Precision Helical
GEAR REDUCERS

VARMEC

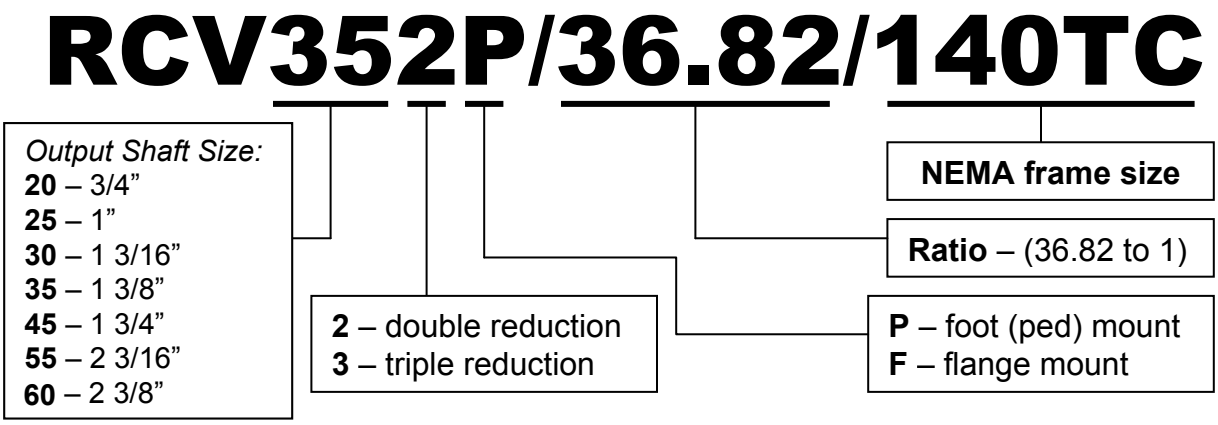
TABLE OF CONTENTS

VARMEC GEAR REDUCERS

Features that make Varmec a premium gear reducer:

- All Varmec gearboxes are computer-designed and conform to AGMA2001- B88 standards.
- All Varmec casings are made from high quality gray cast-iron and are solid-body construction which greatly reduces leakage.
- All Varmec components are machined on modern CNC machining centers.
- All Varmec gears are made from nickel chrome moly alloy steel that is hardened and profile ground.
- All Varmec primary gear sets are ground to at least an AGMA12 finish.
- All Varmec secondary gear sets and beyond are at least an AGMA11 finish.
- All Varmec input shafts are made from hardened and tempered nickel chrome alloy steel.
- All Varmec output shafts are made from high-strength nickel chrome moly alloy steel.
- All Varmec gearboxes are coated with thermosetting orange-peel powder-based polyester and epoxy resin paint.
- All bearings and seals used in Varmec gear boxes are standard off-the-shelf items.
- All Varmec gearboxes use synthetic oil.
- Varmec's double and triple reduction gearboxes have the same boundary dimensions.
- Varmec reducers accept standard NEMA C-face motors.
- The motor can be removed without disassembly of the gearbox.

The first 2 digits represent the output shaft size in millimeters (closest inch dimension for U.S. market).
The third digit represents the number of reduction stages.



GEAR REDUCER SELECTION

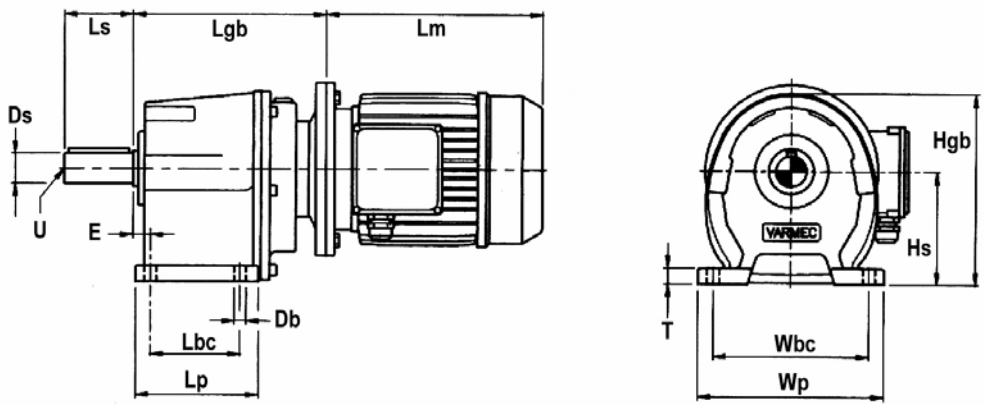
STEPS TO SELECT A GEAR REDUCER

1. Determine the class of service from this chart

AGMA Class of Service	Operating Conditions	Service Factor
I	Light Shock - not more than 10 hours per day	1.0
	Moderate Shock - not more than 15 minutes in 2 hours	
II	Light Shock - 10 to 24 hours per day	1.4
	Moderate Shock - not more than 10 hours per day	
	Heavy Shock - not more than 15 minutes in 2 hours	
III	Moderate Shock - 10 to 24 hours per day	2.0
	Heavy Shock - not more than 10 hours per day	

2. For class I or class II service and 1750 RPM input, use the quick selection chart (page 5 for class I and page 6 for class II) to determine appropriate size based on your hp requirement and desired output RPM.
3. For class III service, please consult your local Varmec distributor.
4. Use the horsepower tables for the appropriate size to get the exact output RPM and capacity, with 1750 RPM input. For 3450 or 1200 RPM input, consult your local Varmec distributor.

