

WedgeRock RW PRODUCT SHEET

700009 Rev-11

HIGH PERFORMANCE DOUBLE-ENVELOPING WORM GEARBOX



Features, Options & Configurability

- | | |
|--|--|
| <ul style="list-style-type: none"> • Capable of reducing turns to cycle or time to close by almost 3X over conventional solutions due to increased efficiency and wide range of ratio options. • Standard and high efficiency configurations available • Optionally Self-Locking • Mechanical stops for quarter turn rotation, $\pm 5^\circ$ adjustment at each stop • 90% filled, Greased for life, no maintenance • Designed and tested to IP68 • Input lockout • Input shaft options: Parallel or Perpendicular to output • Available Certifications: <ul style="list-style-type: none"> ○ BABA and other USA domestic ○ AWWA Compliant ○ ATEX Compliant | <ul style="list-style-type: none"> • Modular design accommodates; <ul style="list-style-type: none"> ○ Quarter-Turn ○ Multi-Turn ○ Rising Stem ○ Sandwich Style Override <ul style="list-style-type: none"> ▪ Declutchable ▪ Lost Motion ○ Subsea <ul style="list-style-type: none"> ▪ Deep water ▪ Shallow water • Motorized and Manual input options • Buried service prep • Risers and adaptors • Temperature range and materials configured per application • Machined for direct mount <ul style="list-style-type: none"> ○ Standard Flanges to MSS SP101/MSS SP102 & ISO 5211/ISO 5210 ○ Custom Bolt Patterns Available |
|--|--|

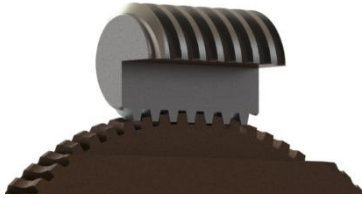
PURPOSE ENGINEERED - QUALITY MANUFACTURED - PERFORMANCE TESTED

The information in this document is subject to change without notice. Updated documents can be requested or obtained from our website.

WedgeRock RW SERIES

PERFORMANCE

Double enveloping design for **STRENGTH** – Superior shock load capacity



Cylindrical Conventional Wormgear



Double Enveloping WedgeRock Wormgear

Four Starts for more **EFFICIENCY** – Operate faster and with less effort



Single Start Standard Efficiency Wormgear, Inherently Self-Locking



Multi Start High Efficiency Wormgear Self-Locking Using Patented PolyLock Clutch

Motorized Application, Optimized **Power** Consumption

	Required Gearbox Rating	Gearbox Ratio	Gearbox Mechanical Advantage	Gearbox Efficiency	Turns to Close	Input Torque Required	Power Required
	IN-LBS (NM)					IN-LBS (NM)	HP (KW)
Standard Efficiency Wormgear	225,000 (25,425)	329	76	23%	82	2973 (336)	4.7 (3.5)
WedgeRock High Efficiency Wormgear	225,000 (25,425)	341	212	62%	85	1061 (120)	1.7 (1.3)

Motorized Application, Optimized **Time** to Operate

	Required Gearbox Rating	Gearbox Ratio	Gearbox Mechanical Advantage	Gearbox Efficiency	Turns to Close	Time to Operate 1/4 Turn @ 100 RPM
	IN-LBS (NM)					Seconds
Standard Efficiency Wormgear	225,000 (25,425)	768	177	23%	192	115
WedgeRock High Efficiency Wormgear	225,000 (25,425)	287	178	62%	72	43

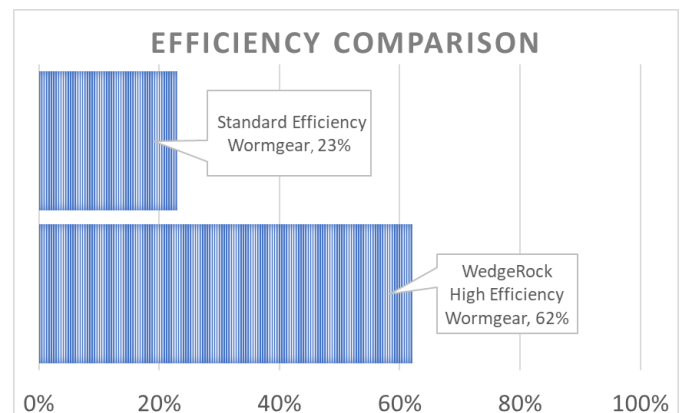
Manual Application, Optimized **Turns** to Operate

	Required Gearbox Rating	Gearbox Ratio	Gearbox Mechanical Advantage	Gearbox Efficiency	Handwheel Diameter	Turns to Operate
	IN-LBS (NM)				IN (MM)	
Standard Efficiency Wormgear	225,000 (25,425)	1024	234	23%	36 (914)	256
WedgeRock High Efficiency Wormgear	225,000 (25,425)	287	178	62%	36 (914)	72

Value Proposition

Conventional wormgears use inefficient gear design as self-locking feature. WedgeRock uses a patented mechanical bidirectional clutch called PolyLock™ making our high efficiency wormgears self-locking. The PolyLock clutch allows torque from input to act on drivetrain in clockwise or counterclockwise direction while providing mechanical brake force if backdriving torque is applied to the output by valve or other actuated device.

Motorized application can be optimized using WedgeRock wormgears, for faster close times, or reducing electric actuator frame size. Manual applications can be optimized to reduce number of turns to operate extending manually operated valve size, reducing installation and maintenance cost.



