



**DRIVES  
MADE BY  
GEIGER**

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**GEIGER AT  
A GLANCE**



# GEIGER RELOADED

*Our **origins** and **values** give GEIGER its special identity. Our brand appearance makes this identity outwards visible.*

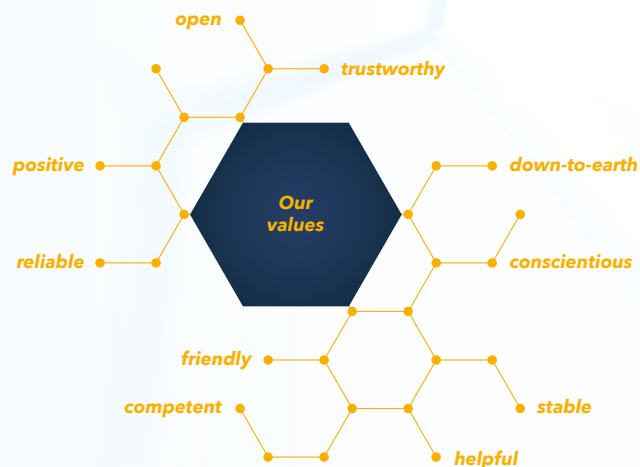


## Our origins

We are rooted in the tradition of Gerhard Geiger, who kept bees as well as a mechanical workshop – professionally, fearlessly, reliably, and focusing on the greater good. He used his experience from the honey extractor drives to design modern drives. He succeeded in developing new opportunities for the privacy and sun protection industries that brought him soaring success.

## Our values

Our actions are characterised by protection and care. We are characterised by coordination and partnership. Reliability, stability, down-to-earth attitude, conscientious work, friendliness, expertise, help, open-mindedness, positive thinking, and action – all this is part of GEIGER.



GEIGER develops and manufactures products of the highest quality. We work as a team, joining forces for our customers and for their customers in turn. This cooperative partnership marks our company and our corporate culture alike.

Building on our strong roots and our unique corporate culture, we want to lead GEIGER into a successful future.

**We are ready for the future.  
With sustainable values.**



# VALUABLE DRIVES

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*Our reliable GEIGER drives bear visible evidence of our values. This is reflected in their innovative technology, outstanding quality and exceptional durability.*



## Our vision

**GEIGER considers itself a “partner of the sun”. We help people live safer and better lives with the sun.**

Our technology and innovations improve, simplify, and control life with the sun and increase safety. We achieve this together with a large community of customers, employees, and suppliers.

As “partner of the sun”, we support the industry with ideas and high-quality products. Our traditional values guide us in this endeavour while we never lose sight of our roots.

Origins and home remain important to us even in the new and digitalised world.

## Our mission

**We have made it our mission to keep delivering new and sustainable drive solutions for our industry and the users of our technology.**

We are a reliable long-term partner who maintains fair interaction with our customers and suppliers.

We develop and deliver the solutions for people’s needs competently while remaining reliable and trustworthy.

As industry partners, we are there for each other and share common development goals. Our vision becomes reality in this connected community.

We take responsibility for our society, our employees and their families, our environment, and our region.

That is why we work every day to pioneer new developments and trends in a highly competitive global market now and in future.



## Innovation

We look forward to the digital future. Our innovative products are designed to help people from around the world to live carefree and relaxed with the sun. This is why we rethink sun protection every single day - depending on the extensive experience of our customers as well as the creative impulses of a diverse, competent team.



## Quality

Our pursuit of quality is measurable: More than 99 percent of GEIGER drives work perfectly throughout their service lives. We place great importance on a high level of automation in our production to ensure this. Our product inspections also exceed the usual by far.



## Manufacturing

There only few parts in our drives that are not produced in-house. Only this allowed us to control and constantly optimise our products' quality. Close integration of machining and plastics technology all the way through mounting enables GEIGER to guarantee the outstanding workmanship that ensures particularly quiet and durable drives.



# ELECTRICAL DRIVES

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# SMART HOME

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DRIVE SOLUTIONS  
WITH AIR

**GEIGER**  
ANTRIEBSTECHNIK



# SIMPLY SMART WITH AIR



*Automated sun protection makes life more comfortable and safer. The smart wireless AIR drives take away all the burden from you with a sun protection system that thinks for itself. For a full smart home, you can simply connect the AIR to a smart-home solution from GEIGER partner Loxone.*

<i>Loxone Smart Home</i>	—	<b>16</b>
The system with the highest IQ - Loxone connects all components and trades in your house to control the technology virtually on its own.		
<i>Mounting</i>	—	<b>18</b>
Ready for use in next to no time - AIR works wirelessly and is quick to install.		
<i>Wireless AIR technology</i>	—	<b>19</b>
No distance is too far - AIR will reach every nook and cranny and check every system command.		
<i>Smart Home Ready</i>	—	<b>19</b>
The gateway to the smart world - AIR can be connected with the entire building technology in the smart home.		
<i>Expandable system</i>	—	<b>20</b>
Equipped for the future - AIR can be expanded from mere motorised sun protection to a smart home.		
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# LOXONE SMART HOME THE SYSTEM WITH THE HIGHEST IQ

*Life can be that simple: The Loxone smart home system connects sun protection with all components and systems in the house – like a human nervous system. Climate, temperature, shading, and lighting all adjust themselves without intervention. Comfort, feel-good atmosphere, and relaxation included.*

## 60,000 happy smart home owners

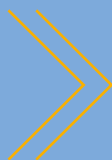
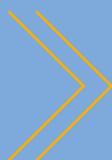
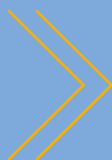
This encompasses the experience of Loxone to date. This also reflects just how well the smart home solution is received by building owners and residents. Their smart homes think just like them and adapt to their needs.

## 50,000 fewer actions to be taken

That's how much work a smart home from Loxone does for its residents. It remains active around the clock, working adjusted to season, weather, presence, and lifestyle. It frees up time for the nicer things in life.

## The best energy-cost brake

This is how well the Loxone smart home knows its residents: It will know when and where someone is in the house and switch off heating, lighting, etc. in unused rooms. The photovoltaic system supplies free energy while the sun is shining. The smart home uses this to run the washing machine, tumble dryer, or dishwasher, amongst other things.





## Real Smart Home

Not all smart homes are created alike: Far from being merely a technical gimmick, a smart home by Loxone offers tangible added value. The system connects all rooms and areas of life from the basement to the attic, from the front door to the garden, from mobility to relaxation. Whether access solution or smart garden, sauna, or pool, photovoltaics or e-mobility: Loxone integrates them all. The result is truly smart - the "Real Smart Home".



## My house, my data

Loxone preserves privacy. The smart home works outside of the cloud. Personal data are not stored online in a cloud somewhere in the world. They remain protected on the Loxone miniserver right there in your own home. Third parties have no access to them.



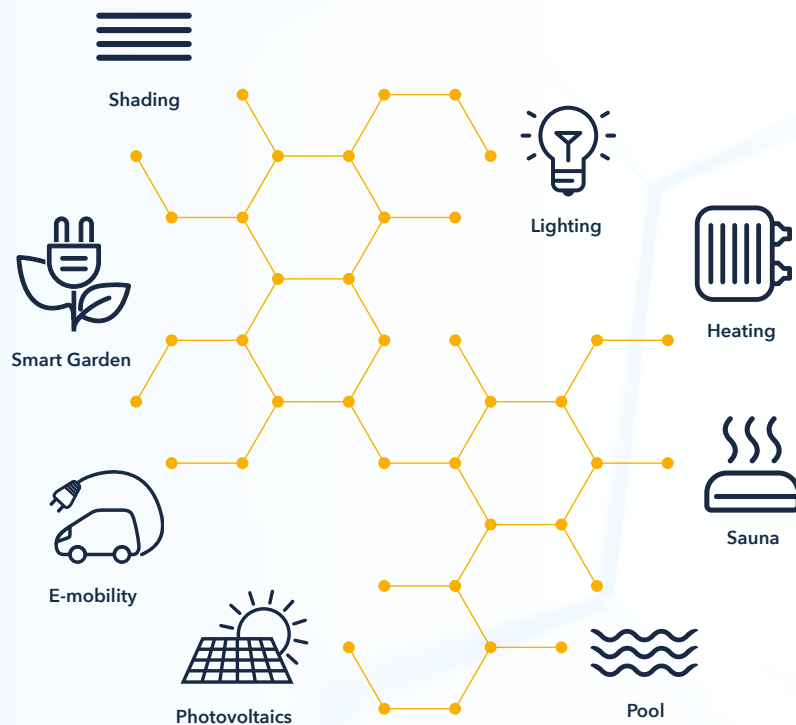
## Automatic or self-operated

The Loxone smart home can do all the work automatically while the residents can sit back and relax. Where necessary, control can be taken over via the convenient keypads in the house - for example, to control sun protection in the child bedroom. Another option is simply using a smartphone app to pre-heat the sauna while on the way home.



## Looking to the future

New products are constantly being developed in Loxone's "Future Lab". Constant updates keep every smart home up to date and new functions are added free of charge every year.





# FEATURES

## MOUNTING

*Quick and easy to use - simple handling is a matter of course for a GEIGER drive. We know how to make installation, maintenance, and operation of our products easier for our customers.*

### Wireless communication

AIR works wirelessly, which makes it quick to install and retrofit. No bus line is required for communication between the components. There is no opening of walls for renovations, barely any dirt, and virtually no effort. This not only saves time, but also reduces costs.

### Plug-in cables and tool-free mounting

Our drives have plug-in connection cables. Their motors can be connected to or disconnected from the mains in the blink of an eye during retrofitting or replacement. Many of our fixation kits can be inserted and attached tool-free. Our installation accessories are developed in close cooperation with the sun protection manufacturers. We keep subsequent installation in mind from the development stage, customising our mounting accessories precisely to any requirements our customers may have.

### Simple end position adjustment

End position programming is an important and sometimes complicated part of commissioning. We have, therefore, made setting the end positions as simple as possible.

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## WIRELESS AIR TECHNOLOGY

*No distances too far - the wireless AIR technology checks every single system command for safety while also covering long distances or houses with many nooks and crannies.*



### MESH technology

No matter how big the house or how thick the wall: AIR will reach everywhere. This is because all AIR drives are equipped with MESH technology. This means that each drive not only receives signals, but also passes them on to its neighbours as an amplifier via the fastest possible route.



### Secure communication

AIR drives are equipped with bidirectional radio. Commands are thus not only received, but also confirmed after execution; otherwise, an error message will be returned. This means that the system and user both know what is happening with every individual sun protection element.




### Grouping

AIR can combine multiple blinds into a group - for example grouping all rolling shutters in the living room. They will be controlled simultaneously to do exactly the same thing. This is not only easier and safer to use, it also looks better.

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## SMART HOME READY

*The gateway to the smart world - AIR can be connected with the entire building technology in the smart home.*



### Integration into a future-proof smart home control

The innovative wireless AIR technology makes your sun protection **smart home ready**. Connecting AIR to the Loxone miniserver will integrate the sun protection system into a full smart home control system. This communication with other smart home technology such as heating, lighting, security technology, and ventilation. All components speak the same language and complement each other in their functions - for more convenience, greater energy efficiency, and improved security.

# FEATURES

## EXTENSIBLE SYSTEM

*Ready for the future - a single AIR drive can be expanded from motorised sun protection with radio control to fully connected shading in the smart home.*

### GEIGER mode

AIR drives, handheld transmitters and weather station form a stand-alone system in **GEIGER mode**. They are controlled manually or with the AIR weather station. Sensors register wind, sun, and rain, using them to control sensitive textile blinds and external Venetian blinds. Awnings, for example, are ideally protected from environmental influences.

### Loxone mode

The AIR drives and the AIR weather station become a fully connected sun protection system when docked to the Loxone miniserver. Solar energy is optimally utilised by combining it with other building technology. This increases a building's energy efficiency to save costs for heating and cooling. The precisely tuned light control also ensures a pleasant room climate and a comfortable atmosphere.

### Regular system enhancements

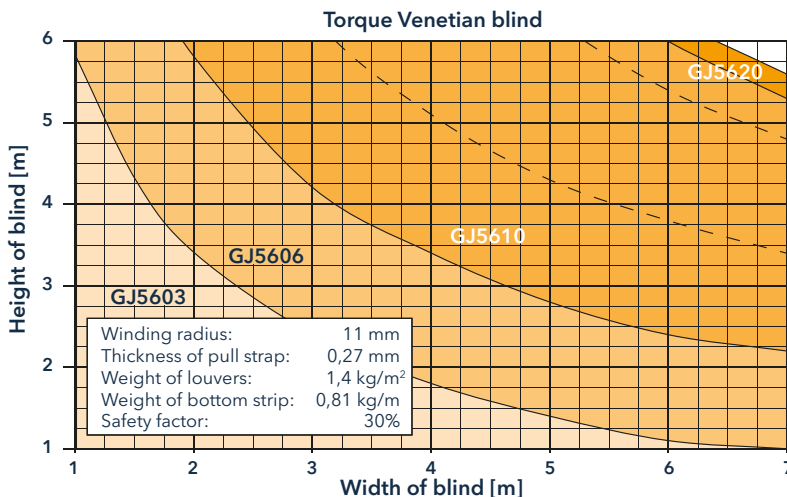
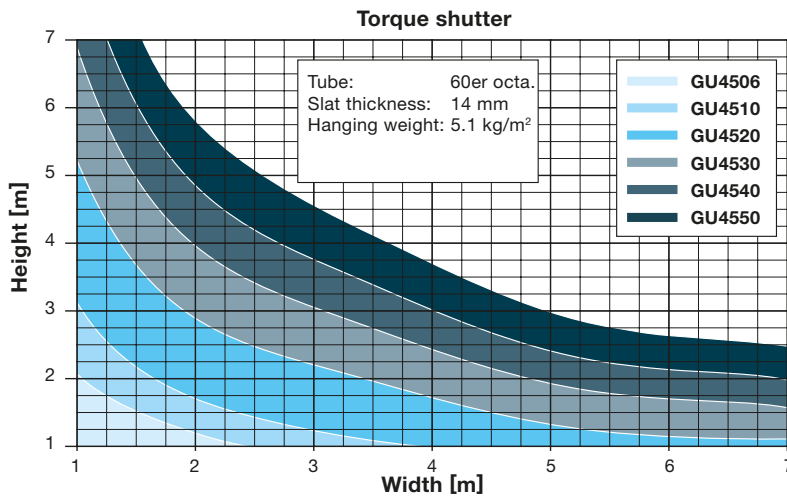
GEIGER will continue to expand the AIR product family in the future to make sun protection even smarter. The smart home solution by Loxone also integrates numerous partners from all areas of home technology. New devices and functions are regularly added to the system. Updates and easy integration of accessories turn the smart home just as individual and flexible as its residents.

# LOXONE

# MOTOR MATRIX AIR

	Flex AIR	Sun AIR	Zip AIR	GJ56... AIR	Accessories AIR
	Page 22	Page 24	Page 26	Page 28	Page 30
<b>AIR radio system</b>					
MESH system	■	■	■	■	■
Bidirectional radio system	■	■	■	■	■
<b>Smart Home Ready</b>					
Selectable GEIGER mode	■	■	■	■	■
Selectable Loxone mode	■	■	■	■	■
<b>Modular system</b>					
Updatable*	■	■	■	■	■
Easy integration of accessories	■	■	■	■	■
<b>Mounting</b>					
Plug-in cables	■	■	■	■	
Tool-free mounting	■	■	■	■	
Easy end position setting	■	■	■	■	

\* if connected to the Miniserver or Miniserver Go



## SOLIDline Flex AIR

Tubular motor with AIR  
radio system Ø 45 mm



### Application:



Rolling shutters



Open style folding arm awnings



Screens

### Characteristics:

#### AIR



With the AIR portfolio, we offer a bidirectional radio solution that is already **Smart Home Ready**.

All AIR drives can be easily and intelligently integrated into the building control system of our exclusive development partner Loxone.

#### MESH technology



All AIR drives are equipped with MESH technology. This means that every drive acts as an amplifier of the radio signal.

#### Soft position



The hanging stops before reaching its upper end position to protect the materials.

#### Burglary resistance



A constant torque cut-off in the DOWN direction allows the rolling shutter to develop its burglary-resistant effect. (Only possible in combination with anti-lifting devices.)

#### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. Quick and precise adjustment of the end positions (when used with stoppers and anti-lift devices).

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



##### ■ Obstacle detection in UP direction

... the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

#### Intermediate position



An additional desired position can be taught in at any time.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths

### Notices:

- Setting the end positions via handheld or wall-mounted transmitters

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)					
	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.8 A	1.0 A	1.0 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l] <sup>1)</sup>	519.5 mm	549.5 mm	569.5 mm	589.5 mm	589.5 mm
Operating mode	S2 4 min	S2 5 min	S2 4 min	S2 4 min	S2 4 min
Sound pressure level <sup>2)</sup>	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)	-
Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

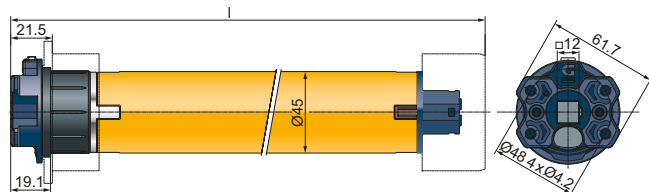
1) SOLIDline-COM + 0.5 mm

2) The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

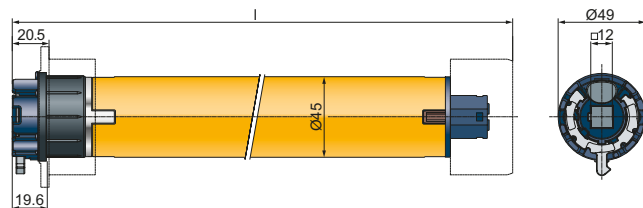
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

### SOC:



### COM:



## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Accessories AIR	30
	Connection cables	134			

## SOLIDline Sun AIR

Tubular motor with AIR  
radio system Ø 45 mm



# LOXONE

### Application:



Cassette awnings

### Characteristics:

#### AIR



With the AIR portfolio, we offer a bidirectional radio solution that is already **Smart Home Ready**.

All AIR drives can be easily and intelligently integrated into the building control system of our exclusive development partner Loxone.

#### MESH technology



All AIR drives are equipped with MESH technology. This means that every drive acts as an amplifier of the radio signal.

#### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. Quick and precise adjustment of the end positions (when used with stoppers and anti-lift devices).

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen on the windowsill are detected and not torn off.



##### ■ Obstacle detection in UP direction

... the system is protected during retraction.



#### Intermediate position



An additional desired position can be taught in at any time.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths

### Notices:

- Setting the end positions via handheld or wall-mounted transmitters

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### End position adjustment:

TOP	Stop on torque	BOTTOM	Stop on free position
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\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)					
	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.8 A	1.0 A	1.0 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l]1)	519.5 mm	549.5 mm	569.5 mm	589.5 mm	589.5 mm
Operating mode	S2 4 min	S2 5 min	S2 4 min	S2 4 min	S2 4 min
Sound pressure level2)	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)	-
Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

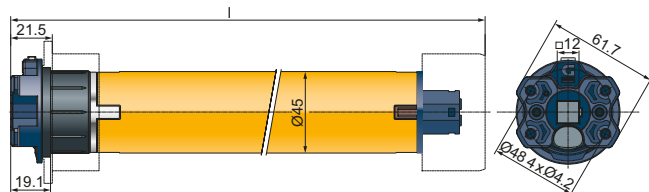
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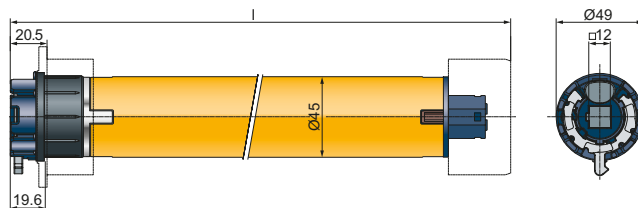
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## Drawings:





SOC:



COM:



## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Accessories AIR	30

## SOLIDline Zip AIR

Tubular motor with  
AIR radio system Ø 45  
mm



### Application:



ZIP screens

### Characteristics:

#### AIR



With the AIR portfolio, we offer a bidirectional radio solution that is already **Smart Home Ready**. All AIR drives can be easily and intelligently integrated into the building control system of our exclusive development partner Loxone.

#### MESH technology



All AIR drives are equipped with MESH technology. This means that every drive acts as an amplifier of the radio signal.

#### Soft position



The hanging stops before reaching its upper end position to protect the materials.

#### DualStop control



If the system detects an obstacle, the motor moves the hanging in the opposite direction at a fixed value. After two further unsuccessful attempts, the system moves to its safety position (upper end position). This applies in UP and DOWN direction.

#### Intermediate position



An additional desired position can be taught in at any time.

#### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. Quick and precise adjustment of the end positions (when used with stoppers and anti-lift devices).

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



##### ■ Obstacle detection in UP direction

... the system is protected during retraction.



##### ■ Blockage detection in DOWN direction

... the system is protected when extending.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths

### Notices:

- Setting the end positions via handheld or wall-mounted transmitters

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)					
	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50 Hz				
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Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
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Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

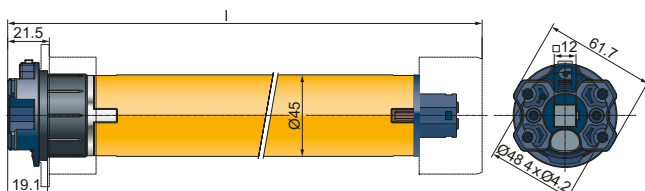
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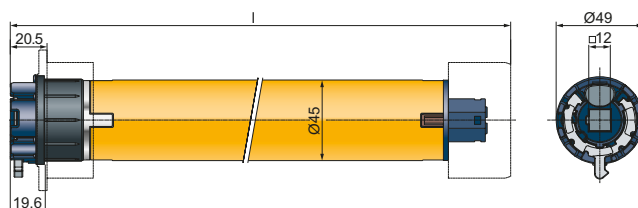
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

SOC:



COM:

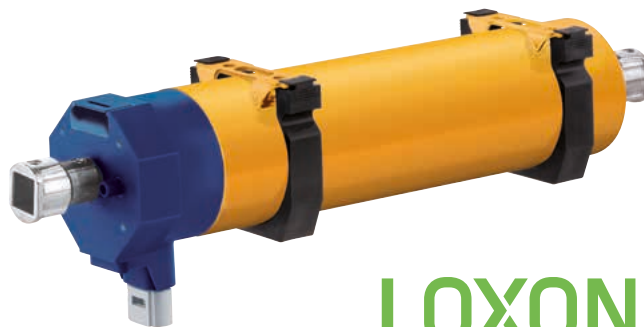


## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Accessories AIR	30

## GJ56.. AIR

AIR radio system  
Venetian blind motor



# LOXONE

### Application:



Venetian blinds

### Characteristics:

#### AIR



With the AIR portfolio, we offer a bidirectional radio solution that is already **Smart Home Ready**. All AIR drives can be easily and intelligently integrated into the building control system of our exclusive development partner Loxone.

#### MESH technology



All AIR drives are equipped with MESH technology. This means that every drive acts as an amplifier of the radio signal.

#### Dynamic torque cut-off



The self-learning torque shutdown detects changes in the blind and adapts itself accordingly to ensure constant movement behaviour.

#### Referencing



Optional referencing makes it possible to compensate for changes in winding behaviour. A reference run is performed every 50 cycles. The function can be deactivated using handheld and wall-mounted transmitters.

#### Hanging protection

##### ■ Antifreeze protection

external blinds that are, for example, frozen to the end rails are detected and not torn off.



##### ■ Obstacle detection in the UP direction

Protection of the system during retraction.



##### ■ Safety shutdown

The GJ56.. The F03 series has an overrun limit switch. It serves as an "emergency button" and protects the system from damage.



#### Intermediate position



An additional desired position can be taught in at any time.

#### Adjustable slat base angle



The adjustable slat base angle is important to ensure a uniform approach to the intermediate position with the set slat angle. Slats have different angles when the hanging is opened and closed. The drive must know by how many degrees it must turn in the opposite direction to compensate for this behaviour in an intermediate position so that the slats have the same angle.

### Product advantages:

- Electronic limit stop
- Start-up time approx. 100 ms
- Can be connected in parallel
- Plug-in connection cable in different lengths
- Overrun limit switch for safety shutdown
- Secure mounting in all standard head rails
- Proven motor and brake concept

### Notices:

- Setting the end positions via handheld or wall-mounted transmitters

### Options:

- Available as **SILENT** drive up to 10 Nm, for indoor use only
- Extensible overrun limit switch possible

### End position adjustment:

TOP	*Stop on torque Stop on free position	BOTTOM	Stop on free position
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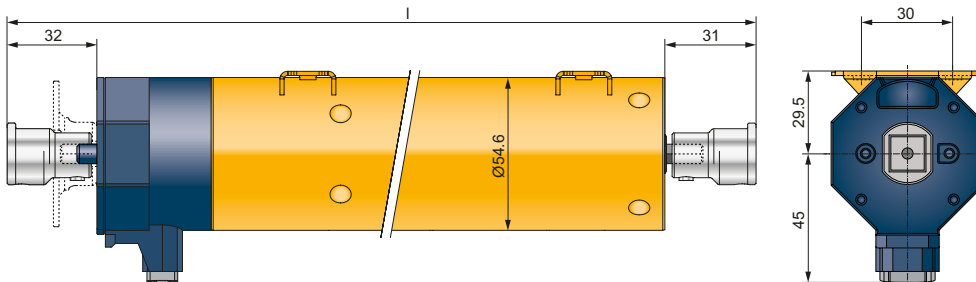
\*Hitting of the overrun limit switch

## Technical data:


Technical data GJ56... F03			
	GJ5606k F03	GJ5610 F03	GJ5620 F03
Voltage	230V~/50Hz		
Current	0.40 A	0.60 A	0.85 A
Cos Phi (cosφ)	>0.95		
Inrush current (factor)	x 1.2		
Power	93 W	135 W	190 W
Torque	6 Nm	10 Nm	2 x 10 Nm
Speed	26 rpm		
Protection class	IP 54		
Limit switch-off range	200 rev.		
Operating mode	S2 4 min.		
Total length [l] (with cpl.)	319.5 mm	329.5 mm	356.7 mm
Diameter	55 mm		
Weight	approx. 1.50 kg	approx. 1.70 kg	approx. 2.20 kg
Humidity	dry, non-condensing		
Storage temperature	T = -15 °C ... +70 °C		

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:



## Accessories:

	Connection cables	175		Coupling pieces	170
	Fixing systems	172		Accessories AIR	30

## Weather station AIR



# LOXONE

### Characteristics:

#### Ambient Light Sensor



Assigned drives move to their shading or protection position when the preset brightness values are reached.

#### Windmill



The targeted drives move into their protection positions when the set wind speed is reached.

#### Rain sensor



The drives move to their protection positions when rain is detected.

#### Temperature sensor (Loxone mode)



The drives react to the individually stored command in conjunction with the Loxone miniserver when a set temperature is reached.

#### Alive function



The Alive signal is an integrated early warning system that moves all AIR drives connected to the weather station to their safety positions in the event of a power failure.

#### MESH technology



Communication between the weather station and all drives takes place via MESH technology when powered by a 24V power supply unit. This bidirectional radio system confirms commands sent to a drive after they have been executed or reports any errors that have occurred.

### Product advantages:

- Detection of external environmental influences: Sun, wind, rain, and temperature
- Wind speed measurable up to 145 km/h (Loxone mode)
- Heated rain sensor (24V)
- Battery and mains operation (24V) possible
- Can be used with all GEIGER AIR drives
- Incl. batteries and mounting accessories for wall and pole mounting (max. ø 50 mm)

#### Application

- Weather-dependent, automatic control of the sun protection system
- Textile sun protection (screens, ZIP screens, and awnings)
- Rolling shutters and Venetian blinds

Part no.	Colour	Number of channels	Automatic sun control
GF3000	<input type="checkbox"/> white	-	-

### Technical data:

Technical data weather station AIR	
Power supply	24 V DC or 2x1.5 V AA batteries
Power consumption	70 mW max. 1.1 W (24 V DC), 14 µW / 39 mW (battery operation)
Transmission frequency	868 MHz (SRD Band Europe), 915 MHz (ISM Band Region 2)
Range	up to 30 metres (battery operation), up to 145 metres (24 V DC)
Ambient temperature	-20 °C ... 54 °C (battery operation), -30 °C ... 85 °C (24 V DC)
Wind measuring range	20 ... 65 km/h (in Loxone mode 9 ... 145 km/h)
Brightness measuring range	0 ... 188,000 lux
Temperature measuring range	-40 °C ... 125 °C (Loxone mode)
Protection class	IP44

Subject to technical changes.

## AIR radio accessories

### Your options

#### Handheld and wall transmitters LC AIR

##### GF2900 | Handheld transmitter Remote AIR



###### Characteristics

- 3 channels
- Feedback from the drive via a coloured LED
- Control of the sun control system

###### Application

- Setting and operating the sun protection system

###### Note

- Can only be operated in GEIGER mode!

Part no.	Colour	Number of channels	Automatic sun control
GF2900	<input type="checkbox"/> white	3	yes

##### GF230. Handheld transmitter LC AIR



###### Characteristics

- 6 channels with channel display on the transmitter
- Feedback from the drive via coloured LEDs
- Control of the sun control system
- Wipeable SoftTouch surface
- Incl. magnetic holder (handheld transmitter) and mounting material

###### Application

- Setting and operating the sun protection system

Part no.	Colour	Number of channels	Automatic sun control
GF2300	<input type="checkbox"/> grey/white	6	yes
GF2301	<input checked="" type="checkbox"/> grey/black	6	yes

##### GF280. Wall transmitter LC AIR



###### Characteristics

- 6 channels with channel display on the transmitter
- Feedback from the drive via coloured LEDs
- Control of the sun control system
- Wipeable SoftTouch surface

###### Application

- Setting and operating the sun protection system

Part no.	Colour	Number of channels	Automatic sun control
GF2800	<input type="checkbox"/> grey/white	6	yes
GF2801	<input checked="" type="checkbox"/> grey/black	6	yes





# SOLIDline

TUBULAR MOTORS

**GEIGER**  
ANTRIEBSTECHNIK



# SIMPLY BETTER PROTECTION



*Rolling shutters act like a coat for your house - they are simply perfect for protecting it from undesired external influences. Their sturdy curtains keep out extreme temperatures, bad weather, and noise. They equally keep out prying eyes or uninvited guests. They can be operated manually, wirelessly, or fully automatically in a smart home.*

<i>Design</i>	—	<b>36</b>
The right look - good design is the result of maximum function at GEIGER.		
<i>Protection</i>	—	<b>37</b>
Carefree enjoyment - our rolling shutter drives not only protect the blinds from damage, but can also make break-ins more difficult.		
<i>Connection</i>	—	<b>38</b>
The gateway to the smart world - every rolling shutter can be connected to the right GEIGER drive.		
<i>Mounting</i>	—	<b>38</b>
Ready for use in the blink of an eye - thanks to customised mounting components, our drives are installed quickly.		
<i>Smooth operation</i>	—	<b>39</b>
Silence is a luxury - GEIGER minimises the noise level of its drives.		
<i>Drive overview</i>	—	<b>40</b>

# FEATURES

## DESIGN

*The right look - function and design in harmony at GEIGER. The more precisely a rolling shutter operates and the more individually it supports the appearance of a building, the higher the quality of its appearance.*

### Synchronised position

Our drives switch off identically in the upper end position thanks to GEIGER motor intelligence. This means that adjacent blinds are at the same height after stopping in the upper end position - even if the rolling shutters are of different sizes or widths. A visual plus for every building.

### Referencing

The motor control unit will check the rolling shutter end positions in particular cycles with the optional referencing function. This keeps the blind moving precisely at the originally set distances even after years, even if the winding behaviour changes due to external influences. Follow-up costs for manufacturers and end customers are reduced to a minimum and the longevity of the systems is maximised.

---

## PROTECTION

*Carefree enjoyment - with smart drives that effectively protect against uninvited guests and also automatically protect the sun protection from wear and damage. This not only alleviates your stress, it is also easy on your wallet.*



### Soft position

The GEIGER soft position does not stop the blind by torque cut-off when retracting, but stops it shortly before reaching the upper end position. It prevents permanent tension or pressure on the rolling shutter curtain. This protects the rolling shutter box, prevents the curtain from bulging, and keeps it from freezing in its upper end position in winter.



### Burglary resistance

Our rolling shutter drives effectively prevent unauthorised access in combination with an anti-lift device. Burglars would have to work against the motor force when pushing up the rolling shutter due to a constant torque cut-off in the DOWN direction. Motor power and anti-lift device together make it almost impossible to push the rolling shutter up from the outside.



### Anti-freeze protection

The anti-freeze protection adds some extra safety in sub-zero temperatures: End rails frozen to the window sill are recognised immediately. The drive stops to prevent damage to the blinds and keep them intact.



### Obstacle detection in UP direction

If the sun protection moves to the upper end position, it is automatically stopped if there is resistance in the travel path. This also applies to weather-related influences such as coarse dirt. The sensitive power cut-off registers obstacles, protects the blind and ensures long-lasting sun protection.

# FEATURES

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## CONNECTION

*The gateway to the smart world. Every rolling shutter can be easily connected to matching GEIGER drive, all the way to integration into a fully automated smart home. Sun protection networks increase functionality, safety, and comfort throughout the home.*



### GEIGER radio 2.0

The unidirectional radio system (433 MHz) with its long range makes it possible to reliably address even relatively distant receivers. Accidental changes to the end positions/motor settings by the end user are prevented by its delimited programming level (programming range/close range). A wide range of accessories such as various handheld transmitters and sensors round off the GEIGER radio program.




### Wireless AIR technology

Our innovative AIR radio technology is able to cover long distances and even the most labyrinthine buildings with MESH technology. All AIR drives are equipped with bidirectional radio. Commands are thus not only received, but also confirmed after execution; otherwise, an error message will be returned. AIR also makes the sun protection system Smart Home Ready: Connecting AIR drives to the Loxone miniserver will integrate the sun protection system into a full smart home control system. All integrated technical components complement each other in their functions - for more convenience, greater energy efficiency, and improved security.

---

## MOUNTING

*Quick and easy to use - simple handling is a matter of course for a GEIGER drive. We know how to make installation, maintenance, and operation of our products easier for our customers.*



### Plug & Play

Plug & Play puts an end to the tedious and time-consuming adjustment of end positions. Our smart drives enable extremely fast teach-in without adjustment cables: Moving to the bottom end position, correcting at need, raising the blind all the way, and switching off - done. Maintenance costs and service calls are reduced.



## Plug-in cables and tool-free mounting

Our drives have plug-in connection cables. Their motors can be connected to or disconnected from the mains in the blink of an eye during retrofitting or replacement. All of our fixation kits can be inserted and attached tool-free. This is because our installation accessories are developed in close co-operation with the rolling shutter manufacturers. We keep subsequent installation in mind from the development stage, customising our mounting accessories precisely to any requirements our customers may have.



## Sophisticated fastening systems

We offer roller bearings, amongst other things, for rolling shutters. This means that the hanging can be unrolled in the open state even if the motor fails. Our folding engine bearers can be fixed without tools and without having to screw the bearing plate to the rolling shutter box.

---

## SMOOTH RUNNING

*Silence is a luxury - and GEIGER keeps improving all of its drives to optimise smooth running. Less material friction equals quieter drives. Once the sun protection is virtually inaudible, it guarantees a more comfortable atmosphere.*



## Optimised product design

We reduce noise emissions right where the develop: in the mechanics of the engine, transmission, and brakes and in transmission of vibrations and structure-borne noise to adjacent elements. Optimisation ranges from product development and material selection to manufacturing processes and includes all drive components.

We strive to reduce friction between all components, absorb sound with softer materials and dampen vibrations.

## MOTOR MATRIX SOLIDline

	Touch	Easy	Easy Radio	SoftPerfection-S	SoftPerfection-X01	X01 Radio
	Page 42	Page 44	Page 46	Page 48	Page 50	Page 52
<b>Application</b>						
Rolling shutter (without stopper + anti-lift devices)	■	■	■			
Rolling shutter (with stopper + anti-lift device)	■	■	■	■	■	■
Screens	■	■	■			
ZIP screens	■					
Facade awnings	■	■	■			
Open style folding arm awnings	■	■	■			
Cassette awning	■	■	■			
Conservatory shading	■	■	■			
<b>Design</b>						
Synchronised position		■	■	■	■	■
Referencing		■	■	■	■	■
Intermediate position						
<b>Hanging protection</b>						
Soft position		■	■		■	■
Burglary resistance*	■	■	■	■		
Anti-freeze protection		■	■	■	■	■
Obstacle detection (UP direction)		■	■	■	■	■
Blocking detection (DOWN direction)						
<b>Connection</b>						
AIR / Smart Home Ready						
GEIGER Radio 2.0			■			■
<b>Mounting</b>						
Plug & Play				■	■	■
Adjustment by control switch		■	■	■		
Plug-in cable	■	■	■	■	■	■
Tool-free mounting	■	■	■	■	■	■
Sophisticated fixing systems	■	■	■	■	■	■
<b>Smooth operation</b>						
Noise-optimised product design	■	■	■	■	■	■

\* only for use with anti-lift devices or fixed tube connectors

SoftPlus-Qi	Qi Radio	ZIP Perfection	ZIP Radio	XS5606 SoftPerfection-X01	Rescue-R Touch	Rescue-R SoftPerfection-X01
Page 54	Page 56	Page 58	Page 60	Page 62	Page 64	Page 64
					■	
				■	■	■
		■	■			
■	■					
■	■					
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■	■	■	■	■	■	■

SOLIDline

TEClime

Accessories for tubular drives

GJ56..

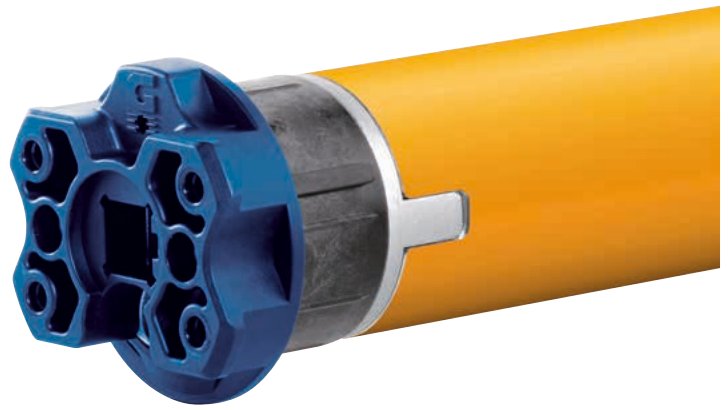
Accessories GJ56...

Wireless accessories

General information

# SOLIDline Touch

## Mechanical tubular motor Ø 45 mm



### Application:



Rolling shutters



Open style folding arm awnings



Screens

### Characteristics:

#### 1-button technology



Both end positions can be set precisely with just one button on the motor head.  
No more complications when setting the end positions.

#### Wind proof



The Touch has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

### Product advantages:

- Mechanical limit switch
- Plug-in connection cable in different lengths
- Quick adjustment of the end positions without setting cable

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Parallel connection not possible

### End position adjustment:

<b>TOP</b>	Stop on free position	<b>BOTTOM</b>	Stop on free position
------------	-----------------------	---------------	-----------------------

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)						
	GU4506	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50Hz					
Current	0.36 A	0.47 A	0.63 A	0.8 A	1.0 A	1.0 A
Cos Phi (cosφ)	>0.95					
Inrush current (factor)	x 1.2					
Power	83 W	105 W	140 W	180 W	220 W	220 W
Torque	6 Nm	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	38 revolutions					
Protection class	IP 44					
Total length [l] <sup>1)</sup>	509.5 mm	519.5 mm	549.5 mm	569.5 mm	589.5 mm	589.5 mm
Operating mode	S2 4 min	S2 4 min	S2 5 min	S2 4 min	S2 4 min	S2 4 min
Sound pressure level <sup>2)</sup>	39 dB(A)	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)	-
Diameter	45 mm					
Weight	approx. 1.85 kg	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing					
Storage temperature	T = -15 °C ... +70 °C					

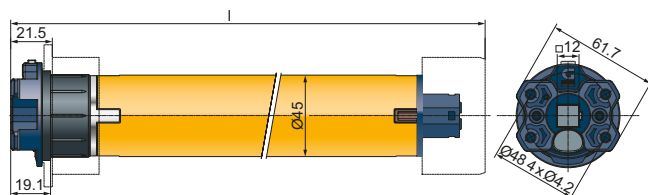
<sup>1)</sup> SOLIDline-COM + 0.5 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

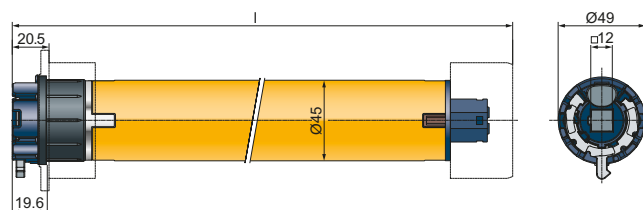
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

SOC:



COM:



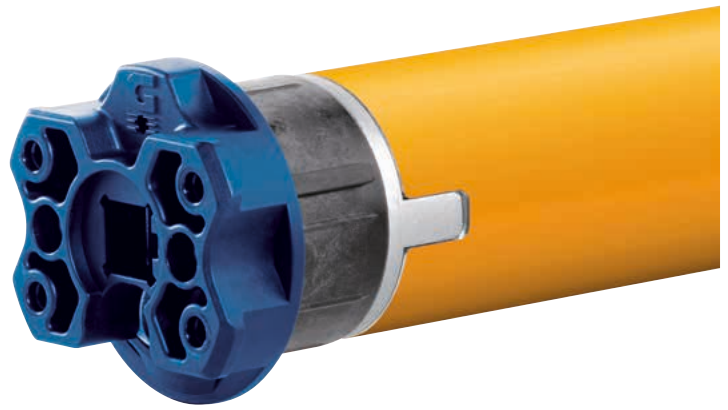
## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift devices	136
	Radio accessories	181			

# SOLIDline

## Easy

### Electronic tubular motor Ø 45 mm



## Application:



Rolling shutters



Open style folding arm awnings



Screens



Insect protection

## Characteristics:

### Soft position



The hanging stops before reaching its upper end position to protect the materials.

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



■ **Obstacle detection in UP direction**... the system is protected during retraction.



### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore.

### Burglary resistance



A constant torque cut-off in the DOWN direction allows the rolling shutter to develop its burglary-resistant effect. (Only possible in combination with anti-lifting devices.)

### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

## Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

## Options:

- Available with SOC or COM head
- Available with faster motor upon request

## End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)					
	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.8 A	1.0 A	1.0 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l] <sup>1)</sup>	519.5 mm	549.5 mm	569.5 mm	589.5 mm	589.5 mm
Operating mode	S2 4 min	S2 5 min	S2 4 min	S2 4 min	S2 4 min
Sound pressure level <sup>2)</sup>	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)	-
Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

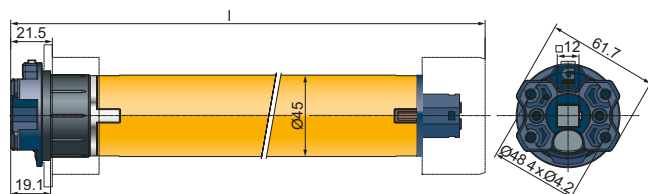
<sup>1)</sup> SOLIDline-COM + 0.5 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

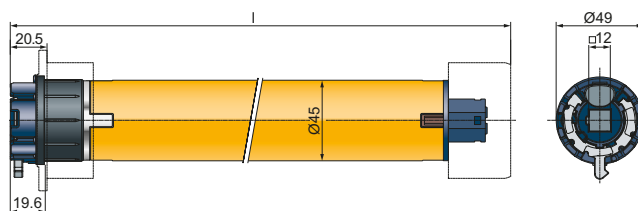
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

### SOC:



### COM:

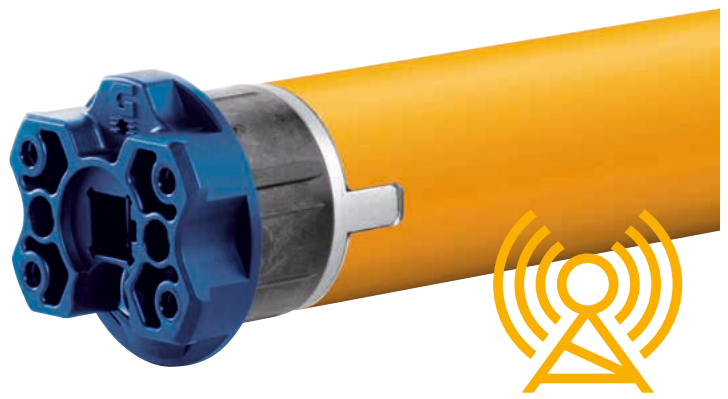


## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift devices	136
	Radio accessories	181			

# SOLIDline Easy Radio

Electronic tubular  
motor Ø 45 mm



## Application:



Rolling shutters



Open style folding arm awnings



Screens



Insect protection

## Characteristics:

### Soft position



The hanging stops before reaching its upper end position to protect the materials.

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



■ **Obstacle detection in UP direction...** the system is protected during retraction.



### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore.

### Operation



The motor can be operated using a handheld transmitter or alternatively using a (wired) control switch.

### Burglary resistance



A constant torque cut-off in the DOWN direction allows the rolling shutter to develop its burglary-resistant effect. (Only possible in combination with anti-lifting devices.)

### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

## Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

## Options:

- Available with SOC or COM head
- Available with faster motor upon request

## End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)					
	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.8 A	1.0 A	1.0 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Radio frequency	433 MHz				
Total length [l] <sup>1)</sup>	519.5 mm	549.5 mm	569.5 mm	589.5 mm	589.5 mm
Operating mode	S2 4 min	S2 5 min	S2 4 min	S2 4 min	S2 4 min
Sound pressure level <sup>2)</sup>	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)	-
Diameter	45 mm				
Radio frequency	433 MHz				
Weight	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

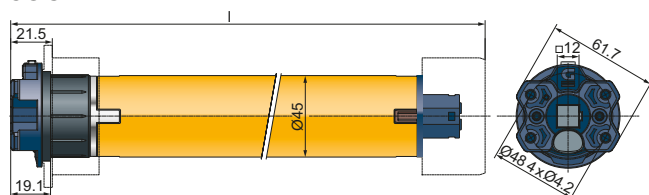
<sup>1)</sup> SOLIDline-COM + 0.5 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

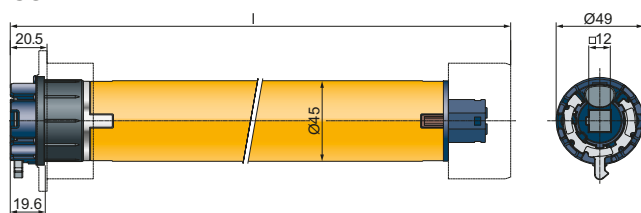
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

SOC:



COM:



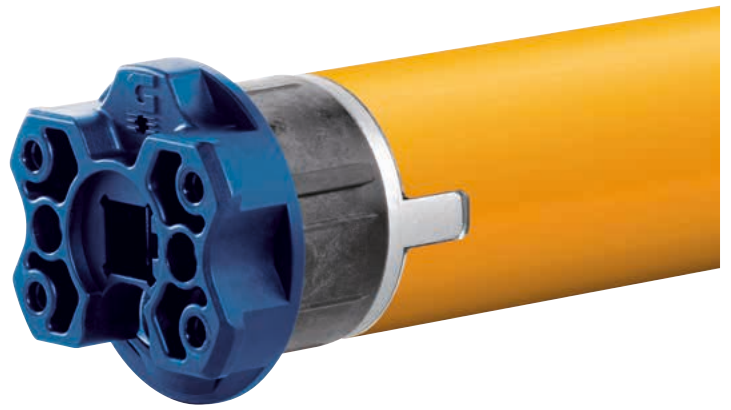
## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift devices	136
	Radio accessories	181			

# SOLIDline

## SoftPerfection-S

### Electronic tubular motor Ø 45 mm



## Application:



Rolling shutter

## Special features:

### Soft position



The hanging stops before reaching its upper end position to protect the materials.

### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore.

### Burglary resistance



A constant torque cut-off in the DOWN direction allows the rolling shutter to develop its burglary-resistant effect. (Only possible in combination with anti-lifting devices.)

### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. (Only when using stoppers and anti-lift devices).

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



#### ■ Obstacle detection in UP direction... the system is protected during retraction.



### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

## Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Rigid tube connectors and stoppers are essential
- Adjustment of end positions possible via control switch

## Options:

- Available with SOC or COM head
- Available with faster motor upon request

## End position adjustment:



\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)				
	GU4510	GU4520	GU4530	GU4540
Voltage	230V~/50Hz			
Current	0.47 A	0.63 A	0.8 A	1.0 A
Cos Phi (cosφ)	>0.95			
Inrush current (factor)	x 1.2			
Power	105 W	140 W	180 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm
Speed	16 rpm			
Limit switch-off range	> 200 revolutions			
Protection class	IP 44			
Total length [l] <sup>1)</sup>	519.5 mm	549.5 mm	569.5 mm	589.5 mm
Operating mode	S2 4 min	S2 5 min	S2 4 min	S2 4 min
Sound pressure level <sup>2)</sup>	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)
Diameter	45 mm			
Weight	approx. 1.9 kg	approx. 2.2 kg	approx. 2.4 kg	approx. 2.7 kg
Humidity	dry, non-condensing			
Storage temperature	T = -15 °C ... +70 °C			

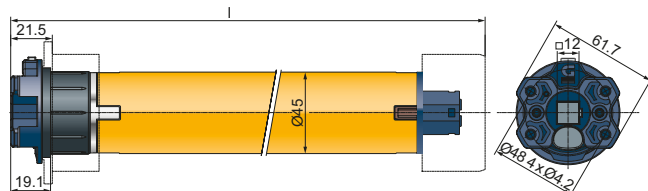
<sup>1)</sup> SOLIDline-COM + 0.5 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

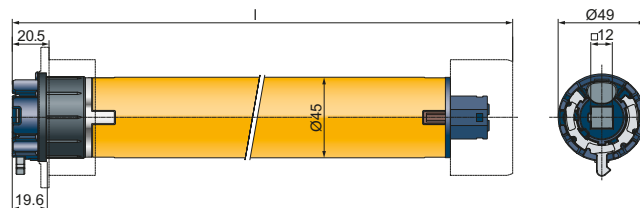
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

### SOC:



### COM:



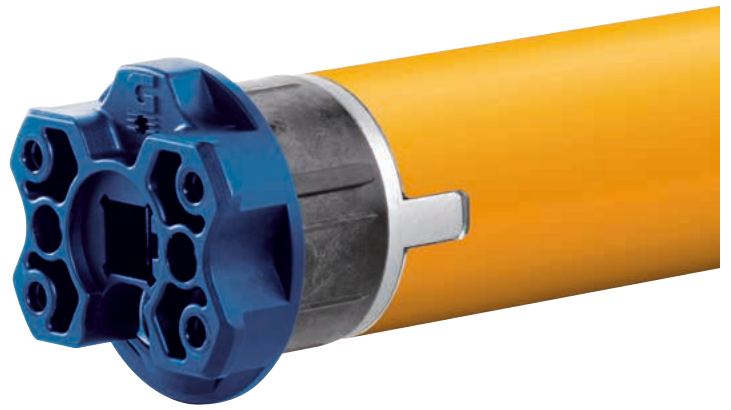
## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift devices	136
	Radio accessories	181			

# SOLIDline

## SoftPerfection-X01

Electronic tubular motor Ø 45 mm



### Application:



Rolling shutter

### Characteristics:

#### Delayed teaching



The motor does not learn its actual end positions until the fifth driving cycle.

#### Soft position



The hanging stops before reaching its upper end position to protect the materials.

#### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore

#### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. (Only when using stoppers and anti-lift devices).

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



##### ■ Obstacle detection in UP direction... the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Rigid tube connectors and stoppers are essential
- Adjustment of end positions possible via control switch

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### End position adjustment:

**TOP** \*Stop on torque **BOTTOM** \*Stop on torque

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)					
	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.8 A	1.0 A	1.0 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l] <sup>1)</sup>	519.5 mm	549.5 mm	569.5 mm	589.5 mm	589.5 mm
Operating mode	S2 4 min	S2 5 min	S2 4 min	S2 4 min	S2 4 min
Sound pressure level <sup>2)</sup>	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)	-
Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

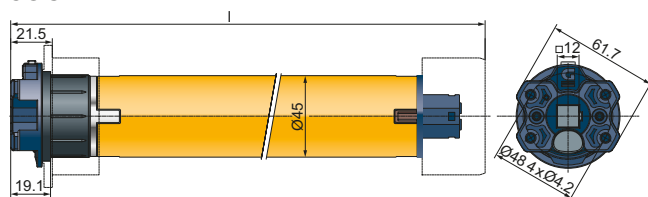
<sup>1)</sup> SOLIDline-COM + 0.5 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

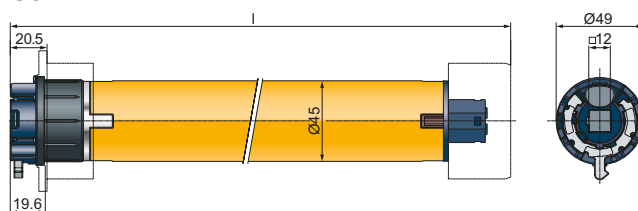
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

SOC:



COM:



## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift devices	136
	Radio accessories	181			

## SOLIDline X01 Radio

Electronic tubular motor Ø  
45 mm with radio system



### Application:



Rolling shutter

### Characteristics:

#### Delayed teaching



The motor does not learn its actual end positions until the fifth driving cycle.

#### Soft position



The hanging stops before reaching its upper end position to protect the materials.

#### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore

#### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. (Only when using stoppers and anti-lift devices).

#### Operation



The motor can be operated using a handheld transmitter or alternatively using a (wired) control switch.

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



##### ■ Obstacle detection in UP direction... the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

#### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Rigid tube connectors and stoppers are essential
- Adjustment of end positions possible via control switch

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### End position adjustment:

TOP

\*Stop on torque

BOTTOM

\*Stop on torque

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)					
	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.8 A	1.0 A	1.0 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Radio frequency	433 MHz				
Total length [l] <sup>1)</sup>	519.5 mm	549.5 mm	569.5 mm	589.5 mm	589.5 mm
Operating mode	S2 4 min	S2 5 min	S2 4 min	S2 4 min	S2 4 min
Sound pressure level <sup>2)</sup>	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)	-
Diameter	45 mm				
Radio frequency	433 MHz				
Weight	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

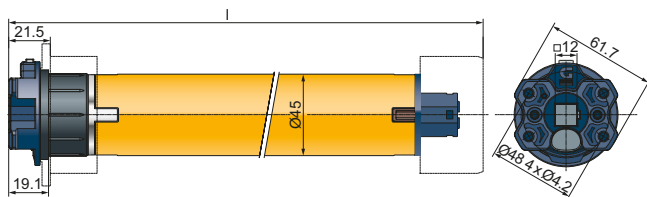
<sup>1)</sup> SOLIDline-COM + 0.5 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

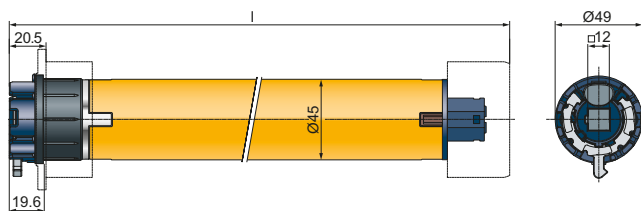
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

SOC:



COM:

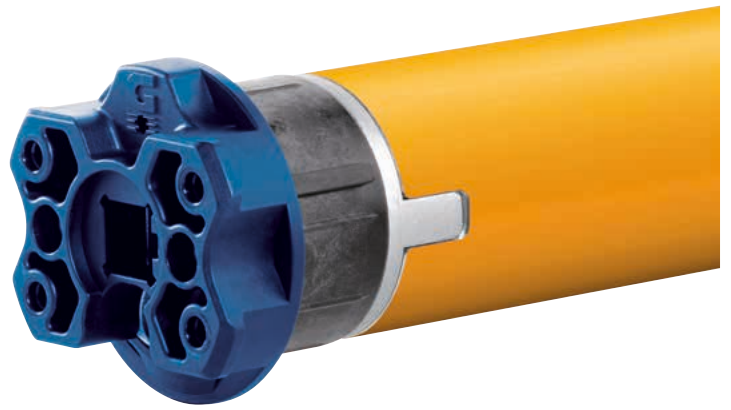


## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift devices	136
	Radio accessories	181			

# SOLIDline SoftPlus-Qi

## Electronic tubular motor Ø 45 mm



### Application:



Cassette awnings

### Characteristics:

#### Plug & Play



Autonomous detection of the upper end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement.

#### Driving range detection



The motor recognises which driving range it is in while driving. As a result, it works with as much or as little power as is actually required in the respective driving range. The SoftPlus-Qi is exceptionally powerful in the folding point area of the awning, but particularly sensitive in the closing area. This ensures a long service life for the system.

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Obstacle detection in UP direction

... the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

### Options:

- Available with faster motor upon request

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

### End position adjustment:

TOP	Stop on torque	BOTTOM	Stop on free position
-----	----------------	--------	-----------------------

## Technical data:

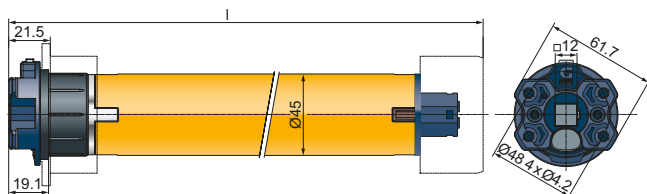
Technical data tubular motor SOLIDline-SOC (GU45..)						
	GU4506	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50Hz					
Current	0.36 A	0.47 A	0.63 A	0.8 A	1.0 A	1.0 A
Cos Phi (cosφ)	>0.95					
Inrush current (factor)	x 1.2					
Power	83 W	105 W	140 W	180 W	220 W	220 W
Torque	6 Nm	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	> 200 revolutions					
Protection class	IP 44					
Total length [l]	509.5 mm	519.5 mm	549.5 mm	569.5 mm	589.5 mm	589.5 mm
Operating mode	S2 4 min	S2 4 min	S2 5 min	S2 4 min	S2 4 min	S2 4 min
Sound pressure level <sup>1)</sup>	39 dB(A)	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)	-
Diameter	45 mm					
Weight	approx. 1.85 kg	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing					
Storage temperature	T = -15 °C ... +70 °C					

<sup>1)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.





Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

SOC:



## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Radio accessories	181

## SOLIDline Qi Radio

Electronic tubular  
motor Ø 45 mm with  
radio system



### Application:



Cassette awnings

### Characteristics:

#### Plug & Play



Autonomous detection of the upper end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement.

#### Driving range detection



The motor recognises which driving range it is in while driving. As a result, it works with as much or as little power as is actually required in the respective driving range. The SoftPlus-QI is exceptionally powerful in the folding point area of the awning, but particularly sensitive in the closing area. This ensures a long service life for the system.

#### Operation



The motor can be operated using a handheld transmitter or alternatively using a (wired) control switch.

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Obstacle detection in UP direction

... the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

#### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

### Options:

- Available with faster motor upon request

### End position adjustment:

TOP	Stop on torque	BOTTOM	Stop on free position
-----	----------------	--------	-----------------------

## Technical data:

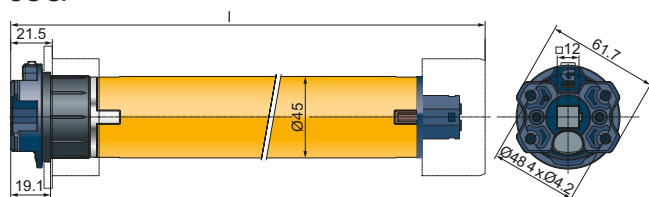
Technical data tubular motor SOLIDline-SOC (GU45..)						
	GU4506	GU4510	GU4520	GU4530	GU4540	GU4550
Voltage	230V~/50Hz					
Current	0.36 A	0.47 A	0.63 A	0.8 A	1.0 A	1.0 A
Cos Phi (cosφ)	>0.95					
Inrush current (factor)	x 1.2					
Power	83 W	105 W	140 W	180 W	220 W	220 W
Torque	6 Nm	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	16 rpm	16 rpm	16 rpm	16 rpm	16 rpm	12 rpm
Limit switch-off range	> 200 revolutions					
Protection class	IP 44					
Radio frequency	433 MHz					
Total length [l]	509.5 mm	519.5 mm	549.5 mm	569.5 mm	589.5 mm	589.5 mm
Operating mode	S2 4 min	S2 4 min	S2 5 min	S2 4 min	S2 4 min	S2 4 min
Sound pressure level <sup>1)</sup>	39 dB(A)	39 dB(A)	41 dB(A)	41 dB(A)	43 dB(A)	-
Diameter	45 mm					
Radio frequency	433 MHz					
Weight	approx. 1.85 kg	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.70 kg	approx. 2.70 kg
Humidity	dry, non-condensing					
Storage temperature	T = -15 °C ... +70 °C					

<sup>1)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.





Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

### SOC:



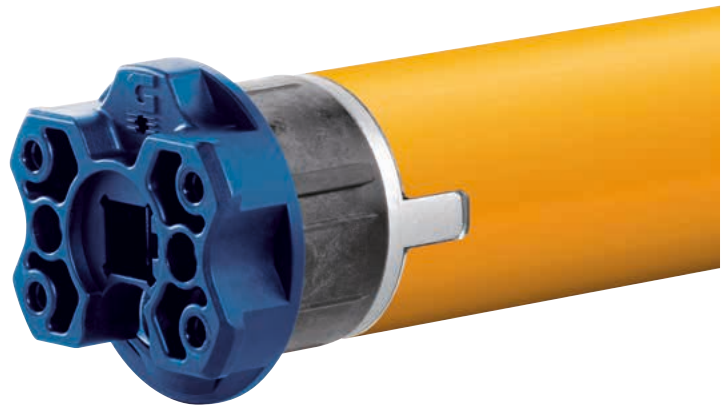
## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Radio accessories	181

# SOLIDline

## ZIP-Perfection

### Electronic tubular motor Ø 45 mm



## Application:



ZIP screens

## Characteristics:

### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. Fast and precise adjustment of the end positions.

### DualStop-Control



If the system detects an obstacle, the motor moves the hanging in the opposite direction at a fixed value. After two further unsuccessful attempts, the system moves to its safety position (upper end position). This applies in UP and DOWN direction.

### Wind resilience



Obstacle detection can differentiate between an obstacle and a gust of wind. The hanging will safely move to its upper end position in the event of a gust of wind in the UP direction to protect the system and prevent damage to the hanging.

### Slowmotion detection



The motor recognises the system status and can detect changes in winding behaviour. If the hanging moves too slowly in the DOWN direction and the end rail threatens to tilt, the motor will stop automatically to protect the system and the hanging.

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



#### ■ Soft position

... the hanging will stop before reaching the upper end position to protect the materials.



#### ■ Blocking detection in AB direction

... Obstacles are recognised. The drive stops and thus protects the blind.



#### ■ Obstacle detection in UP direction

... the system is protected during retraction.



### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### Crushing protection



This function prevents fingers or other objects from being crushed or damaged.

## Product advantages:

- Electronic limit stop
- Easy commissioning: Plug & Play
- Can be connected in parallel
- Plug-in connection cable in different lengths

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

## Options:

- Available with SOC, ROC, or COM head
- Available with faster motor upon request

## End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)					
	GU4503	GU4506	GU4510	GU4520	GU4530
Voltage	230V~/50Hz				
Current	0.35 A	0.36 A	0.47 A	0.63 A	0.80 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	80 W	83 W	105 W	140 W	180 W
Torque	3 Nm	6 Nm	10 Nm	20 Nm	30 Nm
Speed	26 rpm	16 rpm	16 rpm	16 rpm	16 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l] <sup>1)</sup>	467.5 mm	509.5 mm	519.5 mm	549.5 mm	569.5 mm
Operating mode	S2 4 min	S2 4 min	S2 4 min	S2 5 min	S2 4 min
Sound pressure level <sup>2)</sup>	39 dB(A)	39 dB(A)	39 dB(A)	41 dB(A)	41 dB(A)
Diameter	45 mm				
Weight	approx. 1.70 kg	approx. 1.85 kg	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

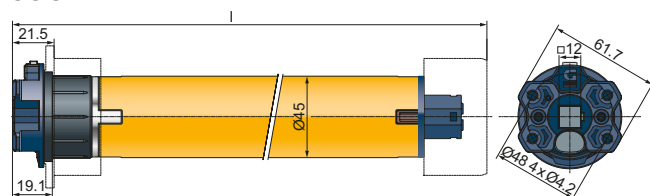
<sup>1)</sup> SOLIDline-ROC: + 5.9 mm / SOLIDline-COM: + 4.2 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

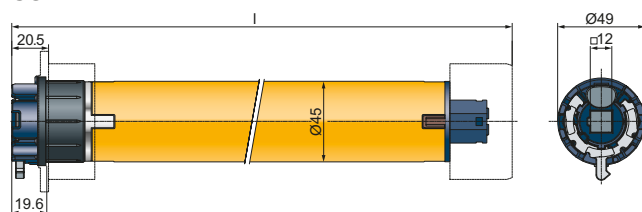
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

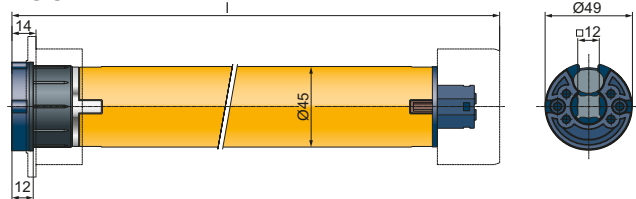
### SOC:







### COM:



### ROC:

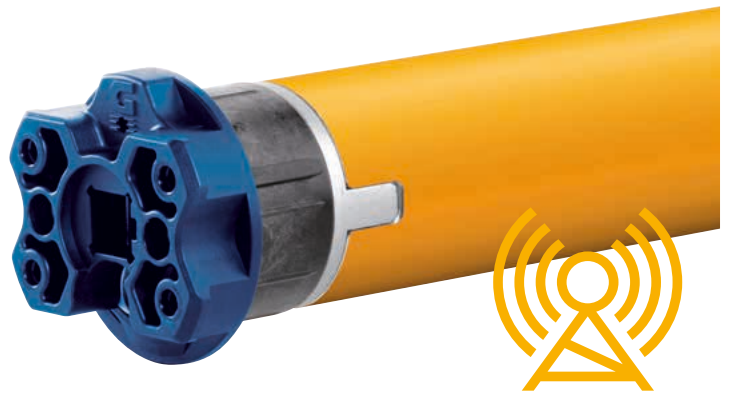


## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Radio accessories	181

## SOLIDline ZIP Radio

Electronic tubular  
motor Ø 45 mm with  
radio



### Application:



ZIP screens

### Characteristics:

#### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. Fast and precise adjustment of the end positions.

#### DualStop-Control



If the system detects an obstacle, the motor moves the hanging in the opposite direction at a fixed value. After two further unsuccessful attempts, the system moves to its safety position (upper end position). This applies in UP and DOWN direction.

#### Wind resilience



Obstacle detection can differentiate between an obstacle and a gust of wind. The hanging will safely move to its upper end position in the event of a gust of wind in the UP direction to protect the system and prevent damage to the hanging.

#### Slowmotion detection



The motor recognises the system status and can detect changes in winding behaviour. If the hanging moves too slowly in the DOWN direction and the end rail threatens to tilt, the motor will stop automatically to protect the system and the hanging.

#### Operation



The motor can be operated using a handheld transmitter or alternatively using a (wired) control switch.

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



##### ■ Soft position

... the hanging will stop before reaching the upper end position to protect the materials.



##### ■ Blocking detection in AB direction

... Obstacles are recognised. The drive stops and thus protects the blind.



##### ■ Obstacle detection in UP direction

... the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

#### Crushing protection



This function prevents fingers or other objects from being crushed or damaged.

#### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

### Product advantages:

- Electronic limit stop
- Easy commissioning: Plug & Play
- Can be connected in parallel
- Plug-in connection cable in different lengths

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

### Options:

- Available with SOC, ROC, or COM head
- Available with faster motor upon request

### End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU45..)					
	GU4503	GU4506	GU4510	GU4520	GU4530
Voltage	230V~/50Hz				
Current	0.35 A	0.36 A	0.47 A	0.63 A	0.80 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	80 W	83 W	105 W	140 W	180 W
Torque	3 Nm	6 Nm	10 Nm	20 Nm	30 Nm
Speed	26 rpm	16 rpm	16 rpm	16 rpm	16 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Radio frequency	433 MHz				
Total length [l] <sup>1)</sup>	467.5 mm	509.5 mm	519.5 mm	549.5 mm	569.5 mm
Operating mode	S2 4 min	S2 4 min	S2 4 min	S2 5 min	S2 4 min
Sound pressure level <sup>2)</sup>	39 dB(A)	39 dB(A)	39 dB(A)	41 dB(A)	41 dB(A)
Diameter	45 mm				
Radio frequency	433 MHz				
Weight	approx. 1.70 kg	approx. 1.85 kg	approx. 1.90 kg	approx. 2.20 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

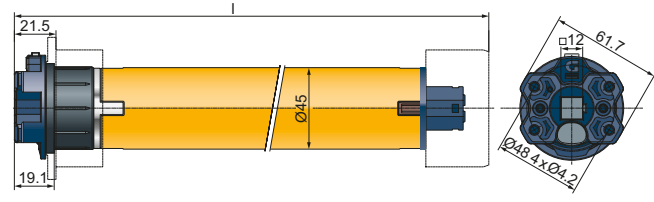
<sup>1)</sup> SOLIDline-ROC: + 5.9 mm / SOLIDline-COM: + 4.2 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

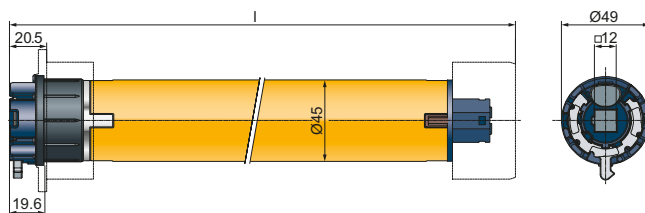
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

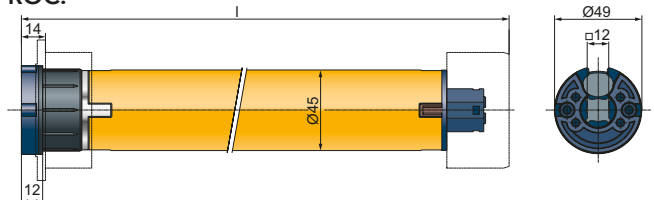
### SOC:







### COM:



### ROC:



## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Radio accessories	181

## XS5606

### SoftPerfection-X01

Electronic tubular motor Ø 56 mm



## Application:



Rolling shutter

## Characteristics:

### Delayed teaching



The motor does not learn its actual end positions until the fifth driving cycle.

### Soft position



The hanging stops before reaching its upper end position to protect the materials.

### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore

### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. (Only when using stoppers and anti-lift devices).

