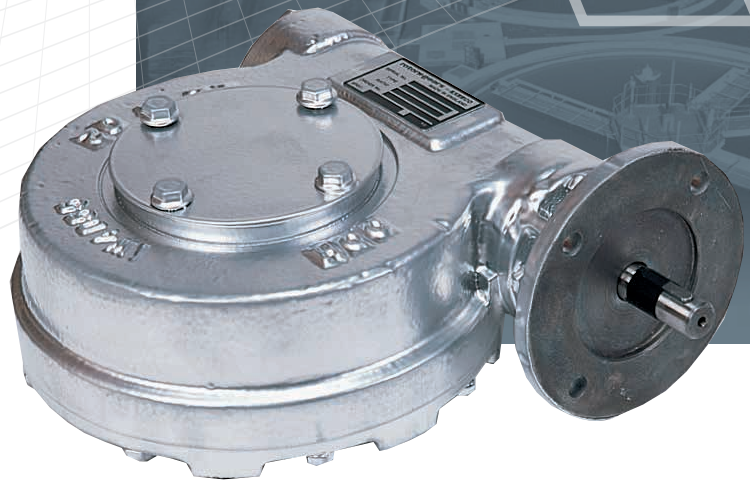


rotork®

Gears

MTW Series

Multi-Turn Worm Gearbox



MTW Multi-Turn Worm Gear Series

MTW range multi-turn worm gear operators are designed to suit valves, dampers and gates requiring irreversibility which is provided by worm gears.

MTW range can be used for multi-turn or part-turn with a travelling nut for operation other than 90 degrees. They feature a full 360 degree output gear without stops which means they are ideally suited for applications where the high ratio of a worm gear is desired but multiple turns are needed.

Typical applications include dampers and river gates. A wide selection of sizes with output torques going up to 162,000 Nm and ratios up to 5760:1 means they are also ideally suited for large high pressure valves where the thrust is taken within the valve.

Features

- Hardened and ground worm shaft.
- Aluminium bronze worm wheel.
- Special grease.
- Totally enclosed gearing.
- Grease filled for life & fully sealed.
- Removable output sleeve.
- Finished with grey primer.

Environmental Specification

- Enclosure: IP67 standard, IP68 optional.
- Temperature: -10 °C to 120 °C.

