

Cleveland® heavy duty
speed reducers

Cleveland

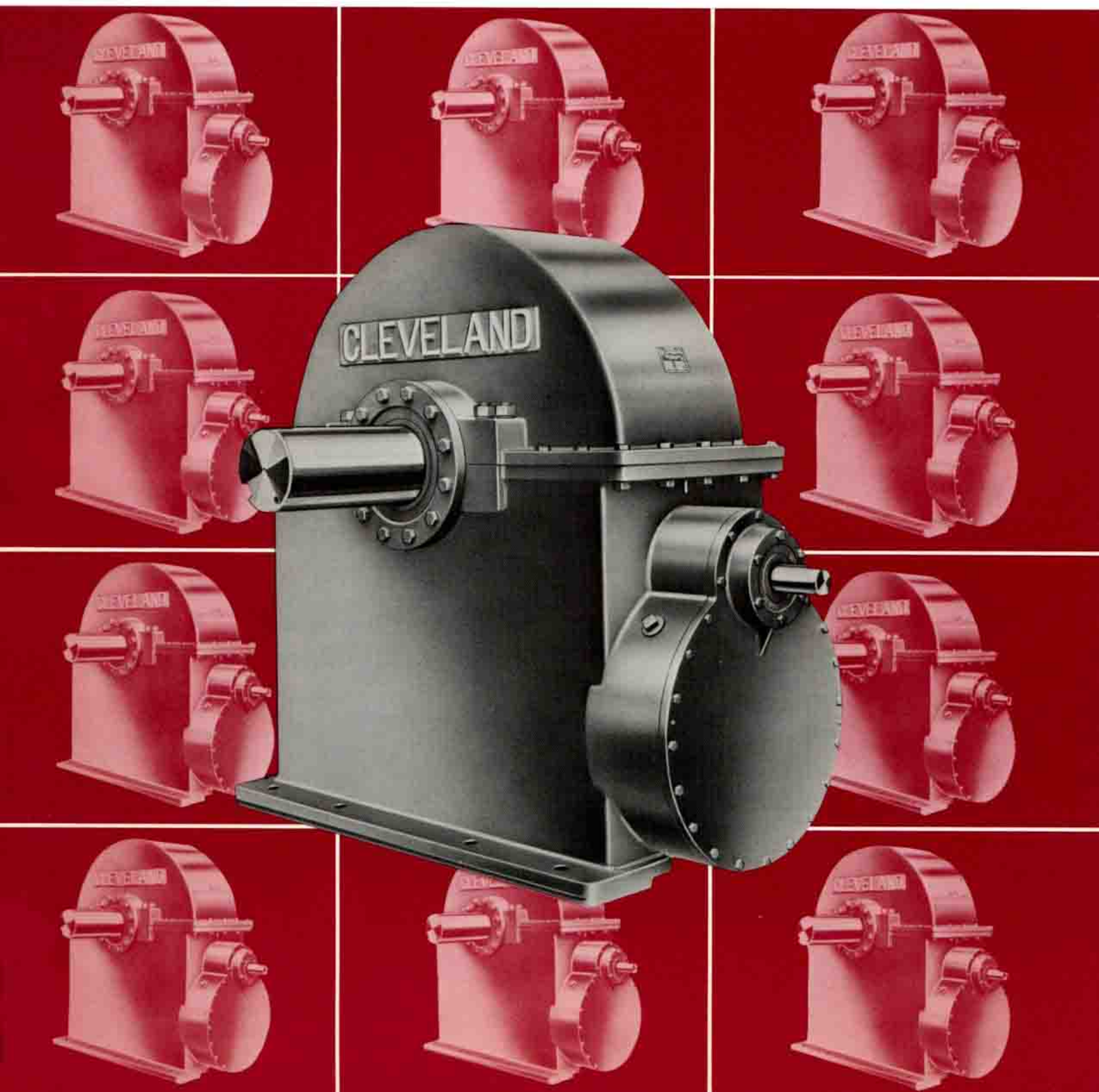
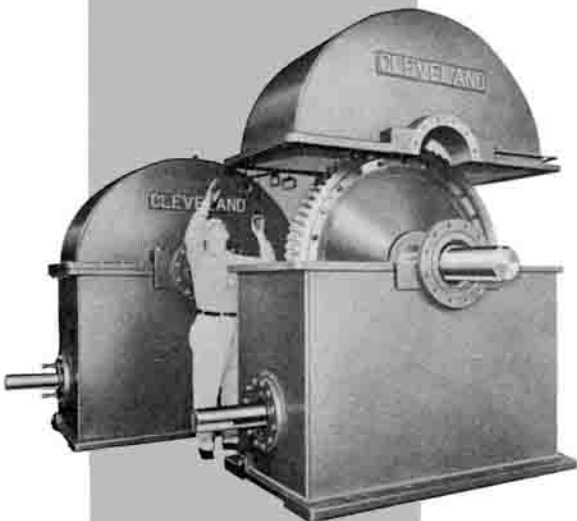


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Cleveland[®] *worm gearing*

. . .SINCE 1912

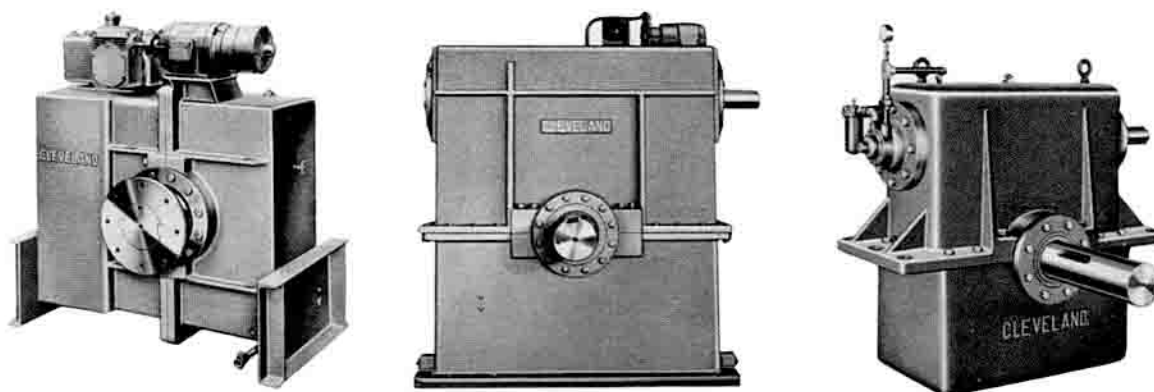
The Cleveland Gear Company was founded in 1912 for the exclusive purpose of manufacturing high quality worm gearing. At that time worm gearing was used primarily by the automotive industry for rear axle drives. Within a few years its application for industrial needs assumed major importance, and in 1918 they introduced this country's first standardized line of worm gear speed reducers. Many units built during those early years are still in service.

By specializing in the manufacture of worm gearing, and through a continuous program of research and development, the name "Cleveland" became known as a leader in the field. Because of this policy of specialization, many advances in mechanical power transmission have been pioneered.

In its manufacturing processes, Cleveland has recognized from the beginning that no one worm thread form is superior to all others. It began with a basic form that was and is easiest and least costly to produce, and proceeded to refine it to provide the best possible tooth contact. True conjugate action between the worm thread and gear tooth is of prime importance in worm gearing. Our efforts have therefore been to improve the contact by strict adherence to closer and closer manufacturing tolerances.

Equally important have been the advances pioneered in housing design. Cleveland's research program early showed the importance of adequate surface area to radiate the heat generated; this led to the box type housing. Further developments included a reducer capable of handling heavy overhung loads and a one piece housing design which permitted economical production of small size units.

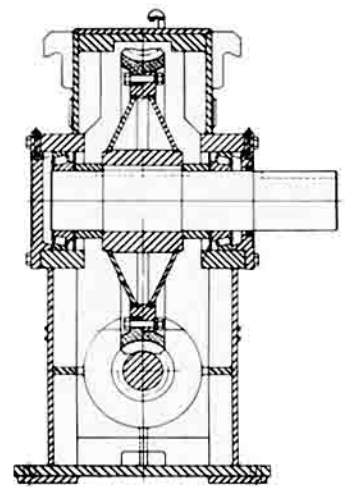
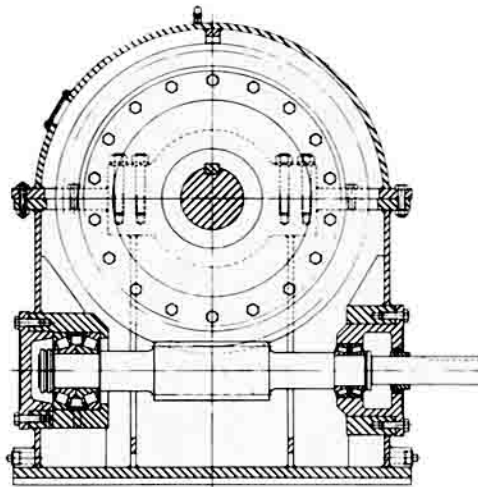
Many variations of Cleveland Worm & Gear Speed Reducers have been produced to meet special operating conditions, some of which led to standard practices by the entire industry. Extensive research into the problem of tooth contact temperature and heat dissipation made possible, in 1944, the introduction of the Cleveland fan-cooled "Speedaire" line of units. The success of this design led to the present fan-cooled line of speed reducers, which are described in this catalog. These worm gear speed reducers have created a new standard of performance by providing increased horsepower capacity with a substantial reduction in unit size.



CLEVELAND® *heavy duty speed reducers*

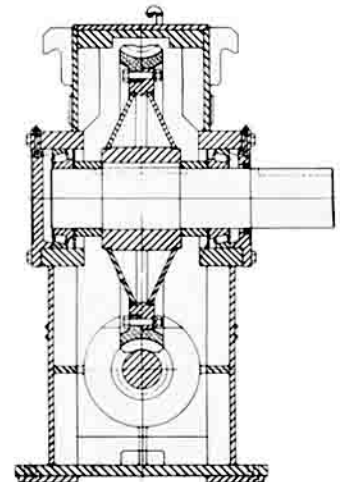
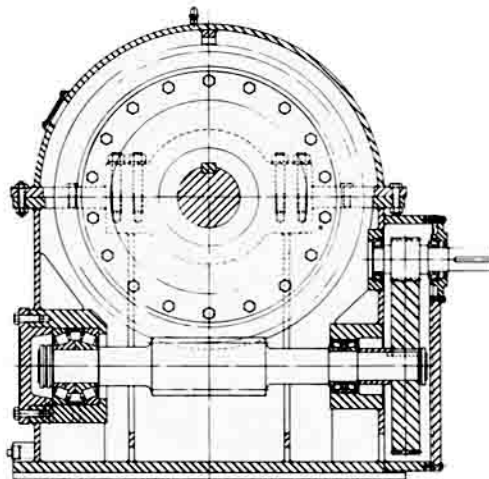
single worm

RATIOS FROM 3-5/9:1 to 100:1
UP TO 639 HP
UP TO 1,867,000 IN. LBS.
OUTPUT TORQUE
13.4365" to 36.000" CENTERS



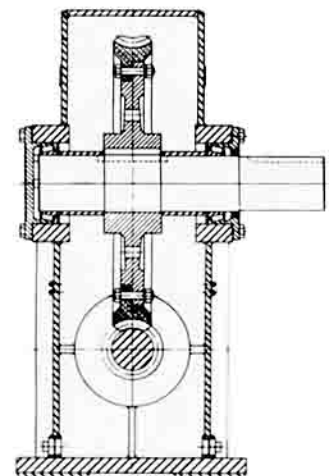
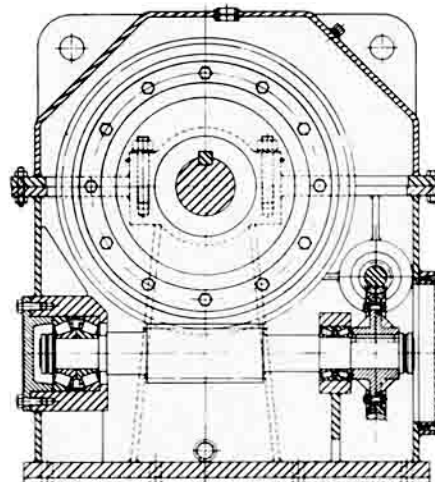
helical worm

RATIOS FROM 30:1 to 420:1
UP TO 569 HP
UP TO 1,867,000 IN. LBS.
OUTPUT TORQUE
13.4365" TO 36.000"
WORM GEAR CENTERS
9.000" TO 20.000"
HELICAL GEAR CENTER



double worm

RATIOS FROM 97:1 TO 6100:1
UP TO 627,000 IN. LBS.
OUTPUT TORQUE
CENTER DISTANCES
6" TO 10" PRIMARY REDUCTION
13.4365" TO 21.000"
SECONDARY REDUCTION



single reduction worm gear speed reducers

GENERAL SELECTION GUIDE

Types A—UV—DV

UNIT SIZES AVAILABLE	CENTER DISTANCE	RATIOS AVAILABLE	HP CAPACITY RANGE	OUTPUT TORQUE RANGE* CAPACITY (IN. LBS.)	RATINGS & DIMENSIONS SEE PAGES
134	13.4"	3-5/9:1-100:1	212 to 12.4 (1750 RPM)	108,000 to 198,000	4-5
150	15.0"	3-5/9:1-100:1	247 to 15.5 (1750 RPM)	137,000 to 258,000	6-7
180	18.0"	4-3/5:1-98:1	334 to 22.5 (1750 RPM)	224,000 to 401,500	8-9
195	19.5"	6-5/6:1-77:1	354 to 39.5 (1750 RPM)	348,500 to 470,000	10-11
218	21.8"	6:1-100:1	466 to 32.0 (1750 RPM)	370,000 to 627,000	12-13
240	24.0"	8:1-89:1	429 to 42.0 (1150 RPM)	505,500 to 745,000	14
270	27.0"	7-5/8:1-68:1	523 to 77.0 (870 RPM)	856,000 to 1,055,000	15
300	30.0"	8-5/8:1-77:1	577 to 75.0 (870 RPM)	1,000,000 to 1,325,000	16
360	36.0"	10-5/8:1-95:1	639 to 62 (720 RPM)	1,160,000 to 1,867,000	17

*100 RPM INPUT



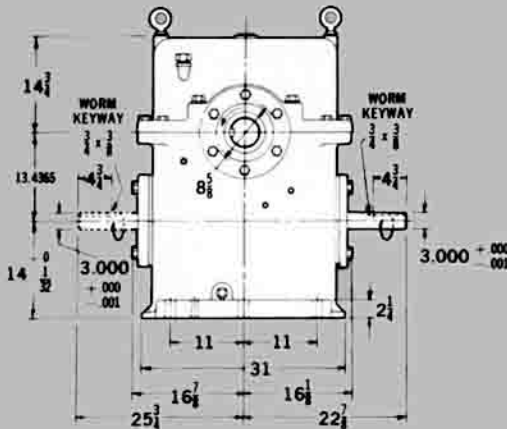
Standard single reduction heavy duty worm gear units are available in three basic types, A (worm below gear), UV (upward gear shaft extension) and DV (downward gear shaft extension). The worm gearing, available in 9 different sizes, is enclosed in two-piece housings in type A and one piece housings in types DV and UV. All housings are welded steel with the exception of type A size 134 through 218 which are cast iron. Output shafts are rigidly supported by heavy duty anti-friction bearings.

Units with vertical output shafts have grease lubricated upper gear shaft bearings. Grease fittings are located in the top gear plate. One fitting serves as input, the other as relief and indicator.

SINGLE REDUCTION SPEED REDUCERS

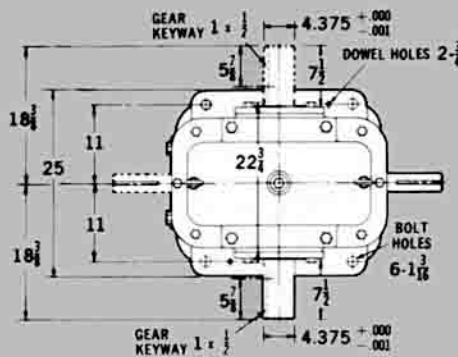
SIZE 134

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE A

Approx. Weight 2,400 lbs.



STANDARD SHAFT ARRANGEMENTS A UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm and/or gear shafts may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



SER. 25



SER. 25



SER. 26



SER. 27



SER. 27



SER. 28

RATING TABLE FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM

13.4365" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	380 RPM	200 RPM	100 RPM	Thermal H. P. Ratings
*3 5/9	R	Input H. P.	193.95	176.45	159.12	147.91	134.87	100.29	84.31	55.40	91.0
	L	Output Torque	23189	32018	38031	42587	48029	68082	84907	109209	
*4 5/8	R	Input H. P.	202.30	178.28	160.74	148.43	134.24	101.13	83.82	52.78	81.0
	L	Output Torque	31396	41939	49768	55348	61875	8649	108974	134142	
5 1/7	R	Input H. P.	213.05	186.13	166.50	153.49	138.70	105.09	85.66	52.95	78.0
	L	Output Torque	36759	48642	57258	63557	70977	102344	123604	149183	
6 1/6	R	Input H. P.	197.31	169.39	151.07	138.32	124.96	94.62	75.83	46.06	71.0
	L	Output Torque	40787	52987	62175	68530	76528	110127	130896	155080	
7 3/5	R	Input H. P.	176.77	150.90	133.83	122.34	110.85	83.97	66.56	39.99	62.5
	L	Output Torque	44897	57942	67579	74328	83202	119548	140396	164315	
8	R	Input H. P.	172.13	146.97	130.37	119.19	108.01	81.87	64.92	39.03	60.5
	L	Output Torque	45965	59318	69183	76093	85177	122385	143722	168201	
8 4/5	R	Input H. P.	161.84	137.71	121.91	111.67	100.96	76.64	60.35	36.02	57.0
	L	Output Torque	47453	61015	70992	78224	87330	125548	146285	169921	
9 1/5	R	Input H. P.	156.39	132.75	117.56	107.64	97.17	73.82	57.84	34.34	55.0
	L	Output Torque	47894	61426	71463	78719	87722	126160	146196	168923	
9 1/2	R	Input H. P.	152.54	130.49	115.94	105.98	96.17	73.08	58.17	35.18	54.0
	L	Output Torque	48113	62150	72550	79738	89319	128319	150997	177055	
10	R	Input H. P.	150.14	127.84	113.24	103.78	93.88	71.41	56.31	33.70	52.0
	L	Output Torque	49828	64072	74549	82143	91709	131842	153634	178475	
10 1/2	R	Input H. P.	144.88	123.22	109.17	100.04	90.43	68.84	54.14	32.32	50.5
	L	Output Torque	50427	64749	75332	82992	92560	133095	154615	179079	
11 3/4	R	Input H. P.	133.38	113.28	100.43	92.02	83.12	63.40	49.72	29.60	46.5
	L	Output Torque	51769	66343	77180	85009	94675	136176	157524	181696	
13 3/4	R	Input H. P.	116.80	99.70	87.64	80.57	73.57	55.23	42.87	25.23	41.5
	L	Output Torque	52847	67979	78368	86588	97429	137710	157402	179419	
15	R	Input H. P.	109.50	93.51	82.28	75.65	69.08	52.04	40.49	23.91	39.0
	L	Output Torque	53819	69210	79818	88163	99147	140338	160547	183165	
15 2/3	R	Input H. P.	107.21	91.36	81.02	74.32	67.34	51.62	40.57	24.29	38.0
	L	Output Torque	54713	70166	81476	89728	100042	143645	165763	190749	
17 1/3	R	Input H. P.	97.87	83.63	73.83	67.81	61.90	47.02	36.77	21.88	35.0
	L	Output Torque	55122	70829	81849	90246	101326	144024	165185	188936	

*Special ratios available at additional charge.
Output torque ratings given in inch pounds.
Gear shaft overhung load capacity at center of keyway 8 000 lbs.
Consult factory for greater overhung load capacities.

RATING TABLE FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM

13.4365" CENTERS

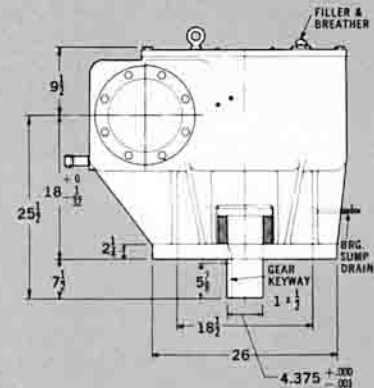
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM	Thermal H.P. Ratings
20	R	Input H. P. Output Torque Output R.P.M.	87.25 56113 87.5	74.57 72004 57.5	66.15 83486 43.5	60.75 91933 36.0	55.29 102768 29.0	42.51 147103 15.0	33.48 169436 10.0	20.14 194618 5.0	31.0
21 1/2	R	Input H. P. Output Torque Output R.P.M.	81.70 56271 81.4	69.96 72280 53.5	61.94 83599 40.5	56.93 92105 33.5	52.03 103339 27.0	39.86 147156 14.0	31.34 168968 9.3	18.82 193480 4.7	29.5
23 1/2	R	Input H. P. Output Torque Output R.P.M.	75.81 56597 74.5	64.97 72667 48.9	57.66 84137 37.0	53.00 92641 30.6	48.44 103814 24.7	37.34 148167 12.8	29.47 170362 8.5	17.80 187408 4.3	27.5
28 1/2	R	Input H. P. Output Torque Output R.P.M.	63.03 56652 61.4	53.72 72180 40.4	47.54 83263 30.5	43.78 91732 25.3	40.44 103803 20.4	30.47 144569 10.5	23.76 163728 7.02	14.12 184905 3.5	24.5
31 1/2	R	Input H. P. Output Torque Output R.P.M.	57.55 56774 55.6	49.23 72495 36.5	43.61 83639 27.6	40.22 92223 22.9	37.13 104187 18.4	28.19 145730 9.5	22.08 165489 6.3	13.21 187408 3.17	21.5
36	R	Input H. P. Output Torque Output R.P.M.	51.00 56576 48.6	43.70 72154 31.9	38.80 83239 24.2	35.82 91739 20.0	33.16 103735 16.1	25.28 144752 8.3	19.87 164134 5.6	11.95 185591 2.8	19.0
40	R	Input H. P. Output Torque Output R.P.M.	46.40 56262 43.8	40.12 72289 28.8	35.77 83550 21.8	33.06 92108 18.0	30.44 103403 14.5	23.84 147027 7.5	19.02 168664 5.0	11.70 192956 2.5	17.5
43	L	Input H. P. Output Torque Output R.P.M.	43.49 55858 40.7	37.68 71750 26.7	33.68 82984 20.2	31.15 91428 16.7	28.72 102582 13.5	22.66 146072 6.8	18.15 167718 4.6	11.25 192043 2.3	16.5
47	R	Output Torque Input H. P. Output R.P.M.	39.70 55084 37.2	34.48 70775 24.5	30.85 81801 18.5	28.58 90179 15.3	26.39 101235 12.3	20.89 143951 6.4	16.77 165141 4.3	10.42 188933 2.1	15.0
48	R	Input H. P. Output Torque Output R.P.M.	38.63 54720 36.5	33.60 70375 23.9	29.99 81145 18.1	27.85 89644 15.0	25.75 100829 12.1	20.28 142659 6.3	16.24 163159 4.2	10.05 186096 2.1	14.5
55	R	Input H. P. Output Torque Output R.P.M.	32.91 53074 31.8	28.43 67671 20.9	25.41 78066 15.8	23.56 86030 13.1	21.95 97297 10.5	17.04 135705 5.5	13.55 153830 3.6	8.30 173888 1.8	13.0
61	R	Input H. P. Output Torque Output R.P.M.	29.24 51244 28.7	25.42 65537 18.8	22.78 75619 14.3	21.18 83430 11.8	19.72 94144 9.5	15.53 132082 4.9	12.45 150276 3.3	7.72 170506 1.6	12.0
70	R	Input H. P. Output Torque Output R.P.M.	24.37 47780 25.0	21.18 60846 16.4	19.03 70186 12.4	17.71 77310 10.3	16.59 87515 8.3	13.04 121768 4.3	10.47 137822 2.9	6.49 155552 1.4	10.7
71	R	Input H. P. Output Torque Output R.P.M.	23.71 47310 24.6	20.62 60287 16.2	18.51 69544 12.3	17.23 76623 10.1	16.13 86695 8.2	12.69 120782 4.2	10.18 136817 2.8	6.31 154546 1.4	10.5
79	R	Input H. P. Output Torque Output R.P.M.	19.84 43407 22.2	17.20 55074 14.6	15.46 63513 11.0	14.40 69863 9.1	13.54 79301 7.3	10.58 109552 3.8	8.48 123433 2.5	5.23 138664 1.3	9.3
89	R	Input H. P. Output Torque Output R.P.M.	16.17 38845 19.7	14.08 49310 12.9	12.70 56867 9.8	11.85 62565 8.1	11.16 70991 6.5	8.81 98166 3.4	7.09 110671 2.2	4.41 124405 1.1	8.3
100	R	Input H. P. Output Torque Output R.P.M.	13.02 33892 17.5	11.39 43026 11.5	10.31 49621 8.7	9.65 54594 7.2	9.12 61943 5.8	7.27 85666 3.0	5.89 96588 2.0	3.70 108585 1.0	7.4

Thermal horsepower ratings listed may be increased by the installation of internal water cooling coils or by means of an external oil cooling system.