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



#### ■ Obstacle detection in UP direction... the system is protected during retraction.



### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

## Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Rigid tube connectors and stoppers are essential
- Adjustment of end positions possible via control switch

## End position adjustment:



\* Stopper and anti-lift device/rigid tube connector

## Technical data:

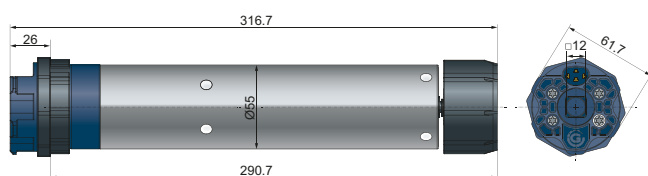
Technical data tubular motor XS56-SOC (GJ5606)	
	XS5606-E16
Application	Rolling shutter with 60 mm octagonal tube (> 370 mm), tube material < 0.60 mm
Voltage	230V~/50 Hz
Current	0.40 A
Cos Phi (cosφ)	>0.95
Inrush current (factor)	x 1.2
Power	93 W
Torque	6 Nm
Speed	26 rpm
Limit switch-off range	> 200 revolutions
Protection class	IP 54
Total length	316.7 mm
Operating mode	S2 4 min
Sound pressure level <sup>1)</sup>	34 dB(A)
Diameter	55 mm
Weight	approx. 1.5 kg
Humidity	dry, non-condensing
Storage temperature	T = -15 °C ... +70 °C

<sup>1)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

## Drawings:

### SOC:



## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift devices	136
	Radio accessories	181			

## RESCUE-R

Solution for rolling shutters  
the  
2nd escape route



### Application:



Rolling shutter

### Sun protection in the escape route

The requirement in accordance with § 33 of the German standard building regulations (Musterbauverordnung; MBO) requires at least two mutually independent escape routes per building level, at least one of which must comply with the provisions for the first escape route.



The first escape route is a traffic route that enables people to leave a danger zone quickly. It either leads out of a building into the open or into a secured area. Examples include corridors, stairs, and exits people use to get to safety in the event of a fire.



In contrast to the first escape route, which is strictly regulated and clearly defined, the second escape route can be designed based on countless possible solutions. Neither the MBO nor any other state building regulations nationwide contain any standardised regulations so far.

This represents a massive challenge in terms of design and implementation for sun protection manufacturers, architects, and planners.

This in turn may lead to conflicts, in particular if the fire protection requirements for sun protection in the second escape route are not considered. Aesthetic aspects, monument protection regulations, structural framework conditions, and, last but not least, costs must be harmonised as well.

### Modular design - systematic motors and gearboxes!

The ingenious design of the RESCUE-R can be easily integrated into all standard rolling shutter boxes. All component dimensions are designed so that only the crank handle needs to be installed inside the building.

- **Space-saving:** Its modular design permits integration of the system into all front and top boxes.
- **Flexible:** RESCUE-R is available for rolling shutters with 60 mm octagonal tube and 50 mm octagonal tube.
- **Maintenance-free:** The motor, freewheel, and gearbox do not require any maintenance.
- **Customer-focused:** The rolling shutter can be opened quickly and easily in an emergency. The gear reduction ratio of 4:1 makes operation child's play.

## RESCUE-R at a glance



## Components at a glance

- **SOLIDline Touch (10 Nm):** Optimal and quick setting of the end positions with just one button. No time-consuming turning of different adjustment screws.
- **SOLIDline X01 RESCUE (10 Nm):** Plug & Play motor with electronic limit switching and self-learning end positions (can be switched in parallel).
- **Freewheel:** Solid freewheel made of extremely stable and durable plastic.
- **Bevel gearbox:** Tried and tested components and assemblies ensure smooth operation. A patent for the gearbox is pending.
- **Air-tight spherical bearing:** Prevents thermal bridges and protects against draughts and condensation.
- **AvantGarde crank:** Aesthetic crank handle with concealed mechanism can be discreetly integrated into the room.

## Installation

The freewheel with tube driver is plugged onto the motor. The system is installed as usual, except that the gearbox is fitted instead of the counter bearing and the roller capsule. If a specific direction of crank rotation is required, the gearbox can be rotated through 180° axially. The tube length/hanging width must not be less than 750 mm.

## Operation in case of fire

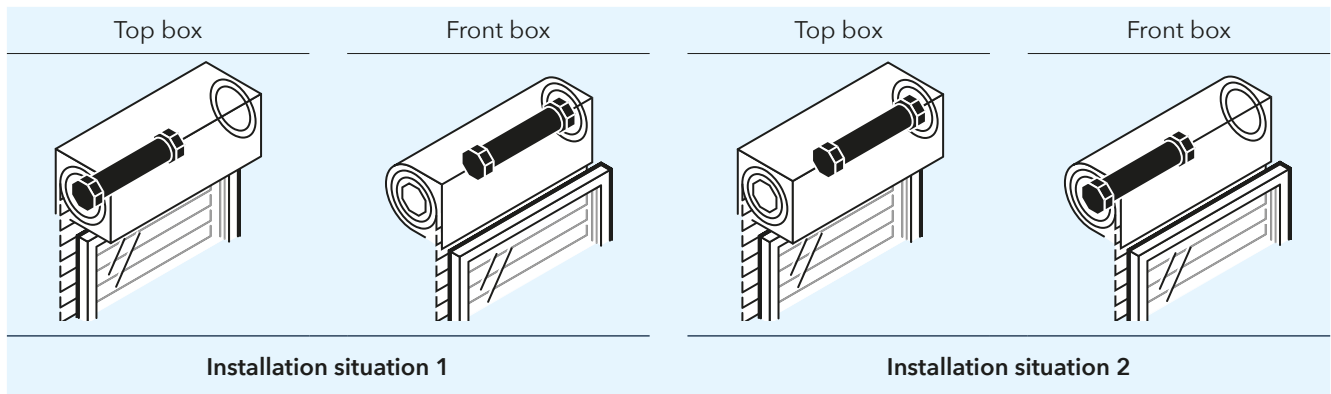
The RESCUE-R is used if the rolling shutter cannot be raised electrically in the event of a fire. Simply remove the rod from its holder and turn it. The safety seal is used to visually indicate that the crank should only be operated in an emergency.

The freewheel is triggered by operating the emergency hand crank. You may hear a repeated clicking noise here.

## Return to operation

No special actions are necessary when putting the two SOLIDline motors back into operation. If the blind was opened with the crank handle, turn the crank handle a quarter turn in the opposite direction before putting them into operation to relieve the gearbox and prevent the crank handle from turning during motorised operation.

## RESCUE-R - choosing the right kit or module solution



## RESCUE-R kit or modules - set contents

Components	Kit	Modules 1.x	Modules 2.x	Modules 3.x
SOLIDline SOC 10 Nm	●	●	-	-
Connection cable, length = 3 m, with open cable ends	●	●	-	-
Tube adapter	●	●	-	●
Freewheel with tube driver	●	●	-	●
Bevel gearbox 4:1, drive 6 mm square	●	-	●	●
Airtight spherical bearing, 90°, plate 22x85 mm	●	-	●	-
AvantGarde aluminium frame, length = 1,200 mm	●	-	●	-
Plastic crank holder, RAL 9016	●	-	●	-
Security seal	●	-	●	-

## Ordering table

		Installation situation 1		Installation situation 2	
		60 mm oct. tube	50 mm oct. tube	60 mm oct. tube	50 mm oct. tube
Kits	SOLIDline Touch	Kit 1 M45F9000	Kit 3 M45F9002	Kit 2 M45F9001	Kit 4 M45F9003
	SOLIDline X01 RESCUE	Kit 5 M45F9010	Kit 7 M45F9012	Kit 6 M45F9011	Kit 8 M45F9013
Modules 1.x	SOLIDline Touch	Module 1.1 M45F9050	Module 1.3 M45F9052	Module 1.2 M45F9051	Module 1.4 M45F9053
	SOLIDline X01 RESCUE	Module 1.5 M45F9150	Module 1.7 M45F9152	Module 1.6 M45F9151	Module 1.8 M45F9153
Modules 2.x		Module 2.1 456F200	Module 2.2 456F201	Module 2.1 456F200	Module 2.2 456F201
Modules 3.x		Module 3.1 456F300	Module 3.3 456F302	Module 3.2 456F301	Module 3.4 456F303

## Technical data:

Technical data tubular motor SOLIDline-SOC (GU4510)	
SOLIDline Touch/SoftPerfection-X01 RESCUE	
Voltage	230V~/50Hz
Current	0.47 A
Cos Phi ( $\cos\varphi$ )	>0.95
Inrush current (factor)	x 1.2
Power	105 W
Torque	10 Nm
Speed	16 rpm
Limit switch-off range	38 revolutions (Touch) / > 200 revolutions (SoftPerfection-X01)
Protection class	IP 44
Total length [l]	519.5 mm
Operating mode	S2 4 min
Sound pressure level <sup>1)</sup>	39 dB(A)
Diameter	45 mm
Weight	approx. 1.90 kg
Humidity	dry, non-condensing
Storage temperature	T = -15 °C ... +70 °C

<sup>1)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

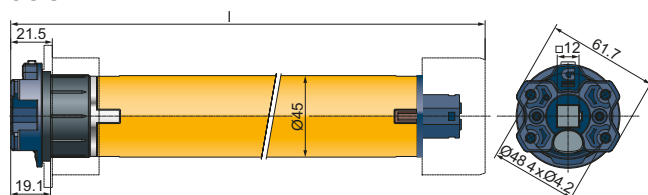
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de).

Technical data bevel gearbox 456F150/ 456F151	
Max. output torque	12 Nm
Gear reduction	4:1
Efficiency	0.85




Subject to technical changes.

## Drawings:

### SOC:



## Accessories:

	Engine bearer	124		Anti-lift device	136
	Radio accessories	181			





# TECline

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TUBULAR MOTORS

**GEIGER**  
ANTRIEBSTECHNIK

Smart Home

SOLIDline

TECLine

Accessories for tubular drives

GJ56..

Accessories GJ56...

Wireless accessories

General information

# SIMPLY BETTER PROTECTION



*Rolling shutters act like a coat for your house - they are simply perfect for protecting it from undesired external influences. Their sturdy curtains keep out extreme temperatures, bad weather, and noise. They equally keep out prying eyes or uninvited guests. They can be operated manually, wirelessly, or fully automatically in a smart home.*

<i>Design</i>	—	<b>72</b>
The right look - good design is the result of maximum function at GEIGER.		
<i>Protection</i>	—	<b>73</b>
Carefree enjoyment - our rolling shutter drives not only protect the blinds from damage, but can also make break-ins more difficult.		
<i>Connection</i>	—	<b>74</b>
The gateway to the smart world - every rolling shutter can be connected to the right GEIGER drive.		
<i>Mounting</i>	—	<b>74</b>
Ready for use in the blink of an eye - thanks to customised mounting components, our drives are installed quickly.		
<i>Smooth operation</i>	—	<b>75</b>
Silence is a luxury - GEIGER minimises the noise level of its drives.		
<i>Drive overview</i>	—	<b>76</b>

# FEATURES

## DESIGN

*The right look - function and design in harmony at GEIGER. The more precisely a rolling shutter operates and the more individually it supports the appearance of a building, the higher the quality of its appearance.*

### Synchronised position

Our drives switch off identically in the upper end position thanks to GEIGER motor intelligence. This means that adjacent blinds are at the same height after stopping in the upper end position - even if the rolling shutters are of different sizes or widths. A visual plus for every building.

### Referencing

The motor control unit will check the rolling shutter end positions in particular cycles with the optional referencing function. This keeps the blind moving precisely at the originally set distances even after years, even if the winding behaviour changes due to external influences. Follow-up costs for manufacturers and end customers are reduced to a minimum and the longevity of the systems is maximised.

---

## PROTECTION

*Carefree enjoyment - with smart drives that effectively protect against uninvited guests and also automatically protect the sun protection from wear and damage. This not only alleviates your stress, it is also easy on your wallet.*



### Soft position

The GEIGER soft position does not stop the blind by torque cut-off when retracting, but stops it shortly before reaching the upper end position. It prevents permanent tension or pressure on the rolling shutter curtain. This protects the rolling shutter box, prevents the curtain from bulging, and keeps it from freezing in its upper end position in winter.



### Burglary resistance

Our rolling shutter drives effectively prevent unauthorised access in combination with an anti-lift device. Burglars would have to work against the motor force when pushing up the rolling shutter due to a constant torque cut-off in the DOWN direction. Motor power and anti-lift device together make it almost impossible to push the rolling shutter up from the outside.



### Anti-freeze protection

The anti-freeze protection adds some extra safety in sub-zero temperatures: End rails frozen to the window sill are recognised immediately. The drive stops to prevent damage to the blinds and keep them intact.



### Obstacle detection in UP direction

If the sun protection moves to the upper end position, it is automatically stopped if there is resistance in the travel path. This also applies to weather-related influences such as coarse dirt. The sensitive power cut-off registers obstacles, protects the blind and ensures long-lasting sun protection.

# FEATURES

## CONNECTION

*The gateway to the smart world. Every rolling shutter can be easily connected to matching GEIGER drive, all the way to integration into a fully automated smart home. Sun protection networks increase functionality, safety, and comfort throughout the home.*

### GEIGER radio

The unidirectional radio system with its long range makes it possible to reliably address even relatively distant receivers. Accidental changes to the end positions/motor settings by the end user are prevented by its delimited programming level (programming range/close range). A wide range of accessories such as various handheld transmitters and sensors round off the GEIGER radio program.

### Wireless AIR technology

Our innovative AIR radio technology is able to cover long distances and even the most labyrinthine buildings with MESH technology. All AIR drives are equipped with bidirectional radio. Commands are thus not only received, but also confirmed after execution; otherwise, an error message will be returned. AIR also makes the sun protection system Smart Home Ready: Connecting AIR drives to the Loxone miniserver will integrate the sun protection system into a full smart home control system. All integrated technical components complement each other in their functions - for more convenience, greater energy efficiency, and improved security.

## MOUNTING

*Quick and easy to use - simple handling is a matter of course for a GEIGER drive. We know how to make installation, maintenance, and operation of our products easier for our customers.*

### Plug & Play

Plug & Play puts an end to the tedious and time-consuming adjustment of end positions. Our smart drives enable extremely fast teach-in without adjustment cables: Moving to the bottom end position, correcting at need, raising the blind all the way, and switching off - done. Maintenance costs and service calls are reduced.



## Tool-free mounting

All of our fixation kits can be inserted and attached tool-free. This is because our installation accessories are developed in close co-operation with the rolling shutter manufacturers. We keep subsequent installation in mind from the development stage, customising our mounting accessories precisely to any requirements our customers may have.



## Sophisticated fastening systems

We offer roller bearings, amongst other things, for rolling shutters. This means that the hanging can be unrolled in the open state even if the motor fails. Our folding engine bearers can be fixed without tools and without having to screw the bearing plate to the rolling shutter box.

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## SMOOTH RUNNING

*Silence is a luxury - and GEIGER keeps improving all of its drives to optimise smooth running. Less material friction equals quieter drives. Once the sun protection is virtually inaudible, it guarantees a more comfortable atmosphere.*



## Optimised product design

We reduce noise emissions right where the develop: in the mechanics of the engine, transmission, and brakes and in transmission of vibrations and structure-borne noise to adjacent elements. Optimisation ranges from product development and material selection to manufacturing processes and includes all drive components. We strive to reduce friction between all components, absorb sound with softer materials and dampen vibrations.

# MOTOR MATRIX TECLine

	SLIM.TECLine Ø35 mm						PRO.TECLine Ø45 mm			
	Spindle	Spindle- Radio	Easy	Easy Radio	Soft- Perfec- tion-X01	X01 Radio	Spindle	Spindle- Radio	Super- Silent Spindle	Super- Silent Spindle Radio
	Page 78	Page 80	Page 82	Page 84	Page 86	Page 88	Page 90	Page 92	Page 94	Page 96
<b>Application</b>										
Rolling shutter (without stopper + anti-lift devices)	■	■	■	■			■	■	■	■
Rolling shutter (with stopper + anti-lift device)	■	■	■	■	■	■	■	■	■	■
Screens	■	■	■	■			■	■	■	■
ZIP screens	■	■					■	■	■	■
Inspect protection	■	■					■	■	■	■
Facade awnings			■	■			■	■		
Open style folding arm awnings			■	■			■	■		
Cassette awnings							■	■		
Conservatory shading							■	■		
Roller gates										
<b>Design</b>										
Synchronised position			■	■	■	■				
Referencing			■	■	■	■				
Intermediate position										
<b>Hanging protection</b>										
Wind proof	■	■					■	■	■	■
Soft position			■	■						
Burglary resistance*	■	■	■	■	■	■	■	■	■	■
Anti-freeze protection			■	■	■	■				
Obstacle detection (UP direction)			■	■	■	■				
Blocking detection (DOWN direction)										
Closing force minimisation										
Torque deactivation			■	■	■	■				
DualStop-Control										
<b>Connection</b>										
GEIGER Radio 2.0		■		■		■		■		■
<b>Mounting</b>										
Plug-in cables										
Plug & Play					■	■				
Control switch required	■		■		■	■	■		■	
<b>Smooth operation</b>										
SuperSilent									■	■

\* only for use with anti-lift devices or fixed tube connectors

Spindle NHK	Spindle-Radio NHK	SOL.TEcline Ø45 mm								POWER.TEcline Ø59 mm	
		Easy	Easy Radio	Soft-Perfection-X01	X01 Radio	SoftPlus-Qi	Qi Radio	ZIP Perfection	ZIP Radio	Spindle NHK	Spindle-Radio NHK
Page 98	Page 100	Page 102	Page 104	Page 106	Page 108	Page 110	Page 112	Page 114	Page 116	Page 118	Page 120
■	■	■	■								
■	■	■	■	■	■						
		■	■								
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		■	■	■	■	■	■	■	■		
				■	■	■	■	■	■		
■		■		■		■		■		■	

## SLIM.TECline Spindle

Mechanical tubular  
motor Ø 35 mm



### Application:



Rolling shutters



Screens



ZIP screens



Insect protection

### Characteristics:

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### End position adjustment:

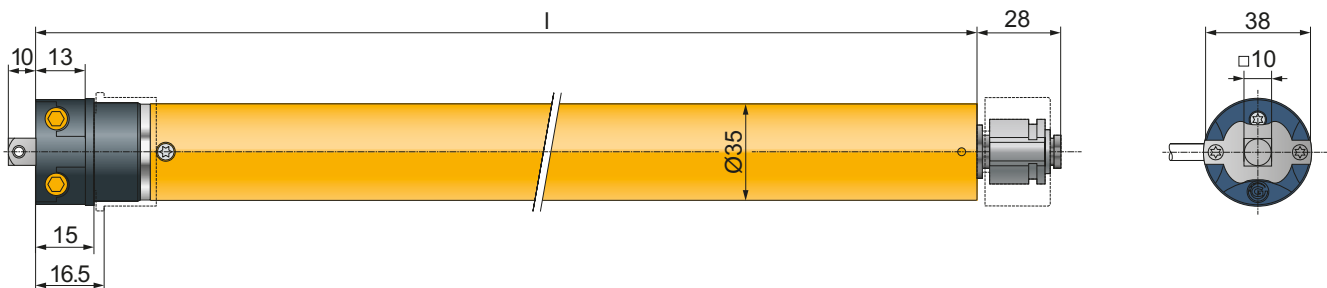
<b>TOP</b>	Stop on free position	<b>BOTTOM</b>	Stop on free position
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## Technical data:

Technical data tubular motor SLIM.TECline Spindle (GB35S-../..)		
	GB35S-06/26	GB35S-10/17
Voltage	230V~/50Hz	
Current	0.54 A	0.54 A
Cos Phi ( $\cos\varphi$ )	>0.95	
Inrush current (factor)	x 1.2	
Power	120 W	120 W
Torque	6 Nm	10 Nm
Speed	26 rpm	17 rpm
Limit switch-off range	30 revolutions	
Protection class	IP 44	
Total length [l]	451 mm	
Operating mode	S2 4 min	
Sound pressure level	39 dB(A)	
Diameter	35 mm	
Weight	approx. 1.50 kg	approx. 1.50 kg
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	<b>124</b>		Anti-lift device	<b>136</b>
	Adaptor/driver	<b>130</b>		Radio accessories	<b>181</b>

## SLIM.TECline SpindleRadio

Mechanical tubular  
motor Ø 35 mm  
with radio system



### Application:



Rolling shutters



Screens



ZIP screens



Insect protection

### Characteristics:

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

#### GEIGER Radio 2.0



The end positions are set via the known spindle screws with a 4 mm socket wrench. The systems are opened and closed comfortably and simply via the new, elegant handheld transmitters.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### Notices:

- Operation by handheld or wall transmitter

### End position adjustment:

**TOP**

Stop on free  
position

**BOTTOM**

Stop on free  
position

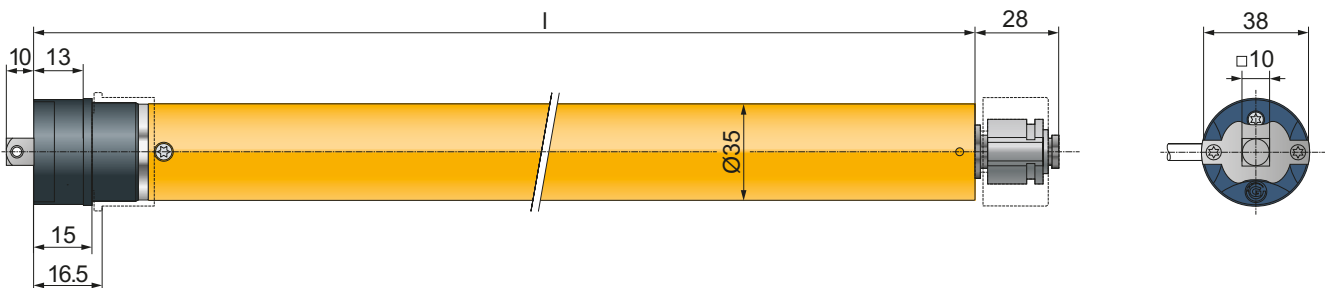
## Technical data:

Technical data tubular motor SLIM.TEcline SpindleRadio (GB35R-../..)

	GB35R-06/26	GB35R-10/17
Voltage	230V~/50Hz	
Current	0.54 A	0.54 A
Cos Phi ( $\cos\varphi$ )	>0.95	
Inrush current (factor)	x 1.2	
Power	120 W	120 W
Torque	6 Nm	10 Nm
Speed	26 rpm	17 rpm
Limit switch-off range	30 revolutions	
Protection class	IP 44	
Total length [l]	571 mm	
Operating mode	S2 4 min	
Sound pressure level	39 dB(A)	
Radio frequency	433 MHz	
Weight	approx. 1.60 kg	approx. 1.60 kg
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	<b>124</b>		Anti-lift device	<b>136</b>
	Adaptor/driver	<b>130</b>		Radio accessories	<b>181</b>

# SLIM.TECLine

## Easy

### Electronic tubular motor Ø 35 mm



## Application:



Rolling shutters



Screens



ZIP screens



Insect protection

## Characteristics:

### Soft position



The hanging stops before reaching its upper end position to protect the materials.

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



■ **Obstacle detection in UP direction...** the system is protected during retraction.



### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore.

### Burglary resistance



A constant torque cut-off in the DOWN direction allows the rolling shutter to develop its burglary-resistant effect. (Only possible in combination with anti-lifting devices.)

### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

## Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

## Options:

- Available with faster motor upon request

## End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

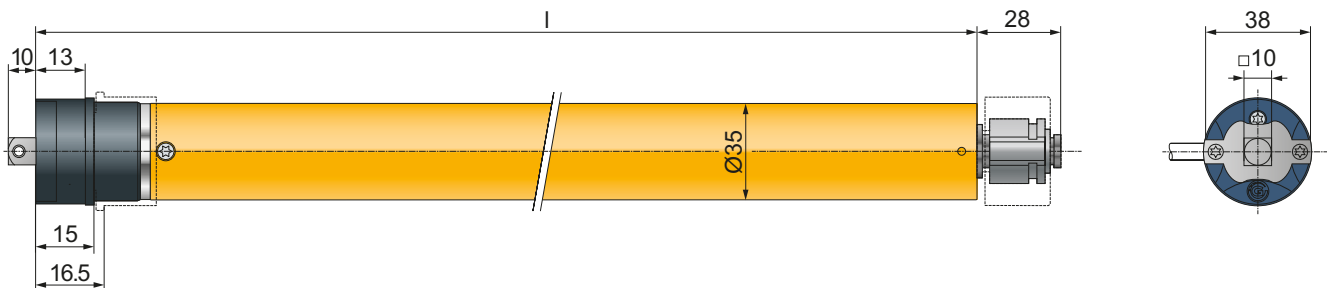
\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SLIM.TEClime Easy (GB35E01-../..)		
	GB35E01-06/26	GB35E01-10/17
Voltage	230V~/50Hz	
Current	0.54 A	0.54 A
Cos Phi (cosφ)	>0.95	
Inrush current (factor)	x 1.2	
Power	120 W	120 W
Torque	6 Nm	10 Nm
Speed	26 rpm	17 rpm
Limit switch-off range	> 200 revolutions	
Protection class	IP 44	
Total length [l]	453 mm	
Operating mode	S2 4 min	
Sound pressure level	39 dB(A)	
Diameter	35 mm	
Weight	approx. 1.60 kg	approx. 1.60 kg
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181

## SLIM.TECLine Easy Radio

Electronic tubular  
motor Ø 35 mm



### Application:



Rolling shutters



Screens



ZIP screens



Insect protection

### Characteristics:

#### Soft position



The hanging stops before reaching its upper end position to protect the materials.

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



■ **Obstacle detection in UP direction...** the system is protected during retraction.



#### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore.

#### Burglary resistance



A constant torque cut-off in the DOWN direction allows the rolling shutter to develop its burglary-resistant effect. (Only possible in combination with anti-lifting devices.)

#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

#### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

### End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

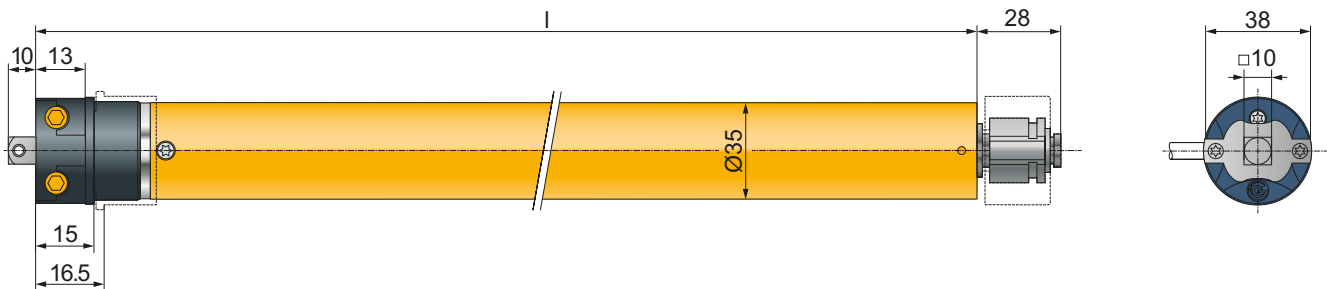
\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SLIM.TEClime Easy Radio (GB35F11-../..)		
	GB35F11-06/26	GB35F11-10/17
Voltage	230V~/50Hz	
Current	0.54 A	0.54 A
Cos Phi (cosφ)	>0.95	
Inrush current (factor)	x 1.2	
Power	120 W	120 W
Torque	6 Nm	10 Nm
Speed	26 rpm	17 rpm
Limit switch-off range	> 200 revolutions	
Protection class	IP 44	
Total length [l]	453 mm	
Operating mode	S2 4 min	
Sound pressure level	39 dB(A)	
Diameter	35 mm	
Radio frequency	433 MHz	
Weight	approx. 1.60 kg	approx. 1.60 kg
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181

# SLIM.TECLine SoftPerfection-X01

Electronic tubular  
motor Ø 35 mm



## Application:



Rolling shutter

## Characteristics:

### Delayed teaching



The motor does not learn its actual end positions until the fifth driving cycle.

### Soft position



The hanging stops before reaching its upper end position to protect the materials.

### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore

### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. (Only when using stoppers and anti-lift devices).

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



#### ■ Obstacle detection in UP direction... the system is protected during retraction.



### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

## Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- In learning mode already on delivery

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Rigid tube connectors and stoppers are essential
- Adjustment of end positions possible via control switch

## End position adjustment:



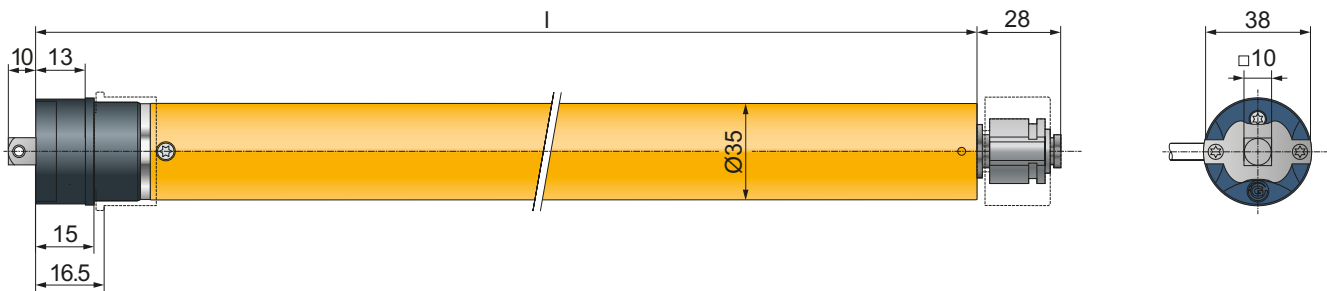
\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SLIM.TEClime SoftPerfection-X01 (GB35E03-../..)		
	GB35E03-06/26	GB35E03-10/17
Voltage	230V~/50Hz	
Current	0.54 A	0.54 A
Cos Phi (cosφ)	>0.95	
Inrush current (factor)	x 1.2	
Power	120 W	120 W
Torque	6 Nm	10 Nm
Speed	26 rpm	17 rpm
Limit switch-off range	> 200 revolutions	
Protection class	IP 44	
Total length [l]	453 mm	
Operating mode	S2 4 min	
Sound pressure level	39 dB(A)	
Diameter	35 mm	
Weight	approx. 1.60 kg	approx. 1.60 kg
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181

# SLIM.TECline X01 Radio

Electronic  
tubular motor Ø 35 mm



## Application:



Rolling shutter

## Characteristics:

### Delayed teaching



The motor does not learn its actual end positions until the fifth driving cycle.

### Soft position



The hanging stops before reaching its upper end position to protect the materials.

### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore

### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. (Only when using stoppers and anti-lift devices).

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



■ **Obstacle detection in UP direction...** the system is protected during retraction.



### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

## Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- In learning mode already on delivery

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Rigid tube connectors and stoppers are essential
- Adjustment of end positions possible via control switch or handheld transmitter

## End position adjustment:

TOP

\*Stop on torque

BOTTOM

\*Stop on torque

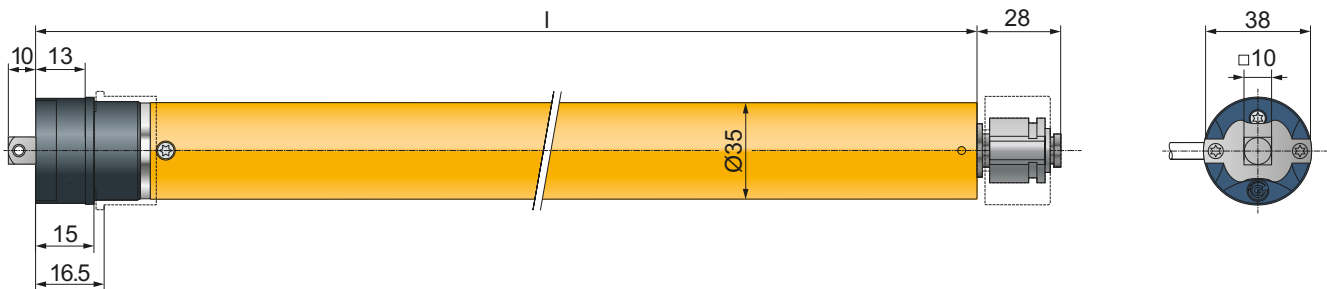
\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SLIM.TEClime X01 Radio (GB35F12-../..)		
	GB35F12-06/26	GB35F12-10/17
Voltage	230V~/50Hz	
Current	0.54 A	0.54 A
Cos Phi (cosφ)	>0.95	
Inrush current (factor)	x 1.2	
Power	120 W	120 W
Torque	6 Nm	10 Nm
Speed	26 rpm	17 rpm
Limit switch-off range	> 200 revolutions	
Protection class	IP 44	
Total length [l]	453 mm	
Operating mode	S2 4 min	
Sound pressure level	39 dB(A)	
Diameter	35 mm	
Radio frequency	433 MHz	
Weight	approx. 1.60 kg	approx. 1.60 kg
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181

## PRO.TECline Spindle

Mechanical tubular  
motor Ø 45 mm



### Application:



Rolling shutters



Screens



Awnings



Facade awnings

### Characteristics:

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### End position adjustment:

TOP

Stop on free  
position

BOTTOM

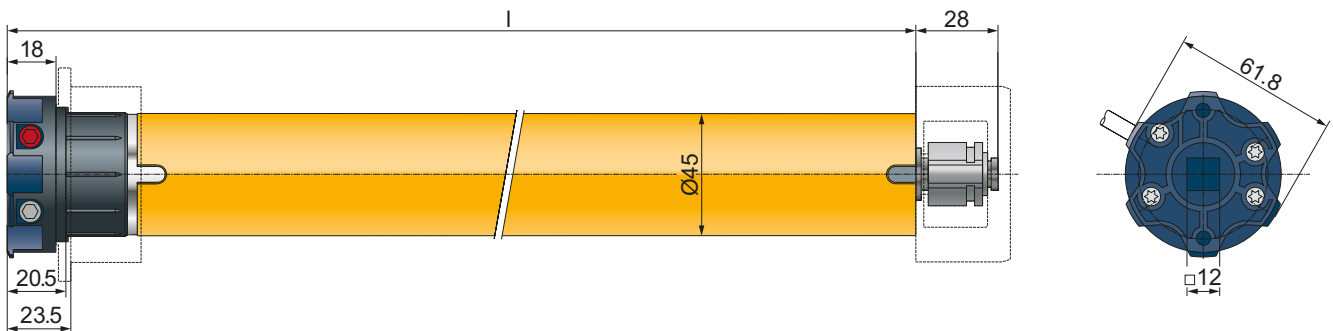
Stop on free  
position

## Technical data:

Technical data tubular motor PRO.TEClime Spindle (GB45S-../..)					
	GB45S-10/15	GB45S-20/15	GB45S-30/15	GB45S-40/15	GB45S-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi ( $\cos\varphi$ )	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	22 revolutions				
Protection class	IP 44				
Total length [l]	438 mm	458 mm	488 mm	518 mm	518 mm
Operating mode	S2 4 min				
Sound pressure level	39 dB(A)				
Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.00 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181

## PRO.TECline SpindleRadio

Mechanical tubular  
motor Ø 45 mm



### Application:



Rolling shutters



Screens



Awnings



Facade awnings

### Characteristics:

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

#### GEIGER Radio 2.0



The end positions are set via the known spindle screws with a 4 mm socket wrench. The systems are opened and closed comfortably and simply via the new, elegant handheld transmitters.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### End position adjustment:

TOP

Stop on free  
position

BOTTOM

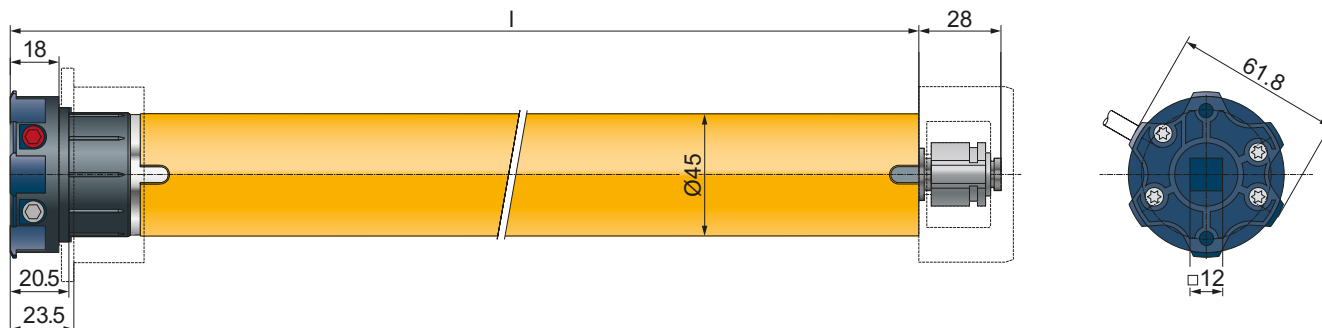
Stop on free  
position

## Technical data:

Technical data tubular motor PRO.TECline SpindleRadio (GB45R-../..)					
	GB45R-10/15	GB45R-20/15	GB45R-30/15	GB45R-40/15	GB45R-50/12
<b>Voltage</b>	230V~/50Hz				
<b>Current</b>	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
<b>Cos Phi (cosφ)</b>	>0.95				
<b>Inrush current (factor)</b>	x 1.2				
<b>Power</b>	105 W	140 W	180 W	220 W	220 W
<b>Torque</b>	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
<b>Speed</b>	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
<b>Limit switch-off range</b>	22 revolutions				
<b>Protection class</b>	IP 44				
<b>Total length [l]</b>	558 mm	578 mm	608 mm	638 mm	638 mm
<b>Operating mode</b>	S2 4 min				
<b>Sound pressure level</b>	39 dB(A)				
<b>Diameter</b>	45 mm				
<b>Radio frequency</b>	433 MHz				
<b>Weight</b>	approx. 2.00 kg	approx. 2.10 kg	approx. 2.30 kg	approx. 2.40 kg	approx. 2.50 kg
<b>Humidity</b>	dry, non-condensing				
<b>Storage temperature</b>	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	<b>124</b>		Anti-lift device	<b>136</b>
	Adaptor/driver	<b>130</b>		Radio accessories	<b>181</b>

## PRO.TECline SuperSilent Mechanical tubular motor Ø 45 mm



### Application:



Rolling shutters



Screens



Facade awnings

### Characteristics:

#### SuperSilent



Super silent tubular motor with a noise level of 30 dB(A), particularly suitable for indoor use.

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### End position adjustment:

<b>TOP</b>	Stop on free position	<b>BOTTOM</b>	Stop on free position
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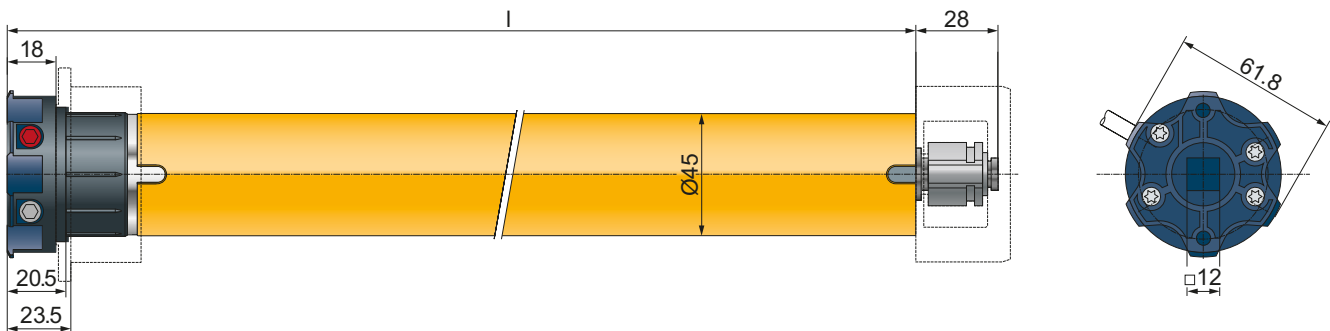
## Technical data:

Technical data tubular motor PRO.TEClime SuperSilent (GB45SS-../...)

	GB45SS-06/26	GB45SS-10/17
Voltage	230V~/50Hz	
Current	0.54 A	0.54 A
Cos Phi ( $\cos\varphi$ )	>0.95	
Inrush current (factor)	x 1.2	
Power	120 W	120 W
Torque	6 Nm	10 Nm
Speed	26 rpm	17 rpm
Limit switch-off range	22 revolutions	
Protection class	IP 44	
Total length [l]	598 mm	
Operating mode	S2 4 min	
Sound pressure level	30 dB(A)	
Diameter	45 mm	
Weight	approx. 2.50 kg	
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181

## PRO.TECline SuperSilentRadio

Mechanical tubular  
motor Ø 45 mm



### Application:



Rolling shutters



Screens



Facade awnings

### Characteristics:

#### SuperSilent



Super silent tubular motor with a noise level of 30 dB(A), particularly suitable for indoor use.

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

#### GEIGER Radio 2.0



The end positions are set via the known spindle screws with a 4 mm socket wrench. The systems are opened and closed comfortably and simply via the new, elegant handheld transmitters.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### End position adjustment:

TOP

Stop on free  
position

BOTTOM

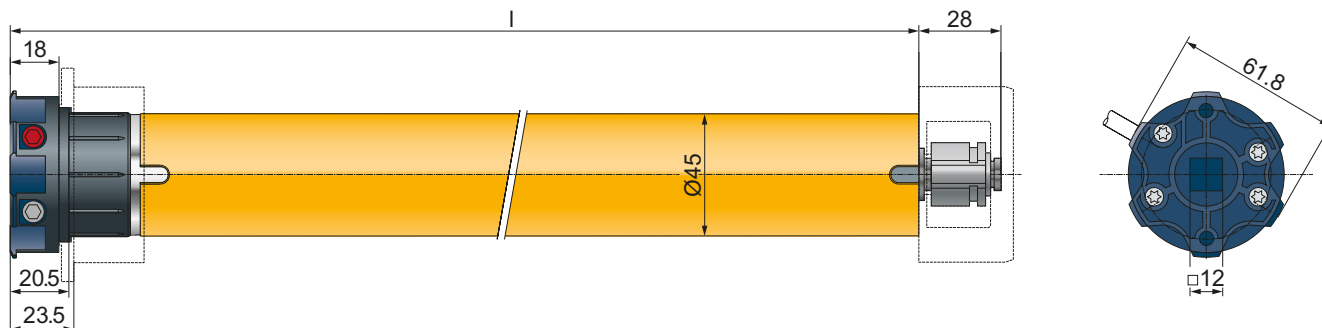
Stop on free  
position

## Technical data:

Technical data tubular motor PRO.TEClime SuperSilentRadio (GB45SR-../..)		
	GB45SR-06/26	GB45SR-10/17
Voltage	230V~/50Hz	
Current	0.54 A	0.54 A
Cos Phi ( $\cos\varphi$ )	>0.95	
Inrush current (factor)	x 1.2	
Power	120 W	120 W
Torque	6 Nm	10 Nm
Speed	26 rpm	17 rpm
Limit switch-off range	22 revolutions	
Protection class	IP 44	
Total length [l]	718 mm	
Operating mode	S2 4 min	
Sound pressure level	30 dB(A)	
Diameter	45 mm	
Radio frequency	433 MHz	
Weight	approx. 2.60 kg	
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:

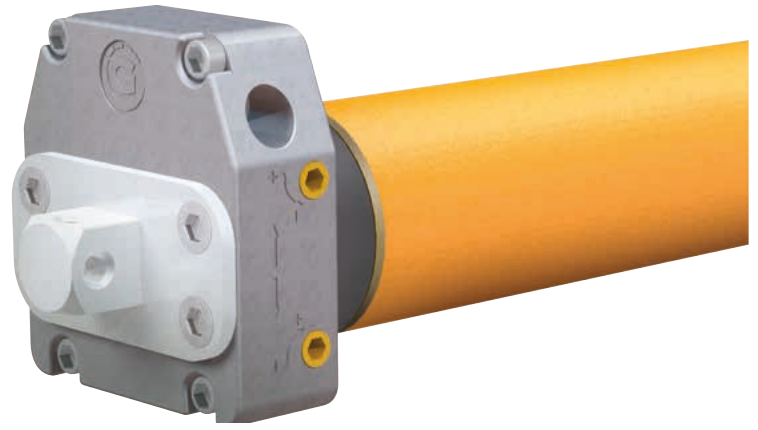


## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181

## PRO.TECline Spindle NHK

Mechanical tubular  
motor Ø 45 mm



### Application:



Rolling shutters



Screens



Awnings



Facade awnings

### Characteristics:

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### End position adjustment:

<b>TOP</b>	Stop on free position	<b>BOTTOM</b>	Stop on free position
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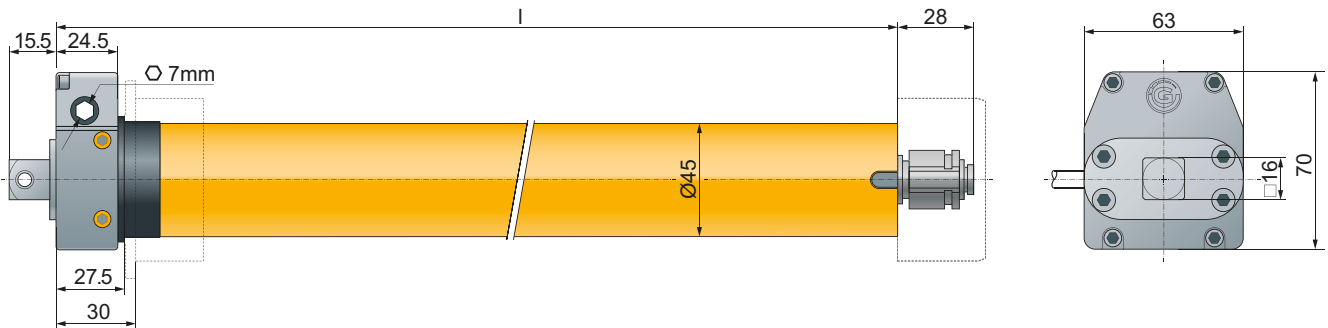
## Technical data:

Technical data tubular motor PRO.TEClime Spindle NHK (GB45M-../..)

	GB45M-10/15	GB45M-20/15	GB45M-30/15	GB45M-40/15	GB45M-50/12
<b>Voltage</b>	230V~/50Hz				
<b>Current</b>	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
<b>Cos Phi (cosφ)</b>	>0.95				
<b>Inrush current (factor)</b>	x 1.2				
<b>Power</b>	105 W	140 W	180 W	220 W	220 W
<b>Torque</b>	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
<b>Speed</b>	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
<b>Limit switch-off range</b>	22 revolutions				
<b>Protection class</b>	IP 44				
<b>Total length [l]</b>	528 mm	548 mm	568 mm	588 mm	588 mm
<b>Operating mode</b>	S2 4 min				
<b>Sound pressure level</b>	39 dB(A)		48 dB(A)		48 dB(A)
<b>Diameter</b>	45 mm				
<b>Crank reduction</b>	26:1				
<b>Weight</b>	approx. 2.20 kg	approx. 2.30 kg	approx. 2.50 kg	approx. 2.70 kg	approx. 2.70 kg
<b>Humidity</b>	dry, non-condensing				
<b>Storage temperature</b>	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:

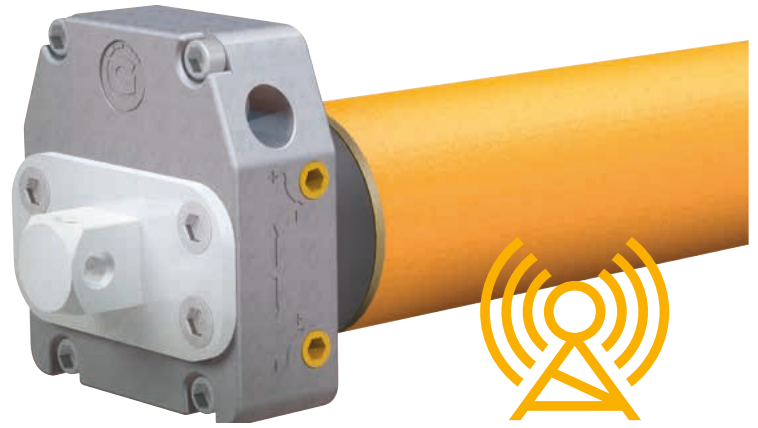


## Accessories:

	Engine bearer	<b>124</b>		Anti-lift device	<b>136</b>
	Adaptor/driver	<b>130</b>		Radio accessories	<b>181</b>

## PRO.TECline SpindleRadio NHK

Mechanical tubular  
motor Ø 45 mm



### Application:



Rolling shutters



Screens



Awnings



Facade awnings

### Characteristics:

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

#### GEIGER Radio 2.0



The end positions are set via the known spindle screws with a 4 mm socket wrench. The systems are opened and closed comfortably and simply via the new, elegant handheld transmitters.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### End position adjustment:

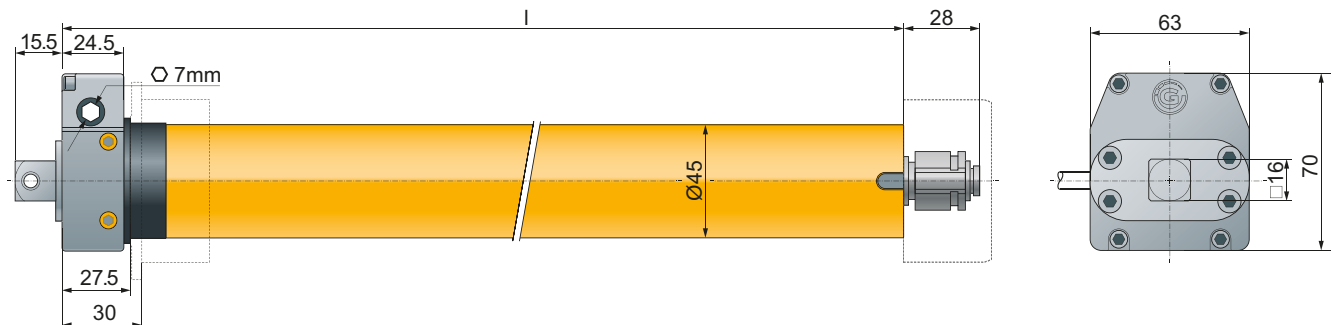
<b>TOP</b>	Stop on free position	<b>BOTTOM</b>	Stop on free position
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## Technical data:

Technical data tubular motor PRO.TEClime SpindleRadio NHK (GB45MR-../..)					
	GB45MR-10/15	GB45MR-20/15	GB45MR-30/15	GB45MR-40/15	GB45MR-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi ( $\cos\varphi$ )	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	22 revolutions				
Protection class	IP 44				
Total length [l]	648 mm	668 mm	688 mm	708 mm	708 mm
Operating mode	S2 4 min				
Sound pressure level	39 dB(A)		48 dB(A)		48 dB(A)
Diameter	45 mm				
Crank reduction	26:1				
Radio frequency	433 MHz				
Weight	approx. 2.30 kg	approx. 2.40 kg	approx. 2.60 kg	approx. 2.80 kg	approx. 2.80 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



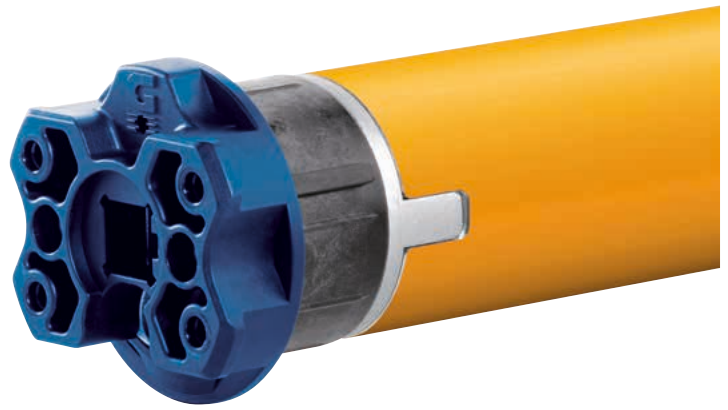
## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181

# SOL.TECLine

## Easy

### Electronic tubular motor Ø 45 mm



## Application:



Rolling shutters



Screens



Facade awnings



Open style folding arm awnings

## Characteristics:

### Soft position



The hanging stops before reaching its upper end position to protect the materials.

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



■ **Obstacle detection in UP direction...** the system is protected during retraction.



### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore.

### Burglary resistance



A constant torque cut-off in the DOWN direction allows the rolling shutter to develop its burglary-resistant effect. (Only possible in combination with anti-lifting devices.)

### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

## Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

## Options:

- Available with SOC or COM head
- Available with faster motor upon request

## End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

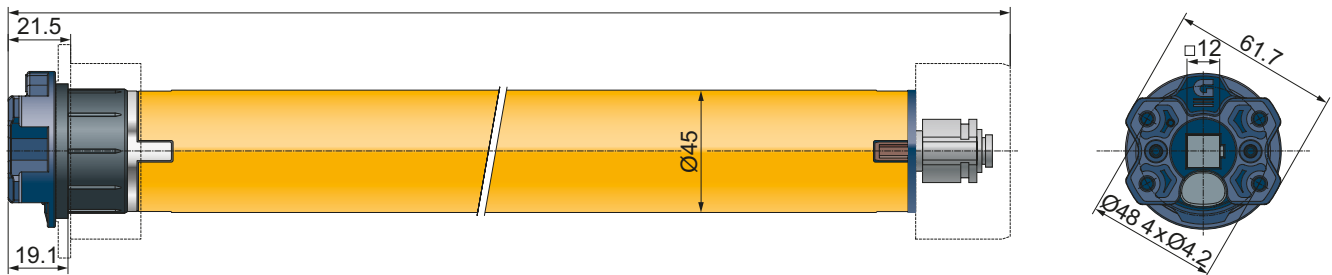
\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOL.TEClone Easy (GB45E01-../..)					
	GB45E01-10/15	GB45E01-20/15	GB45E01-30/15	GB45E01-40/15	GB45E01-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l]	438 mm	458 mm	488 mm	518 mm	518 mm
Operating mode	S2 4 min				
Sound pressure level	39 dB(A)				
Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.00 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



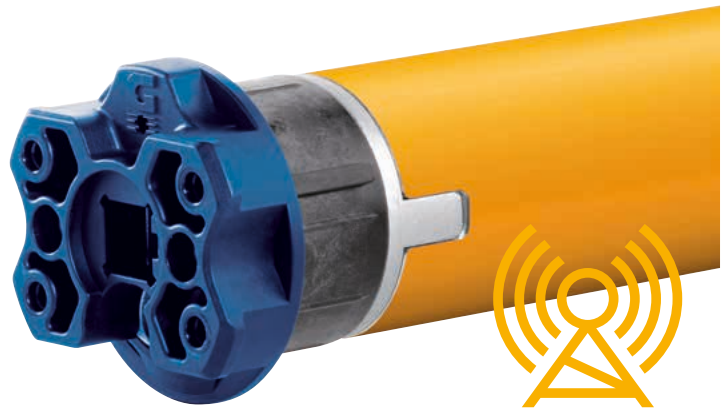
## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift device	136

# SOL.TECLine

## Easy Radio

Electronic tubular motor Ø 45 mm



### Application:



Rolling shutters



Screens



Facade awnings



Open style folding arm awnings

### Characteristics:

#### Soft position



The hanging stops before reaching its upper end position to protect the materials.

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



■ **Obstacle detection in UP direction...** the system is protected during retraction.



#### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore.

#### Burglary resistance



A constant torque cut-off in the DOWN direction allows the rolling shutter to develop its burglary-resistant effect. (Only possible in combination with anti-lifting devices.)

#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

#### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

\* Stopper and anti-lift device/rigid tube connector

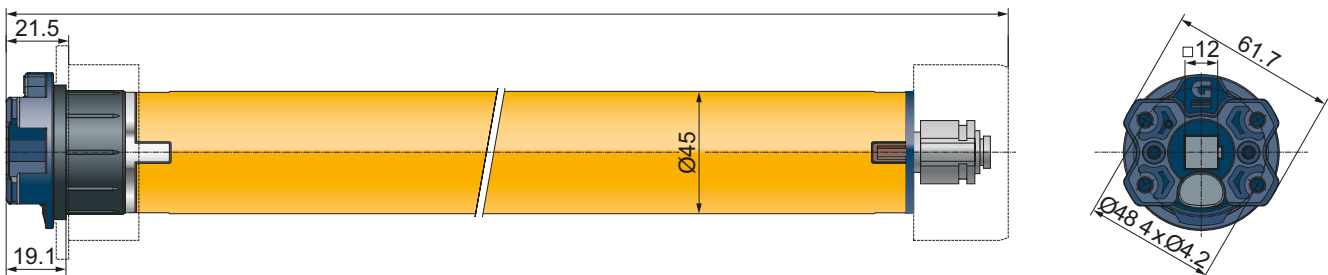
## Technical data:

Technical data tubular motor SOL.TECline Easy Radio (GB45F11-../..)

	GB45F11-10/15	GB45F11-20/15	GB45F11-30/15	GB45F11-40/15	GB45F11-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l]	438 mm	458 mm	488 mm	518 mm	518 mm
Operating mode	S2 4 min				
Sound pressure level	39 dB(A)				
Diameter	45 mm				
Radio frequency	433 MHz				
Weight	approx. 1.90 kg	approx. 2.00 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



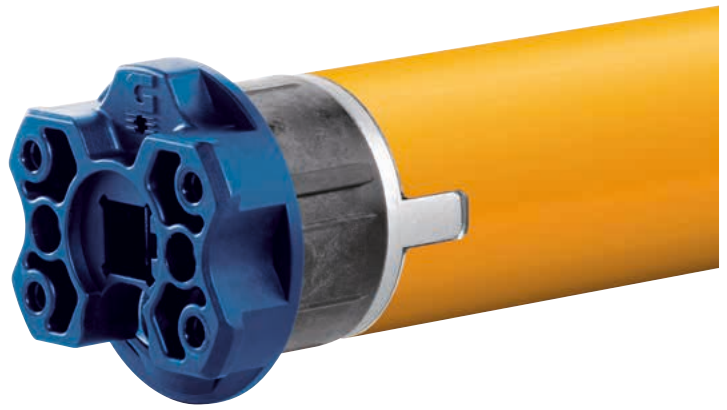
## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift device	136
	Radio accessories	181			

# SOL.TECLine

## SoftPerfection-X01

Electronic tubular motor Ø 45 mm



### Application:



Rolling shutter

### Characteristics:

#### Delayed teaching



The motor does not learn its actual end positions until the fifth driving cycle.

#### Soft position



The hanging stops before reaching its upper end position to protect the materials.

#### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore

#### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. (Only when using stoppers and anti-lift devices).

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



■ **Obstacle detection in UP direction...** the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Rigid tube connectors and stoppers are essential
- Adjustment of end positions possible via control switch

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### End position adjustment:

TOP

\*Stop on torque

BOTTOM

\*Stop on torque

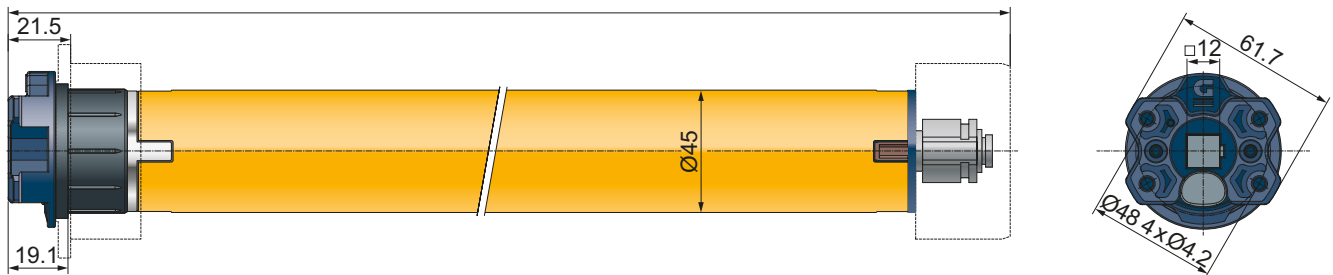
\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOL.TECline SoftPerfection-X01 (GB45E03-../..)					
	GB45E03-10/15	GB45E03-20/15	GB45E03-30/15	GB45E03-40/15	GB45E03-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l]	438 mm	458 mm	488 mm	518 mm	518 mm
Operating mode	S2 4 min				
Sound pressure level	39 dB(A)				
Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.00 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:

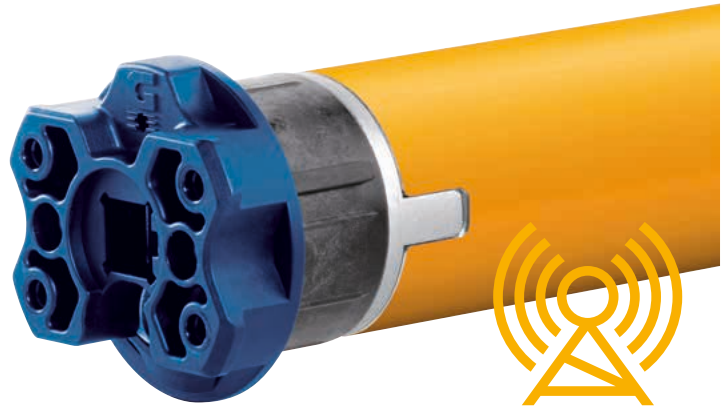


## Accessories:

	Engine bearer	<b>124</b>		Connection cables	<b>134</b>
	Adaptor/driver	<b>130</b>		Anti-lift device	<b>136</b>

# SOL.TECLiDline X01 Radio

Electronic tubular  
motor Ø 45 mm



## Application:



Rolling shutter

## Characteristics:

### Delayed teaching



The motor does not learn its actual end positions until the fifth driving cycle.

### Soft position



The hanging stops before reaching its upper end position to protect the materials.

### Synchronised position



Consistent switch-off behaviour is always guaranteed, even with different hanging widths or heights. No rolling shutters hanging differently in their upper end positions anymore

### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. (Only when using stoppers and anti-lift devices).

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



#### ■ Obstacle detection in UP direction... the system is protected during retraction.



### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

## Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Rigid tube connectors and stoppers are essential
- Adjustment of end positions possible via control switch or handheld transmitter

## Options:

- Available with SOC or COM head
- Available with faster motor upon request

## End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
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\* Stopper and anti-lift device/rigid tube connector

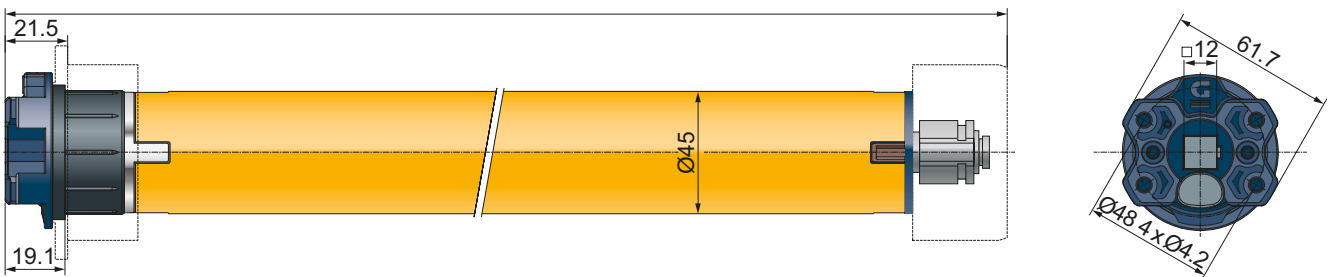
## Technical data:

Technical data tubular motor SOL.TEClime X01 Radio (GB45F12-../..)

	GB45F12-10/15	GB45F12-20/15	GB45F12-30/15	GB45F12-40/15	GB45F12-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l]	438 mm	458 mm	488 mm	518 mm	518 mm
Operating mode	S2 4 min				
Sound pressure level	39 dB(A)				
Diameter	45 mm				
Radio frequency	433 MHz				
Weight	approx. 1.90 kg	approx. 2.00 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:

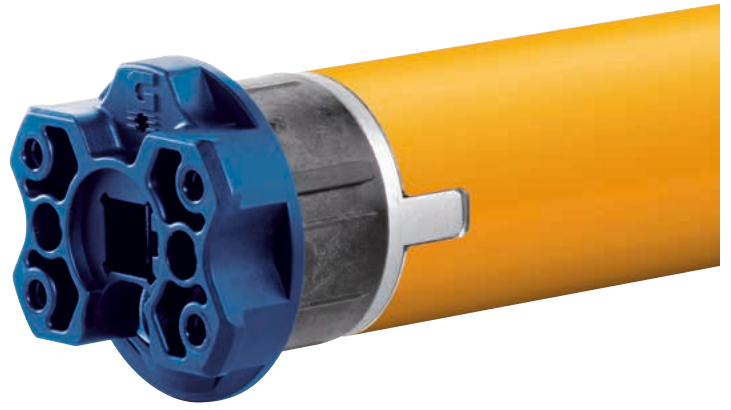


## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Anti-lift device	136
	Radio accessories	181			

# SOL.TECLine SoftPlus-Qi

## Electronic tubular motor Ø 45 mm



### Application:



Cassette awnings

### Characteristics:

#### Plug & Play



Autonomous detection of the upper end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement.

#### Driving range detection



The motor recognises which driving range it is in while driving. As a result, it works with as much or as little power as is actually required in the respective driving range. The SoftPlus-Qi is exceptionally powerful in the folding point area of the awning, but particularly sensitive in the closing area. This ensures a long service life for the system.

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Obstacle detection in UP direction

... the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### End position adjustment:

TOP	Stop on torque	BOTTOM	Stop on free position
-----	----------------	--------	-----------------------

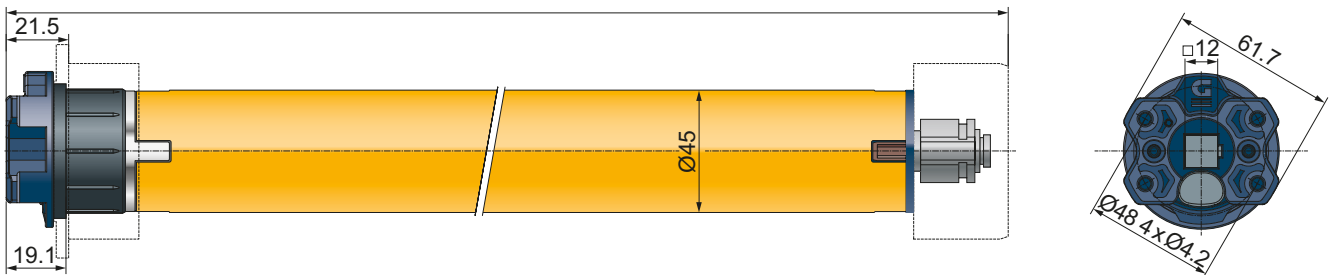
## Technical data:

Technical data tubular motor SOL.TECline SoftPlus-Qi (GB45E09-../..)





	GB45E09-10/15	GB45E09-20/15	GB45E09-30/15	GB45E09-40/15	GB45E09-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l]	438 mm	458 mm	488 mm	518 mm	518 mm
Operating mode	S2 4 min				
Sound pressure level	39 dB(A)				
Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.00 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Radio accessories	181

# SOL.TECLine

## Qi Radio

Electronic tubular motor Ø 45 mm



### Application:



Cassette awnings

### Characteristics:

#### Plug & Play



Autonomous detection of the upper end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement.

#### Driving range detection



The motor recognises which driving range it is in while driving. As a result, it works with as much or as little power as is actually required in the respective driving range. The SoftPlus-QI is exceptionally powerful in the folding point area of the awning, but particularly sensitive in the closing area. This ensures a long service life for the system.

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Obstacle detection in UP direction

... the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

#### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

### Product advantages:

- Electronic limit stop
- Automatic detection left and right installation
- Can be connected in parallel
- Plug-in connection cable in different lengths
- In learning mode already on delivery

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

### Options:

- Available with SOC or COM head
- Available with faster motor upon request

### End position adjustment:

TOP	Stop on torque	BOTTOM	Stop on free position
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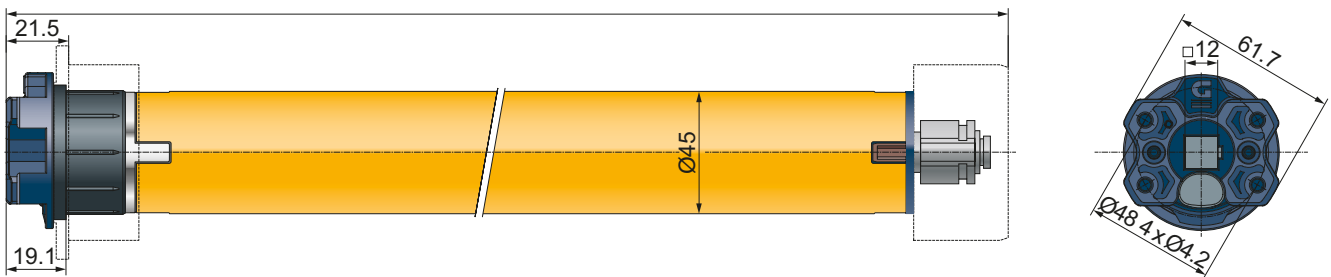
## Technical data:

Technical data tubular motor SOL.TEClone Qi Radio (GB45F13-../..)





	GB45F13-10/15	GB45F13-20/15	GB45F13-30/15	GB45F13-40/15	GB45F13-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l]	438 mm	458 mm	488 mm	518 mm	518 mm
Operating mode	S2 4 min				
Sound pressure level	39 dB(A)				
Diameter	45 mm				
Radio frequency	433 MHz				
Weight	approx. 1.90 kg	approx. 2.00 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



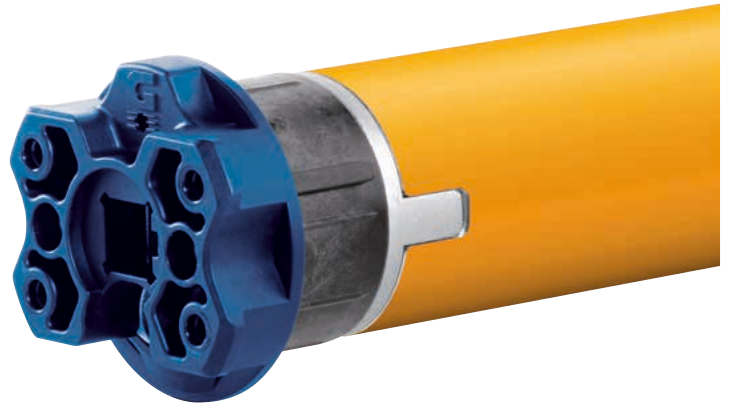
## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Radio accessories	181

# SOL.TECLine

## ZIP-Perfection

### Electronic tubular motor Ø 45 mm



## Application:



ZIP screens

## Characteristics:

### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. Fast and precise adjustment of the end positions.

### DualStop-Control



If the system detects an obstacle, the motor moves the hanging in the opposite direction at a fixed value. After two further unsuccessful attempts, the system moves to its safety position (upper end position). This applies in UP and DOWN direction.

### Wind resilience



Obstacle detection can differentiate between an obstacle and a gust of wind. The hanging will safely move to its upper end position in the event of a gust of wind in the UP direction to protect the system and prevent damage to the hanging.

### Slowmotion detection



The motor recognises the system status and can detect changes in winding behaviour. If the hanging moves too slowly in the DOWN direction and the end rail threatens to tilt, the motor will stop automatically to protect the system and the hanging.

