

MASTERGEAR
WORLDWIDE



**SD SERIES MANUAL
OVERRIDE GEARBOXES**



A Regal Brand

REGAL



General description

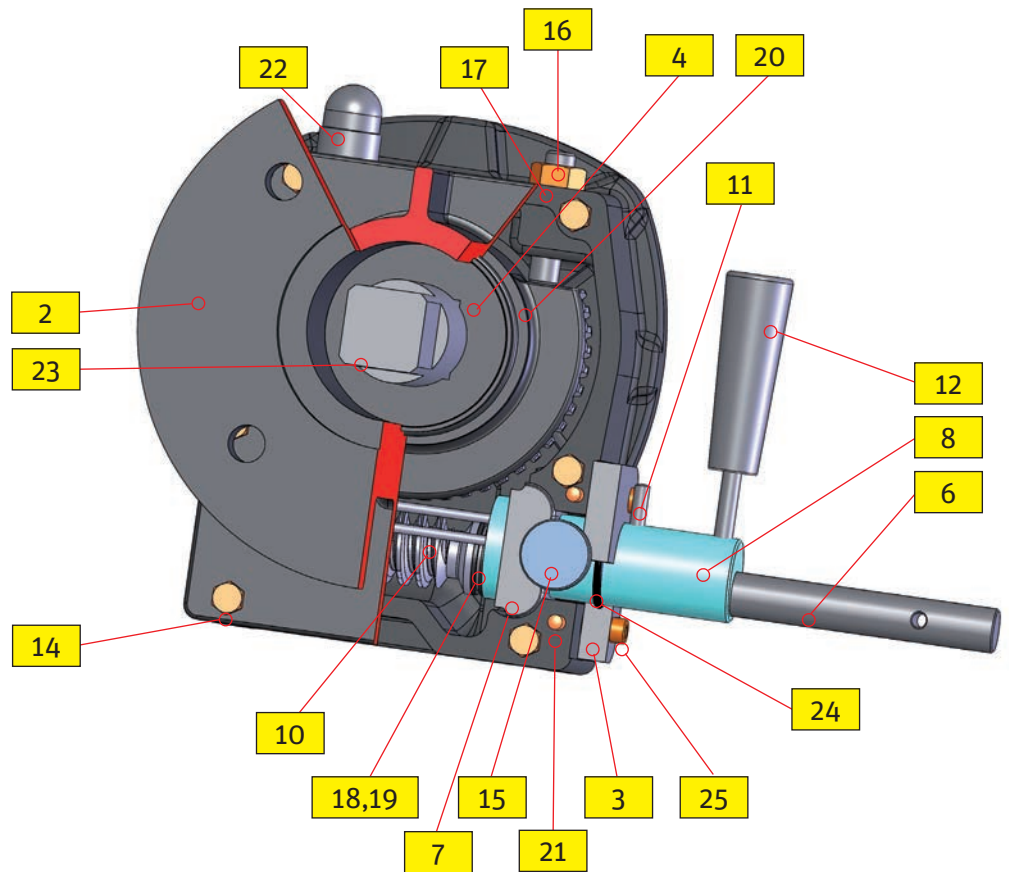
The cast iron construction and rugged design of the M-Series has been modified by new components to get an manual override gearbox.

Thus allows, to fit the gearboxes in between an pneumatic or hydraulic actuator and a valve.

Through corrosion resistant treatment of bare metal surfaces, a paint finish and the use of suitable sealing systems, the SD range is sealed to IP67 and achieves exceptional durability.

All models use high performance axial needle roller bearings, which combined with a one piece input wormshaft, maximises the available mechanical advantage and overall unit efficiency.

The use of accessories like torque plugs between gear and actuator, mounting brackets for isolating valve and the use of different materials for the constructions make this units suitable for different applications and environmental situations.



