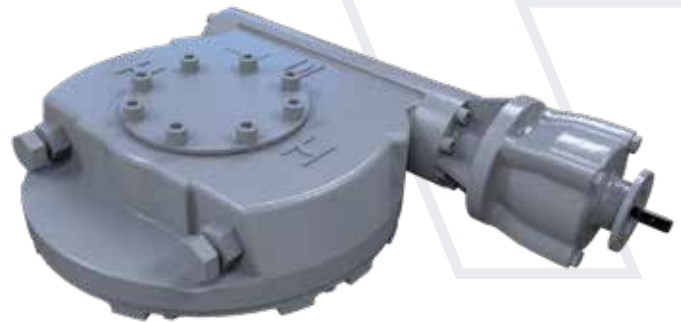




**Keeping the World Flowing
for Future Generations**



HOW/MPR Series

Hand Operated Worm Gearbox

The HOW/MPR gear operators include low lead angle gearing designed to be inherently self-locking. The gearboxes feature a removable output sleeve to facilitate bore and keyway machining, and an indexable baseplate to allow on or off centre mounting to the valve flange without special machining.

HOW/MPR gear operators are manufactured from high quality materials and life tested ensuring that maximum performance, quality and reliability are consistently maintained.

Operating temperature normally ranges from -40 to +120 °C (-40 to +250 °F), although other temperature ranges are available on request.

Application

Designed for manual applications, the HOW/MPR worm gear operators are part-turn devices intended for the operation of ball, plug and butterfly valves.

Environmental Specification

- Sealed to IP67 for standard environment
- Optional IP68

Features

- Carefully chosen ratios to meet manual rim effort requirements
- Protected steel input shaft
- Removable output sleeve
- Ductile iron gearcase
- Totally enclosed gearing
- Angular contact bearings supporting worm shaft
- Repositionable baseplate facility
- Grease filled for life and fully sealed
- Maintenance free
- Adjustable mechanical stops (at 0° and 90° ±5°)
- Primed finish

Options

- High temperature to +150 °C (+302 °F) or +200 °C (+392 °F)
- Low temperature to -60 °C (-76 °F)
- Stainless steel input shaft
- Coating for aggressive environments
- Limit switches
- Fixed and flexible extensions
- Interlock safety system
- Padlockable handwheels
- Travelling nut for applications requiring less than 90° travel
- Lever arms
- Gloss paint finish
- Chain wheels

HOW/MPR Series

Gearbox Selection Chart

Gearbox	Output Torque (Nm)	Ratio:1	Mechanical Advantage* $\pm 10\%$
HOW8	39000	1229	307
HOW82	48100	1766	442
HOW9	57750	1601	464
HOW92	67900	2081	603
HOW10	100000	2655	689
HOW11	127250	2619	746
HOW112	141000	2619	746
HOW115	170000	4712	1359
HOW13	264000	7171	2240

*The published M.A. is achieved after a few cycles.