Reducer Dimensions



Dimensions for 2 stage reducers

Size	Frame Size	Hs	Lbc	Wbc	Ds	Db	U	Hgb	T	Wp	Lp	Ls	E	Lgb		Lm	Ltotal	Wt. (lbs.)
202	56 C	100	60	130	19.05	11		173	14	155	95	40	18	168	6.61	11.88	20.07	25.3
	140 TC	**3.94**	**2.36**	**5.12**	**3/4**	**0.43**	**5/16 - 18**	**6.81**	**0.55**	**6.10**	**3.74**	**1.57**	**0.71**	168	6.61	11.95	20.14	
252	56 C	110	70	160	25.4	11		190	16	190	105	50	18	177	6.97	11.88	20.82	30.8
	140 TC	**4.33**	**2.76**	**6.30**	**1**	**0.43**	**5/16 - 18**	**7.48**	**0.63**	**7.48**	**4.13**	**1.97**	**0.71**	177	6.97	11.95	20.89	
302	140 TC	130	105	180	30.16	14		220	18	215	143	60	20	235	9.25	11.95	23.56	50.6
	180 TC	**5.12**	**4.13**	**7.09**	**1 3/16**	**0.55**	**3/8 - 16**	**8.66**	**0.71**	**8.46**	**5.63**	**2.36**	**0.79**	241	9.49	15.18	27.03	
352	140 TC	130	105	180	34.92	14		220	18	215	143	80	20	235	9.25	11.95	24.35	52.8
	180 TC	**5.12**	**4.13**	**7.09**	**1 3/8**	**0.55**	**3/8 - 16**	**8.66**	**0.71**	**8.46**	**5.63**	**3.15**	**0.79**	241	9.49	15.18	27.82	
452	140 TC	155	110	225	44.45	18		265	22	270	164	90	25	266	10.47	11.95	25.97	92.4
	180 TC	**6.10**	**4.33**	**8.86**	**1 3/4**	**0.71**	**1/2 - 13**	**10.43**	**0.87**	**10.63**	**6.46**	**3.54**	**0.98**	272	10.71	15.18	29.43	
	210 TC													272	10.71	16.06	30.31	
552	180 TC	195	145	250	55.56	18		325	25	300	198	110	25	331	13.03	15.18	32.54	160.6
	210 TC	**7.68**	**5.71**	**9.84**	**2 3/16**	**0.71**	**5/8 - 11**	**12.80**	**0.98**	**11.81**	**7.80**	**4.33**	**0.98**	331	13.03	16.06	33.42	
	250 TC													331	13.03	19.38	36.74	
	280 TC													341	13.43	22.93	40.69	
602	180 TC	225	310	250	60.32	22		375	35	340	365	120	40	421	16.57	15.18	31.75	286.0
	210 TC	**8.86**	**12.20**	**9.84**	**2.375**	**0.87**	**3/4 - 10**	**14.76**	**1.38**	**13.39**	**13.39**	**4.72**	**1.57**	421	16.57	16.06	32.63	
	250 TC													421	16.57	19.38	35.95	
	280 TC													437	17.20	22.93	40.13	

Dimensions for 3 stage reducers

Size	Frame Size	Hs	Lbc	Wbc	Ds	Db	U	Hgb	T	Wp	Lp	Ls	E	Lgb		Lm	Ltotal	Wt. (lbs.)
203	56 C	100	60	130	19.05	11		173	14	155	95	40	18	174	6.85	11.88	20.31	22.0
		3.94	**2.36**	**5.12**	**3/4**	**0.43**	**5/16 - 18**	**6.81**	**0.55**	**6.10**	**3.74**	**1.57**	**0.71**					
253	56 C	110	70	160	25.4	11		190	16	190	105	50	18	184	7.24	11.88	21.09	29.7
		4.33	**2.76**	**6.30**	**1**	**0.43**	**5/16 - 18**	**7.48**	**0.63**	**7.48**	**4.13**	**1.97**	**0.71**					
303	56 TC	130	105	180	30.16	14		220	18	215	143	60	20	229	9.02	11.88	23.26	49.5
	140 TC	**5.12**	**4.13**	**7.09**	**1 3/16**	**0.55**	**3/8 - 16**	**8.66**	**0.71**	**8.46**	**5.63**	**2.36**	**0.79**	229	9.02	11.95	23.33	
353	56 TC	130	105	180	34.92	14		220	18	215	143	80	20	229	9.02	11.88	24.05	51.7
	140 TC	**5.12**	**4.13**	**7.09**	**1 3/8**	**0.55**	**3/8 - 16**	**8.66**	**0.71**	**8.46**	**5.63**	**3.15**	**0.79**	229	9.02	11.95	24.12	
453	140 TC	155	110	225	44.45	18		265	22	270	164	90	25	271	10.67	11.95	26.16	90.2
	180 TC	**6.10**	**4.33**	**8.86**	**1 3/4**	**0.71**	**1/2 - 13**	**10.43**	**0.87**	**10.63**	**6.46**	**3.54**	**0.98**	271	10.67	15.18	29.39	
553	140 TC	195	145	250	55.56	18		325	25	300	198	110	25	325	12.80	11.95	29.08	160.6
	180 TC	**7.68**	**5.71**	**9.84**	**2 3/16**	**0.71**	**5/8 - 11**	**12.80**	**0.98**	**11.81**	**7.80**	**4.33**	**0.98**	331	13.03	15.18	32.54	
603	180 TC	225	310	250	60.32	22		375	35	340	365	120	40	441	17.36	15.18	32.54	286.0
	210 TC	**8.86**	**12.20**	**9.84**	**2.375**	**0.87**	**3/4 - 10**	**14.76**	**1.38**	**13.39**	**13.39**	**4.72**	**1.57**	441	17.36	16.06	33.42	
	250 TC													441	17.36	19.38	36.74	

Note: Standard dimensions = mm.
Bold dimensions = inches.
Motor length dimension is maximum for NEMA standard.

CLASS I SERVICE

SERVICE FACTOR OF 1.0 OR GREATER

Based on 1750 RPM input																	
HP	1/4 hp	1/3 hp	1/2 hp	3/4 hp	1 hp	1 1/2 hp	2 hp	3 hp	5 hp	7 1/2 hp	10 hp	15 hp	20 hp	25 hp	30 hp	40 hp	50 hp
RPM	56C	56C	56C	56C	143TC	145TC	145TC	182TC	184TC	213TC	215TC	250TC	250TC	280TC	280TC	320TC	320TC
300	←						RCV202	←	RCV302	←	RCV452	←			RCV552	←	RCV602
250	←						RCV202	←	RCV302	←	RCV452	←		RCV552	←		RCV602
225	←						RCV202	←	RCV302	←	RCV452	←		RCV552	←		RCV602
200	←						RCV202	←	RCV302	←	RCV452	←	RCV552	←			RCV602
175	←						RCV202	←	RCV302	←	RCV452	←	RCV552	←			RCV602
150	←					RCV202	RCV252	←	RCV302	←	RCV452	←	RCV552	←			RCV602
120	←					RCV202	RCV252	←	RCV302	←	RCV452	←	RCV552	←		RCV602	
105	←					RCV202	RCV252	RCV302	RCV352	←	RCV452	←	RCV552	←		RCV602	
90	←				RCV202	←	RCV252	RCV302	RCV352	RCV452	RCV552	RCV552	←		RCV602		
75	←				RCV202	←	RCV252	RCV302	←	RCV452	RCV552	←		RCV602			
60	←			RCV202	←	RCV252	RCV302	RCV352	RCV452	←	RCV552	←	RCV602				
45	←			RCV202	←	RCV252	RCV302	RCV352	RCV452	RCV552	←		RCV602				
30	←		RCV203	←	RCV253	RCV303	←	RCV453	RCV552	←		RCV603					
20	←	RCV203	RCV253	←	RCV303	←	RCV453	RCV553	←	RCV603							

