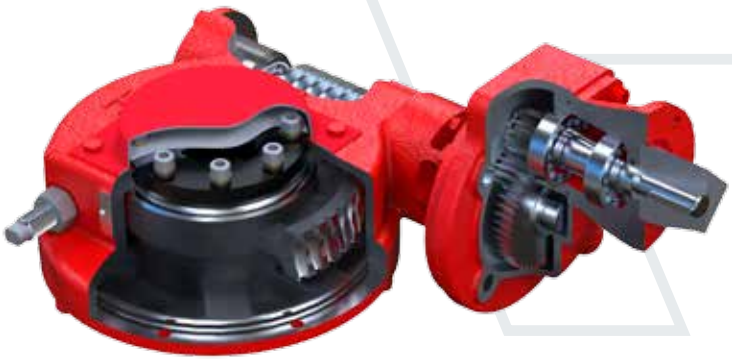
rotork®
Gears



IW Series AWWA

C504 and C517 Quarter-turn
Worm Gear Operator

IW Quarter-turn Worm Gear Operator

The IW AWWA worm gear operators are suitable for manual actuation of AWWA C504 butterfly and C517 plug valves. The range has been designed and comprehensively tested to meet or exceed all aspects of the AWWA C504 & C517 specifications, and are manufactured from high quality and reliable materials. The range includes a gear design for inherent self-locking capability. Test reports are available upon request. All Rotork Gears actuators are made to ISO 9001 standards.

Features

- 90% grease filled for life and fully sealed
- Comprehensive gear ratios combined with a selection of input gear reducers
- Angular contact bearings supporting the worm shaft
- Removable and repositionable drive sleeve
- Self-lubricated drive sleeve
- -40 to 250 °F standard temperature range
- Adjustable travel stops +/- 5 degrees
- Maximum rated output torque - 1.45 million in-lbs
- Maximum stem acceptance diameter - 12" bored with ANSI B17.1 square key
- Above or buried service
- IP68

Options

- Stem extensions
- Padlock kit
- NAMUR & Westlock position indicator mounting kit
- High temperature to +392 °F
- Low temperature to -76 °F
- 2" square nut
- 450 ft-lbs Service
- Mitre box (IB2 for FA10 mounting or IB4 for FA14 mounting) available for buried service applications.

Sizing Chart for AWWA C504-15 & C517-09 with 300 ft lbs Overload Capacity

Unit Size	Ratio	Turns to close	MA ±10%*	Max H/W dia inch	Max handwheel output torque in lbs	Max handwheel output torque ft lbs	Max wrench nut torque in lbs	Max wrench nut torque ft lbs	Rated output torque in lbs	Rated output torque ft lbs	Approx Weight lbs
IW5	48	12	16	48	30733	2561	28813	2401	59034	4920	100
IW5	144	36	46	36	59034	4920	59034	4920	59034	4920	115
IW6	76	19	25	48	48815	4068	45764	3814	106740	8895	150
IW6	228	57	72	36	104342	8695	106740	8895	106740	8895	175
IW7	384	96	120	36	172872	14406	177000	14750	177000	14750	330
IW8	768	192	233	36	300900	25075	300900	25075	300900	25075	545
IW9	1044	261	342	36	492480	41040	562021	46835	562021	46835	755
IW10	1332	333	391	36	563328	46944	668880	55740	668880	55740	995
IW11	1314	329	423	48	811776	67648	761040	63420	1126256	93855	1210
IW12	2374	594	796	48	1451520	120960	1432031	119336	1451520	120960	2650

*The published M.A. is achieved after a few cycles. Other ratios are available.

