

# 4 DP 3 1/2" Face

## Steel Stock Spur Gears 20° Pressure Angle



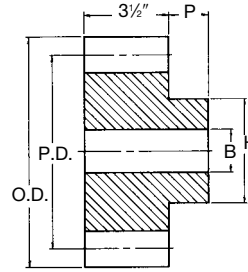
**Type B**  
Plain With Hub  
All Steel



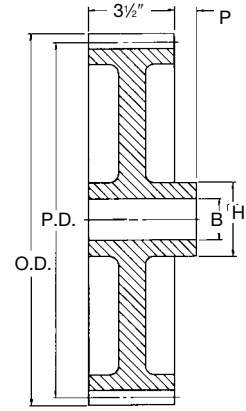
**Type B<sub>1</sub>**  
Web  
All Steel



**Type B<sub>2</sub>**  
Web With  
Lighten Holes  
All Steel



**Type B**



**Type B<sub>1</sub>, B<sub>2</sub>**

### Steel

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max. *	Diameter	Proj.	
12	TS412	20	3.000	3.500	B	1 1/4	1 1/16	2 7/16	7/16	6.8
14	TS414	20	3.500	4.000	B	1 1/4	1 1/4	2 9/16	7/16	9.8
15	TS415	20	3.750	4.250	B	1 1/4	1 1/4	3 1/16	7/16	11.5
16	TS416	20	4.000	4.500	B	1 1/4	2 1/8	3 3/16	7/16	13.3
18	TS418	20	4.500	5.000	B	1 1/4	2 3/8	3 7/16	7/16	17.3
20	TS420	20	5.000	5.500	B	1 1/4	2 3/4	4 1/16	7/16	21.8
22	TS422	20	5.500	6.000	B	1 1/4	3	4 3/16	7/16	26.7
24	TS424	20	6.000	6.500	B	1 1/4	3 1/8	5	1 1/4	33.7
28	TS428	20	7.000	7.500	B	1 1/4	3 3/8	5	1 1/4	43.8
30	TS430	20	7.500	8.000	B	1 1/4	3 3/8	5	1 1/4	49.4
32	TS432	20	8.000	8.500	B	1 1/4	3 3/8	5	1 1/2	56.8
36	TS436	20	9.000	9.500	B	1 1/4	3 3/8	5	1 1/2	70.0
40	TS440	20	10.000	10.500	B	1 1/4	3 3/8	5 1/2	1 1/2	85.2
44	TS444	20	11.000	11.500	B	1 1/4	3 3/8	5 1/2	1 1/2	101.6
48	TS448	20	12.000	12.500	B	1 1/4	3 3/8	5 1/2	1 1/2	119.5
56	TS456	20	14.000	14.500	B <sub>1</sub>	1 1/4	3 3/4	5 1/2	1 1/2	96.9
60	TS460	20	15.000	15.500	B <sub>2</sub>	1 1/4	3 3/4	5 1/2	1 1/2	88.1
64	TS464	20	16.000	16.500	B <sub>2</sub>	1 1/4	3 3/4	5 1/2	1 1/2	86.9
72	TS472	20	18.000	18.500	B <sub>2</sub>	1 1/4	3 3/4	5 1/2	1 1/2	86.5
80	TS480	20	20.000	20.500	B <sub>2</sub>	1 1/4	3 3/4	5 1/2	1 1/2	90.9

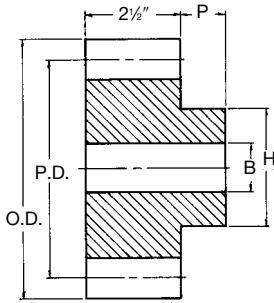
\* Recommended maximum bore with keyway and set screw.

20° P.A. Gears Will Not Operate With 14 1/2° P.A.

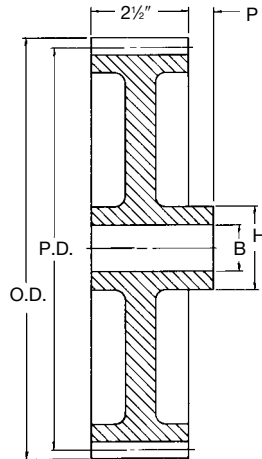
# Martin

## Steel Stock Spur Gears 20° Pressure Angle

# 5 DP 2 1/2" Face



**Type B**



**Type B<sub>2</sub>**



**Type B**  
Plain With Hub  
All Steel



**Type B<sub>2</sub>**  
Web With Lighten Holes  
All Steel

### Steel

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max. *	Diameter	Proj.	
12	TS512	20	2.400	2.800	B	1 1/8	1 1/8	1 3/16	3/8	2.9
14	TS514	20	2.800	3.200	B	1 1/8	1 1/8	2 3/16	3/8	4.3
15	TS515	20	3.000	3.400	B	1 1/8	1 1/8	2	3/8	5.2
16	TS516	20	3.200	3.600	B	1 1/8	1 1/8	2 1/2	3/8	6.1
18	TS518	20	3.600	4.000	B	1 1/8	1 1/8	3	3/8	8.0
20	TS520	20	4.000	4.400	B	1 1/8	2 1/4	3 3/8	3/8	10.2
24	TS524	20	4.800	5.200	B	1 1/8	2 3/8	3 3/4	1 1/4	15.7
25	TS525	20	5.000	5.400	B	1 1/8	2 3/8	3 3/4	1 1/4	20.3
28	TS528	20	5.600	6.000	B	1 1/8	2 3/8	3 3/4	1 1/4	22.9
30	TS530	20	6.000	6.400	B	1 1/8	2 3/8	3 3/4	1 1/4	23.9
35	TS535	20	7.000	7.400	B	1 1/8	2 3/8	3 3/4	1 1/4	29.9
40	TS540	20	8.000	8.400	B	1 1/8	2 3/8	3 3/4	1 1/4	38.2
45	TS545	20	9.000	9.400	B	1 1/8	2 3/8	3 3/4	1 1/4	47.7
50	TS550	20	10.000	10.400	B	1 1/8	2 3/8	4 1/8	1 1/4	60.3
60	TS560	20	12.000	12.400	B	1 1/8	2 3/8	4 1/8	1 1/4	84.7
70	TS570	20	14.000	14.400	B <sub>2</sub>	1 3/16	3 1/8	5 1/8	1 1/4	51.6
80	TS580	20	16.000	16.400	B <sub>2</sub>	1 3/16	3 1/8	5 1/8	1 1/4	55.8
90	TS590	20	18.000	18.400	B <sub>2</sub>	1 3/16	3 1/8	5 1/8	1 1/4	59.7
100	TS5100	20	20.000	20.400	B <sub>2</sub>	1 3/16	3 1/8	5 1/8	1 1/2	69.2
110	TS5110	20	22.000	22.400	B <sub>2</sub>	1 3/16	3 1/8	5 1/8	1 1/2	72.3
120	TS5120	20	24.000	24.400	B <sub>2</sub>	1 3/16	3 1/2	6 1/4	1 1/2	80.2

\* Recommended maximum bore with keyway and set screw.

20° P.A. Gears Will Not Operate With 14 1/2° P.A.

GEARS

# 6 DP 2" Face

# Steel Stock Spur Gears 20° Pressure Angle

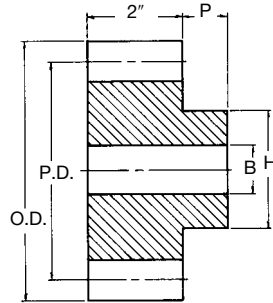
# Martin



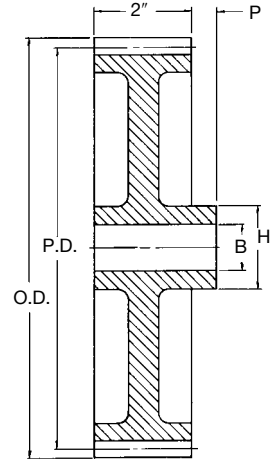
**Type B**  
Plain With Hub  
All Steel



**Type B<sub>2</sub>**  
Web With Lighten Holes  
All Steel



**Type B**



**Type B<sub>2</sub>**

## Steel

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max.*	Diameter	Proj.	
11	TS611†	20	2.000	2.333	B	1	1	1½	¾	1.6
12	TS612	20	2.000	2.333	B	1	1	1½	¾	1.6
14	TS614	20	2.333	2.666	B	1	1	1⅝	¾	2.4
15	TS615	20	2.500	2.833	B	1	1¼	2	¾	2.9
16	TS616	20	2.666	3.000	B	1	1⅙	2½	¾	3.4
18	TS618	20	3.000	3.333	B	1	1½	2½	¾	4.6
21	TS621	20	3.500	3.833	B	1	1½	3	¾	6.6
24	TS624	20	4.000	4.333	B	1½	1½	3	¾	8.1
27	TS627	20	4.500	4.833	B	1½	2½	3½	¾	10.6
30	TS630	20	5.000	5.333	B	1½	2½	4	¾	13.4
33	TS633	20	5.500	5.833	B	1½	2½	4	1½	17.8
36	TS636	20	6.000	6.333	B	1½	2½	4	1½	20.4
42	TS642	20	7.000	7.333	B	1½	2½	4	1½	26.2
48	TS648	20	8.000	8.333	B	1½	2½	4	1½	32.8
54	TS654	20	9.000	9.333	B	1½	2½	4	1½	40.4
60	TS660	20	10.000	10.333	B	1½	2⅙	4½	1½	50.0
64	TS664	20	10.666	11.000	B	1½	2⅙	4½	1½	56.5
66	TS666	20	11.000	11.333	B	1½	2⅙	4½	1½	59.8
72	TS672	20	12.000	12.333	B	1½	2⅙	4½	1½	70.0
84	TS684	20	14.000	14.333	B <sub>2</sub>	1½	2⅙	5	1½	42.8
96	TS696	20	16.000	16.333	B <sub>2</sub>	1½	2⅙	5	1½	46.0
108	TS6108	20	18.000	18.333	B <sub>2</sub>	1½	2⅙	5	1½	48.8
120	TS6120	20	20.000	20.333	B <sub>2</sub>	1½	2⅙	5	1½	51.3

\* Recommended maximum bore with keyway and set screw.

† Enlarged pitch diameter with special tooth form.

**20° P.A. Gears Will Not Operate With 14½° P.A.**

## Bored-to-Size

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Set Screw	Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Keyway		Diameter	Proj.	
12	TS612BS 1	20	2.000	2.333	B	1	¼X ⅝	(f) 1/4-20 @90	1½	¾	1.60
14	TS614BS 1	20	2.333	2.667	B	1	¼X ⅝	(f) 5/16-18 @90	1⅝	¾	2.40
14	TS614BS 1-1/8	20	2.333	2.667	B	1½	¼X ⅝	(f) 5/16-18 @90	1⅝	¾	2.40
15	TS615BS 1	20	2.500	2.833	B	1	¼X ⅝	(f) 5/16-18 @90	2	¾	2.90
15	TS615BS 1-1/8	20	2.500	2.833	B	1½	¼X ⅝	(f) 5/16-18 @90	2	¾	2.90
15	TS615BS 1-3/16	20	2.500	2.833	B	1⅙	¼X ⅝	(f) 5/16-18 @90	2	¾	2.90
15	TS615BS 1-1/4	20	2.500	2.833	B	1½	¼X ⅝	(f) 5/16-18 @90	2	¾	2.90
16	TS616BS 1	20	2.667	3.000	B	1	¼X ⅝	(f) 5/16-18 @90	2½	¾	3.40
16	TS616BS 1-1/8	20	2.667	3.000	B	1½	¼X ⅝	(f) 5/16-18 @90	2½	¾	3.40
16	TS616BS 1-3/16	20	2.667	3.000	B	1⅙	¼X ⅝	(f) 5/16-18 @90	2½	¾	3.40
16	TS616BS 1-1/4	20	2.667	3.000	B	1½	¼X ⅝	(f) 5/16-18 @90	2½	¾	3.40
18	TS618BS 1	20	3.000	3.333	B	1	¼X ⅝	(f) 5/16-18 @90	2½	¾	4.60
18	TS618BS 1-1/8	20	3.000	3.333	B	1½	¼X ⅝	(f) 5/16-18 @90	2½	¾	4.60
18	TS618BS 1-3/16	20	3.000	3.333	B	1⅙	¼X ⅝	(f) 5/16-18 @90	2½	¾	4.60
18	TS618BS 1-1/4	20	3.000	3.333	B	1½	¼X ⅝	(f) 5/16-18 @90	2½	¾	4.60
21	TS621BS 1	20	3.500	3.833	B	1	¼X ⅝	(f) 5/16-18 @90	3	¾	6.60
21	TS621BS 1-1/8	20	3.500	3.833	B	1½	¼X ⅝	(f) 5/16-18 @90	3	¾	6.60
21	TS621BS 1-3/16	20	3.500	3.833	B	1⅙	¼X ⅝	(f) 5/16-18 @90	3	¾	6.60
21	TS621BS 1-1/4	20	3.500	3.833	B	1½	¼X ⅝	(f) 5/16-18 @90	3	¾	6.60

