

Copar quarter turn actuators DRD/DRE

FESTO



Copar quarter turn actuators DRD/DRE

Key features and product range overview

FESTO

Brief description

Size
1 ... 880

Torque
7,5 ... 8 800 Nm

Swivel angle
0 ... 90°

The Copar quarter turn actuators are ideally suited for automating swivel valves in the process industry. Sturdy, but nevertheless accurate for high precision positioning, especially with ball valves and plug valves, as well as shut-off and butterfly valves.

- Direction of rotation can be optionally changed from clockwise to anticlockwise
- End-position sensor and limit switch module can be mounted directly to the drive
- Fast or slow valve actuation
- Suitable for manual on-site use, as well as automatic operation
- Resistant to overload and continuous loads
- Can be used as a variable-speed actuator in combination with an electro-pneumatic positioning controller
- Opening and closing are controlled with a flange-mounted solenoid valve with port pattern to Namur
- Highly corrosion resistant
- Optionally adjustable end positions for sizes 8 ... 100, facilitating adjustment ranges of -4° ... $+4^{\circ}$ and 86° ... 94°
- Selected types according to ATEX directive for explosive atmospheres
→ www.festo.com/en/ex
- Port pattern to Namur VDI/VDE 3845 for attaching solenoid valves



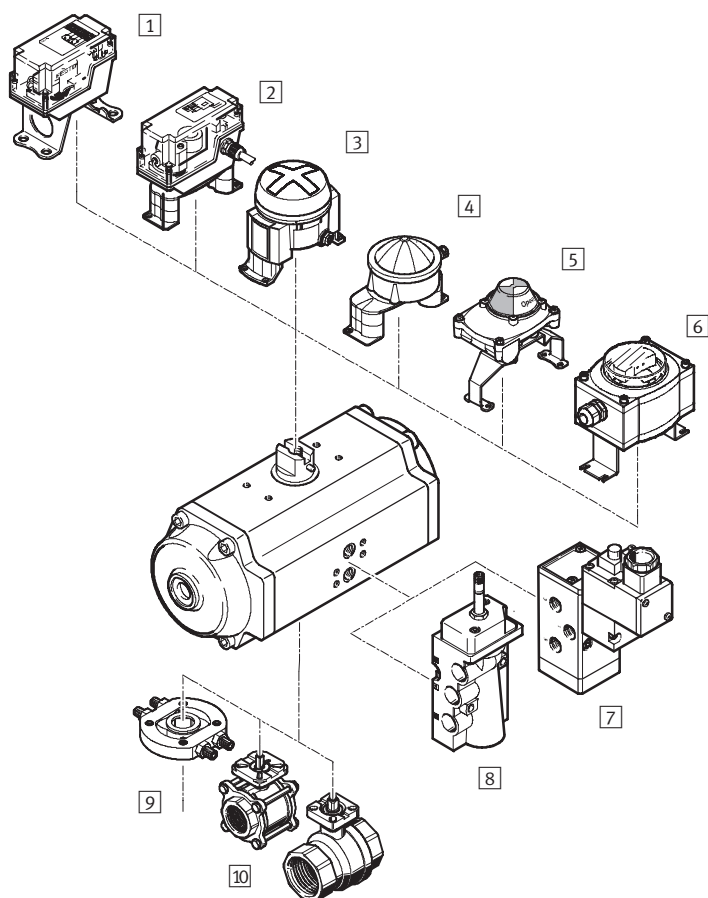
Flange hole pattern – Connection dimensions to DIN ISO 5211 and Namur VDI/VDE 3845

Connection	F03	F04	F05	F07	F10	F12	F14	F16	F25	F30	Shaft height
Square	V09	V11	V14	V17	V22	V27	V36	V46	V55	V75	
DR...-1-F03	■	–	–	–	–	–	–	–	–	–	20
DR...-2-F03	■	–	–	–	–	–	–	–	–	–	20
DR...-2-F04	–	■	–	–	–	–	–	–	–	–	20
DR...-4-F04	–	–	■	–	–	–	–	–	–	–	20
DR...-4-F05	–	–	–	■	–	–	–	–	–	–	20
DR...-8-F05	–	–	–	■	–	–	–	–	–	–	20
DR...-14-F05	–	–	–	■	–	–	–	–	–	–	20
DR...-26-F07	–	–	–	–	■	–	–	–	–	–	20
DR...-50-F07	–	–	–	–	–	■	–	–	–	–	20
DR...-50-F10	–	–	–	–	–	–	■	–	–	–	30
DR...-77-F10	–	–	–	–	–	–	■	–	–	–	30
DR...-77-F12	–	–	–	–	–	–	–	■	–	–	30
DR...-100-F12	–	–	–	–	–	–	–	■	–	–	30
DR...-150-F14	–	–	–	–	–	–	–	–	■	–	30
DR...-225-F14	–	–	–	–	–	–	–	–	–	■	30
DR...-375-F16	–	–	–	–	–	–	–	–	–	–	30
DR...-575-F16	–	–	–	–	–	–	–	–	–	–	30
DR...-575-F25	–	–	–	–	–	–	–	–	–	■	30
DR...-880-F25	–	–	–	–	–	–	–	–	–	■	30
DR...-880-F30	–	–	–	–	–	–	–	–	–	–	30
Hole pattern for Namur accessories	25	25	30	30	30	30	30	30	30	30	
	50	50	80	80	80	80	130	130	130	150	

Copar quarter turn actuators DRD/DRE

Peripherals overview

FESTO



Mounting attachments and accessories			
	Brief description	➔ Page/Internet	
1	Limit switch attachment QH-DR-E	Square design, pneumatic, electrical or inductive sensing fits sizes 4 ... 50	qh-dr-e
2	Limit switch attachment DAPZ	Square design, electrical, electrically explosion-proof or inductive sensing fits sizes 4 ... 225, size 1 and 2 or 375 ... 880	dapz
3	Limit switch attachment DAPZ	Round design, variant AR, electrical, inductive or inductively explosion-proof sensing fits sizes 4 ... 225	dapz
4	Limit switch attachment DAPZ	Round design, variant RO, electrical, inductive or inductive Namur sensing fits sizes 4 ... 225, size 1 and 2 or 375 ... 880	dapz
5	End-position sensing attachment SRBF	Square design Sensing via two mechanical switches	srbf
6	Sensor box SRBP, SRAP	SRBP, binary sensor box reports the open and closed position of the drive SRAP, analogue sensor box continuously senses the entire swivel range and reports this back to the controller	srbp, srap
7	Solenoid valve MFH	Basic valve with pilot control valve for F solenoid coil	mfh
	Solenoid valve MN1H	Basic valve with pilot control valve for N1 solenoid coil	mn1h
	Solenoid valve MGTBH	Basic valve with pilot control valve, solenoid coil and socket	mgtbh
8	Solenoid valve NVF3	For F solenoid coil and explosion-proof F solenoid coil	nvf3
9	Stop DADP	For end-position adjustment, based on standard VDI/VDE 3845 (Namur) fits sizes 150 ... 880; for size 1 ... 100 the adjustable end-position cushioning is in the end caps	33
10	Ball valve VAPB	Brass or stainless steel, corrosion-resistant	vapb

Copar quarter turn actuators DRD/DRE

Type codes

FESTO

		DRE	—	100	—	F12
Type						
DRD	Double-acting quarter turn actuator					
DRE	Single-acting quarter turn actuator					
Size						
1	Size 1					
2	Size 2					
4	Size 4					
8	Size 8					
14	Size 14					
26	Size 26					
50	Size 50					
77	Size 77					
100	Size 100					
150	Size 150					
225	Size 225					
375	Size 375					
575	Size 575					
880	Size 880					
Flange hole pattern						
F03	Flange hole pattern F03 with shaft connection V09					
F04	Flange hole pattern F04 with shaft connection V11					
F05	Flange hole pattern F05 with shaft connection V14					
F07	Flange hole pattern F07 with shaft connection V17					
F10	Flange hole pattern F10 with shaft connection V22					
F12	Flange hole pattern F12 with shaft connection V27					
F14	Flange hole pattern F14 with shaft connection V36					
F16	Flange hole pattern F16 with shaft connection V46					
F25	Flange hole pattern F25 with shaft connection V55					
F30	Flange hole pattern F30 with shaft connection V75					

Copar quarter turn actuators DRD/DRE

Type codes

FESTO

		–	Q10	–	FS	–	0	–	
Number of springs for quarter turn actuator DRE									
Q06	Number of springs 06								
Q08	Number of springs 08								
Q10	Number of springs 10 ¹⁾								
Q12	Number of springs 12								
Q14	Number of springs 14								
Q09	Number of springs 09 ²⁾								
Q15	Number of springs 15 ²⁾								
Q18	Number of springs 18 ²⁾								
Spring function for quarter turn actuator DRE									
FS	Spring force, closing								
F0	Spring force, opening								
Adjustable end-positions									
	Without adjustable end-positions								
0	With adjustable end-positions and extended rotation angle ³⁾								
Variant									
	Standard version								
NPT	NPT/UNC thread ⁴⁾								
C	Corrosion resistant design								

1) Standard spring quantity designed for 6 bar operating pressure

2) Only with size 575

3) Swivel range to 98°, only with size 8 ... 100

4) On request

Copar quarter turn actuators DRD/DRE

Sizing information

FESTO

Sizing and adapting quarter turn actuators for process valves

We will use the example of a rack-and-pinion actuator to explain how to size double-acting and

single-acting quarter turn actuators. The procedure is the same for scotch yoke actuators, with the exception

that the non-linear characteristic of the actuator's torque curve does not have to be taken into account.

Sizing example for a double-acting quarter turn actuator

Breakaway torque of the process valve

The torque required to facilitate reliable opening of the valve's shut-off device (disc in a butterfly valve, ball in a ball valve ...) under the specified operating conditions (medium, temperature, inline pressure, etc.).

Compressed air supply

The minimum compressed air pressure available at all times at the valve to be sized forms the basis for sizing (worst-case analysis).

Process valve type

What type of valve (butterfly valve, ball valve, etc.) is being used?

The main operating conditions must be known before the breakaway torque can be specified by the valve manufacturer or correctly derived from existing tables:

- Medium
 - Temperature, concentration, viscosity of the medium
 - Gas or liquid, lubricating or non-lubricating
 - Presence of particles that form deposits or caking
 - Differential pressure at the process valve
 - Required safety factor
- If no safety factor is specified, a factor of at least approx. 1.2 (20% safety) should be taken into account when sizing the quarter turn actuator.

Example

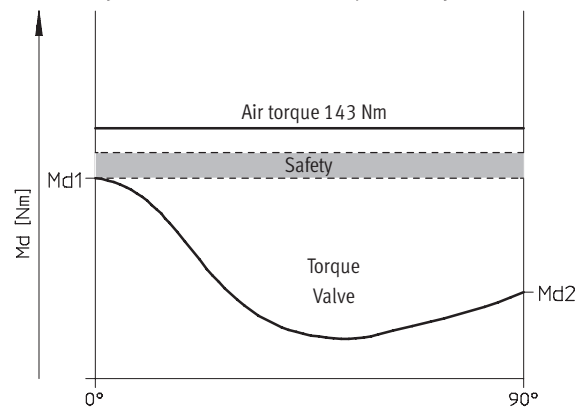
A breakaway torque of 100 Nm is determined for the valve. A safety factor of 1.2 is selected.