### Hanging protection

The integrated sensitive motor intelligence ensures that ...

#### ■ Antifreeze protection

... the hangings that are frozen to the windowsill are detected and not torn off.



#### ■ Soft position

... the hanging will stop before reaching the upper end position to protect the materials.



#### ■ Blocking detection in AB direction

... Obstacles are recognised. The drive stops and thus protects the blind.



#### ■ Obstacle detection in UP direction

... the system is protected during retraction.



### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

### Crushing protection



This function prevents fingers or other objects from being crushed or damaged.

## Product advantages:

- Electronic limit stop
- Easy commissioning: Plug & Play
- Can be connected in parallel
- Plug-in connection cable in different lengths

## Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

## Options:

- Available with SOC, ROC, or COM head
- Available with faster motor upon request

## End position adjustment:

<b>TOP</b>	*Stop on torque	<b>BOTTOM</b>	*Stop on torque
	Stop on free position		Stop on free position

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOL.TECline ZIP-Perfection (GB45E11-../..)					
	GB45E11-10/15	GB45E11-20/15	GB45E11-30/15	GB45E11-40/15	GB45E11-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l] <sup>1)</sup>	438 mm	458 mm	488 mm	518 mm	518 mm
Operating mode	S2 4 min				
Sound pressure level <sup>2)</sup>	39 dB(A)				
Diameter	45 mm				
Weight	approx. 1.90 kg	approx. 2.00 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

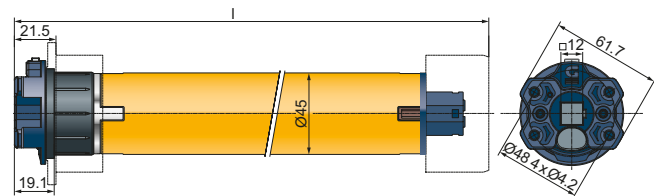
<sup>1)</sup> SOLIDline-ROC: + 5.9 mm / SOLIDline-COM: + 4.2 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

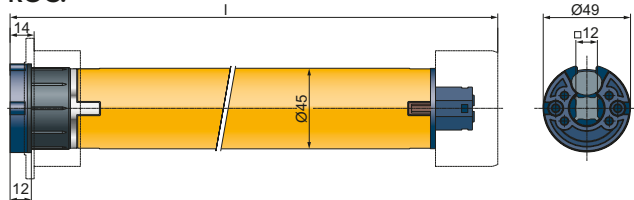
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:

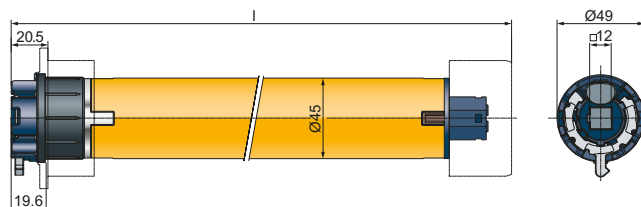
### SOC:







### ROC:



### COM:



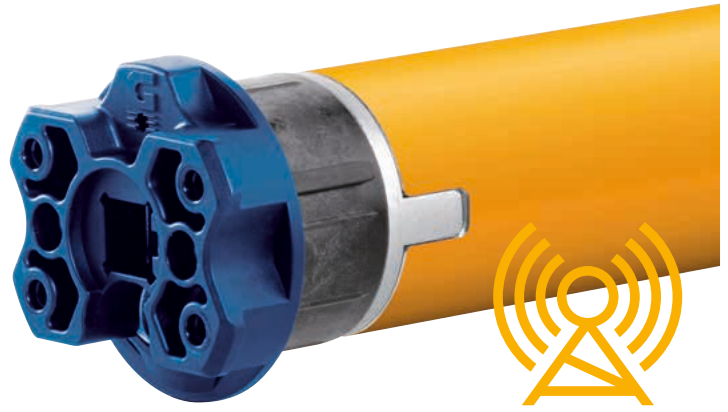
## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Radio accessories	181

# SOL.TECLine

## ZIP Radio

Electronic tubular motor Ø 45 mm



### Application:



ZIP screens

### Characteristics:

#### Plug & Play



Autonomous detection of the end positions without time-consuming adjustment work in the installation procedure. Done in only one up and down movement. Fast and precise adjustment of the end positions.

#### DualStop-Control



If the system detects an obstacle, the motor moves the hanging in the opposite direction at a fixed value. After two further unsuccessful attempts, the system moves to its safety position (upper end position). This applies in UP and DOWN direction.

#### Wind resilience



Obstacle detection can differentiate between an obstacle and a gust of wind. The hanging will safely move to its upper end position in the event of a gust of wind in the UP direction to protect the system and prevent damage to the hanging.

#### Slowmotion detection



The motor recognises the system status and can detect changes in winding behaviour. If the hanging moves too slowly in the DOWN direction and the end rail threatens to tilt, the motor will stop automatically to protect the system and the hanging.

#### Hanging protection

The integrated sensitive motor intelligence ensures that ...

##### ■ Antifreeze protection

... the hangings that are frozen on the windowsill are detected and not torn off.



##### ■ Soft position

... the hanging will stop before reaching the upper end position to protect the materials.



##### ■ Blocking detection in AB direction

... Obstacles are recognised. The drive stops and thus protects the blind.



##### ■ Obstacle detection in UP direction

... the system is protected during retraction.



#### Referencing



Every 50 cycles, a reference run is carried out to check whether the end positions are right. For this purpose the hanging moves to the upper end position until the drive switches off to torque. The end positions are checked and corrected if necessary.

#### Crushing protection



This function prevents fingers or other objects from being crushed or damaged.

#### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

### Product advantages:

- Electronic limit stop
- Easy commissioning: Plug & Play
- Can be connected in parallel
- Plug-in connection cable in different lengths

### Notices:

- Do not use switches with simultaneous UP/DOWN command
- Programming of the end positions possible via any adjustment cable. Any setting cable that has a programming button or permits simultaneous UP/DOWN commands can be used.

### Options:

- Available with SOC, ROC, or COM head
- Available with faster motor upon request

### End position adjustment:

TOP	*Stop on torque	BOTTOM	*Stop on torque
	Stop on free position		Stop on free position

\* Stopper and anti-lift device/rigid tube connector

## Technical data:

Technical data tubular motor SOL.TECline ZIP Radio (GB45F14-../..)					
	GB45F14-10/15	GB45F14-20/15	GB45F14-30/15	GB45F14-40/15	GB45F14-50/12
Voltage	230V~/50Hz				
Current	0.47 A	0.63 A	0.80 A	1.00 A	1.00 A
Cos Phi (cosφ)	>0.95				
Inrush current (factor)	x 1.2				
Power	105 W	140 W	180 W	220 W	220 W
Torque	10 Nm	20 Nm	30 Nm	40 Nm	50 Nm
Speed	15 rpm	15 rpm	15 rpm	15 rpm	12 rpm
Limit switch-off range	> 200 revolutions				
Protection class	IP 44				
Total length [l] <sup>1)</sup>	438 mm	458 mm	488 mm	518 mm	518 mm
Operating mode	S2 4 min				
Sound pressure level <sup>2)</sup>	39 dB(A)				
Diameter	45 mm				
Radio frequency	433 MHz				
Weight	approx. 1.90 kg	approx. 2.00 kg	approx. 2.20 kg	approx. 2.40 kg	approx. 2.40 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

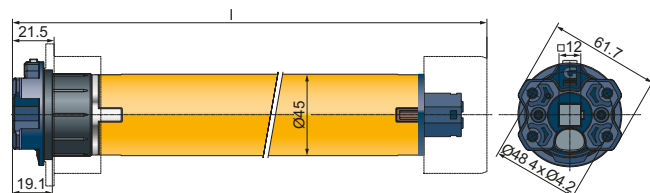
<sup>1)</sup> SOLIDline-ROC: + 5.9 mm / SOLIDline-COM: + 4.2 mm

<sup>2)</sup> The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

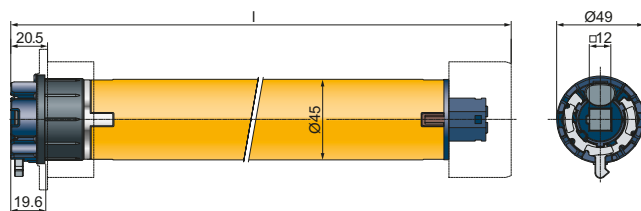
Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:

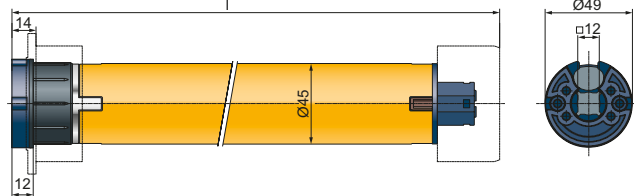
### SOC:







### COM:



### ROC:

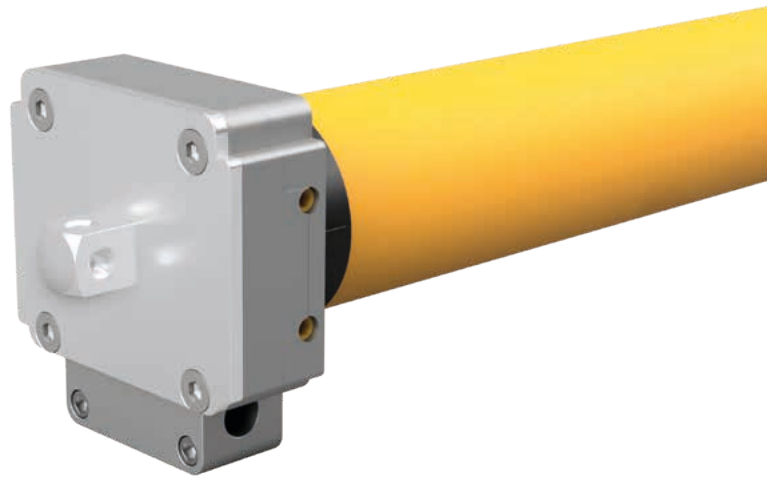


## Accessories:

	Engine bearer	124		Connection cables	134
	Adaptor/driver	130		Radio accessories	181

## POWER.TECLine Spindle NHK

Mechanical tubular  
motor Ø 59 mm



### Application:



Rolling shutters



Awnings



Roller gates

### Characteristics:

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### End position adjustment:

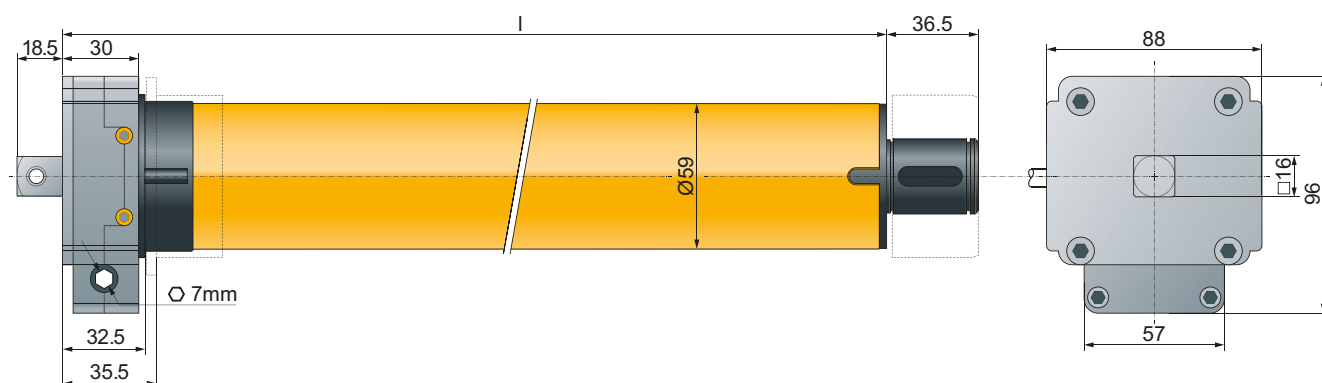
<b>TOP</b>	Stop on free position	<b>BOTTOM</b>	Stop on free position
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## Technical data:





Technical data tubular motor POWER.TECline Spindle NHK (GB59M-../..)				
	GB59M-80/12	GB59M-100/12	GB59M-120/09	GB59M-140/09
Voltage	230V~/50Hz			
Current	1.20 A	1.65 A	1.20 A	1.65 A
Cos Phi (cosφ)	>0.95			
Inrush current (factor)	x 1.2			
Power	270 W	365 W	270 W	365 W
Torque	80 Nm	100 Nm	120 Nm	140 Nm
Speed	12 rpm	12 rpm	9 rpm	9 rpm
Limit switch-off range	24 revolutions			
Protection class	IP 44			
Total length [l]	678 mm	678 mm	723 mm	723 mm
Operating mode	S2 4 min			
Sound pressure level	48 dB(A)			
Diameter	59 mm			
Crank reduction	45:1			
Weight	approx. 6.40 kg	approx. 6.40 kg	approx. 6.40 kg	approx. 6.40 kg
Humidity	dry, non-condensing			
Storage temperature	T = -15 °C ... +70 °C			

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:

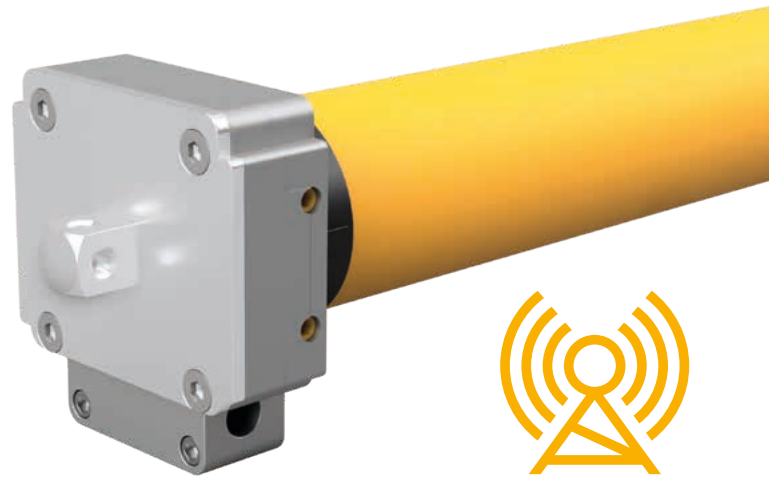


## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181

## POWER.TECline SpindleRadio NHK

Mechanical tubular  
motor Ø 59 mm



### Application:



Rolling shutters



Awnings



Roller gates

### Characteristics:

#### Wind proof



The Spindle has no obstacle detection. This allows the blind to move quickly to its protected upper end position in the event of a wind alarm in spite of strong gusts of wind.

#### GEIGER Radio 2.0



The unidirectional radio system offers a long range and enables secure communication with remote receivers.

### Product advantages:

- Mechanical limit switch
- Fixed connection line with open end
- Quick adjustment of the end positions by precise spindle deactivation by socket screws

### End position adjustment:

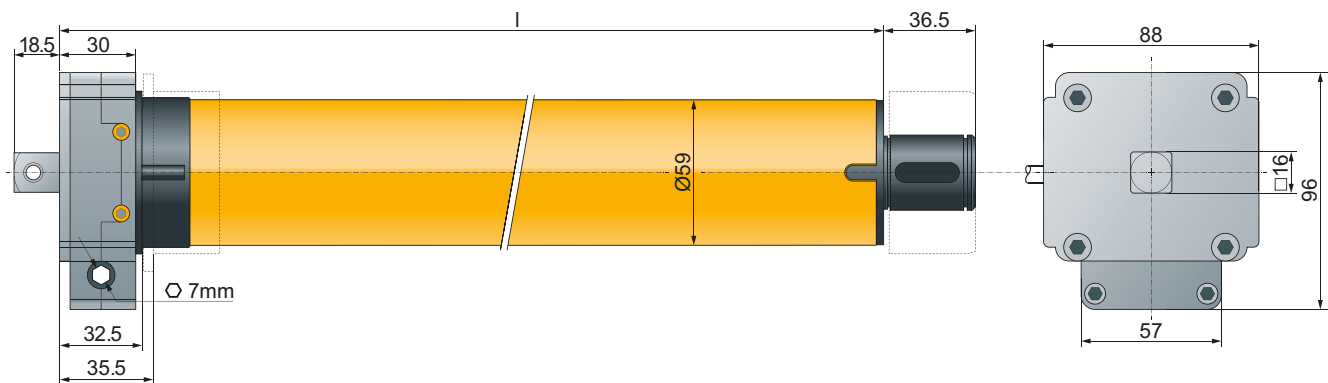
<b>TOP</b>	Stop on free position	<b>BOTTOM</b>	Stop on free position
------------	-----------------------	---------------	-----------------------

## Technical data:

Technical data tubular motor POWER.TECline SpindleRadio NHK (GB59MR-../..)				
	GB59MR-80/12	GB59MR-100/12	GB59MR-120/09	GB59MR-140/09
Voltage	230V~/50Hz			
Current	1.20 A	1.65 A	1.20 A	1.65 A
Cos Phi (cosφ)	>0.95			
Inrush current (factor)	x 1.2			
Power	270 W	365 W	270 W	365 W
Torque	80 Nm	100 Nm	120 Nm	140 Nm
Speed	12 rpm	12 rpm	9 rpm	9 rpm
Limit switch-off range	24 revolutions			
Protection class	IP 44			
Total length [l]	798 mm	798 mm	843 mm	843 mm
Operating mode	S2 4 min			
Sound pressure level	48 dB(A)			
Diameter	59 mm			
Crank reduction	45:1			
Radio frequency	433 MHz			
Weight	approx. 6.50 kg	approx. 6.50 kg	approx. 6.50 kg	approx. 6.50 kg
Humidity	dry, non-condensing			
Storage temperature	T = -15 °C ... +70 °C			

Subject to technical changes. Find information to the ambient temperature range of our GEIGER motors under [www.geiger.de](http://www.geiger.de)

## Drawings:



## Accessories:

	Engine bearer	124		Anti-lift device	136
	Adaptor/driver	130		Radio accessories	181





# ACCESSORIES

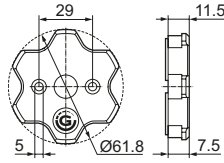
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FOR  
TUBULAR MOTORS

**GEIGER**  
ANTRIEBSTECHNIK

## M35F251 | SOC flange for 35 mm motors

Application: **all applications**



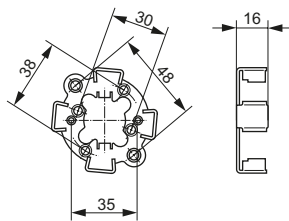
### Characteristics

- For mounting 35 mm motors in a star engine bearer
- Incl. 2 pan-head screw 4x18 mm
- Motor can be removed at any time

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M35F251	-	X	20 Nm	No

## M45F354 | Engine bearer with clip system

Application: **all applications**



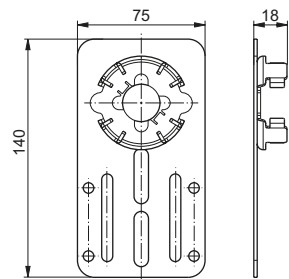
### Characteristics

- Quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F354	X	-	40 Nm	Yes

## M45F356 | Engine bearer with clip system

Application: **Built-in rolling shutter**



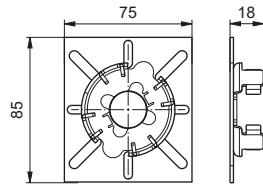
### Characteristics

- quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time
- Height adjustable: Oblong holes for stud bolts are available

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F356	X	-	40 Nm	Yes

## M45F357 | Engine bearer with clip system

Application: **all applications**



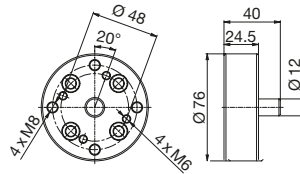
### Characteristics

- Quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F357	X	-	40 Nm	Yes

## M45F169 | Spacer

Application: **Awnings**



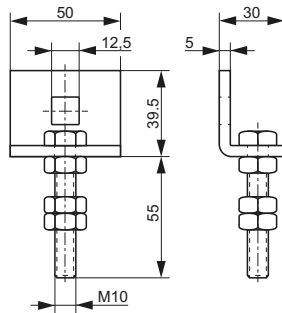
### Characteristics

- Allows one-to-one replacement of a gear with a GEIGER motor. Shortening the awning or the support tube is not necessary!

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F169	X	-	50 Nm	No

## M45F397 | Square bracket fixation

Application: **Built-in rolling shutter**



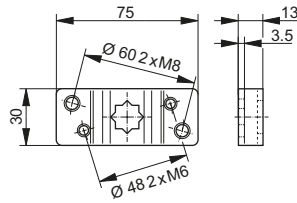
### Characteristics

- For SOLIDline motors with COM and SOC motor heads, square fixation M45F883

Part no.
M45F397

## M45F882 | Square star engine bearer, with square insert and pin

Application: **Awnings / built-in rolling shutters**



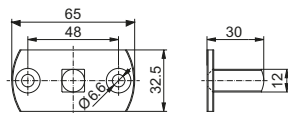
### Characteristics

- Low-priced fixation option
- Universal fixation option
- Classic and proven
- 12 mm square
- Secure square insert on bearer side with pin
- Lock square insert into the motor head with pressure piece

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F882	X	X	30 Nm	Yes

## M45F884 | Square engine bearer

Application: **Awnings / built-in rolling shutters / screens**



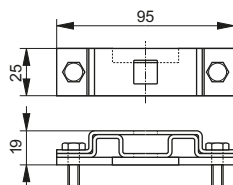
### Characteristics

- Low-priced fixation option
- Universal fixation option
- 12 mm square

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F884	X	X	40 Nm	Yes

## M45F885+M45F... | Clamp engine bearer

Application: **Build-in rolling shutter (in-wall bearer)**



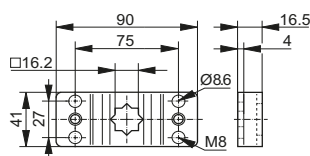
### Characteristics

- Can be used whenever an in-wall bearer is found in renovation
- Engine clamp bearer M45F885 + square trunnion with split pin
- 12 mm square

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F885 + M45F883	X	X	40 Nm	Yes

## M45K163 | Square star bearer for TECline NHK drives

Application: **Awnings / built-in rolling shutters**



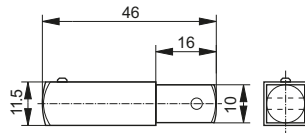
### Characteristics

- Low-priced fixation option
- Universal fixation option
- 12 mm square
- Lock square insert into the motor head with pressure piece

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F882	X	X	140 Nm	Yes

## M45F887 | Square adapter bearer 10 x 10 mm

Application: **Built-in rolling shutter**

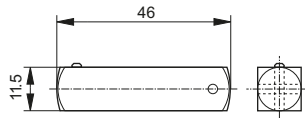


### Characteristics

- For existing 10 mm square bearers
- Low-priced fixation option
- Universal fixation option
- Secure square insert on bearer side with pin

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F887	X	X	30 Nm	Yes

## M45F883 | Square 12 x 12 mm



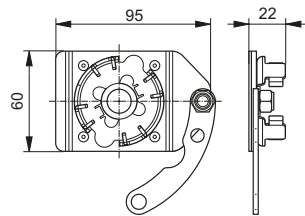
### Characteristics

- For SOLIDline-KS/-COM/-SOC
- Incl. split pin

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F883	X	X	40 Nm	Yes

## M45F19. | Engine bearer with clip system

Application: **Front-mounted rolling shutters (Heroal)**



### Characteristics

- Screwless fixation in front mounted elements (HEROAL)
- Quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time

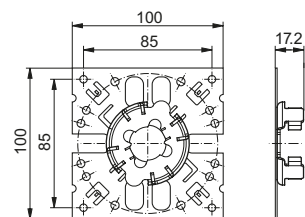
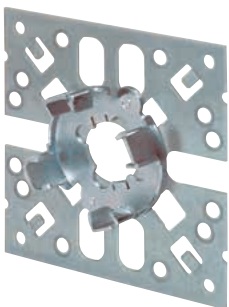
### Note

- Left-hand version: M45F198, Right-hand version: M45F197

Part no.	Suitable for motor head		max. load	screwless fixation	Manufacturer
	COM	SOC			
M45F197	X	-	20 Nm	Yes	Heroal
M45F198	X	-	20 Nm	Yes	Heroal

## M45F219 | Engine bearer with clip system

Application: **Rolling shutters, top-mounted elements (VEKAVARIANT)**



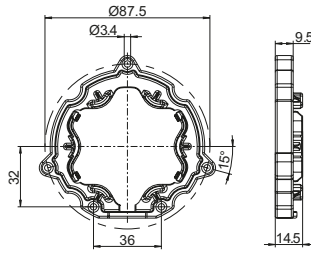
### Characteristics

- Special fixation for VEKAVARIANT
- Quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time
- Different orientations in the 'VEKA star'

Part no.	Suitable for motor head		max. load	screwless fixation	Manufacturer
	COM	SOC			
M45F219	X	-	20 Nm	Yes	VEKAVARIANT

## M45F178 | Engine bearer with clip system

Application: **Facade awnings, screens with and without ZIP guidance**



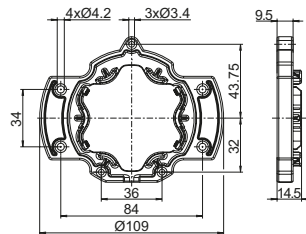
### Characteristics

- Quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time

Part no.	Suitable for motor head		max. load	screwless fixation	Manufacturer
	COM	SOC			
M45F178	-	X	20 Nm	Yes	Heim+Haus

## M45F179 | Engine bearer with clip system

Application: **Facade awnings, screens with and without ZIP guidance**



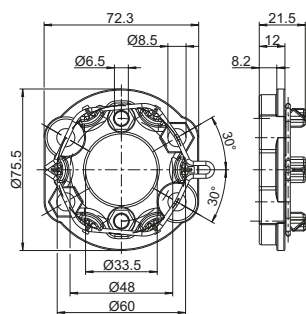
### Characteristics

- Quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time

Part no.	Suitable for motor head		max. load	screwless fixation	Manufacturer
	COM	SOC			
M45F179	-	X	20 Nm	Yes	Heim+Haus

## M45F176 | Engine bearer

Application: **Folding arm and facade awnings, screens with ZIP guidance**



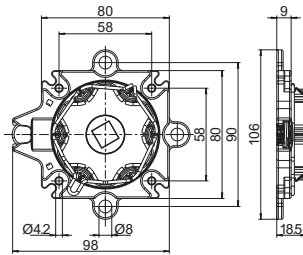
### Characteristics

- Quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F176	-	X	50 Nm	Yes

## M45F193 | Roller clip bearer

Application: **Rolling shutters, screens with and without ZIP guide**



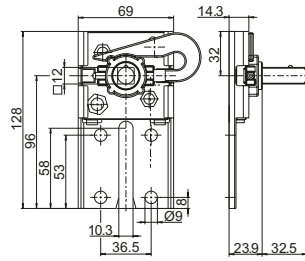
### Characteristics

- For front- and top-mounted boxes
- Quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F193	-	X	20 Nm	Yes

## M45F181 | Roller bearer

Application: **Rolling shutter**



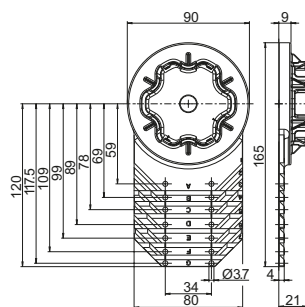
### Characteristics

- Built-in
- Motor can be removed at any time

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F181	X	X	20 Nm	Yes

## M45F182 | Engine bearer with folding plastic plate

Application: **Rolling shutters, screens with and without ZIP guide**

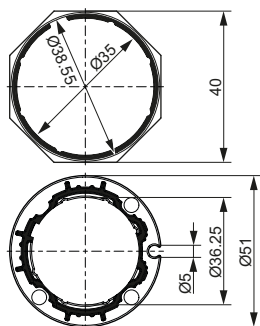


### Characteristics

- Suitable for front-mounted elements 125 to 205 mm
- Quick + ergonomic mounting: "clip + ready"
- Motor can be removed at any time

Part no.	Suitable for motor head		max. load	screwless fixation
	COM	SOC		
M45F182	-	X	20 Nm	Yes

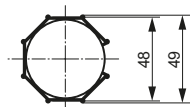
## M35F... | Adapters and drivers for 35 mm motors



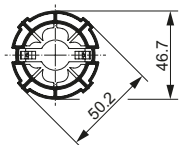
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M35F800	M35K021	M35K022	Octagonal tube	40	10 Nm	-

Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M35F801	M35K056	M35K055	Profile tube	51	10 Nm	-

## M45F... | Adapters and drivers for 45mm motor

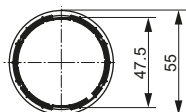


Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F800	M45F024	M45E148	Octagonal tube	50	40 Nm	-

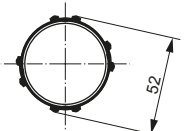


Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F809	M45E233	-	Profile tube	50	40 Nm	-

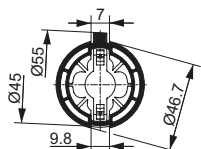
Only suitable for motors with KS, COM or SOC head



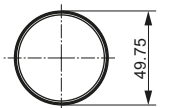
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F844	M45E582	M45E583	Round tube	55		Bandalux



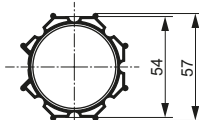
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F807	M45E085	M45E207	Tube (FR)	54	40 Nm	ZF



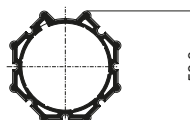
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F842	M45E560	M45E561	Dolphin tube	53		Delfin



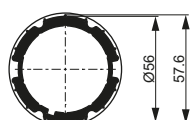
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F810	M45E235	M45E234	Round tube	50	40 Nm	-



Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F801	M45E023	M45E147	Octagonal tube	60	40 Nm	Italprofil

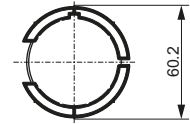


Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F824	M45E454	M45E455	Octagonal tube	60	40 Nm	Ribsol

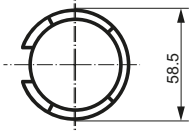


Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F850	M45E586	M45E587	Round tube with groove profile	60	40 Nm	Griesser

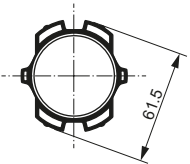
\* Outer tube diameter or standard commercial designation on the market



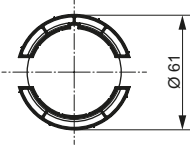
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F821	M45E399	M45E400	Round tube with groove profile	62	40 Nm	Deprat



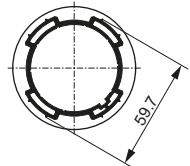
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F813	M45E280	M45E279	Round tube with groove profile	63	40 Nm	Welser, PVG (flat groove)



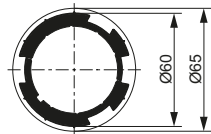
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F802	M45E087	M45E149	Tube (FR)	64	40 Nm	ZF



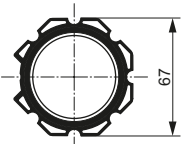
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F817	M45E376	M45E377	Round tube with groove profile	65	40 Nm	-



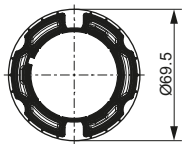
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F822	M45E450	M45E451	Round tube with groove profile	65	40 Nm	Benthin



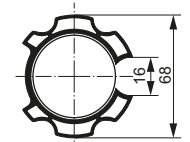
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F845	M45E584	M45E585	Round tube with groove profile	65	40 Nm	Bandalux



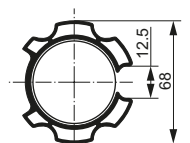
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F808	M45E084	M45E209	Octagonal tube	70	40 Nm	Italprofil



Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F851	M45E486	M45E580	Round tube with groove profile	70	40 Nm	Griesser

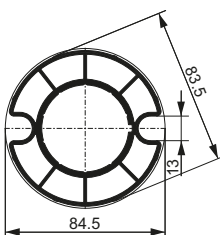
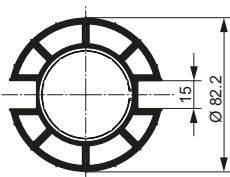
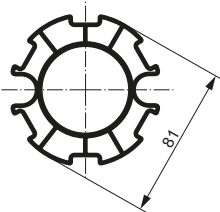
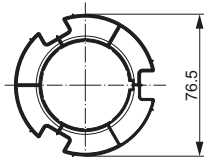
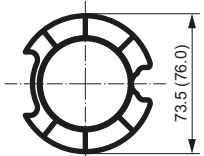
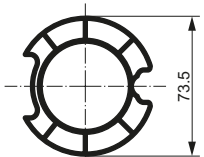
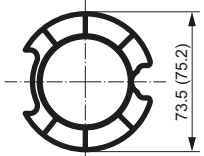
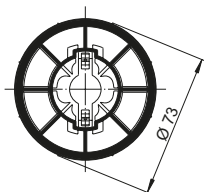


Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F803	M45E159	M45E160	Round tube with groove profile	70	40 Nm	MHZ, PVG, F.I.T.E.SOL, Welser, Mitjavila, Italprofil



Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F827	M45E456	M45E457	Round tube with groove profile	70	40 Nm	Simbac

\* Outer tube diameter or standard commercial designation on the market



Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F812	M45E274	M45E275	Round tube	78	40 Nm	-

Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F804	M45E109	M45E156	Round tube with groove profile	78	50 Nm	MHZ, PVG, F.I.T.E.SOL, Simbac, Welser, Dick, Hocoplast/WO&WO, Italprofil

Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F816	M45E093	M45E094		78	50 Nm	-

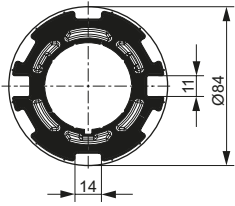
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F819	M45E093	M45E156	Round tube with groove profile	78	50 Nm	Döhner

Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F811	M45E248	M45E249	Round tube with groove profile	80	50 Nm	Optinut, Welser

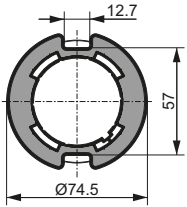
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F805	M45E157	M45E158	Round tube with groove profile	85	50 Nm	F.I.T.E.SOL, Hocoplast/WO&WO, Italprofil

Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F815	M45E391	M45E392	Round tube with groove profile	85	50 Nm	PVG (after change), Welser, Simbac (no special profiles)

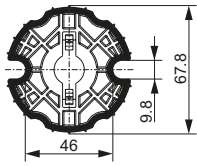
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F835	M45E089	M45E090		85	50 Nm	PVG



Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F852	M45E548	M45E581	Round tube with groove profile	85	50 Nm	Griesser

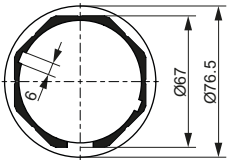


Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F828	M45E462	M45E537	Round tube with groove profile	78	50 Nm	Storma, Renson

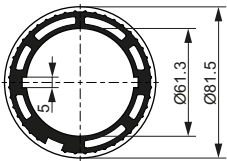


Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M45F831	M45E486		Round tube with groove profile	70	50 Nm	Storma, Renson

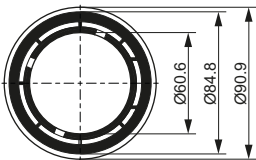
## M59F... | Adapters and drivers for 59 mm motors



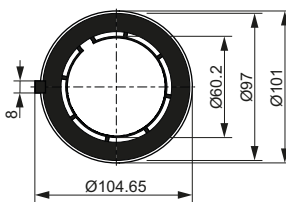
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M59F800	M59K008	M59K007	Octagonal tube	70	140 Nm	-



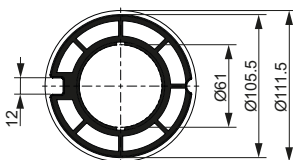
Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M59F801	M59K010	M59K009	Round tube with groove profile	82	140 Nm	-



Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M59F802	M59K014	M59K012	Round tube with groove profile	84	140 Nm	-



Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M59F803	M59K016	M59K015	Round tube with groove profile	97	140 Nm	-



Part no.	Driver	Adapter	Tube	Diameter [mm]*	max. load	Manufacturer
M59F804	M59K018	M59K017	Round tube with groove profile	106	140 Nm	-

## M56.... | Connecting cables, black



### Characteristics

- Various plug and connection ends available
- Suitable for indoor and outdoor use
- UV-resistant
- Halogen-free
- Temperature range: -25 °C to 60 °C
- Cable designation: 05RR-F 4G 0.75mm<sup>2</sup>

Part no.	Length [cm]	Cable end A	Cable end B	Note
M56K067	90	GEIGER plug	Open end cable	-
M56E386	200	GEIGER plug	Open end cable	-
M56E219	300	GEIGER plug	Open end cable	-
M56E454	300	GEIGER plug	Open end cable	Delivery unit: 25 pcs.
M56E427	500	GEIGER plug	Open end cable	-
M56E623	30	GEIGER plug	Hirschmann STAS3 plug	-
M56K066	50	GEIGER plug	Hirschmann STAS3 plug	-
M56K042	90	GEIGER plug	Hirschmann STAS3 plug	-
M56E378	150	GEIGER plug	Hirschmann STAS3 plug	-
M56E399	150	Hirschmann STAK3 cable socket	Open end cable	-
M56E587	500	Hirschmann STAK3 cable socket	Open end cable	-
M56E281	200	Hirschmann STAK3 cable socket	Hirschmann STAS3 plug	-
M56E273	30	Hirschmann STAS3 plug	Open end cable	-
M56K455	30	GEIGER plug	Hirschmann STAS3 plug	Changed rotation direction
M56E699	300	GEIGER plug	Open end cable	For SOLIDline AIR drives, delivery unit: 25 pcs.
M56E799	500	GEIGER plug	Open end cable	For SOLIDline AIR drives, delivery unit: 25 pcs.

Further cable lengths on request.

## M56E4.. | Connecting cables, white



### Characteristics

- Suitable for indoor and outdoor use
- UV-resistant
- Not halogen-free
- Temperature range: -25 °C to 60 °C
- Cable designation: 05RN-F 4G 0.75mm<sup>2</sup>

Part no.	Length [cm]	Cable end A	Cable end B
M56E409	300	GEIGER plug	Open end cable

## M56E41. | Connecting cables made of PVC, white



### Characteristics

- Various plug and connection ends available
- For indoor use only
- Not UV-resistant
- Not halogen-free
- Temperature range: -5 °C to 60 °C
- Cable designation: H05VV-F 4G 0.75mm<sup>2</sup>

Part no.	Length [cm]	Cable end A	Cable end B
M56E417	90	GEIGER plug	Open end cable
M56E418	300	GEIGER plug	Open end cable

Further cable lengths on request.

## M56... | Setting switch



### Note

- A 5-wire setting switch M56F152 or M56F153 is required for SMI motor
- SMI being a standard, any setting switch of the SMI group can be used

Part no.	Description
M56F154	with service terminal (D) / 4-wire
M56B265	Adaptation cable with service terminal and STAS3
M56E399	Adaptation cable with STAK3 and open cable end, 150 cm
M56E658	Adaptation cable with STAK4 and open cable end, 150 cm

## M56K... | Hirschmann 3-pole connections



### Note

- Delivery without cable

Part no.	Description
M56K075	Hirschmann STAK3 cable socket
M56K078	Hirschmann STAS3 plug
M56K079	Hirschmann STAS3 bracket

## GF2900 | Handheld transmitter Remote AIR



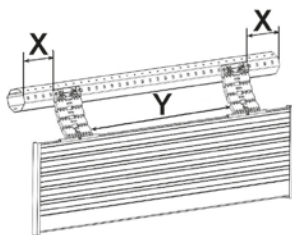
### Characteristics

- 3 channels
- Feedback from the drive via a coloured LED
- Control of the sun control system

### Application

- Setting and operating the sun protection system

## M45F95. | Anti-lift devices for mini and maxi profiles



X = min. 30 mm    Y = min. 400 mm  
max. 80 mm        max. 600 mm

### Characteristics

- High-strength plastic
- Available as 2 and 3- unit models
- Available for mini and maxi profiles
- Available as snap-in attachment or screw mounting version

### Note

- Please observe the installation instructions!

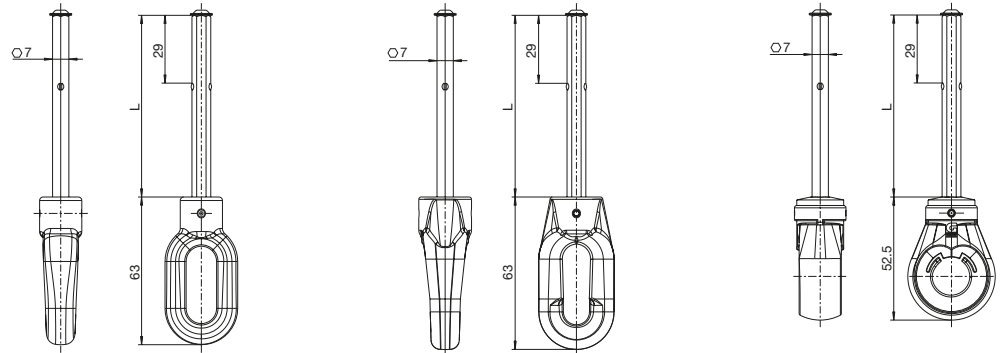
Part no.	Profile/rod	Elements	Note
M45F950	Mini profile	2-elements	for clipping
M45F951	Mini profile	3-elements	for clipping
M45F953	Mini profile	2-elements	for screwing
M45F954	Mini profile	3-elements	for screwing
M45F956	Maxi profile	2-elements	for clipping
M45F957	Maxi profile	3-elements	for clipping
M45F959	Maxi profile	2-elements	for screwing
M45F960	Maxi profile	3-elements	for screwing

## M45F3.. | Extension with eyelet for manual override crank



### Characteristics

- For TEClime motors with NHK function
- Awning cranks for operation can be found in the chapter "Textile sun protection"

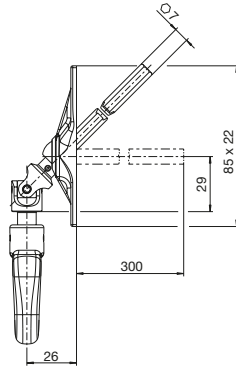


Part no.	Length [L]	Drive ▲	Output ▼
M45F370	60 mm	☐ RAL 9016	● 7 mm
M45F373	60 mm	☐ RAL 7035	● 7 mm
M45F376	60 mm	■ RAL 9005	● 7 mm
M45F371	100 mm	☐ RAL 9016	● 7 mm
M45F374	100 mm	☐ RAL 7035	● 7 mm
M45F377	100 mm	■ RAL 9005	● 7 mm
M45F372	165 mm	☐ RAL 9016	● 7 mm
M45F375	165 mm	☐ RAL 7035	● 7 mm
M45F378	165 mm	■ RAL 9005	● 7 mm
M45F379	60 mm	☐ RAL 9016	● 7 mm
M45F382	60 mm	☐ RAL 7035	● 7 mm
M45F385	60 mm	■ RAL 9005	● 7 mm
M45F380	100 mm	☐ RAL 9016	● 7 mm
M45F383	100 mm	☐ RAL 7035	● 7 mm
M45F386	100 mm	■ RAL 9005	● 7 mm
M45F381	165 mm	☐ RAL 9016	● 7 mm
M45F384	165 mm	☐ RAL 7035	● 7 mm
M45F387	165 mm	■ RAL 9005	● 7 mm
M45F392	60 mm	○ Zinc	● 7 mm
M45F393	100 mm	○ Zinc	● 7 mm
M45F394	165 mm	○ Zinc	● 7 mm
M45F402	250 mm	○ Zinc	● 7 mm
M45F403	400 mm	○ Zinc	● 7 mm

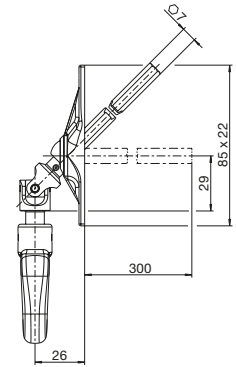
## 816F0..... | Spherical bearing 45°

### Characteristics

- For TECLine motors with NHK function
- Universal plates made of die cast zinc, 22 x 85 mm
- Further spherical bearings on request
- With zinc eyelet
- Awning cranks for operation can be found in the chapter "Textile sun protection"



Part no.	Colour	Profile/rod	Holes
816F018001	nickel-plated	7 mm	2

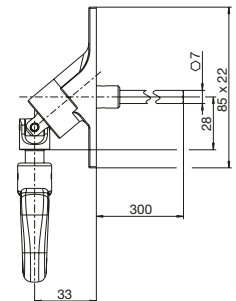


Part no.	Colour	Profile/rod	Holes
816F027901	nickel-plated	7 mm	3

## 816F16.... | Spherical bearing 90°

### Characteristics

- For TECLine motors with NHK function
- Universal plates made of die cast zinc, 22 x 85 mm
- Further spherical bearings on request
- With zinc eyelet
- Awning cranks for operation can be found in the chapter "Textile sun protection"



Part no.	Colour	Profile/rod	Holes
816F168001	nickel-plated	7 mm	2



Smart Home

SOLIDline

TECLine


Accessories for tubular drives

GJ56..

Accessories GJ56...

Wireless accessories

General information



**+**  
**EXTERNAL  
BLINDS AND  
VENETIAN BLINDS**

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**DRIVE SOLUTIONS**

**GEIGER**  
ANTRIEBSTECHNIK

---

# SIMPLY MORE DAYLIGHT



*External blinds are lighting experts - and just perfect for large glass surfaces. With their flexible adjustable slats, they regulate the daylight so that brightness, temperature and privacy are well balanced in every room. Manually, radio-controlled, or fully automated in a building control system.*

<i>Design</i>	—	<b>143</b>
The right look - good design is the result of maximum function at GEIGER.		
<i>Protection</i>	—	<b>144</b>
Enjoy life - our smart drives protect the hangings from damage.		
<i>Connected</i>	—	<b>144</b>
Gateway to the smart world - every external blind can be interconnected with the help of the matching GEIGER drive.		
<i>Mounting</i>	—	<b>145</b>
Ready to use in no time at all - thanks to coordinated assembly components, our drives are quickly installed.		
<i>Smooth operation</i>	—	<b>146</b>
Silence is a luxury - GEIGER minimises the noise level of its drives.		
<i>Comfort</i>	—	<b>147</b>
Compromise is a thing of the past - slats can be positioned precisely even with fast-moving hangings.		
<i>Specialists</i>	—	<b>147</b>
In use worldwide - our special drives cope with extreme conditions.		
<i>Drive overview</i>	—	<b>149</b>



# FEATURES

## DESIGN

*The right look – function and design in harmony at GEIGER. The more precisely an external Venetian blind operates and the more discreetly can it be integrated into facades, and the higher the quality of its appearance.*

### Suitable for all common head rails

Due to their modular design, our external blind drives can be fitted into any standard head rail. No matter the box dimensions, slat shapes or control systems are provided – virtually all installation situations can be covered up. This includes connected drives and solutions for the second escape route. Even retrofitting is no problem with our simple, tool-less fixation kits.

### Referencing

The bands on newly installed external blinds often stretch. This has visible consequences after a while: The element hangs further down in the upper end position than set during mounting. The optional referencing function is suitable for Electronic drives adapt the motor control to the changed winding behaviour: It checks the end positions of the external blind in certain cycles. This is how the hanging can target the originally set distance exactly even after years. Follow-up costs for manufacturers and end customers are reduced to a minimum and the longevity of the systems is maximised.

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## PROTECTION

*Carefree enjoyment - with smart drives that automatically protect the sun protection from wear and damage. This not only protects valuable hangings but also reduces stress on your nerves and your wallet.*



### Safety shutdown

With the integrated limit switch from GEIGER, incorrect operation of the sensitive external blinds is reduced to a minimum. Because in addition to the referencing function, the switch works like an "emergency button": It stops the hanging in its upper end position before the entire slat package is moved too deeply into the aperture. This means that the end positions of all parallel hangings can be set at exactly the same height and the external Venetian blinds remain undamaged.



### Anti-freeze protection

The anti-freeze protection adds some extra safety in sub-zero temperatures: End rails frozen to the window sill are recognised immediately. The drive stops to prevent damage to the blinds and keep them intact.



### Obstacle detection in UP direction

If the sun protection moves to the upper end position, it is automatically stopped if there is resistance in the travel path. This also applies to weather-related influences such as coarse dirt or dust. The sensitive power cut-off registers any obstacle, protects the blind and ensures long-lasting sun protection.

---

## CONNECTING

*Gateway to the smart world - every external blind, whether for detached houses or for large objects, can be interconnected with the help of the matching GEIGER drive. Large sun protection systems can thus be monitored and controlled very easily. We offer drives and users greater functionality and security throughout the building with connected sun protection.*



### Wireless AIR technology

Our innovative AIR radio technology is able to cover long distances and even the most labyrinthine buildings with **MESH technology**. All AIR drives are equipped with bidirectional radio. Commands are thus not only received, but also confirmed after execution; otherwise, an error message will be returned. AIR also makes the sun protection system **Smart Home Ready**: Connecting AIR to the Loxone miniserver will integrate the sun protection system into a full smart home control system. All integrated technical components complement each other in their functions - for more convenience, greater energy efficiency, and improved security.

# FEATURES



## SMI interface for sun protection control

GEIGER SMI drives offer a standardised interface for shading elements. The individual drives are able to communicate seamlessly without a drive via the SMI (Standard Motor Interface) protocol established on the market. This enables control of entire sun protection systems via building automation. The sub-bus system is specifically adapted to these requirements and a particularly economical solution for planners and electricians.

## MOUNTING

*Quick and easy to use – simple handling is a matter of course for a GEIGER drive. We know how to make installation, maintenance, and operation of our products easier for our customers.*



## Plug-in cables and tool-free mounting

Our drives have plug-in connecting cables. Their motors can be connected to or disconnected from the mains in the blink of an eye during retrofitting or replacement. All of our fixation kits can be inserted and attached tool-free. This is because our installation accessories are developed in close co-operation with the external blind manufacturers. We keep subsequent installation in mind from the development stage, customising our mounting accessories precisely to any requirements our customers may have.



## Simple end position adjustment

End position programming is an important and often complicated part of mounting. We have, therefore, made setting the end positions as simple as possible.



## SMOOTH RUNNING

*Silence is a luxury - and GEIGER keeps improving all of its drives to optimise smooth running. Less material friction equals quieter drives. Once the sun protection is virtually inaudible, it guarantees a more comfortable atmosphere.*



### Optimised product design

We reduce noise emissions right where the develop: in the mechanics of the engine, transmission, and brakes and in transmission of vibrations and structure-borne noise to adjacent elements. Optimisation ranges from product development and material selection to manufacturing processes and includes all drive components. We strive to reduce friction between all components, absorb sound with softer materials and dampen vibrations.



### SILENT drives

Our SILENT drives are extremely quiet among sun protection motors: They will be equipped with both an improved transmission and an optimised braking system. Both ensure a significant reduction in overall noise emissions. Special rubber damping elements also prevent sound transmission to the housing and reduce vibrations. The built-in drive is also a master of whispers.

# FEATURES

## COMFORT

*Compromise is a thing of the past - slats can be positioned precisely even with fast-moving hangings.*



### One drive, two speeds

DuoDrive - the name of our comfort drive says it all. It merges two apparent opposites. This is because its automatic switching gear unit combines two different speeds: The motor turns very slowly during its start-up phase. After three quarters of a turn, the gear shifts up to high speed. This allows the slats to be positioned precisely and adjusted sensitively. The subsequent fast travelling movement not only offers more comfort, but also more safety in the event of a wind alarm.

## SPECIALISTS

*In use all over the world - our special drives are at home everywhere and can cope with extreme conditions. No matter if used in great heat or with a different power supply: GEIGER has the right drive.*



### Highest temperature resistance

The T90 from GEIGER remains perfectly reliable even when things get hot. This is because the external blind drive was developed for permanent use at high temperatures. Its special materials make it ideal for hot climate zones or closed facade systems with intensive solar radiation. We confidently guarantee the use of the T90 in a temperature range from -20 °C to +90 °C after tests under most demanding conditions.



### Mains voltage with 100 V

The mains voltage for the power supply is not always the standard 230 V in Germany. But that's no problem for GEIGER: We also have matching external Venetian blind drive in our portfolio for countries such as Japan, where the mains voltage is only 100 V.

Smart Home

SOLIDline

TECLine

Accessories for tubular drives

GJ56..

Accessories GJ56..

Wireless accessories

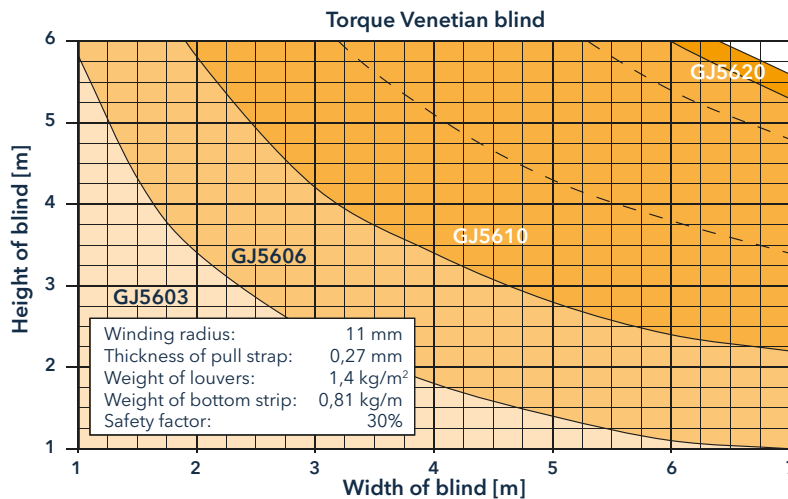
General information

# MOTORMATRIX EXTERNAL BLINDS

	GJ56.. ME	GJ5606 DuoDrive	GJ56.. T90	GJ5610v1	GJ56.. E14 Performance	GJ56.. E14 Perfection	GJ56.. E17 SMI	RESCUE-J
	Page 150	Page 152	Page 154	Page 156	Page 158	Page 160	Page 162	Page 164
<b>Design</b>								
Suitable for common head rails	■	■	■	■	■	■	■	■
Referencing					■	■	■	
<b>Hanging protection</b>								
Safety shutdown (AES)	■	■	■	■	■	■	■	■
Referencing					■	■	■	
Anti-freeze protection					■	■	■	
Obstacle detection (UP direction)					■	■	■	
<b>Connected</b>								
SMI							■	
AIR/Smart Home Ready								
<b>Smooth operation</b>								
SILENT <sup>1)</sup>	■	■ <sup>2)</sup>		■ <sup>2)</sup>	■	■		■
Noise-optimised product design	■	■	■	■	■	■	■	■
<b>Special features</b>								
Particularly heat-resistant			■					
High-speed drives		■						
Power supply 100 V				■				
Intermediate position						■		
Emergency operation								■
<b>Mounting</b>								
Plug-in cables	■	■	■	■	■	■	■	■
Tool-free mounting	■	■	■	■	■	■	■	■
Simple end position adjustment	■	■	■	■	■	■	■	■

<sup>1)</sup> Suitable for labelled GJ56.. drives up to 10 Nm and for indoor use only!

<sup>2)</sup> On request



## GJ56.. ME

### Mechanical Venetian blind motor



### Application:



Venetian blinds

### Characteristics:

#### 2-button technology



Safe adjustment of the end positions by means of self-retaining pushbuttons. Easy teach-in of the end positions in any direction of rotation.

#### Safety shutdown



The integrated overrun limit switch acts as an "emergency button" and protects the system from damage. It can also be used to approach an upper end position. This emergency button is perfectly synchronised with our motor so that the system always stops in the same position if it is driven up several times.

### Product advantages:

- Mechanical limit switch
- Plug-in connecting cable in different lengths
- No adjustment cable required to set the end positions
- Tool-free and secure mounting in all common head rails
- Proven motor and brake concept

### Options:

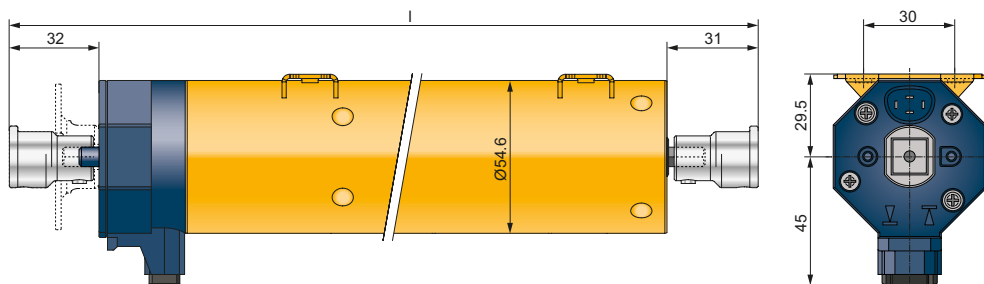
- Available as **SILENT** drive up to 10 Nm
- Also available with optimised running time on request
- Extensible overrun limit switch possible

### End position adjustment:

TOP	*Stop on torque	BOTTOM	Stop on free position
	Stop on free position		

\*Hitting of the overrun limit switch

### Drawing:



## Technical data:

Technical data GJ56.. with mechanical limit switch (standard mechanical)				
	GJ5603k <sup>3)</sup>	GJ5606k	GJ5610	GJ5620
Voltage	230V~/50Hz			
Current	0.40 A	0.40 A	0.60 A	0.85 A
Cos Phi (cosφ)	> 0.95			
Inrush current (factor)	x 1.2			
Power	90 W	93 W	135 W	190 W
Torque	3 Nm	6 Nm	10 Nm	2 x 10 Nm
Speed	26 rpm			
Protection class	IP 54			
Limit switch-off range	80 rpm			
Operating mode	S2 4 min			
Sound pressure level <sup>1)</sup>	34 db(A)	34 db(A)	35 db(A)	40 db(A)
Total length [l] (w. cpl.)	299 mm	299 mm	309 mm	336 mm
Diameter	55 mm			
Weight	approx. 1.50 kg	approx. 1.50 kg	approx. 1.70 kg	approx. 2.20 kg
Humidity	dry, non-condensing			
Storage temperature	T = -15 °C ... +70 °C			

Technical data GJ56.. with mechanical limit switch (runtime-optimised version)		
	GJ5606	GJ5616 <sup>2) 3)</sup>
Voltage	230V~/50Hz	
Current	0.40 A	0.70 A
Cos Phi (cosφ)	> 0.95	
Inrush current (factor)	x 1.2	
Power	90 W	150 W
Torque	6 Nm	2 x 8 Nm
Speed	26 rpm	
Protection class	IP 54	
Limit switch-off range	80 rpm	
Operating mode	S2 6 min	
Sound pressure level <sup>1)</sup>	34 db(A)	40 db(A)
Total length [l] (w. cpl.)	304 mm	336 mm
Diameter	55 mm	
Weight	approx. 1.60 kg	approx. 2.20 kg
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

<sup>1)</sup>The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

<sup>2)</sup>Without VDE and EMC test mark.

<sup>3)</sup>Without CCC certification mark.

Subject to technical changes. Information on the ambient temperature range of GEIGER motors can be found in the general information in the annex.

## Accessories:



Coupling pieces

170



Connecting cables

174



Fixing systems

172

## GJ5606 DuoDrive

### Mechanical motor for Venetian blinds



#### Application:



Venetian blinds

#### Characteristics:

##### DuoDrive



Two seemingly contradictory requirements in a single drive: Fast travelling movement, slow turning. This enables precise adjustment of the slat angle and fast opening and closing of the blind.

##### Advantages of the fast travelling movement:

- Quick hanging protection in the event of a wind alarm
- Greater convenience thanks to shorter journey times
- More driving cycles until the thermal protection responds
- Time saving during factory commissioning of the external blind

##### Advantages of slow slat turning:

- 3 times better resolution for slat positioning
- Ideal for automated daylight control
- Ideal for sensitive manual slat adjustment

##### 2-button technology



Safe adjustment of the end positions by means of self-retaining pushbuttons. Easy teach-in of the end positions in any direction of rotation.

##### Safety shutdown



The integrated overrun limit switch acts as an "emergency button" and protects the system from damage. It can also be used to approach an upper end position. This emergency button is perfectly synchronised with our motor so that the system always stops in the same position if it is driven up several times.

#### Product advantages:

- Mechanical limit switch
- Plug-in connecting cable in different lengths
- Two speeds in a single motor
- No adjustment cable required to set the end positions
- Tool-free and secure mounting in all common head rails
- Proven motor and brake concept

#### Options:

- Also available with optimised running time on request
- Extensible overrun limit switch possible

#### End position adjustment:

TOP	*Stop on torque	BOTTOM	Stop on free position
	Stop on free position		

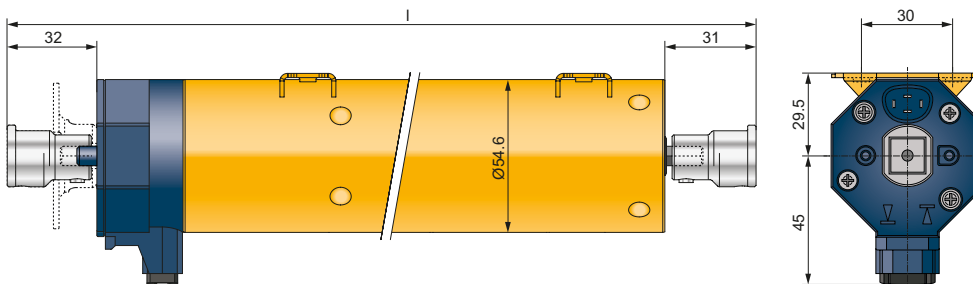
\*Hitting of the overrun limit switch

## Technical data:

Technical data GJ5606 DuoDrive with mechanical limit switch	
	GJ5606 DuoDrive
Voltage	230V~/50 Hz
Current	0.60 A
Cos Phi ( $\cos\varphi$ )	> 0.95
Inrush current (factor)	x 1.2
Power	145 W
Torque	6 Nm
Speed	9/39 rpm
Protection class	IP 54
Limit switch-off range	80 revolutions
Operating mode	S2 4 min
Total length [l] (w. cpl.)	336 mm
Diameter	55 mm
Weight	approx. 2.05 kg
Humidity	dry, non-condensing
Storage temperature	T = -15 °C ... +70 °C

Subject to technical changes. Information on the ambient temperature range of GEIGER motors can be found in the general information in the annex.

## Drawing:



## Accessories:



Coupling pieces

170



Connecting cables

174



Fixing systems

172

## GJ56.. T90

### Mechanical Venetian blind motor



#### Application:



Venetian blinds

#### Characteristics:

##### HighTemperature



This Venetian blind drive is optimised for use in higher temperature ranges. Use of special materials and components makes it suitable for applications up to +90 °C.

The requirements of Cahier 3677 - of the CSTB in Class B of

- 8000 cycles at room temperature
  - 2000 cycles at 75 °C
  - 500 cycles at 85 °C
- are of course met.

##### 2-button technology



Safe adjustment of the end positions by means of self-retaining pushbuttons. Easy teach-in of the end positions in any direction of rotation.

##### Safety shutdown



The integrated overrun limit switch acts as an "emergency button" and protects the system from damage. It can also be used to approach an upper end position. This emergency button is perfectly synchronised with our motor so that the system always stops in the same position if it is driven up several times.

#### Product advantages:

- Mechanical limit switch
- Plug-in connecting cable in different lengths
- No adjustment cable required to set the end positions
- Tool-free and secure mounting in all common head rails
- Proven motor and brake concept

#### Options:

- Extensible overrun limit switch possible

#### End position adjustment:

<b>TOP</b>	*Stop on torque	<b>BOTTOM</b>	Stop on free position
	Stop on free position		

\*Hitting of the overrun limit switch

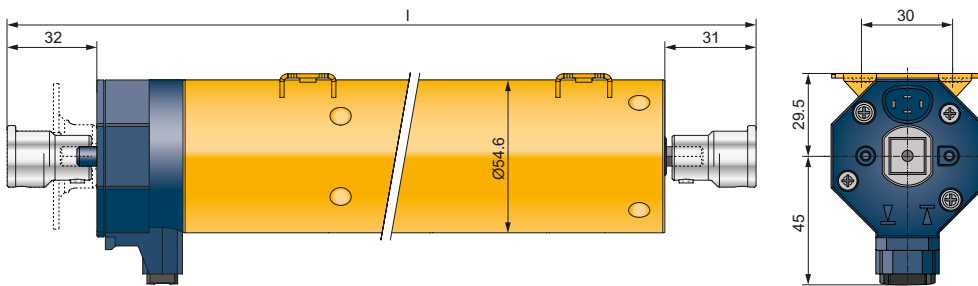
## Technical data:

Technical data GJ56.. with mechanical limit switch (runtime-optimised version)		
	GJ5606 T90	GJ5616 T90
Voltage	230V~/50Hz	
Current	0.40 A	0.70 A
Cos Phi (cosφ)	> 0.95	
Inrush current (factor)	x 1.2	
Power	90 W	150 W
Torque	6 Nm	2 x 8 Nm
Speed	26 rpm	
Protection class	IP 54	
Limit switch-off range	80 revolutions	
Operating mode	S2 6 min	
Sound pressure level <sup>1)</sup>	34 db(A)	40 db(A)
Total length [l] (w. cpl.)	304 mm	336 mm
Diameter	55 mm	
Weight	approx. 1.60 kg	approx. 2.20 kg
Humidity	dry, non-condensing	
Storage temperature	T = -15 °C ... +70 °C	

<sup>1)</sup>The average sound pressure level data are intended for guidance only. The values were determined by GEIGER at a distance of 1 m, with a hanging motor at idle speed and averaged over 10 seconds. There is no reference to any specific test standard.

Subject to technical changes. Information on the ambient temperature range of GEIGER motors can be found in the general information in the annex.

## Drawing:



## Accessories:



Coupling pieces

170



Connecting cables

176



Fixing systems

172

## GJ5610v1

### Mechanical Venetian blind motor



100 V

#### Application:



Venetian blinds

#### Characteristics:

100 V



Suitable for a current voltage of 100 V. Specifically for markets that have a 100 V 50/60 Hz power supply.

#### 2-button technology



Safe adjustment of the end positions by means of self-retaining pushbuttons. Easy teach-in of the end positions in any direction of rotation.

#### Safety shutdown



The integrated overrun limit switch acts as an "emergency button" and protects the system from damage. It can also be used to approach an upper end position. This emergency button is perfectly synchronised with our motor so that the system always stops in the same position if it is driven up several times.

#### Product advantages:

- Mechanical limit switch
- Plug-in connecting cable in different lengths
- No adjustment cable required to set the end positions
- Tool-free and secure mounting in all common head rails
- Proven motor and brake concept

#### Options:

- Also available with optimised running time on request
- Extensible overrun limit switch possible

#### End position adjustment:

TOP	*Stop on torque	BOTTOM	Stop on free position
	Stop on free position		

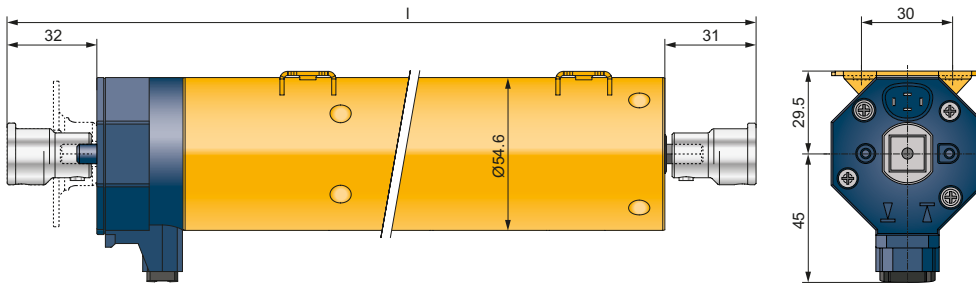
\*Hitting of the overrun limit switch

## Technical data:

Technical data GJ56.. with mechanical limit switch (standard mechanical)	
GJ5610v1	
Voltage	100V~ / 50/60 Hz
Current	1 A (50 Hz) 1.2 A (60 Hz)
Cos Phi (cosφ)	> 0.95
Inrush current (factor)	x 1.2
Power	99 W (50 Hz) 118 W (60 Hz)
Torque	10 Nm
Speed	26 rpm (50 Hz) 32 rpm (60 Hz)
Protection class	IP 54
Limit switch-off range	80 revolutions
Operating mode	S2 4 min
Total length [l] (w. cpl.)	309 mm
Diameter	55 mm
Weight	approx. 1.70 kg
Humidity	dry, non-condensing
Storage temperature	T = -15 °C ... +70 °C

Subject to technical changes. Information on the ambient temperature range of GEIGER motors can be found in the general information in the annex.

## Drawing:



## Accessories:



Coupling pieces

170



Connecting cables

174



Fixing systems

172

## GJ56.. E14 Performance Electronic Venetian blind motor



### Application:



Venetian blinds

### Characteristics:

#### Dynamic torque cut-off



The self-learning torque shutdown detects changes in the blind and adapts itself accordingly to ensure constant movement behaviour.

#### Referencing



Optional referencing makes it possible to compensate for changes in winding behaviour. Every 50 cycles, a reference run is carried out to check whether the end positions are right. The hanging is moved onto the limit stop switch for this. The set end position is checked and corrected. Function can be deactivated using the adjustment cable.

#### Hanging protection

##### ■ Antifreeze protection

External blinds that are, for example, frozen to the end rails are detected and not torn off.



##### ■ Obstacle detection in the UP direction

Protection of the system during retraction.



##### ■ Safety shutdown

The GJ56.. The E14 series has an overrun limit switch. It serves as an "emergency button" and protects the system from damage.



### Product advantages:

- Electronic limit stop
- Start-up time approx. 100 ms
- Can be connected in parallel
- Plug-in connecting cable in different lengths
- Overrun limit switch for safety shutdown
- Secure mounting in all standard head rails
- Proven motor and brake concept

### Options:

- Available as **SILENT**drive up to 10 Nm
- Extensible overrun limit switch possible

### Notices:

- Setting the end positions via setting switch, control switch or the overrun limit switch

### End position adjustment:

TOP	*Stop on torque	BOTTOM	Stop on free position
	Stop on free position		

\*Hitting of the overrun limit switch

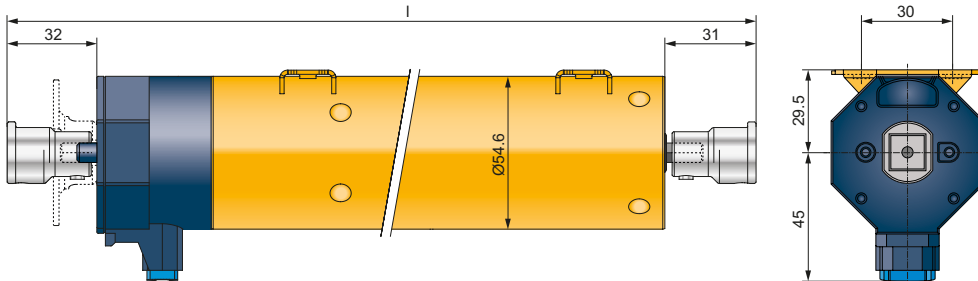
## Technical data:

Technical data GJ56.. E14 Performance with electronic limit switch					
	GJ5603k	GJ5606k	GJ5606 <sup>1)</sup>	GJ5610	GJ5620
Voltage	230V~/50Hz				
Current	0.40 A	0.40 A	0.40 A	0.60 A	0.85 A
Cos Phi (cosφ)	> 0.95				
Inrush current (factor)	x 1.2				
Power	90 W	93 W	90 W	135 W	190 W
Torque	3 Nm	6 Nm	6 Nm	10 Nm	2 x 10 Nm
Speed	26 rpm				
Protection class	IP 54				
Limit switch-off range	> 200 revolutions				
Operating mode	S2 4 min.	S2 4 min.	S2 6 min.	S2 4 min.	S2 4 min.
Total length [l] (w. cpl.)	319.5 mm	319.5 mm	324.5 mm	329.5 mm	356.7 mm
Diameter	55 mm				
Weight	approx. 1.50 kg	approx. 1.50 kg	approx. 1.60 kg	approx. 1.70 kg	approx. 2.20 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

<sup>1)</sup> Runtime-optimised motor

Subject to technical changes. Information on the ambient temperature range of GEIGER motors can be found in the general information in the annex.

