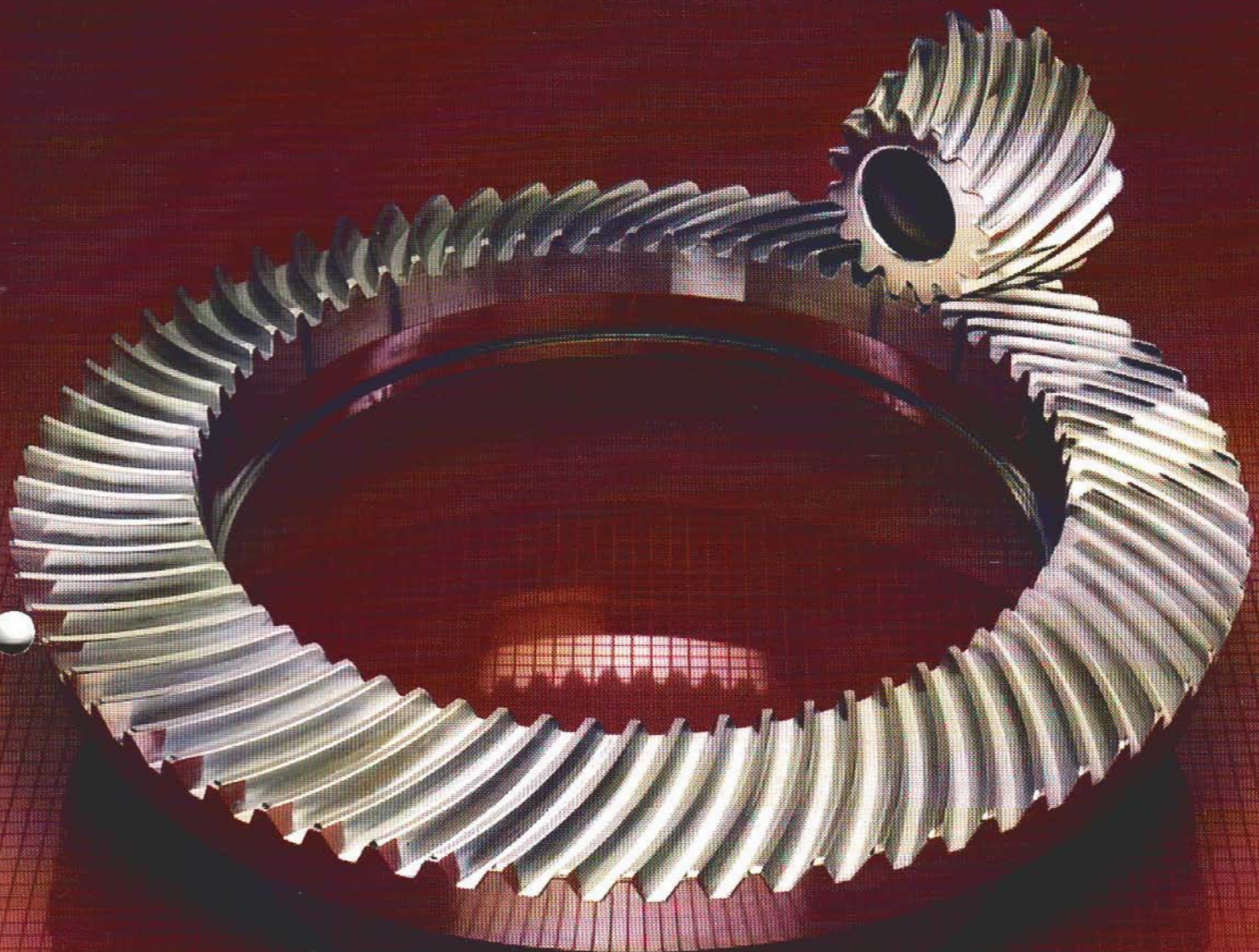


Standard Spiral Bevel Gears



Amarillo Gear Company



Call Amarillo Gear Company for your spiral bevel gear requirements because Amarillo Gear Company has:

- The largest inventory of standard spiral bevel gears in the world, consisting of more sizes and ratios available off-the-shelf than any other gear company in the world.
- Over 90 years of spiral bevel gear and right angle gear drive engineering experience.
- A track record of over 60 years of right angle gear drive manufacturing experience.
- Spiral bevel manufacturing capabilities from 3" to 100" pitch diameter.
- The largest rotary type spiral bevel generator in the world. (One of only three in the United States.)
- Carburizing capability to 48" and die quenching capacity of 44" pitch diameter.
- Hard cutting capability from 28" to 100" pitch diameter.
- An impeccable reputation for quality products and customer-oriented service.
- The ability to supply a wide range of spiral bevel gears, either from our large inventory of our standard gears, modifications of our standard designs, or gears of customer design.

Take advantage of our inventory, engineering experience, manufacturing expertise and facilities, and quality spiral bevel gears as if they were your own!

Typical Service Factors

Prime Mover	Duration of Service	Uniform Load	Mod. Shock	Heavy Shock
Electric Motor	Up to 10 hrs./day	1.25	1.5	1.75
	24 hrs./day	1.25	1.50	2.00
Multi-Cyl. Engine	Up to 10 hrs./day	1.25	1.50	2.00
	24 hrs./day	1.50	1.75	2.25
Single Cyl. Engine	Up to 10 hrs./day	1.50	1.75	2.25
	24 hrs./day	1.75	1.75	2.50

Amarillo Spiral Bevel Gears

Amarillo Spiral Bevel Gears are designed and proportioned according to the Gleason Spiral Bevel Gear System. These gears have either 35 or 30 degree spiral angle and 20 degree pressure angle. All members are machined from alloy steel, case hardened, lapped, and tested in pairs. Mounting distance, optimum backlash, mating teeth, part number, and serial number are etched on each member. Bores and mounting surfaces are finish ground. Ring gears are die quenched to minimize distortion.

Torque ratings shown are based on AGMA standards and are shown without any dynamic or service factors applied. The following conditions were also considered in the rating calculations:

1. Gears must be properly assembled in housings designed to insure correct gear alignment and position under maximum load; and with housings sized to prevent overheating.
2. Bearings must be properly sized to position the gears correctly under all load conditions.
3. Adequate lubrication must be provided.

There are larger sizes and other ratios available, and we also can manufacture custom spiral bevel gear sets according to your specific needs which may not be met by our standard product line.

Rating Calculations

To select a set of spiral bevel gears, the following procedure is suggested:

1. Select a service factor based on experience, AGMA standards or the chart of typical service factors (on the preceding page).
2. Calculate the working pinion torque from the transmitted horsepower and pinion speed. (Equation 1)
3. Calculate the required base torque rating. (Equation 2)
4. Select the proper gear set from the rating data chart for the ratio required.
(An "L" or "R" in the part numbers indicate left or right hand spiral.)
5. Calculate actual service factor based on gear set selected.



$$T_{wp} = \frac{63025 \times \text{HP}}{\text{RPM}_p} \quad (\text{Equation 1})$$

Where:

- T_{wp} = working pinion torque (lb-in))
- HP = horsepower
- RPM_p = revolutions per minute (pinion)

$$T_{rp} = \frac{T_{wp} \times \text{SF}}{K_v} \quad (\text{Equation 2})$$

Where:

- T_{rp} = base torque rating, pinion
- S.F. = service factor (see chart)
- K_v = dynamic factor

$$K_v = \sqrt{\frac{78}{78 + \sqrt{\text{PLV}}}} \quad (\text{Equation 3})$$

Where:

PLV (Pitch Line Velocity) = 0.262 x RPM x pinion pitch diameter. (Equation 4)

Example:

- Required horsepower = 175 @ 2150 RPM input.
- Ration required = 2:1
- Desired S.F. = 1.5 (from chart)

$T_{wp} = 5130 \text{ lb-in}$ (From Eq. 1)

$T_{rp} = 9618 \text{ lb-in}$ (assume $K_v = .8$ for first try) (From Eq. 2)

From 2:1 data select Drawing Numbers 262 GR and 262 PL.

Calculate actual K_v :

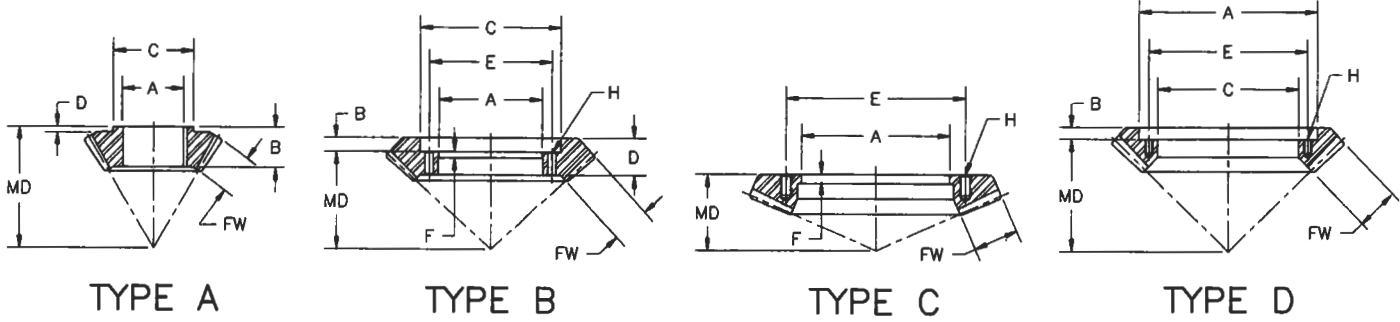
$\text{PLV} = 0.262 \times \text{RPM}_p \times \text{pitch diameter (pinion)} = 2816$ from Eq. 4)

$K_v = .771$ (From Eq. 3)

$T_s = \text{Gear set rating at application speed} = T_{rp}K_v = 8316 \text{ lb-ins}$

$\text{SF} = T_s/T_{wp} = 8316/5130 = 1.62$

Therefore, this selection is adequate.

