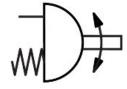
## Semi-rotary drive DFPD-N-300-RP-90-RS60-F0710 Part number: 8066453

**FESTO** 





## **Data sheet**

Feature	Value
Size of valve actuator	300
Flange hole pattern	F0710
Swivel angle	90 deg
End-position adjustment range at 0°	-5 deg5 deg
End-position adjustment range at nominal swivel angle	-5 deg5 deg
Shaft connection depth	24 mm
Fitting connection conforms to standard	ISO 5211
Mounting position	optional
Mode of operation	Single-acting
Design	Rack and pinion
Closing direction	Closes to the right
Valve connection conforms to standard	VDI/VDE 3845 (NAMUR)
Connection point for positioner and position sensor conforms to standard	VDI/VDE 3845 size AA 2
Device type according to VDMA 66413	Safety device
Safety function	The safety function consists of the drive switching to the defined safety switching position when the compressed air is switched off and the spring chamber is exhausted. This switching movement is realised by the spring force of the spring assembly.
Safety Integrity Level (SIL)	To SIL 2 Low Demand mode Up to SIL 3 in a redundant architecture Up to SIL 1 high demand mode
Certified for safety function to ISO 13849 and IEC 61508 (SIL)	Product can be used in SRP/CS up to SIL 2 (Low Demand) Product can be used in SRP/CS up to SIL 1 (High Demand) Up to SIL 3 in a redundant architecture
Burst pressure	24 bar
Operating pressure	0.2 MPa0.8 MPa 2 bar8 bar 29 psi116 psi
Nominal operating pressure	0.6 MPa 6 bar 87 psi
Maritime classification	See certificate
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)
UKCA marking (see declaration of conformity)	To UK EX instructions

Explosion protection  Explosion grows a control of the protection of the prote	Feature	Value
Zone 1 (UKEX) Zone 21 (ATEX) Zone 21 (ATEX) Zone 22	Explosion protection certification outside the EU	
German Technical Control Board (TÜV) Rheinland 968/V 1106.01/2023   ATEX category dust   II 2G   ATEX category dust   II 2G   Explosion ignition protection type for gas   Ex h IIC T4 Gb X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection type for dust   Ex h IIC T105°C Db X   Explosion ignition protection   T22   Explosion ignition protection   T22   Explosion ignition protection   T22   Explosion ignition protection   T22   Explosion ignition protection   Die-cast aluminium alloy   Explosion ignition protection   Die-cast aluminium alloy   Explosion ignition protection   Die-cast aluminium alloy   Explosion ignition protection   Die-cast aluminium   Explosion ignition protection   Explosion   Explosion   Explosion ignition   Explosion   Explosion   Explosion   Explosion ignition   Die-cast aluminium   Explosion ignition   Die-cast aluminium   Explosion ignition   Die-cast aluminium   Explosion ignition   Die-cast aluminium   Explosion ignition   Explosion   Die-cast aluminium   Explosion ignition   Explosion	Explosion protection	Zone 1 (UKEX) Zone 2 (ATEX) Zone 21 (ATEX) Zone 21 (UKEX)
ATEX category dust  Explosion ignition protection type for gas  Ex h IIC T105°C Db X  Explosion ignition protection type for dust  Explosion ignition protection [F4:40]  Explosion ignition ign	Certificate issuing authority	
Explosion ignition protection type for gas  Explosion ignition protection type for dust  Explosion ignition protection type for dust  Explosion ignition protection type for dust  Explosion ambient temperature  -20 °C <= Ta <= +80 °C  Operating medium  Compressed air to 150 8573-1:2010 [7:4:4]  Dew point at least 10 °C below the ambient temperature and temperature of the medium Lubricated operation possible (in which case lubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA24364-B1/B2-L  Storage temperature  -20 °C80 °C  Ambient temperature  -20 °C80 °C  Torque at nominal operating pressure and 9° swivel angle  115.3 Nm  The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 0° swivel angle  214.1 Nm  Mean time to dangerous failure (MTTFd)  Probability of Failure per Hour (PFH)  1.016-07  Probability of Failure per Hour (PFH)  1.016-07  Probability of Failure an Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 ps) per cycle 0°-nominal swivel angle-0°  Product weight  Shaft connection  1/4 NPT  Note on materials  Material sub-base  Anodised wrought aluminium alloy  Material cover  Material seals  Material seals  Material seals  Material seals  Material seals  Material piston  Material piston  Material piston  Material piston  Material piston  Material searing  Material piston  Material searing  Material searing  Material searing  Material piston  Material searing	ATEX category gas	II 2G
