

# LARGE INDUSTRIAL PUMP DRIVES

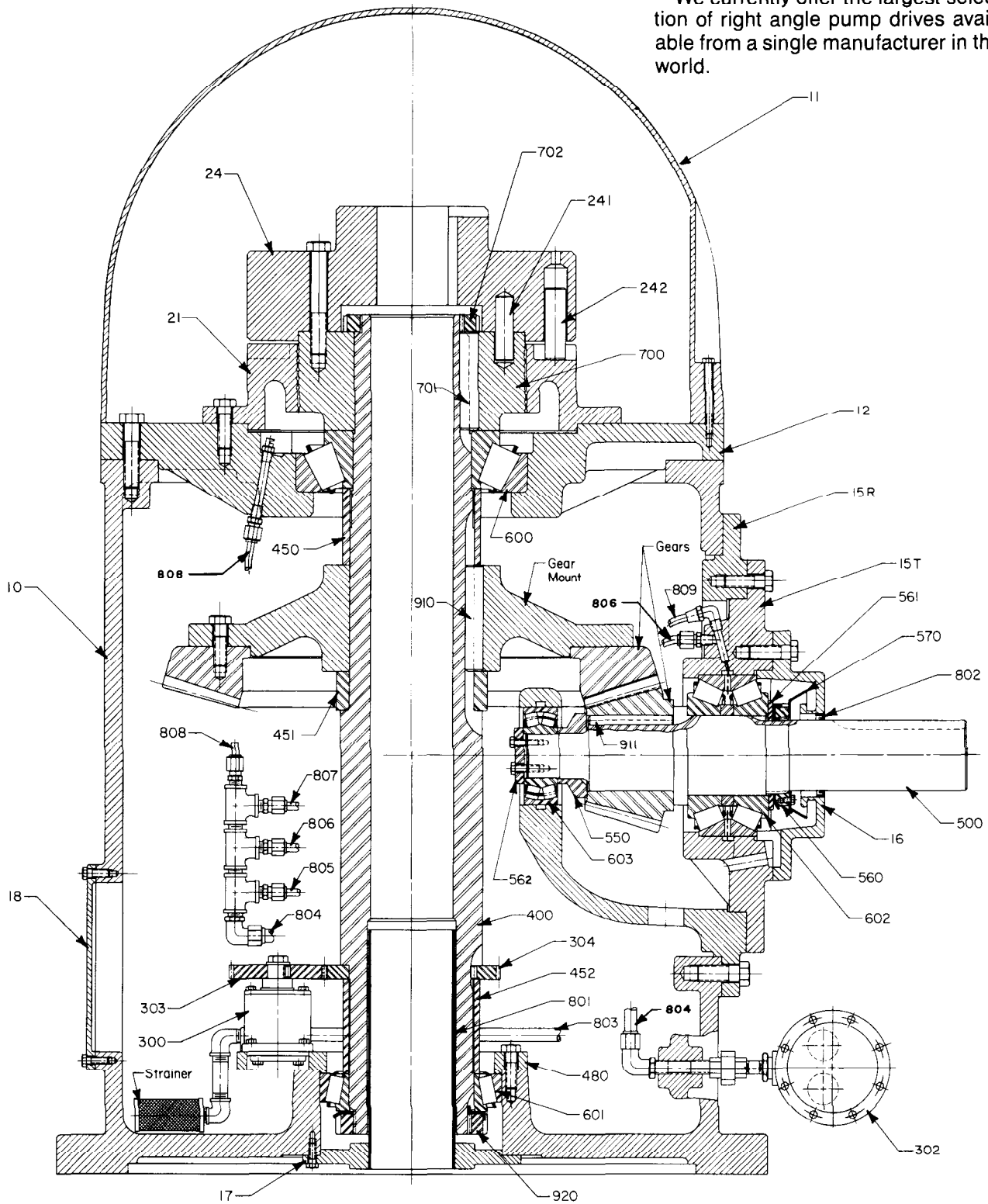


Amarillo  
Gear  
Company



In 1934, Amarillo Gear Company began designing and manufacturing right angle gear drives using spiral bevel gears. Our commitment then, as now, is to excellence in design, workmanship and reliability. The worldwide acceptance our drives have enjoyed testifies to our ability to live up to this commitment.

We currently offer the largest selection of right angle pump drives available from a single manufacturer in the world.



**DESIGN FACTORS:**

**GEARS.**

All drives are furnished with spiral bevel gears manufactured by Amarillo Gear Company in our modern plant using the latest Gleason equipment. Optimum tooth contact and maximum performance is insured by computer aided design analysis and strict adherence to the latest AGMA standards.

