Cleveland Gear

FAN-COOLED SPEED REDUCERS

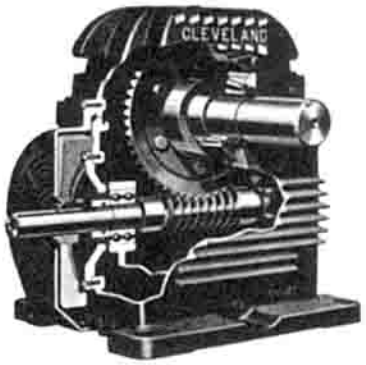
1-800-423-3169
Phone: 216-641-9000
Fax: 216-641-2731
www.clevelandgear.com

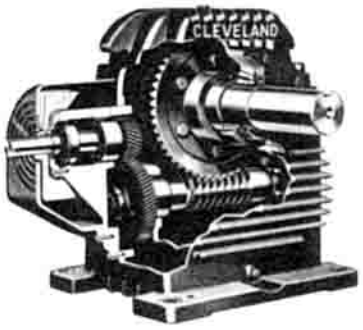
MEMBER OF AGMA

ISO-9001 DNV

CLEVELAND® FAN-COOLED SPEED REDUCERS...

Single Worm
Ratios from 3-1/9:1 to 95:1
Up to 170 H.P.
Up to 145,000 in. lbs. Output Torque
3" to 12" Centers





Helical Worm
Ratios from 32:1 to 394:1
Up to 60 H.P.
Up to 145,000 in. lbs. Output Torque
4" to 12" Centers

Double Worm
Ratios from 25:1 to 6650:1
Up to 145,000 in. lbs. Output Torque
Center Distances 3" to 6" Primary Reduction, 3" to 12" Secondary Reduction.

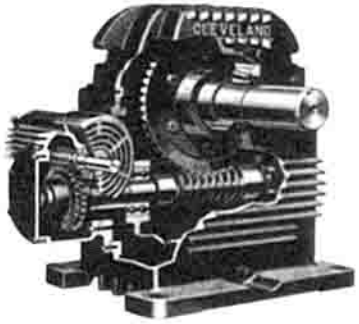
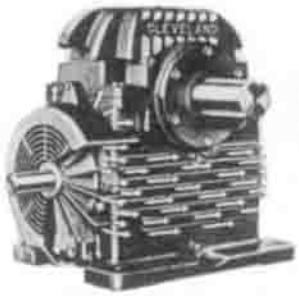


TABLE OF CONTENTS

OFFER THESE IMPORTANT DESIGN FEATURES...



FAN COOLING

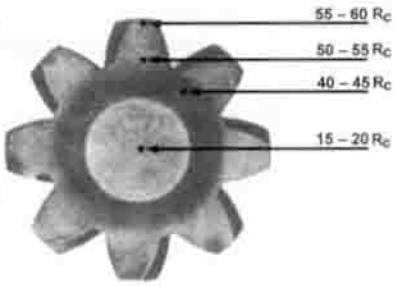
A light, specially designed fan, equally effective in either direction of rotation, is located on the worm shaft's input side. Fan size and design permit a smooth, effective flow of air beneath, above and around all sides of the reducer.

RUGGED FINNED HOUSINGS

One and two-piece housings of highest quality cast iron are ribbed for maximum strength and heat dissipation. They are available in a wide variety of designs for mounting in one position only, thus avoiding design compromises necessary with universal mount types. Cast steel housings are available in AF sizes 40-120, welded steel in other types.

INCREASED OIL CAPACITY

All Clevelands provide an engineered built-in lubrication system with an oil capacity more than adequate to lubricate worm, gear and bearings. This additional oil capacity carries away heat from working contact surfaces and dissipates it through housing walls – provides optimum cooling efficiency. As a result, oil oxidation rate is decreased - lubricant life increased.

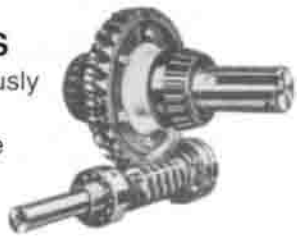


FLAMATIC-HARDENED WORMS

As illustrated in the cross section, Cleveland worms possess a high degree of hardness throughout the entire thread thickness and well below the worm's root diameter. This hardness pattern gives maximum thread strength and resistance to wear without sacrificing the advantages of a medium hard core.

CENTRIFUGALLY-CAST BRONZE GEARS

Gear rims are cut from high tin content bronze centrifugally cast. This copper-tin-nickel alloy offers a relatively high hardness yet is ductile enough to avoid excessively high contact pressure. It affords a low coefficient of friction while running against a hardened steel worm, insuring increased resistance to wear and fatigue pitting.



LARGE GEAR SHAFT DIAMETERS AND GENEROUSLY SIZED BEARINGS

Worm and gear shafts are designed to withstand high torsional and overhung loads. Generously sized anti-friction bearings, mounted in the housing bore for greater rigidity, are designed to accommodate high radial, thrust and overhung loads. Cleveland units are designed to handle almost any overhung load condition ever encountered in their horsepower range without outboard bearings or special shafting.

catalog organization

Catalog 500 is devoted exclusively to Cleveland's complete line of single, helical-worm and double reduction fan-cooled worm gear speed reducers. Additional literature is available on other types of worm gear speed reducers and worm gear sets.

Catalog 500 consists of four basic sections: (1) unit design and selection, (2) single reduction, (3) helical-worm, and (4) double reduction speed reducer specifications. Section (1) covers unit design, selection procedure, service factors, application classifications, etc. Sections (2), (3) and (4) are devoted respectively to single, helical-worm and double reduction unit rating tables, dimensions and shaft arrangements.

reducer selection procedure

1. Determine the application classification from tables on pages 14-15. If your application is not listed, select classification of a similar loading.
2. Determine service factor from the same table.
3. Calculate ratio required by dividing input shaft speed by output shaft speed.
4. Refer to rating tables. Select input or output rating which, when divided by the service factor, is equal to or greater than the load.
5. If either input or output shaft is connected by other than a flexible coupling, the overhung load must be calculated. See Page 17 for overhung load factors.

Relationship between Torque and Horsepower is shown by the two formulas below. For input speeds of 100 RPM or less units are selected and rated on a Torque basis.

$$\text{H. P.} = \frac{\text{Torque} \times \text{RPM}}{63{,}025} \qquad \text{Torque} = \frac{63{,}025 \times \text{HP}}{\text{RPM}}$$

EXAMPLE #1 Select a horizontal reducer to drive a uniformly loaded oven conveyor.

Service 8-10 hours/day

7½ hp electric motor at 1,750 rpm, motor direct coupled

70 rpm output speed required

6″ pitch dia. chain sprocket on the output shaft

1. Application classification tables indicate load is uniform.
2. Service factor for uniform load, 8-10 hours/day, electric-motor-driven is 1.0.
3. Ratio required $= \frac{1750}{70} = 25{:}1$.
4. Rating tables indicate that a 50AF or 50RF, ratio 25:1, rates 8.47 hp at 1,750 rpm and can be tentatively selected.
5. Since a chain sprocket is to be mounted on the output shaft, actual output torque must be calculated. The published torque figure of 6,150 in. lbs. is calculated at an input horsepower of 8.47, so the proportionate torque rating at an input horsepower of 7.5 must be found.
   $\frac{8.47}{6{,}150} = \frac{7.5}{x}$ or actual output torque = 5,433 in. lbs.

The chain sprocket has a 6.0″ pitch dia. or a 3.00″ pitch radius. For chain sprockets, the overhung factor is 1.0. Therefore, actual output torque—5,433 in. lbs., divided by the sprocket radius 3.00″, gives an overhung load of 1,811 lbs. A 50AF or 50RF has an overhung capacity of 3,700 lbs. and is the proper selection for this application.

rating tables and gear ratios

Rating tables list ratios available with their input horsepower ratings, output torque ratings, allowable output shaft overhung load capacities and gear r.p.m. Stock ratios are listed in boldface type and should be used whenever possible for quickest delivery and lowest cost.

Overall ratios listed in the helical-worm gear tables provide a convenient selection from the many ratios available; any worm gear ratio above 15:1, shown in the single reduction section, can be combined with either of the two helical ratios listed, if required. The ratio must be above 15:1 to insure that the rating of the helical gearing matches that of the worm gearing.

Double reduction worm gear tables contain ratios most commonly called for. However, any combination of ratios listed in the single reduction tables can be used. In rating units with ratios other than those shown in the double reduction tables, the rating of each reduction is determined *at its particular input speed.* The lower rating then determines the overall rating of the reducer.

All shaft rotations shown on arrangement drawings are for right hand thread worms. Rotating a left hand thread worm in the same direction as indicated in the shaft arrangement drawings will result in a gear shaft rotation opposite to that shown. Left hand thread ratios in both primary and secondary reductions of a double reduction unit will result in the same relative rotation as indicated on arrangement drawings.

EXAMPLE #2 Select a vertical down shaft unit to drive a pure liquid agitator.

Service 24 hours per day

15 hp electric motor at 1,750 rpm, direct coupled

30 rpm output speed required

Weight and hydraulic thrust of agitator 4,500 lbs.

1. Application classification tables indicate load is uniform.
2. Service factor for uniform load, 24 hours/day, electric-motor-driven is 1.25.
3. Ratio required $= \frac{1750}{30} = 58.3{:}1.$
4. With a 1.25 service factor, a unity rating of 15 hp x 1.25, or 18.75 hp, is required. Rating tables indicate that for a single reduction unit tentatively select a 120DF, ratio 59:1, rated 25.5 hp at 1,750 rpm. Since a ratio of 58:1 is in the range of the helical worm reducers, check those tables and tentatively select a 90HDF unit, ratio 63.55:1, rated 23.8 hp at 1,750 rpm input. The 90HDF unit is lower in cost than the 120DF; therefore, it would be the best selection.
5. Table on page 16 indicates that the thrust capacity of a 90HDF unit at 30 rpm is approximately 11,500 lbs., which is greater than the 4,500 lbs. load; therefore, it is the proper selection for this application.

EXAMPLE #3 Select a horizontal unit for a winch drive. A 20″ dia. drum is to be mounted on the reducer's output shaft.

Service intermittent, 2 hours/day total

1,750 rpm electric motor, horsepower to be determined

2,000 lb. rope pull

12 rpm drum speed

1. Application classification tables indicate load is uniform.
2. Service factor for uniform load, 2 hours/day total, electric-motor-driven, is 0.9.
3. Ratio required $= \frac{1750}{12} = 145.8{:}1.$
4. Output torque required is 10″ (drum radius) x 2,000 lbs. or 20,000 in. lbs. torque. Because of intermittent service, the unit requires an actual rating of only 20,000 x .9 or 18,000 in. lbs. output torque. From the helical worm gear rating tables, tentatively select a 60HAF unit, ratio 144.2:1, rated 19,600 in. lbs. output torque. To determine input horsepower required, set up the proportion— $\frac{4.8}{19{,}600} = \frac{x}{20{,}000}$ or 4.9 input hp required. Use a 5 hp, 1,750 rpm, motor.
5. The rope pull of 2,000 lbs. is less than the overhung load capacity of a 60HAF, which is 5,800 lbs. Therefore, a 60HAF is the proper unit to select for this application.

EXAMPLE #4 Select a horizontal unit to drive a slow-moving drying conveyor uniformly loaded.

Service 24 hours/day

1,750 rpm electric motor direct coupled, horsepower to be determined

Head shaft speed 1.4 rpm

Reducer, direct connected, requires 64,500 in. lbs. of torque at head shaft

1. Application classification tables indicate load is uniform.
2. Service factor for uniform load, 24 hours/day, electric-motor-driven is 1.25.
3. Ratio required $= \frac{1750}{1.4} = 1{,}250{:}1.$
4. To find unity rating of the unit multiply 1.25 x 64,500 in. lbs. which equals 80,625 in. lbs. output torque. From the double reduction worm gear rating tables, select a 50/100 RFA unit, ratio 1,220:1, rated 88,300 in. lbs. output torque. To determine the motor horsepower required set up a proportion as follows:

   $\frac{3.87}{88{,}300} = \frac{x}{64{,}500} = 2.83$ hp. Use a 3 hp, 1,750 rpm, motor.
5. Since unit is direct coupled on input and output shafts, no check on overhung load capacity is required.

application classifications and service factor tables

LOAD NATURE

DURATION OF SERVICE	UNIFORM				MODERATE SHOCK				HEAVY SHOCK			
	Occasional ½ hour day	Intermittent 2 hours day	10 hours day	24 hours day	Occasional ½ hour day	Intermittent 2 hours day	10 hours day	24 hours day	Occasional ½ hour day	Intermittent 2 hours day	10 hours day	24 hours day
PRIME MOVER Electric Motor (Normal Service)	0.80	0.90	1.00	1.25	0.90	1.00	1.25	1.50	1.00	1.25	1.50	1.75
PRIME MOVER Multi-cylinder Internal Combustion Engine or Electric Motor (more than 10 starts per hour)	0.90	1.00	1.25	1.50	1.00	1.25	1.50	1.75	1.25	1.50	1.75	2.00
PRIME MOVER Single Cylinder Internal Combustion Engine	1.00	1.25	1.50	1.75	1.25	1.50	1.75	2.00	1.50	1.75	2.00	2.25

APPLICATION	SUB-APPLICATION		
Agitators	Pure Liquids	Liquids and Solids Liquids, Variable Density	
Blowers	Centrifugal Vane	Lobe	
Brewing and Distilling	Bottling Machinery Brew Kettles, Continuous Duty Cookers, Continuous Duty Mash Tubs, Continuous Duty	Scale Hopper, Frequent Starts	
Can Filling Machines	Can Filling Machines		
Cane Knives		Cane Knives	
Car Dumpers			Car Dumpers
Car Pullers		Car Pullers	
Clarifiers	Clarifiers		
Classifiers		Classifiers	
Clay Working Machinery		Clay Working Machinery Pug Mill	Brick Press Briquette Machine
Compressors	Centrifugal	Lobe Reciprocating, Multi-Cylinder	Reciprocating, Single-Cylinder
Conveyors, Uniformly Loaded or Fed	Apron Assembly Belt Bucket Chain Flight Oven Screw		
Conveyors, Heavy Duty Not Uniformly Fed *Live Roll		Apron Assembly Belt Bucket Chain Flight Oven Screw	Reciprocating Shaker
Cranes *Bridge Travel *Trolley Travel	Main Hoists		
Crusher		**Sugar	Ore Stone
Dredges		Cable Reels Conveyors Maneuvering Winches Pumps Stackers Utility Winches	Cutter Head Drives Jig Drives Screen Drive
Elevators *Man Lifts *Passenger	Bucket, Uniform Load Bucket, Continuous Centrifugal Discharge Escalators Gravity Discharge	Bucket, Heavy Load Freight	
Fans **Cooling Towers** *Induced Draft *Forced Draft	Centrifugal Light (Small Diameter)	Induced Draft Large (Mine, Etc.) Large (Industrial)	
Feeders	Disc	Apron Screw Belt	Reciprocating
Food Industry	Cereal Cooker	Beet Slicer Meat Grinders Dough Mixer	
Generators, (Not Welding)	Generators, (Not Welding)		
Hammer Mills			Hammer Mills
Hoists		Medium Duty Skip Hoist	Heavy Duty
Laundry Washers		Reversing	
Laundry Tumblers		Laundry Tumblers	
Line Shafts	Light Other Line Shafts	Driving Processing Equipment	
Lumber Industry	Small Waste Conveyor, Belt	Barkers, Hydraulic, Mechanical Burner Conveyor Edger Feed Gang Feed Green Chain Off Bearing Rolls Planer Feed Chains Planer Food Chains Planer Tilting Hoist Re-Saw Merry-Go-Round Conveyor Small Waste Conveyor, Chain Sorting Table	Chain Saw and Drag Saw Chain Transfer Craneway Transfer De-Barking Drum Live Rolls Log Deck Log Haul, Incline Log Haul, Well Type Log Turning Device Main Log Conveyors Roll Cases Slab Conveyor

***Refer to Factory.**

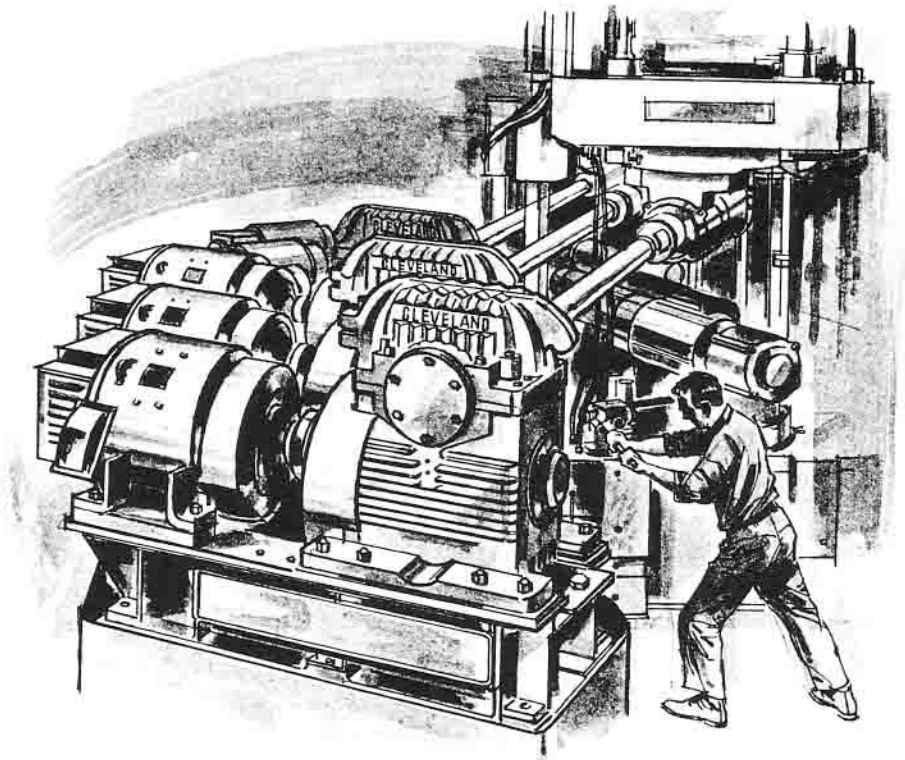
****To be selected on basis of 24 hr. service only.**

LOAD NATURE

DURATION OF SERVICE	UNIFORM				MODERATE SHOCK				HEAVY SHOCK			
	Occasional ½ hour day	Intermittent 2 hours day	10 hours day	24 hours day	Occasional ½ hour day	Intermittent 2 hours day	10 hours day	24 hours day	Occasional ½ hour day	Intermittent 2 hours day	10 hours day	24 hours day
PRIME MOVER **Electric Motor (Normal Service)**	0.80	0.90	1.00	1.25	0.90	1.00	1.25	1.50	1.00	1.25	1.50	1.75
PRIME MOVER **Multi-cylinder Internal Combustion Engine or Electric Motor (more than 10 starts per hour)**	0.90	1.00	1.25	1.50	1.00	1.25	1.50	1.75	1.25	1.50	1.75	2.00
PRIME MOVER **Singlea Cylinder Internal Combustion Engine**	1.00	1.25	1.50	1.75	1.25	1.50	1.75	2.00	1.50	1.75	2.00	2.25
APPLICATION					**SUB-APPLICATION**							
Lumber Industry Cont'd	Small Waste Conveyor — Belt				Triple Hoist Conveyor Triple Hoist Drive Transfer Conveyors Transfer Rolls Tray Drive Trimmer Feed Waste Conveyor							
Machine Tools *Notching Press, Belt Driven	Other Machine Tools, Auxiliary Drives				Bending Roll Other Machine Tools, Main Drives				Punch Press, Gear Driven Plate Planers Tapping Machine			
Metal Mills *Pinch, Dryer and Scrubber Rolls, Reversing *Reversing					Draw Bench Carriage and Main Drive Slitters Table Conveyors, Non-Reversing, Group Drives Wire Drawing and Flattening Machine Wire Winding Machine				Table Conveyors, Non-Reversing, Individual Drives			
Mills, Rotary Type					**Ball **Cement Kilns **Dryers and Coolers Kilns **Pebble **Rod, Plain and Wedge Bar				Tumbling Barrels			
Mixers	Constant Density				Concrete Mixers, Continuous Concrete Mixers, Intermittent Variable Density							
Oil Industry *Oil Well Pumping					Chillers Paraffin Filter Press Rotary Kilns							
Paper Mills	Bleacher Conveyors Presses Suction Roll Winders				Agitators, (Mixers) Barker, Auxiliaries, Hydraulic Barker, Mechanical Beater and Pulper Calenders Converting Machine, Except Cutters, Platers Couch Cylinders Dryers Felt Stretcher Pulp Machine Reel Stock Chests Washers and Thickeners				Barking Drum Calenders, Super Cutters, Platers Felt Whipper Jordans Log Haul			
***Printing Presses**												
Pullers									Barge Haul			
Pumps Reciprocating *Single Acting, 1 or 2 cylinders *Double Acting, Single cylinders	Centrifugal Rotary, Gear Type Lobe, Vane				Proportioning Reciprocating Single Acting, 3 or more cylinders Double Acting, 2 or more cylinders							
Rubber and Plastic Industries *Tire Building Machines *Tire and Tube Press Openers	**Rubber Mill, (3 on line)				Laboratory Equipment **Refiners **Rubber Calenders **Rubber Mill, (2 on line) **Sheeter **Tubers and Strainers **Warming Mills				**Crackers **Mixing Mills			
Sand Muller					Sand Muller							
Sewage Disposal Equipment	Bar Screens Chemical Feeders Collectors				Dewatering Screws Scum Breakers Slow or Rapid Mixers Thickeners Vacuum Filters							
Screens	Air Washing Traveling Water Intake				Rotary, Stone or Gravel							
Slab Pushers					Slab Pushers							
***Steering Gear**												
Stokers	Stokers											
Sugar Industry					**Cane Knives **Crushers				**Mills			
Textile Industry *Knitting Machines *Range Drives					Batchers Calenders Cards Dry Cans Dryers Dyeing Machinery Looms Mangles Nappers Pads Slashers Soapers Spinners Tenter Frames Washers Winders							
***Windlass**												

***Refer to Factory.**

****To be selected on basis of 24 hr. service only.**



application data

GEAR SHAFT THRUST LOAD CAPACITY (UP OR DOWN) IN LBS. FOR VERTICAL UNITS*

	UNIT SIZE									
GEAR RPM	**30**	**35**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**120**
10	2500	3400	5000	5000	8500	11000	12200	13200	14800	17100
25	2100	2950	4550	5000	7150	9500	10800	11900	13300	15500
50	1550	2350	3300	4550	5400	7400	8650	9800	11000	13000
75	1200	1850	2600	3500	4300	5900	7200	8300	9450	11400
100	900	1550	2250	2800	3600	4950	6200	7300	8350	10200
150	600	1200	1900	2200	2850	4000	5100	6200	7200	9050
250	500	1100	1800	2000	2800	3800	4800	5800	6800	8750
350	450	1100	1750	1950	2750	3650	4600	5500	6400	8450

*Assumes no overhung load

OVERHUNG LOAD SERVICE FACTORS

Depending on the type of overhung load, the published overhung load figure should be divided by one of the following factors:

Overhung Member	Factor
Chain sprocket	1.00
Spur pinion	1.25
"V"-belt pulley	1.50
Flat belt pulley	2.50

INPUT SHAFT OVERHUNG LOAD CAPACITY

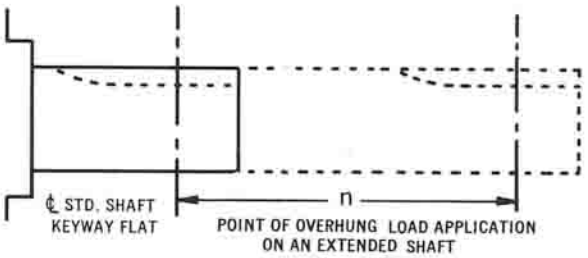
SIZE	WORM SHAFT CAPACITY Single & double reduction worm gear units	HELICAL SHAFT CAPACITY helical worm gear units
30	250	—
35	300	—
40	500	100
50	600	180
60	800	260
70	900	400
80	1000	540
90	1150	660
100	1500	820
120	1900	1100

Use modifying factor for overhung member other than chain sprocket.

GEAR SHAFT OVERHUNG LOAD CAPACITY OF UNITS WITH SHAFTS LONGER THAN STANDARD

Under certain circumstances, it may be necessary to have a longer than standard gear shaft, in which case the overhung load capacity of the unit is necessarily reduced. The amount of reduction is dependent upon the point of application.

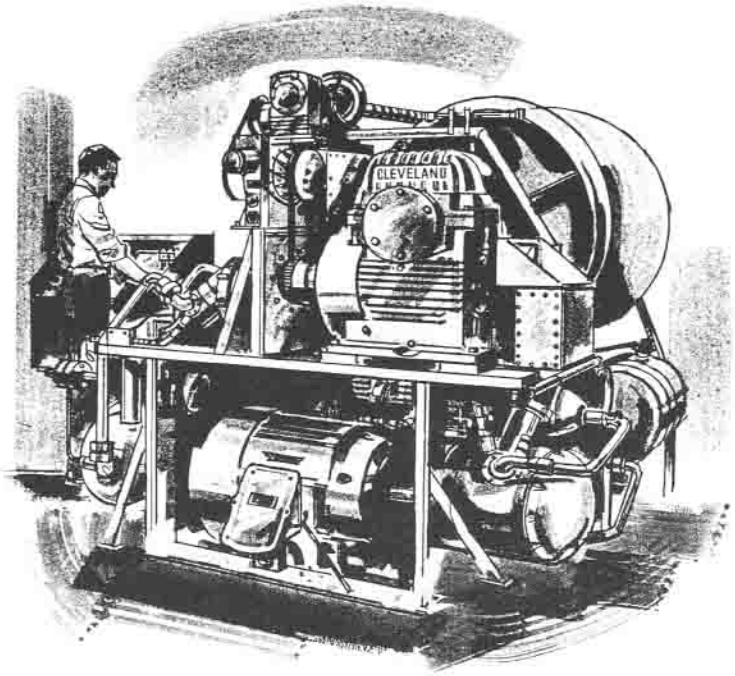
Limitations are indicated in the chart shown below. The factor "K" represents percentage of the published overhung load capacity remaining for a given number of inches (n) beyond the center of the standard gear shaft keyway flat—based on gear shaft bearing capacity. The maximum figure shown on the chart represents the overhung load capacity on the extended shaft, based on shaft strength, and is not to be exceeded.



It should be noted that DF type units have longer standard gear shafts than AF, RF or UF types. Therefore, the published overhung load capacity should be reduced to 75% for sizes 30 through 60 DF types, and 65% for sizes 70 through 120 DF types after consulting the table.

n / UNIT		1"	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"
30	K	86.5	76.5	68.5	61.7	56.5	52.0						
	Max	1040	795	645	540	465	410						
35	K	88.0	78.7	71.1	65.0	59.6	55.2						
	Max	1150	880	720	600	520	460						
40	K	89.6	81.2	74.2	68.3	63.3	59.0	55.3					
	Max	1970	1590	1330	1140	1000	890	810					
50	K	90.9	83.3	77.0	71.5	66.7	62.5	58.9	55.5				
	Max	5500	4570	3920	3420	3050	2740	2490	2280				
60	K	92.0	85.0	79.3	74.0	69.6	65.5	62.0	58.9	56.0	53.3		
	Max	7350	6300	5500	4900	4400	4000	3660	3380	3140	2930		
70	K	93.3	87.4	82.1	77.5	73.4	69.7	66.3	63.3	60.5	58.0	55.6	
	Max	8450	7250	6320	5600	5030	4570	4180	3860	3580	3340	3130	
80	K	94.0	88.6	84.0	79.7	75.8	72.3	68.2	66.2	63.5	61.0	58.8	56.6
	Max	9210	7740	6650	5850	5200	4700	4280	3920	3630	3380	3150	2960
90	K	94.5	89.8	84.5	81.3	77.8	74.5	71.5	68.6	66.0	63.6	61.3	59.3
	Max	10100	8700	7650	6850	6150	5600	5150	4750	4450	4150	3900	3700
100	K	94.8	90.2	85.9	82.1	78.6	75.4	72.5	69.6	67.0	64.8	62.5	60.5
	Max	10500	8850	7680	6790	6060	5490	5000	4610	4260	3960	3710	3480
120	K	95.5	91.5	87.8	84.3	81.1	78.2	75.4	72.8	70.4	68.2	66.1	64.1
	Max	18400	15900	14000	12500	11300	10400	9550	8840	8250	7700	7150	6810

Use modifying factor for overhung member other than chain sprocket.



application data

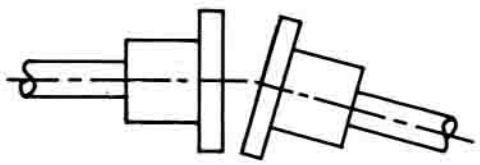
BRAKING ACTION OF WORM GEARING

Braking is required in some applications, such as inclined conveyors, where the load tends to run away with the drive. Overall efficiency of a worm gear reduction unit when acting as a speed reducer must be less than 50% to provide a self-locking drive capable of exerting positive braking action. Since the efficiency of a Cleveland worm gear unit can run as high as 95%, it cannot be depended upon to supply such braking action unassisted. Generally, ratios as high as 40 to 1 will overhaul rather freely under heavy reversing loads, and even with higher ratios, some added braking effort must be applied at the worm shaft to provide positive braking action.

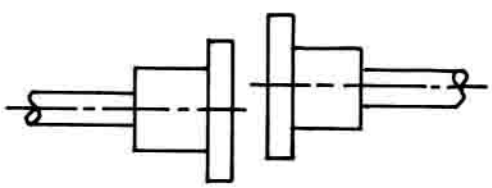
INSTALLATION, LUBRICATION, AND MAINTENANCE

When connecting reducer, prime mover and driven machine, keys will usually require some hand fitting to obtain the best fit. To aid in assembly and removal at a later date, an anti-seize lubricant, such as red lead or molydisulfide, should be used when couplings are mounted on shafts. Most installations can be made with a light driving fit. Any nicks or burrs present should be carefully removed, but no attempt to actually change a diameter by hand filing should be made. Tighter fits for heavier loads can be obtained by heating the coupling half; however, it must not be driven into place without properly backing up the opposite end of the shaft. This can be done on single shaft extensions by removing the plate on the opposite side of the reducer. If this plate is not removed and the shaft properly backed up, the effect of the hammer blow is absorbed by an anti-friction bearing and damage to rolls or races may result. Care should be exercised in reassembling plate shims in exactly the same manner so that gear setting and bearing adjustment will not be altered.

Accurate alignment of both high and low speed shafts is a necessity. Lack of good alignment will cause excessive shaft stresses, overloaded bearings, noise and leaking oil seals. Initial setting of the reducer is, therefore, important and its alignment with the motor and connected machine must be checked after it is securely bolted down. Misalignment can be caused later by a settled foundation, a springing bedplate, or movement of the connected machine. Two forms of misalignment, or a combination of them is possible. Figures below illustrate each.



Angular Misalignment



Parallel Misalignment

When correcting coupling misalignment by placing metal shims under the reducer, angular misalignment should be corrected first. This can be checked by inserting a tapered gauge at 90° positions. When a tapered gauge enters the crack between the couplings an equal distance at four places 90° apart, angular misalignment has been removed. Parallel misalignment is checked by placing a straight edge on the outside diameter of the coupling halves. Either reducer or driven machine must be moved in a vertical or horizontal plane to correct this form of misalignment.

Importance of a solid foundation cannot be overemphasized. Alignment of both high and low speed shafts is jeopardized if the speed reducer does not have a firm foundation. Rigid cast iron or welded steel bedplates are of considerable help in this regard.

Before shipment, all Cleveland speed reducers are run with a rust resisting oil to coat all internal surfaces and to determine that bearings are free and properly adjusted. Units are then drained and shipped dry. Before starting, units must be filled to level indicated with grade of oil called for on the nameplate.

Lubricant specifications are stamped on the nameplate of each reducer. A steam cylinder oil, containing from 5 to 10% acidless tallow, is specified. Proper viscosity is indicated according to the units operating speed. Units stamped with "150" seconds should be filled with oil conforming to "Oil #7 Compounded", those stamped "200" should be filled with oil conforming to "Oil #8 Compounded", as indicated in AGMA Lubricant Specification #250.02. Any supplier of industrial oil should be able to meet these specifications with a standard product.

Above specifications presume an ambient temperature between +15° and +125° Fahrenheit. For recommendations outside this range, or in atmospheres contaminated by chemical fumes, etc., refer to the factory or to your lubricant supplier for an alternate recommendation.

Oil level in a reducer can be checked only when it is at rest and must be maintained at the proper level. Overfilling is to be avoided since it causes excessive churning losses and may result in overheating.

Vertical units, types UF, DF, HUF, HDF, RFU and RFD, have either one or two grease fittings and a companion pressure relief fitting to prevent overfilling the associated anti-friction bearings. These fittings will accept a standard grease gun and the use of any general purpose soft grease is recommended. Bearings are filled before shipment and should be refilled at least once between recommended oil changes.

If possible, before starting, turn the input shaft a few revolutions by hand. This will insure some initial lubrication of bearings, seals and gear contact surfaces. The same thing should be done if the reducer has been idle several weeks. Oil in a new unit should be drained at the end of two weeks and the case flushed with a light oil to remove any foreign substances that may be detrimental to good operation. Thereafter, oil should be changed every six months or 2500 hours—whichever occurs first. Oil may be refiltered if filtering facilities are available. Extremely severe or dirty conditions, as well as high humidity, will require more frequent oil changes. (Note that if the reducer becomes coated with dirt, it should be cleaned so that air cooling will remain effective. This can be easily accomplished with a brush or broom.)

Worm gearing has a tendency to bed itself in, and during the process some pitting of the bronze teeth may occur. This is a natural occurrence and should cause no alarm. The bedding-in process will be repeated any time a gear adjustment is made—setting of the gearing, therefore, should not be disturbed unless absolutely necessary. A bedding-in process produces some initial wear in order to distribute the load across the tooth's entire area. Disturbing the setting starts the process all over again in a new place and requires an equal amount of wear the second time to produce full contact.

Units that stand idle for long periods of time or are kept in storage should be completely filled with oil to prevent corrosion due to internal condensation. Units in intermittent service should be operated for brief periods of time about once a month to redistribute oil. This will help protect bearings and ground parts from rust and will lubricate oil seals.

MAXIMUM SPEED

Cleveland fan-cooled reducers should not be run at input speeds in excess of 2400 r.p.m. In some applications, special conditions will prevail, and the factory should be consulted in early design stages.

HOW TO ORDER

Quotations on standard Cleveland units or on designs suitable for any special application will be gladly given. To enable us to render prompt and accurate service, the following information is desired:

Prime Mover

1. Type (motor, turbine, etc.).
2. Speed.
3. Horsepower output rating.
4. Will speed reducer be flexibly coupled to the driving mechanism, and if not, describe the connection to be employed, giving full information to permit determination of input speed to reduction unit.

Driven Machine

1. Kind of machine.
2. Actual horsepower required.
3. Operating schedule (8 to 10 hours daily, 24 hours, etc.).
4. Speed required at output shaft of reducer.
5. Manner of connection of low speed reducer shaft to machine—i.e., whether flexible coupled, geared or belted. If either of the latter, advise sizes of gears, sprockets or pulleys, and whether or not outboard bearing will be provided.

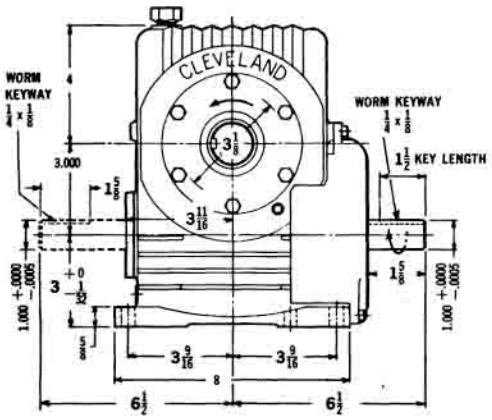
Speed Reducer

1. Indicate type of unit that will best fit space requirements. Indicate shaft arrangements, as well.
2. Do you want us to furnish flexible couplings, and if so, have you a preference for any particular make? Cleveland can supply complete power transmission assemblies, if desired.
3. Advise any special requirements that must be met.

SINGLE REDUCTION SPEED REDUCERS

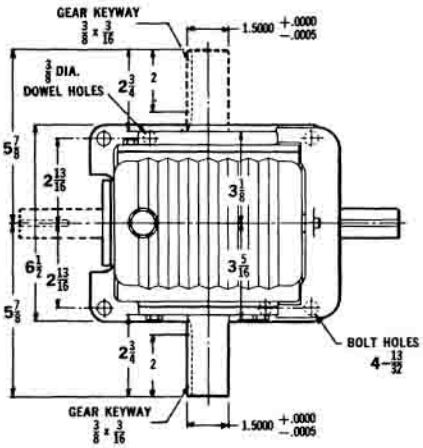
SIZE 30

Dimensions in Inches



TYPE AF

Net Wt.—60 Lbs.
Oil Cap.—2 Pts.

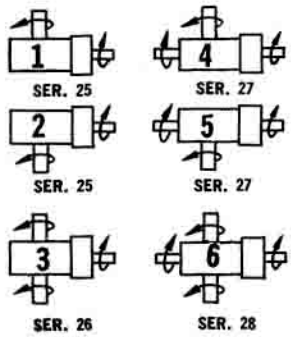


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



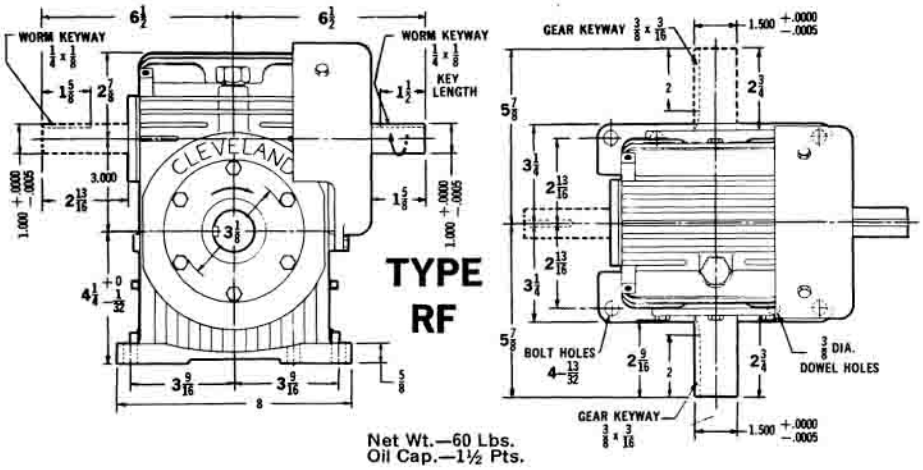
RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 3.000" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
4 1/7	R	Input H.P.	8.25	6.90	6.09	5.54	4.86	3.01	2.15	1.16
		Output Torque	1145	1445	1680	1830	1990	2335	2470	2600
		Output R.P.M.	423	278	210	174	140	72.6	48.4	24.2
		Overhung Load	820	860	920	950	1150	1275	1450	1625
4 1/2	R	Input H.P.	8.49	7.20	6.23	5.62	4.85	2.94	2.10	1.11
		Output Torque	1285	1640	1875	2020	2150	2480	2620	2730
		Output R.P.M.	389	256	193	160	129	66.6	44.4	22.2
		Overhung Load	850	890	950	980	1175	1325	1525	1625
5	**R**	Input H.P.	8.10	6.89	5.98	5.36	4.62	2.78	1.96	1.04
		Output Torque	1360	1745	1985	2140	2280	2600	2720	2840
	L	Output R.P.M.	350	230	174	144	116	60.0	40.0	20.0
		Overhung Load	880	940	1000	1025	1225	1400	1625	1625
6	R	Input H.P.	7.05	5.96	5.27	4.77	4.11	2.46	1.77	.92
		Output Torque	1405	1790	2080	2270	2410	2740	2840	2960
	L	Output R.P.M.	292	192	145	120	96.6	50.0	33.3	16.7
		Overhung Load	950	1025	1075	1125	1275	1525	1600	1600
7	R	Input H.P.	6.86	5.76	4.91	4.39	3.79	2.23	1.58	.85
		Output Torque	1590	2010	2240	2400	2550	2870	3000	3110
	L	Output R.P.M.	250	164	124	103	82.9	42.9	28.6	14.3
		Overhung Load	1000	1100	1150	1200	1350	1625	1575	1575
7 1/2	**R**	Input H.P.	6.39	5.38	4.63	4.12	3.55	2.10	1.48	.79
		Output Torque	1580	2000	2260	2410	2560	2880	2990	3110
		Output R.P.M.	234	154	116	96.0	77.4	40.0	26.7	13.3
		Overhung Load	1025	1125	1200	1225	1375	1625	1575	1575
8	R	Input H.P.	6.52	5.49	4.72	4.19	3.62	2.15	1.51	.81
		Output Torque	1710	2160	2440	2600	2760	3100	3230	3360
	L	Output R.P.M.	219	144	109	90.0	72.5	37.5	25.0	12.5
		Overhung Load	1050	1175	1225	1275	1400	1625	1575	1575
10	**R**	Input H.P.	5.30	4.47	3.85	3.49	3.03	1.77	1.24	.66
		Output Torque	1710	2160	2430	2640	2800	3120	3230	3360
	L	Output R.P.M.	175	115	87.0	72.0	58.0	30.0	20.0	10.0
		Overhung Load	1150	1300	1350	1400	1500	1600	1550	1550
11	R	Input H.P.	5.11	4.26	3.63	3.14	2.78	1.63	1.15	.62
		Output Torque	1805	2250	2520	2680	2830	3140	3260	3380
		Output R.P.M.	159	105	79.1	65.5	52.7	27.3	18.2	9.09
		Overhung Load	1200	1350	1425	1475	1550	1600	1550	1525
12 1/2	**R**	Input H.P.	4.68	3.92	3.31	2.96	2.54	1.49	1.06	.57
		Output Torque	1840	2300	2590	2750	2900	3240	3360	3490
	L	Output R.P.M.	140	92.0	69.1	57.5	46.4	24.0	16.0	8.0
		Overhung Load	1250	1425	1500	1550	1600	1575	1525	1525
15	**R**	Input H.P.	4.22	3.54	2.95	2.63	2.25	1.33	.94	.51
		Output Torque	1975	2470	2670	2830	2980	3320	3450	3580
		Output R.P.M.	117	76.7	58.0	48.0	38.7	20.0	13.3	6.67
		Overhung Load	1350	1550	1650	1650	1600	1550	1525	1500

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
See page 14 for other service factors.
For DF units, use 75% of overhung load figure.