Explosion ignition protection type for dust Explosion ignition protection type for dust Explosion ambient temperature 20 °C <= Ta <= +80 °C Operating medium Compressed air to ISO 8573-1:2010 [7:4:4] Note on operating and pilot medium Unbricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity VDMA24364-81/B-1.  Storage temperature 20 °C80 °C Operating pressure and 0° swivel angle 221 Nm Oroque at nominal operating pressure and 9° swivel angle 115.3 Nm Note on torque The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 0° swivel angle 108.8 Nm Spring return torque at 0° swivel angle 214.1 Nm Wean time to dangerous failure (MTFtd) 1126 years Probability of Failure on Demand (PFD) 0.00078 Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0° Product weight 12880 g Shaft connection 1/4 NPT Note on materials Material sub-base Anodised wrought aluminium alloy Material cover Material seals Material seals Material spring Material piston Material piston Material piston Material spring Material piston Material spring Material piston Material sears Material spring Material serves Material serves Material screws High-alloy stainless steel	ATEX category dust	II 2D
Explosion ambient temperature  -20 °C <= Ta <= +80 °C  Compressed air to ISO 8573-1:2010 [7:4:4]  Deve point at least 10 °C below the ambient temperature and temperature of the medium ubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA24364-B1/B2-L  Storage temperature  -20 °C60 °C  Ambient temperature  Ambient temperature  Torque at nominal operating pressure and 0° swivel angle  Torque at nominal operating pressure and 90° swivel angle  Torque at nominal operating pressure and 90° swivel angle  Torque at one will always be required)  The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 90° swivel angle  Spring return torque at 90° swivel angle  Spring return torque at 90° swivel angle  108.4 Nm  Spring return torque at 90° swivel angle  214.1 Nm  Mean time to dangerous failure (MTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  0.00078  Air consumption at 0.6 MPa (6 bar, 87 ps)) per cycle 0°-nominal swivel angle o'  Preumatic connection  11 4 MPT  Note on materials  RoHS-compliant  Material sub-base  Anodised wrought aluminium alloy  Material cover  Die-cast aluminium, coated  Material spring  Spring steel  Material spring  Material piston  Material bearing  Material piston  Material bearing  Material bearing  Material bearing  Material bearing  Material serves  High-alloy stainless steel	Explosion ignition protection type for gas	Ex h IIC T4 Gb X
Operating medium  Compressed air to ISO 8573-1:2010 [7:4:4]  Note on operating and pilot medium  Dew point at least 10 °C below the ambient temperature and temperature of the medium Lubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA2;464-B1/B2-L  Storage temperature  -20 °C60 °C  Ambient temperature  -20 °C60 °C  Torque at nominal operating pressure and 0° swivel angle  221 Nm  Torque at nominal operating pressure and 90° swivel angle  Torque at nominal operating pressure and 90° swivel angle  The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 0° swivel angle  Spring return torque at 90° swivel angle  214.1 Nm  Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  12880 g  Shaft connection  T22  Predumatic connection  1/4 NPT  Note on materials  RoHS-compliant  Material sub-base  Anodised wrought aluminium alloy  Material sub-base  Material sub-base  Material spring  Material spring  Material spring  Material housing  Anodised wrought aluminium alloy  Material boring	Explosion ignition protection type for dust	Ex h IIIC T105°C Db X
Dew point at least 10 °C below the ambient temperature and temperature of the medium ubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA24364-B1/B2-L  Storage temperature  -20 °C60 °C  Ambient temperature  -20 °C60 °C  Torque at nominal operating pressure and 0° swivel angle  221 Nm  Torque at nominal operating pressure and 90° swivel angle  The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 0° swivel angle  108.4 Nm  Spring return torque at 90° swivel angle  214.1 Nm  Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle  Product weight  12880 g  Shaft connection  172  Preduct weight  Note on materials  RoHS-compliant  Material sub-base  Anodised wrought aluminium alloy  Material sub-base  Material spring  Material spring  Material spring  Material spring  Material spring  Material spring  Material bousing  Material bousing  Material bousing  Material bousing  Material bearing  Material sears  Material sears  Material sears  Material bearing  POM  Material screws  High-alloy stainless steel	Explosion ambient temperature	-20 °C <= Ta <= +80 °C