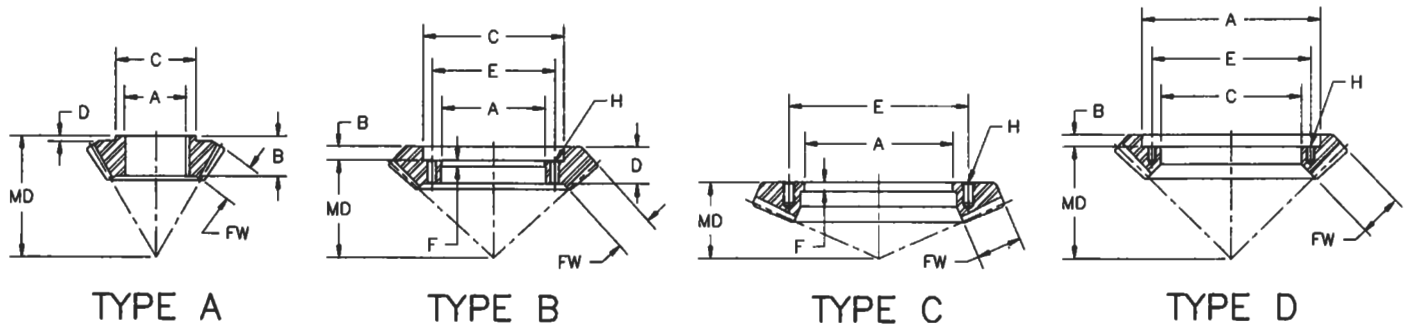


1:1 RATIO

PART NO.	PITCH		DIAM.								HOLES		PINION BASE TORQ.			
	DIA.	TEETH	PITCH	MD	A	B	C	D	FW	E	F	SIZE	NO.	KEYWAY	TYPE	(LB-IN)
119 GL	3.500	25	7.143	2.438	1.438	1.318	2.500	0.375	0.813					1/4 X 3/32	A	2,027
119 PR	3.500	25	7.143	2.438	1.438	1.318	2.500	0.375	0.813					1/4 X 3/32	A	
118 GL	4.188	25	5.970	2.813	1.750	1.375	2.750	0.313	1.063					3/8 X 3/32	A	3,537
118 PR	4.188	25	5.970	2.813	1.750	1.375	2.750	0.313	1.063					3/8 X 3/32	A	
534 GL	5.250	28	5.333	3.438	2.375	1.625	3.250	0.375	1.250					3/8 X 1/8	A	6,173
534 PR	5.250	28	5.333	3.438	2.375	1.625	3.250	0.375	1.250					3/8 X 1/8	A	
523 GL	6.436	27	4.195	3.938	2.375	1.688	3.625	0.250	1.500					3/8 X 1/8	A	10,593
523 PR	6.436	27	4.195	4.125	2.375	1.875	3.625	0.438	1.500					3/8 X 1/8	A	
243 GR	8.000	32	4.000	4.625	3.000	2.000	4.500	0.250	1.500					1/2 X 3/16	A	14,660
243 PL	8.000	32	4.000	4.625	3.000	2.000	4.500	0.250	1.500					1/2 X 3/16	A	
482 GL	10.000	35	3.500	5.875	3.375	2.500	5.000	0.250	2.125					3/4 X 1/4	A	31,490
482 PR	9.714	34	3.500	5.875	3.375	2.500	5.000	0.250	2.125					3/4 X 1/4	A	
272 GL	12.000	36	3.000	5.564	6.500	0.938	8.625	1.688	2.000	7.500	0.318	17/32	12		B	38,888
272 PR	12.000	36	3.000	5.564	6.500	0.938	8.625	1.688	2.000	7.500	0.318	17/32	12		B	
528 GL	12.249	36	2.939	5.750	6.500	0.938	8.625	1.875	2.250	7.500	0.318	17/32	12		B	43,763
528 PR	12.249	36	2.939	5.750	6.500	0.938	8.625	1.875	2.250	7.500	0.318	17/32	12		B	
155 GL	13.000	39	3.000	6.062	6.750	0.875	9.250	1.875	2.375	8.000	0.500	17/32	8		B	52,767
155 PR	13.000	39	3.000	6.062	6.750	0.875	9.250	1.875	2.375	8.000	0.500	17/32	8		B	
182 GR	14.397	37	2.570	7.000	11.250	0.750	8.875		2.750	10.000	--	1/2-20 NF	10		D	71,283
182 PL	14.008	36	2.570	7.250	11.250	0.750	8.875		2.750	10.000	--	1/2-20 NF	10		D	
280 GL	17.369	47	2.706	9.250	11.000				3.625	13.125	0.563	1/2-20 NF	12		C	129,734
280 PR	16.999	46	2.706	9.500	11.000				3.625	13.125	0.563	1/2-20 NF	12		C	
518 GL	21.497	58	2.698	10.125	16.125	1.250	11.250		4.500	14.500	--	3/4-16 NF	12		D	201,138
518 PR	21.127	57	2.698	10.750	16.125	1.250	11.250		4.500	14.500	--	3/4-16 NF	12		D	

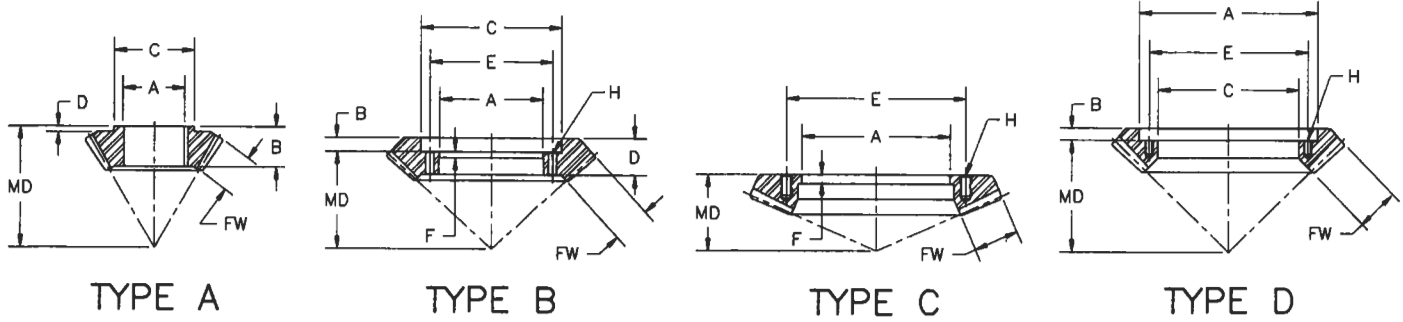
11:10 RATIO

PART NO.	PITCH		DIAM.								HOLES		PINION BASE TORQ.			
	DIA.	TEETH	PITCH	MD	A	B	C	D	FW	E	F	SIZE	NO.	KEYWAY	TYPE	(LB-IN)
526 GR	6.312	30	4.753	3.625	2.375	1.500	3.625	0.250	1.450					3/8 X 18	A	8,633
526 PL	5.681	27	4.753	3.625	2.375	1.500	3.875	0.125	1.450					3/8 X 18	A	
530 GL	6.312	30	4.753	3.625	2.375	1.500	3.625	0.250	1.450					3/8 X 18	A	8,633
530 PR	5.681	27	4.753	3.625	2.375	1.500	3.875	0.125	1.450					3/8 X 18	A	
251 GL	8.000	31	3.875	4.625	3.000	2.000	4.500	0.375	1.500					1/2 X 3/16	A	15,351
251 PR	7.226	28	3.875	4.625	3.000	2.000	4.500	0.188	1.500					1/2 X 3/16	A	
251 GR	8.000	31	3.875	4.625	3.000	2.000	4.500	0.375	1.500					1/2 X 3/16	A	15,351
251 PL	7.226	28	3.875	4.625	3.000	2.000	4.500	0.188	1.500					1/2 X 3/16	A	
522 GR	10.375	34	3.277	5.875	3.375	2.500	5.000	0.250	2.125					3/4 X 1/4	A	30,050
522 PL	9.460	31	3.277	5.875	3.375	2.500	5.000	0.250	2.125					3/4 X 1/4	A	
268 GR	11.333	34	3.000	5.250	5.000	0.750	7.125	1.875	2.250	6.000	0.688	0.531	6		B	33,721
268 PL	10.333	31	3.000	5.500	5.000	0.750	7.125	2.000	2.250	6.000	0.813	0.531	6		B	
551 GR	13.000	54	4.154	6.063	6.500	0.875	8.875	2.313	2.375	7.750	0.375	0.531	6		B	46,793
551 PL	11.796	49	4.154	7.750	3.750	3.000	6.000	0.375	2.375					3/4 X 1/4	A	
382 GR	15.000	39	2.600	7.000	11.250	0.750	8.875		3.000	10.000		1/2-20 NF	10		D	82,087
382 PL	13.462	35	2.600	7.750	10.500	0.750	7.985		3.000	9.125		5/8-18 NF	8		D	



