










RT GEARBOXES

Build your gearbox. Select one option from each **category**. Highlighted in orange is an example: **FRT50 B3 20 N56 AC1.00**

Input Style	Type	Size			Mount Option	Ratio			Input Flange		Output Style	Output Size		
		A	B	C		A	B	C	NEMA	IEC		RT	(in.)	(mm)
M  Motorized	RT Single Reduction	28	28/28	63/40	B3  Universal	5	280	25	N42	B5 Include Motor Frame size	AC  Hollow Bore	28	0.625	14
	RT/RT Double Reduction	40	28/40	63/50		7	420	...	N48			40	0.75	(18) 19 (20)
	TA Helical Worm	50	28/50	71/50		10	560	63	N56			50	1.00	24 (25)
F  Flange Input		60	28/60	63/60	F, FV, FL  Output Flange	15	784	95	N140	B14 Include Motor Frame size	AS  Single Output	60	1.125	25
		70	40/70	71/60		20	1120	126	N180			70	1.25	28 (30)
		85	40/85	...		28	1568	176				85	1.375	32 (35)
NIL  Solid Shaft		110	50/110	100/150	TA  Torque Arm	40	2240	252			AD  Double Output	110	1.625	42
						49	2800	309						
						56	4000	353						
						70	5600	441						
						80	8000	...						
				100	10000	800								

() Option available upon request

BASIC SPECIFICATIONS

- Power Ratings from 0.12 to 10HP
- Output Torque to 27,400 in-lbs
- Ratios from 5:1 through 10,000:1
- 7 Sizes available from stock

TECHNICAL SELECTION CATALOG

- A** RT - Worm Gearboxes
See Varvel RT/RS Catalog Pg 20-23
- B** RT/RT - Double Worm Gearboxes
See Varvel RT/RS Catalog Pg 27
- C** TA - Helical Worm Gearboxes
See Varvel RT/RS Catalog Pg 24-26


STANDARD FEATURES

- Vent free design, factory lubricated with premium synthetic long life gear lubricant with an operating temperature range of -4°F to 131°F (-20°C to +55°C)
- Precision machined single-piece aluminum alloy housing up to size 85, cast iron construction for larger sizes
- Unparalleled flexibility: housings accept both NEMA and IEC input flanges and Imperial and Metric output shafts / hollow bores
- G-coupling mount (fretting corrosion eliminated)
- Hardened and ground worm and alloy bronze gear for greater wear life
- Oversized bearings for higher shock and radial load capacity
- Worm-worm and Helical-worm double reduction combinations also available from stock




GEARBOX PURCHASING DATA

Dimensions are in inches / mm




Ratios: 5 - 100

MODEL	RT Imperial (inch Bore)		RT Metric (mm Bore)		Available Input Flanges	
	RT List	Bore Size	RT List	Bore Size	NEMA	IEC (B5/B14)
RT28	\$290	0.625"	\$290	14	42/48	56/63
RT40	\$349	0.75"	\$349	(18) 19 (20)	42/48/56	56/63/71
RT50	\$456	1.00"	\$456	24 (25)	56	63/71/80
RT60	\$635	1.125"	\$635	25	56/140	71/80/90
RT70	\$688	1.25"	\$688	28 (30)	56/140/180	71/80/90/100
RT85	\$971	1.375"	\$971	32 (35)	56/140/180	80/90/100/112
RT110	\$1,758	1.625"	\$1,758	42	56/140/180	90B5/100/112



Ratios: 200 - 10000

MODEL	RT/RT Imperial (inch Bore)		RT/RT Metric (mm Bore)		Available Input Flanges	
	RT/RT List	Bore Size	RT/RT List	Bore Size	NEMA	IEC (B5/B14)
RT28/28	\$690	0.625"	\$690	14	42/48	56/63
RT28/40	\$749	0.75"	\$749	(18) 19 (20)	42/48	56/63
RT28/50	\$856	1.00"	\$856	24 (25)	42/48	56/63
RT28/60	\$1,035	1.125"	\$1,035	25	42/48	56/63
RT40/70	\$1,148	1.25"	\$1,148	28 (30)	42/48/56	56/63/71
RT40/85	\$1,431	1.375"	\$1,431	32 (35)	42/48/56	56/63/71
RT50/110	\$2,402	1.625"	\$2,402	42	56	63/71/80



