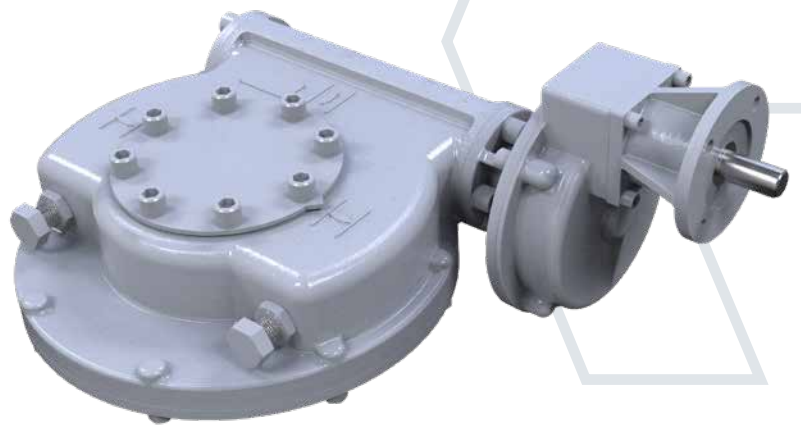




Keeping the World Flowing
for Future Generations



The new IW Mk2 quarter-turn worm gear operators have been designed to suit isolating duty motorised applications.

The gearboxes include low lead angle gearing designed to be inherently self-locking, and offer an increased torque output per size compared with the previous IW range. The IW Mk2 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.

Operating temperature ranges from -40 to +120°C (-40 to +250 °F), although other temperature ranges are available on request. Standard actuated input and output flanges are designed in accordance with ISO 5211 standard. However, equivalent standards such as MSS & DIN can also be supplied.

Application

Rotork IW Mk2 worm gear operators are quarter-turn devices intended for the operation of ball, plug and butterfly valves. The gearboxes are suitable for motorised applications.

Features

- Totally enclosed gearing
- Grease filled for life and fully sealed to IP67 as standard
- Comprehensive gear ratios combined with a selection of auxiliary input spur gear reducers
- Angular contact bearings supporting worm shaft
- Removable and repositionable output sleeve
- Repositionable baseplate facility
- Adjustable mechanical stops (at 0° and 90° ±5°)
- Inherently self-locking gear componentry

IW Mk2

Quarter-Turn Worm Gearboxes

Environmental Specification

- IP67 as standard:
Suitable for submerged duty up to a depth of 1 metre (3 feet) for 30 minutes
- IP68 option:
Suitable for submerged duty up to a depth of 15 metres (50 feet) for 72 hours
- Temperature as standard:
-40 to +120 °C (-40 to +250 °F)

Options

- Flexible extensions
- IP68
- ATEX
- All types of environment
- Low temperature option:
-60 °C (-76 °F)
- High temperature option:
+200 °C (+392 °F)

IW Mk2 Quarter-Turn Worm Gearboxes

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	Protected 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
Fasteners	Protected Steel	BS3692			
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
Reducer Gearing	Steel	BS970 817M40T	AISI/SAE 4340	34 CrNiMo 6	ISO 683 36 CrNiMo 6
Reducer 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
Bearings	Angular Contact Ball Bearings				
Seals	Nitrile Rubber				
Grease	Renolit CLX2				

Materials of construction are those listed above or equivalents.

