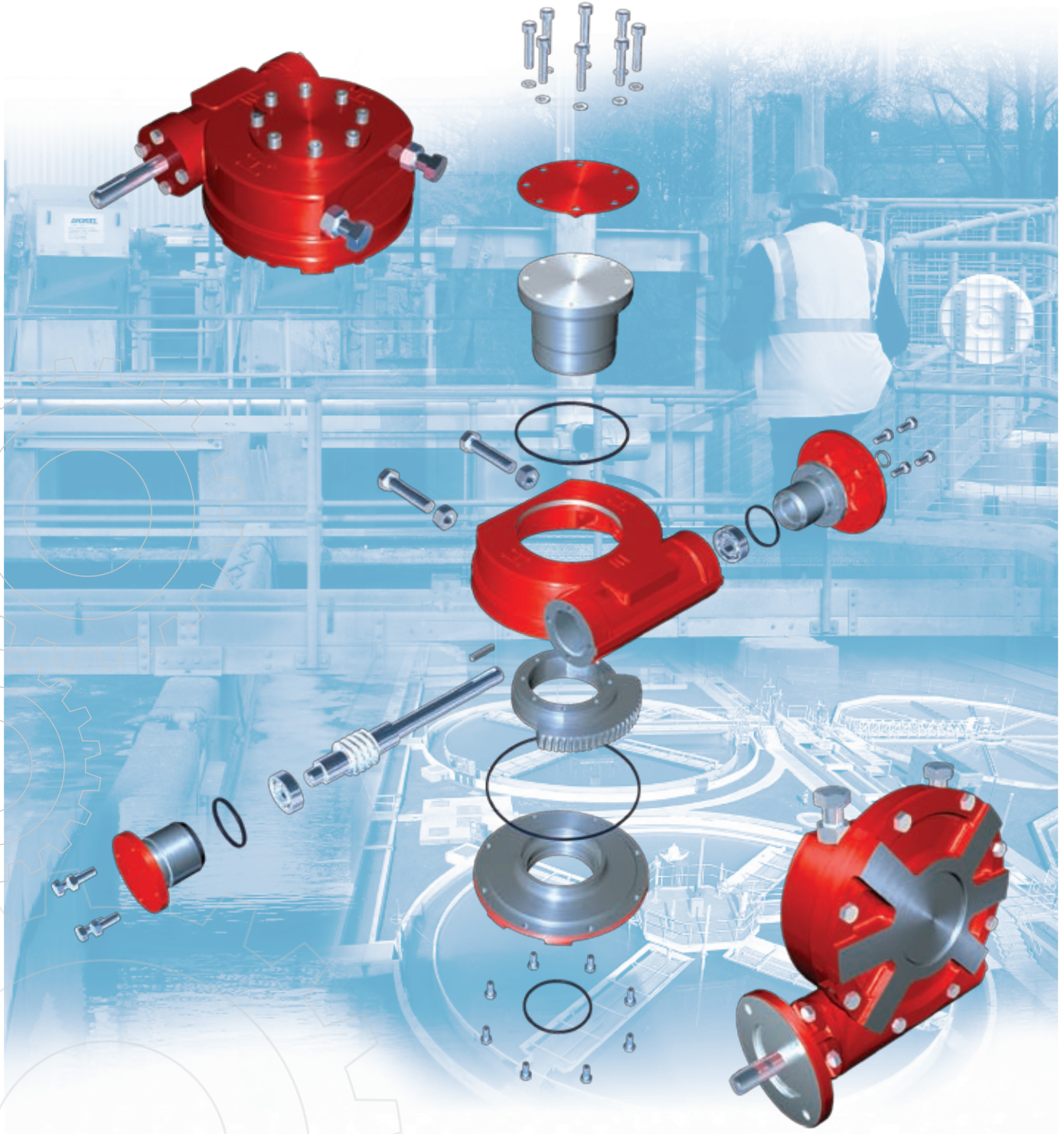


IW Quarter-turn

Gearbox Series

rotork[®]
Gears



Cast Iron Housing Gearboxes - IW Quarter-turn Gear Series

IW Gearbox Series

IW Quarter-turn Gearbox Series

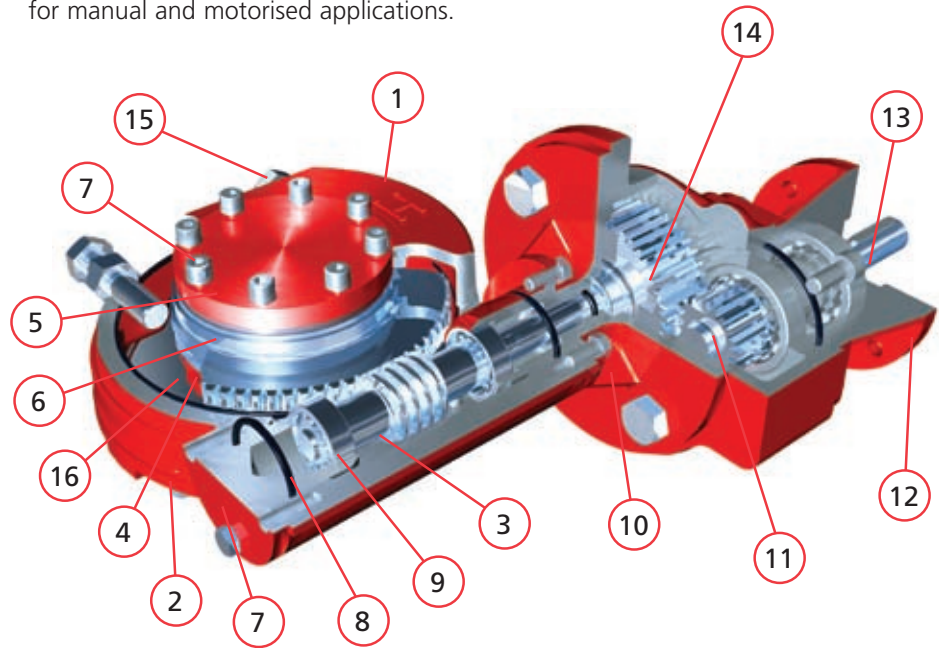
Description

The IW series of quadrant worm operators has been designed with customer stocking in mind, and features a removable steel output sleeve to facilitate bore and keyway machining. This separate output sleeve can be positioned through 90° steps on the IW3 & through 45° steps on the IW4 to IW11. The baseplate can be positioned through 45° steps on the IW3 to IW5 and through 22.5° steps on the IW6 to IW12. This facility allows for on or off centre mounting on the valve stool without special machining.

Operating temperature normally ranges from -40 to +120 °C, although other temperature ranges are available on request. Standard input (for actuation purposes) and output flanges are to ISO 5211 standard. However, equivalent standards such as MSS & DIN can be supplied.

Application

Rotork Gears IW series operators are quarter-turn devices intended for the operation of ball, plug and butterfly valves as well as power and process dampers. The gearboxes are suitable for manual and motorised applications.



Features

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

Environmental specification

- Enclosure: IP67 standard
- Temperature: -40 to +120 °C (-40 to +250 °F)