## Drawing:



## Accessories:



Coupling pieces

170



Connecting cables

174



Fixing systems

172

# GJ56.. E14

## Perfection

### Electronic Venetian blind motor



## Application:



Venetian blinds

## Characteristics:

### Dynamic torque cut-off



The self-learning torque shutdown detects changes in the blind and adapts itself accordingly to ensure constant movement behaviour.

### Referencing



Optional referencing makes it possible to compensate for changes in winding behaviour. Every 50 cycles, a reference run is carried out to check whether the end positions are right. The hanging is moved onto the limit stop switch for this. The set end position is checked and corrected. Function can be deactivated using the adjustment cable.

### Hanging protection

#### ■ Antifreeze protection

External blinds that are, for example, frozen to the end rails are detected and not torn off.



#### ■ Obstacle detection in the UP direction

Protection of the system during retraction.



#### ■ Safety shutdown

The GJ56.. The E14 series has an overrun limit switch. It serves as an "emergency button" and protects the system from damage.



### Intermediate position



An additional desired position can be taught in at any time.

## Product advantages:

- Electronic limit stop
- Start-up time approx. 100 ms
- Can be connected in parallel
- Plug-in connecting cable in different lengths
- Overrun limit switch for safety shutdown
- Secure mounting in all standard head rails
- Proven motor and brake concept

## Options:

- Available as **SILENT** drive up to 10 Nm
- Extensible overrun limit switch possible

## Notices:

- Setting the end positions via setting switch, control switch or the overrun limit switch

## End position adjustment:

TOP	*Stop on torque	BOTTOM	Stop on free position
	Stop on free position		

\*Hitting of the overrun limit switch

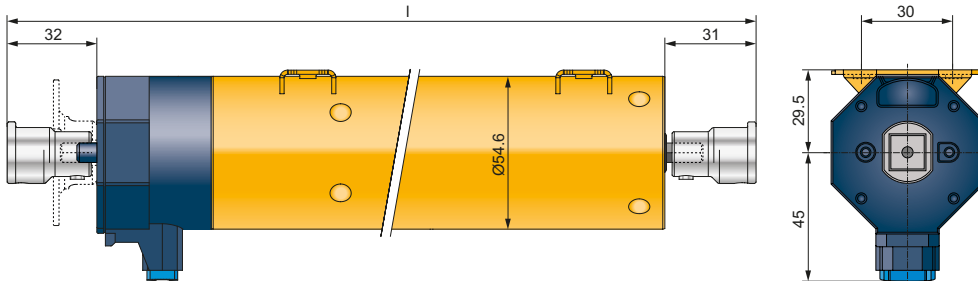
## Technical data:

Technical data GJ56.. E14 Perfection with electronic limit switch					
	GJ5603k	GJ5606k	GJ5606 <sup>1)</sup>	GJ5610	GJ5620
Voltage	230V~/50Hz				
Current	0.40 A	0.40 A	0.40 A	0.60 A	0.85 A
Cos Phi (cosφ)	> 0.95				
Inrush current (factor)	x 1.2				
Power	90 W	93 W	90 W	135 W	190 W
Torque	3 Nm	6 Nm	6 Nm	10 Nm	2 x 10 Nm
Speed	26 rpm				
Protection class	IP 54				
Limit switch-off range	> 200 revolutions				
Operating mode	S2 4 min.	S2 4 min.	S2 6 min.	S2 4 min.	S2 4 min.
Total length [l] (w. cpl.)	319.5 mm	319.5 mm	324.5 mm	329.5 mm	356.7 mm
Diameter	55 mm				
Weight	approx. 1.50 kg	approx. 1.50 kg	approx. 1.60 kg	approx. 1.70 kg	approx. 2.20 kg
Humidity	dry, non-condensing				
Storage temperature	T = -15 °C ... +70 °C				

<sup>1)</sup> Runtime-optimised motor

Subject to technical changes. Information on the ambient temperature range of GEIGER motors can be found in the general information in the annex.

## Drawing:



## Accessories:



Coupling pieces

170



Connecting cables

174

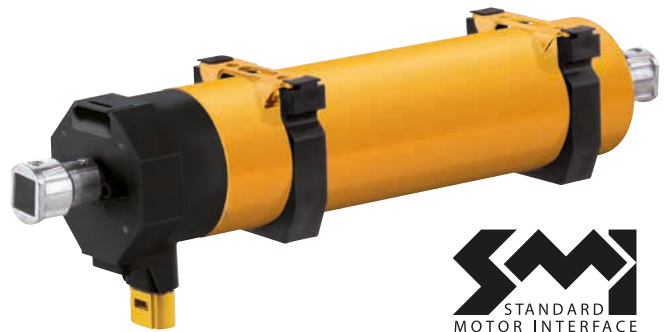


Fixing systems

172

## GJ56.. E17 SMI

### Electronic Venetian blind motor



### Application:



Venetian blinds

### Characteristics:

#### SMI



The GJ56.. E17 uses SMI 3.0, the third generation of the Standard Motor Interface Protocol. The protocol is well-established on the market and represents a standardised interface of building automation for the control of sun protection systems.

#### ■ Status feedback

The current position and motor status can be queried using feedback from the drive.



#### Dynamic torque cut-off



The self-learning torque shutdown detects changes in the blind and adapts itself accordingly to ensure constant movement behaviour.

#### Hanging protection

##### ■ Antifreeze protection

External blinds that are, for example, frozen to the end rails are detected and not torn off.



##### ■ Obstacle detection in the UP direction

Protection of the system during retraction.



##### ■ Safety shutdown

The GJ56.. The E17 SMI series is equipped with an overrun limit switch. It serves as an "emergency button" and protects the system from damage.



#### Referencing



Optional referencing makes it possible to compensate for changes in winding behaviour. Every 50 cycles, a reference run is carried out to check whether the end positions are right. The hanging is moved onto the limit stop switch for this. The set end position is checked and corrected. Function can be deactivated using the adjustment cable.

### Product advantages:

- Electronic limit stop
- Start-up time approx. 100 ms
- Can be connected in parallel
- Plug-in connecting cable in different lengths
- Overrun limit switch for safety shutdown
- Secure mounting in all standard head rails
- Proven motor and brake concept

### Notices:

- Setting the end positions via setting switch, control switch or the overrun limit switch

### Options:

- Extensible overrun limit switch possible

### End position adjustment:

TOP	*Stop on torque Stop on free position	BOTTOM	Stop on free position
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\*Hitting of the overrun limit switch

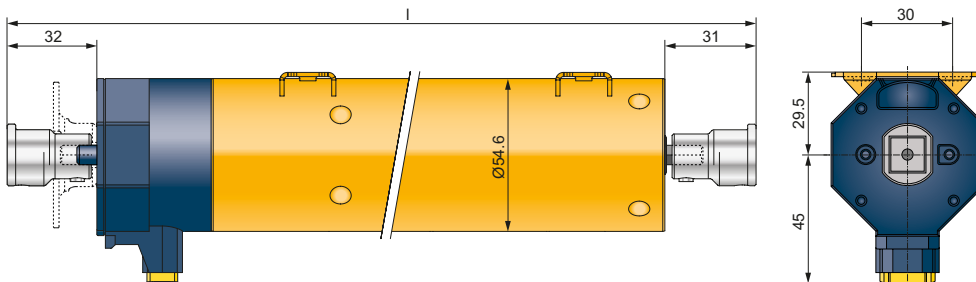
## Technical data:

Technical data GJ56.. E17 SMI with electronic limit switch				
	GJ5606k	GJ5606 <sup>1)</sup>	GJ5610	GJ5620
Voltage	230V~/50Hz			
Current	0.40 A	0.40 A	0.60 A	0.85 A
Cos Phi (cosφ)	> 0.95			
Inrush current (factor)	x 1.2			
Power	93 W	90 W	135 W	190 W
Torque	6 Nm	6 Nm	10 Nm	2 x 10 Nm
Speed	26 rpm			
Protection class	IP 54			
Limit switch-off range	> 200 revolutions			
Operating mode	S2 4 min.	S2 6 min.	S2 4 min.	S2 4 min.
Total length [l] (w. cpl.)	371.0 mm	376.0 mm	381.0 mm	408.0 mm
Diameter	55 mm			
Weight	approx. 1.50 kg	approx. 1.60 kg	approx. 1.70 kg	approx. 2.20 kg
Humidity	dry, non-condensing			
Storage temperature	T = -15 °C ... +70 °C			




<sup>1)</sup> Runtime-optimised motor

Subject to technical changes. Information on the ambient temperature range of GEIGER motors can be found in the general information in the annex.

## Drawing:



## Accessories:

	Coupling pieces	170		Connecting cables	174
	Fixing systems	172			

## RESCUE-J

Solution for external blinds in the 2nd escape route



### Application:



Venetian blinds

### Sun protection in the escape route

The requirement in accordance with § 33 of the German standard building regulations (Musterbauverordnung; MBO) requires at least two mutually independent escape routes per building level, at least one of which must comply with the provisions for the first escape route.



The first escape route is a traffic route that enables people to leave a danger zone quickly. It either leads out of a building into the open or into a secured area. Examples include corridors, stairs, and exits people use to get to safety in the event of a fire.



In contrast to the first escape route, which is strictly regulated and clearly defined, the second escape route can be designed based on countless possible solutions. Neither the MBO nor any other state building regulations nationwide contain any standardised regulations so far.

This represents a massive challenge in terms of design and implementation for sun protection manufacturers, architects, and planners.

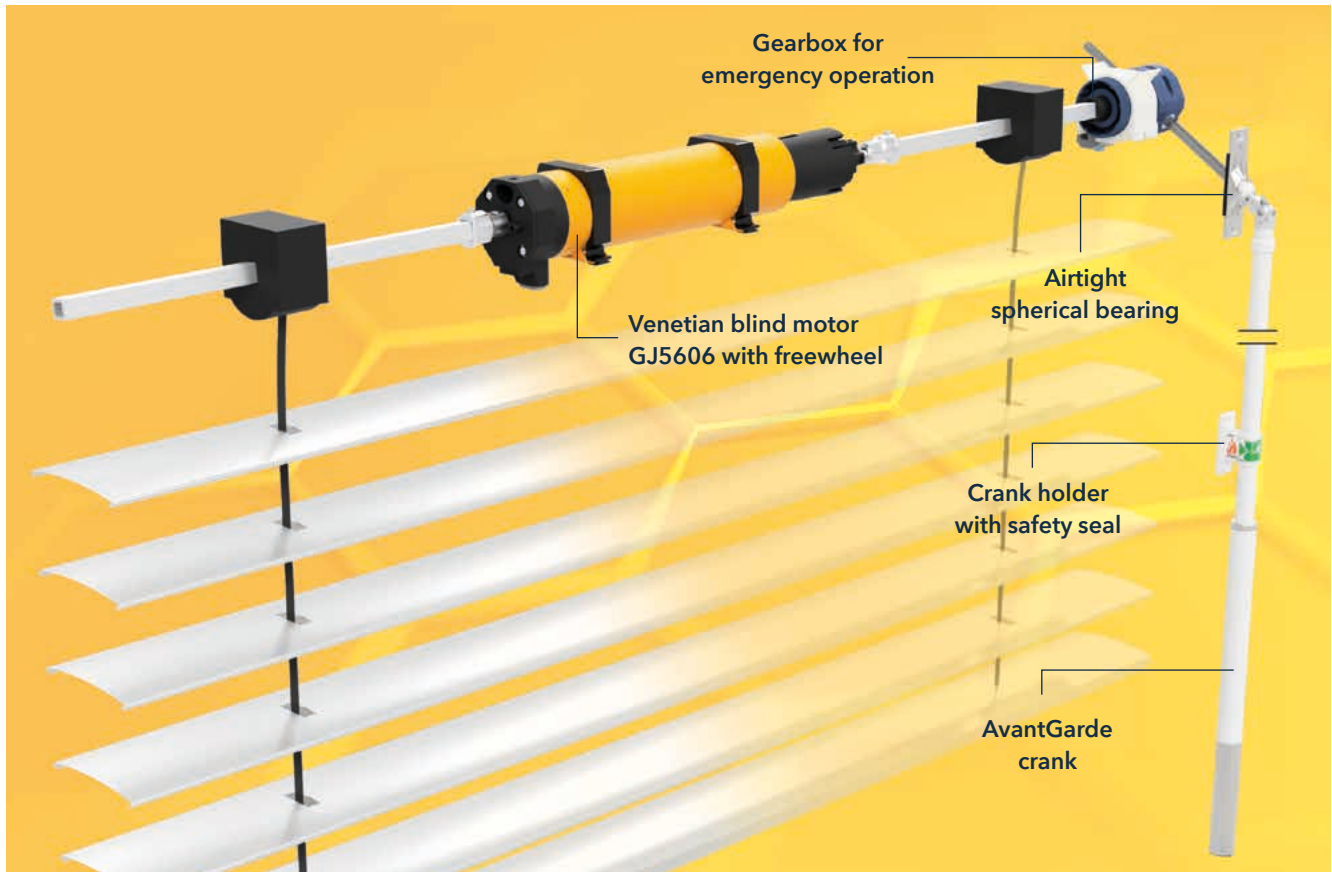
This in turn may lead to conflicts, in particular if the fire protection requirements for sun protection in the second escape route are not considered. Aesthetic aspects, monument protection regulations, structural framework conditions, and, last but not least, costs must be harmonised as well.

### Modular design - systematic motors and gearboxes!

The ingenious design of the RESCUE-J can be easily integrated into all standard top rails. All component dimensions are designed so that only the crank handle needs to be installed inside the building.

- **Space-saving:** Thanks to its modular design, the system can be integrated into all top tracks.
- **Flexible:** RESCUE-J is available for external blinds with 14 mm grooved tube or 12 mm square tube turning bars.
- **Maintenance-free:** The motor, freewheel, and gearbox do not require any maintenance. However, we recommend an annual check of the mechanical components by means of a test operation.
- **Customer-focused:** In an emergency, the external blind can be opened quickly and easily. The gear reduction ratio of 2:1 makes operation child's play.

## RESCUE-J at a glance



## Components at a glance

- **Venetian blind motor GJ5606 (6 Nm):** The basis is our mechanical external blind motor, which has been tried and tested millions of times. Optimum and quick adjustment of the end positions with just two buttons.
- **Freewheel:** Solid freewheel made of extremely stable and durable plastic. The freewheel is designed for 50 emergency operations and guarantees reliable use over the entire service life of the external Venetian blind system.
- **Bevel gearbox:** Tried and tested components and assemblies ensure smooth operation.
- **Air-tight spherical bearing:** Prevents thermal bridges and protects against draughts and condensation.
- **AvantGarde crank:** Aesthetic crank handle with concealed mechanism can be discreetly integrated into the room.

## Installation

Slide the motor with freewheel, dampers and the mounted coupling pieces into the top rail. Secure the motor with the clamping bracket/clamping bridge and lock it with the locking lever. Insert the turning rods into the coupling pieces.

Insert the gear holder on the side and secure with a screw if necessary. Insert the gearbox into the holder, paying attention to the alignment of the drive guide. Suitable fixation of the universal plate plate must be checked and guaranteed on site!

If a specific direction of crank rotation is required, the gearbox can be rotated through 180° axially.

**NOTE:** Crank operation is only possible in the upright position and is only intended for emergency operation.

## Operation in case of fire

If the external blind cannot be raised electrically in the event of a fire, RESCUE-J is used.

Simply pull the rods out of the holder, push the sleeve of the AvantGarde crank upwards, bend the crank and turn it. The safety seal is used to visually indicate that the crank should only be operated in an emergency.

The freewheel is triggered by strongly operating the emergency hand crank. You will hear a repeated clicking noise here.

## Return to operation

If the upper position was given by the overrun limit switch, no action is necessary when recommissioning the GJ5606 motor. If the upper end position was set to position and the blind was manually cranked above this position, the upper end position must be reset.

If the blind was opened with the crank handle, turn the crank handle a quarter turn in the opposite direction before putting them into operation to relieve the gearbox and prevent the crank handle from turning during motorised operation.

## RESCUE-J Kits - Set contents

Components	Kit 1 for 14 mm grooved tube	Kit 2 for 12 mm square tube
Part no.	M56F7000	M56F7001
Venetian blind motor GJ5606 with freewheel and mounted coupling pieces for 14 mm grooved tube	•	–
Venetian blind motor GJ5606 with freewheel and mounted coupling pieces for 12 mm square tube	–	•
Connecting cable, length = 0.5 m with STAS3	•	•
Extension for overrun limit switch	•	•
Bevel gearbox 2:1, output 14 mm grooved tube	•	–
Bevel gearbox 2:1, output 12 mm square tube	–	•
Airtight spherical bearer, 90°, plate 22x85 mm	•	•
AvantGarde aluminium frame, length = 1,200 mm	•	•
Plastic crank holder, RAL 9016	•	•
Security seal	•	•

**NOTE:** Please note that the gear holder and the fixation set (damper and clamping bridge/clamping bracket) must be ordered separately based on the dimensions of the top track and axle height.

## Technical data:

Technical data GJ5606kj with mech. Limit switch	
Voltage	230V~/50Hz
Current	0.40 A
Cos Phi (cosφ)	> 0.95
Inrush current (factor)	x 1.2
Power	93 W
Torque	6 Nm
Speed	26 rpm
Protection class	IP 54
Limit switch-off range	80 revolutions
Operating mode	S2 4 min.
Total length (w. cpl.)	390 mm
Diameter	55 mm
Weight	approx. 1.60 kg

## Hanging specifications

Hanging dimensions	
Max. hanging area	5.50 m <sup>2</sup>
Max. height	3.00 m
Max. width	3.00 m

## Accessories:



Coupling pieces

170



Connecting cables

174



Fixing systems

172

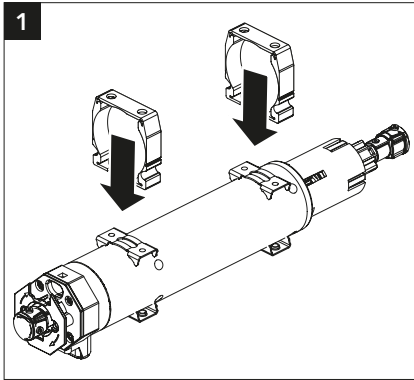
## Maintenance and instructions

The system is maintenance-free. However, an annual test run is recommended.

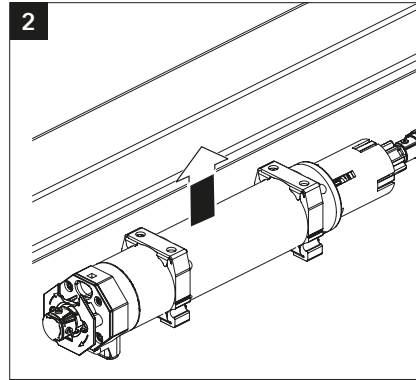
Check the system. The occupants or employees in the premises

secured by RESCUE-J should be instructed in its use.

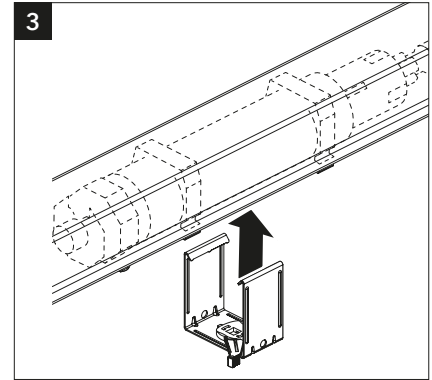
## Assembly instructions



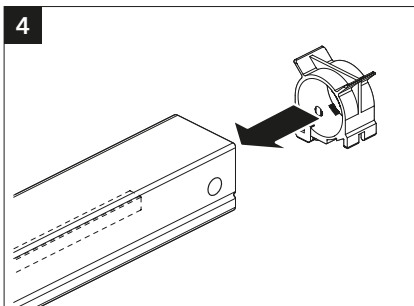
Check that the freewheel is firmly seated. Slide the dampers over the driver until they snap into place on the mounting feet.



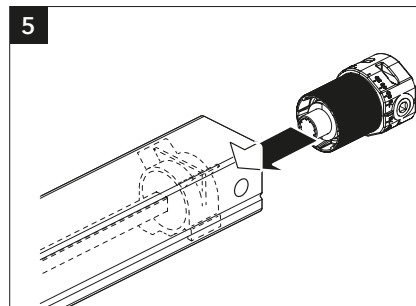
Slide the motor with the dampers into the top rail.



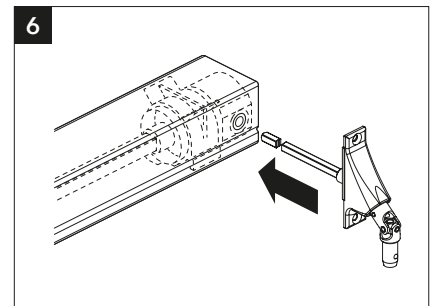
Slide the clamping bracket over the top rails to secure the motor. Insert the turning bars into the coupling pieces.



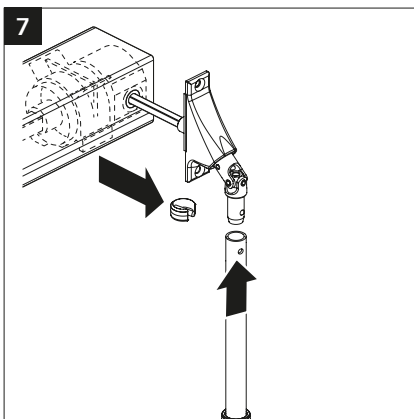
Slide the gear holder into the top rail.



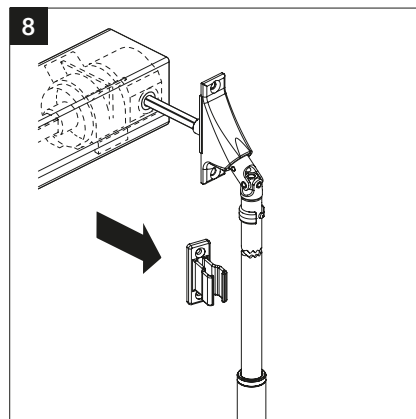
Slide the gearbox into the holder and lock it in place with the screw from below.  
**NOTE: Observe the alignment of the drive mount.**



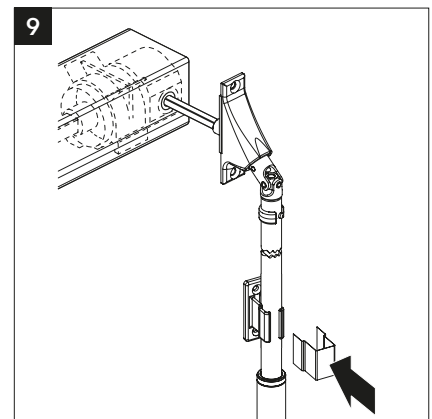
Guide the output rod of the airtight spherical plain bearing through the hole in the gearbox. Screw the spherical bearing to the wall with 2 screws (not included in the scope of delivery) to the wall.



Slide the crank onto the trunnion of the spherical bearing and secure it with the safety clip supplied.



Fix the crank holder to the wall with 2 screws (not included).



Secure the crank with the safety seal by sticking it over the holder.





# ACCESSORIES

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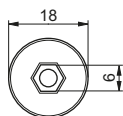
FOR  
VENETIAN BLIND MOTORS

**GEIGER**  
ANTRIEBSTECHNIK

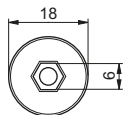
## M56.... | Coupling pieces

### Characteristics

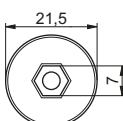
- for adapting the motor output to the reversing rod
- different numbers of set screws are required depending on how the turning bar is mounted



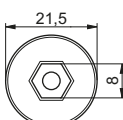
Part no.	Material	Output	Set screws
M56E369	Steel	⊙ 6 mm	4



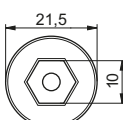
Part no.	Material	Output	Set screws
M56E398	Steel	⊙ 6 mm	2



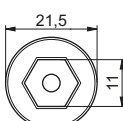
Part no.	Material	Output	Set screws
M56E235	Zinc die cast	⊙ 7 mm	2



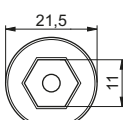
Part no.	Material	Output	Set screws
M56E278	Zinc die cast	⊙ 8 mm	2



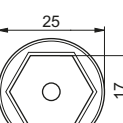
Part no.	Material	Output	Set screws
M56E248	Zinc die cast	⊙ 10 mm	1



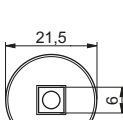
Part no.	Material	Output	Set screws
M56E247	Zinc die cast	⊙ 11 mm	2



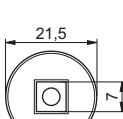
Part no.	Material	Output	Set screws
M56E232	Zinc die cast	⊙ 11 mm	1



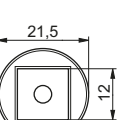
Part no.	Material	Output	Set screws
M56E526	Zinc die cast	⊙ 17 mm	1



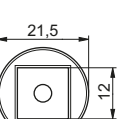
Part no.	Material	Output	Set screws
M56E672	Zinc die cast	⊙ 6 mm	2



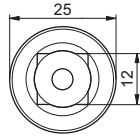
Part no.	Material	Output	Set screws
M56K064	Zinc die cast	⊙ 7 mm	2



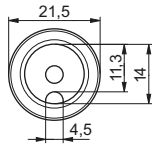
Part no.	Material	Output	Set screws
M56K054	Zinc die cast	⊙ 12 mm	1



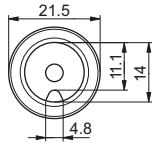
Part no.	Material	Output	Set screws
M56K063	Zinc die cast	⊙ 12 mm	2



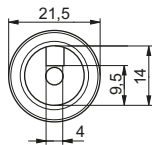
Part no.	Material	Output	Set screws
M56E069	Steel	12 mm	2



Part no.	Material	Output	Set screws
M56K061	Zinc die cast	Flat groove	2



Part no.	Material	Output	Set screws
M56E453	Zinc die cast	Flat groove	2



Part no.	Material	Output	Set screws
M56K119	Zinc die cast	High groove	2

## Housing and mounting options

The GJ56.. motors can be supplied with two or four mounting feet.  
We distinguish between:



### Standard

- 2 mounting feet per motor
- 2 holes per foot (without thread)



### Standard screw fixation

- 2 mounting feet per motor
- 2 threaded holes per foot



### Universal

- 4 mounting feet per motor
- 2 threaded holes per foot



### Mono-Universal

- 2 mounting feet per motor
- 2 threaded holes per foot

## M56F... | Standard fixation kits with clamping bracket

### Characteristics

- for fixation in standard head rails using clamping brackets and damping elements
- the damping elements ensure additional noise optimisation of the external blind system
- please observe the output torque of the drive!
- Further dimensions on request



#### Head rails 51 x 57 mm, centre height 29.0 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F583	20 Nm	29.0 mm	51x57 mm	2

#### Head rails 51 x 57 mm, centre height 29.5 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F580	10 Nm	29.5 mm	51x57 mm	1

#### Head rails 51 x 57 mm, centre height 30.5 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F582	10 Nm	30.5 mm	51x57 mm	1
M56F585	20 Nm	30.5 mm	51x57 mm	2

#### Head rails 56 x 57 mm, centre height 29.0 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F581	10 Nm	29.0 mm	56x57 mm	1
M56F584	20 Nm	29.0 mm	56x57 mm	2

#### Head rails (Schlotterer) 56 x 58 mm, axle height 30.0 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F753	10 Nm	30.0 mm	56x58 mm	1
M56F754	20 Nm	30.0 mm	56x58 mm	2

## M56F... | Standard fixation kits with clamping bridge

### Characteristics

- for fixation in standard head rails using clamping bridge and damping elements
- the damping elements ensure additional noise optimisation of the external blind system
- please observe the output torque of the drive!
- Further dimensions on request



#### Head rails 57 x 51 mm, centre height 29.0 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of bridges
M56F595	10 Nm	29.0 mm	57x51 mm	1
M56F596	20 Nm	29.0 mm	57x51 mm	2



#### Head rails 66 x 65 mm, centre height 34.0 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of bridges
M56F586	10 Nm	34.0 mm	66x65 mm	1
M56F587	20 Nm	34.0 mm	66x65 mm	2

#### Head rails 66 x 78 mm, centre height 32.0 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of bridges
M56F588	10 Nm	32.0 mm	66x78 mm	1
M56F589	20 Nm	32.0 mm	66x78 mm	1

## M56F... | Universal fixation kits with clamping bracket



### Characteristics

- for fixation in standard head rails using clamping brackets and damping elements
- the damping elements ensure additional noise optimisation of the external blind system
- please observe the output torque of the drive!
- Further dimensions on request

### Head rails 56 x 58 mm, centre height 30.0 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F755	10 Nm	30.0 mm	56x58 mm (aluminium)	1
M56F757	20 Nm	30.0 mm	56x58 mm (aluminium)	2

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F756	10 Nm	30.0 mm	56x58 mm (steel)	1
M56F758	20 Nm	30.0 mm	56x58 mm (steel)	2

### HD head rails 51 x 56 mm, centre height 29.5 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F765	10 Nm	29.5 mm	51x56 mm	1
M56F766	20 Nm	29.5 mm	51x56 mm	2

### ROMA head rails 51 x 56 mm, centre height 29.5 mm

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F767	10 Nm	29.5 mm	51x56 mm	1
M56F768	20 Nm	29.5 mm	51x56 mm	2

## M56F... | Monouniversal fixation kits



### Characteristics

- for fixation in standard head rails using clamping brackets and damping elements
- the damping elements ensure additional noise optimisation of the external blind system
- please observe the output torque of the drive!
- Further dimensions on request

### MHZ head rails 55 x 55 mm, centre height 30.0 mm with spring clip

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F769	10 Nm	30.0 mm	55x55 mm	1
M56F770	20 Nm	30.0 mm	55x55 mm	2

### Gradhermetic head rails 60 x 57 mm, centre height 30.0 mm with clamping bracket

Part no.	Max. load	Axle height	Head rail (HxW)	Number of brackets
M56F771	10 Nm	30.0 mm	60x57 mm	1
M56F772	20 Nm	30.0 mm	55x55 mm	2

## M56E... | Plastic clips for screw fixation

### Characteristics

- for adjusting the axle height with screw fixation
- good damping properties



Part no.	Max. load	Axle height
M56E110	20 Nm	30.5 mm



Part no.	Max. load	Axle height
M56E231	20 Nm	35.5 mm

## M56K... | Self-adhesive damping foil for screw fixation

### Characteristics

- for adjusting the axle height with screw fixation
- good damping properties



Part no.	Max. load	Axle height
M56K155	20 Nm	30.0 mm



Part no.	Max. load	Axle height
M56K062	20 Nm	30.5 mm

## M56E143 | Mounting accessories

### Characteristics

- for easy tensioning of the clamping brackets or bridges



Part no.	Description
M56E143	Square-section key

## M56.... | Connecting cables, black, for GJ56.. ME, GJ5606 DuoDrive, GJ56.. E14, GJ5610v1



### Characteristics

- various plug and connection ends available
- suitable for indoor and outdoor use
- UV-resistant
- halogen-free
- Temperature range: -25 °C to 60 °C
- Cable designation: 05RR-F 4G 0.75mm<sup>2</sup>

Part no.	Length [cm]	Cable end A	Cable end B	Note
M56K067	90	GEIGER plug	Open end cable	-
M56E386	200	GEIGER plug	Open end cable	-
M56E219	300	GEIGER plug	Open end cable	-
M56E623	30	GEIGER plug	Hirschmann STAS3 plug	-
M56K066	50	GEIGER plug	Hirschmann STAS3 plug	-
M56K042	90	GEIGER plug	Hirschmann STAS3 plug	-
M56E378	150	GEIGER plug	Hirschmann STAS3 plug	-
M56E399	150	Hirschmann STAK3 cable socket	Open end cable	-
M56E281	200	Hirschmann STAK3 cable socket	Hirschmann STAS3 plug	-
M56E196	50	GEIGER plug	Hirschmann STAS3 plug	with assembly instructions GJ56..
M56E195	90	GEIGER plug	Hirschmann STAS3 plug	with assembly instructions GJ56..

Further cable lengths on request.

## M56E409 | Connecting cables, white, for GJ56.. ME, GJ5606 DuoDrive, GJ56.. E14, GJ5610v1



### Characteristics

- suitable for indoor and outdoor use
- UV-resistant
- not halogen-free
- Temperature range: -25 °C to 60 °C
- Cable designation: 05RN-F 4G 0.75mm<sup>2</sup>

Part no.	Length [cm]	Cable end A	Cable end B
M56E409	300	GEIGER plug	Open end cable

## M56E45. | Connecting cables, grey, for GJ56.. T90



### Characteristics

- various plug and connection ends available
- suitable for indoor and outdoor use
- UV-resistant
- halogen-free
- Temperature range: -40 °C to 90 °C
- Cable designation: UNIPUR 4G 0.75mm<sup>2</sup>

Part no.	Length [cm]	Cable end A	Cable end B
M56E451	50	GEIGER plug	Hirschmann STAS3 plug
M56E450	90	GEIGER plug	Hirschmann STAS3 plug

## M56E... | Connecting cables for GJ56.. AIR



### Characteristics

- suitable for indoor and outdoor use
- UV-resistant
- halogen-free
- Temperature range: -25 °C to 60 °C
- Cable designation: 05RR-F 4G 0.75mm<sup>2</sup>

Part no.	Length [cm]	Cable end A	Cable end B
M56E462	90	GEIGER plug	STAS 3
M56E627	50	GEIGER plug	STAS 3
M56E628	300	GEIGER plug	Open end cable

Further cable lengths on request.

## M56E... | Connecting cables for GJ56.. E17 SMI



### Characteristics

- suitable for indoor and outdoor use
- UV-resistant
- halogen-free
- Temperature range: -25 °C to 60 °C
- Cable designation: 05RR-F 5G 0.75mm<sup>2</sup>

Part no.	Length [cm]	Cable end A	Cable end B
M56E463	90	GEIGER plug	STAS 4
M56E630	50	GEIGER plug	STAS 4
M56E631	300	GEIGER plug	Open end cable

Further cable lengths on request.

## M56E... | Extension for overrun limit switch



### Characteristics

- Extension for limit stop switches for blind drives
- a maximum of 2 extensions of 15 mm height each may be attached

Part no.	Description
M56E288	black, for drives with mechanical cut-off
M56E565	blue, for GJ56.. E14
M56E670	grey, for GJ56.. AIR
M56E679	yellow, for GJ56.. E17 SMI

## M56... | Setting switch



### Characteristics

- for setting motors with electronic limit switching
- various plug and connection ends available

### Note

- a 5-wire setting switch M56F152 or M56F153 is required for SMI motor
- SMI being a standard, any setting switch of the SMI group can be used



Part no.	Description
M56F152	with service terminal (D) / 5-wire / suitable for SMI
M56F153	with service terminal (CH) / 5-wire / suitable for SMI
M56B265	Adaptation cable with service terminal and STAS3
M56E399	Adaptation cable with STAK3 and open cable end, 150 cm
M56E658	Adaptation cable with STAK4 and open cable end, 150 cm
M56B265	Adaptation cable with service terminal and STAS3

## M56K... | Hirschmann 3-pole connections



### Note

- Delivery without cable

Part no.	Description
M56K075	Hirschmann STAK3 cable socket
M56K078	Hirschmann STAS3 plug
M56K079	Hirschmann STAS3 bracket

## M56K... | Hirschmann 4-pole connections



### Note

- STAK4 coupling pieces and STAS4 plugs are required for connection with SMI motors
- Delivery without cable

Part no.	Description
M56K087	Hirschmann STAS4 N V0 plug, grey
M56K179	Hirschmann STAS4 N V0 plug, black
M56K180	Hirschmann STAK4 N V0 coupling, black
M56K088	Hirschmann STAS4 safety bracket (no printing)





# RADIO ACCESSORIES

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FOR UNIDIRECTIONAL  
RADIO SYSTEM

**GEIGER**  
ANTRIEBSTECHNIK

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## CUSTOMER BENEFITS

### Safety

The GEIGER radio system offers the user maximum safety and convenience.

- Even relatively distant receivers can be reliably addressed with its long range.
- Its sophisticated radio protocol, which has been tried and tested over many years, and the high-quality electronic components used, render operating errors virtually impossible.
- Accidental changes to the end positions/motor settings by the end user are prevented by its delimited programming level (programming range/close range).

### Flexibility

Radio offers you the decisive advantage of being able to react to changes in utilisation at any time:

#### Example office building:

The room layouts often change along with the tenants. This has an impact on the control of the sun protection system. GEIGER radio systems permit very quick reaction without having to make any changes to the cabling.

#### Example of a detached house:

Radio systems offer great advantages in the retrofit sector: there is no need for control lines and additional cable runs. Group and centralised control systems can also be implemented if the entire building is not to be rewired.

The GEIGER radio system offers the end user modern operating convenience with minimal structural cuts.

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## TRANSMITTER / RECEIVER / CHANNELS

- **Transmitters** are sensors as well as handheld transmitters. GEIGER radio transmitters always operate in a frequency band around 433 MHz. GEIGER handheld transmitters have up to 50 channels. Each channel can address one or more (e.g., several hundred) receivers.
- **Receivers** are both external radio controls (e.g., for external blind motors) and integrated radio receivers (e.g., in awning and rolling shutter motors). The receiver receives the control commands from the transmitter and then executes the corresponding drive and switching commands.
- Each receiver can be programmed with up to 3 different (handheld) transmitters and an additional 2 sensors can be taught-in.

### Details of the GEIGER radio accessories

The radio accessories listed below can be used for all GEIGER motor series:

- Tubular motor series: SOLIDline (GU45..)

## GFB00. | 1-channel handheld transmitter



### Characteristics

- Selecting a channel
- Stop button to stop the hanging
- Any number of receivers can be assigned to this channel
- incl. battery

### Technical data:

Transmission frequency	433.92 MHz
Transmission power	6 dBm
Temperature range	-0 °C to +60 °C
Power supply	2x Micro 1.5 V, type AAA
Dimensions	95 x 42 x 20 mm

Part no.	Colour	Number of channels
GFB001	<input type="checkbox"/> white	1
GFB002	<input checked="" type="checkbox"/> black	1

## GFB00. | Holder for 1-channel handheld transmitter GFB00.



Part no.	Colour
GFB003	<input type="checkbox"/> white
GFB004	<input checked="" type="checkbox"/> black

## GFB0.. | Comfort 15-channel hand-held transmitter with timer GFB0..



### Characteristics

- These 15 channels can have any number of receivers assigned
- Large buttons for simple navigation and intuitive operation
- Multifunction buttons for performing the displayed functions
- incl. battery
- Total Control: Synchronous control of channels 1 to 6

### Technical data

Display size	2", 240 x 320 px
Transmission frequency	433.92 MHz
Transmission power	6 dBm
Temperature range	-0 °C to +60 °C
Power supply	2x Mignon 1.5 V, type AA
Dimensions	167 x 50 x 30 mm

Part no.	Colour	Number of channels	Timer	Total Control
GFB011	<input type="checkbox"/> white	15	yes	-
GFB012	<input checked="" type="checkbox"/> black	15	yes	-
GFB021	<input type="checkbox"/> white	15	yes	yes
GFB022	<input checked="" type="checkbox"/> black	15	yes	yes

## GFB0.. | Holder for 15-channel handheld transmitter GFB00.



Part no.	Colour
GFB013	<input type="checkbox"/> white
GFB014	<input checked="" type="checkbox"/> black

## GRE001 | External radio receivers with Hirschmann connection on both sides



### Characteristics

- Comfortable installation between the Hirschmann plugs (STAK3/STAS3)
- Suitable for mobile mounting
- Available modes for controlling Venetian blinds and rolling shutters

### Technical data

Supply voltage	230 V (+/-10%) / 50 Hz
Frequency	433.92 MHz
Temperature range	-0 °C to +60 °C
Protection class	IP 54
Dimensions	135 x 35 x 35 mm

Part no.	Colour
GRE001	■ black

## GRE002 | External flush-mounted radio receiver



### Characteristics

- Suitable for installation in a commercial concealed socket
- Additional option of connecting an control switch
- Available modes for controlling rolling shutters and Venetian blinds

### Technical data

Supply voltage	230 V (+/-10%) / 50 Hz
Frequency	433.92 MHz
Temperature range	-0 °C to +60 °C
Protection class	IP 54
Dimensions	135 x 35 x 35 mm

Part no.	Colour
GRE002	■ black

## GRE40. | Vibration sensor



### Characteristics

- Unobtrusive mounting in the awning's front profile
- Installation without screws thanks to high-quality adhesive strips
- Sensitivity adjustment in 10 levels
- Simple commissioning by pairing
- incl. battery

### Technical data

Transmission frequency	433.92 MHz
Transmission power	6 dBm
Protection class	IP 54
Temperature range	-0 °C to +60 °C
Power supply	2x Micro 1.5 V, type AAA
Dimensions (L x W x H)	150 x 35 x 25 mm (incl. 5 mm base plate)

Part no.	Colour
GRE400	■ black
GRE401	□ white





# GENERAL INFORMATION



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## GENERAL TERMS AND CONDITIONS



Find our terms and conditions of purchase and sale on the Internet at [www.geiger.de](http://www.geiger.de)

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## AMBIENT TEMPERATURE RANGE



### Venetian blind drives, series GJ56.. Tubular drives, SOLIDline series

GEIGER drives are designed for use in external and internal applications such as Venetian blinds, rolling shutters and awnings.

The service life is tested for a temperature range that is well above the standard of the product norm to ensure the suitability of GEIGER drives for these applications.

GEIGER drives are suitable for an ambient temperature range of -20 °C to +60 °C, and up to +80 °C for short periods. Short-term refers to temperature peaks on individual days of the year during extreme weather conditions.

Please note that the permitted runtime of the drives is reduced at high temperatures.

Low temperatures can lead to delayed start-up of the drives due to the increasing viscosity of the lubricants. Both effects are physically caused, do not lead to permanent damage to the drive and do not represent a product defect.

**Please observe the note for GEIGER drives with electronic limit switches and the note on the ambient temperature range for connecting cables.**

## RUNTIME OPTIMISATION, INCREASED AMBIENT TEMPERATURE

### Venetian blind drives, type GJ5606, GJ5616 (runtime optimised)

### Venetian blind drives, type GJ5606t, GJ5616t (T90)

The Venetian blind drives, type GJ5606, GJ5616 are designed for low self-heating and achieve the operating mode S2/6min. These drives are suitable for applications with high running time requirements, e.g., with high hangings, in contrast to the standard drives with operating mode S2/4min.

These two drives are available in the "T90" version with the type designation GJ5606t and GJ5616t for applications with an increased ambient temperature. These can be operated up to 90 °C for short periods of time.

**Please observe the information on the ambient temperature range for connecting cables.**

### Note: GEIGER drives with electronic limit switches

Compared to drives with mechanical limit switches, electronic limit switches offer numerous options for customising the functionality to the respective application. Functions such as "freeze protection" and "obstacle detection" can prevent damage to the blinds.

Both the blind and the drive can become sluggish at low temperatures. This is due to the increasing viscosity of the lubricant on the drive. As a result, the "freeze protection" or "obstacle detection" may respond even though no freezing is detected or no obstacle is present. The drive then does not start or it stops. This does not damage the drive. The drive runs again with full functionality as soon as the temperature rises.

This behaviour does not constitute a product defect. If necessary, the product documentation for the application should be provided with appropriate information and the building control system adapted accordingly.

### Note: Ambient temperature range of connecting cables

The following ambient temperature ranges are permissible for GEIGER connecting cables depending on the type of cable used:

- Cable designation 05RR-F and 05RN-F: -25 °C to +60 °C
- Cable designation 05VV-F: -5 °C to 60 °C
- Cable designation Unipur: -40 °C to 90 °C



# MECHANICAL DRIVES

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**+**  
**VENETIAN BLINDS  
& EXTERNAL BLINDS**

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**MECHANICAL  
DRIVE SOLUTIONS**

**GEIGER**  
**ANTRIEBSTECHNIK**

## External drives series 434F6..

The crank gearbox for demanding customers

The advantages of external blinds in technical sun protection have become established worldwide. GEIGER has developed the 434F6.. gearbox series to meet the increased requirements in this area.



### High degree of operating convenience

- Optimised gearing and state-of-the-art materials contribute to reduce significantly the operating force. The 434F6.. gearbox is much easier to operate than the conventional gears used up to now. Crank operation requires up to 30% less effort.



### High strength and durability

- Both the **gearing of the drive** and the **brake** are designed for resilience and a long service life. We guarantee this with a manufacturer's declaration for 10,000 cycles in accordance with the DIN EN 14203 standard.
- A **new braking system** ensures that the external blinds are reliably held in position in the event of high wind loads or continuous moderate wind loads and slight jolting movements.



### Broad product range

- GEIGER offers the right input and output profiles for all products - some of which were installed decades ago. We have fastening systems for all external blind top boxes used worldwide.
- You only need one supplier in the field of drive technology thanks to GEIGER's broad product range.

#### Colour specifications and print presentation

The colours specified and shown in the catalogue are only reference values. RAL colours may deviate from the RAL specifications depending on the surface or base material. The colour fields shown in the tables may be displayed differently due to printing-related deviations.

#### Drawings and dimensions

The technical drawings shown in this catalogue refer to a product from a series. Dimensions from the drawings cannot be used for all items in some cases.

If required, please request exact dimensional drawings for the selected item.

#### Technical changes and errors excepted

## Drive overview

			Top box	Gear reduction	Efficiency	Max. output torque	
	427F6..   Chain gear 3:1	P. 196	25 mm	3:1	0.81	0.40 Nm	
	429F..   Bevel gearbox 1:1	P. 199	25 mm	1:1	0.67	0.75 Nm	
	427F..   Cord drive 2.6:1	P. 197	40 mm > 50 mm	2.6:1	0.64	1.20 Nm	
	427F2..   Cord drive 3.25:1	P. 197	40 mm	3.25:1	0.64	1.60 Nm	
	431F5..   Bevel gearbox 1.2:1	P. 200	40 mm	1.2:1	0.72	2.00 Nm	
	431F1..   Bevel gearbox 1.2:1	P. 200	40 mm	1.2:1	0.55	2.00 Nm	
	434F3..   Bevel gearbox 2:1	P. 202	> 50 mm	2:1	0.57	3.00 Nm	
	434F39.   Driver inserts for bevel gearboxes 433F../434F.. P. 202/203		> 50 mm	2:1	0.72	5.00 Nm	
	434F6..   Bevel gearbox 2:1 with mounted extension P. 203		> 50 mm	2:1	0.72	5.00 Nm	
	433F..   Bevel gearbox 3:1	P. 201	> 50 mm	3:1	0.76	9.00 Nm	
	430F5..   Angle gear	P. 207	-	1:1 1.5:1 1:1.5	0.83	6.00 Nm	

Venetian blinds and external blinds

Rolling shutter

Textile sun protection

System components

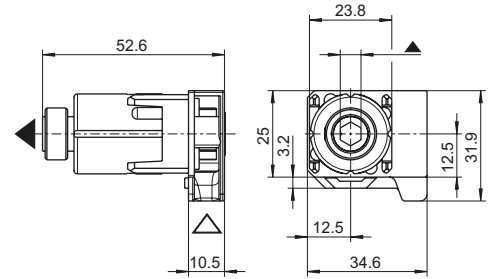
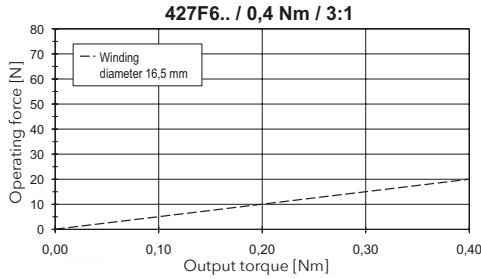
# 427F6.. | Chain gear 3:1

Application: Venetian blinds, plissé blinds with 25 mm top box

Max. output torque	<b>0.4 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.81</b>

### Characteristics

- The entire glass dimension can be utilised for window shading by deflecting the bead chain on the room side
- For chains with 4.5 mm bead diameter and 6 mm spacing
- Left and right gearbox version



Part no.	Colour	Output ▼	Installation side	Fixation
427F600	<input type="checkbox"/> RAL 9016	⊙ 6 mm	right	without cord guide
427F601	<input type="checkbox"/> RAL 9016	⊙ 6 mm	left	without cord guide
427F606	<input type="checkbox"/> RAL 9016	⊙ 5 mm	right	without cord guide
427F607	<input type="checkbox"/> RAL 9016	⊙ 5 mm	left	without cord guide
427F615	<input checked="" type="checkbox"/> RAL 7001	⊙ 6 mm	left	without cord guide
427F616	<input checked="" type="checkbox"/> RAL 9005	⊙ 6 mm	left	without cord guide
427F617	<input checked="" type="checkbox"/> RAL 9005	⊙ 6 mm	right	without cord guide
427F618	<input checked="" type="checkbox"/> RAL 7001	⊙ 6 mm	right	without cord guide
427F660	<input type="checkbox"/> RAL 9016	⊙ 6 mm	right	cord guide
427F661	<input type="checkbox"/> RAL 9016	⊙ 6 mm	left	cord guide
427F662	<input checked="" type="checkbox"/> RAL 7001	⊙ 6 mm	right	cord guide
427F663	<input checked="" type="checkbox"/> RAL 7001	⊙ 6 mm	left	cord guide
427F664	<input checked="" type="checkbox"/> RAL 9005	⊙ 6 mm	right	cord guide
427F665	<input checked="" type="checkbox"/> RAL 9005	⊙ 6 mm	left	cord guide
427F666	<input type="checkbox"/> RAL 9016	⊙ 5 mm	right	cord guide
427F667	<input type="checkbox"/> RAL 9016	⊙ 5 mm	left	cord guide

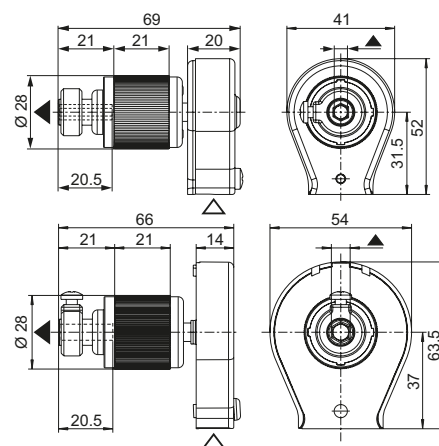
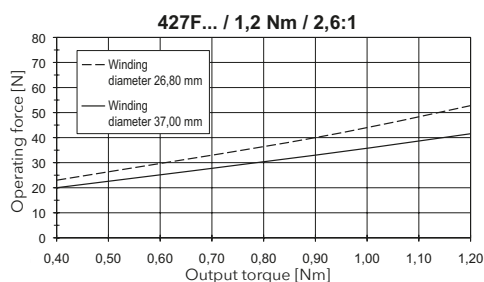
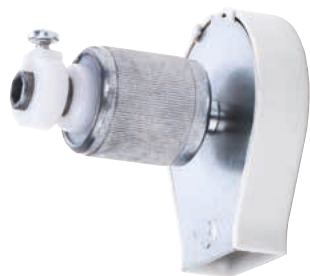
## 427F... | Cord drive 2.6:1

Application: Venetian blinds with 40 mm top box

Max. output torque	<b>1.2 Nm</b>
Gear reduction	<b>2.6:1</b>
Efficiency	<b>0.64</b>

### Characteristics

- Tried and tested and reliable
- Two cord wheel diameters available (see drawing)
- For cords with a diameter of 4.5 mm
- One gearbox version for left or right-hand installation
- See 427F... for matching gearbox holders for various top box dimensions. Gearbox holder



Part no.	Colour	Drive $\Delta$	Output $\nabla$	Comment
427F105	RAL 7035	small cord wheel	5 mm	Plastic fixation ring
427F106	RAL 7035	small cord wheel	6 mm	Plastic fixation ring
427F107	RAL 7035	small cord wheel	7 mm	Plastic fixation ring
427F108	RAL 7035	Large cord wheel	6 mm	Plastic fixation ring
427F109	RAL 7035	Large cord wheel	7 mm	Plastic fixation ring
427F118	RAL 7035	Large cord wheel	5 mm	Plastic fixation ring

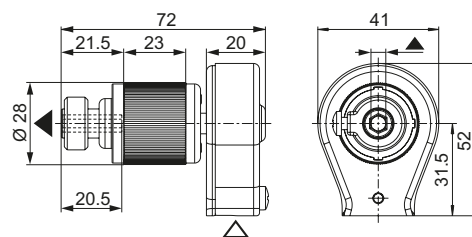
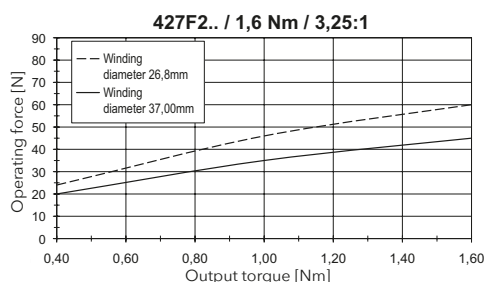
## 427F2.. | Cord drive 3.25:1

Application: Venetian blinds with 40 mm top box

Max. output torque	<b>1.6 Nm</b>
Gear reduction	<b>3.25:1</b>
Efficiency	<b>0.64</b>

### Characteristics

- Easier operation due to larger gear reduction
- For cords with a diameter of 4.5 mm
- One gearbox version for left or right-hand installation
- See 427F... for matching gearbox holders for various top box dimensions. Gearbox holder

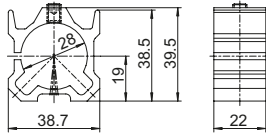


Part no.	Colour	Drive $\Delta$	Output $\nabla$	Comment
427F209	RAL 7035	small cord wheel	5 mm	Plastic fixation ring
427F206	RAL 7035	small cord wheel	6 mm	Plastic fixation ring
427F207	RAL 7035	small cord wheel	7 mm	Plastic fixation ring
427F208	RAL 7035	small cord wheel	6 mm	Steel set collar

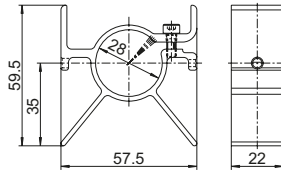
## 427F... | Gearbox holder

### Characteristics

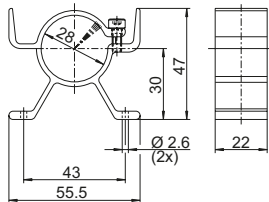
- For 427F cord gearbox...
- For chain gearbox 427F...
- For bevel gearbox 431F1..
- Made of extruded aluminium profile or high-strength plastic



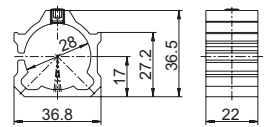
Part no.	Material	Outer dimension	Axle height
427F150	Aluminium	38.7 X 38.5 mm	19 mm



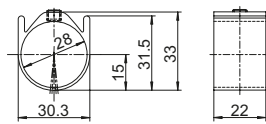
Part no.	Material	Outer dimension	Axle height
427F152	Aluminium	57.5 X 59.5 mm	35 mm



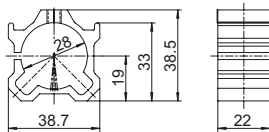
Part no.	Material	Outer dimension	Axle height
427F157	Aluminium	55.5 X 47 mm	30 mm



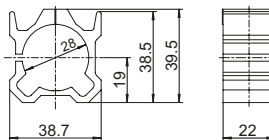
Part no.	Material	Outer dimension	Axle height
427F159	Aluminium	36.8 X 27.2 mm	17 mm



Part no.	Material	Outer dimension	Axle height
427F160	Aluminium	30.3 X 35.5 mm	15 mm



Part no.	Material	Outer dimension	Axle height
427F180	Plastic	38.7 X 33 mm	19 mm



Part no.	Material	Outer dimension	Axle height
427F181	Plastic	38.7 X 38.5 mm	19 mm

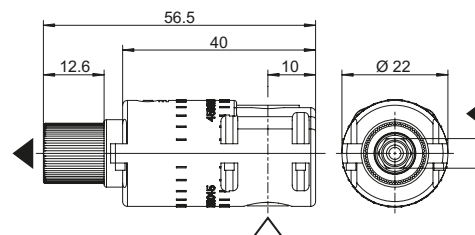
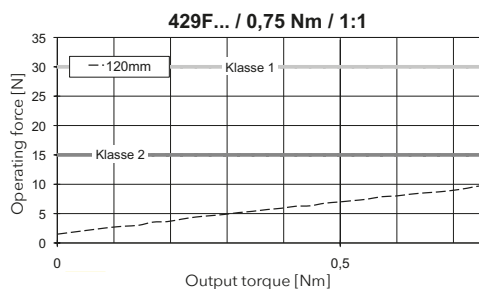
## 429F... | Bevel gearbox 1:1

Application: **Venetian blinds with 25 mm top box**

Max. output torque	<b>0.75 Nm</b>
Gear reduction	<b>1:1</b>
Efficiency	<b>0.67</b>

### Characteristics

- Zinc die-cast housing
- Push-through inner profile on the drive, therefore only one gearbox version for the same direction of rotation for left-hand or right-hand installation
- Alternatively also with mounted universal joint
- Without end stop (AB)
- Matching gear holder 429F100

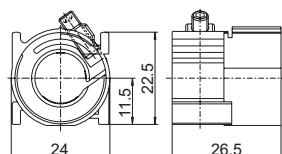


Part no.	Drive $\Delta$	Output $\nabla$	Installation side
429F027	6 mm	5 mm	-
429F028	6 mm	6 mm	-
429F030	6 mm	5 mm	-
429F031	6.8 mm	5 mm	left
429F033	9.9 mm	6 mm	right
429F034	9.9 mm	6 mm	left
429F037	6.8 mm	6 mm	right
429F045	6.8 mm	5 mm	left
429F051	9.9 mm	5 mm	right

## 429F1.. | Gearbox holder

### Characteristics

- Made from high-strength plastic



Part no.	Material	Outer dimension	Axle height
429F100	Plastic	24.0 X 22.5 mm	11.5 mm

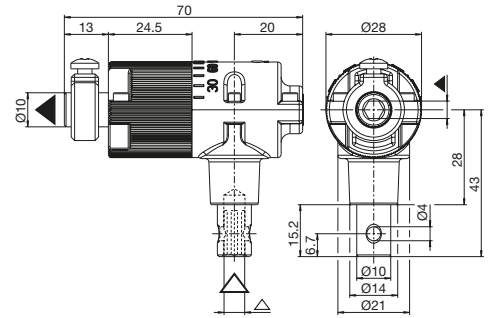
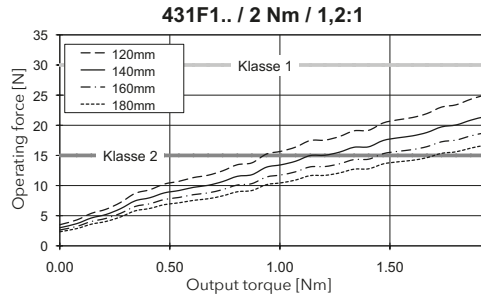
## 431F1.. | Bevel gearbox 1.2:1

Application: Venetian blinds with 40 mm top box

Max. output torque	<b>2.0 Nm</b>
Gear reduction	<b>1.2:1</b>
Efficiency	<b>0.55</b>

### Characteristics

- Zinc die-cast housing
- Continuous inner profile on the output drive, therefore centre installation also possible
- Left-hand and right-hand gearbox version, for the same direction of rotation with left-hand or right-hand installation
- Alternatively also with mounted universal joint
- Without end stop (AB)
- See 427F... for matching gearbox holders for various top box dimensions. Gearbox holder



Part no.	Drive $\Delta$	Output $\nabla$	Installation side
431F100	○ 6 mm	○ 5 mm	right
431F101	○ 6 mm	○ 6 mm	right
431F103	⊗ 6 mm	○ 6 mm	right
431F106	○ 6 mm	○ 6 mm	left

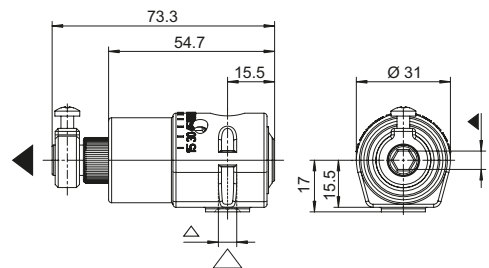
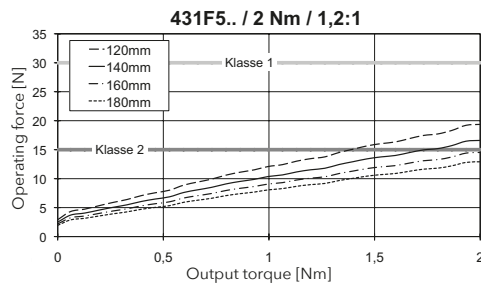
## 431F5.. | Bevel gearbox 1.2:1

Application: Venetian blinds with 40 mm top box

Max. output torque	<b>2.0 Nm</b>
Gear reduction	<b>1.2:1</b>
Efficiency	<b>0.72</b>

### Characteristics

- Housing of high-strength plastic
- Continuous inner profile on the output drive, therefore centre installation also possible
- Push-through inner profile on the drive, therefore only one gearbox version for the same direction of rotation for left-hand or right-hand installation
- Alternatively also with mounted universal joint
- Without end stop (AB)
- See 431F... for matching gearbox holders for various top box dimensions. Gearbox holder

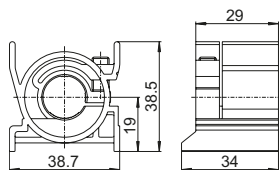


Part no.	Drive $\Delta$	Output $\nabla$	Installation side
431F550	○ 6 mm	○ 6 mm	left/right
431F555	⊗ 9.9 mm	○ 6 mm, not continuous	left
431F557	⊗ 9.9 mm	○ 6 mm, not continuous	right
431F559	○ 6 mm	○ 6 mm	left/right

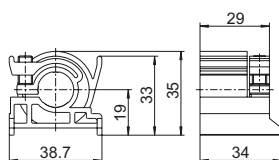
## 431F... | Gearbox holder

### Characteristics

- Made from high-strength plastic



Part no.	Outer dimension	Axle height
431F507	38.7 X 38.5 mm	19 mm



Part no.	Outer dimension	Axle height
431F508	38.7 X 33 mm	19 mm

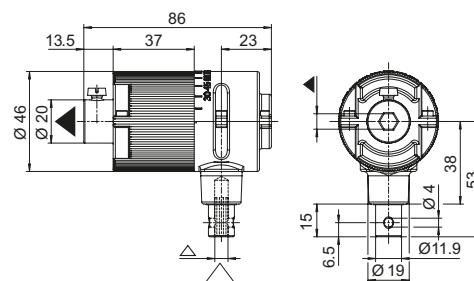
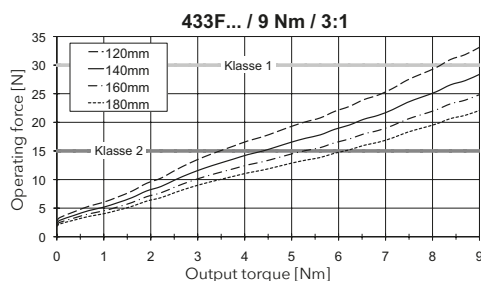
## 433F... | Bevel gearbox 3:1

Application: Venetian blinds and external blinds with 50 mm top box

Max. output torque	<b>9.0 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.76</b>

### Characteristics

- Our most powerful gearbox in the Venetian blind sector
- Zinc die-cast housing
- Continuous inner profile on the output drive, therefore centre installation also possible
- Left-hand and right-hand gearbox version, for the same direction of rotation with left-hand or right-hand installation
- See 432F... for matching gearbox holders for various top box dimensions. Gearbox holder
- Without end stop (AB)



Part no.	Drive $\Delta$	Output $\nabla$	Version
433F001	6 mm, trunnion $\varnothing$ 11.9 mm	7 mm	right
433F002	6 mm, trunnion $\varnothing$ 11.9 mm	7 mm	left
433F003	6 mm, trunnion $\varnothing$ 11.9 mm	14 mm	right
433F004	6 mm, trunnion $\varnothing$ 11.9 mm	14 mm	left
433F011	6 mm, trunnion $\varnothing$ 11.9 mm	6 mm	right
433F012	6 mm, trunnion $\varnothing$ 11.9 mm	6 mm	left
433F025	6 mm, trunnion $\varnothing$ 11.9 mm	12 mm	right
433F026	6 mm, trunnion $\varnothing$ 11.9 mm	12 mm	left

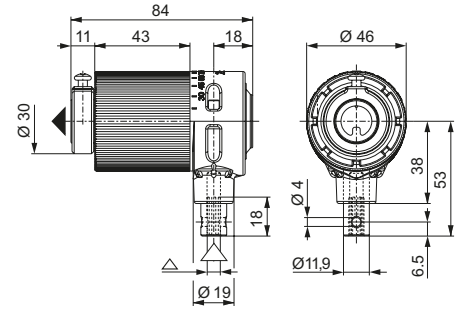
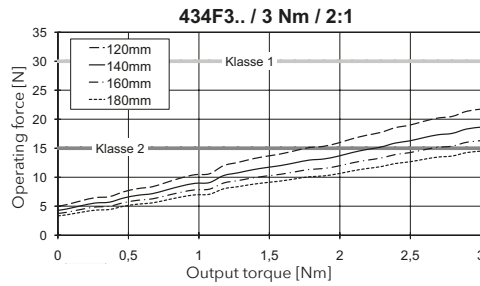
## 434F3.. | Bevel gearbox 2:1

Application: Venetian blinds and external blinds with 50 mm top box

Max. output torque	<b>3.0 Nm</b>
Gear reduction	<b>2:1</b>
Efficiency	<b>0.57</b>

### Characteristics

- Housing of high-strength plastic
- Continuous inner profile on the output drive, therefore centre installation also possible
- Left-hand and right-hand gearbox version, for the same direction of rotation with left-hand or right-hand installation
- Without end stop (AB)
- See 432F... for matching gearbox holders for various top box dimensions. Gearbox holder

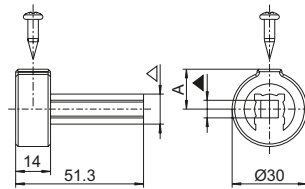


Part no.	Drive $\Delta$	Output $\nabla$	Version
434F314	○ 6 mm, trunnion Ø 11.9 mm	● 14 mm	left
434F315	○ 6 mm, trunnion Ø 11.9 mm	● 14 mm	right
434F360	○ 6 mm, trunnion Ø 11.9 mm	○ 12 mm	right
434F361	○ 6 mm, trunnion Ø 11.9 mm	○ 12 mm	left
434F364	○ 6 mm, trunnion Ø 11.9 mm	○ 7 mm	right
434F366	○ 6 mm, trunnion Ø 11.9 mm	○ 7 mm	left
434F369	○ 6 mm, trunnion Ø 11.9 mm	○ 7 mm	left
434F370	○ 6 mm, trunnion Ø 11.9 mm	○ 7 mm	right

## 434F39. | Driver inserts for bevel gearboxes 433F.../434F...

### Characteristics

- Made from high-strength plastic



Part no.	Drive $\Delta$	Output $\nabla$	[A]
434F390	○ 12 mm	○ 6 mm	16 mm
434F391	○ 12 mm	○ 7 mm	16 mm
434F392	○ 12 mm	○ 7 mm	16 mm
434F393	○ 12 mm	○ 10 mm	18 mm
434F394	○ 12 mm	○ 8 mm	18 mm

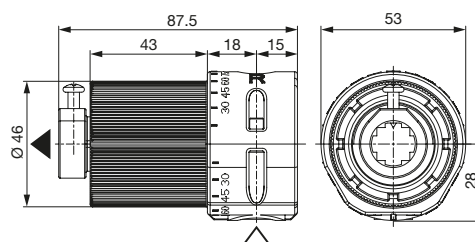
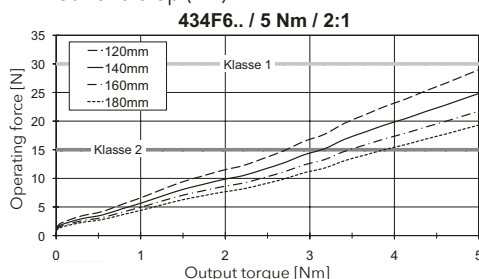
## 434F6.. | Bevel gearbox 2:1

Application: **Venetian blinds and external blinds with 50 mm top box**

Max. output torque	<b>5.0 Nm</b>
Gear reduction	<b>2:1</b>
Efficiency	<b>0.72</b>

### Characteristics

- Housing of high-strength plastic
- Continuous inner profile on the output drive, therefore centre installation also possible
- Push-through inner profile on the drive, therefore only one gearbox version for the same direction of rotation for left-hand or right-hand installation
- See 432F... for matching gearbox holders for various top box dimensions. Gearbox holder
- Without end stop (AB)



Part no.	Drive $\Delta$	Output $\nabla$
434F615	6 mm push-through	6 mm
434F625	6 mm push-through	12 mm
434F620	6 mm push-through	14 mm
434F606	6 mm push-through	12 mm
434F608	6 mm push-through	7 mm
434F607	6 mm push-through	14 mm
434F604	8 mm push-through	14 mm

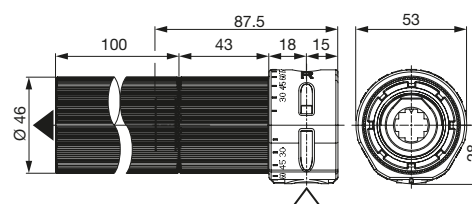
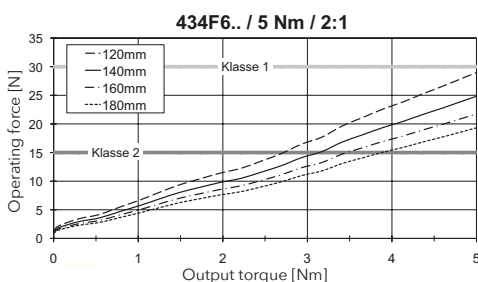
## 434F6.. | Bevel gearbox 2:1 with mounted extension

Application: **Venetian blinds and external blinds with 50 mm top box**

Max. output torque	<b>5.0 Nm</b>
Gear reduction	<b>2:1</b>
Efficiency	<b>0.72</b>

### Characteristics

- Housing of high-strength plastic
- Continuous inner profile on the output drive, therefore centre installation also possible
- Push-through inner profile on the drive, therefore only one gearbox version for the same direction of rotation for left-hand or right-hand installation
- See 432F... for matching gearbox holders for various top box dimensions. Gearbox holder
- Without end stop (AB)

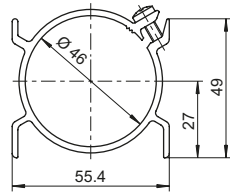


Part no.	Drive $\Delta$	Output $\nabla$
434F616	8 mm push-through	14 mm
434F630	6 mm push-through	14 mm

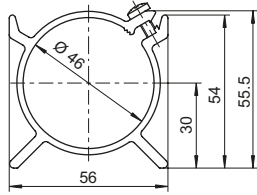
## 432F... | Gearbox holder

### Characteristics

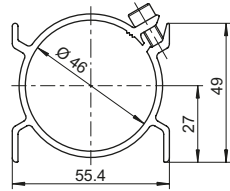
- Made from extruded aluminium or high-strength plastic
- Screws are supplied loose with 432F120 and 432F121



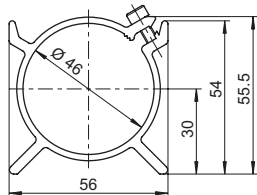
Part no.	Material	Outer dimension	Axle height
432F110	Aluminium	55.4 X 49 mm	27 mm



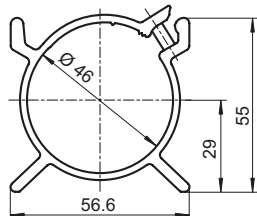
Part no.	Material	Outer dimension	Axle height
432F114	Aluminium	56 X 54 mm	30 mm



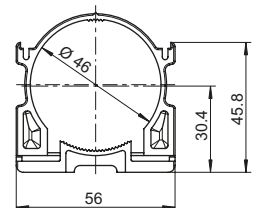
Part no.	Material	Outer dimension	Axle height
432F115	Aluminium	55.4 X 49 mm	27 mm



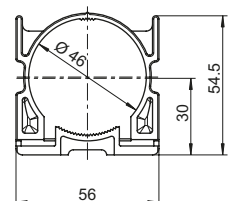
Part no.	Material	Outer dimension	Axle height
432F116	Aluminium	56 X 54 mm	30 mm



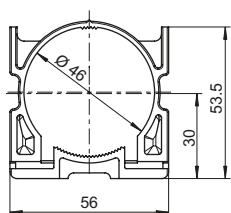
Part no.	Material	Outer dimension	Axle height
432F118	Aluminium	56.6 X 55 mm	29 mm



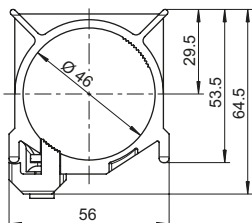
Part no.	Material	Outer dimension	Axle height
432F120	Plastic	56 X 45.8 mm	30.4 mm



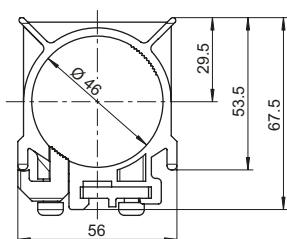
Part no.	Material	Outer dimension	Axle height
432F121	Plastic	56 X 54.5 mm	30 mm



Part no.	Material	Outer dimension	Axle height
432F124	Plastic	56 X 53.5 mm	30 mm



Part no.	Material	Outer dimension	Axle height
432F130	Plastic	56 X 53.5 mm	29.5 mm

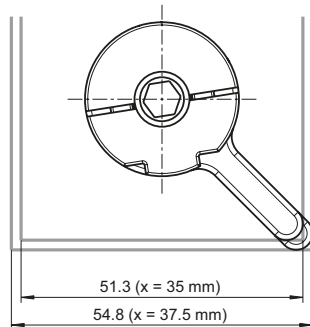


Part no.	Material	Outer dimension	Axle height
432F132	Plastic	56 X 53.5 mm	29.5 mm

with cord guide

## 712F... | Aluminium spindle locks

Application: Venetian blinds and external blinds with 30 mm/55 mm top box

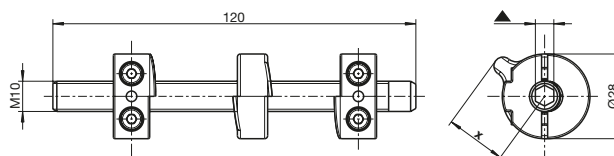


### Characteristics

- Limits the up and down movement of the Venetian blind, thereby preventing damage in the event of improper operation
- Drive by reversing rod, see table for profiles (other profiles on request)
- Two variably adjustable end stops
- Max. stop torque 5.0 Nm with a tightening torque of 3.0 Nm for the stop screws
- Maximum 50 revolutions from stop to stop
- Spindle made of aluminium, stops and running nut made of die-cast zinc
- Stainless steel

### Note

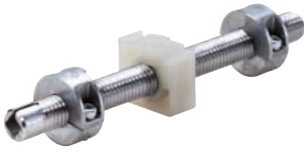
- Recommended for gearboxes 431F1.. and 431F5..
- Only suitable for manual operation
- Use with third-party products and electric drives must be checked by the customer



Part no.	Interior profile ▲	Driving nut [x]
712F635	○ 6 mm	Tab holder 35 mm
712F735	○ 7 mm	Tab holder 35 mm
712F637	○ 6 mm	Tab holder 37.5 mm

## 712F65. | Spindle stops

Application: Venetian blinds with 25 mm top box (e.g.: 25 x 25 mm)

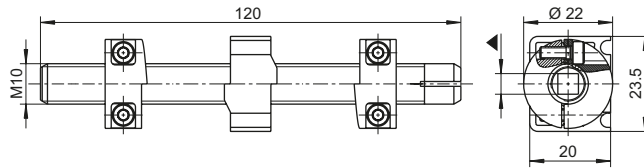


### Characteristics

- Limits the up and down movement of the Venetian blind, thereby preventing damage in the event of improper operation
- Drive by reversing rod, see table for profiles (other profiles on request)
- Two variably adjustable end stops
- Max. stop torque 2.5 Nm with a tightening torque of 1.5 Nm for the stop screws
- Max. 50 revolutions from stop to stop
- Spindle made of aluminium, stops made of die-cast zinc, barrel nut made of plastic
- Stainless steel

### Note

- Recommended for gearboxes 429F0..
- Only suitable for manual operation
- Use with third-party products and electric drives must be checked by the customer



Part no.	Interior profile ▲	Driving nut
712F651	○ 5 mm	23.5 X 20 mm
712F652	○ 5 mm	23.5 X 20 mm
712F653	○ 6 mm	23.5 X 20 mm

## 712F2.. | Plastic spindle stop

Application: Venetian blinds and external blinds with 50 mm top box (e.g.: 57 x 51 mm, 58 x 56 mm)

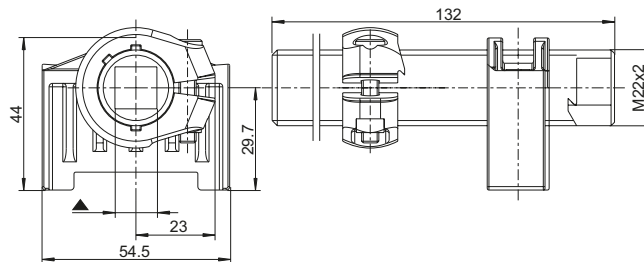


### Characteristics

- Drive by reversing rod, see table for profiles (other profiles on request)
- Limits the up and down movement of the Venetian blind, thereby preventing damage in the event of improper operation
- A variably adjustable end stop
- Max. stop torque 16.0 Nm (tested in accordance with DIN 14203 7/c) with a tightening torque of 4.5 Nm for the stop screws
- Maximum 42 revolutions from stop to stop
- Spindle, fixed stop, and stop ring made of high-strength plastic
- Stainless steel

### Note

- Recommended for gearboxes 434F3.. and 434F6..
- Only suitable for manual operation
- Use with third-party products and electric drives must be checked by the customer



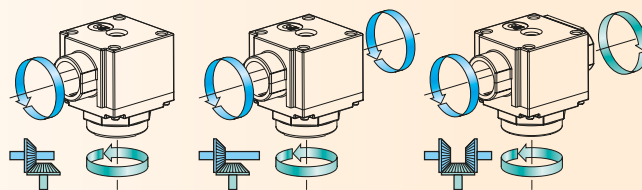
Part no.	Interior profile ▲	Driving nut
712F200	○ 12 mm	54.5 x 29.7 mm
712F201	○ 14 mm	54.5 x 29.7 mm
712F203	○ 8 mm	54.5 x 29.7 mm
712F210	○ 7 mm	54.5 x 29.7 mm

## Angle gear 430F5..

Universal angle gear for a wide range of applications.