**BEARINGS.**

Three thrust bearing arrangements (Standard, Heavy, and Extra Heavy) are offered on each model to insure that the proper bearing is available for even the most unusual application. Maximum reliability is assured by only using bearings from the leading bearing manufactures and by only selecting bearings that exceed the AGMA recommended design life.

**HOUSINGS.**

Carefully designed and precision machined housings insure correct gear and bearing alignment while providing the stiffness, shock resistance and dampening characteristics required.

**SHAFTS.**

Made from heat treated alloy steel properly sized to give maximum life and minimum deflection.

**LUBRICATION.**

Cooled and filtered oil is delivered under pressure to all gears and bearings by a gear driven positive displacement oil pump. An oil to water shell and tube heat exchanger insures that oil is delivered at the proper temperature and viscosity. In the event cooling water is not available, oil to air coolers are available. Please contact our factory.

**DRY WELL CONSTRUCTION.**

Amarillo Gear Company was an early pioneer in the use and perfection of this unique sealing arrangement which provides maximum protection against output shaft leakage.

**EFFICIENCY.** Efficiency varies with speed, power and thrust, with normal ranges being 96-98 %. Contact factory for actual values for you application.

**NON-REVERSE CLUTCHES.**

Available on all models if required.

**SERVICE.** In the event that service is required, Amarillo Gear Company prides itself in its ability to supply parts and / or service personnel with minimum notice.

**HOW TO SELECT A DRIVE:**

The following information is necessary to make proper selection:

- Horsepower requirement.
- Input and output r.p.m.
- Service Factor.
- External thrust.
- Is a hollow or solid output shaft required ?
- Is a non-reverse required ?
- What is the shaft rotation ?

1. Divide input r.p.m. by output r.p.m. to find the required gear ratio.
2. Select the closest ratio from Table # 1.
3. Proceed down the ratio column until the required horsepower rating is found under the pump r.p.m. (Interpolate as required for intermediate rating).

**NOTE:** All ratings listed in this catalog include a 1.5 service factor. In the event a service factor other than 1.5 is required, divide 1.5 by the required service factor and then multiply the results by the table rating to get the drive rating with the new service factor.

4. Check thrust capacity of your selection to verify that it is equal to or less than the rating. (If your requirement is greater than the rated value, contact our factory.)

MODEL PREFIX DEFINITION		
	Hollow Shaft	Solid Shaft
Standard Thrust	SL	SSL
Heavy Thrust	S	SS
Extra Heavy Thrust	SH	SSH

**NOTE:** All thrust ratings listed are for continuous service. Higher thrust loads are allowed for intermittent service or momentary operation conditions. Our experienced sales staff is ready to assist you at all times in making a final selection.

5. Verify the rotation with drawings in Figures #1 - #4.

*Example:* A solid shaft right angle gear drive is to connect a diesel engine transmitting 1200 hp at 1800 r.p.m. and a vertical pump at 720 r.p.m. A 1.5 service factor is required and the pump will develop 15,000 lb.. downthrust at duty.

$$\frac{1800}{720} = 2.5 \text{ (Ratio Reduction)}$$

From Table #1 we find that the Model 1500 2.5:1 rates 1079 hp at 720 r.p.m. and the Model 1800 2.5:1 rates 1634 hp at 720 r.p.m. The correct selection is then the model 1800. The SSL thrust bearing rating exceeds the pump thrust, therefore, the model number would be SSL1800 2.5:1 ratio.

**GENERAL INFORMATION:**

Amarillo Right Angle Gear Drives have been adapted for a wide range of industrial applications too numerous to mention in this catalog. Please contact our engineering department for special or unusual applications.

Our design features and ratings are in accordance with, or exceeds, the minimum of AGMA (American Gear Manufacturers Association) standards.

Amarillo Gear Company has complete noise and vibration testing capabilities with the capability of performing fully loaded tests up to 500 horsepower.

**MISSION STATEMENT**

*Our Mission at Amarillo Gear Company is to be the world-class provider of gear drives by continuing to delight our customers by providing the highest value products and services coming from dedicated people using advanced engineering and manufacturing techniques.*