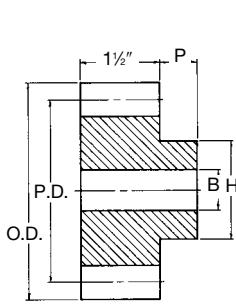
# Martin

## Steel & Cast Stock Spur Gears

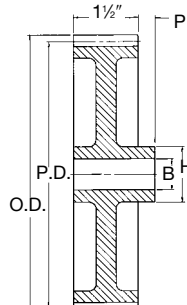
20° Pressure Angle

# 8 DP

## 1 1/2" Face



**Type B**



**Type B<sub>2</sub>, B<sub>3</sub>**



**Type B**  
Plain With Hub All Steel



**Type B<sub>3</sub>**  
Web With Spokes Cast

### Steel

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max. *	Diameter	Proj.	
12	TS812	20	1.500	1.750	B	3/4	3/4	1 1/4	3/4	0.7
14	TS814	20	1.750	2.000	B	3/4	1 1/8	1 1/4	3/4	1.0
15	TS815	20	1.875	2.125	B	3/4	7/8	1 1/4	3/4	1.2
16	TS816	20	2.000	2.250	B	7/8	1 1/8	1 1/4	3/4	1.4
18	TS818	20	2.250	2.500	B	7/8	1 1/4	1 1/4	7/8	1.9
19	TS819	20	2.375	2.625	B	7/8	1 1/2	2	7/8	2.3
20	TS820	20	2.500	2.750	B	7/8	1 1/2	2 1/4	7/8	2.5
22	TS822	20	2.750	3.000	B	7/8	1 1/2	2 1/4	7/8	3.2
24	TS824	20	3.000	3.250	B	1	1 1/2	2 1/4	7/8	3.9
26	TS826	20	3.250	3.500	B	1	1 3/4	2 1/4	7/8	4.6
28	TS828	20	3.500	3.750	B	1	1 3/4	2 1/4	7/8	5.2
30	TS830	20	3.750	4.000	B	1	1 3/4	2 1/4	7/8	5.6
32	TS832	20	4.000	4.250	B	1	1 3/4	3/4	7/8	6.6
36	TS836	20	4.500	4.750	B	1	2 1/8	3/4	7/8	8.6
40	TS840	20	5.000	5.250	B	1	2 1/8	3/4	7/8	10.2
42	TS842	20	5.250	5.500	B	1	2 1/8	3/4	1	11.4
44	TS844	20	5.500	5.750	B	1	2 1/8	3/4	1	12.3
48	TS848	20	6.000	6.250	B	1	2 1/8	3/4	1	14.2

### Cast

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max. *	Diameter	Proj.	
52	TC852	20	6.500	6.750	B	1	1 1/2	3	1	11.9
56	TC856	20	7.000	7.250	B	1	1 1/2	3	1	13.0
60	TC860	20	7.500	7.750	B <sub>2</sub>	1	1 1/2	3	1	12.0
64	TC864	20	8.000	8.250	B <sub>3</sub>	1	1 1/2	3	1	12.1
72	TC872	20	9.000	9.250	B <sub>3</sub>	1	2 1/8	3 1/4	1	14.4
80	TC880	20	10.000	10.250	B <sub>3</sub>	1 1/4	2 1/8	3 1/4	1 1/4	17.0
88	TC888	20	11.000	11.250	B <sub>3</sub>	1 1/4	2 1/8	3 1/4	1 1/4	19.0
96	TC896	20	12.000	12.250	B <sub>3</sub>	1 1/4	2 1/8	3 1/4	1 1/4	23.7
112	TC8112	20	14.000	14.250	B <sub>3</sub>	1 1/4	2 1/8	3 1/4	1 1/4	25.0
120	TC8120	20	15.000	15.250	B <sub>3</sub>	1 1/4	2 1/8	3 1/4	1 1/4	25.8
128	TC8128	20	16.000	16.250	B <sub>3</sub>	1 1/4	2 1/8	3 1/4	1 1/4	28.0
144	TC8144	20	18.000	18.250	B <sub>3</sub>	1 1/4	2 1/8	3 1/4	1 1/4	32.0
160	TC8160	20	20.000	20.250	B <sub>3</sub>	1 1/4	2 1/8	3 1/4	1 1/4	34.8

### Bored-to-Size

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Set Screw	Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Keyway		Diameter	Proj.	
12	TS812BS 3/4	20	1.500	1.750	B	3/4	3/16 X 3/32	(1) 10-24 @ 90	1 1/4	3/4	0.70
14	TS814BS 3/4	20	1.750	2.000	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/4	3/4	1.00
15	TS815BS 3/4	20	1.875	2.125	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/4	3/4	1.20
15	TS815BS 7/8	20	1.875	2.125	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/4	3/4	1.20
16	TS816BS 7/8	20	2.000	2.250	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/4	7/8	1.40
16	TS816BS 1	20	2.000	2.250	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	1 1/4	7/8	1.40
18	TS818BS 7/8	20	2.250	2.500	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/4	7/8	1.90
18	TS818BS 1	20	2.250	2.500	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	1 1/4	7/8	1.90
18	TS818BS 1-1/8	20	2.250	2.500	B	1 1/8	1/4 X 1/8	(1) 5/16-18 @ 90	1 1/4	7/8	1.90
20	TS820BS 7/8	20	2.500	2.750	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	2 1/4	7/8	2.50
20	TS820BS 1	20	2.500	2.750	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	2 1/4	7/8	2.50
20	TS820BS 1-1/8	20	2.500	2.750	B	1 1/8	1/4 X 1/8	(1) 5/16-18 @ 90	2 1/4	7/8	2.50
22	TS822BS 7/8	20	2.750	3.000	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	2 1/4	7/8	3.20
22	TS822BS 1	20	2.750	3.000	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	2 1/4	7/8	3.20
22	TS822BS 1-1/8	20	2.750	3.000	B	1 1/8	1/4 X 1/8	(1) 5/16-18 @ 90	2 1/4	7/8	3.20
24	TS824BS 7/8	20	3.000	3.250	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	2 1/4	7/8	3.90
24	TS824BS 1	20	3.000	3.250	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	2 1/4	7/8	3.90
24	TS824BS 1-1/8	20	3.000	3.250	B	1 1/8	1/4 X 1/8	(1) 5/16-18 @ 90	2 1/4	7/8	3.90

\* Recommended maximum bore with keyway and set screw.

20° P.A. Gears Will Not Operate With 14 1/2° P.A.

GEARS

# 10 DP 1 1/4" Face

# Steel & Cast Stock Spur Gears 20° Pressure Angle

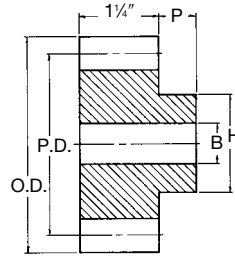
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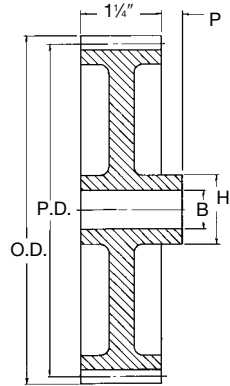
**Type B**  
Plain With Hub  
All Steel



**Type B<sub>3</sub>**  
Web With Spokes  
Cast



**Type B**



**Type B<sub>3</sub>**

## Steel

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max.*	Diameter	Proj.	
12	TS1012	20	1.200	1.400	B	5/8	5/8	29/32	5/8	0.4
14	TS1014	20	1.400	1.600	B	3/4	3/4	1 1/64	5/8	0.6
15	TS1015	20	1.500	1.700	B	3/4	3/4	1 1/32	5/8	0.6
16	TS1016	20	1.600	1.800	B	3/4	3/4	1 1/16	5/8	0.7
18	TS1018	20	1.800	2.000	B	3/4	1 1/16	1 1/32	5/8	0.9
20	TS1020	20	2.000	2.200	B	7/8	7/8	1 3/64	5/8	1.2
22	TS1022	20	2.200	2.400	B	7/8	1 1/16	1 1/16	5/8	1.5
24	TS1024	20	2.400	2.600	B	7/8	1 1/16	2 1/64	5/8	1.8
25	TS1025	20	2.500	2.700	B	7/8	1 1/4	2 1/64	5/8	2.0
26	TS1026	20	2.600	2.800	B	7/8	1 1/4	2 1/8	5/8	2.2
28	TS1028	20	2.800	3.000	B	7/8	1 1/2	2 1/2	5/8	2.7
30	TS1030	20	3.000	3.200	B	7/8	1 3/4	2 1/2	7/8	3.4
32	TS1032	20	3.200	3.400	B	1	1 1/2	2 1/2	7/8	3.7
35	TS1035	20	3.500	3.700	B	1	1 3/4	2 1/2	7/8	4.2
36	TS1036	20	3.600	3.800	B	1	1 3/4	2 1/2	7/8	4.3
40	TS1040	20	4.000	4.200	B	1	2 1/4	3 1/2	7/8	6.4
45	TS1045	20	4.500	4.700	B	1	2 1/2	3 1/2	7/8	7.5
48	TS1048	20	4.800	5.000	B	1	2 3/4	3 3/4	7/8	8.7
50	TS1050	20	5.000	5.200	B	1	2 3/4	4	7/8	9.6
55	TS1055	20	5.500	5.700	B	1	2 3/4	4	1	11.5
60	TS1060	20	6.000	6.200	B	1	2 3/4	4	1	13.1

## Cast

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max.*	Diameter	Proj.	
70	TC1070	20	7.000	7.200	B <sub>3</sub>	1	1 11/16	2 3/4	1	8.2
80	TC1080	20	8.000	8.200	B <sub>3</sub>	1	1 11/16	2 3/4	1	11.2
90	TC1090	20	9.000	9.200	B <sub>3</sub>	1	1 13/16	3	1	11.7
100	TC10100	20	10.000	10.200	B <sub>3</sub>	1 1/2	1 13/16	3	1 1/2	12.2

\* Recommended maximum bore with keyway and set screw.

**20° P.A. Gears Will Not Operate With 14 1/2° P.A.**

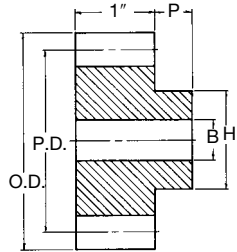
## Bored-to-Size

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Set Screw	Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Keyway		Diameter	Proj.	
12	TS1012BS 5/8	20	1.200	1.400	B	5/8	3/16 X 3/32	(1) 10-24 @ 90	29/32	5/8	0.40
14	TS1014BS 5/8	20	1.400	1.600	B	5/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/64	5/8	0.60
15	TS1015BS 3/4	20	1.500	1.700	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/32	5/8	0.60
16	TS1016BS 3/4	20	1.600	1.800	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/16	5/8	0.70
18	TS1018BS 7/8	20	1.800	2.000	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/32	5/8	0.90
20	TS1020BS 7/8	20	2.000	2.200	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 3/64	5/8	1.20
20	TS1020BS 1	20	2.000	2.200	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	1 3/64	5/8	1.20
24	TS1024BS 7/8	20	2.400	2.600	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/16	5/8	1.50
24	TS1024BS 1	20	2.400	2.600	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	1 1/16	5/8	1.50
25	TS1025BS 7/8	20	2.500	2.700	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	2 1/64	5/8	2.00
25	TS1025BS 1	20	2.500	2.700	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	2 1/64	5/8	2.00
28	TS1028BS 7/8	20	2.800	3.000	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	2 1/32	5/8	2.70
28	TS1028BS 1	20	2.800	3.000	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	2 1/32	5/8	2.70

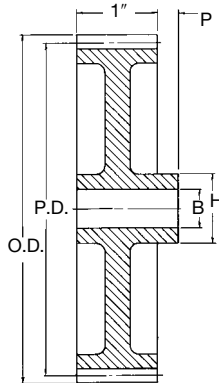
# Martin

## Steel & Cast Stock Spur Gears 20° Pressure Angle

# 12 DP 1" Face



**Type B**



**Type B<sub>3</sub>**



**Type B**  
Plain With Hub All Steel



**Type B<sub>3</sub>**  
Web With Spokes Cast

### Steel

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max.*	Diameter	Proj.	
12	TS1212	20	1.000	1.167	B	1/8	1/8	3/16	5/16	0.21
13	TS1213	20	1.083	1.250	B	5/16	5/16	1/8	5/16	0.21
14	TS1214	20	1.167	1.333	B	5/16	5/16	29/32	5/16	0.28
15	TS1215	20	1.250	1.417	B	5/16	5/16	63/64	5/16	0.34
16	TS1216	20	1.333	1.500	B	5/16	5/16	1 1/16	5/16	0.41
18	TS1218	20	1.500	1.667	B	3/4	3/4	1 1/4	5/16	0.51
19	TS1219	20	1.583	1.750	B	3/4	3/4	1 1/16	5/16	0.59
20	TS1220	20	1.667	1.833	B	3/4	3/4	1 1/16	5/16	0.65
21	TS1221	20	1.750	1.917	B	3/4	1 1/16	1 5/8	5/16	0.75
22	TS1222	20	1.833	2.000	B	3/4	7/8	1 1/16	5/16	0.88
24	TS1224	20	2.000	2.166	B	3/4	1 1/16	1 5/8	5/16	1.06
25	TS1225	20	2.083	2.250	B	3/4	1 1/16	1 3/8	5/16	1.22
26	TS1226	20	2.167	2.333	B	3/4	1 1/8	1 1/8	5/16	1.33
28	TS1228	20	2.333	2.500	B	3/4	1 1/4	2 1/16	5/16	1.60
30	TS1230	20	2.500	2.667	B	3/4	1 1/2	2 1/8	5/16	1.83
32	TS1232	20	2.667	2.833	B	3/4	1 1/2	2 1/4	5/16	2.08
36	TS1236	20	3.000	3.167	B	3/4	1 3/8	2 1/2	7/16	2.98
42	TS1242	20	3.500	3.666	B	3/4	1 3/4	2 3/4	7/16	3.71
48	TS1248	20	4.000	4.166	B	7/8	1 7/8	3	7/16	4.99
54	TS1254	20	4.500	4.666	B	7/8	2 1/8	3 1/2	7/16	6.57
60	TS1260	20	5.000	5.166	B	7/8	2 1/4	3 3/8	7/16	7.63
66	TS1266	20	5.500	5.666	B	7/8	2 1/2	3 1/2	7/16	8.80
72	TS1272	20	6.000	6.166	B	7/8	2 3/4	3 3/4	7/16	10.08