Features & general specifications:

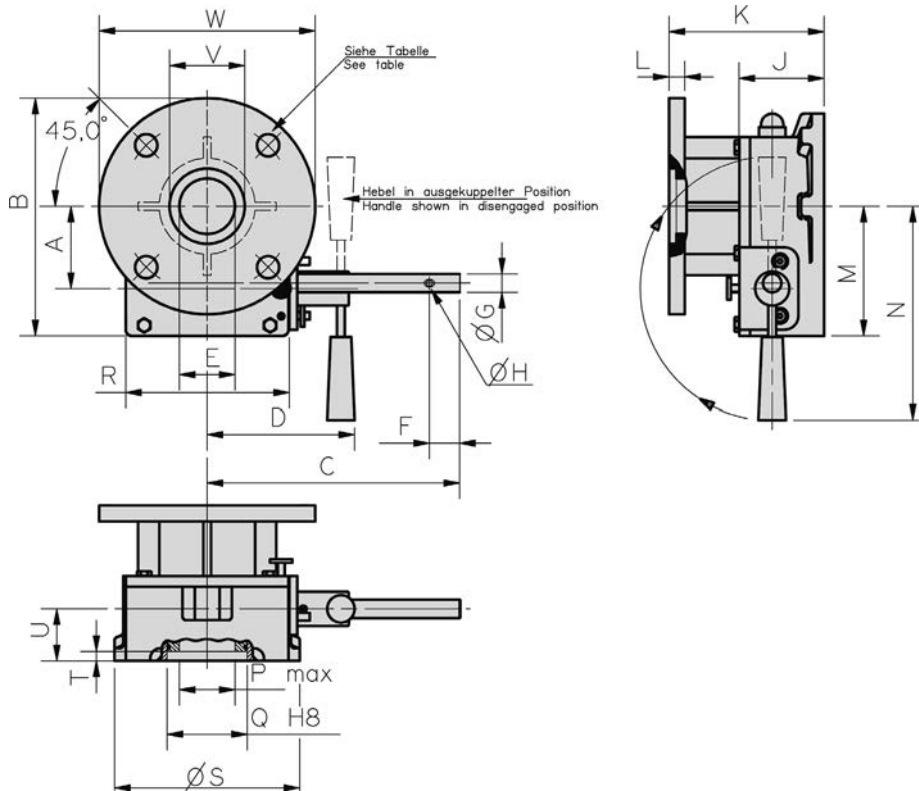
- Sealed to IP67
- Maintenance free
- Self Locking/High Efficiency
- High Mechanical Advantage
- Cast iron Enclosure
- 90° +/- 5° (adjustable) travel
- to 50.00 Nm output torque
- 5 frame sizes
- -20°C to +80°C temperature range for continuous operation
- Unrivalled versatility through different sizes of cover and base flange sizes

Item	Component	Material Description	Specification
1	Gearcase	Grey cast iron	BS1452 grade 260
2	Cover flange	S.G. cast iron	ASTM A 536 65-45-12
3	Input cover	Steel plate	C steel
4	Quadrant	S.G. cast iron	BS2789 grade 500/7
5	Wormshaft o-ring	Medium Nitrile	60-80 Shore
6	Wormshaft	harden steel	BS970 606M36
7	Wormshaft bearing	Sintered iron copper	FC025 40
8	Excentric bush long	harden steel	
9	Excentric bush short	Steel	
10	Rods	Steel	
11	Stopp-Pin	Steel	
12	Lever	Steel/Plastic	
13	Nameplate	Aluminium	
14	Cover screws	Hexagon srews	8.8
15	Lock screw	Knurled head screw	
16	Stopp screws	Socket set screws	8.8
17	Locknut	Hexagon nut	
18	Bearing thrust washer	Needle thrust washer	Type AS
19	Thrust bearing	Needle thrust bearing	Type AXK
20	Quadrant o-ring	Medium Nitrile	60-80 Shore
21	Dowels	Hardened & ground steel	
22	Locknut protection cap	Injection moulded plastic	Low density polyethylene
23	Torque Plug	Steel (Stainless steel)	
24	Input cover sealing	Medium Nitrile	60-80 Shore
25	Declutch stop screw	Pan head screw	8.8

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Performance specification and dimensions