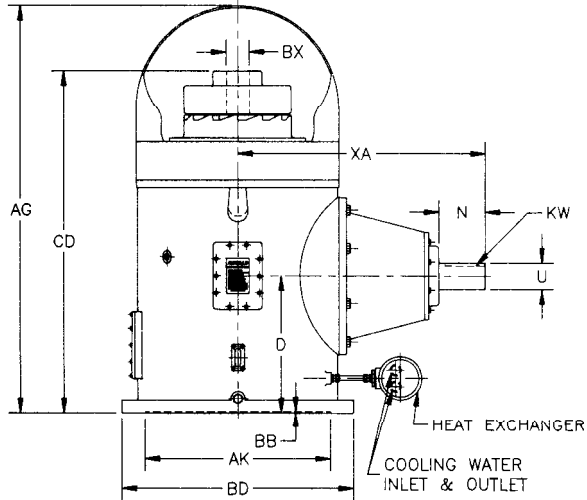
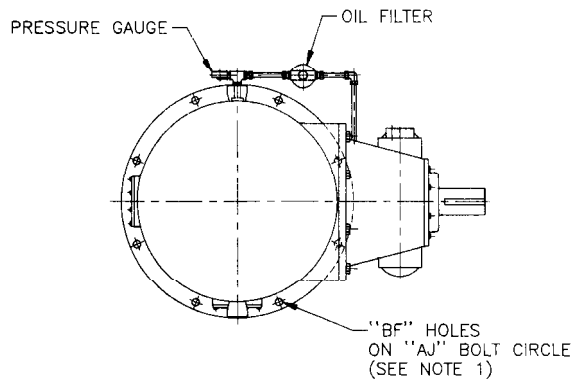
**WARRANTY**

The Amarillo Right Angle Gear Drive is guaranteed against defects in workmanship and material for a period of two years after installation when operated under normal service at rated capacity. Within the above stated period the manufacturer will replace defective parts, returned transportation prepaid. The buyer shall not be entitled to incidental or consequential damages, losses or expenses. The guarantee will not apply to repairs made outside the factory without the consent of the manufacturer, or to drives that have been subject to abuse, accident, neglect or improper installation. No warranty is made in regard to bearings, trade accessories, machinery or other articles of merchandise not manufactured by us. No responsibility will be assumed for overloading the rated capacity of the thrust bearing. (The capacity of the drive should be verified by the pump manufacturer with whose equipment the drive is used.) This warranty is expressly made in lieu of any warranties otherwise implied by law.

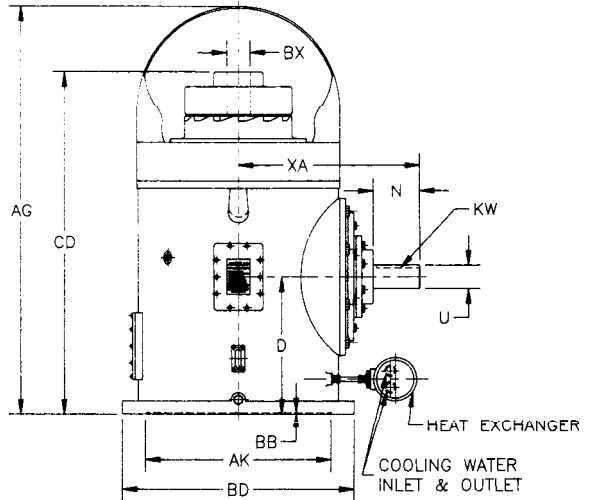
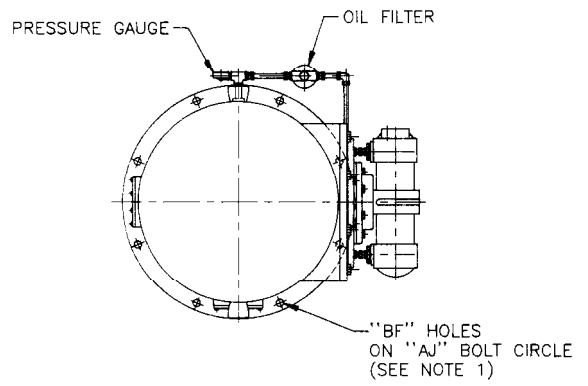