TYPE RF

Net Wt.—60 Lbs.
Oil Cap.—1½ Pts.

SIZE 30

SINGLE REDUCTION SPEED REDUCERS

RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 3.000" CENTERS

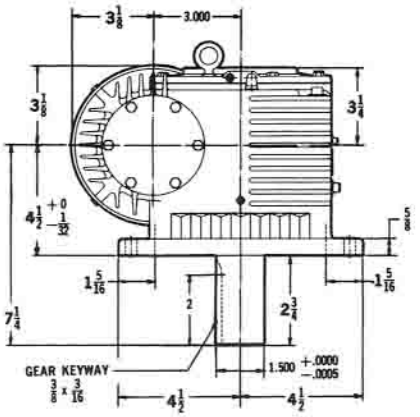
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
16	R	Input H.P.	3.95	3.29	2.81	2.46	2.11	1.25	.88	.47
		Output Torque	1950	2430	2720	2820	2980	3320	3430	3540
	L	Output R.P.M.	110	71.9	54.4	45.0	36.2	18.8	12.5	6.25
		Overhung Load	1375	1575	1650	1650	1600	1550	1500	1475
17	L	Input H.P.	3.75	3.15	2.71	2.43	2.09	1.24	.88	.47
		Output Torque	1950	2440	2740	2920	3080	3420	3550	3670
		Output R.P.M.	103	67.6	51.1	42.3	34.1	17.6	11.8	5.88
		Overhung Load	1400	1625	1650	1650	1600	1550	1500	1475
20	R	Input H.P.	3.34	2.81	2.45	2.18	1.87	1.11	.80	.43
		Output Torque	2000	2500	2820	2980	3140	3480	3620	3740
	L	Output R.P.M.	87.5	57.5	43.5	36.0	29.0	15.0	10.0	5.0
		Overhung Load	1500	1675	1650	1625	1600	1525	1500	1450
25	R	Input H.P.	2.75	2.33	2.00	1.76	1.52	.93	.66	.36
		Output Torque	1960	2460	2740	2920	3090	3420	3540	3650
		Output R.P.M.	70.0	46.0	34.8	28.8	23.2	12.0	8.0	4.0
		Overhung Load	1625	1675	1650	1625	1600	1525	1500	1450
30	R	Input H.P.	2.39	2.02	1.74	1.58	1.35	.81	.58	.32
		Output Torque	1970	2460	2740	2920	3060	3420	3540	3650
	L	Output R.P.M.	58.3	38.3	29.0	24.0	19.3	10.0	6.67	3.33
		Overhung Load	1725	1675	1650	1600	1600	1525	1500	1450
32	R	Input H.P.	2.32	1.96	1.70	1.53	1.32	.79	.57	.31
		Output Torque	2020	2510	2810	2960	3130	3470	3590	3700
		Output R.P.M.	54.7	35.9	27.2	22.5	18.1	9.38	6.25	3.13
		Overhung Load	1725	1675	1650	1600	1600	1525	1500	1450
35	R	Input H.P.	2.10	1.78	1.53	1.40	1.20	.72	.52	.29
		Output Torque	1950	2440	2720	2890	3040	3390	3510	3630
		Output R.P.M.	50.0	32.8	24.8	20.6	16.6	8.57	5.72	2.86
		Overhung Load	1725	1675	1650	1600	1600	1525	1500	1450
40	R	Input H.P.	2.13	1.72	1.49	1.34	1.15	.69	.49	.27
		Output Torque	2120	2630	2930	3080	3250	3580	3710	3820
	L	Output R.P.M.	43.8	28.8	21.8	18.0	14.5	7.5	5.0	2.5
		Overhung Load	1725	1675	1650	1600	1600	1525	1500	1450
45	R	Input H.P.	1.73	1.48	1.28	1.15	1.00	.60	.44	.24
		Output Torque	1920	2380	2660	2810	2960	3280	3390	3500
		Output R.P.M.	38.9	25.6	19.3	16.0	12.9	6.67	4.45	2.22
		Overhung Load	1725	1675	1650	1600	1600	1550	1525	1475
50	R	Input H.P.	1.57	1.32	1.14	1.02	.88	.53	.38	.22
		Output Torque	1880	2320	2590	2720	2860	3140	3260	3360
		Output R.P.M.	35.0	23.0	17.4	14.4	11.6	6.0	4.0	2.0
		Overhung Load	1725	1700	1675	1625	1600	1550	1550	1500
60	R	Input H.P.	1.31	1.10	.94	.85	.72	.43	.31	.17
		Output Torque	1800	2180	2400	2520	2620	2880	2950	3060
	L	Output R.P.M.	29.2	19.2	14.5	12.0	9.70	5.00	3.33	1.67
		Overhung Load	1750	1725	1700	1650	1650	1600	1600	1550

Additional ratios available: 4-1/4 R, 5-1/5 R, 6-1/5 R, 7-1/5 R, 8-2/3 R, 10-1/2 R, 11-1/3 R, 13-1/2 R, 14 R, 16-1/2 R, 20-1/2 L, 38 R.

Output torque ratings given in inch pounds.

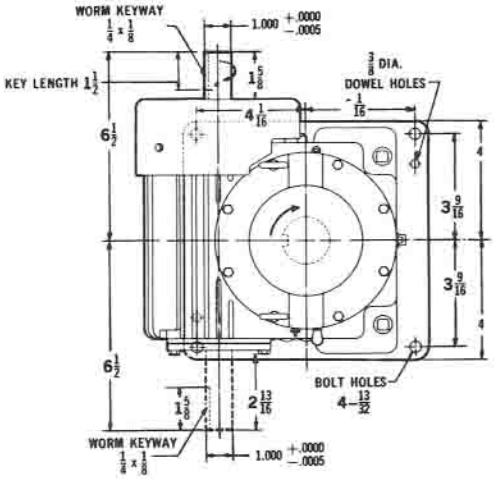
Overhung load given in pounds at center of output shaft keyway.

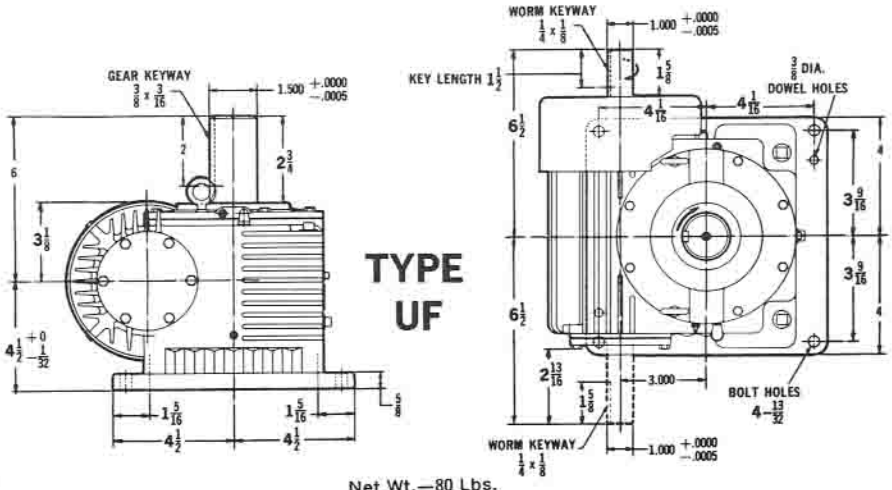
Dimensions in Inches



TYPE DF

Net Wt.—80 Lbs.
Oil Cap.—2 Pts.





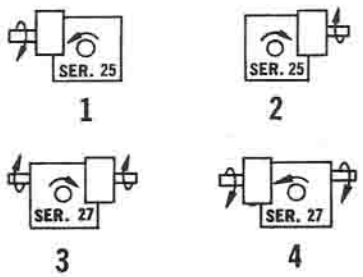
TYPE UF

Net Wt.—80 Lbs.
Oil Cap.—2 Pts.

STANDARD SHAFT ARRANGEMENTS UF-DF UNITS

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

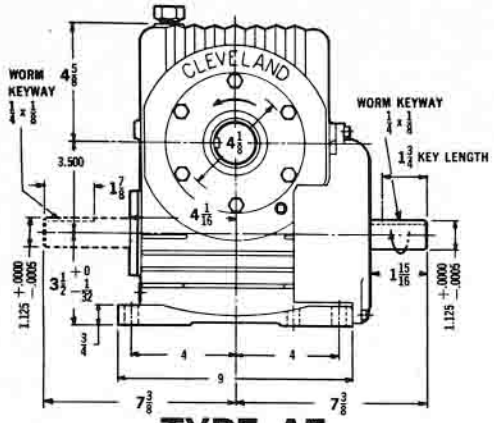
Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



SIZE 35

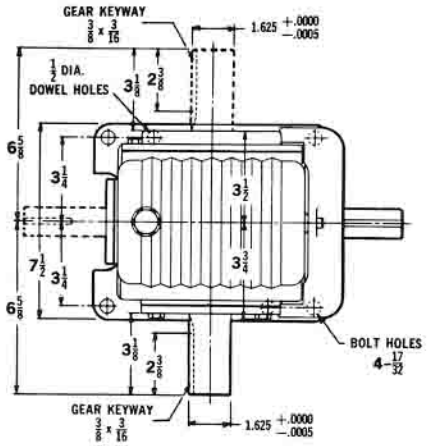
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches



TYPE AF

Net Wt.—90 Lbs.
Oil Cap.—2½ Pts.

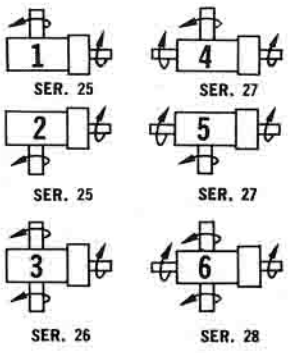


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



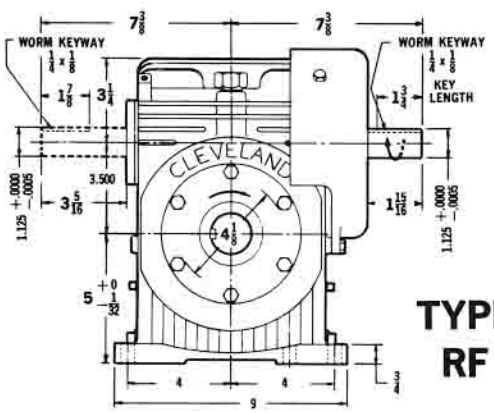
RATING TABLE

FOR UNITY SERVICE FACTOR

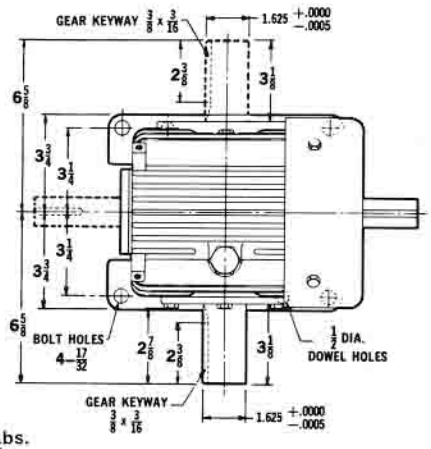
SINGLE REDUCTION WORM GEAR — 3.500" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
*4 1/7	L	Input H.P.	12.4	10.4	9.13	8.30	7.27	4.52	3.10	1.73
		Output Torque	1727	2170	2530	2760	3000	3525	3600	3935
		Output R.P.M.	423	278	210	174	140	72.6	48.4	24.2
		Overhung Load	1400	1550	1675	1750	2000	1950	1900	1900
4 1/2	R	Input H.P.	12.0	9.99	8.79	7.94	6.94	4.27	3.04	1.64
		Output Torque	1810	2280	2650	2890	3130	3630	3840	4050
		Output R.P.M.	389	256	193	160	129	66.6	44.4	22.2
		Overhung Load	1425	1575	1725	1825	2000	1950	1900	1900
5	**R**	Input H.P.	11.5	9.64	8.44	7.62	6.64	4.07	2.86	1.54
		Output Torque	1920	2440	2800	3040	3280	3810	4000	4200
		Output R.P.M.	350	230	174	144	116	60.0	40.0	20.0
	L	Overhung Load	1500	1650	1800	1900	2000	1950	1900	1900
6	L	Input H.P.	10.4	8.80	7.65	6.84	5.92	3.59	2.55	1.36
		Output Torque	2080	2660	3040	3280	3520	4040	4230	4420
		Output R.P.M.	292	192	145	120	96.6	50.0	33.3	16.7
		Overhung Load	1600	1750	1925	2000	1975	1900	1875	1850
7 1/2	**R**	Input H.P.	9.12	7.72	6.69	6.03	5.20	3.12	2.20	1.17
		Output Torque	2260	2880	3280	3520	3780	4290	4490	4680
		Output R.P.M.	234	154	116	96.0	77.4	40.0	26.7	13.3
		Overhung Load	1750	1850	2050	1970	1950	1870	1850	1800
10	**R**	Input H.P.	7.61	6.44	5.58	4.98	4.30	2.58	1.81	.97
		Output Torque	2460	3140	3560	3810	4060	4600	4780	4980
	L	Output R.P.M.	175	115	87.0	72.0	58.0	30.0	20.0	10.0
		Overhung Load	1950	2050	2000	1950	1925	1850	1800	1750
12	R	Input H.P.	6.72	5.67	4.87	4.36	3.75	2.24	1.56	.84
		Output Torque	2580	3260	3680	3920	4180	4700	4860	5060
		Output R.P.M.	146	95.9	72.5	60.0	48.3	25.0	16.7	8.33
		Overhung Load	2100	2050	1975	1950	1900	1800	1750	1700
12 1/2	**R**	Input H.P.	6.45	5.44	4.67	4.19	3.60	2.15	1.50	.81
		Output Torque	2600	3280	3700	3940	4200	4720	4880	5080
		Output R.P.M.	140	92.0	69.1	57.5	46.4	24.0	16.0	8.0
		Overhung Load	2100	2050	1975	1950	1900	1800	1750	1700
14	R	Input H.P.	6.03	5.13	4.40	3.91	3.35	2.02	1.43	.78
		Output Torque	2650	3360	3800	4060	4320	4840	5040	5250
		Output R.P.M.	125	82.1	62.1	51.5	41.5	21.4	14.3	7.15
		Overhung Load	2100	2000	1950	1900	1900	1800	1750	1700
15	**R**	Input H.P.	5.72	4.86	4.18	3.75	3.22	1.94	1.36	.74
		Output Torque	2670	3380	3825	4090	4350	4880	5090	5300
	L	Output R.P.M.	117	76.7	58.0	48.0	38.7	20.0	13.3	6.67
		Overhung Load	2100	2000	1950	1900	1900	1800	1750	1700

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
*Special ratios available at extra charge.
See page 14 for other service factors.



TYPE RF



Net Wt.—90 Lbs.
Oil Cap.—3 Pts.

SIZE 35

SINGLE REDUCTION SPEED REDUCERS

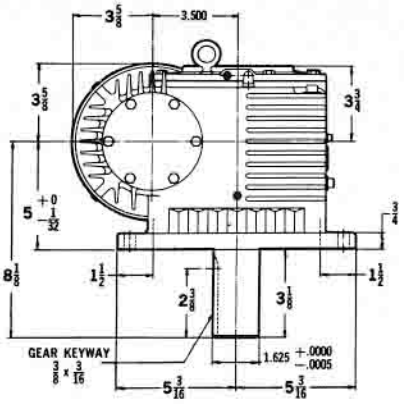
RATING TABLE
FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 3.500" CENTERS

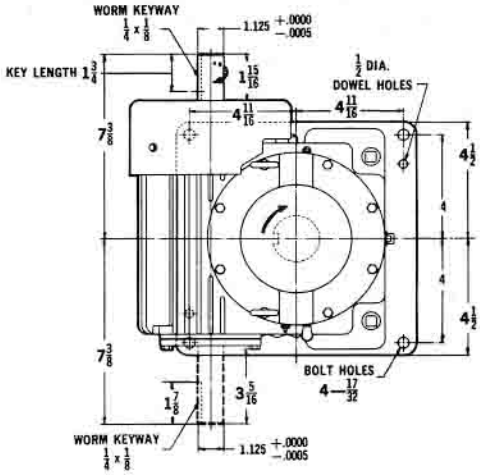
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
17	R	Input H.P.	5.23	4.43	3.82	3.44	2.95	1.77	1.24	.68
	L	Output Torque	2720	3440	3890	4160	4410	4950	5150	5350
		Output R.P.M.	103	67.6	51.1	42.3	34.1	17.6	11.8	5.88
		Overhung Load	2100	2000	1950	1900	1875	1750	1725	1650
18	L	Input H.P.	5.01	4.26	3.66	3.29	2.82	1.69	1.18	.65
		Output Torque	2750	3460	3900	4160	4410	4920	5120	5220
		Output R.P.M.	97.1	63.9	48.3	40.0	32.2	16.7	11.1	5.55
		Overhung Load	2100	2000	1950	1900	1850	1750	1725	1650
20	R	Input H.P.	4.62	3.90	3.34	2.99	2.55	1.53	1.07	.58
	L	Output Torque	2780	3490	3920	4160	4410	4900	5100	5290
		Output R.P.M.	87.5	57.5	43.5	36.0	29.0	15.0	10.0	5.0
		Overhung Load	2100	2000	1925	1900	1850	1750	1725	1650
22 1/2	R	Input H.P.	4.23	3.58	3.10	2.78	2.39	1.44	1.02	.55
		Output Torque	2760	3480	3920	4180	4440	4970	5170	5370
		Output R.P.M.	77.8	51.1	38.7	32.0	25.8	13.3	8.89	4.44
		Overhung Load	2100	2000	1925	1900	1850	1750	1700	1650
25	R	Input H.P.	3.84	3.27	2.86	2.58	2.23	1.36	.96	.53
	L	Output Torque	2730	3460	3930	4200	4480	5050	5250	5460
		Output R.P.M.	70.0	46.0	34.8	28.8	23.2	12.0	8.0	4.0
		Overhung Load	2100	2000	1950	1900	1850	1750	1700	1650
30	R	Input H.P.	3.35	2.87	2.48	2.25	1.93	1.18	.84	.46
	L	Output Torque	2780	3500	3960	4220	4480	5020	5210	5420
		Output R.P.M.	58.3	38.3	29.0	24.0	19.3	10.0	6.67	3.33
		Overhung Load	2100	2000	1950	1900	1850	1750	1700	1650
35	R	Input H.P.	2.93	2.48	2.12	1.92	1.62	1.01	.71	.38
		Output Torque	2780	3470	3880	4120	4340	4820	5000	5170
		Output R.P.M.	50.0	32.8	24.8	20.6	16.6	8.57	5.72	2.86
		Overhung Load	2100	2000	1950	1900	1850	1750	1700	1650
40	R	Input H.P.	2.71	2.31	1.98	1.80	1.53	.93	.66	.37
	L	Output Torque	2820	3520	3960	4200	4430	4930	5110	5300
		Output R.P.M.	43.8	28.8	21.8	18.0	14.5	7.5	5.0	2.5
		Overhung Load	2100	2000	1925	1900	1850	1775	1700	1675
50	R	Input H.P.	2.19	1.88	1.60	1.48	1.24	.76	.54	.30
		Output Torque	2660	3320	3710	3940	4150	4600	4780	4940
		Output R.P.M.	35.0	23.0	17.4	14.4	11.6	6.0	4.0	2.0
		Overhung Load	2100	2025	1950	1925	1900	1800	1750	1750
60	R	Input H.P.	1.87	1.62	1.40	1.28	1.09	.69	.48	.27
	L	Output Torque	2520	3160	3560	3780	3990	4450	4630	4800
		Output R.P.M.	29.2	19.2	14.5	12.0	9.70	5.00	3.33	1.67
		Overhung Load	2125	2050	2000	1950	1925	1850	1800	1800

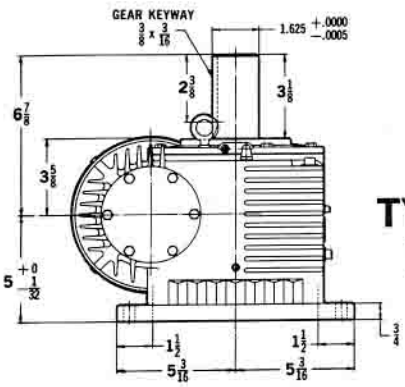
Additional ratios available: 5-1/5 R/L, 8-1/2 R, 10-1/3 R, 29 R.
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For DF units, use 75% of overhung load figure.

Dimensions in Inches

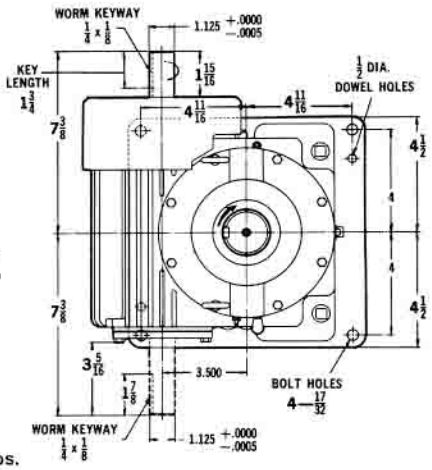


TYPE DF
Net Wt.—105 Lbs.
Oil Cap.—2 Pts.





TYPE UF

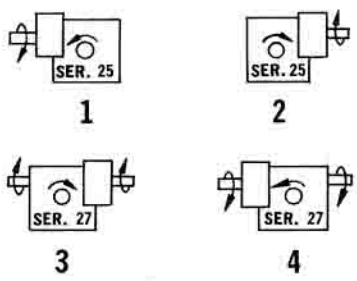


Net Wt.—105 Lbs.
Oil Cap.—3 Pts.

STANDARD SHAFT ARRANGEMENTS
UF-DF UNITS

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

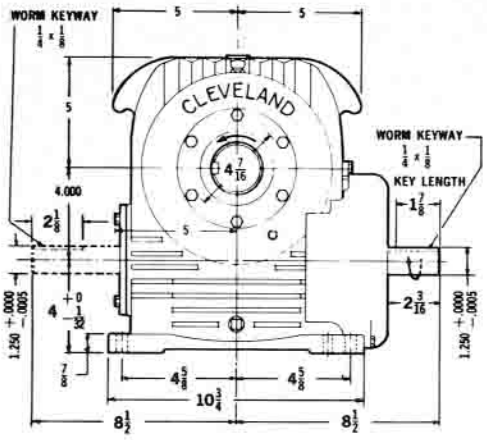
Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



SIZE 40

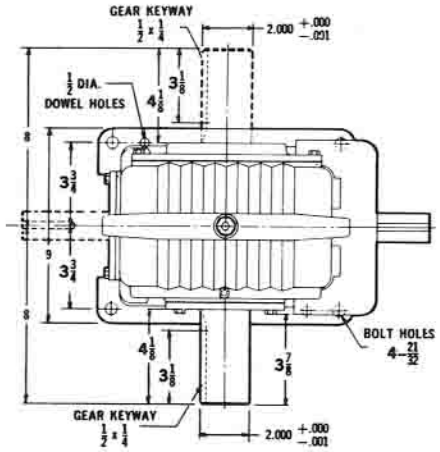
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches



TYPE AF

Net Wt.—120 Lbs.
Oil Cap.—5 Pts.

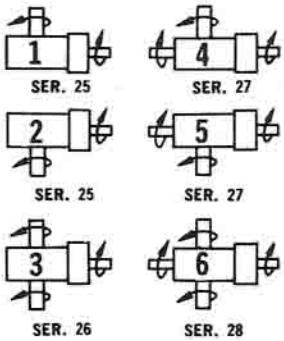


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



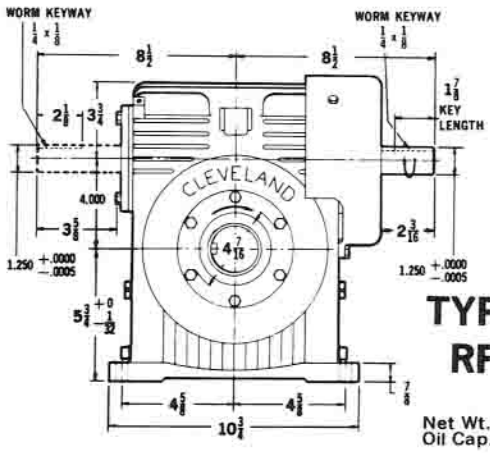
RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 4.000" CENTERS

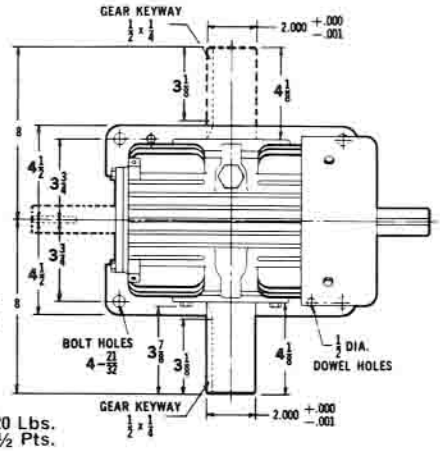
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
*3 1/8	R	Input H.P.	15.6	12.7	11.2	10.5	9.42	6.22	4.54	2.50
		Output Torque	1640	2030	2370	2660	2960	3730	4030	4350
		Output R.P.M.	560	368	278	231	186	96.0	64.0	32.0
		Overhung Load	1250	1300	1425	1450	1550	1875	2275	2850
*3 5/8	R	Input H.P.	14.9	12.5	10.7	9.95	8.90	5.89	4.20	2.30
		Output Torque	1800	2310	2620	2920	3240	4000	4300	4600
	L	Output R.P.M.	483	318	240	199	160	82.8	55.2	27.6
		Overhung Load	1300	1375	1500	1550	1650	2000	2375	2850
4 5/6	**R**	Input H.P.	15.0	12.2	10.9	9.87	8.73	5.48	3.99	2.12
		Output Torque	2400	3000	3520	3860	4210	5000	5360	5635
	L	Output R.P.M.	362	238	180	149	120	62.1	41.4	20.7
		Overhung Load	1450	1550	1675	1750	1850	2250	2550	2850
5 1/6	R	Input H.P.	15.3	12.6	11.1	10.1	8.82	5.47	3.91	2.11
		Output Torque	2600	3270	3800	4150	4500	5280	5600	5900
	L	Output R.P.M.	339	223	168	140	112	58.1	38.7	19.4
		Overhung Load	1475	1600	1725	1800	1900	2300	2600	2825
6	R	Input H.P.	14.3	11.8	10.4	9.41	8.25	5.12	3.60	1.96
		Output Torque	2830	3570	4150	4520	4900	5760	6020	6400
	L	Output R.P.M.	292	192	145	120	96.6	50.0	33.3	16.7
		Overhung Load	1575	1700	1825	1900	2025	2475	2700	2800
6 3/5	R	Input H.P.	13.3	10.9	9.50	8.54	7.44	4.53	3.19	1.71
		Output Torque	2840	3620	4150	4500	4840	5580	5840	6120
	L	Output R.P.M.	267	174	132	109	87.9	45.5	30.3	15.2
		Overhung Load	1625	1750	1900	1975	2100	2575	2700	2800
7 1/4	**R**	Input H.P.	12.9	10.6	9.34	8.41	7.36	4.54	3.22	1.74
		Output Torque	3040	3840	4460	4840	5230	6090	6410	6750
		Output R.P.M.	241	159	120	99.3	80	41.4	27.6	13.8
		Overhung Load	1700	1870	2000	2080	2200	2700	2700	2750
8	R	Input H.P.	12.1	10.1	8.77	7.88	6.87	4.23	2.99	1.61
		Output Torque	3140	3980	4590	4970	5350	6210	6530	6850
	L	Output R.P.M.	219	144	109	90.0	72.5	37.5	25.0	12.5
		Overhung Load	1750	1900	2050	2150	2300	2750	2700	2750
9	R	Input H.P.	11.2	9.32	8.05	7.26	6.33	3.84	2.71	1.46
		Output Torque	3240	4125	4720	5120	5500	6325	6610	6950
		Output R.P.M.	195	128	96.7	80.0	64.5	33.3	22.2	11.1
		Overhung Load	1825	1975	2150	2250	2400	2750	2700	2725
10	**R**	Input H.P.	10.5	8.71	7.62	6.88	6.01	3.70	2.62	1.42
		Output Torque	3340	4240	4890	5340	5720	6620	6950	7310
	L	Output R.P.M.	175	115	87.0	72.0	58.0	30.0	20.0	10.0
		Overhung Load	1900	2050	2250	2350	2500	2750	2700	2675
12	R	Input H.P.	9.21	7.65	6.62	5.95	5.16	3.19	2.23	1.21
		Output Torque	3470	4430	5050	5450	5840	6775	7000	7320
	L	Output R.P.M.	146	95.9	72.5	60.0	48.3	25.0	16.7	8.33
		Overhung Load	2025	2200	2400	2525	2700	2725	2700	2675
12 2/3	**R**	Input H.P.	8.78	7.31	6.33	5.56	4.95	3.01	2.14	1.16
		Output Torque	3460	4420	5050	5320	5840	6670	7000	7310
		Output R.P.M.	138	90.8	68.6	56.9	45.8	23.7	15.8	7.89
		Overhung Load	2070	2250	2450	2570	2750	2725	2700	2675
15 1/2	**R**	Input H.P.	7.63	6.31	5.45	4.88	4.23	2.57	1.82	.98
		Output Torque	3590	4580	5210	5600	5970	6780	7070	7380
	L	Output R.P.M.	113	74.2	56.1	46.5	37.5	19.4	12.9	6.45
		Overhung Load	2250	2450	2650	2800	2825	2725	2700	2675

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
*Special ratios available at extra charge.
See page 14 for other service factors.



TYPE RF

Net Wt.—120 Lbs.
Oil Cap.—4½ Pts.



SIZE 40

SINGLE REDUCTION SPEED REDUCERS

RATING TABLE

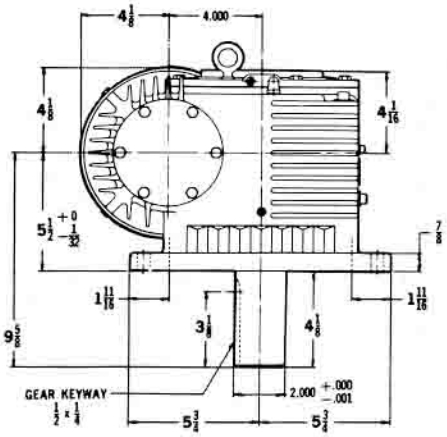
FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 4.000" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
17 1/2	R	Input H.P.	7.03	6.85	5.08	4.55	4.01	2.44	1.75	.96
		Output Torque	3680	4640	5370	5780	6230	7120	7440	7790
		Output R.P.M.	100	65.6	49.7	41.1	33.2	17.2	11.4	5.71
		Overhung Load	2325	2550	2775	2850	2800	2700	2675	2650
19 1/2	R L	Input H.P.	6.43	5.35	4.65	4.15	3.63	2.24	1.60	.87
		Output Torque	3680	4700	5360	5760	6175	7040	7360	7670
		Output R.P.M.	89.7	59.0	44.6	36.9	29.7	15.4	10.3	5.13
		Overhung Load	2400	2650	2875	2850	2800	2700	2675	2625
20 1/2	R	Input H.P.	6.73	5.58	4.83	4.32	3.80	2.34	1.66	.92
		Output Torque	4050	5160	5890	6340	6800	7740	8080	8450
		Output R.P.M.	85.3	56.1	42.4	35.1	28.3	14.6	9.75	4.88
		Overhung Load	2450	2700	2875	2850	2800	2675	2650	2600
21 1/2	L	Input H.P.	5.95	4.93	4.26	3.81	3.33	2.06	1.45	.79
		Output Torque	3720	4750	5400	5800	6210	7070	7380	7700
		Output R.P.M.	81.4	53.5	40.5	33.5	27.0	14.0	9.30	4.65
		Overhung Load	2500	2750	2875	2850	2800	2675	2650	2600
26	R	Input H.P.	5.12	4.22	3.71	3.35	2.95	1.86	1.33	.74
		Output Torque	3700	4700	5400	5840	6260	7200	7550	7900
		Output R.P.M.	67.3	44.2	33.5	27.7	22.3	11.5	7.69	3.85
		Overhung Load	2700	2925	2875	2825	2800	2675	2650	2600
27	L	Input H.P.	4.90	4.04	3.55	3.24	2.84	1.79	1.28	.71
		Output Torque	3680	4680	5370	5810	6250	7200	7540	7900
		Output R.P.M.	64.9	42.6	32.2	26.6	21.5	11.1	7.40	3.70
		Overhung Load	2725	2925	2875	2825	2800	2675	2650	2600
29	R	Input H.P.	4.73	3.93	3.44	3.09	2.77	1.71	1.23	.68
		Output Torque	3730	4790	5470	5900	6310	7220	7560	7900
		Output R.P.M.	60.3	39.7	30.0	24.8	20.0	10.3	6.90	3.45
		Overhung Load	2775	2925	2875	2825	2775	2675	2650	2600
36	R	Input H.P.	3.98	3.27	2.86	2.58	2.27	1.42	1.02	.57
		Output Torque	3730	4750	5410	5810	6210	7060	7360	7690
		Output R.P.M.	48.6	31.9	24.2	20.0	16.1	8.34	5.56	2.78
		Overhung Load	3000	2925	2875	2850	2800	2675	2650	2600
40	R L	Input H.P.	3.71	3.05	2.67	2.40	2.15	1.35	.98	.55
		Output Torque	3710	4730	5400	5810	6240	7100	7420	7740
		Output R.P.M.	43.8	28.8	21.8	18.0	14.5	7.50	5.00	2.50
		Overhung Load	3000	2925	2815	2850	2800	2700	2650	2625
46	R	Input H.P.	3.19	2.63	2.32	2.08	1.83	1.15	.84	.48
		Output Torque	3625	4625	5250	5620	6010	6800	7090	7400
		Output R.P.M.	38.0	25.0	18.9	15.6	12.6	6.52	4.35	2.18
		Overhung Load	3000	2925	2900	2850	2800	2700	2675	2650
50	R L	Input H.P.	3.03	2.49	2.19	1.97	1.73	1.09	.78	.44
		Output Torque	3610	4590	5210	5590	5950	6720	7000	7300
		Output R.P.M.	35.0	23.0	17.4	14.4	11.6	6.0	4.0	2.0
		Overhung Load	3000	2950	2900	2850	2825	2725	2700	2675
55	R	Input H.P.	2.69	2.16	1.90	1.74	1.51	.94	.68	.38
		Output Torque	3460	4380	4950	5290	5610	6290	6530	6770
		Output R.P.M.	31.8	20.9	15.8	13.1	10.6	5.45	3.64	1.82
		Overhung Load	3000	2950	2900	2900	2850	2700	2750	2700
60	R L	Input H.P.	2.48	2.00	1.74	1.57	1.39	.86	.62	.35
		Output Torque	3360	4260	4800	5140	5450	6100	6330	6600
		Output R.P.M.	29.2	19.2	14.5	12.0	9.70	5.00	3.33	1.67
		Overhung Load	3000	2950	2925	2900	2875	2800	2775	2750

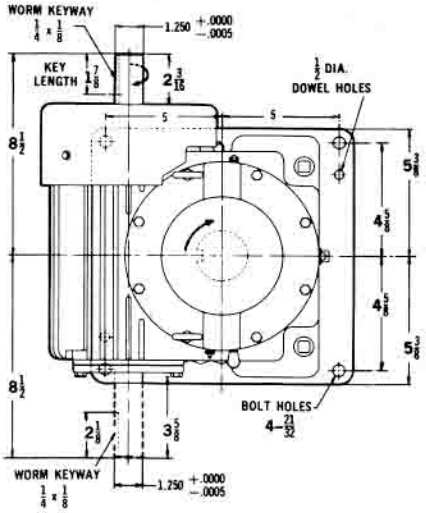
Additional ratios available: 4-3/7 R, 4-4/7 R, 5 R, 5-4/5 R, 8-3/4 R, 25 L
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For DF units, use 75% of overhung load figure.

Dimensions in Inches



TYPE DF

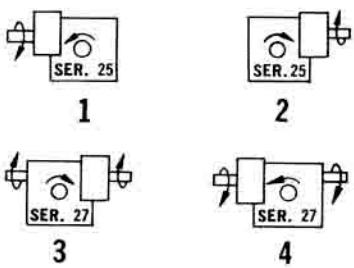
Net Wt.—160 Lbs.
Oil Cap.—4 Pts.

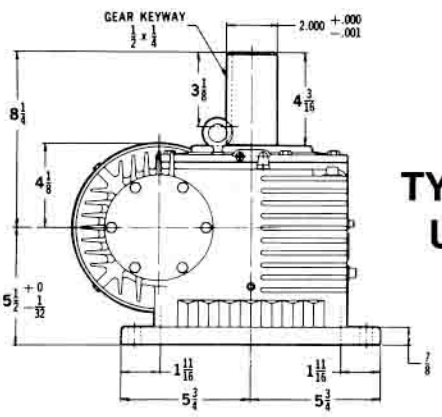


STANDARD SHAFT ARRANGEMENTS UF-DF UNITS

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

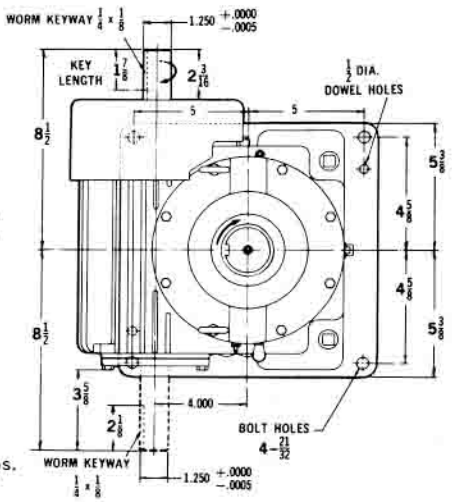
Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.