### Cast

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max.*	Diameter	Proj.	
84	TC1284	20	7.000	7.166	B <sub>3</sub>	7/8	1 1/16	2 1/2	7/8	5.9
96	TC1296	20	8.000	8.166	B <sub>3</sub>	7/8	1 1/8	2 1/2	7/8	7.0
108	TC12108	20	9.000	9.166	B <sub>3</sub>	7/8	1 1/16	2 1/2	7/8	7.6
120	TC12120	20	10.000	10.166	B <sub>3</sub>	1	1 1/8	2 1/2	7/8	10.3
144	TC12144	20	12.000	12.166	B <sub>3</sub>	1	1 1/16	2 3/4	1	10.4

### Bored-to-Size

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Set Screw	Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Keyway		Diameter	Proj.	
12	TS1212BS 1/2	20	1.000	1.167	B	1/8	NONE	(1) 10-24	3/16	5/16	0.21
13	TS1213BS 5/8	20	1.083	1.250	B	5/16	NONE	(1) 1/4-20 @ 90	1/8	5/16	0.21
14	TS1214BS 5/8	20	1.167	1.333	B	5/16	3/16 X 3/32	(1) 10-24 @ 90	29/32	5/16	0.28
15	TS1215BS 5/8	20	1.250	1.417	B	5/16	3/16 X 3/32	(1) 10-24 @ 90	63/64	5/16	0.34
16	TS1216BS 5/8	20	1.333	1.500	B	5/16	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/16	5/16	0.41
18	TS1218BS 3/4	20	1.500	1.667	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/4	5/16	0.51
20	TS1220BS 3/4	20	1.667	1.833	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/16	5/16	0.65
21	TS1221BS 3/4	20	1.750	1.917	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1 25/64	5/16	0.75
21	TS1221BS 7/8	20	1.750	1.917	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 25/64	5/16	0.75
24	TS1224BS 3/4	20	2.000	2.167	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/4	5/16	1.06
24	TS1224BS 7/8	20	2.000	2.167	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 1/4	5/16	1.06
24	TS1224BS 1	20	2.000	2.167	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	1 1/4	5/16	1.06
28	TS1228BS 3/4	20	2.333	2.500	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	2 1/16	5/16	1.60
28	TS1228BS 7/8	20	2.333	2.500	B	7/8	3/16 X 3/32	(1) 1/4-20 @ 90	2 1/16	5/16	1.60
28	TS1228BS 1	20	2.333	2.500	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	2 1/16	5/16	1.60

\* Recommended maximum bore with keyway and set screw.

GEARS

# 16 DP

## 3/4" Face

# Steel & Cast Stock

## Spur Gears

20° Pressure Angle

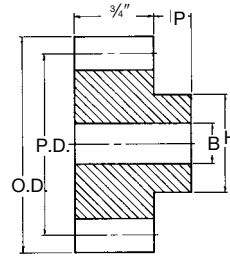
# Martin



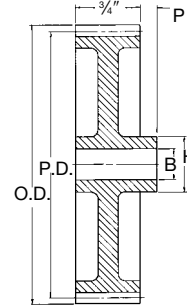
**Type B**  
Plain With Hub All Steel



**Type B<sub>3</sub>**  
Web With Spokes Cast



**Type B**



**Type B<sub>3</sub>**

### Steel

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max.*	Diameter	Proj.	
12	TS1612	20	.750	.875	B	3/8	3/8	3/16	1/2	0.09
13	TS1613	20	.812	.938	B	3/8	3/8	3/16	1/2	0.11
14	TS1614	20	.875	1.000	B	3/8	3/8	1/16	1/2	0.14
15	TS1615	20	.937	1.063	B	3/8	1/2	3/16	1/2	0.17
16	TS1616	20	1.000	1.125	B	1/2	1/2	1/16	1/2	0.17
17	TS1617	20	1.062	1.188	B	1/2	1/2	3/16	1/2	0.20
18	TS1618	20	1.125	1.250	B	1/2	1/2	1/16	1/2	0.24
20	TS1620	20	1.250	1.375	B	3/4	3/4	1/16	1/2	0.28
21	TS1621	20	1.312	1.438	B	3/4	3/4	1/16	1/2	0.32
22	TS1622	20	1.375	1.500	B	3/4	3/4	1/16	1/2	0.36
24	TS1624	20	1.500	1.625	B	3/4	3/4	1/16	1/2	0.46
26	TS1626	20	1.625	1.750	B	3/4	3/4	1/16	1/2	0.56
28	TS1628	20	1.750	1.875	B	3/4	3/4	1/16	1/2	0.65
30	TS1630	20	1.875	2.000	B	3/4	1 1/16	1/16	1/2	0.77
32	TS1632	20	2.000	2.125	B	3/4	1	1/16	1/2	0.90
36	TS1636	20	2.250	2.375	B	3/4	1 1/4	2	1/2	1.18
40	TS1640	20	2.500	2.625	B	3/4	1 1/2	2	3/4	1.48
48	TS1648	20	3.000	3.125	B	3/4	1 1/2	2	3/4	1.94
56	TS1656	20	3.500	3.625	B	3/4	1 3/4	2 1/2	3/4	2.79
60	TS1660	20	3.750	3.875	B	3/4	1 1/2	2 1/2	3/4	3.28
64	TS1664	20	4.000	4.125	B	3/4	1 1/2	2 1/2	3/4	3.74
72	TS1672	20	4.500	4.625	B	3/4	1 3/4	3	3/4	4.69
80	TS1680	20	5.000	5.125	B	3/4	2 1/2	3 1/2	3/4	6.03
84	TS1684	20	5.250	5.375	B	3/4	2 1/2	3 1/2	3/4	6.46
96	TS1696	20	6.000	6.125	B	3/4	2 3/4	3 1/2	3/4	7.86
104	TS16104	20	6.500	6.625	B	3/4	2 3/4	3 1/2	3/4	8.91

### Cast

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max.*	Diameter	Proj.	
112	TC16112	20	7.000	7.125	B <sub>3</sub>	3/4	1 1/16	2 1/2	3/4	4.4
128	TC16128	20	8.000	8.125	B <sub>3</sub>	3/4	1 1/16	2 3/4	3/4	5.5
144	TC16144	20	9.000	9.125	B <sub>3</sub>	3/4	1 1/16	2 3/4	3/4	6.4
160	TC16160	20	10.000	10.125	B <sub>3</sub>	3/4	1 1/16	2 3/4	3/4	8.1
192	TC16192	20	12.000	12.125	B <sub>3</sub>	3/4	1 3/16	3	1	10.1

\* Recommended maximum bore with keyway and set screw.

20° P.A. Gears Will Not Operate With 14 1/2° P.A.

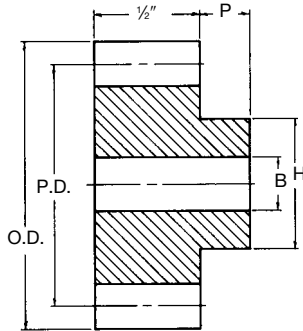
### Bored-to-Size

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Set Screw	Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Keyway		Diameter	Proj.	
12	TS1612BS 3/8	20	0.750	0.875	B	3/8	NONE	(1) 8-32	3/16	1/2	0.09
14	TS1614BS 3/8	20	0.875	1.000	B	3/8	NONE	(1) 10-24	1/16	1/2	0.14
15	TS1615BS 3/8	20	0.937	1.063	B	3/8	NONE	(1) 10-24	3/16	1/2	0.17
15	TS1615BS 1/2	20	0.937	1.063	B	1/2	NONE	(1) 10-24	3/16	1/2	0.17
16	TS1616BS 1/2	20	1.000	1.125	B	1/2	NONE	(1) 10-24	1/16	1/2	0.17
18	TS1618BS 1/2	20	1.125	1.250	B	1/2	NONE	(1) 1/4-20	1/16	1/2	0.24
20	TS1620BS 5/8	20	1.250	1.375	B	3/8	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.28
24	TS1624BS 5/8	20	1.500	1.625	B	3/8	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.46
24	TS1624BS 3/4	20	1.500	1.625	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.46
28	TS1628BS 5/8	20	1.750	1.875	B	3/8	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.65
28	TS1628BS 3/4	20	1.750	1.875	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.65
30	TS1630BS 5/8	20	1.875	2.000	B	3/8	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.77
30	TS1630BS 3/4	20	1.875	2.000	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.77
30	TS1630BS 7/8	20	1.875	2.000	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.77
32	TS1632BS 5/8	20	2.000	2.125	B	3/8	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.90
32	TS1632BS 3/4	20	2.000	2.125	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.90
32	TS1632BS 7/8	20	2.000	2.125	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1/16	1/2	0.90
32	TS1632BS 1	20	2.000	2.125	B	1	1/4 X 1/8	(1) 5/16-18 @ 90	1/16	1/2	0.90

# Martin

## Steel Stock Spur Gears 20° Pressure Angle

# 20 DP 1/2" Face



Type B



Type B  
Plain With Hub  
All Steel

### Steel

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Max. *	Diameter	Proj.	
12	TS2012	20	.600	.700	B	5/16	5/16	15/32	7/16	0.04
14	TS2014	20	.700	.800	B	5/16	5/16	35/64	7/16	0.06
15	TS2015	20	.750	.850	B	3/8	3/8	39/64	7/16	0.07
16	TS2016	20	.800	.900	B	3/8	3/8	21/32	7/16	0.08
18	TS2018	20	.900	1.000	B	3/8	3/8	3/4	7/16	0.12
20	TS2020	20	1.000	1.100	B	1/2	1/2	59/64	7/16	0.13
21	TS2021	20	1.050	1.150	B	1/2	1/2	7/8	7/16	0.15
22	TS2022	20	1.100	1.200	B	1/2	1/2	31/32	7/16	0.17
24	TS2024	20	1.200	1.300	B	1/2	5/16	1 1/16	7/16	0.22
25	TS2025	20	1.250	1.350	B	1/2	3/8	1 1/64	7/16	0.24
28	TS2028	20	1.400	1.500	B	1/2	1 1/16	1 1/64	7/16	0.32
30	TS2030	20	1.500	1.600	B	1/2	1 3/8	1 23/64	7/16	0.38
32	TS2032	20	1.600	1.700	B	1/2	7/8	1 1/16	1/2	0.46
35	TS2035	20	1.750	1.850	B	1/2	7/8	1 1/16	1/2	0.56
36	TS2036	20	1.800	1.900	B	1/2	1 1/16	1 1/8	1/2	0.60
40	TS2040	20	2.000	2.100	B	1/2	1 1/16	1 3/16	1/2	0.76
45	TS2045	20	2.250	2.350	B	1/2	1 1/4	2	1/2	0.95
50	TS2050	20	2.500	2.600	B	1/2	1 1/4	2	1/2	1.08
60	TS2060	20	3.000	3.100	B	1/2	1 1/2	2 1/2	1/2	1.45
70	TS2070	20	3.500	3.600	B	1/2	1 1/2	2 3/4	1/2	1.93
72	TS2072	20	3.600	3.700	B	1/2	1 1/2	2 3/4	1/2	2.01
80	TS2080	20	4.000	4.100	B	3/4	1 1/2	2 1/2	5/8	2.35
84	TS2084	20	4.200	4.300	B	3/4	1 1/2	2 1/2	5/8	2.53
90	TS2090	20	4.500	4.600	B	3/4	1 1/2	2 1/2	5/8	2.82
96	TS2096	20	4.800	4.900	B	3/4	1 1/2	2 1/2	5/8	3.14
100	TS20100	20	5.000	5.100	B	3/4	1 1/2	2 1/2	5/8	3.35
120	TS20120	20	6.000	6.100	B	3/4	1 1/2	2 1/2	5/8	4.58

\* Recommended maximum bore with keyway and set screw.

20° P.A. Gears Will Not Operate With 14 1/2° P.A.