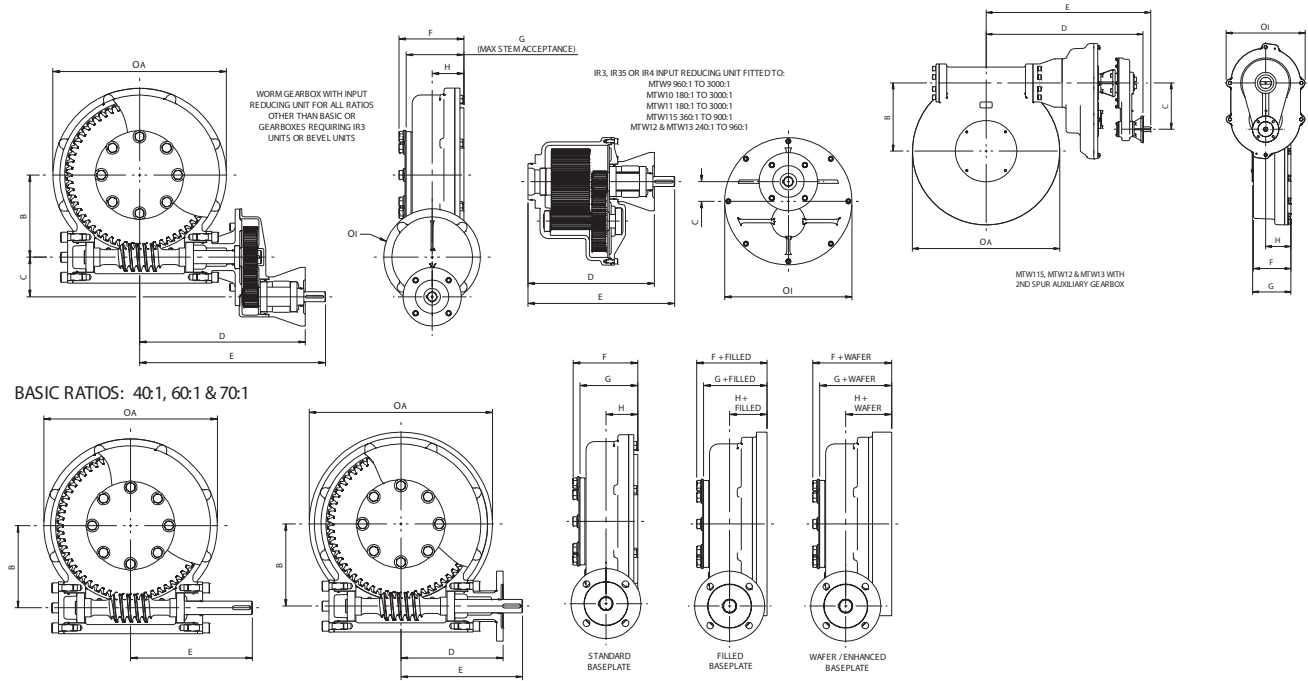
Options

- All types of environment.
- Submersible, buried service, marinised.
- ATEX.
- Limit Switches.
- Lever Arms.
- Flexible Extensions.
- Travel nut.
- Low temperature to -60 °C.

Redefining Flow Control

rotork® Gears

MTW Dimensions



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

Gearbox	Ratio	ØA	B	C	D	E	F	G	H	ØI	Weight (Kg)
MTW3	40,70	170	76		118	158	86	73	45		11
MTW4	40,70	218	102		142	182	106	93	50		22
MTW4	80,120,140,160,210,280	218	102	64	269	320	106	93	50	190	30
MTW4	200,240,350,420	218	102	96	291	342	106	93	50	248	35
MTW5	40,70	285	136		186	236	134	120	65		45
MTW5	80,120,140,160,210,280	285	136	64	313	364	134	120	65	190	53
MTW5	200,240,350,420	285	136	96	335	386	134	120	65	248	58
MTW6	70	375	178		186, 196 for F10/FA10	236	147	130	70		68
MTW6	140,210,280	375	178	64	313	364	147	130	70	190	79
MTW6	350,420	375	178	96	342	393	147	130	70	248	84
MTW7	60	450	210		270	329	181	160	87		120
MTW7	120,180,240,360	450	210	119	460	521	181	160	87	290	152
MTW7	480,540,720	450	210	179	469	530	181	160	87	408	162
MTW8	60	520	246		306	365	194	170	95		180
MTW8	120,180,240,360	520	246	119	496	557	194	170	95	290	212
MTW8	480,540,720	520	246	179	505	566	194	170	95	408	222
MTW9	60	596	279		371	481	206	182	100		220
MTW9	180,240,360,540,720	596	279	179	568	631	206	182	100	408	262
MTW9	960,1080,1440,2160,2347,2520,2940	596	279	59	605	666	206	182	100	382	290
MTW10	60	735	343		397	507	222	200	110		330
MTW10	180,240,360,540,720,960,1080,1440,2160,2347,2520,2940	735	343	59	631	692	222	200	110	382	408
MTW11	60	795	381		414	524	222	200	110		520
MTW11	180,240,360,540,720,960,1080,1440,2160,2347,2520,2940	795	381	59	648	709	222	200	110	382	570
MTW12	60	972	450		460	610	252	246	166		1050
MTW12	240,360,480,610,720,960,1290,1530,1820,2040,2490,2880,3640,3940,4320,5760	972	450	450	851	1039	252	246	166	520	1360
MTW13	60	972	450		460	610	252	246	166		1050
MTW13	240,360,480,610,720,960,1290,1530,1820,2040,2490,2880,3640,3940,4320,5760	972	450	450	851	1039	252	246	166	520	1360

All dimensions in millimetres.

Redefining Flow Control

MTW Series

Multi-Turn Worm Gearbox

Material specification for MTW Multi-turn Worm Gearbox

Component	Material	UK Standard
Gearcase (MTW3 to MTW8)	Cast Iron	BS1452 grade 250
Gearcase (MTW9 - MTW13)	SG Iron	BS2789 grade 420/12
Baseplate	Cast Iron	BS1452 grade 250
End cap	Cast Iron or Steel	BS1452 grade 250 or BS970 grade 070M20
Actuator Flange	Cast Iron or SG Iron	BS1561 EN-GJL-250 or BS1563 EN-GJS-400-15
Indicator Plate	Steel	BS970 grade 070M20
Wormwheel	Aluminium Bronze	BS1400 grade AB2
Wormshaft	Steel	BS970 grade 045M10
O Rings	Synthetic Rubber	
Fixing Screws	HT Steel	BS3692 and BS4168
Worm Shaft Bearings	Angular Contact Ball Bearings	
Output Sleeve (MTW3 to MTW5)	Steel	BS970 grade 070M20
Output Sleeve (MTW6 to MTW9)	Steel	BS970 grade 080M40
Output Sleeve (MTW10 to MTW11)	Steel	BS970 grade 070M55
Grease	Renolit Eplith 00	