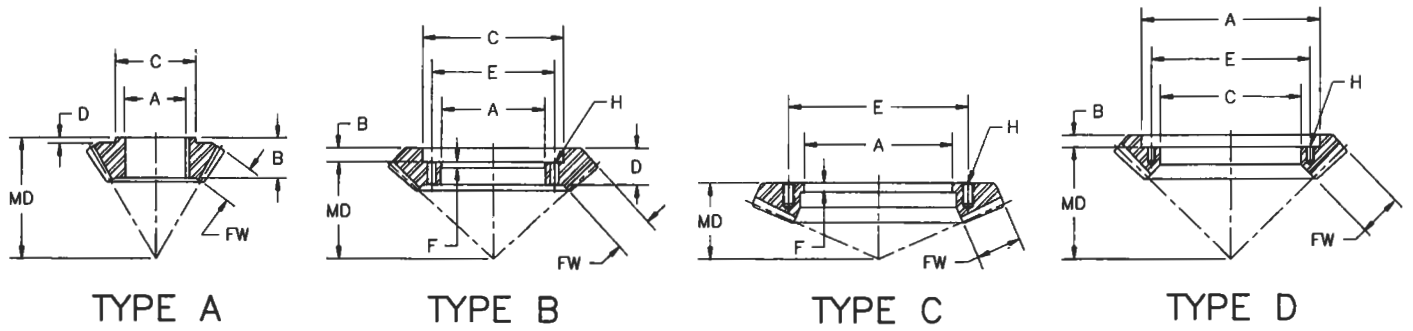
6:5 RATIO

PART NO.	PITCH		DIAM.									HOLES		PINION BASE TORQ.		
	DIA.	TEETH	PITCH	MD	A	B	C	D	FW	E	F	SIZE	NO.	KEYWAY	TYPE	(LB-IN)
278 GR	4.174	24	5.750	2.438	1.438	1.313	2.500	0.250	0.938					1/4 X 3/32	A	2,536
278 PL	3.478	20	5.750	2.438	1.438	1.000	2.500	0.188	0.938					1/4 X 3/32	A	
217 GR	4.800	30	6.250	2.813	1.750	1.375	2.875	0.438	1.000					3/8 X 3/32	A	3,249
217 PL	4.000	25	6.250	3.000	1.750	1.313	2.750	0.375	1.000					3/8 X 3/32	A	
217 GR	4.800	30	6.250	2.813	1.750	1.375	2.875	0.438	1.000					3/8 X 3/32	A	3,249
478 PL	4.000	25	6.250	3.000	2.167	1.313	2.750	0.375	1.000					3/8 X 3/32	A	
231 GL	6.593	30	4.550	3.438	2.375	1.438	3.625	0.188	1.469					3/8 X 1/8	A	8,771
231 PR	5.495	25	4.550	3.938	2.375	1.625	3.875	0.250	1.469					3/8 X 1/8	A	
525 GR	6.593	30	4.550	3.438	2.375	1.438	3.625	0.188	1.469					3/8 X 1/8	A	8,771
525 PL	5.495	25	4.550	3.938	2.375	1.625	3.875	0.250	1.469					3/8 X 1/8	A	
511 GL	8.000	36	4.500	4.625	3.000	2.000	4.500	0.625	1.563					1/2 X 3/16	A	12,575
511 PR	6.667	30	4.500	4.938	3.000	2.000	4.500	0.500	1.563					1/2 X 3/16	A	
305 GR	8.000	36	4.500	4.625	3.000	2.000	4.500	0.375	1.563					1/2 X 3/16	A	12,575
305 PL	6.667	30	4.500	4.938	3.000	2.000	4.500	0.188	1.563					1/2 X 3/16	A	
253 GR	10.000	35	3.500	4.625	3.000	2.000	4.500	0.188	1.750					1/2 X 3/16	A	18,383
253 PL	8.286	29	3.500	6.125	3.000	2.000	4.500	0.750	1.750					1/2 X 3/16	A	
254 GL	10.000	35	3.500	4.625	3.000	2.000	4.500	0.188	1.750					1/2 X 3/16	A	17,693
254 PR	8.286	29	3.500	6.125	3.000	2.000	4.500	0.750	1.750					1/2 X 3/16	A	
489 GL	10.000	35	3.500	4.625	3.375	2.000	4.500	0.188	1.750					3/4 X 1/4	A	17,693
254 PR	8.286	29	3.500	6.125	3.000	2.000	4.500	0.750	1.750					1/2 X 3/16	A	
496 GR	11.250	37	3.289	5.500	3.750	2.625	5.250	0.125	2.188					3/4 X 1/4	A	31,657
496 PL	9.425	31	3.289	6.375	3.375	2.500	5.000	0.250	2.188					3/4 X 1/4	A	
270 GR	12.333	37	3.000	5.250	6.000	0.750	8.125	1.750	2.250	7.000	0.563	0.531	6		B	39,001
270 PL	10.667	32	3.000	5.875	5.000	0.750	7.125	2.000	2.250	6.000	0.813	0.531	6		B	
486 GR	13.500	40	2.963	5.313	6.500	0.875	8.875	2.000	2.625	7.750	0.375	0.531	6		B	49,029
486 PL	11.137	33	2.963	7.750	3.750	3.000	6.000	0.375	2.625					3/4 X 1/4	A	
374 GR	15.983	37	2.315	7.000	13.000	0.750	10.500		2.750	11.750			12	1/2-20 NF	D	70,777
374 PL	13.391	31	2.315	8.000	10.500	0.750	7.985		2.750	9.125			8	5/8-18 NF	D	
370 GR	20.000	50	2.500	9.125	13.000				3.750	15.500	0.500		12	5/8-18 NF	C	150,026
370 PL	16.800	42	2.500	10.750	11.000				3.750	13.125	0.625		12	1/2-20 NF	C	



