

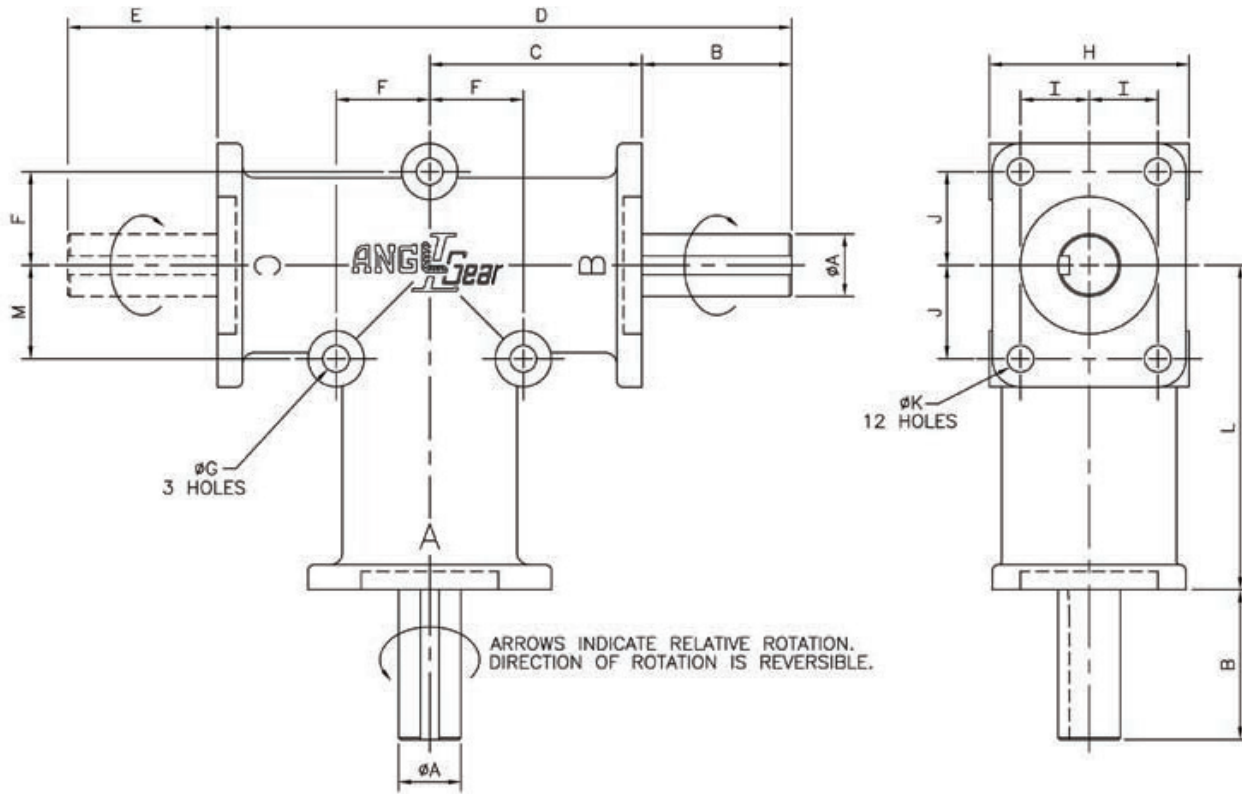
## DIMENSIONS – 2 FLANGE UNITS \*

Model	Type	A	B	C	D	E	F	G	H	I	J	K	L
R3000/R3000-2	2-Way	0.375	0.59	1.385	2.85	-	0.656	0.203	1.25	0.438	0.594	0.177	2.165
R3100/R3100-2	3-Way	0.375	0.59	1.385	2.85	0.59	0.656	0.203	1.25	0.438	0.594	0.177	2.165
R3200/R3200-2	2-Way	0.625	1.50	2.125	5.00	-	0.937	0.265	2.00	0.687	0.937	0.265	3.25
R3300/R3300-2	3-Way	0.625	1.50	2.125	5.00	1.375	0.937	0.265	2.00	0.687	0.937	0.265	3.25

\*Model Numbers followed by "-2" indicates 2:1 reduction. 1:1 & 2:1 units have the same dimensions. Complete outline drawings are available upon request. Shaft diameter tolerances are +0.000/-0.001. All dimensions are in inches and are subject to change.