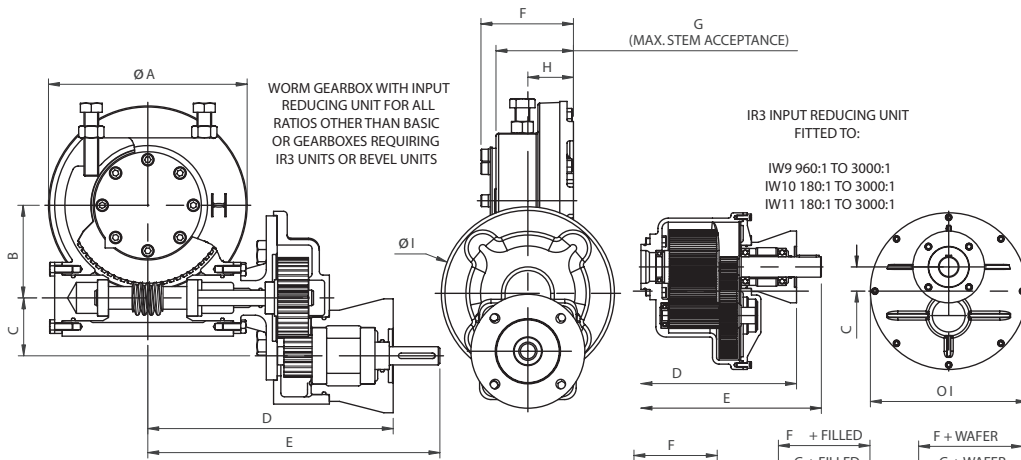
Options

- Ductile Iron
- IP68
- AWWA
- ATEX
- Nuclear
- All types of environment
- High & low temperatures
- Padlockable handwheels
- Limit switches
- Lever arms
- Travelling nut for applications requiring less than 90° travel and more than 90°
- Modulating & multi-turn
- Input flanges for motorisation

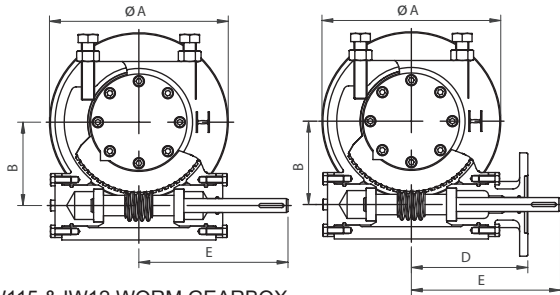
No.	Description	Material	UK Standard	USA Standard	DIN Standard
1	Gearcase (IW3 to IW8)	Cast Iron	BS1561 EN-GJL-250	ASTM A48 35B/40B	GG25
	Gearcase (IW9 to IW12)	SG Iron	BS1563 EN-GJS-450-10	ASTM A536 65-45-12	GGG40
2	Baseplate	Cast Iron	BS1561 EN-GJL-250	ASTM A48 35B/40B	GG25
3	Worm Shaft	Steel	BS970 045M10 or 605M36T	AISI/SAE 1010 or 4340	C 10 or 42 MnMo 7
4	Quadrant	SG Iron	BS1563 EN-GJS-700-2	ASTM A536 100-70-03	GGG70
5	Position Indicator	Steel	BS970 070M20	ASIS/SAE 1023	C 22
6	Output Sleeve	Steel	BS970 070M20 or BS970 080M40 or BS970 070M55 or	ASIS/SAE 1023 or ASIS/SAE 1040 or ASIS/SAE 1055 or	C 22 C 40 C 55
7	Drive Screws	Carbon Steel	BS4168		
8	Seal	Nitrile Rubber			
9	Bearing	Angular Contact Ball Bearings			
10	Adaptor	Cast Iron	BS1561 EN-GJL-250	ASTM A48 35B/40B	GG25
11	Reducer Gearcase	Cast Iron	BS1561 EN-GJL-250	ASTM A48 35B/40B	GG25
12	Input Housing	Cast Iron	BS1561 EN-GJL-250	ASTM A48 35B/40B	GG25
13	Input Shaft	Steel	BS970 605M36T	AISI/SAE 4340	42 MnMo 7
14	Spur Gear	Steel	BS970 817M40T	AISI/SAE 4340	40 NiCrMo 8 - 4
15	Fasteners	Steel	BS3692		
16	Grease	Renolit CLX2			