This gives a minimum torque of 120 Nm for the quarter turn actuator. The torque tables for double-acting quarter turn actuators propose the actuator with the designation

DRD-14-F05 from the Copar series. This actuator has a torque of 143 Nm at compressed air pressure of 6 bar.

This torque is constant across the entire swivel range (0° ... 90°) thanks to the rack-and-pinion design and is therefore sufficient for the valve.

Relationship of the actuator to the butterfly valve torque curve:



0° = Valve closed
90° = Valve open

M_{d1} = Breakaway torque
 M_{d2} = Closing torque

Copar quarter turn actuators DRD/DRE

Sizing information

Sizing example for a single-acting quarter turn actuator

The most important criteria for the sizing of single-acting quarter turn actuators are, with the exception of the valve's closing torque, the same as for double-acting actuators:

- Breakaway torque of the process valve
- Closing torque of the process valve
What torque is required to move the shut-off device (disc, ball ...) securely back into the seal?
- Compressed air supply
- Process valve type

As with double-acting actuators, the main operating conditions must be known before the breakaway torque can be specified by the valve manufacturer or correctly derived from existing tables → 6.

These conditions also apply for the closing torque. As the lubricating properties of the medium remain almost incalculable here, this is more difficult to determine. For that reason, most process valve manufacturers do not specify a closing torque.

The solution

The breakaway torque is used instead of the closing torque as it is always greater than the closing torque of a process valve.

It can generally be assumed that the breakaway torque specified by the process valve manufacturer can be used without a safety factor.

If no safety factor is specified for the breakaway torque, a factor of at least 1.2 to 1.3 (20% to 30% safety) should be included when sizing the single-acting quarter turn actuator. Single-acting quarter turn actuators can close or open with spring force as a safety function.

The most frequent application: Closing with spring force

When the valve is closed, the springs in the actuators are pretensioned. This means: A single-acting actuator will always have a lower maximum air torque than the identically sized double-acting actuator (same piston diameter, same design).

When the process valve opens, the actuator works against the spring force. If the springs are compressed, the force in the springs increases and the opening force of the air decreases proportionally.

This means that the actuator must overcome the torque generated by the spring force as well as the normal breakaway torque. The air torque decreases in accordance with the increasing spring force.

Example

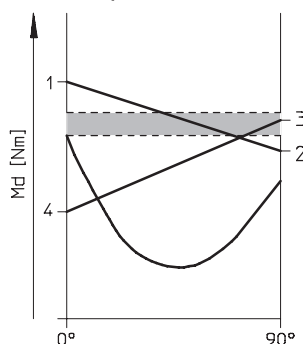
A breakaway torque of 20 Nm is established for a ball valve. A safety factor of 1.2 is selected. This gives a minimum torque of 24 Nm for opening the ball valve.

The necessary torque in the ball valve's open position is estimated at 50% of the breakaway torque (12 Nm). This gives a torque requirement of approx. 14 Nm taking into consideration a safety factor of 20%.

The closing torque of the process valve is not known, therefore the breakaway torque is selected without an additional safety factor: 20 Nm.

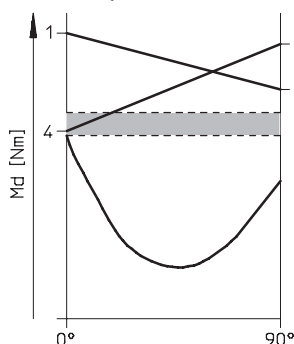
The 3 diagrams below show the calculated breakaway torques and closing torques using the typical torque characteristics of a ball valve and the torque lines of quarter turn actuators of the Copar series. These were selected using the torque tables.

Figure 1:
DRE-4-F05-Q10-FS



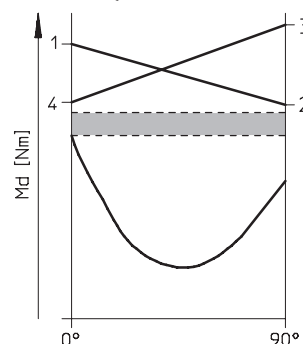
■ Necessary safety factor 20%

Figure 2:
DRE-8-F05-Q10-FS



0° = Valve closed
90° = Valve open

Figure 3:
DRE-8-F05-Q12-FS



1 → 2 = Air torque
3 → 4 = Spring torque

Copar quarter turn actuators DRD/DRE

Sizing information

FESTO

Torques [Nm]		Figure 1 DRE-4-F05-Q10-FS	Figure 2 DRE-8-F05-Q10-FS	Figure 3 DRE-8-F05-Q12-FS
Air torque	max. 1	26.9	53.5	49.5
	min. 2	16.6	32.5	24.2
Spring torque	max. 3	20.6	41.5	49.8
	min. 4	10.3	20.5	24.6

Re. Figure 1:

The quarter turn actuator in Figure 1 is not suitable for this application as the low closing torque of the springs is not enough to close the ball valve (3 → 4).

Re. Figure 2:

The use of the actuator shown in Figure 2 is critical as the closing torque of the springs (4) is only slightly above the breakaway torque of the ball valve. Even small pressure increases in the piping or pressure

drops in the compressed air system will stop the ball valve closing completely.

Re. Figure 3:

The ideal quarter turn actuator in this case is shown in Figure 3. The

breakaway and closing torques of the actuator are above the torque values incl. safety factor (20%) calculated for this ball valve when both opening and closing. This guarantees a reliable actuator function.

An example for the influence of the compressed air pressure:

The available air torque falls from 49.5 Nm to 24.2 Nm at a pressure of 5 bar for the actuator in Figure 3 and is therefore not sufficient for this application example. For this reason, particular attention must be paid to

the constant available minimum air pressure when sizing a quarter turn actuator.

Note that all single-acting actuators are more often than not 1 ... 2 sizes larger than the double-acting

actuators for the same process valve because of the reduced available torques on the air side.

In the case of actuators that open using spring force (rotation of the

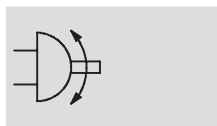
piston by 180° to reverse the direction of rotation), the springs must apply the breakaway torque and the air torque must be large enough to be able to close the valve once more.

Copar quarter turn actuators DRD

Technical data

FESTO

Function



Swivel angle
0 ... 90°



-  - Size
1 ... 880

-  - Torque
2.5 ... 11 750 Nm

General technical data			
Size	1 ... 4	8 ... 100	150 ... 880
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	
Design	Rack and pinion, double-acting		
Assembly position	Any		
Swivel angle [°]	90		
End-position adjusting range [°]	-	-4 ... +4	-
Closing direction	Closes to right		

Operating and environmental conditions			
Size	1 ... 4	8 ... 100	150 ... 880
Operating pressure ¹⁾ [bar]	2.5 ... 10	2 ... 10	
Operating medium	Dried compressed air, lubricated or unlubricated		
Ambient temperature ²⁾³⁾ [°C]	-20 ... +80		
Corrosion resistance class CRC ⁴⁾	3		
Corrosion resistance class CRC ⁵⁾ for corrosion-resistant design	4		
CE marking (see declaration of conformity) → www.festo.com	-	Explosion protection directive 94/9/EC - ATEX	
ATEX specification	-	II 2 GD c X	
ATEX ambient temperature ³⁾	-	-20°C ≤ Ta ≤ +60°C	

1) Minimum operating pressures vary for single-acting quarter-turn actuators depending upon spring quantity

2) Further temperature ranges upon request

3) Note operating range of proximity sensors

4) Corrosion resistance class 3 according to Festo standard 940 070

Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface

5) Corrosion resistance class 4 according to Festo standard 940 070

Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required

Air consumption [l/cycle] at 6 bar			
Size		Size	
DRD-1	1.44	DRD-77	36
DRD-2	2.04	DRD-100	48
DRD-4	3	DRD-150	74.4
DRD-8	4.2	DRD-225	99.6
DRD-14	12	DRD-375	204
DRD-26	19.2	DRD-575	276
DRD-50	24	DRD-880	384

Copar quarter turn actuators DRD

Technical data

FESTO

Weight [g]			
Size		Size	
DRD-1	600	DRD-77	18,500
DRD-2	800	DRD-100	23,000
DRD-4	1,100	DRD-150	31,000
DRD-8	2,400	DRD-225	37,000
DRD-14	3,600	DRD-375	80,000
DRD-26	6,400	DRD-575	123,000
DRD-50	11,200	DRD-880	156,000

Theoretical torque [Nm] at swivel angle 0° and 90° as a function of operating pressure [bar]							
Size	Operating pressure [bar]						
	2	3	4	5	6	7	8
DRD-1	2.48	3.72	4.96	6.2	7.44	8.68	9.92
DRD-2	5.4	8.1	10.8	13.5	16.2	18.9	21.6
DRD-4	12.4	18.6	24.8	31	37.2	43.4	49.6
DRD-8	24.7	37	49.3	61.6	74	86.3	98.6
DRD-14	47	72	95	119	143	167	191
DRD-26	89	133	177	222	266	310	354
DRD-50	169	253	337	421	505	589	673
DRD-77	256	385	513	642	770	898	1,026
DRD-100	338	506	675	843	1,012	1,181	1,350
DRD-150	506	758	1,011	1,264	1,517	1,770	2,023
DRD-225	758	1,138	1,517	1,896	2,275	2,654	3,033
DRD-375	1,264	1,896	2,528	3,159	3,791	4,423	5,055
DRD-575	1,919	2,879	3,839	4,799	5,758	6,718	7,677
DRD-880	2,938	4,407	5,876	7,345	8,814	10,283	11,752

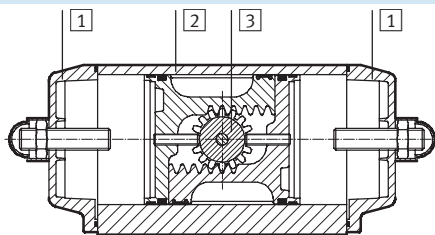
Note

The following minimum degrees of efficiency apply for all quarter turn actuators:

DR...-1 ... 4: ≥ 80%
DR...-8 ... 880: ≥ 90%

Materials

Sectional view



Quarter turn actuator				
1	Cover	Size	1 ... 4	Plastic, glass fibre reinforced
			8 ... 880	Painted aluminium
2	Housing	Size	1 ... 225	Anodised aluminium
			375 ... 880	Painted aluminium
3	Shaft	Size	1 ... 100	Aluminium
			150 ... 880	Steel
-	External screws			Stainless steel
-	Seals			Nitrile rubber, polyurethane, polyacetate