The compact gearbox is available with two or three drives and outputs. Any internal profile can be used as an input or output drive. The die-cast zinc housing is stainless. The durable steel gear wheels are mounted in plastic bushes as standard. A attachment plate with 2 holes (pitch circle  $\varnothing$  51.5 mm) is optionally available.

Made of high-quality materials, very robust and wear-free, they offer the usual GEIGER quality with the greatest possible ease of use.



Angle gear with one drive and one output.

A continuous drive rod makes it possible to drive two Venetian blinds with the same direction of rotation, for example.

Angle gear with one drive and two outputs or two drives and one output.

## 430F5.. | Angle gear

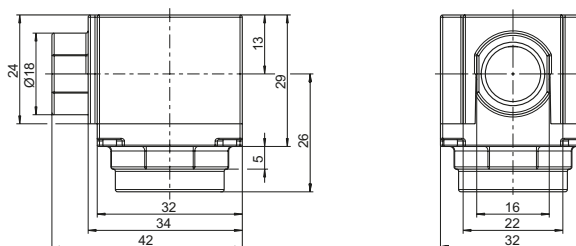
Max. output torque	<b>6 Nm</b>
Transmission	<b>1:1 1.5:1 1:1.5</b>
Efficiency	<b>0.83</b>

### Characteristics

- Housing made of die-cast zinc, toothing made of steel
- Bearing points are filled with plastic
- With one drive and one output

### Note

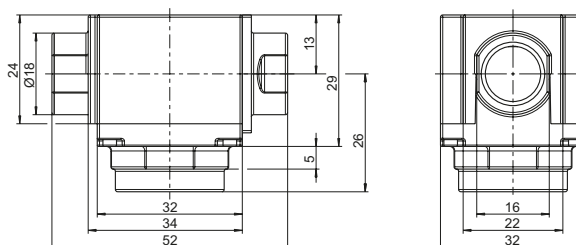
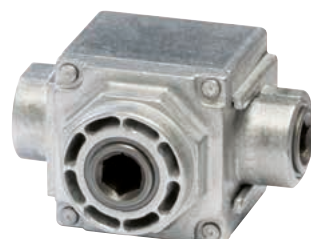
- Other drive/output combinations on request
- Also available as angle gear for emergency operation (max. 10 Nm)



Part no.	Drive/output profile	Transmission	Drive/output(s)
430F550	○ 7 mm	1 : 1	2
430F551	○ 7 mm	1.5 : 1	2
430F552	○ 7 mm	1 : 1.5	2

### Characteristics

- As before, but with one drive and two outputs or two drives and one output

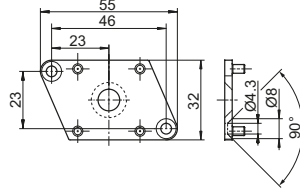
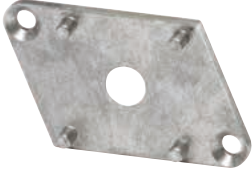


Part no.	Drive/output profile	Transmission	Drive/output(s)
430F553	○ 7 mm	1 : 1	3
430F554	○ 7 mm	1.5 : 1	3
430F555	○ 7 mm	1 : 1.5	3

## 430F503 | Attachment plate

### Characteristics

- Incl. countersunk screw (M6 x 16 mm, galvanised, with screw lock) for fixation to the gearbox
- For horizontal and vertical mounting
- Suitable for 430F5.. angle gears



Part no.	
430F503	



# ROLLER SHUTTERS

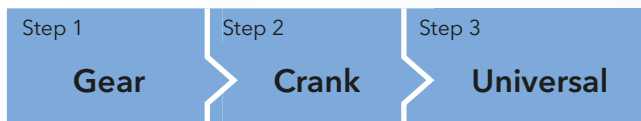
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MECHANICAL  
DRIVE SOLUTIONS

**GEIGER**  
ANTRIEBSTECHNIK

## Dimensioning of rolling shutter drives

In the following, we would like to provide you with help for the correct design of a rolling shutter drive. Several components must be considered:



- **Rolling shutter gearbox**  
What maximum output torque and reduction ratio must or should be used?
- **Crank handles/rods**  
Determine the suitable crank working radius for an easy operation according to standard?
- **Spherical bearing**  
What spherical bearing is suitable for the loads that occur?

### Our service for the rolling shutter manufacturer - the right drive for the rolling shutter.

#### Our service:

We can "measure" rolling shutters for you. Our measurements are to record the "load profile" of the rolling shutter during an on-site inspection. Based on this, we can choose the right drive for the respective rolling shutter element with and for you.

#### Your advantage:

We find that rolling shutters are fitted with oversized drives time and time again. We strive to work with our customers to select the most economical and technically optimal drive. If you don't do this, you are giving away money.

## Step 1: Calculation of the required output torque with the aid of a "constant"

In order to simplify the calculation of the required output torque and make it more reliable, constants for the calculation were determined through extensive series of tests. The gearbox is selected in several steps:

#### Determination of the curtain weight

**Width** of the hanging in m x **Height** of the hanging in m x **sqm Weight** of the profile used in kg (manufacturer's specification) = **Curtain weight in kg**

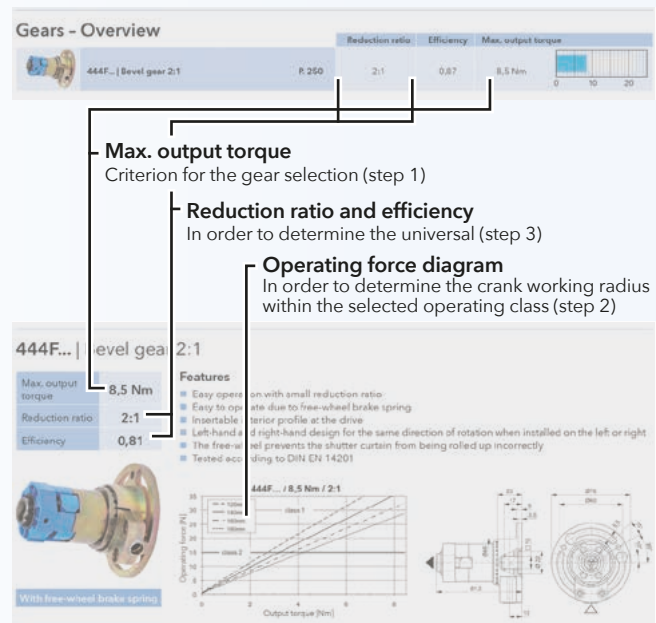
Selection of the appropriate constant determined by the hanging height, the profile used and the tube used

	Profile	Mini profile (8 mm)	Maxi profile (14 mm)	
Hanging height	Tube	40 mm tube Octagonal tube	60 mm tube Octagonal tube	
		up to 140 cm	0.35	0.60
up to 240 cm		0.42	0.60	0.65

#### Calculation of the output torque

**Curtain weight** x **constant value** = required **output torque** of the gearbox

Select your gearbox based on the output torque from the overview on the following page or on the product pages.



You will find on the product data sheets the gear-specific information for the dimensioning of rolling shutter operating systems.

#### Example:

A rolling shutter with a width of 125 cm and a height of 220 cm is used for a door element. A mini profile on a 60 mm tube is used as a blind. The specific curtain weight is 3.4 kg per m<sup>2</sup>. Class 1 operation is required.

#### Sample calculation:

##### Calculation of the curtain weight:

$$1.25 \text{ m} \times 2.20 \text{ m} \times 3.4 \text{ kg} = 9.35 \text{ kg}$$

##### Calculation of the output torque:

$$9.35 \text{ kg} \times 0.6 \text{ (constant value)} = 5.6 \text{ Nm}$$

The "constant value" includes the conversion from kg to Newton, the effective lever length and a safety margin for friction.

**Note that various mechanical factors play a role in the calculation of the output torque, which cannot be taken into account in this "constant value".**

**These include:**

- Shaft geometry and shape used
- Geometry and winding behaviour of the rolling shutter slats
- Run-in behaviour in the guide rails
- Different piping materials
- Friction in the overall system

Therefore, the results are approximate values for which we cannot provide any guarantee. The exact values can only be determined by an experienced technician.

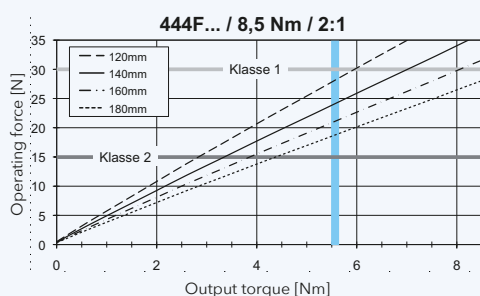
## Step 2: Determining the suitable crank working radius

For normal operation the force needed at the crank handle should not exceed 30 N (corresponds to about 3 kg). This force corresponds to **the operating class 1 according to DIN EN 13659**.

For light and comfortable operation the force needed at the crank handle should not exceed 15 N (corresponds to about 1.5 kg). This force corresponds to **operating class 2 according to DIN EN 13659**.

The operating force diagram which you will find with the selected gear helps you find out the required crank working radius according to the above classes.

**Example:** Gear 444F... with a 8.5 Nm output torque and a 2:1 reduction ratio



As shown with the blue lines, the class 1 is reached with a crank working radius of 120 mm!

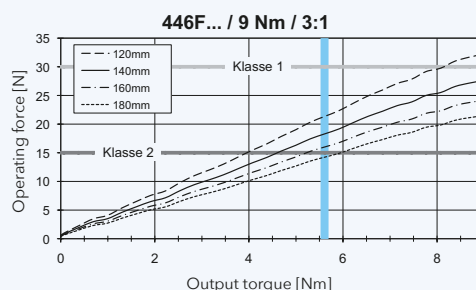
## Step 3: Calculation of the spherical plain bearing

It is important to know the resulting torque at the universal joint when dimensioning the spherical bearing. The output torque calculated in step 1 is calculated with the values (reduction ratio and efficiency) of the gearbox after selecting the gearbox.

**Calculation of the spherical joint torque:**  
(Output torque : gear reduction) : Efficiency =  
spherical plain bearing torque

A different gear with a higher output torque and / or another reduction ratio must be selected in order to reach the class 2.

**Alternative:** Gear 446F... with 9 Nm output torque and a reduction ratio of 3:1



Due to the reduction of the gearbox (3:1), the operating class with a working radius of 180 mm, operating class 2 can be achieved.

**Example:**

The selected gearbox 446F... has a reduction ratio of 3:1 (3 : 1 = 3) and an efficiency of **0.86**.

**Sample calculation:**

**Calculation of the spherical plain bearing torque:**  
(5.6 Nm : 3) : 0.86 = **2.17 Nm**

Up to 3 Nm spherical plain bearing torque, a spherical plain bearing 816F... made of steel can be used. A spherical plain bearing 818F... made of aluminium must be used between 3 and 5 Nm.

### **Colour specifications and print presentation**

The colours specified and shown in the catalogue are only reference values. RAL colours may deviate from the RAL specifications depending on the surface or base material. The colour fields shown in the tables may be displayed differently due to printing-related deviations.

### **Drawings and dimensions**

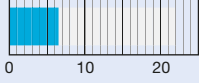



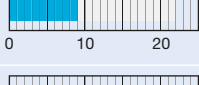
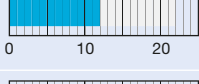
The technical drawings shown in this catalogue refer to a product from a series.

Dimensions from the drawings cannot be used for all items in some cases.

If required, please request exact dimensional drawings for the selected item.

### **Technical changes and errors excepted**

# Drive overview

			Gear reduction	Efficiency	Max. output torque	
	462F...   Bevel gearbox 2.7:1	P. 235	2.7:1	0.66	6.0 Nm	
	415F...   Worm gear 4.33:1	P. 215	4.33:1	0.36	6.0 Nm	
	414F...   Worm gear 4:1	P. 214	4:1	0.39	6.5 Nm	
	421F5...   Worm gear 5.33:1	P. 220	5:1	0.40	7.5 Nm	
	419F5...   Worm gear 6:1	P. 217	6:1	0.46	8.0 Nm	
	419F...   Worm gear 5.33:1	P. 216	5.33:1	0.45	8.0 Nm	
	419F55...   Worm gear 5.7:1	P. 217	5.7:1	0.36	8.0 Nm	
	414F...   Worm gear 6:1	P. 214	6:1	0.31	8.0 Nm	
	444F...   Bevel gearbox 2:1	P. 226	2:1	0.87	8.5 Nm	
	444F6...   Reversible bevel gearbox 2:1	P. 226	2:1	0.65	8.5 Nm	
	446F...   Bevel gearbox 3:1	P. 228	3:1	0.86	9.0 Nm	
	446F6...   Reversible bevel gearbox 3:1	P. 228	3:1	0.61	8.5 Nm	
	447F...   Bevel gearbox 3:1	P. 232	3:1	0.65	9.0 Nm	
	456F...   Bevel gearbox 4:1	P. 230	4:1	0.85	12.0 Nm	
	456F6...   Reversible bevel gearbox 4:1	P. 230	4:1	0.66	12.0 Nm	
	461F...   Bevel gearbox 5:1	P. 233	5:1	0.77	14.0 Nm	
	419F...   Worm gear 8:1	P. 216	8:1	0.40	16.0 Nm	
	421F8...   Worm gear 8:1	P. 222	8:1	0.39	20.0 Nm	
	460F...   Bevel gearbox 8:1	P. 233	8:1	0.75	22.0 Nm	

Venetian blinds and external blinds

Rolling shutter

Textile sun protection

System components

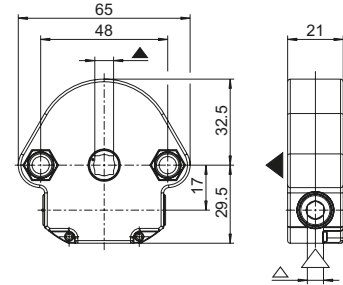
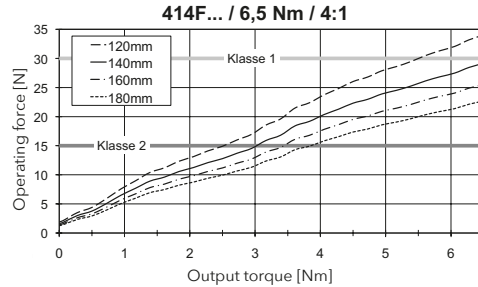
## 414F... | Worm gear 4:1

Max. output torque	<b>6.5 Nm</b>
Gear reduction	<b>4:1</b>
Efficiency	<b>0.39</b>



### Characteristics

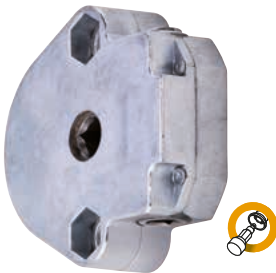
- The small power pack: maximum performance with minimal gearbox dimensions
- With end stop (AB) after max. 19 revolutions (also available without end stop)
- Continuous internal profile on the drive and output
- Matching freewheel and tube driver 414F9.



Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
414F002	with AB	6 mm	6 mm
414F008	with AB	6 mm	7 mm
414F011	without AB	6 mm	7 mm
414F012	with AB	6 mm	7 mm
414F023	without AB	6 mm	7 mm
414F024	with AB	6 mm	7 mm
414F039	with AB	8 mm	7 mm
414F040	with AB, left-hand roller	6 mm	12 mm, L=130 mm
414F043	with AB, right-hand roller	6 mm	12 mm, L=130 mm

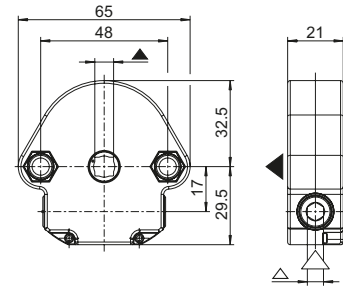
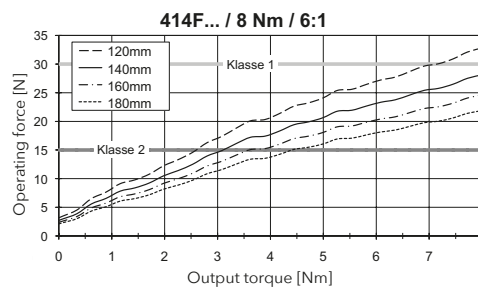
## 414F... | Worm gear 6:1

Max. output torque	<b>8.0 Nm</b>
Gear reduction	<b>6:1</b>
Efficiency	<b>0.31</b>



### Characteristics

- The small power pack: maximum performance with minimal gearbox dimensions
- With end stop (AB) after max. 19 revolutions (also available without end stop)
- Continuous internal profile on the drive and output
- Matching freewheel and tube driver 414F9.

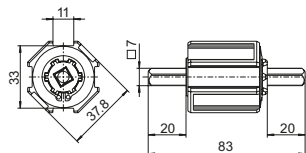


Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
414F602	with AB	6 mm	7 mm
414F624	with AB	6 mm	7 mm
414F625	without AB	6 mm	7 mm
414F630	with AB, left-hand roller	6 mm	12 mm, L=130 mm
414F631	with AB, right-hand roller	6 mm	12 mm, L=130 mm
414F643	without AB	6 mm	7 mm

## 414F906 | Freewheel

### Characteristics

- For worm gear 414F... (max. 8 Nm)
- Prevents incorrect winding of the rolling shutter curtain
- One version for left or right installation
- Stop disc available as mounting stop for rolling shutter tube

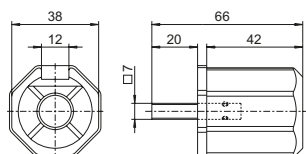


Part no.	Drive	Output	Comment
414F906	■ 7 mm	● 37.8 mm	Freewheel left and right

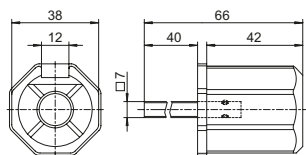
## 414F9.. | Tube driver

### Characteristics

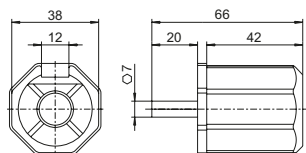
- For worm gear 414F...



Part no.	Drive	Output
414F900	■ 7 mm	● 38 mm



Part no.	Drive	Output
414F902	■ 7 mm	● 38 mm



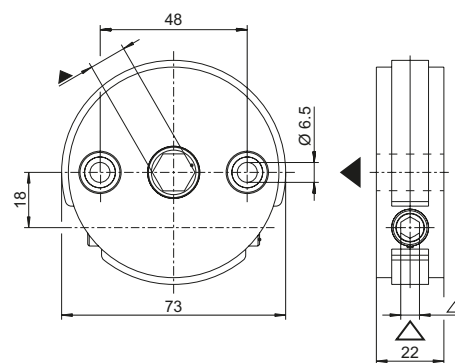
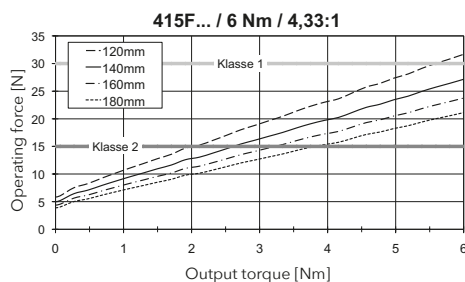
Part no.	Drive	Output
414F909	● 7 mm	● 38 mm

## 415F... | Worm gear 4.33:1

Max. output torque	<b>6.0 Nm</b>
Gear reduction	<b>4.33:1</b>
Efficiency	<b>0.36</b>

### Characteristics

- Zinc die-cast housing
- Continuous internal profile on the drive and output
- Without end stop (AB)



Part no.	Drive ▲	Output ▼	Installation side
415F001	○ 6 mm	○ 12 mm	left
415F003	○ 6 mm	○ 10 mm	left
415F007	○ 6 mm	○ 10 mm	left
415F002	○ 6 mm	○ 12 mm	right

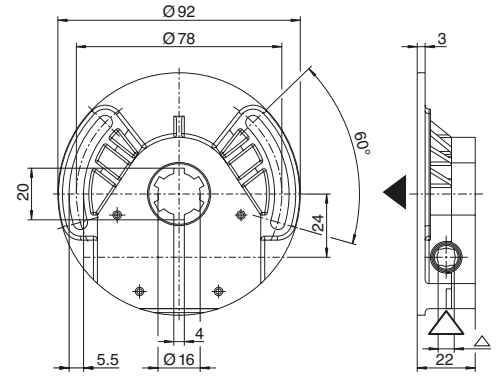
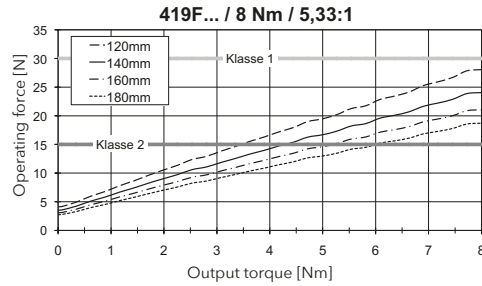
## 419F... | Worm gear 5.33:1

Max. output torque	<b>8 Nm</b>
Gear reduction	<b>5.33:1</b>
Efficiency	<b>0.45</b>



### Characteristics

- Housing of high-strength plastic
- Can be used universally with adapter systems
- Continuous internal profile on the drive and output
- One version for left or right installation
- Can also be mounted in side panels with bearing pins
- Matching freewheel and tube driver 419F9.
- Without end stop (AB)



Part no.	Drive $\triangle$	Output $\nabla$
419F003	$\bigcirc$ 6 mm	$\star$ 16 mm

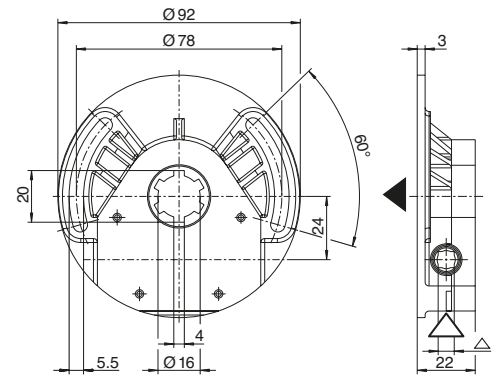
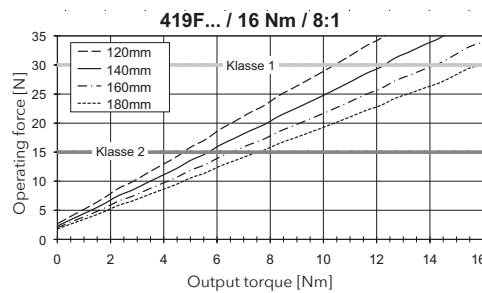
## 419F... | Worm gear 8:1

Max. output torque	<b>16 Nm</b>
Gear reduction	<b>8:1</b>
Efficiency	<b>0.40</b>



### Characteristics

- Housing of high-strength plastic
- Can be used universally with adapter systems
- Continuous internal profile on the drive and output
- One version for left or right installation
- Can also be mounted in side panels with bearing pins
- Matching freewheel and tube driver 419F9.
- Without end stop (AB)



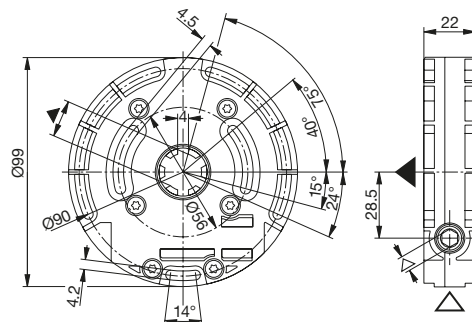
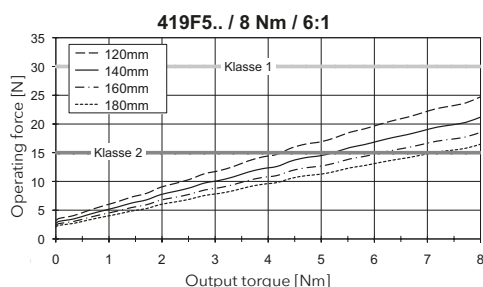
Part no.	Drive $\triangle$	Output $\nabla$
419F001	$\bigcirc$ 6 mm	$\star$ 16 mm
419F012	$\bigcirc$ 7 mm	$\star$ 16 mm

## 419F5.. | Worm gear 6:1

Max. output torque	<b>8 Nm</b>
Gear reduction	<b>6:1</b>
Efficiency	<b>0.46</b>

### Characteristics

- With and without end stop (AB)
- One version for left or right installation
- Continuous internal profile on the drive and output
- Housing of high-strength plastic
- Hardened steel worm, die-cast zinc worm wheel
- Can be used universally with adapter systems
- Can also be mounted in side panels with bearing pins
- Matching freewheel and tube driver 419F9.



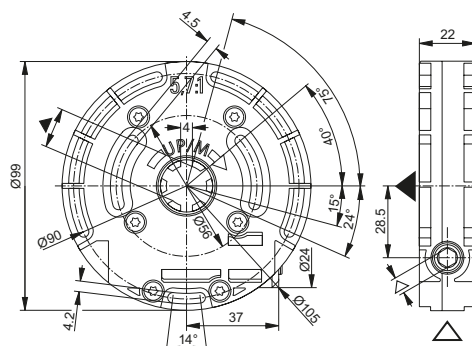
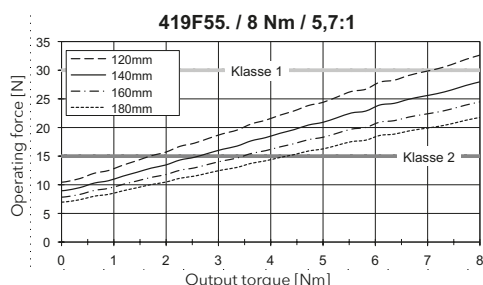
Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
419F500	with AB	8 mm	16 mm
419F501	without AB	8 mm	16 mm
419F502	with AB	6 mm	16 mm
419F503	without AB	6 mm	16 mm
419F504	with AB	7 mm	16 mm
419F508	with AB	8 mm	10 mm
419F511	without AB	7 mm	10 mm
419F515	with AB	8 mm	13 mm

## 419F55. | Worm gear 5.7:1

Max. output torque	<b>8 Nm</b>
Gear reduction	<b>5.7:1</b>
Efficiency	<b>0.36</b>

### Characteristics

- Integrated overload clutch (on both sides) on the drive protects against incorrect operation and prevents the hanging from being wound up incorrectly
- With and without end stop (AB)
- One version for left or right installation
- Continuous internal profile on the drive and output
- Can also be mounted in side panels with bearing pins
- Can be used universally with adapter systems
- Housing of high-strength plastic
- Plastic worm and worm wheel
- Matching tube driver 419F9.

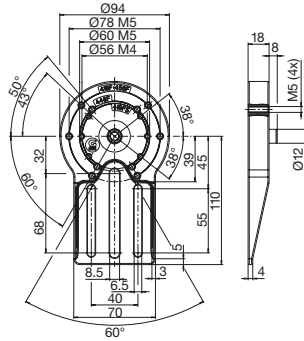


Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
419F550	with AB	7 mm	16 mm
419F551	without AB	7 mm	16 mm
419F554	without AB	7 mm	10 mm
419F555	with AB	7 mm	10 mm
419F557	with AB	7 mm	8 mm
419F558	without AB	7 mm	8 mm

## 444F800 | Universal gearbox holder

### Characteristics

- Height-adjustable: Oblong holes for stud bolts are available
- Suitable for gearboxes 419F..., 419F5..., 419F55..., 444F..., 446F..., 447F... and 456F...

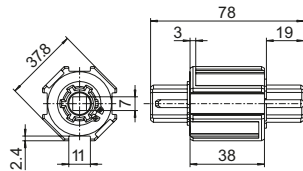


Part no.	
444F800	

## 419F901 | Freewheel

### Characteristics

- For worm gear 419F... (only 5.33:1, max. 8 Nm) and 421F5.
- Prevents incorrect winding of the rolling shutter curtain
- One version for left or right installation

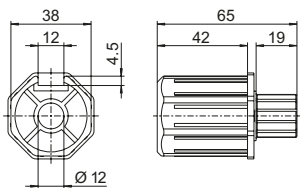


Part no.	Drive	Output	Comment
419F901	☙ 16 mm	● 37.8 mm	Freewheel left and right

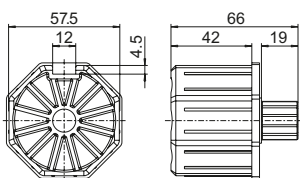
# 419F9.. | Tube driver

## Characteristics

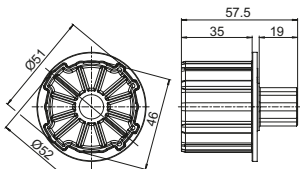
■ For worm gearboxes 419F... and 421F5..



Part no.	Drive	Output
419F903	16 mm	38 mm



Part no.	Drive	Output
419F904	16 mm	57.5 mm



Part no.	Drive	Output
419F912	16 mm	ZF 54

## 421F5.. | Worm gear 5.33:1

Max. output torque	<b>7.5 Nm</b>
Gear reduction	<b>5.33:1</b>
Efficiency	<b>0.40</b>

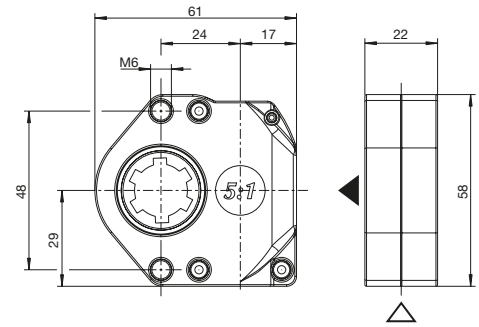
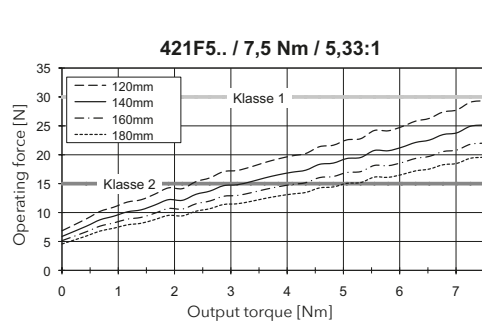


### Characteristics

- Without end stop (AB)
- Housing and worm wheel made of die-cast zinc
- Continuous internal profile on the drive and output

### Note

- Coloured versions on request
- Versions with extension, mounted universal joint, plug-in crank system, zinc, or plastic eyelet or 8 mm square adapter on request



Part no.	Drive $\Delta$	Output $\nabla$
421F504	○ 6 mm	○ 13 mm
421F542	○ 7 mm	○ 13 mm
421F544	○ 6 mm	⬤ 16 mm
421F546	○ 7 mm	⬤ 16 mm

## 421F5.. | Worm gearbox 5.33:1 with end stop

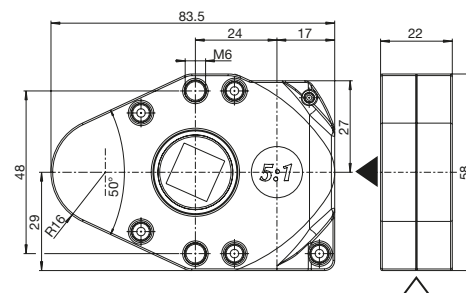
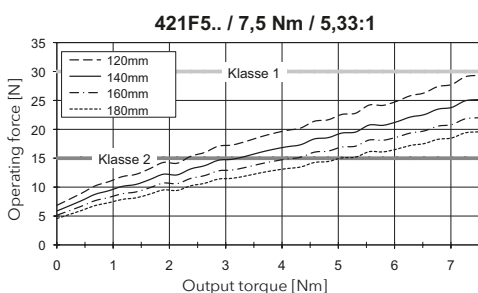
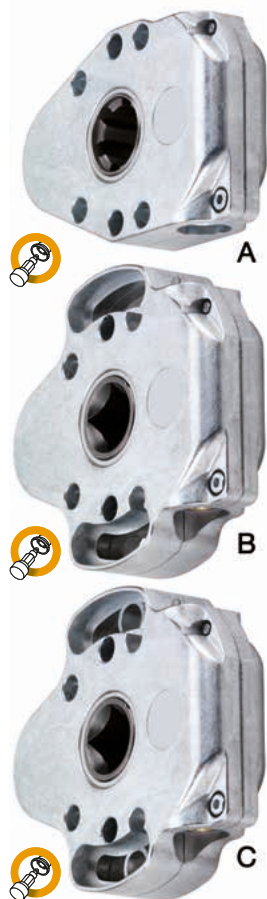
Max. output torque	<b>7.5 Nm</b>
Gear reduction	<b>5.33:1</b>
Efficiency	<b>0.40</b>

### Characteristics

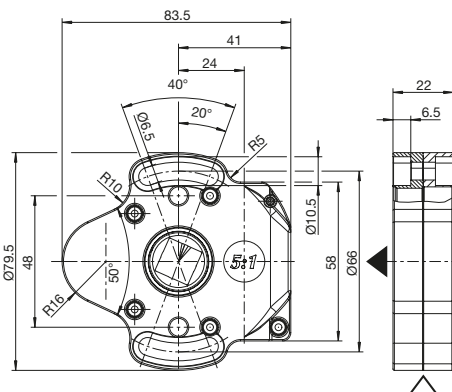
- With end stop (AB)
- Housing made of die-cast zinc, worm wheel made of steel
- Continuous internal profile on the drive and output
- Available in three different housing designs

### Note

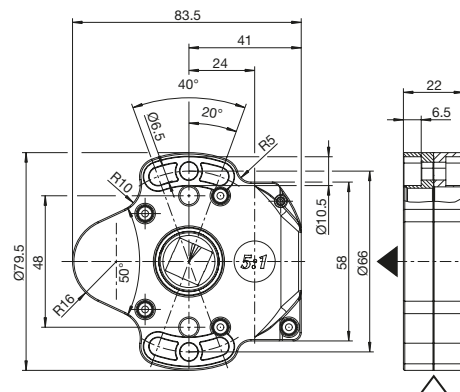
- Coloured versions on request
- Versions with extension, mounted universal joint, plug-in crank system, zinc, or plastic eyelet or 8 mm square adapter on request



Housing design A (TK 48 mm)



Housing design B (TK 66 mm)



Housing design C (TK 66 mm with fixing)

Options for worm gearbox 5.33:1 with end stop	
Drive	○ 6 mm and ○ 7 mm, continuous interior profile
Output	○ or ○ 13 mm and ⚙ 16 mm, continuous interior profile
Pitch circle Ø	48 mm, 66 mm and 66 mm with fixation
Colours	blank or powder-coated

### Housing design A

Part no.	Drive △	Output ▼
421F556	○ 6 mm	⚙ 16 mm
421F557	○ 7 mm	⚙ 16 mm
421F558	○ 7 mm	○ 13 mm
421F559	○ 6 mm	○ 13 mm

### Housing design B

Part no.	Drive △	Output ▼
421F552	○ 6 mm	⚙ 16 mm
421F553	○ 7 mm	⚙ 16 mm
421F554	○ 7 mm	○ 13 mm

### Housing design C

Part no.	Drive △	Output ▼
421F561	○ 6 mm	⚙ 16 mm
421F562	○ 7 mm	⚙ 16 mm
421F563	○ 7 mm	○ 13 mm
421F564	○ 6 mm	○ 13 mm

## 421F8.. | Worm gear 8:1

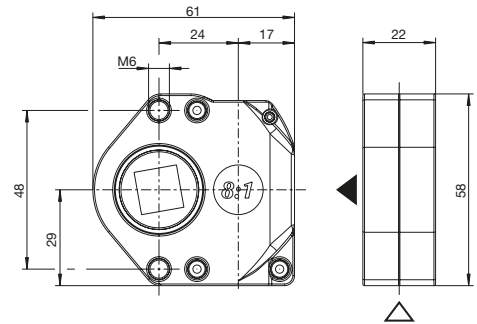
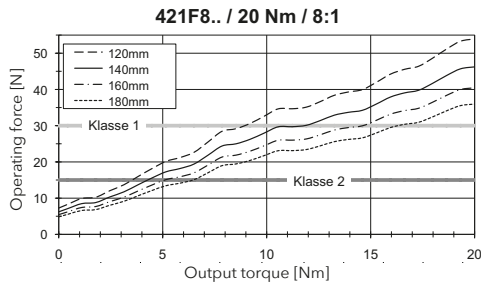
Max. output torque	<b>20 Nm</b>
Gear reduction	<b>8:1</b>
Efficiency	<b>0.39</b>

### Characteristics

- Without end stop (AB)
- Zinc die-cast housing
- Worm and worm wheel made of steel
- Continuous internal profile on the drive and output
- Tested according to DIN EN 14201

### Note

- Coloured versions on request
- Versions with extension, mounted universal joint, plug-in crank system, zinc, or plastic eyelet or 8 mm square adapter on request



Part no.	Drive $\Delta$	Output $\nabla$
421F892	7 mm	10 mm
421F804	6 mm	13 mm
421F842	7 mm	13 mm

# 421F8.. | Worm gearbox 8:1 with end stop

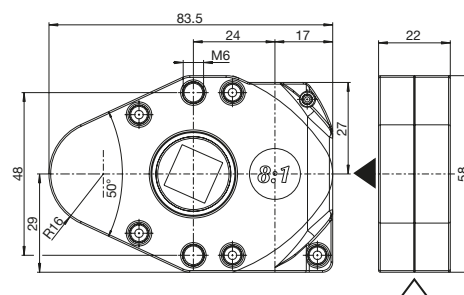
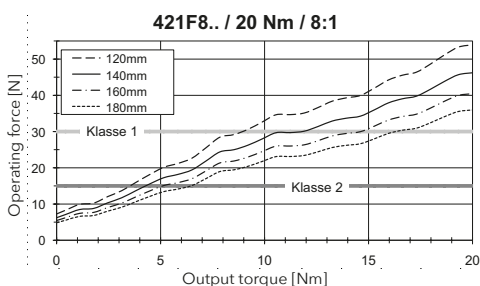
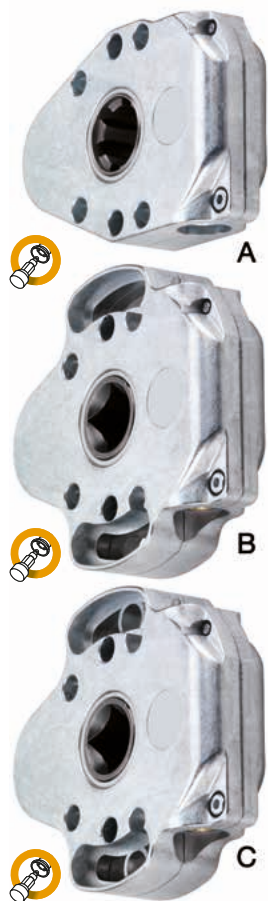
Max. output torque	<b>20 Nm</b>
Gear reduction	<b>8:1</b>
Efficiency	<b>0.39</b>

## Characteristics

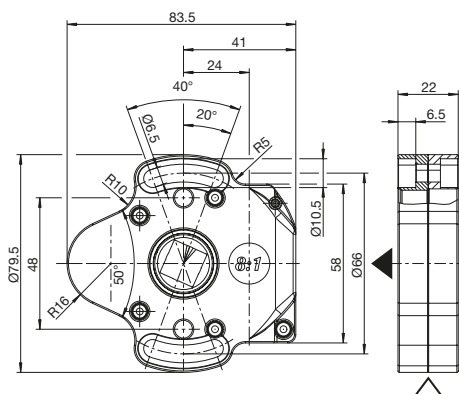
- With end stop (AB)
- Housing made of die-cast zinc, worm wheel made of steel
- Continuous internal profile on the drive and output
- Available in three different housing designs
- Tested according to DIN EN 14201

## Note

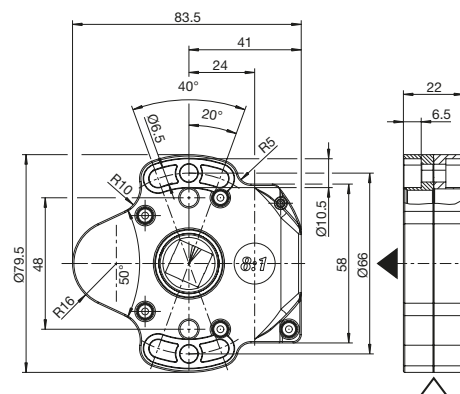
- Coloured versions on request
- Versions with extension, mounted universal joint, plug-in crank system, zinc, or plastic eyelet or 8 mm square adapter on request



Housing design A (TK 48 mm)



Housing design B (TK 66 mm)



Housing design C (TK 66 mm with fixing)

Options for worm gearbox 8:1 with end stop	
Drive	⊙ 6 mm and ⊙ 7 mm, continuous interior profile
Output	⊙ or ⊙ 13 mm and ⊙ 16 mm, continuous interior profile
Pitch circle Ø	48 mm, 66 mm and 66 mm with fixation
Colours	blank or powder-coated

## Housing design A

Part no.	Drive △	Output ▼
421F855	⊙ 6 mm	⊙ 16 mm
421F856	⊙ 7 mm	⊙ 16 mm
421F857	⊙ 7 mm	⊙ 13 mm
421F861	⊙ 6 mm	⊙ 13 mm

## Housing design B

Part no.	Drive △	Output ▼
421F851	⊙ 6 mm	⊙ 16 mm
421F853	⊙ 7 mm	⊙ 13 mm

## Housing design C

Part no.	Drive △	Output ▼
421F862	⊙ 6 mm	⊙ 16 mm
421F863	⊙ 7 mm	⊙ 16 mm
421F864	⊙ 7 mm	⊙ 13 mm
421F865	⊙ 6 mm	⊙ 13 mm

## Bevel gearboxes from the 444F..., 446F..., 456F... series

The GEIGER bevel gearboxes of the 444F..., 446F... and 456F... series have proven their worth millions of times in daily use. They have set standards, particularly with regard to operating comfort and safety. The high level of comfort of the gearboxes in particular is a decisive advantage for industry and trade.

### Convenience due to low operating force and short cranking process

The main requirement for a rolling shutter drive is to be able to move hangings of any size with little effort and just a few turns of the crank. The GEIGER bevel gearboxes 444F.../446F.../456F... fulfil this ergonomic requirement.

The **unique brake spring with free wheel** – similar to a freewheel bike – switches the brake spring off when the hanging opens.

The efficiency can thereby be improved above 85%. Compared to gears without brake spring with freewheel the operation is here **smoother** and faster.

### Incorrect operation is prevented by the integrated overrun clutch.

The GEIGER bevel gearboxes have an integrated overrun clutch. The rolling shutter curtain cannot be wound up in the wrong direction after reaching its lower end position. GEIGER bevel gearboxes of the 444F..., 446F... and 456F... series are subject to damage caused by incorrect winding. Regardless of whether the blind arrives at the bottom of the window sill or whether it hits an obstacle: the GEIGER overrun clutch triggers reliably. This provides security for your rolling shutter curtain and avoids unnecessary customer service visits on site.

### Economical mounting thanks to integrated overrun clutch

GEIGER bevel gearboxes save you time when installing or replacing a gearbox. The inconvenience of setting an end stop is eliminated. The gearbox adapts to the conditions on site and automatically activates the overrun clutch in the lower end position.

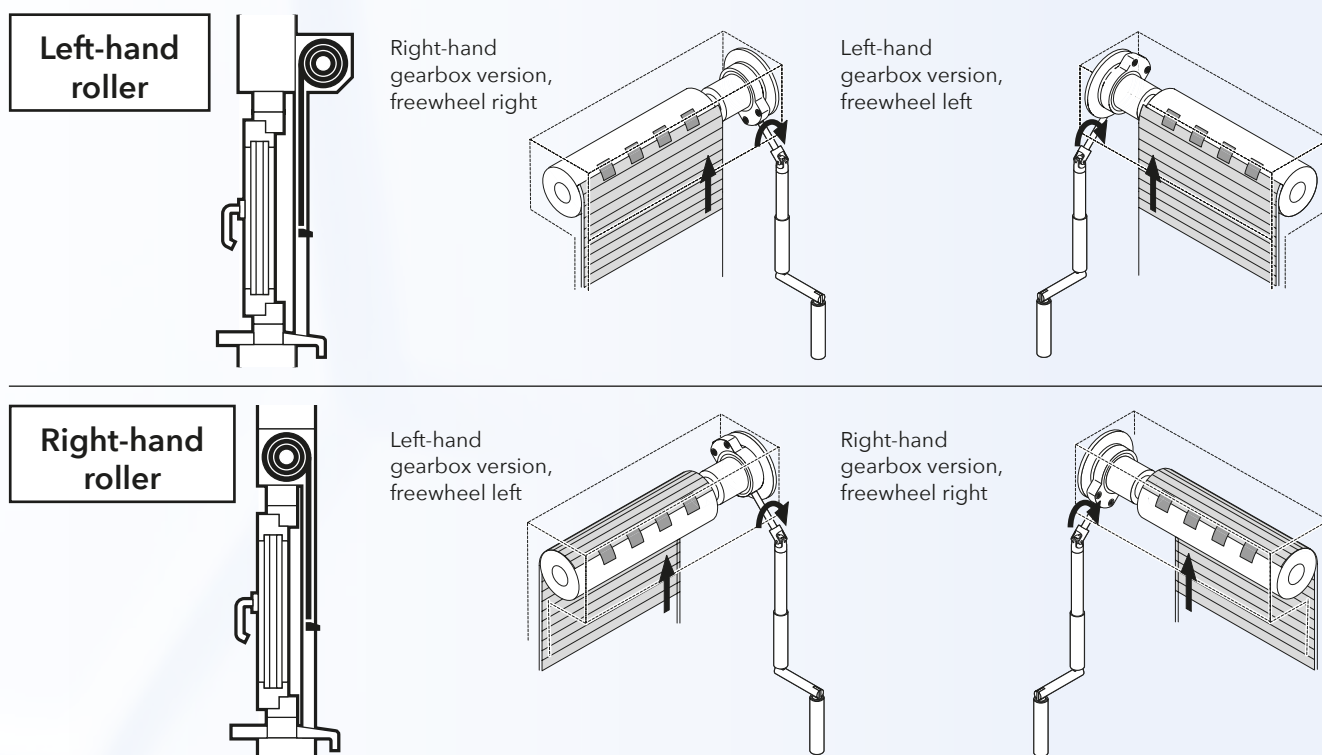
### Service life and operating safety thanks to proven GEIGER brake assembly

GEIGER bevel gearboxes are designed for more than 10,000 actuations. Depending on the degree of utilisation, this corresponds to a service life of well over 10 years.

## Determining the gearbox design

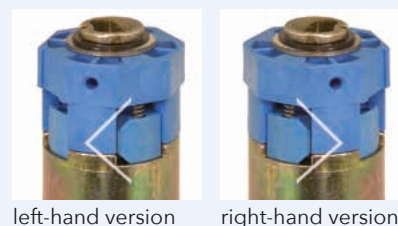
If the rolling shutter is to be opened, the crank handle must be turned clockwise.

Please refer to the drawings on this page when ordering to ensure that the direction of rotation remains the same in different installation situations.



## How do you distinguish between left and right gearbox versions?

With our bevel gearboxes 444F..., 446F... and 456F... it's really simple! Place the gearbox with the mounting side on the palm of your hand. If the coupling elements point to the left, it is a left-hand version. If the coupling elements point to the right, it is a right-hand version.



left-hand version      right-hand version

## Reversible bevel gearboxes

We improve our products through continuous further development and thus make our customers' work easier. Thanks to an innovative solution, the bevel gearboxes in the 444F6.., 446F6.. and 456F6.. series are now suitable for left-hand and right-hand installation. No conversion, no tools, and no effort - just a simple flick of the wrist.

## Customer benefits and product advantages

A simple changeover function for the overrun clutch has been integrated into the gearbox so that the gearbox can be installed on the left or right. As a tool-free system, it can be easily switched at any time.

As the patented changeover function is integrated in the gearbox, no components need to be dismantled or reconnected.

This means that no parts can be lost and the process is much easier and faster. Protection against unintentional switching is provided by a reliable locking mechanism with a marking on the switching mechanism.

The interior of the gearbox remains virtually unchanged - the technology that has been tried and tested millions of times remains the same!



Turn the gearbox set for right-hand installation on the tube driver to the right ...



... until the overrun clutch disengages and the changeover mechanism is free.

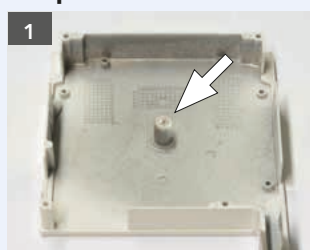


Turn the changeover mechanism to the left to the stop ...

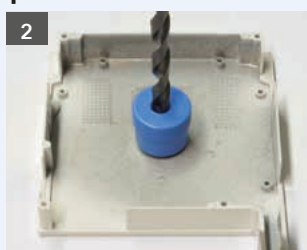


... and also turn the tube driver to the left until the overrun clutch engages.

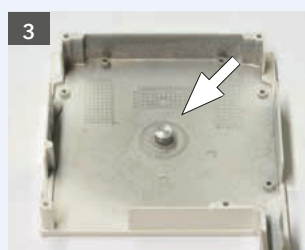
## Preparation of the side panel



As the trunnion of the side panel is too high ...



... it must be shortened to 8.5 mm.



Once the trunnion has been shortened to the specified dimension, you can continue with the installation of the gearbox.

## Installation of the bevel gearbox with quick-fit system



Fit the bevel gearbox with quick-fit system and clamping plate onto the shortened trunnion.



Roughly align the gearbox in the direction of the drive rod (45° or 90°)



Tighten the screw on the clamping plate (can be screwed on both sides) using a 3 mm Allen key.

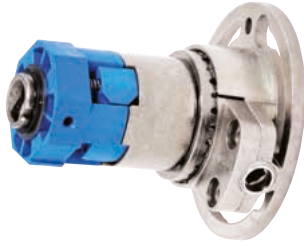
**Tightening torque: 3-4 Nm.**



The final alignment to the drive rod is carried out on site **without** loosening the clamping screw.

## 444F... | Bevel gearbox 2:1

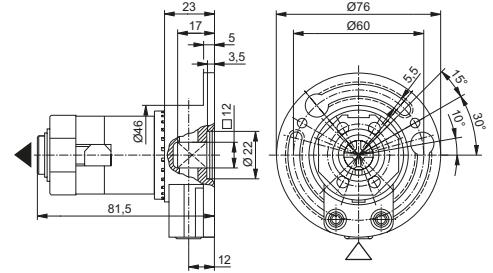
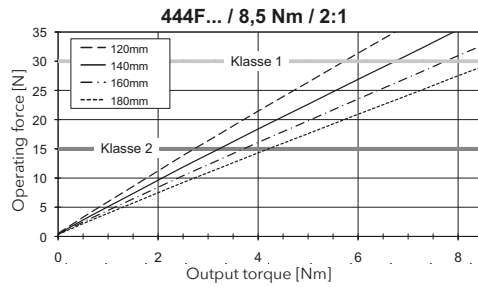
Max. output torque	<b>8.5 Nm</b>
Gear reduction	<b>2:1</b>
Efficiency	<b>0.81</b>



with brake spring freewheel

### Characteristics

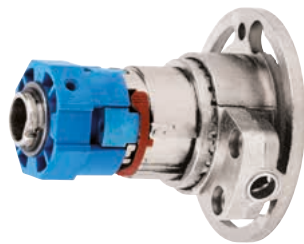
- Fast operation due to small gear reduction
- Very easy operation due to brake spring freewheel
- Push-through interior profile on the drive
- Left-hand and right-hand version for the same direction of rotation with left-hand or right-hand installation
- Freewheel prevents incorrect winding of the rolling shutter curtain
- Tested according to DIN EN 14201



Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
444F003	Freewheel left	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 36.7 mm
444F004	Freewheel right	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 36.7 mm
444F035	Freewheel left	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 38 mm
444F036	Freewheel right	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 38 mm
444F011	Freewheel left	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 57.5 mm
444F012	Freewheel right	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 57.5 mm

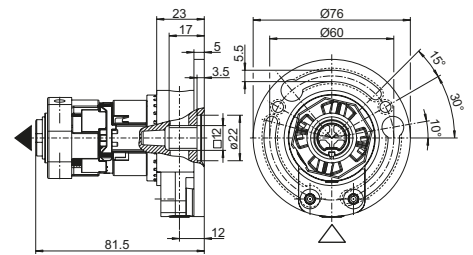
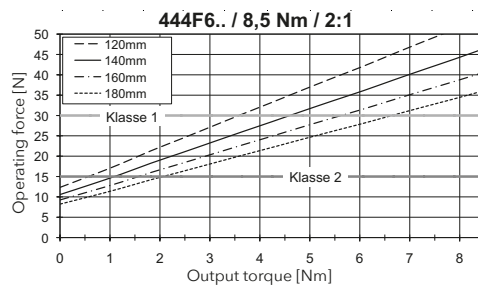
## 444F6.. | Reversible bevel gearbox 2:1

Max. output torque	<b>8.5 Nm</b>
Gear reduction	<b>2:1</b>
Efficiency	<b>0.65</b>



### Characteristics

- Fast operation due to small gear reduction
- Left-hand and right-hand version for the same direction of rotation with left-hand or right-hand installation
- Freewheel prevents incorrect winding of the rolling shutter curtain
- Tested according to DIN EN 14201
- Delivery status: Rotating direction right



### Options for bevel gearbox 446F6..

Drive	<input type="radio"/> 6 mm and <input type="radio"/> 6 mm push-through
Output	<input checked="" type="radio"/> 38 mm, 50 mm, 60 mm (see adapter)
Housing design	Standard, with trunnion or with quick-mounting system
Pitch circle $\varnothing$	$\varnothing$ 60 mm

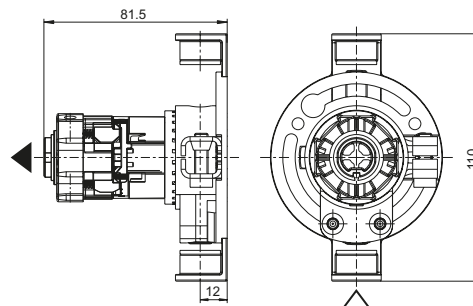
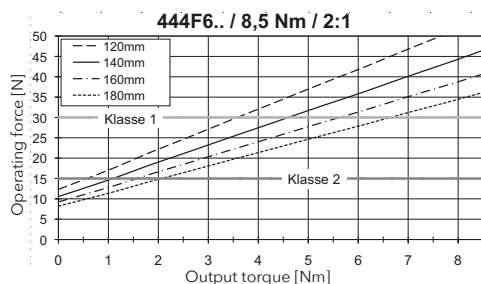
Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
444F635	Overrun clutch left/right	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 38 mm

## 444F7.. | Reversible bevel gearbox with quick assembly system 2:1

Max. output torque	<b>8.5 Nm</b>
Gear reduction	<b>2:1</b>
Efficiency	<b>0.65</b>

### Characteristics

- Bevel gearbox 444F6... with special housing
- Tested according to DIN EN 14201
- Delivery status: Rotating direction right
- Quick assembly system: Tensioning the gear unit with the holding pin
- Reliable absorption of radial forces thanks to two additional bearing points
- No need to drill and countersink the cover cap
- Easy readjustment of the gearbox without tools
- Supplied as complete assembly kit with gear, rod bush, and locking mechanism

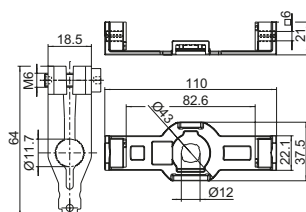


Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
444F735	Overrun clutch left/right	$\square$ 6 mm push-through	$\bullet$ 38.0 mm

## 444F705 | Quick-assembly kit

### Characteristics

- Can only be used with gearbox 444F7.. and 446F7..
- Including bearing bushes and clamping plate with screw



Part no.	
444F705	

## 446F... | Bevel gearbox 3:1

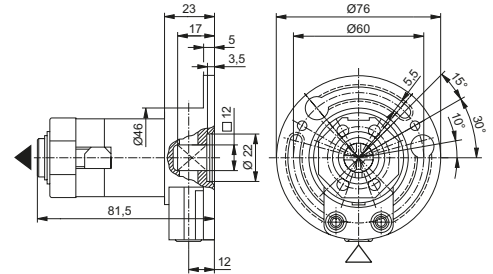
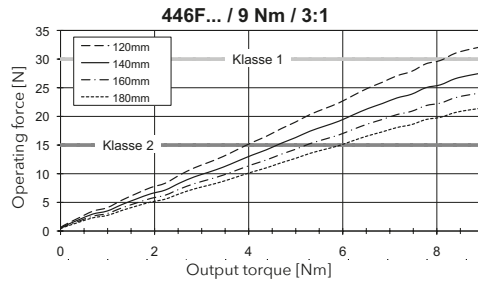
Max. output torque	<b>9 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.86</b>



with brake spring freewheel

### Characteristics

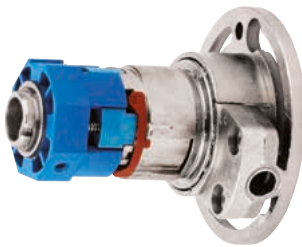
- Very easy operation due to brake spring freewheel
- Push-through interior profile on the drive
- Left-hand and right-hand version for the same direction of rotation with left-hand or right-hand installation
- Freewheel prevents incorrect winding of the rolling shutter curtain
- Tested according to DIN EN 14201



Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
446F003	Freewheel left	6 mm push-through	36.7 mm
446F004	Freewheel right	6 mm push-through	36.7 mm
446F011	Freewheel left	6 mm push-through	57.5 mm
446F012	Freewheel right	6 mm push-through	57.5 mm
446F035	Freewheel left	6 mm push-through	38 mm
446F036	Freewheel right	6 mm push-through	38 mm

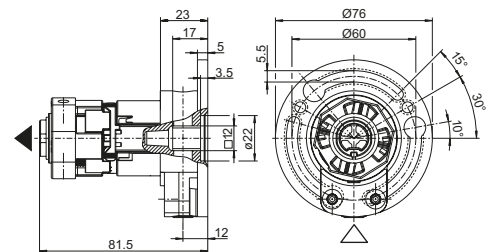
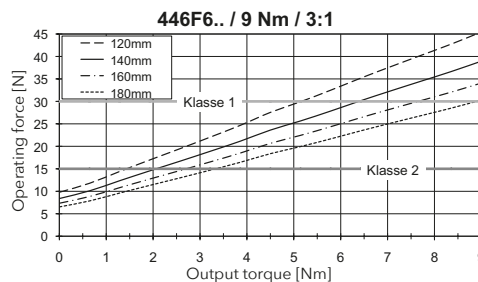
## 446F6.. | Reversible bevel gearbox 3:1

Max. output torque	<b>9 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.61</b>



### Characteristics

- Fast operation due to small gear reduction
- Left-hand and right-hand version for the same direction of rotation with left-hand or right-hand installation
- Freewheel prevents incorrect winding of the rolling shutter curtain
- Tested according to DIN EN 14201
- Delivery status: Rotating direction right



### Options for bevel gearbox 446F6..

Drive	6 mm and 6 mm push-through
Output	38 mm, 50 mm, 60 mm (see adapter)
Housing design	Standard, with trunnion or with quick-mounting system
Pitch circle $\varnothing$	$\varnothing$ 60 mm

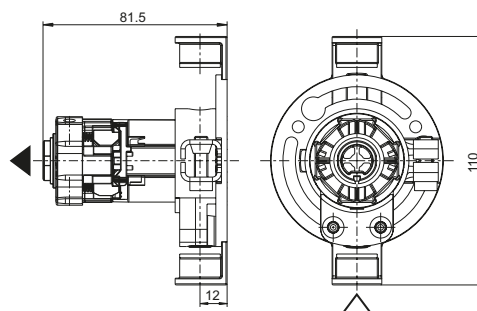
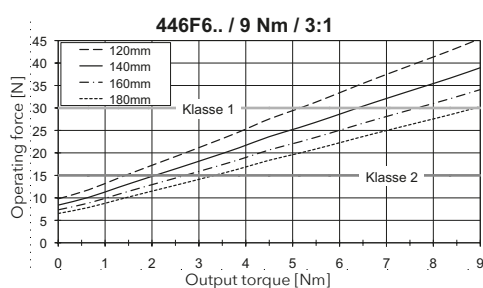
Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
446F635	Overrun clutch left/right	6 mm push-through	38 mm

## 446F7.. | Reversible bevel gearbox with quick assembly system 3:1

Max. output torque	<b>9 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.61</b>

### Characteristics

- Bevel gearbox 446F6... with special housing
- Tested according to DIN EN 14201
- Delivery status: Rotating direction right
- Quick assembly system: Tensioning the gear unit with the holding pin
- Reliable absorption of radial forces thanks to two additional bearing points
- No need to drill and countersink the cover cap
- Easy readjustment of the gearbox without tools
- Supplied as complete assembly kit with gear, rod bush, and locking mechanism

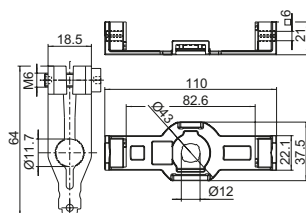


Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
446F735	Overrun clutch left/right	$\bigcirc$ 6 mm push-through	$\bullet$ 38 mm

## 444F705 | Quick-assembly kit

### Characteristics

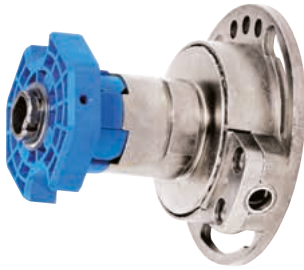
- Can only be used with gearbox 444F7.. and 446F7..
- Including bearing bushes and clamping plate with screw



Part no.	Part no.
444F705	

## 456F... | Bevel gearbox 4:1

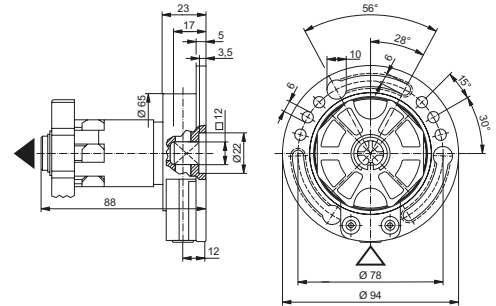
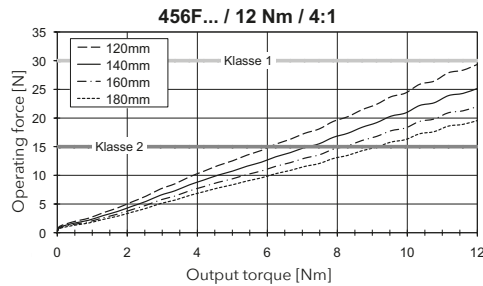
Max. output torque	<b>12 Nm</b>
Gear reduction	<b>4:1</b>
Efficiency	<b>0.85</b>



with brake spring freewheel

### Characteristics

- Very easy operation due to brake spring freewheel
- Push-through interior profile on the drive
- Left-hand and right-hand version for the same direction of rotation with left-hand or right-hand installation
- Freewheel prevents incorrect winding of the rolling shutter curtain
- Tested according to DIN EN 14201



Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
456F003	Freewheel left	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 36.7 mm
456F004	Freewheel right	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 36.7 mm
456F011	Freewheel left	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 57.5 mm
456F012	Freewheel right	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 57.5 mm
456F023	Freewheel left	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 38 mm
456F024	Freewheel right	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 38 mm

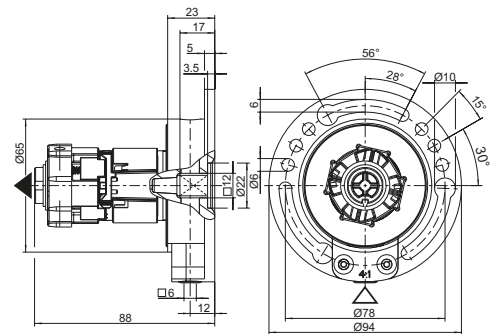
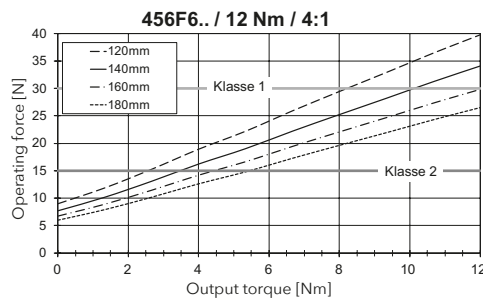
## 456F6.. | Reversible bevel gearbox 4:1

Max. output torque	<b>12 Nm</b>
Gear reduction	<b>4:1</b>
Efficiency	<b>0.66</b>



### Characteristics

- Left-hand and right-hand version for the same direction of rotation with left-hand or right-hand installation
- Freewheel prevents incorrect winding of the rolling shutter curtain
- Tested according to DIN EN 14201
- Delivery status: Rotating direction right



### Options for bevel gearbox 446F6..

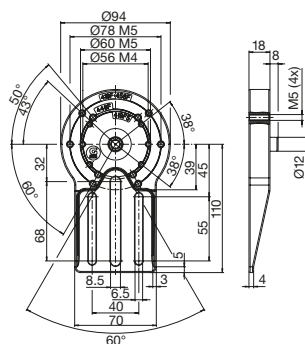
Drive	<input type="radio"/> 6 mm and <input type="radio"/> 6 mm push-through
Output	<input checked="" type="radio"/> 38 mm, 50 mm, 60 mm (see adapter)
Housing design	Standard
Pitch circle $\varnothing$	$\varnothing$ 78 mm

Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
456F603	Overrun clutch left/right	<input type="radio"/> 6 mm push-through	<input checked="" type="radio"/> 36.7 mm

## 444F800 | Universal gearbox holder

### Characteristics

- Height-adjustable: Oblong holes for stud bolts are available
- Suitable for gearboxes 419F..., 419F5..., 419F55..., 444F..., 446F..., 447F... and 456F...