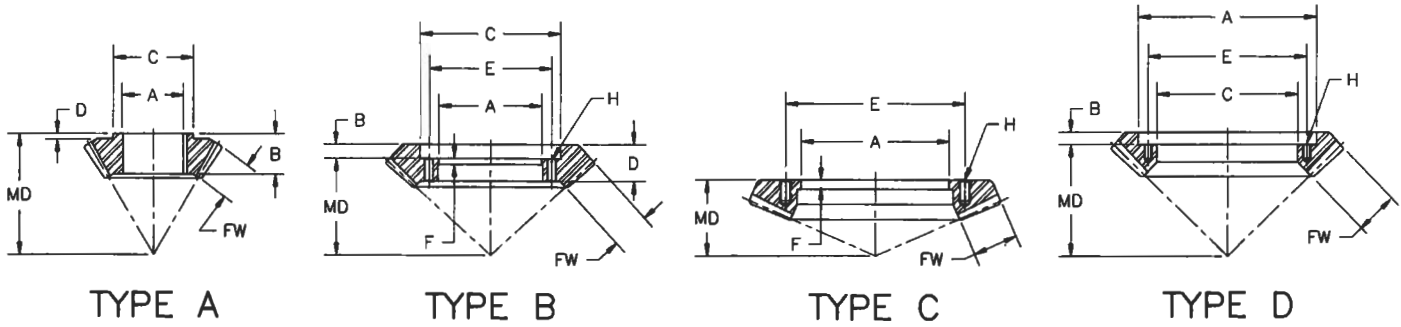
5:4 RATIO

PART NO.	PITCH		DIAM.		MD	A	B	C	D	FW	E	F	HOLES		KEYWAY	TYPE	PINION BASE TORQ. (LB-IN)
	DIA.	TEETH	PITCH	DIA.									SIZE	NO.			
233 GL	6.741	35	5.192	3.438	2.375	1.625	3.750	0.250	1.313						3/8 X 1/8	A	7,484
233 PR	5.393	28	5.192	3.938	2.375	1.500	3.750	0.250	1.313					3/8 X 1/8	A		
524 GR	6.938	35	5.045	3.438	2.375	1.625	3.625	0.188	1.450					3/8 X 1/8	A	8,620	
524 PL	5.550	28	5.045	3.938	2.375	1.500	3.875	0.125	1.450					3/8 X 1/8	A		
304 GR	8.000	30	3.750	4.625	3.000	2.000	4.500	0.500	1.563					1/2 X 3/16	A	12,173	
304 PL	6.400	24	3.750	4.938	3.000	2.000	4.500	0.250	1.563					1/2 X 3/16	A		
304 GL	8.000	30	3.750	4.625	3.000	2.000	4.500	0.500	1.563					1/2 X 3/16	A	12,148	
304 PR	6.400	24	3.750	4.938	3.000	2.000	4.500	0.250	1.563					1/2 X 3/16	A		
256 GL	10.000	35	3.500	4.625	3.000	2.000	4.500	0.250	1.750					1/2 X 3/16	A	19,629	
256 PR	8.000	28	3.500	6.125	3.000	2.000	4.500	0.625	1.750					1/2 X 3/16	A		
488 GL	10.000	35	3.500	4.625	3.375	2.000	4.500	0.250	1.750					3/4 X 1/4	A	19,629	
256 PR	8.000	28	3.500	6.125	3.000	2.000	4.500	0.625	1.750					1/2 X 3/16	A		
255 GR	10.000	35	3.500	4.625	3.000	2.000	4.500	0.250	1.750					1/2 X 3/16	A	19,340	
255 PL	8.000	28	3.500	6.125	3.000	2.000	4.500	0.625	1.750					1/2 X 3/16	A		
273 GR	12.500	40	3.200	4.938	6.000	0.750	8.125	1.500	2.000	7.000	0.313	0.531	6		B	31,147	
521 PL	10.000	32	3.200	7.250	3.375	2.375	6.000	0.500	2.000					3/4 X 1/4	A		
273 GR	12.500	40	3.200	4.938	6.000	0.750	8.125	1.500	2.000	7.000	0.313	0.531	6		B	31,147	
273 PL	10.000	32	3.200	7.250	3.750	2.375	6.000	0.500	2.000					3/4 X 1/4	A		
485 GR	13.500	40	2.963	5.312	6.500	0.875	8.875	2.000	2.625	7.750	0.375	0.531	6		B	47,293	
485 PL	10.800	32	2.963	7.750	3.750	3.000	6.000	0.375	2.625					3/4 X 1/4	A		
198 GR	14.502	44	3.034	5.625	6.750	0.875	9.225	1.875	2.750	8.000	0.500	0.531	8		B	57,770	
198 PL	11.536	35	3.034	8.500	3.750	3.625	6.000	0.500	2.750					3/4 X 1/4	A		
415 GR	20.000	50	2.500	9.125	13.000				3.750	15.500	0.500	5/8-18 NF	12		C	144,566	
415 PL	16.000	40	2.500	11.000	4.750	4.250	6.750	0.438	3.750					3/4 X 1/4	A		



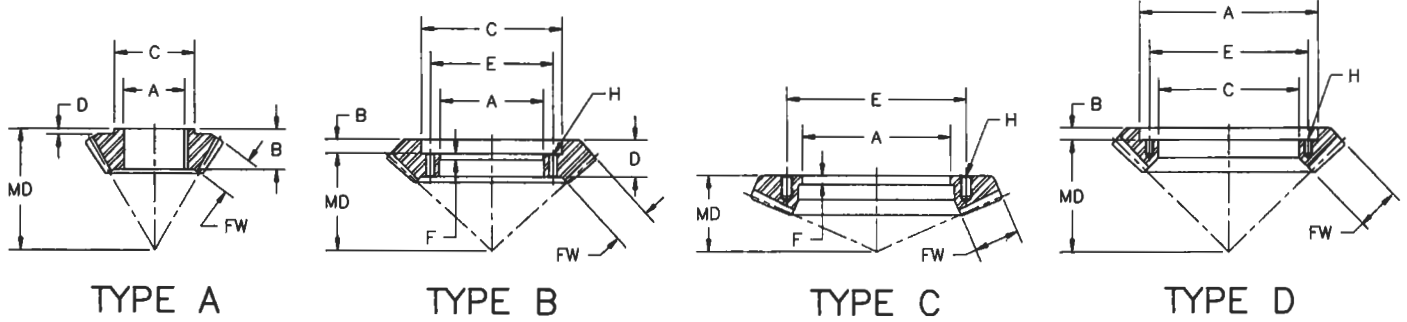
4:3 RATIO

PART NO.	PITCH		DIAM. PITCH	MD	A	B	C	D	FW	E	F	HOLES		KEYWAY	TYPE	PINION BASE TORQ. (LB-IN)
	DIA.	TEETH										SIZE	NO.			
201 GR	4.571	32	7.000	2.438	1.438	1.313	2.500	0.375	0.875					1/4 X 3/32	A	2,268
201 PL	3.429	24	7.000	2.938	1.438	1.250	2.500	0.438	0.875					1/4 X 3/32	A	
209 GR	5.333	32	6.000	3.000	1.750	1.563	2.875	0.563	1.000					3/8 X 3/32	A	3,483
209 PL	4.000	24	6.000	3.375	1.750	1.375	2.750	0.438	1.000					3/8 X 3/32	A	
222 GR	6.400	32	5.000	3.438	2.375	1.625	3.125	0.563	1.250					3/8 X 1/8	A	5,723
222 PL	4.800	24	5.000	3.938	2.375	1.625	3.250	0.438	1.250					3/8 X 1/8	A	
527 GL	6.563	32	4.876	3.438	2.375	1.625	3.625	0.313	1.350					3/8 X 1/8	A	6,718
527 PR	4.922	24	4.876	3.938	2.375	1.625	3.250	0.313	1.350					3/8 X 1/8	A	
303 GR	8.000	32	4.000	4.250	3.000	2.000	4.500	0.438	1.500					1/2 X 3/16	A	9,305
303 PL	6.000	24	4.000	4.938	3.000	2.000	3.813	0.563	1.500					1/2 X 3/16	A	
303 GL	8.000	32	4.000	4.250	3.000	2.000	4.500	0.438	1.500					1/2 X 3/16	A	9,305
303 PR	6.000	24	4.000	4.938	3.000	2.000	3.813	0.563	1.500					1/2 X 3/16	A	
241 GR	8.000	32	4.000	4.250	2.375	2.000	4.500	0.438	1.500					3/8 X 1/8	A	9,305
241 PL	6.000	24	4.000	4.938	2.375	2.000	3.813	0.563	1.500					3/8 X 1/8	A	
245 GL	10.286	36	3.500	4.625	3.000	2.000	4.500	0.313	1.750					1/2 X 3/16	A	17,934
245 PR	7.714	27	3.500	6.125	3.000	2.000	4.500	0.500	1.750					1/2 X 3/16	A	
244 GR	10.286	36	3.500	4.625	3.000	2.000	4.500	0.313	1.750					1/2 X 3/16	A	17,934
244 PL	7.714	27	3.500	6.125	3.000	2.000	4.500	0.500	1.750					1/2 X 3/16	A	
493 GL	10.286	36	3.500	4.625	3.375	2.000	4.500	0.313	1.750					3/4 X 1/4	A	17,934
245 PR	7.714	27	3.500	6.125	3.000	2.000	4.500	0.500	1.750					1/2 X 3/16	A	
539 GR	12.000	36	3.000	4.438	6.000	0.750	8.125	1.500	2.000	7.000	0.313	0.531	6		B	27,529
491 PL	9.000	27	3.000	6.875	3.375	2.375	6.000	0.375	2.000					3/4 X 1/4	A	
539 GR	12.000	36	3.000	4.438	6.000	0.750	8.125	1.500	2.000	7.000	0.313	0.531	6		B	27,529
539 PL	9.000	27	3.000	6.875	3.750	2.375	6.000	0.375	2.000					3/4 X 1/4	A	
181 GR	12.982	37	2.850	5.750	8.000				2.500	9.375	1.000	1/2-20 NF	10		C	39,175
181 PL	9.825	28	2.850	7.375	3.750	3.125	5.500	0.375	2.500					3/4 X 1/4	A	
156 GR	15.667	47	3.000	5.750	8.250	0.750	10.750	1.875	2.625	9.500	0.500	0.531	10		B	52,076
573 PL	11.667	35	3.000	9.000	3.750	3.625	6.000	0.625	2.625					3/4 X 1/4	A	
156 GR	15.667	47	3.000	5.750	8.250	0.750	10.750	1.875	2.625	9.500	0.500	0.531	10		B	52,076
156 PL	11.667	35	3.000	9.000	4.250	3.625	6.000	0.625	2.625					3/4 X 1/4	A	
310 GR	20.000	50	2.500	8.375	13.000				3.750	15.500	0.500	5/8-18 NF	12		C	118,998
310 PL	14.800	37	2.500	11.000	4.750	4.250	6.750	0.438	3.750					3/4 X 1/4	A	
582 GR	28.000	49	1.750	12.000	18.000				5.263	21.500	0.630	3/4-16 NF	16		C	336,876
582 PL	21.143	37	1.750	15.875	7.625	6.500	10.500	0.500	5.263					1.25 X 5/8	A	