Copar quarter turn actuators DRD

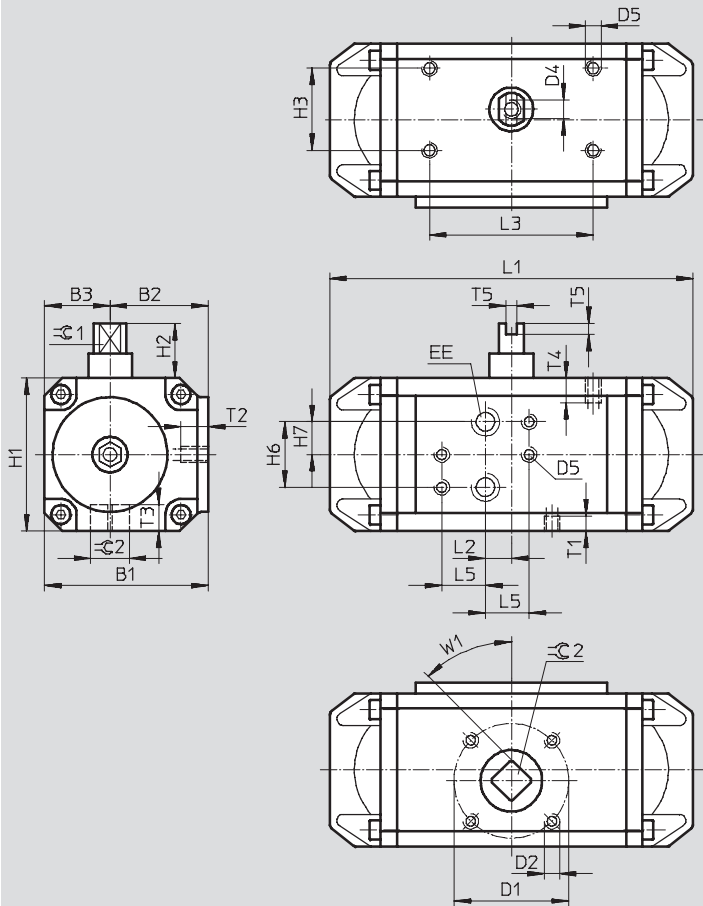
Technical data

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad

Size 1 ... 4



Size	B1	B2	B3	D1 Ø	D2	D4	D5	EE	H1	H2	H3	H6	H7
DRD-1-F03	45	25	20	36	M5	M6	M5	G1/8	45	20	25	24	12
DRD-2-F04	60	34	26	42	M5				56	20	25		
DRD-2-F03				36					66	20	30		
DRD-4-F05	71	38	33	50	M6				66	20	30		
DRD-4-F04				42	M5								

Size	L1	L2	L3	L5	T1	T2	T3	T4	T5	W1	∠C1	∠C2
					min.		+2			±0.1	±0.1	H11
DRD-1-F03	89	11	50	16	5	5	10	6	4	45°	8	9
DRD-2-F04	133	10	50		6	7	12				9	11
DRD-2-F03							10					
DRD-4-F05	175	24	80		7	7	16				15	14
DRD-4-F04							12					

Copar quarter turn actuators DRD

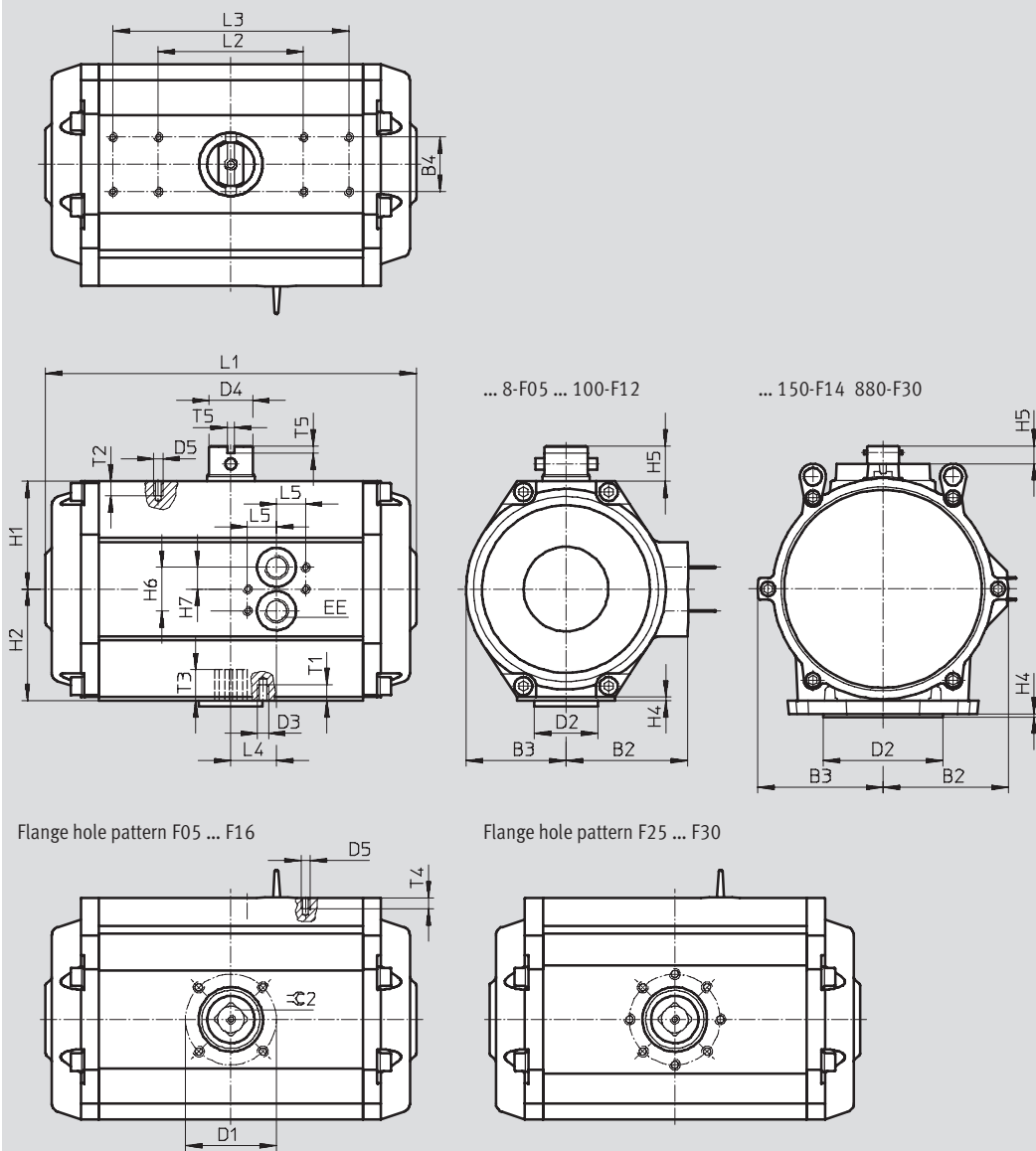
Technical data

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad

Size 8 ... 880



Copar quarter turn actuators DRD

Technical data

FESTO

Size	B2	B3	B4	D1 Ø	D2 Ø	D3 Ø	D4 Ø	D5	EE	H1	H2	H3	H4 max.	H5 ±1	
DRD-8-F05	52.5 _{±1}	41 _{±1}	30	50	35	M6	24	M5	G¼	44.5 _{±1.5}	46.5 _{±1}	12	3	20	
DRD-14-F05	67 _{±1.5}	55 _{±1.5}		50	35	M6				59.5 _{±1.5}	61.5 _{±1}		3	20	
DRD-26-F07	79 _{±2}	67 _{±2}		70	55	M8				71.5 _{±1.5}	74.5 _{±1.5}		3	20	
DRD-50-F07	94 _{±2}	78 _{±2}		70	55	M8				81.5 _{±2.5}	84.5 _{±1.5}		4	30	
DRD-50-F10				102	70	M10							94 _{±3}	98 _{±2}	4
DRD-77-F10	100 _{±2}	90 _{±2}		102	70	M10				106.5 _{±3}	111.5 _{±1.5}		4	30	
DRD-77-F12				125	85	M12							137 _{±3}	137 _{±3}	4
DRD-100-F12	114 _{±2.5}	102 _{±2}		125	85	M12				137	147 _{±3}		4	30	
DRD-150-F14	140 _{±3}	136 _{±2.5}		140	100	M16	53			G¼	172 _{±3.5}	172 _{±3.5}	18	5	30
DRD-225-F14				140	100	M16					210 _{±4}	210 _{±4}		5	30
DRD-375-F16	177 _{±3.5}	175 _{±3.5}		165	130	M20					225 _{±4.5}	225 _{±4.5}		5	30
DRD-575-F16	210 _{±4}	210 _{±4}		165	130	M20					210 _{±4}	210 _{±4}		5	30
DRD-575-F25				254	200	M16									
DRD-880-F25	223.5 _{±4.5}	223.5 _{±4.5}		254	200	M16					225 _{±4.5}	225 _{±4.5}		5	30
DRD-880-F30				298	230	M20									

Size	H6	H7	L1	L2	L3	L4	L5	T1	T2	T3	T4	T5	≈C2	
			max.			±1				+1			H11	
DRD-8-F05	24	12	215	80	-	25.5	16	8.8	8	17	6	4	14	
DRD-14-F05			220	80		25.15				12.5			21	17
DRD-26-F07			280	80	130	32.25		13		25			22	
DRD-50-F07			365	80	130	46.85		16		30			27	
DRD-50-F10				130	-			54.5		16			40	36
DRD-77-F10			430	130		67.1		18		50			46	
DRD-77-F12			440	130		96.5		22		59			55	
DRD-100-F12			370	130		99		25		79			75	
DRD-150-F14			480	130		96.41		25						
DRD-225-F14			520	130				25						
DRD-375-F16			540	150										
DRD-575-F16														
DRD-575-F25			700	175										
DRD-880-F25														
DRD-880-F30														

Copar quarter turn actuators DRD

Technical data

FESTO

Ordering data – Without adjustable end position			
Part No.	Type	Part No.	Type
Size 1		Size 77	
189781	DRD-1-F03	189768	DRD-77-F10
		189769	DRD-77-F12
Size 2		Size 100	
189782	DRD-2-F03	189770	DRD-100-F12
189783	DRD-2-F04		
Size 4		Size 150	
189784	DRD-4-F04	189772	DRD-150-F14
189785	DRD-4-F05		
Size 8		Size 225	
189763	DRD-8-F05	189774	DRD-225-F14
Size 14		Size 375	
189764	DRD-14-F05	189776	DRD-375-F16
Size 26		Size 575	
189765	DRD-26-F07	189777	DRD-575-F16
		189778	DRD-575-F25
Size 50		Size 880	
189766	DRD-50-F07	189779	DRD-880-F25
189767	DRD-50-F10	189780	DRD-880-F30

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary date see

→ 4

Ordering data – With adjustable end position			
Part No.	Type	Part No.	Type
Size 8		Size 50	
560518	DRD-8-F05-O	560524	DRD-50-F07-O
		560526	DRD-50-F10-O
Size 14		Size 77	
560520	DRD-14-F05-O	560528	DRD-77-F10-O
		560530	DRD-77-F12-O
Size 26		Size 100	
560522	DRD-26-F07-O	560532	DRD-100-F12-O