TYPE UF

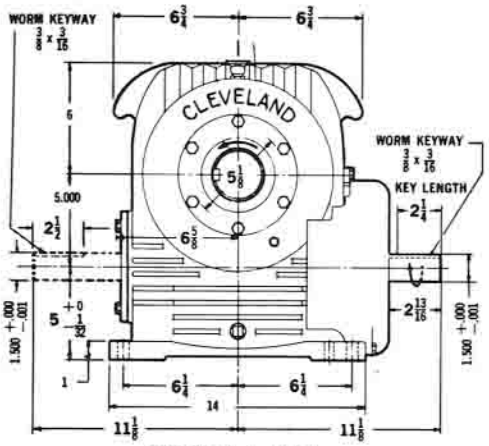
Net Wt.—160 Lbs.
Oil Cap.—5 Pts.



SINGLE REDUCTION SPEED REDUCERS

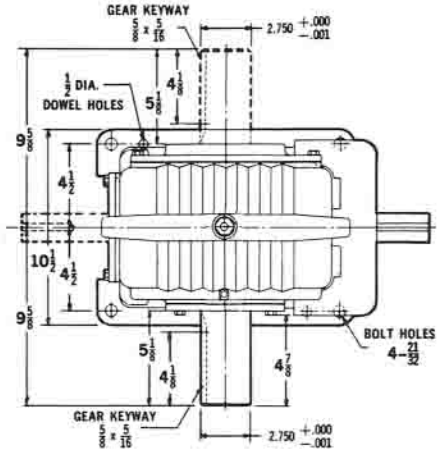
SIZE 50

Dimensions in Inches



TYPE AF

Net Wt.—240 Lbs.
Oil Cap.—1 Gal.

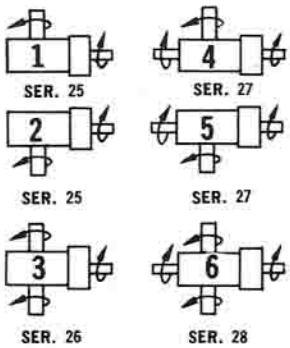


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



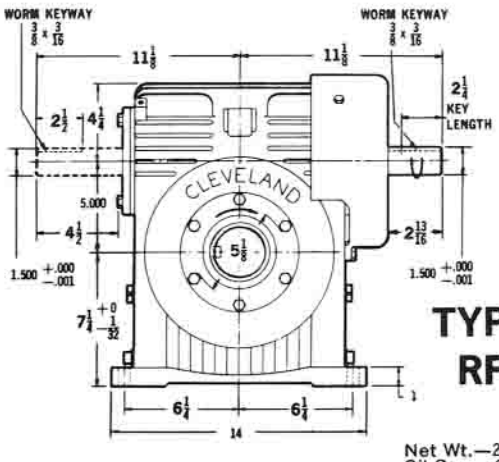
RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — **5.000" CENTERS**

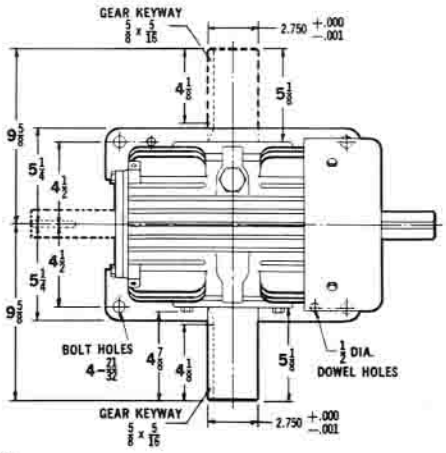
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
*3 3/8	R	Input H.P.	28.5	23.3	20.4	18.7	17.2	11.8	8.76	4.90
		Output Torque	3250	4060	4680	5220	5930	7750	8470	9270
		Output R.P.M.	519	340	258	213	172	88.8	59.2	29.6
		Overhung Load	1675	1850	1925	2000	2125	2525	2950	3650
4 1/6	R	Input H.P.	28.2	22.8	20.0	18.7	16.7	11.3	8.30	4.60
		Output Torque	3930	4870	5650	6370	7090	8980	9730	10500
		Output R.P.M.	420	276	208	172	139	72.0	48.0	24.0
		Overhung Load	1825	2000	2100	2175	2325	2775	3200	3900
4 3/7	R	Input H.P.	27.2	22.0	19.6	18.1	16.2	10.7	7.76	4.25
		Output Torque	3910	4860	5675	6360	7050	8800	9460	10200
		Output R.P.M.	409	268	203	168	136	70.0	46.7	23.4
		Overhung Load	1875	2075	2175	2275	2400	2875	3350	4050
4 5/6	**R**	Input H.P.	26.2	20.4	18.9	17.3	15.7	10.2	7.43	4.06
		Output Torque	4240	5250	6150	6840	7600	9440	10150	10900
		Output R.P.M.	362	238	180	149	120	62.1	41.4	20.7
		Overhung Load	1950	2150	2250	2350	2500	3025	3450	4250
5 1/2	R	Input H.P.	24.1	19.7	17.6	16.1	14.4	9.26	6.73	3.64
		Output Torque	4450	5520	6500	7180	7940	9690	10400	11080
	L	Output R.P.M.	318	209	158	131	106	54.5	36.4	18.2
		Overhung Load	2050	2250	2400	2500	2650	3200	3700	4500
7	R	Input H.P.	21.5	17.6	15.7	14.4	12.8	8.18	5.92	3.22
		Output Torque	5000	6240	7340	8090	8910	10700	11500	12200
		Output R.P.M.	250	164	124	103	82.9	42.9	28.6	14.3
		Overhung Load	2250	2500	2650	2775	2950	3600	4150	5100
7 2/5	**R**	Input H.P.	20.7	17.0	15.2	13.7	12.3	7.76	5.63	3.06
		Output Torque	5080	6310	7440	8120	9000	10800	11500	12200
		Output R.P.M.	236	156	118	97.4	78.4	40.5	27.0	13.5
		Overhung Load	2350	2550	2700	2850	3000	3700	4300	5300
8 1/2	R	Input H.P.	18.6	15.4	13.8	12.5	11.2	7.04	5.09	2.76
		Output Torque	5250	6530	7730	8450	9300	11050	11800	12500
	L	Output R.P.M.	204	135	102	84.6	68.2	35.3	23.6	11.8
		Overhung Load	2450	2725	2900	3025	3250	3950	4550	5650
10 2/3	**R**	Input H.P.	16.1	13.3	11.8	10.8	9.57	6.05	4.38	2.38
		Output Torque	5540	6990	8220	9000	9850	11700	12450	13180
	L	Output R.P.M.	164	108	81.6	67.5	54.4	28.1	18.8	9.38
		Overhung Load	2700	3000	3200	3350	3600	4400	5000	6275
12 2/3	**R**	Input H.P.	14.2	11.7	10.4	9.45	8.32	5.24	3.76	2.04
		Output Torque	5750	7230	8460	9230	10000	11800	12500	13200
	L	Output R.P.M.	138	90.8	68.6	56.9	45.8	23.7	15.8	7.89
		Overhung Load	2850	3200	3400	3600	3800	4700	5300	6800
14 1/3	**R**	Input H.P.	13.5	11.0	9.69	8.75	7.73	4.84	3.46	1.89
		Output Torque	6030	7590	8820	9600	10450	12230	12900	13600
		Output R.P.M.	122	80.2	60.7	50.2	40.5	20.9	14.0	6.98
		Overhung Load	3000	3350	3575	3750	4000	4975	5625	6875
17 1/2	R	Input H.P.	11.3	9.31	8.34	7.61	6.78	4.34	3.14	1.73
		Output Torque	6140	7660	9010	9860	10800	12800	13600	14500
		Output R.P.M.	100	65.6	49.7	41.1	33.2	17.2	11.4	5.71
		Overhung Load	3250	3600	3850	4000	4300	5250	5900	6850

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
*Special ratios available at extra charge.
See page 14 for other service factors.



TYPE RF

Net Wt.—240 Lbs.
Oil Cap.—9 Pts.



SIZE 50

SINGLE REDUCTION SPEED REDUCERS

RATING TABLE

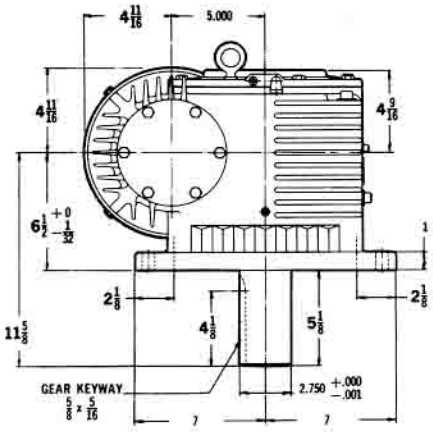
FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 5.000" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
20	R	Input H.P.	10.2	8.37	7.44	6.79	6.01	3.85	2.78	1.53
		Output Torque	6170	7740	9060	9920	10800	12750	13500	14250
		Output R.P.M.	87.5	57.5	43.5	36.0	29.0	15.0	10.0	5.0
		Overhung Load	3400	3800	4050	4250	4550	5525	6200	6825
21	R L	Input H.P.	9.81	8.15	7.17	6.51	5.75	3.66	2.62	1.46
		Output Torque	6260	7900	9200	10030	10850	12700	13400	14100
		Output R.P.M.	83.4	54.8	41.4	34.3	27.6	14.3	9.52	4.76
		Overhung Load	3450	3800	4100	4300	4600	5600	6250	6850
25	R L	Input H.P.	8.47	6.94	6.17	5.61	4.99	3.22	2.32	1.30
		Output Torque	6150	7750	9040	9870	10750	12700	13400	14180
		Output R.P.M.	70.0	46.0	34.8	28.8	23.2	12.0	8.00	4.00
		Overhung Load	3700	4125	4425	4650	4950	5950	6600	6850
30	R	Input H.P.	7.26	6.06	5.32	4.79	4.23	2.71	1.96	1.18
		Output Torque	6180	7850	9060	9880	10700	12450	13100	13800
		Output R.P.M.	58.3	38.3	29.0	24.0	19.3	10.0	6.67	3.33
		Overhung Load	3925	4400	4725	4950	5250	6150	6800	6850
34	R	Input H.P.	6.41	5.47	4.98	4.57	4.10	2.71	1.98	1.12
		Output Torque	6450	8075	9450	10300	11250	13300	14050	14850
		Output R.P.M.	51.5	33.8	25.6	21.2	17.0	8.82	5.88	2.94
		Overhung Load	4100	4600	4900	5150	5400	6350	6800	6850
37	R	Input H.P.	6.00	5.01	4.44	4.04	3.60	2.34	1.70	.96
		Output Torque	6050	7690	8960	9750	10600	12350	13050	13700
		Output R.P.M.	47.3	31.1	23.5	19.4	15.7	8.10	5.40	2.70
		Overhung Load	4200	4750	5050	5300	5600	6450	6850	6850
40	R	Input H.P.	5.83	4.76	4.20	3.89	3.47	2.29	1.66	.94
		Output Torque	6190	7760	9050	9900	10800	12600	13400	14100
		Output R.P.M.	43.8	28.8	21.8	18.0	14.5	7.50	5.00	2.50
		Overhung Load	4325	4875	5250	5500	5750	6550	6875	6850
45	R L	Input H.P.	5.34	4.47	3.95	3.66	3.30	2.19	1.62	.93
		Output Torque	6225	7800	9150	10000	10900	12850	13630	14400
		Output R.P.M.	38.9	25.6	19.3	16.0	12.9	6.67	4.45	2.22
		Overhung Load	4500	5100	5450	5700	5950	6750	6900	6850
48	R L	Input H.P.	4.94	4.04	3.60	3.33	2.97	2.00	1.46	.84
		Output Torque	5940	7460	8710	9530	10350	12200	12900	13650
		Output R.P.M.	36.5	24.0	18.1	15.0	12.1	6.25	4.17	1.08
		Overhung Load	4600	5200	5600	5875	6100	6800	6925	6875
56	R	Input H.P.	4.18	3.40	3.00	2.77	2.44	1.62	1.18	.68
		Output Torque	5750	7260	8410	9150	9860	11450	12000	12600
		Output R.P.M.	31.2	20.5	15.5	12.8	10.2	5.35	3.58	1.79
		Overhung Load	4850	5500	5900	6200	6400	7000	6975	6925
64	R L	Input H.P.	3.55	2.93	2.60	2.38	2.13	1.38	1.01	.58
		Output Torque	5440	6920	7940	8600	9260	10650	11150	11700
		Output R.P.M.	27.4	18.0	13.6	11.2	9.06	4.69	3.12	1.56
		Overhung Load	5050	5800	6200	6500	6700	7100	7000	6950
70	R L	Input H.P.	2.79	2.26	2.01	1.85	1.66	1.10	.81	.47
		Output Torque	4840	6150	7070	7700	8270	9550	10050	10550
		Output R.P.M.	25.0	16.4	12.4	10.3	8.29	4.29	2.86	1.43
		Overhung Load	5200	5950	6400	6700	6900	7150	7000	6950

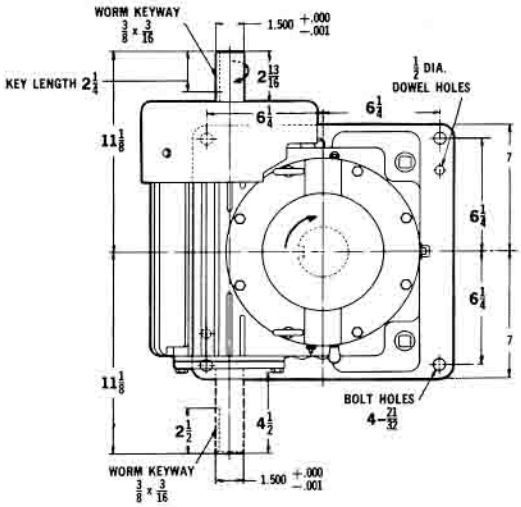
Additional ratios available: 4-5/7 R, 9 R, 14 L, 33 R
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For DF units, use 75% of overhung load figure.

Dimensions in Inches



TYPE DF

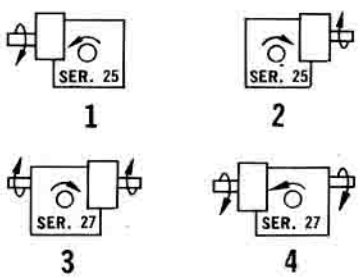
Net Wt.—285 Lbs.
Oil Cap.—10 Pts.

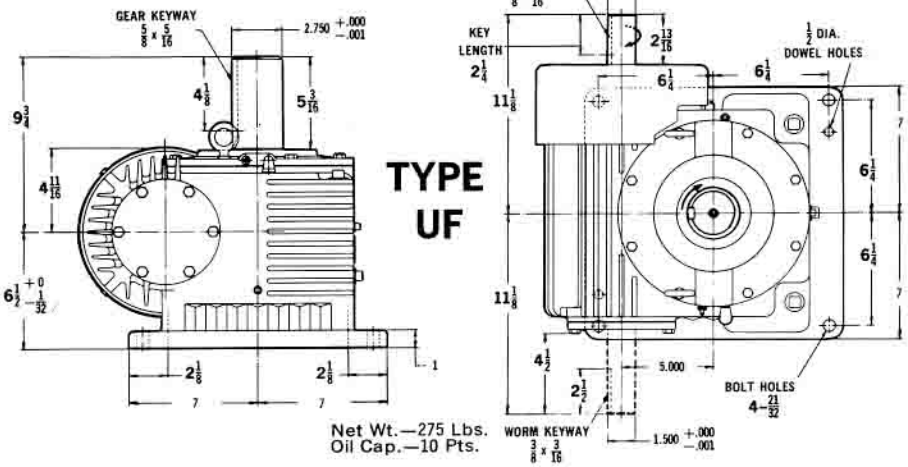


STANDARD SHAFT ARRANGEMENTS UF-DF UNITS

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.





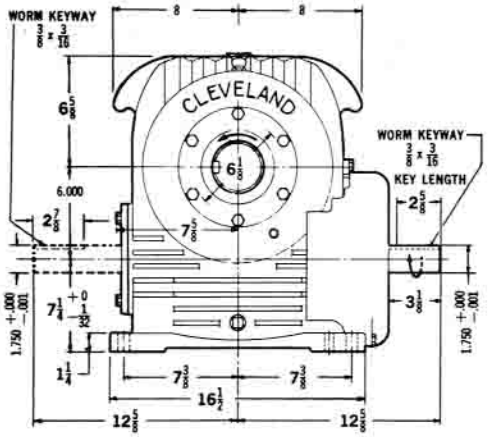
TYPE UF

Net Wt.—275 Lbs.
Oil Cap.—10 Pts.

SIZE 60

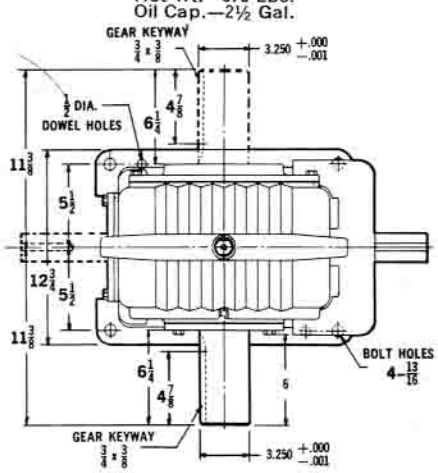
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches



TYPE AF

Net Wt.—370 Lbs.
Oil Cap.—2½ Gal.

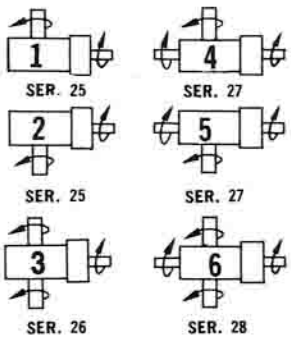


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



RATING TABLE

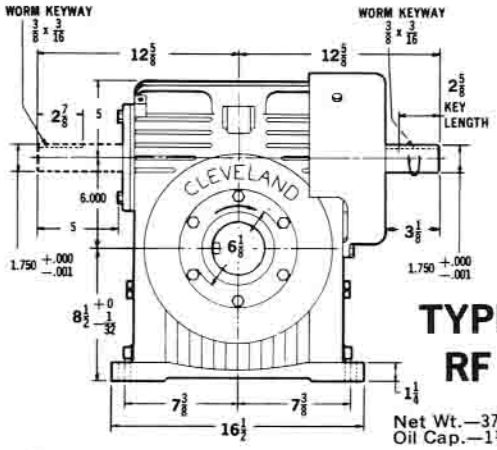
FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 6.000" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
*3 5/8	R	Input H.P.	42.4	34.9	30.6	28.0	25.9	18.1	13.6	7.68
		Output Torque	5200	6550	7550	8320	9510	12700	14200	15700
		Output R.P.M.	483	317	240	199	160	82.8	55.2	27.6
		Overhung Load	1725	1800	1850	1875	2000	2500	2850	3450
4 3/8	R	Input H.P.	41.4	34.0	29.6	27.5	25.2	17.4	12.8	7.19
		Output Torque	6120	7650	8800	9860	11200	14600	16000	17600
		Output R.P.M.	400	263	199	164	132	68.6	45.7	22.8
		Overhung Load	1875	1975	2050	2075	2225	2750	3150	3800
4 5/6	**R**	Input H.P.	39.6	31.8	27.8	25.9	23.5	16.0	11.8	6.52
		Output Torque	6450	7870	9100	10220	11430	14800	16100	17550
		Output R.P.M.	362	238	180	149	120	62.1	41.4	20.7
		Overhung Load	1950	2050	2150	2200	2350	2900	3300	4100
5 1/3	R L	Input H.P.	36.8	30.0	26.2	24.5	22.2	15.0	11.0	6.09
		Output Torque	6600	8190	9450	10650	11930	15220	16550	18000
		Output R.P.M.	328	216	163	135	109	56.3	37.5	18.8
		Overhung Load	2025	2150	2250	2300	2475	3050	3500	4200
6 1/6	R L	Input H.P.	35.1	28.6	25.2	23.4	21.1	14.1	10.2	5.70
		Output Torque	7240	8990	10460	11700	13060	16500	17800	19350
		Output R.P.M.	284	186	141	117	94.0	48.6	32.4	16.2
		Overhung Load	2150	2300	2425	2500	2650	3300	3750	4600
7	R	Input H.P.	33.2	27.0	23.8	22.2	20.0	13.0	9.76	5.38
		Output Torque	7740	9600	11800	12500	13950	17100	19050	20550
		Output R.P.M.	250	164	124	103	82.9	42.9	28.6	14.3
		Overhung Load	2275	2450	2600	2675	2850	3500	4000	4900
7 2/5	**R**	Input H.P.	30.1	25.3	22.3	20.8	18.7	12.4	8.98	4.97
		Output Torque	7600	9440	11000	12400	13700	17100	18400	19800
		Output R.P.M.	236	156	118	97.4	78.4	40.5	27.0	13.5
		Overhung Load	2300	2500	2650	2750	2950	3600	4100	5000
8 1/4	R L	Input H.P.	30.0	24.5	21.7	20.1	18.1	11.8	8.66	4.76
		Output Torque	8180	10170	11900	13300	14700	18300	19750	21200
		Output R.P.M.	212	140	105	87.3	70.3	36.4	24.2	12.1
		Overhung Load	2425	2625	2800	2900	3200	3800	4350	5300
9	R L	Input H.P.	28.1	22.8	20.3	18.8	16.9	11.1	8.13	4.48
		Output Torque	8290	10270	12030	13460	14900	18600	20000	21500
		Output R.P.M.	195	128	96.7	80.0	64.5	33.3	22.2	11.1
		Overhung Load	2550	2750	2925	3000	3250	4000	4600	5600
11	**R**	Input H.P.	24.9	20.3	18.2	16.7	15.0	9.84	7.17	3.94
		Output Torque	8910	11030	13000	14400	15950	19650	21050	22600
		Output R.P.M.	159	105	79.1	65.5	52.7	27.3	18.2	9.09
		Overhung Load	2750	3000	3250	3400	3625	4475	5075	6325
12 2/3	**R**	Input H.P.	21.6	17.6	15.9	14.6	13.4	8.62	6.28	3.46
		Output Torque	8800	10900	12900	14300	15800	19400	20800	22100
		Output R.P.M.	138	90.8	68.6	56.9	45.8	23.7	15.8	7.89
		Overhung Load	2950	3200	3450	3600	3850	4750	5400	6700
13	R L	Input H.P.	21.5	17.5	15.7	14.5	13.0	8.60	6.29	3.48
		Output Torque	8960	11100	13100	14600	16100	19850	21350	22850
		Output R.P.M.	135	88.5	66.9	55.3	44.6	23.1	15.4	7.69
		Overhung Load	2975	3250	3500	3650	3900	4800	5500	6800
14 2/3	**R**	Input H.P.	19.4	15.9	14.2	13.0	11.7	7.64	5.59	3.08
		Output Torque	8980	11150	13170	14500	16050	19570	21000	22400
		Output R.P.M.	119	78.4	59.3	49.1	39.5	20.5	13.6	6.82
		Overhung Load	3150	3475	3700	3850	4100	5100	5800	7150

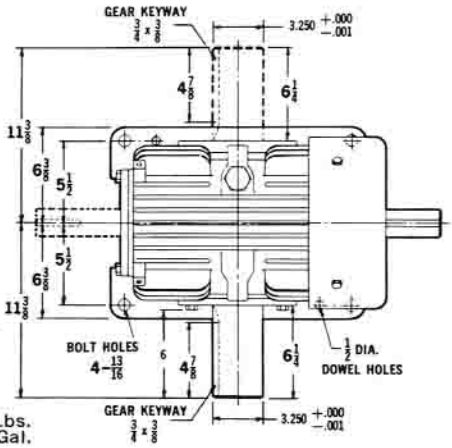
Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
*Special ratios available at extra charge.

See page 14 for other service factors.



TYPE RF

Net Wt.—370 Lbs.
Oil Cap.—1½ Gal.



SIZE 60

SINGLE REDUCTION SPEED REDUCERS

RATING TABLE

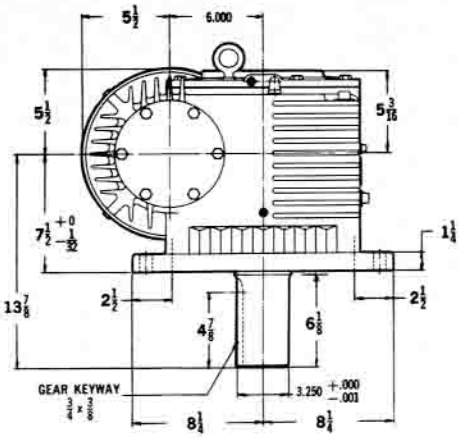
FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 6.000" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
17	R	Input H.P.	17.9	14.6	13.2	12.1	10.9	7.12	5.20	2.87
		Output Torque	9500	11800	13900	15400	17000	20750	22250	23750
	L	Output R.P.M.	103	67.6	51.1	42.3	34.1	17.6	11.8	5.88
		Overhung Load	3300	3675	3900	4100	4400	5400	6000	7800
20	R	Input H.P.	15.2	12.5	11.3	10.2	9.16	6.14	4.41	2.44
		Output Torque	9260	11550	13600	15000	16550	20100	21400	22850
		Output R.P.M.	87.5	57.5	43.5	36.0	29.0	15.0	10.0	5.0
		Overhung Load	3550	3950	4200	4400	4700	5700	6400	8200
20 1/2	R	Input H.P.	14.6	12.1	10.8	9.93	8.89	5.79	4.19	2.38
		Output Torque	9220	11500	13600	14900	16400	19800	21100	22400
	L	Output R.P.M.	85.3	56.1	42.4	35.1	28.3	14.6	9.75	4.88
		Overhung Load	3550	4000	4250	4450	4750	5800	6450	8200
24 1/2	R	Input H.P.	13.1	10.7	9.55	8.88	7.96	5.14	3.83	2.15
		Output Torque	9600	11900	14070	15500	17100	20700	22150	23600
	L	Output R.P.M.	71.4	46.9	35.5	29.4	23.7	12.2	8.16	4.08
		Overhung Load	3850	4300	4600	4850	5100	6150	6850	8325
27 1/2	R	Input H.P.	11.8	9.69	8.75	8.08	7.21	4.74	3.46	1.94
		Output Torque	9560	11900	14050	15500	16950	20400	21700	23100
		Output R.P.M.	63.6	41.8	31.6	26.2	21.1	10.9	7.28	3.64
		Overhung Load	4000	4550	4700	5000	5300	6400	7000	8350
30	R	Input H.P.	10.8	8.87	7.94	7.33	6.54	4.27	3.13	1.74
		Output Torque	9380	11700	13750	15150	16600	19800	21100	22400
		Output R.P.M.	58.3	38.3	29.0	24.0	19.3	10.0	6.67	3.33
		Overhung Load	4150	4650	5000	5300	5500	6450	7100	8400
32	R	Input H.P.	10.2	8.43	7.64	7.02	6.35	4.25	3.15	1.78
		Output Torque	9260	11550	13650	15000	16600	20100	21550	23000
		Output R.P.M.	54.7	35.9	27.2	22.5	18.1	9.38	6.25	3.12
		Overhung Load	4250	4750	5100	5350	5600	6650	7200	8400
35	R	Input H.P.	9.96	8.20	7.43	6.89	6.25	4.23	3.12	1.79
		Output Torque	9740	12050	14250	15750	17400	21300	22800	24350
		Output R.P.M.	50.0	32.8	24.8	20.6	16.6	8.57	5.72	2.86
		Overhung Load	4350	4900	5300	5600	5800	6800	7300	8400
40	R	Input H.P.	8.48	7.01	6.43	5.86	5.28	3.53	2.61	1.48
		Output Torque	9300	11590	13950	15050	16550	19980	21300	22700
	L	Output R.P.M.	43.8	28.8	21.8	18.0	14.5	7.50	5.00	2.50
		Overhung Load	4600	5200	5600	5950	6150	6900	7450	8400
45	R	Input H.P.	7.84	6.51	5.89	5.44	4.91	3.39	2.44	1.39
		Output Torque	9390	11700	13800	15150	16600	20000	21300	22650
	L	Output R.P.M.	38.9	25.6	19.3	16.0	12.9	6.67	4.45	2.22
		Overhung Load	4750	5400	5850	6200	6400	7200	7600	8450
50	R	Input H.P.	6.87	5.67	5.17	4.80	4.35	2.96	2.23	1.29
		Output Torque	8900	11080	13070	14450	15900	19250	20600	21900
	L	Output R.P.M.	35.0	23.0	17.4	14.4	11.6	6.0	4.0	2.0
		Overhung Load	4950	5650	6150	6550	6700	7300	7750	8475
60	R	Input H.P.	5.54	4.62	4.16	3.85	3.49	2.33	1.73	1.00
		Output Torque	8510	10600	12400	13700	15050	17950	19200	20250
		Output R.P.M.	29.2	19.2	14.5	12.0	9.70	5.00	3.33	1.67
		Overhung Load	5250	6000	6600	7000	7150	7600	8000	8500
67	R	Input H.P.	5.06	4.15	3.77	3.46	3.11	2.09	1.56	.89
		Output Torque	8090	10100	11900	13000	14150	16700	17700	18700
		Output R.P.M.	26.1	17.2	13.0	10.8	8.65	4.48	2.98	1.49
		Overhung Load	5400	6300	6900	7300	7400	7600	8100	8500

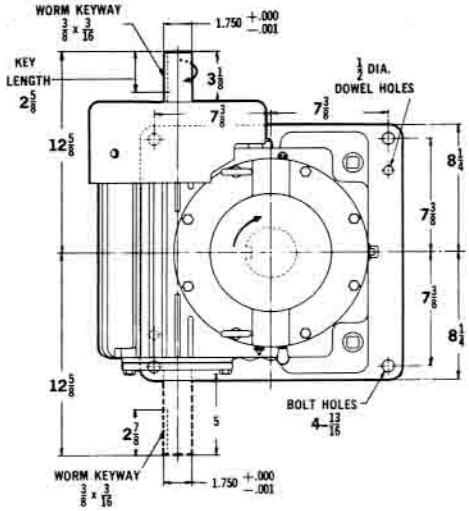
Additional ratios available: 4-2/7 R, 4-4/7 R, 6-3/5 R
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For DF units, use 75% of overhung load figure.

Dimensions in Inches



TYPE DF

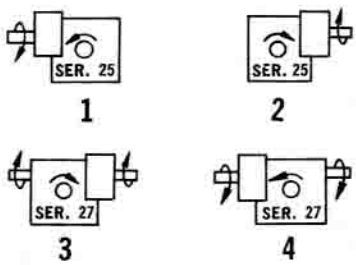
Net Wt.—440 Lbs.
Oil Cap.—2¼ Gal.

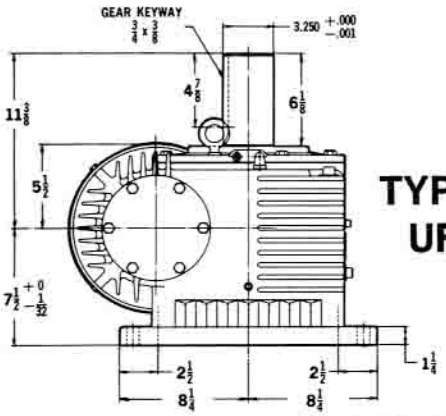


STANDARD SHAFT ARRANGEMENTS UF-DF UNITS

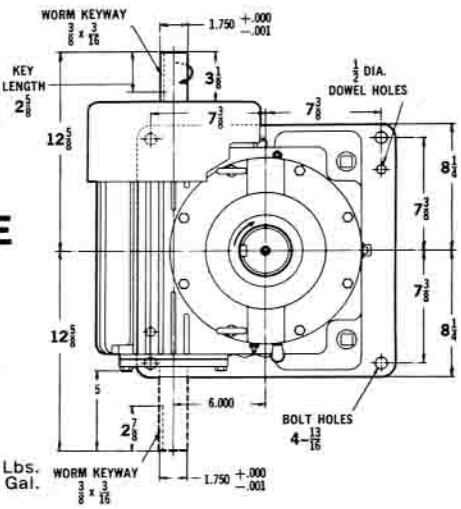
When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

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





TYPE UF

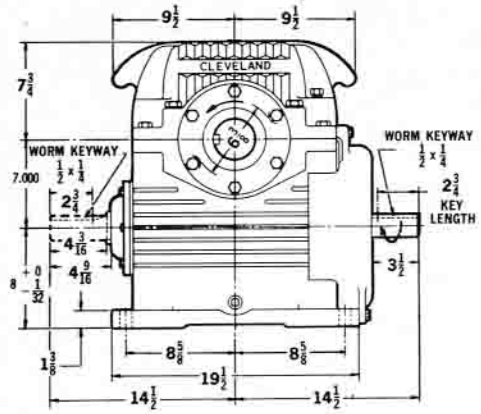


Net Wt.—415 Lbs.
Oil Cap.—2¼ Gal.

SIZE 70

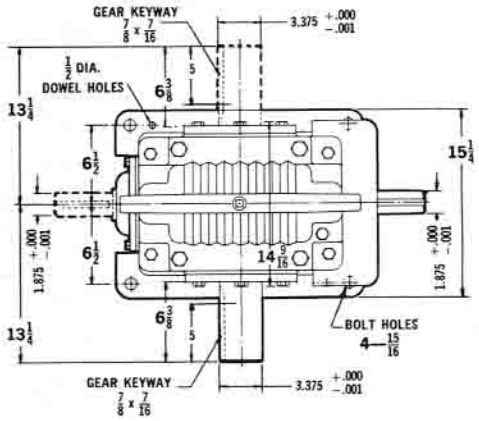
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches



TYPE AF

Net Wt.—600 Lbs.
Oil Cap.—3½ Gal.

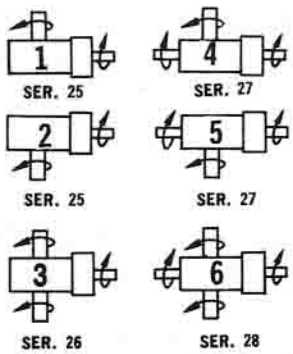


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



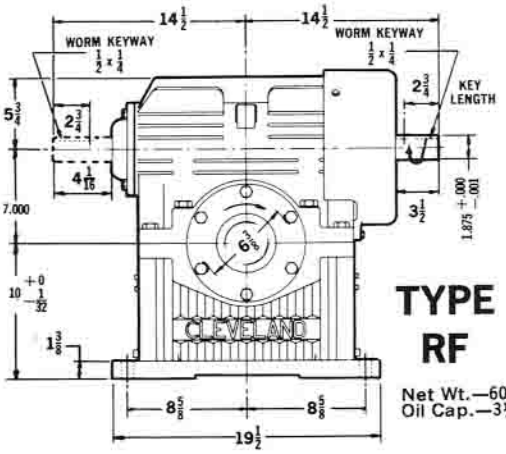
RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — **7.000" CENTERS**

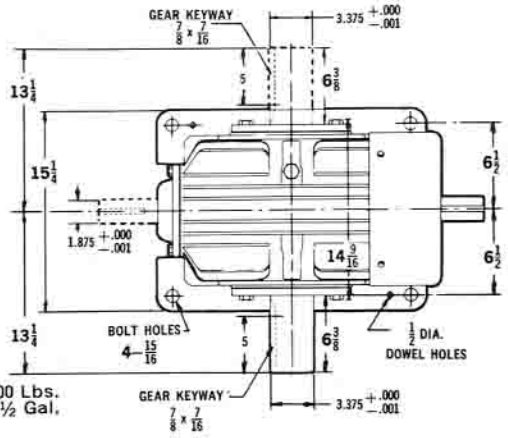
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
*3 5/8	R	Input H.P.	55.2	46.0	40.2	36.7	33.1	24.7	19.0	11.1
	L	Output Torque	6700	8600	9930	10900	12200	17400	19900	22600
		Output R.P.M.	483	317	240	199	160	82.8	55.2	27.6
		Overhung Load	3500	3900	4200	4400	4700	5400	6200	7100
*4 2/9	R	Input H.P.	59.2	46.9	42.6	38.8	35.7	25.7	19.3	11.0
		Output Torque	8400	10200	12200	13400	15300	20900	23400	26100
		Output R.P.M.	415	273	206	171	138	71.1	47.4	23.7
		Overhung Load	3700	4100	4450	4650	4900	5700	6500	7600
*4 1/3	R	Input H.P.	57.7	45.7	41.5	37.8	34.8	25.1	18.8	10.7
		Output Torque	8400	10200	12200	13400	15300	20900	23400	26100
		Output R.P.M.	404	266	201	166	134	69.3	46.2	23.1
		Overhung Load	3750	4150	4500	4700	5000	5800	6600	7700
4 4/7	R	Input H.P.	56.6	45.7	40.5	37.0	33.8	24.1	18.2	10.3
		Output Torque	8650	10700	12500	13800	15700	21300	24800	26500
		Output R.P.M.	382	251	190	157	127	65.5	43.6	21.8
		Overhung Load	3800	4200	4550	4750	5100	6000	6800	8000
4 5/6	**R**	Input H.P.	55.4	45.2	39.6	36.2	33.2	23.4	17.6	9.90
		Output Torque	8940	11200	13000	14300	16200	21800	24200	26800
		Output R.P.M.	362	238	180	149	120	62.1	41.4	20.7
		Overhung Load	3900	4300	4650	4900	5200	6150	6900	8200
5 1/3	R	Input H.P.	53.2	43.7	38.0	35.0	32.0	22.3	16.8	9.41
		Output Torque	9500	12000	13800	15300	17300	23000	25500	28000
		Output R.P.M.	328	216	163	135	109	56.3	37.5	18.8
		Overhung Load	4000	4450	4800	5000	5300	6300	7200	8600
5 2/3	R	Input H.P.	52.0	42.7	37.1	34.1	31.3	21.7	16.2	9.13
	L	Output Torque	9840	12400	14200	15800	18000	23700	26200	28800
		Output R.P.M.	308	203	154	127	102	52.9	35.3	17.6
		Overhung Load	4100	4550	4900	5750	5500	6500	7400	8900
6 2/5	R	Input H.P.	48.5	39.7	34.5	32.0	29.3	20.0	14.9	8.40
		Output Torque	10300	13000	14900	16700	18900	24600	27000	29700
		Output R.P.M.	274	180	136	112	90.6	46.9	31.2	15.6
		Overhung Load	4300	4750	5100	5350	6650	6800	7800	9500
7	**R**	Input H.P.	46.4	37.8	32.9	30.5	27.8	19.0	14.0	7.84
		Output Torque	10700	13400	15400	17300	19600	25300	27600	30200
		Output R.P.M.	250	164	124	103	82.9	42.9	28.6	14.3
		Overhung Load	4450	4900	5250	5500	5850	7100	8000	9900
8 1/4	R	Input H.P.	42.0	34.0	29.6	27.5	25.0	17.0	12.6	7.05
		Output Torque	11200	14000	16200	18200	20400	26300	28700	31400
		Output R.P.M.	212	140	105	87.3	70.3	36.4	24.2	12.1
		Overhung Load	4700	5200	5550	5800	6100	7600	8600	10500
10 1/3	**R**	Input H.P.	36.0	29.2	25.6	23.8	21.6	14.7	10.8	6.03
		Output Torque	12000	15000	17300	19400	21700	27900	30400	33000
		Output R.P.M.	169	111	84.1	69.6	56.1	29.0	19.3	9.67
		Overhung Load	5150	5700	6000	6300	6700	8400	9400	10350
11	R	Input H.P.	34.2	27.6	24.1	22.5	20.3	14.3	10.2	5.72
	L	Output Torque	12100	15000	17400	19500	21800	28000	30400	33000
		Output R.P.M.	159	104	79.0	65.4	52.7	27.2	18.2	9.09
		Overhung Load	5250	5750	6100	6400	6800	8500	9700	10300

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
*Special ratios available at extra charge.
See page 14 for other service factors.