WedgeRock RW SERIES

GENERAL OVERVIEW



MANUAL AND MOTORIZED OPERATION

MODEL	TORQUE RATING			DIRECT DRIVE			SPLINED DRIVER			MAX STEM ENGAGEMENT	STANDARD FLANGE	FLARED FLANGE
	200 CYCLES 1.5X S.F. ²	1,000 CYCLES 2.0X S.F. ²	10,000 CYCLES 2.5X S.F. ²	MAX BORE W/ SQUARE KEY PER ANSI B17.1	MAX BORE W/ RECTANGULAR KEY PER ANSI B17.1	MAX CIRCUMSCRIBED DIAMETER OF DRIVE FEATURE	MAX BORE W/ SQUARE KEY PER ANSI B17.1	MAX BORE W/ RECTANGULAR KEY PER ANSI B17.1	MAX CIRCUMSCRIBED DIAMETER OF DRIVE FEATURE			
	IN-LBS (NM)	IN-LBS (NM)	IN-LBS (NM)	IN (MM)	IN (MM)	IN (MM)	IN (MM)	IN (MM)	IN (MM)		MIN MAX	
RW8	50,667 (5,725)	38,000 (4,294)	30,400 (3,435)	2.75 (69.9)	2.75 (69.9)	3.53 (89.7)	2.38 (60.3)	2.63 (66.7)	3.10 (78.7)	5.8 (147)	F14 ¹ /FA14 ¹ F16/FA19	
RW10	100,000 (11,300)	75,000 (8,475)	60,000 (6,780)	3.50 (88.9)	3.75 (95.3)	4.56 (115.9)	2.88 (73.0)	3.13 (79.4)	3.65 (92.7)	6.7 (170)	F16 ¹ /FA16 ¹ F25/FA25	F35/FA35
RW12	180,000 (20,340)	135,000 (15,255)	108,000 (12,204)	4.25 (108.0)	4.50 (114.3)	5.28 (134.0)	3.50 (88.9)	3.75 (95.3)	4.39 (111.5)	7.8 (198)	F25/FA19 ¹ F35/FA36	F40/FA40
RW14	300,000 (33,900)	225,000 (25,425)	180,000 (20,340)	6.25 (158.8)	6.50 (165.1)	7.78 (197.5)	5.50 (139.7)	5.75 (146.1)	6.87 (174.5)	8.4 (213)	F25 ¹ /FA25 ¹ F40/FA40	F48/FA48
RW18	533,333 (60,267)	400,000 (45,200)	320,000 (36,160)	7.50 (190.5)	7.75 (196.9)	9.25 (235.0)	6.25 (158.8)	6.50 (165.1)	7.77 (197.4)	9.6 (244)	F30 ¹ /FA30 ¹ F48/FA48	F60/FA60
RW22	1,000,000 (113,000)	750,000 (84,750)	600,000 (67,800)	8.00 (203.2)	8.50 (215.9)	10.25 (260.4)	6.50 (165.1)	6.75 (171.5)	8.24 (209.3)	11.9 (302)	F35 ¹ /FA35 ¹ F60/FA60	
RW30	1,800,000 (203,400)	1,350,000 (152,550)	1,080,000 (122,040)	9.75 (247.7)	10.50 (266.7)	12.25 (311.2)	8.00 (203.2)	8.50 (215.9)	9.94 (252.5)	13.8 (351)	F48 ¹ /FA48 ¹ F80/FA80	
RW34	3,000,000 (339,000)	2,250,000 (254,250)	1,800,000 (203,400)	11.50 (292.1)	12.75 (323.9)	14.75 (374.7)	9.75 (247.7)	10.50 (266.7)	12.26 (311.4)	14.0 (356)	F48 ¹ /FA48 ¹ F80/FA80	
RW42	6,666,667 (753,333)	5,000,000 (565,000)	4,000,000 (452,000)	14.00 (355.6)	15.00 (381.0)	17.49 (444.1)	12.38 (314.3)	13.00 (330.2)	15.36 (390.1)	16.0 (406)	F60 ¹ /FA60 ¹ F100/FA100	
RW52	18,666,667 (2,109,333)	14,000,000 (1,582,000)	11,200,000 (1,265,600)	20.00 (508.0)	21.00 (533.4)	24.00 (609.6)	18.00 (457.2)	19.00 (482.6)	21.50 (546.1)	22.0 (559)	F80 ¹ /FA80 ¹ F100/FA100	

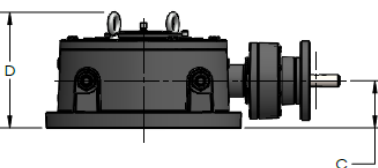
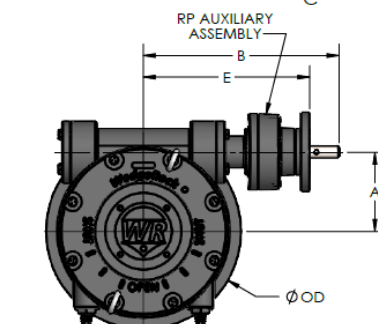
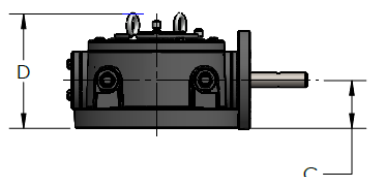
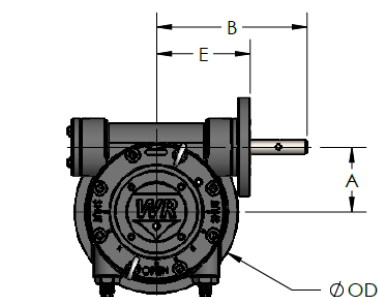
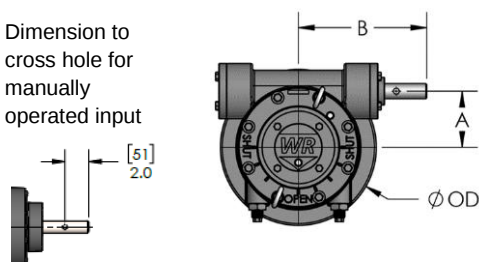
1) Spigot diameter does not fit on standard flange

2) Published safety factor for gearbox design. Application should be sized to published torque rating and include any application safety factor