SIZE 134

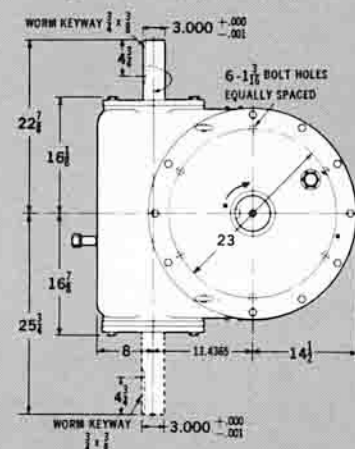
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE DV

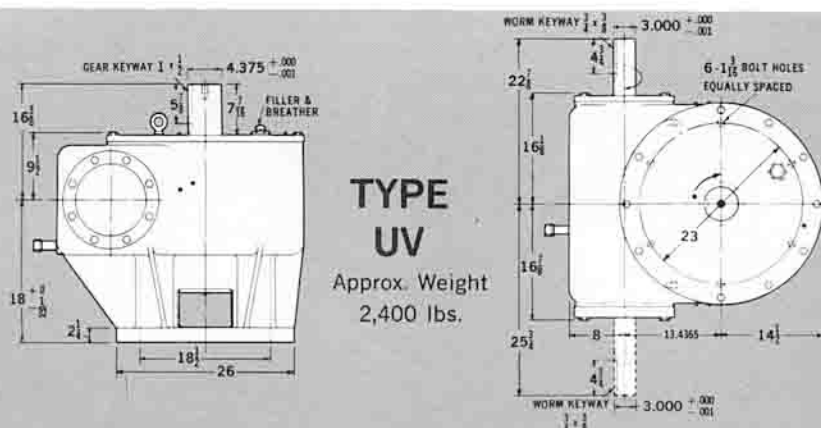
Approx. Weight 2,400 lbs.



STANDARD SHAFT ARRANGEMENTS UV-DV UNITS

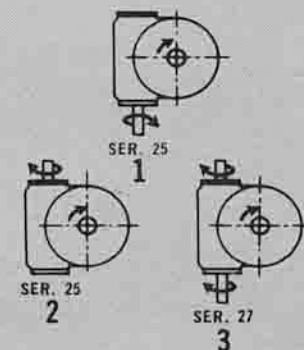
When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



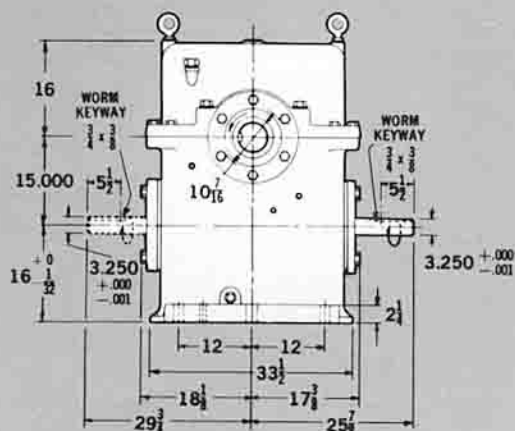
TYPE UV

Approx. Weight
2,400 lbs.



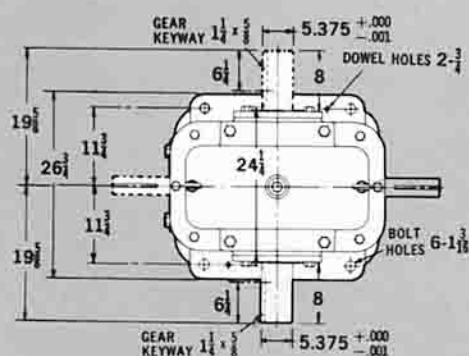
SIZE
150

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE A

Approx. Weight 3,200 lbs.



STANDARD SHAFT ARRANGEMENTS A UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm and/or gear shafts may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.

RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM

15.000" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM	Thermal H.P. Ratings
*3 5/9	R L	Input H. P. Output Torque Output R.P.M.	231.09 27651 492	212.25 38547 323	194.14 45468 248	180.87 52165 202	165.93 59207 163	122.15 83146 84.3	104.40 105533 56.3	70.30 139103 28.1	111.0
*4 5/8	R	Input H. P. Output Torque Output R.P.M.	257.79 40056 378	231.89 54649 249	208.22 64605 188	192.88 72101 155	175.25 81000 125	130.78 115139 64.9	109.70 143189 43.2	70.27 179522 21.6	98.0
6	R L	Input H. P. Output Torque Output R.P.M.	245.48 49439 292	214.33 65374 192	191.66 76937 145	176.24 85198 120	159.38 95221 96.6	120.72 137289 50.0	98.09 165315 33.3	60.40 198844 16.7	85.0
7	R	Input H. P. Output Torque Output R.P.M.	229.88 53921 250	198.37 70421 164	177.33 82822 124	162.62 91438 103	146.83 102043 82.8	111.36 147090 42.8	89.68 175591 28.6	54.76 209907 14.3	80.0
7 3/5	R	Input H. P. Output Torque Output R.P.M.	221.47 56289 230	191.39 73602 151	171.15 86569 114	157.01 95594 94.7	141.83 106696 76.3	107.67 153800 39.5	86.83 183726 26.3	53.13 218959 13.2	75.0
8	R	Input H. P. Output Torque Output R.P.M.	215.65 57661 219	186.11 75285 144	166.43 88543 109	152.66 97749 90.0	137.89 109083 72.5	104.71 157236 37.5	84.38 187675 25.0	51.61 223448 12.5	72.5
9 1/5	R L	Input H. P. Output Torque Output R.P.M.	195.81 60114 190	167.19 77579 125	148.32 90480 94.6	135.60 99517 78.3	122.89 111397 63.0	93.16 160060 32.6	73.88 187965 21.7	44.43 219979 10.9	66.5
9 3/4	R L	Input H. P. Output Torque Output R.P.M.	191.93 62247 179	164.99 80871 118	147.31 94898 89.2	135.00 104601 73.8	122.07 116805 59.8	92.80 168096 30.8	74.56 199810 20.5	45.54 236742 10.3	64.0
10 3/4	R L	Input H. P. Output Torque Output R.P.M.	179.66 64150 163	153.68 82866 107	136.54 96732 80.9	124.80 106316 67.0	113.25 119090 53.9	86.04 171089 27.9	68.47 201326 18.6	41.40 236070 9.3	60.0
11 1/2	R	Input H. P. Output Torque Output R.P.M.	169.42 64644 152	144.28 83122 100	127.80 96715 75.6	117.13 106567 62.6	105.96 118977 50.4	80.61 171043 26.1	63.57 199314 17.4	38.05 231541 8.7	57.5
13	R	Input H. P. Output Torque Output R.P.M.	156.36 67096 135	133.39 86347 88.0	118.24 100470 66.9	108.44 110716 55.4	98.22 123683 44.6	74.91 177787 23.1	59.27 207541 15.4	35.67 241511 7.7	52.5
14 2/3	R	Input H. P. Output Torque Output R.P.M.	142.66 68720 119	121.85 88468 78.0	108.09 102947 59.3	99.20 113441 49.1	89.93 126759 39.6	68.75 182200 20.5	54.53 212852 13.6	32.95 247869 6.8	48.0
17 2/3	R	Input H. P. Output Torque Output R.P.M.	121.40 69909 99.1	103.43 89654 65.1	91.71 104105 49.3	84.13 114649 40.7	76.22 127827 32.8	58.41 183541 16.9	45.89 211802 11.3	27.46 243728 5.7	41.5
20	R	Input H. P. Output Torque Output R.P.M.	110.39 71447 87.5	94.58 92019 57.5	84.10 107123 47.3	77.28 118003 36.0	70.22 131899 29.0	54.07 189574 15.0	43.11 221675 10.1	26.31 258376 5.0	38.0

*Special ratios available at additional charge.
Output torque ratings given in inch pounds.
Gear shaft overhung load capacity at center of keyway 9,000 lbs.
Consult factory for greater overhung load capacities.



SER. 25



SER. 25



SER 26



SER 27



SER 27



SER. 2A

RATING TABLE

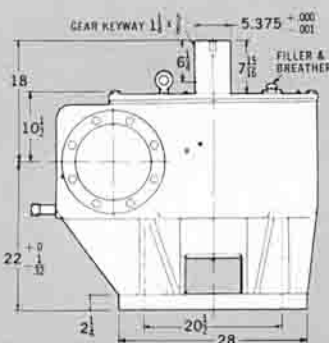
FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM

15.000" CENTERS

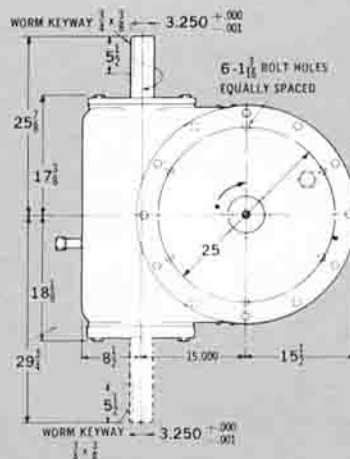
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	360 RPM	200 RPM	100 RPM	Thermal H. P. Ratings
23	R L	Input H. P. Output Torque Output R.P.M.	95.80 70985 76.1	82.04 91266 50.1	72.41 105311 37.8	66.65 116266 31.3	60.98 130694 25.2	46.36 185200 13.0	36.29 212014 8.7	21.64 242048 4.3	33.5
26 1/2	R	Input H. P. Output Torque Output R.P.M.	85.24 71825 66.0	73.04 92218 43.4	64.81 106774 32.8	59.57 117567 27.2	54.43 131745 21.9	41.94 188032 11.3	33.09 216198 7.5	19.97 247899 3.8	30.0
27 1/2	R	Input H. P. Output Torque Output R.P.M.	82.38 71813 63.6	70.64 92223 41.8	62.68 106724 31.6	57.63 117524 26.2	52.72 131800 21.1	40.63 187904 10.9	32.07 215907 7.3	19.37 247402 3.6	29.0
30	R	Input H. P. Output Torque Output R.P.M.	75.88 71968 58.3	65.10 92420 38.3	57.78 106957 29.0	53.14 117777 24.0	48.63 132079 19.3	37.53 188317 10.0	29.64 216394 6.7	17.93 247972 3.3	27.0
35	R	Input H. P. Output Torque Output R.P.M.	65.86 71690 50.0	56.71 92123 32.8	50.37 106441 24.8	46.47 117375 20.6	42.66 131799 16.6	33.04 187288 8.6	26.17 214771 5.7	15.91 245613 2.8	23.5
39	R	Input H. P. Output Torque Output R.P.M.	60.36 71522 44.9	52.28 92131 29.5	46.88 107270 22.3	43.36 118150 18.5	39.69 132079 14.9	31.42 189828 7.7	25.49 222050 5.1	16.08 258901 2.6	21.5
44	R	Input H. P. Output Torque Output R.P.M.	53.40 71005 39.8	46.10 91127 26.1	41.37 106020 19.8	38.26 116794 16.5	34.98 130213 13.2	27.76 187251 6.8	22.39 217295 4.5	14.01 251418 2.5	19.5
49	L	Input H. P. Output Torque Output R.P.M.	47.26 69183 35.7	40.94 88865 23.5	36.60 102779 17.7	33.85 113238 14.7	31.21 127052 11.8	24.62 180917 6.1	19.72 207727 4.1	12.22 237855 2.0	17.5
53	R L	Input H. P. Output Torque Output R.P.M.	43.35 67939 33.0	37.64 87290 21.7	33.67 100895 16.4	31.18 111223 13.6	28.79 124854 10.9	22.78 177555 5.6	18.28 203704 3.7	11.36 233065 1.9	16.5
55	R	Input H. P. Output Torque Output R.P.M.	41.31 66996 31.8	35.93 86163 20.9	32.07 99349 15.8	29.78 109755 13.1	27.56 123449 10.5	21.70 174663 5.5	17.38 199762 3.6	10.76 227845 1.8	15.5
60	R	Input H. P. Output Torque Output R.P.M.	37.31 65328 29.1	32.46 83939 19.2	29.08 97011 14.5	26.97 106951 12.0	24.94 120069 9.7	19.82 170713 5.0	15.95 195830 3.3	9.96 224027 1.6	14.5
71	R	Input H. P. Output Torque Output R.P.M.	29.51 59682 24.6	25.82 76775 16.2	23.14 88511 12.3	21.55 97790 10.1	20.03 110044 8.2	15.95 155505 4.2	12.86 177717 2.8	8.05 202548 1.4	12.5
80	R L	Input H. P. Output Torque Output R.P.M.	24.68 54409 21.9	21.66 69829 14.4	19.49 80525 10.9	18.20 88933 9.0	16.98 100152 7.3	13.64 141249 3.7	11.06 161229 2.5	6.98 183533 1.2	11.0
100	R	Input H. P. Output Torque Output R.P.M.	16.34 42950 17.5	14.46 55223 11.5	13.09 63715 8.7	12.25 70349 7.2	11.46 79085 5.8	9.39 112045 3.0	7.70 128252 2.0	4.94 146403 1.0	9.0

Thermal horsepower ratings listed may be increased by the installation of internal water cooling coils or by means of an external oil cooling system.



TYPE UV

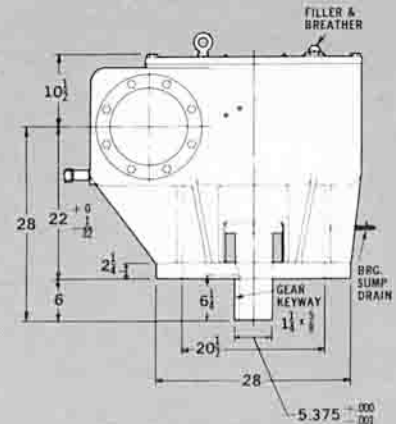
Approx. Weight
3,200 lbs.



SIZE
150

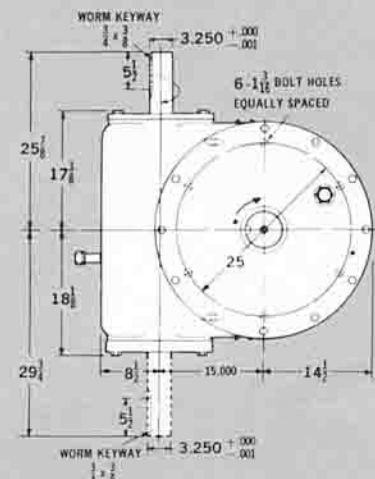
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE DV

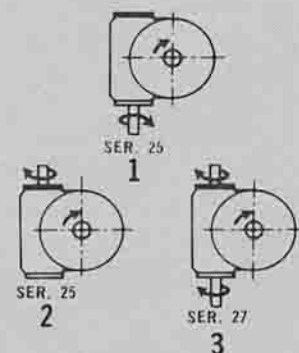
Approx. Weight 3,200 lbs.



STANDARD SHAFT ARRANGEMENTS UV-DV UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

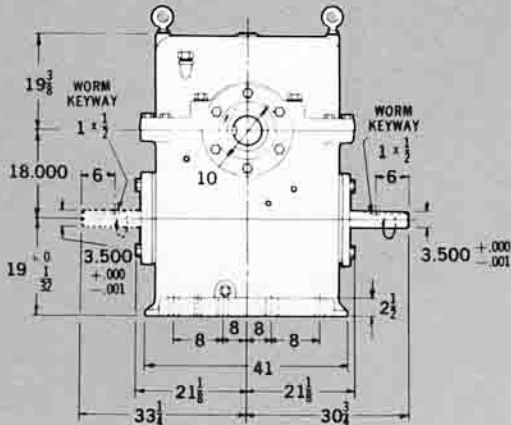
Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



SINGLE REDUCTION SPEED REDUCERS

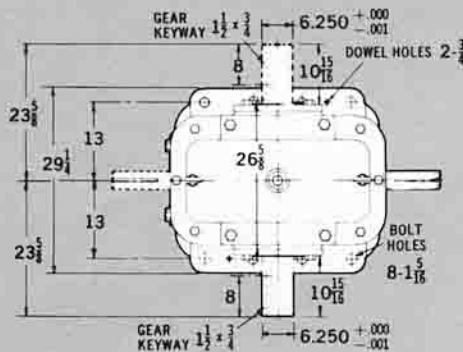
SIZE 180

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE A

Approx. Weight 4,600 lbs.



STANDARD SHAFT ARRANGEMENTS A UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm and/or gear shafts may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



SER. 25



SER. 25



SER. 26



SER. 27



SER. 27



SER. 28

RATING TABLE FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM

18,000" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM	Thermal H.P. Ratings
*4 3/5	R L	Input H. P. Output Torque Output R.P.M.	352.66 54577 380	324.66 76258 250	294.70 91222 189	275.51 102751 156	252.28 116396 126	186.23 163898 65.2	158.47 207050 43.5	106.11 271370 21.7	134.00
*5 5/6	R	Input H. P. Output Torque Output R.P.M.	354.83 69496 297	320.53 95223 195	287.76 112550 148	266.57 125620 122	242.66 141385 98.6	181.23 201071 50.9	152.13 250226 33.9	98.11 315688 17.1	119.0
7 3/5	R	Input H. P. Output Torque Output R.P.M.	313.96 80005 230	274.83 106119 151	248.15 126092 114	229.04 140144 94.7	206.72 156319 76.3	156.41 225039 39.5	129.00 274959 26.3	80.79 336320 13.2	102.0
8	R	Input H. P. Output Torque Output R.P.M.	301.13 80743 219	263.24 106919 144	235.88 126054 109	217.69 140062 90.0	196.58 156291 72.5	149.03 225378 37.5	121.87 272995 25.0	75.62 330587 12.5	99.5
9 3/4	R L	Input H. P. Output Torque Output R.P.M.	273.56 88990 179	239.31 117847 118	214.61 138967 89.2	198.16 154412 73.8	179.05 172292 59.8	136.03 248454 30.8	111.46 301023 20.5	69.40 364630 10.3	89.0
11	R L	Input H. P. Output Torque Output R.P.M.	250.43 91762 159	217.45 120501 105	194.59 141756 79.1	178.73 156654 65.5	161.63 174936 52.7	122.91 252182 27.3	99.53 301983 18.2	61.24 360912 9.1	80.5
12 1/4	R L	Input H. P. Output Torque Output R.P.M.	231.66 94264 143	199.30 122532 93.9	178.07 143855 71.0	163.27 158626 58.8	147.60 177059 47.3	112.35 254955 24.5	90.38 303257 16.3	55.30 359594 8.2	75.0
13 1/4	R L	Input H. P. Output Torque Output R.P.M.	219.14 96149 132	188.82 125127 86.8	169.01 147104 65.7	155.09 162297 54.3	140.17 181040 43.8	106.95 260943 22.6	86.26 310833 15.1	52.98 369209 7.5	71.0
15	R L	Input H. P. Output Torque Output R.P.M.	200.66 99329 117	172.75 129067 76.6	154.43 151475 58.0	141.66 166982 48.0	128.21 186441 38.6	97.87 268355 20.0	78.85 319046 13.3	48.43 378104 6.6	64.5
16 1/3	R L	Input H. P. Output Torque Output R.P.M.	186.64 100284 107	160.22 129815 70.4	142.81 151828 53.3	130.69 166901 44.1	118.69 186905 35.5	90.57 268429 18.4	72.59 317262 12.2	44.38 373556 6.1	60.5
17 2/3	R	Input H. P. Output Torque Output R.P.M.	175.82 101786 99.1	151.17 131891 65.1	134.94 154399 49.3	123.63 169854 40.7	112.25 190061 32.8	85.80 272922 16.9	68.98 323250 11.3	42.38 381354 5.7	57.0
18 1/3	R L	Input H. P. Output Torque Output R.P.M.	170.54 102300 95.5	146.83 132719 62.7	131.24 155540 47.5	120.36 171265 39.3	109.19 191456 31.6	83.57 275112 16.4	67.35 326436 10.9	41.51 385963 5.5	55.5
20	R	Input H. P. Output Torque Output R.P.M.	158.68 103162 87.5	137.48 134612 57.5	123.41 158313 43.5	113.53 174753 36.0	102.89 195002 29.0	79.19 281080 15.0	64.37 335375 10.0	40.09 399136 5.0	51.5

*Special ratios available at additional charge.

Output torque ratings given in inch pounds.

Gear shaft overhung load capacity at center of keyway 10,000 lbs.

Consult factory for greater overhung load capacities.

FOR UNITY SERVICE FACTOR

18.000" CENTERS

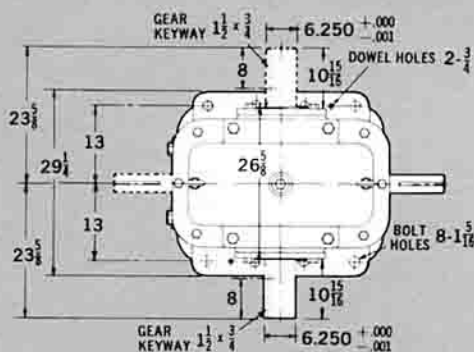
Thermal horsepower ratings listed may be increased by the installation of internal water cooling coils or by means of an external oil cooling system.

SINGLE REDUCTION SPEED REDUCERS

SIZE
195

[illegible]

Approx. Weight 5,400 lbs.



Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.

19.518" CENTERS

Output torque ratings given in inch pounds.
Gear shaft overhung load capacity at center of keyway 11,000 lbs.
Consult factory for greater overhung load capacities.



RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM

19.518" CENTERS

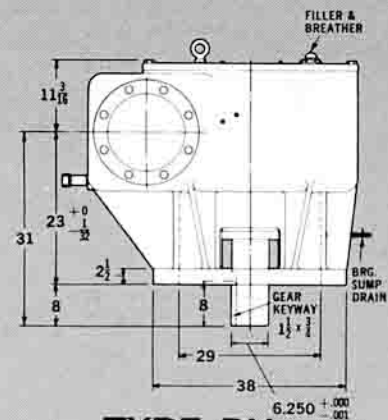
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM	Thermal H.P. Ratings
20	R L	Input H. P. Output Torque Output R.P.M.	184.73 120935 87.5	159.03 156895 57.5	142.13 183873 43.5	130.35 202462 36.0	118.24 226332 29.0	90.48 325227 15.0	72.91 385900 10.0	44.93 456271 5.0	59.5
23 1/2	R L	Input H. P. Output Torque Output R.P.M.	161.08 122673 74.5	139.17 159502 48.9	124.80 187303 37.0	114.75 206574 30.6	104.03 230533 24.7	80.16 332046 12.8	65.00 395083 8.51	40.43 468658 4.3	52.0
26 1/2	R	Input H. P. Output Torque Output R.P.M.	145.01 123432 66.0	125.83 161004 43.4	113.13 189349 32.8	104.20 208999 27.2	94.56 233206 21.9	73.19 336146 11.3	59.69 400996 7.5	37.44 477120 3.8	47.0
29 1/2	R L	Input H. P. Output Torque Output R.P.M.	131.02 123681 59.3	112.86 159868 39.0	100.85 186728 29.5	92.52 205130 24.4	84.38 229881 19.7	65.26 330223 10.2	52.58 389105 6.8	32.59 456833 3.4	43.0
30	R	Input H. P. Output Torque Output R.P.M.	129.60 123939 58.3	112.25 161111 38.3	100.86 189155 29.0	92.89 208582 24.0	84.39 232814 19.3	65.61 335252 10.0	53.35 398786 6.7	33.51 472895 3.3	42.5
43	R	Input H. P. Output Torque Output R.P.M.	92.09 122044 40.7	80.01 158231 26.7	72.04 185329 20.2	66.45 203966 16.7	60.74 228130 13.5	47.72 327560 6.8	39.05 388419 4.8	24.89 458738 2.3	31.0
53	R L	Input H. P. Output Torque Output R.P.M.	72.64 117042 33.0	62.91 150766 21.7	56.41 175540 16.4	52.17 193345 13.6	47.75 216139 10.9	37.79 310642 5.6	30.66 363371 3.7	19.34 423675 1.9	26.5
59	R	Input H. P. Output Torque Output R.P.M.	64.29 113507 29.7	55.93 146498 19.5	50.34 170876 14.7	46.55 187929 12.2	42.74 210379 9.8	34.03 302275 5.1	27.81 355051 3.4	17.76 415607 1.7	23.0
60	R	Input H. P. Output Torque Output R.P.M.	63.50 12932 29.2	55.56 146601 19.2	50.32 171902 14.5	46.63 189365 12.0	42.75 211592 9.7	34.15 304241 5.0	28.26 361271 3.3	18.38 427532 1.7	23.0
70	R	Input H. P. Output Torque Output R.P.M.	51.28 104675 25.0	44.82 135197 16.4	40.49 157800 12.4	37.51 173452 10.3	34.55 194274 8.3	27.77 279106 4.3	22.86 328342 2.9	14.79 384905 1.4	20.0
77	R L	Input H. P. Output Torque Output R.P.M.	43.94 97214 22.7	38.43 125324 14.9	34.71 146024 11.3	32.26 160738 9.3	29.72 179790 7.5	24.03 258369 3.9	19.77 302736 2.3	12.80 353546 1.3	18.0

Thermal horsepower ratings listed may be increased by the installation of internal water cooling coils or by means of an external oil cooling system.

SIZE 195

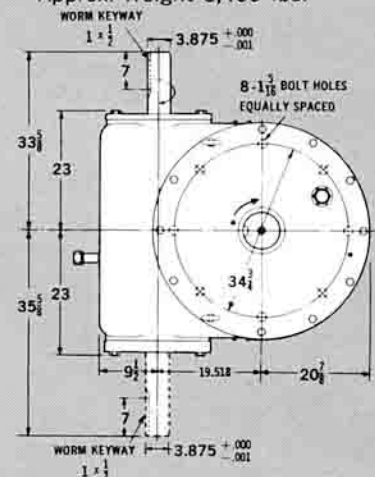
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE DV

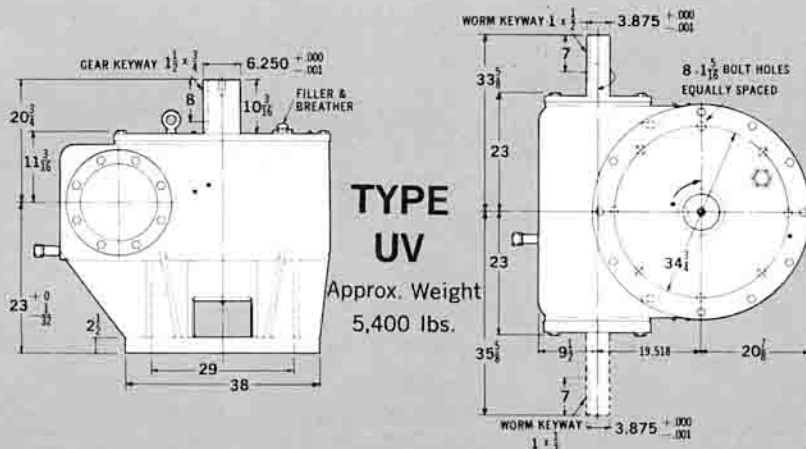
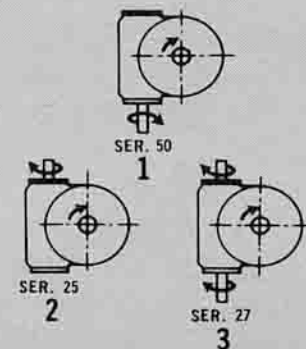
Approx. Weight 5,400 lbs.