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
MTW3	45.0	36.0	F10 - F12	F14	F10 - F12 - F14 - F16	12	26
MTW4	64.0	51.0	F12- F14	-	F12 - F14 - F16	-	25
MTW5	76.0	62.0	F14 - F16	F14 - F16 - F25	F16 - F25	10	36
MTW6	102.0	83.3	F16 - F25	F16 - F25 - F30	F16 - F30	0	23
MTW7	136.0	108.8	F25 - F30	F25 - F30	F25 - F30 - F35	10	31
MTW8	157.0	122.9	F25 - F30 - F35	F25 - F30 - F35	F40 - F48	0	38
MTW9	178.0	132.1	F30 - F35 - F40	F30 - F35 - F40	F48	0	27
MTW10	203.0	152.6	F35 - F40	F35 - F40 - F48	F40 - F48 - F60	0	32
MTW11	203.0	142.0	F30 - F35- F40 - F48	F40 - F48 - F60	-	0	-
MTW12	305.0	229.0	F40 - F48 - F60	-	-	-	-
MTW13	305.0	229.0	F40 - F48 - F60	-	-	-	-

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

MTW Multi-Turn Worm Gearbox sizing chart

Gearbox	Ratio							Output Torque (Nm)	Max Input Torque (Nm)							**Mechanical Advantage ±10%						
	40	70	80	120	140	160	200		47	31	61	27	18	15	15	23	29	71	110	132		
MTW3	40	70						712	47	31					15	23						
MTW4	40	70	80					1763	118	77	61				15	23	29					
MTW4	120	140	160	200				1898	44	43	33	27			43	44	57	71				
MTW4	210	240	280	350	420			1966	30	23	22	18	15		66	86	88	110	132			
MTW5	40	70						2847	167	124					17	23						
MTW5	80	120	140	160	200			3118	97	65	71	48	38		32	48	44	65	81			
	210	240	280	350	420				47	32	35	28	24		66	97	88	110	132			
MTW6	70							6779	295						23							
MTW6	140	210						7728	176	117					44	66						
MTW6	280	350	420					8270	94	75	63				88	110	132					
MTW7	60	120	180					10846	434	226	153				25	48	71					
MTW7	240	360	480	540	720			12202	128	86	65	57	43		95	142	189	214	285			
MTW8	60							20337	813						25							
MTW8	120	180	240	360	480	540	720	21693	452	306	228	153	115	101	76	48	71	95	142	189	214	285
MTW9	60	180	240	360	540	720		39318	1573	554	414	277	184	138		25	71	95	142	214	285	
MTW9	960	1080	1440	2160	2347	2520	2940	42030	111	98	74	49	48	47	38	380	428	570	855	875	900	1100
MTW10	60	180	240	360	540	720		52198	2088	735	549	368	244	183		25	71	95	142	214	285	
MTW10	960	1080	1440	2160	2347	2520	2940	54232	143	127	95	63	62	60	49	380	428	570	855	875	900	1100
MTW11	60	180	240	360				81348	3254	1146	856	573				25	71	95	142			
MTW11	540	720	960	1080				88127	412	309	232	206				214	285	380	428			
MTW11	1440	2160	2347	2520	2940			93550	164	109	107	104	85			570	855	875	900	1100		
MTW12	60							110000	4400							25						
MTW12/IR4	240	360	480	610	720	960		110000	1222	815	608	482	406	305		90	135	181	228	271	361	
MTW12/IR4/AS5	1290	1530	1820	2040	2490			110000	253	214	179	160	131		434	514	616	686	842			
	2880	3640	3940	4320	5760				113	89	83	75	56		975	1233	1332	1462	1949			
MTW13	60							162000	6480							25						
MTW13/IR4	240	360	480	610	720	960		162000	1800	1200	895	711	598	449		90	135	181	228	271	361	
MTW13/IR4/AS6	1210	1440	1820	1920	2430			162000	394	333	263	249	197		411	487	616	650	822			
	2880	3640	3840	4860	5760				166	131	125	99	83		975	1233	1300	1644	1949			

*For handwind only The rated output torques can be increased by 1.3 for derivatives of 60:1 ratios.

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

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