Part no.	
444F800	

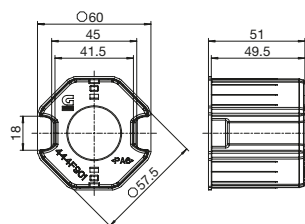
## 444F90. | Adapter

### Characteristics

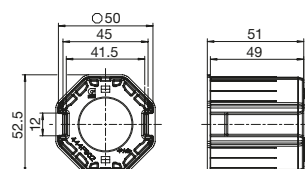
- Made from high-strength plastic
- For adapting the gearbox output to the rolling shutter tube
- Suitable for gearboxes 444F..., 446F... and 456F... with 36.7 or 38 mm output profile

### Note

- Please note the changed torque when using the tube adapter
- Recommendation: Secure adapter with pan head screw 4 x 16 mm



Part no.	Drive	Output
444F901	● 38 mm	● 60 mm



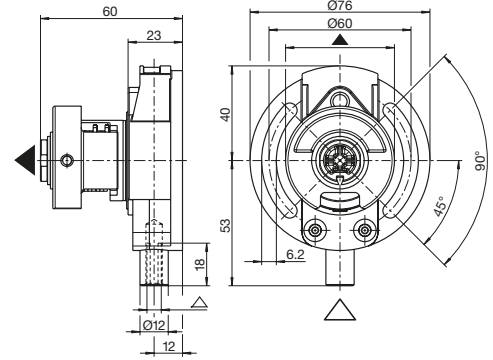
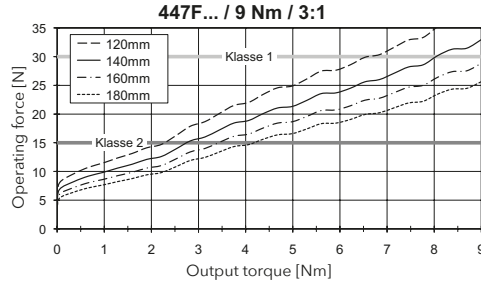
Part no.	Drive	Output
444F902	● 38 mm	● 50 mm

## 447F... | Bevel gearbox 3:1

Max. output torque	<b>9 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.65</b>

### Characteristics

- With end stop (AB) after max. 15 revolutions

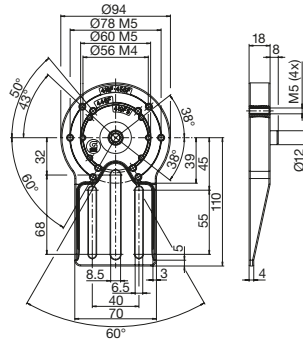


Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
447F001	with AB	$\square$ 6 mm	$\square$ $\varnothing$ 46 mm
447F002	with AB	$\circ$ 6 mm	$\square$ $\varnothing$ 46 mm
447F004	with AB	$\square$ 6 mm	$\bullet$ 38 mm

## 444F800 | Universal gearbox holder

### Characteristics

- Height-adjustable: Oblong holes for stud bolts are available
- Suitable for gearboxes 419F..., 419F5..., 419F55..., 444F..., 446F..., 447F... and 456F...



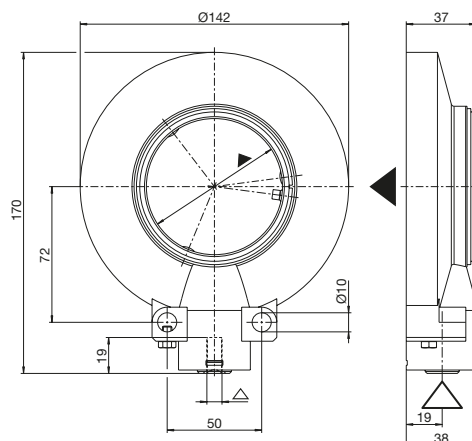
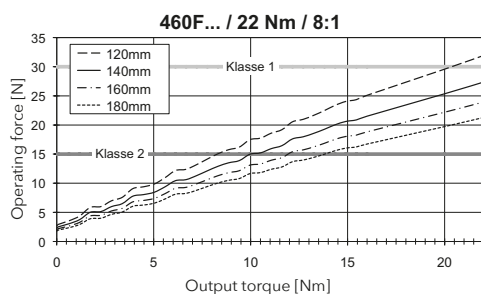
Part no.	
444F800	

## 460F... | Bevel gearbox 8:1

Max. output torque	<b>22 Nm</b>
Gear reduction	<b>8:1</b>
Efficiency	<b>0.75</b>

### Characteristics

- Tube-enclosing bevel gearbox
- With end stop (AB) after max. 10 revolutions
- Matching adapter for 60 mm octagonal tube see 460F100
- See 460F12 for matching gearbox bracket.



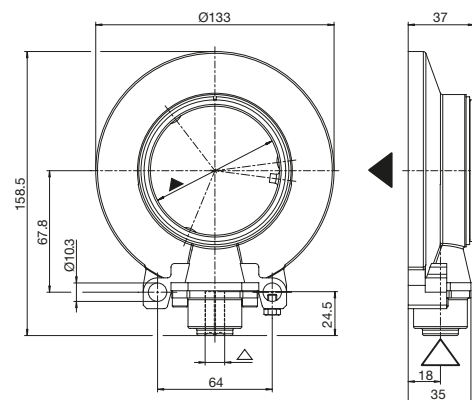
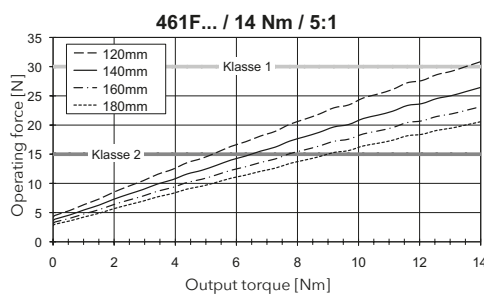
Part no.	Drive $\Delta$	Output $\nabla$
460F001	8 mm	Inner Ø 70 mm
460F002	8 mm	Inner Ø 60 mm

## 461F... | Bevel gearbox 5:1

Max. output torque	<b>14 Nm</b>
Gear reduction	<b>5:1</b>
Efficiency	<b>0.77</b>

### Characteristics

- Tube-enclosing bevel gearbox
- With end stop (AB) after max. 13 revolutions
- Matching adapter for 60 mm octagonal tube see 460F100
- See 460F12 for matching gearbox bracket.

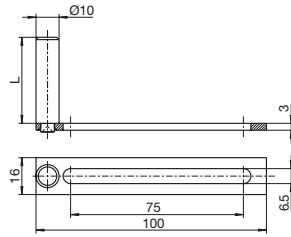


Part no.	Drive $\Delta$	Output $\nabla$
461F001	8 mm	Inner Ø 70 mm
461F002	8 mm	Inner Ø 60 mm

## 460F12. | Gearbox holder

### Characteristics

- Made of steel
- Galvanised

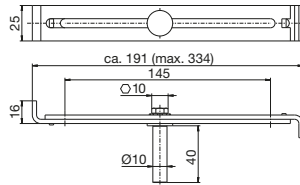


Part no.	Fixation
460F120	Ø 10 mm, L=60 mm
460F121	Ø 10 mm, L=80 mm

## 460F125 | Gearbox holder

### Characteristics

- Made of steel
- Galvanised
- Adjustable from 143 mm to 334 mm

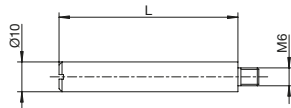


Part no.	
460F125	

## 460F11. | Axis

### Characteristics

- Made of steel
- Galvanised



Part no.	Description
460F110	M6 Ø10, L=60 mm

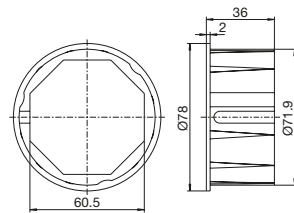
## 460F100 | Adapter

### Characteristics

- For octagonal tube 60 mm
- Made of plastic
- If the gearbox is floating, the adapter must be fixed in place!

### Note

- Only for gearbox output Ø 70 mm, item no. 460F001 and 461F001



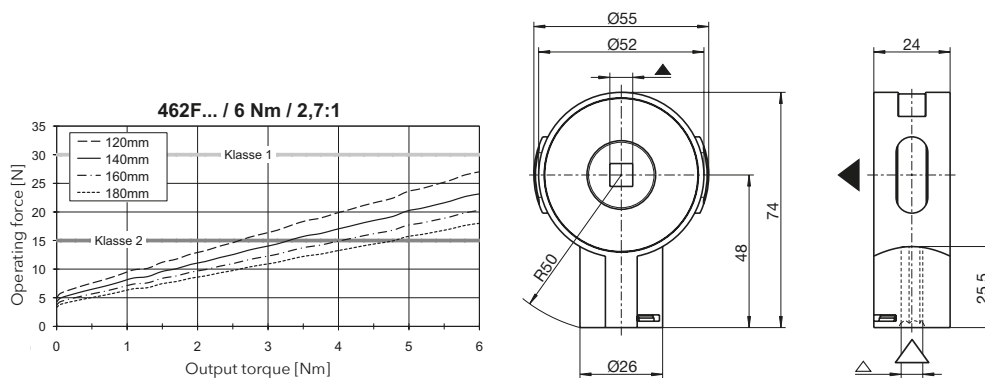
Part no.	
460F100	

## 462F... | Bevel gearbox 2.7:1

Max. output torque	<b>6.0 Nm</b>
Gear reduction	<b>2.7:1</b>
Efficiency	<b>0.66</b>

### Characteristics

- Can be installed on the left and right with constant direction of rotation
- Only suitable for spherical plain bearing drive
- Coupling piece for use with an 8 mm square see 462F093
- Fixation by means of gear holder 462F070 or 462F071

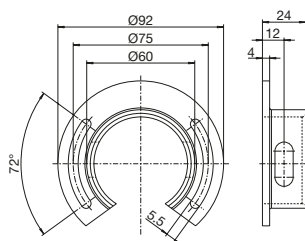


Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
462F007	without AB	⊙ 6 mm	⊙ 12 mm
462F013	without AB	⊙ 6 mm	⊙ 10.2 mm
462F021	without AB	⊙ 6 mm	⊙ 14 mm

## 462F070 | Gearbox holder

### Characteristics

- Made from high-strength plastic
- For side fixation
- Gearbox can be fitted on both sides

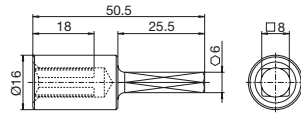
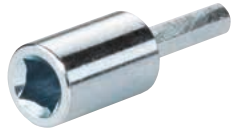


Part no.	
462F070	

## 462F093 | Coupling piece for gearbox 462F...

### Characteristics

- Made of steel
- Galvanised

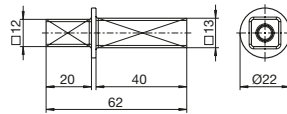


Part no.	Drive	Output
462F093	□ 8 mm	● 6 mm

## 462F080 | Adaptor for tube driver 462F085

### Characteristics

- Made from die-cast zinc
- For tube driver 13 mm square, 462F085

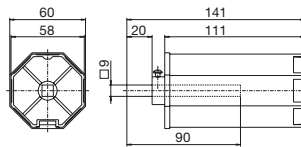


Part no.	Drive	Output
462F080	■ 12 mm	■ 13 mm

## 462F087 | Tube driver

### Characteristics

- Made of plastic
- For octagonal tube
- With sliding steel pin



Part no.	Drive	Output
462F087	■ 9 mm	● 58 mm



# TEXTILE SUN PROTECTION



MECHANICAL  
DRIVE SOLUTIONS

**GEIGER**  
ANTRIEBSTECHNIK

## Awning crank system with spherical hook and plastic eyelet

Application: **all drives with eyelet**

The patented hand-crank system with spherical hook and plastic eyelet allows a smooth and quiet running. The crank handle can be attached and removed easily. No abrasion is generated with the plastic eyelet which was sprayed in a multi-component process and the nickel-plated spherical hook. The traditional oval eyelet in older gears can easily be replaced by a spherical hook system.



## High-quality GEIGER bevel gear 412F5.. with 4.4:1 reduction ratio

**with pluggable drive shaft, externally adjustable end stop, free wheel and spindle**

### Advantages:

- Externally adjustable end stop (setting at the desired point)
- Gear with free wheel, which means there is no risk of incorrect operation
- Various pluggable drive shafts available
- Suitable for 78 mm (75.5 mm) or 85 mm (82.5 mm) roller tubes
- Low storage requirement with interchangeable extensions and eyelets



### Installation:

Fully extend the awning before carrying out the installation. The operating side is easy to identify, as the fixation screw (hexagon socket 4 mm) must be visible to the user.

### End stop:

The end stop can be corrected as follows: Loosen the fixation screw by one full turn with the awning fully extended and crank the awning to the desired end point - tighten the screw again. That's all.

## In modern design and with one-piece bearing - the awning gear 418F5.

The robust gearing made of zinc/aluminium and the storage of all moving parts in plastic slide bushings ensure a long service life. The bearing on the drive (input shaft) is completely integrated into one half of the casing. Thus, the worm is mounted precisely and the gear is protected against the gearing power.

The 9:1 reduction ratio allows a wide range of applications for folding-arm awnings, pivot-arm awnings and window awnings.

Three mounting holes on the pitch circle  $\varnothing$  48 mm ensure excellent hold. The gear is available in 3 colours with a drive shaft in 3 different lengths.



### Colour specifications and print presentation

The colours specified and shown in the catalogue are only reference values. RAL colours may deviate from the RAL specifications depending on the surface or base material. The colour fields shown in the tables may be displayed differently due to printing-related deviations.


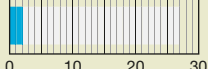

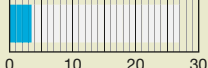

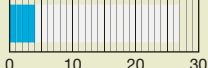

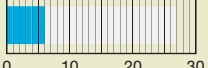

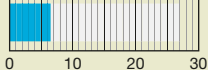

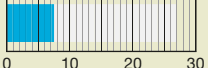

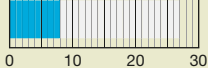

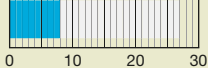

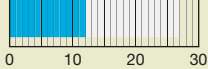

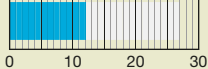

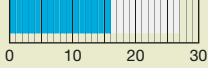

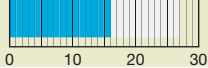

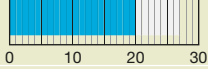

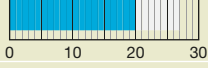

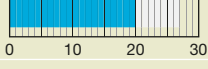

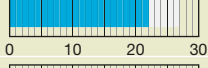

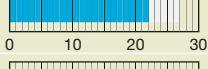

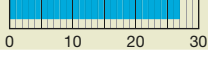

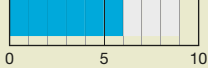
### Drawings and dimensions

The technical drawings shown in this catalogue refer to a product from a series. Dimensions from the drawings cannot be used for all items in some cases.

If required, please request exact dimensional drawings for the selected item.

### Technical changes and errors excepted

# Drive overview

				Gear reduction	Efficiency	Max. output torque	
	426F6..   Worm gear 2.8:1	P. 260		2.8:1	0.38	2.0 Nm	
	414F2..   Worm gear 3:1	P. 251		3:1	0.42	3.5 Nm	
	426F7..   Worm gear 3.5:1	P. 261		3.5:1	0.40	4.0 Nm	
	462F...   Bevel gearbox 2.7:1	P. 261		2.7:1	0.69	6.0 Nm	
	414F...   Worm gear 4:1	P. 250		4:1	0.40	6.5 Nm	
	421F5..   Worm gear 5.33:1	P. 256		5.33:1	0.40	7.5 Nm	
	409F5..   Bevel gearbox 2.7:1	P. 241		2.7:1	0.66	8.0 Nm	
	414F...   Worm gear 6:1	P. 251		6:1	0.34	8.0 Nm	
	409F...   Bevel gearbox 3:1	P. 240		3:1	0.66	12.0 Nm	
	410F...   Bevel gearbox 3:1	P. 242		3:1	0.68	12.0 Nm	
	412F5..   Bevel gearbox 4.4:1	P. 246		4.4:1	0.66	16.0 Nm	
	418F5..   Worm gear 9:1	P. 255		9:1	0.34	16.0 Nm	
	416F...   Worm gear 7:1	P. 252		7:1	0.44	20.0 Nm	
	418F...   Worm gear 7:1	P. 254		7:1	0.42	20.0 Nm	
	421F8..   Worm gear 8:1	P. 258		8:1	0.39	20.0 Nm	
	411F1..   Bevel gearbox 7.8:1	P. 243		7.8:1	0.50	22.0 Nm	
	411F5..   Bevel gearbox 7.8:1	P. 244		7.8:1	0.50	22.0 Nm	
	417F...   Worm gear 13:1	P. 252		13:1	0.43	27.0 Nm	
	430F5..   Angle gear	P. 264		1:1 1.5:1 1:1.5	0.83	6.00 Nm	

Venetian blinds and external blinds

Rolling shutter

Textile sun protection

System components

## 409F... | Bevel gearbox 3:1

Application: **Folding-arm awnings, pivot-arm awnings, and window awnings**

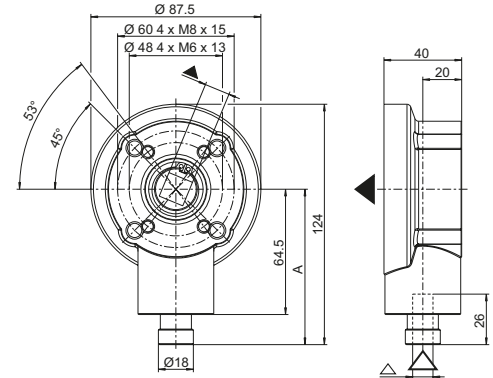
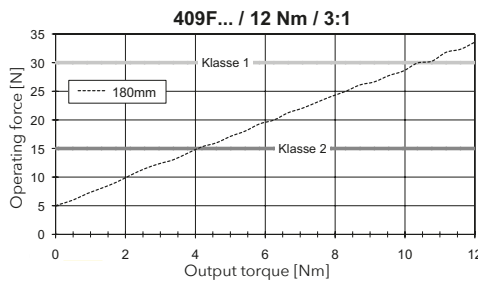
Max. output torque	<b>12 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.66</b>

### Characteristics

- Universally applicable due to different tube drivers
- With end stop (AB) after max. 14 revolutions (also available without end stop)
- Bores for screws M6 (pitch circle 48 mm) and M8 (pitch circle 60 mm)

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	Colour	End stop (AB)	Drive $\Delta$	Output $\nabla$	Gear centre [A]
409F002	<input type="checkbox"/> blank	with AB	$\bigcirc$ 8 mm	$\bigcirc$ 13 mm	80 mm
409F004	<input type="checkbox"/> blank	with AB	$\text{Zinc}$	$\bigcirc$ 13 mm	80 mm
409F050	<input type="checkbox"/> blank	with AB	$\text{RAL 7035}$	$\bigcirc$ 13 mm	80 mm

## 409F200xs | Bevel gearbox 3:1

Application: **Pivot arm and vertical awnings, marquisolettes, screens, volants, special applications**

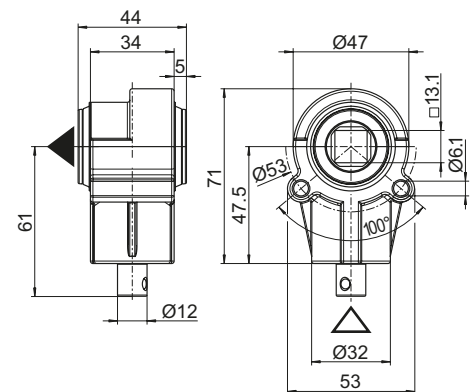
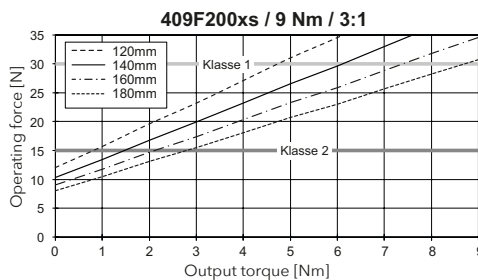
Max. output torque	<b>9 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.53</b>

### Characteristics

- Fast operation due to small gear reduction
- High output torque at very small dimensions
- Without end stop (AB)
- High performance plastic housing
- Steel gearing
- Continuous inner profile at the output

### Note

- Drive and output profile on request
- Also available with oval eyelet or universal joint



Part no.	Colour	End stop (AB)	Drive $\Delta$	Output $\nabla$
409F200xs	<input checked="" type="checkbox"/> black	without AB	$\uparrow$ Ø 12 mm	$\bigcirc$ 13 mm

## 409F5.. | Bevel gearbox 2.7:1

Application: **Pivot-arm awnings, marquisolettes, small folding-arm awnings**

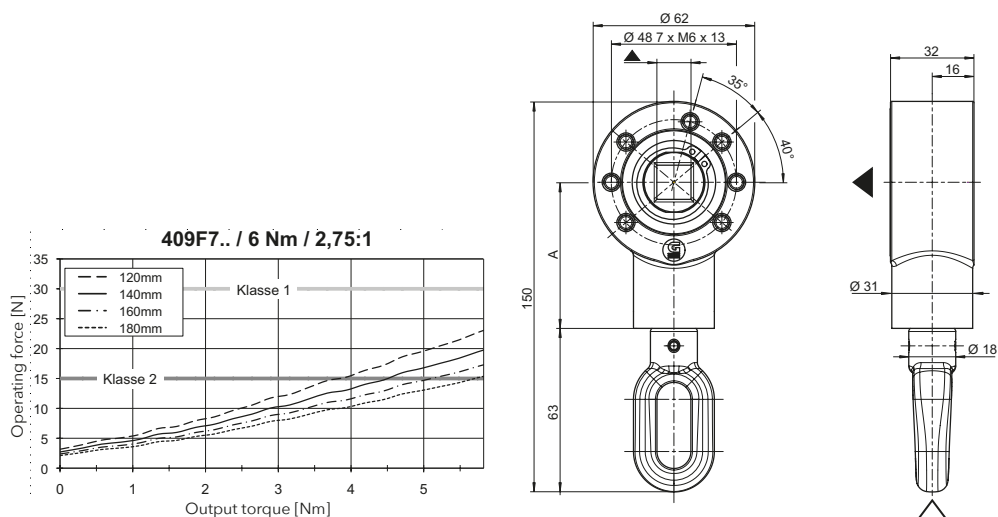
Max. output torque	<b>8 Nm</b>
Gear reduction	<b>2.7:1</b>
Efficiency	<b>0.66</b>

### Characteristics

- The smallest awning bevel gearbox by GEIGER
- Without end stop (AB)
- Bores for screws M6 (pitch circle 48 mm)

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	Colour	Drive $\Delta$	Output $\nabla$	Gear centre [A]
409F501	☒ blank	⊕ Zinc	○ 13 mm	56 mm
409F503	☒ blank	⊕ RAL 7035	○ 13 mm	56 mm
409F519	☒ blank	⊕ RAL 7035	○ 13 mm	76 mm
409F504	■ RAL 7035	⊕ Zinc	○ 13 mm	56 mm
409F505	■ RAL 7035	⊕ RAL 7035	○ 13 mm	56 mm
409F507	□ RAL 9010	⊕ RAL 9016	○ 13 mm	56 mm

## 410F... | Bevel gearbox 3:1

Application: **Folding arm awnings**

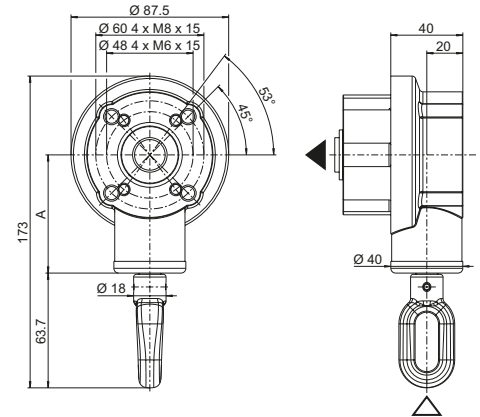
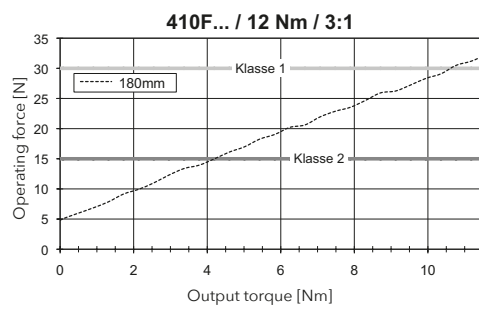
Max. output torque	<b>12 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.68</b>

### Characteristics

- Fast operation due to small gear reduction
- Can be inserted directly into the roller tube
- With end stop (AB) after max. 14 revolutions (also available without end stop)
- Bores for screws M6 (pitch circle 48 mm) and M8 (pitch circle 60 mm)

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	Colour	End stop (AB)	Drive $\Delta$	Output $\nabla$	Gear centre [A]
410F308	<input checked="" type="checkbox"/> blank	with AB	RAL 7035	Ø 75.5 mm	65.6 mm
410F311	<input type="checkbox"/> RAL 7035	with AB	RAL 7035	Ø 75.5 mm	65.6 mm
410F310	<input type="checkbox"/> RAL 9010	with AB	RAL 9016	Ø 75.5 mm	65.6 mm
410F361	<input type="checkbox"/> RAL 9010	with AB	RAL 9016	Ø 66.5 mm	65.6 mm

## 411F1.. | Bevel gearbox 7.8:1

Application: **large folding-arm awnings**

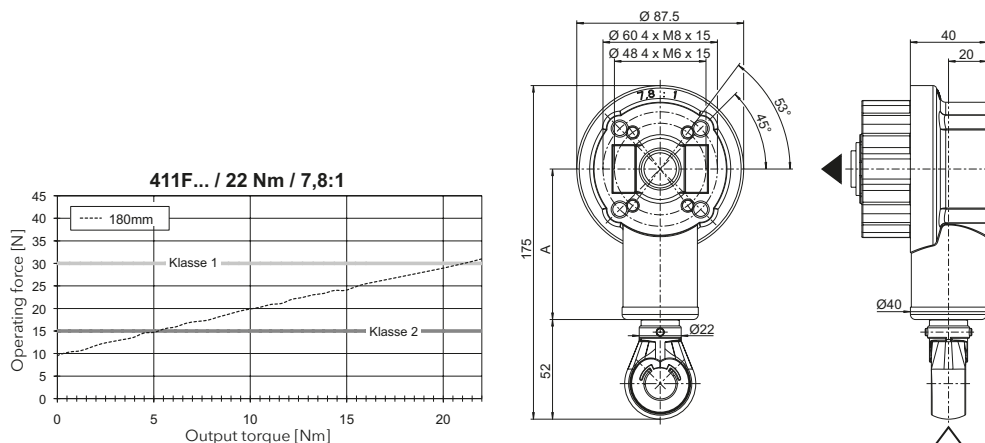
Max. output torque	<b>22 Nm</b>
Gear reduction	<b>7.8:1</b>
Efficiency	<b>0.50</b>

### Characteristics

- The strongest awning bevel gearbox by GEIGER
- Can be inserted directly into the roller tube
- With end stop (AB) after max. 14 revolutions (also available without end stop)
- Bores for screws M6 (pitch circle 48 mm) and M8 (pitch circle 60 mm)

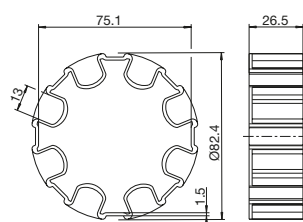
### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	Colour	End stop (AB)	Drive $\Delta$	Output $\nabla$	Gear centre [A]
411F001	☒ blank	with AB	⊙ Zinc	Ø 66.5 mm	79.0 mm
411F002	☒ blank	with AB	⊙ Zinc	Ø 75.5 mm	79.0 mm
411F006	■ RAL 7035	with AB	⊙ Zinc	Ø 75.5 mm	79.0 mm
411F007	☒ blank	without AB	⊙ Zinc	Ø 75.5 mm	79.0 mm
411F200	□ RAL 9010	with AB	⊙ RAL 9016	Ø 75.5 mm	79.0 mm
411F202	☒ blank	with AB	⊙ RAL 7035	Ø 75.5 mm	79.0 mm
411F211	■ RAL 7035	with AB	⊙ RAL 7035	Ø 75.5 mm	79.0 mm

## 412E010 | Adapter for bevel gearbox 410F../411F../412F..



### Characteristics

- From Ø78 mm gearbox output to Ø85 mm tube

### Note

- Cannot be used for gear 412F5..

Part no.	Material
412E010	Plastic

## 411F5.. | Bevel gearbox 7.8:1

Application: **large folding-arm awnings**

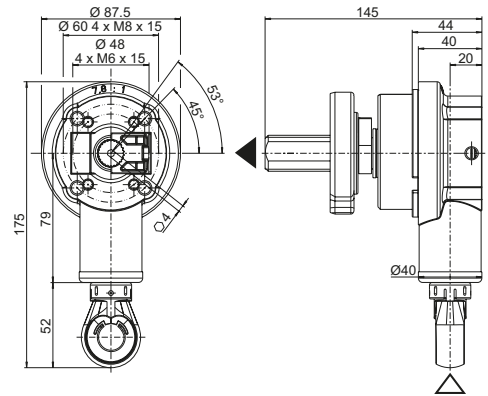
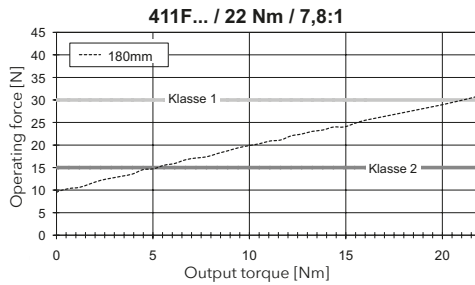
Max. output torque	<b>22 Nm</b>
Gear reduction	<b>7.8:1</b>
Efficiency	<b>0.50</b>

### Characteristics

- Bevel gearbox with integrated freewheel
- Can be inserted directly into the roller tube
- End stop variably adjustable by 0 - 20 turns
- Positioning of the end stop up to 10 mm / 15 ° precisely
- Available in right- and left-hand versions
- Bores for screws M6 (pitch circle 48 mm) and M8 (pitch circle 60 mm)

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	Colour	End stop (AB)	Drive $\Delta$	Output $\nabla$
411F560	□ RAL 9010	Freewheel left	☺ □ RAL 9016	Ø 75.5 mm
411F561	□ RAL 9010	Freewheel right	☺ □ RAL 9016	Ø 75.5 mm
411F566	■ RAL 9006	Freewheel right	† 12 mm	Ø 82.5 mm
411F567	■ RAL 9006	Freewheel left	† 12 mm	Ø 82.5 mm
411F564	■ RAL 9005	Freewheel left	☺ ■ RAL 9005	Ø 75.5 mm
411F565	■ RAL 9005	Freewheel right	☺ ■ RAL 9005	Ø 75.5 mm

## 412F5..M | ISG | Bevel gearbox 4,4:1

Application: **large cassette awnings**

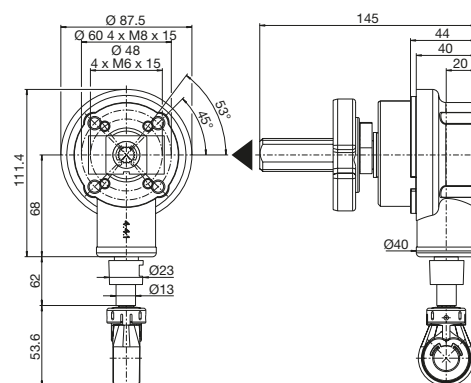
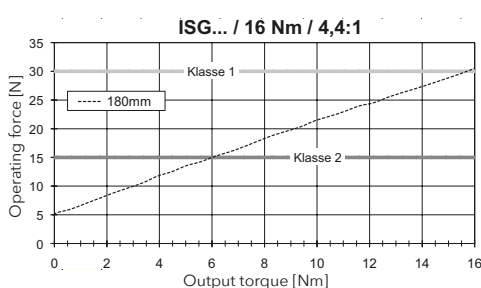
Max. output torque	<b>16 Nm</b>
Gear reduction	<b>4.4:1</b>
Efficiency	<b>0.66</b>

### Characteristics

- Bevel gearbox with integrated freewheel
- Can be inserted directly into the roller tube
- End stop variably adjustable by the drive shaft for 0 - 20 turns
- Positioning of the end stop up to 12 mm / 18 ° precisely
- Available in right- and left-hand versions
- Bores for screws M6 (pitch circle 48 mm) and M8 (pitch circle 60 mm)

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



### Options for awning gearboxes ISG

Drive	round and oval plastic eyelet
Output	78 mm and 85 mm grooved tube
Extensions	upon request
Version	left and right gearbox versions
Housing	coated in RAL-tones 9010, 7035, 9005 (other colours on request)
End position range	20 turns (of the awning tube)
Accuracy	precise to 12 mm / 18°

### ISG

Part no.	Colour	End stop (AB)	Output ▼
412F506M	□ RAL 9016	Freewheel left, adjustable	Ø 75.5 mm
412F507M	□ RAL 9016	Freewheel right, adjustable	Ø 75.5 mm
412F503M	■ RAL 9005	Freewheel right, adjustable	Ø 82.5 mm
412F502M	■ RAL 9005	Freewheel left, adjustable	Ø 82.5 mm
412F510M	□ RAL 7035	Freewheel right, adjustable	Ø 75.5 mm
412F511M	□ RAL 7035	Freewheel left, adjustable	Ø 75.5 mm

### ISG with Easy Clip

Part no.	Colour	End stop (AB)	Output ▼
412F508M	□ RAL 9016	Freewheel left, adjustable	Ø 75.5 mm
412F509M	□ RAL 9016	Freewheel right, adjustable	Ø 75.5 mm
412F505M	■ RAL 9005	Freewheel right, adjustable	Ø 82.5 mm
412F504M	■ RAL 9005	Freewheel left, adjustable	Ø 82.5 mm
412F512M	□ RAL 7035	Freewheel right, adjustable	Ø 75.5 mm
412F503M	□ RAL 7035	Freewheel left, adjustable	Ø 75.5 mm

## 412F5.. | Bevel gearbox 4.4:1

Application: **large folding-arm awnings**

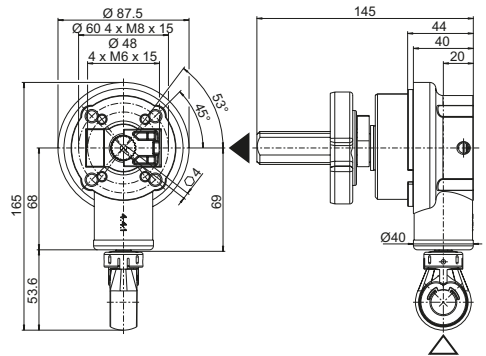
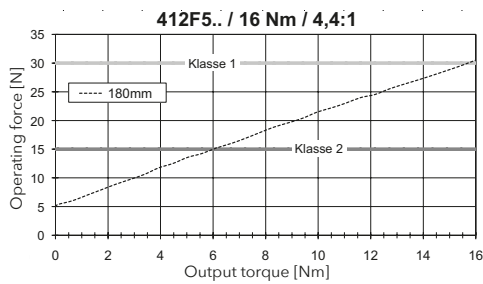
Max. output torque	<b>16 Nm</b>
Gear reduction	<b>4.4:1</b>
Efficiency	<b>0.66</b>

### Characteristics

- Bevel gearbox with integrated freewheel
- Can be inserted directly into the roller tube
- End stop variably adjustable by 0 - 20 turns
- Positioning of the end stop up to 10 mm / 15 ° precisely
- Available in right- and left-hand versions
- Bores for screws M6 (pitch circle 48 mm) and M8 (pitch circle 60 mm)

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	Colour	End stop (AB)	Drive $\Delta$	Output $\nabla$
412F552	<input type="checkbox"/> RAL 9010	Freewheel left, adjustable	<input type="checkbox"/> RAL 9016	Ø 75.5 mm
412F553	<input type="checkbox"/> RAL 9010	Freewheel right, adjustable	<input type="checkbox"/> RAL 9016	Ø 75.5 mm
412F554	<input type="checkbox"/> RAL 7035	Freewheel left, adjustable	<input type="checkbox"/> RAL 7035	Ø 75.5 mm
412F555	<input type="checkbox"/> RAL 7035	Freewheel right, adjustable	<input type="checkbox"/> RAL 7035	Ø 75.5 mm
412F556	<input type="checkbox"/> RAL 9005	Freewheel left, adjustable	<input type="checkbox"/> RAL 9005	Ø 75.5 mm
412F557	<input type="checkbox"/> RAL 9005	Freewheel right, adjustable	<input type="checkbox"/> RAL 9005	Ø 75.5 mm
412F608	<input type="checkbox"/> RAL 9010	Freewheel left, adjustable	Zinc	Ø 75.5 mm
412F609	<input type="checkbox"/> RAL 9010	Freewheel right, adjustable	Zinc	Ø 75.5 mm
412F663	<input type="checkbox"/> RAL 9016	Freewheel left, adjustable	<input type="checkbox"/> RAL 9016	Ø 75.5 mm
412F664	<input type="checkbox"/> RAL 9016	Freewheel right, adjustable	<input type="checkbox"/> RAL 9016	Ø 75.5 mm

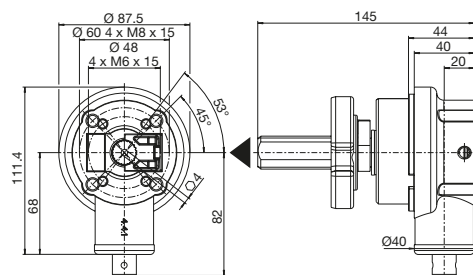
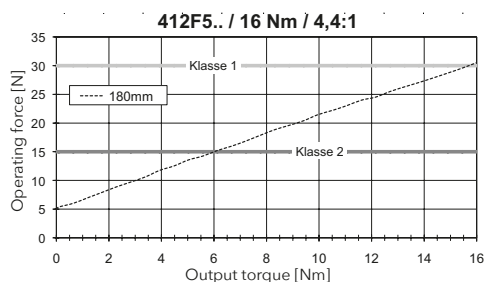
# 412F5.. | Modular bevel gearbox 4,4:1

Application: **large folding-arm awnings**

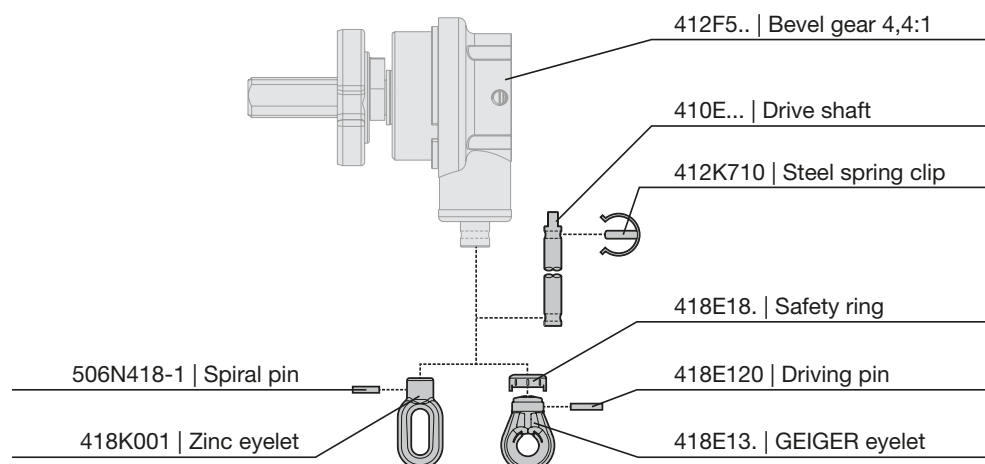
Max. output torque	<b>16 Nm</b>
Gear reduction	<b>4.4:1</b>
Efficiency	<b>0.66</b>

## Characteristics

- Bevel gearbox with integrated freewheel
- Can be inserted directly into the roller tube
- End stop variably adjustable by 0 - 20 turns
- Positioning of the end stop up to 10 mm / 15 ° precisely
- Available in right- and left-hand versions
- Bores for screws M6 (pitch circle 48 mm) and M8 (pitch circle 60 mm)
- Without drive tube and eyelet



Part no.	Colour	End stop (AB)	Output ▼
412F543	<input type="checkbox"/> RAL 9010	Freewheel left, adjustable	Ø 75.5 mm
412F544	<input type="checkbox"/> RAL 9010	Freewheel right, adjustable	Ø 75.5 mm
412F547	<input type="checkbox"/> RAL 9016	Freewheel left, adjustable	Ø 75.5 mm
412F548	<input type="checkbox"/> RAL 9016	Freewheel right, adjustable	Ø 75.5 mm
412F566	<input type="checkbox"/> RAL 9010	Freewheel right, adjustable	Ø 82.5 mm
412F567	<input type="checkbox"/> RAL 9010	Freewheel left, adjustable	Ø 82.5 mm
412F569	<input checked="" type="checkbox"/> RAL 9005	Freewheel right, adjustable	Ø 82.5 mm
412F570	<input checked="" type="checkbox"/> RAL 9005	Freewheel left, adjustable	Ø 82.5 mm
412F604	<input checked="" type="checkbox"/> RAL 9005	Freewheel left, adjustable	Ø 75.5 mm
412F605	<input checked="" type="checkbox"/> RAL 9005	Freewheel right, adjustable	Ø 75.5 mm
412F657	<input type="checkbox"/> RAL 7035	Freewheel right, adjustable	Ø 75.5 mm
412F658	<input type="checkbox"/> RAL 7035	Freewheel left, adjustable	Ø 75.5 mm



## 412K710 | Steel spring clamp

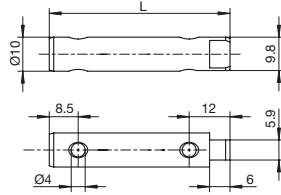
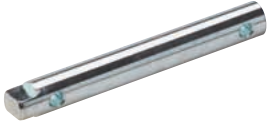


### Characteristics

- Safety clip with stainless steel pin, pin diameter 4 mm
- For secure the drive shaft in the gearbox holder
- The drive shaft with max. Ø 18 mm

Part no.	Outside-Ø	Length	Surface
412K710	20 mm	19 mm	<input type="checkbox"/> galvanised

## 410E... | Drive shaft for bevel gearbox 4.4:1



### Characteristics

- Made of steel with galvanised surface
- With two cross-bores Ø 4 mm

Part no.	Material	Length [L]	Surface
410E048	Steel	107.0 mm	<input type="checkbox"/> galvanised
410E022	Steel	127.0 mm	<input type="checkbox"/> galvanised
410E028	Steel	167.0 mm	<input type="checkbox"/> galvanised
410E030	Steel	37.5 mm	<input type="checkbox"/> galvanised
410E126	Steel	48.5 mm	<input type="checkbox"/> galvanised
410E080	Steel	55.5 mm	<input type="checkbox"/> galvanised
410E040	Steel	60.5 mm	<input type="checkbox"/> galvanised
410E128	Steel	78.0 mm	<input type="checkbox"/> galvanised
410E016	Steel	85.5 mm	<input type="checkbox"/> galvanised
410E104	Steel	97.0 mm	<input type="checkbox"/> galvanised

## 418E13. | GEIGER eyelets



### Characteristics

- Made from high-strength plastic

Part no.	Colour	Material	Interior profile	Cross-bore
418E130	<input type="checkbox"/> RAL 9016	Plastic	○ 10 mm	4.1 mm
418E131	<input checked="" type="checkbox"/> RAL 9005	Plastic	○ 10 mm	4.1 mm
418E132	<input type="checkbox"/> RAL 7035	Plastic	○ 10 mm	4.1 mm

## 418E120 | Driver pin for plastic eyelets



### Characteristics

- To secure the plastic eyelet into the drive shaft (only applicable with safety ring 418F18.)

Part no.	Material	Outside-Ø	Length	Surface
418E120	Stainless steel	4 mm	22 mm	<input checked="" type="checkbox"/> blank

## 418E18. | Safety ring for plastic eyelets



### Characteristics

- To secure the plastic eyelet through easy rotation (together with locking pin 418E120)

Part no.	Colour
418E180	<input type="checkbox"/> RAL 9016
418E181	<input checked="" type="checkbox"/> RAL 9005
418E182	<input type="checkbox"/> RAL 7035

## 506N418-1 | Spiral pin



### Characteristics

- To secure the tube connection

Part no.	Material	Outside-Ø	Length	Surface
506N418-1	Steel	4 mm	18 mm	<input checked="" type="checkbox"/> galvanised

## 418K001 | Zinc eyelet



### Characteristics

- Made from die-cast zinc

Part no.	Colour	Material	Interior profile	Cross-bore
418K001	<input checked="" type="checkbox"/> blank	<input checked="" type="checkbox"/> Zinc	10 mm	4 mm

## 414F... | Worm gear 4:1

Application: **Pivot-arm awnings, marquisolettes, small folding-arm awnings**

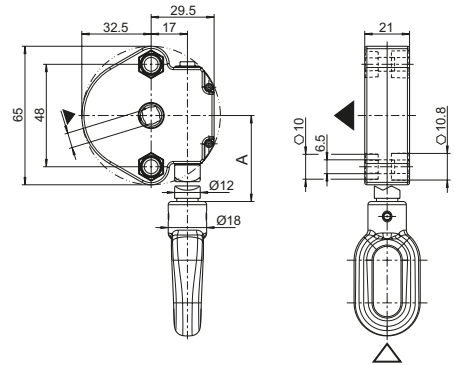
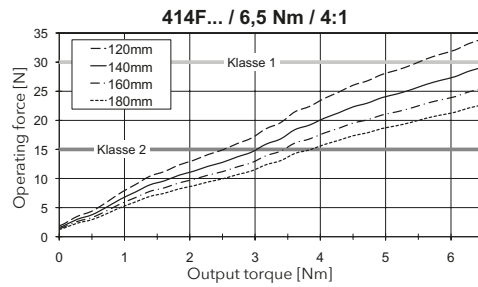
Max. output torque	<b>6.5 Nm</b>
Gear reduction	<b>4:1</b>
Efficiency	<b>0.40</b>

### Characteristics

- The small power pack: maximum performance with minimal gearbox dimensions
- With end stop (AB) after max. 19 revolutions (also available without end stop)
- Continuous internal profile on the drive and output

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$	Gear centre [A]
414F001	without AB	$\bigcirc$ 6 mm	$\bigcirc$ 6 mm	-
414F002	with AB	$\bigcirc$ 6 mm	$\bigcirc$ 6 mm	-
414F008	with AB	$\bigcirc$ 6 mm	$\bigcirc$ 7 mm	-
414F049	with AB	$\text{Zinc}$	$\bigcirc$ 7 mm	55.5 mm
414F052	with AB	$\text{RAL 7035}$	$\bigcirc$ 7 mm	55.5 mm
414F129	with AB	$\text{RAL 7035}$	$\bigcirc$ 7 mm	29.7 mm
414F254	with AB	$\text{9.9 mm}$	$\bigcirc$ 7 mm	64.3 mm
414F260	without AB	$\text{9.9 mm}$	$\bigcirc$ 7 mm	64.3 mm

## 414F... | Worm gear 6:1

Application: **Pivot-arm awnings, marquisolettes, small folding-arm awnings**

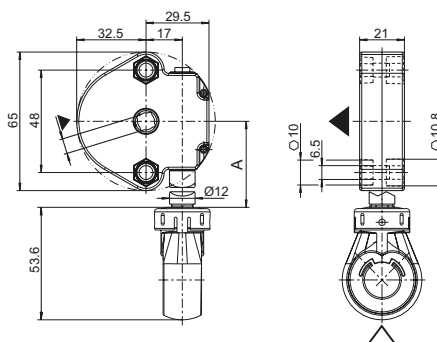
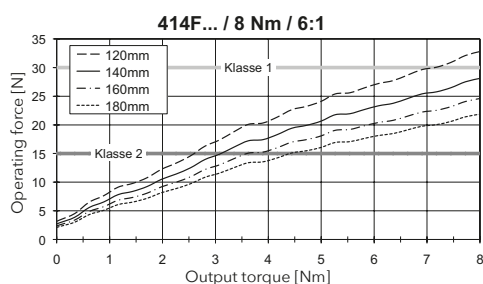
Max. output torque	<b>8.0 Nm</b>
Gear reduction	<b>6:1</b>
Efficiency	<b>0.34</b>

### Characteristics

- The small power pack: maximum performance with minimal gearbox dimensions
- With end stop (AB) after max. 19 revolutions (also available without end stop)
- Continuous internal profile on the drive and output

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours
- Extensions on request



Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$	Gear centre [A]
414F204	without AB	○ 6 mm	○ 8 mm	-
414F205	with AB	○ 6 mm	○ 8 mm	-
414F608	without AB	⚙ 9.9 mm	○ 7 mm	28.7 mm
414F648	with AB	⚙ □ RAL 7035	○ 7 mm	55.5 mm

## 414F2.. | Worm gear 3:1

Application: **Screens, volants**

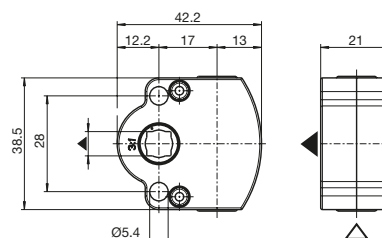
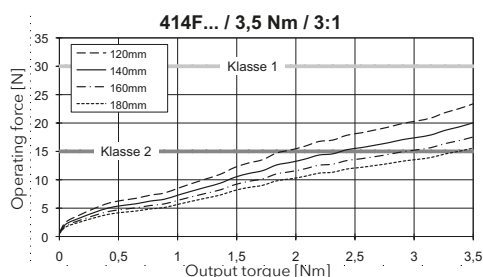
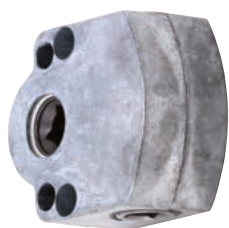
Max. output torque	<b>3.5 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.42</b>

### Characteristics

- Small installation dimensions
- Without end stop (AB)

### Note

- Freewheel and prolonged shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	Drive $\Delta$	Output $\nabla$	Fixation	Gear centre [A]
414F220	○ 6 mm	○ 7 mm	Ø 5.4 mm TK28	-
414F225	⚙ □ RAL 7035	○ 7 mm	M6 TK28	45.0 mm
414F226	⚙ □ RAL 9016	○ 7 mm	M6 TK28	45.0 mm
414F229	⚙ ■ RAL 9005	○ 7 mm	M6 TK28	45.0 mm

TK = pitch circle diameter

## 416F... | Worm gear 7:1

Application: **Folding-arm awnings, pivot-arm awnings, and window awnings**

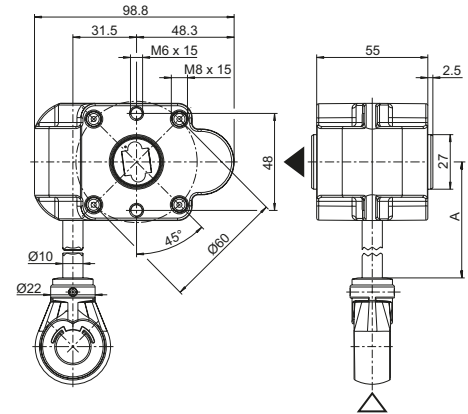
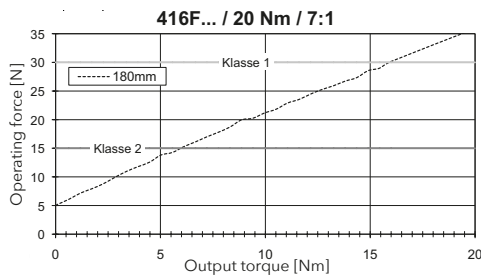
Max. output torque	<b>20 Nm</b>
Gear reduction	<b>7:1</b>
Efficiency	<b>0.44</b>

### Characteristics

- Available with or without housing holder (collar)
- With end stop (AB) after max. 15 revolutions (also available without end stop)

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	Colour	End stop (AB)	Drive $\Delta$	Output $\nabla$	Fixation	Gear centre [A]
416F001	☒ blank	without AB	⊗ Zinc	○ 13 mm	M6+M8 w/o collar	35.5 mm
416F301	☐ RAL 7035	with AB	⊗ RAL 7035	○ 13 mm	M6+M8 with collar	35.5 mm
416F305	☐ RAL 9010	with AB	⊗ RAL 9016	○ 13 mm	M6+M8 with collar	35.5 mm
416F308	☐ RAL 9006	with AB	⊗ RAL 7035	○ 13 mm	M6+M8 with collar	35.5 mm

## 417F... | Worm gear 13:1

Application: **Folding arm and pivot arm awnings**

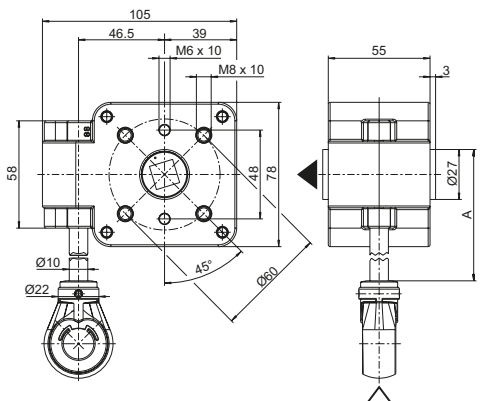
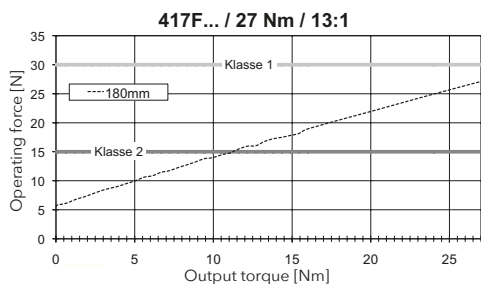
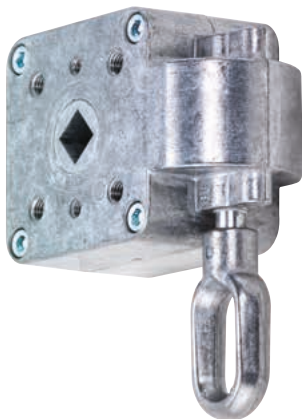
Max. output torque	<b>27 Nm</b>
Gear reduction	<b>13:1</b>
Efficiency	<b>0.43</b>

### Characteristics

- Available with or without housing holder (collar)
- Without end stop (AB)

### Note

- Colours and drive shafts on request
- This GEIGER awning gear is available with oval zinc eyelets, oval or round plastic eyelets in different RAL colours



Part no.	Colour	Drive $\Delta$	Output $\nabla$	Fixation	Gear centre [A]
417F300	☐ RAL 9010	⊗ RAL 9016	○ 13 mm	M6+M8 with collar	36.5 mm
417F327	☐ RAL 7035	⊗ RAL 7035	○ 13 mm	M6+M8 with collar	36.5 mm

## 417F5.. | Worm gear 13:1

Application: **Folding-arm awnings, pivot-arm awnings, and window awnings**

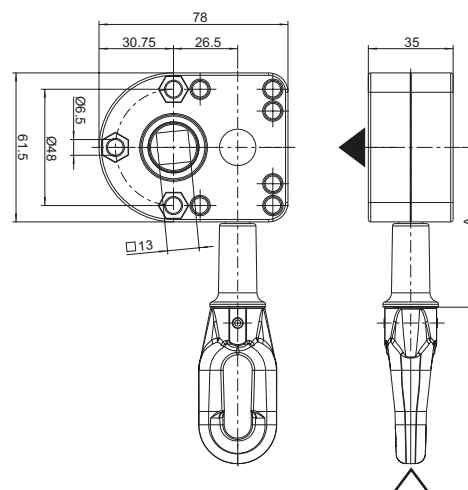
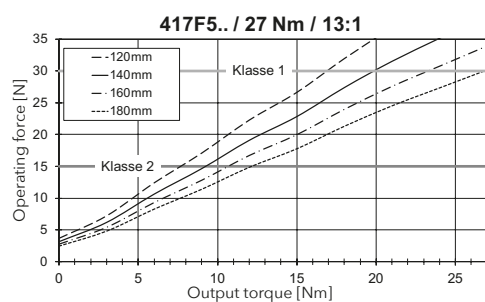
Max. output torque	<b>27 Nm</b>
Gear reduction	<b>13:1</b>
Efficiency	<b>0.38</b>

### Characteristics

- Without housing holder (collar)
- Without end stop (AB)

### Note

- More colours and items on request



Part no.	Colour	Drive $\Delta$	Output $\nabla$	Fixation	Gear centre [A]
417F501	□ RAL 9010	⊗ □ RAL 9016	○ 13 mm	without collar	38.0 mm
417F502	□ RAL 9010	⊗ □ RAL 9016	○ 13 mm	without collar	65.5 mm
417F503	■ RAL 7035	⊗ ■ RAL 7035	○ 13 mm	without collar	65.5 mm

## 418F... | Worm gear 7:1

Application: Folding-arm awnings, pivot-arm awnings, and window awnings

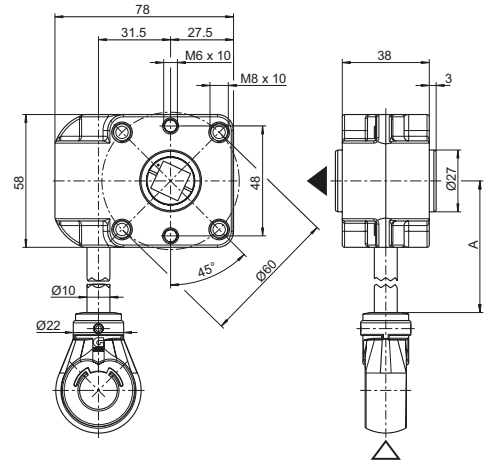
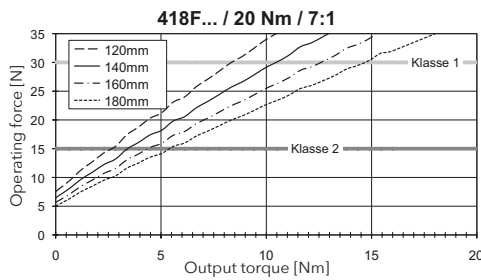
Max. output torque	<b>20 Nm</b>
Gear reduction	<b>7:1</b>
Efficiency	<b>0.42</b>

### Characteristics

- The strong awning classic
- Available with or without housing holder (collar)
- Without end stop (AB)

### Note

- Colours and drive shafts on request
- Also available with oval eyelet. Other items on request.