3:2 RATIO

PART NO.	PITCH		DIAM.		MD	A	B	C	D	FW	E	F	HOLES		KEYWAY	TYPE	PINION BASE TORQ. (LB-IN)
	DIA.	TEETH	PITCH	DIAM.									SIZE	NO.			
203 GR	5.000	30	6.000	2.438	1.438	1.313	2.875	0.375	1.000						1/4 X 3/32	A	2,728
203 PL	3.333	20	6.000	3.000	1.438	1.250	2.375	0.375	1.000						1/4 X 3/32	A	
444 GR	6.000	36	6.000	3.125	1.750	1.688	3.125	0.688	1.125						3/8 X 3/32	A	4,123
444 PL	4.000	24	6.000	3.500	1.750	1.375	2.750	0.313	1.125						3/8 X 3/32	A	
225 GL	7.200	36	5.000	3.563	2.375	1.750	3.500	0.563	1.250						3/8 X 1/8	A	5,978
225 PR	4.800	24	5.000	3.938	2.375	1.313	3.250	0.063	1.250						3/8 X 1/8	A	
224 GR	7.200	36	5.000	3.563	2.375	1.750	3.500	0.563	1.250						3/8 X 1/8	A	6,121
224 PL	4.800	24	5.000	4.250	2.375	1.625	3.250	0.375	1.250						3/8 X 1/8	A	
529 GL	7.656	36	4.702	4.000	3.000	2.000	4.500	0.750	1.531						1/2 X 3/16	A	8,778
529 PR	5.104	24	4.702	4.250	2.375	1.625	3.750	0.219	1.531						3/8 X 1/8	A	
242 GR	8.667	39	4.500	3.938	2.375	2.000	3.625	0.444	1.375						3/8 X 1/8	A	8,814
242 PL	5.778	26	4.500	5.188	2.375	1.875	3.625	0.563	1.375						3/8 X 1/8	A	
531 GR	8.864	39	4.400	4.250	3.000	2.000	4.500	0.750	1.500						1/2 X 3/16	A	10,547
531 PL	5.909	26	4.400	5.188	3.000	1.875	3.750	0.406	1.500						1/2 X 3/16	A	
247 GL	10.500	42	4.000	4.625	3.000	2.000	4.500	0.625	1.750						1/2 X 3/16	A	15,552
247 PR	7.000	28	4.000	6.063	3.000	2.000	4.500	0.500	1.750						1/2 X 3/16	A	
492 GL	10.500	42	4.000	4.625	3.375	2.000	4.500	0.625	1.750						3/4 X 1/4	A	15,552
247 PR	7.000	28	4.000	6.063	3.000	2.000	4.500	0.500	1.750						1/2 X 3/16	A	
246 GR	10.625	42	3.953	4.625	3.000	2.000	4.500	0.375	1.916						1/2 X 3/16	A	18,452
246 PL	7.083	28	3.953	6.063	3.000	2.000	4.000	0.250	1.916						1/2 X 3/16	A	
266 GR	12.857	45	3.500	4.125	6.500	0.750	8.875	1.500	2.000	7.750	0.313	0.531	6			B	24,865
490 PL	8.571	30	3.500	7.250	3.375	2.375	6.000	0.375	2.000						3/4 X 1/4	A	
266 GR	12.857	45	3.500	4.125	6.500	0.750	8.875	1.500	2.000	7.750	0.313	0.531	6			B	24,865
266 PL	8.571	30	3.500	7.250	3.750	2.375	6.000	0.375	2.000						3/4 X 1/4	A	
319 GR	14.545	40	2.750	5.875	9.250				2.500	10.500	0.375		12	1/2-20 NF		C	42,587
319 PL	9.818	27	2.750	8.125	3.750	3.125	5.500	0.375	2.500						3/4 X 1/4	A	
157 GR	16.667	50	3.000	6.500	11.000				2.875	13.125	0.563		12	1/2-20 NF		C	55,694
572 PL	11.000	33	3.000	9.375	3.750	3.625	6.000	0.500	2.875						3/4 X 1/4	A	
157 GR	16.667	50	3.000	6.500	11.000				2.875	13.125	0.563		12	1/2-20 NF		C	55,694
157 PL	11.000	33	3.000	9.375	4.250	3.625	6.000	0.500	2.875						3/4 X 1/4	A	
369 GR	20.000	50	2.500	7.750	13.000				3.750	15.500	0.500		12	5/8-18 NF		C	103,932
369 PL	13.200	33	2.500	11.000	4.750	4.250	6.750	0.438	3.750						3/4 X 1/4	A	
512 GR	24.003	56	2.333	9.000	16.000				4.156	19.000	0.500		12	3/4-16 NF		C	145,305
512 PL	15.859	37	2.333	12.875	5.500	4.500	8.000	0.250	4.156						1 X 1/2	A	
509 GL	28.004	55	1.964	11.188	18.000				5.063	21.500	0.625		16	3/4-16 NF		C	268,971
509 PR	18.839	37	1.964	15.875	7.625	6.500	10.500	1.000	5.063						1.25 X 5/8	A	

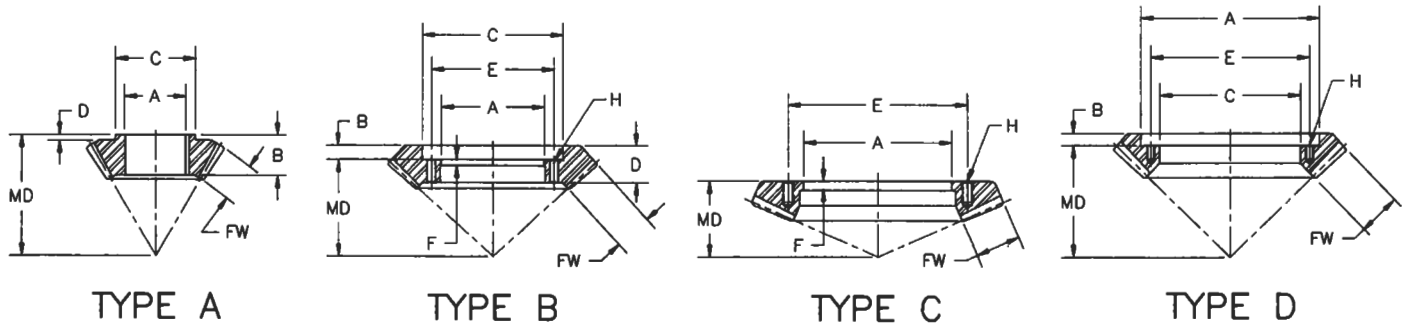


1.6:1 RATIO

PART NO.	PITCH		DIAM.		MD	A	B	C	D	FW	E	F	HOLES		KEYWAY	TYPE	PINION BASE TORQ. (LB-IN)
	DIA.	TEETH	PITCH	PITCH									SIZE	NO.			
234 GR	8.000	37	4.625	3.938	2.375	2.000	4.500	0.250	1.438						3/8 X 1/8	A	7,807
234 PL	4.973	23	4.625	4.500	2.375	1.625	3.750	0.250	1.438						3/8 X 1/8	A	
411 GR	9.250	37	4.000	4.250	2.375	2.000	3.750	0.688	1.700						3/8 X 3/16	A	12,186
411 PL	5.750	23	4.000	5.188	1.938	1.688	3.500	0.375	1.700						1/2 X 3/16	A	
515 GR	11.000	43	3.909	4.625	3.000	2.250	4.500	0.500	1.875						1/2 X 1/4	A	17,424
515 PL	6.907	27	3.909	6.125	3.000	2.000	4.000	0.375	1.875						1/2 X 3/16	A	
592 GR	11.000	43	3.909	4.625	7.000				1.875	8.375	0.310	1/2-20 NF	10			C	17,424
515 PL	6.907	27	3.909	6.125	3.000	2.000	4.000	0.375	1.875						1/2 X 3/16	A	
553 GR	13.500	42	3.111	4.750	8.500				2.375	10.000	0.375	1/2-20 NF	10			C	31,573
553 PL	8.357	26	3.111	7.063	3.000	2.125	4.500	0.063	2.375						1/2 X 1/4	A	
147 GR	15.000	48	3.200	5.875	9.250				2.625	10.500	0.375	1/2-20 NF	12			C	40,175
147 GL	9.375	30	3.200	8.125	3.750	3.125	6.500	0.313	2.625						3/4 X 1/4	A	
160 GR	17.241	50	2.900	6.500	11.000				2.875	13.125	0.563	1/2-20 NF	12			C	55,585
160 PL	10.690	31	2.900	9.625	4.250	3.626	6.000	0.500	2.875						3/4 X 1/4	A	