WedgeRock RW

ENVELOPE DIMENSIONS

Dimension to cross hole for manually operated input



RW FLAREBASE DIMENSIONS AND WEIGHT			
MODEL	OD IN (MM)	+ C + D IN (MM)	+ WEIGHT LBS (KG)
RW10	18.3 (464)	1.38 (35)	51.60 (23)
RW12	19.4 (493)	0.30 (8)	44.82 (20)
RW14	22.0 (559)	0.63 (16)	84.80 (38)
RW18	27.0 (686)	0.63 (16)	127.00 (58)

RW ENVELOPE DIMENSIONS AND WEIGHT

MODEL	A IN (MM)	B IN (MM)	C IN (MM)	D IN (MM)	E IN (MM)	OD IN (MM)	WEIGHT LBS (KG)
RW8	3.7 (94)	8.4 (214)	2.4 (62)	6.6 (167)	6.7 (171)	10.2 (258)	73 (33)
RW8 + RP5	3.7 (94)	15.5 (393)	2.4 (62)	6.6 (167)	12.5 (318)	10.2 (258)	103 (47)
RW10	4.6 (116)	9.3 (236)	3.4 (86)	8.1 (205)	7.3 (185)	11.5 (292)	126 (57)
RW10 + RP5	4.6 (116)	16.0 (407)	3.4 (86)	8.1 (205)	13.5 (342)	11.5 (292)	157 (71)
RW12	6.9 (176)	13.6 (345)	4.1 (105)	10.1 (257)	10.1 (257)	17.1 (434)	262 (119)
RW12 + RP5	6.9 (176)	17.2 (436)	4.1 (105)	10.1 (257)	14.3 (362)	17.1 (434)	296 (134)
RW14	8.4 (213)	14.1 (358)	4.2 (107)	10.7 (272)	10.6 (269)	19.3 (489)	372 (169)
RW14 + RP6	8.4 (213)	20.4 (517)	4.2 (107)	10.7 (272)	17.8 (452)	19.3 (489)	437 (198)
RW14 + RP6 + RP5	8.4 (213)	21.1 (535)	4.2 (107)	10.7 (272)	18.5 (470)	19.3 (489)	440 (199)
RW18	10.3 (261)	16.5 (419)	5.0 (127)	12.6 (319)	13.0 (330)	24.4 (620)	696 (315)
RW18 + RP6	10.3 (261)	22.8 (578)	5.0 (127)	12.6 (319)	20.2 (513)	24.4 (620)	739 (335)
RW18 + RP6 + RP5	10.3 (261)	23.5 (596)	5.0 (127)	12.6 (319)	20.9 (531)	24.4 (620)	742 (336)
RW22	13.0 (329)	19.0 (483)	6.0 (152)	14.9 (378)	15.0 (381)	28.0 (711)	1193 (541)
RW22 + RP8	13.0 (329)	28.1 (713)	6.0 (152)	14.9 (378)	25.1 (637)	28.0 (711)	1299 (589)
RW22 + RP8 + RP6	13.0 (329)	29.2 (741)	6.0 (152)	14.9 (378)	26.6 (675)	28.0 (711)	1359 (616)
RW30	16.4 (415)	24.6 (625)	6.5 (165)	17.2 (437)	20.1 (511)	36.0 (915)	2093 (949)
RW30 + RP8	16.4 (415)	33.2 (842)	6.5 (165)	17.2 (437)	30.2 (766)	36.0 (915)	2199 (997)
RW30 + RP8 + RP6	16.4 (415)	34.3 (870)	6.5 (165)	17.2 (437)	31.7 (805)	36.0 (915)	2218 (1,006)
RW30 + RP8 + RP6 + RP5	16.4 (415)	35.0 (888)	6.5 (165)	17.2 (437)	32.4 (823)	36.0 (915)	2221 (1,007)
RW34	17.9 (455)	39.3 (998)	7.0 (178)	18.3 (465)	34.3 (871)	38.4 (975)	2590 (1,175)
RW34 + RP9	17.9 (455)	36.1 (918)	7.0 (178)	18.3 (465)	32.6 (829)	38.4 (975)	2696 (1,223)
RW34 + RP9 + RP6	17.9 (455)	39.1 (993)	7.0 (178)	18.3 (465)	35.2 (895)	38.4 (975)	2767 (1,255)
RW34 + RP9 + RP6 + RP5	17.9 (455)	38.5 (978)	7.0 (178)	18.3 (465)	35.9 (913)	38.4 (975)	2770 (1,256)
RW42	22.3 (566)	33.3 (845)	7.5 (191)	20.3 (516)	27.3 (693)	60.0 (1,524)	5925 (2,688)
RW42 + RP10	22.3 (566)	42.8 (1,087)	7.5 (191)	20.3 (516)	38.8 (985)	60.0 (1,524)	6300 (2,858)
RW42 + RP10 + RP8	22.3 (566)	47.2 (1,199)	7.5 (191)	20.3 (516)	44.2 (1,123)	60.0 (1,524)	6321 (2,867)
RW42 + RP10 + RP8 + RP6	22.3 (566)	48.3 (1,227)	7.5 (191)	20.3 (516)	45.7 (1,162)	60.0 (1,524)	6340 (2,876)
RW52	29.9 (758)	36.0 (914)	10.9 (276)	28.4 (720)	28.0 (711)	60.0 (1,524)	9000 (4,082)
RW52 + RP14	29.9 (758)	48.5 (1,232)	10.9 (276)	28.4 (720)	43.5 (1,105)	60.0 (1,524)	9500 (4,309)
RW52 + RP14 + RP9	29.9 (758)	52.8 (1,340)	10.9 (276)	28.4 (720)	49.3 (1,251)	60.0 (1,524)	9575 (4,343)
RW52 + RP14 + RP9 + RP6	29.9 (758)	54.4 (1,382)	10.9 (276)	28.4 (720)	51.9 (1,317)	60.0 (1,524)	9587 (4,348)

Dimensions represent most common configurations. Other dimensional configurations possible.

Weight may vary with final configuration.