MODEL	VERT. SHAFT RPM	THRUST **		RATIO													
		SL	S	1.00	1.25	1.33	1.50	1.75	2.0	2.5	3.0	3.50	4.0	4.50	5.0	5.50	6.0
1800	250	34756	90000	445	531	512	474	667	667	635	536	528	513	524	491	483	477
	340	31376	82500	589	703	677	627	910	910	840	709	698	678	693	649	638	630
	430	29017	77000	729	869	837	775	1154	1154	1037	875	862	837	856	801	788	779
	580	26254	70500	954	1136	1094	1013	1560	1472	1354	1143	1125	1093	1117	1046	1029	
	720	24424	66000	1157	1376	1326	1228	1831	1712	1634	1383	1361	1323	1352			
	870	22953	62500	1367	1626	1566	1451	2091	1955	1865	1633	1607					
	960	22173	60750	1491	1773	1708	1582	2240	2094	1998	1779						
	1160	20000	55000	1760	2091	2014	1865										
2200	250	37500	93000	739	901	893	876	1134	1034	999	952	881	877	790	835	819	793
	340	34200	85000	978	1190	1181	1158	1497	1364	1318	1256	1163	1158	1043	1102	1081	1047
	430	31800	80000	1209	1470	1458	1431	1847	1683	1627	1550	1436	1429	1287	1360	1334	1292
	580	29100	73000	1581	1919	1904	1868	2409	2195	2121	2048	1872	1863	1678	1773	1739	
	720	27300	68500	1916	2323	2304	2260	2800	2654	2565	2383	2263	2253				
	870	25800	64750	2263	2742	2720	2668	3197	3131	3025	2720	2670					
	960	25000	63280	2467	2987	2964	2907	3425	3410	3265							
	1160	23600	58000	2910													
2600	250	42500	C.F.	1169	1169	1169	1169	1169	1169	1108	1048	987	926	906	887	867	847
	340	38700	C.F.	1541	1541	1541	1541	1541	1541	1461	1381	1301	1221	1195	1169	1143	1117
	430	36100	C.F.	1900	1900	1900	1900	1900	1900	1801	1703	1604	1505	1473	1441	1409	1377
	580	33000	C.F.	2475	2475	2475	2475	2475	2475	2346	2218	2089	1961	1919	1877		
	720	31000	C.F.	2991	2991	2991	2991	2991	2991	2835	2680	2524	2369				
3000	250	47000	C.F.	1551	1551	1551	1551	1551	1551	1470	1389	1308	1227	1199	1171	1143	1115
	340	42800	C.F.	2043	2043	2043	2043	2043	2043	1936	1830	1723	1616	1579	1543	1506	1469
	430	39900	C.F.	2517	2517	2517	2517	2517	2517	2386	2254	2123	1991	1946	1900	1855	1809
	580	36500	C.F.	3275	3275	3275	3275	3275	3275	3104	2933	2762	2591	2532	2475		
	720	34200	C.F.	3954	3954	3954	3954	3954	3954	3748	3541	3335	3128				
3400	250	49000	C.F.	2037	2037	2037	2037	2037	2037	1922	1808	1693	1578	1529	1481	1432	1383
	340	44600	C.F.	2681	2681	2681	2681	2681	2681	2530	2379	2228	2077	2013	1949	1885	1820
	430	41600	C.F.	3300	3300	3300	3300	3300	3300	3114	2929	2743	2557	2478	2399	2320	2241
	580	38000	C.F.	4290	4290	4290	4290	4290	4290	4049	3807	3566	3324	3221	3118		
3800	250	52000	C.F.	2550	2550	2550	2550	2550	2550	2409	2268	2127	1986	1925	1864	1803	1742
	340	47400	C.F.	3353	3353	3353	3353	3353	3353	3168	2983	2797	2612	2532	2451	2371	2291
	430	44100	C.F.	4126	4126	4126	4126	4126	4126	3897	3669	3441	3213	3114	3016	2917	2818
	580	40300	C.F.	5359	5359	5359	5359	5359	5359	5063	4766	4470	4174	4045			
4200	250	54000	C.F.	3144	3144	3144	3144	3144	3144	2972	2800	2627	2455	2380	2305	2230	2155
	340	48200	C.F.	4131	4131	4131	4131	4131	4131	3905	3679	3452	3226	3128	3029	2930	2832
	430	45800	C.F.	5080	5080	5080	5080	5080	5080	4802	4523	4245	3967	3845	3724	3603	3482
	580	41900	C.F.	6593	6593	6593	6593	6593	6593	6232	5871	5510	5148				
4600	250	55000	C.F.	3824	3824	3824	3824	3824	3824	3615	3405	3196	2986	2895	2803	2712	2620
	340	50100	C.F.	5021	5021	5021	5021	5021	5021	4747	4471	4197	3921	3801	3681	3561	3440
	430	46700	C.F.	6171	6171	6171	6171	6171	6171	5833	5495	5157	4818	4671	4523	4375	4228
5000	250	55000	C.F.	4587	4587	4587	4587	4587	4587	4336	4085	3834	3583	3473	3364	3254	3144
	340	50100	C.F.	6019	6019	6019	6019	6019	6019	5690	5361	5031	4702	4558	4414	4270	4126
	430	46700	C.F.	7393	7393	7393	7393	7393	7393	6989	6584	6180	5775	5598	5421	5244	5068
5400	250	57000	C.F.	5438	5438	5438	5438	5438	5438	5141	4843	4546	4248	4118	3987	3857	3726
	340	51900	C.F.	7132	7132	7132	7132	7132	7132	6742	6351	5961	5571	5400	5229	5058	4887
	430	48400	C.F.	8755	8755	8755	8755	8755	8755	8276	7797	7318	6839	6629	6419	6209	5999
5800	250	58000	C.F.	6381	6381	6381	6381	6381	6381	6032	5682	5333	4983	4830	4677	4523	4370
	340	52800	C.F.	8364	8364	8364	8364	8364	8364	7906	7447	6990	6531	6331	6130	5928	5728
	430	49200	C.F.	10263	10263	10263	10263	10263	10263	9701	9139	8577	8015	7768	7522	7275	7029
6200	250	59000	C.F.	7417	7417	7417	7417	7417	7417	7011	6605	6199	5793	5616	5438	5261	5083
	340	53800	C.F.	9716	9716	9716	9716	9716	9716	9184	8653	8121	7589	7356	7124	6891	6659