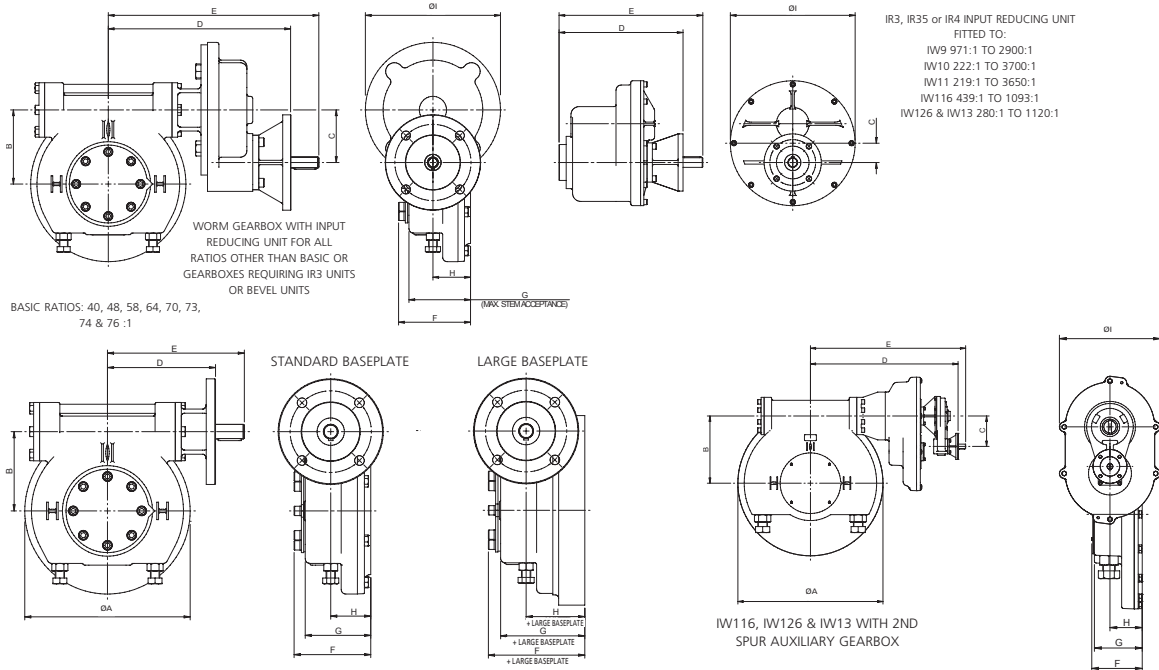
Input and Output Options

Gearbox	Ratio:1	Input Mounting Details Shaft Diameter (mm)					Output Mounting Details						
		F10 FA10	F14 FA14	F16 FA16	F25 FA25	F30 FA30	Max Bore Rectangle Key BS4235	Max Bore Rectangle Key BS4235 (Big Bore)	Max Square Bore A/F	Max Square Bore A/F (Big Bore)	ISO Flange Standard Baseplate	ISO Flange Standard Baseplate (Big Bore)	ISO Flange Large Baseplate
IW3	70	15*	-	-	-	-	45	-	36	-	F/FA 10 - 14	-	F/FA 16
	40	15*	-	-	-	-		-		-			
IW4	70	17*	-	-	-	-	64	-	51	-	F/FA 14 - 16	-	F/FA 25
	40	17*	-	-	-	-		-		-			
	140 to 420	20	20	-	-	-		-		-		-	
	80 to 240	20	20	-	-	-		-		-		-	
IW5 / IW52 / IW56	48	20	25	-	-	-	76	-	62	-	-	-	-
	96 to 288	20	20	-	-	-		-		-			
IW6 / IW66	76	20	30	30	-	-	102	-	83.3	-	F/FA 16 - 25	-	F/FA 30
	152 to 456	20	20	-	-	-		-		-			
IW7 / IW72 / IW76	64	20	30	30	30	-	136	-	108.8	-	F/FA 25 - 30	-	F/FA 35
	130 to 768	20	30	-	-	-		-		-			
IW8 / IW82 / IW86	64	-	-	40	40	-	157	-	122.9	-	F/FA 25 - 40	-	F/FA 48
	130 to 768	20	30	40	50	-		-		-			
IW9 / IW96	58	-	-	40	50	-	178	-	132.1	-	F/FA 30 - 40	-	F/FA 48
	175 to 696	20	30	40	50	-		-		-			
	971 to 2900	20	30	40	50	-		-		-			
IW10 / IW106	74	-	-	-	50	50	203	-	152.6	-	F/FA 35 - 48	-	F/FA 60
	222 to 3700	20	30	40	50	-		-		-			
IW11 / IW11BB	73	-	-	-	50	50	203	270	152.6	190	F/FA 40 - 48	F/FA 48 - 60	
	219 to 3650	20	30	40	50	-							
	73	-	-	-	50	50							
IW116 / IW116BB	439 to 1093	20	30	40	50	-	203	270	152.6	190	F/FA 40 - 48	F/FA 48 - 60	
	1440 to 6560	20	30	30	-	-							
	73	-	-	-	50	50							
IW126	70	-	-	-	75	75	272	305	180	229	F/FA 40 - 60	F/FA 48 - 60	
	280 to 1120	20	30	40	50	-							
	1779 to 6720	20	30	30	-	-							
IW13	70	-	-	-	75	75	272	305	180	229	F/FA 40 - 60	F/FA 48 - 60	
	280 to 1120	20	30	40	50	-							
	1416 to 6720	20	30	30	-	-							