temperature of the medium Lubricated operation possible (in which case lubricated operation will always be required)  LABS (PWIS) conformity  VDMA2436-B1/B2-L  Storage temperature  -20 °C60 °C  Ambient temperature  -20 °C60 °C  Torque at nominal operating pressure and 0° swivel angle  Torque at nominal operating pressure and 90° swivel angle  Torque at nominal operating pressure and 90° swivel angle  The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 0° swivel angle  Material torque at 90° swivel angle  108.4 Mm  Spring return torque at 90° swivel angle  214.1 Nm  Material sub-base  Anodised wrought aluminium alloy  Material spring  Material spring  Material spring  Material spring  Material lousing  Material lousing  Material lousing  Material carm  Material storews  Material screws  High-alloy stainless steel  High-alloy stainless steel	Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]
Storage temperature -20 °C60 °C Ambient temperature -20 °C80 °C Torque at nominal operating pressure and 0° swivel angle 115.3 Nm Torque at nominal operating pressure and 90° swivel angle Note on torque The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 90° swivel angle 108.4 Nm Spring return torque at 90° swivel angle 214.1 Nm Mean time to dangerous failure (MTTFd) 1126 years Probability of Failure per Hour (PFH) 1.01E-07 Probability of Failure on Demand (PFD) 0.00078 Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0° Product weight 12880 g Shaft connection 122 Prequestic connection 1/4 NPT Note on materials ROHS-compliant Material sub-base Anodised wrought aluminium alloy Material seals MBR Material spring Spring steel Material housing Anodised wrought aluminium alloy Material piston Die-cast aluminium Material piston Die-cast aluminium Material piston Material core Material core Material piston Material core Material core Material piston Material posting Material core Material piston Material piston Material scare Material core Material core Material piston Material piston Material piston Material scare Material core Material piston Material piston Material scare Material scare Migh-alloy stainless steel	Note on operating and pilot medium	temperature of the medium Lubricated operation possible (in which case lubricated operation will
Ambient temperature -20 °C80 °C Torque at nominal operating pressure and 0° swivel angle Torque at nominal operating pressure and 90° swivel angle 115.3 Nm The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 0° swivel angle 108.4 Nm Spring return torque at 90° swivel angle 214.1 Nm Mean time to dangerous failure (MTTFd) 1126 years Probability of Failure per Hour (PFH) 1.01E-07 Probability of Failure on Demand (PFD) 0.00078 Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle 0° Product weight 12880 g Shaft connection 122 Preumatic connection 1/4 NPT Note on materials RoHS-compliant Material sub-base Anodised wrought aluminium alloy Material seals NBR Material seals NBR Material spring Spring steel Material boaring POM Material boaring Material bearing POM Material bearing POM Material com Material bearing POM Material com Material com Material com Material com Material com Material bearing POM Material com Material com Material com Material bearing Material com Material com Material bearing Material com Material com Material screws High-alloy stainless steel	LABS (PWIS) conformity	VDMA24364-B1/B2-L
Torque at nominal operating pressure and 0° swivel angle Torque at nominal operating pressure and 90° swivel angle Torque at nominal operating pressure and 90° swivel angle Note on torque The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 0° swivel angle 108.4 Nm  Spring return torque at 90° swivel angle 214.1 Nm  Mean time to dangerous failure (MTTFd) 1126 years  Probability of Failure per Hour (PFH) 1.01E-07  Probability of Failure on Demand (PFD) 0.00078  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight 12880 g  Shaft connection 722  Pneumatic connection 1/4 NPT Note on materials RoHS-compliant Material sub-base Anodised wrought aluminium alloy Material seals NBR Material seals NBR Material spring Spring steel Material bousing Anodised wrought aluminium alloy Material bousing Material bousing Material bousing Material bearing POM Material bearing Material cam Material screws High-alloy stainless steel	Storage temperature	-20 °C60 °C