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

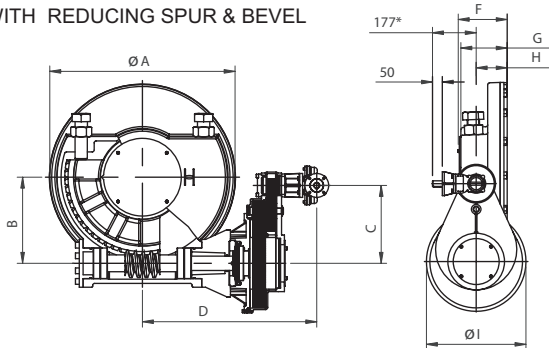
Gearbox IW Series



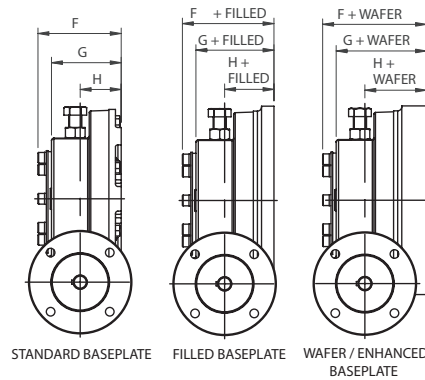
BASIC RATIOS: 40:1, 60:1 & 70:1



IW115 & IW12 WORM GEARBOX WITH REDUCING SPUR & BEVEL



* 200 FOR IW115 & IW12
1440:1 & 1920:1



Gearbox	Ratio	Shaft Diameter (mm)						
		MAN	F10	F14	F16	F25	F30	
IW3	40 TO 70	15	15					
IW4	40 TO 70	17	17					
IW4	80 TO 420	20	20	20				
IW5, IW52	40 TO 70	25	20	25				
IW5, IW52	80 TO 420	20	20	20				
IW6, IW62	70	30	20	30	30			
IW6, IW62	140 TO 420	20	20	20				
IW63	140 TO 420	-	20	20				
IW7, IW72	60	30	20	30	30	30		
IW7, IW72	120 TO 720	50	20	30				
IW8, IW82	60	40	-	-	40	40		
IW8, IW82	120 TO 720	50	20	30	40	50		
IW9	60	-	-	-	40	50		
IW9	180 TO 3000	50	20	30	40	50		
IW10	60	-	-	-	-	50	50	
IW10	180 TO 3000	50	20	30	40	50		
IW11, IW115	60	-	-	-	-	50	50	
IW11	180 TO 3000	50	20	30	40	50		
IW115	480 TO 900	50	-	30	40	50		
IW12, IW13	60	-	-	-	-	75	75	
IW12, IW13	480 TO 900	-	-	30	40	50		
IW115, IW12 & IW13 WITH DOUBLE REDUCING UNITS								
IW115	960 TO 5400	30	20	30	40			
IW12, IW13	1920 TO 5400	30	20	30	40			

SHAFT TOLERANCE
-0.05 (-0.002)