### Bored-to-Size

No. Teeth	Catalog Number	Pressure Angle (Deg.)	Diameter		Type	Bore (Inches)		Set Screw	Hub (Inches)		Weight Lbs. (App.)
			Pitch	Outside		Stock	Keyway		Diameter	Proj.	
12	TS2012BS 5/16	20	0.600	0.700	B	5/16	NONE	#35 P.H.	15/32	7/16	0.04
14	TS2014BS 5/16	20	0.700	0.800	B	5/16	NONE	#35 P.H.	35/64	7/16	0.06
15	TS2015BS 3/8	20	0.750	0.850	B	3/8	NONE	(1) 8-32	39/64	7/16	0.07
16	TS2016BS 3/8	20	0.800	0.900	B	3/8	NONE	(1) 8-32	21/32	7/16	0.08
18	TS2018BS 3/8	20	0.900	1.000	B	3/8	NONE	(1) 10-24	3/4	7/16	0.12
20	TS2020BS 1/2	20	1.000	1.100	B	1/2	NONE	(1) 10-24	59/64	7/16	0.13
24	TS2024BS 1/2	20	1.200	1.300	B	1/2	NONE	(1) 1/4-20	1 1/16	7/16	0.22
25	TS2025BS 1/2	20	1.250	1.350	B	1/2	NONE	(1) 1/4-20	1 1/64	7/16	0.24
30	TS2030BS 1/2	20	1.500	1.600	B	1/2	NONE	(1) 1/4-20	1 23/64	7/16	0.38
35	TS2035BS 1/2	20	1.750	1.850	B	1/2	NONE	(1) 1/4-20	1 1/16	1/2	0.56
40	TS2040BS 1/2	20	2.000	2.100	B	1/2	NONE	(1) 1/4-20	1 13/16	1/2	0.76
40	TS2040BS 5/8	20	2.000	2.100	B	5/8	3/16 X 3/32	(1) 1/4-20 @ 90	1 13/16	1/2	0.76
40	TS2040BS 3/4	20	2.000	2.100	B	3/4	3/16 X 3/32	(1) 1/4-20 @ 90	1 13/16	1/2	0.76

GEARS

# 20° Horsepower Ratings (Approximate)



For  
Class I Service (Service Factor = 1.0)

4 Diametral Pitch

20° Pressure Angle

3 1/2" Face

No. Teeth	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		500 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM		
	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	
11	2.62		5.09		9.64		17.41		23.81		33.72		37.64		46.69		53.06				
12•	3.10		6.02		11.40		20.59		28.15		39.88		44.52		55.21		62.75				
13	3.62		7.03		13.30		24.03		32.86		46.55		51.97		64.45		73.25				
14•	4.07		7.91		14.98		27.06		37.00		52.41		58.51		72.57		82.48				
15•	4.57		8.88		16.80		30.35		41.51		58.80		65.64		81.41		92.53				
16•	4.97		9.67		18.30		33.05		45.20		64.03		71.47		88.64		100.75				
17	5.41		10.51		19.90		35.95		49.16		69.64		77.74		96.42						
18•	5.84		11.35		21.49		38.82		53.09		75.20		83.95		104.12						
19	6.29		12.22		23.13		41.77		57.13		80.93		90.33		112.04						
20•	6.74		13.11		24.81		44.81		61.29		86.81		96.91								
21	7.19		13.98		26.46		47.79		65.36		92.58		103.34								
22•	7.65		14.87		28.14		50.83		69.52		98.48		109.93								
24•	8.52		16.56		31.35		56.63		77.45		109.71		122.47								
25	8.96		17.41		32.95		59.52		81.39		115.30		128.70								
26	9.43		18.32		34.67		62.63		85.65		121.32		135.43								
27	9.90		19.24		36.42		65.79		89.97		127.45		142.27								
28•	10.39		20.18		38.21		69.01		94.38		133.69		149.24								
30•	11.32		22.00		41.63		75.20		102.84		145.69										
32•	12.27		23.85		45.15		81.56		111.54		158.00										
33	12.76		24.80		46.95		84.80		115.97		164.28										
35	13.79		26.81		50.74		91.66		125.35		177.56										
36•	14.30		27.79		52.61		95.03		129.96		184.10										
40•	16.40		31.87		60.32		108.95		149.00												
42	17.39		33.80		63.98		115.58		158.06												
44•	18.41		35.77		67.71		122.31		167.27												
45	18.92		36.77		69.60		125.72		171.93												
48•	20.54		39.91		75.54		136.46		186.61												
50	21.50		41.78		79.08		142.84		195.35												
52	22.52		43.77		82.85		149.65		204.66												
54	23.56		45.78		86.66		156.54		214.08												
55	24.00		46.63		88.26		159.44		218.04												
56•	24.49		47.59		90.09		162.73														
60•	26.62		51.73		97.92		176.87														
64•	28.60		55.57		105.19		190.01														
66	29.63		57.58		108.99		196.87														
70	31.65		61.50		116.41		210.27														
72•	32.55		63.26		119.73		216.28														
80•	36.76		71.43		135.21		244.23														
84	38.86		75.52		142.94		258.21														
88	40.80		79.30		150.09																
90	41.83		81.28		153.85																
96	44.92		87.29		165.23																
100	46.90		91.13		172.50																
108	50.87		98.87		187.14																
110	51.93		100.92		191.03																
112	52.88		102.76		194.50																
120	57.03		110.84		209.79																
144	54.18		105.28		199.28																
160	77.39		150.40		284.68																
200	97.58		189.64		358.95																

Ratings are based on strength calculation.

• Designates stock sizes for this pitch.

Note: 1. Ratings to right of heavy line are not recommended, as pitch line velocity exceeds 1000 feet per minute. They should be used for interpolation purposes only.

2. Non-metallic gears are most commonly used for the driving pinion of a pair of gears, with mating gear made of Cast Iron or Steel, where pitch line velocities exceed 1000 FPM and are not subjected to shock loads.



# 20° Horsepower Ratings (Approximate)

For  
Class I Service (Service Factor = 1.0)

5 Diametral Pitch

20° Pressure Angle

2½" Face

No. Teeth	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		500 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM	
	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI
11•	1.20		2.35		4.50		8.28		11.49		16.67		18.78		23.82		27.50		32.54	
12	1.42		2.78		5.32		9.79		13.59		19.71		22.21		28.17		32.53			
13•	1.66		3.25		6.21		11.43		15.86		23.01		25.93		32.88		37.97			
14•	1.87		3.66		7.00		12.87		17.86		25.90		29.19		37.02		42.75			
15•	2.10		4.10		7.85		14.44		20.04		29.06		32.75		41.53		47.96			
16	2.29		4.47		8.55		15.72		21.82		31.64		35.66		45.22		52.22			
17•	2.49		4.86		9.30		17.10		23.73		34.42		38.79		49.19		56.80			
18	2.69		5.25		10.04		18.46		25.63		37.17		41.88		53.11		61.34			
19•	2.89		5.65		10.80		19.87		27.58		40.00		45.07		57.16		66.01			
20	3.10		6.06		11.59		21.31		29.58		42.91		48.35		61.31					
21	3.31		6.46		12.36		22.73		31.55		45.76		51.56		65.39					
22•	3.52		6.87		13.15		24.18		33.56		48.67		54.85		69.55					
24•	3.92		7.66		14.65		26.93		37.39		54.22		61.10		77.49					
25	4.12		8.05		15.39		28.30		39.29		56.98		64.21		81.43					
26	4.33		8.47		16.20		29.78		41.34		59.96		67.57							
27•	4.55		8.90		17.02		31.29		43.43		62.99		70.98							
28•	4.78		9.33		17.85		32.82		45.56		66.08		74.46							
30	5.20		10.17		19.45		35.76		49.64		72.00		81.14							
32	5.64		11.03		21.09		38.79		53.84		78.09		88.00							
33•	5.87		11.47		21.93		40.33		55.98		81.19		91.49							
35	6.34		12.40		23.70		43.59		60.51		87.76		98.89							
36•	6.58		12.85		24.58		45.19		62.73		90.99									
40	7.54		14.73		28.18		51.81		71.92		104.32									
42	8.00		15.63		29.89		54.96		76.30		110.66									
44•	8.46		16.54		31.63		58.17		80.74		117.11									
45	8.70		17.00		32.51		59.79		82.99											
48•	9.44		18.45		35.29		64.89		90.08											
50	9.89		19.32		36.94		67.93		94.30											
52	10.36		20.24		38.70		71.17		98.79											
54	10.83		21.17		40.48		74.44		103.34											
55	11.03		21.56		41.23		75.82		105.25											
56•	11.26		22.01		42.08		77.39		107.42											
60	12.24		23.92		45.74		84.11		116.76											
64	13.15		25.70		49.14		90.36		125.43											
66•	13.62		26.62		50.91		93.62		129.96											
70	14.55		28.44		54.38		100.00		138.81											
72•	14.97		29.25		55.93		102.85													
80	16.90		33.03		63.16		116.15													
84	17.87		34.92		66.78		122.79													
88•	18.76		36.67		70.12		128.93													
90	19.23		37.58		71.87		132.16													
96•	20.65		40.36		77.19		141.93													
100	21.56		42.14		80.58															
108•	23.39		45.71		87.42															
110	23.88		46.67		89.24															
112•	24.31		47.51																	
120	26.23		51.25																	
144	24.91		48.68																	
160	35.59		69.54																	
200	44.87		87.69																	

Ratings are based on strength calculation.

• Designates stock sizes for this pitch.

Note: 1. Ratings to right of heavy line are not recommended, as pitch line velocity exceeds 1000 feet per minute. They should be used for interpolation purposes only.

2. Non-metallic gears are most commonly used for the driving pinion of a pair of gears, with mating gear made of Cast Iron or Steel, where pitch line velocities exceed 1000 FPM and are not subjected to shock loads.

GEARS

# 20° Horsepower Ratings (Approximate)



For  
Class I Service (Service Factor = 1.0)

6 Diametral Pitch

20° Pressure Angle

2" Face

No. Teeth	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		500 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM	
	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI
11•	0.67		1.32		2.54		4.73		6.63		9.79		11.11		14.34		16.78		20.21	
12•	0.79		1.56		3.00		5.59		7.84		11.58		13.14		16.96		19.84		23.91	
13	0.93		1.82		3.50		6.52		9.15		13.51		15.34		19.80		23.16		27.91	
14•	1.04		2.05		3.94		7.35		10.31		15.21		17.27		22.29		26.08		31.42	
15•	1.17		2.30		4.43		8.24		11.56		17.07		19.37		25.01		29.26		35.25	
16•	1.28		2.50		4.82		8.97		12.59		18.58		21.10		27.23		31.85		38.38	
17	1.39		2.72		5.24		9.76		13.69		20.21		22.95		29.61		34.65			
18•	1.50		2.94		5.66		10.54		14.79		21.83		24.78		31.98		37.42			
19	1.61		3.16		6.09		11.34		15.91		23.49		26.66		34.41		40.26			
20	1.73		3.39		6.53		12.17		17.07		25.20		28.60		36.92		43.19			
21•	1.84		3.62		6.97		12.97		18.21		26.87		30.50		39.37		46.06			
22	1.96		3.85		7.41		13.80		19.37		28.59		32.45		41.88		49.00			
24•	2.19		4.29		8.26		15.38		21.57		31.85		36.15		46.65		54.59			
25	2.30		4.51		8.68		16.16		22.67		33.47		37.99		49.03					
26	2.42		4.74		9.13		17.00		23.86		35.22		39.97		51.59					
27•	2.54		4.98		9.59		17.86		25.06		37.00		41.99		54.20					
28	2.66		5.22		10.06		18.74		26.29		38.81		44.05		56.85					
30•	2.90		5.69		10.97		20.42		28.65		42.29		48.00		61.95					
32	3.15		6.17		11.89		22.14		31.07		45.86		52.06							
33•	3.27		6.42		12.36		23.02		32.31		47.69		54.13							
35	3.54		6.94		13.36		24.88		34.92		51.54		58.50							
36•	3.67		7.19		13.86		25.80		36.20		53.44		60.66							
40	4.21		8.25		15.89		29.58		41.51		61.27		69.54							
42•	4.46		8.75		16.85		31.38		44.03		64.99		73.77							
44	4.72		9.26		17.83		33.21		46.59		68.78		78.07							
45	4.85		9.52		18.33		34.13		47.89		70.70		80.25							
48•	5.27		10.33		19.90		37.05		51.98		76.73									
50	5.51		10.81		20.83		38.78		54.42		80.32									
52	5.78		11.33		21.82		40.63		57.01		84.15									
54•	6.04		11.85		22.82		42.50		59.63		88.02									
55	6.15		12.07		23.25		43.29		60.74											
56	6.28		12.32		23.73		44.18		61.99											
60•	6.83		13.39		25.79		48.02		67.38											
64•	7.33		14.39		27.70		51.59		72.38											
66•	7.60		14.91		28.71		53.45		75.00											
70	8.12		15.92		30.66		57.09		80.10											
72•	8.35		16.37		31.54		58.72		82.39											
80	9.43		18.49		35.61		66.31		93.04											
84•	9.97		19.55		37.65		70.10		98.36											
88	10.46		20.53		39.53		73.61		103.28											
90	10.73		21.04		40.52		75.45													
96•	11.52		22.60		43.52		81.03													
100	12.03		23.59		45.43		84.60													
108•	13.05		25.59		49.29		91.77													
110	13.32		26.12		50.31		93.68													
112	13.56		26.60		51.23		95.39													
120•	14.63		28.69		55.25															
144	13.89		27.25		52.49															
160	19.85		38.93		74.98															
200	25.03		49.09		94.54															

Ratings are based on strength calculation.