Part no.	Colour	Drive $\Delta$	Output $\nabla$	Fixation	Gear centre [A]
418F300	RAL 7035	RAL 7035	13 mm	M6+M8 with collar	36.5 mm
418F301	RAL 9016	RAL 9016	13 mm	M6+M8 with collar	36.5 mm
418F302	RAL 9010	RAL 9016	13 mm	M6+M8 with collar	36.5 mm
418F312	RAL 8019	RAL 9005	13 mm	M6+M8 with collar	36.5 mm
418F604	RAL 9010	RAL 9016	13 mm	M6+M8 with collar	36.5 mm
418F624	RAL 7035	RAL 7035	13 mm	M6+M8 with collar	36.5 mm

# 418F5.. | Worm gear 9:1

Application: **Folding-arm awnings, pivot-arm awnings, and window awnings**

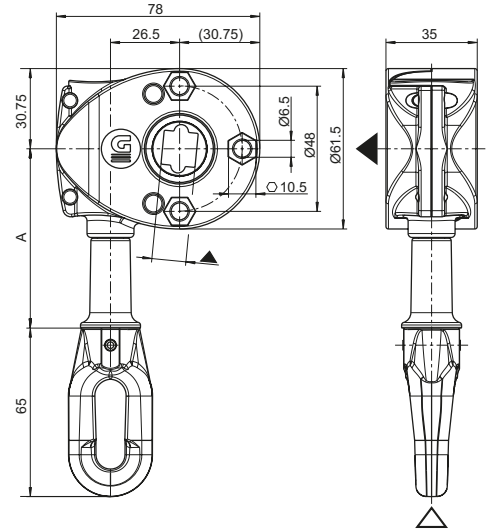
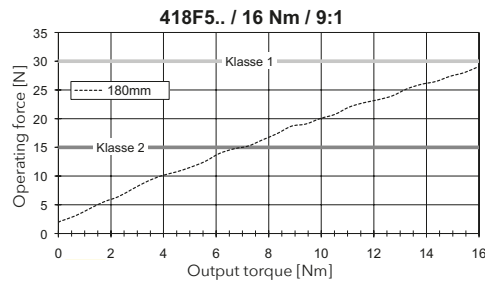
Max. output torque	<b>16 Nm</b>
Gear reduction	<b>9:1</b>
Efficiency	<b>0.34</b>

### Characteristics

- Available with or without housing holder (collar)
- Without end stop (AB)

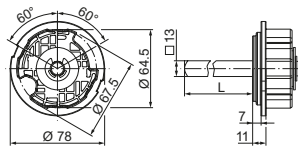
### Note

- Colours and drive shafts on request



Part no.	Colour	Drive $\Delta$	Output $\nabla$	Gear centre [A]
418F500	<input type="checkbox"/> RAL 9010	<input type="checkbox"/> RAL 9016	<input type="checkbox"/> 13 mm	41.0 mm
418F501	<input type="checkbox"/> RAL 9010	<input type="checkbox"/> RAL 9016	<input type="checkbox"/> 13 mm	68.5 mm
418F502	<input type="checkbox"/> RAL 9010	<input type="checkbox"/> RAL 9016	<input type="checkbox"/> 13 mm	98.5 mm
418F510	<input type="checkbox"/> RAL 7035	<input type="checkbox"/> RAL 7035	<input type="checkbox"/> 13 mm	41.0 mm
418F511	<input type="checkbox"/> RAL 7035	<input type="checkbox"/> RAL 7035	<input type="checkbox"/> 13 mm	68.5 mm
418F512	<input type="checkbox"/> RAL 7035	<input type="checkbox"/> RAL 7035	<input type="checkbox"/> 13 mm	98.5 mm

## 418F3.. | Freewheel for 70 mm round tube with groove profile

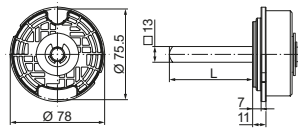


### Characteristics

- Freewheel for 70 mm round tube with groove profile
- For worm gear 418F...
- Prevents incorrect winding of the hanging
- Other lengths of the square rod on request

Part no.	Drive $\Delta$	Output $\nabla$	Comment
418F362	■ 13 mm, L = 69 mm	Ø 66.5 mm	Freewheel left
418F363	■ 13 mm, L = 69 mm	Ø 66.5 mm	Freewheel right

## 418F3.. | Freewheel for 78 mm round tube with groove profile



### Characteristics

- Freewheel for 78 mm round tube with groove profile
- For worm gear 418F...
- Prevents incorrect winding of the hanging
- Other lengths of the square rod on request

Part no.	Drive $\Delta$	Output $\nabla$	Comment
418F369	■ 13 mm, L = 45 mm	Ø 75.5 mm	Freewheel left
418F370	■ 13 mm, L = 45 mm	Ø 75.5 mm	Freewheel right
418F364	■ 13 mm, L = 69 mm	Ø 75.5 mm	Freewheel left
418F365	■ 13 mm, L = 69 mm	Ø 75.5 mm	Freewheel right

## 421F5.. | Worm gear 5.33:1

Application: Pivot arm awnings, marquoisettes, vertical awnings

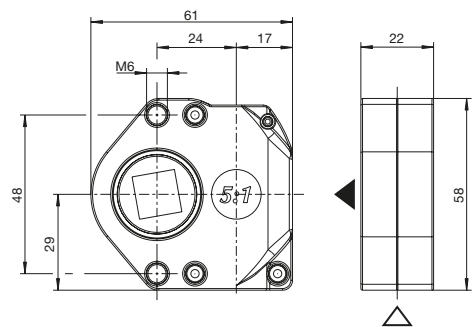
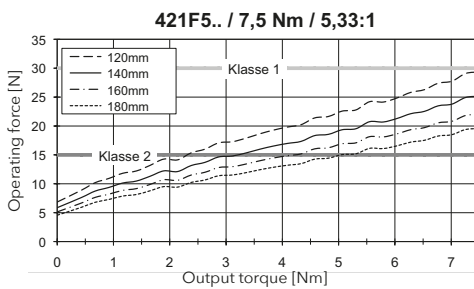
Max. output torque	7.5 Nm
Gear reduction	5.33:1
Efficiency	0.40

### Characteristics

- Without end stop (AB)
- Housing and worm wheel made of die-cast zinc
- Continuous internal profile on the drive and output

### Note

- Coloured versions on request
- Designs with extensions, mounted universal joints, zinc or plastic eyelets or 8 mm square adaptor on request



Part no.	Drive $\Delta$	Output $\nabla$
421F504	○ 6 mm	○ 13 mm
421F542	○ 7 mm	○ 13 mm

# 421F5.. | Worm gearbox 5.33:1 with end stop

Application: **Pivot arm awnings, marquiselettes, vertical awnings**

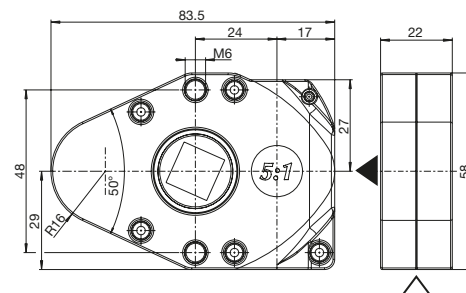
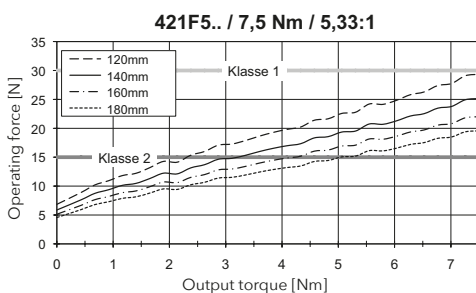
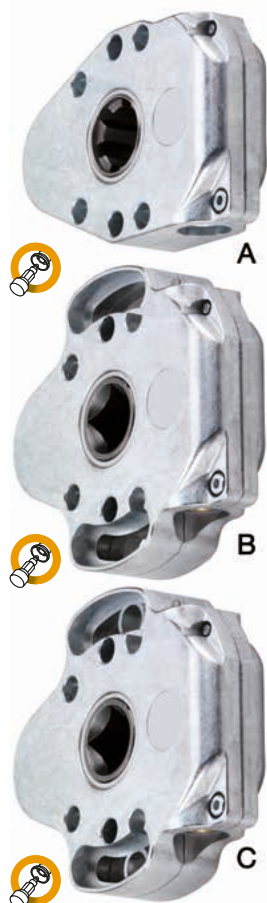
Max. output torque	<b>7.5 Nm</b>
Gear reduction	<b>5.33:1</b>
Efficiency	<b>0.40</b>

## Characteristics

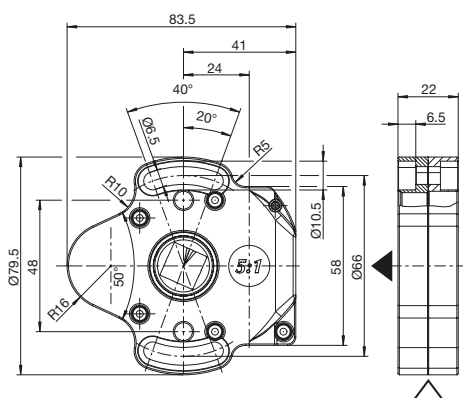
- With end stop (AB)
- Housing made of die-cast zinc, worm wheel made of steel
- Continuous internal profile on the drive and output
- Available in three different housing designs

## Note

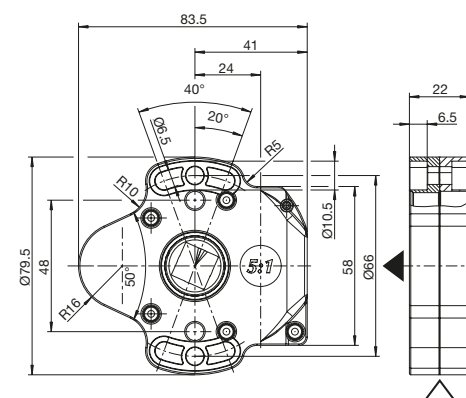
- Coloured versions on request
- Versions with extension, mounted universal joint, plug-in crank system, zinc, or plastic eyelet or 8 mm square adapter on request



Housing design A (TK 48 mm)



Housing design B (TK 66 mm)



Housing design C (TK 66 mm with fixing)

Options for worm gearbox 5.33:1 with end stop	
Drive	⊙ 6 mm and ⊙ 7 mm, continuous interior profile
Output	⊙ or ⊙ 13 mm and ⊙ 16 mm, continuous interior profile
Pitch circle Ø	48 mm, 66 mm and 66 mm with fixation
Colours	blank or powder-coated

## Housing design A

Part no.	Drive △	Output ▼
421F556	⊙ 6 mm	⊙ 16 mm
421F557	⊙ 7 mm	⊙ 16 mm
421F558	⊙ 7 mm	⊙ 13 mm
421F559	⊙ 6 mm	⊙ 13 mm

## Housing design B

Part no.	Drive △	Output ▼
421F552	⊙ 6 mm	⊙ 16 mm
421F553	⊙ 7 mm	⊙ 16 mm
421F554	⊙ 7 mm	⊙ 13 mm

## Housing design C

Part no.	Drive △	Output ▼
421F561	⊙ 6 mm	⊙ 16 mm
421F562	⊙ 7 mm	⊙ 16 mm
421F563	⊙ 7 mm	⊙ 13 mm
421F564	⊙ 6 mm	⊙ 13 mm

## 421F8.. | Worm gear 8:1

Application: **Pivot arm awnings, marquisolettes, vertical awnings**

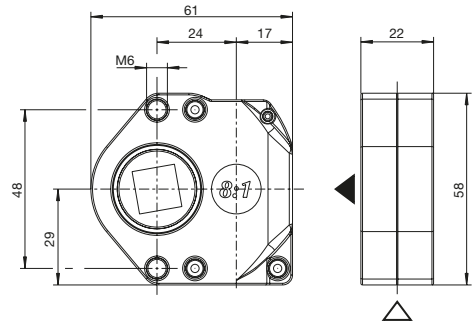
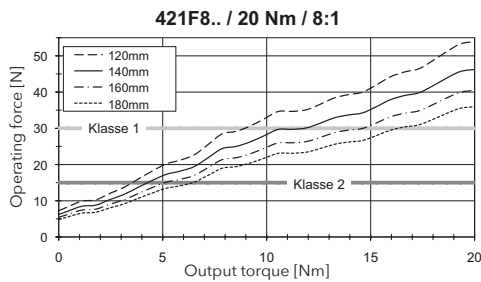
Max. output torque	<b>20 Nm</b>
Gear reduction	<b>8:1</b>
Efficiency	<b>0.39</b>

### Characteristics

- Without end stop (AB)
- Zinc die-cast housing
- Worm and worm wheel made of steel
- Continuous internal profile on the drive and output

### Note

- Coloured versions on request
- Designs with extensions, mounted universal joints, zinc or plastic eyelets or 8 mm square adaptor on request



Part no.	Drive $\triangle$	Output $\nabla$
421F804	$\bigcirc$ 6 mm	$\bigcirc$ 13 mm
421F842	$\bigcirc$ 7 mm	$\bigcirc$ 13 mm
421F892	$\bigcirc$ 7 mm	$\bigcirc$ 10 mm

# 421F8.. | Worm gearbox 8:1 with end stop

Application: **Pivot arm awnings, marquiselettes, vertical awnings**

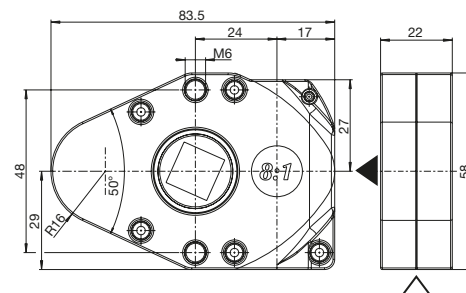
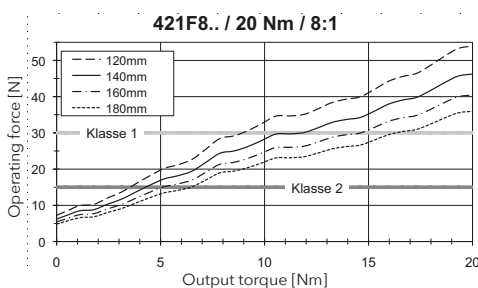
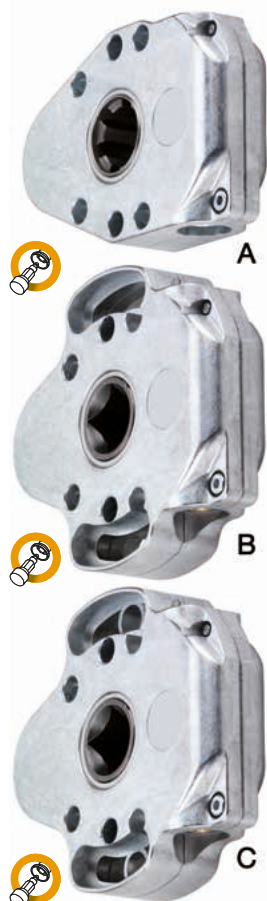
Max. output torque	<b>20 Nm</b>
Gear reduction	<b>8:1</b>
Efficiency	<b>0.39</b>

## Characteristics

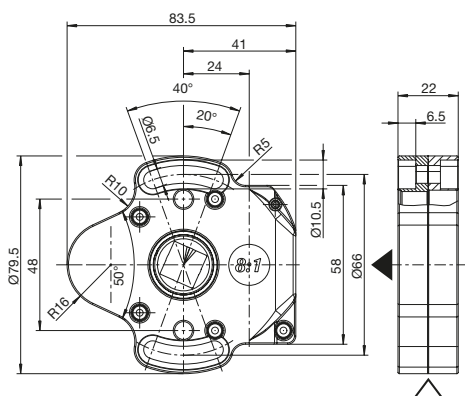
- With end stop (AB)
- Housing made of die-cast zinc, worm wheel made of steel
- Continuous internal profile on the drive and output
- Available in three different housing designs

## Note

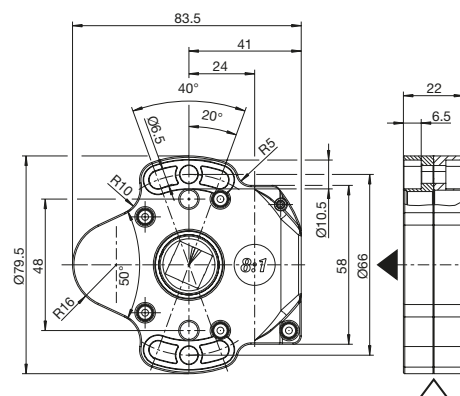
- Coloured versions on request
- Versions with extension, mounted universal joint, plug-in crank system, zinc, or plastic eyelet or 8 mm square adapter on request



Housing design A (TK 48 mm)



Housing design B (TK 66 mm)



Housing design C (TK 66 mm with fixing)

Options for worm gearbox 8:1 with end stop	
Drive	○ 6 mm and ○ 7 mm, continuous interior profile
Output	○ or ⚙ 13 mm and ⚙ 16 mm, continuous interior profile
Pitch circle Ø	48 mm, 66 mm and 66 mm with fixation
Colours	blank or powder-coated

## Housing design A

Part no.	Drive △	Output ▼
421F855	○ 6 mm	⚙ 16 mm
421F856	○ 7 mm	⚙ 16 mm
421F857	○ 7 mm	○ 13 mm
421F861	○ 6 mm	○ 13 mm

## Housing design B

Part no.	Drive △	Output ▼
421F851	○ 6 mm	⚙ 16 mm
421F853	○ 7 mm	○ 13 mm

## Housing design C

Part no.	Drive △	Output ▼
421F862	○ 6 mm	⚙ 16 mm
421F863	○ 7 mm	⚙ 16 mm
421F864	○ 7 mm	○ 13 mm
421F865	○ 6 mm	○ 13 mm

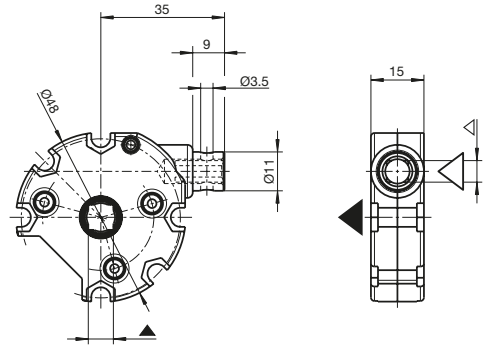
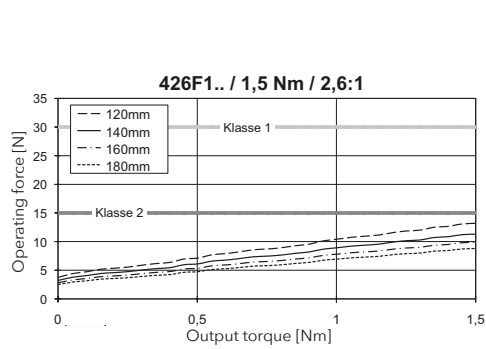
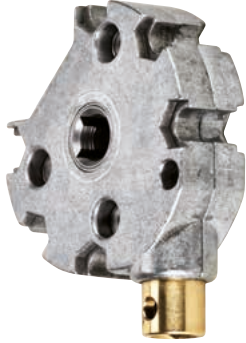
## 426F1.. | Worm gear 2.6:1

Application: **Screens, volants**

Max. output torque	<b>1.5 Nm</b>
Gear reduction	<b>2.6:1</b>
Efficiency	<b>0.37</b>

### Characteristics

- Zinc die-cast housing
- Worm of special brass
- Worm wheel made out of heat-treatable steel
- Brake spring made out of spring steel
- Without end stop (AB)



Part no.	Drive $\Delta$	Output $\nabla$
426F100	6 mm	7 mm
426F101	6 mm	7 mm

## 426F6.. | Worm gear 2.8:1

Application: **Screens, volants**

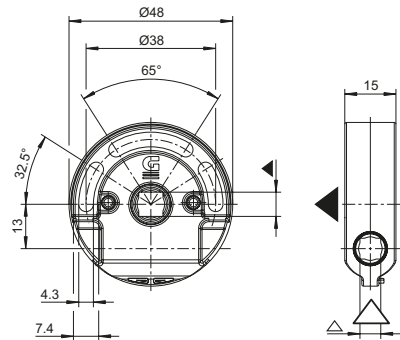
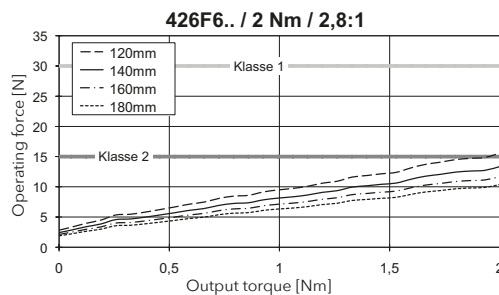
Max. output torque	<b>2 Nm</b>
Gear reduction	<b>2.8:1</b>
Efficiency	<b>0.38</b>

### Characteristics

- Small installation dimensions (only 15 mm wide) for narrow space
- Without end stop (AB)
- Continuous internal profile on the drive and output

### Note

- Also available with oval eyelet or eyelet extension. Other items on request.
- Alternatively also with mounted universal joint



Part no.	Drive $\Delta$	Output $\nabla$
426F600	6 mm	7 mm
426F604	7 mm	7 mm
426F611	6 mm	7 mm
426F615	6 mm	6 mm

## 426F7.. | Worm gear 3.5:1

Application: **Screens, volants**

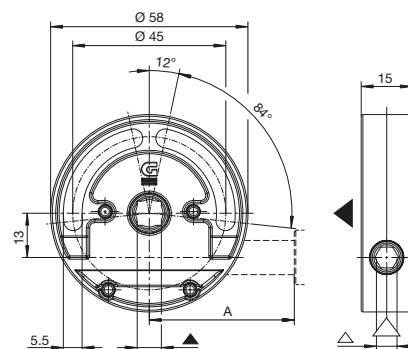
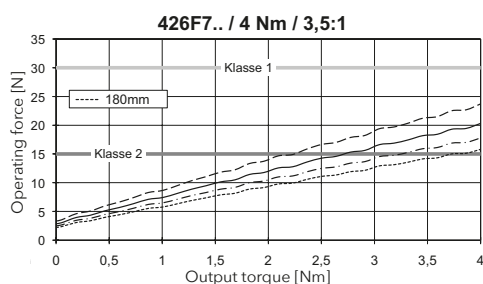
Max. output torque	<b>4 Nm</b>
Gear reduction	<b>3.5:1</b>
Efficiency	<b>0.40</b>

### Characteristics

- Small installation dimensions (only 15 mm wide) for narrow space
- Without end stop (AB)
- Continuous internal profile on the drive and output

### Note

- Also available with oval eyelet or eyelet extension. Other items on request.
- Alternatively also with mounted universal joint



Part no.	Drive $\Delta$	Output $\nabla$	Gear centre [A]
426F700	$\bigcirc$ 6.0 mm	$\bigcirc$ 7 mm	-
426F701	$\text{⌘}$ 9.9 mm $\varnothing$ 16 mm	$\bigcirc$ 7 mm	37
426F702	$\text{⌘}$ 9.9 mm, $\varnothing$ 16 mm	$\bigcirc$ 7 mm	43

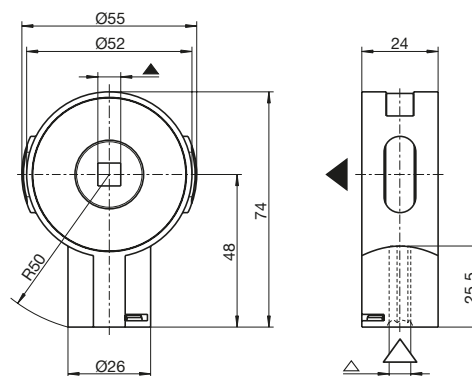
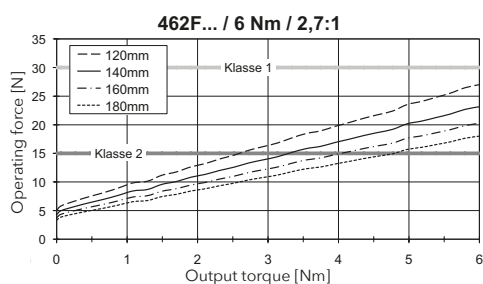
## 462F... | Bevel gearbox 2.7:1

Application: **Screens, volants**

Max. output torque	<b>6 Nm</b>
Gear reduction	<b>2.7:1</b>
Efficiency	<b>0.69</b>

### Characteristics

- Can be installed on the left and right with constant direction of rotation
- Only suitable for spherical plain bearing drive
- Coupling piece for use with an 8 mm square see 462F093
- Without end stop (AB)

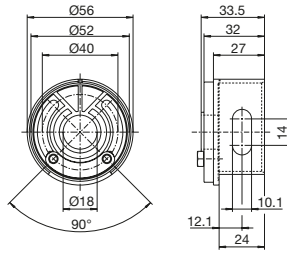


Part no.	End stop (AB)	Drive $\Delta$	Output $\nabla$
462F007	without AB	$\bigcirc$ 6 mm	$\bigcirc$ 12 mm
462F013	without AB	$\bigcirc$ 6 mm	$\bigcirc$ 10.2 mm
462F021	without AB	$\bigcirc$ 6 mm	$\bigcirc$ 14 mm

## 462F075 | Gearbox holder

### Characteristics

- Made of plastic

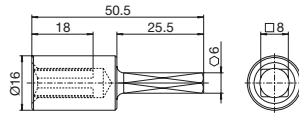


Part no.	Material	Fixation
462F075	Plastic	swivelling

## 462F093 | Coupling piece for gearbox 462F...

### Characteristics

- Inside-8 mm- or 6 mm-square for spherical bearing drive
- Outside-6 mm-hexagon
- Made of steel
- Galvanised

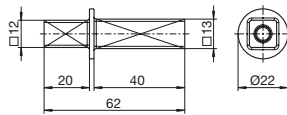


Part no.	Drive	Output
462F093	○ 8 mm	● 6 mm

## 462F080 | Coupling piece

### Characteristics

- Made from die-cast zinc



Part no.	Drive	Output
462F080	■ 12 mm	■ 13 mm

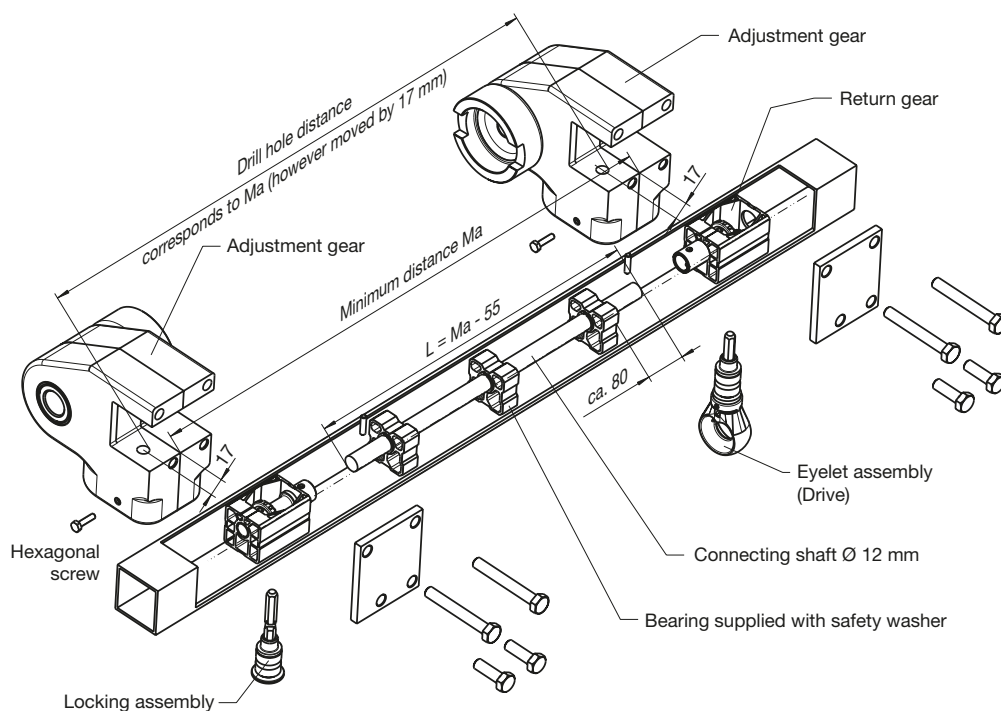
## 482F... | Angle adjustment gear

Application: **Folding arm awnings**



### Characteristics

- Delivery of the complete assembly kit (without connection tube)
- Other colours on request
- For all 40 x 40 mm support tubes with 2 or 2.5 mm wall thickness
- Adjustment by crank drive
- Preset to 7°, swivel range 55°
- Easy and quick mounting, assembly instructions on request
- Also available with oval eyelet. Other items on request.



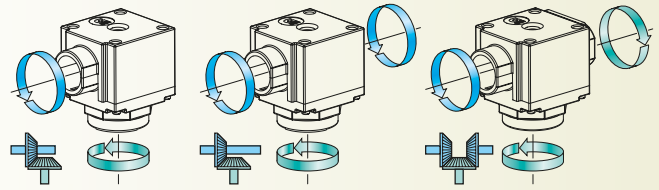
Part no.	Colour	End stop (AB)	Drive $\Delta$
482F131	<input type="checkbox"/> RAL 9010	55°	<input type="checkbox"/> RAL 9016
482F150	<input type="checkbox"/> RAL 9006	55°	<input type="checkbox"/> RAL 7035
482F156	<input type="checkbox"/> RAL 7035	55°	<input type="checkbox"/> RAL 7035
482F157	<input type="checkbox"/> RAL 9016	55°	<input type="checkbox"/> RAL 9016
482F212	<input checked="" type="checkbox"/> blank	55°	<input type="checkbox"/> RAL 7035

## Angle gear 430F5..

Universal angle gear for a wide range of applications.

The compact gearbox is available with two or three drives and outputs. Any internal profile can be used as an input or output drive. The die-cast zinc housing is stainless. The durable steel gear wheels are mounted in plastic bushes as standard. A attachment plate with 2 holes (pitch circle  $\varnothing$  51.5 mm) is optionally available.

Made of high-quality materials, very robust and wear-free, they offer the usual GEIGER quality with the greatest possible ease of use.



Angle gear with one drive and one output.

A continuous drive rod makes it possible to drive two Venetian blinds with the same direction of rotation, for example.

Angle gear with one drive and two outputs or two drives and one output.

## 430F5.. | Angle gear

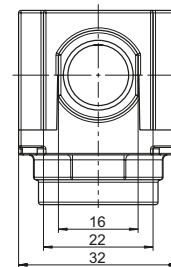
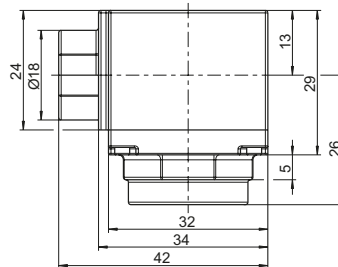
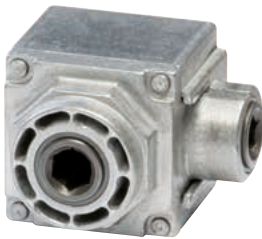
Max. output torque	<b>6 Nm</b>
Transmission	<b>1:1 1.5:1 1:1.5</b>
Efficiency	<b>0.83</b>

### Characteristics

- Housing made of die-cast zinc, toothing made of steel
- Bearing points are filled with plastic
- With one drive and one output

### Note

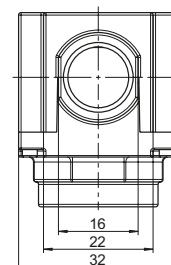
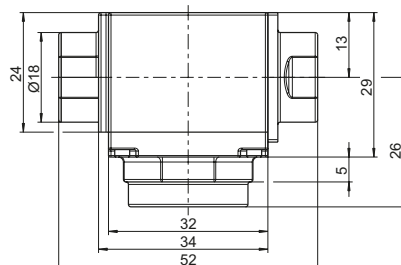
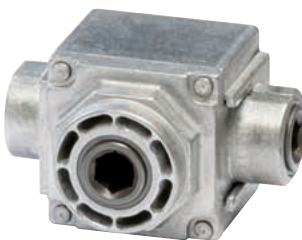
- Other drive/output combinations on request
- Also available as angle gear for emergency operation (max. 10 Nm)



Part no.	Drive/output profile	Transmission	Drive/output(s)
430F50	○ 7 mm	1 : 1	2
430F51	○ 7 mm	1.5 : 1	2
430F52	○ 7 mm	1 : 1.5	2

### Characteristics

- As before, but with one drive and two outputs or two drives and one output

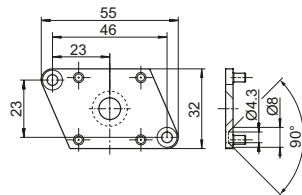
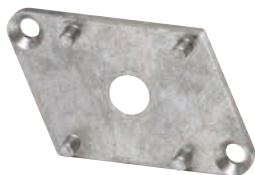


Part no.	Drive/output profile	Transmission	Drive/output(s)
430F53	○ 7 mm	1 : 1	3
430F54	○ 7 mm	1.5 : 1	3
430F55	○ 7 mm	1 : 1.5	3

## 430F503 | Attachment plate

### Characteristics

- Incl. countersunk screw (M6 x 16 mm, galvanised, with screw lock) for fixation to the gearbox
- For horizontal and vertical mounting
- Suitable for 430F5.. angle gears



Part no.

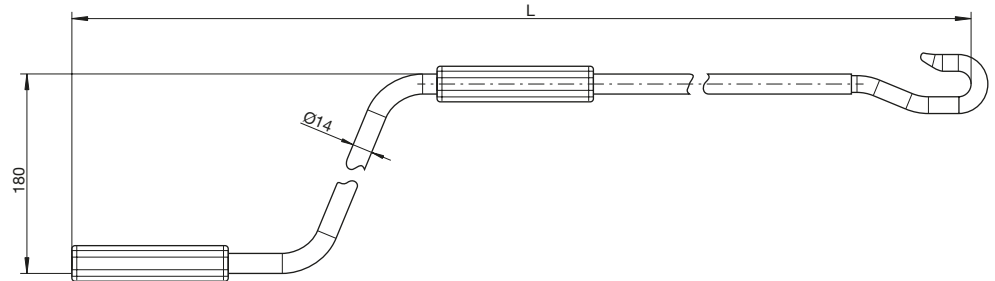
430F503

## 511F9.. | Crank handle



### Characteristics

- 2-piece rod made of steel (composed of hook and tube)
- Powder-coated (RAL 7035 or RAL 9010)
- Available in various lengths, working radius 180 mm
- One-piece grip sleeves made of high strength plastic matching the crank colour
- The awning crank is fitted with a conventional hook for oval eyelets



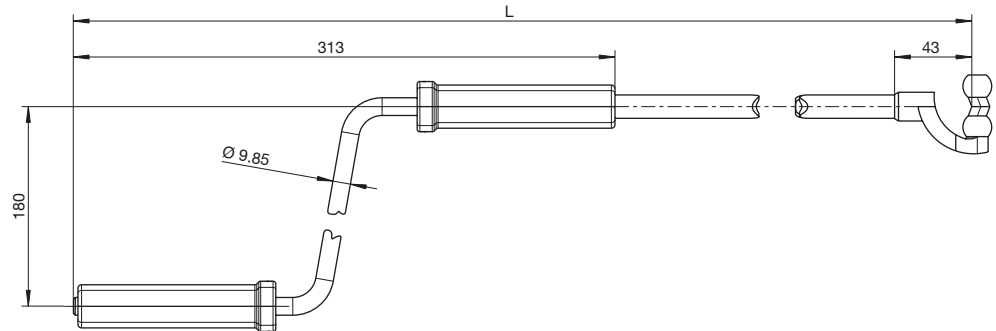
Part no.	Colour	Length [L]	Sleeve type	Sleeve colour
511F950	<input type="checkbox"/> RAL 7035	1000 mm	polygon	<input type="checkbox"/> grey
511F951	<input type="checkbox"/> RAL 7035	1200 mm	polygon	<input type="checkbox"/> grey
511F952	<input type="checkbox"/> RAL 7035	1400 mm	polygon	<input type="checkbox"/> grey
511F953	<input type="checkbox"/> RAL 7035	1600 mm	polygon	<input type="checkbox"/> grey
511F954	<input type="checkbox"/> RAL 7035	1800 mm	polygon	<input type="checkbox"/> grey
511F955	<input type="checkbox"/> RAL 7035	2000 mm	polygon	<input type="checkbox"/> grey
511F957	<input type="checkbox"/> RAL 7035	2400 mm	polygon	<input type="checkbox"/> grey
511F970	<input type="checkbox"/> RAL 9010	1000 mm	polygon	<input type="checkbox"/> white
511F971	<input type="checkbox"/> RAL 9010	1200 mm	polygon	<input type="checkbox"/> white
511F972	<input type="checkbox"/> RAL 9010	1400 mm	polygon	<input type="checkbox"/> white
511F973	<input type="checkbox"/> RAL 9010	1600 mm	polygon	<input type="checkbox"/> white
511F974	<input type="checkbox"/> RAL 9010	1800 mm	polygon	<input type="checkbox"/> white
511F975	<input type="checkbox"/> RAL 9010	2000 mm	polygon	<input type="checkbox"/> white
511F976	<input type="checkbox"/> RAL 9010	2200 mm	polygon	<input type="checkbox"/> white
511F977	<input type="checkbox"/> RAL 9010	2400 mm	polygon	<input type="checkbox"/> white

## 512F... | Crank handle



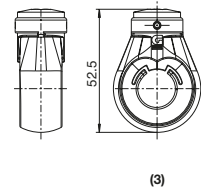
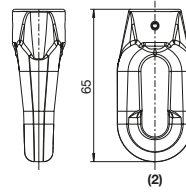
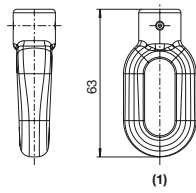
### Characteristics

- 3-piece rod made of steel (composed of hook, tube and crank)
- Zinc-plated or powder-coated
- Available in various lengths, working radius 180 mm
- Diecast spherical hook, nickel-plated
- Two-piece grip sleeves made of high strength plastic (black, angular)
- The smart awning crank for round plastic eyelets



Part no.	Colour	Length [L]	Sleeve type	Sleeve colour
512F010	galvanised	1000 mm	2-piece	black
512F011	galvanised	1200 mm	2-piece	black
512F012	galvanised	1400 mm	2-piece	black
512F013	galvanised	1600 mm	2-piece	black
512F014	galvanised	1800 mm	2-piece	black
512F015	galvanised	2000 mm	2-piece	black
512F016	galvanised	2200 mm	2-piece	black
512F230	RAL 9010	1000 mm	2-piece	black
512F231	RAL 9010	1200 mm	2-piece	black
512F232	RAL 9010	1400 mm	2-piece	black
512F233	RAL 9010	1600 mm	2-piece	black
512F234	RAL 9010	1800 mm	2-piece	black
512F235	RAL 9010	2000 mm	2-piece	black
512F236	RAL 9010	2200 mm	2-piece	black
512F250	RAL 7035	1000 mm	2-piece	black
512F251	RAL 7035	1200 mm	2-piece	black
512F252	RAL 7035	1400 mm	2-piece	black
512F253	RAL 7035	1600 mm	2-piece	black
512F254	RAL 7035	1800 mm	2-piece	black
512F255	RAL 7035	2000 mm	2-piece	black
512F256	RAL 7035	2200 mm	2-piece	black

## 418E2.. | Zinc and plastic eyelets



### Oval zinc eyelet (1)

Part no.	Colour	Material	Interior profile	Cross-bore
418K001	☒ blank	Zinc	Ø 10 mm	4 mm
418K002	☒ blank	Zinc	Ø 12 mm	4 mm
420K003	☒ blank	Zinc	Ø 16 mm	4 mm

### Oval plastic eyelet with bore Ø 12 mm (2)

Part no.	Colour	Material	Interior profile	Cross-bore
418E210	☐ RAL 9016	Plastic	Ø 12 mm	4 mm
418E211	■ RAL 9005	Plastic	Ø 12 mm	4 mm
418E212	▒ RAL 7035	Plastic	Ø 12 mm	4 mm

### Oval plastic eyelet with interior hexagon (also for Ø 10 mm) (2)

Part no.	Colour	Material	Interior profile	Cross-bore
418E230	☐ RAL 9016	Plastic	○ 10 mm	4 mm
418E231	■ RAL 9005	Plastic	○ 10 mm	4 mm
418E232	▒ RAL 7035	Plastic	○ 10 mm	4 mm

### Round plastic eyelet with bore Ø 12 mm (3)

Part no.	Colour	Material	Interior profile	Cross-bore
418E110	☐ RAL 9016	Plastic	Ø 12 mm	4.1 mm
418E111	■ RAL 9005	Plastic	Ø 12 mm	4.1 mm
418E112	▒ RAL 7035	Plastic	Ø 12 mm	4.1 mm

### Round plastic eyelet with interior hexagon (also for Ø 10 mm) (3)

Part no.	Colour	Material	Interior profile	Cross-bore
418E130	☐ RAL 9016	Plastic	○ 10 mm	4.1 mm
418E131	■ RAL 9005	Plastic	○ 10 mm	4.1 mm
418E132	▒ RAL 7035	Plastic	○ 10 mm	4.1 mm

### Round plastic eyelet with interior hexagon 7 mm (3)

Part no.	Colour	Material	Interior profile	Cross-bore
418E170	☐ RAL 9016	Plastic	○ 7 mm	3 mm
418E171	■ RAL 9005	Plastic	○ 7 mm	3 mm
418E172	▒ RAL 7035	Plastic	○ 7 mm	3 mm

### Round plastic eyelet for angle adjustment gear (3)

Part no.	Colour	Material	Interior profile	Cross-bore
418E140	☐ RAL 9016	Plastic	○ 10 mm	3 mm
418E141	■ RAL 9005	Plastic	○ 10 mm	3 mm
418E142	▒ RAL 7035	Plastic	○ 10 mm	3 mm

## 418E18. | Safety ring for plastic eyelets



### Characteristics

- To secure the plastic eyelet through easy rotation (together with locking pin 418E120)

Part no.	Colour
418E180	<input type="checkbox"/> RAL 9016
418E181	<input checked="" type="checkbox"/> RAL 9005
418E182	<input type="checkbox"/> RAL 7035

## 418E120 | Driver pin for plastic eyelets



### Characteristics

- To secure the plastic eyelet into the drive shaft (only applicable with safety ring 418E18.)

Part no.	Material	Outside-Ø	Length	Surface
418E120	Stainless steel	4 mm	22 mm	<input checked="" type="checkbox"/> blank

## 506N418-1 | Spiral pin



### Characteristics

- To secure the tube connection

Part no.	Material	Outside-Ø	Length	Surface
506N418-1	Steel	4 mm	18 mm	<input type="checkbox"/> galvanised





# SYSTEM COMPONENTS



**GEIGER**  
ANTRIEBSTECHNIK



## GEIGER plastic pressure piece KDS

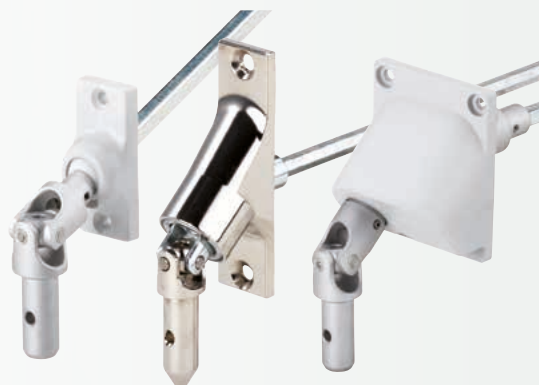
The latest generation of GEIGER aluminium crank handles are equipped with a plastic pressure piece. The plastic bearing of the crank elements prevents material abrasion at the bearing points. Damage that might be caused to wallpaper or curtains is thus prevented. At the same time, the pressure piece ensures easy operation without lubricant as well as a precise locking.



## Spherical bearing

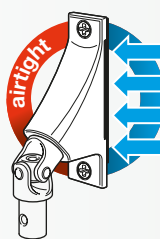
GEIGER offers a very large selection of spherical bearings in all conceivable designs and sizes. These bearings are basically differentiated by the angle of use - 45° or 90° - and the size of the universal joint. As standard, we offer universal joints with a 16 mm diameter made of steel (up to 3 Nm) and with an 18 mm diameter made of aluminium (up to 5 Nm). Our spherical bearing plates are made of high-strength plastic or die-cast zinc.

Two standard colours (white, grey) are available for the plastic panels. The die-cast zinc plates can be bright nickel-plated or powder-coated. Other colours or surfaces on request.



## Airtight spherical bearings

Saving energy and increasing comfort - the airtight spherical bearings from GEIGER fulfil this task. Many of our spherical bearing plates are offered with a special plastic seal made of rubber. These airtight spherical bearings prevent the flow of air from the inside to the outside - both at the spherical bearing plate and at the bearing point. In addition to saving energy, this also increases the service life of the gearbox. The risk of condensation forming on the gear unit is reduced to a minimum.





## SKS - Detachable crank system for Venetian blinds and rolling shutters

The detachable crank system from GEIGER has been specially developed for difficult space conditions. This system can be used where the crank handle makes it difficult to operate the window, is inconvenient for visual reasons or is undesirable.

Due to the installation situation or the rolling shutter or Venetian blind system used, it is often the case that a spherical bearing has to be installed in an area where the crank interferes. GEIGER has developed something special so that the window can still be operated, e.g., opened or tilted.



The crank handle is removed after operating the rolling shutter or Venetian blind.



Only the spherical bearing with funnel is still visible, ...



... and, thanks to its low height, does not impair operation of the window.

### Components suitable for the SKS

Rods and spherical bearing plates that are suitable for the detachable crank system or can be combined with it are marked with the "SKS" icon on the following pages.



## All available surface finishes

Many of our system components are available in various high-quality surface finishes. Below, you will find the available surface finishes of our metal parts:

### blank

smooth surface, without galvanic finishing, the parts are deburred using the vibratory finishing process and sharp edges are rounded

### bright galvanised and chromatised

without mechanical processing \*)

### galvanised and black chromatised

without mechanical processing \*)

### bright nickel-plated

with previous copper plating, without mechanical processing \*)

### anodised

natural colour anodised E6/EV1

dark bronze anodised

black anodised

### powder-coated

in various RAL colours

### wet-painted

in various RAL colours

## Corrosion protection

Good corrosion protection depends on the surface quality. Anodised aluminium parts or galvanised steel parts ensure good corrosion protection. Bright nickel-plated steel parts are not suitable for outdoor mounting.

### Important note

Plaster and various paints emit aggressive vapours when setting.

Galvanised and anodised parts may therefore only be fitted after the interior work has been completed, as the vapours will otherwise attack the surface.

\*) without surface treatment prior to electroplating, but deburred using the vibratory finishing process.

The coating of the electroplated surfaces is constantly tested for strength and adhesion.

**Bright nickel-plated surfaces** are an optical coating. They do not offer lasting corrosion protection.

**Galvanised surfaces** offer significantly better significantly better corrosion protection. The choice of aluminium joints prevents corrosion damage.

The location and the prevailing (indoor) climate as well as the intended use and the associated load profiles are crucial when selecting suitable spherical bearings and universal joints. We will be happy to advise you on the selection of suitable materials and coatings.

### Colour specifications and print presentation

The colours specified and shown in the catalogue are only reference values. RAL colours may deviate from the RAL specifications depending on the surface or base material. The colour fields shown in the tables may be displayed differently due to printing-related deviations.

### Drawings and dimensions

The technical drawings shown in this catalogue refer to a product from a series.

Dimensions from the drawings cannot be used for all items in some cases.

If required, please request exact dimensional drawings for the selected item.

### Technical changes and errors excepted

# Übersicht der Systemkomponenten

## SPHERICAL BEARING PLATES

- 816F... | Spherical bearing plates 45° P. 294
- 816F... | Spherical bearing plates 90° P. 298
- 818F... | Spherical bearing plates 45° P. 300
- 818F... | Spherical bearing plates 90° P. 303

## SPHERICAL BEARINGS (UNIVERSAL JOINTS)

- 816F... | Standard spherical bearing 45° P. 292
- 816F... | Universal joints for spherical bearings P. 293
- 816F... | Standard spherical bearing 90° P. 297
- 818F... | Universal joints for spherical bearings P. 300

## TUBE CONNECTIONS AND FUSES

- 510E7.. | Safety clip P. 285
- 510F930 | Drilling and sawing device P. 286

## CRANK HOLDER AND TUBE BEARING

- 514F... | Crank holder P. 286
- 514F... | Adjustable crank holder P. 287
- 514F... | Magnetic crank holder P. 287
- 514F00. | Tube bearing P. 288

## RODS

- P... | Aluminium rod with Ø 15.5 mm profile tube, concealed connecting pin and safety clip P. 276
- G... | Aluminium rods with tube 15 x 1.5 mm with safety clip P. 277
- G... | Aluminium rod with tube 13 x 1.5 mm with mounted safety clip P. 279
- G... | Aluminium crank handle with steel tube and mounted safety clip P. 280

## CRANKS

- 510F4.. | Aluminium crank handles with concealed connecting pin P. 281
- 510F... | Aluminium crank handles P. 281
- 510F989 | Unlocking device P. 282

## RODS AND ACCESSORIES

- 816E... | Output rods P. 299+327
- 813F.../816F.../818F.../820F... | Universal joints P. 306
- 723F... | Rod material P. 308

## OPTIONS

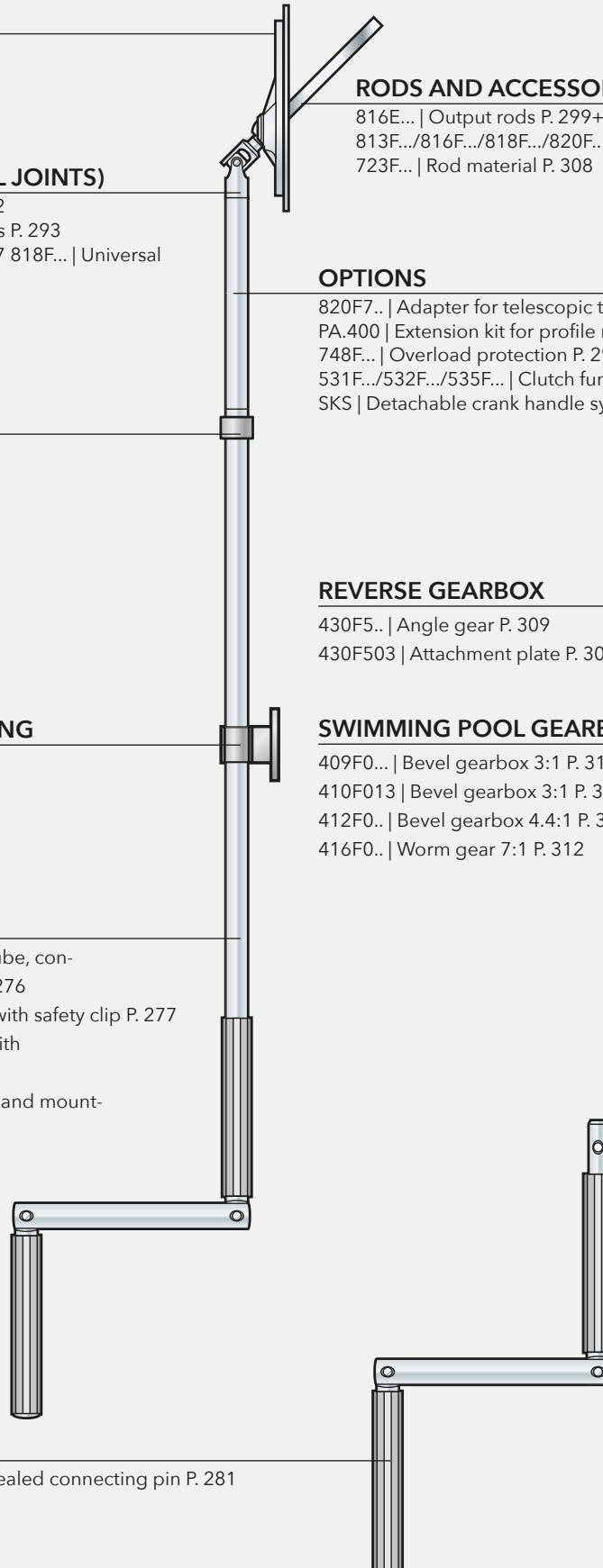
- 820F7.. | Adapter for telescopic tubes P. 289
- PA.400 | Extension kit for profile rods P. 289
- 748F... | Overload protection P. 290
- 531F.../532F.../535F... | Clutch funnel P. 290
- SKS | Detachable crank handle system P. 291

## REVERSE GEARBOX

- 430F5.. | Angle gear P. 309
- 430F503 | Attachment plate P. 309

## SWIMMING POOL GEARBOX

- 409F0... | Bevel gearbox 3:1 P. 310
- 410F013 | Bevel gearbox 3:1 P. 311
- 412F0.. | Bevel gearbox 4.4:1 P. 312
- 416F0.. | Worm gear 7:1 P. 312



## P... | Aluminium rod with Ø 15.5 mm profile tube, concealed connecting pin and safety clip

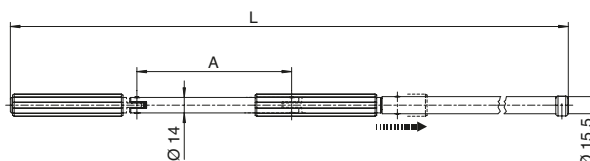


### Characteristics

- Abrasion-free and precise operation of the crank handle thanks to patented plastic pressure piece
- Crank parts and tube made of corrosion-resistant aluminium
- No torsion of the tube even with long crank handles
- Quick and easy mounting on the spherical bearing (no tools required)
- Centre section Ø 14 mm, tube Ø 15.5 mm
- Other rod lengths, crank projections and centre section diameters on request
- Available standard colours (powder-coated): RAL 7035, RAL 9016, RAL 8019 or natural colour anodised
- Other colours and surfaces on request

### Note

- Spherical bearing with profile trunnion required



### Powder-coated centre section and tube, grey handle sleeves and safety clip

Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
P011000	1000 mm	140 mm	<input type="checkbox"/> RAL 7035
P011200	1200 mm	140 mm	<input type="checkbox"/> RAL 7035
P011300	1300 mm	140 mm	<input type="checkbox"/> RAL 7035
P011400	1400 mm	140 mm	<input type="checkbox"/> RAL 7035
P011500	1500 mm	140 mm	<input type="checkbox"/> RAL 7035
P011600	1600 mm	140 mm	<input type="checkbox"/> RAL 7035
P011700	1700 mm	140 mm	<input type="checkbox"/> RAL 7035
P011800	1800 mm	140 mm	<input type="checkbox"/> RAL 7035
P011900	1900 mm	140 mm	<input type="checkbox"/> RAL 7035
P012000	2000 mm	140 mm	<input type="checkbox"/> RAL 7035

### Powder-coated centre section and tube, white grip sleeves and safety clip

Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
P111000	1000 mm	140 mm	<input type="checkbox"/> RAL 9016
P111100	1100 mm	140 mm	<input type="checkbox"/> RAL 9016
P111200	1200 mm	140 mm	<input type="checkbox"/> RAL 9016
P111300	1300 mm	140 mm	<input type="checkbox"/> RAL 9016
P111400	1400 mm	140 mm	<input type="checkbox"/> RAL 9016
P111500	1500 mm	140 mm	<input type="checkbox"/> RAL 9016
P111600	1600 mm	140 mm	<input type="checkbox"/> RAL 9016
P111700	1700 mm	140 mm	<input type="checkbox"/> RAL 9016
P111800	1800 mm	140 mm	<input type="checkbox"/> RAL 9016
P111900	1900 mm	140 mm	<input type="checkbox"/> RAL 9016
P112000	2000 mm	140 mm	<input type="checkbox"/> RAL 9016

### Powder-coated centre section and tube, brown handle sleeves and safety clip

Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
P211000	1000 mm	140 mm	<input type="checkbox"/> RAL 8019
P211100	1100 mm	140 mm	<input type="checkbox"/> RAL 8019
P211200	1200 mm	140 mm	<input type="checkbox"/> RAL 8019
P211300	1300 mm	140 mm	<input type="checkbox"/> RAL 8019
P211400	1400 mm	140 mm	<input type="checkbox"/> RAL 8019
P211500	1500 mm	140 mm	<input type="checkbox"/> RAL 8019
P211600	1600 mm	140 mm	<input type="checkbox"/> RAL 8019
P211800	1800 mm	140 mm	<input type="checkbox"/> RAL 8019
P211900	1900 mm	140 mm	<input type="checkbox"/> RAL 8019
P212000	2000 mm	140 mm	<input type="checkbox"/> RAL 8019

## Anodised centre section and tube, grey handle sleeves and safety clip

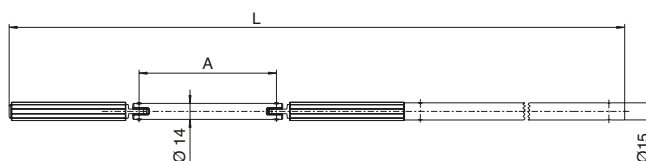
Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
P611000	1000 mm	140 mm	<input type="checkbox"/> natural colour anod.
P611100	1100 mm	140 mm	<input type="checkbox"/> natural colour anod.
P611200	1200 mm	140 mm	<input type="checkbox"/> natural colour anod.
P611300	1300 mm	140 mm	<input type="checkbox"/> natural colour anod.
P611400	1400 mm	140 mm	<input type="checkbox"/> natural colour anod.
P611500	1500 mm	140 mm	<input type="checkbox"/> natural colour anod.
P611600	1600 mm	140 mm	<input type="checkbox"/> natural colour anod.
P611700	1700 mm	140 mm	<input type="checkbox"/> natural colour anod.
P611800	1800 mm	140 mm	<input type="checkbox"/> natural colour anod.
P611900	1900 mm	140 mm	<input type="checkbox"/> natural colour anod.
P612000	2000 mm	140 mm	<input type="checkbox"/> natural colour anod.

## G... | Aluminium rods with tube 15 x 1.5 mm with safety clip



## Characteristics

- Abrasion-free and precise operation of the crank handle thanks to patented plastic pressure piece
- Crank parts and tube made of corrosion-resistant aluminium
- Centre section  $\varnothing$  14 mm, tube  $\varnothing$  15 mm, wall thickness 1.5 mm
- With mounted safety clip for tool-free mounting on the spherical bearing
- Other rod lengths, crank working radii, centre section  $\varnothing$  on request
- Available standard colours (powder-coated): RAL 9016 or anodised in various colours
- Other colours and surfaces on request



## Anodised centre section and tube, grey grip sleeves and mounted safety clip

Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
G011000SC	1000 mm	120 mm	<input type="checkbox"/> natural colour anod.
G011100SC	1100 mm	120 mm	<input type="checkbox"/> natural colour anod.
G011200SC	1200 mm	120 mm	<input type="checkbox"/> natural colour anod.
G011300SC	1300 mm	120 mm	<input type="checkbox"/> natural colour anod.
G011400SC	1400 mm	120 mm	<input type="checkbox"/> natural colour anod.
G011500SC	1500 mm	120 mm	<input type="checkbox"/> natural colour anod.
G011600SC	1600 mm	120 mm	<input type="checkbox"/> natural colour anod.
G011700SC	1700 mm	120 mm	<input type="checkbox"/> natural colour anod.
G011800SC	1800 mm	120 mm	<input type="checkbox"/> natural colour anod.
G011900SC	1900 mm	120 mm	<input type="checkbox"/> natural colour anod.

## Centre section anodised in natural colour, powder-coated tube, white handle sleeves and fitted safety clip

Part no.	Length [L]	Working radius [A]	Colour (tube)
G111000SC	1000 mm	120 mm	<input type="checkbox"/> RAL 9016
G111100SC	1100 mm	120 mm	<input type="checkbox"/> RAL 9016
G111200SC	1200 mm	120 mm	<input type="checkbox"/> RAL 9016
G111300SC	1300 mm	120 mm	<input type="checkbox"/> RAL 9016
G111400SC	1400 mm	120 mm	<input type="checkbox"/> RAL 9016
G111500SC	1500 mm	120 mm	<input type="checkbox"/> RAL 9016
G111600SC	1600 mm	120 mm	<input type="checkbox"/> RAL 9016
G111700SC	1700 mm	120 mm	<input type="checkbox"/> RAL 9016
G111800SC	1800 mm	120 mm	<input type="checkbox"/> RAL 9016
G111900SC	1900 mm	120 mm	<input type="checkbox"/> RAL 9016
G112000SC	2000 mm	120 mm	<input type="checkbox"/> RAL 9016

## Anodised centre section and tube, brown grip sleeves and mounted safety clip

Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
G211000SC	1000 mm	120 mm	■ dark bronze anodised.
G211100SC	1100 mm	120 mm	■ dark bronze anodised.
G211200SC	1200 mm	120 mm	■ dark bronze anodised.
G211500SC	1500 mm	120 mm	■ dark bronze anodised.
G211800SC	1800 mm	120 mm	■ dark bronze anodised.

## Anodised centre section and tube, grey grip sleeves and mounted safety clip

Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
GB31000SC	1000 mm	160 mm	■ natural colour anod.
GB31200SC	1200 mm	160 mm	■ natural colour anod.
GB31300SC	1300 mm	160 mm	■ natural colour anod.
GB31400SC	1400 mm	160 mm	■ natural colour anod.
GB31500SC	1500 mm	160 mm	■ natural colour anod.
GB31600SC	1600 mm	160 mm	■ natural colour anod.
GB31800SC	1800 mm	160 mm	■ natural colour anod.

## Centre section anodised in natural colour, powder-coated tube, white handle sleeves and fitted safety clip

Part no.	Length [L]	Working radius [A]	Colour (tube)
GB211000SC	1000 mm	160 mm	□ RAL 9016
GB211200SC	1200 mm	160 mm	□ RAL 9016
GB211300SC	1300 mm	160 mm	□ RAL 9016
GB211400SC	1400 mm	160 mm	□ RAL 9016
GB211500SC	1500 mm	160 mm	□ RAL 9016
GB211600SC	1600 mm	160 mm	□ RAL 9016
GB211800SC	1800 mm	160 mm	□ RAL 9016

## Anodised centre section and tube, brown grip sleeves and mounted safety clip

Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
GB41000SC	1000 mm	160 mm	■ dark bronze anodised.
GB41200SC	1200 mm	160 mm	■ dark bronze anodised.
GB41400SC	1400 mm	160 mm	■ dark bronze anodised.
GB41800SC	1800 mm	160 mm	■ dark bronze anodised.

## Variants: Aluminium crank handle with aluminium tube 15 x 1.5 mm

Working radius with crank Ø 14 mm	120 mm, 140 mm, 160 mm, 180 mm
Working radius with crank Ø 16 mm	140 mm, 180 mm
Rod length	upon request
Colour: Handle sleeves	white, grey, brown, others on request
Colour: Tube	RAL 9016, natural colour anodised, dark brown anodised, others on request

## Options

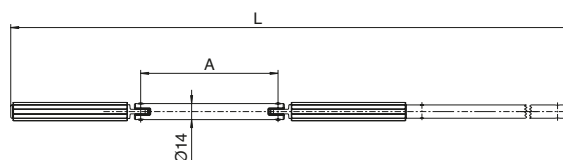
also available on request with mounted	Spherical bearing
	Connection funnel
	Crank holder
Colour: Tube	Special colours on request
Colour: Centre section	with coated or coloured anodised surface

## G... | Aluminium rod with tube 13 x 1.5 mm with mounted safety clip



### Characteristics

- Abrasion-free and precise operation of the crank handle thanks to patented plastic pressure piece
- Crank parts and tube made of corrosion-resistant aluminium
- Centre section Ø 14 mm, tube Ø 13 mm, wall thickness 1.5 mm
- With mounted safety clip for tool-free mounting on the spherical bearing
- Other rod lengths, crank projections and centre section diameters on request
- Available standard colours (powder-coated): RAL 9016, natural colour and dark brown anodised
- Other colours and surfaces on request



Anodised centre section and tube, grey grip sleeves and mounted safety clip

Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
G001000SC	1000 mm	120 mm	<input type="checkbox"/> natural colour anod.
G001200SC	1200 mm	120 mm	<input type="checkbox"/> natural colour anod.
G001300SC	1300 mm	120 mm	<input type="checkbox"/> natural colour anod.
G001400SC	1400 mm	120 mm	<input type="checkbox"/> natural colour anod.
G001500SC	1500 mm	120 mm	<input type="checkbox"/> natural colour anod.
G001600SC	1600 mm	120 mm	<input type="checkbox"/> natural colour anod.
G001700SC	1700 mm	120 mm	<input type="checkbox"/> natural colour anod.
G002000SC	2000 mm	120 mm	<input type="checkbox"/> natural colour anod.

Centre section anodised in natural colour, powder-coated tube, white handle sleeves and fitted safety clip

Part no.	Length [L]	Working radius [A]	Colour (tube)
G121000SC	1000 mm	120 mm	<input type="checkbox"/> RAL 9016
G121200SC	1200 mm	120 mm	<input type="checkbox"/> RAL 9016
G121300SC	1300 mm	120 mm	<input type="checkbox"/> RAL 9016

Anodised centre section and tube, grey grip sleeves and mounted safety clip

Part no.	Length [L]	Working radius [A]	Colour (centrepiece and tube)
GB11000SC	1000 mm	160 mm	<input type="checkbox"/> natural colour anod.
GB11200SC	1200 mm	160 mm	<input type="checkbox"/> natural colour anod.
GB11300SC	1300 mm	160 mm	<input type="checkbox"/> natural colour anod.
GB11400SC	1400 mm	160 mm	<input type="checkbox"/> natural colour anod.
GB11500SC	1500 mm	160 mm	<input type="checkbox"/> natural colour anod.
GB11800SC	1800 mm	160 mm	<input type="checkbox"/> natural colour anod.
GB12000SC	2000 mm	160 mm	<input type="checkbox"/> natural colour anod.

Centre section anodised in natural colour, powder-coated tube, white handle sleeves and fitted safety clip

Part no.	Length [L]	Working radius [A]	Colour (tube)
GB81000SC	1000 mm	160 mm	<input type="checkbox"/> RAL 9016
GB81100SC	1100 mm	160 mm	<input type="checkbox"/> RAL 9016
GB81200SC	1200 mm	160 mm	<input type="checkbox"/> RAL 9016
GB81300SC	1300 mm	160 mm	<input type="checkbox"/> RAL 9016
GB81400SC	1400 mm	160 mm	<input type="checkbox"/> RAL 9016
GB81500SC	1500 mm	160 mm	<input type="checkbox"/> RAL 9016
GB81600SC	1600 mm	160 mm	<input type="checkbox"/> RAL 9016
GB81800SC	1800 mm	160 mm	<input type="checkbox"/> RAL 9016

## Anodised centre section and tube, black grip sleeves and mounted safety clip

Part no.	Length [L]	Working radius [A]	Colour (centre piece and tube)
GB181200SC	1200 mm	160 mm	■ black anod.
GB181300SC	1300 mm	160 mm	■ black anod.
GB181500SC	1500 mm	160 mm	■ black anod.
GB182000SC	2000 mm	160 mm	■ black anod.

## Variants: Aluminium crank handle with aluminium tube 13 x 1.5 mm

Working radius with crank Ø 14 mm	120 mm, 140 mm, 160 mm
Rod length	upon request
Colour: Handle sleeves	white, grey, brown, black, others on request
Colour: Tube	RAL 9016, natural anodised, dark brown anodised, black anod.

## Options

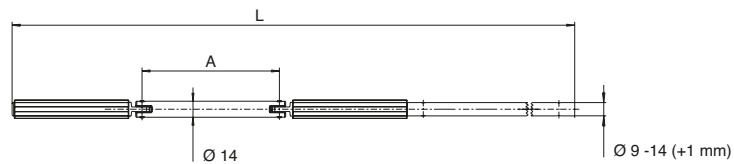
also available on request with mounted	Spherical bearing
	Connection funnel
	Crank holder
Colour: Tube	Special colours on request
Colour: Centre section	with coated or coloured anodised surface

## G... | Aluminium crank handle with steel tube and mounted safety clip



## Characteristics

- Abrasion-free and precise operation of the crank handle thanks to patented plastic pressure piece
- Crank parts made of corrosion-resistant aluminium
- Centre section Ø 12 mm, tube Ø 12 mm plus 1 mm plastic coating, wall thickness 1.0 mm
- With mounted safety clip for tool-free mounting on the spherical bearing
- Other rod lengths, crank working radii, centre section and tube diameters on request
- Other colours and surfaces on request



Centre section (Ø 14 mm) anodised in natural colour, steel tube 12 x 1.0 mm, plastic-coated, white grip sleeves and fitted safety clip

Part no.	Length [L]	Working radius [A]	Colour (tube)
GB21200SC	1200 mm	160 mm	□ RAL 9016
GB21300SC	1300 mm	160 mm	□ RAL 9016
GB21400SC	1400 mm	160 mm	□ RAL 9016
GB21500SC	1500 mm	160 mm	□ RAL 9016
GB21600SC	1600 mm	160 mm	□ RAL 9016
GB21800SC	1800 mm	160 mm	□ RAL 9016

## Variants: Aluminium crank handle with steel tube

Working radius with crank Ø 14 mm	120 mm, 160 mm
Rod length	upon request
Colour: Handle sleeves	white, grey, brown, black
Colour: Tube	RAL 9016, others on request

## Options

also available on request with mounted	Spherical bearing
	Connection funnel
	Crank holder
Colour: Tube	Special colours on request
Colour: Centre section	with coated or coloured anodised surface

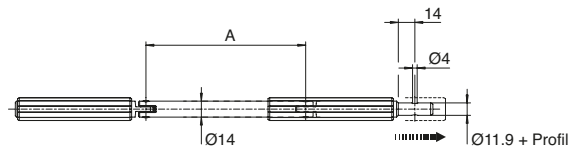
## 510F4.. | Aluminium crank handles with concealed connecting pin

### Various working radii and connection trunnions



#### Characteristics

- Abrasion-free and precise operation of the crank handle thanks to patented plastic pressure piece
- Crank parts made of corrosion-resistant aluminium
- Upper grip sleeve covers the tube/crank connection
- Ergonomic polygonal grip sleeves made from high-quality, impact-resistant and environmentally friendly plastic
- Other crank working radii, centre section and connection pin diameters on request
- Other surfaces, colours, and colour combinations on request
- Auxiliary tool for loosening the grip sleeve 510F989



#### Aluminium crank handle with Ø 11.9 mm trunnion and concealed connecting pin

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510F401	140 mm	Aluminium/14 mm	■ natural colour anod.	■ grey
510F402	140 mm	Aluminium/14 mm	■ natural colour anod.	□ white
510F403	140 mm	Aluminium/14 mm	■ dark bronze anodised.	■ brown
510F413	140 mm	Aluminium/14 mm	□ RAL 9016	□ white

#### Aluminium crank handle with profile tube trunnion and concealed connecting pin

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510F451	140 mm	Aluminium/14 mm	□ RAL 7035	■ grey
510F452	140 mm	Aluminium/14 mm	□ RAL 9016	□ white
510F453	140 mm	Aluminium/14 mm	■ dark bronze anodised.	■ brown
510F454	140 mm	Aluminium/14 mm	■ natural colour anod.	■ grey
510F456	140 mm	Aluminium/14 mm	■ RAL 9005	■ black
510F652	160 mm	Aluminium/14 mm	□ RAL 9016	□ white
510F657	160 mm	Aluminium/14 mm	■ dark bronze anodised.	■ brown

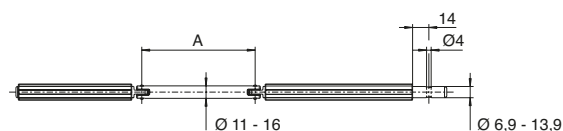
## 510F... | Aluminium crank handles

### Various working radii and connection trunnions



#### Characteristics

- Abrasion-free and precise operation of the crank handle thanks to patented plastic pressure piece
- Crank parts made of corrosion-resistant aluminium
- Ergonomic polygonal grip sleeves made from high-quality, impact-resistant and environmentally friendly plastic
- Other crank working radii, centre section and connection pin diameters on request
- Other surfaces, colours, and colour combinations on request



#### Aluminium crank handle with Ø 9.9 mm trunnion

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510F101	120 mm	Aluminium/14 mm	■ natural colour anod.	■ grey
510F102	120 mm	Aluminium/14 mm	■ black anod.	■ black
510F105	120 mm	Aluminium/14 mm	■ natural colour anod.	□ white
510F115	120 mm	Aluminium/14 mm	■ RAL 8019	■ brown
510F152	120 mm	Aluminium/14 mm	■ natural colour anod.	■ black
510F299	120 mm	Aluminium/14 mm	□ RAL 9016	□ white
510F108	140 mm	Aluminium/14 mm	■ natural colour anod.	■ grey
510F156	140 mm	Aluminium/14 mm	■ natural colour anod.	□ white

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510F260	140 mm	Aluminium/14 mm	natural colour anod.	black
510F166	160 mm	Aluminium/14 mm	natural colour anod.	white
510F167	160 mm	Aluminium/14 mm	dark bronze anodised.	brown
510F175	160 mm	Aluminium/14 mm	natural colour anod.	grey
510F258	160 mm	Aluminium/14 mm	RAL 9016	white
510F298	160 mm	Aluminium/14 mm	black anod.	black
510F132	180 mm	Aluminium/16 mm	natural colour anod.	grey
510F139	180 mm	Aluminium/16 mm	natural colour anod.	white

## Aluminium crank handle with Ø 11.9 mm trunnion

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510F109	120 mm	Aluminium/14 mm	natural colour anod.	white
510F110	120 mm	Aluminium/14 mm	natural colour anod.	grey
510F111	120 mm	Aluminium/14 mm	dark bronze anodised.	brown
510F112	120 mm	Aluminium/14 mm	black anod.	black
510F104	140 mm	Aluminium/14 mm	natural colour anod.	grey
510F121	140 mm	Aluminium/16 mm	natural colour anod.	grey
510F122	140 mm	Aluminium/16 mm	dark bronze anodised.	brown
510F148	140 mm	Aluminium/16 mm	natural colour anod.	white
510F150	140 mm	Aluminium/14 mm	natural colour anod.	white
510F161	140 mm	Aluminium/14 mm	dark bronze anodised.	brown
510F314	140 mm	Aluminium/14 mm	black anod.	black
510F350	140 mm	Aluminium/14 mm	RAL 9016	white
510F157	160 mm	Aluminium/14 mm	natural colour anod.	grey
510F158	160 mm	Aluminium/14 mm	natural colour anod.	white
510F162	160 mm	Aluminium/14 mm	dark bronze anodised.	brown
510F304	160 mm	Aluminium/14 mm	black anod.	black
510F133	180 mm	Aluminium/16 mm	natural colour anod.	grey
510F151	180 mm	Aluminium/16 mm	natural colour anod.	white

## Aluminium crank handle with Ø 12.9 mm trunnion

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510F124	140 mm	Aluminium/16 mm	natural colour anod.	grey
510F138	140 mm	Aluminium/16 mm	dark bronze anodised.	brown
510F190	140 mm	Aluminium/16 mm	natural colour anod.	white
510F131	180 mm	Aluminium/16 mm	natural colour anod.	grey

## Aluminium crank handle with Ø 13.9 mm trunnion

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510F120	140 mm	Aluminium/16 mm	natural colour anod.	grey
510F164	140 mm	Aluminium/16 mm	natural colour anod.	white

## 510F989 | Unlocking device



## Characteristics

- For aluminium crank handles with concealed connecting pin

Part no.	Description
510F989	Unlocking device

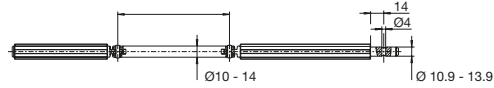
# 510F... | Steel crank handles

## Steel crank handles, various working radii and connecting pins



### Characteristics

- Abrasion-free and precise operation of the crank handle thanks to patented plastic pressure piece
- Ergonomic polygonal grip sleeves made from high-quality, impact-resistant and environmentally friendly plastic
- Other crank working radii, centre section and connection pin diameters on request
- Other surfaces, colours, and colour combinations on request



### Steel crank handle with Ø 10.9 mm trunnion

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510F482	140 mm	Steel/14 mm	nickel-plated	grey

### Steel crank handle with Ø 11.9 mm trunnion

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510B256	180 mm	Steel/14 mm	nickel-plated	grey

### Steel crank handle with Ø 12.9 mm trunnion

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510F248	140 mm	Steel/14 mm	nickel-plated	grey
510F259	140 mm	Steel/14 mm	nickel-plated	white

### Steel crank handle with Ø 13.9 mm trunnion

Part no.	Working radius [A]	Material/Ø	Colour (centre section)	Sleeve colour
510B220	140 mm	Steel/14 mm	nickel-plated	grey
510B230	180 mm	Steel/14 mm	nickel-plated	grey

## 510F0.. | Connecting tubes



### Characteristics

- Connecting tube made of aluminium or steel (length = 6000 mm)

#### Connecting tubes made of aluminium

Part no.	Outside-Ø	Inside Ø	Surface	Packing unit
510F039	13 mm	10 mm	■ dark bronze anodised.	240 m
510F024	13 mm	10 mm	□ natural colour anod.	240 m
510F032	13 mm	10 mm	□ RAL 9016	240 m
510F044	15 mm	12 mm	■ dark bronze anodised.	192 m
510F028	15 mm	12 mm	□ natural colour anod.	192 m
510F043	15 mm	12 mm	□ natural colour anod.	192 m
510F030	15 mm	12 mm	□ RAL 9016	192 m
510F029	15 mm	12 mm	■ black anod.	192 m
510F050	15.5 mm	Profile tube	□ natural colour anod.	180 m
510F046	15.5 mm	Profile tube	□ RAL 7035	180 m
510F048	15.5 mm	Profile tube	■ RAL 8019	180 m
510F049	15.5 mm	Profile tube	■ RAL 9005	180 m
510F047	15.5 mm	Profile tube	□ RAL 9016	180 m
510F055	15.5 mm	12 mm	□ RAL 9016	180 m
510F056	15.5 mm	12 mm	□ RAL 7035	180 m

#### Connecting tubes made of steel

Part no.	Outside-Ø	Inside Ø	Surface	Packing unit
510F020	12 mm	10 mm	□ RAL 7035	240 m
510F083	12 mm	10 mm	□ RAL 9016	240 m
510F022	14 mm	12 mm	□ RAL 7035	192 m
510F082	14 mm	12 mm	□ RAL 9016	192 m
510F023	16 mm	14 mm	□ RAL 7035	192 m
510F019	9 mm	7 mm	□ RAL 7035	240 m

## 506N... | Spiral pin

Application: **to secure the tube connection**



### Characteristics

- made of stainless steel or steel with galvanised surface

Part no.	Material	Outside-Ø	Length	Surface
506N410-0	Stainless steel	4 mm	10 mm	☒ blank
506N412-1	Steel	4 mm	12 mm	■ galvanised
506N413-0	Stainless steel	4 mm	13 mm	☒ blank
506N413-1	Steel	4 mm	13 mm	■ galvanised
506N414-1	Steel	4 mm	14 mm	■ galvanised
506N415-0	Stainless steel	4 mm	15 mm	☒ blank
506N415-1	Steel	4 mm	15 mm	■ galvanised
506N416-1	Steel	4 mm	16 mm	■ galvanised
506N417-1	Steel	4 mm	17 mm	■ galvanised
506N418-0	Stainless steel	4 mm	18 mm	☒ blank
506N418-1	Steel	4 mm	18 mm	■ galvanised
506N420-0	Stainless steel	4 mm	20 mm	☒ blank
506N420-1	Steel	4 mm	20 mm	■ galvanised
506N422-1	Steel	4 mm	22 mm	■ galvanised
506N424-0	Stainless steel	4 mm	24 mm	☒ blank
506N424-1	Steel	4 mm	24 mm	■ galvanised
506N430	Steel	4 mm	30 mm	☒ blank
506N430-1	Steel	4 mm	30 mm	■ galvanised

## 510F9.. | Mounting kit

Application: **For easy mounting of the crank handle to the spherical bearing**



### Characteristics

- Crank handle can be assembled and disassembled by hand without the use of tools
- Parallel pin replaces the conventional spiral pin
- Comprising stainless steel cylindrical pin (Ø 4 mm) and plastic locking sleeve (colours similar to RAL 7035, 9016 and 8019) for axial securing of the pin

Part no.	Colour	Tube outside diameter
510F992	□ RAL 7035	13 mm
510F993	■ RAL 8019	13 mm
510F996	□ RAL 9016	13 mm
510F990	□ RAL 7035	15 mm
510F995	■ RAL 8019	15 mm
510F991	□ RAL 9016	15 mm
510F997	■ RAL 9005	15 mm

## 510E7.. | Safety clip

Application: **For easy mounting of the crank handle to the spherical bearing**



### Characteristics

- Plastic safety clip with moulded stainless steel pin
- Crank handle can be assembled and disassembled by hand without the use of tools

For tubes with an outer diameter of 10 mm, pin diameter 2.5 mm

Part no.	Colour	Inside diameter
510E781	□ RAL 9016	9.8 mm
510E782	□ RAL 7035	9.8 mm

For tubes with an outside diameter of 12 and 13 mm, pin diameter 4 mm

Part no.	Colour	Inside diameter
510E751	□ RAL 9016	11.8 mm
510E752	□ RAL 7035	11.8 mm
510E753	■ RAL 8019	11.8 mm
510E754	■ RAL 9005	11.8 mm

For tubes with an outside diameter 15 to 17 mm, pin diameter 4 mm

Part no.	Colour	Inside diameter
510E701	□ RAL 9016	14.5 mm
510E702	□ RAL 7035	14.5 mm
510E703	■ RAL 8019	14.5 mm
510E704	■ RAL 9005	14.5 mm

## 510K... | Safety clip

Application: **for simple mounting of a profile tubular rod on the spherical bearing**



### Characteristics

- The tube is placed over the profile trunnion with the pre-assembled safety clip and locks into place automatically
- Crank handle can be assembled and disassembled by hand without the use of tools

Part no.	Description
510E230	□ RAL 9016
510E231	■ RAL 9005
510E232	□ RAL 7035
510E233	■ RAL 8019

## 510F930 | Drilling and sawing device



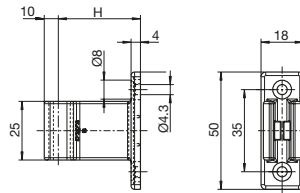
### Characteristics

- For precisely cutting the connecting tube to length and drilling the cross hole
- For connecting tubes from 13 mm to 16 mm diameter

Part no.	Description
510F930	Adjustable drilling and sawing device

## 514F... | Crank holder

Application: For all crank handles from 12 to 17 mm diameter



### Characteristics

- Available colours: similar to RAL 7035, 9016 and 8019
- High-quality plastic with elastic properties

Distance 20 mm

Part no.	Colour	Height [H]
514F123	□ RAL 7035	20 mm
514F124	■ RAL 8019	20 mm
514F148	□ RAL 9016	20 mm

Distance 25 mm

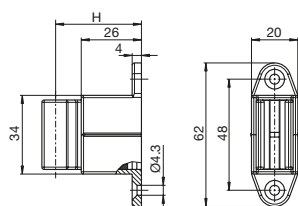
Part no.	Colour	Height [H]
514F125	□ RAL 7035	25 mm
514F126	■ RAL 8019	25 mm
514F127	□ RAL 9016	25 mm
514F128	■ RAL 9005	25 mm

Distance 35 mm

Part no.	Colour	Height [H]
514F135	□ RAL 7035	35 mm
514F136	■ RAL 9005	35 mm
514F137	■ RAL 8019	35 mm
514F138	□ RAL 9016	35 mm

## 514F... | Adjustable crank holder

Application: For all crank handles from 12 to 17 mm diameter



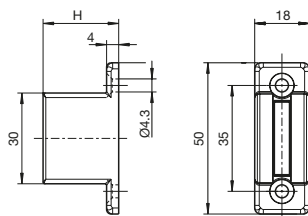
### Characteristics

- Adjustable in 6 steps (33-53 mm)
- Available colours: similar to RAL 7035, 9016 and 8019
- High-quality plastic with elastic properties

Part no.	Colour	Height [H]
514F133	RAL 7035	33-37-41-45-49-53 mm
514F134	RAL 9005	33-37-41-45-49-53 mm
514F141	RAL 9016	33-37-41-45-49-53 mm

## 514F... | Magnetic crank holder

Application: For all crank handles from 12 to 17 mm diameter



### Characteristics

- Available colours: similar to RAL 7035, 9016 and 8019
- For crank handles and/or connecting tubes made of steel

Distance 25 mm

Part no.	Colour	Height [H]
514F250	RAL 7035	25 mm
514F251	RAL 9005	25 mm
514F252	RAL 8019	25 mm
514F255	RAL 9016	25 mm

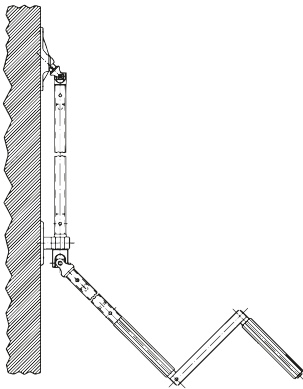
Distance 35 mm

Part no.	Colour	Height [H]
514F350	RAL 7035	35 mm
514F355	RAL 9016	35 mm

Distance 45 mm

Part no.	Colour	Height [H]
514F452	RAL 9016	45 mm

## Tubular bearing and universal joint

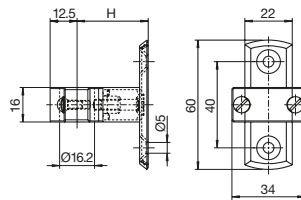


### Tubular bearing and universal joint

- Optimal handling of long rods
- Universal joint with additional shaft for mounting in the tube bearing
- Intermediate bearings for long connecting tubes (>200 cm) and deflection of the crank handle

## 514F00. | Tube bearing

### Intermediate bearings for long connecting tubes (>200 cm) and deflection of the crank handle

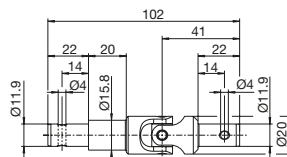


### Characteristics

- Bright nickel-plated surface
- Additional universal joint (818F033 or 820F511)

Part no.	Colour	Height
514F006	■ nickel-plated	33 mm
514F007	■ nickel-plated	41 mm

## 820F51. | Universal joints for tube bearings



### Characteristics

- For connecting the tubes when using tube bearing 514F00.