\*\* THRUST RATINGS ARE LISTED FOR THE STANDARD AND HEAVY THRUST BEARINGS OPERATING CONTINUOUSLY AT THE MOST UNFAVORABLE CONDITIONS OF RATIO AND SPEED. HIGHER THRUST LOADS ARE ALLOWED FOR INTERMITTENT SERVICE OR MOMENTARY LOAD CONDITIONS. CONTACT THE FACTORY FOR AN EXACT BEARING LIFE CALCULATION AND THE MOST ECONOMICAL THRUST BEARING SELECTION.



TYPE 'SL'  
1:1 THROUGH 2.5:1 RATIOS



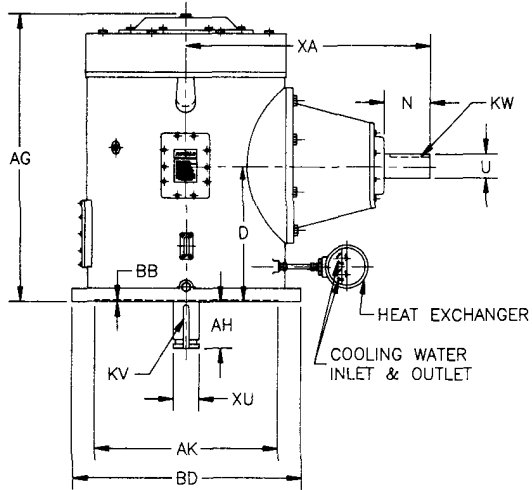
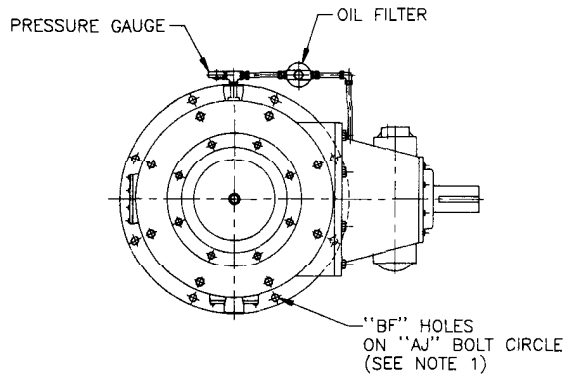
TYPE 'SL'  
3:1 AND GREATER RATIOS

TABLE 2 -- HOLLOW SHAFT  
(SHOWN WITH NON-REVERSE CLUTCH)  
DIMENSIONS (INCHES)