• Designates stock sizes for this pitch.

Note: 1. Ratings to right of heavy line are not recommended, as pitch line velocity exceeds 1000 feet per minute. They should be used for interpolation purposes only.

2. Non-metallic gears are most commonly used for the driving pinion of a pair of gears, with mating gear made of Cast Iron or Steel, where pitch line velocities exceed 1000 FPM and are not subjected to shock loads.



# 20° Horsepower Ratings (Approximate)

For  
Class I Service (Service Factor = 1.0)

8 Diametral Pitch

20° Pressure Angle

1½" Face

No. Teeth	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		500 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM	
	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI
11	0.28		0.56		1.09		2.06		2.94		4.45		5.10		6.76		8.07		10.00	
12•	0.34		0.66		1.29		2.44		3.48		5.26		6.03		7.99		9.54		11.83	
13	0.39		0.78		1.51		2.85		4.06		6.14		7.04		9.33		11.14		13.81	
14•	0.44		0.87		1.70		3.21		4.57		6.91		7.93		10.50		12.54		15.55	
15•	0.50		0.98		1.90		3.60		5.13		7.76		8.90		11.78		14.07		17.45	
16•	0.54		1.07		2.07		3.92		5.58		8.44		9.69		12.83		15.31		18.99	
17	0.59		1.16		2.25		4.26		6.07		9.18		10.53		13.95		16.66		20.66	
18•	0.64		1.25		2.43		4.61		6.56		9.92		11.38		15.07		17.99		22.31	
19•	0.68		1.35		2.62		4.96		7.06		10.67		12.24		16.22		19.36		24.01	
20•	0.73		1.45		2.81		5.32		7.57		11.45		13.13		17.40		20.77		25.76	
21	0.78		1.54		3.00		5.67		8.07		12.21		14.00		18.55		22.14			
22•	0.83		1.64		3.19		6.03		8.59		12.99		14.90		19.73		23.56			
24•	0.93		1.83		3.55		6.72		9.56		14.47		16.60		21.98		26.24			
25	0.97		1.92		3.73		7.06		10.05		15.21		17.44		23.10		27.58			
26•	1.02		2.02		3.93		7.43		10.58		16.00		18.35		24.31		29.02			
27	1.08		2.12		4.12		7.80		11.11		16.81		19.28		25.54		30.49			
28•	1.13		2.23		4.33		8.19		11.66		17.63		20.22		26.79		31.98			
30•	1.23		2.43		4.71		8.92		12.70		19.21		22.04		29.19		34.85			
32•	1.33		2.63		5.11		9.68		13.77		20.84		23.90		31.66					
33	1.39		2.73		5.31		10.06		14.32		21.67		24.85		32.92					
35	1.50		2.96		5.74		10.87		15.48		23.42		26.86		35.58					
36•	1.56		3.06		5.96		11.27		16.05		24.28		27.85		36.89					
40•	1.78		3.51		6.83		12.92		18.40		27.84		31.93		42.29					
42•	1.89		3.73		7.24		13.71		19.52		29.53		33.87		44.86					
44•	2.00		3.94		7.67		14.51		20.66		31.25		35.84		47.48					
45	2.06		4.05		7.88		14.91		21.23		32.12		36.84							
48•	2.23		4.40		8.55		16.19		23.05		34.86		39.99							
50		1.12		2.21		4.30		8.13		11.58		17.52		20.09						
52•		1.18		2.32		4.50		8.52		12.13		18.35		21.05						
54		1.23		2.42		4.71		8.91		12.69		19.20		22.02						
55		1.25		2.47		4.80		9.08		12.93		19.55		22.43						
56•		1.28		2.52		4.90		9.27		13.19		19.96		22.89						
60•		1.39		2.74		5.32		10.07		14.34		21.69		24.88						
64•		1.49		2.94		5.72		10.82		15.40		23.30								
66		1.55		3.05		5.92		11.21		15.96		24.14								
70		1.65		3.26		6.33		11.97		17.05		25.79								
72•		1.70		3.35		6.51		12.32		17.53										
80•		1.92		3.78		7.35		13.91		19.80										
84		2.03		4.00		7.77		14.70		20.93										
88•		2.13		4.20		8.16		15.44		21.98										
90		2.18		4.30		8.36		15.82		22.53										
96•		2.34		4.62		8.98		16.99		24.20										
100		2.45		4.82		9.37		17.74		25.26										
108		2.66		5.23		10.17		19.25		27.40										
110		2.71		5.34		10.38		19.65		27.97										
112•		2.76		5.44		10.57		20.01		28.48										
120•		2.98		5.87		11.40		21.58		30.72										
144•		2.83		5.57		10.83		20.50												
160•		4.04		7.96		15.47		29.28												
200		5.09		10.04		19.51		36.92												

Ratings are based on strength calculation.

• Designates stock sizes for this pitch.

Note: 1. Ratings to right of heavy line are not recommended, as pitch line velocity exceeds 1000 feet per minute. They should be used for interpolation purposes only.

2. Non-metallic gears are most commonly used for the driving pinion of a pair of gears, with mating gear made of Cast Iron or Steel, where pitch line velocities exceed 1000 FPM and are not subjected to shock loads.

# 20° Horsepower Ratings (Approximate)



For  
Class I Service (Service Factor = 1.0)

10 Diametral Pitch

20° Pressure Angle

1¼" Face

No. Teeth	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		500 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM	
	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI
11	0.15		0.30		0.59		1.13		1.62		2.49		2.87		3.88		4.70		5.95	
12•	0.18		0.36		0.70		1.33		1.91		2.94		3.40		4.58		5.55		7.04	
13	0.21		0.42		0.81		1.55		2.23		3.43		3.97		5.35		6.48		8.22	
14•	0.24		0.47		0.91		1.75		2.51		3.87		4.47		6.02		7.30		9.25	
15•	0.27		0.53		1.03		1.96		2.82		4.34		5.01		6.76		8.19		10.38	
16•	0.29		0.57		1.12		2.14		3.07		4.72		5.45		7.36		8.91		11.30	
17	0.31		0.62		1.22		2.32		3.34		5.14		5.93		8.00		9.70		12.30	
18•	0.34		0.67		1.31		2.51		3.61		5.55		6.41		8.64		10.47		13.28	
19	0.37		0.72		1.41		2.70		3.88		5.97		6.89		9.30		11.27		14.29	
20•	0.39		0.78		1.52		2.90		4.16		6.40		7.40		9.98		12.09		15.33	
21	0.42		0.83		1.62		3.09		4.44		6.83		7.89		10.64		12.89		16.35	
22•	0.44		0.88		1.72		3.29		4.72		7.26		8.39		11.32		13.71		17.39	
24•	0.50		0.98		1.91		3.66		5.26		8.09		9.35		12.61		15.28		19.37	
25•	0.52		1.03		2.01		3.85		5.53		8.50		9.82		13.25		16.05		20.36	
26•	0.55		1.08		2.12		4.05		5.82		8.95		10.34		13.94		16.89			
27	0.58		1.14		2.22		4.25		6.11		9.40		10.86		14.65		17.75			
28•	0.60		1.19		2.33		4.46		6.41		9.86		11.39		15.37		18.61			
30•	0.66		1.30		2.54		4.86		6.99		10.74		12.41		16.74		20.28			
32•	0.71		1.41		2.76		5.27		7.58		11.65		13.46		18.16		22.00			
33	0.74		1.47		2.87		5.48		7.88		12.11		14.00		18.88		22.87			
35•	0.80		1.59		3.10		5.93		8.52		13.09		15.13		20.41		24.72			
36•	0.83		1.64		3.21		6.14		8.83		13.58		15.68		21.16		25.63			
40•	0.95		1.88		3.68		7.04		10.12		15.56		17.98		24.26					
42	1.01		2.00		3.91		7.47		10.74		16.51		19.07		25.73					
44	1.07		2.12		4.14		7.91		11.36		17.47		20.19		27.23					
45•	1.10		2.18		4.25		8.13		11.68		17.96		20.75		27.99					
48•	1.19		2.36		4.61		8.82		12.68		19.49		22.52		30.38					
50•	1.25		2.47		4.83		9.24		13.27		20.41		23.57							
52	1.31		2.59		5.06		9.68		13.90		21.38		24.70							
54	1.37		2.71		5.29		10.12		14.54		22.36		25.83							
55•	1.40		2.76		5.39		10.31		14.81		22.78		26.31							
56	1.42		2.82		5.50		10.52		15.12		23.25		26.86							
60•	1.55		3.06		5.98		11.44		16.43		25.27		29.19							
64		0.80		1.58		3.08		5.90		8.47		13.03		15.05						
66		0.83		1.63		3.19		6.11		8.78		13.50		15.60						
70•		0.88		1.75		3.41		6.53		9.38		14.42		16.66						
72		0.91		1.80		3.51		6.71		9.65		14.83		17.13						
80•		1.03		2.03		3.96		7.58		10.89		16.75								
84		1.08		2.14		4.19		8.01		11.52		17.71								
88		1.14		2.25		4.40		8.41		12.09		18.59								
90•		1.17		2.31		4.51		8.62		12.39		19.06								
96		1.25		2.48		4.84		9.26		13.31										
100•		1.31		2.59		5.06		9.67		13.90										
108		1.42		2.81		5.49		10.49		15.08										
110		1.45		2.87		5.60		10.71		15.39										
112		1.48		2.92		5.70		10.90		15.67										
120		1.59		3.15		6.15		11.76		16.90										
144		1.51		2.99		5.84		11.17		16.05										
160		2.16		4.27		8.35		15.96		22.93										
200		2.72		5.38		10.52		20.12		28.92										

Ratings are based on strength calculation.

• Designates stock sizes for this pitch.

Note: 1. Ratings to right of heavy line are not recommended, as pitch line velocity exceeds 1000 feet per minute. They should be used for interpolation purposes only.

2. Non-metallic gears are most commonly used for the driving pinion of a pair of gears, with mating gear made of Cast Iron or Steel, where pitch line velocities exceed 1000 FPM and are not subjected to shock loads.



# 20° Horsepower Ratings (Approximate)

For  
Class I Service (Service Factor = 1.0)

12 Diametral Pitch

20° Pressure Angle

1" Face

No. Teeth	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		500 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM	
	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI
11	0.08		0.17		0.33		0.63		0.92		1.43		1.66		2.27		2.78		3.58	
12•	0.10		0.20		0.39		0.75		1.09		1.69		1.96		2.68		3.28		4.24	
13•	0.12		0.23		0.45		0.88		1.27		1.97		2.29		3.13		3.83		4.95	
14•	0.13		0.26		0.51		0.99		1.43		2.22		2.58		3.52		4.32		5.57	
15•	0.15		0.29		0.57		1.11		1.60		2.49		2.89		3.95		4.84		6.25	
16•	0.16		0.32		0.63		1.20		1.74		2.71		3.15		4.30		5.27		6.81	
17	0.18		0.35		0.68		1.31		1.90		2.95		3.42		4.68		5.74		7.40	
18•	0.19		0.37		0.73		1.42		2.05		3.18		3.70		5.06		6.19		7.99	
19•	0.20		0.40		0.79		1.52		2.20		3.43		3.98		5.44		6.67		8.60	
20•	0.22		0.43		0.85		1.63		2.36		3.68		4.27		5.84		7.15		9.23	
21•	0.23		0.46		0.90		1.74		2.52		3.92		4.55		6.22		7.63		9.84	
22•	0.25		0.49		0.96		1.85		2.68		4.17		4.84		6.62		8.11		10.47	
24•	0.28		0.55		1.07		2.06		2.99		4.64		5.39		7.38		9.04		11.66	
25•	0.29		0.57		1.13		2.17		3.14		4.88		5.67		7.75		9.50		12.26	
26•	0.31		0.60		1.19		2.28		3.30		5.14		5.96		8.16		9.99		12.90	
27	0.32		0.63		1.25		2.40		3.47		5.40		6.27		8.57		10.50		13.55	
28•	0.34		0.67		1.31		2.52		3.64		5.66		6.57		8.99		11.01		14.21	
30•	0.37		0.73		1.42		2.74		3.96		6.17		7.16		9.79		12.00		15.49	
32•	0.40		0.79		1.54		2.97		4.30		6.69		7.77		10.62		13.01			
33	0.41		0.82		1.61		3.09		4.47		6.95		8.08		11.05		13.53			
35	0.45		0.88		1.73		3.34		4.83		7.52		8.73		11.94		14.63			
36•	0.46		0.92		1.80		3.46		5.01		7.79		9.05		12.38		15.16			
40	0.53		1.05		2.06		3.97		5.74		8.94		10.38		14.19		17.39			
42•	0.56		1.12		2.19		4.21		6.09		9.48		11.01		15.05		18.44			
44	0.60		1.18		2.32		4.46		6.45		10.03		11.65		15.93		19.52			
45	0.61		1.21		2.38		4.58		6.63		10.31		11.97		16.37		20.06			
48•	0.66		1.32		2.58		4.97		7.19		11.19		13.00		17.77					
50	0.70		1.38		2.70		5.21		7.53		11.71		13.60		18.60					
52	0.73		1.44		2.83		5.45		7.89		12.27		14.25		19.49					
54•	0.76		1.51		2.96		5.71		8.25		12.84		14.91		20.39					
55	0.78		1.54		3.02		5.81		8.41		13.08		15.18		20.77					
56	0.79		1.57		3.08		5.93		8.58		13.35		15.50		21.19					
60•	0.86		1.71		3.35		6.45		9.33		14.51		16.84		23.04					
64	0.93		1.83		3.60		6.93		10.02		15.58		18.10		24.75					
66•	0.96		1.90		3.73		7.18		10.38		16.15		18.75							
70	1.02		2.03		3.98		7.66		11.09		17.24		20.03							
72•	1.05		2.09		4.09		7.88		11.40											
80		0.57		1.13		2.22		4.27		6.18		9.61		11.16						
84•		0.60		1.20		2.35		4.52		6.53		10.16		11.80						
88		0.63		1.26		2.46		4.74		6.86		10.67		12.39						
90		0.65		1.29		2.52		4.86		7.03		10.94								
96•		0.70		1.38		2.71		5.22		7.55		11.75								
100		0.73		1.44		2.83		5.45		7.89		12.27								
108•		0.79		1.57		3.07		5.91		8.55		13.31								
110		0.81		1.60		3.13		6.04		8.73		13.58								
112		0.82		1.63		3.19		6.15		8.89										
120•		0.89		1.76		3.44		6.63		9.59										
144•		0.84		1.67		3.27		6.30		9.11										
160		1.20		2.38		4.67		9.00		13.01										
200		1.52		3.00		5.89		11.34		16.41										

Ratings are based on strength calculation.

