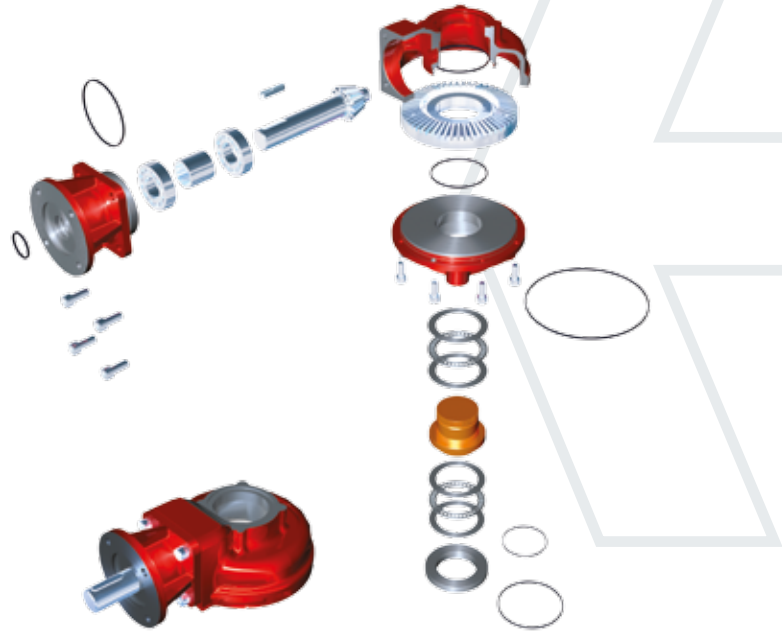


rotork®

Gears



IB Multi-turn Gearbox Series

The IB Series of multi-turn operators has been designed with customer stocking in mind, and features a removable output sleeve to facilitate spindle machining.

Operating temperature normally ranges from -40 °F to 250 °F, although other temperature ranges are available on request.

Standard input and output flanges are to MSSP-102. However, equivalent standards such as ISO and DIN can be supplied.

Application

Rotork Gears series IB operators are multi-turn devices intended for the operation of gate, globe, sluice and penstock valves. These gearboxes are designed for motorised applications.

Environmental Specification

Enclosure IP67 standard suitable for submerged duty up to a depth of 3 feet for 30 minutes.

Enclosure IP68 continuous submerged duty up to a maximum depth of 50 feet.

IB Multi-turn

Cast Iron Housing Gearboxes

Features

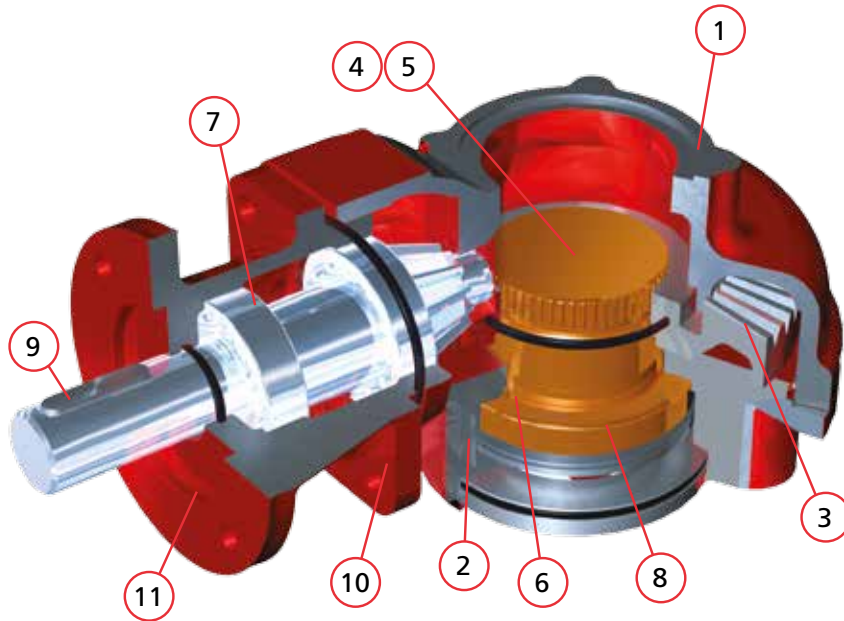
- Totally enclosed gearing
- Grease filled for life and fully sealed
- Comprehensive gear ratios
- Removable output sleeve
- Spur and bevel combinations available
- Input gear mounted on ball bearings
- Various input and output flanges to suit actuators and valves

Options

- Auxiliary spur / bevel input reducers
- High and low temperatures
- Nuclear
- IP68, buried duty
- Flexible extensions
- Dual shaft bevel – 2 or 3 input shafts available at 90° and 180° to each other
- Firesafe to ISO 10497
- Interlock safety system
- Form A, B and C available