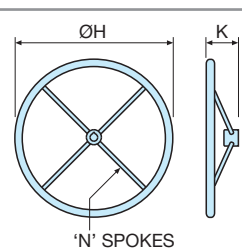
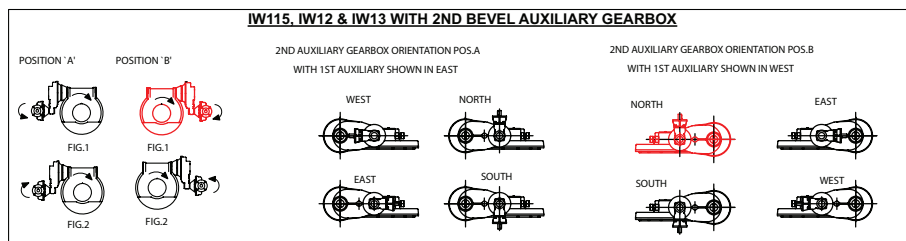
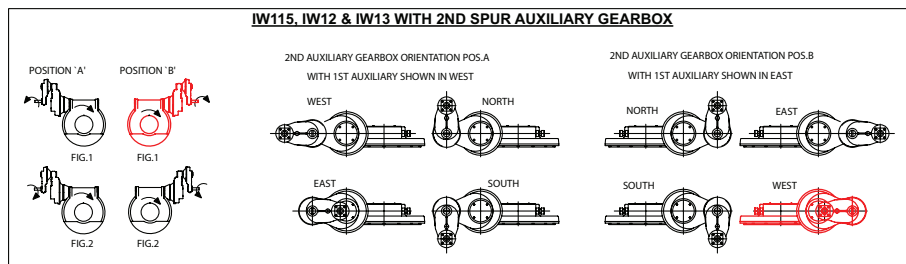
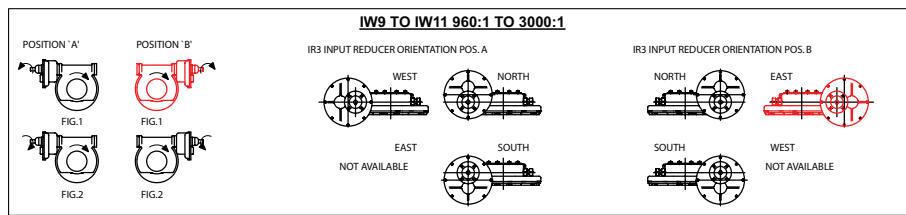
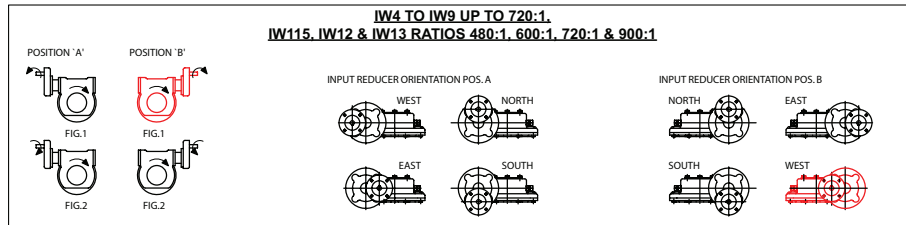
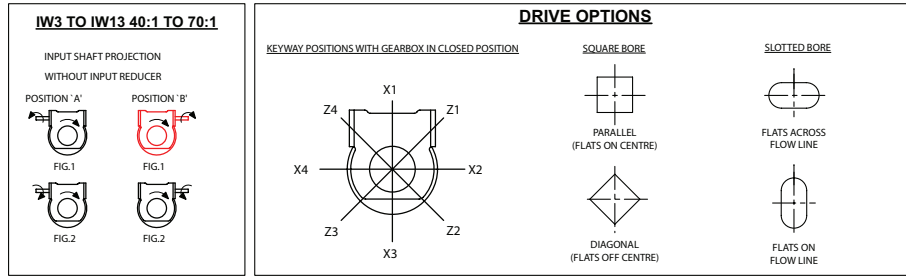
Dimensions and Weights

Gearbox	Ratio	ØA	B	C	D	E	F	G	H	ØI	Weight (kg)
IW3	40, 70	170	76		118	158	81	65	45		11
IW4	40, 70	218	102		142	182	102	85	50		22
IW4	80, 120, 140, 160, 210, 280	218	102	64	269	320	102	85	50	190	30
IW4	200, 240, 350, 420	218	102	96	291	342	102	85	50	248	35
IW5, IW52	40, 70	285	136		186	236	126	110	65		45
IW5, IW52	80, 120, 140, 160, 210, 280	285	136	64	313	364	126	110	65	190	53
IW5, IW52	200, 240, 350, 420	285	136	96	335	386	126	110	65	248	58
IW6, IW62, IW63	70	375	178		186	236	132	110	70		68
					196 for IW6 F10, FA10						
IW6, IW62, IW63	140 - 280	375	178	64	313	364	132	110	70	190	79
IW6, IW62, IW63	350 - 420	375	178	96	342	393	132	110	70	248	84
IW7, IW72	60	450	210		270	329	169	140	87		120
IW7, IW72	120 - 360	450	210	119	460	521	169	140	87	290	152
IW7, IW72	480 - 720	450	210	179	469	530	169	140	87	408	162
IW8, IW82	60	520	246		306	365	185	155	95		180
IW8, IW82	120 - 360	520	246	119	496	557	185	155	95	290	212
IW8, IW82	480 - 720	520	246	179	505	566	185	155	95	408	222
IW9	60	596	279		371	481	198	165	100		220
IW9	180 - 720	596	279	179	568	631	198	165	100	408	262
IW9	960 - 3000	596	279	59	605	666	198	165	100	382	290
IW10	60	735	343		397	507	210	180	110		330
IW10	180 - 3000	735	343	59	631	692	210	180	110	382	408
IW11	60	795	381		414	524	245	200	120		520
IW11	180 - 3000	795	381	59	648	709	245	200	120	382	570
IW115	60	795	381		414	524	245	200	120		481
IW115	480, 600, 720 & 900	795	381	407	791	851	245	200	120	520	770
IW115 WITH SPUR & BEVEL REDUCING UNIT	1440, 1800, 1920, 2160, 2400, 2700, 2880, 3600, 4320 & 5400	795	381	407	865	-	245	200	120	520	790
					893 for IW115 1440:1 & 1920:1						
IW12, IW13	60	972	450		460	610	260	251	166		1000
IW12, IW13	480, 600, 720 & 900	972	450	407	837	896	260	251	166	520	1200
IW12 WITH SPUR & BEVEL REDUCING UNIT	1440, 1800, 1920, 2160, 2400, 2700, 2880, 3600, 4320 & 5400	972	450	407	911	-	260	251	166	520	1220
					939 for IW12 1440:1 & 1920:1						
IW13 WITH SPUR & BEVEL REDUCING UNIT	1440, 1800, 1920, 2160, 2400, 2700, 2880, 3600, 4320 & 5400	972	450	407	939	-	260	251	166	520	1220