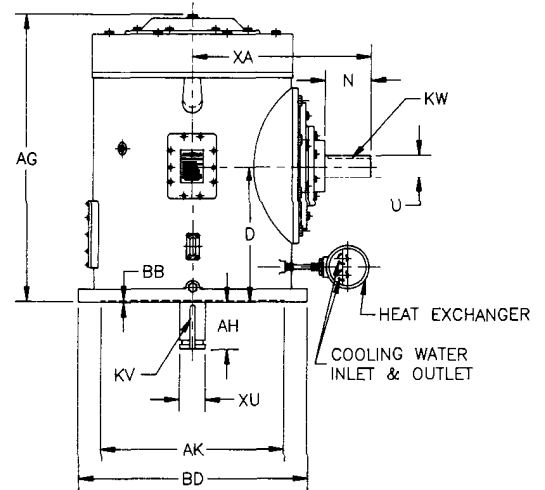
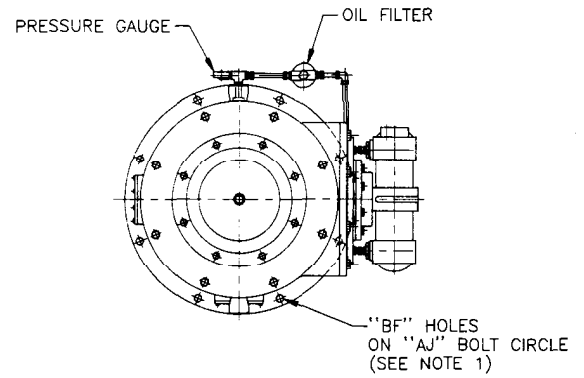
MODEL	1:1 THROUGH 2.5:1 RATIOS				3:1 AND GREATER RATIOS				SL		D	AJ	AK	BB	BD	BF	BX MAX	WEIGHT (LBS)
	XA	N	U	KW	XA	N	U	KW	AG	CD								
1000A	33.13	6	3.749	.88 X .44	24.25	6	3.186	.75 X .38	50.13	38.63	17	28.75	22.000	.25	30.50	1.06	4	2,280
1200	38	8	3.998	1 X .5	26.38	6	3.748	.88 X .44	54	45	18	28.75	22.000	.25	30.50	1.06	4	3,090
1500	38	8	3.998	1 X .5	26.38	6	3.748	.88 X .44	54	45	18	28.75	22.000	.25	30.50	1.06	4	3,145
1800	42.75	8	4.498	1 X .5	31.25	8	3.998	1 X .5	65.25	54.25	23.5	37.50	32.000	.25	40	1.31	4.5	5,800
2200	47.50	9	5.248	1.25 X .63	37.13	8	4.498	1 X .5	77	66.13	27.5	42	32.000	.38	46	1.31	5.25	8,500
2600	50	9	6.498	1.5 X .75	38.5	8	4.748	1.25 X .63	81	70	31	46	40.000	.38	50	1.31	6.5	10,400
3000	55	10.5	7.248	1.75 X .88	41.5	9	5.498	1.25 X .63	85	74	33	55	50.000	.38	60	1.56	7.25	12,300
3400	58	11	7.623	1.75 X .88	45.63	10	5.998	1.5 X .75	99.5	88.13	38.5	55	50.000	.50	60	1.56	7.75	14,200
3800	60	12	8.248	2 X 1	46	11	7.248	1.75 X .88	105	93	40	62	58.000	.50	66	1.56	8.25	17,000
4200	64	12	8.748	2 X 1	50	12	7.748	2 X 1	108	97	45	68	64.000	.50	72	1.56	9.25	19,100
4600	67	13.5	9.248	2.5 X 1.25	53	12.25	8.248	2 X 1	118	107	48	72	68.000	.50	76	1.81	9.75	21,200
5000	70	13.5	9.498	2.5 X 1.25	56	13	8.873	2 X 1	128	117	51	76	72.000	.50	80	1.81	10	23,400
5400	75	14	9.748	2.5 X 1.25	59	13.5	9.248	2.5 X 1.25	132	121	55	80	76.000	.50	84	1.81	10.38	26,000
5800	79	14.75	9.998	2.5 X 1.25	63	14	9.498	2.5 X 1.25	136	125	59	84	80.000	.50	88	2.13	10.5	29,000
6200	83	15.5	10.498	2.5 X 1.25	66	14	9.748	2.5 X 1.25	140	129	63	88	84.000	.50	92	2.13	10.75	32,000

NOTES:

1. MODELS 1000A - 1500 HAVE 4 "BF" HOLES EQ. SP., 45° OFF CENTER LINES. MODELS 1800-6200 HAVE 8 "BF" HOLES EQ. SP., 22° 30' OFF CENTER LINES.
2. CATALOG DIMENSIONS ARE SUBJECT TO VARIATION. REQUEST CERTIFIED DRAWINGS FOR CONSTRUCTION PURPOSES.