**Keyway Dimensions:** SIZE 1 – R-3000 / R3000-2 / R3100 / R3100-2: None  
 SIZE 2 – R-3200 / R3200-2 / R3300 / R3300-2: 3/16W x 3/32H x 1 1/2L

# 3 FLANGE UNITS, INCH SERIES



## DIMENSIONS – 3 FLANGE UNITS \*

Model	Type	A	B	C	D	E	F	G	H	I	J	K	L	M
R3003/R3003-2	2-Way	0.375	0.59	1.385	3.36	-	0.656	0.209	1.25	0.438	0.594	0.177	2.165	0.656
R3103/R3103-2	3-Way	0.375	0.59	1.385	3.36	0.59	0.656	0.209	1.25	0.438	0.594	0.177	2.165	0.656
R3203/R3203-2	2-Way	0.625	1.50	2.125	5.75	-	0.937	0.265	2.00	0.687	0.937	0.265	3.25	0.937
R3303/R3303-2	3-Way	0.625	1.50	2.125	5.75	1.50	0.937	0.265	2.00	0.687	0.937	0.265	3.25	0.937
R3330/R3330-2	2-Way	0.75	2.00	3.00	8.00	-	1.50	0.344	3.00	1.125	1.50	0.344	5.00	1.50
R3350/R3350-2	3-Way	0.75	2.00	3.00	8.00	2.00	1.50	0.344	3.00	1.125	1.50	0.344	5.00	1.50
R3400/R3400-2	2-Way	1.00	2.75	3.25	9.25	-	1.75	0.406	4.00	1.50	1.50	0.406	6.00	2.75
R3500/R3500-2	3-Way	1.00	2.75	3.25	9.25	2.75	1.75	0.406	4.00	1.50	1.50	0.406	6.00	2.75
R3570	2-Way	1.00	2.75	3.25	9.25	-	1.75	0.406	4.00	1.50	1.50	0.406	6.00	2.75
R3590	3-Way	1.00	2.75	3.25	9.25	2.75	1.75	0.406	4.00	1.50	1.50	0.406	6.00	2.75

\* Model Numbers followed by "-2" indicates 2:1 reduction. 1:1 & 2:1 units have the same dimensions. Complete outline drawings are available upon request. Shaft diameter tolerances are +0.000/-0.001. All dimensions are in inches and are subject to change.

**Keyway Dimensions:**

- SIZE 1 – R3003 / R3003-2 / R3103 / R3103-2: None
- SIZE 2 – R3203 / R3203-2 / R3303 / R3303-2: 3/16W x 3/32H x 1 1/4L
- SIZE 3 – R3330 / R3330-2 / R3350 / R3350-2: 3/16W x 3/32H x 1 1/2L
- SIZE 4 – R3400 / R3400-2 / R3500 / R3500-2: 1/4W x 1/8H x 2L
- SIZE 5 – R3570 / R3590: 1/4W x 1/8H x 2L

# SELECTION & ORDERING INFORMATION, INCH SERIES

## Selection Procedure

- Determine the output speed and torque required for your application. The maximum recommended output speed is 3000 rpm for 1:1 units, and 1500 rpm for 2:1 units. 2:1 units are NOT recommended for use as speed increasers.
- Select an application service factor from the chart to the right. Multiply your torque by the selected service factor. If you are unsure of the factor to be used, please consult us.
- Using the chart below, find your output speed on the left. If your speed is not shown, use the next highest speed. Depending on the ratio you need (1:1 or 2:1), follow the chart across until you find a torque value that is larger than your corrected torque value.
- The Unit Size you need will be at the top of that column. There are 5 sizes available. At the bottom of the column is a list of the various models available under the selected size. Select the model number; based on the gear ratio and the number of shafts you need (2 or 3). When ordering, use the model number you selected, along with the ratio desired.
- Check the applied radial and thrust loads on the unit compared with loads in the chart at the bottom of the page. If the applied loads are larger than the chart values, a larger unit must be selected.
- Refer back to pages 4 and 5 for dimensional information on the model you selected.