Part no.	Material	Surface	Drive $\Delta$	Output $\nabla$
820F057	Steel	■ galvanised	▼ 9.9 mm	▼ 9.9 mm
820F141	Steel	■ nickel-plated	▼ 12.9 mm	▼ 12.9 mm
820F511	Steel	■ nickel-plated	▼ 11.9 mm	▼ 11.9 mm
818F033	Aluminium	■ natural colour anod.	Profile tube	Profile tube

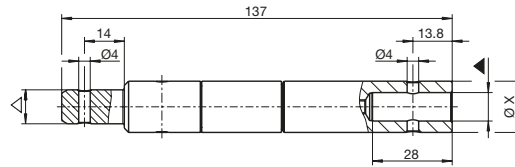


## 748F... | Overload protection



### Characteristics

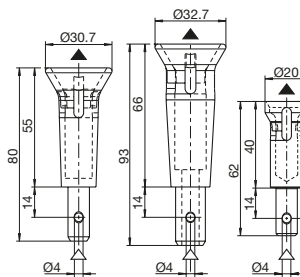
- For mounting between spherical bearing and connecting tube
- Available with different release torques
- Various drives and outputs available



Part no.	Material	Surface	Diameter [mm][x]	Release torques [Nm]	Drive $\Delta$	Output $\nabla$
748F007	Aluminium	□ natural colour anod.	20 mm	2- 2.5 Nm	▼ 9.9 mm	○ 10 mm
748F009	Aluminium	□ natural colour anod.	18 mm	4 Nm	▼ 9.9 mm	○ 10 mm
748F010	Aluminium	□ natural colour anod.	18 mm	4 Nm	▼ 11.9 mm	○ 10 mm

## 531F.../532F.../535F... | Clutch funnel

Application: Removable crank handles



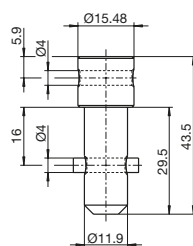
### Characteristics

- Bayonet lock: Crank handles can be securely hooked in and do not unhook themselves when turning to the right or left
- Incl. matching spiral pin for spherical bearing pin

Part no.	Surface	Holder	Trunnion
532F099	▨ nickel-plated	11.9 mm	Ø 9.9 mm
532F119	▨ nickel-plated	11.9 mm	Ø 11.9 mm
532F100	□ galvanised	11.9 mm	Ø 9.9 mm
531F150	▨ nickel-plated	13.9 mm	Ø 11.9 mm
531F139	▨ nickel-plated	13.9 mm	Ø 13.9 mm
535F502	□ galvanised	9.9 mm	Ø 9.9 mm
535F506	▨ nickel-plated	9.9 mm	Ø 9.9 mm
535F507	□ galvanised	9.9 mm	○ Ø 12 with screw
532F127	▨ nickel-plated	for profile tube	Profile tube

## 820F... | Connection trunnion

Application: Connecting piece for spherical bearing 818F... when using the clutch funnel 532F119



### Characteristics

- For mounting in Ø 15.5 mm hole

Part no.
820F427

## 506N4..-1 | Spiral pin



### Characteristics

- Pin for holding the clutch funnel on the spherical bearing pin
- Spiral pin 506N420-1 for funnel 531F...
- Spiral pin 506N418-1 for funnel 532F...
- Spiral pin 506N424-1 for funnel 532F... with profile trunnion
- Spiral pin 506N415-1 for funnel 535F...

Part no.	Material	Outside-Ø	Length	Surface
506N415-1	Steel	4 mm	15 mm	galvanised
506N418-1	Steel	4 mm	18 mm	galvanised
506N420-1	Steel	4 mm	20 mm	galvanised
506N424-1	Steel	4 mm	24 mm	galvanised

## SKS | Detachable crank handle system

Application: For difficult space conditions for Venetian blinds and rolling shutters

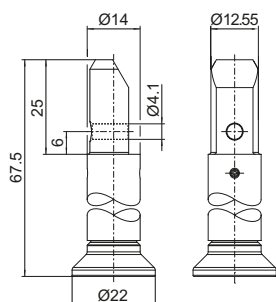


### Characteristics

- Enables easy disassembly of the rod after use
- Ideal in areas where a rod would be disruptive
- Prevents misuse of the rod by unauthorised users (schools, public buildings, etc.)

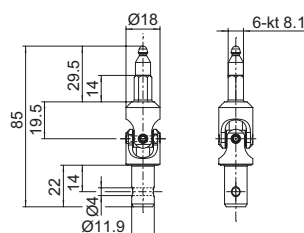
### Note

- For 45° and 90° spherical bearings
- Comprising a funnel and trunnion
- The funnel can also be permanently installed in gearboxes



### Funnel for rods

Part no.	Surface	Drive $\Delta$
532F104	natural colour anod.	Profile tube
532B001	natural colour anod.	11.9 mm



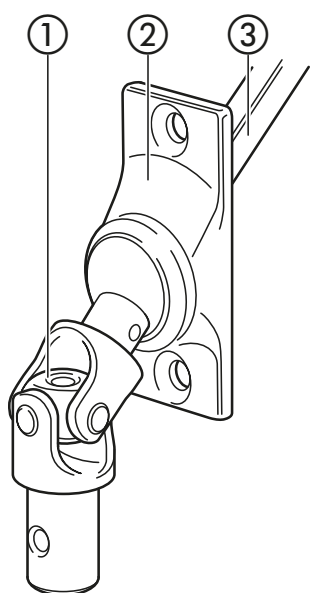
### Locking tip for rods

Part no.	Surface	Drive $\Delta$
818F090	natural colour anod.	11.9 mm
818F091	natural colour anod.	Profile tube
818F092	natural colour anod.	9.9 mm
818F094	RAL 9016	Ø 12 with screw

## 816F... | Standard spherical bearing 45°

Part no.	Item des. 1	Degrees	Plate	Trunnion	Connecting rod
816F01PR00	Spherical bearing 45° - 22x85 - Clip - SW6(300)	45°	22 x 85 mm	PROFILE	6 mm hexagon (300 mm)
816F01PR02	Spherical bearing 45° - 22x85 - Clip - 6/4(300)	45°	22 x 85 mm	PROFILE	6 mm square (300 mm)
816F011000	Spherical bearing 45° - 22x85 - 9.9 - SW6(300)	45°	22 x 85 mm	Ø 9.9	6 mm hexagon (300 mm)
816F011001	Spherical bearing 45° - 22x85 - 9.9 - SW7(300)	45°	22 x 85 mm	Ø 9.9	7 mm hexagon (300 mm)
816F011002	Spherical bearing 45° - 22x85 - 9.9 - 6/4(300)	45°	22 x 85 mm	Ø 9.9	6 mm square (300 mm)
816F011003	Spherical bearing 45° - 22x85 - 9.9 - 8/4(300)	45°	22 x 85 mm	Ø 9.9	8 mm square (300 mm)
816F011200	Spherical bearing 45° - 22x85 - 11.9 - SW6(300)	45°	22 x 85 mm	Ø 11.9	6 mm hexagon (300 mm)
816F011201	Spherical bearing 45° - 22x85 - 11.9 - SW7(300)	45°	22 x 85 mm	Ø 11.9	7 mm hexagon (300 mm)
816F011202	Spherical bearing 45° - 22x85 - 11.9 - 6/4(300)	45°	22 x 85 mm	Ø 11.9	6 mm square (300 mm)
816F011203	Spherical bearing 45° - 22x85 - 11.9 - 8/4(300)	45°	22 x 85 mm	Ø 11.9	8 mm square (300 mm)
816F011300	Spherical bearing 45° - 22x85 - 12.9 - SW6(300)	45°	22 x 85 mm	Ø 12.9	6 mm hexagon (300 mm)
816F011302	Spherical bearing 45° - 22x85 - 12.9 - 6/4(300)	45°	22 x 85 mm	Ø 12.9	6 mm square (300 mm)
816F011303	Spherical bearing 45° - 22x85 - 12.9 - 8/4(300)	45°	22 x 85 mm	Ø 12.9	8 mm square (300 mm)
816F021200	Spherical bearing 45° - 22x85 (wood) - 11.9 - SW6(300)	45°	22 x 85 mm	Ø 11.9	6 mm hexagon (300 mm)
816F021201	Spherical bearing 45° - 22x85 (wood) - 11.9 - SW7(300)	45°	22 x 85 mm	Ø 11.9	7 mm hexagon (300 mm)
816F021202	Spherical bearing 45° - 22x85 (wood) - 11.9 - 6/4(300)	45°	22 x 85 mm	Ø 11.9	6 mm square (300 mm)
816F021203	Spherical bearing 45° - 22x85 (wood) - 11.9 - 8/4(300)	45°	22 x 85 mm	Ø 11.9	8 mm square (300 mm)
816F03PR02	Spherical bearing 45° - 22x52 - Clip - 6/4(300)	45°	22 x 52 mm	PROFILE	6 mm square (300 mm)
816F031002	Spherical bearing 45° - 22x52 - 9.9 - 6/4(300)	45°	22 x 52 mm	Ø 9.9	6 mm square (300 mm)
816F031200	Spherical bearing 45° - 22x52 - 11.9 - SW6(300)	45°	22 x 52 mm	Ø 11.9	6 mm hexagon (300 mm)
816F031201	Spherical bearing 45° - 22x52 - 11.9 - SW7(300)	45°	22 x 52 mm	Ø 11.9	7 mm hexagon (300 mm)
816F031202	Spherical bearing 45° - 22x52 - 11.9 - 6/4(300)	45°	22 x 52 mm	Ø 11.9	6 mm square (300 mm)
816F031203	Spherical bearing 45° - 22x52 - 11.9 - 8/4(300)	45°	22 x 52 mm	Ø 11.9	8 mm square (300 mm)
816F031302	Spherical bearing 45° - 22x52 - 12.9 - 6/4(300)	45°	22 x 52 mm	Ø 12.9	6 mm square (300 mm)
816F041200	Spherical bearing 45° - 22x52 (wood) - 11.9 - SW6(300)	45°	22 x 52 mm	Ø 11.9	6 mm hexagon (300 mm)
816F041202	Spherical bearing 45° - 22x52 (wood) - 11.9 - 6/4(300)	45°	22 x 52 mm	Ø 11.9	6 mm square (300 mm)
816F041203	Spherical bearing 45° - 22x52 (wood) - 11.9 - 8/4(300)	45°	22 x 52 mm	Ø 11.9	8 mm square (300 mm)
816F07PR28	Spherical bearing 45° - 17x73 - Clip - 6/4(300)	45°	17 x 73 mm	PROFILE	6 mm square (300 mm)
816F071023	Spherical bearing 45° - 17x73 - 9.9 - SW6(300)	45°	17 x 73 mm	Ø 9.9	6 mm hexagon (300 mm)
816F071028	Spherical bearing 45° - 17x73 - 9.9 - 6/4(300)	45°	17 x 73 mm	Ø 9.9	6 mm square (300 mm)
816F071203	Spherical bearing 45° - 17x73 - 11.9 - 8/4(300)	45°	17 x 73 mm	Ø 11.9	8 mm square (300 mm)
816F071223	Spherical bearing 45° - 17x73 - 11.9 - 6/6(300)	45°	17 x 73 mm	Ø 11.9	6 mm hexagon (300 mm)
816F071228	Spherical bearing 45° - 17x73 - 11.9 - 6/4(300)	45°	17 x 73 mm	Ø 11.9	6 mm square (300 mm)
816F111200	Spherical bearing 45° - 27x56 - 11.9 - SW6(300)	45°	27 x 56 mm	Ø 11.9	6 mm hexagon (300 mm)
816F111202	Spherical bearing 45° - 27x56 - 11.9 - 6/4(300)	45°	27 x 56 mm	Ø 11.9	6 mm square (300 mm)
816F111203	Spherical bearing 45° - 27x56 - 11.9 - 8/4(300)	45°	27 x 56 mm	Ø 11.9	8 mm square (300 mm)
816F121200	Spherical bearing 45° - 27x45 - 11.9 - SW6(300)	45°	27 x 45 mm	Ø 11.9	6 mm hexagon (300 mm)
816F121202	Spherical bearing 45° - 27x45 - 11.9 - 6/4(300)	45°	27 x 45 mm	Ø 11.9	6 mm square (300 mm)

## Information on the spherical bearings



### How to find the right spherical bearing for your application

#### ① Universal joints

- 816F... made of steel, diameter 16 mm, max. load 3 Nm
- 818F... made of aluminium, diameter 18 mm, max. load 5 Nm

#### ② Spherical bearing plates

- With a deflection of 45° or 90°
- Made of high-strength plastic in 3 colours (white, grey, brown). Other colours on request.
- Made of die-cast zinc, nickel-plated. Powder-coated colours on request.

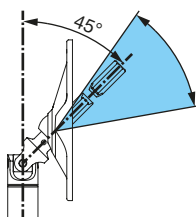
#### ③ Output rods

- According to the requirements of the gearbox. Rod length according to structural conditions.

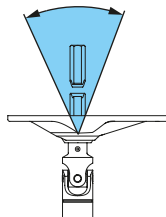
### Specification of the swivel range for spherical bearing plates

#### 45° universal

vertical installation

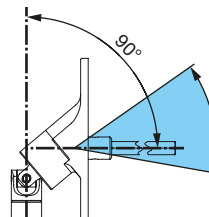


horizontal installation

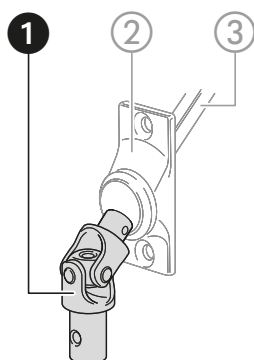


#### 90° universal

vertical installation

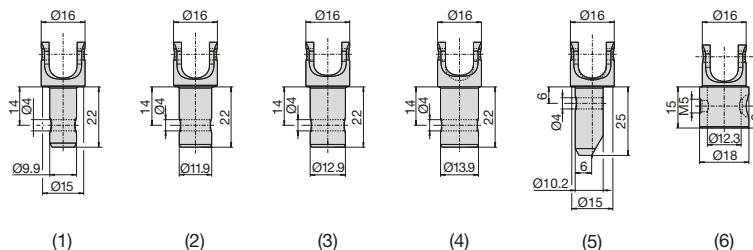


## 816F... | Universal joints for spherical bearings



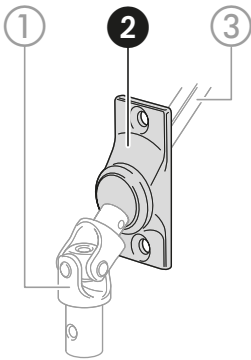
### Characteristics

- Steel universal joints with 16 mm diameter (up to 3 Nm)
- Other versions and connecting trunnions on request



Part no.	Material	Trunnion
816F... (1)	Steel	┆ 9.9 mm
816F... (2)	Steel	┆ 11.9 mm
816F... (3)	Steel	┆ 12.9 mm
816F... (4)	Steel	┆ 13.9 mm
816F... (5)	Steel	┆ PROFILE
816F... (6)	Steel	○ 12.3 mm

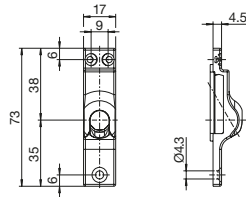
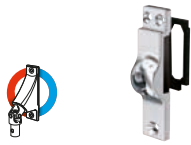
# 816F... | Spherical bearing plates 45°



### Characteristics

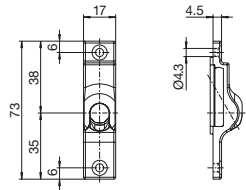
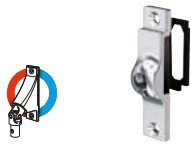
- Max. torque 3 Nm
- Steel universal joints
- Various connecting trunnions and connecting rods available
- Attachment plates made of die-cast zinc (bright nickel-plated) or plastic in 2 standard colours (white, grey)
- Swivelling range depends on the plate

### Airtight designs



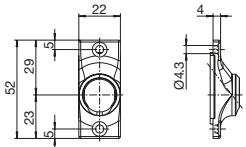
Part no.	Swivelling range	Material	Height	Width
816F205....	50°	Zinc	73.0 mm	17.0 mm

airtight design  
optimised for wooden windows



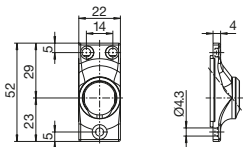
Part no.	Swivelling range	Material	Height	Width
816F204....	50°	Zinc	73.0 mm	17.0 mm

airtight design



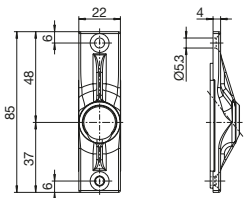
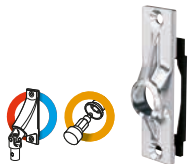
Part no.	Swivelling range	Material	Height	Width
816F202....	50°	Zinc	52.0 mm	22.0 mm

airtight design



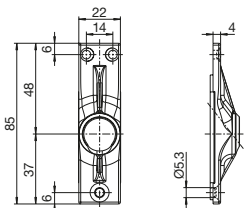
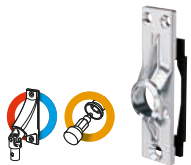
Part no.	Swivelling range	Material	Height	Width
816F203....	50°	Zinc	52.0 mm	22.0 mm

airtight design  
optimised for wooden windows



Part no.	Swivelling range	Material	Height	Width
816F200....	50°	Zinc	85.0 mm	22.0 mm

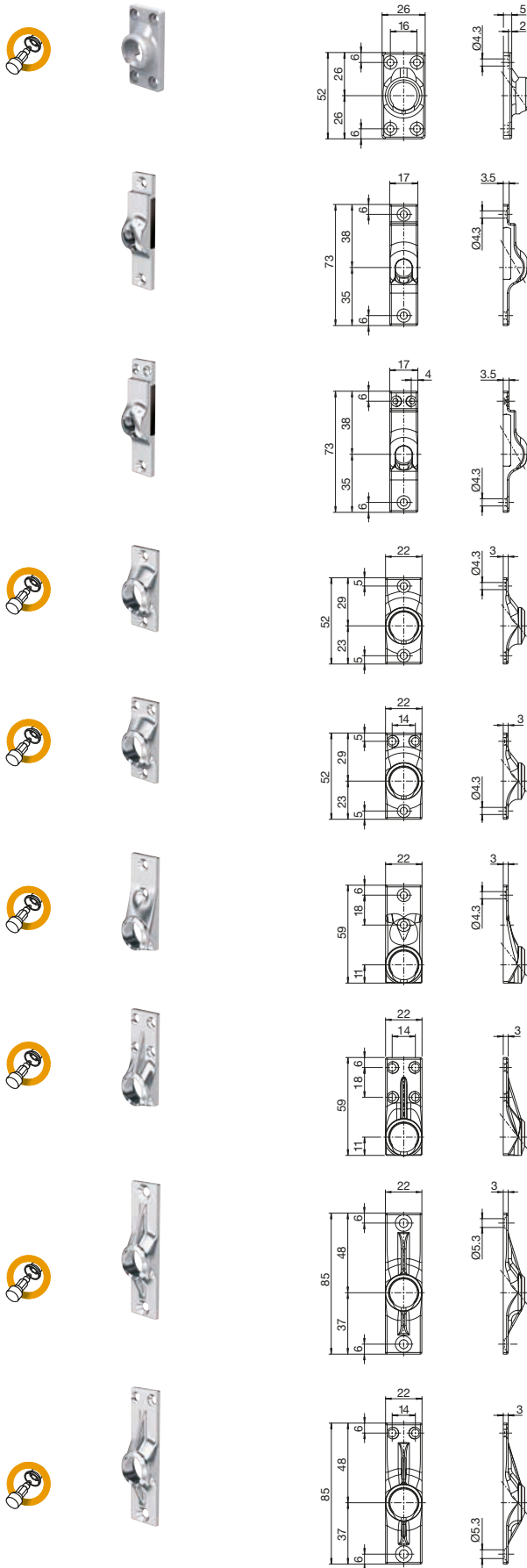
airtight design



Part no.	Swivelling range	Material	Height	Width
816F201....	50°	Zinc	85.0 mm	22.0 mm

airtight design  
optimised for wooden windows

## Standard version



Part no.	Swivelling range	Material	Height	Width
816F26....	50°	Plastic	52.0 mm	26.0 mm

Part no.	Swivelling range	Material	Height	Width
816F07....	50°	Zinc	73.0 mm	17.0 mm

Part no.	Swivelling range	Material	Height	Width
816F08....	50°	Zinc	73.0 mm	17.0 mm

optimised for wooden windows

Part no.	Swivelling range	Material	Height	Width
816F03....	50°	Zinc	52.0 mm	22.0 mm

Part no.	Swivelling range	Material	Height	Width
816F04....	50°	Zinc	52.0 mm	22.0 mm

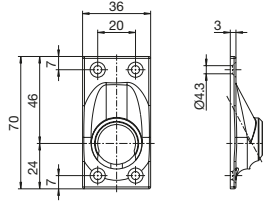
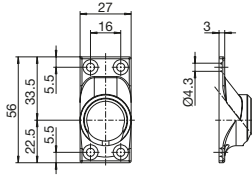
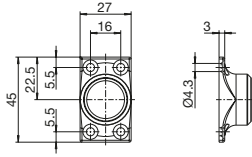
optimised for wooden windows

Part no.	Swivelling range	Material	Height	Width
816F05....	50°	Zinc	59.0 mm	22.0 mm

Part no.	Swivelling range	Material	Height	Width
816F06....	50°	Zinc	59.0 mm	22.0 mm

Part no.	Swivelling range	Material	Height	Width
816F(0)01....	50°	Zinc	85.0 mm	22.0 mm

Part no.	Swivelling range	Material	Height	Width
816F02....	50°	Zinc	85.0 mm	22.0 mm



Part no.	Swivelling range	Material	Height	Width
816F12....	35°	Zinc	45.0 mm	27.0 mm

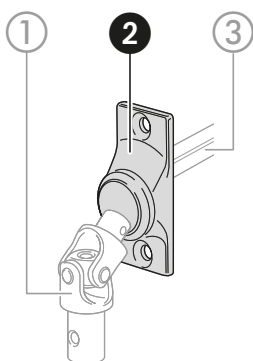
Part no.	Swivelling range	Material	Height	Width
816F11....	50°	Zinc	56.0 mm	27.0 mm

Part no.	Swivelling range	Material	Height	Width
816F13....	50°	Zinc	70.0 mm	36.0 mm

## 816F... | Standard spherical bearing 90°

Part no.	Item des. 1	Degrees	Plate	Trunnion	Connecting rod
816F16PR00	Spherical bearing 90° - 22x85 - Clip - SW6(300)	90°	22 x 85 mm	PROFILE	6 mm hexagon (300 mm)
816F16PR02	Spherical bearing 90° - 22x85 - Clip - 6/4(300)	90°	22 x 85 mm	PROFILE	6 mm square (300 mm)
816F161000	Spherical bearing 90° - 22x85 - 9.9 - SW6(300)	90°	22 x 85 mm	Ø 9.9	6 mm hexagon (300 mm)
816F161001	Spherical bearing 90° - 22x85 - 9.9 - SW7(300)	90°	22 x 85 mm	Ø 9.9	7 mm hexagon (300 mm)
816F161002	Spherical bearing 90° - 22x85 - 9.9 - 6/4(300)	90°	22 x 85 mm	Ø 9.9	6 mm square (300 mm)
816F161003	Spherical bearing 90° - 22x85 - 9.9 - 8/4(300)	90°	22 x 85 mm	Ø 9.9	8 mm square (300 mm)
816F161200	Spherical bearing 90° - 22x85 - 11.9 - SW6(300)	90°	22 x 85 mm	Ø 11.9	6 mm hexagon (300 mm)
816F161201	Spherical bearing 90° - 22x85 - 11.9 - SW7(300)	90°	22 x 85 mm	Ø 11.9	7 mm hexagon (300 mm)
816F161202	Spherical bearing 90° - 22x85 - 11.9 - 6/4(300)	90°	22 x 85 mm	Ø 11.9	6 mm square (300 mm)
816F161203	Spherical bearing 90° - 22x85 - 11.9 - 8/4(300)	90°	22 x 85 mm	Ø 11.9	8 mm square (300 mm)
816F161300	Spherical bearing 90° - 22x85 - 12.9 - SW6(300)	90°	22 x 85 mm	Ø 12.9	6 mm hexagon (300 mm)
816F161301	Spherical bearing 90° - 22x85 - 12.9 - SW7(300)	90°	22 x 85 mm	Ø 12.9	7 mm hexagon (300 mm)
816F161302	Spherical bearing 90° - 22x85 - 12.9 - 6/4(300)	90°	22 x 85 mm	Ø 12.9	6 mm square (300 mm)
816F161303	Spherical bearing 90° - 22x85 - 12.9 - 8/4(300)	90°	22 x 85 mm	Ø 12.9	8 mm square (300 mm)
816F171200	Spherical bearing 90° - 42x68 - 11.9 - SW6(300)	90°	42 x 68 mm	Ø 11.9	6 mm hexagon (300 mm)
816F171202	Spherical bearing 90° - 42x68 - 11.9 - 6/4(300)	90°	42 x 68 mm	Ø 11.9	6 mm square (300 mm)
816F401200	Spherical bearing 90° - 42x85 - 11.9 - SW6(300)	90°	42 x 85 mm	Ø 11.9	6 mm hexagon (300 mm)
816F401202	Spherical bearing 90° - 42x85 - 11.9 - 6/4(300)	90°	42 x 85 mm	Ø 11.9	6 mm square (300 mm)
816F401203	Spherical bearing 90° - 42x85 - 11.9 - 8/4(300)	90°	42 x 85 mm	Ø 11.9	8 mm square (300 mm)

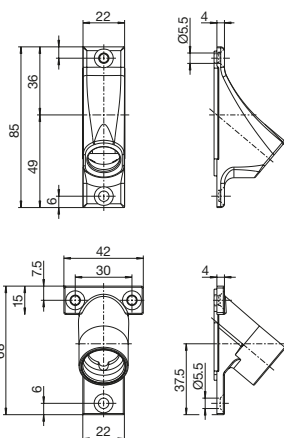
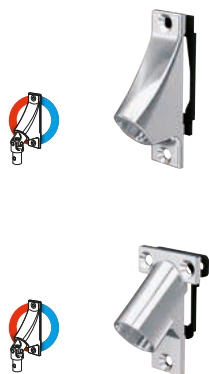
# 816F... | Spherical bearing plates 90°



## Characteristics

- Max. torque 3 Nm
- Steel universal joints
- Various connecting trunnions and connecting rods available
- Attachment plates made of die-cast zinc (bright nickel-plated) or plastic in 3 standard colours (white, grey, brown)
- Swivelling range depends on the plate

## Airtight design



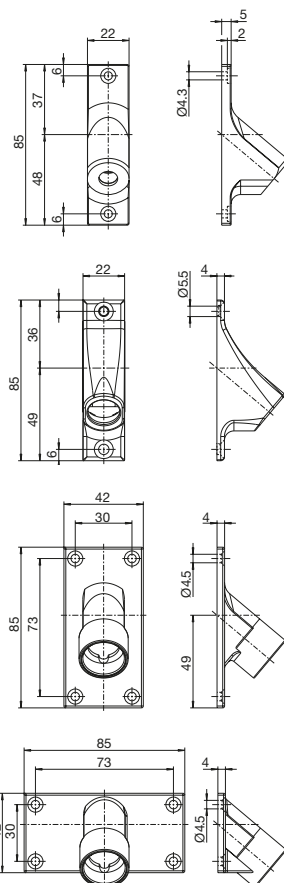
Part no.	Swivelling range	Material	Height	Width
816F206....	46°	Zinc	85.0 mm	22.0 mm

airtight design

Part no.	Swivelling range	Material	Height	Width
816F207....	46°	Zinc	68.0 mm	42.0 mm

airtight design

## Standard version



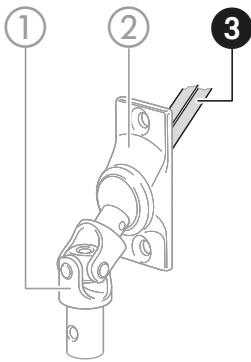
Part no.	Swivelling range	Material	Height	Width
816F2D....	46°	Plastic	85.0 mm	22.0 mm

Part no.	Swivelling range	Material	Height	Width
816F16....	46°	Zinc	85.0 mm	22.0 mm

Part no.	Swivelling range	Material	Height	Width
816F40....	46°	Zinc	85.0 mm	42.0 mm

Part no.	Swivelling range	Material	Height	Width
816F41....	46°	Zinc	42.0 mm	85.0 mm

## 816E... | Output rods



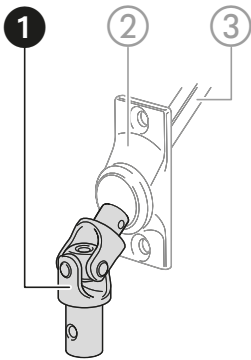
### Characteristics

- Various profiles and lengths of output rods available
- Made of steel with galvanised surface

Profile	Length 300 mm	Length 500 mm
■ 6 mm	816E062	816E274
■ 8 mm	816E064	816E067
◆ 6 mm	816E036	816E030
◆ 7 mm	816E057	816E264

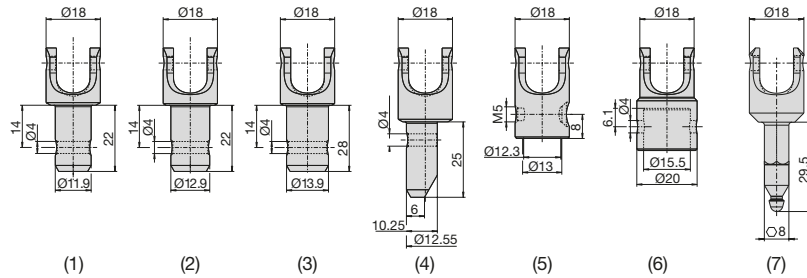


## 818F... | Universal joints for spherical bearings



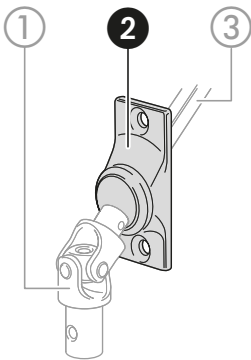
### Characteristics

- Universal joints made of aluminium with 18 mm diameter (up to 5 Nm)
- Other versions and connecting trunnions on request



Part no.	Material	Trunnion
818F... (1)	Aluminium	▼ 11.9 mm
818F... (2)	Aluminium	▼ 12.9 mm
818F... (3)	Aluminium	▼ 13.9 mm
818F... (4)	Aluminium	▼ Profile tube
818F... (5)	Aluminium	○ 12.3 mm
818F... (6)	Aluminium	○ 15.5 mm
818F... (7)	Aluminium	○ 8 mm (SKS)

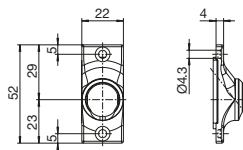
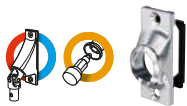
## 818F... | Spherical bearing plates 45°



### Characteristics

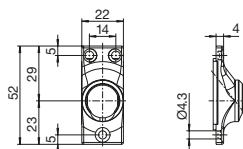
- Max. torque 5 Nm
- Universal joints made of aluminium
- Various connecting trunnions and connecting rods available
- Attachment plates made of die-cast zinc (bright nickel-plated) or plastic in 2 standard colours (white, grey)
- Swivelling range depends on the plate

### Airtight designs



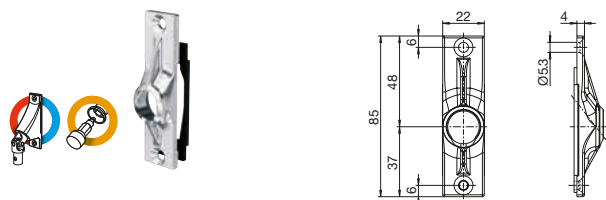
Part no.	Swivelling range	Material	Height	Width
818F202....	50°	Zinc	52.0 mm	22.0 mm

### airtight design



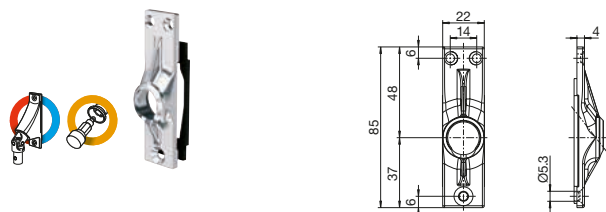
Part no.	Swivelling range	Material	Height	Width
818F203....	50°	Zinc	52.0 mm	22.0 mm

### airtight design optimised for wooden windows



Part no.	Swivelling range	Material	Height	Width
818F200....	50°	Zinc	85.0 mm	22.0 mm

airtight design



Part no.	Swivelling range	Material	Height	Width
818F201....	50°	Zinc	85.0 mm	22.0 mm

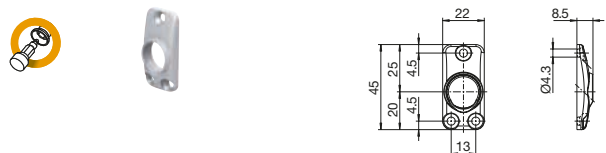
airtight design  
optimised for wooden windows

### Standard versions



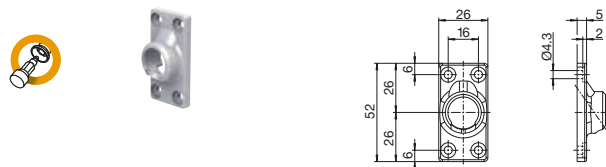
Part no.	Swivelling range	Material	Height	Width
818F113....	+ 33°/- 22°	Plastic	31.2 mm	31.2 mm

suitable for folding universal joints



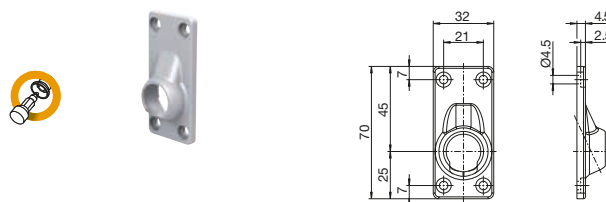
Part no.	Swivelling range	Material	Height	Width
818F114....	+ 42°/- 22°	Plastic	45.0 mm	22.0 mm

suitable for folding universal joints



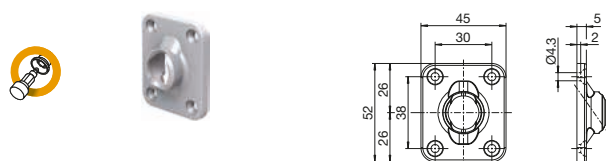
Part no.	Swivelling range	Material	Height	Width
818F26....	50°	Plastic	52.0 mm	26.0 mm

suitable for folding universal joints



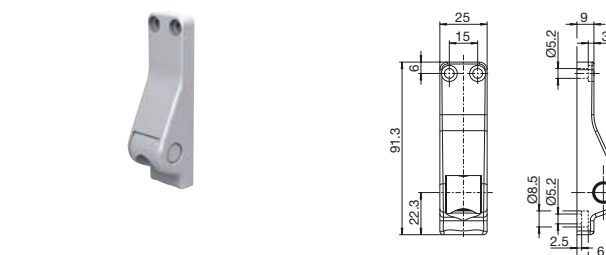
Part no.	Swivelling range	Material	Height	Width
818F1A....	65°	Plastic	70.0 mm	32.0 mm

suitable for folding universal joints



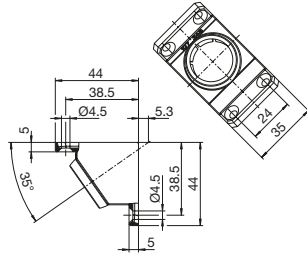
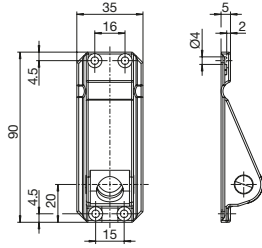
Part no.	Swivelling range	Material	Height	Width
818F(0)25....	45°	Plastic	52.0 mm	45.0 mm

suitable for folding universal joints



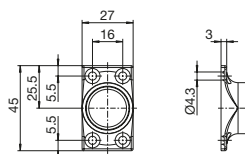
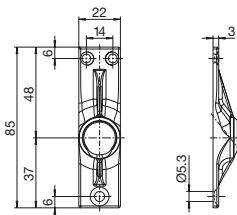
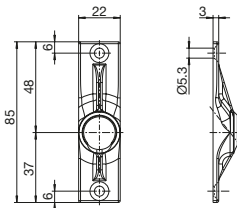
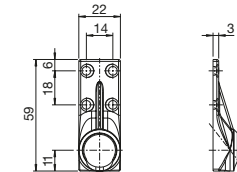
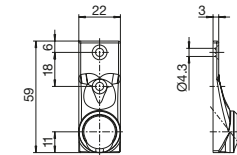
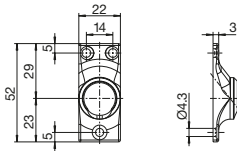
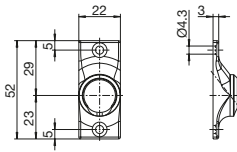
Part no.	Swivelling range	Material	Height	Width
818F37....	70°	Plastic	91.3 mm	25.0 mm

suitable for folding universal joints



Part no.	Swivelling range	Material	Height	Width
818F2U....	70°	Plastic	90.0 mm	35.0 mm

Part no.	Swivelling range	Material	Height	Width
818FWW....	25°	Plastic	44.0 mm	35.0 mm



Part no.	Swivelling range	Material	Height	Width
818F03....	50°	Zinc	52.0 mm	22.0 mm

Part no.	Swivelling range	Material	Height	Width
818F04....	50°	Zinc	52.0 mm	22.0 mm

optimised for wooden windows

Part no.	Swivelling range	Material	Height	Width
818F05....	50°	Zinc	59.0 mm	22.0 mm

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Part no.	Swivelling range	Material	Height	Width
818F67....	50°	Zinc	59.0 mm	22.0 mm

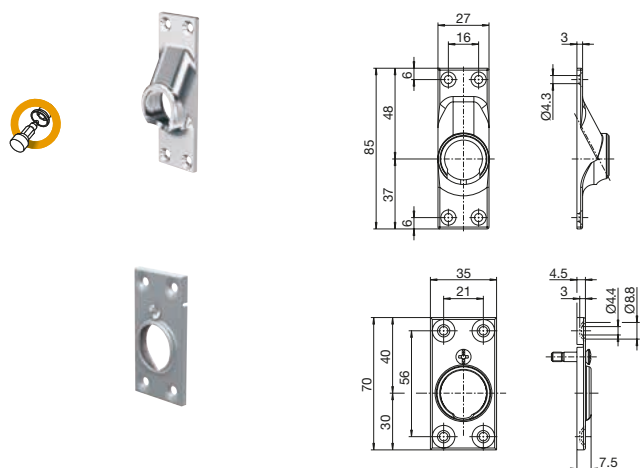
optimised for wooden windows

Part no.	Swivelling range	Material	Height	Width
818F01....	50°	Zinc	85.0 mm	22.0 mm

Part no.	Swivelling range	Material	Height	Width
818F02....	50°	Zinc	85.0 mm	22.0 mm

optimised for wooden windows

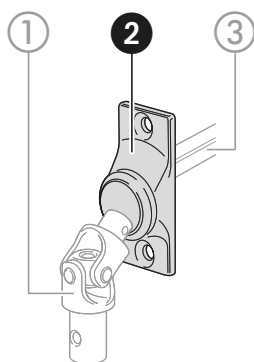
Part no.	Swivelling range	Material	Height	Width
818F12....	35°	Zinc	45.0 mm	27.0 mm



Part no.	Swivelling range	Material	Height	Width
818F15....	65°	Zinc	85.0 mm	27.0 mm

Part no.	Swivelling range	Material	Height	Width
818F(0)I3	50°	INOX	70.0 mm	35.0 mm

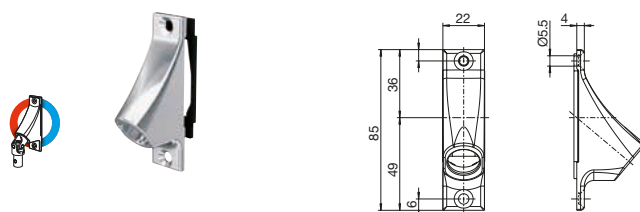
## 818F... | Spherical bearing plates 90°



### Characteristics

- Max. torque 5 Nm
- Universal joints made of aluminium
- Various connecting trunnions and connecting rods available
- Attachment plates made of die-cast zinc (bright nickel-plated) or plastic in 3 standard colours (white, grey, brown)
- Swivelling range depends on the plate

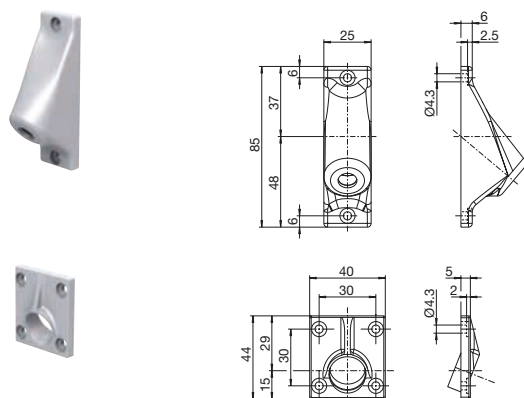
### Airtight designs



Part no.	Swivelling range	Material	Height	Width
818F46....	46°	Zinc	85.0 mm	22.0 mm

airtight design

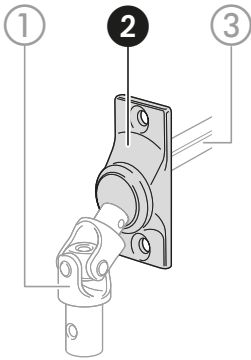
### Standard versions



Part no.	Swivelling range	Material	Height	Width
818F(0)44....	46°	Plastic	85.0 mm	22.0 mm

Part no.	Swivelling range	Material	Height	Width
818F1B....	46°	Plastic	44.0 mm	40.0 mm

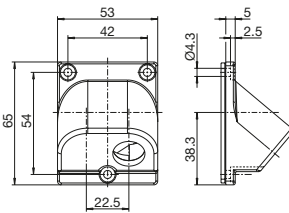
## 818F... | Offset spherical bearing 90°



### Characteristics

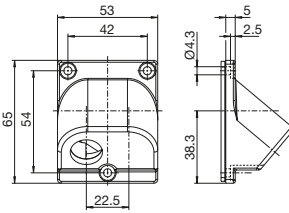
- To compensate for misalignment between gear and crank or in hard-to-reach spaces
- Max. torque 5 Nm
- Universal joints made of aluminium
- Various connecting trunnions and connecting rods available
- Housing made of plastic in 3 different colour (white, grey, brown)

### Offset spherical bearing (airtight design)



Part no.	Swivelling range	Material	Height	Width
818F562	60°	Plastic	65.0 mm	53.0 mm

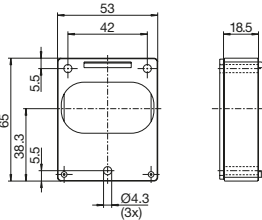
airtight design



Part no.	Swivelling range	Material	Height	Width
818F563	60°	Plastic	65.0 mm	53.0 mm

airtight design

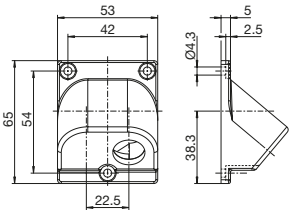
### Extension plate for offset spherical bearing (airtight version)



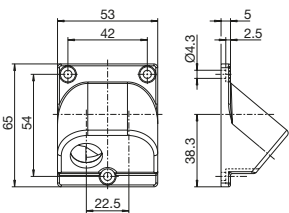
Part no.	Swivelling range	Material	Height	Width
818F568	-	Plastic	65.0 mm	53.0 mm

airtight design

### Offset spherical bearing (normal version)

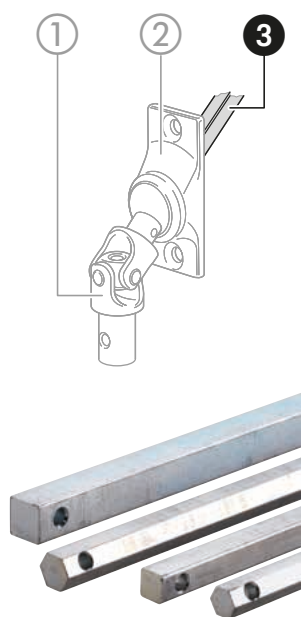


Part no.	Swivelling range	Material	Height	Width
818F501....	60°	Plastic	65.0 mm	53.0 mm



Part no.	Swivelling range	Material	Height	Width
818F500....	60°	Plastic	65.0 mm	53.0 mm

## 816E... | Output rods



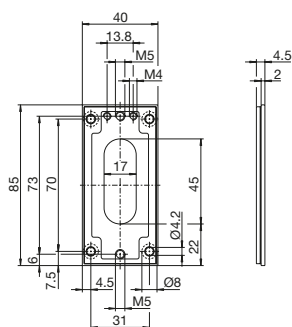
### Characteristics

- Various profiles and lengths of output rods available
- Made of steel with galvanised surface

Profile	Length 300 mm	Length 500 mm
■ 6 mm	816E062	816E274
■ 8 mm	816E064	816E067
● 6 mm	816E036	816E030
● 7 mm	816E057	816E264

## 740F.. | Spacers 40x85 mm / 85x85 mm

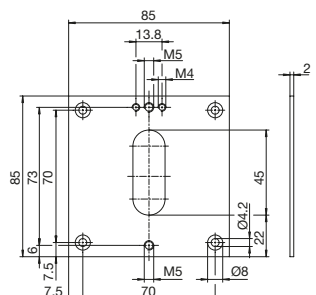
Application: **Covering of large wall openings**



### Characteristics

- Suitable for all spherical bearings with 22 x 85 mm base plate
- Made of steel
- Bright nickel-plated or powder-coated surface
- Also available in an airtight version

Part no.	Colour	Description	Material thickness	Outer dimension
740F002	■ nickel-plated	airtight	2 mm	40X85 mm
740F003	■ nickel-plated	-	2 mm	40X85 mm
740F008	□ RAL 9016	-	2 mm	40X85 mm



### Characteristics

- Suitable for all spherical bearings with 22 x 85 mm base plate
- Made of steel
- Bright nickel-plated or powder-coated surface
- Also available in an airtight version

Part no.	Colour	Description	Material thickness	Outer dimension
740F001	■ nickel-plated	-	2 mm	85X85 mm
740F006	■ nickel-plated	airtight	2 mm	85X85 mm
740F007	□ RAL 9016	-	2 mm	85X85 mm

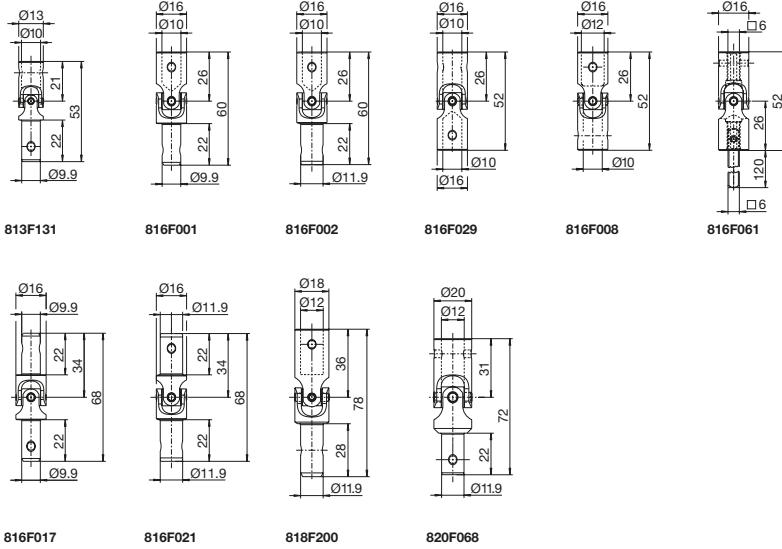
# 813F.../816F.../818F.../820F... | Universal joints

Application: **Connection of coupled systems with angular offset**



## Characteristics

- Max. torque: 813F... 2 Nm, 816F... 3 Nm, 818F... 5 Nm, 820F... 6 Nm
- Steel universal joints, hardened version on request
- Various connection dimensions available
- Surface finish galvanised or bright nickel-plated
- Max. deflection 45°

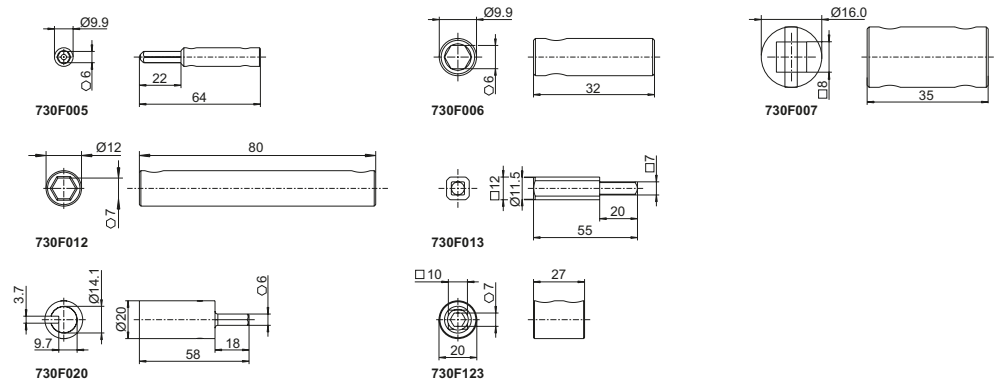


Part no.	Material	Surface	Drive	Output
813F131	Steel	galvanised	9.9 mm	10 mm
816F001	Steel	nickel-plated	9.9 mm	10 mm
816F002	Steel	nickel-plated	11.9 mm	10 mm
816F029	Steel	nickel-plated	10 mm	10 mm
816F008	Steel	nickel-plated	10 mm	12 mm
816F061	Steel	galvanised	6 mm	6 mm
816F017	Steel	nickel-plated	9.9 mm	9.9 mm
816F021	Steel	nickel-plated	11.9 mm	11.9 mm
818F200	Aluminium	natural colour anod.	11.9 mm	12 mm
820F068	Steel	nickel-plated	11.9 mm	12 mm

# 730F... | Coupling pieces

## Characteristics

- Various connection dimensions available
- Surface finish galvanised or bright nickel-plated



Part no.	Drive	Output
730F005	● 6 mm	∅10 mm
730F006	○ 6 mm	○ 6 mm
730F007	○ 8 mm	○ 8 mm
730F012	○ 7 mm	○ 7 mm
730F013	■ 12 mm	■ 7 mm
730F020	● 6 mm	○ for 14 mm grooved tube
730F123	○ 7 mm	○ 10 mm

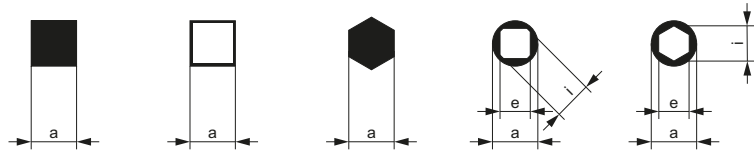
## 723F... | Rod material

### Characteristics

- Square rod
- Square brass tube
- Hexagonal rod
- Steel tube with internal square
- Steel tube with internal hexagon

### Note

- Part no. and current delivery lengths on request.
- Dimensions e and i on request



Part no.	Material	Surface	Length	External dimension [a]	Profiles
723F002	Steel	■ galvanised	5000 mm	6 mm	■ 6 mm
723F004	Steel	■ galvanised	5000 mm	6 mm	● 6 mm
723F006	Steel	⊠ blank	5700 mm	8 mm	■ 8 mm
723F016	Steel	⊠ blank	3000 mm	7 mm	● 7 mm
816E030	Steel	■ galvanised	526 mm	6 mm	● 6 mm
816E067	Steel	■ galvanised	526 mm	8 mm	■ 8 mm
816E274	Steel	■ galvanised	526 mm	6 mm	■ 6 mm
723F007	Steel	■ galvanised	500 mm	12 mm	○ 6 mm
723F008	Steel	⊠ blank	4500 mm	12 mm	○ 6 mm
723F009	Steel	■ galvanised	500 mm	14 mm	○ 8 mm
723F010	Steel	⊠ blank	2700 mm	14 mm	○ 8 mm
723F011	Steel	■ galvanised	500 mm	16 mm	○ 8 mm
723F012	Steel	⊠ blank	3000 mm	16 mm	○ 8 mm
723F013	Brass	▨ nickel-plated	500 mm	16 mm	□ 14 mm
723F018	Steel	⊠ blank	3000 mm	10 mm	○ 6 mm
723F020	Steel	⊠ blank	3000 mm	12 mm	○ 7 mm
723F024	Steel	⊠ blank	3000 mm	10 mm	○ 7 mm
723F025	Steel	■ galvanised	500 mm	10 mm	○ 5 mm
723F026	Steel	⊠ blank	3000 mm	10 mm	○ 5 mm
723F031	Aluminium	⊠ blank	500 mm	12 mm	○ 7 mm

## 430F5.. | Angle gear

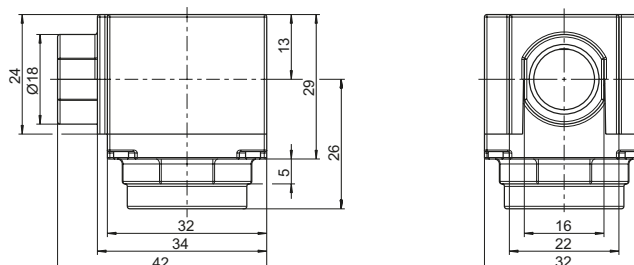
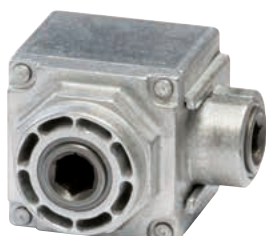
max. output torque	<b>6 Nm</b>
Transmission	<b>1:1 1.5:1 1:1.5</b>
Efficiency	<b>0.83</b>

### Characteristics

- Housing made of die-cast zinc, toothing made of steel
- Bearing points are filled with plastic
- With one drive and one output

### Note

- Other drive/output combinations on request
- Also available as angle gear for emergency operation (max. 10 Nm)

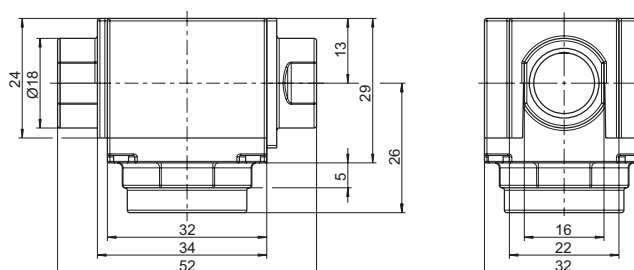


Part no.	Drive/output profile	Transmission	Drive/output(s)
430F550	○ 7 mm	1 : 1	2
430F551	○ 7 mm	1.5 : 1	2
430F552	○ 7 mm	1 : 1.5	2



### Characteristics

- As before, but with one drive and two outputs or two drives and one output

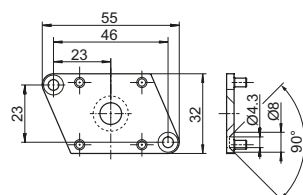
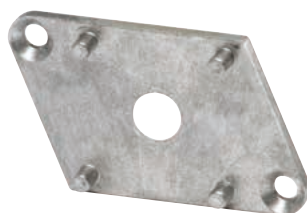


Part no.	Drive/output profile	Transmission	Drive/output(s)
430F553	○ 7 mm	1 : 1	3
430F554	○ 7 mm	1.5 : 1	3
430F555	○ 7 mm	1 : 1.5	3

## 430F503 | Attachment plate

### Characteristics

- Incl. countersunk screw (M6 x 16 mm, galvanised, with screw lock) for fixation to the gearbox
- For horizontal and vertical mounting
- Suitable for angle gears 430F5..



Part no.	Part no.
430F503	

# GEIGER SWIMMING POOL GEARBOXES

## FOR RELIABLE OPERATION OF SWIMMING POOL COVERS

### Why are swimming pool covers used?

- **Safety:** One of the most important functions of swimming pool covers is to increase safety. They can prevent children or pets from accidentally falling into the water, which can often cause serious injury or even death.
- **Cleanliness:** A cover can keep the pool clean by preventing dirt, leaves, twigs, and other impurities from getting into the water. This reduces the need for cleaning agents and equipment, which saves time and money.
- **Energy efficiency:** A pool cover can also help to improve the energy efficiency of the pool by reducing heat loss. The heat remains in the pool and less energy is required to heat the water when the cover is closed. This can reduce heating costs.

### Handling of swimming pool covers

The GEIGER swimming pool gearbox is probably the easiest way to operate flexible swimming pool covers. The cover can be easily rolled up into a bale and unrolled again with the gearbox and the long crank. After use, the gearbox can be removed and stored in a safe and dry place.

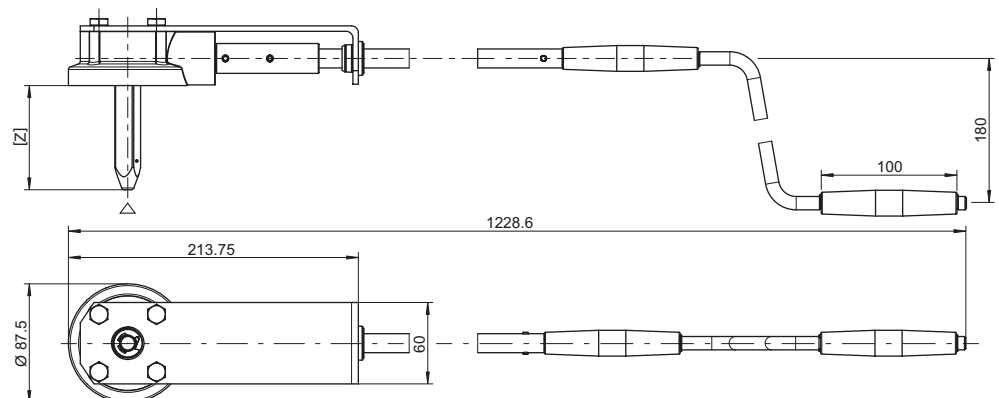
The gearbox is designed for a long service life and for simple and safe operation. The materials and surfaces used are weather and moisture resistant.

## 409F0... | Bevel gearbox 3:1

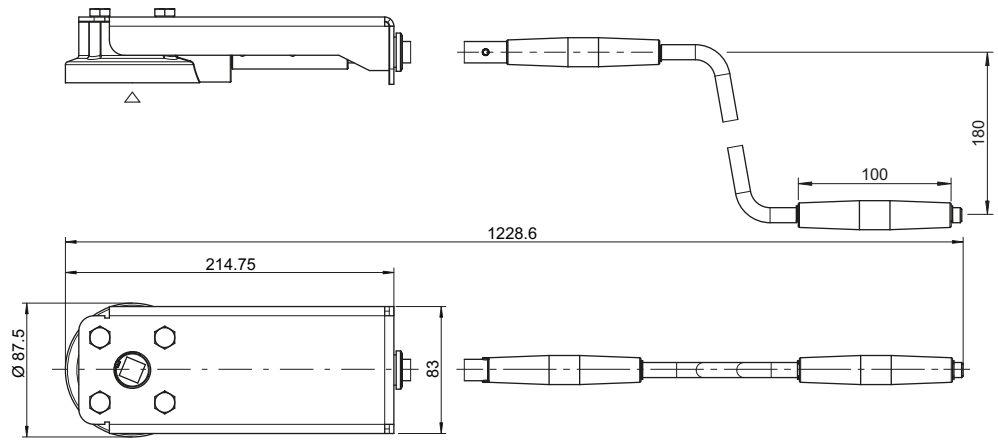
max. output torque	<b>12 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.66</b>

### Characteristics

- Gearbox housing made of die-cast zinc
- Without end stop
- With or without stainless steel trunnion
- Gearbox holder made of galvanised and blue passivated sheet steel
- Galvanised steel rods (mounted or loose)



Part no.	Output $\Delta$	Trunnion [Z]	Gearbox holder	Crank handle
409F013	13.1 mm	■ 15 mm x 76.8 mm, stainless steel	galvanised and blue passivated, open	mounted
409F014	13.1 mm	■ 15 mm x 116.8 mm, stainless steel	galvanised and blue passivated, open	mounted
409F026	13.1 mm	without trunnion	galvanised and blue passivated, open	mounted
409F027	13.1 mm	without trunnion	galvanised and blue passivated, open	loose



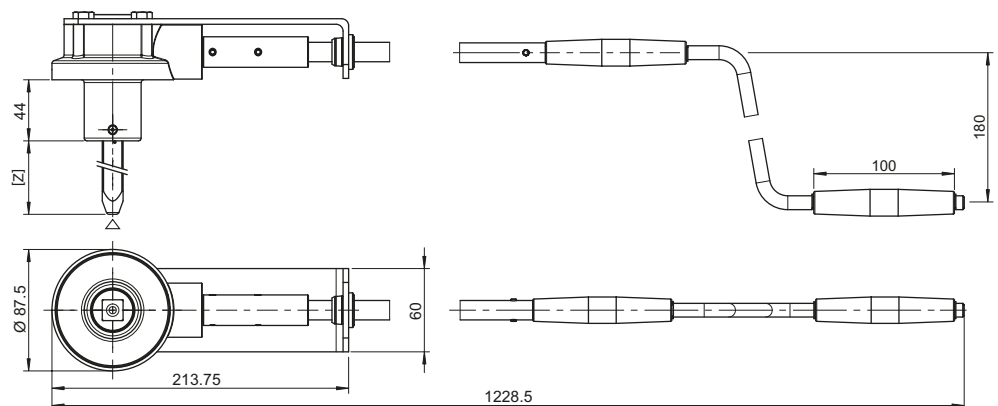
Part no.	Output $\Delta$	Trunnion [Z]	Gearbox holder	Crank handle
409F025	○ 13.1 mm	without trunnion	made of stainless steel, reinforced	mounted

## 410F013 | Bevel gearbox 3:1

max. output torque	<b>12 Nm</b>
Gear reduction	<b>3:1</b>
Efficiency	<b>0.68</b>

### Characteristics

- Gearbox housing made of die-cast zinc
- Additional guidance through collar on the gearbox
- Without end stop
- Gearbox holder made of galvanised and blue passivated sheet steel
- Galvanised steel rods (assembled)



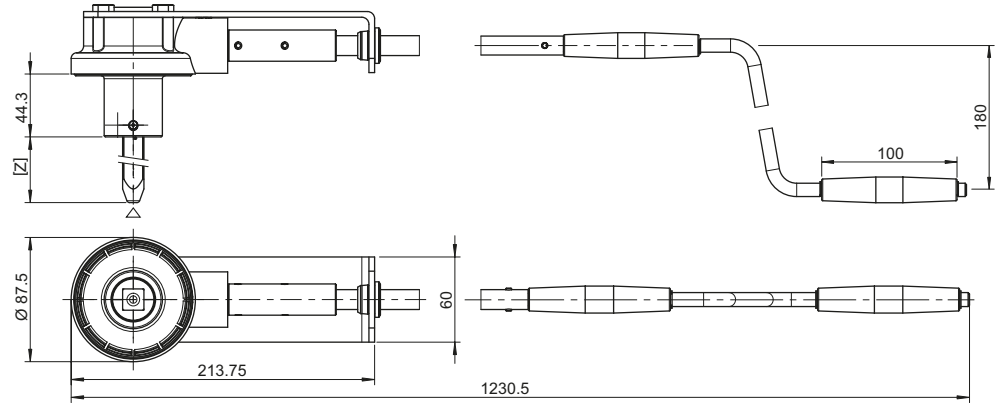
Part no.	Output $\Delta$	Trunnion [Z]	Gearbox holder	Crank handle
410F013PN	○ 17 mm, pinned (6 mm)	■ 15 mm x 78 mm, stainless steel	galvanised and blue passivated, open	mounted

## 412F0.. | Bevel gearbox 4.4:1

max. output torque	<b>16 Nm</b>
Gear reduction	<b>4.4:1</b>
Efficiency	<b>0.66</b>

### Characteristics

- Gearbox housing made of die-cast zinc
- Without end stop
- Gearbox holder made of galvanised and blue passivated sheet steel or stainless steel
- Galvanised steel rods (assembled)



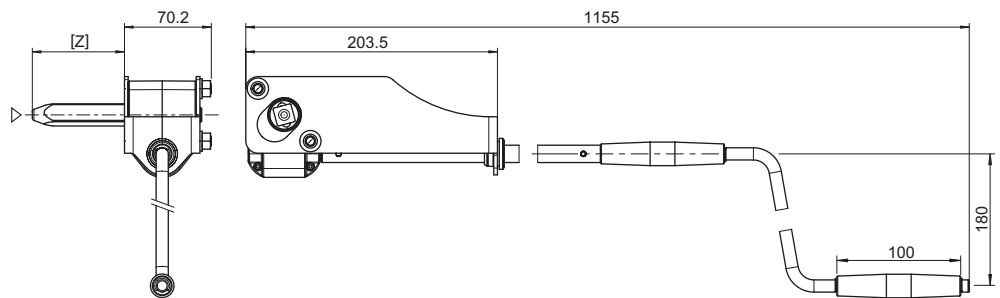
Part no.	Output $\Delta$	Trunnion [Z]	Gearbox holder	Crank handle
412F011	15 mm	■ 15 mm x 78 mm, stainless steel	galvanised and blue passivated, open	mounted
412F040	15 mm	■ 15 mm x 78 mm, stainless steel	made of stainless steel, reinforced	mounted

## 416F0.. | Worm gear 7:1

max. output torque	<b>20 Nm</b>
Gear reduction	<b>7:1</b>
Efficiency	<b>0.44</b>

### Characteristics

- Gearbox housing made of die-cast zinc
- Without end stop
- With or without stainless steel trunnion
- Gearbox holder made of galvanised and blue passivated sheet steel
- Galvanised steel rods (assembled)



Part no.	Output $\Delta$	Trunnion [Z]	Gearbox holder	Crank handle
416F044	13.1 mm	■ 15 mm x 74.5 mm, stainless steel	galvanised and blue passivated, reinforced	mounted
416F058	13.1 mm	without trunnion	galvanised and blue passivated, reinforced	mounted