WedgeRock RP SERIES

AUXILIARY PLANETARY GEAR ASSEMBLIES



RP SERIES PLANETARY REDUCTION GEAR			
MODEL	INPUT SHAFT DIAMETER (KEY PER ANSI B17.1)	MIN STANDARD INPUT FLANGE	MAX STANDARD INPUT FLANGE
	IN (MM)		
RP5	1.00 / 1.50 (25.4 / 38.1)	F/FA10	F/FA16
RP6	1.00 / 1.50 (25.4 / 38.1)	F/FA14	F/FA16
RP8	1.50 / 2.00 (38.1 / 50.8)	F/FA16	F/FA25
RP9	1.50 / 2.00 (38.1 / 50.8)	F/FA16	F/FA25
RP10	3.00 (76.2)	F25/FA19	F/FA35
RP12	3.50 (88.9)	F/FA25	F/FA40
RP14	4.00 (101.6)	F/FA30	F/FA48

COMMON RP RATIOS FOR RP5 AND RP6

RATIO ¹ [MOST COMMON]	2.50	[2.60]	2.71	2.78	2.85	[3.00]	3.18	[3.29]	3.40	3.67	4.00	[4.20]	4.43	[5.00]	5.80	[6.33]	[9.00]
MECHANICAL ADVANTAGE ² [MOST COMMON]	2.4	[2.5]	2.6	2.7	2.8	[2.9]	3.1	[3.2]	3.3	3.6	3.9	[4.1]	4.3	[4.9]	5.6	[6.1]	[8.7]

COMMON RP RATIOS FOR RP8 AND LARGER

RATIO ¹ [MOST COMMON]	[2.5]	2.60	2.71	2.78 [^]	2.85	[3.00]	3.18	3.29 [^]	3.40	3.67	[4.00]	4.20 [^]	4.43	[5.00]	5.80 [^]	6.33 ^{^^}	9.00 ^{^^^}
MECHANICAL ADVANTAGE ² [MOST COMMON]	[2.4]	2.5	2.6	2.7	2.8	[2.9]	3.1	3.2	3.3	3.6	[3.9]	4.1	4.3	[4.9]	5.6	6.1	8.7

[^] Catalog torque rating to be reduced by 20% using this ratio

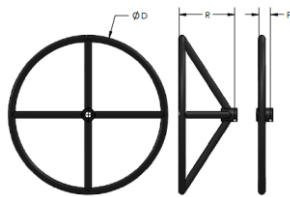
^{^^} Catalog torque rating to be reduced by 40% using this ratio

^{^^^} Catalog torque rating to be reduced by 60% using this ratio

1) Additional ratios available upon request.

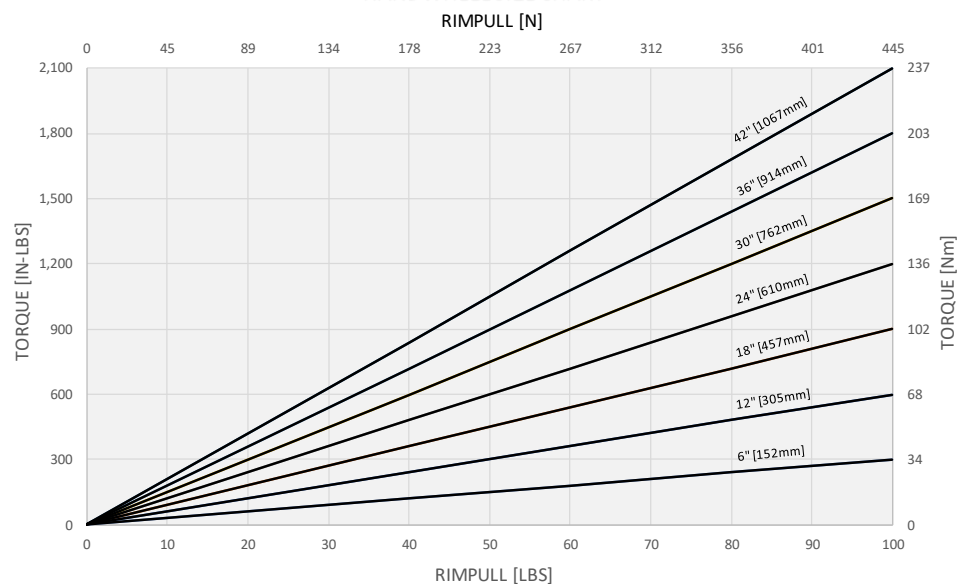
2) Mechanical advantage can fall short of published value by 10% until gearbox has worn in. Wear in should occur within 10 cycles.

WedgeRock HANDWHEELS



D	R	F
IN	IN	IN
(MM)	(MM)	(MM)
6	5.25	1.75
(152)	(133)	(44)
12	5.25	1.75
(305)	(133)	(44)
18	6.25	1.75
(457)	(159)	(44)
24	8.38	1.75
(610)	(213)	(44)
30	10.00	1.75
(762)	(254)	(44)
36	9.63	1.75
(914)	(244)	(44)
42	10.13	1.75
(1,067)	(257)	(44)