IB Multi-turn Cast Iron Housing Gearboxes

DSB - Dual Shaft Bevel



180° version



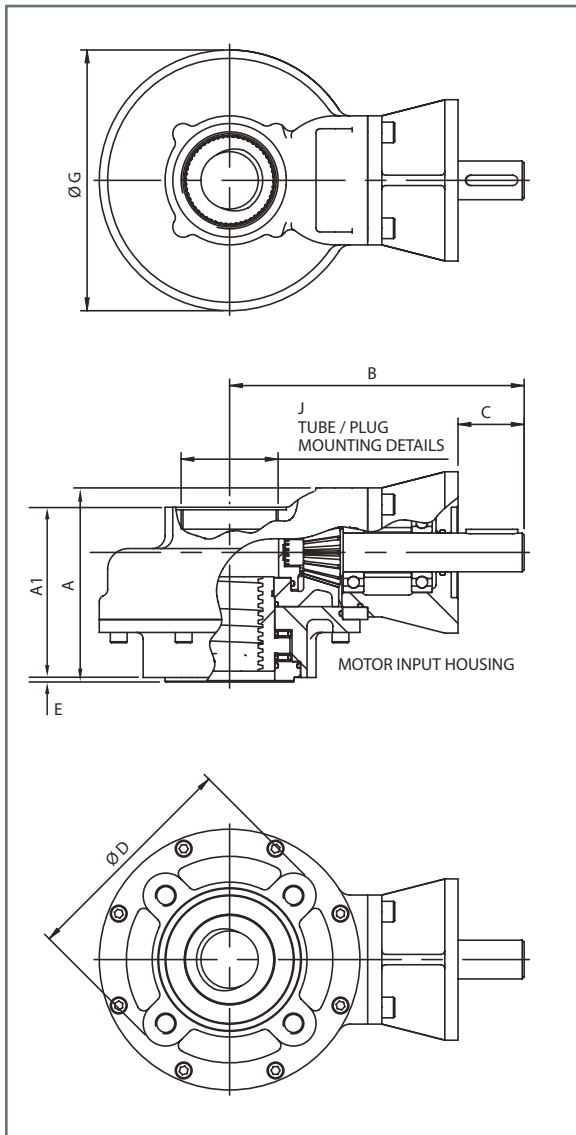
90° version

90° & 180° DSB available for IB4 to IB11.
180° DSB available for IB12 to IB14.

Material Specification for Rotork Gear IB Series of BEVEL Gear Valve Operators

No.	Description	Material	USA Standard
1	Gearcase	IB2-IB9 Cast Iron IB10-IB14 SG Iron	ASTM A48 35B/40B ASTM A536 65-45-12
2	Baseplate	SG Iron	ASTM A536 65-45-12
3	Gears	SG Iron Steel	AISI/SAE 1010 or 4340
4	Output Sleeve Form B	Steel	ASIS/SAE 1023
5	Output Sleeve Form A	Aluminium Bronze	ASTM B505 C95800
6	Seals	Nitrile Rubber	
7	Input Shaft bearings	Ball Bearings	
8	Output Thrust Bearings	Needle Roller Bearings (with the exception of output size 14 which has Roller Thrust Bearings)	
9	Input Shaft	Steel	AISI/SAE 4340
10	Fasteners	Steel	
11	Input Flange	Cast Iron or SG Iron	ASTM A48 35B/40B or ASTM A536 65-45-12
	Grease	Renolit CL-X2	
	Finish	PE3 Grey Primer (other finishes available on request)	

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

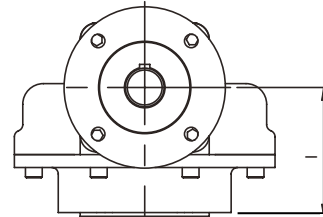


Input Flange Details

Input	Flange Dia. & Thickness	Shaft Dia.	Key Details
F10 & FA10	Ø4.92 x 0.39	0.787 - 0.002	0.236 x 0.236 x 1.575
F14 & FA14	Ø6.89 x 0.59	1.181 - 0.002	0.315 x 0.276 x 1.575
F16 & FA16	Ø8.26 x 0.79	*1.575 - 0.002	**0.473 x 0.315 x 2.166
F25 & FA25	Ø1.18 x 0.79	1.969 - 0.002	0.551 x 0.354 x 2.166

* 1.181 for IB6 & IB7.