TYPE RF

Net Wt.—600 Lbs.
Oil Cap.—3½ Gal.



SIZE 70

SINGLE REDUCTION SPEED REDUCERS

RATING TABLE

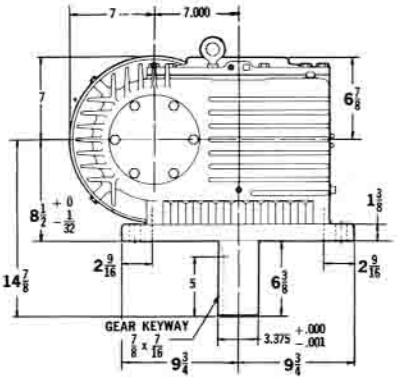
FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 7.000" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
12 2/3	R	Input H.P.	31.0	25.4	22.2	20.2	18.6	12.6	9.32	5.20
		Output Torque	12500	15700	18200	19900	22800	28900	31400	34000
		Output R.P.M.	138	90.8	68.6	56.9	45.8	23.7	15.8	7.89
		Overhung Load	5500	6100	6400	6700	7100	8900	10250	10250
15 1/2	R	Input H.P.	26.7	21.7	19.0	18.0	16.0	10.8	7.96	4.45
		Output Torque	13000	16000	18700	21000	23400	29600	32000	34600
		Output R.P.M.	113	74.2	56.1	47.0	37.4	19.4	12.9	6.45
		Overhung Load	5950	6550	6900	7200	7700	9600	10400	10250
19	R L	Input H.P.	22.8	18.6	16.3	15.4	13.9	9.35	6.92	3.89
		Output Torque	13300	16600	19200	21600	24000	30200	32800	35400
		Output R.P.M.	92.1	60.5	45.8	37.9	30.5	15.8	10.5	5.26
		Overhung Load	6250	6850	7200	7550	8000	10250	10350	10200
22	R	Input H.P.	20.1	16.2	14.4	13.3	12.1	8.12	6.02	3.43
		Output Torque	13400	16500	19300	21600	24000	29700	32000	34800
		Output R.P.M.	79.5	52.2	39.5	32.7	26.4	13.6	9.09	4.55
		Overhung Load	6700	7400	7800	8100	8500	10500	10300	10200
25	R	Input H.P.	18.0	14.5	12.9	12.0	10.9	7.30	5.37	3.00
		Output Torque	13300	16400	19400	21500	23900	29600	31800	34100
		Output R.P.M.	70.0	46.0	34.8	28.8	23.2	12.0	8.00	4.00
		Overhung Load	7100	7800	8150	8500	9100	10550	10400	10250
30	R	Input H.P.	15.4	12.4	11.1	10.2	9.27	6.23	4.58	2.57
		Output Torque	13400	16500	19500	21600	23900	29500	31600	33800
		Output R.P.M.	58.3	38.3	29.0	24.0	19.3	10.0	6.67	3.33
		Overhung Load	7600	8300	8650	9000	9600	10550	10400	10300
36	R	Input H.P.	13.6	11.0	9.76	8.99	8.27	5.74	4.33	2.53
		Output Torque	13500	16800	19600	21900	24400	30600	33000	35600
		Output R.P.M.	48.6	31.9	24.2	20.0	16.1	8.34	5.56	2.78
		Overhung Load	8000	8900	9200	9500	10100	10500	10300	10100
40	R	Input H.P.	12.8	10.4	9.19	8.52	7.80	5.49	4.09	2.35
		Output Torque	13800	17100	20000	22200	24900	31200	33600	36200
		Output R.P.M.	43.8	28.8	21.8	18.0	14.5	7.50	5.00	2.50
		Overhung Load	8400	9200	9500	9900	10500	10450	10300	10150
46	R	Input H.P.	10.8	8.79	7.88	7.22	6.60	4.60	3.47	2.00
		Output Torque	13100	16200	19000	21200	23500	29200	31400	33800
		Output R.P.M.	38.0	25.0	18.9	15.6	12.6	6.52	4.35	2.18
		Overhung Load	8700	9700	10000	10300	10900	10500	10400	10200
51	R	Input H.P.	9.69	7.74	6.90	6.46	5.83	4.06	3.02	1.70
		Output Torque	12700	15600	18400	20400	22600	27800	30000	32100
		Output R.P.M.	34.3	22.6	17.2	14.1	11.4	5.88	3.92	1.96
		Overhung Load	9200	10000	10300	10750	10900	10650	10500	10400
55	R L	Input H.P.	8.55	7.07	6.33	5.86	5.22	3.68	2.78	1.60
		Output Torque	12400	15300	18000	20000	22000	27000	29200	31000
		Output R.P.M.	31.8	20.9	15.8	13.1	10.6	5.45	3.64	1.82
		Overhung Load	9300	10300	10600	11000	10900	10600	10500	10400
61	R	Input H.P.	8.31	6.66	5.89	5.52	5.00	3.53	2.63	1.50
		Output Torque	12200	15200	17900	19800	21900	27000	28900	30800
		Output R.P.M.	28.7	18.8	14.2	11.8	9.50	4.92	3.28	1.64
		Overhung Load	9700	10750	11000	11000	10900	10700	10600	10500

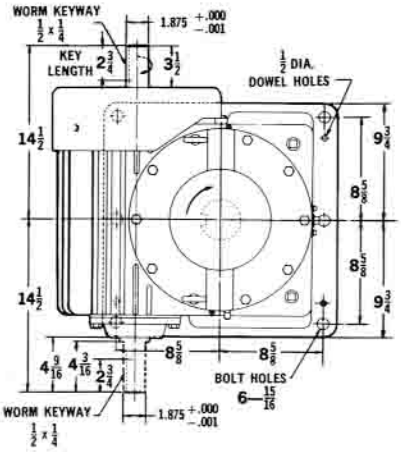
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For DF units, use 65% of overhung load figure.

Dimensions in Inches



TYPE DF

Net Wt.—720 Lbs.
Oil Cap.—3½ Gal.

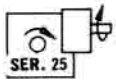


STANDARD SHAFT ARRANGEMENTS UF-DF UNITS

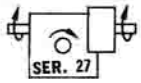
When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

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

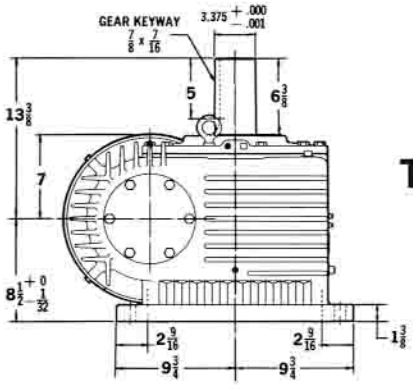
1



2

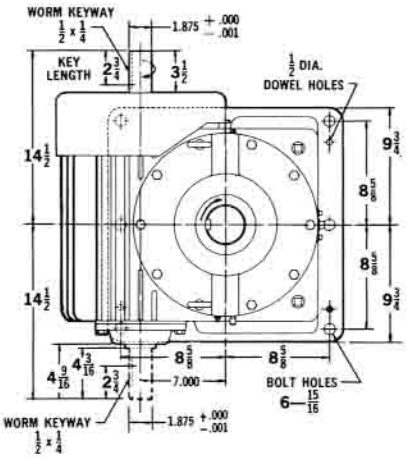


3



TYPE UF

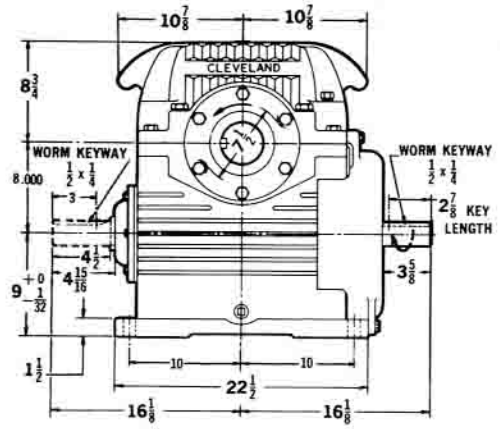
Net Wt.—690 Lbs.
Oil Cap.—3½ Gal.



SINGLE REDUCTION SPEED REDUCERS

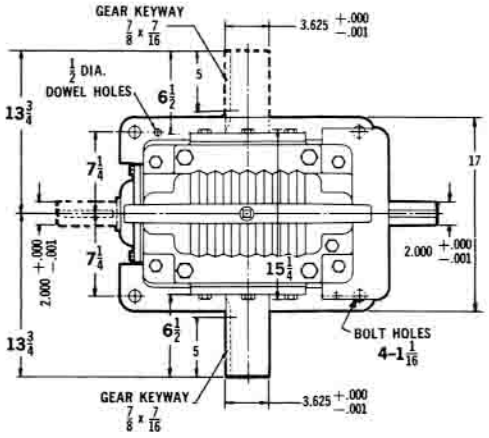
SIZE 80

Dimensions in Inches



TYPE AF

Net Wt.—810 Lbs.
Oil Cap.—5½ Gal.

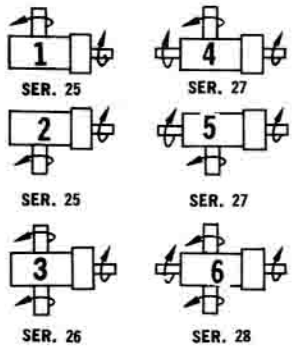


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



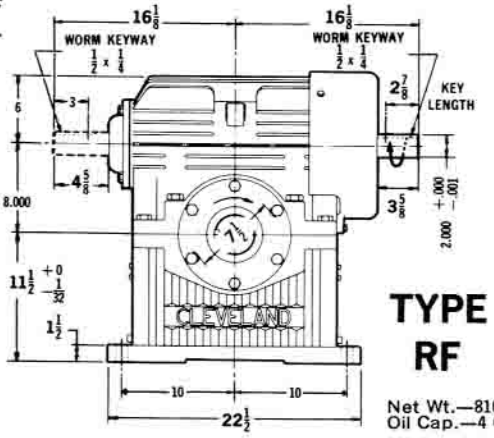
RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 8.000" CENTERS

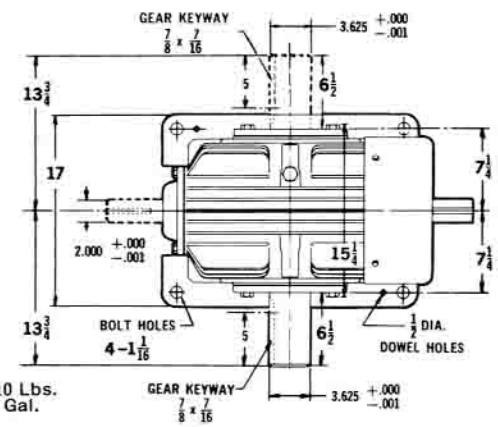
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
*3 1/9	R	Input H.P.	70.2	60.2	52.8	48.0	43.3	32.9	26.1	15.7
		Output Torque	7450	9650	11300	12400	13900	20100	23600	27800
		Output R.P.M.	562	370	280	231	186	96.4	64.3	32.1
		Overhung Load	4950	5350	5750	6100	6500	7100	8000	9800
*3 1/2	R	Input H.P.	78.0	65.7	57.7	52.8	47.4	35.6	28.0	16.6
	L	Output Torque	9220	11900	13900	15300	17000	24400	28400	32800
		Output R.P.M.	500	329	248	206	166	85.8	57.2	28.6
		Overhung Load	5200	5600	6000	6300	6700	7600	8400	10500
*3 7/8	R	Input H.P.	79.7	66.4	57.6	53.4	48.0	35.9	27.9	16.4
	L	Output Torque	10400	13300	15400	17100	19000	27100	31200	35800
		Output R.P.M.	452	297	224	186	150	77.4	51.6	25.8
		Overhung Load	5350	5800	6300	6500	7000	8000	9000	11000
4 5/6	**R**	Input H.P.	73.8	60.9	53.0	48.2	44.1	32.2	24.4	14.0
		Output Torque	12400	15600	18100	19800	22600	30800	34600	38600
		Output R.P.M.	362	238	180	149	120	62.1	41.4	20.7
		Overhung Load	5800	6300	6800	7100	7600	9000	10100	12400
5 1/8	R	Input H.P.	70.0	57.6	50.2	45.8	41.8	29.9	22.6	12.9
	L	Output Torque	12000	15200	17500	19300	21900	29800	33300	37100
		Output R.P.M.	342	224	170	140	113	58.5	39.0	19.5
		Overhung Load	5900	6500	7000	7300	7800	9300	10500	12400
5 7/8	R	Input H.P.	67.1	54.9	47.9	43.8	40.1	28.4	21.3	12.0
	L	Output Torque	13200	16500	19100	21000	24000	32200	35800	39600
		Output R.P.M.	298	196	148	122	98.8	51.0	34.0	17.0
		Overhung Load	6200	6800	7300	7600	8200	9900	11300	12300
6 4/5	R	Input H.P.	63.4	52.0	45.4	41.6	38.0	26.9	20.2	11.5
	L	Output Torque	14300	18000	20800	23000	26200	35200	39100	43200
		Output R.P.M.	258	169	128	106	85.3	44.1	29.4	14.7
		Overhung Load	6500	7200	7800	8100	8600	10800	12300	12200
7 1/5	**R**	Input H.P.	61.3	50.3	43.8	40.0	36.7	25.7	19.6	11.1
		Output Torque	14600	18400	21200	23400	26700	35400	39700	44000
		Output R.P.M.	243	160	121	100	80.5	41.7	27.8	13.9
		Overhung Load	6600	7400	7900	8200	8800	11100	12300	12100
9 1/4	R	Input H.P.	51.5	42.2	36.6	33.8	30.9	21.6	16.1	9.11
		Output Torque	15600	19600	22600	25000	28500	37600	41400	45500
		Output R.P.M.	189	124	94.0	77.9	62.7	32.4	21.6	10.8
		Overhung Load	7200	8100	8800	9000	9700	12000	12200	11800
10 1/3	**R**	Input H.P.	48.2	39.0	34.0	31.4	28.7	19.9	14.8	8.40
		Output Torque	16100	20100	23200	25900	29500	38500	42300	46300
		Output R.P.M.	169	111	84.1	69.6	56.1	29.0	19.3	9.67
		Overhung Load	7500	8500	9200	9600	10900	12400	12100	11800
11	R	Input H.P.	46.2	37.5	32.4	30.5	27.7	19.1	14.1	7.92
		Output Torque	16600	20600	23900	26800	30200	39100	42600	46500
		Output R.P.M.	159	104	79.0	65.5	52.7	27.2	18.2	9.09
		Overhung Load	7700	8700	9400	9600	10300	12300	12000	11700
12 2/3	**R**	Input H.P.	41.6	34.0	29.5	27.4	25.2	17.5	13.0	7.43
		Output Torque	17100	21300	24500	27500	31200	40800	44600	49600
		Output R.P.M.	138	90.8	68.6	56.9	45.8	23.7	15.8	7.89
		Overhung Load	8100	9100	10000	10100	10800	12250	12000	11600
15 1/2	**R**	Input H.P.	35.5	29.0	25.1	23.3	21.3	15.0	11.1	6.29
		Output Torque	17400	21800	25000	28000	31700	41200	45000	49100
		Output R.P.M.	113	74.2	56.1	47.0	37.4	19.4	12.9	6.45
		Overhung Load	8700	9800	10500	11000	11800	12200	11900	11500

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
*Special ratios available at extra charge.
See page 14 for other service factors.



TYPE RF

Net Wt.—810 Lbs.
Oil Cap.—4 Gal.



SIZE 80

SINGLE REDUCTION SPEED REDUCERS

RATING TABLE

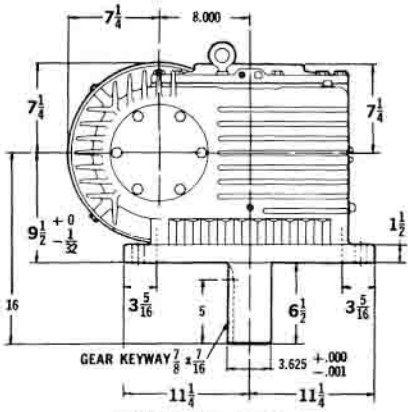
FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 8.000" CENTERS

Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
17	R	Input H.P.	32.9	26.7	23.3	21.7	19.7	13.5	10.0	5.61
		Output Torque	17600	21900	25400	28500	31900	40600	44200	47900
	L	Output R.P.M.	103	67.6	51.1	42.3	34.1	17.6	11.8	5.88
		Overhung Load	9000	10100	11200	11300	12200	12100	11800	11500
18	R	Input H.P.	31.5	25.7	22.3	20.8	18.9	13.2	9.93	5.51
		Output Torque	17700	22100	25400	28700	32300	41500	45300	49200
	L	Output R.P.M.	97.1	63.9	48.3	40.0	32.2	16.7	11.1	5.55
		Overhung Load	9100	10300	11400	11600	12400	12100	11800	11400
19 1/2	R	Input H.P.	29.8	24.3	21.1	19.6	18.0	12.6	9.47	5.41
		Output Torque	17900	22300	25500	28800	32600	42400	46300	50600
		Output R.P.M.	89.7	59.0	45.0	36.9	29.7	15.4	10.2	5.12
		Overhung Load	9400	10600	11800	12000	12800	12000	11800	11400
24	R	Input H.P.	25.2	20.5	17.9	16.8	15.2	10.6	7.92	4.50
		Output Torque	18400	22800	26300	29500	33100	42400	46100	50100
	L	Output R.P.M.	72.9	47.9	36.3	30.0	24.2	12.5	8.33	4.17
		Overhung Load	10100	11400	12100	12800	12800	12100	11800	11400
26 1/2	R	Input H.P.	22.9	18.6	16.3	15.2	13.8	9.52	7.12	4.02
		Output Torque	18200	22600	26400	29400	33000	42000	45500	49100
		Output R.P.M.	66.0	43.4	32.8	27.2	21.9	11.3	7.55	3.77
		Overhung Load	10400	11800	13000	12900	12800	12100	11800	11400
31	R	Input H.P.	20.2	16.6	14.4	13.3	12.3	8.71	6.61	3.80
		Output Torque	18100	22500	26000	29100	32800	42400	46200	50300
		Output R.P.M.	56.5	37.1	28.1	23.2	18.7	9.68	6.45	3.23
		Overhung Load	11000	12500	13100	13000	12800	12100	11800	11400
38	R	Input H.P.	17.4	14.3	12.5	11.6	10.7	7.80	5.95	3.48
		Output Torque	18100	22800	26200	29600	33100	43100	47100	51500
		Output R.P.M.	46.1	30.3	22.9	19.0	15.3	7.90	5.26	2.63
		Overhung Load	11800	13200	13100	13000	12800	12100	11800	11400
41	R	Input H.P.	16.1	13.2	11.6	10.7	9.84	7.04	5.38	3.14
		Output Torque	18000	22400	26000	29000	32600	41900	45700	49700
		Output R.P.M.	42.7	28.1	21.2	17.6	14.2	7.32	4.88	2.44
		Overhung Load	12200	13200	13100	13000	12800	12200	11900	11400
44	R	Input H.P.	14.9	11.9	10.7	10.1	9.27	6.68	5.09	2.98
		Output Torque	17900	22300	25800	28800	32400	41800	45500	49500
		Output R.P.M.	39.8	26.2	19.8	16.4	13.2	6.82	4.55	2.28
		Overhung Load	12400	13200	13100	13000	12800	12200	11900	11500
47	R	Input H.P.	13.9	11.4	10.0	9.34	8.51	6.18	4.72	2.74
		Output Torque	17700	22000	25400	28400	32000	41000	44700	48500
	L	Output R.P.M.	37.2	24.5	18.5	15.3	12.3	6.38	4.25	2.12
		Overhung Load	12700	13200	13100	13000	12800	12200	11900	11600
51	R	Input H.P.	12.7	10.5	9.31	8.74	8.04	5.73	4.37	2.55
		Output Torque	17400	21600	25000	28100	31600	40100	43500	47200
		Output R.P.M.	34.3	22.6	17.2	14.1	11.4	5.88	3.92	1.96
		Overhung Load	13100	13300	13100	13100	12900	12300	12000	11700
60	R	Input H.P.	10.7	8.75	7.77	7.32	6.68	4.88	3.66	2.14
		Output Torque	16300	20200	23500	26400	29400	37200	40200	43400
		Output R.P.M.	29.2	19.2	14.5	12.0	9.7	5.0	3.33	1.67
		Overhung Load	13400	13300	13200	13100	13000	12500	12300	12000
67	R	Input H.P.	9.60	7.87	7.02	6.59	6.02	4.35	3.32	1.95
		Output Torque	15900	19700	22900	25700	28600	36200	39100	42200
		Output R.P.M.	26.1	17.2	13.0	10.8	8.65	4.48	2.98	1.49
		Overhung Load	13400	13300	13200	13100	13000	12700	12500	12200

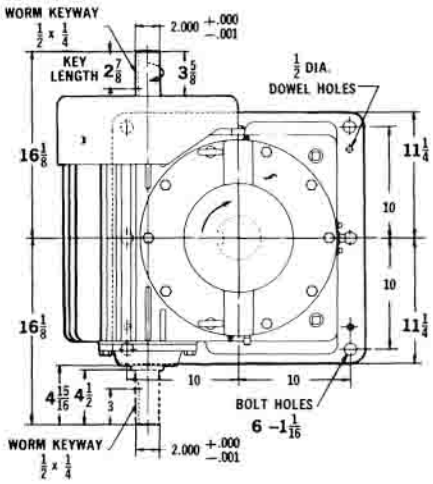
Additional ratios available:* 4-1/4 R/L, 6-2/5 R, 13 R/L
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For DF units, use 65% of overhung load figure.

Dimensions in Inches



TYPE DF

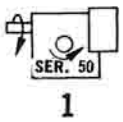
Net Wt.—960 Lbs.
Oil Cap.—5 Gal.



STANDARD SHAFT ARRANGEMENTS UF-DF UNITS

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

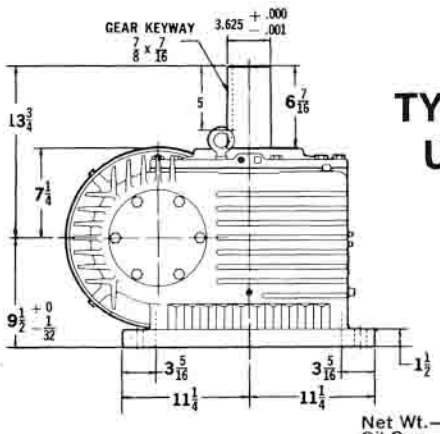
Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.



1

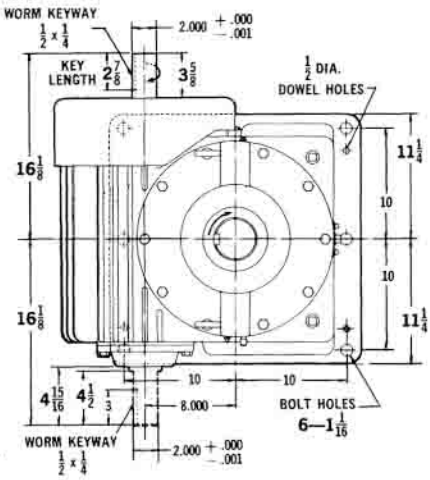
2

3



TYPE UF

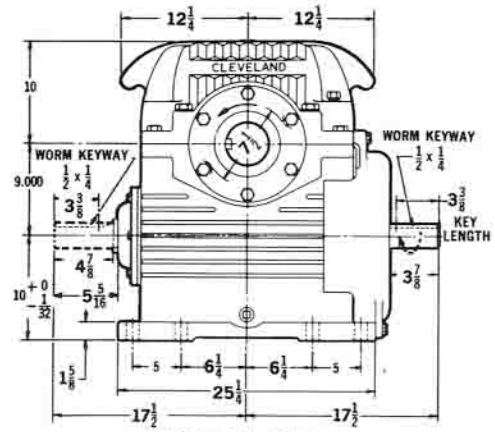
Net Wt.—920 Lbs.
Oil Cap.—5 Gal.



SIZE 90

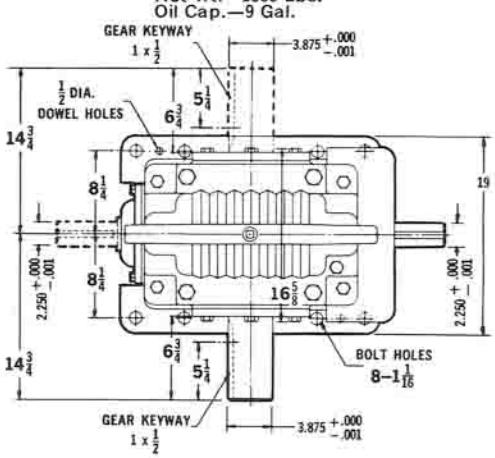
SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches



TYPE AF

Net Wt.—1000 Lbs.
Oil Cap.—9 Gal.

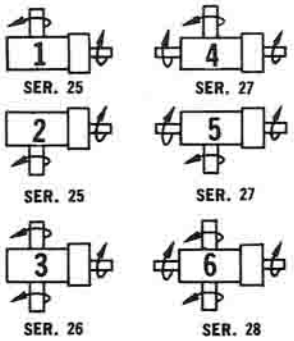


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



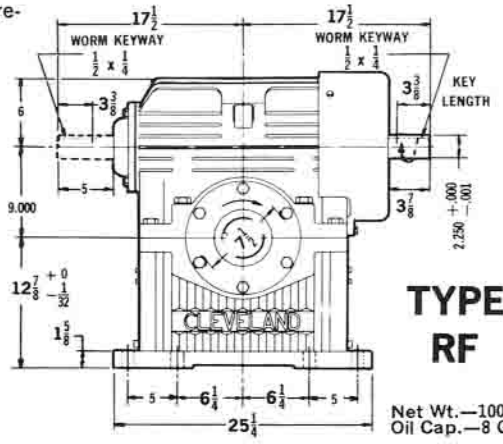
RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 9.000" CENTERS

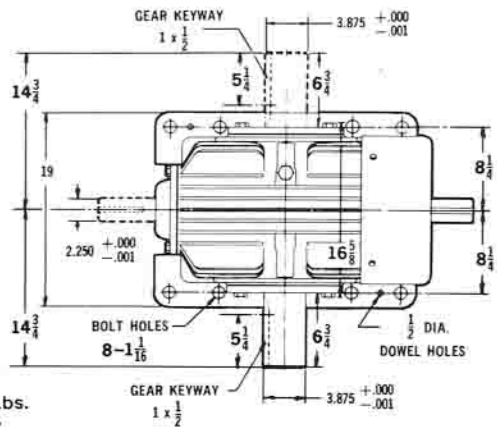
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
*3 5/8	R	Input H.P.	90.5	76.1	67.4	61.8	55.8	42.2	33.5	20.2
		Output Torque	11100	14300	16800	18600	20800	30000	35400	41600
	L	Output R.P.M.	483	317	240	199	160	82.8	55.2	27.6
		Overhung Load	6300	6900	7500	7800	8200	9800	10800	12900
*4	R	Input H.P.	96.8	81.9	72.1	65.6	59.5	44.6	35.0	20.8
		Output Torque	13100	17000	19800	21800	24400	34900	40700	47200
	L	Output R.P.M.	438	288	218	180	145	75	50	25
		Overhung Load	6600	7200	7800	8200	8600	10200	11300	12900
4 5/6	**R**	Input H.P.	94.9	79.7	69.2	63.3	58.3	42.6	32.6	19.2
		Output Torque	15500	19900	22900	25300	28800	40300	45500	52500
		Output R.P.M.	362	238	180	149	120	62.1	41.4	20.7
		Overhung Load	7100	7800	8400	8800	9200	11000	12200	12800
5 1/8	R	Input H.P.	89.3	74.1	65.2	59.4	53.8	39.6	30.3	17.4
		Output Torque	15400	19600	22800	25100	28100	39400	44800	50500
	L	Output R.P.M.	342	224	170	141	113	58.5	39.0	19.5
		Overhung Load	7200	7900	8500	8900	9400	11300	12500	12800
6 2/5	R	Input H.P.	83.3	68.7	60.0	54.6	49.8	36.6	28.0	16.1
		Output Torque	17800	22500	26100	28700	32300	45200	51200	57600
		Output R.P.M.	273	180	136	113	90.6	46.9	31.3	15.6
		Overhung Load	7800	8600	9200	9700	10200	12300	12800	12500
7 2/5	**R**	Input H.P.	79.4	65.7	57.2	51.9	47.9	34.5	26.4	15.0
		Output Torque	19600	24800	28700	31400	35800	49100	55300	61900
		Output R.P.M.	236	156	118	97.4	78.4	40.5	27.0	13.5
		Overhung Load	8200	9000	9800	10200	10800	13100	12800	12500
9	R	Input H.P.	67.5	56.0	48.4	44.2	40.7	29.2	22.3	12.6
		Output Torque	20100	25400	29200	32200	36600	49600	55500	61600
		Output R.P.M.	195	128	96.7	80	64.5	33.3	22.2	11.1
		Overhung Load	8800	9700	10500	11100	11700	13100	12600	12300
10	**R**	Input H.P.	62.7	51.4	45.1	41.3	38.0	27.1	20.5	11.5
		Output Torque	20700	25900	30000	33200	37800	50700	56000	62000
	L	Output R.P.M.	175	115	87.0	72.0	58.0	30.0	20.0	10.0
		Overhung Load	9200	10100	10900	11500	12200	13000	12500	12200
11 2/3	R	Input H.P.	56.6	46.6	40.8	37.2	34.3	24.5	18.5	10.6
		Output Torque	21600	27200	31400	34600	39400	53200	59300	65900
		Output R.P.M.	150	98.5	74.5	61.6	49.7	25.7	71.1	8.56
		Overhung Load	9700	10700	11500	12200	12900	12900	12500	12000
12 2/3	**R**	Input H.P.	53.0	43.9	38.3	35.2	32.5	23.1	17.5	9.95
		Output Torque	22000	27700	32000	35400	40300	54000	60300	66600
		Output R.P.M.	138	90.8	68.6	56.9	45.8	23.7	15.8	7.89
		Overhung Load	10000	11000	11900	12500	13300	12900	12500	12000
15 1/2	**R**	Input H.P.	45.4	37.5	32.7	30.5	27.8	19.9	15.0	8.61
		Output Torque	22700	28500	32900	36600	41400	55500	61600	68200
		Output R.P.M.	113	74.2	56.1	47.0	37.4	19.4	12.9	6.45
		Overhung Load	10700	11800	12800	13600	13500	12800	12300	11900
17 1/2	R	Input H.P.	41.4	33.9	29.8	27.2	25.2	18.2	13.7	7.90
		Output Torque	23000	28800	33300	36800	42000	56300	62600	69300
	L	Output R.P.M.	100	65.6	49.7	41.1	33.2	17.2	11.4	5.71
		Overhung Load	11200	12400	13500	13600	13500	12600	12200	11900

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
*Special ratios available at extra charge.
See page 14 for other service factors.



TYPE RF

Net Wt.—1000 Lbs.
Oil Cap.—8 Gal.



SIZE 90

SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches

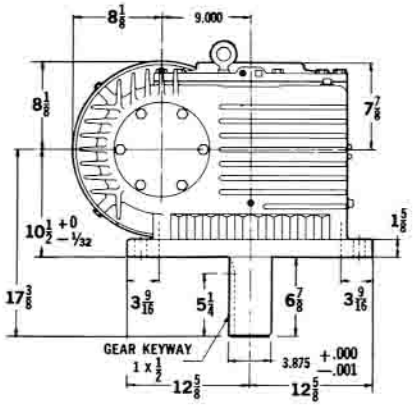
RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 9.000" CENTERS

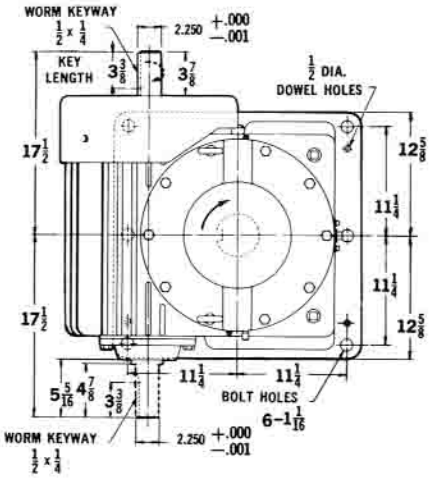
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
18 1/2	R	Input H.P.	39.4	32.2	28.3	26.0	23.9	17.2	12.9	7.45
		Output Torque	23000	28800	33300	36900	42000	56000	61900	68200
		Output R.P.M.	94.5	62.1	47.0	38.9	31.3	16.2	10.8	5.40
		Overhung Load	11400	12700	13700	13600	13500	12500	12200	11900
20	R	Input H.P.	36.8	30.3	26.5	24.5	22.6	16.2	12.2	7.01
		Output Torque	23100	29000	33500	37200	42300	56400	62200	68500
		Output R.P.M.	87.5	57.5	43.5	36.0	29.0	15.0	10.0	5.0
		Overhung Load	11800	13000	13900	13600	13500	12500	12200	11900
24	R	Input H.P.	31.2	25.5	22.4	20.7	19.1	13.4	10.1	5.77
		Output Torque	23100	28900	33300	37200	42000	54500	59800	65400
	L	Output R.P.M.	72.9	47.9	36.3	30.0	24.2	12.5	8.33	4.17
		Overhung Load	12500	14000	13800	13600	13500	12500	12200	11900
31	R	Input H.P.	25.7	21.2	18.5	16.9	16.0	11.6	8.83	5.17
		Output Torque	23500	29500	34100	37600	43000	57100	63300	69600
		Output R.P.M.	56.5	37.1	28.1	23.2	18.7	9.68	6.45	3.23
		Overhung Load	13700	14000	13700	13600	13500	12500	12000	11900
35	R	Input H.P.	23.1	19.1	16.6	15.3	14.3	10.6	8.02	4.73
		Output Torque	23400	29500	34000	37600	42800	57300	63500	70000
	L	Output R.P.M.	50.0	32.8	24.8	20.6	16.6	8.57	5.72	2.86
		Overhung Load	14300	14000	13700	13600	13500	12500	12100	11900
40	R	Input H.P.	21.0	17.1	15.0	13.9	13.0	9.41	7.13	4.17
		Output Torque	23900	29800	34200	38300	43500	56700	62100	68000
	L	Output R.P.M.	43.8	28.8	21.8	18.0	14.5	7.50	5.00	2.50
		Overhung Load	14300	14000	13600	13600	13500	12500	12200	11900
44	R	Input H.P.	18.7	15.4	13.5	12.5	11.7	8.48	6.41	3.81
		Output Torque	23000	28800	32200	37100	42000	54600	59700	65500
		Output R.P.M.	39.8	26.2	19.8	16.4	13.2	6.82	4.55	2.27
		Overhung Load	14300	14000	13700	13600	13500	12600	12300	12000
46	R	Input H.P.	18.1	14.9	13.0	12.1	11.3	8.32	6.32	3.77
		Output Torque	23000	28800	32200	37100	42100	55600	61100	67200
		Output R.P.M.	38.0	25.0	18.9	15.6	12.6	6.52	4.35	2.18
		Overhung Load	14300	14000	13700	13600	13500	12600	12300	12100
51	R	Input H.P.	16.4	13.6	11.9	11.0	10.1	7.49	5.73	3.39
		Output Torque	22700	28300	32500	36400	41200	53800	59000	64600
		Output R.P.M.	34.3	22.6	17.2	14.1	11.4	5.88	3.92	1.96
		Overhung Load	14300	14000	13800	13700	13500	12800	12500	12200
62	R	Input H.P.	13.0	10.8	9.43	8.90	8.34	6.06	4.66	2.77
		Output Torque	20900	26000	30000	33700	38000	49300	53900	58900
		Output R.P.M.	28.2	18.6	14.0	11.6	9.35	4.85	3.23	1.61
		Overhung Load	14300	14100	14000	13800	13600	13000	12900	12500
65	R	Input H.P.	12.4	10.3	9.12	8.55	7.93	5.82	4.49	2.68
		Output Torque	20600	25700	29700	33200	37500	48500	53000	57900
		Output R.P.M.	26.9	17.7	13.4	11.1	8.92	4.62	3.08	1.54
		Overhung Load	14300	14200	14200	13800	13600	13100	13000	12800
80	R	Input H.P.	9.10	7.49	6.65	6.22	5.80	4.28	3.30	1.96
		Output Torque	17800	22200	25600	28700	32300	41300	45000	49000
		Output R.P.M.	21.9	14.4	10.9	9.0	7.25	3.75	2.5	1.25
		Overhung Load	14400	14400	14400	13900	13700	13400	13300	13000

Additional ratios available 4-4/7 R, 9-1/4 R
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For DF units, use 65% of overhung load figure.



TYPE DF

Net Wt.—1280 Lbs.
Oil Cap.—9 Gal.



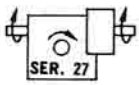
STANDARD SHAFT ARRANGEMENTS UF-DF UNITS

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

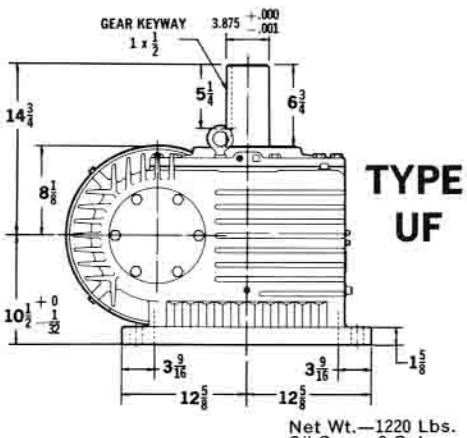
Arrows show relative rotations for right hand thread worms. Worms may be rotated in either direction.

1

2

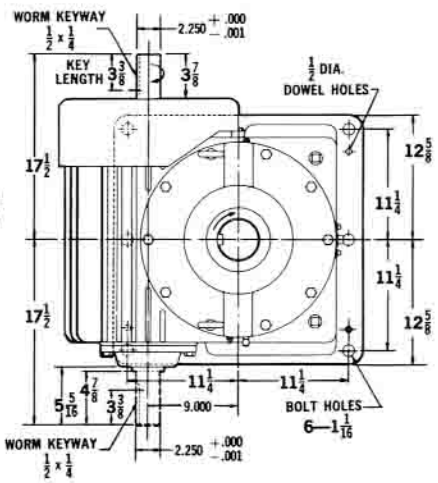


3



TYPE UF

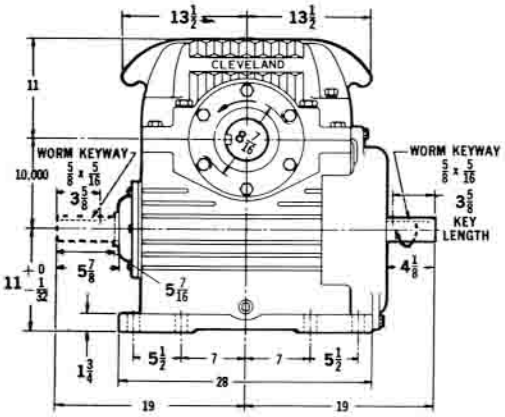
Net Wt.—1220 Lbs.
Oil Cap.—9 Gal.



SINGLE REDUCTION SPEED REDUCERS

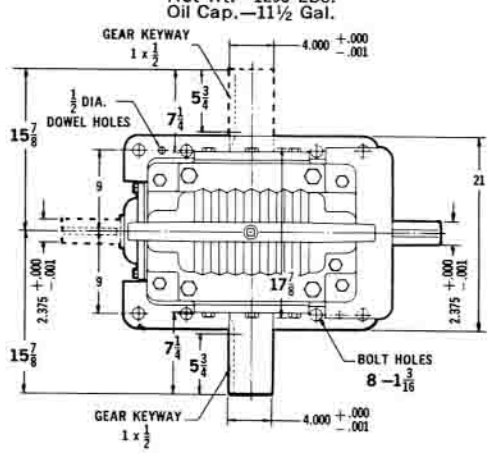
SIZE 100

Dimensions in Inches



TYPE AF

Net Wt.—1290 Lbs.
Oil Cap.—11½ Gal.