STANDARD SHAFT ARRANGEMENTS UV-DV UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



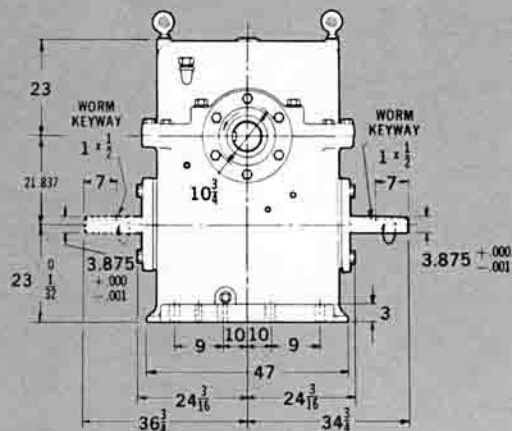
TYPE UV

Approx. Weight
5,400 lbs.

SINGLE REDUCTION SPEED REDUCERS

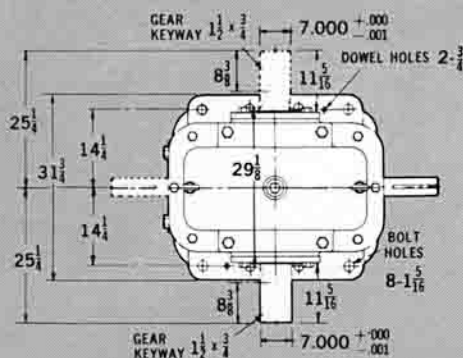
SIZE 218

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE A

Approx. Weight 6,200 lbs.



STANDARD SHAFT ARRANGEMENTS A UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm and/or gear shafts may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



SER. 25



SER. 25



SER. 26



SER. 27



SER. 27



SER. 28

RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM

21.837" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM	Thermal H.P. Ratings
6	R L	Input H. P. Output Torque Output R.P.M.	498.74 100608 292	458.26 140300 192	415.71 167706 145	388.14 188641 120	355.12 213490 96.0	262.58 301009 50.0	223.00 379388 33.3	148.95 495852 16.7	163.0
7 1/6	R L	Input H. P. Output Torque Output R.P.M.	465.41 112060 244	423.43 154711 160	381.86 183756 121	354.96 205761 100	323.70 232051 80.9	240.82 328948 41.9	202.50 410230 27.9	133.10 527543 13.9	148.0
8	R L	Input H. P. Output Torque Output R.P.M.	440.86 118282 219	399.97 162806 144	360.16 192996 109	334.34 215806 90.0	304.77 243209 72.5	227.25 345208 37.5	191.06 430146 25.0	124.78 548987 12.5	138.0
9 2/5	R L	Input H. P. Output Torque Output R.P.M.	401.93 126427 186	362.45 172850 122	325.49 204264 92.6	301.72 228043 76.6	274.40 256312 61.7	205.21 364403 31.9	172.40 453266 21.3	110.93 569280 10.6	125.0
10 2/5	R L	Input H. P. Output Torque Output R.P.M.	380.08 131876 168	343.48 180648 110	308.57 213481 83.6	286.07 238316 69.2	260.52 268122 55.8	195.19 381355 28.8	164.23 474547 19.2	106.29 598271 9.6	117.5
11 3/4	R L	Input H. P. Output Torque Output R.P.M.	350.38 137097 149	311.79 184792 97.8	280.93 218933 74.0	259.96 243844 61.3	235.83 273175 49.4	177.40 389762 25.5	148.42 481890 17.0	94.67 597920 8.5	107.0
13 3/4	R L	Input H. P. Output Torque Output R.P.M.	313.56 142753 127	279.85 192861 83.6	252.22 228398 63.3	233.61 254485 52.4	212.20 285249 42.2	159.84 406469 21.8	134.23 503393 14.5	86.10 625858 7.3	96.0
15	R	Input H. P. Output Torque Output R.P.M.	293.58 145548 117	259.25 194443 76.6	234.21 230739 58.0	216.61 256612 48.0	196.30 286880 38.6	148.93 411347 20.0	124.13 505264 13.3	78.97 622019 6.6	90.0
16	R L	Input H. P. Output Torque Output R.P.M.	278.67 146962 109	245.82 196053 71.9	222.23 232709 54.4	205.53 258741 45.0	186.27 289164 36.3	141.61 414951 18.8	118.02 509156 12.5	75.12 626015 6.3	85.5
18	R L	Input H. P. Output Torque Output R.P.M.	252.64 149141 97.2	222.39 198398 63.9	201.29 235613 48.3	186.22 261890 40.0	168.74 292438 32.2	128.79 420313 16.7	107.29 514659 11.1	68.35 631174 5.5	78.0
20	R	Input H. P. Output Torque Output R.P.M.	231.76 151323 87.5	203.81 200965 57.5	184.64 238735 43.5	170.89 265349 36.0	154.55 296113 29.0	118.55 425992 15.0	98.79 520968 10.0	63.03 637947 5.0	72.0
25	R L	Input H. P. Output Torque Output R.P.M.	190.77 153764 70.0	167.87 203976 46.0	152.13 241977 34.8	140.97 268933 28.8	127.80 299761 23.2	98.56 431985 12.0	82.29 527093 8.0	52.76 643646 4.0	60.0

Output torque ratings given in inch pounds.

Gear shaft overhung load capacity at center of keyway 12,000 lbs.

Consult factory for greater overhung load capacities.

RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM

21.837" CENTERS

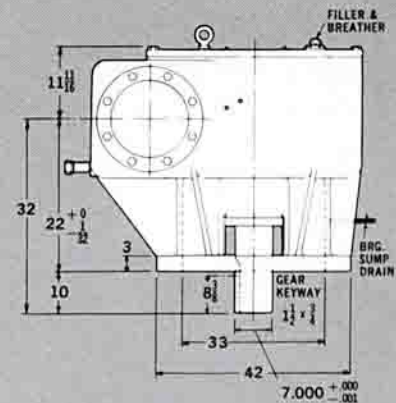
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	560 RPM	380 RPM	200 RPM	100 RPM	Thermal H. P. Ratings
30	R L	Input H. P. Output Torque Output R.P.M.	161.86 154585 58.3	142.62 205004 38.3	129.33 242948 29.0	120.00 270001 24.0	108.90 300790 19.3	84.51 433827 10.0	70.56 528705 6.7	45.64 644660 3.3	51.5
40	R	Input H. P. Output Torque Output R.P.M.	122.13 152773 43.8	107.71 201935 28.8	97.22 237623 21.8	89.97 262921 18.0	82.11 293840 14.5	64.18 423637 7.5	53.28 509278 5.0	34.22 611409 2.5	40.0
45	R L	Input H. P. Output Torque Output R.P.M.	109.65 150939 38.9	97.12 200241 25.6	88.61 237599 19.3	82.53 264069 16.0	75.30 294379 12.9	59.33 424146 6.7	50.34 517662 4.4	33.19 632330 2.2	36.0
50	R L	Input H. P. Output Torque Output R.P.M.	97.78 148193 35.0	86.65 196393 23.0	78.87 232188 17.4	73.53 258019 14.4	67.18 287660 11.6	53.16 414856 6.0	45.03 504168 4.0	29.69 612807 2.0	32.5
56	R	Input H. P. Output Torque Output R.P.M.	85.78 144038 31.3	76.13 190949 20.5	69.46 226014 15.5	64.81 251170 12.8	59.26 279920 10.4	47.09 403710 5.4	40.06 491292 3.6	26.58 598075 1.9	29.5
60	R L	Input H. P. Output Torque Output R.P.M.	79.30 140665 29.2	70.49 186449 19.2	64.39 220566 14.5	60.16 245109 12.0	55.10 273214 9.7	44.01 394031 5.0	37.54 479202 3.3	25.05 582932 1.7	27.5
66	R L	Input H. P. Output Torque Output R.P.M.	70.00 134516 26.5	62.34 178342 17.4	57.09 211157 13.2	53.41 234661 10.9	48.99 261497 8.8	39.34 377143 4.5	33.72 459127 3.0	22.67 559144 1.5	25.5
71	R L	Input H. P. Output Torque Output R.P.M.	62.47 129135 24.6	55.62 170959 16.2	50.69 201387 12.3	47.43 223759 10.1	43.59 249753 8.2	35.00 360144 4.2	29.82 435802 2.8	19.93 527146 1.4	23.5
74	R	Input H. P. Output Torque Output R.P.M.	58.32 125133 23.6	51.97 165560 15.5	47.34 194880 11.8	44.25 216220 9.7	40.71 241501 7.8	32.73 348218 4.0	27.85 420319 2.7	18.60 506970 1.3	23.0
79	R	Input H. P. Output Torque Output R.P.M.	52.70 118762 22.2	47.05 157096 14.6	42.94 184904 11.0	40.15 204998 9.1	37.02 229024 7.3	29.93 330220 3.8	25.53 398218 2.5	17.14 479796 1.3	21.5
90	R	Input H. P. Output Torque Output R.P.M.	41.55 105339 19.4	36.80 137604 12.8	33.61 161839 9.7	31.34 178682 8.0	28.85 199411 6.4	23.50 287440 3.3	19.81 343180 2.2	13.23 408726 1.1	19.0
100	R L	Input H. P. Output Torque Output R.P.M.	34.21 92748 17.5	30.70 122807 11.5	28.22 144747 8.7	26.56 160831 7.2	24.58 179482 5.8	20.19 258818 3.0	17.49 313402 2.0	12.00 379383 1.0	18.0

Thermal horsepower ratings listed may be increased by the installation of internal water cooling coils or by means of an external oil cooling system.

SIZE 218

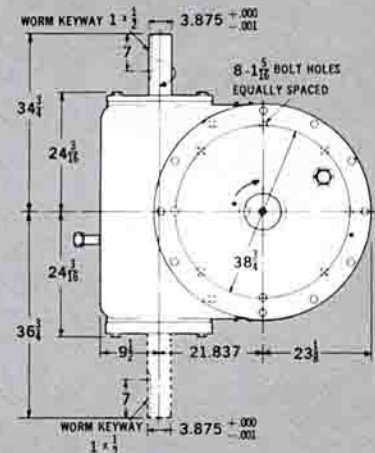
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE DV

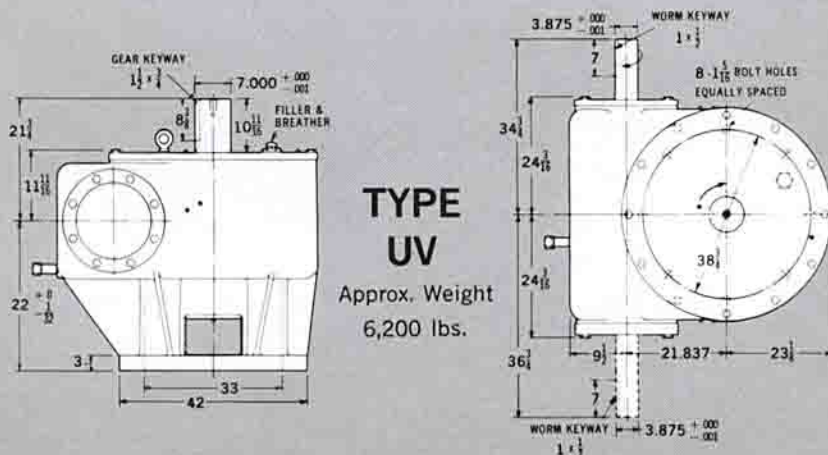
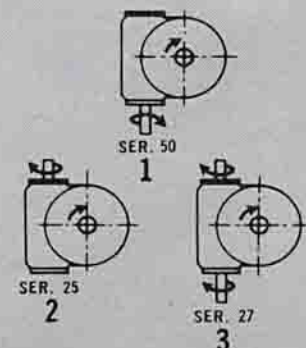
Approx. Weight 6,200 lbs.



STANDARD SHAFT ARRANGEMENTS UV-DV UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



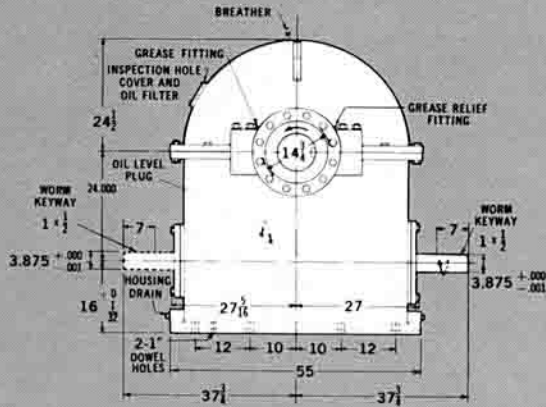
TYPE UV

Approx. Weight
6,200 lbs.

SINGLE REDUCTION SPEED REDUCERS

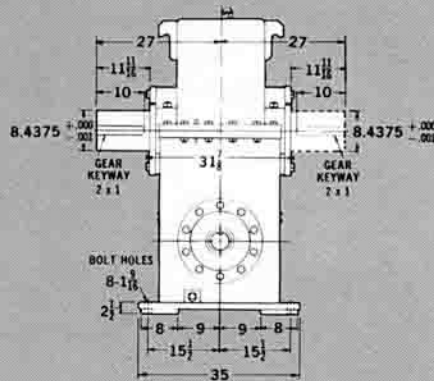
SIZE 240

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE A

Approx. Weight 8,000 lbs.



RATING TABLE FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR

24,000" CENTERS

Ratio	Hand of Thread		1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
8	R L	Input H. P. Output Torque Output R.P.M.	468.68 191150 144	422.67 227038 109	392.88 254226 90.0	358.29 286707 72.5	266.54 406428 37.5	224.13 506854 25.0	147.32 651798 12.5
9	R L	Input H. P. Output Torque Output R.P.M.	442.38 202533 128	398.36 240088 96.6	369.81 268465 80.0	337.12 302554 64.4	251.39 429442 33.3	211.38 535106 22.2	138.06 682944 11.1
10 ³ / ₅	R L	Input H. P. Output Torque Output R.P.M.	397.92 213921 108	357.37 252799 82.0	331.27 282228 67.9	301.30 317214 54.7	225.35 450988 28.3	189.35 560965 18.9	121.86 704545 9.4
11 ³ / ₅	R L	Input H. P. Output Torque Output R.P.M.	379.75 222793 99.1	341.15 263286 75.0	316.28 293916 62.1	288.02 330675 50.0	215.79 470325 25.9	181.55 593497 17.2	117.49 737847 8.6
13 ¹ / ₄	R L	Input H. P. Output Torque Output R.P.M.	340.67 227590 86.8	306.96 269638 65.7	284.06 300319 54.3	257.71 336444 43.8	193.89 480033 22.6	162.24 593497 15.1	103.50 736401 7.5
15 ¹ / ₄	R L	Input H. P. Output Torque Output R.P.M.	308.70 236045 75.4	278.21 279538 57.0	257.68 311466 47.2	234.05 349119 38.0	176.27 497481 19.8	148.01 616107 13.1	94.92 765993 6.6
18	R L	Input H. P. Output Torque Output R.P.M.	265.96 238644 63.9	240.55 283398 48.3	222.41 315006 40.0	201.42 351777 32.2	153.35 505543 16.7	127.54 619110 11.1	81.00 759406 5.5
20 ¹ / ₃	R L	Input H. P. Output Torque Output R.P.M.	239.78 241470 56.5	217.04 286765 42.8	200.80 318746 35.9	181.97 355927 28.5	138.92 511564 14.8	115.76 626393 9.8	73.77 768202 4.9
22 ¹ / ₃	R	Input H. P. Output Torque Output R.P.M.	221.73 244142 51.5	200.87 290027 39.0	185.91 322359 32.2	168.46 359732 26.0	128.96 517517 13.4	107.47 632898 8.9	68.56 775009 4.5
28	R L	Input H. P. Output Torque Output R.P.M.	181.51 246969 41.1	164.49 292981 31.1	152.44 325617 25.7	138.20 362943 20.7	106.58 523037 10.7	88.99 638192 7.1	57.06 779312 3.6
33 ¹ / ₂	R L	Input H. P. Output Torque Output R.P.M.	154.14 247416 34.3	139.77 293210 26.0	129.69 325860 21.5	117.70 363019 17.3	91.33 523579 8.9	76.47 638086 6.0	49.32 778030 3.0
45	R	Input H. P. Output Torque Output R.P.M.	113.91 240026 25.6	102.83 282445 19.3	95.16 312515 16.0	86.86 349267 12.9	67.91 503547 6.7	56.40 605342 4.4	36.23 726738 2.2
50	R L	Input H. P. Output Torque Output R.P.M.	103.58 237377 23.0	94.64 282080 17.4	88.14 313512 14.4	80.45 349627 11.6	63.34 503473 6.0	53.78 614924 4.0	35.49 751804 2.0
63	R	Input H. P. Output Torque Output R.P.M.	78.36 220885 18.3	71.51 261448 13.8	66.73 290547 11.4	61.02 323805 9.2	48.50 467002 4.8	41.26 568315 3.2	27.39 691839 1.6
67	R L	Input H. P. Output Torque Output R.P.M.	72.40 213873 17.2	66.14 253009 13.0	61.79 281162 10.7	56.60 313401 8.7	45.20 451989 4.5	38.56 549688 3.0	25.73 668675 1.5

Additional ratios available: 8-1/6, 16-3/4, 27, 56, 74, 89.

Output torque ratings given in inch pounds.

No thermal horsepower ratings are published. Applications having continuous operation will require some cooling means, such as internal water cooling coils or external oil cooling systems. Consult factory for overhung load capacities.

STANDARD SHAFT ARRANGEMENTS A UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm and/or gear shafts may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



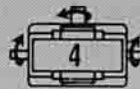
SER. 25



SER. 25



SER. 26



SER. 27



SER. 27



SER. 28

RATING TABLE FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR 27.000" CENTERS

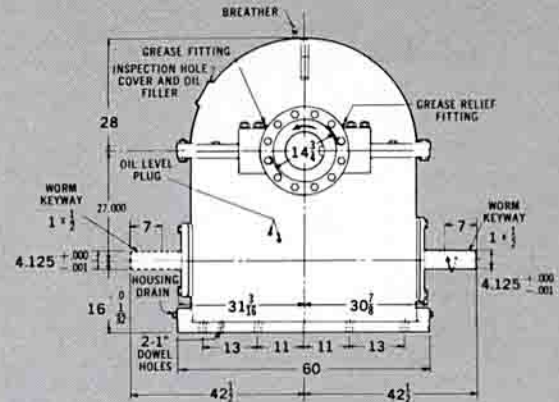
Ratio	Hand of Thread		870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
7 5/8	R L	Input H. P. Output Torque Output R.P.M.	573.35 294032 114	533.31 329624 94.4	489.92 374566 76.1	363.06 529457 39.3	309.11 669089 26.2	212.17 898883 13.1
9 5/6	R	Input H. P. Output Torque Output R.P.M.	487.74 320397 88.5	453.76 359086 73.2	417.71 408579 59.0	310.57 578020 30.5	264.57 729416 20.3	183.07 984186 10.2
10 4/5	R	Input H. P. Output Torque Output R.P.M.	458.42 330808 80.6	428.03 371904 66.7	391.63 420647 53.7	290.50 593569 27.8	246.83 747061 18.5	165.18 974698 9.3
11 4/5	R	Input H. P. Output Torque Output R.P.M.	431.62 339490 74.0	402.62 381199 61.3	367.92 430499 49.4	273.72 608715 25.5	232.03 763663 17.0	154.85 992434 8.5
12 1/5	R	Input H. P. Output Torque Output R.P.M.	428.43 347420 71.3	399.92 390364 59.0	367.14 442830 47.5	271.77 622324 24.6	232.81 788890 16.4	157.70 1038265 8.2
13 1/2	R L	Input H. P. Output Torque Output R.P.M.	395.17 353654 64.4	369.09 397453 53.3	337.85 449380 43.0	251.48 634436 22.2	213.97 797783 14.8	143.67 1039738 7.4
15	R	Input H. P. Output Torque Output R.P.M.	368.50 364043 58.0	344.00 408783 48.0	316.20 463892 38.6	234.74 651596 20.0	201.76 826725 13.3	137.53 1089215 6.6
19	R L	Input H. P. Output Torque Output R.P.M.	298.00 367983 45.8	278.42 413125 37.9	256.27 468873 30.5	191.15 658489 15.8	164.91 835701 10.5	113.27 1101406 5.3
24	R	Input H. P. Output Torque Output R.P.M.	244.92 378265 36.3	228.42 423526 30.0	209.18 477617 24.2	158.11 677111 12.5	134.55 844377 8.3	90.42 1085323 4.2
30	R	Input H. P. Output Torque Output R.P.M.	185.98 349224 29.0	173.96 391611 24.0	160.63 444346 19.3	122.04 627493 10.0	106.07 794269 6.7	75.26 1061795 3.3
37 1/2	R	Input H. P. Output Torque Output R.P.M.	162.06 378088 23.2	151.18 422525 19.2	138.78 476034 15.5	106.35 676046 8.0	91.20 842086 5.3	61.57 1071272 2.7
45	R	Input H. P. Output Torque Output R.P.M.	136.28 372468 19.3	127.71 417141 16.0	117.60 470477 12.9	90.64 666832 6.7	78.28 831687 4.4	54.09 1070486 2.2
52	R	Input H. P. Output Torque Output R.P.M.	117.26 360388 16.7	110.58 405304 13.8	102.36 458604 11.2	79.13 646780 5.8	69.39 814808 3.8	49.32 1064327 1.9
62	R	Input H. P. Output Torque Output R.P.M.	95.69 342656 14.0	90.22 384467 11.6	83.51 434029 9.3	65.25 614124 4.8	57.20 768933 3.2	40.66 996855 1.6
68	R	Input H. P. Output Torque Output R.P.M.	84.84 328356 12.8	80.00 368145 10.6	74.12 415446 8.5	58.21 588237 4.4	51.09 735053 2.9	36.40 950580 1.5

Output torque ratings given in inch pounds.
No thermal horsepower ratings are published. Applications having continuous operation will require some cooling means, such as internal water cooling coils or external oil cooling systems. Consult factory for overhung load capacities.

SIZE 270

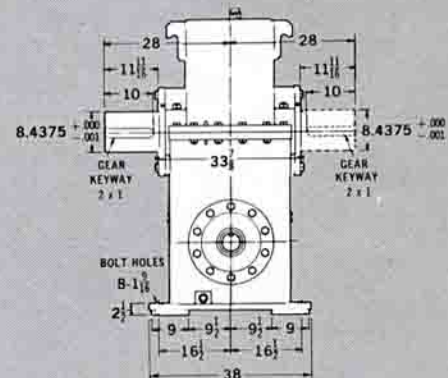
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE A

Approx. Weight 9,000 lbs.



STANDARD SHAFT ARRANGEMENTS A UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm and/or gear shafts may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



SER. 25



SER. 25



SER. 26



SER. 27



SER. 27

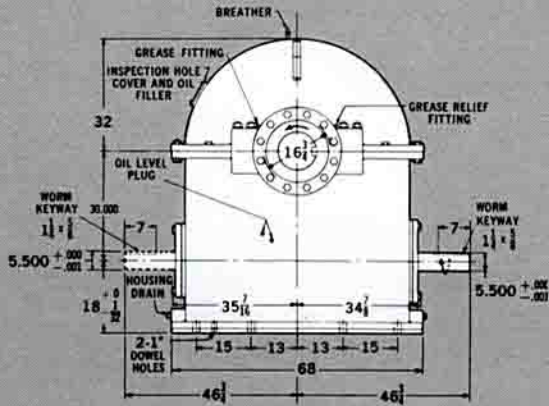


SER. 28

SINGLE REDUCTION SPEED REDUCERS

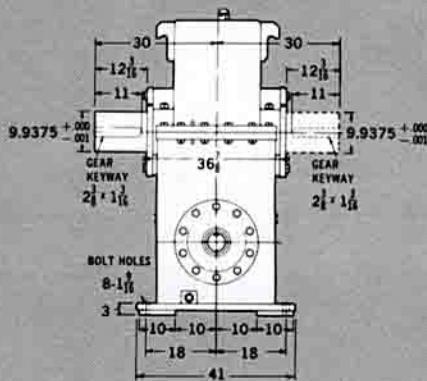
SIZE 300

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE A

Approx. Weight 13,000 lbs.



RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR

30.000" CENTERS

Ratio	Hand of Thread		870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
8 5/8	R L	Input H. P. Output Torque Output R.P.M.	643.59 373340 101	598.65 418532 83.5	549.94 475596 67.3	407.54 672265 37.8	346.98 849560 23.2	238.16 1141334 11.6
11 1/6	R	Input H. P. Output Torque Output R.P.M.	568.46 424055 77.9	528.85 475259 64.5	486.85 540783 51.9	362.00 765067 26.9	308.37 965417 17.9	213.41 1302769 9.0
12 2/5	R	Input H. P. Output Torque Output R.P.M.	516.85 427426 70.2	481.63 479610 58.1	442.05 544145 46.8	326.69 764424 24.2	280.15 971035 16.1	190.31 1284089 8.1
13 1/5	R	Input H. P. Output Torque Output R.P.M.	501.14 439739 65.9	466.80 493174 54.5	428.34 559235 43.9	318.45 789416 22.7	272.62 999917 15.2	187.11 1333906 7.6
13 4/5	R	Input H. P. Output Torque Output R.P.M.	476.64 437222 63.0	444.92 491266 52.2	408.45 557293 42.0	302.34 783184 21.7	259.00 992804 14.5	175.43 1306639 7.2
14 2/5	R	Input H. P. Output Torque Output R.P.M.	461.10 440702 60.4	430.83 495592 50.0	395.39 561930 40.2	293.03 790227 20.8	250.85 1000561 13.8	169.80 1314994 6.9
15 1/4	R L	Input H. P. Output Torque Output R.P.M.	437.75 442582 57.0	408.86 497394 47.2	374.25 562378 38.0	278.57 793968 19.7	237.02 998390 13.1	159.13 1301186 6.5
17	R	Input H. P. Output Torque Output R.P.M.	407.05 455753 51.2	380.01 511779 42.3	349.28 580763 34.1	259.31 815777 17.6	222.87 1034988 11.8	151.91 1363534 5.9
21 2/3	R L	Input H. P. Output Torque Output R.P.M.	332.63 468221 40.2	310.79 525660 33.2	286.06 596593 26.8	213.40 837860 13.8	184.13 1063344 9.2	126.50 1401427 4.6
27	R	Input H. P. Output Torque Output R.P.M.	269.25 468013 32.2	251.10 524012 26.7	229.95 590936 21.5	173.78 837762 11.1	147.87 1044714 7.4	99.35 1342827 3.7
34	R	Input H. P. Output Torque Output R.P.M.	221.74 474374 25.6	207.79 532819 21.2	191.77 604555 17.1	144.73 849361 8.8	125.82 1077231 5.9	87.78 1418608 2.9
42 1/2	R	Input H. P. Output Torque Output R.P.M.	174.38 460964 20.5	162.67 515141 16.9	149.33 580380 13.6	114.45 824234 7.1	98.15 1026670 4.7	66.27 1306093 2.4
51	R	Input H. P. Output Torque Output R.P.M.	145.12 449414 17.1	135.99 503316 14.1	125.23 567669 11.4	96.52 804589 5.9	83.37 1003500 3.9	57.61 1291631 1.9
59	R	Input H. P. Output Torque Output R.P.M.	124.22 433136 14.7	117.15 487119 12.2	108.44 551178 9.8	83.84 777339 5.1	73.53 979286 3.4	52.26 1279172 1.7
70	R	Input H. P. Output Torque Output R.P.M.	98.53 398576 12.4	92.90 447211 10.3	85.99 504860 8.3	67.17 714346 4.3	58.88 894419 2.8	41.84 1159537 1.4
77	R	Input H. P. Output Torque Output R.P.M.	84.50 370324 11.3	79.68 415194 9.3	73.82 468537 7.5	57.97 663416 3.9	50.88 828966 2.3	36.25 1071981 1.3

Output torque ratings given in inch pounds.

No thermal horsepower ratings are published. Applications having continuous operation will require some cooling means, such as internal water cooling coils or external oil cooling systems. Consult factory for overhung load capacities.

STANDARD SHAFT ARRANGEMENTS A UNITS

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Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



SER. 25



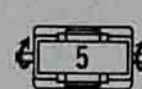
SER. 25



SER. 26



SER. 27



SER. 27



SER. 28

RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR

36.000" CENTERS

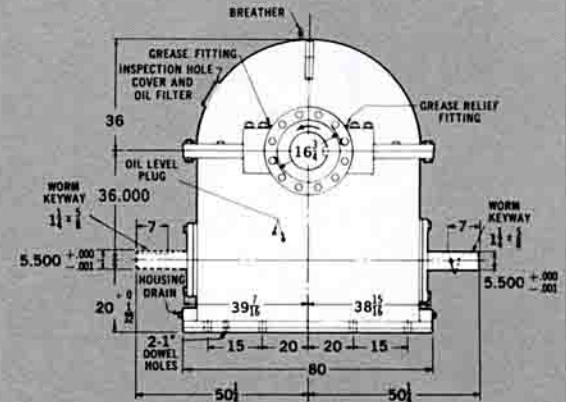
Ratio	Hand of Thread		720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
10 ⁵ / ₈	R L	Input H. P. Output Torque Output R.P.M.	725.26 624629 67.8	666.24 709793 54.6	493.73 1003307 28.2	420.36 1267907 18.8	288.52 1703359 9.4
13 ⁵ / ₆	R	Input H. P. Output Torque Output R.P.M.	608.44 677289 52.0	560.10 770640 41.9	416.46 1090230 21.7	354.78 1375784 14.5	245.51 1856318 7.2
15 ¹ / ₅	R	Input H. P. Output Torque Output R.P.M.	557.55 679591 47.4	513.46 773311 38.2	382.26 1094055 19.7	325.93 1380511 13.2	226.01 1863104 6.6
16 ¹ / ₅	R	Input H. P. Output Torque Output R.P.M.	547.07 709581 44.4	501.98 804629 35.8	373.15 1135815 18.5	319.42 1438685 12.3	219.19 1919228 6.2
17	R	Input H. P. Output Torque Output R.P.M.	527.53 717610 42.3	484.29 814058 34.1	358.47 1144024 17.6	307.08 1450223 11.8	207.98 1908653 5.9
21	R	Input H. P. Output Torque Output R.P.M.	447.10 743801 34.3	410.96 844074 27.6	305.09 1185611 14.3	262.23 1504266 9.5	178.75 1981879 4.8
26 ² / ₃	R	Input H. P. Output Torque Output R.P.M.	357.67 744769 27.0	329.21 845269 21.8	245.56 1187102 11.3	211.86 1506574 7.5	145.53 1985579 3.7
33 ¹ / ₃	R	Input H. P. Output Torque Output R.P.M.	290.17 747458 21.6	265.73 842920 17.4	200.84 1194997 9.0	170.90 1490197 6.0	114.83 1915429 3.0
42	R	Input H. P. Output Torque Output R.P.M.	230.15 729105 17.1	212.41 827268 13.8	160.30 1162257 7.1	139.34 1474074 4.8	97.22 1941211 2.3
52	R	Input H. P. Output Torque Output R.P.M.	182.79 708729 13.8	167.79 798484 11.2	128.56 1133978 5.8	110.24 1412489 3.8	74.41 1796917 1.9
63	R	Input H. P. Output Torque Output R.P.M.	147.09 672307 11.4	135.46 758268 9.2	104.41 1074735 4.8	90.19 1340432 3.2	62.23 1725305 1.6
73	R	Input H. P. Output Torque Output R.P.M.	120.76 621124 9.9	111.78 702805 7.9	86.43 991182 4.1	75.80 1248684 2.7	53.88 1631068 1.4
86	R	Input H. P. Output Torque Output R.P.M.	91.48 541474 8.4	84.67 611275 6.7	66.12 864917 3.5	57.95 1082946 2.3	41.17 1403946 1.2
95	R	Input H. P. Output Torque Output R.P.M.	75.45 485039 7.6	69.90 547359 6.1	54.90 775014 3.2	48.18 968447 2.1	34.33 1252408 1.1

Output torque ratings given in inch pounds.
No thermal horsepower ratings are published. Applications having continuous operation will require some cooling means, such as internal water cooling coils or external oil cooling systems. Consult factory for overhung load capacities.

SIZE
360

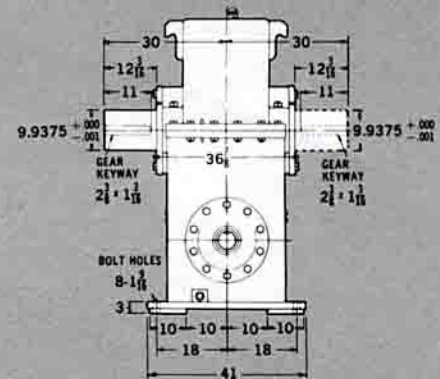
SINGLE REDUCTION
SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE A

Approx. Weight 17,000 lbs.



SER. 25



SER. 25



SER. 26



SER. 27



SER. 27



SER. 28

STANDARD SHAFT ARRANGEMENTS A UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm and/or gear shafts may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.

helical worm gear speed reducers

GENERAL SELECTION GUIDE

Type HA

UNIT SIZES AVAILABLE	CENTER DISTANCE	RATIOS AVAILABLE (APPROX.)	HP CAPACITY RANGE *	OUTPUT TORQUE RANGE CAPACITY (IN. LBS) **	RATINGS & DIMENSIONS SEE PAGES
134	13.4"	30:1 to 420:1	80 to 8	107,500 to 195,000	19
150	15.0"	31:1 to 431:1	115 to 10	145,100 to 258,000	20
180	18.0"	30:1 to 418:1	151 to 15	224,000 to 406,000	21
195	19.5"	30:1 to 328:1	171 to 26	348,500 to 470,000	22
218	21.8"	31:1 to 414:1	222 to 22	370,000 to 627,000	23
240	24.0"	31:1 to 380:1	357 to 31	505,500 to 745,000	24
270	27.0"	30:1 to 282:1	340 to 60	896,000 to 1,055,000	25
300	30.0"	31:1 to 323:1	402 to 60	1,000,000 to 1,320,000	26
360	36.0"	31:1 to 405:1	569 to 56	1,160,000 to 1,867,000	27

*1750 RPM INPUT
** 100 RPM INPUT



Helical worm gear combinations are designed to increase the range of reduction ratio that may be obtained with a right angle drive. In ratios between 5:1 through 250:1, a helical worm gear combination is usually the most economical drive. Standard helical worm units are offered in one type (HA). Hardened helical gears in ratios of approximately 2:1 to 4:1 share the same oil bath with the worm gear secondary reduction. Both the gear and pinion are rigidly supported by heavy duty anti-friction bearings as are the worm and gear shafts.

Cleveland has maintained a balanced design between primary and secondary gear reduction in all helical worm gear units. Extra large helical gearing has been used so that the entire unit is capable of withstanding a 300% momentary overload.

RATING TABLE FOR UNITY SERVICE FACTOR

HELICAL WORM GEAR

CENTERS
13.4365" WORM GEARING
9.000" HELICAL GEARING

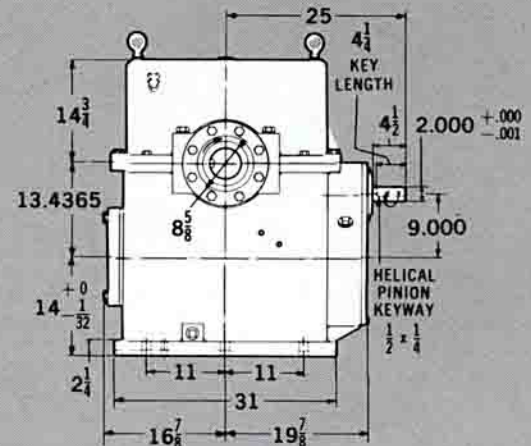
Ratio	Hand of Worm Thread		Input (Pinion) Shaft Speed — R.P.M.								Thermal H.P. Ratings
			1750	1150	870	720	580	300	200	100	
30.89 2.059 HG 15 WG	R	Input H.P.	84.75	70.94	63.72	58.48	52.25	33.53	—	—	39.0
	L	Output Torque	80857	101420	119092	130852	143769	172244	183179	183179	
		Output R.P.M.	56.7	37.2	28.2	23.3	18.8	9.7	6.5	3.24	
32.26 2.059 HG 15 1/2 WG	R	Input H.P.	83.33	69.31	62.61	57.55	51.96	33.82	—	—	38.0
	L	Output Torque	82401	102574	120947	133073	147467	178714	190764	190764	
		Output R.P.M.	54.3	35.6	27.9	22.3	18	9.3	6.2	3.1	
35.69 2.059 HG 17 1/2 WG	R	Input H.P.	75.89	63.61	57.31	52.67	47.25	30.56	—	—	35.0
	L	Output Torque	82733	103720	121940	134035	147636	177437	188952	188952	
		Output R.P.M.	49.1	32.2	24.3	20.1	16.3	8.4	5.6	2.8	
41.18 2.059 HG 20 WG	R	Input H.P.	68.04	56.89	51.47	47.39	42.79	27.97	—	—	31.0
	L	Output Torque	84417	105317	124069	136467	150948	182466	194634	194634	
		Output R.P.M.	42.5	28.0	21.1	17.5	14.1	7.3	4.85	2.43	
44.27 2.059 HG 21 1/2 WG	R	Input H.P.	63.69	53.50	48.35	44.54	40.10	26.16	—	—	29.5
	L	Output Torque	84503	105812	124466	136836	150888	181612	193496	193496	
		Output R.P.M.	39.6	26.0	19.6	16.2	13.1	6.8	4.5	2.26	
48.39 2.059 HG 23 1/2 WG	R	Input H.P.	59.30	49.83	45.14	41.63	37.58	24.67	—	—	27.5
	L	Output Torque	85059	106337	125166	137635	151975	183265	195357	195357	
		Output R.P.M.	36.2	23.8	17.9	14.9	12.0	6.2	4.1	2.06	
52.50 2.059 HG 25 1/2 WG	R	Input H.P.	54.21	45.76	41.21	37.96	33.87	21.94	—	—	26.0
	L	Output Torque	84598	106219	124435	136616	149366	177837	188632	188632	
		Output R.P.M.	33.4	21.9	16.6	13.7	11.1	5.7	3.8	1.91	
63.00 4.200 HG 15 WG	R	Input H.P.	63.32	51.36	43.09	37.69	32.15	—	—	—	39.0
	L	Output Torque	119987	145288	159055	166794	174146	183179	183179	183179	
		Output R.P.M.	27.8	18.3	13.8	11.4	9.2	4.80	3.2	1.58	
72.80 4.200 HG 17 1/2 WG	R	Input H.P.	56.96	46.47	39.11	34.30	29.32	—	—	—	35.0
	L	Output Torque	122882	149236	163613	171763	179439	188952	188952	188952	
		Output R.P.M.	24.0	15.8	12.0	9.89	8.3	4.3	2.9	1.43	
84.00 4.200 HG 20 WG	R	Input H.P.	51.18	42.10	35.59	31.33	26.85	—	—	—	31.0
	L	Output Torque	125072	152652	167763	176440	184506	194634	194634	194634	
		Output R.P.M.	20.8	13.7	10.3	8.6	6.9	3.6	2.4	1.19	
90.30 4.200 HG 21 1/2 WG	R	Input H.P.	48.07	39.45	33.32	29.30	25.12	—	—	—	29.5
	L	Output Torque	125439	152541	167344	175765	183668	193496	193496	193496	
		Output R.P.M.	19.4	12.73	9.63	8.0	6.4	3.3	2.2	1.11	
98.70 4.200 HG 23 1/2 WG	R	Input H.P.	44.89	36.98	31.32	27.59	23.69	—	—	—	27.5
	L	Output Torque	126159	153662	168705	177297	185328	195357	195357	195357	
		Output R.P.M.	17.8	11.65	8.8	7.3	5.9	3.0	2.0	1.1	
119.7 4.20 HG 28 1/2 WG	R	Input H.P.	37.09	30.01	25.29	22.14	18.95	14.69	—	—	24.5
	L	Output Torque	124609	149149	162349	169509	176563	184920	184920	184920	
		Output R.P.M.	14.6	9.62	7.27	6.0	4.85	2.5	1.67	.84	
132.3 4.200 HG 31 1/2 WG	R	Input H.P.	34.17	27.80	23.49	20.61	17.68	—	—	—	21.5
	L	Output Torque	125339	150486	164057	171493	178743	187423	187423	187423	
		Output R.P.M.	13.2	8.7	6.58	5.45	4.4	2.3	1.5	.76	
151.2 4.200 HG 36 WG	R	Input H.P.	30.59	24.94	21.13	18.56	15.96	—	—	—	19.0
	L	Output Torque	124647	149400	162734	170000	177125	185606	185606	185606	
		Output R.P.M.	11.6	7.6	5.75	4.75	3.8	1.98	1.32	.66	
168.0 4.200 HG 40 WG	R	Input H.P.	28.41	23.65	20.19	17.88	15.46	—	—	—	17.5
	L	Output Torque	125422	152358	167056	175393	183241	192971	192971	192971	
		Output R.P.M.	10.4	6.85	5.18	4.3	3.45	1.8	1.19	.60	
180.6 4.200 HG 43 WG	R	Input H.P.	26.90	22.50	19.27	17.10	14.82	—	—	—	16.5
	L	Output Torque	124517	151416	166107	174463	182306	192059	192059	192059	
		Output R.P.M.	9.7	6.37	4.8	3.99	3.2	1.66	1.11	.55	
197.4 4.200 HG 47 WG	R	Input H.P.	24.75	20.75	17.79	15.80	13.71	—	—	—	15.0
	L	Output Torque	122795	149173	163567	171732	179417	188948	188948	188948	
		Output R.P.M.	8.9	5.83	4.4	3.64	2.9	1.52	1.01	.51	
231.0 4.200 HG 55 WG	R	Input H.P.	20.42	16.84	14.40	12.72	11.01	—	—	—	13.0
	L	Output Torque	116884	140048	152522	159312	165977	173902	173902	173902	
		Output R.P.M.	7.6	4.98	3.77	3.1	2.5	1.3	.86	.43	
256.2 4.200 HG 61 WG	R	Input H.P.	18.46	15.38	13.22	11.71	10.18	—	—	—	12.0
	L	Output Torque	113428	136482	148950	155829	162490	170519	170519	170519	
		Output R.P.M.	6.56	4.48	3.4	2.8	2.26	1.17	.78	.39	
298.2 4.200 HG 71 WG	R	Input H.P.	15.11	12.55	10.81	9.59	8.33	—	—	—	10.5
	L	Output Torque	104089	124617	135662	141658	147560	154558	154558	154558	
		Output R.P.M.	5.87	3.86	2.91	2.41	1.95	1.01	.67	.33	
331.8 4.200 HG 79 WG	R	Input H.P.	12.68	10.48	9.01	7.99	6.93	—	—	—	9.3
	L	Output Torque	94879	112933	122449	127562	132708	138675	138675	138675	
		Output R.P.M.	5.29	3.47	2.62	2.17	1.75	0.90	.60	.30	
373.8 4.200 HG 89 WG	R	Input H.P.	10.49	8.73	7.53	6.70	5.82	—	—	—	8.3
	L	Output Torque	84923	101195	109782	114397	119029	124415	124415	124415	
		Output R.P.M.	4.7	3.08	2.33	1.93	1.55	0.80	.54	.27	
420.0 4.200 HG 100 WG	R	Input H.P.	8.62	7.21	6.26	5.58	4.87	—	—	—	7.4
	L	Output Torque	74097	88309	95812	99843	103888	108593	108593	108593	
		Output R.P.M.	4.17	2.74	2.07	1.73	1.38	.72	.48	.24	

Output torque ratings in inch pounds. • Gear shaft overhung load capacity at center of keyway 8,000 lbs. • Consult factory for helical reduction worm gear combinations not listed. • Thermal horsepower ratings listed may be increased by installation of internal water cooling coils or by means of an external oil cooling system.

SIZE 134

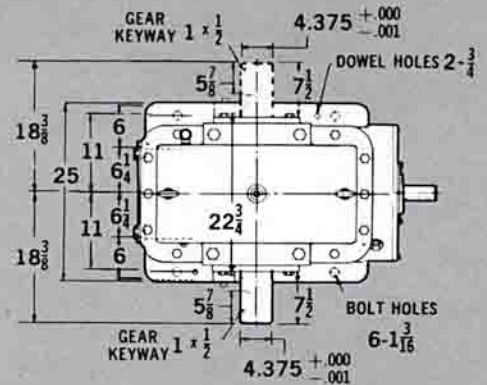
HELICAL-WORM SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



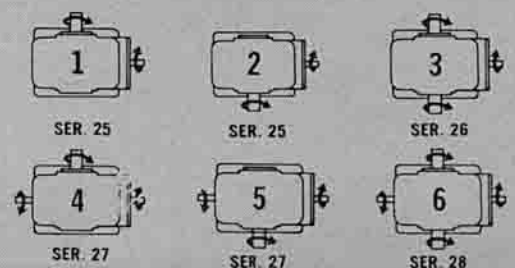
TYPE HA

Approx. Weight 2,700 lbs.



STANDARD SHAFT ARRANGEMENTS HA UNITS

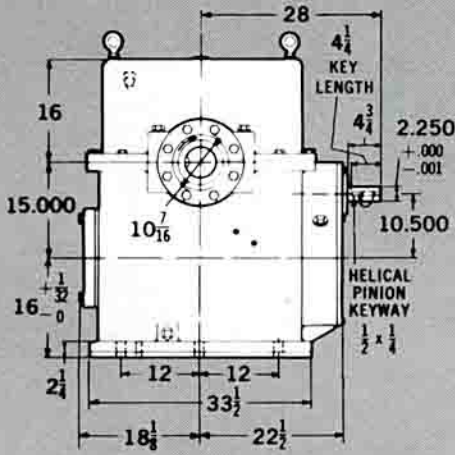
When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended and/or gear shaft may be double extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



HELICAL-WORM SPEED REDUCERS

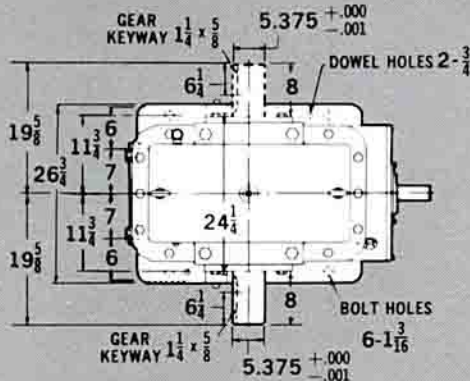
Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.

SIZE 150



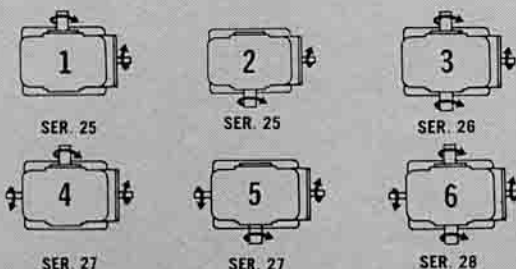
TYPE HA

Approx. Weight 3,600 lbs.



STANDARD SHAFT ARRANGEMENTS HA UNITS

When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended and/or gear shaft may be double extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



RATING TABLE FOR UNITY SERVICE FACTOR

CENTERS

15.000" WORM GEARING

10.500" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread		Input (Pinion) Shaft Speed — R.P.M.								Thermal H. P. Ratings
			1750	1150	870	720	580	300	200	100	
31.62 2.156HG 14 3/4 WG	R	Input H. P. Output Torque Output R. P. M.	109.02 106712 55.3	89.98 132282 36.4	81.40 156145 27.5	75.02 172615 22.8	67.71 191491 18.3	44.09 233546 9.5	247869 247869 6.3	— 247869 3.2	48.0
38.09 2.156HG 17 3/4 WG	R	Input H. P. Output Torque Output R. P. M.	92.23 107584 46	77.23 135046 30.3	69.56 158560 22.8	63.89 174346 18.9	57.24 191925 15.2	36.89 230527 7.9	— 243728 5.3	— 243728 2.6	41.5
43.12 2.156HG 20 WG	R	Input H. P. Output Torque Output R. P. M.	84.87 111031 40.5	70.24 137494 26.7	63.75 162364 17.5	58.92 179638 16.7	53.34 199320 14.4	35.05 243380 7.0	— 258376 4.6	— 258376 2.3	38.0
49.59 2.156 HG 23 WG	R L	Input H. P. Output Torque Output R. P. M.	73.17 109334 35.4	61.56 137432 23.2	55.36 160817 15.2	50.89 176619 14.5	45.30 193025 11.7	29.13 229729 6.1	— 242048 4.0	— 242048 2.0	33.5
57.13 2.156HG 26 1/2 WG	R	Input H. P. Output Torque Output R. P. M.	65.36 1110575 30.6	55.12 138889 20.2	49.77 162820 13.7	45.88 178934 12.6	41.10 196328 10.2	26.73 234837 5.3	— 247899 3.5	— 247899 1.8	30.0
63.30 4.316 HG 14 3/4 WG	R	Input H. P. Output Torque Output R. P. M.	81.47 155909 27.6	67.30 192390 18.2	57.06 212173 11.4	50.35 224047 11.3	42.91 235242 9.2	— 247869 4.7	— 247869 3.2	— 247869 1.6	48.0
76.25 4.316 HG 17 3/4 WG	R	Input H. P. Output Torque Output R. P. M.	69.63 158348 22.9	56.87 192736 15.1	48.04 211190 11.4	42.19 221904 9.5	35.91 232220 7.6	— 243728 3.9	— 243728 2.6	— 243728 1.3	41.8
86.32 4.316 HG 20 WG	R	Input H. P. Output Torque Output R. P. M.	63.80 162117 20.3	53.02 200263 13.3	45.10 220963 10.1	39.93 233417 8.3	34.13 245159 6.7	— 258376 3.5	— 258376 2.3	— 258376 1.2	38.0
99.27 4.316 HG 23 WG	R	Input H. P. Output Torque Output R. P. M.	55.42 160619 17.6	45.00 193782 11.6	37.99 211443 8.8	33.28 221441 7.2	28.35 231308 5.8	— 242048 3.0	— 242048 2.0	— 242048 1.0	33.5
114.4 4.316 HG 26 1/2 WG	L	Input H. P. Output Torque Output R. P. M.	49.82 162610 15.3	40.83 197131 10.1	34.63 215593 7.6	30.47 226194 6.3	26.03 236512 5.1	— 247899 2.6	— 247899 1.75	— 247899 .88	30.0
129.5 4.316 HG 30 WG	R	Input H. P. Output Torque Output R. P. M.	44.54 162923 13.5	36.54 197375 8.9	31.02 215791 6.7	27.30 226345 5.6	23.35 236636 4.5	— 247972 2.3	— 247972 1.5	— 247972 .77	27.0
151.1 4.316 HG 35 WG	R	Input H. P. Output Torque Output R. P. M.	39.13 162249 11.6	32.18 196117 7.6	27.39 214183 5.8	24.13 224469 4.8	20.69 234564 3.8	— 245613 2.0	— 245613 1.3	— 245613 .66	23.5
168.3 4.316 HG 39 WG	R	Input H. P. Output Torque Output R. P. M.	36.57 162296 10.4	30.98 200563 6.85	26.66 221336 5.2	23.83 233843 4.3	20.59 245636 3.45	— 258901 1.8	— 258901 1.2	— 258901 .59	21.5
189.9 4.316 HG 44 WG	R	Input H. P. Output Torque Output R. P. M.	32.44 160950 9.2	27.26 197128 6.1	23.41 216637 4.6	20.85 228145 3.8	17.99 239056 3.1	— 251418 1.6	— 251418 1.1	— 251418 .53	19.5
211.5 4.316 HG 49 WG	R	Input H. P. Output Torque Output R. P. M.	28.89 156601 8.3	24.05 189552 5.5	20.63 207152 4.1	18.28 217213 3.4	15.77 227048 2.75	— 237855 1.4	— 237855 .95	— 237855 .47	17.5
228.8 4.316 HG 53 WG	R L	Input H. P. Output Torque Output R. P. M.	26.69 153770 7.7	22.25 185963 5.04	19.12 203144 3.8	16.95 212941 3.1	14.65 222542 2.5	— 233065 1.3	— 233065 .88	— 233065 .44	16.5
237.4 4.316 HG 55 WG	R	Input H. P. Output Torque Output R. P. M.	25.50 151574 7.4	21.17 182679 4.9	18.18 199228 3.7	16.09 208568 3.0	13.90 217813 2.4	— 227845 1.27	— 227845 .85	— 227845 .42	15.5
259.0 4.316 HG 60 WG	R	Input H. P. Output Torque Output R. P. M.	23.17 147858 6.8	19.38 178787 4.4	16.68 195292 3.4	14.81 204700 2.8	12.82 213922 2.2	— 224027 1.2	— 224027 .77	— 224027 .39	14.5
306.4 4.316 HG 71 WG	R	Input H. P. Output Torque Output R. P. M.	18.64 135015 5.7	15.58 162587 3.75	13.45 177245 2.8	11.94 185496 2.3	10.36 193685 1.9	— 202548 98	— 202548 .65	— 202548 .33	12.5
345.3 4.316 HG 80 WG	R L	Input H. P. Output Torque Output R. P. M.	15.88 122734 5.1	13.33 147602 3.3	11.57 160806 2.5	10.29 168208 2.1	8.96 175583 1.7	— 183533 88	— 183533 .58	— 183533 .26	11.0
431.6 4.316 100 WG	R	Input H. P. Output Torque Output R. P. M.	10.82 97181 4.1	9.22 117231 2.7	8.05 127907 2.0	7.20 133948 1.67	6.30 139913 1.3	— 146403 69	— 146403 .46	— 146403 .23	9.0

Output torque ratings in inch pounds. • Gear shaft overhung load capacity at center of keyway 9,000 lbs. • Consult factory for helical reduction worm gear combinations not listed. • Thermal horsepower ratings listed may be increased by installation of internal water cooling coils or by means of an external oil cooling system.