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary date see

→ 4

Copar quarter turn actuators DRD

Technical data

FESTO

Ordering data – Corrosion resistant			
Part No.	Type	Part No.	Type
Size 1		Size 77	
189835	DRD-1-F03-C	189822	DRD-77-F10-C
		189823	DRD-77-F12-C
Size 2		Size 100	
189836	DRD-2-F03-C	189824	DRD-100-F12-C
189837	DRD-2-F04-C		
Size 4		Size 150	
189838	DRD-4-F04-C	189826	DRD-150-F14-C
189839	DRD-4-F05-C		
Size 8		Size 225	
189817	DRD-8-F05-C	189828	DRD-225-F14-C
Size 14		Size 375	
189818	DRD-14-F05-C	189830	DRD-375-F16-C
Size 26		Size 575	
189819	DRD-26-F07-C	189831	DRD-575-F16-C
		189832	DRD-575-F25-C
Size 50		Size 880	
189820	DRD-50-F07-C	189833	DRD-880-F25-C
189821	DRD-50-F10-C	189834	DRD-880-F30-C

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary date see

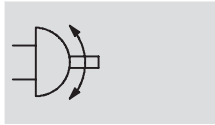
→ 4

Copar quarter turn actuators DRE

Technical data

FESTO

Function



Swivel angle
0 ... 90°



-  - Size
2 ... 880

-  - Torque
2.5 ... 9 305 Nm

General technical data			
Size	2 ... 4	8 ... 100	150 ... 880
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	
Design	Rack and pinion, single-acting		
Assembly position	Any		
Swivel angle [°]	90		
End-position adjusting range [°]	-	-4 ... +4	-
Closing direction	Spring force, closing		

Operating and environmental conditions			
Size	2 ... 4	8 ... 100	150 ... 880
Operating pressure ¹⁾ [bar]	2.5 ... 10	2 ... 10	
Operating medium	Dried compressed air, lubricated or unlubricated		
Ambient temperature ²⁾³⁾ [°C]	-20 ... +80		
Corrosion resistance class CRC ⁴⁾	3		
Corrosion resistance class CRC ⁵⁾ for corrosion-resistant design	4		
CE marking (see declaration of conformity) → www.festo.com	-	Explosion protection directive 94/9/EC - ATEX	
ATEX specification	-	II 2 GD c X	
ATEX ambient temperature ³⁾	-	-20°C ≤ Ta ≤ +60°C	

1) Minimum operating pressures vary for single-acting quarter-turn actuators depending upon spring quantity

2) Further temperature ranges upon request

3) Note operating range of proximity sensors

4) Corrosion resistance class 3 according to Festo standard 940 070

Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface

5) Corrosion resistance class 4 according to Festo standard 940 070

Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required

Air consumption [l/cycle] at 6 bar			
Type		Type	
DRE-2	1.02	DRE-100	24
DRE-4	1.5	DRE-150	37.2
DRE-8	2.1	DRE-225	49.8
DRE-14	6	DRE-375	102
DRE-26	9.6	DRE-575	138
DRE-50	12	DRE-880	192
DRE-77	18		

Copar quarter turn actuators DRE

Technical data

FESTO

Theoretical torque [Nm] at swivel angle 0° and 90° as a function of operating pressure [bar]								
Number of springs ¹⁾	Spring torque [Nm]	Md available	Operating pressure					
			3	4	5	6	7	8
Quarter turn actuators DRE-2								
6	2.7	min.	2.7	5.4	8.1	10.8	13.5	16.2
	5.4	max.	5.4	8.1	10.8	13.5	16.2	18.9
8	3.6	min.	0.9	3.6	6.3	9	11.7	14.4
	7.2	max.	4.5	7.2	9.9	12.6	15.3	18
10	4.5	min.	–	2.8	5.5	8.2	10.9	13.6
	8	max.		6.3	9	11.7	14.4	17.1
12	5.4	min.	–	–	2.7	5.4	8.1	10.8
	10.8	max.			8.1	10.8	13.5	16.2
14	8.3	min.	–	–	0.9	3.6	6.3	9
	12.6	max.			5.2	7.9	10.6	13.3
Quarter turn actuators DRE-4								
6	6.1	min.	6.4	12.6	18.8	25	31.2	37.4
	12.2	max.	12.5	18.7	24.9	31.1	37.3	43.5
8	8.2	min.	2.2	8.4	14.6	20.8	27	33.2
	16.4	max.	10.4	16.6	22.8	29	35.2	41.4
10	10.3	min.	–	4.2	10.4	16.6	22.8	29
	20.6	max.		14.5	20.7	26.9	33.1	39.3
12	12.3	min.	–	–	6.4	12.6	18.8	25
	24.6	max.			18.7	24.9	31.1	37.3
14	14.4	min.	–	–	2.2	8.4	14.6	20.8
	28.8	max.			16.6	22.8	29	35.2
Quarter turn actuators DRE-8								
6	12.3	min.	12.1	24.4	36.7	49.1	61.4	73.7
	24.9	max.	24.7	37	49.3	61.7	74	86.3
8	16.4	min.	3.8	16.1	28.4	40.8	53.1	65.4
	33.2	max.	20.6	32.9	45.2	57.6	69.9	82.2
10	20.5	min.	–	7.8	20.1	32.5	44.8	57.1
	41.5	max.		28.8	41.1	53.5	65.8	78.1
12	24.6	min.	–	–	11.8	24.2	36.5	48.8
	49.8	max.			37	49.4	61.7	74
14	28.7	min.	–	–	4.5	16.9	29.2	41.5
	57.1	max.			32.9	45.3	57.6	69.9

1) Smaller number of springs on request.

Note

The following minimum degrees of efficiency apply for all quarter turn actuators:

DR...-1 ... 4: ≥ 80%
DR...-8 ... 880: ≥ 90%

Copar quarter turn actuators DRE

Technical data

FESTO

Theoretical torque [Nm] at swivel angle 0° and 90° as a function of operating pressure [bar]								
Number of springs ¹⁾	Spring torque [Nm]	Md available	Operating pressure					
			3	4	5	6	7	8
Quarter turn actuators DRE-14								
6	24	min.	24	47	71	95	119	143
	48	max.	48	71	95	119	143	167
8	32	min.	8	31	55	79	103	127
	64	max.	40	63	87	111	135	159
10	40	min.	–	15	39	63	87	111
	80	max.		55	79	103	127	151
12	48	min.	–	–	23	47	71	95
	96	max.			71	95	119	143
14	56	min.	–	–	7	31	55	79
	112	max.			63	87	111	135
Quarter turn actuators DRE-26								
6	44	min.	44	88	133	177	221	275
	89	max.	89	133	178	222	266	320
8	58	min.	15	59	104	148	192	246
	118	max.	75	119	164	208	252	306
10	73	min.	–	29	74	118	162	216
	148	max.		104	149	193	237	291
12	88	min.	–	–	44	88	132	186
	178	max.			134	178	222	276
14	102	min.	–	–	15	59	103	157
	207	max.			120	164	208	262
Quarter turn actuators DRE-50								
6	80	min.	85	169	253	337	421	505
	168	max.	173	257	341	425	509	593
8	107	min.	29	113	197	281	365	449
	224	max.	146	230	314	398	482	556
10	134	min.	–	57	141	225	309	393
	280	max.		203	287	371	455	539
12	160	min.	–	–	85	169	253	337
	336	max.			261	345	429	513
14	187	min.	–	–	29	113	197	281
	392	max.			234	318	402	486

1) Smaller number of springs on request.

Note

The following minimum degrees of efficiency apply for all quarter turn actuators:

DR...-1 ... 4: ≥ 80%
DR...-8 ... 880: ≥ 90%

Copar quarter turn actuators DRE

Technical data

FESTO

Theoretical torque [Nm] at swivel angle 0° and 90° as a function of operating pressure [bar]								
Number of springs ¹⁾	Spring torque [Nm]	Md available	Operating pressure					
			3	4	5	6	7	8
Quarter turn actuators DRE-77								
6	122	min.	132	260	389	517	645	773
	253	max.	263	391	520	648	776	904
8	162	min.	48	176	305	433	561	689
	337	max.	223	351	480	608	736	864
10	203	min.	–	91	220	348	476	604
	422	max.		310	439	567	695	823
12	244	min.	–	–	136	264	392	520
	506	max.			398	526	654	772
14	284	min.	–	–	52	180	308	436
	590	max.			358	486	614	742
Quarter turn actuators DRE-100								
6	160	min.	174	343	511	680	849	1,018
	332	max.	346	515	683	852	1,021	1,190
8	213	min.	63	232	400	569	738	907
	443	max.	293	462	630	799	968	1,137
10	267	min.	–	121	289	458	627	796
	554	max.		408	576	745	914	1,083
12	320	min.	–	–	178	347	516	685
	665	max.			523	692	861	1,030
14	373	min.	–	–	67	236	405	574
	767	max.			470	639	808	977
Quarter turn actuators DRE-150								
6	253	min.	252	505	758	1,011	1,264	1,517
	506	max.	505	758	1,011	1,264	1,517	1,770
8	337	min.	84	337	590	843	1,096	1,349
	674	max.	421	674	927	1,180	1,433	1,686
10	421	min.	–	168	421	674	927	1,180
	843	max.		590	843	1,096	1,349	1,602
12	506	min.	–	–	253	506	759	1,012
	1,011	max.			758	1,011	1,264	1,517
14	590	min.	–	–	84	337	590	843
	1,180	max.			674	927	1,180	1,433

1) Smaller number of springs on request.

Note

The following minimum degrees of efficiency apply for all quarter turn actuators:

DR...-1 ... 4: ≥ 80%
DR...-8 ... 880: ≥ 90%

Copar quarter turn actuators DRE

Technical data

FESTO

Theoretical torque [Nm] at swivel angle 0° and 90° as a function of operating pressure [bar]								
Number of springs ¹⁾	Spring torque [Nm]	Md available	Operating pressure					
			3	4	5	6	7	8
Quarter turn actuators DRE-225								
6	379	min.	382	761	1,140	1,519	1,898	2,277
	756	max.	759	1,138	1,517	1,896	2,275	2,654
8	506	min.	127	506	885	1,264	1,643	2,022
	1,011	max.	632	1,011	1,390	1,769	2,148	2,527
10	632	min.	–	253	632	1,011	1,390	1,769
	1,264	max.		885	1,264	1,643	2,022	2,401
12	758	min.	–	–	379	758	1,137	1,516
	1,517	max.			1,138	1,517	1,896	2,275
14	885	min.	–	–	127	506	885	1,264
	1,769	max.			1,011	1,390	1,769	2,148
Quarter turn actuators DRE-375								
6	632	min.	632	1,264	1,895	2,527	3,159	3,791
	1,264	max.	1,264	1,896	2,527	3,159	3,791	4,423
8	843	min.	211	843	1,474	2,106	2,738	3,370
	1,685	max.	1,053	1,685	2,316	2,948	3,580	4,212
10	1,053	min.	–	421	1,052	1,684	2,360	2,948
	2,107	max.		1,475	2,106	2,738	3,370	4,002
12	1,264	min.	–	–	631	1,263	1,895	2,527
	2,528	max.			1,895	2,527	3,159	3,791
14	1,475	min.	–	–	210	842	1,474	2,106
	2,949	max.			1,684	2,316	2,948	3,580
Quarter turn actuators DRE-575								
6	632	min.	1,615	2,575	3,535	4,494	5,454	6,413
	1,264	max.	2,247	3,207	4,167	5,126	6,086	7,045
9	948	min.	938	1,943	2,903	3,862	4,822	5,781
	1,896	max.	1,931	2,891	3,851	4,810	5,770	6,729
12	1,264	min.	351	1,311	2,271	3,230	4,190	5,149
	2,528	max.	1,615	2,575	3,535	4,494	5,454	6,413
15	1,580	min.	–	679	1,639	2,598	3,558	4,517
	3,160	max.		2,259	3,219	4,178	5,138	6,097
18	1,896	min.	–	–	1,007	1,966	2,926	3,885
	3,792	max.			2,903	3,862	4,822	5,781

1) Smaller number of springs on request.