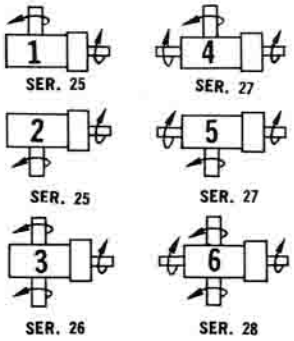


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



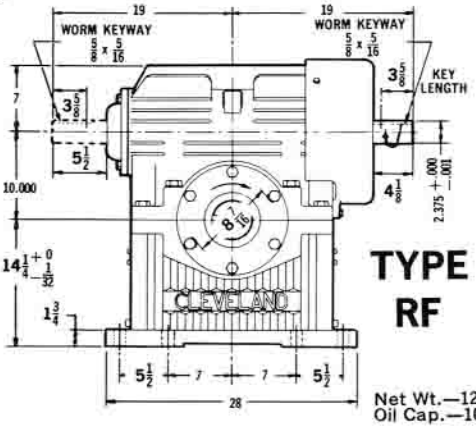
RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 10.000" CENTERS

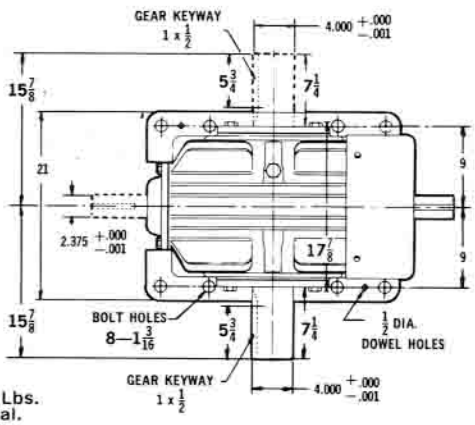
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
*3 5/9	R	Input H.P.	106	91	83	74	67	50	41	25.5
	L	Output Torque	12850	16800	19800	22000	24550	35150	42500	51400
		Output R.P.M.	493	324	245	202	163	84.4	56.3	28.1
		Overhung Load	6900	7500	7900	8500	8900	10300	11300	14300
*4	R	Input H.P.	104	89	81	72	65	49	40	24.5
		Output Torque	14150	18500	21850	24150	27000	38800	46400	55400
		Output R.P.M.	438	288	218	180	145	75	50	25
		Overhung Load	7200	7900	8300	8900	9400	10800	12000	14300
4 5/6	**R**	Input H.P.	115	97.9	85.7	78.5	70.6	53.2	41.8	26.0
	L	Output Torque	18800	24500	28400	31400	35000	50100	58400	70800
		Output R.P.M.	362	238	180	149	120	62.1	41.4	20.7
		Overhung Load	7700	8500	9000	9500	10000	11800	13000	14300
6 2/5	R	Input H.P.	104	86	76	68	62	46	36	21
	L	Output Torque	22250	28550	32950	36100	40750	57700	66000	75200
		Output R.P.M.	273	180	136	113	90.6	46.9	31.3	15.6
		Overhung Load	8400	9300	9900	10300	11000	13100	14600	14000
7 2/5	**R**	Input H.P.	95	78	69	62	57	42	32	18.5
		Output Torque	23500	29800	34600	38000	42900	59900	67900	76500
		Output R.P.M.	236	156	118	97.4	78.4	40.5	27	13.5
		Overhung Load	9000	10000	10600	11100	11800	14100	14700	13900
8	R	Input H.P.	92	75	66	60	54	40	30.5	17.8
	L	Output Torque	23550	30850	35750	39200	44100	61700	69900	78750
		Output R.P.M.	219	144	109	90	72.5	37.5	25	12.5
		Overhung Load	9200	10200	11000	11500	12200	14600	14600	13800
9	R	Input H.P.	86	70	62	56	51	37.5	28.5	16.5
		Output Torque	25800	32200	37200	41050	46100	64250	72500	81600
		Output R.P.M.	195	128	96.7	80	64.5	33.3	22.2	11.1
		Overhung Load	9600	10700	11500	12000	12800	15000	14500	13700
10	**R**	Input H.P.	78.7	64.5	56.3	51.5	46.7	34.4	26.4	15.3
	L	Output Torque	26000	32600	37650	41500	46600	65000	73500	82900
		Output R.P.M.	175	115	87.0	72.0	58.0	30.0	20.0	10.0
		Overhung Load	10000	11200	12000	12500	13300	15000	14500	13500
12 1/2	**R**	Input H.P.	68.0	56.2	48.8	44.7	41.1	29.8	22.6	13.0
	L	Output Torque	27600	34900	40200	44300	50300	68500	76600	85400
		Output R.P.M.	140	92.0	69.1	57.5	46.4	24.0	16.0	8.0
		Overhung Load	10800	12000	13000	13500	14500	14900	14200	13300
13 1/3	R	Input H.P.	64	53	47	42	39	28	21.5	12.5
		Output Torque	27950	35350	40850	44900	51150	69650	78100	87400
		Output R.P.M.	131	86.1	65.2	54	43.5	22.5	15	7.5
		Overhung Load	11100	12300	13300	13800	14900	14900	14200	13200
15	**R**	Input H.P.	59.1	48.5	42.2	38.7	35.7	25.8	19.5	11.4
	L	Output Torque	28600	35800	41400	45700	52000	70500	78700	88600
		Output R.P.M.	117	76.7	58.0	48.0	38.7	20.0	13.3	6.67
		Overhung Load	11600	12800	14000	14500	15500	14700	14000	13200
16 2/3	R	Input H.P.	53	43	38.5	34.5	31.5	23	17.6	10.1
		Output Torque	28350	35450	40900	45200	51500	69500	77500	86000
		Output R.P.M.	105	69	52.1	43.2	34.8	18	12	6
		Overhung Load	12100	13300	14500	15000	15600	14600	14000	13100
18	R	Input H.P.	51	42	36.5	33.5	31	22.5	17.3	10
	L	Output Torque	29200	36900	42500	46900	53200	72400	81000	90300
		Output R.P.M.	97.2	63.9	48.3	40	32.2	16.7	11.1	5.56
		Overhung Load	12400	13700	14900	15500	15600	14500	13900	13000
20	**R**	Input H.P.	48.0	39.3	34.3	31.5	29.0	20.9	15.9	9.19
	L	Output Torque	30100	37700	43500	48100	54700	73500	81900	90600
		Output R.P.M.	87.5	57.5	43.5	36.0	29.0	15.0	10.0	5.0
		Overhung Load	12900	14200	15500	16000	15600	14500	13800	13000

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
*Special ratios available at extra charge.
See page 14 for other service factors. For DF units, use 65% of overhung load figure.



TYPE RF

Net Wt.—1290 Lbs.
Oil Cap.—10 Gal.



SIZE 100

SINGLE REDUCTION SPEED REDUCERS

RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 10.000" CENTERS

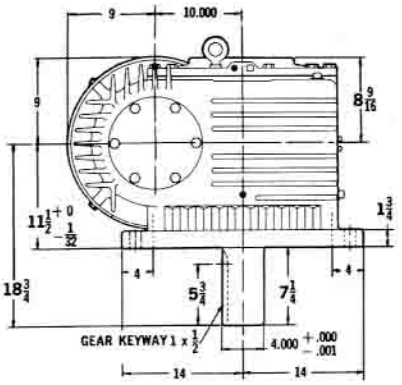
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
23 1/2	R	Input H.P.	40	32.5	29	26.5	24.5	17.8	13.6	7.9
	L	Output Torque	29450	36750	42500	47000	53500	71900	79700	88200
		Output R.P.M.	74.5	48.9	37	30.6	24.7	12.8	8.51	4.26
		Overhung Load	13700	15000	15800	16000	15500	14400	13600	12900
26 1/2	R	Input H.P.	36.6	30.1	26.3	24.4	22.4	16.2	12.3	7.15
		Output Torque	29600	37100	42900	47800	54100	72200	79800	88100
		Output R.P.M.	66.0	43.4	32.8	27.2	21.9	11.3	7.55	3.77
		Overhung Load	14300	15700	15700	15900	15500	14400	13600	12900
30 1/2	R	Input H.P.	32.6	26.6	23.3	21.5	19.9	14.4	10.9	6.40
		Output Torque	29700	37100	42900	47500	54300	72100	79900	88300
		Output R.P.M.	57.4	37.7	28.5	23.6	19.0	9.84	6.55	3.28
		Overhung Load	15000	16400	15700	15900	15500	14300	13800	12900
36	R	Input H.P.	28.5	23.5	20.5	18.6	17.4	13	10.1	6.0
	L	Output Torque	29700	37200	43100	47600	54000	73500	81900	91000
		Output R.P.M.	48.6	31.9	24.2	20	16.1	8.33	5.56	2.78
		Overhung Load	15800	16500	16000	15800	15600	14500	14000	13000
39	R	Input H.P.	26.3	21.5	18.8	17.4	16.1	11.9	9.15	5.40
	L	Output Torque	29000	36200	41800	46300	52800	70500	78200	86400
		Output R.P.M.	44.9	29.5	22.3	18.5	14.9	7.69	5.13	2.56
		Overhung Load	16500	16500	16000	15800	15600	14500	14000	13000
45	R	Input H.P.	23.5	19.2	16.7	15.1	14.2	10.5	8.2	4.9
		Output Torque	29000	36500	42000	46500	53000	70600	78200	86250
		Output R.P.M.	38.9	25.6	19.3	16	12.9	6.67	4.45	2.22
		Overhung Load	17300	16500	16000	15900	15600	14600	14300	14200
49	R	Input H.P.	20.2	16.7	14.9	13.9	12.8	9.42	7.39	4.41
		Output Torque	28000	35100	40500	44900	51200	68000	75300	83500
		Output R.P.M.	35.7	23.5	17.8	14.7	11.8	6.12	4.08	2.04
		Overhung Load	17700	16500	16000	16000	15700	14700	14400	13300
52	R	Input H.P.	20.1	16.3	14.3	12.9	12.1	9.0	7.0	4.1
		Output Torque	27850	34800	40100	44650	50900	67100	73800	81100
		Output R.P.M.	33.7	22.1	16.7	13.8	11.2	5.77	3.85	1.92
		Overhung Load	17700	16500	16200	16100	15800	14800	14500	13400
58	R	Input H.P.	17.7	14.5	12.8	11.8	11.1	8.22	6.38	3.81
		Output Torque	26100	34100	39300	43600	49800	66700	72200	79600
		Output R.P.M.	30.2	19.8	15.0	12.4	10.0	5.17	3.45	1.72
		Overhung Load	17700	16500	16300	16200	15900	15000	14600	13700
65	R	Input H.P.	15.8	13.1	10.9	10.3	9.6	7.2	5.6	3.4
		Output Torque	25700	32750	37700	42150	47750	62600	68900	75600
		Output R.P.M.	26.9	17.7	13.4	11.1	8.92	4.62	3.08	1.54
		Overhung Load	17700	16500	16500	16300	15900	15200	14700	14000
71	R	Input H.P.	13.4	11.1	9.6	9.1	8.5	6.3	4.9	2.9
		Output Torque	25100	31250	35900	40200	45400	59000	64600	70400
		Output R.P.M.	24.6	16.2	12.3	10.1	8.17	4.23	2.82	1.41
		Overhung Load	17700	16500	16400	16300	16000	15500	14900	14300
79	R	Input H.P.	11.6	9.5	8.1	7.7	7.2	5.4	4.2	2.6
	L	Output Torque	23100	28300	32500	36400	41300	53200	59050	64750
		Output R.P.M.	22.2	14.6	11.0	9.11	7.35	3.80	2.53	1.27
		Overhung Load	17700	16500	16400	16300	16000	15500	14900	14300
90	R	Input H.P.	9.2	7.5	6.4	6.1	5.7	4.2	3.2	1.9
		Output Torque	19900	24700	28600	32000	36000	46100	50400	54700
		Output R.P.M.	19.5	12.8	9.67	8	6.45	3.33	2.22	1.11
		Overhung Load	17700	16500	16400	16300	16000	15500	14900	14300
95	R	Input H.P.	8.4	6.9	5.8	5.6	5.2	3.9	3.0	1.8
		Output Torque	18800	23350	26900	30200	34000	43600	47300	51600
		Output R.P.M.	18.4	12.1	9.16	7.58	6.11	3.16	2.11	1.05
		Overhung Load	17700	16500	16400	16300	16000	15500	14900	14300

Additional Ratios Available: *4⅛ R/L, *4¼ L, 5¼ R, 7 R, 8-2/5 R, 9¼ R, 9½ R, 10¾ R, 11¼ R, 12½ R, 12⅔ R, 14⅓ R, 14⅔ R, 16 L, 18½ R, 24 R.

Output torque ratings given in inch pounds.

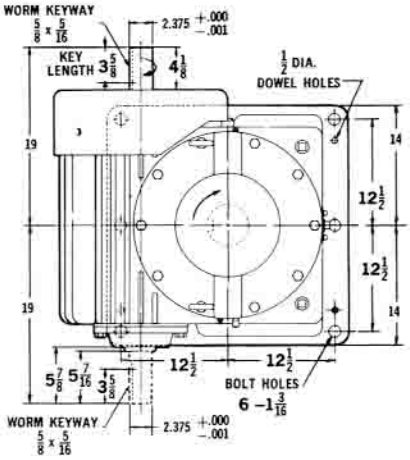
Overhung load given in pounds at center of output shaft keyway.

Dimensions in Inches



TYPE DF

Net Wt.—1585 Lbs.
Oil Cap.—12 Gal.



STANDARD SHAFT ARRANGEMENTS UF-DF UNITS

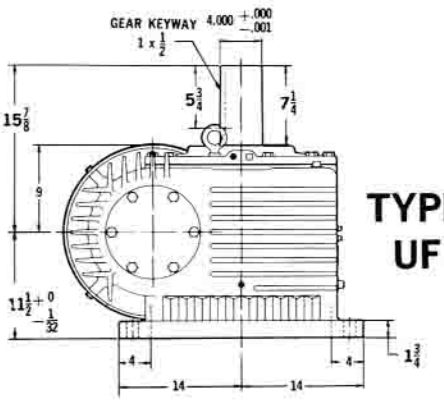
When ordering, refer to size, type, series and shaft arrangement number; worm shaft may be double extended at extra charge.

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

1

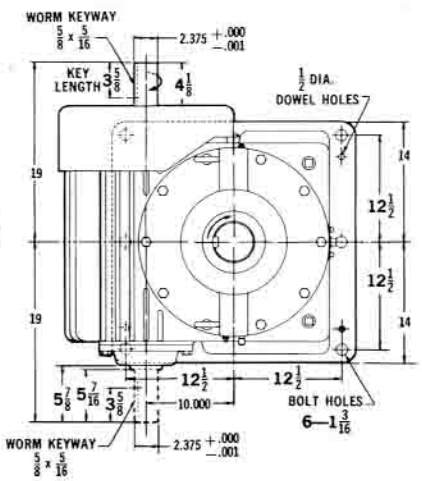
2

3



TYPE UF

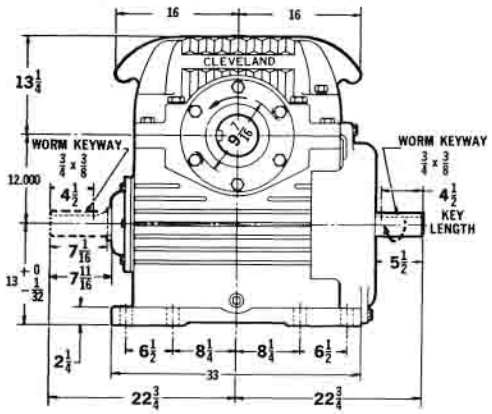
Net Wt.—1500 Lbs.
Oil Cap.—12 Gal.



SINGLE REDUCTION SPEED REDUCERS

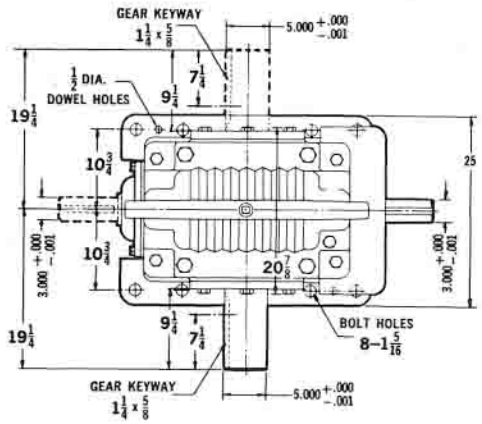
SIZE 120

Dimensions in Inches



TYPE AF

Net Wt.—2000 Lbs.
Oil Cap.—18 Gal.

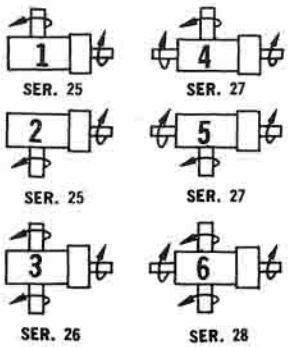


STANDARD SHAFT ARRANGEMENTS AF-RF UNITS

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.

Gear shaft rotations shown are for AF units; gear shaft rotations are reversed for RF units.



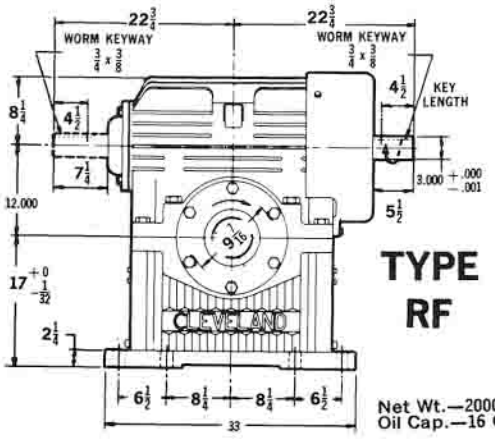
RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — **12.000" CENTERS**

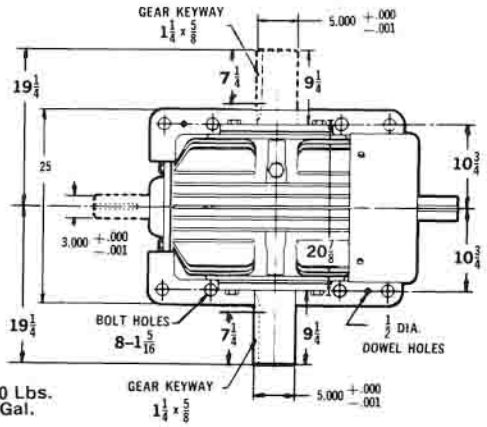
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
*3 5/9	R	Input H.P.	156	137	124	114	102	77	64	41
	L	Output Torque	18830	25400	30300	33800	37800	54000	66700	83400
		Output R.P.M.	493	324	245	202	163	84.4	56.3	28.1
		Overhung Load	8000	8300	8700	9000	9500	11200	12500	15200
*3 7/8	R	Input H.P.	158	138	123	114	103	77	64	41
	L	Output Torque	20900	28000	33100	37000	41900	59200	73000	90500
		Output R.P.M.	452	297	224	186	150	77.4	51.6	25.8
		Overhung Load	8200	8600	9100	9400	9800	11700	13100	15800
4 5/6	**R**	Input H.P.	169	147	130	119	107	81.3	65.2	39.7
	L	Output Torque	28000	36900	43400	47900	53500	77000	91800	109000
		Output R.P.M.	362	238	180	149	120	62.1	41.4	20.7
		Overhung Load	8900	9400	10000	10400	11000	13000	14600	17500
5 3/5	R	Input H.P.	161	137	121	110	99	75	60	36
		Output Torque	30500	39650	46600	50500	57100	82250	97000	114000
		Output R.P.M.	312	206	155	128	104	53.6	35.7	17.8
		Overhung Load	9400	10000	10700	11100	11700	13900	15600	18900
6 1/6	R	Input H.P.	153	130	114	105	94	71	56	33.5
	L	Output Torque	32000	41500	48400	53500	59600	86750	100300	117000
		Output R.P.M.	284	186	141	117	94.1	48.7	32.4	16.2
		Overhung Load	9700	10400	11100	11600	12200	14600	16400	19800
7 2/5	**R**	Input H.P.	141	119	104	95.9	86.5	65.4	51.2	30.5
		Output Torque	35200	45500	52800	58300	65100	93300	108000	125000
		Output R.P.M.	236	156	118	97.4	78.4	40.5	27	13.5
		Overhung Load	10300	11300	12000	12600	13300	16000	18000	21500
8	R	Input H.P.	134	112	99	91	81	61	48	28.5
	L	Output Torque	35850	46200	53750	59400	66100	95000	110500	127300
		Output R.P.M.	219	144	109	90	72.5	37.5	25	12.5
		Overhung Load	10700	11700	12500	13100	13800	16500	18500	22500
8 2/5	R	Input H.P.	129	108	95	87	78	59	46	27
		Output Torque	36400	46600	54100	59900	66750	95250	109000	126300
		Output R.P.M.	208	137	104	85.7	69.0	35.7	23.8	11.9
		Overhung Load	10900	12000	12800	13400	14000	17000	19000	22500
10	**R**	Input H.P.	115	96.9	84.7	77.7	69.9	52.6	41.0	24.1
		Output Torque	38500	49500	57200	63300	70500	100000	116000	132000
		Output R.P.M.	175	115	87	72	58	30	20	10
		Overhung Load	11600	12900	13800	14500	15300	18500	20700	22500
11 1/4	R	Input H.P.	105	89	77	71	64	48	37	21.5
	L	Output Torque	39250	50500	58300	64300	72100	101900	116500	132500
		Output R.P.M.	156	102	77.3	64.0	51.5	26.7	17.8	8.89
		Overhung Load	12000	13500	14500	15200	16000	19500	21800	22400
12 1/4	**R**	Input H.P.	99.8	83.9	73.1	67.3	61.2	46.0	36.0	21.2
		Output Torque	40500	52000	59900	66200	74200	105000	121000	137000
		Output R.P.M.	143	93.9	71.0	58.7	47.3	24.5	16.3	8.15
		Overhung Load	12500	13900	15000	15700	16600	20000	22800	22300
13 2/3	R	Input H.P.	91	77	67	62	55	41	32	18.5
		Output Torque	41400	52900	61250	67300	75500	106000	120400	136000
		Output R.P.M.	128	84.2	63.7	52.7	42.4	22	14.6	7.32
		Overhung Load	13000	14600	15600	16400	17400	21000	23400	22100
15 1/3	**R**	Input H.P.	84.6	70.6	61.8	56.6	51.4	38.4	29.7	17.4
	L	Output Torque	42100	54000	62400	68600	77100	108000	123000	140000
		Output R.P.M.	114	75	56.7	47	37.8	19.6	13	6.52
		Overhung Load	13500	15000	16200	17000	18000	22000	23300	22000
16 1/3	R	Input H.P.	80	67	59	54	49	36	28	16.5
		Output Torque	42800	54300	62900	69100	78000	108500	123400	139000
		Output R.P.M.	107	70.4	53.2	44	35.5	18.4	12.2	6.12
		Overhung Load	13800	15500	16700	17400	18600	22600	23200	22000

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
*Special ratios available at extra charge.
See page 14 for other service factors.



TYPE RF

Net Wt.—2000 Lbs.
Oil Cap.—16 Gal.



SIZE 120

SINGLE REDUCTION SPEED REDUCERS

Dimensions in Inches

RATING TABLE

FOR UNITY SERVICE FACTOR

SINGLE REDUCTION WORM GEAR — 12.000" CENTERS

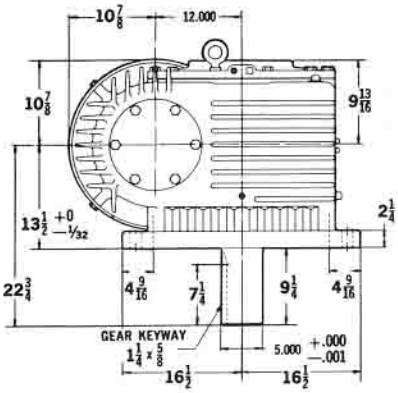
Ratio	Hand of Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
20	R	Input H.P.	68.7	57.3	50.2	46.0	41.9	31.6	24.6	14.6
		Output Torque	43600	55600	64400	71000	79800	112000	128000	145000
	L	Output R.P.M.	87.5	57.5	43.5	36.0	29.0	15.0	10.0	5.0
		Overhung Load	14900	16800	18000	18800	20100	24100	23000	21600
22 1/2	R	Input H.P.	61	51	45	40	37	28	22	13
		Output Torque	43500	55300	63900	70250	78900	110500	125500	141000
		Output R.P.M.	77.8	51.1	38.7	32.0	25.8	13.3	8.89	4.44
		Overhung Load	15500	17500	18800	19500	21000	24000	23000	21600
23 1/2	R	Input H.P.	60	49	43	39.5	36	27	21	12.5
		Output Torque	44200	56300	65000	71400	80500	112200	127000	143000
	L	Output R.P.M.	74.5	48.9	37	30.6	24.7	12.8	8.51	4.26
		Overhung Load	15800	17700	19100	19900	21300	24000	23000	21600
25	R	Input H.P.	56.9	47.4	41.7	38.1	34.6	26.2	20.4	12.1
		Output Torque	44200	56500	65500	72000	80500	113000	128000	145000
		Output R.P.M.	70.0	46.0	34.8	28.8	23.2	12.0	8.0	4.0
		Overhung Load	16100	18100	19500	20300	21800	24000	23000	21600
28 1/2	R	Input H.P.	51	42	37	33.5	30.5	23	18	11
		Output Torque	44100	56400	65000	71600	80500	112200	127000	143000
		Output R.P.M.	61.4	40.4	30.5	25.3	20.4	10.5	7.02	3.51
		Overhung Load	16900	19000	20500	21300	22800	24000	23000	21600
30	R	Input H.P.	48.7	40.5	35.4	32.5	29.5	22.4	17.4	10.6
		Output Torque	44400	56400	65100	71600	80400	112000	127000	145000
		Output R.P.M.	58.3	38.3	29.0	24.0	19.3	10.0	6.67	3.33
		Overhung Load	17200	19300	21000	21600	23200	24000	23000	21600
33 1/2	R	Input H.P.	44	36	32	29	26.5	20	16	9.4
		Output Torque	44200	56000	64600	70900	80500	111200	125200	140300
		Output R.P.M.	52.2	34.3	26	21.5	17.3	8.95	5.97	2.98
		Overhung Load	17900	20000	21700	22500	24000	24000	23000	21700
35 1/2	R	Input H.P.	41	34	30	27	25	18.5	14.5	8.6
		Output Torque	44000	55500	64250	70550	80250	110000	123200	137900
		Output R.P.M.	49.3	32.4	24.5	20.3	16.3	8.45	5.64	2.82
		Overhung Load	18300	20500	22000	23000	24500	24000	23000	21800
40	R	Input H.P.	38.1	31.8	27.6	25.5	23.2	17.9	14.2	8.66
		Output Torque	43700	55800	64400	71000	79500	112000	128000	144000
	L	Output R.P.M.	43.8	28.8	21.8	18.0	14.5	7.50	5.00	2.50
		Overhung Load	19100	21300	23000	24000	25000	24000	23000	22000
45	R	Input H.P.	33	28	25	22.5	20.5	16	12.5	7.7
		Output Torque	42750	54400	62750	69100	78000	108700	123000	138800
		Output R.P.M.	38.9	25.6	19.3	16	12.9	6.67	4.45	2.22
		Overhung Load	20000	22200	23900	25000	25500	24100	23200	22100
50	R	Input H.P.	30.7	25.6	22.4	20.7	19.0	14.7	11.6	7.12
		Output Torque	42800	54500	62800	69100	78000	109000	123000	138000
	L	Output R.P.M.	35	23	17.4	14.4	11.6	6	4	2
		Overhung Load	20700	23000	24700	26000	25500	24400	23300	22300
59	R	Input H.P.	25.5	21.1	18.4	19.9	15.7	12.0	9.35	5.74
		Output Torque	40400	51100	59000	64800	73500	110100	113000	126000
		Output R.P.M.	29.7	19.5	14.7	12.2	9.83	5.08	3.39	1.69
		Overhung Load	22000	24500	26000	26000	25700	24700	23900	22900
70	R	Input H.P.	19.5	17	15.0	13.5	12.5	9.6	7.6	4.7
		Output Torque	36800	46500	53650	59000	67150	91400	102200	114000
		Output R.P.M.	25	16.4	12.4	10.3	8.28	4.29	2.86	1.43
		Overhung Load	23500	26000	26300	26200	26000	25000	24600	23500
79	R	Input H.P.	17	14	12	11	10.5	8.0	6.3	3.8
		Output Torque	32600	42200	48950	54000	61500	82750	91500	101700
		Output R.P.M.	22.2	14.6	11	9.11	7.35	3.80	2.53	1.27
		Overhung Load	24500	26300	26300	26200	26000	25000	24600	23500

Additional ratios available: *4 R/L, 5-1/6 R, 5-1/3 R, 5-5/8 R, 12 R, 13 R, 21 R, 26 R

Output torque ratings given in inch pounds.

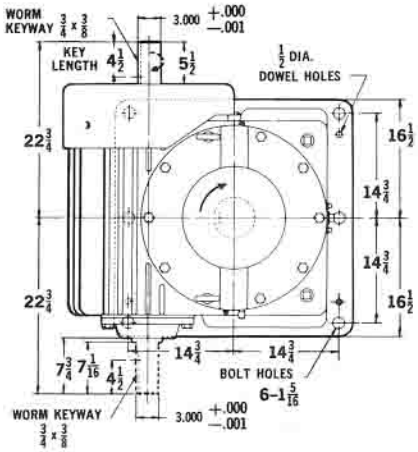
Overhung load given in pounds at center of output shaft keyway.

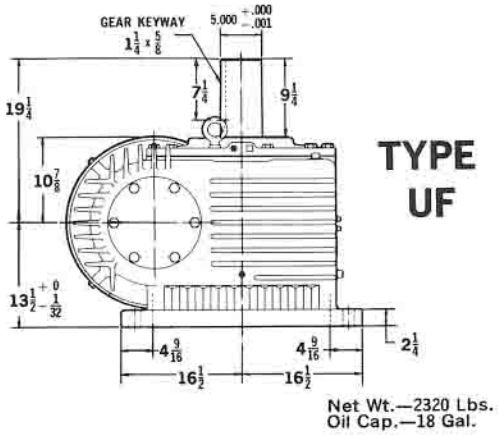
For DF units, use 65% of overhung load figure.



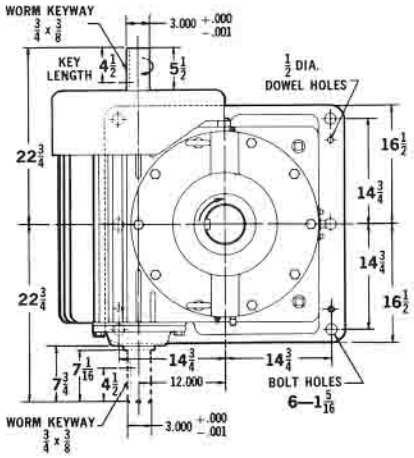
TYPE DF

Net Wt.—2450 Lbs.
Oil Cap.—18 Gal.





TYPE UF



Net Wt.—2320 Lbs.
Oil Cap.—18 Gal.

STANDARD SHAFT ARRANGEMENTS UF-DF 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.

1

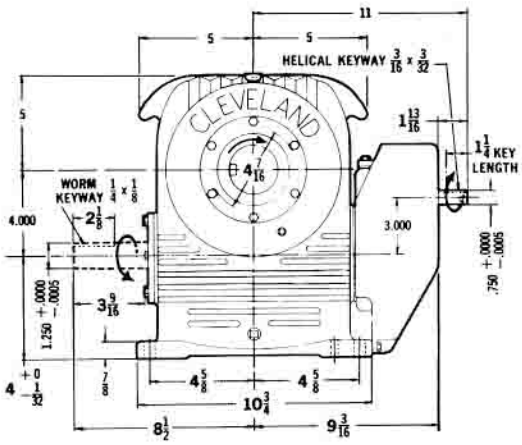
2

3

HELICAL-WORM SPEED REDUCERS

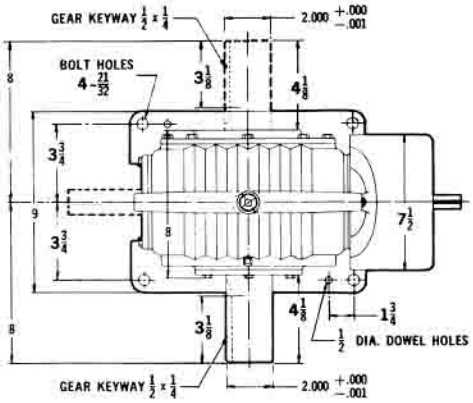
SIZE 40

Dimensions in Inches



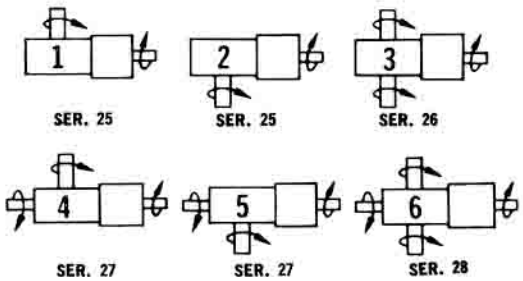
TYPE HAF

Net Wt.—160 Lbs.
Oil Cap.—6 Pts.



STANDARD SHAFT ARRANGEMENTS HAF 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
4.000" WORM GEARING
3.000" HELICAL GEARING

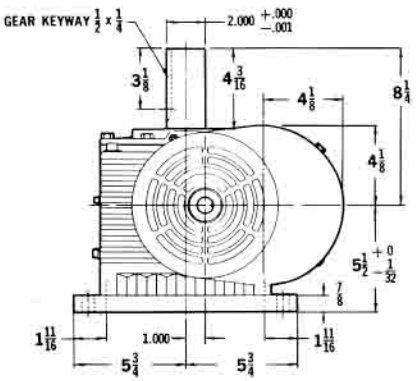
HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
35.18	**R**	Input H.P.	5.06	3.80	3.07	2.65	2.24	1.25	—	—
2.27 HG	L	Output Torque	5470	5980	6540	6730	6900	7280	7380	7380
151/2 WG		Output R.P.M.	49.7	32.7	24.7	20.5	16.5	8.53	5.68	2.84
		Overhung Load	2800	2825	2725	2725	2700	2675	2675	2675
39.72	R	Input H.P.	4.65	3.50	2.85	2.47	2.10	1.17	—	—
2.27 HG		Output Torque	5640	6460	6860	7070	7260	7680	7790	7790
171/2 WG		Output R.P.M.	44.1	29.0	21.9	18.1	14.6	7.56	5.04	2.52
		Overhung Load	2850	2800	2750	2700	2675	2650	2650	2650
44.26	**R**	Input H.P.	4.30	3.27	2.66	2.32	1.97	1.10	—	—
2.27 HG	L	Output Torque	5630	6400	6790	6990	7180	7570	7670	7670
191/2 WG		Output R.P.M.	39.5	26.0	19.6	16.3	13.1	6.78	4.52	2.26
		Overhung Load	2850	2800	2700	2700	2675	2625	2625	2625
46.54	R	Input H.P.	4.13	3.15	2.57	2.25	1.91	1.07	—	—
2.27 HG		Output Torque	5650	6420	6800	7010	7190	7590	7690	7690
201/2 WG		Output R.P.M.	37.6	24.7	18.7	15.5	12.5	6.45	4.30	2.15
		Overhung Load	2850	2800	2675	2675	2675	2650	2650	2650
48.80	L	Input H.P.	4.00	3.04	2.50	2.17	1.85	1.04	—	—
2.27 HG		Output Torque	5670	6430	6820	7020	7200	7600	7700	7700
211/2 WG		Output R.P.M.	35.9	23.6	17.8	14.8	11.9	6.15	4.10	2.05
		Overhung Load	2850	2800	2675	2675	2650	2650	2600	2600
59.02	**R**	Input H.P.	3.47	2.68	2.20	1.92	1.63	.93	—	—
2.27 HG		Output Torque	5690	6500	6920	7140	7350	7790	7900	7900
26 WG		Output R.P.M.	29.6	19.5	14.8	12.2	9.83	5.09	3.39	1.70
		Overhung Load	2825	2800	2675	2675	2650	2650	2600	2600
64.48	**R**	Input H.P.	3.30	2.37	1.88	1.59	1.31	—	—	—
4.16 HG	L	Output Torque	6430	6850	7040	7150	7260	7380	7380	7380
151/2 WG		Output R.P.M.	27.2	17.8	13.5	11.2	8.99	4.65	3.10	1.55
		Overhung Load	2775	2725	2700	2700	2675	2675	2675	2675
65.83	**R**	Input H.P.	3.20	2.49	2.03	1.77	1.50	.86	—	—
2.27 HG		Output Torque	5760	6540	6950	7160	7370	7790	7900	7900
29 WG		Output R.P.M.	26.6	17.5	13.2	10.9	8.81	4.56	3.04	1.52
		Overhung Load	2825	2775	2675	2675	2650	2600	2600	2600
72.80	R	Input H.P.	3.06	2.21	1.75	1.48	1.22	—	—	—
4.16 HG		Output Torque	6740	7200	7410	7540	7650	7790	7790	7790
171/2 WG		Output R.P.M.	24.0	15.8	12.0	9.89	7.97	4.12	2.75	1.37
		Overhung Load	2800	2700	2675	2675	2650	2650	2650	2650
81.12	**R**	Input H.P.	2.85	2.08	1.65	1.40	1.15	—	—	—
4.16 HG	L	Output Torque	6670	7120	7330	7440	7550	7670	7670	7670
191/2 WG		Output R.P.M.	21.6	14.2	10.7	8.88	7.15	3.70	2.46	1.23
		Overhung Load	2800	2700	2675	2675	2625	2625	2625	2625
85.28	R	Input H.P.	2.75	2.01	1.60	1.35	1.12	—	—	—
4.16 HG		Output Torque	6690	7130	7340	7640	7570	7690	7690	7690
201/2 WG		Output R.P.M.	20.5	13.5	10.2	8.45	6.80	3.52	2.34	1.17
		Overhung Load	2800	2675	2650	2650	2600	2600	2600	2600
89.44	L	Input H.P.	2.67	1.96	1.55	1.32	1.09	—	—	—
4.16 HG		Output Torque	6700	7140	7350	7470	7580	7700	7700	7700
211/2 WG		Output R.P.M.	19.6	12.9	9.73	8.05	6.49	3.36	2.24	1.12
		Overhung Load	2725	2675	2650	2650	2600	2600	2600	2600

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
In addition to those listed, any worm gear ratio greater than 15:1 (refer to the appropriate size in the single reduction section) may be combined with either of the helical ratios above for additional total reductions.

TYPE HUF

Net Wt.—190 Lbs.
Oil Cap.—6 Pts.