* 20 mm shaft adaptor available on request. Shaft tolerance -0.05 (-0.002")

IW Mk2 Quarter-Turn Worm Gearboxes

Dimensions



Gearbox	Ratio	ØA	B	C	D	E	F	G	H	ØI	Large Baseplate Thickness	Weight kg (lbs)
IW3	40 / 70	172	76		118	158	91	74	49		22	11 (24)
IW4	70	218	102		142	182	102	85	50		25	21 (46)
	140 - 280	218	102	64	269	320	104	85	50	190		33 (73)
	355 - 420	218	102	96	291	342	104	85	50	248		45 (99)
IW4	40	218	102		142	182	102	85	50		25	21 (46)
	80 - 160	218	102	64	269	320	104	85	50	190		33 (73)
	203 - 240	218	102	96	291	342	104	85	50	248		45 (99)
IW5 / IW52 / IW56	48	285	136		186	236	132	114	69		6	44 (97)
	96, 144, 192	285	136	64	313	364	132	114	69	190		55 (121)
	243, 288	285	136	96	335	386	132	114	69	248		68 (150)
IW6 / IW66	76	375	178		186 (196 for F/FA10)	236	139	113	70		-	68 (150)
	152 - 304	375	178	64	313	364	139	113	70	190		79 (174)
	385 - 456	375	178	96	342	393	139	113	70	248		90 (198)
IW7 / IW72 / IW76	64	450	210		270	329	171	140	86		31	129 (284)
	130 - 384	450	210	119	460	521	171	140	86	290		149 (328)
	505 - 768	450	210	179	469	530	171	140	86	408		181 (399)
IW8 / IW82 / IW86	64	520	246		306	365	192	160	99		38	186 (410)
	130 - 384	520	246	119	496	557	192	160	99	290		221 (487)
	505 - 768	520	246	179	505	566	192	160	99	408		247 (545)
IW9 / IW96	58	596	279		371	481	200	168	99		27	278 (613)
	175 - 696	596	279	179	568	631	200	168	99	408		335 (739)
	971 - 2900	596	279	59	605	666	200	168	99	382		342 (754)
IW10 / IW106	74	735	343		397	507	216	180	110		32	392 (864)
	222 - 3700	735	343	59	631	692	216	180	110	382		452 (996)
IW11 / IW11BB	73	795	381		414	524	247	200	120		-	485 (1069)
	219 - 3650	795	381	59	648	709	247	200	120	382		545 (1202)
IW116	73	795	381		414	524	247	200	120		-	485 (1069)
	439 - 1093	795	381	59	648	709	247	200	120	382		549 (1210)
IW116 with 2nd spur auxiliary	1440 - 6560	795	381	204	786	838	247	200	120	382	-	584 (1287)
IW126 / IW13	70	972	450		460	610	260	251	166		-	898 (1980)
	280 - 1120	972	450	240	851	910	260	251	166	520		1168 (2575)
IW126 with 2nd spur auxiliary	1779 - 6720	972	450	204	989	1039	260	251	166	520	-	1203 (2652)
IW13 with 2nd spur auxiliary	1416 - 6720	972	450	305	1001	1051	260	251	166	520	-	1218 (2685)

All dimensions in mm.