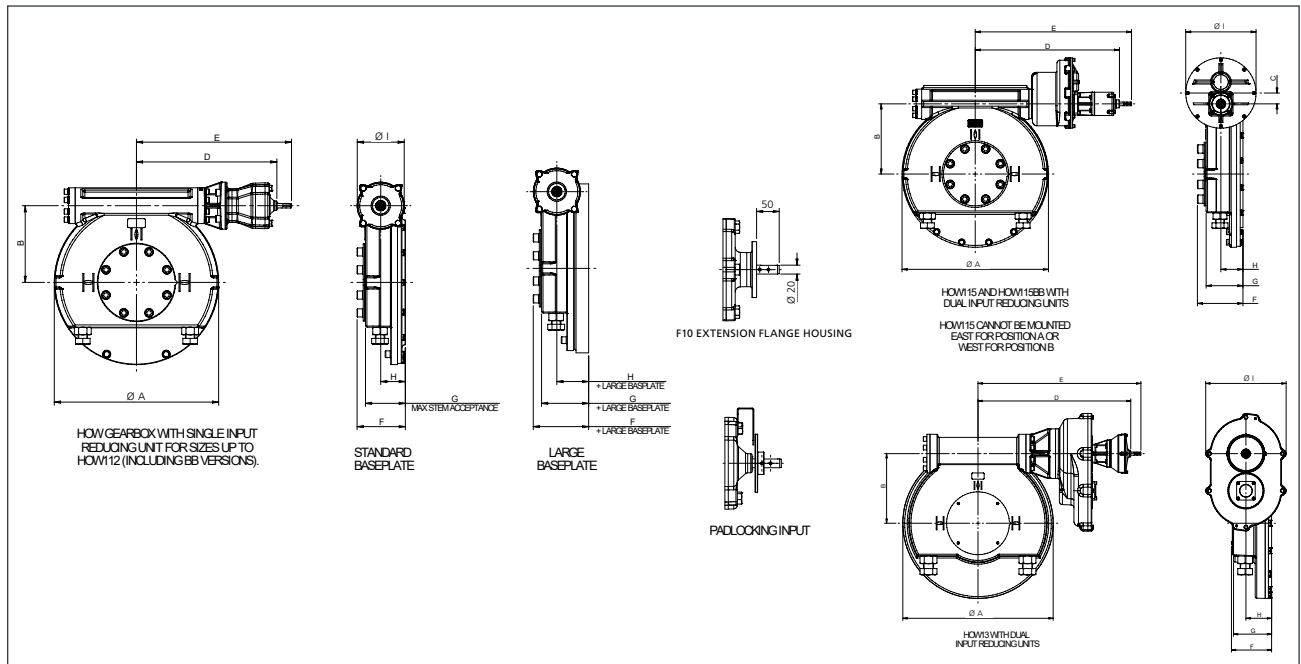
Material Specification

Component	Material	UK Standard	USA Standard	DIN Standard	ISO Standard
Gearcase	SG Iron	BS1563 EN-GJS-450-10 BS1563 EN-GJS-400-15	ASTM A536 65-45-12	GGG40	ISO 1083 JS 450-10 ISO 1083 JS 400-15
Baseplate	SG Iron Cast Iron	BS1563 EN-GJS-450-10 BS1561 EN-GJL-250	ASTM A536 65-45-12 ASTM A48 35B/40B	GGG40 GG25	ISO 1083 JS 450-10 ISO 185 JL/250
Worm shaft	Steel	BS970 708M40	AISI/SAE 4140	42 CrMo 4	ISO 683 42 CrMo 4
Quadrant	SG Iron	BS1563 EN-GJS-700-2	ASTM A536 100-70-03	GGG70	ISO 1083 JS 700-2
Position Indicator	Steel	BS970 070M20	AISI/SAE 1023	C 22	ISO 683 C 20
Output Sleeve	Steel	BS970 070M20 BS970 080M40 BS970 070M55	AISI/SAE 1023 AISI/SAE 1040 AISI/SAE 1055	C 22 C 40 C 55	ISO 683 C 20 ISO 683 C 40 E4 ISO 683 C 55 E4
Input Flange	SG Iron	BS1563 EN-GJS-450-10 BS1563 EN-GJS-400-15	ASTM A536 65-45-12	GGG40	ISO 1083 JS 450-10 ISO 1083 JS 400-15
Input Shaft	Protected Steel	BS970 817M40T	AISI/SAE 4340	34 CrNiMo 6	ISO 683 36 CrNiMo 6
Reducer Gearcase	SG Iron	BS1563 EN-GJS-600-3 BS1563 EN-GJS-450-10 BS1563 EN-GJS-400-15	ASTM A536 80-60-03 ASTM A536 65-45-12	GGG60 GGG40	ISO 1083 JS 600-3 ISO 1083 JS 450-10 ISO 1083 JS 400-15
Fasteners	Protected Steel	BS3692			
Bearings	Angular Contact Bearings				
Seals	Nitrile Rubber				
Grease	Renolit CLX2				

Materials of construction are those listed above or equivalents.