• Designates stock sizes for this pitch.

Note: 1. Ratings to right of heavy line are not recommended, as pitch line velocity exceeds 1000 feet per minute. They should be used for interpolation purposes only.

2. Non-metallic gears are most commonly used for the driving pinion of a pair of gears, with mating gear made of Cast Iron or Steel, where pitch line velocities exceed 1000 FPM and are not subjected to shock loads.

# 20° Horsepower Ratings (Approximate)



For  
Class I Service (Service Factor = 1.0)

16 Diametral Pitch

20° Pressure Angle

3/4" Face

No. Teeth	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		500 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM	
	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI
11	0.04		0.07		0.14		0.27		0.40		0.63		0.73		1.02		1.28		1.69	
12•	0.04		0.08		0.17		0.32		0.47		0.74		0.87		1.21		1.51		2.00	
13•	0.05		0.10		0.19		0.38		0.55		0.87		1.01		1.41		1.76		2.33	
14•	0.06		0.11		0.22		0.42		0.62		0.98		1.14		1.59		1.98		2.63	
15•	0.06		0.12		0.24		0.48		0.69		1.10		1.28		1.79		2.22		2.95	
16•	0.07		0.14		0.27		0.52		0.76		1.19		1.40		1.94		2.42		3.21	
17•	0.07		0.15		0.29		0.56		0.82		1.30		1.52		2.12		2.63		3.49	
18•	0.08		0.16		0.31		0.61		0.89		1.40		1.64		2.28		2.84		3.77	
19	0.09		0.17		0.34		0.65		0.95		1.51		1.76		2.46		3.06		4.05	
20•	0.09		0.18		0.36		0.70		1.02		1.62		1.89		2.64		3.28		4.35	
21•	0.10		0.20		0.39		0.75		1.09		1.73		2.02		2.81		3.50		4.64	
22•	0.10		0.21		0.41		0.80		1.16		1.84		2.15		2.99		3.72		4.93	
24•	0.12		0.23		0.46		0.89		1.29		2.04		2.39		3.33		4.15		5.50	
25	0.12		0.24		0.48		0.93		1.36		2.15		2.51		3.50		4.36		5.78	
26•	0.13		0.26		0.50		0.98		1.43		2.26		2.64		3.69		4.59		6.08	
27	0.14		0.27		0.53		1.03		1.50		2.38		2.78		3.87		4.82		6.38	
28•	0.14		0.28		0.56		1.08		1.58		2.49		2.91		4.06		5.06		6.70	
30•	0.15		0.31		0.61		1.18		1.72		2.72		3.18		4.43		5.51		7.30	
32•	0.17		0.33		0.66		1.28		1.86		2.94		3.44		4.80		5.98		7.91	
33	0.17		0.35		0.68		1.33		1.94		3.06		3.58		4.99		6.21		8.23	
35	0.19		0.37		0.74		1.44		2.09		3.31		3.87		5.39		6.72		8.89	
36•	0.20		0.39		0.77		1.49		2.17		3.43		4.01		5.59		6.96		9.22	
40•	0.22		0.45		0.88		1.71		2.49		3.93		4.60		6.41		7.98		10.57	
42	0.24		0.47		0.93		1.81		2.64		4.17		4.88		6.80		8.47			
44	0.25		0.50		0.99		1.92		2.80		4.42		5.16		7.20		8.96			
45	0.26		0.51		1.01		1.97		2.87		4.54		5.31		7.40		9.21			
48•	0.28		0.56		1.10		2.14		3.12		4.93		5.76		8.03		10.00			
50	0.29		0.58		1.15		2.24		3.26		5.16		6.03		8.41		10.47			
52	0.31		0.61		1.21		2.34		3.42		5.40		6.32		8.81		10.96			
54	0.32		0.64		1.26		2.45		3.58		5.65		6.61		9.21		11.47			
55	0.33		0.65		1.29		2.50		3.64		5.76		6.73		9.38					
56•	0.34		0.67		1.31		2.55		3.72		5.88		6.87		9.58					
60•	0.36		0.72		1.43		2.77		4.04		6.39		7.47		10.41					
64•	0.39		0.78		1.53		2.98		4.34		6.86		8.02		11.18					
66	0.41		0.81		1.59		3.08		4.50		7.11		8.31		11.58					
70	0.43		0.86		1.70		3.29		4.81		7.59		8.88		12.37					
72•	0.45		0.88		1.74		3.39		4.94		7.81		9.13		12.73					
80•	0.50		1.00		1.97		3.83		5.58		8.82		10.31		14.37					
84•	0.53		1.06		2.08		4.05		5.90		9.32		10.90		15.19					
88•	0.56		1.11		2.19		4.25		6.20		9.79		11.45							
90	0.57		1.14		2.24		4.35		6.35		10.03		11.73							
96•	0.62		1.22		2.41		4.68		6.82		10.78		12.60							
100	0.64		1.27		2.51		4.88		7.12		11.25		13.16							
108		0.33		0.66		1.31		2.54		3.71		5.86		6.85						
110		0.34		0.68		1.34		2.60		3.79		5.98		6.99						
112•		0.35		0.69		1.36		2.64		3.85		6.09		7.12						
120		0.37		0.74		1.47		2.85		4.16		6.57		7.68						
144•		0.36		0.71		1.39		2.71		3.95		6.24								
160•		0.51		1.01		1.99		3.87		5.64		8.91								
200		0.64		1.27		2.51		4.88		7.11		11.24								

Ratings are based on strength calculation.

• Designates stock sizes for this pitch.

Note: 1. Ratings to right of heavy line are not recommended, as pitch line velocity exceeds 1000 feet per minute. They should be used for interpolation purposes only.

2. Non-metallic gears are most commonly used for the driving pinion of a pair of gears, with mating gear made of Cast Iron or Steel, where pitch line velocities exceed 1000 FPM and are not subjected to shock loads.



# 20° Horsepower Ratings (Approximate)

For  
Class I Service (Service Factor = 1.0)

20 Diametral Pitch

20° Pressure Angle

½" Face

No. Teeth	25 RPM		50 RPM		100 RPM		200 RPM		300 RPM		500 RPM		600 RPM		900 RPM		1200 RPM		1800 RPM	
	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI	S	CI
11	0.02		0.03		0.06		0.12		0.17		0.28		0.32		0.46		0.57		0.78	
12•	0.02		0.04		0.07		0.14		0.20		0.33		0.38		0.54		0.68		0.92	
13	0.02		0.04		0.08		0.16		0.24		0.38		0.45		0.63		0.79		1.07	
14•	0.02		0.05		0.09		0.18		0.27		0.43		0.50		0.71		0.89		1.20	
15•	0.03		0.05		0.11		0.21		0.30		0.48		0.56		0.80		1.00		1.35	
16•	0.03		0.06		0.11		0.22		0.33		0.52		0.61		0.87		1.09		1.47	
17	0.03		0.06		0.12		0.24		0.36		0.57		0.67		0.94		1.19		1.60	
18•	0.03		0.07		0.13		0.26		0.38		0.61		0.72		1.02		1.28		1.73	
19	0.04		0.07		0.14		0.28		0.41		0.66		0.78		1.10		1.38		1.86	
20•	0.04		0.08		0.16		0.30		0.44		0.71		0.83		1.18		1.48		2.00	
21•	0.04		0.08		0.17		0.32		0.47		0.76		0.89		1.25		1.58		2.13	
22•	0.04		0.09		0.18		0.34		0.50		0.80		0.94		1.33		1.68		2.26	
24•	0.05		0.10		0.20		0.38		0.56		0.90		1.05		1.49		1.87		2.52	
25•	0.05		0.10		0.21		0.40		0.59		0.94		1.11		1.56		1.96		2.65	
26	0.06		0.11		0.22		0.42		0.62		0.99		1.16		1.64		2.07		2.79	
27	0.06		0.12		0.23		0.44		0.65		1.04		1.22		1.73		2.17		2.93	
28•	0.06		0.12		0.24		0.47		0.68		1.09		1.28		1.81		2.28		3.07	
30•	0.07		0.13		0.26		0.51		0.75		1.19		1.40		1.97		2.48		3.35	
32•	0.07		0.14		0.28		0.55		0.81		1.29		1.52		2.14		2.69		3.63	
33	0.07		0.15		0.29		0.57		0.84		1.34		1.58		2.22		2.80		3.78	
35•	0.08		0.16		0.32		0.62		0.91		1.45		1.70		2.40		3.03		4.08	
36•	0.08		0.17		0.33		0.64		0.94		1.50		1.77		2.49		3.14		4.23	
40•	0.10		0.19		0.38		0.74		1.08		1.72		2.02		2.86		3.60		4.85	
42	0.10		0.20		0.40		0.78		1.15		1.83		2.15		3.03		3.81		5.15	
44	0.11		0.21		0.42		0.83		1.21		1.93		2.27		3.21		4.04		5.45	
45•	0.11		0.22		0.44		0.85		1.25		1.99		2.34		3.30		4.15		5.60	
48	0.12		0.24		0.47		0.92		1.35		2.16		2.54		3.58		4.50		6.08	
50•	0.13		0.25		0.49		0.97		1.42		2.26		2.65		3.75		4.71		6.36	
52	0.13		0.26		0.52		1.01		1.48		2.37		2.78		3.92		4.94		6.66	
54	0.14		0.27		0.54		1.06		1.55		2.48		2.91		4.10		5.17			
55	0.14		0.28		0.55		1.08		1.58		2.52		2.96		4.18		5.26			
56	0.14		0.28		0.56		1.10		1.61		2.57		3.02		4.27		5.37			
60•	0.16		0.31		0.61		1.20		1.75		2.80		3.29		4.64		5.84			
64	0.17		0.33		0.66		1.28		1.88		3.01		3.53		4.98		6.27			
66	0.17		0.34		0.68		1.33		1.95		3.11		3.66		5.16		6.50			
70•	0.19		0.37		0.73		1.42		2.08		3.33		3.91		5.51		6.94			
72•	0.19		0.38		0.75		1.46		2.14		3.42		4.02		5.67		7.14			
80•	0.22		0.43		0.85		1.65		2.42		3.86		4.54		6.40					
84•	0.23		0.45		0.89		1.75		2.56		4.08		4.80		6.77					
88	0.24		0.47		0.94		1.83		2.69		4.29		5.04		7.11					
90•	0.24		0.49		0.96		1.88		2.76		4.40		5.16		7.29					
96•	0.26		0.52		1.03		2.02		2.96		4.72		5.55		7.83					
100•	0.27		0.55		1.08		2.11		3.09		4.93		5.79		8.17					
108	0.30		0.59		1.17		2.29		3.35		5.35		6.28							
110	0.30		0.60		1.19		2.33		3.42		5.46		6.41							
112	0.31		0.62		1.22		2.38		3.48		5.56		6.53							
120•	0.33		0.66		1.31		2.56		3.76		5.99		7.04							
144	0.32		0.63		1.25		2.43		3.57		5.69		6.69							
160	0.45		0.90		1.78		3.48		5.10		8.13		9.56							
200	0.57		1.14		2.24		4.38		6.43		10.26		12.05							

Ratings are based on strength calculation.

• Designates stock sizes for this pitch.

Note: 1. Ratings to right of heavy line are not recommended, as pitch line velocity exceeds 1000 feet per minute. They should be used for interpolation purposes only.

