

Type code

001	Series	
DSRL	Semi-rotary drive	
DSR	Semi-rotary drive	

002	Size [mm]	
10	10	
12	12	
16	16	
25	25	
32	32	
40	40	

003	Nominal swivel angle [°]	
180	180	

004	Cushioning	
P	Elastic cushioning rings/plates on both sides	

005	Shaft	
	Spigot shaft	
FW	Flanged shaft	

Datasheet

General technical data

Size	10	12	16	25	32	40
Design	Vane					
Mode of operation	Double-acting					
Cushioning	Elastic cushioning rings/plates at both ends					
Cushioning angle	2.4 deg	2.2 deg	2.1 deg	1.8 deg	1.2 deg	0.9 deg
Position detection	Without					
Type of mounting	With through-hole					
Mounting position	optional					
Swivel angle	0 ... 180 deg					
Product weight	100 g	200 g	300 g	500 g	1,300 g	2,400 g

Operating and environmental conditions

Size	10	12	16	25	32	40
Operating medium	Compressed air to ISO 8573-1:2010 [7:-:-]					
Operating pressure ¹⁾	2.5 ... 8 bar	2 ... 8 bar		1.5 ... 8 bar		
Ambient temperature ²⁾	-10 ... 60°C					

1) The minimum operating pressure can be increased by up to 0.5 bar after a rest period of 24 hours

2) Observe the operating range of the proximity switches

Weight

Size	10	12	16	25	32	40
Product weight	100	200	300	500	1,300	2,400

Materials

Material housing	Die-cast zinc
Material drive shaft	Steel, Nickel-plated
Material covering	PA-reinforced
Material seals	NBR
LABS (PWIS) conformity	VDMA24364-B2-L
RoHS status	RoHS compliant in accordance with EU directive

Forces and torques

Size	10	12	16	25	32	40
Theoretical torque at 0.6 MPa (6 bar, 87 psi)	0.5 Nm	1 Nm	2 Nm	5 Nm	10 Nm	20 Nm
Max. radial force ¹⁾	30 N	45 N	75 N	120 N	200 N	350 N
Max. axial force ²⁾	10 N	18 N	30 N	50 N	75 N	120 N
Max. swivel frequency at 0.6 MPa (6 bar, 87 psi)	3 Hz					

1) On the output shaft at max. frequency

2) On the output shaft at max. frequency

Assembly instructions

If the specified maximum permissible mass moments of inertia are exceeded, external stops must be used. The following must be noted in this case:

The stop must not fall below a minimum radius to the output shaft (r_{min}). The stop force must not exceed the maximum force. Because of the elastic stops, an exact end position can only be achieved using an external stop.