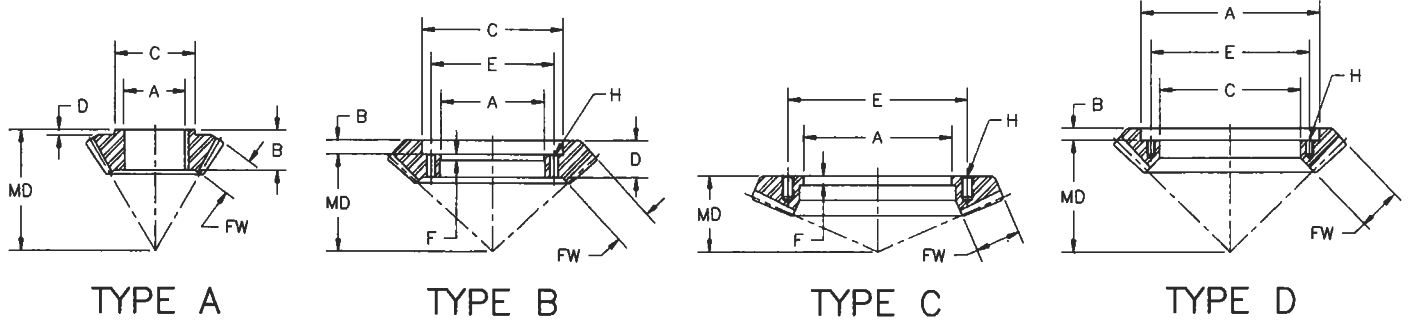
1.75:1 RATIO

PART NO.	PITCH		DIAM.		MD	A	B	C	D	FW	E	F	HOLES		KEYWAY	TYPE	PINION BASE TORQ. (LB-IN)
	DIA.	TEETH	PITCH	PITCH									SIZE	NO.			
581 GR	5.500	37	6.727	2.437	1.438	1.310	3.000	0.250	0.954						1/4 X 3/32	A	2,423
581 PL	3.122	21	6.727	3.000	1.438	1.250	2.500	0.000	0.954						1/4 X 3/32	A	
219 GR	6.875	40	5.818	3.125	1.750	1.688	3.625	0.438	1.250						3/8 X 3/32	A	4,786
219 PL	3.953	23	5.818	3.750	1.750	1.313	2.875	0.188	1.250						3/8 X 3/32	A	
236 GR	9.000	44	4.889	3.937	2.375	2.000	3.750	0.750	1.500						3/8 X 1/8	A	8,826
236 PL	5.114	25	4.889	5.188	2.375	2.000	3.750	0.438	1.500						3/8 X 1/8	A	
475 GR	9.000	44	4.889	3.313	5.500				1.500	6.500	0.375	3/8-24 NF	6			C	8,826
236 PL	5.114	25	4.889	5.188	2.375	2.000	3.750	0.438	1.500						3/8 X 1/8	A	
520 GR	10.375	47	4.530	4.250	3.000	2.000	4.500	0.750	1.750						1/2 X 3/16	A	13,125
520 PL	5.960	27	4.530	5.625	3.000	1.875	4.250	0.250	1.750						1/2 X 3/16	A	
124 GR	11.000	44	4.000	3.875	7.000				2.000	8.375	0.313	1/2-20 NF	10			C	17,167
257 PL	6.250	25	4.000	6.000	3.000	2.125	4.500	0.250	2.000						1/2 X 3/16	A	
257 GR	11.000	44	4.000	4.625	3.000	2.000	4.500	0.875	1.750						1/2 X 3/16	A	17,167
257 PL	6.250	25	4.000	6.000	3.000	2.125	4.500	0.250	2.000						1/2 X 3/16	A	
498 GR	13.249	44	3.321	4.625	8.500				2.250	10.000	0.375	1/2-20 NF	10			C	26,188
498 PL	7.528	25	3.321	7.250	3.375	2.750	5.000	0.250	2.250						3/4 X 1/4	A	
320 GR	17.000	51	3.000	5.875	11.000				2.500	13.125	0.563	1/2-20 NF	12			C	41,122
320 PL	9.667	29	3.000	9.125	3.750	3.125	5.500	0.250	2.500						3/4 X 1/4	A	
161 GR	20.000	55	2.750	6.750	13.000				3.000	15.500	0.500	5-18 NF	12			C	65,191
161 PL	11.273	31	2.750	10.625	4.250	3.625	6.000	0.250	3.000						3/4 X 1/4	A	
300 GR	24.017	55	2.290	8.000	16.000				4.000	19.000	0.500	3/4-16 NF	12			C	131,134
300 PL	13.537	31	2.290	12.625	4.750	4.250	6.750	0.250	4.000						3/4 X 1/4	A	
564 GR	28.006	58	2.071	9.750	18.000				4.813	13.125	0.563	1/2-20 NF	12			C	202,728
564 PL	15.934	33	2.071	14.750	7.125	5.125	10.500	0.125	4.813						1.25 X 5/8	A	



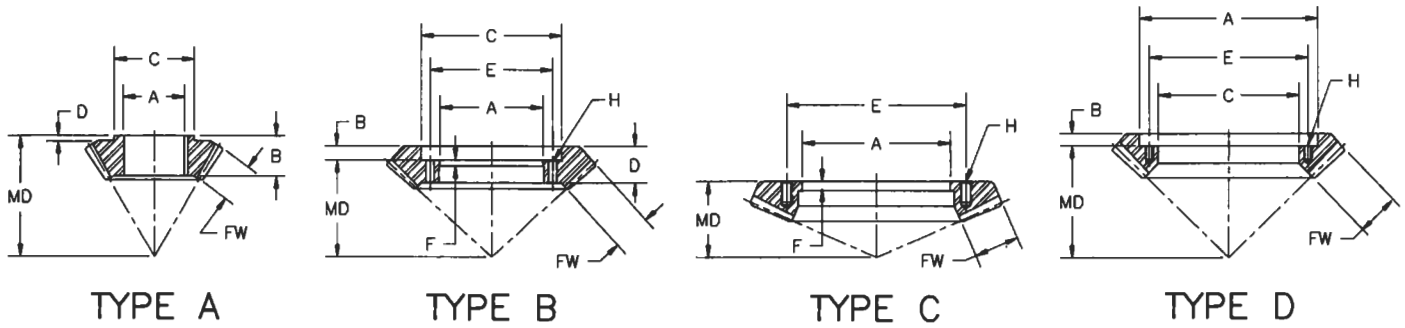
2:1 RATIO

PART NO.	PITCH		DIAM.		MD	A	B	C	D	FW	E	F	HOLES		KEYWAY	TYPE	PINION BASE TORQ. (LB-IN)
	DIA.	TEETH	PITCH										SIZE	NO.			
120 BR	5.429	38	7.000	2.438	1.438	1.625	2.875	0.625	1.000						3/8 X 1/8	A	1,852
120 PL	2.714	79	7.000	3.000	1.178	1.125	2.125	0.000	1.000						1/4 X 3/32	A	
205 GR	6.000	36	6.000	2.438	1.438	1.313	2.875	0.375	1.000						1/4 X 3/32	A	2,546
205 PL	3.000	18	6.000	3.375	1.438	1.250	2.375	0.313	1.000						1/4 X 3/32	A	
213 GR	6.667	40	6.000	2.938	1.750	1.500	3.125	0.625	1.188						3/8 X 3/32	A	3,687
213 PL	3.333	20	6.000	3.688	1.750	1.375	2.500	0.281	1.188						3/8 X 3/32	A	
380 GR	8.375	45	5.373	3.000	2.375	1.750	3.625	0.250	1.438						3/8 X 1/8	A	6,304
380 PL	4.095	22	5.373	4.375	1.563	1.563	2.875	0.063	1.438						3/8 X 1/8	A	
226 GR	9.333	42	4.500	3.937	2.375	2.000	3.625	0.875	1.563						3/8 X 1/8	A	8,479
226 PL	4.667	21	4.500	5.188	2.375	1.875	3.500	0.375	1.563						3/8 X 1/8	A	
467 GR	9.333	42	4.500	3.125	5.500				1.563	6.500	0.375	3/8-24 NF	6			C	8,479
226 PA	4.667	21	4.500	5.188	2.375	1.875	3.500	0.375	1.563						3/8 X 1/8	A	
262 GR	10.000	40	4.000	2.563	5.000	0.625	6.625	1.250	1.750	5.750	0.313	0.406	12			B	10,787
262 PL	5.000	20	4.000	5.500	2.375	2.000	3.750	0.313	1.750						3/8 X 1/8	A	
519 GR	10.374	51	4.916	4.250	3.000	2.000	4.750	0.750	1.563						1/2 X 3/16	A	9,884
519 PL	5.289	26	4.916	5.625	3.000	1.750	4.250	0.250	1.563						1/2 X 3/16	A	
420 GR	11.001	42	3.818	4.188	3.000	2.500	4.500	0.750	1.845						1/2 X 1/4	A	13,436
420 PL	5.500	21	3.818	6.000	1.938	2.000	3.500	0.313	1.845						1/2 X 3/16	A	
248 GR	12.000	42	3.500	4.625	3.000	2.000	4.500	0.750	2.000						1/2 X 3/16	A	16,610
248 PL	6.000	21	3.500	6.563	3.000	2.250	3.875	0.313	2.000						1/2 X 3/16	A	
249 GR	12.000	42	3.500	3.125	5.750	0.750	8.000	1.500	2.000	6.875	0.313	0.531	6			B	16,610
248 PL	6.000	21	3.500	6.563	3.000	2.250	3.875	0.313	2.000						1/2 X 3/16	A	
426 GR	13.500	42	3.111	4.250	8.500				2.250	10.000	0.375	1/2-20 NF	10			C	23,284
426 PL	6.750	21	3.111	7.063	3.000	2.125	4.500	0.063	2.250						1/2 X 3/16	A	
372 GL	13.973	51	3.650	4.313	8.500				2.250	10.000	0.438	1/2-20 NF	10			C	22,233
372 PL	6.849	25	3.650	7.750	3.000	2.625	5.000	0.500	2.250						3/4 X 1/4	A	
298 GR	17.406	51	2.930	5.250	11.000				2.938	13.125	0.563	1/2-20 NF	12			C	42,634
298 PL	8.532	25	2.930	9.125	3.750	3.125	5.500	0.125	2.938						3/4 X 1/4	A	
158 GR	20.000	55	2.750	6.750	13.000				3.125	15.500	0.500	5/8-18 NF	12			C	60,779
158 PL	9.818	27	2.750	10.625	4.250	3.625	6.000	0.250	3.125						3/4 X 1/4	A	
377 GR	24.016	61	2.540	7.000	16.000				4.000	19.000	0.500	3/4-16 NF	12			C	97,324
377 PL	11.417	29	2.540	12.625	4.750	4.250	6.750	0.250	4.000						3/4 X 1/4	A	