CLASS II SERVICE

SERVICE FACTOR OF 1.4 OR GREATER

Based on 1750 RPM input																	
HP	1/4 hp	1/3 hp	1/2 hp	3/4 hp	1 hp	1 1/2 hp	2 hp	3 hp	5 hp	7 1/2 hp	10 hp	15 hp	20 hp	25 hp	30 hp	40 hp	50 hp
RPM	56C	56C	56C	56C	143TC	145TC	145TC	182TC	184TC	213TC	215TC	250TC	250TC	280TC	280TC	320TC	320TC
300	←						RCV202	←	RCV302	←	RCV452	←			RCV552	←	RCV602
250	←						RCV202	←	RCV302	←	RCV452	←		RCV552	←		RCV602
225	←					RCV202	RCV252	←	RCV302	←	RCV452	←		RCV552	←		RCV602
200	←					RCV202	RCV252	←	RCV302	←	RCV452	←	RCV552	←			RCV602
175	←					RCV202	RCV252	←	RCV302	←	RCV452	RCV552	←				RCV602
150	←				RCV202	←	RCV252	RCV302	RCV352	←	RCV452	RCV552	←				RCV602
120	←				RCV202	←	RCV252	RCV302	RCV452	RCV452	RCV552	←			RCV602		
105	←				RCV202	RCV252	RCV302	RCV302	RCV452	RCV452	RCV552	←			RCV602		
90	←			RCV202	←	RCV252	RCV302	RCV302	RCV452	←	RCV552	←		RCV602			
75	←			RCV202	←		RCV302	←	RCV452	RCV552	←		RCV602				
60	←		RCV202	←	RCV252	RCV302	RCV352	RCV452	RCV552	←		RCV602					
45	←		RCV202	←	RCV252	RCV302	RCV352	RCV452	RCV552	←		RCV602					
30	←	RCV203	←	RCV252	RCV303	RCV353	RCV453	RCV552	←		RCV603						
20	RCV203	←		RCV303	←	RCV453	RCV553	RCV553	←	RCV603							

1750 RPM Horsepower Tables

3/4" Output Shaft

Ratio	n2	Class I Service			Class II Service			Size	NEMA Flanges
		HP	SF	Mn2	HP	SF	Mn2		
5.49	319	2	1.7	31.3	2	1.7	31.3	**RCV202**	140TC/56C
6.46	271	2	1.4	37.1	2	1.4	37.1	**RCV202**	140TC/56C
7.75	226	2	1.3	44.5	1.5	1.7	32.6	**RCV202**	140TC/56C
8.57	204	2	1.2	49.2	1.5	1.6	36.1	**RCV202**	140TC/56C
9.92	176	2	1.0	56.9	1.5	1.4	41.7	**RCV202**	140TC/56C
11.67	150	1.5	1.3	49.1	1	1.8	33.5	**RCV202**	140TC/56C
14	125	1.5	1.1	58.9	1	1.7	40.2	**RCV202**	140TC/56C
15.48	113	1.5	1.0	65.1	1	1.5	44.4	**RCV202**	140TC/56C
18.01	97	1	1.3	51.7	0.75	1.8	37.9	**RCV202**	140TC/56C
21.19	83	1	1.2	60.8	0.75	1.6	44.6	**RCV202**	140TC/56C
25.43	69	1	1.1	73	0.75	1.5	53.5	**RCV202**	140TC/56C
28.13	62	0.75	1.3	59.2	0.5	1.9	39.8	**RCV202**	140TC/56C
31.71	55	0.75	1.2	66.7	0.5	1.8	44.9	**RCV202**	140TC/56C
37.31	47	0.75	1.0	78.5	0.5	1.5	52.8	**RCV202**	140TC/56C
44.77	39	0.5	1.2	63.4	0.33	1.8	42.8	**RCV202**	140TC/56C
49.52	35	0.5	1.1	70.1	0.33	1.6	47.4	**RCV202**	140TC/56C
58.1	30.1	0.5	1.0	80.2	0.33	1.5	54.2	**RCV203**	56C
64.3	27.2	0.33	1.3	59.9	0.25	1.8	43.2	**RCV203**	56C
69.2	25.3	0.33	1.2	64.5	0.25	1.7	46.5	**RCV203**	56C
81.4	21.5	0.33	1.0	75.9	0.25	1.5	54.7	**RCV203**	56C
97.7	17.9	0.25	1.2	65.6	0.167	1.6	49.2	**RCV203**	56C
108.1	16.2	0.25	1.1	72.6	0.167	1.4	54.4	**RCV203**	56C
120.1	14.6	0.25	1.0	80.6				**RCV203**	56C

Ratio = actual ratio
n2 = output RPM assuming 1750 RPM input
SF = service factor
Mn2 = output torque in ft-lbs
Class I = uniform loading between 3 to 10 hours per day – minimum 1.0 service factor
Class II = uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day - minimum 1.4 service factor