SIZE 40

HELICAL-WORM SPEED REDUCERS

RATING TABLE
FOR UNITY SERVICE FACTOR

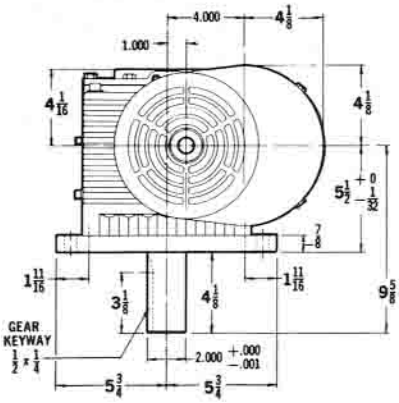
CENTERS
4.000" WORM GEARING
3.000" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
104.4 2.27 HG 46 WG	R	Input H.P.	2.20	1.70	1.40	1.22	1.04	.60	—	—
		Output Torque	5500	6210	6570	6750	6920	7300	7400	7400
		Output R.P.M.	16.8	11.0	8.33	6.90	5.55	2.87	1.91	.957
		Overhung Load	2850	2800	2700	2700	2675	2650	2650	2650
108.2 4.16 HG 26 WG	R	Input H.P.	2.35	1.73	1.38	1.17	.97	—	—	—
		Output Torque	6800	7280	7520	7650	7770	7900	7900	7900
		Output R.P.M.	16.2	10.6	8.04	6.65	5.36	2.77	1.85	.924
		Overhung Load	2800	2675	2650	2650	2650	2600	2600	2600
112.3 4.16 HG 27 WG	L	Input H.P.	2.29	1.68	1.33	1.14	.94	—	—	—
		Output Torque	6790	7280	7510	7640	7760	7900	7900	7900
		Output R.P.M.	15.6	10.2	7.74	6.40	5.16	2.67	1.78	.890
		Overhung Load	2800	2675	2650	2650	2650	2600	2600	2600
120.6 4.16 HG 29 WG	R	Input H.P.	2.18	1.59	1.27	1.08	.90	—	—	—
		Output Torque	6830	7300	7530	7650	7770	7900	7900	7900
		Output R.P.M.	14.5	9.53	7.21	5.97	4.81	2.49	1.66	.829
		Overhung Load	2775	2675	2650	2650	2650	2600	2600	2600
124.8 2.27 HG 55 WG	R	Input H.P.	1.81	1.39	1.13	1.00	.85	.49	—	—
		Output Torque	5180	5790	6090	6250	6390	6690	6770	6770
		Output R.P.M.	14.0	9.21	6.97	5.77	4.65	2.40	1.60	.801
		Overhung Load	2900	2850	2700	2700	2750	2750	2700	2700
136.2 2.27 HG 60 WG	R L	Input H.P.	1.63	1.25	1.02	.90	.76	.44	—	—
		Output Torque	5030	5620	5910	6060	6200	6510	6600	6600
		Output R.P.M.	12.8	8.45	6.39	5.28	4.26	2.20	1.47	.734
		Overhung Load	2900	2875	2800	2800	2775	2775	2750	2750
149.8 4.16 HG 36 WG	R	Input H.P.	1.85	1.35	1.08	.94	.78	—	—	—
		Output Torque	6700	7130	7330	7450	7560	7690	7690	7690
		Output R.P.M.	11.7	7.68	5.80	4.80	3.87	2.00	1.34	.668
		Overhung Load	2800	2675	2650	2650	2650	2600	2600	2600
166.4 4.16 HG 40 WG	R L	Input H.P.	1.70	1.25	1.00	.87	.72	—	—	—
		Output Torque	6730	7180	7390	7510	7620	7740	7740	7740
		Output R.P.M.	10.5	6.90	5.22	4.32	3.48	1.80	1.20	.600
		Overhung Load	2800	2700	2650	2650	2650	2625	2625	2625
191.4 4.16 HG 46 WG	R	Input H.P.	1.50	1.10	.88	.75	.62	—	—	—
		Output Torque	6460	6870	7060	7170	7280	7400	7400	7400
		Output R.P.M.	9.14	6.00	4.55	3.76	3.03	1.57	1.04	.522
		Overhung Load	2800	2700	2675	2675	2675	2650	2650	2650
208.0 4.16 HG 50 WG	R L	Input H.P.	1.37	1.01	.80	.69	.58	—	—	—
		Output Torque	6390	6790	6970	7080	7180	7300	7300	7300
		Output R.P.M.	8.41	5.53	4.18	3.46	2.79	1.44	.961	.481
		Overhung Load	2825	2725	2700	2700	2675	2675	2675	2675
228.8 4.16 HG 55 WG	R	Input H.P.	1.21	.89	.71	.61	.51	—	—	—
		Output Torque	6000	6350	6510	6600	6680	6770	6770	6770
		Output R.P.M.	7.64	5.02	3.80	3.14	2.53	1.31	.874	.437
		Overhung Load	2850	2700	2750	2750	2750	2700	2700	2700
249.6 4.16 HG 60 WG	R L	Input H.P.	1.10	.80	.64	.55	.46	—	—	—
		Output Torque	5820	6160	6310	6400	6490	6600	6600	6600
		Output R.P.M.	7.01	4.60	3.48	2.88	2.32	1.20	.800	.400
		Overhung Load	2875	2800	2775	2775	2775	2750	2750	2750

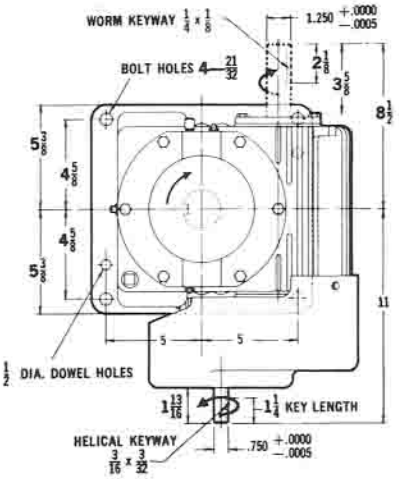
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For HDF units, use 75% of the overhung load figure.
See page 14 for other service factors.

Dimensions in Inches



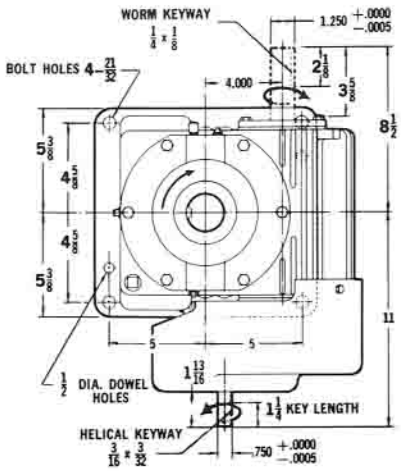
TYPE HDF

Net Wt.—190 Lbs.
Oil Cap.—5 Pts.



STANDARD SHAFT ARRANGEMENTS HUF-HDF UNITS

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

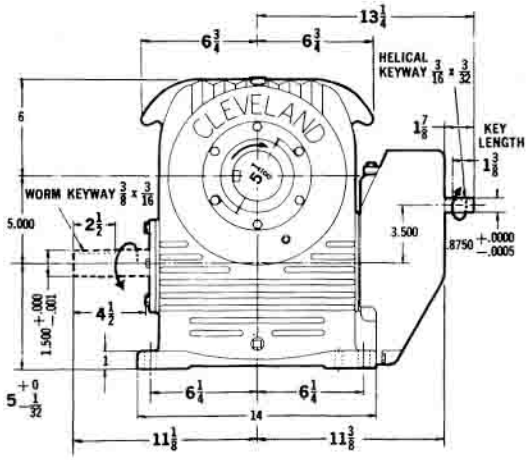


1 2 3 4

HELICAL-WORM SPEED REDUCERS

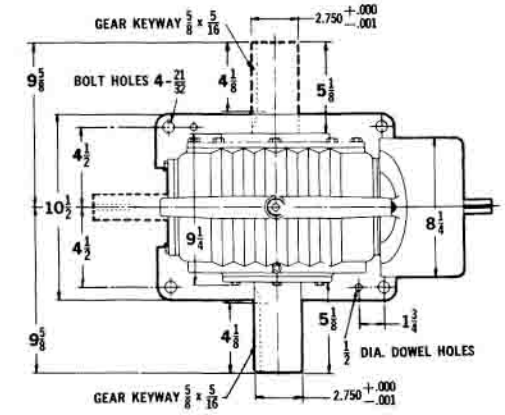
SIZE 50

Dimensions in Inches



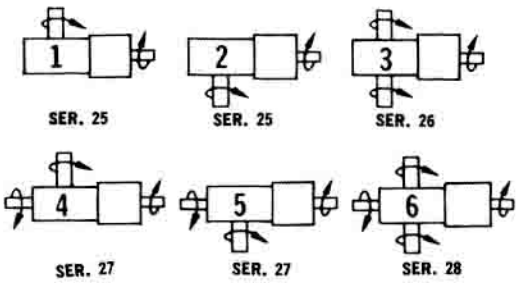
TYPE HAF

Net Wt.—265 Lbs.
Oil Cap.—9 Pts.



STANDARD SHAFT ARRANGEMENTS HAF 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
5.000" WORM GEARING
3.500" HELICAL GEARING

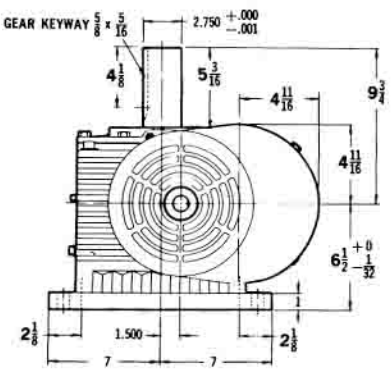
HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
32.39	R	Input H.P.	9.10	7.03	5.80	5.05	4.23	2.90	—	—
2.26 HG		Output Torque	9310	10900	11700	2100	12500	3400	3600	13600
14 1/3 WG		Output R.P.M.	54.0	35.5	26.8	22.2	17.6	9.26	6.17	3.08
		Overhung Load	3750	4000	4975	4975	5625	6875	6875	6875
39.55	R	Input H.P.	7.80	6.08	5.00	4.40	3.68	2.12	—	—
2.26 HG		Output Torque	9510	11300	12200	2700	13200	14200	4500	14500
17 1/2 WG		Output R.P.M.	44.2	29.1	22.0	18.2	14.7	7.59	5.05	2.53
		Overhung Load	4000	4300	5250	5250	5900	6850	6850	6850
45.20	R	Input H.P.	7.05	5.50	4.55	3.99	3.38	1.95	—	—
2.26 HG		Output Torque	9600	11300	12200	2600	13100	14000	4200	14200
20 WG		Output R.P.M.	38.7	25.4	19.2	15.9	12.8	6.63	4.42	2.21
		Overhung Load	4250	4550	5525	5525	6200	6825	6825	6825
47.46	R	Input H.P.	6.75	5.30	4.36	3.85	3.23	1.87	—	—
2.26 HG	L	Output Torque	9720	11300	12100	2600	13000	13900	4100	14100
21 WG		Output R.P.M.	36.8	24.2	18.3	15.2	12.2	6.32	4.21	2.11
		Overhung Load	4300	4600	5600	5600	5600	6850	6850	6850
56.50	R	Input H.P.	5.85	4.60	3.70	3.35	2.81	1.64	—	—
2.26 HG	L	Output Torque	9560	11200	12100	2600	13000	13900	4200	14200
25 WG		Output R.P.M.	31.0	20.4	15.4	12.7	10.3	5.31	3.54	1.77
		Overhung Load	4650	4950	5950	5950	6600	6600	6850	6850
59.91	R	Input H.P.	6.10	4.50	3.60	3.00	2.50	—	—	—
4.18 HG		Output Torque	11500	12400	12800	3100	13200	13600	13600	13600
14 1/3 WG		Output R.P.M.	29.2	19.2	14.5	12.0	9.69	5.01	3.34	1.67
		Overhung Load	4000	4975	5625	5625	6875	6875	6875	6875
67.80	R	Input H.P.	5.00	3.90	3.20	2.82	2.37	1.40	—	—
2.26 HG		Output Torque	9580	11100	11900	2300	12700	13600	13800	13800
30 WG		Output R.P.M.	25.2	17.0	12.8	10.6	8.55	4.3	2.95	1.48
		Overhung Load	4950	5250	6150	6150	6800	6850	6850	6850
73.15	R	Input H.P.	5.30	3.95	3.13	2.65	2.20	—	—	—
4.18 HG		Output Torque	12000	13000	13500	3800	14100	14500	14500	14500
17 1/2 WG		Output R.P.M.	23.9	15.7	11.9	9.84	7.93	41.0	2.74	1.37
		Overhung Load	4300	5250	5900	5900	6850	6850	6850	6850
76.84	R	Input H.P.	4.55	3.57	2.96	2.62	2.20	1.30	—	—
2.26 HG		Output Torque	10000	11800	12700	3100	13600	14600	14800	14800
34 WG		Output R.P.M.	22.8	15.0	11.3	9.37	7.55	3.91	2.60	1.30
		Overhung Load	5150	5400	6350	6350	6800	6850	6850	6850
83.60	R	Input H.P.	4.80	3.60	2.88	2.44	2.03	—	—	—
4.18 HG		Output Torque	11900	12900	13400	3700	14000	14200	14200	14200
20 WG		Output R.P.M.	20.9	13.8	10.4	8.60	6.93	3.58	2.39	1.20
		Overhung Load	4550	5525	6200	6200	6825	6825	6825	6825
87.78	R	Input H.P.	4.62	3.46	2.75	2.34	1.95	—	—	—
4.18 HG	L	Output Torque	11900	12900	13300	3600	13800	14100	14100	14100
21 WG		Output R.P.M.	19.9	13.1	9.91	8.20	6.60	3.42	2.28	1.14
		Overhung Load	4600	5600	6250	6250	6250	6850	6850	6850
104.5	R	Input H.P.	4.00	2.99	2.40	2.03	1.70	—	—	—
4.18 HG	L	Output Torque	11900	12900	13300	3600	13900	14200	14200	14200
25 WG		Output R.P.M.	16.8	11.0	8.32	6.89	5.55	2.87	1.91	.956
		Overhung Load	4950	5950	6600	6600	6850	6850	6850	6850

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
In addition to those listed, any worm gear ratio greater than 15:1 (refer to the appropriate size in the single reduction section) may be combined with either of the helical ratios above for additional total reductions.

TYPE HUF

Net Wt.—315 Lbs.
Oil Cap.—11 Pts.



SIZE 50

HELICAL-WORM SPEED REDUCERS

RATING TABLE
FOR UNITY SERVICE FACTOR

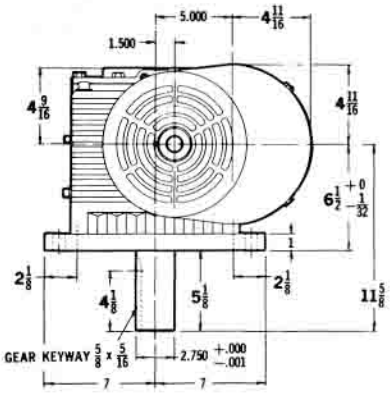
CENTERS
5.000" WORM GEARING
3.500" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
108.5 2.26 HG 48 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	3.45 9230 16.1 5875	2.75 10800 10.6 6100	2.33 11600 8.01 6100	2.07 12100 6.63 6800	1.76 12500 5.35 6800	1.05 13400 2.76 6925	— 13600 1.84 6875	— 13600 .921 6875
125.4 4.18 HG 30 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	3.40 11700 13.9 5250	2.53 12600 9.16 6150	2.02 13000 6.93 6800	1.73 13300 5.74 6800	1.46 13500 4.62 6850	— 13800 2.39 6850	— 13800 1.59 6850	— 13800 .796 6850
137.9 4.18 HG 33 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	3.20 11800 12.7 5400	2.40 12700 8.34 6350	1.92 13200 6.31 6350	1.64 13500 5.22 6800	1.38 13700 4.20 6800	— 14000 2.18 6850	— 14000 1.45 6850	— 14000 .725 6850
142.1 4.18 HG 34 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	3.14 12400 12.3 5400	2.35 13400 8.09 6350	1.89 14000 6.12 6350	1.61 14300 5.06 6800	1.35 14500 4.08 6800	— 14800 2.11 6850	— 14800 1.41 6850	— 14800 .703 6850
154.6 4.18 HG 37 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	2.98 11600 11.3 5600	2.24 12500 7.44 6450	1.80 13000 5.63 6850	1.53 13200 4.66 6850	1.28 12500 3.75 6850	— 13700 1.94 6850	— 13700 1.29 6850	— 13700 .647 6850
158.2 2.26 HG 70 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	2.18 8040 11.1 6700	1.73 9230 7.27 6900	1.45 9810 5.50 7150	1.28 10100 4.55 7150	1.09 10400 3.66 7000	.65 11000 1.90 6950	— 11200 1.26 6950	— 11200 .632 6950
167.2 4.18 HG 40 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	2.83 11800 10.5 5750	2.13 12800 6.88 6550	1.70 13300 5.20 6875	1.45 13600 4.30 6875	1.23 13800 3.47 6850	— 14100 1.79 6850	— 14100 1.20 6850	— 14100 .598 6850
188.1 4.18 HG 45 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	2.58 12000 9.30 5950	1.96 13000 6.11 6750	1.57 13600 4.62 6900	1.35 13800 3.82 6900	1.14 14100 3.08 6900	— 14400 1.60 6850	— 14400 1.06 6850	— 14400 .531 6850
200.6 4.18 HG 48 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	2.45 11400 8.73 6800	1.87 12400 5.73 6925	1.50 12800 4.34 6925	1.29 13100 3.59 6925	1.09 13400 2.89 6925	— 13600 1.50 6875	— 13600 .999 6875	— 13600 .499 6875
234.1 4.18 HG 56 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	1.99 10800 7.47 7000	1.51 11600 4.91 7000	1.21 12000 3.72 6975	1.04 12200 3.08 6975	.88 12400 2.48 6975	— 12600 1.28 6925	— 12600 .854 6925	— 12600 .427 6925
267.5 4.18 HG 64 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	1.70 10100 6.53 7100	1.28 10800 4.29 7100	1.02 11100 3.25 7000	.89 11300 2.69 7000	.76 11500 2.17 7000	— 11700 1.12 6950	— 11700 .748 6950	— 11700 .374 6950
292.6 4.18 HG 70 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	1.52 9650 5.98 7150	1.15 10300 3.93 7150	.90 10700 2.97 7000	.80 10800 2.46 7000	.68 11000 1.98 6950	— 11200 1.03 6950	— 11200 .684 6950	— 11200 .342 6950

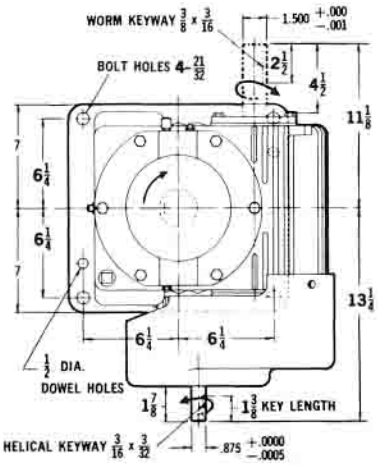
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For HDF units, use 75% of the overhung load figure.
See page 14 for other service factors.

Dimensions in Inches



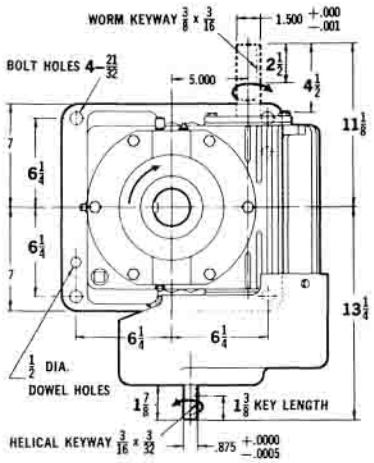
TYPE HDF

Net Wt.—325 Lbs.
Oil Cap.—11 Pts.



STANDARD SHAFT ARRANGEMENTS HUF-HDF UNITS

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

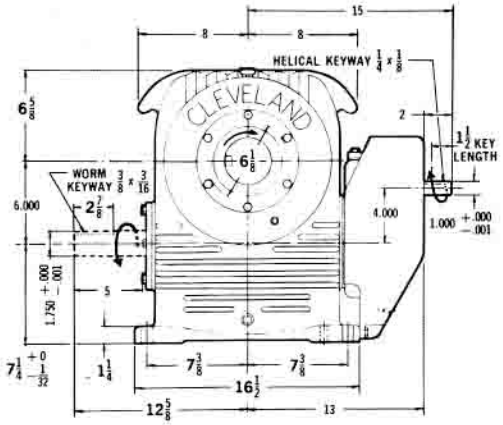


1 2 3 4

HELICAL-WORM SPEED REDUCERS

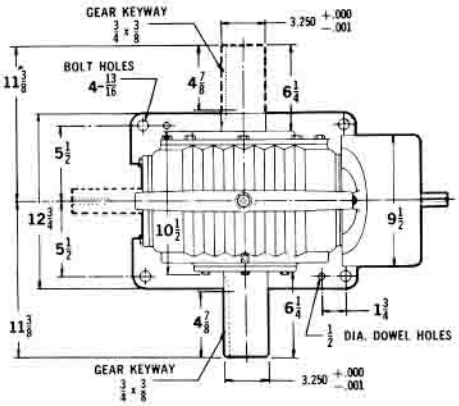
SIZE 60

Dimensions in Inches



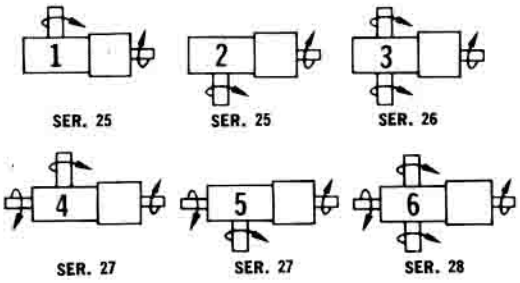
TYPE HAF

Net Wt.—425 Lbs.
Oil Cap.—2¾ Gal.



STANDARD SHAFT ARRANGEMENTS HAF 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
6.000" WORM GEARING
4.000" HELICAL GEARING

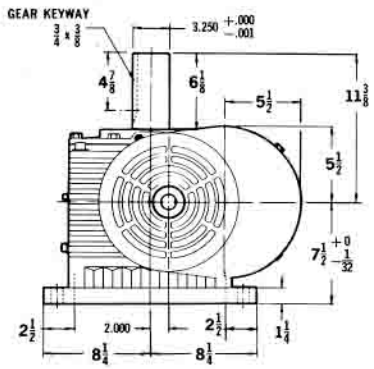
HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
33.15 2.26 HG 14 2/3 WG	**R**	Input H.P.	13.4	10.7	9.0	7.9	6.7	3.91	—	—
		Output Torque	14300	17000	18500	19400	20200	21900	22400	22400
		Output R.P.M.	52.7	34.6	26.2	21.7	17.5	9.03	6.02	3.01
		Overhung Load	3700	4100	5100	5100	5800	5800	7150	7150
38.42 2.26 HG 17 WG	R L	Input H.P.	12.0	9.6	8.0	7.2	6.0	3.5	—	—
		Output Torque	15200	18000	19600	20500	21400	23200	23800	23800
		Output R.P.M.	45.6	30.0	22.6	18.7	15.1	7.81	5.20	2.60
		Overhung Load	4100	4400	5400	5400	6000	7800	7800	7800
45.20 2.26 HG 20 WG	**R**	Input H.P.	10.5	8.4	7.2	6.4	5.4	3.10	—	—
		Output Torque	14800	17400	19000	19900	20700	22400	22800	22800
		Output R.P.M.	38.7	25.4	19.2	15.9	12.8	6.65	4.43	2.21
		Overhung Load	4400	4700	5700	5700	6400	8200	8200	8200
55.37 2.26 HG 24 1/2 WG	**R** L	Input H.P.	9.1	7.2	6.0	5.3	4.5	2.71	—	—
		Output Torque	15300	18000	19600	20500	21300	23100	23600	23600
		Output R.P.M.	31.6	20.8	15.7	13.0	10.5	5.41	3.61	1.80
		Overhung Load	4850	5100	6150	6150	6850	8325	8325	8325
60.43 4.12 HG 14 2/3 WG	**R**	Input H.P.	9.5	7.2	5.8	5.0	4.1	—	—	—
		Output Torque	18000	19900	20800	21300	21800	22400	22400	22400
		Output R.P.M.	29.0	19.0	14.4	11.9	9.60	4.97	3.31	1.66
		Overhung Load	5100	5100	5800	5800	5800	7150	7150	7150
62.15 2.26 HG 27 1/2 WG	R	Input H.P.	8.2	6.5	5.4	4.7	4.1	2.39	—	—
		Output Torque	15300	17800	19300	20200	21000	22600	23100	23100
		Output R.P.M.	28.2	18.5	14.0	11.6	9.33	4.83	3.22	1.61
		Overhung Load	5000	5300	6400	6400	7000	8350	8350	8350
67.80 2.26 HG 30 WG	**R**	Input H.P.	7.6	6.0	5.0	4.4	3.8	2.2	—	—
		Output Torque	14900	17400	18800	19600	20400	22000	22400	22400
		Output R.P.M.	25.8	17.0	12.8	10.6	8.55	4.42	2.95	1.47
		Overhung Load	5300	5500	6450	6450	7100	8400	8400	8400
70.04 4.12 HG 17 WG	R L	Input H.P.	8.5	6.5	5.2	4.4	3.7	—	—	—
		Output Torque	19000	21100	22100	22600	23100	23800	23800	23800
		Output R.P.M.	25.0	16.4	12.4	10.3	8.29	4.28	2.86	1.43
		Overhung Load	4400	5400	6000	6000	6000	7800	7800	7800
72.32 2.26 HG 32 WG	R	Input H.P.	7.2	5.7	4.8	4.2	3.6	2.12	—	—
		Output Torque	14800	17500	19000	19900	20700	22500	23000	23000
		Output R.P.M.	23.5	15.4	11.7	9.66	7.78	4.03	2.68	1.34
		Overhung Load	5350	5600	6650	6650	7200	8400	8400	8400
79.10 2.26 HG 35 WG	R	Input H.P.	6.7	5.4	4.5	4.0	3.4	2.01	—	—
		Output Torque	15500	18400	20100	21000	22000	23800	24400	24400
		Output R.P.M.	22.1	14.5	11.0	9.10	7.33	3.79	2.53	1.26
		Overhung Load	5600	5800	6800	6800	7300	8400	8400	8400
82.40 4.12 HG 20 WG	**R**	Input H.P.	7.6	5.8	4.6	3.9	3.25	—	—	—
		Output Torque	18500	20400	21300	21800	22300	22800	22800	22800
		Output R.P.M.	21.2	14.0	10.6	8.74	7.04	3.64	2.43	1.21
		Overhung Load	5700	5700	6400	6400	6400	8200	8200	8200
90.40 2.26 HG 40 WG	**R** L	Input H.P.	6.1	4.9	4.1	3.65	3.1	1.86	—	—
		Output Torque	14900	17400	18900	19800	20600	22200	22700	22700
		Output R.P.M.	19.4	12.7	9.63	7.97	6.42	3.32	2.21	1.11
		Overhung Load	5950	6150	6900	6900	7450	8400	8400	8400

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
In addition to those listed, any worm gear ratio greater than 15:1 (refer to the appropriate size in the single reduction section) may be combined with either of the helical ratios above for additional total reductions.

TYPE HUF

Net Wt.—460 Lbs.
Oil Cap.—2¼ Gal.



SIZE 60

HELICAL-WORM SPEED REDUCERS

RATING TABLE

FOR UNITY SERVICE FACTOR

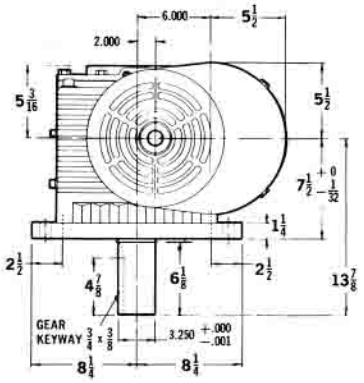
CENTERS
6.000" WORM GEARING
4.000" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
100.94 4.12 HG 24 1/2 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	6.4 19100 17.3 6150	4.9 21000 11.4 6150	3.95 22000 8.61 6850	3.40 22500 7.13 6850	2.85 23000 5.74 6850	— 23600 2.97 8325	— 23600 1.98 8325	— 23600 .99 8325
113.3 4.12 HG 27 1/2 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	5.8 18900 15.5 6400	4.4 20700 10.2 6400	3.55 21600 7.70 7000	3.0 22000 6.37 7000	2.5 22500 5.13 7000	— 23100 2.65 8350	— 23100 1.77 8350	— 23100 .885 8350
123.6 4.12 HG 30 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	5.3 18400 14.1 6450	4.0 20100 9.27 6450	3.26 21000 7.01 7100	2.8 21400 5.80 7100	2.3 21900 4.67 7100	— 22400 2.42 8400	— 22400 1.61 8400	— 22400 .806 8400
131.84 4.12 HG 32 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	5.1 18500 13.3 6650	3.9 20400 8.71 6650	3.12 21400 6.59 7200	2.68 21900 5.45 7200	2.23 22400 4.40 7200	— 23000 2.27 8400	— 23000 1.52 8400	— 23000 .757 8400
135.6 2.26 HG 60 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	3.95 13500 12.9 7000	3.2 15800 8.45 7150	2.8 17100 6.40 7600	2.41 17800 5.30 7600	2.05 18500 4.26 8000	1.25 19000 2.20 8500	— 20200 1.47 8500	— 20200 .735 8500
144.2 4.12 HG 35 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	4.8 19600 12.1 5800	3.65 21600 7.99 6800	2.95 22600 6.04 7300	2.53 23200 5.00 7300	2.10 23700 4.03 7300	— 24400 2.08 8400	— 24400 1.39 8400	— 24400 .694 8400
151.42 2.26 HG 67 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	3.45 12800 11.5 7300	2.82 14800 7.57 7400	2.33 15900 5.72 7600	2.10 16500 4.73 7600	1.77 17100 3.81 8100	1.07 18400 1.97 8500	— 18700 1.32 8500	— 18700 .657 8500
164.8 4.12 HG 40 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	4.3 18400 10.6 6150	3.3 20300 6.97 6900	2.7 21200 5.27 7450	2.33 21600 4.36 7450	1.95 22100 3.52 7450	— 22700 1.82 8400	— 22700 1.21 8400	— 22700 .605 8400
185.4 4.12 HG 45 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	3.9 18500 9.41 6400	3.05 20300 6.18 7200	2.5 21200 4.67 7600	2.15 21600 3.87 7600	1.81 22100 3.12 7600	— 22600 1.61 8450	— 22600 1.07 8450	— 22600 .537 8450
206.0 4.12 HG 50 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	3.6 17800 8.50 7300	2.8 19500 5.58 7300	2.3 20400 4.22 7750	2.0 20900 3.49 7750	1.7 21400 2.82 8475	— 21900 1.45 8475	— 21900 .970 8475	— 21900 .485 8475
247.2 4.12 HG 60 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	2.85 16700 7.09 7600	2.2 18200 4.65 7600	1.79 19100 3.52 8000	1.55 19500 2.91 8000	1.3 19800 2.35 8000	20200 1.22 8500	20200 .810 8500	20200 .405 8500
276.04 4.12 HG 67 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	2.5 15600 6.34 7600	1.9 16900 4.17 7600	1.55 17600 3.15 8100	1.33 18000 2.61 8100	1.11 18300 2.10 8100	— 18700 1.09 8500	— 18700 .724 8500	— 18700 .362 8500

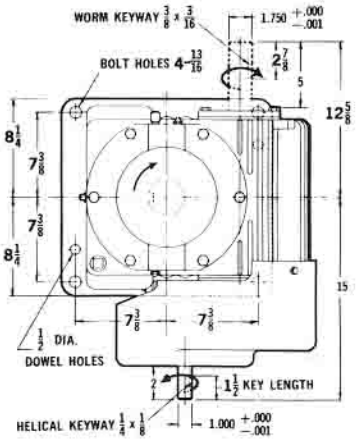
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For HDF units, use 75% of the overhung load figure.
See page 14 for other service factors.

Dimensions in Inches



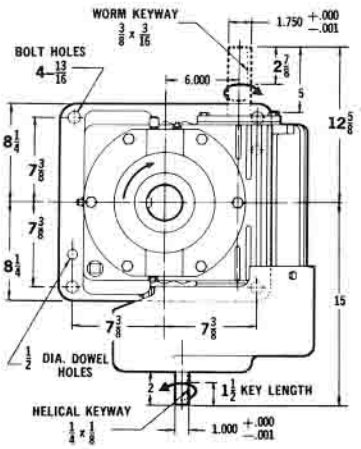
TYPE HDF

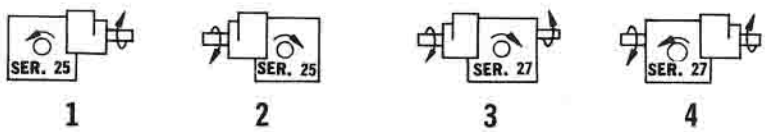
Net Wt.—475 Lbs.
Oil Cap.—1¾ Gal.



STANDARD SHAFT ARRANGEMENTS HUF-HDF UNITS

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



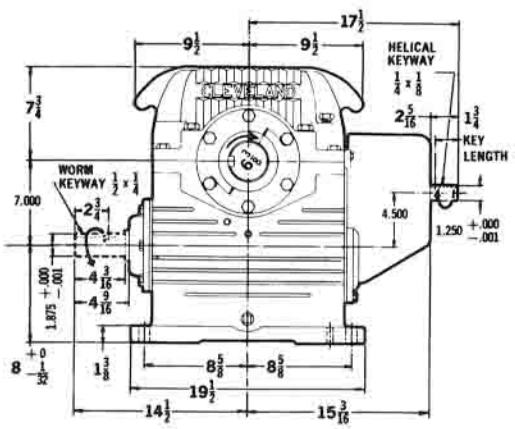


1 2 3 4

HELICAL-WORM SPEED REDUCERS

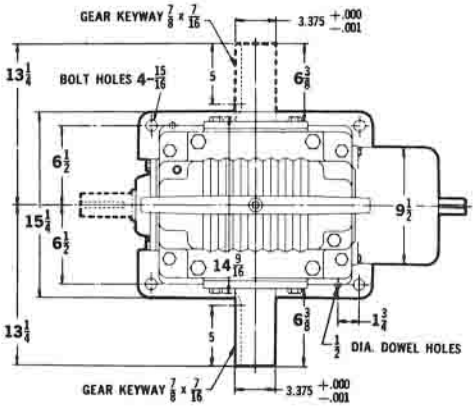
SIZE 70

Dimensions In Inches



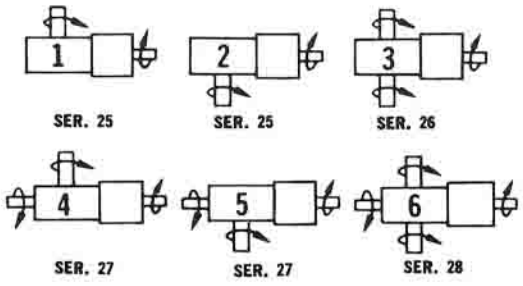
TYPE HAF

Net Wt.—660 Lbs.
Oil Cap.—3½ Gal.



STANDARD SHAFT ARRANGEMENTS HAF 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

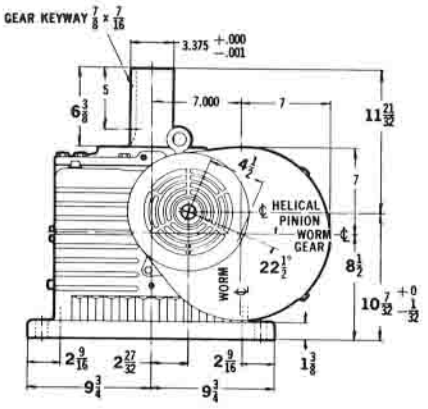
HELICAL WORM GEAR — CENTERS: 7.000" WORM GEARING, 4.500" HELICAL GEARING

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
35.03 2.26 HG 15 1/2 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	18.3 20200 50.0 7200	14.8 25000 32.8 7700	12.5 27700 24.8 9600	11.2 29200 20.6 9600	9.60 30700 16.6 10400	5.63 33700 8.56 10400	— 34600 5.71 10250	— 34600 2.86 10250
42.94 2.26 HG 19 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	15.7 20700 40.8 7550	12.8 25600 26.8 8000	10.8 28300 20.3 10250	9.70 29800 16.8 10250	8.30 31300 13.5 10350	4.40 34500 6.99 10200	— 35400 4.66 10200	— 35400 2.33 10200
49.72 2.26 HG 22 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	13.8 20700 35.2 8100	11.2 25600 23.1 8500	9.50 28300 17.5 10500	8.50 29800 14.5 10500	7.25 31300 11.7 10300	4.27 34500 6.03 10200	— 34800 4.02 10200	— 34800 2.01 10200
56.50 2.26 HG 25 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	12.3 20700 31.0 8500	10.0 25300 20.4 9100	8.50 27900 15.4 10550	7.55 29200 12.8 10550	6.40 30600 10.3 10400	3.80 33300 5.31 10250	— 34100 3.54 10250	— 34100 1.77 10250
64.48 4.16 HG 15 1/2 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	13.2 27000 27.2 9600	10.1 30200 17.8 9600	8.20 31800 13.5 10400	7.00 32700 11.2 10400	5.85 33600 9.00 10400	— 34600 4.65 10250	— 34600 3.10 10250	— 34600 1.55 10250
67.80 2.26 HG 30 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	10.5 20800 25.8 9000	8.60 25300 17.0 9600	7.25 27800 12.8 10550	6.45 29100 10.6 10550	5.50 30400 8.55 10400	3.25 33100 4.42 10300	— 33800 2.95 10300	— 33800 1.48 10300
79.04 4.16 HG 19 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	11.4 27600 22.2 10250	8.80 30800 14.6 10250	7.10 32600 11.0 10350	6.15 33500 9.11 10350	5.10 34400 7.34 10350	— 35400 3.80 10200	— 35400 2.53 10200	— 35400 1.26 10200
81.36 2.26 HG 36 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	9.40 21100 21.5 9500	7.75 26000 14.2 10100	6.60 28700 10.7 10500	5.95 30200 8.86 10500	5.20 31700 7.13 10300	3.05 34700 3.69 10100	— 35600 2.46 10100	— 35600 1.23 10100
91.52 4.16 HG 22 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	10.0 27600 19.1 10500	7.70 30800 12.6 10500	6.20 32600 9.51 10300	5.35 33500 7.87 10300	4.47 34400 6.34 10300	— 34800 3.28 10200	— 34800 2.19 10200	— 34800 1.09 10200

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
In addition to those listed, any worm gear ratio greater than 15:1 (refer to the appropriate size in the single reduction section) may be combined with either of the helical ratios above for additional total reductions.

TYPE HUF

Net Wt.—750 Lbs.
Oil Cap.—3½ Gal.



SIZE 70

HELICAL-WORM SPEED REDUCERS

RATING TABLE
FOR UNITY SERVICE FACTOR

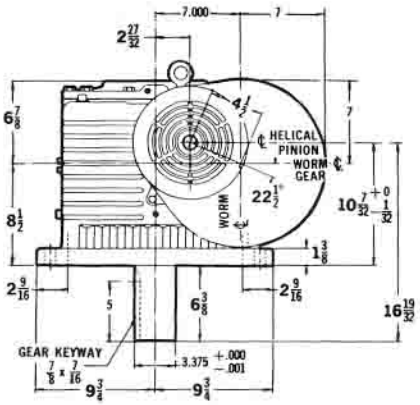
CENTERS
7.000" WORM GEARING
4.500" HELICAL GEARING

HELICAL WORM GEAR

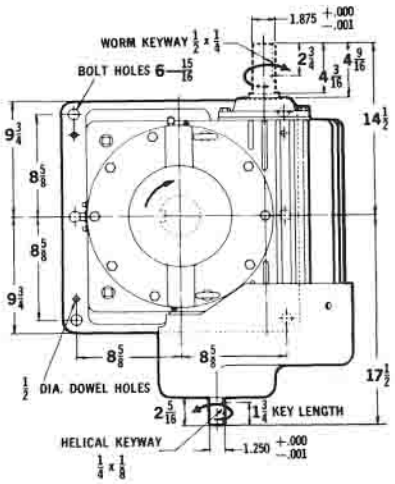
Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
104.0	R	Input H.P.	8.90	6.85	5.50	4.75	3.95	—	—	—
4.16 HG		Output Torque	27200	30100	31600	32400	33200	34100	34100	34100
25 WG		Output R.P.M.	16.8	11.1	8.36	6.92	5.58	2.88	1.92	.961
		Overhung Load	10550	10400	10400	10400	10250	10250	10250	10250
115.3	R	Input H.P.	6.60	5.40	4.65	4.20	3.60	2.14	—	—
2.26 HG		Output Torque	19700	23900	26200	27500	28800	31400	32100	32100
51 WG		Output R.P.M.	15.2	9.96	7.54	6.24	5.03	2.60	1.73	.866
		Overhung Load	10750	10900	10650	10650	10650	10500	10400	10400
124.8	R	Input H.P.	7.60	5.78	4.70	4.05	3.38	—	—	—
4.16 HG		Output Torque	27100	30000	31400	32200	32900	33800	33800	33800
30 WG		Output R.P.M.	14.0	9.22	6.97	5.77	4.65	2.40	1.60	.801
		Overhung Load	10550	10550	10400	10400	10400	10300	10300	10300
149.8	R	Input H.P.	6.95	5.38	4.38	3.79	3.15	—	—	—
4.16 HG		Output Torque	28000	31200	32800	33700	34600	35600	35600	35600
36 WG		Output R.P.M.	11.7	7.68	5.81	4.81	3.87	2.00	1.34	.668
		Overhung Load	10500	10500	10300	10300	10300	10100	10100	10100
166.4	R	Input H.P.	6.60	5.15	4.20	3.64	3.05	—	—	—
4.16 HG		Output Torque	28500	31800	33400	34300	35200	36200	36200	36200
40 WG		Output R.P.M.	10.5	6.91	5.23	4.33	3.48	1.80	1.20	.601
		Overhung Load	10450	10450	10300	10300	10300	10150	10150	10150
191.4	R	Input H.P.	5.55	4.33	3.50	3.05	2.55	—	—	—
4.16 HG		Output Torque	26800	29700	31200	32000	32900	33800	33800	33800
46 WG		Output R.P.M.	9.13	6.00	4.54	3.76	3.03	1.57	1.04	.522
		Overhung Load	10500	10500	10400	10400	10400	10200	10200	10200
212.2	R	Input H.P.	4.85	3.80	3.20	2.67	2.23	—	—	—
4.16 HG		Output Torque	25500	28300	29800	30600	31300	32100	32100	32100
51 WG		Output R.P.M.	8.24	5.41	4.10	3.39	2.73	1.41	.942	.471
		Overhung Load	10650	10650	10500	10500	10500	10400	10400	10400
228.8	R	Input H.P.	4.55	3.60	2.92	2.53	2.11	—	—	—
4.16 HG	L	Output Torque	24900	27500	29000	29700	30300	32200	32200	32200
55 WG		Output R.P.M.	7.64	5.02	3.80	3.14	2.53	1.31	.874	.437
		Overhung Load	10600	10600	10500	10500	10500	10400	10400	10400
253.8	R	Input H.P.	4.20	3.30	2.70	2.33	1.96	—	—	—
4.16 HG		Output Torque	24800	27500	28700	29400	30100	30800	30800	30800
61 WG		Output R.P.M.	6.90	4.53	3.43	2.84	2.29	1.18	.788	.394
		Overhung Load	10700	10700	10600	10600	10600	10500	10500	10500

Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For HDF units, use 65% of the overhung load figure.
See page 14 for other service factors.