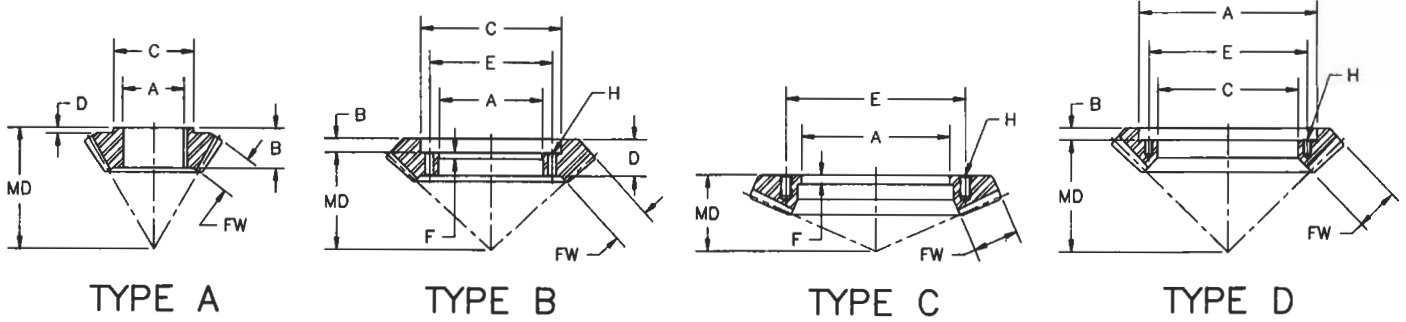
2.25:1 RATIO

PART NO.	PITCH		DIAM.		A	B	C	D	FW	E	F	HOLES		KEYWAY	TYPE	PINION BASE TORQ. (LB-IN)
	DIA.	TEETH	PITCH	MD								SIZE	NO.			
451 GR	8.501	36	4.235	2.875	2.375	1.688	3.500	0.375	1.438					3/8 X 3/16	A	6,218
451 PL	3.778	16	4.235	4.500	1.563	1.500	2.500	0.125	1.438					3/8 X 1/8	A	
404 GR	9.251	40	4.324	3.688	2.375	2.000	3.750	0.813	1.520					3/8 X 3/16	A	7,696
404 PL	4.163	18	4.324	5.188	1.938	1.875	3.500	0.500	1.520					1/2 X 3/16	A	
421 GR	11.000	42	3.818	4.000	3.000	2.500	4.500	0.750	1.811					1/2 X 1/4	A	11,724
421 PL	4.976	19	3.818	5.557	1.938	2.000	3.500	0.375	1.811					1/2 X 3/16	A	
621 GR	13.500	55	4.074	3.938	8.500				2.188	10.000	0.440	1/2-20 NF	10		C	18,417
621 PL	5.891	24	4.074	7.063	2.375	2.250	3.500	0.130	2.188					1/2 X 3/16	A	
261 GR	13.500	54	4.000	3.875	8.500				2.125	10.000	0.375	1/2-20 NF	10		C	19,340
261 PL	6.000	24	4.000	7.063	3.000	2.125	4.500	0.125	2.125					1/2 X 1/8	A	
180 GR	17.000	52	3.059	4.875	11.000				2.500	13.125	0.563	1/2-20 NF	12		C	30,454
180 PL	7.519	23	3.059	9.125	3.750	3.125	5.000	0.313	2.500					3/4 X 1/4	A	
378 GR	20.000	56	2.800	6.000	13.000				3.250	15.500	0.500	5/8-18 NF	12		C	62,726
378 PL	8.929	25	2.800	10.625	4.250	3.625	6.000	0.250	3.250					3/8 X 1/8	A	



2.5:1 RATIO

PART NO.	PITCH		DIAM.		MD	A	B	C	D	FW	E	F	HOLES		KEYWAY	TYPE	PINION BASE TORQ. (LB-IN)
	DIA.	TEETH	PITCH										SIZE	NO.			
503 GR	6.500	47	7.231	2.000	2.000	1.000	3.000	0.125	1.063						3/8 X 1/8	A	2,336
503 PL	2.628	19	7.231	3.500	1.000	1.188	1.625	0.188	1.063						1/4 X 1/8	A	
447 GR	8.499	41	4.824	2.875	2.375	2.000	3.750	0.500	1.438						3/8 X 1/8	A	4,929
447 PL	3.317	16	4.824	4.500	1.563	1.563	2.500	0.125	1.438						3/8 X 1/8	A	
423 GR	9.250	47	5.081	2.750	5.500				1.500	6.500	0.375	3/8-24 NF	6			C	6,010
423 PL	3.543	18	5.081	5.188	1.750	1.906	2.750	0.500	1.500						3/8 X 1/8	A	
238 GR	10.375	41	3.952	3.937	2.375	2.000	3.750	0.750	1.625						3/8 X 1/8	A	8,647
238 PL	4.302	17	3.952	5.750	2.063	2.000	3.313	0.438	1.625						3/8 X 1/8	A	
405 GR	11.000	44	4.000	3.625	3.000	2.500	4.500	0.750	1.770						1/2 X 1/4	A	9,467
405 PL	4.250	17	4.000	6.000	1.938	2.063	3.250	0.406	1.770						1/2 X 3/16	A	
591 GR	13.500	56	4.148	3.875	8.500				2.125	10.000	0.440	1/2-20 NF	10			C	15,826
591 PL	5.304	22	4.148	7.063	2.375	2.250	3.500	0.130	2.125						1/2 X 3/16	A	
259 GR	13.500	54	4.000	3.625	8.500				2.125	10.000	0.313	1/2-20 NF	10			C	17,095
259 PL	5.500	22	4.000	7.063	3.000	2.125	4.125	0.188	2.125						1/2 X 1/8	A	
308 GR	17.391	52	2.990	4.500	11.000				2.800	13.125	0.563	1/2-20 NF	12			C	31,788
308 PL	7.023	21	2.990	9.125	3.250	3.125	5.000	0.250	2.800						3/4 X 1/4	A	
448 GR	17.377	53	3.050	4.500	11.000				2.813	13.125	0.563	1/2-20 NF	12			C	33,648
448 PL	6.557	20	3.050	9.125	3.250	3.125	5.000	0.250	2.813						3/4 X 1/4	A	
162 GR	20.000	58	2.900	5.250	13.000				3.125	15.500	0.500	5/8-18 NF	12			C	50,523
162 PL	7.931	23	2.900	10.625	4.250	3.375	6.000	0.250	3.125						3/4 X 1/4	A	
312 GR	24.000	63	2.625	6.250	16.000				3.875	19.000	0.500	3/4-16 NF	12			C	76,737
312 PL	9.524	25	2.625	12.625	4.750	4.250	6.750	0.250	3.875						3/4 X 1/4	A	



3:1 RATIO

PART NO.	PITCH		DIAM.		MD	A	B	C	D	FW	E	F	HOLES		KEYWAY	TYPE	PINION BASE TORQ. (LB-IN)
	DIA.	TEETH	PITCH	PITCH									SIZE	NO.			
206 GR	6.429	45	7.000	2.438	1.438	1.500	2.875	0.688	1.000						3/8 X 1/8	A	1,654
206 PL	2.143	15	7.000	3.375	1.188	2.188	1.772	1.063	1.000						1/4 X 1/16	SPEC.	
215 GR	8.727	48	5.500	3.125	1.750	1.688	3.250	0.750	1.109						3/8 X 3/32	A	3,076
215 PL	2.909	16	5.500	4.563	1.774	1.250	2.500	0.000	1.109						1/4 X 1/16	A	
468 GR	8.727	48	5.500	2.188	5.250				1.250	6.625	0.313	3/8-24 NF	8			C	3,602
468 PL	2.909	16	5.500	4.563	1.313	1.375	2.500	0.188	1.250						3/8 X 1/8	A	
533 GR	9.250	45	4.865	3.250	2.375	2.000	3.750	0.750	1.500						3/8 X 3/16	A	4,869
533 PL	3.083	15	4.865	5.188	1.500	1.986	2.750	0.000	1.500						3/8 X 1/8	A	
227 GR	10.667	48	4.500	2.813	7.000				1.375	8.375	0.500	1/2-20 NF	10			C	5,627
227 PL	3.556	16	4.500	5.938	2.063	1.875	2.875	0.563	1.375						3/8 X 1/16	A	
263 GR	11.333	51	4.500	2.813	7.000				1.750	8.375	0.313	1/2-20 NF	10			C	8,433
263 PL	3.778	17	4.500	5.938	1.688	1.875	3.250	0.188	1.750						3/8 X 1/8	A	
250 GR	13.500	54	4.000	3.125	8.500				2.000	10.000	0.313	1/2-20 NF	10			C	12,237
250 PL	4.500	18	4.000	7.063	1.938	2.125	3.250	0.188	2.000						1/2 X 3/16	A	
587 GR	13.502	61	4.518	3.500	8.500				2.125	10.000	0.313	1/2-20 NF	10			C	12,681
587 PL	4.427	20	4.518	7.063	1.938	2.310	3.500	0.000	2.125						1/2 X 3/16	A	
276 GL	14.400	54	3.750	3.500	8.500				2.250	10.000	0.438	1/2-20 NF	10			C	16,415
276 PR	4.800	18	3.750	7.750	2.063	2.625	4.250	0.000	2.250						1/2 X 3/16	A	
299 GR	16.992	61	3.590	4.000	11.000				2.680	13.125	0.563	1/2-20 NF	12			C	22,250
299 PL	5.571	20	3.590	9.125	2.750	3.125	4.750	0.000	2.680						3/4 X 1/4	A	
159 GR	20.000	58	2.900	5.250	13.000				3.125	15.500	0.500	5/8-18 NF	12			C	36,324
159 PL	6.552	19	2.900	10.625	3.250	3.500	5.000	0.000	3.125						3/4 X 1/4	A	
313 GR	24.000	64	2.667	5.625	16.000				3.750	19.000	0.500	3/4-16 NF	12			C	59,753
313 PL	7.875	21	2.667	12.625	3.750	4.125	6.250	0.000	3.750						3/4 X 1/4	A	
584 GR	28.002	73	2.607	6.625	18.000				4.313	21.500	0.630	3/4-16 NF	16			C	83,003
584 PL	9.206	24	2.607	14.750	4.000	4.880	6.250	0.000	4.313						3/4 X 1/4	A	