RATING TABLE FOR UNITY SERVICE FACTOR

18.000" WORM GEARING
12.000" HELICAL GEARING

HELICAL WORM GEAR

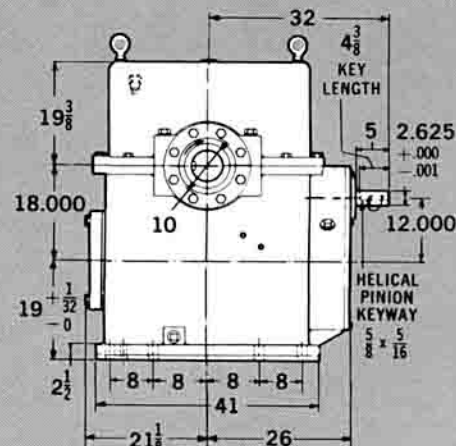
Ratio	Hand of Worm Thread		Input (Pinion) Shaft Speed— R.P.M.								Thermal H.P. Ratings
			1750	1150	870	720	580	300	200	100	
30.80	R	Input H.P.	159.19	131.40	117.34	109.21	99.16	66.81	—	—	
2.053 HG		Output Torque	153222	190051	221924	247765	276357	350225	378104	378104	64.5
15 WG	L	Output R.P.M.	56.8	37.3	28.2	23.4	18.8	9.8	6.5	3.2	
33.53	R	Input H.P.	147.11	121.51	108.69	101.23	91.85	61.33	—	—	
2.053 HG		Output Torque	153478	190314	222448	248478	276688	346954	373556	373556	60.5
16½ WG	L	Output R.P.M.	52.3	34.4	26.0	21.5	17.3	9.0	6.0	3.0	
36.27	R	Input H.P.	139.03	114.96	102.88	95.86	87.07	58.44	—	—	
2.053 HG		Output Torque	156104	193585	226212	252648	281458	353938	381354	381354	57.0
17¾ WG	L	Output R.P.M.	48.3	31.8	24.0	19.7	16.0	8.3	5.5	2.8	
41.06	R	Input H.P.	127.20	105.38	94.32	87.94	80.14	54.90	—	—	
2.053 HG		Output Torque	160092	198615	231754	258640	288853	368966	399136	399136	51.5
20 WG	L	Output R.P.M.	42.7	28.0	21.2	17.5	14.1	7.3	4.9	2.4	
44.14	R	Input H.P.	119.37	99.02	88.76	82.83	75.50	51.54	—	—	
2.053 HG		Output Torque	160375	198933	232257	259280	289282	367251	396663	396663	48.5
21½ WG	L	Output R.P.M.	39.7	26.1	19.7	16.3	13.2	6.8	4.5	2.3	
50.30	R	Input H.P.	105.68	87.72	78.72	73.50	66.98	45.49	—	—	
2.053 HG		Output Torque	161144	199853	233468	260711	290588	366593	395315	395315	44.0
24½ WG	L	Output R.P.M.	34.8	22.8	17.3	14.3	11.5	6.0	4.0	2.0	
54.40	R	Input H.P.	98.17	81.62	73.41	68.61	62.53	42.17	—	—	
2.053 HG		Output Torque	160381	198852	232515	259774	289079	360994	388256	388256	41.0
26½ WG	L	Output R.P.M.	32.2	21.2	16.0	13.3	10.7	5.5	3.7	1.8	
64.10	R	Input H.P.	115.70	96.93	83.05	73.55	63.47	—	—	—	
4.273 HG		Output Torque	226013	283558	316988	337419	356047	378104	378104	378104	64.5
15 WG	L	Output R.P.M.	27.4	17.9	13.6	11.2	9.1	4.7	3.1	1.6	
69.79	R	Input H.P.	107.07	89.66	76.38	67.63	58.22	—	—	—	
4.273 HG		Output Torque	226310	283489	315066	334857	352452	373556	373556	373556	60.5
16½ WG	L	Output R.P.M.	25.1	16.5	12.5	10.3	8.3	4.3	2.9	1.4	
78.34	R	Input H.P.	98.70	82.87	70.94	62.91	54.31	—	—	—	
4.273 HG		Output Torque	231981	290860	324374	345063	363738	385963	385963	385963	55.5
18½ WG	L	Output R.P.M.	22.4	14.7	11.1	9.2	7.4	3.8	2.5	1.3	
85.46	R	Input H.P.	93.11	78.48	67.77	60.23	52.24	—	—	—	
4.273 HG		Output Torque	236211	296700	333133	355009	375310	399136	399136	399136	51.5
20 WG	L	Output R.P.M.	20.5	13.5	10.2	8.4	6.8	3.5	2.3	1.2	
91.87	R	Input H.P.	87.58	73.88	63.62	56.57	49.03	—	—	—	
4.273 HG		Output Torque	236579	296891	332217	353719	373403	396663	396663	396663	48.5
21½ WG	L	Output R.P.M.	19.0	12.5	9.5	7.8	6.3	3.3	2.2	1.1	
104.7	R	Input H.P.	77.63	65.49	56.21	49.98	43.26	—	—	—	
4.273 HG		Output Torque	237663	297975	332272	353454	372565	395315	395315	395315	44.0
24½ WG	L	Output R.P.M.	16.7	11.0	8.3	6.9	5.5	2.9	1.9	.96	
109.0	R	Input H.P.	74.96	63.27	54.12	48.14	41.60	—	—	—	
4.273 HG		Output Torque	236723	296475	329322	349872	368139	390085	390085	390085	42.5
25½ WG	L	Output R.P.M.	16.0	10.5	8.0	6.6	5.3	2.8	1.8	.92	
113.2	R	Input H.P.	72.44	61.07	52.21	46.40	40.09	—	—	—	
4.273 HG		Output Torque	236815	296020	328451	348650	366605	388256	388256	388256	41.0
26½ WG	L	Output R.P.M.	15.4	10.2	7.7	6.4	.51	.27	1.77	.88	
128.2	R	Input H.P.	64.82	54.83	46.95	41.80	36.16	—	—	—	
4.273 HG		Output Torque	237589	297450	330274	350776	369001	390925	390925	390925	37.0
30 WG	L	Output R.P.M.	13.7	9.0	6.8	5.6	4.5	2.4	1.6	.78	
149.6	R	Input H.P.	56.28	47.25	40.38	35.84	30.98	—	—	—	
4.273 HG		Output Torque	236568	293146	323963	342829	359599	380108	380108	380108	32.5
35 WG	L	Output R.P.M.	11.7	7.7	5.8	4.8	3.9	2.0	1.3	.67	
170.9	R	Input H.P.	51.41	43.99	38.02	34.08	29.70	—	—	—	
4.273 HG		Output Torque	236500	296446	330270	351242	370089	392571	392571	392571	28.5
40 WG	L	Output R.P.M.	10.2	6.7	5.1	4.2	3.4	1.8	1.2	.59	
213.6	R	Input H.P.	41.19	35.45	30.80	27.69	24.22	—	—	—	
4.273 HG		Output Torque	229215	287448	320805	341333	359920	382006	382006	382006	24.0
50 WG	L	Output R.P.M.	8.2	5.4	4.1	3.4	2.7	1.4	.94	.47	
226.5	R	Input H.P.	38.54	32.99	28.48	25.54	22.26	—	—	—	
4.273 HG		Output Torque	224637	279761	309886	328517	345077	365162	365162	365162	22.5
53 WG	L	Output R.P.M.	7.7	5.1	3.8	3.2	2.6	1.3	.88	.44	
273.5	R	Input H.P.	31.29	27.03	23.44	21.12	18.48	—	—	—	
4.273 HG		Output Torque	210175	262222	290699	308372	324081	343079	343079	343079	18.5
64 WG	L	Output R.P.M.	6.4	4.2	3.2	2.6	2.1	1.1	.73	.37	
299.1	R	Input H.P.	27.49	23.66	20.51	18.45	16.13	—	—	—	
4.273 HG		Output Torque	200188	248602	275011	291250	305686	323275	323275	323275	17.0
70 WG	L	Output R.P.M.	5.8	3.8	2.9	2.4	1.9	1.0	.67	.33	
337.6	R	Input H.P.	22.52	19.19	16.62	14.87	12.99	—	—	—	
4.273 HG		Output Torque	181247	222442	244693	258036	269897	284661	284661	284661	15.5
79 WG	L	Output R.P.M.	5.2	3.4	2.6	2.1	1.7	.89	.59	.30	
418.8	R	Input H.P.	15.65	13.40	11.67	10.46	9.18	—	—	—	
4.273 HG		Output Torque	144506	176366	193525	203668	212817	224032	224032	224032	12.5
98 WG	L	Output R.P.M.	4.2	2.75	2.1	1.7	1.4	.72	.48	.24	

Output torque ratings in inch pounds. • Gear shaft overhung load capacity at center of keyway 10,000 lbs. • Consult factory for helical reduction worm gear combinations not listed. • Thermal horsepower ratings listed may be increased by installation of internal water cooling coils or by means of an external oil cooling system.

SIZE
180

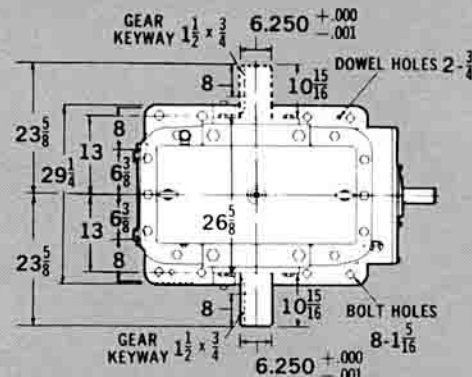
HELICAL-WORM SPEED REDUCERS

Dimensions in Inches
Dimensions Subject to Change.
Use Certified Prints
Only for Construction



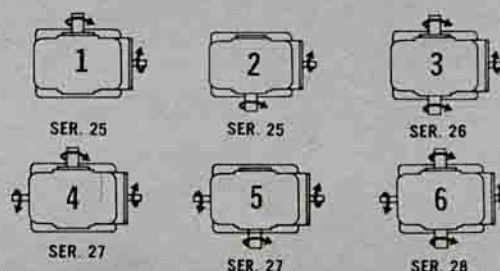
TYPE HA

Approx. Weight 5,000 lbs.



STANDARD SHAFT ARRANGEMENTS HA UNITS

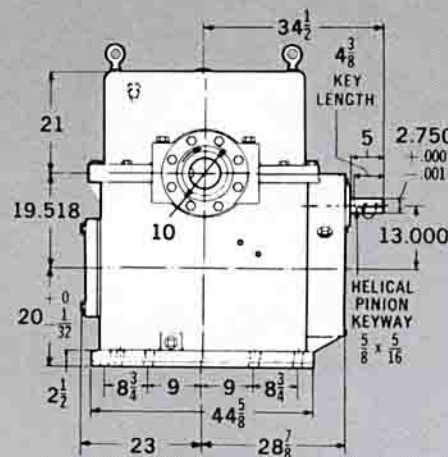
When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended and/or gear shaft may be double extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



HELICAL-WORM SPEED REDUCERS

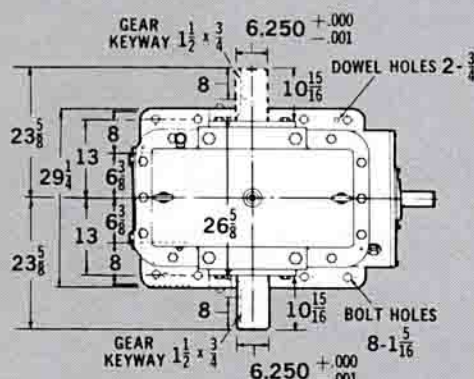
SIZE 195

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints.
Only for Construction.



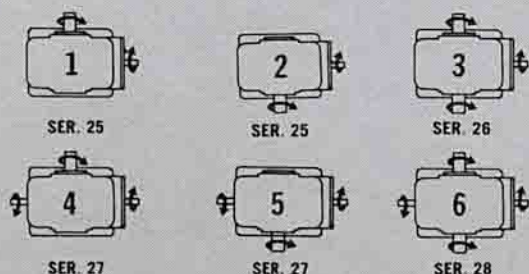
TYPE HA

Approx. Weight 6,000 lbs.



STANDARD SHAFT ARRANGEMENTS HA UNITS

When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended and/or gear shaft may be double extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



RATING TABLE FOR UNITY SERVICE FACTOR

CENTERS

19.518" WORM GEARING

13.000" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread		Input (Pinion) Shaft Speed — R.P.M.								Thermal H.P. Ratings
			1750	1150	870	720	580	300	200	100	
30.45 2.030 HG 15 WG	R	Input H.P.	185.57	153.08	136.51	126.95	115.20	77.91	—	—	74.0
		Output Torque	177443	220027	256931	286859	320294	407065	441002	441002	
	L	Output R.P.M.	57.5	37.7	28.5	23.6	19.0	9.85	6.6	3.28	
33.50 2.030 HG 16 1/2 WG	R	Input H.P.	172.60	142.51	127.18	118.34	107.45	72.78	—	—	69.0
		Output Torque	180673	224029	261617	292100	326115	414221	448686	448686	
	L	Output R.P.M.	52.3	34.4	26.0	21.5	17.3	9.0	6.0	3.0	
35.86 2.030 HG 17 1/2 WG	R	Input H.P.	161.46	133.38	119.21	110.99	100.69	67.54	—	—	65.5
		Output Torque	180331	223545	261307	291903	325329	408807	441551	441551	
	L	Output R.P.M.	48.8	32.2	24.3	20.0	16.2	8.4	5.6	2.8	
40.60 2.030 HG 20 WG	R	Input H.P.	147.23	121.80	108.92	101.47	92.22	62.47	—	—	59.5
		Output Torque	184793	229113	267662	298911	333481	421718	456271	456271	
	L	Output R.P.M.	43.2	28.4	21.4	17.7	14.3	7.4	4.9	2.46	
47.71 2.030 HG 23 1/2 WG	R	Input H.P.	129.30	107.23	96.02	89.55	81.60	55.93	—	—	52.0
		Output Torque	188272	233462	272589	304323	339861	432455	468658	468658	
	L	Output R.P.M.	36.8	24.1	18.3	15.1	12.2	6.3	4.2	2.1	
53.80 2.030 HG 26 1/2 WG	R	Input H.P.	117.21	97.36	87.28	81.49	74.41	51.55	—	—	47.0
		Output Torque	190293	235914	275305	307270	343477	439591	477120	477120	
	L	Output R.P.M.	32.6	21.4	16.1	13.4	10.8	5.6	3.7	1.86	
63.95 4.263 HG 15 WG	R	Input H.P.	134.12	112.30	96.01	85.31	73.29	—	—	—	74.0
		Output Torque	263078	329915	369600	392773	415232	441002	441002	441002	
	L	Output R.P.M.	27.4	18.1	13.7	11.3	9.1	4.7	3.1	1.57	
70.34 4.263 HG 16 1/2 WG	R	Input H.P.	124.96	104.75	89.60	79.66	68.48	—	—	—	69.0
		Output Torque	257857	335880	376161	399715	422511	448686	448686	448686	
	L	Output R.P.M.	25.0	16.4	12.4	10.2	8.2	4.3	2.8	1.42	
75.31 4.263 HG 17 1/2 WG	R	Input H.P.	116.97	97.99	83.31	74.05	63.49	—	—	—	65.5
		Output Torque	267178	334516	372415	395159	416607	441551	441551	441551	
	L	Output R.P.M.	23.2	15.2	11.5	9.6	7.7	4.0	2.7	1.33	
85.26 4.263 HG 20 WG	R	Input H.P.	106.98	89.88	76.79	68.36	58.78	—	—	—	59.5
		Output Torque	273893	343234	383462	407230	429996	456271	456271	456271	
	L	Output R.P.M.	20.5	13.5	10.2	8.5	6.8	3.5	2.3	1.18	
93.94 3.545 HG 26 1/2 WG	R	Input H.P.	91.66	78.69	69.55	62.65	55.12	—	—	—	47.0
		Output Torque	253047	323545	370899	398990	427478	477120	477120	477120	
	L	Output R.P.M.	18.5	12.2	9.5	7.6	6.1	3.2	2.1	1.06	
100.2 4.263 HG 23 1/2 WG	R	Input H.P.	94.91	79.64	68.44	61.06	52.70	—	—	—	52.0
		Output Torque	279153	350135	392515	417192	441176	468658	468658	468658	
	L	Output R.P.M.	17.5	11.5	8.7	7.2	5.8	3.0	2.0	1.0	
113.0 4.263 HG 26 1/2 WG	R	Input H.P.	85.91	72.73	62.84	56.16	48.63	—	—	—	47.0
		Output Torque	282142	354178	398321	423693	448675	477120	477120	477120	
	L	Output R.P.M.	15.4	10.2	7.7	6.4	5.1	2.65	1.77	.88	
127.9 4.263 HG 30 WG	R	Input H.P.	76.88	65.18	56.17	50.25	43.49	—	—	—	42.5
		Output Torque	281898	353546	396201	421075	445214	472895	472895	472895	
	L	Output R.P.M.	13.7	9.0	6.9	5.0	4.5	2.34	1.56	.78	
144.0 3.348 HG 43 WG	R	Input H.P.	60.48	52.45	46.85	42.41	37.48	—	—	—	31.0
		Output Torque	240293	307053	351883	379247	407001	457738	458738	458738	
	L	Output R.P.M.	12.2	8.0	6.0	5.0	4.0	2.08	1.39	.69	
161.8 3.762 HG 43 WG	R	Input H.P.	58.13	50.07	44.15	39.64	34.88	—	—	—	31.0
		Output Torque	257367	324715	369518	394613	420078	420078	420078	420078	
	L	Output R.P.M.	10.8	7.1	5.4	4.4	3.6	1.85	1.23	.62	
183.3 4.263 HG 43 WG	R	Input H.P.	55.69	47.65	41.10	36.96	32.08	—	—	—	31.0
		Output Torque	276016	345802	385936	409754	432467	432467	432467	432467	
	L	Output R.P.M.	9.6	6.3	4.7	3.9	3.2	1.64	1.09	.55	
225.9 4.263 HG 53 WG	R	Input H.P.	44.18	37.53	32.23	28.88	25.01	—	—	—	26.5
		Output Torque	263154	326142	361032	381500	400798	423675	423675	423675	
	L	Output R.P.M.	7.8	5.1	3.8	3.2	2.6	1.33	.88	.44	
255.8 4.263 HG 60 WG	R	Input H.P.	39.52	34.19	29.74	26.89	23.49	—	—	—	23.0
		Output Torque	256099	321012	358971	381308	402790	427532	427532	427532	
	L	Output R.P.M.	6.8	4.5	3.4	2.8	2.3	1.17	.78	.39	
298.4 4.263 HG 70 WG	R	Input H.P.	32.07	27.73	24.00	21.70	18.92	—	—	—	20.0
		Output Torque	235416	293704	326139	345415	363590	384905	384905	384905	
	L	Output R.P.M.	5.9	3.85	2.9	2.4	1.9	1.05	.67	.34	
328.3 4.263 HG 77 WG	R	Input H.P.	27.75	23.96	20.76	18.76	16.37	—	—	—	18.0
		Output Torque	218591	271445	300763	318030	334310	353546	353546	353546	
	L	Output R.P.M.	5.3	3.5	2.6	2.2	1.8	.93	.61	.30	

Output torque ratings in inch pounds. • Gear shaft overhung load capacity at center of keyway 11,000 lbs. • Consult factory for helical reduction worm gear combinations not listed. • Thermal horsepower ratings listed may be increased by installation of internal water cooling coils or by means of an external oil cooling system.