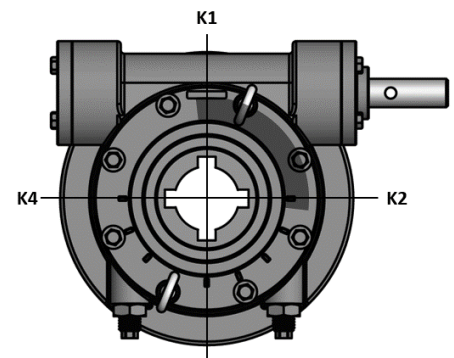
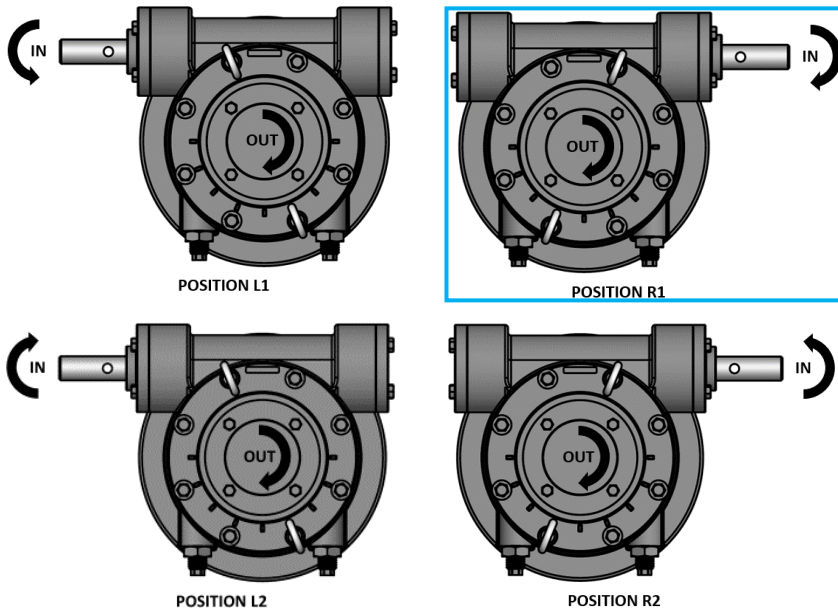
HANDWHEEL SIZE CHART



WedgeRock RW SERIES

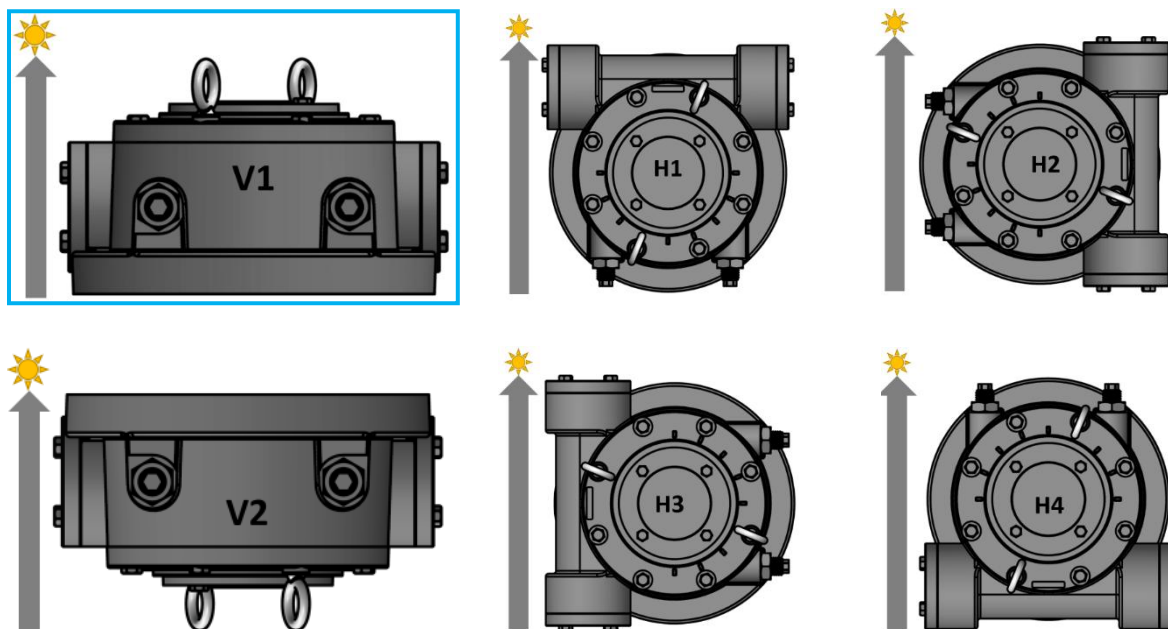
INPUT SHAFT PROJECTION [STANDARD]

KEYWAY POSITION



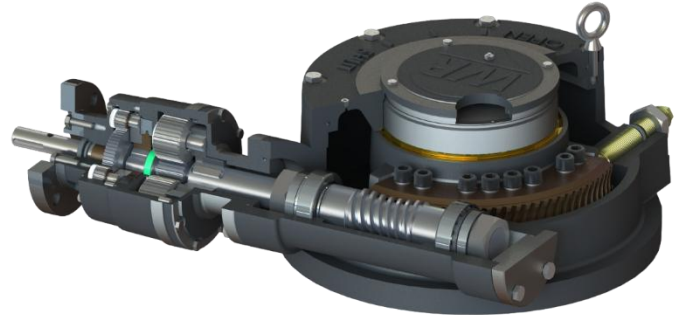
TOP VIEW, QUADRANT IN CLOSED POSITION AS SHOWN

GEAR OPERATOR ORIENTATION TO ALLOW FOR PROPER VENT CONFIGURATION [STANDARD]



WedgeRock RW SERIES

SERVICE CONDITIONS



STANDARD COMPONENT MATERIAL SELECTION FOR SPECIFIED ENVIRONMENTS

COMPONENT	SERVICE CONDITION					
	STANDARD PIPELINE		OFFSHORE	SUBSEA		DISTRICT HEATING
	TOPSIDE	BURIED	PLATFORM	SHALLOW	COMPENSATED	CORROSIVE
HOUSING/COVER ¹	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	BRONZE
OUTPUT HUB ¹	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	BRONZE
WORMGEAR QUADRANT	BRONZE	BRONZE	BRONZE	BRONZE	BRONZE	BRONZE
WORM	ALLOY STEEL	ALLOY STEEL	ALLOY STEEL	ALLOY STEEL	ALLOY STEEL	ALLOY STEEL
HUB BEARINGS	BRASS	BRASS	BRASS	BRASS	BRASS	BRONZE
INDICATOR ¹	DUCTILE IRON		DUCTILE IRON	SUPER DUPLEX STAINLESS STEEL	SUPER DUPLEX STAINLESS STEEL	BRONZE
INPUT SHAFT	STAINLESS STEEL	STAINLESS STEEL	SUPER DUPLEX STAINLESS STEEL	SUPER DUPLEX STAINLESS STEEL	SUPER DUPLEX STAINLESS STEEL	SUPER DUPLEX STAINLESS STEEL
STOPS	ALLOY STEEL	ALLOY STEEL	ALLOY STEEL	ALLOY STEEL	ALLOY STEEL	ALLOY STEEL
JAM NUT(S)	STEEL	SEALED STEEL	SEALED STEEL	SEALED STEEL	SEALED STEEL	SEALED BRONZE
FASTENERS ²	GRADE 5	GRADE 5	316SS	GRADE 5 / 316SS	GRADE 5 / 316SS	316SS
SEALS ³	BUNA	BUNA	BUNA	PTFE/BUNA	PTFE/BUNA	BUNA
LUBRICATION ⁴	GREASE	GREASE	GREASE	GREASE	OIL	GREASE
FINISH ⁵	EPOXY PRIMER	EPOXY PRIMER	EPOXY PRIMER	EPOXY PRIMER	EPOXY PRIMER	N/A