Note

The following minimum degrees of efficiency apply for all quarter turn actuators:

DR...-1 ... 4: $\geq 80\%$

DR...-8 ... 880: $\geq 90\%$

Copar quarter turn actuators DRE

Technical data

FESTO

Theoretical torque [Nm] at swivel angle 0° and 90° as a function of operating pressure [bar]								
Number of springs ¹⁾	Spring torque [Nm]	Md available	Operating pressure					
			3	4	5	6	7	8
Quarter turn actuators DRE-880								
6	1,468	min.	1,470	2,939	4,408	5,877	7,346	8,815
	2,937	max.	2,939	4,408	5,877	7,346	8,815	10,284
8	1,958	min.	791	2,260	3,729	5,198	6,667	8,136
	3,616	max.	2,449	3,918	5,387	6,856	8,325	9,794
10	2,447	min.	–	982	2,451	3,920	5,389	6,858
	4,894	max.		3,429	4,898	6,367	7,836	9,305
12	2,937	min.	–	–	1,472	2,941	4,410	5,879
	5,873	max.			4,408	5,877	7,346	8,815
14	3,792	min.	–	–	493	1,962	3,431	4,900
	6,852	max.			3,553	5,022	6,491	7,960

1) Smaller number of springs on request.

Note

The following minimum degrees of efficiency apply for all quarter turn actuators:

DR...-1 ... 4: ≥ 80%
 DR...-8 ... 880: ≥ 90%

Copar quarter turn actuators DRE

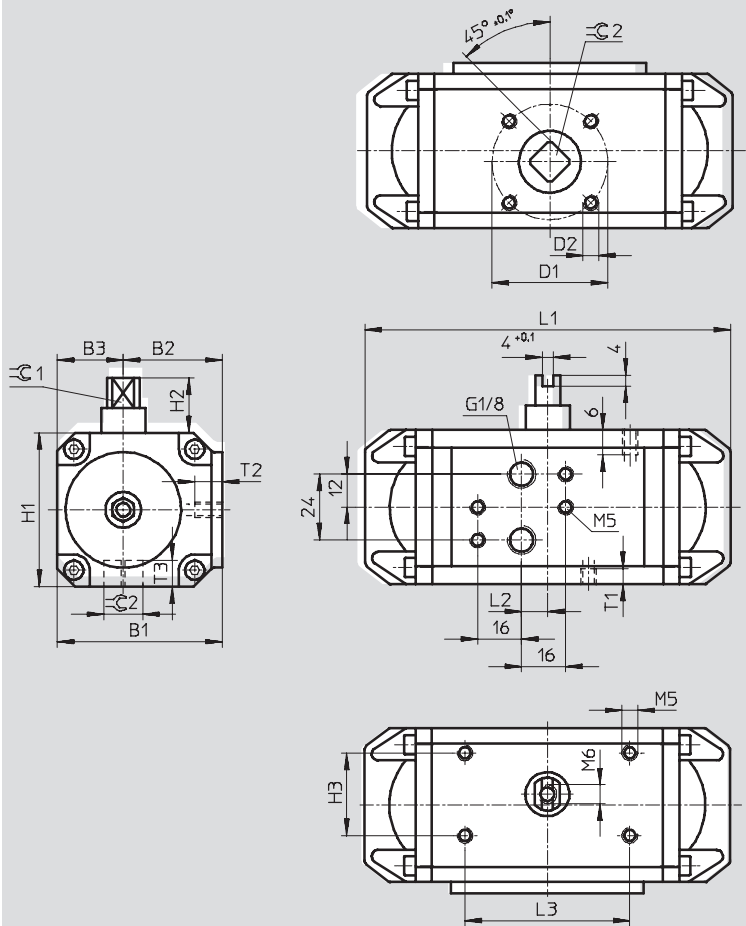
Technical data

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad

Size 2 ... 4



Copar quarter turn actuators DRE

Technical data

FESTO

Size	B1	B2	B3	D1 Ø	D2	H1	H2	H3
DRE-2-F04	60	34	26	42	M5	56	20	25
DRE-2-F03				36				
DRE-4-F05	71	38	33	50	M6	66	20	30
DRE-4-F04				42	M5			

Size	L1	L2	L3	T1 min.	T2	T3 +2	≈C1 ±0.1	≈C2 H11
DRE-2-F04	133	10	50	6	7	12	9	11
DRE-2-F03						10		9
DRE-4-F05	175	24	80	7	7	16	15	14
DRE-4-F04						12		11

Copar quarter turn actuators DRE

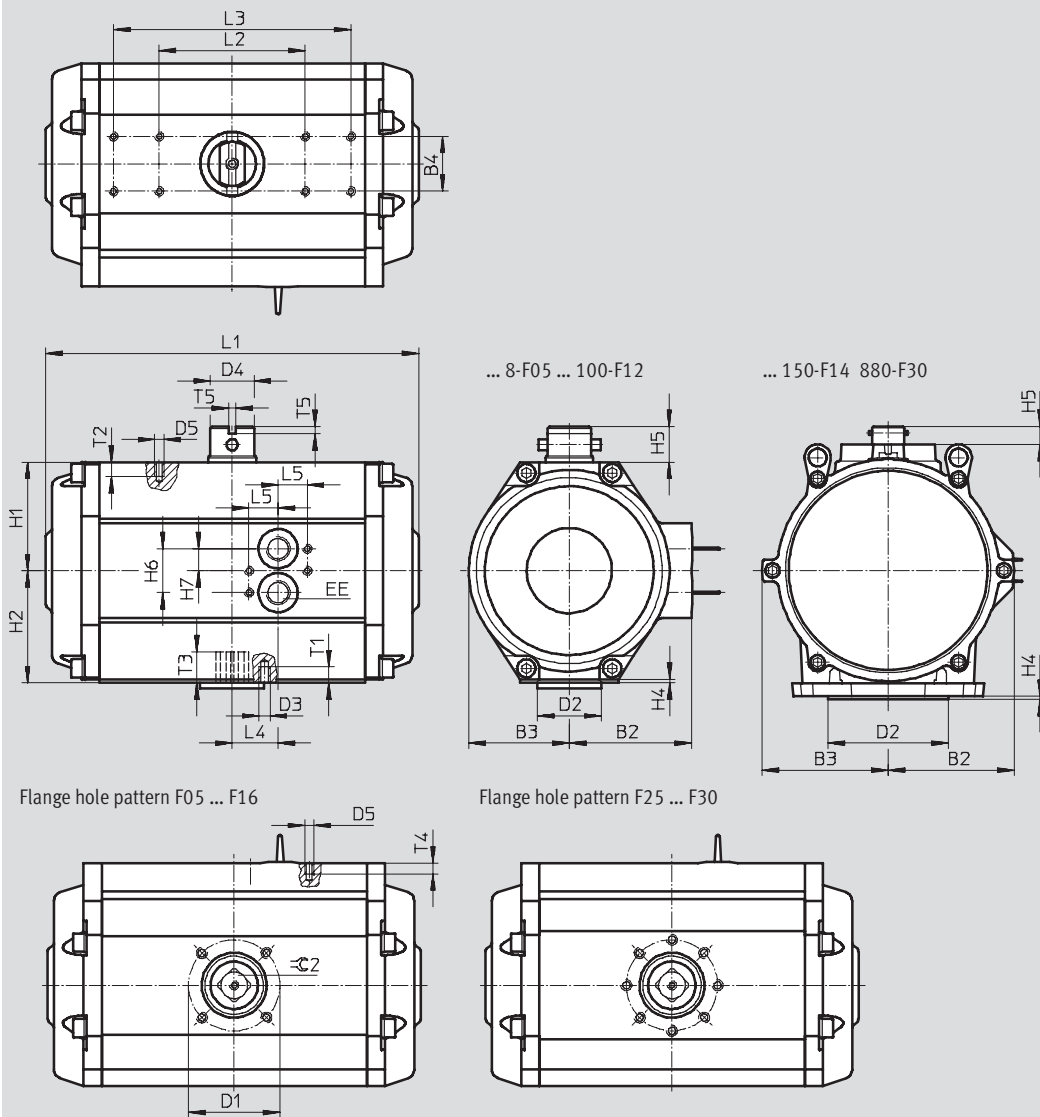
Technical data

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad

Size 8 ... 880



Copar quarter turn actuators DRE

Technical data

FESTO

Size	B2	B3	B4	D1 Ø	D2 Ø	D3 Ø	D4 Ø	D5	EE	H1	H2	H3	H4 max.	H5 ±1
DRE-8-F05	52.5 _{±1}	41 _{±1}	30	50	35	M6	24	M5	G¼	44.5 _{±1.5}	46.5 _{±1}	12	3	20
DRE-14-F05	67 _{±1.5}	55 _{±1.5}		50	35	M6				59.5 _{±1.5}	61.5 _{±1}		3	20
DRE-26-F07	79 _{±2}	67 _{±2}		70	55	M8				71.5 _{±1.5}	74.5 _{±1.5}		3	20
DRE-50-F07	94 _{±2}	78 _{±2}		70	55	M8				81.5 _{±2.5}	84.5 _{±1.5}		4	30
DRE-50-F10				102	70	M10							4	30
DRE-77-F10	100 _{±2}	90 _{±2}		102	70	M10				94 _{±3}	98 _{±2}		4	30
DRE-77-F12				125	85	M12							4	30
DRE-100-F12	114 _{±2.5}	102 _{±2}		125	85	M12				106.5 _{±3}	111.5 _{±1.5}		4	30
DRE-150-F14	140 _{±3}	136 _{±2.5}		140	100	M16				137 _{±3}	137 _{±3}		4	30
DRE-225-F14				140	100	M16				137	147 _{±3}		4	30
DRE-375-F16	177 _{±3.5}	175 _{±3.5}		165	130	M20				172 _{±3.5}	172 _{±3.5}	18	5	30
DRE-575-F16	210 _{±4}	210 _{±4}		165	130	M20	210 _{±4}			210 _{±4}	5		30	
DRE-575-F25				254	200	M16					5		30	
DRE-880-F25	223.5 _{±4.5}	223.5 _{±4.5}		254	200	M16	225 _{±4.5}			225 _{±4.5}	5		30	
DRE-880-F30				298	230	M20								