1750 RPM Horsepower Tables

1" Output Shaft

Ratio	n2	Class I Service			Class II Service			Size	NEMA Flanges
		HP	SF	Mn2	HP	SF	Mn2		
5.02	348	2	3.4	28.8	2	3.4	28.8	**RCV252**	140TC/56C
5.92	296	2	2.8	34	2	2.8	34	**RCV252**	140TC/56C
6.47	270	2	2.7	37.1	2	2.7	37.1	**RCV252**	140TC/56C
7.88	222	2	2.3	45.2	2	2.3	45.2	**RCV252**	140TC/56C
8.93	196	2	2.1	51.2	2	2.1	51.2	**RCV252**	140TC/56C
10.53	166	2	1.7	60.4	2	1.7	60.4	**RCV252**	140TC/56C
11.51	152	2	1.6	66.1	2	1.6	66.1	**RCV252**	140TC/56C
14.01	125	2	1.5	80.4	2	1.5	80.4	**RCV252**	140TC/56C
16.42	107	2	1.4	94.2	2	1.4	94.2	**RCV252**	140TC/56C
19.35	90	2	1.2	111	1.5	1.6	81.4	**RCV252**	140TC/56C
21.16	83	2	1.1	121.4	1.5	1.5	89.1	**RCV252**	140TC/56C
25.75	68	1.5	1.3	108.4	1	1.9	73.9	**RCV252**	140TC/56C
31.27	56	1.5	1.1	131.6	1	1.7	89.7	**RCV252**	140TC/56C
36.86	47	1.5	1.0	155.1	1	1.4	105.8	**RCV252**	140TC/56C
40.29	43	1	1.3	115.6	0.75	1.7	84.8	**RCV252**	140TC/56C
49.04	36	1	1.0	140.7	0.75	1.4	103.2	**RCV252**	140TC/56C
60.1	29.1	0.75	1.1	123.3	0.5	1.7	82.9	**RCV253**	56C
69.6	25.2	0.75	1.1	142.8	0.5	1.6	96.1	**RCV253**	56C
82	21.3	0.5	1.3	113.2	0.33	2.0	76.5	**RCV253**	56C
89.7	19.5	0.5	1.2	123.8	0.33	1.8	83.6	**RCV253**	56C
109.1	16	0.33	1.4	101.8	0.33	1.4	101.8	**RCV253**	56C
122.5	14.3	0.33	1.3	114.3	0.25	1.9	82.3	**RCV253**	56C
144.4	12.1	0.33	1.1	134.7	0.25	1.6	97	**RCV253**	56C
157.9	11.1	0.33	1.0	147.2	0.25	1.4	106	**RCV253**	56C
192.1	9.1	0.25	1.1	129	0.167	1.5	96.8	**RCV253**	56C

Ratio = actual ratio
n2 = output RPM assuming 1750 RPM input
SF = service factor
Mn2 = output torque in ft-lbs
Class I = uniform loading between 3 to 10 hours per day – minimum 1.0 service factor
Class II = uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day - minimum 1.4 service factor

1750 RPM Horsepower Tables

1 3/16" Output Shaft

Ratio	n2	Class I Service			Class II Service			Size	NEMA Flanges
		HP	SF	Mn2	HP	SF	Mn2		
5.11	342	5	2.5	78.2	5	2.5	78.2	**RCV302**	180TC/140TC
6.22	281	5	2.2	95.2	5	2.2	95.2	**RCV302**	180TC/140TC
6.93	253	5	2.0	106.1	5	2.0	106.1	**RCV302**	180TC/140TC
7.51	233	5	1.9	114.9	5	1.9	114.9	**RCV302**	180TC/140TC
7.78	225	5	1.8	119.1	5	1.8	119.1	**RCV302**	180TC/140TC
9.14	191	5	1.5	139.9	5	1.5	139.9	**RCV302**	180TC/140TC
10.18	172	5	1.4	155.8	5	1.4	155.8	**RCV302**	180TC/140TC
11.43	153	5	1.3	164	3	2.3	131.2	**RCV302**	180TC/140TC
12.62	139	5	1.1	181.1	3	1.9	144.9	**RCV302**	180TC/140TC
15.37	114	5	1.0	220.5	3	1.7	129.4	**RCV302**	180TC/140TC
17.11	102	3	1.5	144	3	1.5	144	**RCV302**	180TC/140TC
19.21	91	3	1.4	161.7	3	1.4	161.7	**RCV302**	180TC/140TC
24.19	72	3	1.0	203.6	2	1.5	138.8	**RCV302**	180TC/140TC
29.45	59	2	1.3	169	1.5	1.8	123.9	**RCV302**	180TC/140TC
32.8	53	2	1.2	188.2	1.5	1.6	138	**RCV302**	180TC/140TC
36.82	48	2	1.1	211.3	1.5	1.5	155	**RCV302**	180TC/140TC
41.2	42.5	2	1.0	230.5	1	2.0	115.2	**RCV303**	140TC/56C
46.2	37.9	1.5	1.2	189.7	1	1.8	129.4	**RCV303**	140TC/56C
54	32.4	1.5	1.0	221.7	1	1.4	151.2	**RCV303**	140TC/56C
65.8	26.6	1	1.2	184	0.75	1.7	135	**RCV303**	140TC/56C
73.6	23.9	1	1.1	205	0.75	1.5	150.3	**RCV303**	140TC/56C
82.2	21.3	1	1.0	230.1	0.75	1.4	168.7	**RCV303**	140TC/56C
99.3	17.6	0.75	1.1	203.8	0.5	1.6	137.1	**RCV303**	140TC/56C
120.9	14.5	0.5	1.3	166.9	0.33	2.0	112.8	**RCV303**	140TC/56C
134.7	13	0.5	1.2	185.9	0.33	1.8	125.6	**RCV303**	140TC/56C
151.1	11.6	0.5	1.1	208.6	0.33	1.7	141	**RCV303**	140TC/56C

Ratio = actual ratio
n2 = output RPM assuming 1750 RPM input
SF = service factor
Mn2 = output torque in ft-lbs
Class I = uniform loading between 3 to 10 hours per day – minimum 1.0 service factor
Class II = uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day - minimum 1.4 service factor