Dimensions In Inches



TYPE HDF
Net Wt.—770 Lbs.
Oil Cap.—3½ Gal.

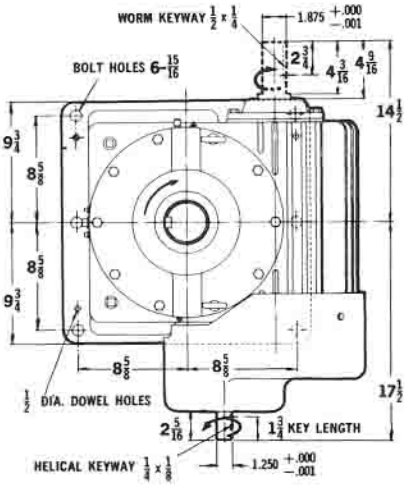


STANDARD SHAFT ARRANGEMENTS HUF-HDF UNITS

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

1

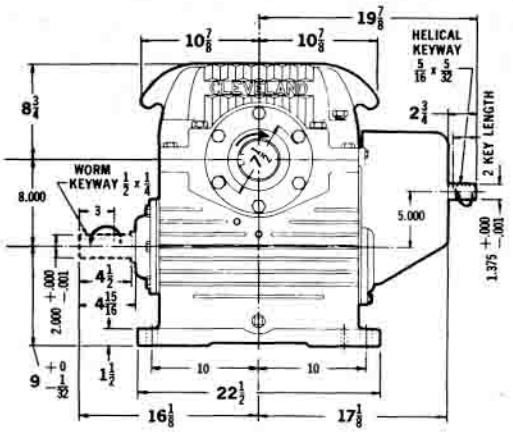
2



HELICAL-WORM SPEED REDUCERS

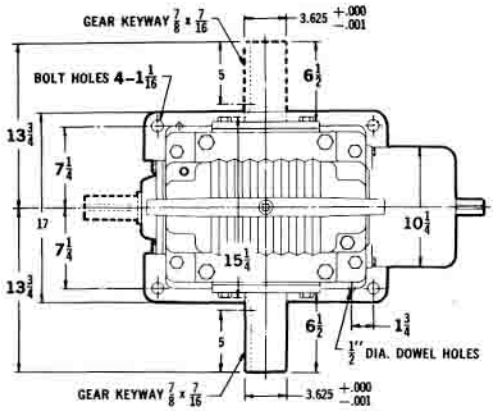
SIZE 80

Dimensions in Inches



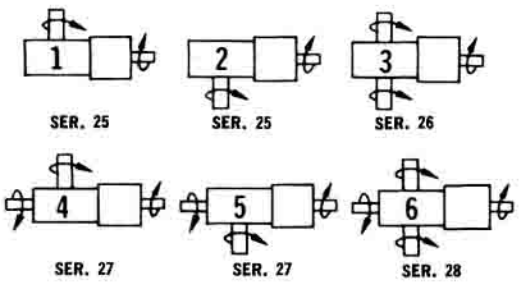
TYPE HAF

Net Wt.—880 Lbs.
Oil Cap.—5½ Gal.



STANDARD SHAFT ARRANGEMENTS HAF 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
8.000" WORM GEARING
5.000" HELICAL GEARING

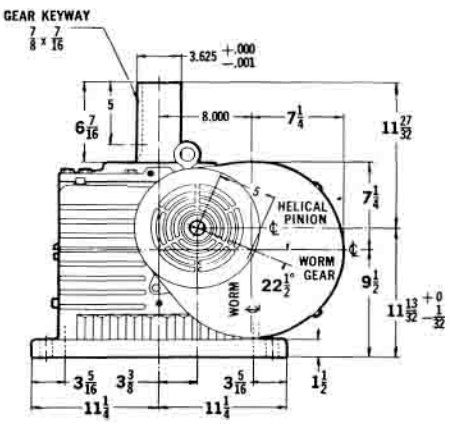
HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
34.64 2.24 HG 15 1/2 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	24.0 26800 50.5 11000	19.9 34000 33.2 11800	17.2 38200 25.1 12200	15.5 40500 20.8 12200	13.4 42800 16.7 11900	8.00 47700 8.66 11500	— 49100 5.78 11500	— 49100 2.89 11500
38.00 2.24 HG 17 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	22.3 27300 46.1 11300	18.6 34000 30.3 12200	16.1 37900 22.9 12100	14.5 39900 18.9 12100	12.5 42100 15.3 12100	7.70 46600 7.90 11800	— 47900 5.26 11500	— 47900 2.63 11500
43.58 2.24 HG 19 1/2 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	20.1 27500 40.2 12000	16.8 34900 26.4 12800	14.5 39300 20.0 12000	13.1 41600 16.5 12000	11.4 44000 13.3 11800	6.85 49100 6.88 11400	— 50600 4.59 11400	— 50600 2.29 11400
53.64 2.24 HG 24 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	17.2 24600 32.6 12800	14.2 35300 21.4 12800	12.1 39500 16.2 12100	11.0 41700 13.4 12100	9.50 43900 10.8 11800	5.70 48700 5.59 11400	— 50100 3.73 11400	— 50100 1.86 11400
59.23 2.24 HG 26 1/2 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	15.7 28200 29.6 12900	13.1 35200 19.4 12800	11.2 39200 14.7 12100	10.1 41300 12.2 12100	8.80 43400 9.79 11800	5.30 47900 5.06 11800	— 49100 3.38 11400	— 49100 1.69 11400
64.94 4.19 HG 15 1/2 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	17.9 37200 26.6 12200	14.0 42200 17.5 12200	11.4 44700 13.2 11900	9.75 46200 10.9 11900	8.20 47500 8.80 11900	— 49100 4.55 11500	— 49100 3.04 11500	— 49100 1.52 11500
69.28 2.24 HG 31 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	13.7 27900 25.2 13000	11.5 35200 16.6 12800	9.95 39400 12.6 12800	9.00 41700 10.4 12100	7.85 44000 8.36 11800	4.76 48900 4.33 11400	— 50300 2.88 11400	— 50300 1.44 11400
71.23 4.19 HG 17 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	16.7 36900 24.6 12100	13.1 41500 16.2 12100	10.7 43900 12.2 11800	9.15 45700 10.1 11800	7.70 46500 8.14 11800	— 47900 4.21 11500	— 47900 2.81 11500	— 47900 1.40 11500
81.70 4.19 HG 19 1/2 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	15.0 38300 21.4 12000	11.8 43400 14.1 12000	9.70 46000 10.6 11800	8.40 47500 8.81 11800	7.00 49000 7.10 11800	— 50600 3.67 11400	— 50600 2.45 11400	— 50600 1.22 11400
84.93 2.24 HG 38 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	11.7 28200 20.6 13000	9.85 35500 13.6 12800	8.54 40000 10.2 12100	7.70 42300 8.49 12100	6.75 44700 6.84 11800	4.15 50000 3.54 11400	— 51500 2.36 11400	— 51500 1.18 11400
91.64 2.24 HG 41 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	11.0 27800 19.1 13000	9.25 34800 12.6 12800	8.00 39000 9.50 12200	7.25 41200 7.85 12200	6.40 43500 6.33 12200	3.93 48300 3.27 11900	— 49700 2.18 11400	— 49700 1.09 11400
100.6 4.19 HG 24 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	12.6 38500 17.4 12100	9.90 43300 11.4 12100	8.10 45800 8.65 11800	6.95 47200 7.16 11800	5.80 48600 5.77 11800	— 50100 2.98 11400	— 50100 1.99 11400	— 50100 .994 11400

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
In addition to those listed, any worm gear ratio greater than 15:1 (refer to the appropriate size in the single reduction section) may be combined with either of the helical ratios above for additional total reductions.

TYPE HUF

Net Wt.—990 Lbs.
Oil Cap.—5 Gal.



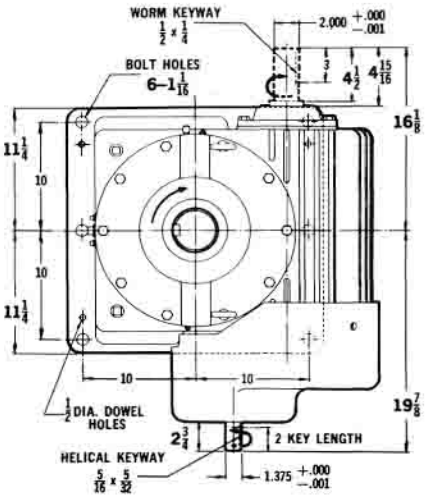
RATING TABLE

FOR UNITY SERVICE FACTOR

HELICAL WORM GEAR — CENTERS: 8.000" WORM GEARING, 5.000" HELICAL GEARING

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
105.0	R	Input H.P.	9.70	8.20	7.05	6.40	5.63	3.47	—	—
2.24 HG	L	Output Torque	27200	34200	38200	40300	42500	47200	48500	48500
47 WG		Output R.P.M.	16.7	11.0	8.28	6.85	5.52	2.86	1.90	.952
		Overhung Load	13000	12800	12200	12200	11900	11600	11600	11600
111.0	R	Input H.P.	11.7	9.20	7.55	6.45	5.95	—	—	—
4.19 HG		Output Torque	38200	42900	45200	46500	47700	49100	49100	49100
26 1/2 WG		Output R.P.M.	15.8	10.4	7.83	6.49	5.22	2.70	1.80	.900
		Overhung Load	12100	12100	11800	11800	11800	11400	11400	11400
114.0	R	Input H.P.	9.00	7.60	6.50	5.93	5.20	3.20	—	—
2.24 HG		Output Torque	26900	33600	37400	39400	41500	45900	47200	47200
51 WG		Output R.P.M.	15.4	10.1	7.63	6.31	5.09	2.63	1.75	.877
		Overhung Load	13100	12900	12900	12300	12300	12000	11700	11700
129.9	R	Input H.P.	10.3	8.15	6.75	5.82	4.90	—	—	—
4.19 HG		Output Torque	38400	43400	45900	47300	48700	50300	50300	50300
31 WG		Output R.P.M.	13.5	8.85	6.70	5.55	4.46	2.31	1.54	.770
		Overhung Load	12800	12100	11800	11800	11800	11400	11400	11400
150.8	R	Input H.P.	6.60	5.58	4.90	4.50	3.95	2.38	—	—
2.24 HG		Output Torque	24600	30500	33800	35600	37400	41100	42200	42200
67 WG		Output R.P.M.	11.7	7.68	5.81	4.80	3.87	2.00	1.34	.668
		Overhung Load	13100	13000	12700	12700	12500	12500	12200	12200
159.2	R	Input H.P.	8.85	7.00	5.83	5.05	4.25	—	—	—
4.19 HG		Output Torque	38900	44100	46800	48300	49800	51500	51500	51500
38 WG		Output R.P.M.	11.0	7.22	5.46	4.52	3.64	1.88	1.26	.627
		Overhung Load	12800	12100	11800	11800	11800	11400	11400	11400
171.8	R	Input H.P.	8.30	6.60	5.50	4.77	4.00	—	—	—
4.19 HG		Output Torque	38000	42900	45400	46800	48200	49700	49700	49700
41 WG		Output R.P.M.	10.2	6.70	5.16	4.20	3.38	1.75	1.16	.582
		Overhung Load	12800	12200	11900	11900	11900	11400	11400	11400
184.4	R	Input H.P.	7.80	6.20	5.15	4.45	3.75	—	—	—
4.19 HG		Output Torque	37800	42700	45200	46600	48000	49500	49500	49500
44 WG		Output R.P.M.	9.48	6.23	4.71	3.90	3.14	1.63	1.08	.542
		Overhung Load	12800	12200	11900	11900	11900	11500	11500	11500
196.9	R	Input H.P.	7.35	5.85	4.85	4.20	3.55	—	—	—
4.19 HG	L	Output Torque	37200	41900	44400	45800	47100	48500	48500	48500
47 WG		Output R.P.M.	8.89	5.84	4.42	3.66	2.94	1.52	1.02	.508
		Overhung Load	12200	11900	11900	11900	11600	11600	11600	11600
213.7	R	Input H.P.	6.80	5.41	4.50	3.37	3.28	—	—	—
4.19 HG		Output Torque	36500	41000	43200	44500	45800	47200	47200	47200
51 WG		Output R.P.M.	8.20	5.38	4.07	3.37	2.71	1.40	.936	.468
		Overhung Load	12300	12300	12000	12000	12000	11700	11700	11700
251.4	R	Input H.P.	5.70	4.60	3.75	3.25	2.75	—	—	—
4.19 HG		Output Torque	33900	37900	40000	41100	42200	43400	43400	43400
60 WG		Output R.P.M.	6.95	4.57	3.46	2.86	2.31	1.19	.795	.398
		Overhung Load	12500	12500	12300	12300	12300	12000	12000	12000
280.7	R	Input H.P.	5.07	4.12	3.35	2.90	2.48	—	—	—
4.19 HG		Output Torque	33000	36900	36800	40000	41000	42200	42200	42200
67 WG		Output R.P.M.	6.23	4.10	3.10	2.56	2.06	1.07	.712	.356
		Overhung Load	12700	12700	12500	12500	12500	12200	12200	12200

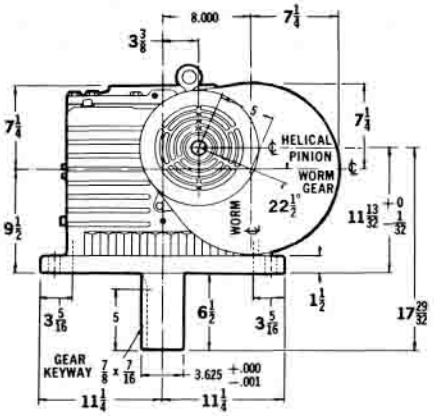
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For HDF units, use 65% of the overhung load figure.
See page 14 for other service factors.



SIZE 80

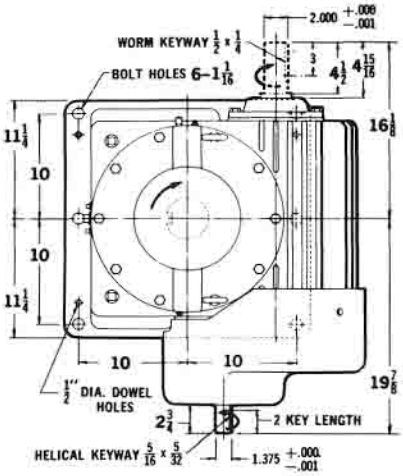
HELICAL-WORM SPEED REDUCERS

Dimensions in Inches



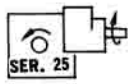
TYPE HDF

Net Wt.—1015 Lbs.
Oil Cap.—5 Gal.

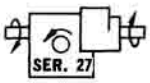


STANDARD SHAFT ARRANGEMENTS HUF-HDF UNITS

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



1

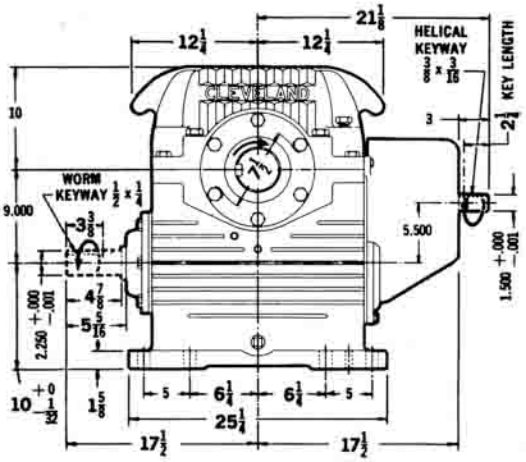


2

HELICAL-WORM SPEED REDUCERS

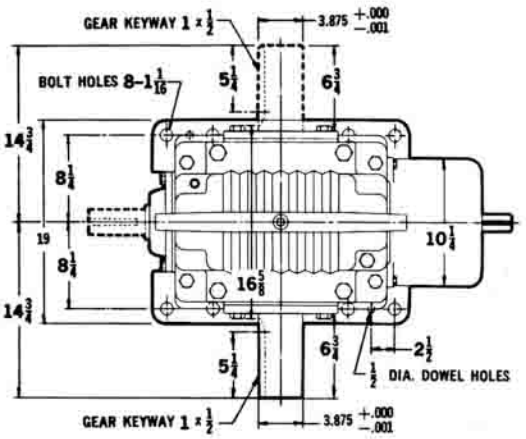
SIZE 90

Dimensions in Inches



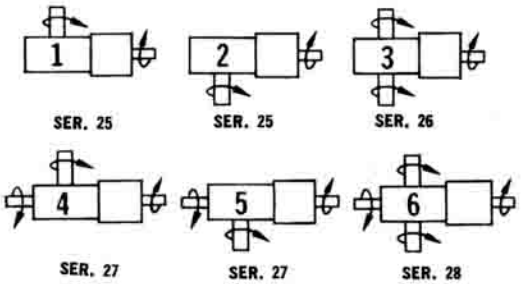
TYPE HAF

Net Wt.—1080 Lbs.
Oil Cap.—9 Gal.



STANDARD SHAFT ARRANGEMENTS HAF 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

HELICAL WORM GEAR

CENTERS
9.000" WORM GEARING
5.500" HELICAL GEARING

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
34.41 2.22 HG 15 1/2 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	31.4 34900 50.7 13600	26.2 43600 33.3 13500	22.8 49300 25.2 12800	20.6 53700 20.9 12800	18.0 57600 16.8 12300	11.0 65000 8.70 11900	— 68200 5.80 11900	— 68200 2.90 11900
38.94 2.22 HG 17 1/2 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	28.3 35200 45.0 13600	23.7 44200 29.5 13500	20.6 50100 22.3 12600	18.9 54700 18.5 12600	16.5 58600 14.9 12200	10.0 66000 7.70 11900	— 69300 5.13 11900	— 69300 2.56 11900
41.16 2.22 HG 18 1/2 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	26.9 35200 42.5 13600	22.5 44200 27.9 13500	19.6 49800 21.1 12500	17.9 54200 17.5 12500	15.5 58100 14.1 12500	9.42 65000 7.29 12200	— 68200 4.85 11900	— 68200 2.43 11900
44.50 2.22 HG 20 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	25.5 35500 39.3 13600	21.3 44500 25.8 13500	18.5 50200 19.6 12500	16.8 54600 16.2 12500	14.6 58400 13.0 12200	8.92 66000 6.75 11900	— 68500 4.50 11900	— 68500 2.25 11900
53.40 2.22 HG 24 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	21.5 35200 32.8 13600	18.0 44000 21.5 13500	15.5 49100 16.3 12500	14.0 53000 13.5 12500	12.1 56000 10.9 12200	7.33 63000 5.61 11900	— 65400 3.74 11900	— 65400 1.87 11900
63.55 4.10 HG 15 1/2 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	23.8 47600 27.5 12800	19.0 56500 18.1 12800	15.0 60700 13.7 12300	13.5 61600 11.3 12300	11.4 64500 9.12 12300	— 68200 4.72 11900	— 68200 3.14 11900	— 68200 1.57 11900
68.98 2.22 HG 31 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	17.6 36000 25.4 13600	15.0 45000 16.7 13500	13.2 50900 12.6 12500	12.0 55000 10.4 12500	10.5 59000 8.42 12500	6.50 66700 4.35 12000	— 69600 2.90 11900	— 69600 1.45 11900
71.75 4.10 HG 17 1/2 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	21.6 48300 24.4 12600	17.4 57300 16.0 12600	14.2 61700 12.1 12200	12.3 62600 10.0 12200	10.4 65500 8.09 12200	— 69300 4.18 11900	— 69300 2.78 11900	— 69300 1.39 11900
75.85 4.10 HG 18 1/2 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	20.5 48100 23.1 12500	16.5 57000 15.2 12500	13.4 61000 11.5 12200	11.6 61900 9.50 12200	9.80 64600 7.65 12200	— 68200 3.96 11900	— 68200 2.64 11900	— 68200 1.32 11900
82.00 4.10 HG 20 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	19.3 48500 21.4 12500	16.4 57400 14.0 12500	12.7 61300 10.6 12200	11.0 63500 8.79 12200	9.20 65500 7.07 12200	— 68500 3.66 11900	— 68500 2.44 11900	— 68500 1.22 11900
89.00 2.22 HG 40 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	14.4 36300 19.7 13600	12.2 45300 12.9 13500	10.7 50800 9.77 12500	9.75 54800 8.09 12500	8.52 58300 6.51 12200	5.25 65200 3.37 11900	— 68000 2.25 11900	— 68000 1.12 11900

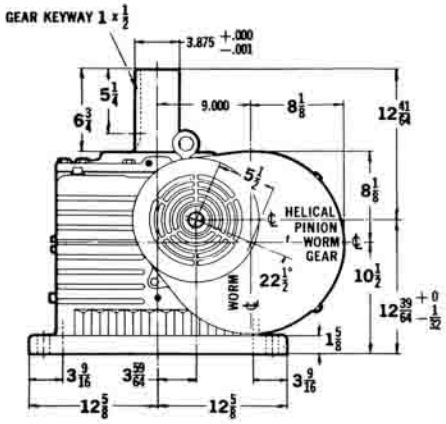
Bold face listing in hand of thread column indicates stock ratios.

Stock ratios should be selected whenever possible for quickest delivery and lowest cost.

In addition to those listed, any worm gear ratio greater than 15:1 (refer to the appropriate size in the single reduction section) may be combined with either of the helical ratios above for additional total reductions.

TYPE HUF

Net Wt.—1300 Lbs.
Oil Cap.—9 Gal.



SIZE 90

HELICAL-WORM SPEED REDUCERS

RATING TABLE
FOR UNITY SERVICE FACTOR

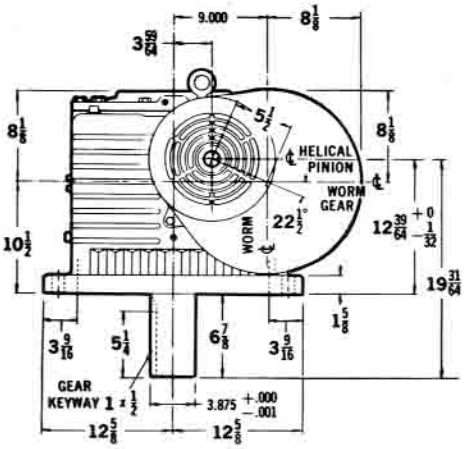
CENTERS
9.000" WORM GEARING
5.500" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
98.40 4.10 HG 24 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	16.2 47500 17.8 12500	12.8 55000 11.7 12500	10.5 59000 8.85 12200	9.05 60800 7.32 12200	7.60 62700 5.80 11900	65400 3.05 11900	65400 2.04 11900	65400 1.02 11900
113.5 2.22 HG 51 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	11.4 34500 15.4 13700	9.60 42800 10.1 13500	8.45 48200 7.66 12800	7.78 52000 6.34 12800	6.82 55200 5.11 12800	4.25 62000 2.64 12500	64600 1.76 12200	64600 .88 12200
127.1 4.10 HG 31 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	13.7 48700 13.8 13500	11.0 58000 9.04 12500	9.19 62100 6.84 12000	8.00 64100 5.66 12000	6.73 66000 4.56 12000	69600 2.36 11900	69600 1.57 11900	69600 .79 11900
143.5 4.10 HG 35 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	12.4 49000 12.2 13500	10.0 58400 8.01 12500	8.33 62500 6.05 12100	7.25 64700 5.02 12100	6.15 66700 4.04 12100	70000 2.09 11900	70000 1.39 11900	70000 .70 11900
164.0 4.10 HG 40 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	11.2 49000 10.7 13500	9.00 57400 7.01 12500	7.40 61000 5.30 12200	6.42 63000 4.39 12200	5.42 65000 3.54 12200	68000 1.83 11900	68000 1.22 11900	68000 .61 11900
180.4 4.10 HG 44 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	10.0 47600 9.70 13500	8.12 55500 6.37 12600	6.70 59000 4.82 12300	5.82 60700 3.99 12300	4.92 62500 3.21 12300	65500 1.66 12000	65500 1.11 12000	65500 .55 12000
188.6 4.10 HG 46 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	9.73 48100 9.28 13500	7.95 56900 6.10 12600	6.55 60300 4.61 12300	5.70 62300 3.82 12300	4.85 64000 3.08 12300	67200 1.59 12100	67200 1.06 12100	67200 .53 12100
209.1 4.10 HG 51 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	8.80 46500 8.37 13500	7.20 54500 5.50 12800	5.98 58000 4.16 12800	5.20 60000 3.44 12500	4.39 61800 2.78 12500	64600 1.43 12200	64600 .96 12200	64600 .48 12200
254.2 4.10 HG 62 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	7.20 42900 6.89 13600	5.80 50000 4.53 13000	4.82 53100 3.42 12900	4.21 54700 2.83 12900	3.57 56300 2.28 12900	58900 1.18 12500	58900 .79 12500	58900 .39 12500
266.5 4.10 HG 65 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	6.87 42200 6.55 13600	5.55 49200 4.31 13100	4.65 52200 3.26 13000	4.07 53900 2.70 13000	3.44 55100 2.18 13000	57900 1.12 12800	57900 .75 12800	57900 .37 12800
328.0 4.10 HG 80 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	5.00 36300 5.33 13700	4.10 42000 3.51 13400	3.41 44500 2.65 13300	3.00 45800 2.20 13300	2.54 47000 1.77 13000	49000 .91 13000	49000 .61 13000	49000 .30 13000

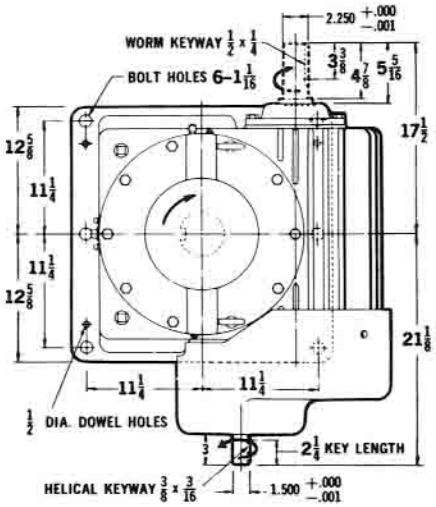
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For HDF units, use 65% of the overhung load figure.
See page 14 for other service factors.

Dimensions in Inches



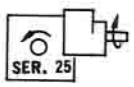
TYPE HDF

Net Wt.—1330 Lbs.
Oil Cap.—9 Gal.

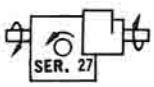


STANDARD SHAFT ARRANGEMENTS HUF-HDF UNITS

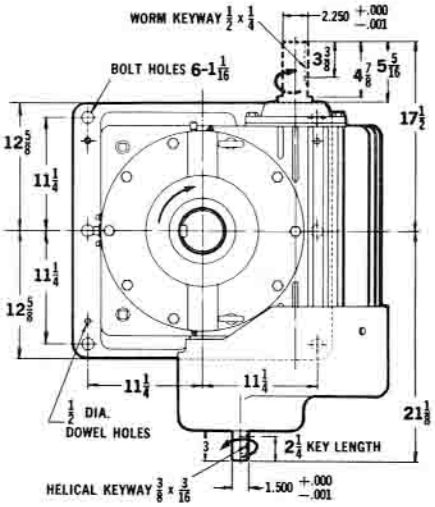
When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



1

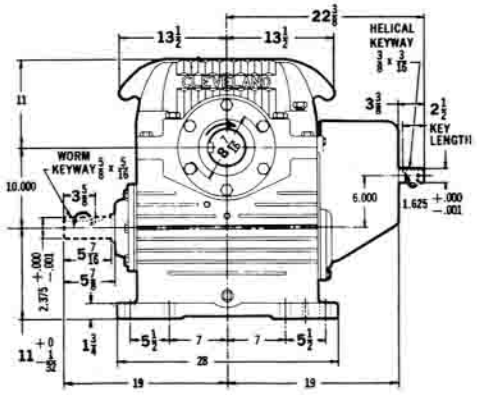


2



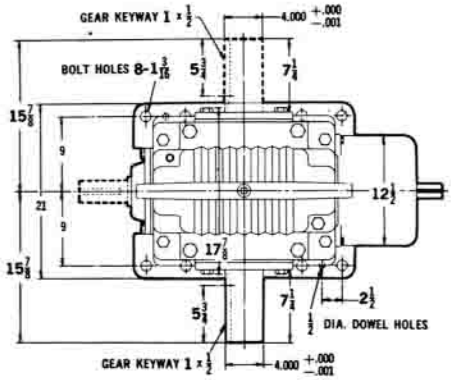
SIZE 100

Dimensions In Inches



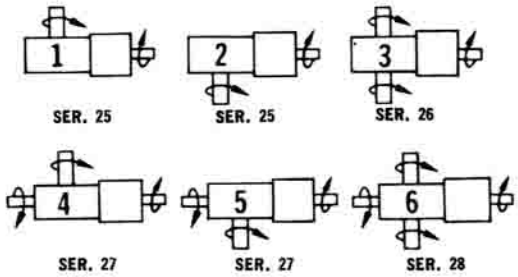
TYPE HAF

Net Wt.—1360 Lbs.
Oil Cap.—11½ Gal.



STANDARD SHAFT ARRANGEMENTS HAF 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
10.000" WORM GEARING
6.000" HELICAL GEARING

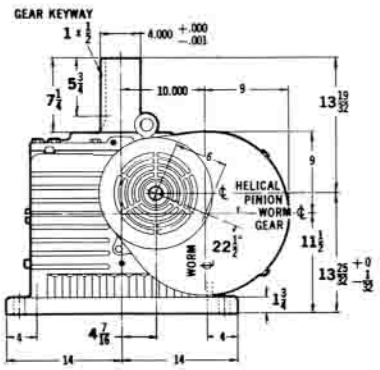
HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
33.09 2.21 HG 15 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	40.3 44000 53.0 14500	33.8 56000 34.8 15500	29.4 64900 26.3 14700	26.8 68900 21.8 14700	23.4 73600 17.5 14700	14.4 85000 9.07 14000	— 88600 6.05 13200	— 88600 3.02 13200
36.77 2.21 HG 16 2/3 WG	R	Input H.P. Output Torque Output R.P.M. Overhung Load	35.8 43500 47.6 15000	29.9 55400 31.3 15600	26.1 63500 23.6 14600	23.8 67900 19.6 14600	21.0 72500 15.8 14000	12.9 82900 8.16 13100	— 86000 5.44 13100	— 86000 2.72 13100
39.71 2.21 HG 18 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	34.9 45100 44.0 15500	29.4 57400 29.0 15600	25.6 66000 21.9 14500	23.3 70700 18.1 14500	20.5 75700 14.6 14500	12.7 87000 7.55 13900	— 90300 5.04 13000	— 90300 2.52 13000
44.12 2.21 HG 20 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	32.8 46300 39.7 16000	27.5 58700 26.1 15600	23.9 67200 19.7 14500	21.7 71800 16.3 14500	19.0 76700 13.2 13800	11.6 87500 6.80 13000	— 90600 4.53 13000	— 90600 2.27 13000
51.84 2.21 HG 23 1/2 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	27.7 45200 33.8 16000	23.3 57500 22.2 15500	20.2 65800 16.8 14400	18.4 70300 13.9 14400	16.2 74900 11.2 14400	10.0 85100 5.79 13600	— 88200 3.86 12900	— 88200 1.93 12900
62.14 4.14 HG 15 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	30.5 62000 28.2 15500	24.4 72300 18.5 14700	20.0 77900 14.0 14000	17.4 81400 11.6 14000	14.8 84600 9.34 14000	— 88600 4.83 13200	— 88600 3.22 13200	— 88600 1.61 13200
67.40 2.21 HG 30 1/2 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	22.3 45700 26.0 15700	18.8 58100 17.1 15500	16.4 66200 12.9 14300	15.0 70500 10.7 14300	13.0 75100 8.62 13800	8.03 85300 4.46 12900	— 88300 2.98 12900	— 88300 1.49 12900
74.57 4.14 HG 18 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	26.5 64000 23.5 15600	21.3 74300 15.4 14500	17.8 80100 11.7 13900	15.4 83500 9.65 13900	13.0 86600 7.78 13900	— 90300 4.02 13000	— 90300 2.68 13000	— 90300 1.34 13000
82.86 4.14 HG 20 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	24.8 65200 21.1 14500	19.8 75400 13.9 14500	16.3 81100 10.5 13800	14.1 84300 8.70 13800	12.0 87100 7.00 13800	— 90600 3.62 13000	— 90600 2.42 13000	— 90600 1.21 13000
86.03 2.21 HG 39 WG	**R** L	Input H.P. Output Torque Output R.P.M. Overhung Load	18.1 44500 20.4 15800	15.3 56600 13.4 15600	13.4 64600 10.1 14500	12.3 68900 8.37 14500	10.8 73400 6.75 14000	6.80 83400 3.49 14000	— 86400 2.33 13000	— 86400 1.16 13000
97.36 4.14 HG 23 1/2 WG	R L	Input H.P. Output Torque Output R.P.M. Overhung Load	21.0 63800 18.0 15500	16.8 73600 11.8 14400	14.0 78900 8.94 13600	12.1 82000 7.40 13600	10.2 84800 5.96 13600	— 88200 3.08 12900	— 88200 2.06 12900	— 88200 1.03 12900
109.8 4.14 HG 26 1/2 WG	**R**	Input H.P. Output Torque Output R.P.M. Overhung Load	19.2 64200 15.9 14400	15.4 73900 10.5 14400	12.7 79000 7.92 13600	11.0 82100 6.56 13600	9.30 84800 5.28 13600	— 88100 2.73 12900	— 88100 1.82 12900	— 88100 .910 12900

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
In addition to those listed, any worm gear ratio greater than 15:1 (refer to the appropriate size in the single reduction section) may be combined with either of the helical ratios above for additional total reductions.

TYPE HUF

Net Wt.—1590 Lbs.
Oil Cap.—12 Gal.



SIZE 100

HELICAL-WORM SPEED REDUCERS

RATING TABLE
FOR UNITY SERVICE FACTOR

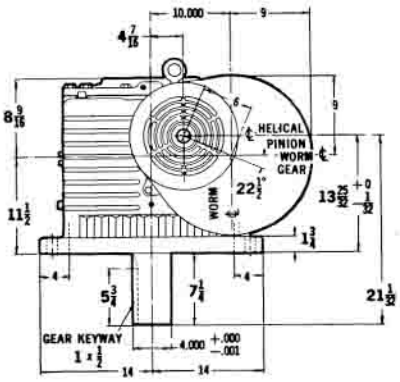
CENTERS
10.000" WORM GEARING
6.000" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
126.4 4.14 HG 30 1/2 WG	R	Input H.P.	17.0	13.7	11.2	9.75	8.20	—	—	—
		Output Torque	64300	73800	79100	82200	84900	88300	88300	88300
		Output R.P.M.	13.8	9.09	6.87	5.70	4.59	2.37	1.58	.790
		Overhung Load	14300	14300	13800	13800	13800	12900	12900	12900
149.1 4.14 HG 36 WG	R L	Input H.P.	15.1	12.3	10.4	9.05	7.70	—	—	—
		Output Torque	64900	75300	81100	84400	87400	91000	91000	91000
		Output R.P.M.	11.7	7.71	5.83	4.83	3.89	2.01	1.34	.670
		Overhung Load	14500	14500	14000	14000	14000	13000	13000	13000
161.6 4.14 HG 39 WG	R L	Input H.P.	13.9	11.3	9.40	8.20	6.95	—	—	—
		Output Torque	62700	72200	77400	80400	83100	86400	86400	86400
		Output R.P.M.	10.8	7.11	5.39	4.46	3.59	1.86	1.24	.619
		Overhung Load	14500	14500	14000	14000	14000	13000	13000	13000
186.4 4.14 HG 45 WG	R	Input H.P.	12.3	10.0	8.40	7.40	6.30	—	—	—
		Output Torque	62800	72300	77400	80400	83000	86200	86200	86200
		Output R.P.M.	9.38	6.16	4.66	3.86	3.11	1.61	1.07	.536
		Overhung Load	14600	14600	14300	14300	14300	14200	14200	14200
203.0 4.14 HG 49 WG	R	Input H.P.	11.0	9.00	7.60	6.60	5.63	—	—	—
		Output Torque	60600	69600	74600	76500	80200	83500	83500	83500
		Output R.P.M.	8.62	5.66	4.29	3.54	2.86	1.48	.984	.492
		Overhung Load	14700	14700	14400	14400	13300	13300	13300	13300
215.4 4.14 HG 52 WG	R	Input H.P.	10.5	8.60	7.20	6.25	5.30	—	—	—
		Output Torque	60000	68600	73100	75800	78200	81100	81100	81100
		Output R.P.M.	8.11	5.33	4.03	3.34	2.69	1.39	.927	.463
		Overhung Load	14800	14800	14500	14500	14500	13400	13400	13400
240.3 4.14 HG 58 WG	R	Input H.P.	9.60	7.80	6.55	5.70	4.88	—	—	—
		Output Torque	59300	67900	71600	74200	76600	79600	79600	79600
		Output R.P.M.	7.28	4.78	3.62	2.99	2.41	1.25	.831	.416
		Overhung Load	15000	15000	14600	14600	14600	13700	13700	13700
269.3 4.14 HG 65 WG	R	Input H.P.	8.40	6.90	5.77	5.05	4.32	—	—	—
		Output Torque	56100	64000	68300	70700	72900	75600	75600	75600
		Output R.P.M.	6.50	4.27	3.23	2.67	2.15	1.11	.742	.377
		Overhung Load	15200	15200	14700	14700	14700	14000	14000	14000
294.1 4.14 HG 71 WG	R	Input H.P.	7.40	6.05	5.08	4.43	3.75	—	—	—
		Output Torque	53000	60200	64000	66200	68100	70400	70400	70400
		Output R.P.M.	5.95	3.91	2.96	2.45	1.97	1.02	.680	.340
		Overhung Load	15500	15500	14900	14900	14300	14300	14300	14300
327.3 4.14 HG 79 WG	R L	Input H.P.	6.30	5.15	4.30	3.80	3.27	—	—	—
		Output Torque	48000	54500	58400	60600	62500	64800	64800	64800
		Output R.P.M.	5.34	3.51	2.66	2.20	1.77	.916	.610	.306
		Overhung Load	15500	15500	14900	14900	14300	14300	14300	14300
372.9 4.14 HG 90 WG	R	Input H.P.	4.90	3.98	3.30	2.88	2.44	—	—	—
		Output Torque	41700	47000	50000	51600	53000	54700	54700	54700
		Output R.P.M.	4.69	3.08	2.33	1.93	1.56	.804	.536	.268
		Overhung Load	15500	15500	14900	14300	14300	14300	14300	14300
393.6 4.14 HG 95 WG	R	Input H.P.	4.52	3.72	3.10	2.70	2.30	—	—	—
		Output Torque	39400	44400	46900	48500	49900	51600	51600	51600
		Output R.P.M.	4.44	2.92	2.21	1.83	1.47	.762	.508	.254
		Overhung Load	15500	14900	14900	14300	14300	14300	14300	14300

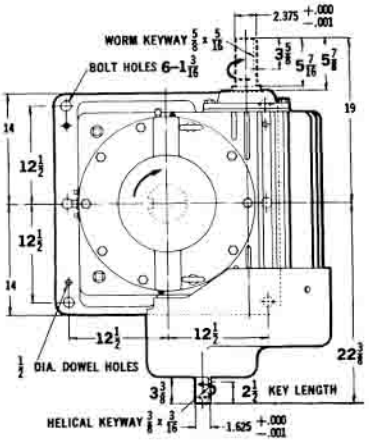
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For HDF units, use 65% of the overhung load figure.
See page 14 for other service factors.