Size	H6	H7	L1	L2	L3	L4	L5	T1	T2	T3	T4	T5	≈C2
			max.			±1				+1			H11
DRE-8-F05	24	12	215	80	–	25.5	16	8.8	8	17	6	4	14
DRE-14-F05			220	80		25.15							
DRE-26-F07			280	80	130	32.25		12.5		21			17
DRE-50-F07			365	80	130	46.85		13		25			22
DRE-50-F10				130				16					
DRE-77-F10			430	130	54.5	16		30		36			
DRE-77-F12						18							46
DRE-100-F12			440	130	67.1	18		40		55			
DRE-150-F14			370	130		26							75
DRE-225-F14			480	130	96.5	26		50					
DRE-375-F16			520	130		99				22			
DRE-575-F16			540	150	96.41	25		59					
DRE-575-F25						25							
DRE-880-F25			700	175	136	25		79					
DRE-880-F30						25							

Copar quarter turn actuators DRE

Technical data

FESTO

Ordering data – Without adjustable end position			
Spring-force closing		Spring-force opening	
Part No.	Type	Part No.	Type
Size 2			
189840	DRE-2-F03-Q06-FS	189906	DRE-2-F03-Q06-FO
189841	DRE-2-F04-Q06-FS	189907	DRE-2-F04-Q06-FO
189842	DRE-2-F03-Q08-FS	189908	DRE-2-F03-Q08-FO
189843	DRE-2-F04-Q08-FS	189909	DRE-2-F04-Q08-FO
189900	DRE-2-F03-Q10-FS	189910	DRE-2-F03-Q10-FO
189901	DRE-2-F04-Q10-FS	189911	DRE-2-F04-Q10-FO
189902	DRE-2-F03-Q12-FS	189912	DRE-2-F03-Q12-FO
189903	DRE-2-F04-Q12-FS	189913	DRE-2-F04-Q12-FO
189904	DRE-2-F03-Q14-FS	189914	DRE-2-F03-Q14-FO
189905	DRE-2-F04-Q14-FS	189915	DRE-2-F04-Q14-FO
Size 4			
189956	DRE-4-F04-Q06-FS	189966	DRE-4-F04-Q06-FO
189957	DRE-4-F05-Q06-FS	189967	DRE-4-F05-Q06-FO
189958	DRE-4-F04-Q08-FS	189968	DRE-4-F04-Q08-FO
189959	DRE-4-F05-Q08-FS	189969	DRE-4-F05-Q08-FO
189960	DRE-4-F04-Q10-FS	189970	DRE-4-F04-Q10-FO
189961	DRE-4-F05-Q10-FS	189971	DRE-4-F05-Q10-FO
189962	DRE-4-F04-Q12-FS	189972	DRE-4-F04-Q12-FO
189963	DRE-4-F05-Q12-FS	189973	DRE-4-F05-Q12-FO
189964	DRE-4-F04-Q14-FS	189974	DRE-4-F04-Q14-FO
189965	DRE-4-F05-Q14-FS	189975	DRE-4-F05-Q14-FO
Size 8			
190017	DRE-8-F05-Q06-FS	190022	DRE-8-F05-Q06-FO
190018	DRE-8-F05-Q08-FS	190023	DRE-8-F05-Q08-FO
190019	DRE-8-F05-Q10-FS	190024	DRE-8-F05-Q10-FO
190020	DRE-8-F05-Q12-FS	190025	DRE-8-F05-Q12-FO
190021	DRE-8-F05-Q14-FS	190026	DRE-8-F05-Q14-FO
Size 14			
190057	DRE-14-F05-Q06-FS	190062	DRE-14-F05-Q06-FO
190058	DRE-14-F05-Q08-FS	190063	DRE-14-F05-Q08-FO
190059	DRE-14-F05-Q10-FS	190064	DRE-14-F05-Q10-FO
190060	DRE-14-F05-Q12-FS	190065	DRE-14-F05-Q12-FO
190061	DRE-14-F05-Q14-FS	190066	DRE-14-F05-Q14-FO
Size 26			
190097	DRE-26-F07-Q06-FS	190102	DRE-26-F07-Q06-FO
190098	DRE-26-F07-Q08-FS	190103	DRE-26-F07-Q08-FO
190099	DRE-26-F07-Q10-FS	190104	DRE-26-F07-Q10-FO
190100	DRE-26-F07-Q12-FS	190105	DRE-26-F07-Q12-FO
190101	DRE-26-F07-Q14-FS	190106	DRE-26-F07-Q14-FO

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary data see

→ 4

Copar quarter turn actuators DRE

Technical data

FESTO

Ordering data – Without adjustable end position			
Spring-force closing		Spring-force opening	
Part No.	Type	Part No.	Type
Size 50			
190137	DRE-50-F07-Q06-FS	190147	DRE-50-F07-Q06-FO
190138	DRE-50-F10-Q06-FS	190148	DRE-50-F10-Q06-FO
190139	DRE-50-F07-Q08-FS	190149	DRE-50-F07-Q08-FO
190140	DRE-50-F10-Q08-FS	190150	DRE-50-F10-Q08-FO
190141	DRE-50-F07-Q10-FS	190151	DRE-50-F07-Q10-FO
190142	DRE-50-F10-Q10-FS	190152	DRE-50-F10-Q10-FO
190143	DRE-50-F07-Q12-FS	190153	DRE-50-F07-Q12-FO
190144	DRE-50-F10-Q12-FS	190154	DRE-50-F10-Q12-FO
190145	DRE-50-F07-Q14-FS	190155	DRE-50-F07-Q14-FO
190146	DRE-50-F10-Q14-FS	190156	DRE-50-F10-Q14-FO
Size 77			
190217	DRE-77-F10-Q06-FS	190227	DRE-77-F10-Q06-FO
190218	DRE-77-F12-Q06-FS	190228	DRE-77-F12-Q06-FO
190219	DRE-77-F10-Q08-FS	190229	DRE-77-F10-Q08-FO
190220	DRE-77-F12-Q08-FS	190230	DRE-77-F12-Q08-FO
190221	DRE-77-F10-Q10-FS	190231	DRE-77-F10-Q10-FO
190222	DRE-77-F12-Q10-FS	190232	DRE-77-F12-Q10-FO
190223	DRE-77-F10-Q12-FS	190233	DRE-77-F10-Q12-FO
190224	DRE-77-F12-Q12-FS	190234	DRE-77-F12-Q12-FO
190225	DRE-77-F10-Q14-FS	190235	DRE-77-F10-Q14-FO
190226	DRE-77-F12-Q14-FS	190236	DRE-77-F12-Q14-FO
Size 100			
190297	DRE-100-F12-Q06-FS	190302	DRE-100-F12-Q06-FO
190298	DRE-100-F12-Q08-FS	190303	DRE-100-F12-Q08-FO
190299	DRE-100-F12-Q10-FS	190304	DRE-100-F12-Q10-FO
190300	DRE-100-F12-Q12-FS	190305	DRE-100-F12-Q12-FO
190301	DRE-100-F12-Q14-FS	190306	DRE-100-F12-Q14-FO
Size 150			
190338	DRE-150-F14-Q06-FS	190348	DRE-150-F14-Q06-FO
190340	DRE-150-F14-Q08-FS	190350	DRE-150-F14-Q08-FO
190342	DRE-150-F14-Q10-FS	190352	DRE-150-F14-Q10-FO
190344	DRE-150-F14-Q12-FS	190354	DRE-150-F14-Q12-FO
190346	DRE-150-F14-Q14-FS	190356	DRE-150-F14-Q14-FO

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary data see

→ 4

Copar quarter turn actuators DRE

Technical data

FESTO

Ordering data – Without adjustable end position			
Spring-force closing		Spring-force opening	
Part No.	Type	Part No.	Type
Size 225			
190398	DRE-225-F14-Q06-FS	190408	DRE-225-F14-Q06-F0
190400	DRE-225-F14-Q08-FS	190410	DRE-225-F14-Q08-F0
190402	DRE-225-F14-Q10-FS	190412	DRE-225-F14-Q10-F0
190404	DRE-225-F14-Q12-FS	190414	DRE-225-F14-Q12-F0
190406	DRE-225-F14-Q14-FS	190416	DRE-225-F14-Q14-F0
Size 375			
190458	DRE-375-F16-Q06-FS	190468	DRE-375-F16-Q06-F0
190460	DRE-375-F16-Q08-FS	190470	DRE-375-F16-Q08-F0
190462	DRE-375-F16-Q10-FS	190472	DRE-375-F16-Q10-F0
190464	DRE-375-F16-Q12-FS	190474	DRE-375-F16-Q12-F0
190466	DRE-375-F16-Q14-FS	190476	DRE-375-F16-Q14-F0
Size 575			
190517	DRE-575-F16-Q06-FS	190527	DRE-575-F16-Q06-F0
190518	DRE-575-F25-Q06-FS	190528	DRE-575-F25-Q06-F0
190519	DRE-575-F16-Q09-FS	190529	DRE-575-F16-Q09-F0
190520	DRE-575-F25-Q09-FS	190530	DRE-575-F25-Q09-F0
190521	DRE-575-F16-Q12-FS	190531	DRE-575-F16-Q12-F0
190522	DRE-575-F25-Q12-FS	190532	DRE-575-F25-Q12-F0
190523	DRE-575-F16-Q15-FS	190533	DRE-575-F16-Q15-F0
190524	DRE-575-F25-Q15-FS	190534	DRE-575-F25-Q15-F0
190525	DRE-575-F16-Q18-FS	190535	DRE-575-F16-Q18-F0
190526	DRE-575-F25-Q18-FS	190536	DRE-575-F25-Q18-F0
Size 880			
189719	DRE-880-F25-Q06-FS	189729	DRE-880-F25-Q06-F0
189720	DRE-880-F30-Q06-FS	189730	DRE-880-F30-Q06-F0
189721	DRE-880-F25-Q08-FS	189731	DRE-880-F25-Q08-F0
189722	DRE-880-F30-Q08-FS	189732	DRE-880-F30-Q08-F0
189723	DRE-880-F25-Q10-FS	189733	DRE-880-F25-Q10-F0
189724	DRE-880-F30-Q10-FS	189734	DRE-880-F30-Q10-F0
189725	DRE-880-F25-Q12-FS	189735	DRE-880-F25-Q12-F0
189726	DRE-880-F30-Q12-FS	189736	DRE-880-F30-Q12-F0
189727	DRE-880-F25-Q14-FS	189737	DRE-880-F25-Q14-F0
189728	DRE-880-F30-Q14-FS	189738	DRE-880-F30-Q14-F0