TYPE 'SSL'  
1:1 THROUGH 2.5:1 RATIOS



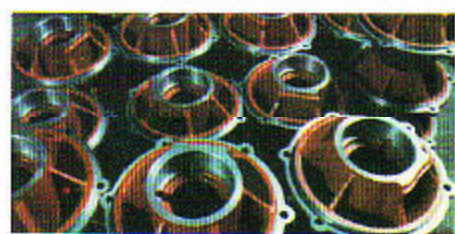
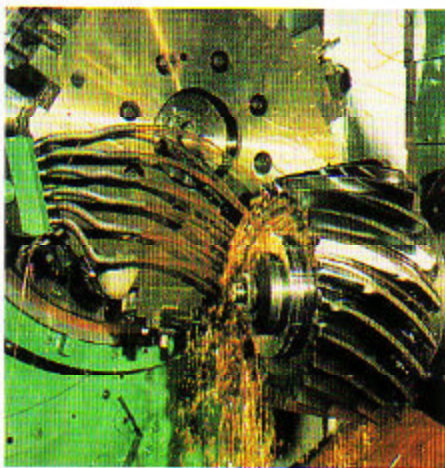
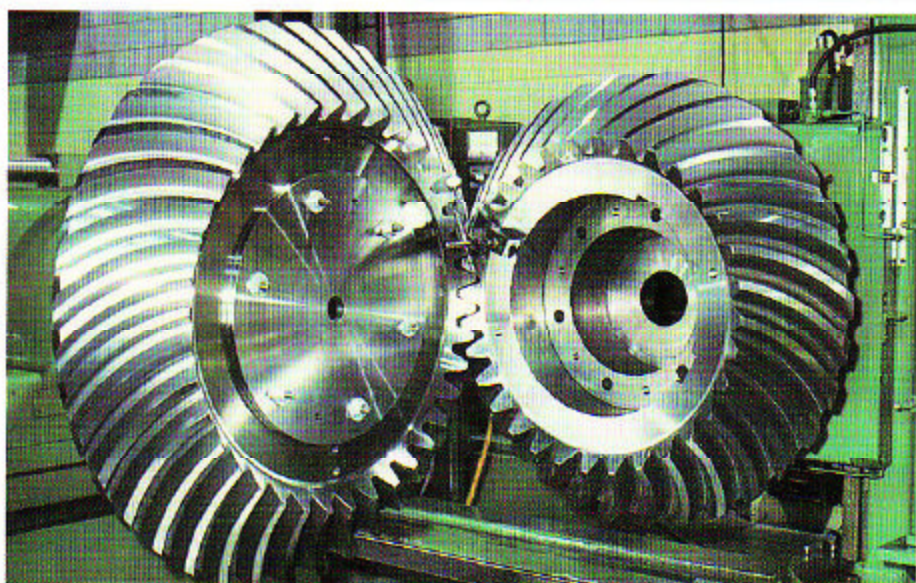
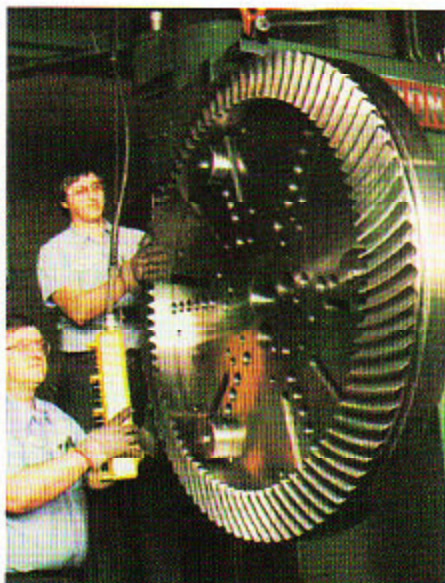
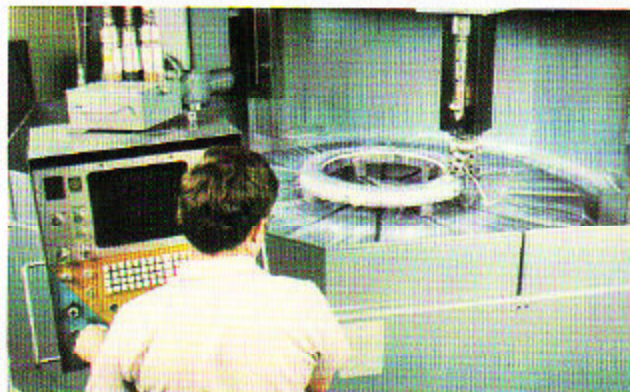
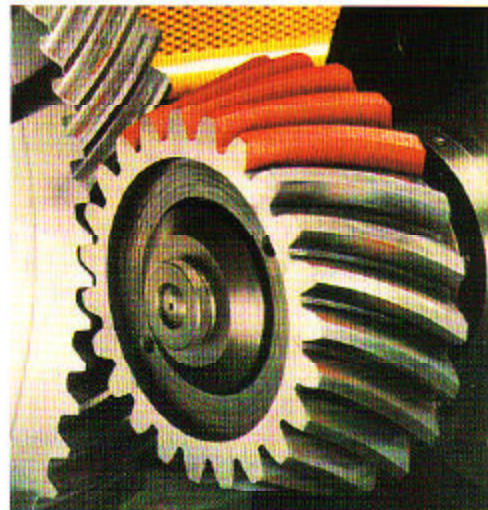
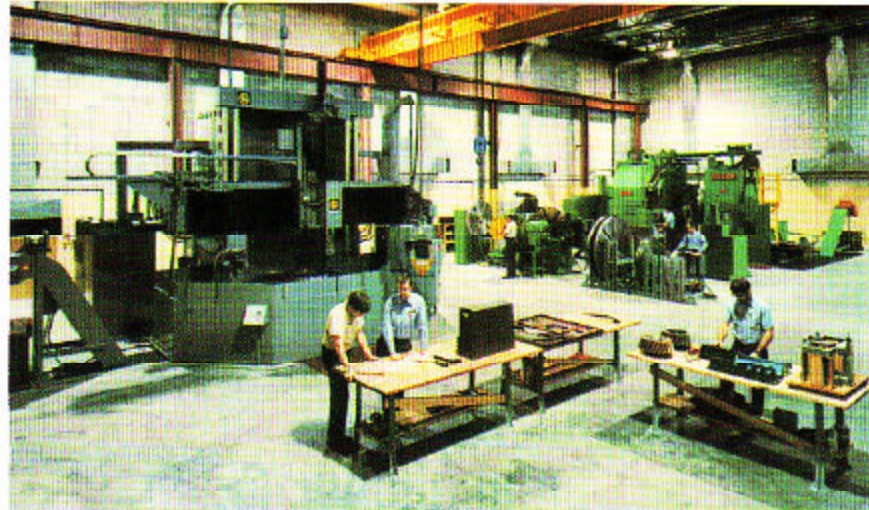
TYPE 'SSL'  
3:1 AND GREATER RATIOS