1750 RPM Horsepower Tables

1 3/8" Output Shaft

Ratio	n2	Class I Service			Class II Service			Size	NEMA Frames Available
		HP	SF	Mn2	HP	SF	Mn2		
5.11	342	5	3.5	73.3	5	3.5	73.3	**RCV352**	180TC/140TC
6.22	281	5	3.0	89.2	5	3.0	89.2	**RCV352**	180TC/140TC
6.93	253	5	2.8	99.4	5	2.8	99.4	**RCV352**	180TC/140TC
7.51	233	5	2.3	114.9	5	2.3	114.9	**RCV352**	180TC/140TC
7.78	225	5	2.5	111.6	5	2.5	111.6	**RCV352**	180TC/140TC
9.14	191	5	2.1	131.1	5	2.1	131.1	**RCV352**	180TC/140TC
10.18	172	5	1.9	146.1	5	1.9	146.1	**RCV352**	180TC/140TC
11.43	153	5	1.8	164	5	1.5	164	**RCV352**	180TC/140TC
12.62	139	5	1.5	181.1	5	1.5	181.1	**RCV352**	180TC/140TC
15.37	114	5	1.3	220.5	3	2.2	176.4	**RCV352**	180TC/140TC
17.11	102	5	1.2	245.5	3	2.1	196.4	**RCV352**	180TC/140TC
19.21	91	5	1.1	275.6	3	1.8	161.7	**RCV352**	180TC/140TC
24.19	72	3	1.3	203.6	2	2.0	138.8	**RCV352**	180TC/140TC
29.45	59	3	1.2	247.9	2	1.7	169	**RCV352**	180TC/140TC
32.8	53	3	1.1	276.1	2	1.6	188.2	**RCV352**	180TC/140TC
36.82	48	3	1.0	309.9	2	1.4	211.3	**RCV352**	180TC/140TC
41.2	42.5	2	1.3	230.5	1.5	1.7	169	**RCV353**	140TC/56C
46.2	37.9	2	1.2	258.7	1.5	1.6	189.7	**RCV353**	140TC/56C
54	32.4	1.5	1.2	221.7	1	1.8	151.2	**RCV353**	140TC/56C
65.8	26.6	1.5	1.1	269.9	1	1.6	184	**RCV353**	140TC/56C
73.6	23.9	1.5	1.0	300.6	1	1.4	205	**RCV353**	140TC/56C
82.2	21.3	1	1.3	230.1	0.75	1.8	168.7	**RCV353**	140TC/56C
99.3	17.6	1	1.0	277.9	0.75	1.4	203.8	**RCV353**	140TC/56C
120.9	14.5	0.75	1.2	248.1	0.5	1.7	166.9	**RCV353**	140TC/56C
134.7	13	0.75	1.1	276.3	0.5	1.6	185.9	**RCV353**	140TC/56C
151.1	11.6	0.75	1.0	310.1	0.5	1.5	208.6	**RCV353**	140TC/56C

Ratio = actual ratio
n2 = output RPM assuming 1750 RPM input
SF = service factor
Mn2 = output torque in ft-lbs
Class I = uniform loading between 3 to 10 hours per day – minimum 1.0 service factor
Class II = uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day - minimum 1.4 service factor

1750 RPM Horsepower Tables

1 3/4" Output Shaft

Ratio	n2	Class I Service			Class II Service			Size	NEMA Flanges
		HP	SF	Mn2	HP	SF	Mn2		
4.42	396	10	3.5	126.8	10	3.5	126.8	**RCV452**	210TC/180TC/140TC
4.89	358	10	3.3	140.3	10	3.3	140.3	**RCV452**	210TC/180TC/140TC
5.43	322	10	3.0	155.8	10	3.0	155.8	**RCV452**	210TC/180TC/140TC
6.07	288	10	2.7	174.2	10	2.7	174.2	**RCV452**	210TC/180TC/140TC
8.14	215	10	2.0	233.6	10	2.0	233.6	**RCV452**	210TC/180TC/140TC
9	194	10	1.8	258.3	10	1.8	258.3	**RCV452**	210TC/180TC/140TC
10	175	10	1.7	286.9	10	1.7	286.9	**RCV452**	210TC/180TC/140TC
11.18	157	10	1.5	320.8	10	1.5	320.8	**RCV452**	210TC/180TC/140TC
12.89	136	10	1.3	369.9	7.5	1.7	271.2	**RCV452**	210TC/180TC/140TC
14.25	123	10	1.2	408.9	7.5	1.6	299.9	**RCV452**	210TC/180TC/140TC
15.83	111	10	1.1	454.2	7.5	1.5	333.1	**RCV452**	210TC/180TC/140TC
17.7	99	10	1.0	507.9	5	1.8	270.9	**RCV452**	210TC/180TC/140TC
19.99	88	7.5	1.2	420.6	5	1.6	305.9	**RCV452**	210TC/180TC/140TC
22.09	79	7.5	1.1	464.8	5	1.5	338.1	**RCV452**	210TC/180TC/140TC
24.55	71	7.5	1.0	516.6	3	2.5	281.8	**RCV452**	210TC/180TC/140TC
27.45	64	5	1.3	393.8	3	2.2	315.1	**RCV452**	210TC/180TC/140TC
30.93	57	5	1.2	443.8	3	2.1	355	**RCV452**	210TC/180TC/140TC
31.2	56	5	1.1	447.6	3	1.7	262.6	**RCV452**	210TC/180TC/140TC
34.67	50	5	1.0	497.4	3	1.7	291.8	**RCV452**	210TC/180TC/140TC
38.76	45	3	1.2	326.2	2	1.8	222.4	**RCV452**	210TC/180TC/140TC
43.68	40	3	1.2	367.7	2	1.8	250.7	**RCV452**	210TC/180TC/140TC
45.68	**38.3**	**3**	**1.3**	**374.9**	**2**	**1.9**	**255.6**	**RCV453**	180TC/140TC
50.49	34.7	3	1.2	414.4	2	1.8	282.5	**RCV453**	180TC/140TC
56.1	31.2	3	1.1	460.4	2	1.6	313.9	**RCV453**	180TC/140TC
62.73	27.9	3	1.0	514.8	2	1.5	351	**RCV453**	180TC/140TC
76.79	22.8	2	1.1	429.7	1.5	1.5	315.1	**RCV453**	180TC/140TC
84.88	20.6	2	1.1	474.9	1.5	1.4	348.3	**RCV453**	180TC/140TC
94.31	18.6	2	1.0	527.7	1	1.9	263.8	**RCV453**	180TC/140TC
105.45	16.6	1.5	1.2	432.7	1	1.7	295	**RCV453**	180TC/140TC
147.18	11.9	1	1.2	411.8				**RCV453**	180TC/140TC
162.67	10.8	1	1.1	455.1				**RCV453**	180TC/140TC
180.74	9.7	1	1.0	505.7				**RCV453**	180TC/140TC

Ratio = actual ratio
n2 = output RPM assuming 1750 RPM input
SF = service factor
Mn2 = output torque in ft-lbs
Class I = uniform loading between 3 to 10 hours per day – minimum 1.0 service factor
Class II = uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day - minimum 1.4 service factor