Ratios: 32 - 800

MODEL	TA Imperial (inch Bore)		TA Metric (mm Bore)		Available Input Flanges	
	TA List	Bore Size	TA List	Bore Size	NEMA	IEC (B5/B14)
TA63/40	\$649	0.75"	\$649	(18) 19 (20)	--	56/63
TA63/50	\$756	1.00"	\$756	24 (25)	--	56/63
TA71/50	\$808	1.00"	\$808	24 (25)	--	71
TA63/60	\$935	1.125"	\$935	25	--	56/63
TA71/60	\$987	1.125"	\$987	25	--	71
TA80/60	\$1,064	1.125"	\$1,064	25	--	80/90
TA71/70	\$1,040	1.25"	\$1,040	28 (30)	--	71
TA80/70	\$1,117	1.25"	\$1,117	28 (30)	--	80/90
TA71/85	\$1,323	1.375"	\$1,323	32 (35)	--	71
TA80/85	\$1,400	1.375"	\$1,400	32 (35)	--	80/90
TA80/110	\$2,187	1.625"	\$2,187	42	--	80/90
TA100/110	\$2,877	1.625"	\$2,877	42	56/140/180	80/90/100/112

*Alternative double reduction combinations available from stock: RT 40/50, 40/60, 50/70, 60/110, 70/110

() Option available upon request

ACCESSORIES PURCHASING DATA

Dimensions are in inches / mm

MODEL	Single Output Shaft Kit			Double Output Shaft Kit		KISM Input Shaft Kit		Mounting Options	
	Kit List	Shaft Size (inch)	Shaft Size (mm)	Kit List	Shaft Size (mm)	Kit List	Shaft Size (mm)	Output Flange	Torque Arm
RT28	\$24	0.50"/0.625"	14	\$35	14	--	--	\$16	\$39
RT40	\$30	0.75"	(18) 19	\$67	19	\$128	11	\$22	\$41
RT50	\$39	1.00"	24 (25)	\$76	24	\$128	14	\$28	\$44
RT60	\$45	1.125"	25	\$98	25	\$141	19	\$29	\$58
RT70	\$49	1.25"	28	\$105	28	\$155	19	\$39	\$60
RT85	\$72	1.375"	32 (35)	\$118	32	\$195	24	\$42	\$80
RT110	\$122	1.625"	42	\$178	42	\$229	28	\$178	\$119

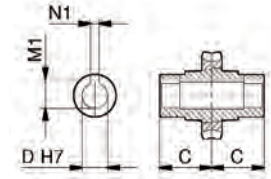
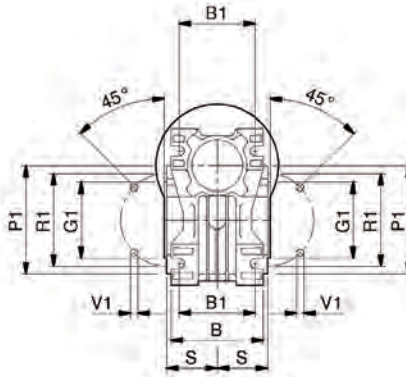
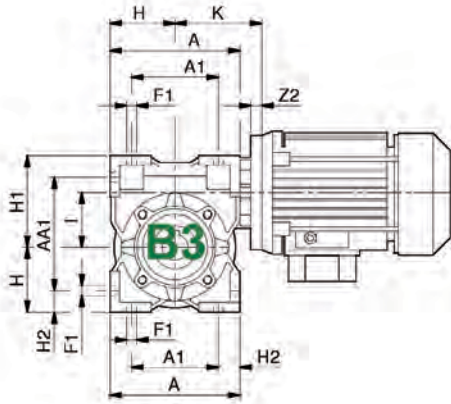
() Option available upon request