RATING TABLE FOR UNITY SERVICE FACTOR

CENTERS

21.837" WORM GEARING

14.000" HELICAL GEARING

HELICAL WORM GEAR

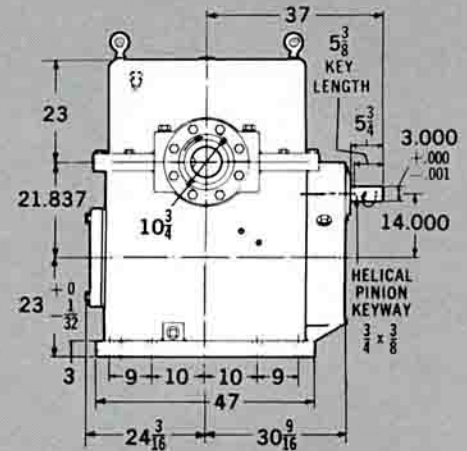
Ratio	Hand of Worm Thread	Input (Pinion) Shaft Speed — R.P.M.	Thermal H. P. Ratings							
			1750	1150	870	720	580	300	200	100
30.00 2.000 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	239.95 235504 56.0	199.11 294055 36.7	175.57 339617 27.8	163.43 379411 23.0	150.46 430044 18.5	106.01 568102 9.6	622019 622019 6.4	90.0 — 3.2
32.00 2.000 HG 16 WG	R	Input H.P. Output Torque Output R.P.M.	227.63 237473 52.5	189.06 296560 34.6	166.69 342305 26.0	155.30 382608 21.6	143.03 433644 17.4	100.82 572108 9.0	626015 626015 6.0	85.5 — 3.0
36.00 2.000 HG 18 WG	R	Input H.P. Output Torque Output R.P.M.	206.13 240353 46.7	171.48 300249 30.6	151.16 346148 23.2	141.07 387296 19.2	130.01 438911 15.4	91.68 577544 8.0	631174 631174 5.3	78.0 — 2.7
40.00 2.000 HG 20 WG	R	Input H.P. Output Torque Output R.P.M.	189.06 243487 42.0	157.49 304220 27.6	138.85 350478 21.5	129.75 392375 17.3	119.64 444639 13.9	84.47 584176 7.2	637947 637947 4.8	72.0 — 2.4
50.00 2.000 HG 25 WG	R	Input H.P. Output Torque Output R.P.M.	155.73 246701 33.6	130.18 308340 22.1	114.89 354759 17.4	107.66 397608 13.8	99.44 450517 11.1	70.52 590206 8.8	643646 643646 3.8	60.0 — 1.9
62.15 4.143 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	176.60 337718 28.2	150.46 430044 18.5	132.37 494438 14.4	119.19 533413 11.5	104.13 573004 9.3	— 622019 4.8	622019 622019 3.2	90.0 — 1.6
66.29 4.143 HG 16 WG	R	Input H.P. Output Torque Output R.P.M.	167.68 340405 26.4	143.03 433644 17.4	125.87 498332 13.1	113.31 537299 10.8	99.02 577009 8.8	— 626015 4.5	626015 626015 3.0	85.5 — 1.5
74.57 4.143 HG 18 WG	R	Input H.P. Output Torque Output R.P.M.	152.06 344259 23.5	130.01 438911 15.5	114.45 503891 11.7	102.97 542658 9.7	90.05 582420 7.8	— 631174 4.0	631174 631174 2.7	78.0 — 1.3
82.86 4.143 HG 20 WG	R	Input H.P. Output Torque Output R.P.M.	139.68 348583 21.2	119.64 444639 13.9	105.39 510171 10.5	94.80 549041 8.7	82.97 589064 7.0	— 637947 3.6	637947 637947 2.4	72.0 — 1.2
92.40 3.696 HG 25 WG	R	Input H.P. Output Torque Output R.P.M.	121.76 333672 19.0	103.78 422719 12.5	92.46 489536 9.4	84.41 532459 7.8	74.28 574417 6.3	— 643646 3.26	643646 643646 2.2	60.0 — 1.1
103.6 4.143 HG 25 WG	R	Input H.P. Output Torque Output R.P.M.	115.57 352877 17.0	99.44 450517 11.2	87.78 516363 8.5	78.98 554993 7.0	69.28 595064 5.6	— 595064 2.9	595064 595064 1.9	60.0 — .97
124.3 4.143 HG 30 WG	R	Input H.P. Output Torque Output R.P.M.	98.72 354059 14.1	85.28 452238 9.3	75.47 518044 7.0	67.96 556424 5.8	59.75 596393 4.7	— 644660 2.5	644660 644660 1.6	51.5 — .80
147.8 3.696 HG 40 WG	R	Input H.P. Output Torque Output R.P.M.	78.27 325834 12.2	67.73 415746 7.8	60.28 477292 6.1	54.61 513848 5.0	48.20 551485 3.9	— 611409 2.1	611409 611409 1.35	40.0 — .68
165.7 4.143 HG 40 WG	R	Input H.P. Output Torque Output R.P.M.	75.21 348140 10.6	64.66 439420 7.0	56.94 500139 5.4	51.11 533901 4.3	44.86 569070 3.5	— 611409 1.9	611409 611409 1.2	40.0 — .60
186.4 4.143 HG 45 WG	R	Input H.P. Output Torque Output R.P.M.	68.76 346541 9.4	60.01 442384 6.2	53.60 507102 4.7	48.53 545119 3.9	42.98 584520 3.1	— 632330 1.7	632330 632330 1.1	36.0 — .54
207.2 4.143 HG 50 WG	R	Input H.P. Output Torque Output R.P.M.	61.31 337857 8.5	53.73 432018 5.6	47.97 494230 4.2	43.35 530005 3.5	38.44 567620 2.8	— 612807 1.45	612807 612807 .97	32.5 — .48
232.0 4.143 HG 56 WG	R	Input H.P. Output Torque Output R.P.M.	54.25 329120 7.5	47.63 420621 5.0	42.65 481500 3.8	38.62 516752 3.1	34.31 553643 2.5	— 598075 1.3	598075 598075 .86	29.5 — .43
248.6 4.143 HG 60 WG	R	Input H.P. Output Torque Output R.P.M.	50.53 321071 7.0	44.53 410439 4.6	39.97 469701 3.5	36.22 503905 2.9	32.25 539778 2.3	— 582932 1.2	582932 582932 .80	27.5 — .37
273.4 4.143 HG 66 WG	R	Input H.P. Output Torque Output R.P.M.	45.07 307545 6.4	39.83 392993 4.2	35.88 449949 3.2	32.58 482989 2.6	29.07 517523 2.1	— 559144 1.1	559144 559144 .73	25.5 — .37
294.2 4.143 HG 71 WG	R	Input H.P. Output Torque Output R.P.M.	40.21 294377 5.9	35.43 374455 3.9	31.77 427515 2.9	28.72 457348 2.4	25.63 489200 2.0	— 527146 1.0	527146 527146 .88	23.5 — .34
306.6 4.143 HG 74 WG	R	Input H.P. Output Torque Output R.P.M.	37.66 285214 5.7	33.14 361726 3.75	29.68 412497 2.8	26.84 440902 2.3	23.93 471001 1.9	— 506970 .98	506970 506970 .65	23.0 — .33
327.3 4.143 HG 79 WG	R	Input H.P. Output Torque Output R.P.M.	34.36 270681 5.4	30.32 342912 3.5	27.20 390869 2.7	24.64 417662 2.2	22.00 445943 1.8	— 479796 .92	479796 479796 .61	21.5 — .30
372.9 4.143 HG 90 WG	R	Input H.P. Output Torque Output R.P.M.	27.10 237530 4.7	23.80 298166 3.1	21.15 337409 2.3	19.22 359409 2.0	17.03 395949 1.6	— 408726 .80	408726 408726 .54	19.0 — .27
414.3 4.143 HG 100 WG	R	Input H.P. Output Torque Output R.P.M.	22.90 211437 4.2	20.50 269169 2.8	18.60 307408 2.1	16.92 328986 1.7	15.24 351968 1.4	— 379383 .73	379383 379383 .48	18.0 — .24

Output torque ratings in inch pounds. • Gear shaft overhung load capacity at center of keyway 12,000 lbs. • Consult factory for helical reduction worm gear combinations not listed. • Thermal horsepower ratings listed may be increased by installation of internal water cooling coils or by means of an external oil cooling system.

SIZE 218

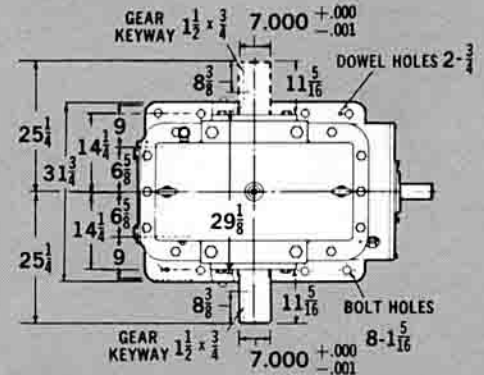
HELICAL-WORM SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



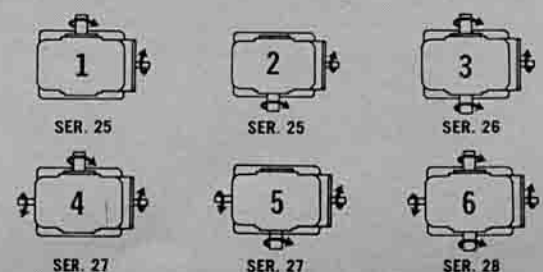
TYPE HA

Approx. Weight 7,500 lbs.



STANDARD SHAFT ARRANGEMENTS HA UNITS

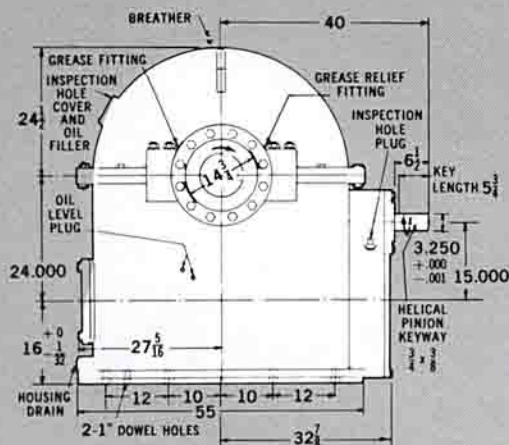
When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended and/or gear shaft may be double extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



HELICAL-WORM SPEED REDUCERS

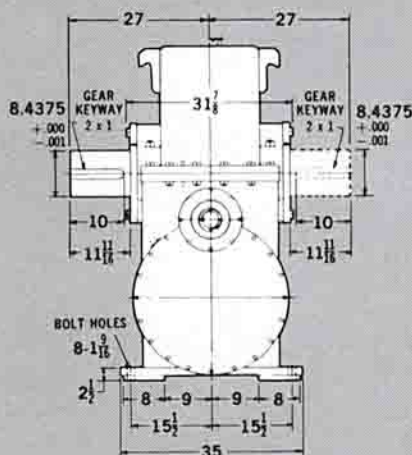
SIZE 240

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



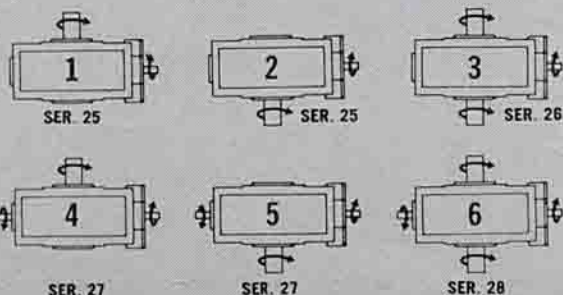
TYPE HA

Approx. Weight 8,800 lbs.



STANDARD SHAFT ARRANGEMENTS HA UNITS

When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended and/or gear shaft may be double extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



RATING TABLE FOR UNITY SERVICE FACTOR

CENTERS

27.000" WORM GEARING

17.000" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread	Input (Pinion) Shaft Speed— R.P.M.								
			1750	1150	870	720	580	300	200	100
31.31	R	Input H.P.	287.12	239.37	210.93	195.16	179.82	127.97	—	—
2.053 HG		Output Torque	283119	355200	410008	455286	516175	693057	765993	765993
15 1/4 WG	L	Output R.P.M.	56.0	36.8	28.0	23.0	18.5	9.6	6.4	3.2
34.39	R	Input H.P.	264.01	219.24	193.50	179.87	165.68	116.90	—	—
2.053 HG		Output Torque	285044	355936	411330	458650	519775	690500	759309	759309
16 3/4 WG	L	Output R.P.M.	51.0	33.5	25.0	20.6	16.9	8.7	5.8	2.9
36.95	R	Input H.P.	247.98	205.97	181.74	169.26	155.94	109.79	—	—
2.053 HG		Output Torque	286713	357830	413201	461432	522849	691884	759406	759406
18 WG	L	Output R.P.M.	47.4	31.2	23.8	19.5	15.7	8.1	5.4	2.7
41.75	R	Input H.P.	223.75	186.12	164.38	153.22	141.29	99.79	—	—
2.053 HG		Output Torque	290115	362084	418078	466912	529054	699963	768202	768202
20 1/2 WG	L	Output R.P.M.	42.0	27.6	21.0	17.3	13.9	7.2	4.8	2.4
45.85	R	Input H.P.	207.07	172.44	152.31	142.14	131.13	92.69	—	—
2.053 HG		Output Torque	293379	366229	422555	472206	535021	706716	775009	775009
22 1/2 WG	L	Output R.P.M.	38.2	25.2	19.2	15.7	12.7	6.5	4.4	2.2
55.43	R	Input H.P.	174.48	145.77	128.67	120.49	111.29	78.70	—	—
2.053 HG		Output Torque	295094	368609	424267	475105	538195	707087	773388	773388
27 WG	L	Output R.P.M.	31.6	20.7	16.3	13.0	10.5	5.4	3.6	1.8
57.48	R	Input H.P.	168.88	141.18	124.62	116.77	107.87	76.30	—	—
2.053 HG		Output Torque	295446	369093	424634	475697	538845	707240	773305	773305
28 WG	L	Output R.P.M.	30.6	20.0	15.3	12.5	10.1	5.2	3.5	1.7
65.16	R	Input H.P.	207.61	176.33	155.46	139.62	122.43	—	—	—
4.273 HG		Output Torque	416890	531570	610504	660935	708913	765993	765993	765993
15 1/4 WG	L	Output R.P.M.	27.0	17.7	13.5	11.1	8.9	4.6	3.1	1.5
71.57	R	Input H.P.	190.30	162.16	142.59	127.49	111.69	—	—	—
4.273 HG		Output Torque	417823	534299	611498	659075	705459	759309	759309	759309
16 3/4 WG	L	Output R.P.M.	24.5	16.2	12.3	10.0	8.1	4.2	2.8	1.4
76.91	R	Input H.P.	178.68	152.54	134.05	119.69	104.87	—	—	—
4.273 HG		Output Torque	419573	537102	613923	660610	706563	759406	759406	759406
18 WG	L	Output R.P.M.	22.8	15.0	11.5	9.4	7.5	3.9	2.6	1.3
86.88	R	Input H.P.	161.63	138.24	121.65	108.69	95.36	—	—	—
4.273 HG		Output Torque	424517	543459	621150	668334	714798	768202	768202	768202
20 1/2 WG	L	Output R.P.M.	20.0	13.3	10.1	7.9	6.7	3.5	2.3	1.15
95.43	R	Input H.P.	149.75	128.30	112.95	100.90	88.58	—	—	—
4.273 HG		Output Torque	428999	549436	627651	674872	721562	775009	775009	775009
22 1/2 WG	L	Output R.P.M.	18.3	12.0	9.2	7.5	6.1	3.1	1.1	1.05
103.5	R	Input H.P.	133.36	113.92	101.08	91.61	80.35	—	—	—
3.833 HG		Output Torque	409520	521201	600398	650062	699880	773388	773388	773388
27 WG	L	Output R.P.M.	17.0	11.2	8.6	7.0	5.7	2.9	1.95	.98
115.4	R	Input H.P.	127.04	108.89	96.87	85.53	75.21	—	—	—
4.273 HG		Output Torque	432433	552190	629687	675531	721500	773388	773388	773388
27 WG	L	Output R.P.M.	15.1	10.2	7.6	6.2	5.0	2.6	1.7	.87
128.4	R	Input H.P.	110.72	94.98	84.60	76.87	67.61	—	—	—
3.833 HG		Output Torque	411505	523579	603345	653526	703758	778030	778030	778030
33 1/2 WG	L	Output R.P.M.	13.7	9.0	6.9	5.6	4.5	2.3	1.6	.78
143.2	R	Input H.P.	105.52	90.92	80.36	71.86	63.39	—	—	—
4.273 HG		Output Torque	434230	554889	632939	679259	725602	778030	778030	778030
33 1/2 WG	L	Output R.P.M.	12.2	8.0	6.1	5.0	4.1	2.1	1.4	.70
172.5	R	Input H.P.	81.47	70.63	62.75	56.56	49.82	—	—	—
3.833 HG		Output Torque	393394	503547	576013	618377	662888	726738	726738	726738
45 WG	L	Output R.P.M.	10.1	6.7	5.1	4.2	3.4	1.7	1.16	.58
192.3	R	Input H.P.	78.88	67.46	59.31	53.07	46.59	—	—	—
4.273 HG		Output Torque	421213	530390	600997	641986	681330	726738	726738	726738
45 WG	L	Output R.P.M.	9.1	6.0	4.5	3.7	3.0	1.6	1.04	.52
213.7	R	Input H.P.	72.49	63.28	56.48	50.80	45.15	—	—	—
4.273 HG		Output Torque	416976	534174	609878	655296	700398	751804	751804	751804
50 WG	L	Output R.P.M.	8.2	5.4	4.1	3.4	2.7	1.4	.94	.47
239.3	R	Input H.P.	63.96	55.72	49.66	44.59	39.67	—	—	—
4.273 HG		Output Torque	405043	515938	587802	630030	672327	720142	720142	720142
56 WG	L	Output R.P.M.	7.3	4.8	3.7	3.0	2.4	1.25	.84	.42
269.2	R	Input H.P.	55.42	48.48	43.34	38.97	34.75	—	—	—
4.273 HG		Output Torque	387662	494567	563784	604563	645570	691839	691839	691839
63 WG	L	Output R.P.M.	6.5	4.3	3.3	2.7	2.2	1.1	.74	.37
286.3	R	Input H.P.	51.55	45.21	40.49	36.45	32.57	—	—	—
4.273 HG		Output Torque	375354	478510	545328	584635	624108	668675	668675	668675
67 WG	L	Output R.P.M.	6.1	4.0	3.1	2.5	2.0	1.05	.70	.35
316.2	R	Input H.P.	44.91	39.57	35.57	32.08	28.73	—	—	—
4.273 HG		Output Torque	352225	449541	512535	549716	587056	629217	629217	629217
74 WG	L	Output R.P.M.	5.5	3.6	2.8	2.3	1.8	.96	.63	.32
380.3	R	Input H.P.	32.80	28.80	25.80	23.32	20.81	—	—	—
4.273 HG		Output Torque	297805	376028	426987	456557	485310	518285	518285	518285
89 WG	L	Output R.P.M.	4.6	3.0	2.3	1.9	1.5	.78	.52	.26

Output torque ratings in inch pounds. • Consult factory for overhung load capacities. • Consult factory for helical reduction worm gear combinations not listed. • No thermal horsepower ratings are published. Applications having continuous operation will require some cooling means, such as internal water cooling coils or external oil cooling systems.

RATING TABLE FOR UNITY SERVICE FACTOR

HELICAL WORM GEAR

CENTERS
24.000" WORM GEARING
15.000" HELICAL GEARING

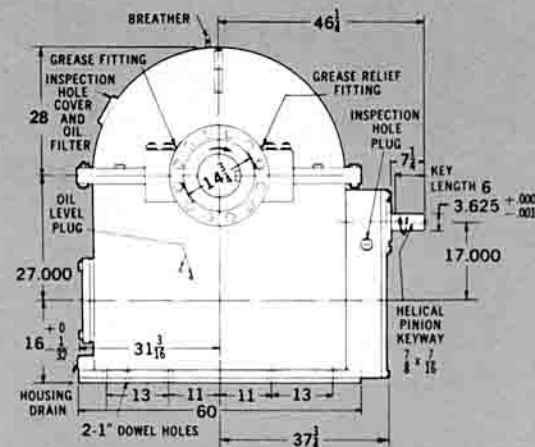
Ratio	Hand of Worm Thread	Input (Pinion) Shaft Speed— R.P.M.								
			1750	1150	870	720	580	300	200	100
30.95 2.063 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	378.72 368904 56.0	323.54 474676 36.8	284.82 546778 27.7	261.92 604351 23.0	239.31 680268 18.5	179.85 962185 9.6	1089215 6.4	1089215 3.2
34.00 2.267 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	367.73 392603 51.4	310.56 499225 33.8	307.66 504237 25.6	250.93 633254 21.2	231.02 717993 17.0	170.23 996725 8.8	1089215 5.9	1089215 2.9
37.50 2.500 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	354.50 416328 46.7	297.07 524703 30.7	261.60 605283 23.2	241.24 669705 19.2	222.48 759984 15.5	160.36 1029070 8.0	1089215 5.3	1089215 2.7
41.54 2.769 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	340.61 441981 42.0	282.95 552060 27.8	249.36 636983 20.9	232.51 711957 17.3	232.51 711957 14.0	213.92 807954 7.2	1089215 4.8	1089215 2.4
46.25 3.083 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	326.16 469519 37.8	269.77 583749 24.9	239.59 678759 18.8	223.09 755812 15.6	203.91 851753 12.5	151.753 — 6.5	1089215 4.3	1089215 2.2
51.83 3.455 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	310.56 499225 33.7	256.52 619268 22.2	229.46 724029 16.7	213.49 810040 13.9	193.88 901076 11.2	— 901076 5.8	1089215 3.9	1089215 1.9
58.50 3.900 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	293.72 531046 30.0	242.99 659141 19.7	219.47 778755 14.7	202.31 858010 12.3	182.56 951558 9.9	— 1089215 5.1	1089215 3.4	1089215 1.7
62.37 4.158 HG 15 WG	R	Input H.P. Output Torque Output R.P.M.	284.56 547533 28.1	238.15 686304 18.4	213.92 807954 13.9	196.42 887791 11.6	175.56 978127 9.3	— 1089215 4.8	1089215 3.2	1089215 1.6
69.67 3.667 HG 19 WG	R	Input H.P. Output Torque Output R.P.M.	245.01 520468 25.2	203.04 643941 16.6	182.76 757523 12.5	170.01 844152 11.3	154.28 937787 8.3	1101406 1101406 4.3	1101406 2.9	1101406 1.4
79.00 4.158 HG 19 WG	R	Input H.P. Output Torque Output R.P.M.	231.15 553417 22.2	194.07 693649 14.6	174.78 816684 11.0	160.82 897413 9.1	144.07 988929 7.4	— 988929 3.8	— 988929 2.5	— 988929 1.3
88.01 3.667 HG 24 WG	R	Input H.P. Output Torque Output R.P.M.	198.93 526626 19.9	167.02 658812 13.1	150.77 776205 9.9	138.82 853583 8.2	124.95 941036 6.6	1085323 1085323 3.4	1085323 2.3	1085323 1.1
99.79 4.158 HG 24 WG	R	Input H.P. Output Torque Output R.P.M.	188.52 562568 17.6	159.25 707174 11.5	142.75 826790 8.7	131.14 906516 7.2	115.76 984763 5.8	— 984763 3.0	— 984763 2.0	— 984763 1.0
110.0 3.667 HG 30 WG	R	Input H.P. Output Torque Output R.P.M.	162.55 523268 15.9	135.67 647238 10.5	122.90 761928 7.9	114.72 848563 6.6	104.64 942566 5.3	1106344 1106344 2.7	1106344 1.8	1106344 0.91
124.7 4.158 HG 30 WG	R	Input H.P. Output Torque Output R.P.M.	153.71 556482 14.0	130.07 697562 9.3	117.78 821093 7.0	108.88 902189 5.8	97.94 993711 4.7	— 993711 2.4	— 993711 1.6	— 993711 0.80
137.5 3.667 HG 37½ WG	R	Input H.P. Output Torque Output R.P.M.	132.55 525381 12.75	112.41 658745 8.4	101.73 774268 6.3	94.08 850790 5.2	84.59 933474 4.2	1071272 1071272 2.2	1071272 1.5	1071272 0.73
155.9 4.158 HG 37½ WG	R	Input H.P. Output Torque Output R.P.M.	125.54 559984 11.2	107.25 705946 7.4	96.43 822503 5.6	88.81 900835 4.6	78.42 975224 3.7	— 975224 1.9	— 975224 1.3	— 975224 0.64
175.5 3.900 HG 45 WG	R	Input H.P. Output Torque Output R.P.M.	109.86 536103 9.96	93.74 673314 6.7	85.10 789603 4.9	79.05 865927 4.1	71.07 948102 3.3	1070486 1070486 1.7	1070486 1.14	1070486 0.57
187.1 4.158 HG 45 WG	R	Input H.P. Output Torque Output R.P.M.	106.95 554253 9.4	91.58 696650 6.2	82.93 814689 4.7	76.76 893319 3.85	68.26 970929 3.1	— 970929 1.6	— 970929 1.07	— 970929 0.53
202.8 3.900 HG 52 WG	R	Input H.P. Output Torque Output R.P.M.	96.02 523058 8.6	81.93 653797 5.6	75.12 770194 4.3	70.02 845774 3.5	63.89 934732 2.9	1064327 1064327 1.5	1064327 0.99	1064327 0.49
216.2 4.158 HG 52 WG	R	Input H.P. Output Torque Output R.P.M.	93.66 541168 8.1	80.46 679059 5.3	73.34 797351 4.0	68.34 875426 3.3	61.59 959442 2.7	— 959442 1.4	— 959442 0.92	— 959442 0.46
241.8 3.900 HG 62 WG	R	Input H.P. Output Torque Output R.P.M.	78.45 494377 7.2	67.55 620402 4.8	61.92 729020 3.6	57.88 799965 3.0	52.61 879549 2.4	996855 996855 1.24	996855 0.83	996855 0.41
257.8 4.158 HG 62 WG	R	Input H.P. Output Torque Output R.P.M.	76.62 511955 6.8	66.24 643002 4.5	60.50 753315 3.4	56.42 826493 2.8	50.67 901656 2.2	— 901656 1.16	— 901656 0.78	— 901656 0.39
282.7 4.158 HG 68 WG	R	Input H.P. Output Torque Output R.P.M.	68.09 489789 6.2	59.07 615348 4.1	54.04 720390 3.1	50.44 790188 2.6	45.28 860754 2.1	950580 950580 1.06	950580 0.71	950580 0.35

Output torque ratings in inch pounds. • Consult factory for overhung load capacities. • Consult factory for helical reduction worm gear combinations not listed. • No thermal horsepower ratings are published. Applications having continuous operation will require some cooling means, such as internal water cooling coils or external oil cooling systems.

SIZE 270

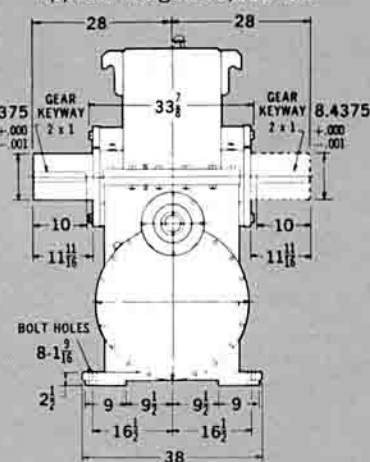
HELICAL-WORM SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints.
Only for Construction.



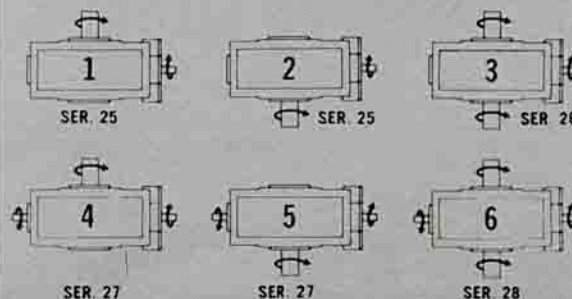
TYPE HA

Approx. Weight 10,500 lbs.



STANDARD SHAFT ARRANGEMENTS HA UNITS

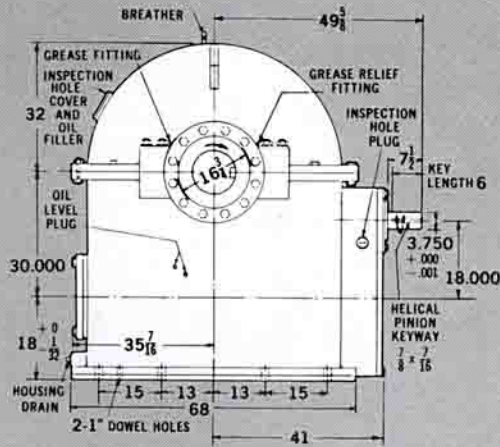
When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended and/or gear shaft may be double extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



HELICAL-WORM SPEED REDUCERS

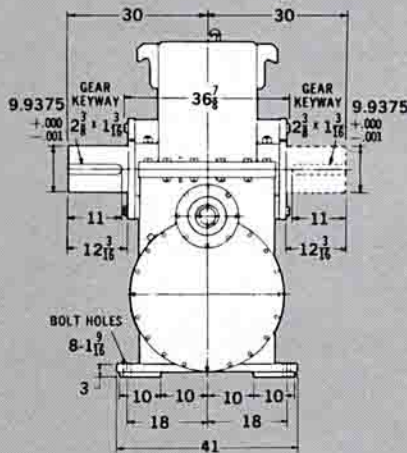
SIZE 300

Dimensions in Inches
Dimensions Subject to Change.
Use Certified Prints.
Only for Construction.