Note: The dimensions and ratings shown in the preceding data sheets are intended as a design guide only, and are intended for use by competent gear engineers. The designs shown are subject to revision, and therefore the customer should verify dimensions and ratings. Amarillo Gear Company will supply certified dimensional drawings for mounting design upon request. We will also assist in the selection of the proper gear set for your application, but the ultimate responsibility for the application of these gear sets rest with the customer.



Spiral Bevel Gear Design Data

Power or torque to be transmitted: _____

Input Speed: _____ Output Speed: _____

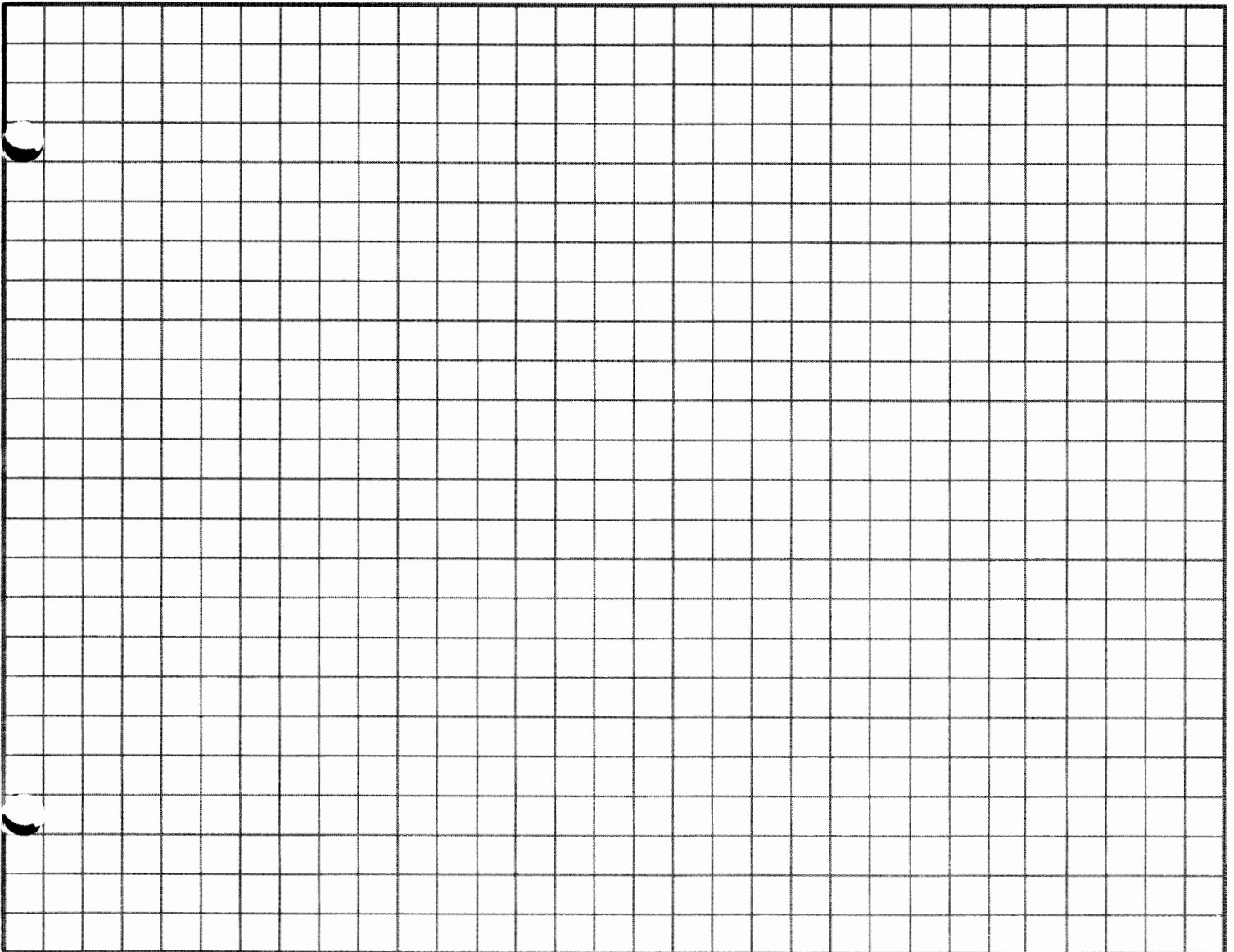
Application and prime mover: _____

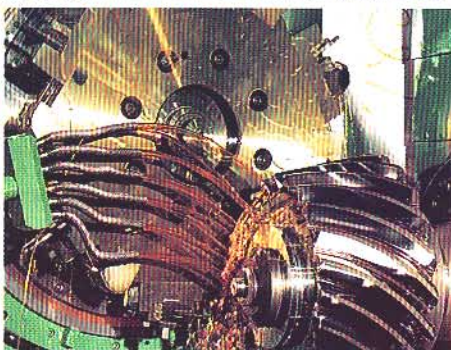
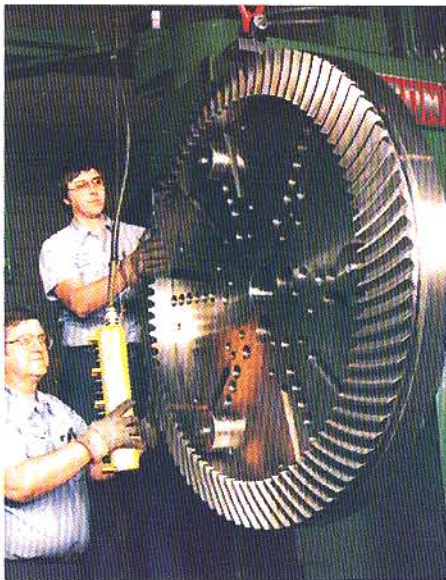
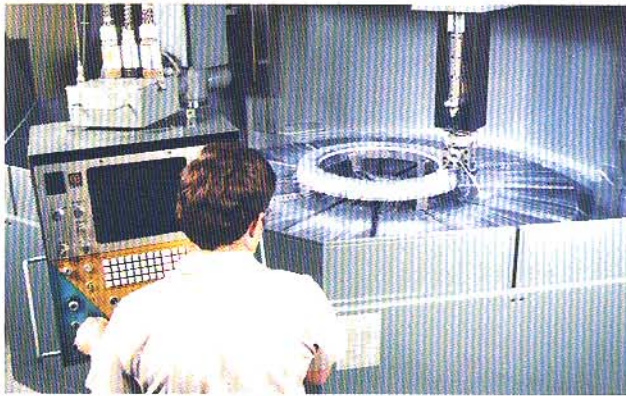
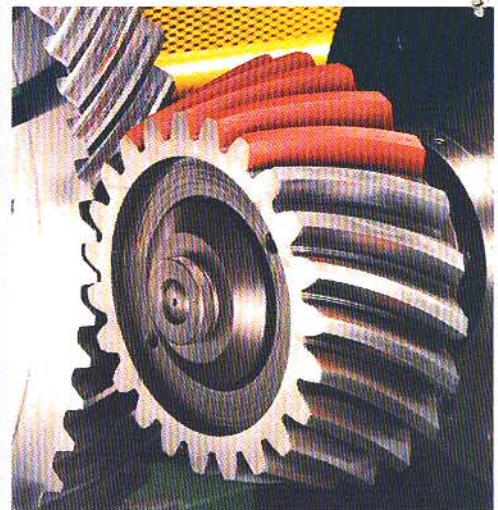
Service Factor Required (if known): _____

Maximum OD (Gear): _____ Maximum OD (Pinion): _____

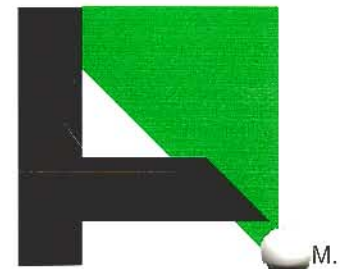
Is exact ratio required? _____

Sketch of Application





Catalog OG-1996



Amarillo Gear Company

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