2. Non-metallic gears are most commonly used for the driving pinion of a pair of gears, with mating gear made of Cast Iron or Steel, where pitch line velocities exceed 1000 FPM and are not subjected to shock loads.

# Machined Gear Rack



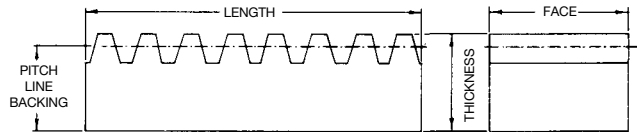
## Standard Face Width Steel — 14½° & 20° Pressure Angle

Catalog Number		Pitch	Face Width (Inches)	Overall Thickness (Inches)	Pitch Line Backing	App. Weight Lbs./Pc
14½° P.A.	20° P.A.					
R3x2	TR3x2	3	3	1½	1.167	24.0
R3x4	TR3x4	3	3	1½	1.167	48.0
R3x6	TR3x6	3	3	1½	1.167	72.0
R4x2	TR4x2	4	2	1½	1.250	17.4
R4x4	TR4x4	4	2	1½	1.250	34.8
R4x6	TR4x6	4	2	1½	1.250	52.2
RA4x2		4	2	2	1.750	23.6
RA4x4		4	2	2	1.750	47.2
RA4x6		4	2	2	1.750	70.8
R5x2	TR5x2	5	1½	1¼	1.050	12.8
R5x4	TR5x4	5	1½	1¼	1.050	25.6
R5x6	TR5x6	5	1½	1¼	1.050	38.4
RA5x2		5	1½	1½	1.300	16.0
RA5x4		5	1½	1½	1.300	32.0
RA5x6		5	1½	1½	1.300	48.0
R6x2		6	1½	1	.833	8.6
R6x4		6	1½	1	.833	17.2
R6x6		6	1½	1	.833	25.8
RA6x2	TR6x2	6	1½	1½	1.333	13.8
RA6x4	TR6x4	6	1½	1½	1.333	27.6
RA6x6	TR6x6	6	1½	1½	1.333	41.4
R8x2		8	1¼	¾	.625	5.2
R8x4		8	1¼	¾	.625	10.4
R8x6		8	1¼	¾	.625	15.6
RA8x2	TR8x2	8	1¼	1¼	1.125	9.8
RA8x4	TR8x4	8	1¼	1¼	1.125	19.6
RA8x6	TR8x6	8	1¼	1¼	1.125	29.4
R10x2		10	1	¾	.525	3.6
R10x4		10	1	¾	.525	7.2
R10x6		10	1	¾	.525	10.8
RA10x2	TR10x2	10	1	1	.900	6.0
RA10x4	TR10x4	10	1	1	.900	12.0
RA10x6	TR10x6	10	1	1	.900	18.0
R12x2		12	¾	½	.417	2.0
R12x4		12	¾	½	.417	4.0
R12x6		12	¾	½	.417	6.0
RA12x2	TR12x2	12	¾	¾	.667	3.4
RA12x4	TR12x4	12	¾	¾	.667	6.8
RA12x6	TR12x6	12	¾	¾	.667	10.2
R16x2		16	⅝	⅝	.250	.50
R16x4		16	⅝	⅝	.250	1.00
R16x6		16	⅝	⅝	.250	1.50
RA16x2	TR16x2	16	½	½	.438	1.52
RA16x4	TR16x4	16	½	½	.438	3.04
RA16x6	TR16x6	16	½	½	.438	4.56
R20x2	TR20x2	20	¾	¾	.325	.84
R20x4	TR20x4	20	¾	¾	.325	1.68
R20x6	TR20x6	20	¾	¾	.325	2.52
R24x2		24	¾	¾	.208	.38
R24x4		24	¾	¾	.208	.76
R24x6		24	¾	¾	.208	1.14

*Martin* Rack is made from low carbon cold drawn steel. It is available in 14½° and 20° pressure angle in 2, 4, and 6 foot lengths. Allowance is made for cutting and machining. Pinions to run with the rack may be selected from the Spur Gear section of the catalog. Special rack can be supplied in other materials, sizes, and pitches.

## Wide Face Width Steel — 20° Pressure Angle

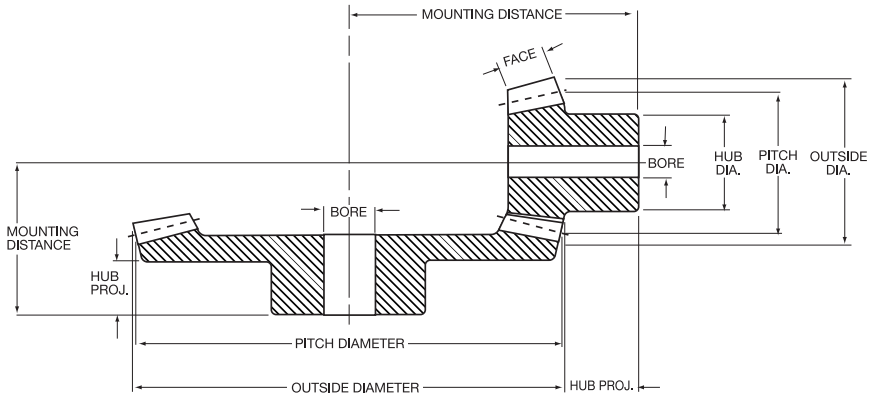
Catalog Number	Pitch	Face Width (Inches)	Overall Thickness (Inches)	Pitch Line Backing	App. Weight Lbs./Pc
R204x2	4	3½	2	1.750	41.0
R204x4	4	3½	2	1.750	82.0
R204x6	4	3½	2	1.750	123.0
R205x2	5	2½	1½	1.300	22.4
R205x4	5	2½	1½	1.300	44.8
R205x6	5	2½	1½	1.300	67.2
R206x2	6	2	1½	1.333	17.0
R206x4	6	2	1½	1.333	34.0
R206x6	6	2	1½	1.333	51.0
R208x2	8	1½	1½	1.375	13.8
R208x4	8	1½	1½	1.375	27.6
R208x6	8	1½	1½	1.375	41.3
R2010x2	10	1¼	1¼	1.150	9.0
R2010x4	10	1¼	1¼	1.150	18.0
R2010x6	10	1¼	1¼	1.150	27.0
R2012x2	12	1	1	.917	6.4
R2012x4	12	1	1	.917	12.8
R2012x6	12	1	1	.917	19.2
R2016x2	16	¾	¾	.688	3.4
R2016x4	16	¾	¾	.688	6.8
R2016x6	16	¾	¾	.688	10.2
R2020x2	20	½	½	.450	.8
R2020x4	20	½	½	.450	1.6
R2020x6	20	½	½	.450	2.5



**Martin Stocks**  
**14½° Spur Gears.**  
**&**  
**20° Spur Gears**

# Bevel Gears

## 20° Pressure Angle



Bevel Gears are used as right angle drives where high efficiency is required. They are carried in stock as 1:1 to 6:1 ratios. Bevel Gears are cut with the long and short addendum system and 20 degree pressure angle to compensate for tooth undercut in gears and pinions having low numbers of teeth. Most all of *Martin* Bevel Gears are cut with the Coniflex tooth form to

allow for a slight misalignment at assembly and during operation. Gears should be mounted at the correct distance from the core of apex center with thrust bearings being used in back of hubs to absorb the backward thrust created in this type of gearing.

### Cast Iron Gears With Steel Pinions

Number Teeth	Catalog Number	Diameter		Face (Inches)	Bore (Inches)		Mounting (Inches)	Hub (Inches)		Wt. Lbs. (App.)
		Pitch	Outside		Diameter	Length		Diameter	Proj. (App.)	

#### 3 Pitch

30	B330-2	10.00	10.19	1.87	1 1/4	3 3/8	5 1/2	5	2	32.8
15	B315-2	5.00	5.80	1.87	1 1/4	4 1/2	7 1/4	3 3/4	1 1/8	13.4

#### 4 Pitch

32	B432-2	8.00	8.10	1.40	1 1/8	2 1/16	4 1/4	3 3/4	1 1/8	14.7
16	B416-2	4.00	4.60	1.40	1 1/8	3 1/8	6	3 1/4	1 1/8	7.5
42	B442-3	10.50	10.59	1.42	1 1/8	2 1/16	4	3 3/4	1 1/2	20.5
14	B414-3	3.50	4.17	1.42	1 1/8	3 5/8	7 1/4	3 3/4	1 1/8	6.8
56	B456-4	14.00	14.07	1.69	1 1/4	2 1/8	4 1/4	4 1/4	1 1/8	37.8
14	B414-4	3.50	4.20	1.69	1 1/4	3 5/8	9	3 3/4	1 1/8	7.6

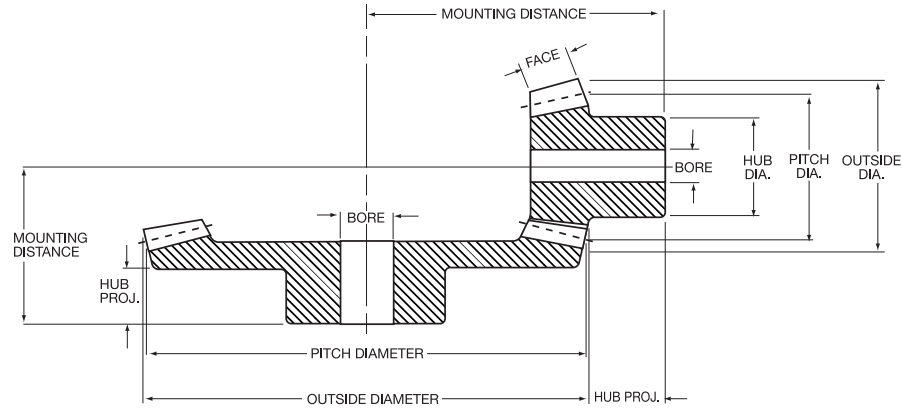
#### 5 Pitch

30	B530-2	6.00	6.12	1.04	1 1/8	2 1/4	3 3/8	3 3/4	1 1/8	8.6
15	B515-2	3.00	3.48	1.04	1	2 3/8	4 3/8	2 1/2	1 3/8	3.1
45	B545-3	9.00	9.07	1.31	1 1/4	2 1/8	3 3/8	3 3/4	1 1/8	14.6
15	B515-3	3.00	3.54	1.31	1	2 1/16	5 1/8	2 3/8	1 1/8	3.6
60	B560-4	12.00	12.05	1.70	1 1/4	2 3/8	3 3/8	4	1 1/8	23.2
15	B515-4	3.00	3.56	1.70	1	3 3/8	7 1/2	3	1 1/8	5.0

#### 6 Pitch

36	BS636-2	6.00	6.10	1.06	1 1/8	2 1/4	3 3/8	3 3/4	1 1/2	7.5
18	B618-2	3.00	3.42	1.06	1	2 3/8	4 3/8	2 1/2	1 3/8	3.3
42	B642-2	7.00	7.10	1.05	1 1/8	2 3/8	3 3/8	3 3/8	1 1/2	9.5
21	B621-2	3.50	3.90	1.05	1	2 3/8	5	2 1/2	1 1/4	3.8
45	B645-3	7.50	7.56	1.07	1 1/8	2 1/8	3	3 3/4	1 1/4	8.9
15	B615-3	2.50	2.94	1.07	3/8	2 3/8	5 1/4	2 1/8	1 1/8	2.2
48	B648-2	8.00	8.10	1.17	1 1/8	1 5/8	3 1/8	3 3/4	1	11.6
24	B624-2	4.00	4.40	1.17	1	2 3/8	5 1/8	2 3/8	1 1/4	4.9
60	B660-4	10.00	10.04	1.21	1 1/8	2 1/4	3 3/8	3 3/4	1 1/8	14.3
15	B615-4	2.50	2.97	1.21	1	2 3/8	6 3/8	2 1/2	1 3/8	3.2

Steel Bevel Gears may be furnished with hardened teeth at slight additional cost.



## Cast Iron Gears With Steel Pinions

Number Teeth	Catalog Number	Diameter		Face (Inches)	Bore (Inches)		Mounting (Inches)	Hub (Inches)		Wt. Lbs. (App.)
		Pitch	Outside		Diameter	Length		Diameter	Proj. (App.)	