** 0.315 x 0.276 x 1.575 for IB6 & IB7.



MOTOR INPUT HOUSING

Gearbox	Max Bore ANSI B17.1		Max Acme Thread (Inch)	Weight (Lbs)
	Square	Rectangle		
IB2	1.5	1.625	1 3/4"	46
IB3	1.875	2	2 7/8"	55
IB4	1.5	1.625	1 3/4"	35
IB5	1.875	2	2 1/8"	44/**49
IB6	1.875	2	2 1/8"	62/**71
IB7	2.5	2.625	2 7/8"	77/**99
IB8	2.5	2.625	2 7/8"	121/**135
IB9	2.75	3	3 3/8"	154/**168
IB10	2.75	3	3 3/8"	231/**240
IB11	3.5	3.75	3 7/8"	276/**298
IB12	3.5	3.75	3 7/8"	379/**397
IB13	4.5	4.625	5"	441/**474
* IB14	4.625	5	5 7/8"	756

*Cast bore 2.4 inch, optional 1.6 inch. **Weight for larger output.

Gearbox	Ratio	A	A1	B	C	ØD	E	ØG	I	J	Input Options	Output Options
IB2	1:1	7.36	3.89	8.98	2.01	4.92	0.12	7.95	4.21	2.5"NPT	FA10 & FA14	FA07 / FA10
IB3	1:1	8.27	4.80	8.98	2.01	6.89	0.16	7.95	5.12	2.5"NPT	FA10 & FA14	FA14
IB4	2, 3, 4 & 6:1	4.88	4.21	8.98	2.01	4.92	0.12	7.95	2.91	2.5"NPT	FA10 & FA14	FA10
IB5	2, 3, 4 & 6:1	5.79	5.12	8.98	2.01	6.89/*8.27	0.16	7.95	3.82	2.5"NPT	FA10 & FA14	FA14, FA16
IB6	3, 4 & 6:1	5.98	5.55	9.88	2.01	6.89/*8.27	0.16/*0.19	10.24	4.01	3.5"NPT	FA10, FA14 & FA16	FA14, FA16
IB7	3, 4 & 6:1	6.69	6.26	9.88	2.01	8.27/*11.14	0.19	10.24/*10.51	4.72	3.5"NPT	FA10, FA14 & FA16	FA16, FA25
IB8	3, 4 & 6:1	7.52	7.52	13.07	2.36	8.27/*11.14	0.19	12.60	5.12	4"NPT	FA14, FA16 & FA25	FA16, FA25
IB9	3, 4 & 6:1	7.76	7.76	13.07	2.36	11.81/*13.78	0.19	12.60/*13.97	5.35	4"NPT	FA14, FA16 & FA25	FA25, FA30
IB10	4 & 6:1	8.50	8.50	14.84	2.36	11.81/*13.78	0.19	16.22	6.10	5"NPT	FA14, FA16 & FA25	FA25, FA30
IB11	4 & 6:1	9.33	9.33	14.84	2.36	13.78/*16.14	0.19	16.22	6.93	5"NPT	FA14, FA16 & FA25	FA30, FA35
IB12	6 & 8:1	9.37	9.37	17.01	2.36	13.78/*16.14	0.19	20.47	6.93	Ø7.67" Bore (4 x M10 on 8.66" PCD)	FA14, FA16 & FA25	FA30, FA35
IB13	6 & 8:1	10.00	10.00	17.01	2.36	16.14/*18.74	0.19/*0.32	20.47	7.55	Ø7.67" Bore (4 x M10 on 8.66" PCD)	FA14, FA16 & FA25	FA35, FA40
IB14	6 & 8:1	14.41	14.41	17.01	2.36	18.74	0.32	20.47	11.97	Ø7.67" Bore (4 x M10 on 8.66" PCD)	FA14, FA16 & FA25	FA40

All dimensions in inches. * Dimension for larger output.

Gearbox Selection Chart

Gearbox	Nominal Ratio	Output Torque (ft-lb)	Max Thrust (lb x 1000)	Mechanical Advantage ±10%*		
IB2	1	225	12	0.85		
IB3	1	225	40	0.85		
IB4	2	225	12	1.70		
IB4	3	4	500	12	2.55	3.40
IB4	6	400	12	5.10		
IB5	2	225	40	1.70		
IB5	3	4	500	40	2.55	3.40
IB5	6	400	40	5.10		
IB6	3	4	1000	40	2.55	3.40
IB6	6	800	40	5.10		
IB7	3	4	1000	60	2.55	3.40
IB7	6	800	60	5.10		
IB8	3	4	1500	60	2.55	3.40
IB8	6	1200	60	5.10		
IB9	3	4	1500	80	2.55	3.40
IB9	6	1200	80	5.10		
IB10	4	6	3000	80	3.40	5.10
IB11	4	6	3000	112.5	3.40	5.10
IB12	6	8	6000	112.5	5.10	6.80
IB13	6	8	6000	187.5	5.10	6.80
IB14	6	8	6000	296.75	5.10	6.80

Static safety factor is 2.

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



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