1) Models RW34 and larger may use carbon steel fabrications in place of ductile iron.

2) Standard fasteners for application. Option to use Grade 5, 316SS, B7(M), L7(M), Monel, or other materials per project specification. Grade 5 is zinc plated.

3) Standard seals for application unless otherwise specified. Refer to temperature service condition table.

4) Lubrication per temperature condition. Refer to temperature service condition table.

5) Standard finish unless otherwise specified. Standard epoxy 7-10 mils dft.

WedgeRock RW SERIES

TEMPERATURE AND SERVICE CONDITIONS

Explosion Protection

Available explosion protection configuration conforms to ATEX requirements for T3 or T4. The following is the standard ATEX rating:

II 2 G Ex h IIB T4 Gb
 II 2 D Ex h IIIC T135°C Db

Enclosure Protection

The standard RW has been verified to meet IP68 requirements, ensuring sealing integrity when submerged in water at depths greater than 1 m. The unit is suitable for uncompensated subsea operation to 100 m and for compensated applications to depths exceeding 6,000 m.

Ambient Temperature Rating

TEMPERATURE SERVICE CONDITIONS		
SERVICE CONDITION	MIN OPERATING TEMP	MAX OPERATING TEMP
	°F (°C)	°F (°C)
STANDARD SERVICE	-40 (-40)	225 (107)
HIGH TEMPERATURE SERVICE	-15 (-26)	400 (204)
LOW TEMPERATURE SERVICE	-60 (-51)	225 (107)
ATEX T4 STANDARD	-31 (-35)	160 (70)
ATEX T4 EXTENDED	-60 (-51)	160 (70)
Wider operating temperature ranges are available. Consult with factory.		

HIGH EFFICIENCY MODEL

MODEL	1,000 Cycle Torque Rating	Standard Gear Stack Configuration & Ratios	Configurable Input Ratio	Total Gear Ratio						Mechanical Advantage						Input Torque											
	In-Lbs/(Nm)			Configurable Ratio (more options available)						+/- 10%						In-Lbs/(Nm)											
RP5 - RP6 Configurable Standard Ratios				2.60	3.00	4.20	5.00	6.33	9.00	2.60				3.00	4.20	5.00	6.33	9.00	2.60				3.00	4.20	5.00	6.33	9.00
RP8 - RP14 Configurable Standard Ratios				2.50	3.00	4.00	5.00	6.33	9.00	2.50				3.00	4.00	5.00	6.33	9.00	2.50				3.00	4.00	5.00	6.33	9.00
RW8	38,000 (4,294)		RP5	18							11							3305 (373)									
				47	55	77	91	116	164	29	33	47	56	71	100	1310 (148)	1136 (128)	811 (92)	681 (77)	538 (61)	379 (43)						
RW10	75,000 (8,475)		RP5	14							9							8117 (917)									
				36	42	59	70	89	126	23	27	38	45	57	81	3218 (364)	2789 (315)	1992 (225)	1674 (189)	1322 (149)	930 (105)						
RW12	135,000 (15,254)		RP5	23							15							8991 (1016)									
				59	68	96	114	144	205	38	44	61	73	92	131	3565 (403)	3090 (349)	2207 (249)	1854 (209)	1464 (165)	1030 (116)						
RW14	225,000 (25,424)		RP6	23							15							14985 (1693)									
				59	68	96	114	144	205	38	44	61	73	92	131	5942 (671)	5149 (582)	3678 (416)	3090 (349)	2441 (276)	1716 (194)						
				RP6-3.00	RP5	177	205	287	341	432	614	110	127	178	212	268	381	2042 (231)	1770 (200)	1264 (143)	1062 (120)	839 (95)	590 (67)				
RW18	400,000 (45,198)		RP6	23							15							26640 (3010)									
				59	68	96	114	144	205	38	44	61	73	92	131	10563 (1194)	9155 (1034)	6539 (739)	5493 (621)	4339 (490)	3052 (345)						
				RP6-4.20	RP5	248	287	401	478	605	860	154	178	249	297	376	534	2593 (293)	2247 (254)	1605 (181)	1348 (152)	1065 (120)	749 (85)				
RW22	750,000 (84,746)		RP8	23							15							49950 (5644)									
				57	68	91	114	144	36	44	58	73	92	20598 (2327)	17165 (1940)	12874 (1455)	10299 (1164)	8135 (919)									
				RP8-6.33	RP6	374	432	605	720	912	1296	233	268	376	447	566	805	3226 (364)	2796 (316)	1997 (226)	1677 (190)	1325 (150)	932 (105)				
RW30	1,350,000 (152,542)		RP8	22							15							90558 (10233)									
				56	67	89	111	141	36	43	58	72	92	37344 (4220)	31120 (3516)	23340 (2637)	18672 (2110)	14749 (1667)									
				RP8-5.00	RP6	289	334	467	556	704	1001	182	210	295	351	444	631	7404 (837)	6416 (725)	4583 (518)	3850 (435)	3041 (344)	2139 (242)				
				RP8-5.00 RP6-3.00	RP5	868	1001	1402	1669	2113	3004	531	612	857	1020	1292	1837	2544 (287)	2205 (249)	1575 (178)	1323 (149)	1045 (118)	735 (83)				
RW34	2,250,000 (254,237)		RP9	27							18							123237 (13925)									
				68	82	109	136	44	53	71	89	50819 (5742)	42349 (4785)	31762 (3589)	25410 (2871)												
				RP9-5.00	RP6	354	409	572	681	862	1226	223	258	361	429	544	773	10075 (1138)	8732 (987)	6237 (705)	5239 (592)	4138 (468)	2911 (329)				
				RP9-5.00 RP6-4.20	RP5	1488	1717	2403	2861	3622	5150	910	1050	1470	1750	2215	3149	2473 (279)	2143 (242)	1531 (173)	1286 (145)	1016 (115)	714 (81)				
RW42	5,000,000 (564,972)		RP10	33							22							227842 (25745)									
				83	100	133	166	53	64	85	106	93956 (10616)	78296 (8847)	58722 (6635)	46978 (5308)												
				RP10-3.00	RP8	249	299	399	499	631	155	186	248	310	392	32287 (3648)	26906 (3040)	20179 (2280)	16144 (1824)	12752 (1441)							
				RP10-3.00 RP8-3.00	RP6	778	898	1257	1496	1894	2693	469	541	757	901	1141	1622	10668 (1205)	9246 (1045)	6604 (746)	5548 (627)	4382 (495)	3082 (348)				
				RP10-5.00 RP8-5.00	RP6	2161	2494	3491	4156	5262	7481	1302	1502	2103	2504	3170	4506	3841 (434)	3329 (376)	2378 (269)	1997 (226)	1578 (178)	1110 (125)				
				RW52	14,000,000 (1,581,921)		RP14	44							25							555060 (62719)					
111	133	177	221					280	61	73	98	122	155	228891 (25863)	190742 (21553)	143057 (16165)	114445 (12932)	90399 (10215)									
RP14-5.00	RP9	553	664					885	1106	1401	1991	297	356	475	593	751	1068	47194 (5333)	39328 (4444)	29496 (3333)	23597 (2666)	18639 (2106)	13109 (1481)				
RP14-5.00 RP9-5.00	RP6	2876	3319					4646	5531	7003	9956	1496	1726	2417	2877	3643	5179	9356 (1057)	8109 (916)	5792 (654)	4865 (550)	3843 (434)	2703 (305)				
RP14-5.00 RP9-9.00	RP6	5177	5974					8363	9956	12605	17921	2693	3108	4351	5179	6557	9323	5198 (587)	4505 (509)	3218 (364)	2703 (305)	2135 (241)	1502 (170)				