Torque at nominal operating pressure and 90° swivel angle  Note on torque  The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 90° swivel angle  108.4 Nm  Spring return torque at 90° swivel angle  214.1 Nm  Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  0.00078  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  12880 g  Shaft connection  722  Pneumatic connection  1/4 NPT  Note on materials  RoHS-compliant  Material sub-base  Anodised wrought aluminium alloy  Material seals  Material seals  NBR  Material pring  Anodised wrought aluminium alloy  Material pring  Material piston  Die-cast aluminium  Material piston  Die-cast aluminium  Material bearing  POM  Material core  Material cam  Material screws  High-alloy stainless steel	Ambient temperature	-20 °C80 °C
The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 9° swivel angle  Spring return torque at 9° swivel angle  Mean time to dangerous failure (MTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  12880 g  Shaft connection  722  Preumatic connection  1/4 NPT  Note on materials  Material sub-base  Anodised wrought aluminium alloy  Material seals  NBR  Material spring  Spring steel  Material piston  Material piston  Material piston  Material bearing  POM  Material cam  Material cam  Material screws  High-alloy stainless steel	Torque at nominal operating pressure and 0° swivel angle	221 Nm
maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.  Spring return torque at 0° swivel angle  108.4 Nm  Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  12880 g  Shaft connection  722  Preumatic connection  Note on materials  Material sub-base  Anodised wrought aluminium alloy  Material seals  Material spring  Spring steel  Material spring  Material piston  Material piston  Material piston  Material screws  Material screws  High-alloy stainless steel  Material screws	Torque at nominal operating pressure and 90° swivel angle	115.3 Nm
Spring return torque at 90° swivel angle  Mean time to dangerous failure (MTTFd)  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  12880 g  Shaft connection  T22  Pneumatic connection  1/4 NPT  Note on materials  RoHS-compliant  Material sub-base  Anodised wrought aluminium alloy  Material seals  Material spring  Material spring  Material housing  Material piston  Material bearing  Material com  Material com  Material com  Material bearing  Material bearing  Material com  Material com  Material search  Material bearing  Material search  Material search  Material bearing  Material screws  High-alloy stainless steel	Note on torque	maximum permissible torque listed in ISO 5211, with reference to the
Mean time to dangerous failure (MTTFd)  1126 years  Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  11 l  12880 g  Product weight  124 NPT  Note on materials  RoHS-compliant  Material sub-base  Anodised wrought aluminium alloy  Material seals  Material spring  Material spring  Material housing  Material piston  Material bearing  Material cam  Material cam  Material screws  Material screws  Material screws  High-alloy stainless steel	Spring return torque at 0° swivel angle	108.4 Nm
Probability of Failure per Hour (PFH)  1.01E-07  Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  12880 g  Product weight  124 NPT  Note on materials  Material sub-base  Anodised wrought aluminium alloy  Material spring  Material spring  Material spring  Material housing  Material piston  Material bearing  Material cam  Material screws  Material spring  Material spring  Material screws	Spring return torque at 90° swivel angle	214.1 Nm
Probability of Failure on Demand (PFD)  Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  12880 g  Shaft connection  T22  Pneumatic connection  1/4 NPT  Note on materials  RoHS-compliant  Material sub-base  Anodised wrought aluminium alloy  Material seals  NBR  Material seals  NBR  Material spring  Spring steel  Material housing  Material piston  Material bearing  Material cam  Material cam  Material screws  Material screws  High-alloy stainless steel	Mean time to dangerous failure (MTTFd)	1126 years
Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°  Product weight  12880 g  Shaft connection  T22  Pneumatic connection  Note on materials  Material sub-base  Anodised wrought aluminium alloy  Material seals  NBR  Material spring  Spring steel  Material piston  Material piston  Material poston  Material cam  Material cam  Material screws  High-alloy stainless steel  Mind Anodises steel  Migh-alloy stainless steel	Probability of Failure per Hour (PFH)	1.01E-07
angle-0°  Product weight  12880 g  Shaft connection  T22  Pneumatic connection  1/4 NPT  Note on materials  Material sub-base  Anodised wrought aluminium alloy  Material seals  NBR  Material spring  Material spring  Spring steel  Material housing  Anodised wrought aluminium alloy  Die-cast aluminium, coated  Material piston  Die-cast aluminium alloy  Material bearing  Anodised wrought aluminium alloy  Die-cast aluminium alloy  Material bearing  POM  Material cam  Steel  Material screws  High-alloy stainless steel	Probability of Failure on Demand (PFD)	0.00078
Shaft connection T22 Pneumatic connection 1/4 NPT Note on materials RoHS-compliant Material sub-base Anodised wrought aluminium alloy Material cover Die-cast aluminium, coated Material spring Spring steel Material housing Anodised wrought aluminium alloy Die-cast aluminium alloy Material piston Die-cast aluminium Material bearing POM Material cam Material screws High-alloy stainless steel	Air consumption at 0.6 MPa (6 bar, 87 psi) per cycle 0°-nominal swivel angle-0°	11
Pneumatic connection 1/4 NPT  Note on materials RoHS-compliant  Material sub-base Anodised wrought aluminium alloy  Material cover Die-cast aluminium, coated  Material seals NBR  Material spring Spring steel  Material housing Anodised wrought aluminium alloy  Material piston Die-cast aluminium  Material bearing POM  Material cam Steel  Material screws High-alloy stainless steel	Product weight	12880 g
Note on materials  Material sub-base  Anodised wrought aluminium alloy  Material cover  Die-cast aluminium, coated  Material seals  NBR  Material spring  Spring steel  Material housing  Anodised wrought aluminium alloy  Die-cast aluminium alloy  Material piston  Die-cast aluminium  Material bearing  POM  Material cam  Steel  Material screws  High-alloy stainless steel	Shaft connection	T22
Material sub-base Anodised wrought aluminium alloy Material cover Die-cast aluminium, coated Material seals NBR Material spring Spring steel Material housing Anodised wrought aluminium alloy Material piston Die-cast aluminium Material bearing POM Material cam Steel Material screws High-alloy stainless steel	Pneumatic connection	1/4 NPT
Material cover  Material seals  Material spring  Material spring  Material housing  Material housing  Material piston  Material bearing  Material bearing  Material cam  Material screws  Die-cast aluminium, coated  Anodised wrought aluminium alloy  Die-cast aluminium  POM  Steel  High-alloy stainless steel	Note on materials	RoHS-compliant
Material seals  Material spring  Spring steel  Material housing  Anodised wrought aluminium alloy  Material piston  Die-cast aluminium  Material bearing  POM  Material cam  Steel  Material screws  High-alloy stainless steel	Material sub-base	Anodised wrought aluminium alloy
Material spring Spring steel Material housing Anodised wrought aluminium alloy Material piston Die-cast aluminium Material bearing POM Material cam Steel Material screws High-alloy stainless steel	Material cover	Die-cast aluminium, coated
Material housing Anodised wrought aluminium alloy Material piston Die-cast aluminium Material bearing POM Material cam Steel Material screws High-alloy stainless steel	Material seals	NBR
Material piston Die-cast aluminium  Material bearing POM  Material cam Steel  Material screws High-alloy stainless steel	Material spring	Spring steel
Material bearing POM  Material cam Steel  Material screws High-alloy stainless steel	Material housing	Anodised wrought aluminium alloy
Material cam Steel Material screws High-alloy stainless steel	Material piston	Die-cast aluminium
Material screws High-alloy stainless steel	Material bearing	РОМ
	Material cam	Steel
Material shaft Nickel-plated steel	Material screws	High-alloy stainless steel
	Material shaft	Nickel-plated steel