All dimensions in millimetres.

Mounting Options

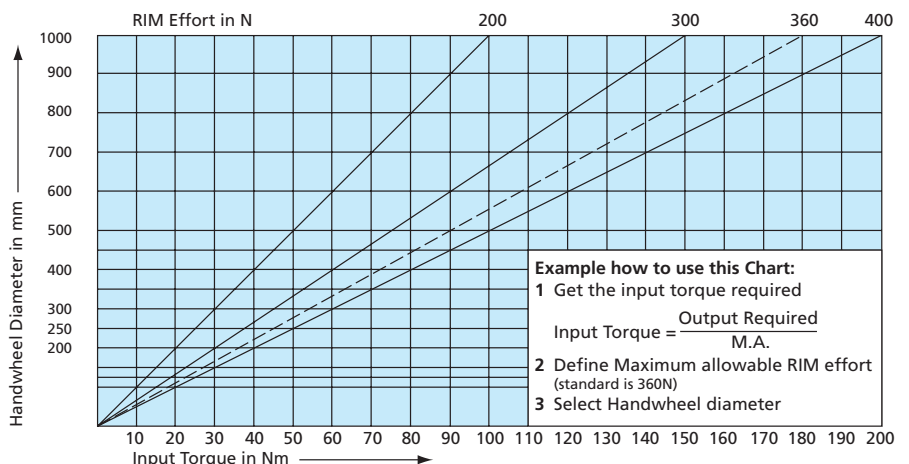
Gearbox	Max Bore Rectangle Key BS4235	Max Square Bore AF	ISO Flange Standard Baseplate	ISO Flange Filled Baseplate	ISO Flange Wafer Baseplate	Filled Baseplate Thickness	Wafer Baseplate Thickness
IW3	45.0	36.0	F10 - F12	F14	F16	12	26
IW4	64.0	51.0	F12- F14	---	F16	---	25
IW5, IW52	76.0	62.0	F14 - F16	F25	F25	10	36
IW6, IW62, IW63	102.0	83.3	F16 - F25	F30	F30	0	23
IW7, IW72	136.0	108.8	F25 - F30	F25 - F30	F35	10	31
IW8, IW82	157.0	122.9	F25 - F35	---	F40 - F48	---	42
IW9	178.0	132.1	F30 - F35 - F40	F30 - F35 - F40	F48	0	27
IW10	203.0	152.6	F35 - F40	F35 - F40 - F48	F60	0	32
IW11, IW115	203.0	142.0	F35 - F40 - F48	F60	---	0	---
IW12, IW13	272.0	180.0	F40	---	---	---	---
IW12, IW13	305.0	229.0	F48 - F60	---	---	---	---



'F' Type handwheel

Dimensions

Type	ØH	K	N
F200	200	75.5	3
F300	300	100.5	3
F400	400	100.5	4
F500	500	100.5	4
F600	600	100.5	4
F700	700	100.5	6
F800	800	100.5	6
F900	900	100.5	6
F1000	1000	100.5	6
F1100	1100	100.5	6
F1200	1200	100.5	8