1750 RPM Horsepower Tables

2 3/16" Output Shaft

Ratio	n2	Class I Service			Class II Service			Size	NEMA Flanges
		HP	SF	Mn2	HP	SF	Mn2		
2.78	629	30	1.8	234	30	1.8	234	**RCV552**	280TC/250TC/210TC/180TC
3.68	476	30	1.5	309.7	30	1.5	309.7	**RCV552**	280TC/250TC/210TC/180TC
4.57	383	30	1.8	384.7	30	1.8	384.7	**RCV552**	280TC/250TC/210TC/180TC
6.03	290	30	1.5	507.6	30	1.5	507.6	**RCV552**	280TC/250TC/210TC/180TC
7.39	237	25	1.4	523.1	25	1.4	523.1	**RCV552**	280TC/250TC/210TC/180TC
9.49	184	20	1.3	544.6	15	1.5	399.4	**RCV552**	280TC/250TC/210TC/180TC
12.07	145	20	1.2	692.7	15	1.7	508	**RCV552**	280TC/250TC/210TC/180TC
15.56	112	20	1.0	893	10	1.9	446.5	**RCV552**	280TC/250TC/210TC/180TC
19.06	92	15	1.0	802.2	10	1.4	546.9	**RCV552**	280TC/250TC/210TC/180TC
24.94	70	10	1.2	715.7	7.5	1.7	524.8	**RCV552**	280TC/250TC/210TC/180TC
30.55	57	7.5	1.2	642.9	5	1.7	467.5	**RCV552**	280TC/250TC/210TC/180TC
38.4	46	7.5	1.1	808	5	1.5	587.7	**RCV552**	280TC/250TC/210TC/180TC
47.03	37	5	1.2	674.8	3	2.1	539.8	**RCV552**	280TC/250TC/210TC/180TC
53.46	33	5	1.0	767	3	1.6	450	**RCV552**	280TC/250TC/210TC/180TC
65.48	27	3	1.5	551.2	3	1.5	551.2	**RCV552**	280TC/250TC/210TC/180TC
70.22	24.9	3	1.4	576.3	3	1.4	576.3	**RCV553**	180TC/140TC
88.88	19.7	3	1.2	729.4	2	1.8	497.3	**RCV553**	180TC/140TC
108.86	16.1	2	1.4	609.1	2	1.4	609.1	**RCV553**	180TC/140TC
118.46	14.8	2	1.3	662.9	1.5	1.8	486.1	**RCV553**	180TC/140TC
145.09	12.1	2	1.0	811.9	1.5	1.4	595.4	**RCV553**	180TC/140TC
183.64	9.5	1.5	1.2	753.6	1	1.7	513.8	**RCV553**	180TC/140TC
224.93	7.8	1	1.3	629.3				**RCV553**	180TC/140TC
259.37	6.8	1	1.2	725.6				**RCV553**	180TC/140TC

Ratio = actual ratio
n2 = output RPM assuming 1750 RPM input
SF = service factor
Mn2 = output torque in ft-lbs
Class I = uniform loading between 3 to 10 hours per day – minimum 1.0 service factor
Class II = uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day - minimum 1.4 service factor

1750 RPM Horsepower Tables

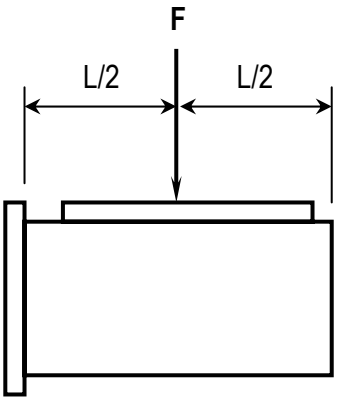
2 3/8" Output Shaft

Ratio	n2	Class I Service			Class II Service			Size	NEMA Flanges
		HP	SF	Mn2	HP	SF	Mn2		
4.64	377.2	50	1.8	668.4	50	1.8	668.4	**RCV602**	320TC,280TC,250TC,210TC,180TC
5.04	347.2	50	1.7	726.0	50	1.7	726.0	**RCV602**	320TC,280TC,250TC,210TC,180TC
6.03	290.2	50	1.7	868.7	50	1.7	868.7	**RCV602**	320TC,280TC,250TC,210TC,180TC
7.38	237.1	50	1.6	1063.1	50	1.6	1063.1	**RCV602**	320TC,280TC,250TC,210TC,180TC
8.61	203.3	50	1.5	1240.3	50	1.5	1240.3	**RCV602**	320TC,280TC,250TC,210TC,180TC
9.36	187.0	50	1.4	1348.4	50	1.4	1348.4	**RCV602**	320TC,280TC,250TC,210TC,180TC
11.2	156.3	50	1.4	1613.4	50	1.4	1613.4	**RCV602**	320TC,280TC,250TC,210TC,180TC
13.71	127.6	40	1.3	1580.0	30	1.7	1185.0	**RCV602**	320TC,280TC,250TC,210TC,180TC
15.03	116.4	40	1.2	1732.1	30	1.5	1299.1	**RCV602**	280TC,250TC,210TC,180TC
16.34	107.1	40	1.2	1883.1	30	1.6	1412.3	**RCV602**	280TC,250TC,210TC,180TC
19.55	89.5	30	1.3	1689.8	25	1.6	1408.1	**RCV602**	280TC,250TC,210TC,180TC
23.93	73.1	25	1.2	1723.6	20	1.5	1378.9	**RCV602**	280TC,250TC,210TC,180TC
24.99	70.0	20	1.2	1440.0	15	1.6	1080.0	**RCV602**	250TC,210TC,180TC
27.16	64.4	20	1.2	1565.0	15	1.6	1173.8	**RCV602**	250TC,210TC,180TC
30.24	57.9	20	1.1	1742.5	15	1.4	1306.9	**RCV602**	250TC,210TC,180TC
32.5	53.8	20	1.1	1872.7	15	1.4	1404.5	**RCV602**	250TC,210TC,180TC
36.18	48.4	20	1.1	2084.8	15	1.4	1563.6	**RCV602**	250TC,210TC,180TC
39.79	44.0	15	1.3	1719.6	10	1.9	1146.4	**RCV602**	250TC,210TC,180TC
44.29	39.5	15	1.2	1914.1	10	1.7	1276.0	**RCV602**	250TC,210TC,180TC
46.6	37.6	15	1.3	1971.9	10	1.9	1314.6	**RCV603**	250TC,210TC,180TC,140TC
55.8	31.4	15	1.1	2361.2	10	1.6	1574.2	**RCV603**	250TC,210TC,180TC,140TC
60.1	29.1	10	1.5	1695.5	10	1.5	1695.5	**RCV603**	250TC,210TC,180TC,140TC
71.9	24.3	10	1.2	2028.4	7.5	1.6	1521.3	**RCV603**	250TC,210TC,180TC,140TC
88	19.9	7.5	1.3	1861.9	5	1.9	1241.3	**RCV603**	250TC,210TC,180TC,140TC
96.3	18.2	7.5	1.3	2037.5	5	1.9	1358.3	**RCV603**	210TC,180TC,140TC
115.2	15.2	7.5	1.0	2437.4	5	1.5	1624.9	**RCV603**	210TC,180TC,140TC
136.5	12.8	5	1.3	1925.4	3	2.2	1155.2	**RCV603**	210TC,180TC,140TC
148.3	11.8	5	1.2	2091.8	3	2.0	1255.1	**RCV603**	210TC,180TC,140TC
177.5	9.9	5	1.0	2503.7	3	1.7	1502.2	**RCV603**	210TC,180TC,140TC
190.4	9.2	3	1.6	1611.4	3	1.6	1611.4	**RCV603**	180TC,140TC
207	8.5	3	1.5	1751.9	3	1.5	1751.9	**RCV603**	180TC,140TC
217.2	8.1	3	1.3	1838.2	2	2.0	1225.5	**RCV603**	180TC,140TC
247.6	7.1	3	1.3	2095.5	2	1.9	1397.0	**RCV603**	180TC,140TC
303.1	5.8	2	1.4	1710.1	2	1.4	1710.1	**RCV603**	180TC,140TC