RT RIGHT ANGLE WORM GEAR REDUCERS

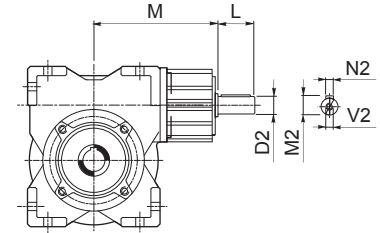
SIZES RT28 - RT110, INCH AND METRIC OPTIONS



DIMENSIONAL DRAWINGS



KISM input shaft kit



() Option available upon request

Dimensions are in inches / mm

RT	General Dimensions						
	28	40	50	60	70	85	110
A	3.15 80	3.94 100	4.72 120	5.67 144	6.77 172	8.11 206	10.04 255
A1	2.13 54	2.76 70	3.15 80	3.94 100	4.72 120	5.51 140	6.69 170
AA1	2.80 71	3.60 91.5	4.09 104	5.12 130	6.02 153	6.77 172	8.27 210
B	2.09 53	2.80 71	3.35 85	3.94 100	4.41 112	5.12 130	5.67 144
B1	1.73 44	2.36 60	2.76 70	3.35 85	3.54 90	3.94 100	4.53 115
C	1.18 30	1.61 41	1.93 49	2.36 60	2.36 60	2.40 61	3.05 77.5
D (H7)	0.625 14	0.75 (18) 19 (20)	1.00 24 (25)	1.125 25	1.25 28 (30)	1.375 32 (35)	1.625 42
D2	(9)	11	14	19	19	24	28
G1 (h8)	2.17 55	2.36 60	2.76 70	3.15 80	3.74 95	4.33 110	5.12 130
H	1.57 40	1.97 50	2.36 60	2.83 72	3.39 86	4.06 103	5.02 127.5
H1	2.24 57	2.81 71.5	3.31 84	4.02 102	4.69 119	5.31 135	6.59 167.5
H2	0.51 13	0.59 15	0.79 20	0.87 22	1.02 26	1.30 33	1.67 42.5
I	1.10 28	1.57 40	1.97 50	2.36 60	2.76 70	3.35 85	4.33 110
K	2.26 57.5	2.78 70.5	3.82 83 - 88*	4.06 93 - 94*	4.96 117 - 118*	6.30 134 - 137*	5.94 151 - 153*
L	0.79 (20)	0.91 23	1.18 30	1.57 40	1.57 40	1.97 50	2.36 60
M	1.97 (50)	4.35 110.5	4.88 124	5.35 135.8	6.53 165.8	7.11 180.5	8.03 204
M1	0.71 16.3	0.84 21.8	1.12 27.3	1.25 28.3	1.37 31.3	1.52 35.3	1.80 45.3
M2	0.40 10.2	0.49 12.5	0.63 16	0.89 22.5	0.89 22.5	1.06 27	1.22 31
N1	0.19 5	0.24 6	0.25 8	0.25 8	0.25 8	0.31 10	0.38 12
N2	0.12 3	0.16 4	0.20 5	0.24 6	0.24 6	0.31 8	0.31 8
P1	2.95 75	3.39 86	3.94 100	4.33 110	5.12 130	6.30 160	7.87 200
R1	2.56 65	2.95 75	3.35 85	3.74 95	4.53 115	5.12 130	6.50 165
S	1.08 27.5	1.52 38.5	1.83 46.5	2.24 57	2.24 57	2.64 67	2.91 74
V1/V2	(V1) M6x10 (V2) M4x10	(V1) M6x8.5 (V2) M4x10	(V1) M8x10 (V2) M6x15	(V1) M8x16 (V2) M8x20	(V1) M8x16 (V2) M8x20	(V1) M10x18 (V2) M8x20	(V1) M10x21 (V2) M8x20
Z2	0.51 13	0.51 13	0.52 - 0.73 13 - 18.5	0.55 - 0.59 14 - 15	0.61 - 0.69 15.5 - 17.5	0.61 - 0.73 15.5 - 18.5	0.71 - 0.79 18 - 20