TABLE 3 -- SOLID SHAFT  
(SHOWN WITHOUT NON-REVERSE CLUTCH)  
DIMENSIONS (INCHES)

MODEL	1:1 THROUGH 2.5:1 RATIOS				3:1 AND GREATER RATIOS				SSL	D	AJ	AK	BB	BD	BF	AH	XU	KV
	XA	N	U	KW	XA	N	U	KW										
1000A	33.13	6	3.749	.88 X .44	24.25	6	3.186	.75 X .38	33.63	17	28.75	22.000	.25	30.50	1.06	8	3.998	1 X .5
1200	38	8	3.998	1 X .5	26.38	6	3.748	.88 X .44	37	18	28.75	22.000	.25	30.50	1.06	8	3.998	1 X .5
1500	38	8	3.998	1 X .5	26.38	6	3.748	.88 X .44	37	18	28.75	22.000	.25	30.50	1.06	8	3.998	1 X .5
1800	42.75	8	4.498	1 X .5	31.25	8	3.998	1 X .5	45	23.5	37.50	32.000	.25	40	1.31	8	4.498	1 X .5
2200	47.50	9	5.248	1.25 X .63	37.13	8	4.498	1 X .5	56.5	27.5	42	32.000	.38	46	1.31	9	5.248	1.25 X .63
2600	50	9	6.498	1.5 X .75	38.5	8	4.748	1.25 X .63	60.38	31	46	40.000	.38	50	1.31	9	6.498	1.5 X .75
3000	55	10.5	7.248	1.75 X .88	41.5	9	5.498	1.25 X .63	64.38	33	55	50.000	.38	60	1.56	10.5	7.248	1.75 X .88
3400	58	11	7.623	1.75 X .88	45.63	10	5.998	1.5 X .75	77.63	38.5	55	50.000	.50	60	1.56	11	7.748	1.75 X .88
3800	60	12	8.248	2 X 1	46	11	7.248	1.75 X .88	84	40	62	58.000	.50	66	1.56	12	8.248	2 X 1
4200	64	12	8.748	2 X 1	50	12	7.748	2 X 1	87	45	68	64.000	.50	72	1.56	12	9.248	2.25 X 1.13
4600	67	13.5	9.248	2.5 X 1.25	53	12.25	8.248	2 X 1	97	48	72	68.000	.50	76	1.81	13.5	9.748	2.25 X 1.13
5000	70	13.5	9.498	2.5 X 1.25	56	13	8.873	2 X 1	107	51	76	72.000	.50	80	1.81	13.5	9.998	2.25 X 1.13
5400	75	14	9.748	2.5 X 1.25	59	13.5	9.248	2.5 X 1.25	110	55	80	76.000	.50	84	1.81	14	10.373	2.25 X 1.13
5800	79	14.75	9.998	2.5 X 1.25	63	14	9.498	2.5 X 1.25	115	59	84	80.000	.50	88	2.13	14.75	10.498	2.25 X 1.13
6200	83	15.5	10.498	2.5 X 1.25	66	14	9.748	2.5 X 1.25	119	63	88	84.000	.50	92	2.13	15.5	10.748	2.5 X 1.25

NOTES:

1. MODELS 1000A - 1500 HAVE 4 "BF" HOLES EQ. SP., 45' OFF CENTER LINES. MODELS 1800-6200 HAVE 8 "BF" HOLES EQ. SP., 22' 30' OFF CENTER LINES.
2. CATALOG DIMENSIONS ARE SUBJECT TO VARIATION. REQUEST CERTIFIED DRAWINGS FOR CONSTRUCTION PURPOSES.



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# AMARILLO

## GEAR COMPANY

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