Ratio = actual ratio
n2 = output RPM assuming 1750 RPM input
SF = service factor
Mn2 = output torque in ft-lbs
Class I = uniform loading between 3 to 10 hours per day – minimum 1.0 service factor
Class II = uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day - minimum 1.4 service factor

Overhung Load Capacity

Output RPM	RCV						
	202-203	252-253	302-303	352-353	452-453	552-553	602-603
400	214	241	438	697	924	1090	2473
300	234	265	456	719	949	1338	2541
250	272	310	533	760	1003	1349	2676
200	292	335	575	814	1072	1461	2698
150	321	369	632	886	1167	1686	2743
100	389	420	724	1000	1317	1911	3260
80	438	452	778	1066	1405	2136	3552
60	495	499	859	1164	1535	2473	4182
40	540	571	982	1315	1735	3147	4879
20	674	719	1236	1619	2136	3597	5171

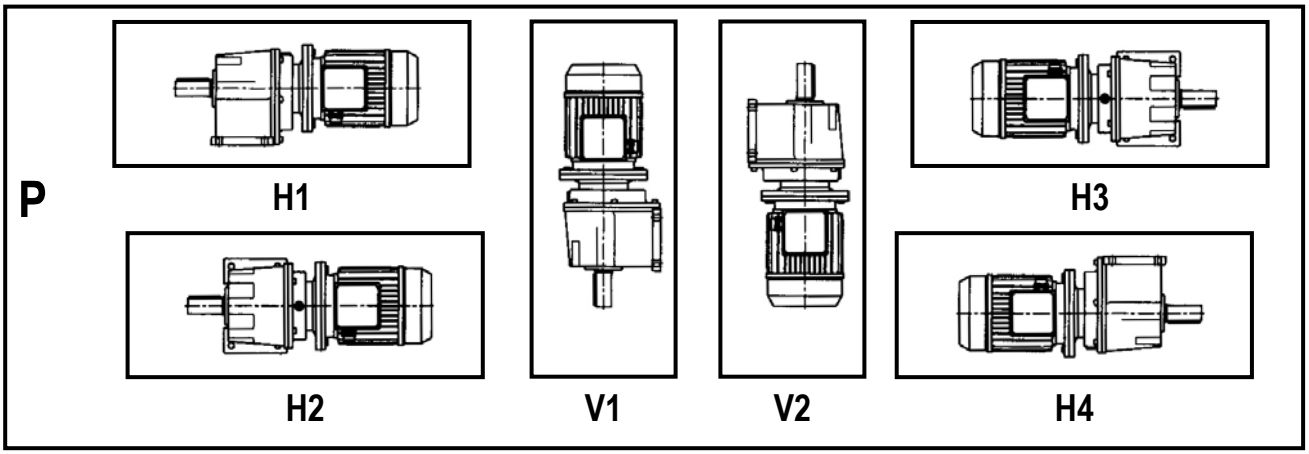


Loads above are indicated at half shaft length.
Units are shown in pounds.

Lubrication of Varmec Gear Reducers

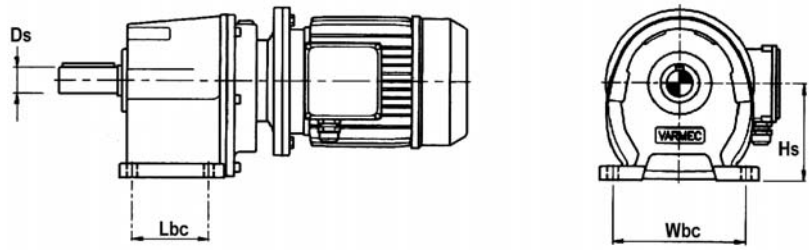
All Varmec gearboxes are filled with synthetic oil for mounting in the H1 position. If you are mounting a gearbox in a position other than H1, please refer to the following chart. The synthetic oil used is compatible with SHC630.

Size	Mounting Position					
	H1	H2	H3	H4	V1	V2
RCV 452/453P	2.5 Litres	2.5 Litres	2.5 Litres	2.0 Litres	3.0 Litres	3.4 Litres
RCV 552/553P	3.8 Litres	3.5 Litres	3.5 Litres	3.0 Litres	5.0 Litres	5.5 Litres
RCV 602/603P	8.5 Litres	8.0 Litres	8.0 Litres	8.5 Litres	12.5 Litres	12.0 Litres



CRITICAL MOUNTING DIMENSIONS

OTHER EUROPEAN MANUFACTURERS



Varmec	Bonfiglioli		Ds Varmec	Lbc	Wbc	Hs
RCV202P	AS20P		**3/4**	60	130	100
RCV252P	AS25P		**1**	70	160	110
RCV302P	AS30P		**1 3/16**	105	180	130
RCV352P	AS35P		**1 3/8**	105	180	130
RCV452P	AS45P		**1 3/4**	110	225	155
RCV552P	AS55P		**2 3/16**	145	250	195
RCV602P			**2 3/8**	310	250	225
David Brown	**SEW Eurodrive**	**Nordbloc**	Ds			
M0122	R17	SK172	**3/4**	110	110	75
M0322	R37	SK372	**1**	130	110	90
M0422	R47	SK472	**1 1/4**	165	135	115
M0622	R67	SK672	**1 3/8**	195	150	130
M0722	R77	SK772	**1 5/8**	205	170	140
M0822	R87	SK872	**2 1/8**	260	215	180
M0921	R97	SK972	**2 3/8**	310	250	225
Leroy Somer/Browning			Ds			
CbN2002s			**3/4**	85	110	75
CbN2102s			**1**	165	110	80
CbN2202s			**1 1/4**	192	135	100
CbN2302s			**1 1/2**	240	170	125
CbN2402s			**1 3/4**	235	230	180
CbN2502S			**2 3/8**	280	280	200
Nord (standard)			Ds			
SK02			**3/4**	60	110	86
SK12			**1**	62	105	102
SK22			**1 1/4**	80	160	125
SK32			**1 5/8**	120	185	155
SK42			**1 7/8**	120	175	175
SK52			**2 1/4**	150	220	212