Gearbox Selection Chart

Gearbox	Ratio							Manual Output Torque (Nm)	Motorised Output Torque (Nm)	Maximum Motorised Input Torque (Nm)							Mechanical Advantage ±10%									
IW3	70							1060	813	35								23								
IW3	40							1630	1085	72								15								
IW4	70							2650	2034	88								23								
IW4	140							2850	2190	50								44								
IW4	210	280	350	420				2950	2264	34	26	21	17					66	88	110	132					
IW4	40	80						3660	2440	163	84							15	29							
IW4	120	160	200					3930	2617	61	46	37						43	57	71						
IW4	240							4070	2712	32								86								
IW5	70							4410	3390	147								23								
IW5	140	210	280	350	420			4820	3701	84	56	42	34	28				44	66	88	110	132				
IW5	40							6100	4067	239								17								
IW5	80	120	160	200	240			6670	4447	139	93	68	55	46				32	48	65	81	97				
IW52	40							7300	4867	286								17								
IW52	80	120	160	200	240			8000	5334	167	111	82	66	55				32	48	65	81	97				
IW6	70							10580	8135	354								23								
IW6	140	210						12060	9274	211	141							44	66							
IW6	280	350	420					13000	9924	113	90	75						88	110	132						
IW62	70							12540	NA	NA								23								
IW62	140	210						14300	NA	NA								44	66							
IW62	280	350	420					15300	NA	NA								88	110	132						
IW63	70							NA	9650	420								23								
IW63	140	210	280	350	420			NA	11000	250	167	125	100	83				44	66	88	110	132				
IW7	60	120	180					17630	13558	542	282	191						25	48	71						
IW7	240	360	480	540	720			20000	15253	161	107	81	71	54				95	142	189	214	285				
IW72	60	120	180	240	360	480	540	720	26000	20000	800	417	282	211	141	106	93	70	25	48	71	95	142	189	214	285
IW8	60								31730	24404	976							25								
IW8	120	180	240	360	480	540	720		34000	26031	542	367	274	183	138	122	91	48	71	95	142	189	214	285		
IW82	60								45000	34600	1385							25								
IW82	120	180	240	360	480	540	720		48100	37000	771	521	389	261	196	173	130	48	71	95	142	189	214	285		
IW9	60	180	240	360	480	540	720		63500	48809	1952	687	514	344	258	228	171	25	71	95	142	189	214	285		
IW9	960	1080	1440	2160	2520	3000			67900	52171	137	122	92	61	52	44		380	428	570	855	998	1188			
IW10	60	180	240	360	540	720			84600	65078	2603	917	685	458	304	228		25	71	95	142	214	285			
IW10	960	1080	1440	2160	2520	3000			88130	67790	178	158	119	79	68	57		380	428	570	855	998	1188			
IW11	60	180	240	360	540	720			141000	108464	4339	1528	1142	764	507	381		25	71	95	142	214	285			
IW11	960	1080	1440	2160	2520	3000					285	253	190	127	109	91		380	428	570	855	998	1188			
IW115	60	360	480	600	720	900					5200	1016	714	578	489	381		25	128	182	225	266	341			
IW115	1440	2160	2400	2700					170000	130000	300	191	170	150				434	679	764	869					
IW115	2880	3600	4320	5400							144	112	96	75				905	1159	1358	1738					
IW12	60	360	480	600	720	900					5480	1070	753	609	515	402		25	128	182	225	266	341			
IW12	1440	1800	1920	2160	2400	2700			180000	137000	295	239	221	202	179	158		464	573	619	679	764	869			
IW12	2880	3600	4320	5400							151	118	101	79				905	1159	1358	1738					
IW13	60	360	480	600	720	900					8120	1586	1115	902	763	595		25	128	182	225	266	341			
IW13	1440	1800	1920	2160	2400	2700			264000	203000	438	354	328	299	266	234		464	573	619	679	764	869			
IW13	2880	3600	4320	5400							224	175	149	117				905	1159	1358	1738					

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