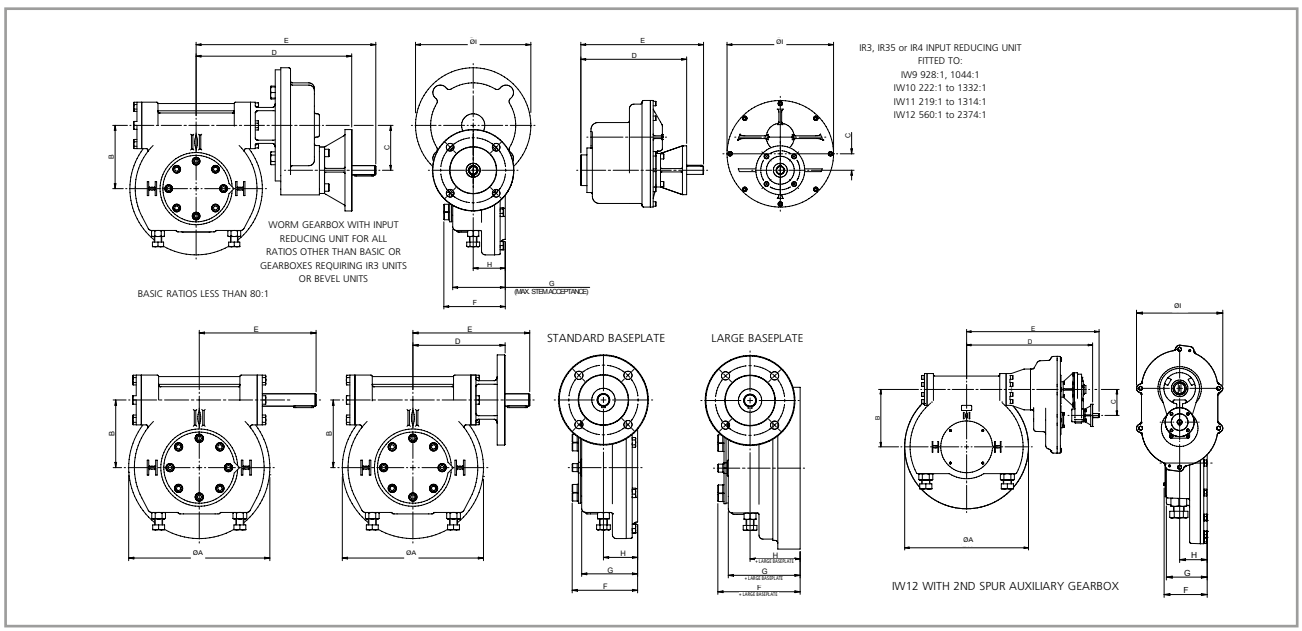
Sizing Chart for AWWA C504-15 & C517-09 with 450 ft lbs Overload Capacity

Unit Size	Ratio	Turns to close	MA ±10%*	Max H/W dia inch	Max handwheel output torque in lbs	Max handwheel output torque ft lbs	Max wrench nut torque in lbs	Max wrench nut torque ft lbs	Rated output torque in lbs	Rated output torque ft lbs	Approx Weight lbs
IW5	48	12	16	48	30733	2561	28813	2401	59034	4920	100
IW5	96	24	30	48	58394	4866	54744	4562	59034	4920	115
IW6	76	19	25	48	48815	4068	45764	3814	106740	8895	150
IW6	152	38	48	48	92749	7729	86952	7246	106740	8895	175
IW7	256	64	80	48	153664	12805	144060	12005	177000	14750	335
IW8	512	128	155	48	298240	24853	279600	23300	300900	25075	545
IW9	696	174	228	48	437760	36480	410400	34200	562021	46835	755
IW10	888	222	261	48	500736	41728	469440	39120	668880	55740	995
IW11	1314	329	423	48	811776	67648	761040	63420	1126256	93855	1210
IW12	2374	594	796	48	1451520	120960	1432031	119336	1451520	120960	2650

*The published M.A. is achieved after a few cycles. Other ratios are available.

Mounting Options

Gearbox	Max Bore ANSI B17.1 Key		Max Square Bore AF	MSS Flange Baseplate	Additional Baseplate Thickness	Max Stem Height
	Square	Rectangular				
IW5	2.75	3	2.375	FA14 - FA16	0	4.48
IW5 LB	2.75	3	2.375	FA25	1.42	5.75
IW6	3.75	3.875	3.25	FA16 - FA25	0	4.45
IW6 LB	3.75	3.875	3.25	FA30	0.91	5.35
IW7	4.875	5.25	4.25	FA25 - FA30	0	5.51
IW7 LB	4.875	5.25	4.25	FA35	1.22	6.73
IW8	5.625	6	4.75	FA25 - FA30 - FA35 - FA40	0	6.30
IW8 LB	5.625	6	4.75	FA40 - FA48	1.49	7.80
IW9	6.5	6.5	5.125	FA30 - FA35 - FA40	0	6.62
IW9 LB	6.5	6.5	5.125	FA40 - FA48	1.06	7.70
IW10	7.375	7.625	6	FA35 - FA40 - FA48	0	7.10
IW10 LB	7.375	7.625	6	FA60	1.26	8.35
IW11	7.375	7.625	6	FA35 - FA40 - FA48	0	7.87
IW11BB	9.875	10.125	7.5	FA40 - FA48	0	7.87
IW11BB LB	9.875	10.125	7.5	FA60	0	7.87
IW12	9.5	10.25	7	FA40 - FA48 - FA60	0	9.88
IW12 (12" Baseplate)	11.75	12	9	FA48 - FA60	0	9.88