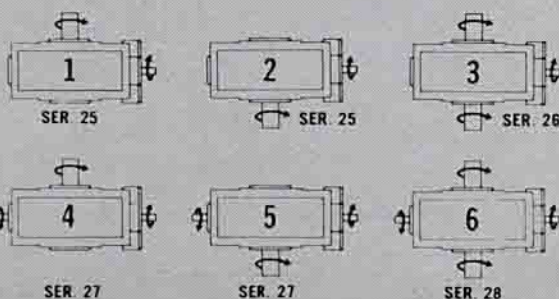
TYPE HA

Approx. Weight 15,000 lbs.



STANDARD SHAFT ARRANGEMENTS HA UNITS

When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended and/or gear shaft may be double extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



RATING TABLE FOR UNITY SERVICE FACTOR

CENTERS

30.000" WORM GEARING
18.000" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread		Input (Pinion) Shaft Speed— R.P.M.							
			1750	1150	870	720	580	300	200	100
31.40	R	Input H.P.	451.89	383.09	336.98	309.18	283.42	210.54	—	—
2.059 HG		Output Torque	449475	573776	661894	729962	824439	1153279	1301186	1301186
15 1/2 WG	L	Output R.P.M.	55.8	36.6	27.6	22.9	18.5	9.6	6.4	3.2
34.31	R	Input H.P.	437.37	367.45	323.22	295.71	272.93	198.84	—	—
2.250 HG		Output Torque	474286	600764	692364	761340	865065	1192026	1301186	1301186
15 1/4 WG	L	Output R.P.M.	51.1	33.6	25.3	21.0	16.9	8.8	5.8	2.9
37.62	R	Input H.P.	423.00	352.28	310.41	287.07	264.24	188.45	—	—
2.466 HG		Output Torque	501626	629803	726825	807511	916501	1226968	1301186	1301186
15 1/4 WG	L	Output R.P.M.	46.5	30.6	23.1	19.1	15.4	8.0	5.3	2.7
41.38	R	Input H.P.	406.14	337.32	296.19	276.25	254.30	177.56	—	—
2.714 HG		Output Torque	529134	661047	760294	853216	965634	1264077	1301186	1301186
15 1/4 WG	L	Output R.P.M.	42.3	27.8	21.0	17.4	14.0	7.3	4.8	2.4
46.14	R	Input H.P.	379.56	315.29	278.45	258.80	238.63	169.00	—	—
2.714 HG		Output Torque	547189	682864	789272	881875	998445	1322135	1301186	1301186
17 WG	L	Output R.P.M.	38.0	25.0	18.8	15.6	12.6	6.5	4.3	2.2
50.83	R	Input H.P.	372.84	307.09	274.38	255.36	231.22	165.50	—	—
3.333 HG		Output Torque	592892	735192	859988	960955	1069824	1301186	1301186	1301186
15 1/4 WG	L	Output R.P.M.	34.5	22.6	17.1	14.2	11.4	5.9	3.9	2.0
56.84	R	Input H.P.	353.76	292.40	263.41	242.18	218.63	—	—	—
3.727 HG		Output Torque	627215	778733	921180	1014768	1123473	1301186	1301186	1301186
15 1/4 WG	L	Output R.P.M.	30.9	20.3	15.3	12.7	10.2	5.3	3.5	1.8
64.05	R	Input H.P.	334.87	280.20	250.52	229.30	203.50	—	—	—
4.200 HG		Output Torque	666972	837981	982012	1078765	1177123	1301186	1301186	1301186
15 1/4 WG	L	Output R.P.M.	27.3	17.9	13.5	11.2	9.1	4.7	3.1	1.6
71.40	R	Input H.P.	313.16	262.06	235.33	215.87	193.11	—	—	—
4.200 HG		Output Torque	689252	864878	1016717	1118091	1227821	1363534	1363534	1363534
17 WG	L	Output R.P.M.	24.5	16.1	12.2	10.1	8.1	4.2	2.8	1.4
80.75	R	Input H.P.	271.80	224.87	203.01	188.53	171.19	—	—	—
3.727 HG		Output Torque	667445	825359	974625	1082164	1200089	1401427	1401427	1401427
21 1/2 WG	L	Output R.P.M.	21.6	14.2	10.7	8.9	7.2	3.7	2.5	1.2
91.00	R	Input H.P.	257.10	215.87	194.36	178.68	160.21	—	—	—
4.200 HG		Output Torque	708057	888434	1044525	1148716	1261736	1401427	1401427	1401427
21 1/2 WG	L	Output R.P.M.	19.3	12.6	9.5	7.9	6.4	3.3	2.2	1.1
100.6	R	Input H.P.	217.20	182.61	164.56	151.59	136.32	—	—	—
3.727 HG		Output Torque	656421	823207	969309	1064646	1170001	1342827	1342827	1342827
27 WG	L	Output R.P.M.	16.5	10.8	8.2	6.8	5.5	2.8	1.9	.95
113.4	R	Input H.P.	206.27	174.19	156.17	143.26	126.62	—	—	—
4.200 HG		Output Torque	699277	879810	1027424	1127290	1221255	1342827	1342827	1342827
27 WG	L	Output R.P.M.	15.4	10.2	7.7	6.3	5.1	2.6	1.8	.88
127.7	R	Input H.P.	182.77	152.30	138.37	128.93	117.66	—	—	—
3.727 HG		Output Torque	676204	835977	987819	1096197	1215508	1418608	1418608	1418608
34 WG	L	Output R.P.M.	13.7	9.0	6.8	5.6	4.5	2.3	1.6	.78
142.8	R	Input H.P.	173.28	146.62	132.71	122.58	110.35	—	—	—
4.200 HG		Output Torque	717470	900329	1058265	1163735	1276337	1418608	1418608	1418608
34 WG	L	Output R.P.M.	12.3	8.0	6.1	5.0	4.1	2.1	1.4	.70
158.4	R	Input H.P.	141.82	120.31	108.1	100.60	90.39	—	—	—
3.727 HG		Output Torque	645818	810674	952316	1045240	1143395	1306093	1306093	1306093
42 1/2 WG	L	Output R.P.M.	11.1	7.2	5.5	4.5	3.7	1.9	1.3	.63
178.5	R	Input H.P.	134.60	115.09	103.42	95.01	84.08	—	—	—
4.200 HG		Output Torque	686311	866936	1008100	1103603	1191994	1306093	1306093	1306093
42 1/2 WG	L	Output R.P.M.	9.8	6.4	4.9	4.0	3.3	1.7	1.1	.56
190.1	R	Input H.P.	118.98	101.30	92.20	85.60	77.62	—	—	—
3.727 HG		Output Torque	630428	790511	931102	1022780	1124685	1291631	1291631	1291631
51 WG	L	Output R.P.M.	9.2	6.0	4.6	3.8	3.0	1.6	1.05	.53
214.2	R	Input H.P.	113.40	97.09	87.95	81.30	72.38	—	—	—
4.200 HG		Output Torque	671881	845259	987315	1083372	1174261	1291631	1291631	1291631
51 WG	L	Output R.P.M.	8.2	5.4	4.1	3.4	2.7	1.4	.94	.47
247.8	R	Input H.P.	98.87	84.95	77.44	72.08	65.00	—	—	—
4.200 HG		Output Torque	653782	821194	962967	1058080	1156085	1279172	1279172	1279172
59 WG	L	Output R.P.M.	7.1	4.6	3.5	2.9	2.3	1.2	.81	.40
294.0	R	Input H.P.	78.58	67.93	62.06	57.79	51.94	—	—	—
4.200 HG		Output Torque	598424	752318	880290	966516	1051374	1159537	1159537	1159537
70 WG	L	Output R.P.M.	6.0	3.9	3.0	2.4	2.0	1.0	.68	.34
323.4	R	Input H.P.	67.55	58.60	53.63	49.99	44.91	—	—	—
4.200 HG		Output Torque	555032	697968	816109	895827	973043	1071981	1071981	1071981
77 WG	L	Output R.P.M.	5.4	3.6	2.7	2.2	1.8	.93	.62	.31

Output torque ratings in inch pounds. • Consult factory for overhung load capacities. • Consult factory for helical reduction worm gear combinations not listed. • No thermal horsepower ratings are published. Applications having continuous operation will require some cooling means, such as internal water cooling coils or external oil cooling systems.

RATING TABLE

FOR UNITY SERVICE FACTOR

36.000" WORM GEARING
20.000" HELICAL GEARING

CENTERS

HELICAL WORM GEAR

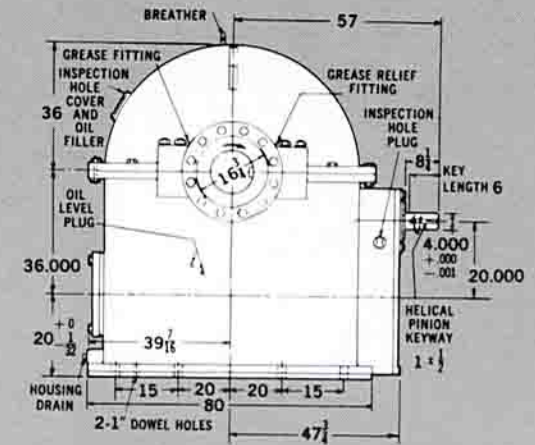
Ratio	Hand of Worm Thread	Input (Pinion) Shaft Speed— R.P.M.								
			1750	1150	870	720	580	300	200	100
31.21	R	Input H.P.	618.23	525.68	466.08	427.16	386.27	293.94	—	—
2.053 HG		Output Torque	614083	787929	916308	1009269	1124765	1619393	1863104	1863104
15 1/2 WG		Output R.P.M.	56.2	36.9	28.9	23.1	18.6	9.6	6.4	3.2
33.77	R	Input H.P.	598.44	509.62	448.72	411.34	374.70	282.11	—	—
2.222 HG		Output Torque	641054	824217	952061	1050700	1180049	1863104	1863104	1863104
15 1/2 WG		Output R.P.M.	52.0	34.1	25.8	21.4	17.2	8.9	5.9	3.0
36.66	R	Input H.P.	581.50	492.00	432.66	396.92	363.55	268.66	—	—
2.412 HG		Output Torque	676020	862370	994650	1095861	1241448	1863104	1863104	1863104
15 1/2 WG		Output R.P.M.	47.7	31.4	23.6	19.6	15.8	8.2	5.5	2.7
39.90	R	Input H.P.	563.09	472.78	415.07	380.12	350.72	255.00	—	—
2.625 HG		Output Torque	711137	900666	1038507	1142040	1296999	1863104	1863104	1863104
15 1/2 WG		Output R.P.M.	44.0	28.8	21.8	18.1	14.5	7.5	5.0	2.5
43.58	R	Input H.P.	545.15	453.89	399.41	369.77	340.24	242.31	—	—
2.867 HG		Output Torque	751382	942006	1088635	1209286	1372429	1863104	1863104	1863104
15 1/2 WG		Output R.P.M.	40.0	27.4	19.9	16.5	13.3	6.9	4.6	2.3
47.77	R	Input H.P.	524.37	435.28	381.99	356.45	328.10	—	—	—
3.143 HG		Output Torque	790122	987341	1135603	1273609	1441126	1863104	1863104	1863104
15 1/2 WG		Output R.P.M.	36.8	24.1	18.2	15.1	12.2	6.3	4.2	2.1
52.62	R	Input H.P.	504.27	415.71	369.77	343.83	313.51	—	—	—
3.462 HG		Output Torque	836027	1037045	1209286	1348182	1509824	1863104	1863104	1863104
15 1/2 WG		Output R.P.M.	33.3	21.8	16.5	13.7	11.0	5.7	3.8	1.9
58.26	R	Input H.P.	482.47	397.55	355.06	330.46	298.78	—	—	—
3.833 HG		Output Torque	881792	1094055	1279456	1429003	1593653	1863104	1863104	1863104
15 1/2 WG		Output R.P.M.	30.1	19.8	14.9	12.4	10.0	5.2	3.4	1.7
64.95	R	Input H.P.	458.83	378.18	341.48	313.51	283.26	—	—	—
4.273 HG		Output Torque	931950	1156659	1364346	1509824	1670872	1863104	1863104	1863104
15 1/2 WG		Output R.P.M.	27.0	17.8	13.4	11.1	9.0	4.6	3.1	1.5
72.64	R	Input H.P.	430.42	359.40	322.21	294.63	262.85	—	—	—
4.273 HG		Output Torque	975264	1225511	1435691	1580580	1728684	1908653	1908653	1908653
17 WG		Output R.P.M.	24.1	15.9	12.0	9.9	8.0	4.1	2.8	1.4
80.49	R	Input H.P.	384.93	317.30	287.05	265.03	238.98	—	—	—
3.833 HG		Output Torque	957870	1185611	1401802	1549806	1721736	1981879	1981879	1981879
21 WG		Output R.P.M.	21.8	14.3	10.8	9.0	7.2	3.7	2.5	1.2
89.73	R	Input H.P.	365.94	306.25	275.12	251.98	225.26	—	—	—
4.273 HG		Output Torque	1011364	1270728	1489086	1639551	1794252	1981879	1981879	1981879
21 WG		Output R.P.M.	19.6	12.8	9.7	8.0	6.5	3.3	2.2	1.1
102.2	R	Input H.P.	308.90	255.37	231.63	214.29	193.69	—	—	—
3.833 HG		Output Torque	959345	1187102	1403728	1552283	1724580	1985579	1985579	1985579
26 1/2 WG		Output R.P.M.	17.1	11.3	8.5	7.0	5.7	2.9	2.0	.98
113.9	R	Input H.P.	293.87	246.76	222.23	203.99	182.75	—	—	—
4.273 HG		Output Torque	1012839	1272536	1491338	1642088	1797366	1985579	1985579	1985579
26 1/2 WG		Output R.P.M.	15.7	10.1	7.8	6.3	5.1	2.6	1.8	.88
127.8	R	Input H.P.	248.27	208.87	188.08	173.23	154.62	—	—	—
3.833 HG		Output Torque	951323	1194997	1401767	1538936	1689216	1915429	1915429	1915429
33 1/2 WG		Output R.P.M.	13.7	9.0	6.8	5.6	4.5	2.3	1.6	.78
145.4	R	Input H.P.	208.84	174.36	157.19	147.27	134.76	—	—	—
3.462 HG		Output Torque	891921	1105823	1293699	1444413	1606613	1941211	1941211	1941211
42 WG		Output R.P.M.	12.0	7.9	6.0	4.9	4.0	2.1	1.4	.69
161.0	R	Input H.P.	200.02	166.71	152.03	141.16	128.22	—	—	—
3.833 HG		Output Torque	938637	1162257	1373969	1518565	1686906	1941211	1941211	1941211
42 WG		Output R.P.M.	10.9	7.2	5.4	4.5	3.6	1.9	1.2	.62
179.5	R	Input H.P.	190.68	161.38	146.10	134.76	121.20	—	—	—
4.273 HG		Output Torque	991168	1245415	1459243	1606613	1757753	1941211	1941211	1941211
42 WG		Output R.P.M.	9.8	6.4	4.8	4.0	3.2	1.7	1.1	.56
199.3	R	Input H.P.	157.53	133.71	120.84	111.69	99.61	—	—	—
3.833 HG		Output Torque	901987	1133978	1327384	1456286	1591328	1591328	1591328	1591328
52 WG		Output R.P.M.	8.8	5.8	4.4	3.6	2.9	1.5	1.0	.50
222.2	R	Input H.P.	150.27	128.62	115.53	105.72	93.68	—	—	—
4.273 HG		Output Torque	953190	1207052	1397890	1529281	1648202	1591328	1591328	1591328
52 WG		Output R.P.M.	7.9	5.2	3.9	3.2	2.6	1.3	.90	.45
241.5	R	Input H.P.	127.40	108.59	98.72	91.67	82.50	—	—	—
3.833 HG		Output Torque	855681	1074735	1261054	1384579	1520700	1725305	1725305	1725305
63 WG		Output R.P.M.	7.3	4.8	3.6	3.0	2.4	1.2	.83	.42
269.2	R	Input H.P.	121.72	104.07	94.54	87.21	77.62	—	—	—
4.273 HG		Output Torque	904783	1145536	1327476	1458158	1575885	1725305	1725305	1725305
63 WG		Output R.P.M.	6.5	4.3	3.2	2.7	2.2	1.1	.74	.37
311.9	R	Input H.P.	101.25	87.03	79.42	73.77	66.47	—	—	—
4.273 HG		Output Torque	841163	1057855	1236793	1360514	1481694	1631068	1631068	1631068
73 WG		Output R.P.M.	5.6	3.7	2.8	2.3	1.9	.97	.64	.32
367.5	R	Input H.P.	76.82	66.42	60.74	56.44	50.69	—	—	—
4.273 HG		Output Torque	730750	919734	1073170	1179580	1279210	1403946	1403946	1403946
86 WG		Output R.P.M.	4.8	3.1	2.4	2.1	1.6	.82	.55	.27
405.9	R	Input H.P.	63.52	55.12	50.50	46.98	42.17	—	—	—
4.273 HG		Output Torque	653848	823158	959861	1054760	1142264	1252408	1252408	1252408
95 WG		Output R.P.M.	4.3	2.8	2.1	2.0	1.4	.74	.49	.25

Output torque ratings in inch pounds. • Consult factory for overhung load capacities. • Consult factory for helical reduction worm gear combinations not listed. • No thermal horsepower ratings are published. Applications having continuous operation will require some cooling means, such as internal water cooling coils or external oil cooling systems.

SIZE 360

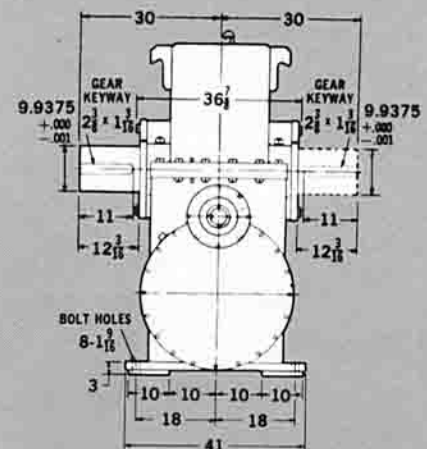
HELICAL-WORM SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



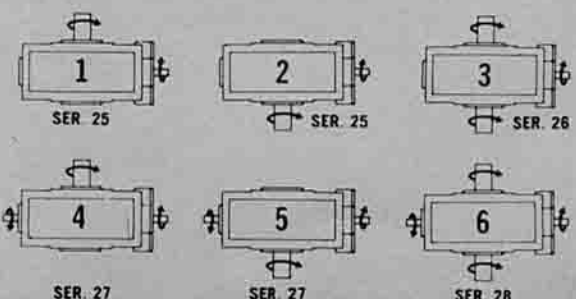
TYPE HA

Approx. Weight 19,500 lbs.



STANDARD SHAFT ARRANGEMENTS HA UNITS

When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended and/or gear shaft may be double extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



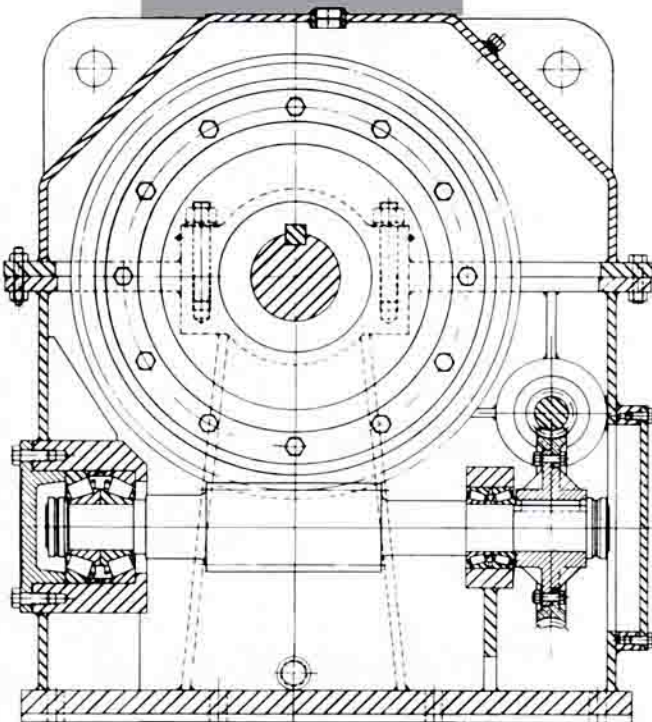
double reduction worm gear speed reducers

GENERAL SELECTION GUIDE

Type D

UNIT SIZES AVAILABLE	CENTER DISTANCE		RATIOS AVAILABLE (APPROX.)	OUTPUT TORQUE RANGE CAPACITY (IN. LBS.)*	RATINGS & DIMENSIONS SEE PAGES
	PRIMARY	SECONDARY			
60-134	6.0"	13.4"	113:1 to 6000:1	108,000 to 198,000	29
70-150	7.0"	15.0"	111:1 to 6100:1	145,000 to 258,000	30
80-180	8.0"	18.0"	118:1 to 5880:1	224,000 to 406,000	31
90-195	9.0"	19.5"	96:1 to 4774:1	349,000 to 479,000	32
100-218	10.0"	21.8"	120:1 to 5800:1	370,000 to 627,000	33

*100 RPM



Standard double reduction heavy duty worm gear units are available in type D (primary worm above, secondary worm below), in five sizes from 13.4365 to 21.837" secondary reduction. Both the primary and secondary worm gear sets are enclosed in a two-piece welded steel housing and are lubricated by a common oil bath. Heavy duty anti-friction bearings rigidly support the worm and gear shafts of the primary and secondary worm gearing.

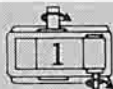
RATING TABLE FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
6.000" PRIMARY
13.4365" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
113.6	4 $\frac{5}{8}$ x 23 $\frac{1}{2}$	Input H.P. Output Torque	39.3 123000	32.4 149000	28.7 169000	26.0 183000	22.4 190000	12.7 195000	—
123.2	4 $\frac{5}{8}$ x 25 $\frac{1}{2}$	Input H.P. Output Torque	39.3 134000	31.5 158000	26.4 170000	23.2 177000	19.8 184000	11.2 189000	—
137.8	4 $\frac{5}{8}$ x 28 $\frac{1}{2}$	Input H.P. Output Torque	35.7 134000	28.5 156000	23.8 168000	20.9 174000	17.8 181000	10.1 185000	—
152.2	4 $\frac{5}{8}$ x 31 $\frac{1}{2}$	Input H.P. Output Torque	32.9 134000	26.4 158000	22.1 170000	19.5 176000	16.7 183000	9.42 187000	—
188.7	7 $\frac{7}{8}$ x 25 $\frac{1}{2}$	Input H.P. Output Torque	31.4 159000	23.8 176000	19.6 184000	16.8 189000	13.8 189000	7.77 189000	—
210.9	7 $\frac{7}{8}$ x 28 $\frac{1}{2}$	Input H.P. Output Torque	28.3 157000	21.5 173000	17.6 181000	15.0 185000	12.4 185000	7.00 185000	—
233.1	7 $\frac{7}{8}$ x 31 $\frac{1}{2}$	Input H.P. Output Torque	26.3 158000	20.0 175000	16.5 183000	14.1 187000	11.6 187000	6.54 187000	—
258.5	11 x 23 $\frac{1}{2}$	Input H.P. Output Torque	24.1 158000	19.9 189000	15.9 195000	13.3 195000	11.1 195000	6.13 195000	—
280.5	11 x 25 $\frac{1}{2}$	Input H.P. Output Torque	24.1 172000	18.1 187000	14.0 189000	11.8 189000	9.86 189000	5.41 189000	—
313.5	11 x 28 $\frac{1}{2}$	Input H.P. Output Torque	22.0 172000	16.3 184000	12.6 185000	10.6 185000	8.90 185000	4.89 185000	—
374.0	14 $\frac{3}{4}$ x 25 $\frac{1}{2}$	Input H.P. Output Torque	19.4 178000	14.0 189000	11.0 189000	9.29 189000	7.80 189000	4.24 189000	—
418.0	14 $\frac{3}{4}$ x 28 $\frac{1}{2}$	Input H.P. Output Torque	18.1 181000	12.6 185000	9.88 185000	8.40 185000	7.06 185000	3.82 185000	—
470.0	20 x 23 $\frac{1}{2}$	Input H.P. Output Torque	15.0 164000	12.4 195000	9.74 195000	8.20 195000	6.78 195000	3.84 195000	—
510.0	20 x 25 $\frac{1}{2}$	Input H.P. Output Torque	15.0 180000	11.0 189000	8.61 189000	7.22 189000	6.00 189000	3.37 189000	—
570.0	20 x 28 $\frac{1}{2}$	Input H.P. Output Torque	14.2 185000	9.87 185000	7.79 185000	6.53 185000	5.39 185000	3.01 185000	—
630.0	20 x 31 $\frac{1}{2}$	Input H.P. Output Torque	13.3 187000	9.23 187000	7.29 187000	6.12 187000	5.06 187000	2.88 187000	—
698.2	24 $\frac{1}{2}$ x 28 $\frac{1}{2}$	Input H.P. Output Torque	11.9 185000	8.29 185000	6.61 185000	5.45 185000	4.65 185000	2.61 185000	—
765.0	30 x 25 $\frac{1}{2}$	Input H.P. Output Torque	11.2 189000	7.74 189000	6.12 189000	5.22 189000	4.31 189000	2.48 189000	—
855.0	30 x 28 $\frac{1}{2}$	Input H.P. Output Torque	10.0 185000	6.97 185000	5.50 185000	4.70 185000	3.90 185000	2.24 185000	—
945.0	30 x 31 $\frac{1}{2}$	Input H.P. Output Torque	9.39 187000	6.53 187000	5.17 187000	4.41 187000	3.67 187000	2.11 187000	—
1020	40 x 25 $\frac{1}{2}$	Input H.P. Output Torque	9.05 189000	6.36 189000	5.03 189000	4.26 189000	3.56 189000	2.07 189000	—
1140	40 x 28 $\frac{1}{2}$	Input H.P. Output Torque	8.18 185000	5.72 185000	4.56 185000	3.86 185000	3.23 185000	1.87 185000	—
1260	40 x 31 $\frac{1}{2}$	Input H.P. Output Torque	7.66 187000	5.37 187000	4.28 187000	3.63 187000	3.04 187000	1.76 187000	—
1440	40 x 36	Input H.P. Output Torque	7.00 186000	4.95 186000	3.93 186000	3.34 186000	2.79 186000	1.63 186000	—
1600	40 x 40	Input H.P. Output Torque	6.90 193000	4.89 193000	3.89 193000	3.32 193000	2.78 193000	1.62 193000	—
1800	50 x 36	Input H.P. Output Torque	6.00 186000	4.24 186000	3.39 186000	2.91 186000	2.47 186000	1.46 186000	—
2000	50 x 40	Input H.P. Output Torque	5.90 193000	4.20 193000	3.37 193000	2.91 193000	2.45 193000	1.46 193000	—
2200	40 x 55	Input H.P. Output Torque	4.94 174000	3.51 174000	2.82 174000	2.41 174000	2.03 174000	1.19 174000	—
2400	50 x 48	Input H.P. Output Torque	5.14 186000	3.66 186000	2.95 186000	2.55 186000	2.16 186000	1.28 186000	—
2880	60 x 48	Input H.P. Output Torque	4.43 186000	3.19 186000	2.56 186000	2.22 186000	1.88 186000	1.12 186000	—
3050	50 x 61	Input H.P. Output Torque	4.00 171000	2.87 171000	2.31 171000	2.00 171000	1.69 171000	1.00 171000	—
3300	60 x 55	Input H.P. Output Torque	3.65 174000	2.64 174000	2.13 174000	1.85 174000	1.55 174000	.93 174000	—

Output torque ratings given in inch pounds.
Gear shaft overhung load capacity at center of keyway 8,000 lbs.
Consult factory for greater overhung capacities available.
All gear sets listed have right hand threads. Consult factory for those with left hand threads.
Consult factory for double reduction worm gear combinations other than those listed.