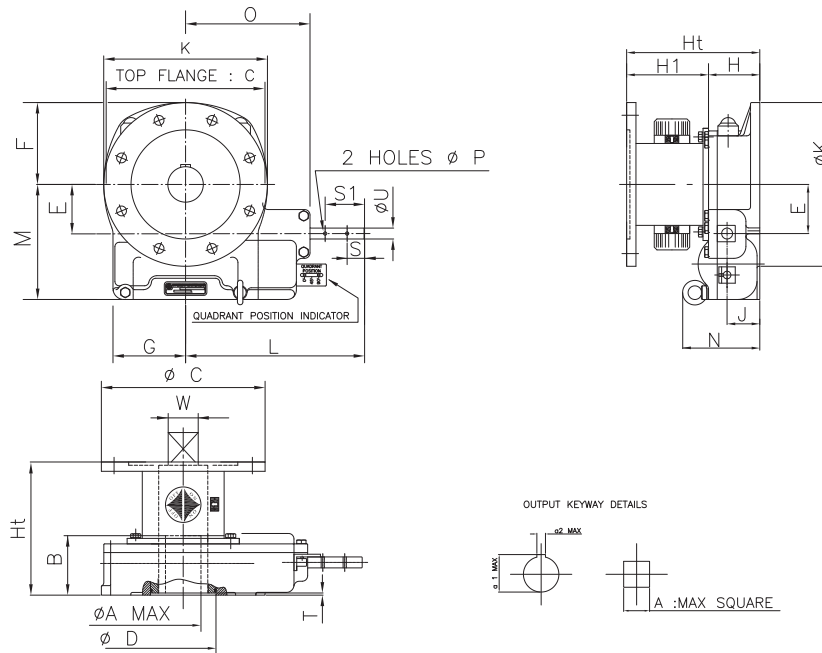


Unit Size	M07SD	M10SD	M12SD	M14SD	M15SD
Valve mounting flange DIN ISO 5211	F05 F07	F07 F10 F12	F10 F12 F14	F12 F14 F16	F14 F16
Actuator mounting flange DIN/ISO 5211 with recess	F05 F07	F07 F10 F12	F10 F12 F14	F12 F14 F16	F14 F16
Output torque Nm	338	678	1.355	2.190	4.076
Ratio	51 : 1	55 : 1	50 : 1	72 : 1	84 : 1
Mechanical advantage	9.0	15.1	13.8	19.8	22.7
Input torque Nm	37.6	44.9	98.3	110.5	179.5
Turns to close	12.8	13.8	12.5	18	21
A	35.6	52.0	66.6	94.4	295.5
B	106.9	158.5	192.5	230.1	283.0
C	99.3	158.5	205.0	205.2	260.1
D	71.1	103.2	119.5	134.1	150.4
E	24	39	54	80	82
F	13.0	20.0	25.0	25.0	32.0
G	9.98/10.01	11.94/11.98	14.94/14.98	14.94/14.98	19.94/19.98
H	3.0	4.0	5.0	5.0	6.0
J	45.5	56.0	68.5	78.0	88.5
K	89.9	100.4	125.7	135.1	152.0
L	9.7	12.7	12.7	12.7	12.7
M	62.0	83.5	105.0	131.1	178.0
N	140.0	154.7	173.0	195.8	230.5
P	25.0	32.0	45.0	65.0	86.0
Q	38.1	50.0	65.0	90.0	115.0
R	84.1	106.0	132.0	165.0	222.0
S	87.9	116.0	150.0	192.0	252.0
T	0.5	4.5	7.5	7.5	9.5
U	26.4	35.1	42.0	50.0	50.0
V	30.0	45.7	61.0	86.6	88.9
Unit weight (Kg)	3	6,2	11,2	12	33

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Performance specification and dimensions