Type FRT (B3) Dimensions

RT Right Angle Worm

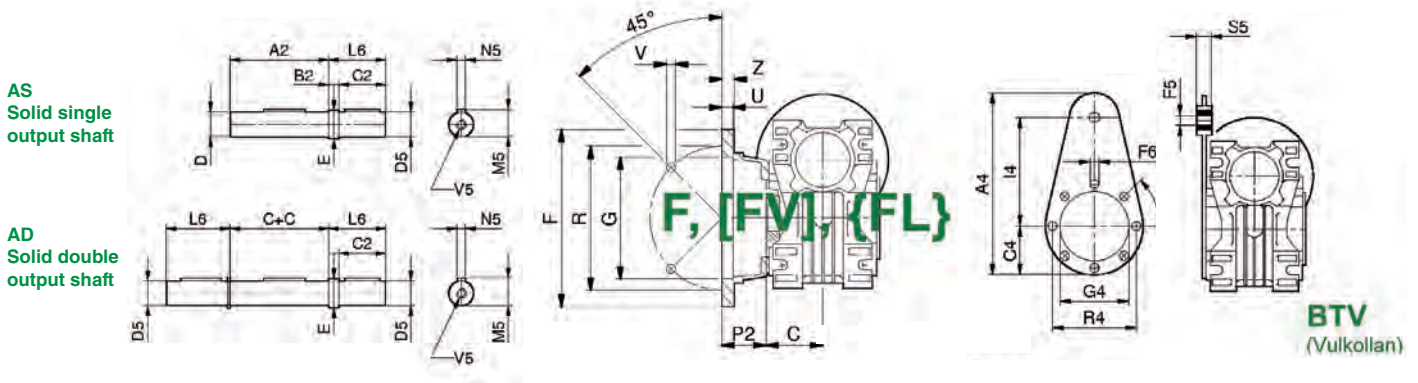
RD Helical Inline

XA Helical Inline Stage

RP Auger Reducer

VS Mechanical Variator

DIMENSIONAL DRAWINGS



() Option available upon request

Dimensions are in **inches / mm**

General Dimensions								
RT	28	40	50	60	70	85	110	
Output Shaft (AS/AD)	A2	2.28 58	3.16 80	3.74 95	4.61 117	4.61 117	4.69 119	6.02 153
	C	1.18 30	1.61 41	1.93 49	2.36 60	2.36 60	2.40 61	3.05 77.5
	C2	1.375 30	1.57 40	1.97 45	2.36 50	2.36 60	2.76 70	3.15 110
	D5	0.625 14	0.75 (18) 19 (20)	1.00 24 (25)	1.125 25	1.25 28 (30)	1.375 32 (35)	1.625 42
	E	0.82 14	0.98 22	1.25 28	1.37 30	1.49 34	1.69 38	1.95 50
	L6	1.42 31	1.97 50	2.37 60	2.76 70	2.76 70	3.15 80	3.54 110
	M5	0.70 18	0.83 21.5	1.10 27	1.23 28	1.36 31	1.51 35	1.79 45
	N5	3/16 5	3/16 6	1/4 8	1/4 8	1/4 8	5/16 10	3/8 12
	V5	1/4"-20 M5x10	1/4"-20 M8x20	3/8"-16 M8x20	3/8"-16 M8x20	1/2"-13 M8x20	1/2"-13 M10x25	5/8"-11 M10x25
	Output Flanges	C	30	41	49	60	60	61
F		80	110{110}	125{160}{125}	180{180}	200	210	270
G		50	60{60}	70{110}{70}	115{115}	130	152	170
P2		23	28{58}	44{41.5}{74}	25{56}	51	50	53.5
R		68	87{87}	90{130}{90}	150.5{150.5}	165	175	230
U		10	4{4}	5{11}{5}	6.5{6.5}	12	6	5
Z		7	6{8}	10{13}{10}	10{10}	14	16	18
Torque Arm (BTV)	V	7	9{9}	11{9}{9}	11{11}	13	13	14
	A4	5.43 138	6.61 168	7.28 185	9.25 235	11.61 295	12.32 313	15.28 388
	C4	1.50 38	1.69 43	2.36 60	2.17 55	2.56 65	2.95 75	3.94 100
	F5	0.39 10	0.39 10	0.39 10	0.39 10	0.39 10	0.79 20	0.79 20
	F6	0.28 7	0.28 7	0.35 9	0.35 9	0.35 9	0.47 12	0.51 13
	G4	2.17 55	2.36 60	2.76 70	3.15 80	3.74 95	4.33 110	5.12 130
	I4	3.15 80	3.93 100	3.94 100	5.91 150	7.87 200	7.87 200	9.84 250
	R4	2.56 65	2.95 75	3.35 85	3.74 95	4.53 115	5.12 130	6.50 165
	S5	0.59 15	0.59 15	0.59 15	0.79 20	0.79 20	0.98 25	0.98 25