- Notes:
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 - The calculated input torque values in the table correspond to the 1,000-cycle rated output torque for each model.
 - Many additional gear ratios are available upon request.

STANDARD EFFICIENCY MODEL

MODEL	1,000 Cycle Torque Rating	Standard Gear Stack Configuration & Ratios	Configurable Input Ratio	Total Gear Ratio						Mechanical Advantage						Input Torque								
	In-Lbs/(Nm)			Configurable Ratio (more options available)						+/- 10%						In-Lbs/(Nm)								
RP5 - RP6 Configurable Standard Ratios				2.60	3.00	4.20	5.00	6.33	9.00	2.60	3.00	4.20	5.00	6.33	9.00	2.60	3.00	4.20	5.00	6.33	9.00			
RP8 - RP14 Configurable Standard Ratios				2.50	3.00	4.00	5.00	6.33	9.00	2.50	3.00	4.00	5.00	6.33	9.00	2.50	3.00	4.00	5.00	6.33	9.00			
RW8	38,000 (4,294)			73							26							1487 (168)						
			RP5	190	219	307	365	462	657	64	74	104	124	157	223	590 (67)	511 (58)	365 (41)	307 (35)	242 (27)	170 (19)			
RW10	75,000 (8,475)			56							22							3348 (378)						
				RP5	146	168	235	280	354	504	56	65	91	109	138	196	1328 (150)	1151 (130)	822 (93)	690 (78)	545 (62)	384 (43)		
RW12	135,000 (15,254)			91							32							4239 (479)						
				RP5	237	273	382	455	576	819	80	93	130	154	196	278	1681 (190)	1457 (165)	1040 (118)	874 (99)	690 (78)	486 (55)		
RW14	225,000 (25,424)			91							32							7064 (798)						
				RP6	237	273	382	455	576	819	80	93	130	154	196	278	2801 (317)	2428 (274)	1734 (196)	1457 (165)	1151 (130)	809 (91)		
				RP6-2.60	RP5	615	710	994	1183	1498	2129	203	234	327	390	493	701	1111 (125)	963 (109)	688 (78)	578 (65)	456 (52)	321 (36)	
RW18	400,000 (45,198)			91							32							12559 (1419)						
				RP6	237	273	382	455	576	819	80	93	130	154	196	278	4980 (563)	4316 (488)	3083 (348)	2589 (293)	2045 (231)	1439 (163)		
				RP6-3.00	RP5	710	819	1147	1365	1728	2457	234	270	378	450	569	809	1711 (193)	1483 (168)	1059 (120)	890 (101)	703 (79)	494 (56)	
RW22	750,000 (84,746)			91							32							23548 (2661)						
				RP8	228	273	364	455	576	819	77	93	124	154	196	278	9710 (1097)	8092 (914)	6069 (686)	4855 (549)	3835 (433)	2697 (305)		
				RP8-5.00	RP6	1183	1365	1911	2275	2880	4095	390	450	629	749	948	1349	1925 (218)	1668 (189)	1192 (135)	1001 (113)	791 (89)	556 (63)	
RW30	1,350,000 (152,542)			89							35							38894 (4395)						
				RP8	223	267	356	445	563	801	84	101	135	168	213	303	16039 (1812)	13366 (1510)	10024 (1133)	8019 (906)	6334 (716)	4455 (503)		
				RP8-3.00	RP6	694	801	1121	1335	1690	2403	255	294	411	490	620	882	5300 (599)	4593 (519)	3281 (371)	2756 (311)	2177 (246)	1531 (173)	
				RP8-9.00	RP6	2083	2403	3364	4005	5070	7209	764	882	1234	1470	1861	2645	1767 (200)	1531 (173)	1094 (124)	919 (104)	726 (82)	510 (58)	
RW34	2,250,000 (254,237)			109							41							54322 (6138)						
				RP9	273	327	436	545	690		100	121	161	201	254		22401 (2531)	18667 (2109)	14000 (1582)	11200 (1266)	8847 (1000)			
				RP9-2.50	RP6	709	818	1145	1363	1725	2453	253	292	409	487	617	877	8882 (1004)	7698 (870)	5498 (621)	4619 (522)	3648 (412)	2566 (290)	
				RP9-5.00 RP6-3.00	RP5	4251	4905	6867	8175	10350	14715	1474	1701	2382	2835	3589	5103	1526 (172)	1323 (149)	945 (107)	794 (90)	627 (71)	441 (50)	
RW42	5,000,000 (564,972)			133							44							113921 (12872)						
				RP10	333	399	532	665	842	1197	106	128	170	213	269	383	46978 (5308)	39148 (4424)	29361 (3318)	23489 (2654)	18554 (2096)	13049 (1475)		
				RP10-2.50	RP8	831	998	1330	1663	2105	2993	258	310	413	516	654	929	19372 (2189)	16144 (1824)	12108 (1368)	9686 (1094)	7651 (865)	5381 (608)	
				RP10-5.00	RP8	1663	1995	2660	3325	4209	5985	516	619	826	1032	1307	1858	9686 (1094)	8072 (912)	6054 (684)	4843 (547)	3825 (432)	2691 (304)	
				RP10-5.00 RP9-5.00 RP8-5.00	RP6	8645	9975	13965	16625	21047	29925	2604	3004	4206	5007	6339	9013	1920 (217)	1664 (188)	1189 (134)	999 (113)	789 (89)	555 (63)	
RW52	14,000,000 (1,581,921)			177							46							304216 (34375)						
				RP14	443	531	708	885			112	134	179	223			125450 (14175)	104541 (11813)	78406 (8859)	62725 (7088)				
				RP14-3.00	RP9	1328	1593	2124	2655			325	390	520	650			43110 (4871)	35925 (4059)	26944 (3044)	21555 (2436)			
				RP14-5.00	RP9	2213	2655	3540	4425	5602			541	650	866	1083	1370	25866 (2923)	21555 (2436)	16166 (1827)	12933 (1461)	10216 (1154)		
				RP14-5.00 RP9-5.00	RP6	11505	13275	18585	22125	28010	39825	2730	3150	4410	5250	6647	9450	5128 (579)	4444 (502)	3175 (359)	2667 (301)	2106 (238)	1481 (167)	