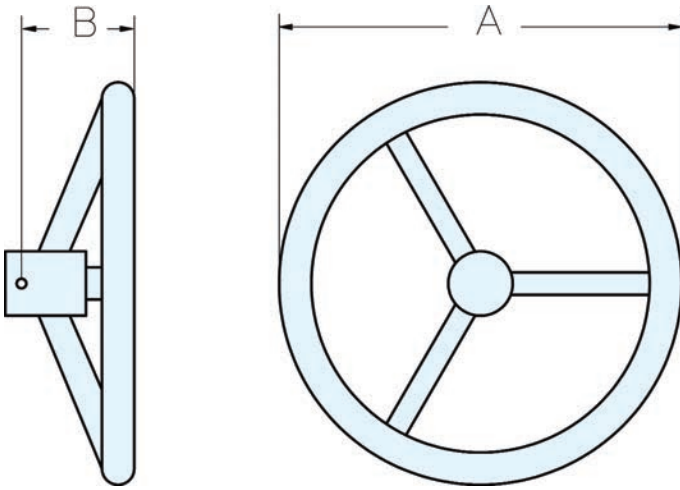
Unit Size	M20 SD	M30 SD	M40 SD	M50 SD
Max output torque (Nm)	8000	13000	24000	50000
Mechanical advantage	57.0	99.0	188.7	384.6
Input torque (Nm)	140	131	127	130
Rim pull (Kg/hand)	23	22	21	23,5
Ratio	183:1	309:1	615:1	1219.89:1
Turns to close	47.75	77.30	153.75	304.95
Valve mounting flange ISO 5211	F16-F20-F25	F20-F25-F30	F25÷F40	F25÷F48
Top mounting flange ISO 5211	F16-F20-F25	F20-F25-F30	F25÷F40	F25÷F48
A max valve shaft diam.	65*	100*	120	130
a1 max	69.4	106.4	127.4	137.4
a2 max	18	28	32	32
A max valve shaft quare	55*	70*	90	95
B	116	140	203	203
C	F16=210 F25=230	F20=225 F30=350	F40=475	F40=475
D	120	155	205	225
E	90	107.7	70.3	124.7
F	150	185	229	270
G	133	159.5	212	270
Ht	255	300	365	392
H1	160	179	220	220
H2	95	121	145	172
J	60	85	108	135
K	300	370	486	540
L	328	362.5	466	522.5
L2	403	437.5	517	574
M	211	267	340	433
N	141.5	170	202	271
O	228	262.5	366	422.5
P	6	6	6	6
S	32	32	32	32
T	4	4	5	5
U	20	20	20	20
W max square	60 x 60	80 x 80	90 x 90	95 x 95
W max diameter	90	125	120	130
Unit weight (Kg)	73	113	230	342
Recommended handwheel	600	600	600	600

*With mounting on bracket these sizes can be increased

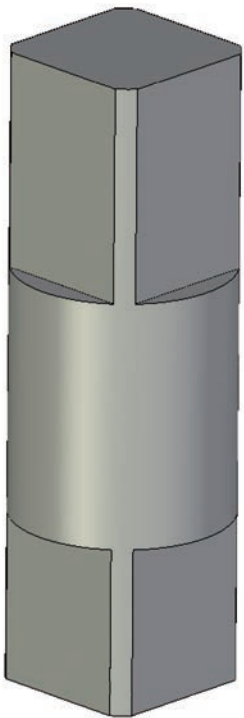
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Accessories



Handwheel Type	Ø A	B	Weight Kg
R6	150	52	0.8
R8	200	62	1.0
R10	250	70	1.9
R12	300	80	2.2
R14	350	90	2.4
R18	450	130	3.6
R24	600	150	4.1
R30	800	150	5.5



Torque-Plug

Suitable torque plugs are available for the torque transmission between pneumatic actuator and gearbox quadrant/valve shaft.

They can be supplied either in steel or in stainless steel

The two square are designed according to the individual situation, e.g. the upper ones is equivalent to the square bore of the pneumatic actuator and the lower square will fit into the square bore of the gearbox quadrant bore.

The lengths of both square are such that they fit into the bore of the actuator and the lower square is designed such, that the lengths is limited to max. 50 % of the quadrant height, because the remaining 50 % of the height is reserved for the valve shaft.

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