Note: Because of the company's policy of continuous improvement, Rotork reserves the right to change specification details without prior notice.

HOW/MPR Series



Dimensions and Weights

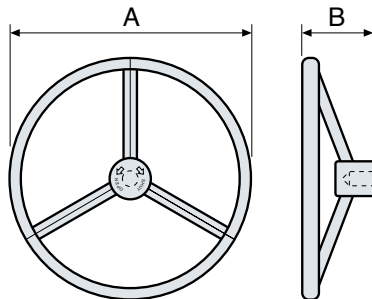
Gearbox	Ratio:1	ØA Standard Baseplate	ØA Large Baseplate	B	C	D	E	Key Details	F	G	H	ØI	Weight (kg)
HOW8	1229	520	550	246	0	483	549	6 x 6 x 36	192	160	99	210	199
HOW82	1766	520	550	246	0	487	553	6 x 6 x 36	192	160	99	210	206
HOW9	1601	596	620	279	0	552	618	6 x 6 x 36	200	168	99	210	298
HOW92	2081	596	620	279	0	602	668	6 x 6 x 36	200	168	99	210	309
HOW10	2655	735	755	343	0	628	694	6 x 6 x 36	216	180	110	210	423
HOW11	2619	795	795	381	0	645	711	6 x 6 x 36	247	200	120	210	513
HOW112	2619	795	795	381	0	645	711	6 x 6 x 36	247	200	120	210	513
HOW115	4712	795	795	381	59	783	849	6 x 6 x 36	247	200	120	382	593
HOW11BB	2619	795	795	381	0	645	711	6 x 6 x 36	247	200	120	210	550
HOW112BB	2619	795	795	381	0	645	711	6 x 6 x 36	247	200	120	210	550
HOW115BB	4712	795	795	381	59	783	849	6 x 6 x 36	247	200	120	382	593
HOW13	7171	972	972	450	0	988	1053	6 x 6 x 36	260	251	166	520	1140

Mounting Options

Gearbox	Ratio:1	Max Bore Rectangle Key BS4235	Max Square Bore AF	ISO Flange Standard Baseplate	ISO Flange Large Baseplate	Large Baseplate Additional Thickness
HOW8	1229	157	122.9	F25 - F30 - F35 - F40	F40 - F48	38
HOW82	1766	157	122.9	F25 - F30 - F35 - F40	F40 - F48	38
HOW9	1601	178	132.1	F30 - F35 - F40	F40 - F48	27
HOW92	2081	178	132.1	F30 - F35 - F40	F40 - F48	27
HOW10	2655	203	152.6	F35 - F40 - F48	F60	32
HOW11	2619	203	152.6	F40 - F48	F60	0
HOW112	2619	203	152.6	F40 - F48	F60	0
HOW115	4712	270	190	F40 - F48	F60	0
HOW11BB	2619	270	190	F40 - F48	F60	0
HOW112BB	2619	270	190	F40 - F48	F60	0
HOW115BB	4712	270	190	F40 - F48	F60	0
HOW13	7171	272	180	F35 - F48 - F60	-	-
HOW13	7171	305	229	F48 - F60	-	-

All dimensions in mm.

Handwheel Selection Chart



SG series handwheel

Handwheel Dimensions

Type	A	B
SG200	Ø200 (8")	80 (3,15")
SG250	Ø250 (10")	110 (4,33")
SG300	Ø300 (12")	115 (4,53")
SG350	Ø350 (14")	120 (4,72")
SG400	Ø400 (16")	130 (5,12")
SG450	Ø450 (18")	150 (5,91")
SG500	Ø500 (20")	150 (5,91")
SG600	Ø600 (24")	150 (5,91")
SG700	Ø700 (28")	150 (5,91")
SG800	Ø800 (32")	150 (5,91")
SG900	Ø900 (36")	160 (6,30")
SG1000	Ø1000 (40")	160 (6,30")