RT GEARBOX SELECTION TABLE

1800 RPM input - S.F. 1.0		RT Worm Gear Reducers											
1800 RPM	Ratio	5	7	10	15	20	28	40	49	56	70	80	100
	Output RPM	360	257	180	120	90	64	45	37	32	26	23	18
RT 28 1.10" CD	HP	--	0.75	0.55	0.39	0.27	0.27	0.17	0.15	0.13	0.10	0.08	0.05
	in-lb	--	159	159	159	142	177	150	150	133	106	106	71
	eff.	--	0.84	0.81	0.77	0.74	0.66	0.62	0.57	0.51	0.45	0.45	0.43
RT 40 1.57" CD	HP	1.87	1.84	1.36	0.92	0.64	0.62	0.42	0.35	0.30	0.23	0.20	0.15
	in-lb	398	398	407	389	345	425	372	363	336	319	283	257
	eff.	0.87	0.85	0.83	0.78	0.75	0.68	0.61	0.58	0.56	0.52	0.50	0.46
RT 50 1.97" CD	HP	4.53	3.02	2.18	1.56	1.06	1.06	0.69	0.62	0.52	0.42	0.34	0.22
	in-lb	717	664	664	655	575	752	637	673	628	558	513	381
	eff.	0.88	0.86	0.84	0.78	0.76	0.71	0.64	0.62	0.60	0.53	0.52	0.47
RT 60 2.36" CD	HP	6.87	4.69	3.86	2.68	2.01	1.68	1.26	1.04	0.91	0.77	0.62	0.42
	in-lb	1106	1000	1177	1151	1080	1230	1195	1133	1089	1080	938	735
	eff.	0.89	0.86	0.84	0.81	0.77	0.71	0.66	0.62	0.60	0.55	0.53	0.49
RT 70 2.76" CD	HP	9.55	6.71	5.20	3.69	3.02	2.51	2.01	1.41	1.24	0.97	0.84	0.62
	in-lb	1558	1469	1593	1664	1717	1912	2106	1673	1593	1443	1363	1151
	eff.	0.89	0.88	0.86	0.83	0.81	0.75	0.71	0.67	0.64	0.59	0.56	0.52
RT 85 3.35" CD	HP	15.52	10.39	7.71	5.70	4.86	3.69	2.68	2.35	2.01	1.61	1.44	0.92
	in-lb	2469	2292	2372	2558	2850	2823	2876	2797	2699	2567	2478	1859
	eff.	0.90	0.88	0.86	0.83	0.82	0.76	0.72	0.67	0.68	0.63	0.60	0.56
RT 110 4.33" CD	HP	--	20.95	15.09	10.90	9.55	7.38	5.87	4.53	3.69	3.35	2.51	1.84
	in-lb	--	4646	4708	4956	5726	5682	6115	5584	5266	5620	4646	4151
	eff.	--	0.88	0.87	0.84	0.83	0.76	0.73	0.71	0.70	0.67	0.66	0.61

MODEL	RT 28	RT 40	RT 50	RT 60	RT 70	RT 85	RT 110
Weight (lbs.)	2.43	5.51	8.38	14.33	19.84	29.76	85.98
Oil Vol. (pre-filled) (L)	0.03	0.08	0.13	0.25	0.35	0.60	1.50