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary data see

➔ 4

Copar quarter turn actuators DRE

Technical data

FESTO

Ordering data – With adjustable end position			
Spring-force closing		Spring-force opening	
Part No.	Type	Part No.	Type
Size 8			
190027	DRE-8-F05-Q06-FS-O	190032	DRE-8-F05-Q06-FO-O
190028	DRE-8-F05-Q08-FS-O	190033	DRE-8-F05-Q08-FO-O
190029	DRE-8-F05-Q10-FS-O	190034	DRE-8-F05-Q10-FO-O
190030	DRE-8-F05-Q12-FS-O	190035	DRE-8-F05-Q12-FO-O
190031	DRE-8-F05-Q14-FS-O	190036	DRE-8-F05-Q14-FO-O
Size 14			
190067	DRE-14-F05-Q06-FS-O	190072	DRE-14-F05-Q06-FO-O
190068	DRE-14-F05-Q08-FS-O	190073	DRE-14-F05-Q08-FO-O
190069	DRE-14-F05-Q10-FS-O	190074	DRE-14-F05-Q10-FO-O
190070	DRE-14-F05-Q12-FS-O	190075	DRE-14-F05-Q12-FO-O
190071	DRE-14-F05-Q14-FS-O	190076	DRE-14-F05-Q14-FO-O
Size 26			
561881	DRE-26-F07-Q06-FS-O	561886	DRE-26-F07-Q06-FO-O
561882	DRE-26-F07-Q08-FS-O	561887	DRE-26-F07-Q08-FO-O
561883	DRE-26-F07-Q10-FS-O	561888	DRE-26-F07-Q10-FO-O
561884	DRE-26-F07-Q12-FS-O	561889	DRE-26-F07-Q12-FO-O
561885	DRE-26-F07-Q14-FS-O	561890	DRE-26-F07-Q14-FO-O
Size 50			
561901	DRE-50-F07-Q06-FS-O	561911	DRE-50-F07-Q06-FO-O
561902	DRE-50-F10-Q06-FS-O	561912	DRE-50-F10-Q06-FO-O
561903	DRE-50-F07-Q08-FS-O	561913	DRE-50-F07-Q08-FO-O
561904	DRE-50-F10-Q08-FS-O	561914	DRE-50-F10-Q08-FO-O
561905	DRE-50-F07-Q10-FS-O	561915	DRE-50-F07-Q10-FO-O
561906	DRE-50-F10-Q10-FS-O	561916	DRE-50-F10-Q10-FO-O
561907	DRE-50-F07-Q12-FS-O	561917	DRE-50-F07-Q12-FO-O
561908	DRE-50-F10-Q12-FS-O	561918	DRE-50-F10-Q12-FO-O
561909	DRE-50-F07-Q14-FS-O	561919	DRE-50-F07-Q14-FO-O
561910	DRE-50-F10-Q14-FS-O	561920	DRE-50-F10-Q14-FO-O
Size 77			
561941	DRE-77-F10-Q06-FS-O	561951	DRE-77-F10-Q06-FO-O
561942	DRE-77-F12-Q06-FS-O	561952	DRE-77-F12-Q06-FO-O
561943	DRE-77-F10-Q08-FS-O	561953	DRE-77-F10-Q08-FO-O
561944	DRE-77-F12-Q08-FS-O	561954	DRE-77-F12-Q08-FO-O
561945	DRE-77-F10-Q10-FS-O	561955	DRE-77-F10-Q10-FO-O
561946	DRE-77-F12-Q10-FS-O	561956	DRE-77-F12-Q10-FO-O
561947	DRE-77-F10-Q12-FS-O	561957	DRE-77-F10-Q12-FO-O
561948	DRE-77-F12-Q12-FS-O	561958	DRE-77-F12-Q12-FO-O
561949	DRE-77-F10-Q14-FS-O	561959	DRE-77-F10-Q14-FO-O
561950	DRE-77-F12-Q14-FS-O	561960	DRE-77-F12-Q14-FO-O
Size 100			
561981	DRE-100-F12-Q06-FS-O	561986	DRE-100-F12-Q06-FO-O
561982	DRE-100-F12-Q08-FS-O	561987	DRE-100-F12-Q08-FO-O
561983	DRE-100-F12-Q10-FS-O	561988	DRE-100-F12-Q10-FO-O
561984	DRE-100-F12-Q12-FS-O	561989	DRE-100-F12-Q12-FO-O
561985	DRE-100-F12-Q14-FS-O	561990	DRE-100-F12-Q14-FO-O

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary data see

→ 4

Copar quarter turn actuators DRE

Technical data

FESTO

Ordering data – Corrosion resistant			
Spring-force closing		Spring-force opening	
Part No.	Type	Part No.	Type
Size 2			
189936	DRE-2-F03-Q06-FS-C	189946	DRE-2-F03-Q06-FO-C
189937	DRE-2-F04-Q06-FS-C	189947	DRE-2-F04-Q06-FO-C
189938	DRE-2-F03-Q08-FS-C	189948	DRE-2-F03-Q08-FO-C
189939	DRE-2-F04-Q08-FS-C	189949	DRE-2-F04-Q08-FO-C
189940	DRE-2-F03-Q10-FS-C	189950	DRE-2-F03-Q10-FO-C
189941	DRE-2-F04-Q10-FS-C	189951	DRE-2-F04-Q10-FO-C
189942	DRE-2-F03-Q12-FS-C	189952	DRE-2-F03-Q12-FO-C
189943	DRE-2-F04-Q12-FS-C	189953	DRE-2-F04-Q12-FO-C
189944	DRE-2-F03-Q14-FS-C	189954	DRE-2-F03-Q14-FO-C
189945	DRE-2-F04-Q14-FS-C	189955	DRE-2-F04-Q14-FO-C
Size 4			
189997	DRE-4-F04-Q06-FS-C	190007	DRE-4-F04-Q06-FO-C
189998	DRE-4-F05-Q06-FS-C	190008	DRE-4-F05-Q06-FO-C
189999	DRE-4-F04-Q08-FS-C	190009	DRE-4-F04-Q08-FO-C
190000	DRE-4-F05-Q08-FS-C	190010	DRE-4-F05-Q08-FO-C
190001	DRE-4-F04-Q10-FS-C	190011	DRE-4-F04-Q10-FO-C
190002	DRE-4-F05-Q10-FS-C	190012	DRE-4-F05-Q10-FO-C
190003	DRE-4-F04-Q12-FS-C	190013	DRE-4-F04-Q12-FO-C
190004	DRE-4-F05-Q12-FS-C	190014	DRE-4-F05-Q12-FO-C
190005	DRE-4-F04-Q14-FS-C	190015	DRE-4-F04-Q14-FO-C
190006	DRE-4-F05-Q14-FS-C	190016	DRE-4-F05-Q14-FO-C
Size 8			
190047	DRE-8-F05-Q06-FS-C	190052	DRE-8-F05-Q06-FO-C
190048	DRE-8-F05-Q08-FS-C	190053	DRE-8-F05-Q08-FO-C
190049	DRE-8-F05-Q10-FS-C	190054	DRE-8-F05-Q10-FO-C
190050	DRE-8-F05-Q12-FS-C	190055	DRE-8-F05-Q12-FO-C
190051	DRE-8-F05-Q14-FS-C	190056	DRE-8-F05-Q14-FO-C
Size 14			
190087	DRE-14-F05-Q06-FS-C	190092	DRE-14-F05-Q06-FO-C
190088	DRE-14-F05-Q08-FS-C	190093	DRE-14-F05-Q08-FO-C
190089	DRE-14-F05-Q10-FS-C	190094	DRE-14-F05-Q10-FO-C
190090	DRE-14-F05-Q12-FS-C	190095	DRE-14-F05-Q12-FO-C
190091	DRE-14-F05-Q14-FS-C	190096	DRE-14-F05-Q14-FO-C
Size 26			
190127	DRE-26-F07-Q06-FS-C	190132	DRE-26-F07-Q06-FO-C
190128	DRE-26-F07-Q08-FS-C	190133	DRE-26-F07-Q08-FO-C
190129	DRE-26-F07-Q10-FS-C	190134	DRE-26-F07-Q10-FO-C
190130	DRE-26-F07-Q12-FS-C	190135	DRE-26-F07-Q12-FO-C
190131	DRE-26-F07-Q14-FS-C	190136	DRE-26-F07-Q14-FO-C

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary data see

→ 4

Copar quarter turn actuators DRE

Technical data

FESTO

Ordering data – Corrosion resistant			
Spring-force closing		Spring-force opening	
Part No.	Type	Part No.	Type
Size 50			
190197	DRE-50-F07-Q06-FS-C	190207	DRE-50-F07-Q06-FO-C
190198	DRE-50-F10-Q06-FS-C	190208	DRE-50-F10-Q06-FO-C
190199	DRE-50-F07-Q08-FS-C	190209	DRE-50-F07-Q08-FO-C
190200	DRE-50-F10-Q08-FS-C	190210	DRE-50-F10-Q08-FO-C
190201	DRE-50-F07-Q10-FS-C	190211	DRE-50-F07-Q10-FO-C
190202	DRE-50-F10-Q10-FS-C	190212	DRE-50-F10-Q10-FO-C
190203	DRE-50-F07-Q12-FS-C	190213	DRE-50-F07-Q12-FO-C
190204	DRE-50-F10-Q12-FS-C	190214	DRE-50-F10-Q12-FO-C
190205	DRE-50-F07-Q14-FS-C	190215	DRE-50-F07-Q14-FO-C
190206	DRE-50-F10-Q14-FS-C	190216	DRE-50-F10-Q14-FO-C
Size 77			
190277	DRE-77-F10-Q06-FS-C	190287	DRE-77-F10-Q06-FO-C
190278	DRE-77-F12-Q06-FS-C	190288	DRE-77-F12-Q06-FO-C
190279	DRE-77-F10-Q08-FS-C	190289	DRE-77-F10-Q08-FO-C
190280	DRE-77-F12-Q08-FS-C	190290	DRE-77-F12-Q08-FO-C
190281	DRE-77-F10-Q10-FS-C	190291	DRE-77-F10-Q10-FO-C
190282	DRE-77-F12-Q10-FS-C	190292	DRE-77-F12-Q10-FO-C
190283	DRE-77-F10-Q12-FS-C	190293	DRE-77-F10-Q12-FO-C
190284	DRE-77-F12-Q12-FS-C	190294	DRE-77-F12-Q12-FO-C
190285	DRE-77-F10-Q14-FS-C	190295	DRE-77-F10-Q14-FO-C
190286	DRE-77-F12-Q14-FS-C	190296	DRE-77-F12-Q14-FO-C
Size 100			
190327	DRE-100-F12-Q06-FS-C	190332	DRE-100-F12-Q06-FO-C
190328	DRE-100-F12-Q08-FS-C	190333	DRE-100-F12-Q08-FO-C
190329	DRE-100-F12-Q10-FS-C	190334	DRE-100-F12-Q10-FO-C
190330	DRE-100-F12-Q12-FS-C	190335	DRE-100-F12-Q12-FO-C
190331	DRE-100-F12-Q14-FS-C	190336	DRE-100-F12-Q14-FO-C
Size 150			
190378	DRE-150-F14-Q06-FS-C	190388	DRE-150-F14-Q06-FO-C
190380	DRE-150-F14-Q08-FS-C	190390	DRE-150-F14-Q08-FO-C
190382	DRE-150-F14-Q10-FS-C	190392	DRE-150-F14-Q10-FO-C
190384	DRE-150-F14-Q12-FS-C	190394	DRE-150-F14-Q12-FO-C
190386	DRE-150-F14-Q14-FS-C	190396	DRE-150-F14-Q14-FO-C