## SERVICE FACTORS

OPERATION CONDITIONS	UNIFORM LOAD		MODERATE SHOCK	
	3	0.7	0.9	1
SERVICE (hours/day)	8	0.9	1	1.3
	12	1	1.3	1.8
	24	1.3	1.8	

$$T \text{ (in.lb)} = 63,000 \times \text{HP} / \text{RPM}$$

$$\text{HP} = T \times \text{RPM} / 63,000$$

OUTPUT SPEED (RPM)	SIZE 1				SIZE 2				SIZE 3				SIZE 4				SIZE 5		
	Ratio 1:1		Ratio 2:1		Ratio 1:1		Ratio 2:1		Ratio 1:1		Ratio 2:1		Ratio 1:1		Ratio 2:1		Ratio 1:1		
	RATINGS*	in.lb	HP	in.lb	HP	in.lb	HP	in.lb	HP	in.lb	HP	in.lb	HP	in.lb	HP	in.lb	HP	in.lb	HP
50	17	0.01	10	0.01	51	0.04	32	0.03	229	0.18	125	0.10	400	0.32	193	0.15	800	0.63	
100	16	0.03	10	0.02	49	0.08	30	0.05	215	0.34	117	0.19	370	0.59	182	0.29	740	1.17	
200	15	0.05	9	0.03	48	0.15	28	0.09	207	0.66	110	0.35	345	1.10	172	0.55	700	2.22	
300	15	0.07	9	0.04	47	0.23	27	0.13	205	0.98	105	0.50	325	1.55	162	0.77	660	3.14	
400	14	0.09	8	0.05	47	0.30	26	0.17	203	1.29	100	0.63	310	1.97	154	0.98	625	3.97	
500	14	0.11	8	0.06	46	0.37	25	0.20	200	1.59	96	0.76	300	2.38	148	1.17	600	4.76	
750	13	0.15	8	0.09	46	0.54	24	0.29	196	2.34	91	1.08	278	3.31	137	1.63	565	6.73	
1000	13	0.20	8	0.12	45	0.71	23	0.37	193	3.06	87	1.38	265	4.21	130	2.06	540	8.57	
1250	13	0.25	7	0.14	44	0.88	23	0.45	190	3.77	84	1.67	260	5.16	128	2.53	520	10.32	
1500	13	0.30	7	0.17	44	1.05	23	0.54	187	4.45	81	1.93	257	6.11	125	2.98	500	11.90	
1750	12	0.34			43	1.21			185	5.14			254	7.04			485	13.47	
2000	12	0.39			43	1.37			183	5.80			250	7.95			470	14.92	
2500	12	0.48			42	1.68			179	7.11			245	9.73			448	17.76	
3000	12	0.57			42	1.99			176	8.39			241	11.5			435	20.24	
2-WAY	R3000	R3000-2	R3200	R3200-2	R3330	R3330-2	R3400	R3400-2	R3570										
3-WAY	R3100	R3100-2	R3300	R3300-2	R3350	R3350-2	R3500	R3500-2	R3590										
2-WAY	R3003	R3003-2	R3203	R3203-2															
3-WAY	R3103	R3103-2	R3303	R3303-2															
MODEL DATA (lbs)	R3000	R3100	R3200	R3300	R3330	R3350	R3400	R3500	R3570	R3590									
	1:1	2:1	1:1	2:1	1:1	2:1	1:1	2:1	1:1	2:1	1:1	2:1	1:1	2:1	1:1	2:1	1:1	1:1	1:1
RADIAL LOAD	25	25	25	25	50	50	50	50	100	100	100	100	100	100	100	100	100	100	100
THRUST LOAD	50	50	50	50	100	100	100	100	200	200	200	200	200	200	200	200	200	200	200
WEIGHT	0.5	0.5	0.5	0.5	2.2	2.2	2.4	2.4	8.7	8.7	9.0	9.0	14.5	14.5	15	15	17.5	17.5	18

\* Unit ratings are: Output Torque in in.lb and Output Power in HP.

## Selection Example

An application to connect a drive-shaft to a fan-shaft at a right-angle. Gearbox ratio to be 1:1. Input and output connections are with timing belt pulleys at 1000 rpm. Transmitted power is 1.34 HP. Operating conditions are moderate shock, 12 hours/day.

- Output speed is 1000 rpm. Operating torque =  $63,000 \times 1.34 \text{ HP} / 1000 \text{ rpm} = 84.4 \text{ in.lb}$ .
- Service factor from chart (12 hours/day, moderate shock) – SF = 1.3. Corrected torque =  $84.4 \times 1.3 = 109.7 \text{ in.lb}$ .
- From ratings chart (output speed = 1000 rpm), unit torque = 193 in.lb (>109.7 in.lb) – Size 3 1:1.
- The model selected is: R3330 for two-way or R3350 for three-way.
- The applied radial loads are calculated to be 74 lb. on each shaft (<100 lb.) which is allowable.
- On pages 4 and 5, the dimensions are checked to confirm available space for model selected.