Dimensions and Weights

Gearbox	Ratio	ØA	B	C	D	E	F	G	H	ØI	Weight (lb)
IW5	48	11.22	5.35		7.32	9.29	5.20	4.49	2.72		99
IW5	96, 144	11.22	5.35	2.52	12.32	14.33	5.20	4.49	2.72	7.48	117
IW6	76	14.76	7.01		7.32 (7.72 for FA10)	9.29	5.47	4.45	2.76		150
IW6	152, 228	14.76	7.01	2.52	12.32	14.33	5.47	4.45	2.76	7.48	174
IW7	64 to 384	17.72	8.27	4.69*	18.11*	20.51*	6.73	5.51	3.39	11.42*	328*
IW8	64 to 768	20.47	9.69	7.05*	19.88*	22.28*	7.56	6.30	3.90	16.06*	545*
IW9	58 to 1044	23.46	10.98	7.05*	23.82*	26.22*	7.87	6.61	3.90	16.06*	754*
IW10	74 to 1332	28.94	13.50	2.32*	24.84*	27.24*	8.50	7.09	4.33	15.04	996*
IW11 / IW11BB	73 to 1314	31.30	15.00	2.32*	25.51*	27.91*	9.72	7.87	4.72	15.04	1210*
IW12 WITH 2ND SPUR AUXILIARY	70 to 2374	38.27	17.72	9.45*	38.94*	40.91*	10.24	9.88	6.54	20.47	2650*

All dimensions in inches.
*Values listed are maximums and are subject to change based on gearbox configuration and options.

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Keeping the World Flowing

IW Series AWWA

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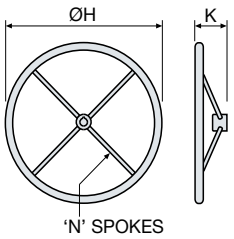
Worm Gear Operator

Material Specification

Component	Material	Specification / Notes
Gearcase	Ductile Iron	ASTM A536 65-45-12
Baseplate	Cast Iron	ASTM A48 35B/40B
Worm Shaft	Steel	ASTM A29 4140
Quadrant	Ductile Iron	ASTM A536 100-70-03
Position Indicator	Steel	AISI 1023
Drive sleeve	Steel	AISI 1023, AISI 1040 or AISI 1055 (All with self-lubricating surface treatment)
Bearings	Steel	Angular Contact
O-Ring seals	Nitrile	
Fasteners	Stainless Steel	ASTM A276 316
Grease	Renolit CL-X2	
Input Shaft	Stainless Steel	ASTM A276 431

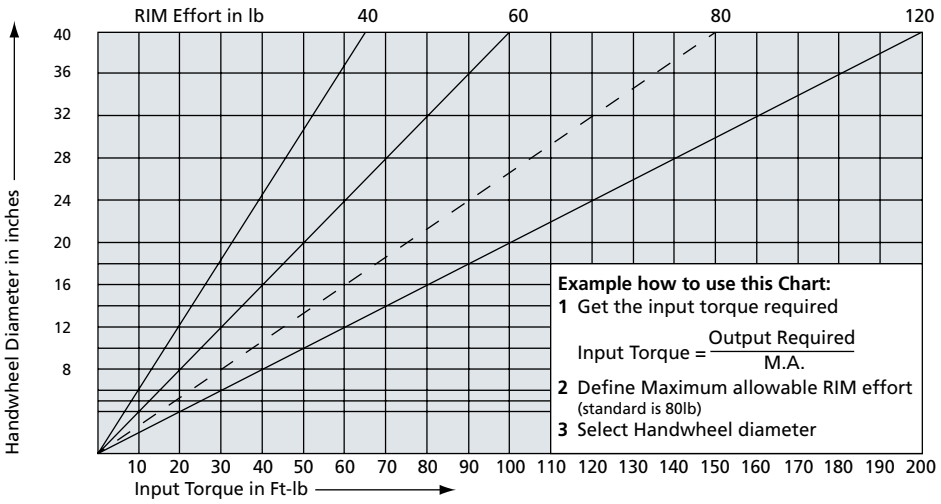
Handwheel Selection Chart



'F' Type handwheel

Dimensions

Type	ØH	K	N
F200	8	2.97	3
F300	12	3.96	3
F400	16	3.96	4
F500	20	3.96	4
F600	24	3.96	4
F700	28	3.96	6
F800	32	3.96	6
F900	36	3.96	6
F1000	40	3.96	6
F1100	44	3.96	6
F1200	48	3.96	8



A full listing of the Rotork sales and service network is available on our website.

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