SER. 25



SER. 25



SER. 27



SER. 25



SER. 26



SER. 27



SER. 25



SER. 26

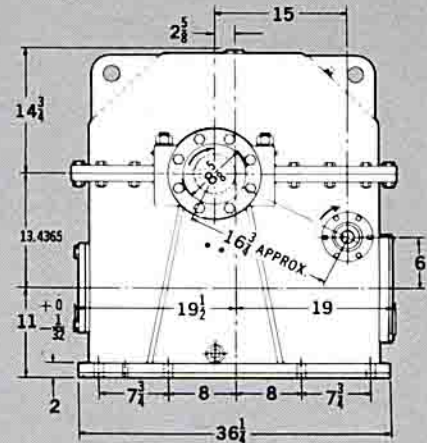


SER. 28

SIZE 60-134

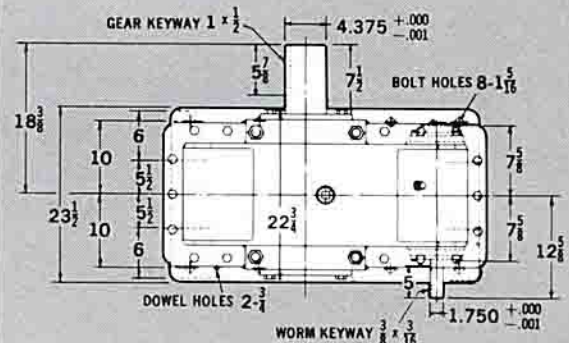
DOUBLE REDUCTION SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE D

Approx. Weight 2,700 lbs.



STANDARD SHAFT ARRANGEMENTS D UNITS

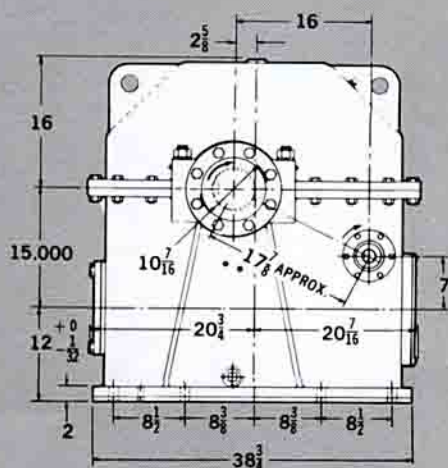
When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.

DOUBLE REDUCTION SPEED REDUCERS

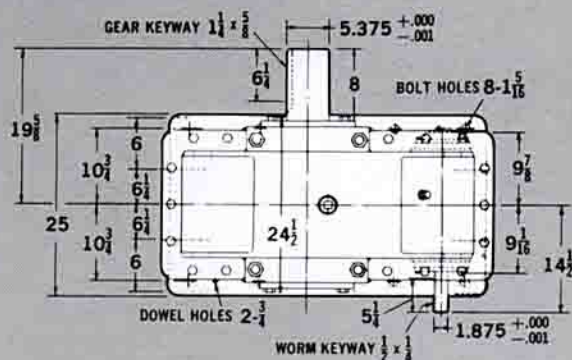
SIZE 70-150

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE D

Approx. Weight 3,600 lbs.



STANDARD SHAFT ARRANGEMENTS D UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



SER. 25



SER. 25



SER. 27



SER. 25



SER. 26



SER. 27



SER. 25



SER. 26



SER. 28

RATING TABLE FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
7.000" PRIMARY
15.000" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
111.2	4% x 23	Input H.P. Output Torque	53.7 170000	43.2 201000	36.3 218000	31.8 227000	27.2 236000	15.2 242000	—
128.1	4% x 26 1/2	Input H.P. Output Torque	48.3 172000	39.2 205000	33.2 222000	29.2 232000	25.0 241000	14.1 248000	—
145.0	4% x 30	Input H.P. Output Torque	43.2 172000	35.1 205000	29.7 222000	26.1 232000	22.4 241000	12.6 248000	—
161.0	7 x 23	Input H.P. Output Torque	44.4 198000	34.0 222000	27.9 234000	24.2 241000	20.4 242000	11.0 242000	—
185.5	7 x 26 1/2	Input H.P. Output Torque	40.4 201000	31.1 227000	25.6 240000	22.3 247000	18.8 248000	10.2 248000	—
210.0	7 x 30	Input H.P. Output Torque	36.1 202000	27.9 227000	23.0 240000	20.0 247000	16.9 248000	9.20 248000	—
237.7	10 1/3 x 23	Input H.P. Output Torque	34.9 221000	25.8 239000	20.3 242000	17.2 242000	14.1 242000	7.80 242000	—
273.8	10 1/3 x 26 1/2	Input H.P. Output Torque	32.0 226000	23.8 244000	18.8 248000	15.9 248000	13.0 248000	7.27 248000	—
310.0	10 1/3 x 30	Input H.P. Output Torque	28.7 226000	21.3 244000	16.8 248000	14.3 248000	11.7 248000	6.55 248000	—
356.5	15 1/2 x 23	Input H.P. Output Torque	26.2 236000	18.3 242000	14.2 242000	11.9 242000	9.84 242000	5.53 242000	—
410.8	15 1/2 x 26 1/2	Input H.P. Output Torque	24.3 244000	16.9 248000	13.2 248000	11.1 248000	9.16 248000	5.18 248000	—
465.0	15 1/2 x 30	Input H.P. Output Torque	21.8 244000	15.2 248000	11.8 248000	9.96 248000	8.25 248000	4.67 248000	—
522.5	19 x 27 1/2	Input H.P. Output Torque	20.1 247000	14.0 247000	10.9 247000	9.24 247000	7.76 247000	4.31 247000	—
570.0	19 x 30	Input H.P. Output Torque	18.6 248000	13.0 248000	10.1 248000	8.57 248000	7.20 248000	4.00 248000	—
604.5	15 1/2 x 39	Input H.P. Output Torque	19.5 255000	13.7 260000	10.8 260000	9.11 260000	7.60 260000	4.37 260000	—
665.0	19 x 35	Input H.P. Output Torque	16.6 246000	11.6 246000	9.07 246000	7.68 246000	6.47 246000	3.61 246000	—
750.0	25 x 30	Input H.P. Output Torque	14.8 248000	10.2 248000	8.10 248000	6.88 248000	5.63 248000	3.25 248000	—
795.0	30 x 26 1/2	Input H.P. Output Torque	14.0 248000	9.69 248000	7.68 248000	6.51 248000	5.42 248000	3.10 248000	—
900.0	30 x 30	Input H.P. Output Torque	12.6 248000	8.72 248000	6.91 248000	5.87 248000	4.89 248000	2.80 248000	—
975.0	25 x 39	Input H.P. Output Torque	13.3 259000	9.36 259000	7.45 259000	6.37 259000	5.23 259000	3.05 259000	—
1050	30 x 35	Input H.P. Output Torque	11.3 246000	7.82 246000	6.22 246000	5.29 246000	4.41 246000	2.53 246000	—
1200	40 x 30	Input H.P. Output Torque	10.3 248000	7.26 248000	5.77 248000	4.88 248000	4.11 248000	2.38 248000	—
1320	30 x 44	Input H.P. Output Torque	9.95 251000	6.98 251000	5.57 251000	4.74 251000	3.97 251000	2.31 251000	—
1400	40 x 35	Input H.P. Output Torque	9.24 246000	6.53 246000	5.20 246000	4.41 246000	3.71 246000	2.15 246000	—
1560	40 x 39	Input H.P. Output Torque	9.43 259000	6.72 259000	5.34 259000	4.56 259000	3.83 259000	2.25 259000	—
1760	40 x 44	Input H.P. Output Torque	8.19 251000	5.85 251000	4.65 251000	3.96 251000	3.33 251000	1.97 251000	—
1989	51 x 39	Input H.P. Output Torque	7.69 259000	5.58 259000	4.37 259000	3.77 259000	3.20 259000	1.88 259000	—
2244	51 x 44	Input H.P. Output Torque	6.69 251000	4.87 251000	3.8 251000	3.28 251000	2.78 251000	1.64 251000	—
2379	61 x 39	Input H.P. Output Torque	6.95 259000	4.91 259000	3.93 259000	3.40 259000	2.87 259000	1.70 259000	—
2684	61 x 44	Input H.P. Output Torque	6.04 251000	4.28 251000	3.43 251000	2.96 251000	2.51 251000	1.48 251000	—
3060	51 x 60	Input H.P. Output Torque	4.83 224000	3.53 224000	2.77 224000	2.40 224000	2.04 224000	1.20 224000	—
3355	61 x 55	Input H.P. Output Torque	4.70 228000	3.34 228000	2.69 228000	2.32 228000	1.95 228000	1.17 228000	—

Output torque ratings given in inch pounds.

Gear shaft overhung load capacity at center of keyway 9,000 lbs.

Consult factory for greater overhung capacities available.

All gear sets listed have right hand threads. Consult factory for those with left hand threads.

Consult factory for double reduction worm gear combinations other than those listed.

RATING TABLE FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
8.000" PRIMARY
18.000" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
118.4	4% x 24½	Input H.P. Output Torque	74.1 251000	62.2 310000	53.7 346000	47.7 365000	41.1 382000	23.3 395000	—
128.1	4% x 26½	Input H.P. Output Torque	70.7 255000	58.6 311000	49.9 342000	44.2 359000	38.1 376000	21.6 388000	—
145.0	4% x 30	Input H.P. Output Torque	63.3 257000	52.7 313000	44.9 344000	39.9 362000	34.4 378000	19.6 391000	—
154.8	7½ x 21½	Input H.P. Output Torque	60.9 263000	50.6 321000	44.5 363000	41 397000	33.8 397000	18.6 397000	—
176.4	7½ x 24½	Input H.P. Output Torque	60.9 297000	50.1 358000	41.4 382000	36.1 395000	29.8 395000	16.4 395000	—
190.8	7½ x 26½	Input H.P. Output Torque	59.4 309000	46.5 353000	38.4 375000	33.5 388000	27.6 388000	15.2 388000	—
216.0	7½ x 30	Input H.P. Output Torque	53.4 311000	41.9 355000	34.6 378000	30.3 391000	25.0 391000	13.8 391000	—
253.2	10½ x 24½	Input H.P. Output Torque	47.8 324000	39.1 388000	31.0 395000	26.1 395000	21.4 395000	11.9 395000	—
273.8	10½ x 26½	Input H.P. Output Torque	47.8 344000	36.2 381000	28.7 388000	24.2 388000	19.1 388000	11.1 388000	—
310.0	10½ x 30	Input H.P. Output Torque	43.4 350000	32.7 384000	25.9 391000	21.9 391000	18.0 391000	10.0 391000	—
335.7	12½ x 26½	Input H.P. Output Torque	41.4 356000	31.1 388000	24.2 388000	20.4 388000	16.8 388000	9.47 388000	—
380.0	12½ x 30	Input H.P. Output Torque	38.3 368000	28.1 391000	21.9 391000	18.5 391000	15.3 391000	8.60 391000	—
410.8	15½ x 26½	Input H.P. Output Torque	35.1 361000	25.8 388000	20.1 388000	16.9 388000	13.9 388000	7.87 388000	—
465.0	15½ x 30	Input H.P. Output Torque	33.5 383000	23.4 391000	18.2 391000	15.3 391000	12.6 391000	7.15 391000	—
542.5	15½ x 35	Input H.P. Output Torque	28.6 373000	20.0 380000	15.6 380000	13.1 380000	10.8 380000	6.17 380000	—
585.0	19½ x 30	Input H.P. Output Torque	28.3 391000	19.4 391000	15.2 391000	12.9 391000	10.7 391000	6.03 391000	—
620.0	15½ x 40	Input H.P. Output Torque	27.6 384000	19.5 393000	15.3 393000	12.9 393000	10.7 393000	6.14 393000	—
682.5	19½ x 35	Input H.P. Output Torque	24.1 380000	16.6 380000	13.0 380000	11.1 380000	9.23 380000	5.20 380000	—
780.0	19½ x 40	Input H.P. Output Torque	23.5 393000	16.3 393000	12.8 393000	10.9 393000	9.15 393000	5.19 393000	—
840.0	24 x 35	Input H.P. Output Torque	20.1 380000	14.0 380000	10.9 380000	9.31 380000	7.69 380000	4.41 380000	—
960.0	24 x 40	Input H.P. Output Torque	19.7 393000	13.7 393000	10.7 393000	9.22 393000	7.64 393000	4.42 393000	—
1085	31 x 35	Input H.P. Output Torque	16.2 380000	11.3 380000	8.95 380000	7.49 380000	6.36 380000	3.67 380000	—
1240	31 x 40	Input H.P. Output Torque	15.9 393000	11.2 393000	8.89 393000	7.51 393000	6.32 393000	3.70 393000	—
1435	41 x 35	Input H.P. Output Torque	13.3 380000	9.25 380000	7.25 380000	6.28 380000	5.24 380000	3.05 380000	—
1640	41 x 40	Input H.P. Output Torque	13.1 393000	9.18 393000	7.22 393000	6.27 393000	5.24 393000	3.08 393000	—
1785	51 x 35	Input H.P. Output Torque	11.1 380000	7.97 380000	6.25 380000	5.34 380000	4.52 380000	2.64 380000	—
2040	51 x 40	Input H.P. Output Torque	10.9 393000	7.93 393000	6.23 393000	5.34 393000	4.54 393000	2.67 393000	—
2173	41 x 53	Input H.P. Output Torque	9.88 365000	6.98 365000	5.51 365000	4.80 365000	4.02 365000	2.37 365000	—
2400	60 x 40	Input H.P. Output Torque	9.75 393000	6.97 393000	5.59 393000	5.14 393000	3.00 393000	2.41 393000	—
2703	51 x 53	Input H.P. Output Torque	8.30 365000	6.04 365000	4.76 365000	4.10 365000	3.46 365000	2.05 365000	—
3000	60 x 50	Input H.P. Output Torque	8.08 382000	5.78 382000	4.65 382000	4.00 382000	3.42 382000	2.03 382000	—
3264	51 x 64	Input H.P. Output Torque	7.03 343000	5.14 343000	4.07 343000	3.49 343000	2.98 343000	1.78 343000	—

Output torque ratings given in inch pounds.
Gear shaft overhung load capacity at center of keyway 10,000 lbs.
Consult factory for greater overhung capacities available.
All gear sets listed have right hand threads. Consult factory for those with left hand threads.
Consult factory for double reduction worm gear combinations other than those listed.



SER. 25



SER. 25



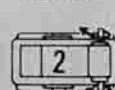
SER. 27



SER. 25



SER. 26



SER. 27



SER. 25



SER. 26

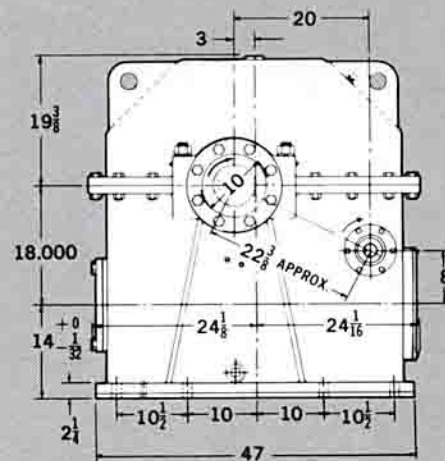


SER. 28

SIZE 80-180

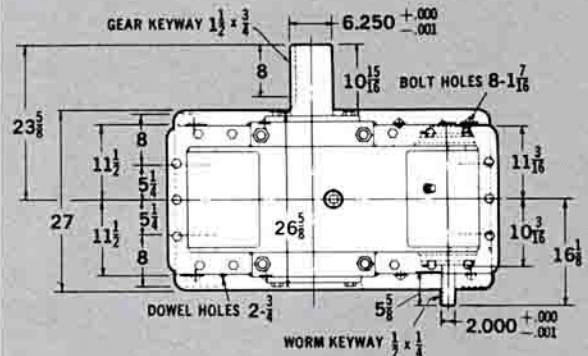
DOUBLE REDUCTION SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE D

Approx. Weight 5,000 lbs.



STANDARD SHAFT ARRANGEMENTS D UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.

RATING TABLE FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
10.000" PRIMARY
21.837" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	380 RPM	100 RPM
120.8	4½ x 25	Input H.P. Output Torque	111 387000	95.0 486000	82.8 549000	74.2 584000	64.8 619000	37.0 644000	644.00
145.0	4½ x 30	Input H.P. Output Torque	95.3 389000	81.6 488000	71.2 550000	64.0 586000	55.9 620000	32.1 645000	645000
193.3	4½ x 40	Input H.P. Output Torque	72.2 379000	62.0 475000	53.5 528000	48.01 560000	41.9 590000	24.1 611000	611000
250.0	10 x 25	Input H.P. Output Torque	78.0 529000	63.1 625000	50.6 644000	42.6 644000	35.0 644000	19.3 644000	644000
296.0	7½ x 40	Input H.P. Output Torque	61.6 476000	49.2 553000	41.3 592000	35.9 611000	29.6 611000	16.7 611000	611000
333.0	7½ x 45	Input H.P. Output Torque	57.5 480000	46.8 567000	39.9 611000	34.9 632000	28.9 632000	16.5 632000	632000
375.0	12½ x 30	Input H.P. Output Torque	62.0 596000	46.2 645000	36.1 645000	30.5 645000	24.8 645000	14.0 645000	645000
450.0	10 x 45	Input H.P. Output Torque	50.2 544000	39.4 614000	32.0 632000	27.1 632000	22.4 632000	12.7 632000	632000
500.0	12½ x 40	Input H.P. Output Torque	46.5 569000	34.6 611000	27.1 611000	22.9 611000	18.7 611000	10.6 611000	611000
562.5	12½ x 45	Input H.P. Output Torque	44.6 585000	33.6 632000	26.5 632000	22.5 632000	18.4 632000	10.5 632000	632000
625.0	12½ x 50	Input H.P. Output Torque	39.9 568000	30.1 613000	23.8 613000	20.1 613000	16.5 613000	9.46 613000	613000
675.0	15 x 45	Input H.P. Output Torque	40.2 612000	29.0 612000	22.6 632000	19.2 632000	16.1 632000	9.05 632000	632000
750.0	15 x 50	Input H.P. Output Torque	35.9 593000	26.0 613000	20.2 613000	17.3 613000	14.4 613000	8.16 613000	613000
840.0	15 x 56	Input H.P. Output Torque	32.1 579000	23.9 598000	18.6 598000	15.9 598000	13.3 598000	7.55 598000	598000
900.0	20 x 45	Input H.P. Output Torque	32.9 632000	22.9 632000	18.1 632000	15.2 632000	12.7 632000	7.23 632000	632000
1000	20 x 50	Input H.P. Output Torque	29.5 613000	20.5 613000	16.2 613000	13.7 613000	11.4 613000	6.52 613000	613000
1193	26½ x 45	Input H.P. Output Torque	25.9 632000	18.3 632000	14.3 632000	12.1 632000	10.2 632000	5.82 632000	632000
1325	26½ x 50	Input H.P. Output Torque	23.2 613000	16.4 613000	12.8 613000	10.9 613000	9.19 613000	5.25 613000	613000
1484	26½ x 56	Input H.P. Output Torque	20.8 598000	14.8 598000	11.6 598000	9.82 598000	8.29 598000	4.76 598000	598000
1590	26½ x 60	Input H.P. Output Torque	19.7 583000	14.0 583000	11.0 583000	9.33 583000	7.89 583000	4.55 583000	583000
1708	30½ x 56	Input H.P. Output Torque	18.4 598000	13.1 598000	10.5 598000	8.98 598000	7.37 598000	4.28 598000	598000
1830	30½ x 60	Input H.P. Output Torque	17.4 583000	12.4 583000	9.97 583000	8.56 583000	7.02 583000	4.09 583000	583000
1950	39 x 50	Input H.P. Output Torque	17.3 613000	12.0 613000	9.53 613000	8.05 613000	6.92 613000	4.06 613000	613000
2184	39 x 56	Input H.P. Output Torque	15.5 598000	10.8 598000	8.59 598000	7.27 598000	6.26 598000	3.69 598000	598000
2340	39 x 60	Input H.P. Output Torque	14.7 583000	10.3 583000	8.18 583000	6.94 583000	5.98 583000	3.52 583000	583000
2574	39 x 66	Input H.P. Output Torque	13.4 559000	9.35 559000	7.48 559000	6.34 559000	5.47 559000	3.25 559000	559000
2744	49 x 56	Input H.P. Output Torque	13.0 598000	9.05 598000	7.32 598000	6.29 598000	5.29 598000	3.12 598000	598000
2940	49 x 60	Input H.P. Output Torque	12.4 583000	8.62 583000	6.98 583000	6.01 583000	5.04 583000	2.98 583000	583000
3234	49 x 66	Input H.P. Output Torque	11.3 559000	7.86 559000	6.39 559000	5.50 559000	4.63 559000	2.75 559000	559000
3480	58 x 60	Input H.P. Output Torque	10.5 583000	7.80 583000	6.24 583000	5.38 583000	4.55 583000	2.72 583000	583000
3828	58 x 66	Input H.P. Output Torque	9.89 559000	7.12 559000	5.72 559000	4.93 559000	4.17 559000	2.51 559000	559000
4118	58 x 71	Input H.P. Output Torque	8.68 527000	6.25 527000	5.01 527000	4.32 527000	3.67 527000	2.20 527000	527000

Output torque ratings given in inch pounds.
Gear shaft overhung load capacity at center of keyway 12,000 lbs.
Consult factory for greater overhung capacities available.
All gear sets listed have right hand threads. Consult factory for those with left hand threads.
Consult factory for double reduction worm gear combinations other than those listed.



SER. 25



SER. 25



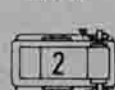
SER. 27



SER. 25



SER. 26



SER. 27



SER. 25



SER. 26

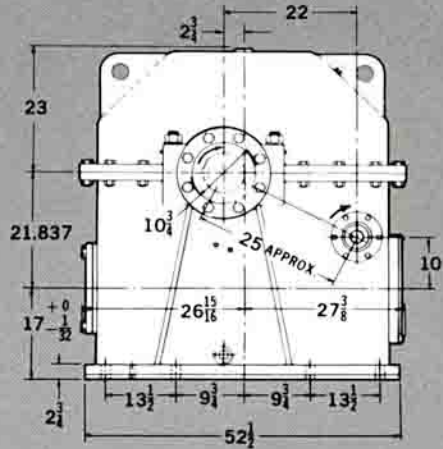


SER. 28

SIZE 100-218

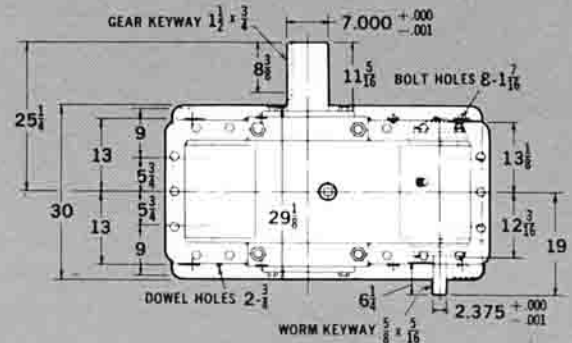
DOUBLE REDUCTION SPEED REDUCERS

Dimensions in Inches.
Dimensions Subject to Change.
Use Certified Prints
Only for Construction.



TYPE D

Approx. Weight 7,500 lbs.



STANDARD SHAFT ARRANGEMENTS D UNITS

When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



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CATALOG No. 700A