Notes:

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- The calculated input torque values in the table correspond to the 1,000-cycle rated output torque for each model.
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Useful Equations

$\#_{in}$	INPUT TURNS TO OPERATE ¼ TURN
D_{hw}	HANDWHEEL DIAMETER
MA	MECHANICAL ADVANTAGE
N	GEAR RATIO
F_{rp}	RIMPULL
RPM	INPUT RPM
$T_{1/4}$	TIME TO OPERATE ¼ TURN (SECONDS)
T_{inmax}	ONE-TIME MAX INPUT TORQUE
T_{in}	INPUT TORQUE
T_{out}	OUTPUT TORQUE
T_{200}	200 CYCLE TORQUE RATING
T_{1000}	1,000 CYCLE TORQUE RATING
T_{10000}	10,000 CYCLE TORQUE RATING
200 cycle torque rating:	
$T_{200} = T_{1000} \times 1.33$	
10,000 cycle torque rating:	
$T_{10000} = T_{1000} \times 0.80$	
One-Time max input torque	
$T_{inmax} = 2 \times \frac{T_{1000}}{MA}$	
Input turns to operate ¼ turn	
$\#_{in} = \frac{N}{4}$	
Time to operate ¼ turn (Seconds)	
$T_{1/4} = \frac{15 \times N}{RPM}$	
Mechanical Advantage	
$MA = \frac{T_{out}}{T_{in}}$	
Required Input Torque	
$T_{in} = \frac{T_{out}}{MA}$	
Required Rimpull	
$F_{rp} = \frac{2 \times T_{in}}{D_{hw}}$	
Required Handwheel Diameter	
$D_{hw} = \frac{2 \times T_{in}}{F_{rp}}$	

Other RW Configurations

RW Override

RW sandwich style override:

- Lost Motion override



RW Subsea



RW subsea wormgears:

- Shallow water manual subsea
- Deep water ROV operated, compensated subsea

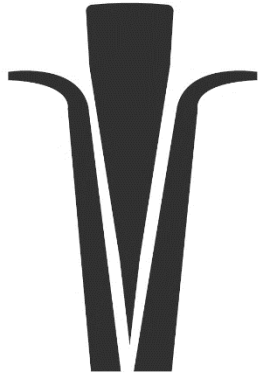
RW Multi-turn

RW multi-turn wormgears:

- Rising stem applications
- Dam gate hoists
- Specialty applications



ABOUT WEDGEROCK



The WedgeRock name and logo symbolize the elegance of a simple and effective design and the grit, focus, and determination required to make things happen – the work required to get big things moving. Pragmatism and hard work are central to our culture and reflected in everything we do.

Don't let our dirty hands and old school approach fool you. WedgeRock brings industry leading innovation to your engineered projects in standard lead times.

With a focused approach, WedgeRock provides solutions for the most demanding torque and thrust application. Whether you need to operate valves thousands of meters below the ocean surface, or a purpose designed gear operator for your valve line, give us a call or send an email to get the partnership started.

OUR MISSION

WedgeRock provides performance engineered actuation solutions for demanding applications.