Note: Standard dimensions = mm. **Bold dimensions = inches.**

Inch and Metric Equivalent Chart

FRACTIONAL INCHES AND MILLIMETERS									DECIMAL EQUIVALENTS OF MILLIMETERS					
FRACTIONAL - DECIMAL - MILLIMETERS					FRACTIONAL - DECIMAL - MILLIMETERS				MILLIMETERS - INCHES		MILLIMETERS - INCHES		MILLIMETERS - INCHES	
16th	32nd	64th			16th	32nd	64th							
		1/64	0.015625	0.3969				*0.51181 — 13*	**25**	**0.98425**	63	2.48031	105	4.133858
	1/32		0.03125	0.7938			33/64	0.515625	13.0969			64	2.51969	110	4.330709
			0.03937 — 1			17/32		0.53125	13.4938	26	1.02362	**65**	**2.55906**	115	4.527559
		3/64	0.046875	1.1906			35/64	0.546875	13.8906	27	1.06299			120	4.724409
1/16			**0.0625**	1.5875				*0.55118 — 14*		28	1.10236	66	2.59843	125	4.921260
		5/64	0.078125	1.9844	**9/16**			**0.5625**	14.2875	29	1.14173	67	2.63780	130	5.118110
			0.07874 — 2				37/64	0.578125	14.6844	**30**	**1.18110**	68	2.67717	135	5.314961
	3/32		0.09375	2.3813				*0.59055 — 15*				69	2.71654	140	5.511811
		7/64	0.109375	2.7781		19/32		0.59375	15.0813	31	1.22047	**70**	**2.75591**	145	5.708661
			0.11811 — 3				39/64	0.609375	15.4781	32	1.25984			150	5.905512
1/8			**0.125**	3.1750	**5/8**			**0.625**	15.8750	33	1.29921	71	2.79528	155	6.102362
		9/64	0.140625	3.5719				*0.62992 — 16*		34	1.33858	72	2.83465	160	6.299213
	5/32		0.15625	3.9688			41/64	0.640625	16.2719	**35**	**1.37795**	73	2.87402	165	6.496063
			0.15748 — 4			21/32		0.65625	16.6688			74	2.91339	170	6.692913
		11/64	0.171875	4.3656				*0.66929 — 17*		36	1.41732	**75**	**2.95276**	175	6.889764
3/16			**0.1875**	4.7625			43/64	0.671875	17.0656	37	1.45669			180	7.086614
			0.19685 — 5		**11/16**			**0.6875**	17.4625	38	1.49606	76	2.99213	185	7.283465
		13/64	0.203125	5.1594			45/64	0.703125	17.8594	39	1.53543	77	3.03150	190	7.480315
	7/32		0.21875	5.5563				*0.70866 — 18*		**40**	**1.57480**	78	3.07087	195	7.677165
		15/64	0.234375	5.9531		23/32		0.71875	18.2563			79	3.11024	200	7.874016
			0.23622 — 6				47/64	0.734375	18.6531	41	1.61417	**80**	**3.14961**	205	8.070866
1/4			**0.250**	6.3500				*0.74803 — 19*		42	1.65354			210	8.267717
		17/64	0.265625	6.7469	**3/4**			**0.750**	19.0500	43	1.69291	81	3.18898	215	8.464567
			0.27559 — 7				49/64	0.765625	19.4469	44	1.73228	82	3.22835	220	8.661417
	9/32		0.28125	7.1438		25/32		0.78125	19.8438	**45**	**1.77165**	83	3.26772	225	8.858268
		19/64	0.296875	7.5406				*0.78740 — 20*				84	3.30709	230	9.055118
5/16			**0.3125**	7.9375			51/64	0.796875	20.2406	46	1.81102	**85**	**3.34646**	235	9.251969
			0.31496 — 8		**13/16**			**0.8125**	20.6375	47	1.85039			240	9.448819
		21/64	0.328125	8.3344				*0.82677 — 21*		48	1.88976	86	3.38583	245	9.645669
	11/32		0.34375	8.7313			53/64	0.828125	21.0344	49	1.92913	87	3.42520	250	9.842520
			0.35433 — 9			27/32		0.84375	21.4313	**50**	**1.96850**	88	3.46457	255	10.039370
		23/64	0.359375	9.1281			55/64	0.859375	21.8281			89	3.50394	260	10.236220
3/8			**0.375**	9.5250				*0.86614 — 22*		51	2.00787	**90**	**3.54331**	265	10.433071
		25/64	0.390625	9.9219	**7/8**			**0.875**	22.2250	52	2.04724			270	10.629921
			0.39370 — 10				57/64	0.890625	22.6219	53	2.08661	91	3.58268	275	10.826772
	13/32		0.40625	10.3188				*0.90551 — 23*		54	2.12598	92	3.62205	280	11.023622
		27/64	0.421875	10.7156		29/32		0.90625	23.0188	**55**	**2.16535**	93	3.66142	285	11.220472
			0.43307 — 11				59/64	0.921875	23.4156			94	3.70079	290	11.417323
7/16			**0.4375**	11.1125	**15/16**			**0.9375**	23.8125	56	2.20472	**95**	**3.74016**	295	11.614173
		29/64	0.453125	11.5094				*0.94488 — 24*		57	2.24409			300	11.811024
	15/32		0.46875	11.9063			61/64	0.953125	24.2094	58	2.28346	96	3.77953	305	12.007874
			0.47244 — 12			31/32		0.96875	24.6063	59	2.32283	97	3.81890	310	12.204724
		31/64	0.484375	12.3031				*0.98425 — 25*		**60**	**2.36220**	98	3.85827	315	12.401575
1/2			**0.500**	12.7000			63/64	0.984375	25.0031			99	3.89764	320	12.598425
					1			**1.000**	25.4000	61	2.40157	**100**	**3.93701**	325	12.795276
										62	2.44094				

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