Sizing Chart

Gearbox	Ratio :1										Average Static MA* ±10%										Rated Output Torque Nm	Rated Output Torque lbf.ft	Min. Closing Time sec				
	70	40	30	24	20	18	16	15	14	13	23	20	18	16	15	14	13	12	11	10							
IW3	70										23										813	600	5				
	40										15											1085	800	5			
IW4	70										23												5				
	140	210	280	355	420						44	66	88	110	132								1850	1364	5		
	40										15													5			
	80	120	160	203	240							29	43	57	71	86								2712	2000	5	
IW5	48										16													5			
	96	144	192	243	288						30	46	61	77	91									4447	3280	5	
IW52	48										16													7			
	96	144	192	243	288						30	46	61	77	91									6670	4920	7	
IW56	48										16													8			
	96	144	192	243	288						30	46	61	77	91									8000	5900	8	
IW6	76										25													10			
	152	228	304	385	456						48	72	97	122	145									9924	7320	10	
IW66	76										25													12			
	152	228	304	385	456						48	72	97	122	145									12000	8851	12	
IW7	64										21													16			
	130	192	262	384	505	572	768				41	60	82	120	158	179	240							15253	11250	16	
IW72	64										21													20			
	130	192	262	384	505	572	768				41	60	82	120	158	179	240							20000	14751	20	
IW76	64										21													26			
	130	192	262	384	505	572	768				41	60	82	120	158	179	240							26000	19177	26	
IW8	64										20													20			
	130	192	262	384	505	572	768				39	58	79	117	153	174	233							32000	23602	20	
IW82	64										20													22			
	130	192	262	384	505	572	768				39	58	79	117	153	174	233							37000	27290	22	
IW86	64										20													27			
	130	192	262	384	505	572	768				39	58	79	117	153	174	233							44500	32822	27	
IW9	58										21													23			
	175	230	350	458	519	696					60	79	121	158	179	240								52171	38479	23	
	971	1044	1424	2088	2436	2900					318	342	466	684	798	950											
IW96	58										21													27			
	175	230	350	458	519	696					60	79	121	158	179	240								63500	46835	27	
	971	1044	1424	2088	2436	2900					318	342	466	684	798	950											
IW10	74										26													25			
	222	303	444	666	908	1238	1332	1816	2664	3108	3700	70	96	140	211	287	392	421	575	843	983	1170		70000	51629	25	
IW106	74										26													35			
	222	303	444	666	908	1238	1332	1816	2664	3108	3700	70	96	140	211	287	392	421	575	843	983	1170		100000	73756	35	
IW11	73										26													37			
	219	299	438	657	896	1222	1314	1792	2628	3066	3650	70	96	141	211	288	393	423	577	846	987	1174		108464	79999	37	
IW116	73										26													48			
	439	595	680	785	919	1093					141	191	219	253	296	352								141000	103996	48	
	1440	1663	1946	2315	2788	3220	3767	4483	5513	6560		440	508	595	708	852	984	1152	1370	1685	2005						
IW126	70										27													61			
	280	420	560	708	840	1120					99	148	198	250	296	395								180000	132761	61	
	1779	2372	3360	4592	5040	6720					596	795	1126	1539	1689	2252											
IW13	70										27													69			
	280	420	560	708	840	1120					99	148	198	250	296	395								203000	149725	69	
	1416	1680	2240	2833	3360	4480	5666	6720			475	563	751	949	1126	1501	1899	2252									

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

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www.rotork.com

Rotork Gears UK
tel +44 (0)113 2567922
email sales@rotorkgears.com

Corporate Headquarters
Rotork plc
tel +44 (0)1225 733200
fax +44 (0)1225 333467
email mail@rotork.com

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