Size 10: Stop radius 13 mm / force 60 N

Size 12: Stop radius 15 mm / force 90 N

Size 16: Stop radius 17 mm / force 160 N

Size 25: Stop radius 21 mm / force 320 N

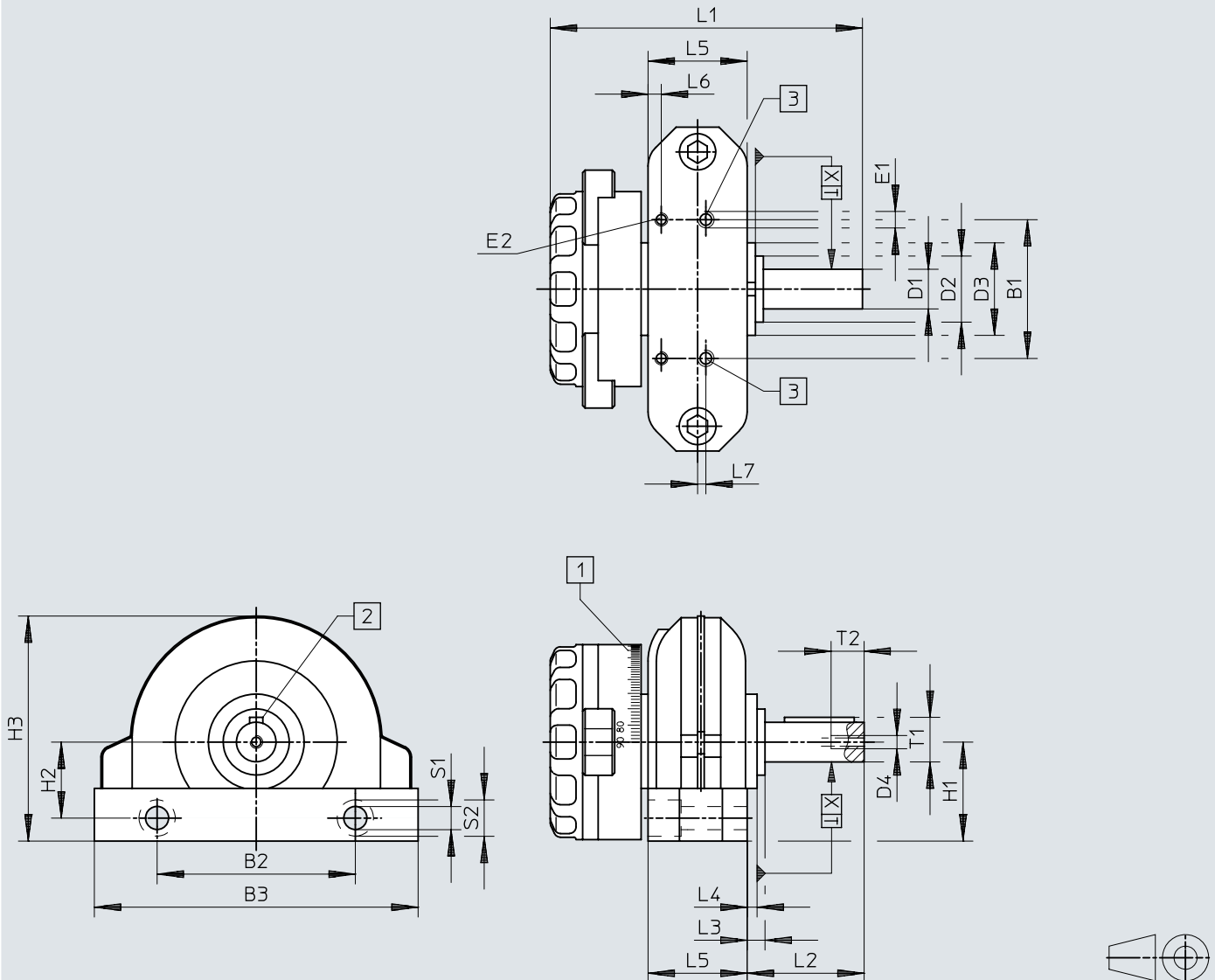
Size 32: Stop radius 28 mm / force 480 N

Size 40: Stop radius 40 mm / force 650 N

If the semi-rotary drives are throttled to swivel speeds below 180°/s, the drives must be operated with a minimum of 6 bar. A synchronisation fluctuation of $\pm 30\%$ is to be expected. An improvement in the synchronisation fluctuations and the swivel times shown in the graphs can only be achieved with throttle valves.

Dimensions

Dimensions – Quarter turn actuator DSR

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- [1] Angle scale for reading the swivelling angle
- [2] Featherkey position at 0°
- [3] Compressed air supply port
- [4] The swivel angle is 180° and is pressure-dependent. The maximum cushioning angle per side is approx. 1.6° at 8 bar
- [5] If, at the end of the swivelling motion, the kinetic energy is absorbed by the cushioning, the drive shaft will swivel back by a corresponding proportion of the angle.
- [6] The stops must not be removed, as the vane itself is not suitable for setting the end position. An angle scale is provided on the cover cap to help set the swivel angles.
- [7] The maximum permissible tightening torque of the bolt at D4 must not be exceeded when attaching additional components to the spigot shaft.

Dimensions

	B1	B2	B3	D1 Ø g7	D2 Ø	D3 Ø h9	D4	E1	E2	H1	H2	H3	L1	L2
DSR-10	22	32	53	6	12	20	M2,5	M3	M3	19,4	15,5	38,8	57	22,4
DSR-12	26	40	65	8	16	22	M3	M5	M3	23,5	18,5	48	65,6	25,5
DSR-16	30	46	78	10	17	24	M3	M5	M3	27	20,5	56,5	75,8	29
DSR-25	42	60	98	12	18	28	M4	M5	M4	30	23	68,1	94,5	35,4
DSR-32	54	80	130	16	27	42	M5	G1/8	M4	43	34	92	125,5	50
DSR-40	70	100	160	20	36	52	M6	G1/4	M4	53	40	121	162	60

	L3	L4	L5	L6	L7	S1	S2	T2	X	1)	2)
DSR-10	6,5	4,5	15,1	2,2	2	3,4	6	7	0,35	A2 x 2 x 12	0,7
DSR-12	5,5	3,5	18	2,1	2,5	4,4	8	9	0,35	A2 x 2 x 16	1,2
DSR-16	6	3,5	22,5	2,1	–	5,5	10	9	0,35	A3 x 3 x 18	1,2
DSR-25	5,4	3	30	4	–	7	11	10	0,4	A4 x 4 x 25	5,5
DSR-32	10	7	36	4	–	8,5	15	12,5	0,45	A5 x 5 x 36	5,5
DSR-40	10	6	50	4	–	8,5	15	16	0,5	A6 x 6 x 45	5,5

1) Feather key according to DIN 6885 included in the scope of delivery

2) Tightening torque at D4 [Nm]