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary data see

→ 4

Copar quarter turn actuators DRE

Technical data

FESTO

Ordering data – Corrosion resistant			
Spring-force closing		Spring-force opening	
Part No.	Type	Part No.	Type
Size 225			
190438	DRE-225-F14-Q06-FS-C	190448	DRE-225-F14-Q06-F0-C
190440	DRE-225-F14-Q08-FS-C	190450	DRE-225-F14-Q08-F0-C
190442	DRE-225-F14-Q10-FS-C	190452	DRE-225-F14-Q10-F0-C
190444	DRE-225-F14-Q12-FS-C	190454	DRE-225-F14-Q12-F0-C
190446	DRE-225-F14-Q14-FS-C	190456	DRE-225-F14-Q14-F0-C
Size 375			
190498	DRE-375-F16-Q06-FS-C	190508	DRE-375-F16-Q06-F0-C
190500	DRE-375-F16-Q08-FS-C	190510	DRE-375-F16-Q08-F0-C
190502	DRE-375-F16-Q10-FS-C	190512	DRE-375-F16-Q10-F0-C
190504	DRE-375-F16-Q12-FS-C	190514	DRE-375-F16-Q12-F0-C
190506	DRE-375-F16-Q14-FS-C	190516	DRE-375-F16-Q14-F0-C
Size 575			
189699	DRE-575-F16-Q06-FS-C	189709	DRE-575-F16-Q06-F0-C
189700	DRE-575-F25-Q06-FS-C	189710	DRE-575-F25-Q06-F0-C
189701	DRE-575-F16-Q08-FS-C	189711	DRE-575-F16-Q08-F0-C
189702	DRE-575-F25-Q08-FS-C	189712	DRE-575-F25-Q08-F0-C
189703	DRE-575-F16-Q10-FS-C	189713	DRE-575-F16-Q10-F0-C
189704	DRE-575-F25-Q10-FS-C	189714	DRE-575-F25-Q10-F0-C
189705	DRE-575-F16-Q12-FS-C	189715	DRE-575-F16-Q12-F0-C
189706	DRE-575-F25-Q12-FS-C	189716	DRE-575-F25-Q12-F0-C
189707	DRE-575-F16-Q14-FS-C	189717	DRE-575-F16-Q14-F0-C
189708	DRE-575-F25-Q14-FS-C	189718	DRE-575-F25-Q14-F0-C
Size 880			
189759	DRE-880-F25-Q06-FS-C	189850	DRE-880-F25-Q06-F0-C
189760	DRE-880-F30-Q06-FS-C	189851	DRE-880-F30-Q06-F0-C
189761	DRE-880-F25-Q08-FS-C	189852	DRE-880-F25-Q08-F0-C
189762	DRE-880-F30-Q08-FS-C	189853	DRE-880-F30-Q08-F0-C
189844	DRE-880-F25-Q10-FS-C	189854	DRE-880-F25-Q10-F0-C
189845	DRE-880-F30-Q10-FS-C	189855	DRE-880-F30-Q10-F0-C
189846	DRE-880-F25-Q12-FS-C	189856	DRE-880-F25-Q12-F0-C
189847	DRE-880-F30-Q12-FS-C	189857	DRE-880-F30-Q12-F0-C
189848	DRE-880-F25-Q14-FS-C	189858	DRE-880-F25-Q14-F0-C
189849	DRE-880-F30-Q14-FS-C	189859	DRE-880-F30-Q14-F0-C

Note

Should a quarter turn actuator be required with options that exceed these, then the appropriate order code needs to be established. There is no part number for this order code; for the necessary data see

→ 4

Copar quarter turn actuators DRD/DRE

FESTO

Accessories

Stop DADP

Based/complies with standard
VDI/VDE 3845 (Nimur)

Scope of delivery:

1 stop

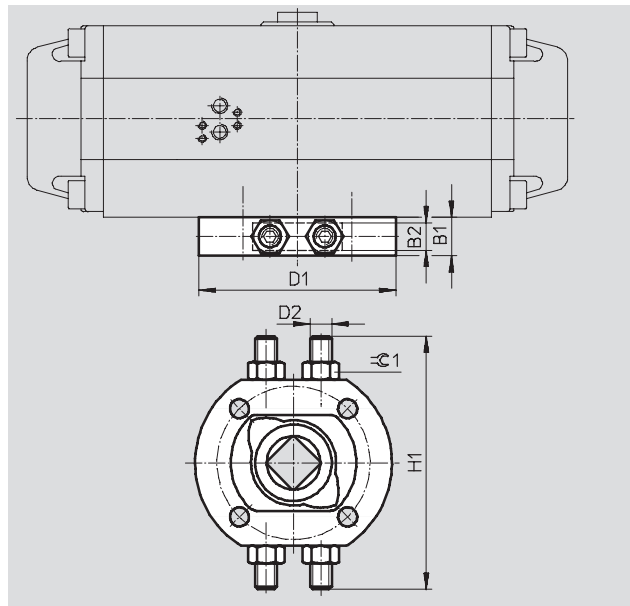
Material:

Housing, plate: Nickel plated steel

Nut, screws: Galvanised steel

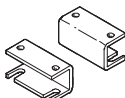
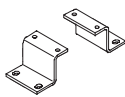
Bearing: Polyacetal

Free of copper, PTFE and silicone



Dimensions and ordering data											
Size	Flange hole pattern	B1	B2	D1 $\varnothing$	D2	H1	$\varnothing 1$	CRC ¹⁾	Weight [g]	Part No.	Type
150, 225	F14	35	25	180	M20	232	30	2	5,000	539930	DADP-F14
375, 575	F16	45	35	200	M24	256	36	2	8,000	539931	DADP-F16
575, 880	F25	60	50	300	M30	344	46	2	23,500	539932	DADP-F25

- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Ordering data – Adapter kits for mounting the sensor boxes SRBP, SRAP						
	Size	Dimensions [mm]	CRC ¹⁾	Part No.	Type	
	DRD/DRE-4-F05	20x30x80	3	568275	DASB-P1-HA-SB	
	DRD/DRE-4-F04					
	DRD/DRE-8-F05					
	DRD/DRE-14-F05					
	DRD/DRE-26-F07					
	DRD/DRE-50-F07					
	DRD/DRE-50-F10	30x30x130			572419	DASB-P1-HC-SB
	DRD/DRE-77-F10					
	DRD/DRE-77-F12					
	DRD/DRE-100-F12					
	DRD/DRE-150-F14					
	DRD/DRE-225-F14					
	DRD/DRE-375-F16					

- 1) Corrosion resistance class 3 according to Festo standard 940 070
Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface

Product Range and Company Overview

A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



Custom Automation Components
Complete custom engineered solutions



Custom Control Cabinets
Comprehensive engineering support and on-site services



Complete Systems
Shipment, stocking and storage services

The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



Electromechanical
Electromechanical actuators, motors, controllers & drives



Pneumatics
Pneumatic linear and rotary actuators, valves, and air supply



PLCs and I/O Devices
PLC's, operator interfaces, sensors and I/O devices

Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.



© Copyright 2008, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. For Liability and Warranty conditions, refer to our "Terms and Conditions of Sale", available from your local Festo office. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Festo. All technical data subject to change according to technical update.



Printed on recycled paper at New Horizon Graphic, Inc., FSC certified as an environmentally friendly printing plant.

Festo North America

Festo Regional Contact Center

5300 Explorer Drive
Mississauga, Ontario L4W 5G4
Canada

USA Customers:

For ordering assistance,

Call: 1.800.99.FESTO (1.800.993.3786)

Fax: 1.800.96.FESTO (1.800.963.3786)

Email: customer.service@us.festo.com

For technical support,

Call: 1.866.GO.FESTO (1.866.463.3786)

Fax: 1.800.96.FESTO (1.800.963.3786)

Email: product.support@us.festo.com

Canadian Customers:

Call: 1.877.GO.FESTO (1.877.463.3786)

Fax: 1.877.FX.FESTO (1.877.393.3786)

Email: festo.canada@ca.festo.com

USA Headquarters

Festo Corporation
395 Moreland Road
P.O. Box 18023
Hauppauge, NY 11788, USA
www.festo.com/us

USA Sales Offices

Appleton

North 922 Tower View Drive, Suite N
Greenville, WI 54942, USA

Boston

120 Presidential Way, Suite 330
Woburn, MA 01801, USA

Chicago

1441 East Business Center Drive
Mt. Prospect, IL 60056, USA

Dallas

1825 Lakeway Drive, Suite 600
Lewisville, TX 75057, USA

Detroit – Automotive Engineering Center

2601 Cambridge Court, Suite 320
Auburn Hills, MI 48326, USA

New York

395 Moreland Road
Hauppauge, NY 11788, USA

Silicon Valley

4935 Southfront Road, Suite F
Livermore, CA 94550, USA

United States



USA Headquarters, East: Festo Corp., 395 Moreland Road, Hauppauge, NY 11788

Phone: 1.631.435.0800; Fax: 1.631.435.8026;

Email: info@festo-usa.com

www.festo.com/us

Canada



Headquarters: Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4

Phone: 1.905.624.9000; Fax: 1.905.624.9001;

Email: festo.canada@ca.festo.com

www.festo.ca

Mexico



Headquarters: Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquahuac,
54020 Tlalnepantla, Edo. de México

Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;

Email: festo.mexico@mx.festo.com

www.festo.com/mx

Central USA

Festo Corporation
1441 East Business
Center Drive
Mt. Prospect, IL 60056, USA
Phone: 1.847.759.2600
Fax: 1.847.768.9480



Western USA

Festo Corporation
4935 Southfront Road,
Suite F
Livermore, CA 94550, USA
Phone: 1.925.371.1099
Fax: 1.925.245.1286



Festo Worldwide

Argentina Australia Austria Belarus Belgium Brazil Bulgaria Canada Chile China Colombia Croatia Czech Republic Denmark
Estonia Finland France Germany Great Britain Greece Hong Kong Hungary India Indonesia Iran Ireland Israel Italy Japan Latvia
Lithuania Malaysia Mexico Netherlands New Zealand Norway Peru Philippines Poland Romania Russia Serbia Singapore
Slovakia Slovenia South Africa South Korea Spain Sweden Switzerland Taiwan Thailand Turkey Ukraine United States Venezuela

www.festo.com