### 8 Pitch

40	BS840-2	5.00	5.07	.82	1	1 <sup>2</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>8</sub>	3	1 <sup>1</sup> / <sub>4</sub>	4.9
20	B820-2	2.50	2.80	.82	<sup>7</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>32</sub>	4	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>32</sub>	1.9
48	B848-3	6.05	6.20	.84	<sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	1	4.5
16	B816-3	2.00	2.33	.84	<sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>64</sub>	4 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>	1.2
64	B864-4	8.00	8.03	.84	1	1 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	9.0
16	B816-4	2.00	2.35	.84	<sup>7</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>32</sub>	5 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>32</sub>	1.3
72	B872-4	9.00	9.03	1.22	1 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>4</sub>	3	1 <sup>1</sup> / <sub>16</sub>	12.2
18	B818-4	2.25	2.60	1.22	<sup>7</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>32</sub>	5 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>32</sub>	1.9

### 10 Pitch

60	B1060-3	6.00	6.04	.78	<sup>7</sup> / <sub>8</sub>	1 <sup>2</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>4</sub>	3	1 <sup>3</sup> / <sub>8</sub>	5.1
20	B1020-3	2.00	2.27	.78	<sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>32</sub>	4 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>	1.3
60	B1060-4	6.00	6.03	.72	<sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	4.5
15	B1015-4	1.50	1.78	.72	<sup>5</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>32</sub>	.6
90	B1090-6	9.00	9.03	.86	1	1 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>	9.7
15	B1015-6	1.50	1.79	.86	<sup>5</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>64</sub>	5 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>32</sub>	.7

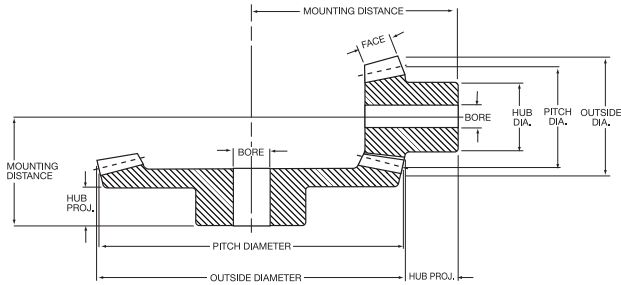
### 12 Pitch

36	B1236-2	3.00	3.05	.46	<sup>5</sup> / <sub>8</sub>	<sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>16</sub>	<sup>1</sup> / <sub>2</sub>	.8
18	B1218-2	1.50	1.70	.46	<sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>64</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>	.5
72	B1272-4	6.00	6.02	.60	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>	2	2	8 <sup>1</sup> / <sub>64</sub>	2.6
18	B1218-4	1.50	1.73	.60	<sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>64</sub>	.4
72	B1272-6	6.00	6.02	.74	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	2	8 <sup>1</sup> / <sub>64</sub>	2.6
12	B1212-6	1.00	1.24	.74	<sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>64</sub>	3 <sup>3</sup> / <sub>4</sub>	1 <sup>5</sup> / <sub>16</sub>	23 <sup>3</sup> / <sub>64</sub>	.4

Steel Bevel Gears may be furnished with hardened teeth at slight additional cost.

# Bevel Gears

## 20° Pressure Angle



### Steel Gears With Steel Pinions

Number Teeth	Catalog Number	Diameter		Face (Inches)	Bore (Inches)		Mounting (Inches)	Hub (Inches)		Wt. Lbs. (App.)
		Pitch	Outside		Diameter	Length		Diameter	Proj. (App.)	

#### 6 Pitch

36	BS636-2	6.00	6.10	1.06	1 1/8	2 1/4	3 1/2	3 3/4	1 1/2	8.7
18	BS618-2	3.00	3.42	1.06	1 1/8	2 3/4	4	2 1/2	1 1/2	3.2

#### 8 Pitch

40	BS840-2	5.00	5.07	.82	1	1 7/8	2 1/2	3	1 1/4	4.9
20	BS820-2	2.50	2.80	.82	1	2 1/2	4	2 1/2	1 1/2	1.8

#### 10 Pitch

30	BS1030-15	3.00	3.08	.57	3/4	1 1/8	2 1/4	2 1/2	1	2.0
20	BS1020-15	2.00	2.21	.57	3/4	1 3/4	2 1/2	1 3/4	29/32	.8
40	BS1040-2	4.00	4.06	.71	7/8	1 1/2	2 1/2	3	1 1/8	3.7
20	BS1020-2	2.00	2.24	.71	3/4	1 1/4	3 1/2	1 3/4	1 1/8	1.0
50	BS1050-2	5.00	5.06	.70	3/4	1 1/2	2 1/2	2	1	4.0
25	B1025-2	2.50	2.74	.70	3/4	1 3/4	3 1/2	2	3/4	1.5
60	BS1060-3	6.00	6.04	.78	1	1 3/4	2 1/2	3	1 1/8	6.0
20	BS1020-3	2.00	2.27	.78	3/4	2 1/2	4 1/2	1 3/4	1 1/8	.9

#### 12 Pitch

27	BS1227-15	2.25	2.32	.41	1/2	1 1/8	1 1/4	1 1/2	25/32	.6
18	BS1218-15	1.50	1.67	.41	1/2	1 1/8	1 1/4	1 1/4	21/32	.3
36	BS1236-2	3.00	3.05	.53	1	1 1/4	1 1/2	2 1/2	7/8	1.3
18	BS1218-2	1.50	1.70	.53	3/4	1 1/4	2 1/2	1 1/2	13/16	.3
36	BS1236-2A	3.00	3.05	.53	5/8	1 1/4	1 1/2	2 1/2	7/8	1.4
18	BS1218-2A	1.50	1.70	.53	1/2	1 1/4	2 1/2	1 1/2	13/16	.4
48	BS1248-2	4.00	4.05	.59	5/8	1 1/4	2	1 1/2	3/4	1.6
24	B1224-2	2.00	2.20	.59	1/2	1 1/4	2 1/2	1 1/2	3/4	.8
54	BS1254-3	4.50	4.53	.60	5/8	1 1/2	1 1/4	1 1/4	3/4	1.9
18	B1218-3	1.50	1.72	.60	1/2	1 1/2	3	1 1/4	11/16	.4

#### 14 Pitch

28	BS1428-2	2.00	2.04	.35	1/2	15/16	1 1/4	1 1/2	21/32	.5
14	BS1414-2	1.00	1.17	.35	1/2	31/32	1 1/4	1 3/16	9/16	.1

#### 16 Pitch

24	BS1624-2	1.50	1.54	.19	1/2	5/8	1	1	7/16	.15
12	BS1612-2	.75	.91	.19	3/8	37/64	1 1/8	2 1/2	11/32	.08
24	BS1624-15	1.50	1.55	.25	1/2	3/4	1 1/2	1 1/2	9/16	.40
16	BS1616-15	1.00	1.13	.25	3/8	47/64	1 1/4	1 3/4	7/16	.09
32	BS1632-2	2.00	2.04	.35	1/2	49/64	1 1/2	1 1/2	1/2	.30
16	BS1616-2	1.00	1.15	.35	3/8	27/32	1 1/2	1 3/4	7/16	.04
48	BS1648-3	3.00	3.02	.42	5/8	7/8	1 1/2	1 1/2	9/16	.74
16	B1616-3	1.00	1.17	.42	7/16	59/64	2	7/8	15/32	.13
64	BS1664-4	4.00	4.02	.48	5/8	57/64	1 3/4	2 1/4	9/16	1.7
16	B1616-4	1.00	1.17	.48	1/2	63/64	2 1/2	1 3/4	15/32	.12

Steel Bevel Gears may be furnished with hardened teeth at slight additional cost.



# Bevel Gears Horsepower Ratings

## Cast Iron

Catalog Number	Revolutions per Minute							
	50	100	200	300	600	900	1200	1800
B330-2	2.5	4.5	7.7	10.0	15.3			
B315-2	2.5	4.5	7.7	10.0	15.3			
B432-2	1.33	2.3	4.0	5.3	8.0	9.5		
B416-2	1.33	2.3	4.0	5.3	8.0	9.5		
B442-3	1.10	2.0	3.7	5.0	7.5	9.0		
B414-3	1.10	2.0	3.7	5.0	7.5	9.0		
B456-4	1.4	2.5	4.4	6.0	9.0	10.9		
B414-4	1.4	2.5	4.4	6.0	9.0	10.9		
B530-2	.5	1.0	1.9	2.5	3.9	4.8	5.5	
B515-2	.5	1.0	1.9	2.5	3.9	4.8	5.5	
B545-3	.7	1.4	2.4	3.3	5.2	6.4	7.2	
B515-3	.7	1.4	2.4	3.3	5.2	6.4	7.2	
B560-4	1.0	1.8	3.3	4.4	6.9	8.4	9.5	
B515-4	1.0	1.8	3.3	4.4	6.9	8.4	9.5	
B636-2	.5	1.0	1.7	2.3	3.7	4.4	5.0	
B618-2	.5	1.0	1.7	2.3	3.7	4.4	5.0	
B642-2	.6	1.1	2.0	2.7	4.0	5.0		
B621-2	.6	1.1	2.0	2.7	4.0	5.0		
B645-3	.4	.8	1.4	2.0	3.2	3.9	4.6	
B615-3	.4	.8	1.4	2.0	3.2	3.9	4.6	
B648-2	.8	1.5	2.5	3.4	5.1	6.1		
B624-2	.8	1.5	2.5	3.4	5.1	6.1		
B660-4	.5	.9	1.7	2.3	3.7	4.6	5.2	
B615-4	.5	.9	1.7	2.3	3.7	4.6	5.2	
B840-2	.4	.7	1.3	1.8	2.9	3.7	4.2	
B820-2	.4	.7	1.3	1.8	2.9	3.7	4.2	
B848-3	.2	.4	.7	1.0	1.7	2.2	2.5	2.9
B816-3	.2	.4	.7	1.0	1.7	2.2	2.5	2.9
B864-4	.2	.4	.7	1.0	1.7	2.2	2.5	
B816-4	.2	.4	.7	1.0	1.7	2.2	2.5	
B872-4	.4	.7	1.2	1.8	2.8	3.6	4.2	
B818-4	.4	.7	1.2	1.8	2.8	3.6	4.2	
B1060-3	.17	.3	.6	.8	1.3	1.7	1.9	2.3
B1020-3	.17	.3	.6	.8	1.3	1.7	1.9	2.3
B1060-4	.1	.2	.4	.5	.9	1.2	1.4	1.8
B1015-4	.1	.2	.4	.5	.9	1.2	1.4	1.8
B1090-6	.14	.25	.5	.7	1.2	1.7	1.9	2.3
B1015-6	.14	.25	.5	.7	1.2	1.7	1.9	2.3
B1236-2	.05	.11	.2	.3	.5	.6	.8	1.0
B1218-2	.05	.11	.2	.3	.5	.6	.8	1.0
B1254-3	.07	.15	.3	.4	.7	.9	1.0	1.3
B1218-3	.07	.15	.3	.4	.7	.9	1.0	1.3
B1272-4	.07	.15	.3	.4	.7	.9	1.1	1.4
B1218-4	.07	.15	.3	.4	.7	.9	1.1	1.4
B1272-6	.06	.11	.2	.3	.6	.8	1.0	1.2
B1212-6	.06	.11	.2	.3	.6	.8	1.0	1.2

## Steel

Catalog Number	Revolutions per Minute							
	50	100	200	300	600	900	1200	1800
BS636-2	.9	1.7	3.0	4.1	6.4	8.0	9.0	
BS618-2	.9	1.7	3.0	4.1	6.4	8.0	9.0	
BS840-2	.5	.9	1.5	2.1	3.5	4.4	5.0	
BS820-2	.5	.9	1.5	2.1	3.5	4.4	5.0	
BS1030-15	.2	.4	.7	1.0	1.7	2.1	2.3	2.9
BS1020-15	.2	.4	.7	1.0	1.7	2.1	2.3	2.9
BS1040-2	.25	.5	.9	1.3	2.1	2.7	3.0	3.7
BS1020-2	.25	.5	.9	1.3	2.1	2.7	3.0	3.7
BS1050-2	.33	.64	1.2	1.6	2.5	3.2	3.7	
B 1025-2	.33	.64	1.2	1.6	2.5	3.2	3.7	
BS1060-3	.3	.5	1.0	1.4	2.4	3.0	3.5	4.3
BS1020-3	.3	.5	1.0	1.4	2.4	3.0	3.5	4.3
BS1227-15	.09	.17	.33	.5	.8	1.0	1.2	1.6
BS1218-15	.09	.17	.33	.5	.8	1.0	1.2	1.6
BS1236-2	.12	.25	.4	.6	1.0	1.4	1.7	2.0
BS1218-2	.12	.25	.4	.6	1.0	1.4	1.7	2.0
BS1236-2A	.12	.25	.4	.6	1.0	1.4	1.7	2.0
BS1218-2A	.12	.25	.4	.6	1.0	1.4	1.7	2.0
BS1248-2	.18	.37	.7	.9	1.6	2.0	2.3	2.8
B1224-2	.18	.37	.7	.9	1.6	2.0	2.3	2.8
BS1254-3	.14	.28	.5	.7	1.2	1.6	1.9	2.3
B1218-3	.14	.28	.5	.7	1.2	1.6	1.9	2.3
BS1428-2	.05	.08	.16	.20	.40	.54	.7	.8
BS1414-2	.05	.08	.16	.20	.40	.54	.7	.8
BS1624-2	.02	.03	.05	.08	.14	.20	.25	.3
BS1612-2	.02	.03	.05	.08	.14	.20	.25	.3
BS1624-15	.03	.05	.09	.14	.25	.33	.4	.5
BS1612-15	.03	.05	.09	.14	.25	.33	.4	.5
BS1632-2	.03	.08	.14	.20	.37	.5	.6	.8
BS1616-2	.03	.08	.14	.20	.37	.5	.6	.8
BS1648-3	.05	.09	.17	.25	.50	.6	.8	1.0
BS1616-3	.05	.09	.17	.25	.50	.6	.8	1.0
BS1664-4	.05	.10	.20	.33	.50	.7	.9	1.1
BS1616-4	.05	.10	.20	.33	.50	.7	.9	1.1