Dimensions in Inches



TYPE HDF

Net Wt.—1675 Lbs.
Oil Cap.—12 Gal.

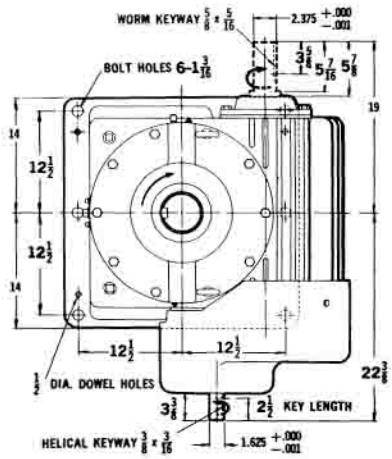


STANDARD SHAFT ARRANGEMENTS HUF-HDF UNITS

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

1

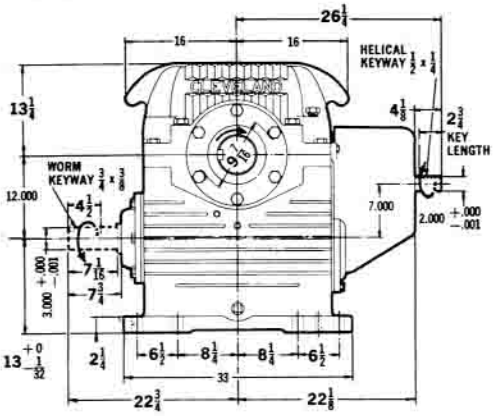
2



HELICAL-WORM SPEED REDUCERS

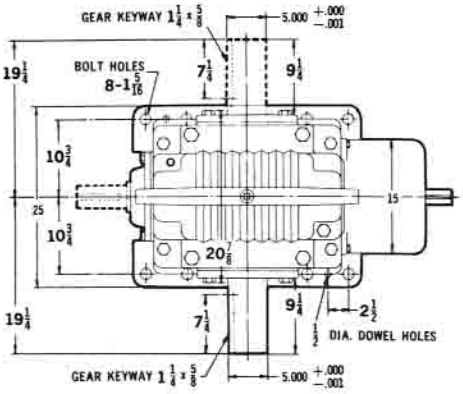
SIZE 120

Dimensions In Inches



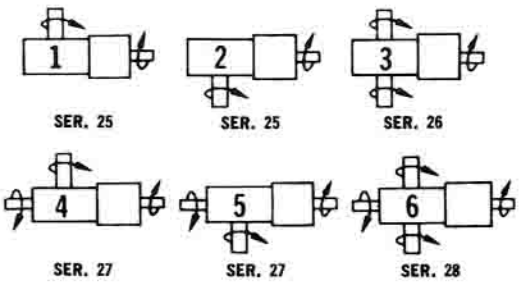
TYPE HAF

Net Wt.—2280 Lbs.
Oil Cap.—18 Gal.



STANDARD SHAFT ARRANGEMENTS HAF 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
12.000" WORM GEARING
7.000" HELICAL GEARING

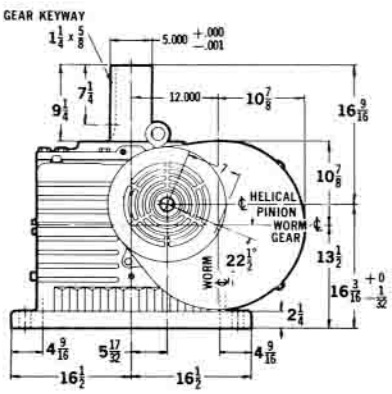
HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
34.04 2.22 HG 15 1/3 WG	**R** L	Input H.P.	58.5	49.0	43.1	39.7	35.0	22.0	—	—
		Output Torque	65800	84000	97900	105000	114000	134000	140000	140000
		Output R.P.M.	51.4	33.8	25.6	21.1	17.0	8.81	5.87	2.94
		Overhung Load	17000	18000	22000	22000	23300	22000	22000	22000
36.26 2.22 HG 16 1/3 WG	R	Input H.P.	56.2	46.5	40.8	37.3	33.0	20.7	—	—
		Output Torque	66300	84500	98500	105000	114000	133000	139000	139000
		Output R.P.M.	48.2	31.7	24.0	19.9	16.0	8.27	5.51	2.76
		Overhung Load	17400	18600	22600	22600	23200	22000	22000	22000
44.40 2.22 HG 20 WG	**R** L	Input H.P.	48.0	40.0	35.4	32.5	29.0	18.3	—	—
		Output Torque	68700	87000	101000	109000	118000	139000	145000	145000
		Output R.P.M.	39.4	25.9	19.6	16.2	13.1	6.76	4.50	2.25
		Overhung Load	18800	20100	24100	24100	23000	21600	21600	21600
46.62 2.22 HG 21 WG	R	Input H.P.	45.0	38.1	33.7	31.0	27.5	17.5	—	—
		Output Torque	68900	87100	102000	110000	119000	139000	145000	145000
		Output R.P.M.	37.5	24.6	18.7	15.4	12.4	6.43	4.29	2.14
		Overhung Load	18800	20100	24100	24100	23000	21600	21600	21600
49.95 2.22 HG 22 1/2 WG	R	Input H.P.	42.1	35.2	31.3	28.9	25.8	16.3	—	—
		Output Torque	67400	85900	100000	108000	114000	136000	141000	141000
		Output R.P.M.	35.0	23.0	17.4	14.4	11.6	6.00	4.00	2.00
		Overhung Load	19500	21000	24000	24000	24000	23000	21600	21600
52.17 2.22 HG 23 1/2 WG	R L	Input H.P.	41.0	34.2	30.2	27.9	24.6	15.6	—	—
		Output Torque	68500	87600	102000	110000	116000	137000	143000	143000
		Output R.P.M.	33.6	22.0	16.7	13.8	11.1	5.75	3.83	1.92
		Overhung Load	19900	21300	24000	24000	23000	21600	21600	21600
55.50 2.22 HG 25 WG	**R**	Input H.P.	39.7	32.9	29.3	27.1	24.0	15.1	—	—
		Output Torque	69100	87800	102000	110000	120000	139000	145000	145000
		Output R.P.M.	31.5	20.7	15.7	13.0	10.4	5.40	3.60	1.80
		Overhung Load	20300	21800	24000	24000	23000	21600	21600	21600
57.72 2.22 HG 26 WG	R	Input H.P.	37.1	31.3	27.6	25.5	22.4	14.2	—	—
		Output Torque	67900	87300	101000	109000	118000	136000	141000	141000
		Output R.P.M.	30.3	19.9	15.1	12.5	10.0	5.20	3.46	1.73
		Overhung Load	20300	21800	24000	24000	23000	21600	21600	21600
63.63 4.15 HG 15 1/3 WG	**R** L	Input H.P.	44.6	36.5	30.6	26.7	22.5	—	—	—
		Output Torque	94500	111000	121000	127000	133000	140000	140000	140000
		Output R.P.M.	27.5	18.1	13.7	11.3	9.11	4.71	3.14	1.57
		Overhung Load	22000	22000	23300	23300	23300	22000	22000	22000
67.78 4.15 HG 16 1/3 WG	R	Input H.P.	42.2	34.4	28.8	25.3	21.3	—	—	—
		Output Torque	95300	113000	122000	127000	133000	139000	139000	139000
		Output R.P.M.	25.8	17.0	12.8	10.6	8.55	4.42	2.95	1.48
		Overhung Load	22600	22600	23200	23200	22000	22000	22000	22000
74.37 2.22 HG 33 1/2 WG	R	Input H.P.	30.3	25.2	22.4	20.7	18.5	11.8	—	—
		Output Torque	68100	87300	101000	109000	117000	135000	140000	140000
		Output R.P.M.	23.5	15.5	11.7	9.68	7.80	4.03	2.69	1.34
		Overhung Load	22500	24000	24000	24000	24000	23000	21700	21700
83.00 4.15 HG 20 WG	**R** L	Input H.P.	36.5	30.0	25.4	22.2	18.8	—	—	—
		Output Torque	98000	116000	126000	132000	138000	145000	145000	145000
		Output R.P.M.	21.1	13.9	10.5	8.68	6.99	3.62	2.41	1.20
		Overhung Load	24100	24100	23000	23000	21600	21600	21600	21600

Bold face listing in hand of thread column indicates stock ratios.
Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
In addition to those listed, any worm gear ratio greater than 15:1 (refer to the appropriate size in the single reduction section) may be combined with either of the helical ratios above for additional total reductions.

TYPE HUF

Net Wt.—2400 Lbs.
Oil Cap.—18 Gal.



SIZE 120

HELICAL-WORM SPEED REDUCERS

RATING TABLE
FOR UNITY SERVICE FACTOR

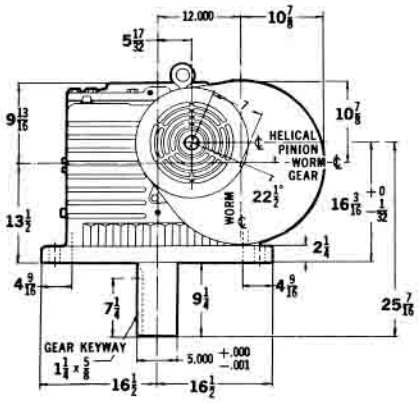
CENTERS
12.000" WORM GEARING
7.000" HELICAL GEARING

HELICAL WORM GEAR

Ratio	Hand of Worm Thread		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	200 RPM	100 RPM
87.75	R	Input H.P.	34.8	28.6	24.0	21.2	17.9	—	—	—
4.15 HG		Output Torque	98400	115000	127000	132000	138000	145000	145000	145000
21 WG		Output R.P.M.	20.1	13.2	9.97	8.25	6.65	3.46	2.29	1.15
		Overhung Load	24100	24100	23000	23000	21600	21600	21600	21600
93.38	R	Input H.P.	32.3	26.7	22.6	19.8	16.7	—	—	—
4.15 HG		Output Torque	96700	114000	124000	130000	135000	141000	141000	141000
22 1/2 WG		Output R.P.M.	18.8	12.3	9.33	7.72	6.22	3.22	2.14	1.07
		Overhung Load	24000	24000	23000	23000	23000	21600	21600	21600
103.8	R	Input H.P.	30.1	24.9	21.0	18.8	15.5	—	—	—
4.15 HG		Output Torque	98900	117000	127000	132000	138000	145000	145000	145000
25 WG		Output R.P.M.	16.9	11.1	8.39	6.94	5.59	2.89	1.93	.964
		Overhung Load	24000	24000	23000	23000	23000	21600	21600	21600
124.5	R	Input H.P.	25.8	21.3	18.0	15.7	13.5	—	—	—
4.15 HG		Output Torque	98200	116000	126000	132000	138000	145000	145000	145000
30 WG		Output R.P.M.	14.1	9.23	6.99	5.78	4.66	2.41	1.61	.803
		Overhung Load	24000	24000	23000	23000	23000	21600	21600	21600
139.0	R	Input H.P.	23.1	19.2	16.4	14.3	12.1	—	—	—
4.15 HG		Output Torque	97800	115000	124000	129000	134000	140000	140000	140000
33 1/2 WG		Output R.P.M.	12.6	8.27	6.26	5.18	4.17	2.16	1.44	.720
		Overhung Load	24000	24000	23000	23000	23000	21700	21700	21700
147.3	R	Input H.P.	21.5	17.7	14.9	13.1	11.1	—	—	—
4.15 HG		Output Torque	97100	113000	122000	127000	132000	138000	138000	138000
35 1/2 WG		Output R.P.M.	11.9	7.80	5.90	4.88	3.94	2.04	1.36	.678
		Overhung Load	24000	24000	23000	23000	23000	21800	21800	21800
166.0	R L	Input H.P.	20.4	17.1	14.5	12.8	10.9	—	—	—
4.15 HG		Output Torque	97900	116000	126000	132000	138000	144000	144000	144000
40 WG		Output R.P.M.	10.5	6.92	5.24	4.33	3.49	1.81	1.20	.602
		Overhung Load	24000	24000	23000	23000	23000	22000	22000	22000
186.8	R	Input H.P.	18.2	15.2	12.8	11.3	9.70	—	—	—
4.15 HG		Output Torque	95300	112000	122000	127000	132000	139000	139000	139000
45 WG		Output R.P.M.	9.36	6.15	4.65	3.85	3.10	1.61	1.07	.535
		Overhung Load	24100	24100	23200	23200	23200	22100	22100	22100
207.5	R L	Input H.P.	16.8	14.0	11.8	10.5	9.00	—	—	—
4.15 HG		Output Torque	95500	112000	122000	127000	132000	138000	138000	138000
50 WG		Output R.P.M.	8.43	5.54	4.19	3.47	2.79	1.45	.963	.482
		Overhung Load	24400	24400	23300	23300	22300	22300	22300	22300
244.8	R	Input H.P.	13.8	11.4	9.60	8.50	7.25	—	—	—
4.15 HG		Output Torque	89000	104000	112000	116000	121000	126000	126000	126000
59 WG		Output R.P.M.	7.14	4.70	3.55	2.94	2.37	1.22	.816	.408
		Overhung Load	24700	24700	23900	23900	23900	22900	22900	22900
290.5	R	Input H.P.	11.0	9.15	7.80	6.90	5.92	—	—	—
4.15 HG		Output Torque	80800	93900	101000	105000	109000	114000	114000	114000
70 WG		Output R.P.M.	6.02	3.96	2.99	2.48	2.00	1.03	.689	.344
		Overhung Load	25000	25000	24600	24600	24600	23500	23500	23500
327.8	R	Input H.P.	9.05	7.60	6.50	5.68	4.82	—	—	—
4.15 HG		Output Torque	73500	84800	90600	94200	97100	102000	102000	102000
79 WG		Output R.P.M.	5.33	3.51	2.65	2.20	1.77	.915	.610	.305
		Overhung Load	25000	25000	24600	24600	23500	23500	23500	23500

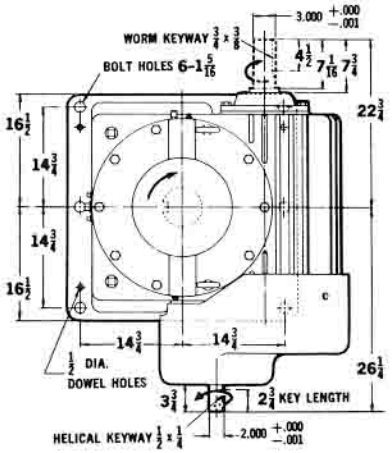
Output torque ratings given in inch pounds.
Overhung load given in pounds at center of output shaft keyway.
For HDF units, use 65% of the overhung load figure.
See page 14 for other service factors.

Dimensions In Inches



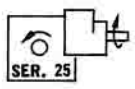
TYPE HDF

Net Wt.—2540 Lbs.
Oil Cap.—18 Gal.

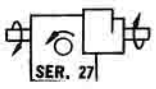


STANDARD SHAFT ARRANGEMENTS HUF-HDF UNITS

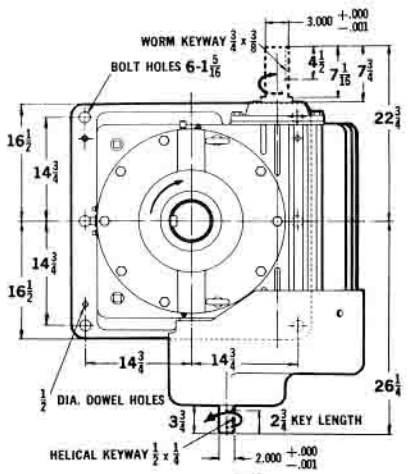
When ordering, refer to size, type, series, and shaft arrangement number. Worm shaft on side opposite helical pinion-input shaft may be extended at extra charge. Arrows show relative rotations for right hand thread worms. Helical pinion-input shaft may be rotated in either direction.



1



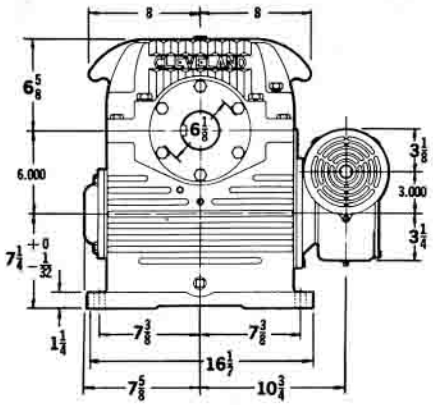
2



DOUBLE REDUCTION SPEED REDUCERS

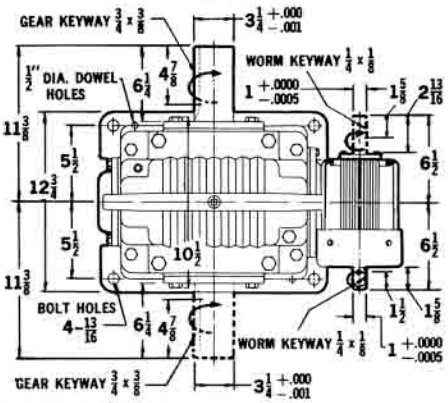
SIZE 30-60

Dimensions In Inches



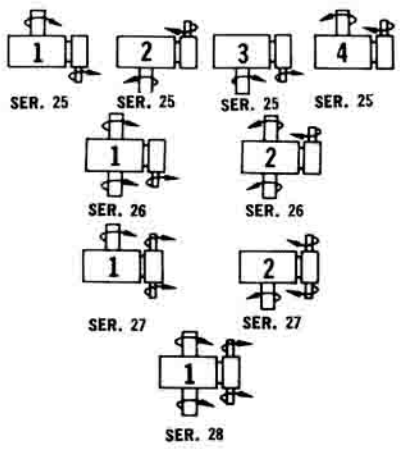
TYPE RFA

Net Wt.—430 Lbs.
Oil Cap.—3 Gal.



STANDARD SHAFT ARRANGEMENTS RFA UNITS

When ordering, refer to size, type, series and shaft arrangement number. Shaft extensions may be arranged in any of the nine standard patterns, as illustrated. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.



RATING TABLE

FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
3.000" PRIMARY
6.000" SECONDARY

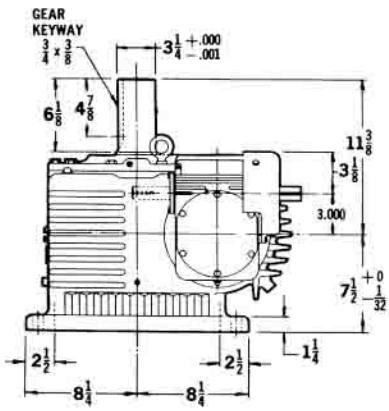
DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
67.50	**7½ x 9**	4400	Input H.P.	6.39	5.38	4.63	4.12	3.55	2.00	—
			Output Torque	11800	15100	17200	18500	19800	21500	21500
82.50	**7½ x 11**	4875	Input H.P.	6.39	5.38	4.63	4.12	3.36	1.74	—
			Output Torque	14200	18300	20800	22400	22600	22600	22600
90.00	**10 x 9**	4850	Input H.P.	5.30	4.47	3.85	3.49	2.96	1.53	—
			Output Torque	12700	16400	18600	20400	21500	21500	21500
95.00	**7½ x 12⅔**	5200	Input H.P.	6.39	5.38	4.32	3.60	2.90	1.50	—
			Output Torque	16100	20600	21900	22100	22100	22100	22100
110.0	**10 x 11**	5375	Input H.P.	5.30	4.47	3.85	3.18	2.57	1.33	—
			Output Torque	15400	19800	22600	22600	22600	22600	22600
126.7	**10 x 12⅔**	5700	Input H.P.	5.30	4.39	3.34	2.76	2.23	1.15	—
			Output Torque	17400	21900	22100	22100	22100	22100	22100
137.5	**12½ x 11**	5825	Input H.P.	4.68	3.92	3.17	2.62	2.11	1.09	—
			Output Torque	16600	21100	22600	22600	22600	22600	22600
158.3	**12½ x 12⅔**	6200	Input H.P.	4.68	3.62	2.74	2.27	1.82	.95	—
			Output Torque	18800	22100	22100	22100	22100	22100	22100
165.0	**15 x 11**	6100	Input H.P.	4.22	3.54	2.68	2.22	1.79	.93	—
			Output Torque	17500	22400	22600	22600	22600	22600	22600
183.3	**12½ x 14⅔**	6600	Input H.P.	4.68	3.23	2.44	2.02	1.63	.84	—
			Output Torque	21200	22400	22400	22400	22400	22400	22400
190.0	**15 x 12⅔**	6500	Input H.P.	4.22	3.09	2.34	1.94	1.56	.80	—
			Output Torque	19900	22100	22100	22100	22100	22100	22100
220.0	**15 x 14⅔**	6925	Input H.P.	4.18	2.77	2.10	1.73	1.40	.71	—
			Output Torque	22200	22400	22400	22400	22400	22400	22400
253.3	**20 x 12⅔**	6700	Input H.P.	3.34	2.38	1.80	1.49	1.20	.62	—
			Output Torque	20300	22100	22100	2210	22100	22100	22100
293.3	**20 x 14⅔**	7150	Input H.P.	3.28	2.16	1.63	1.35	1.09	.56	—
			Output Torque	22400	22400	22400	22400	22400	22400	22400
300.0	**15 x 20**	7900	Input H.P.	3.28	2.18	1.65	1.37	1.10	.57	—
			Output Torque	22600	22850	22850	22850	22850	22850	22850
366.7	**25 x 14⅔**	7150	Input H.P.	2.70	1.77	1.35	1.12	.89	.45	—
			Output Torque	22400	22400	22400	22400	22400	22400	22400
400.0	**20 x 20**	8200	Input H.P.	2.56	1.67	1.28	1.05	.85	.43	—
			Output Torque	22800	22800	22800	22800	22800	22800	22800
490.0	**20 x 24½**	8325	Input H.P.	2.25	1.48	1.12	.93	.74	.38	—
			Output Torque	23600	23600	23600	23600	23600	23600	23600
500.0	**25 x 20**	8200	Input H.P.	2.15	1.41	1.07	.89	.71	.36	—
			Output Torque	22800	22800	22800	22800	22800	22800	22800
600.0	**30 x 20**	8200	Input H.P.	1.82	1.19	.91	.75	.60	.31	—
			Output Torque	22800	22800	22800	22800	22800	22800	22800
640.0	32 x 30	8200	Input H.P.	1.74	1.14	.87	.72	.58	.30	—
			Output Torque	22800	22800	22800	22800	22800	22800	22800
735.0	**30 x 24½**	8325	Input H.P.	1.61	1.06	.81	.66	.53	.28	—
			Output Torque	23600	23600	23600	23600	23600	23600	23600
750.0	**25 x 30**	8400	Input H.P.	1.55	1.02	.78	.64	.52	.26	—
			Output Torque	22400	22400	22400	22400	22400	22400	22400
800.0	**40 x 20**	8200	Input H.P.	1.45	.95	.73	.60	.48	.25	—
			Output Torque	22800	22800	22800	22800	22800	22800	22800

Bold face listing in "Total Reduction" and/or "Primary X Secondary Ratio" columns indicates stock ratios. Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
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 in the rating tables.

TYPE RFU

Net Wt.—485 Lbs.
Oil Cap.—2 Gal.



SIZE 30-60

DOUBLE REDUCTION SPEED REDUCERS

RATING TABLE

FOR UNITY SERVICE FACTOR

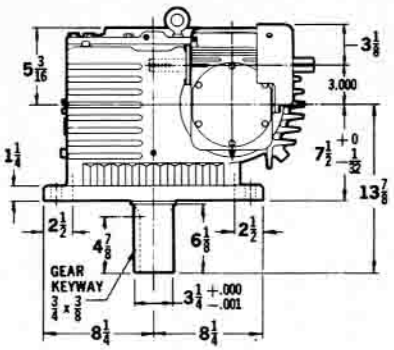
WORM GEARING CENTERS
3.000" PRIMARY
6.000" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
875.0	**25 x 35**	8400	Input H.P.	1.53	1.01	.76	.63	.51	.26	—
			Output Torque	24400	24400	24400	24400	24400	24400	24400
900.0	**30 x 30**	8400	Input H.P.	1.33	.88	.67	.55	.44	.23	—
			Output Torque	22400	22400	22400	22400	22400	22400	22400
960.0	32 **x 30**	8400	Input H.P.	1.26	.83	.63	.52	.42	.21	—
			Output Torque	22400	22400	22400	22400	22400	22400	22400
1000	**25 x 40**	8400	Input H.P.	1.30	.86	.65	.53	.43	.22	—
			Output Torque	22700	22700	22700	22700	22700	22700	22700
1120	32 x 35	8400	Input H.P.	1.25	.82	.62	.51	.41	.21	—
			Output Torque	24400	24400	24400	24400	24400	24400	24400
1200	**40 x 30**	8400	Input H.P.	1.06	.70	.53	.44	.35	.18	—
			Output Torque	22400	22400	22400	22400	22400	22400	22400
1250	**25 x 50**	8475	Input H.P.	1.10	.72	.55	.45	.36	.19	—
			Output Torque	21900	21900	21900	21900	21900	21900	21900
1280	32 **x 40**	8400	Input H.P.	1.05	.69	.52	.43	.35	.18	—
			Output Torque	22700	22700	22700	22700	22700	22700	22700
1350	45 **x 30**	8400	Input H.P.	.97	.64	.49	.40	.32	.17	—
			Output Torque	22400	22400	22400	22400	22400	22400	22400
1440	32 x 45	8450	Input H.P.	.98	.65	.49	.40	.32	.17	—
			Output Torque	22600	22600	22600	22600	22600	22600	22600
1500	**50 x 30**	8400	Input H.P.	.91	.60	.46	.38	.31	.16	—
			Output Torque	22400	22400	22400	22400	22400	22400	22400
1600	**40 x 40**	8400	Input H.P.	.89	.58	.45	.37	.29	.15	—
			Output Torque	22700	22700	22700	22700	22700	22700	22700
1750	**50 x** 35	8400	Input H.P.	.89	.58	.45	.37	.29	.15	—
			Output Torque	24400	24400	24400	24400	24400	24400	24400
1800	**60 x 30**	8400	Input H.P.	.82	.54	.41	.34	.27	.14	—
			Output Torque	22400	22400	22400	22400	22400	22400	22400
1920	32 **x 60**	8500	Input H.P.	.73	.48	.36	.30	.24	.12	—
			Output Torque	20200	20200	20200	20200	20200	20200	20200
2000	**50 x 40**	8400	Input H.P.	.76	.50	.38	.31	.25	.13	—
			Output Torque	22700	22700	22700	22700	22700	22700	22700
2250	45 **x 50**	8475	Input H.P.	.68	.45	.34	.28	.23	.12	—
			Output Torque	21900	21900	21900	21900	21900	21900	21900
2400	**60 x 40**	8400	Input H.P.	.67	.44	.33	.28	.22	.11	—
			Output Torque	22700	22700	22700	22700	22700	22700	22700
2500	**50 x 50**	8475	Input H.P.	.64	.42	.32	.26	.21	.11	—
			Output Torque	21900	21900	21900	21900	21900	21900	21900
2700	**60 x** 45	8450	Input H.P.	.63	.41	.31	.26	.21	.11	—
			Output Torque	22600	22600	22600	22600	22600	22600	22600
3000	**60 x 50**	8475	Input H.P.	.57	.37	.29	.23	.19	.10	—
			Output Torque	21900	21900	21900	21900	21900	21900	21900
3350	**50 x** 67	8500	Input H.P.	.44	.29	.22	.18	.15	.08	—
			Output Torque	18700	18700	18700	18700	18700	18700	18700
3600	**60 x 60**	8500	Input H.P.	.46	.30	.23	.19	.15	.08	—
			Output Torque	20200	20200	20200	20200	20200	20200	20200
4020	**60 x** 67	8500	Input H.P.	.39	.27	.20	.16	.13	.07	—
			Output Torque	18700	18700	18700	18700	18700	18700	18700

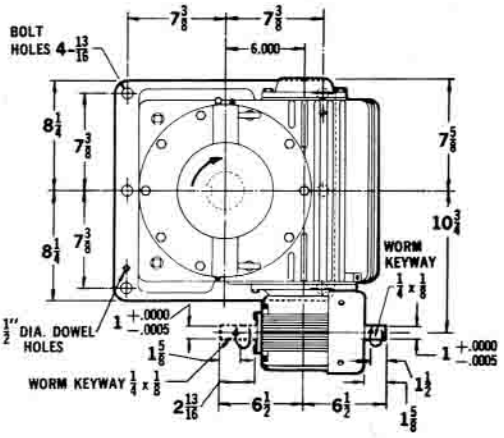
Output torque ratings given in in. lbs.
Overhung load given in pounds at center of output shaft keyway.
For RFD units, use 75% of overhung load figure.
See page 14 for other service factors.

Dimensions In Inches



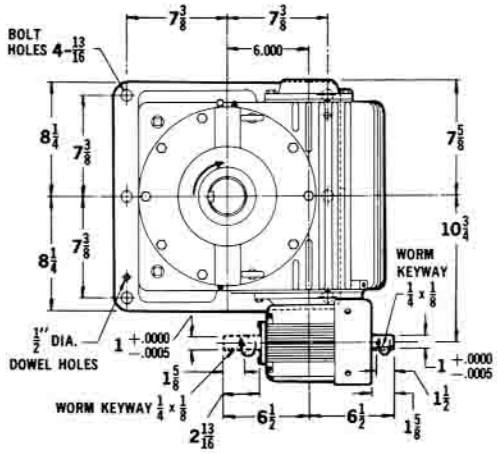
TYPE RFD

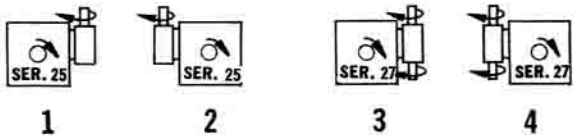
Net Wt.—500 Lbs.
Oil Cap.—2 Gal.



STANDARD SHAFT ARRANGEMENTS RFU-RFD UNITS

When ordering, refer to size, type, series and shaft arrangement number. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.

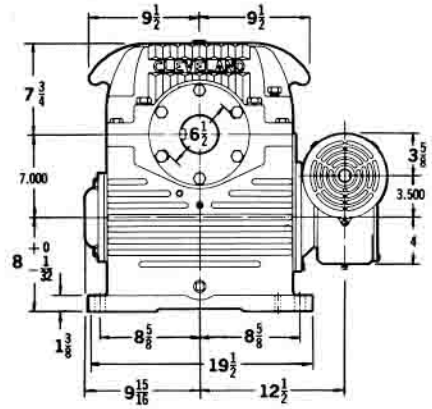




DOUBLE REDUCTION SPEED REDUCERS

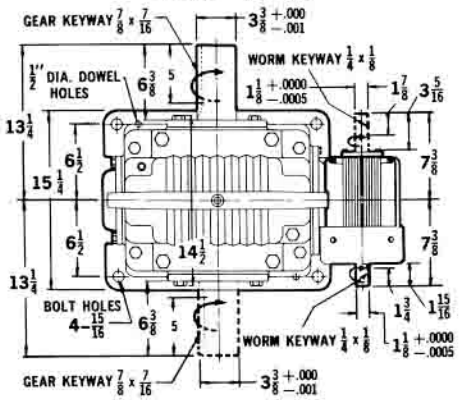
SIZE 35-70

Dimensions in Inches



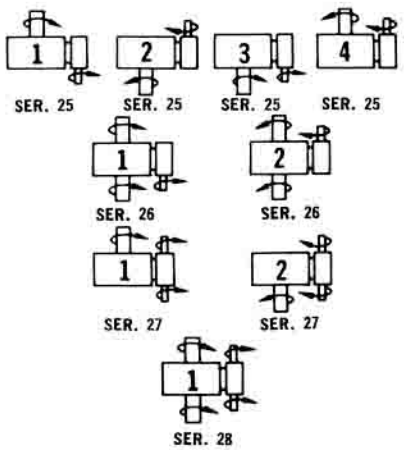
TYPE RFA

Net Wt.—690 Lbs.
Oil Cap.—4¼ Gal.



STANDARD SHAFT ARRANGEMENTS RFA UNITS

When ordering, refer to size, type, series and shaft arrangement number. Shaft extensions may be arranged in any of the nine standard patterns, as illustrated. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.



RATING TABLE

FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
3.500" PRIMARY
7.000" SECONDARY

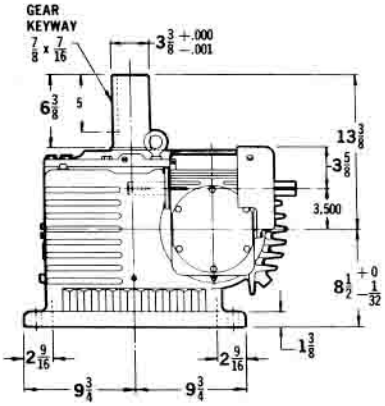
DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
77.50	**7½ x 10⅓**	9000	Input H.P.	9.12	7.72	6.69	6.03	5.08	2.62	—
			Output Torque	19600	25300	29000	31600	33000	33000	33000
82.50	**7½** x 11	9300	Input H.P.	9.12	7.72	6.69	6.00	4.83	2.47	—
			Output Torque	20700	26600	30500	33000	33000	33000	33000
95.00	**7½ x 12⅔**	9800	Input H.P.	9.12	7.72	6.66	5.50	4.44	2.26	—
			Output Torque	23200	29900	33600	34000	34000	34000	34000
103.3	**10** x 10⅓	9700	Input H.P.	7.61	6.44	5.58	4.83	3.87	1.99	—
			Output Torque	21400	27500	31000	33000	33000	33000	33000
110.0	**10** x 11	10000	Input H.P.	7.61	6.44	5.55	4.59	3.70	1.95	—
			Output Torque	22500	29000	33000	33000	33000	33000	33000
126.7	**10 x 12⅔**	10250	Input H.P.	7.61	6.44	5.10	4.22	3.40	1.76	—
			Output Torque	25300	32500	34000	34000	34000	34000	34000
137.5	**12½** x 11	10300	Input H.P.	6.45	5.44	4.54	3.71	3.03	1.57	—
			Output Torque	23300	29900	33000	33000	33000	33000	33000
158.3	**12½ x 12⅔**	10250	Input H.P.	6.45	5.44	4.16	3.44	2.77	1.44	—
			Output Torque	26300	33800	34000	34000	34000	34000	34000
165.0	**15** x 11	10300	Input H.P.	5.72	4.86	3.82	3.16	2.55	1.32	—
			Output Torque	24500	31700	33000	33000	33000	33000	33000
193.8	**12½ x 15½**	10250	Input H.P.	6.45	4.70	3.57	2.94	2.37	1.23	—
			Output Torque	31200	34600	34600	34600	34600	34600	34600
232.5	**15 x 15½**	10250	Input H.P.	5.72	3.95	2.99	2.48	1.99	1.03	—
			Output Torque	32900	34600	34600	34600	34600	34600	34600
253.3	**20 x 12⅔**	10250	Input H.P.	4.62	3.64	2.76	2.28	1.84	.95	—
			Output Torque	28300	34000	34000	34000	34000	34000	34000
285.0	**15 x 19**	10200	Input H.P.	5.15	3.43	2.60	2.15	1.73	.90	—
			Output Torque	35000	35400	35400	35400	35400	35400	35400
310.0	**20 x 15½**	10250	Input H.P.	4.62	3.11	2.35	1.95	1.57	.82	—
			Output Torque	33800	34600	34600	34600	34600	34600	34600
380.0	**20 x 19**	10200	Input H.P.	4.11	2.70	2.05	1.69	1.36	.70	—
			Output Torque	35400	35400	35400	35400	35400	35400	35400
387.5	**25 x 15½**	10250	Input H.P.	3.84	2.52	1.92	1.58	1.27	.66	—
			Output Torque	34600	34600	34600	34600	34600	34600	34600
440.0	**20** x 22	10200	Input H.P.	3.64	2.39	1.82	1.50	1.21	.62	—
			Output Torque	34800	34800	34800	34800	34800	34800	34800
500.0	**20 x 25**	10250	Input H.P.	3.22	2.12	1.61	1.32	1.07	.55	
			Output Torque	34100	34100	34100	34100	34100	34100	34100
600.0	**20 x 30**	10300	Input H.P.	2.70	1.77	1.35	1.12	.89	.46	—
			Output Torque	33800	33800	33800	33800	33800	33800	33800
625.0	**25 x 25**	10250	Input H.P.	2.66	1.75	1.33	1.09	.88	.46	—
			Output Torque	34100	34100	34100	34100	34100	34100	34100
665.0	35 x 19	10200	Input H.P.	2.64	1.74	1.32	1.08	.88	.45	—
			Output Torque	35400	35400	35400	35400	35400	35400	35400
750.0	**30 x 25**	10250	Input H.P.	2.30	1.51	1.15	.95	.76	.40	—
			Output Torque	34100	34100	34100	34100	34100	34100	34100
800.0	**20 x 40**	10150	Input H.P.	2.49	1.64	1.24	1.02	.82	.43	—
			Output Torque	36200	36200	36200	36200	36200	36200	36200

Bold face listing in "Total Reduction" and/or "Primary X Secondary Ratio" columns indicates stock ratios. Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
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 in the rating tables.

TYPE RFU

Net Wt.—780 Lbs.
Oil Cap.—4 Gal.



SIZE 35-70

DOUBLE REDUCTION SPEED REDUCERS

RATING TABLE

FOR UNITY SERVICE FACTOR

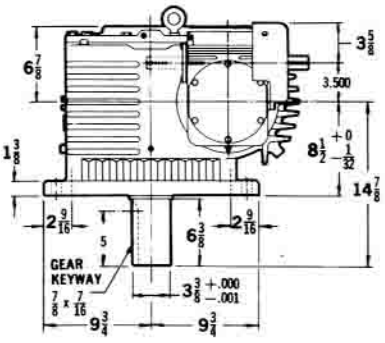
WORM GEARING CENTERS
3.500" PRIMARY
7.000" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
900.0	**30 x 30**	10300	Input H.P.	2.01	1.32	1.00	.83	.67	.34	—
			Output Torque	33800	33800	33800	33800	33800	33800	33800
1000	**25 x 40**	10150	Input H.P.	2.05	1.35	1.02	.84	.68	.35	—
			Output Torque	36200	36200	36200	36200	36200	36200	36200
1100	**50** x 22	10200	Input H.P.	1.79	1.18	.89	.74	.59	.33	—
			Output Torque	34800	34800	34800	34800	34800	34800	34800
1150	**25** x 46	10200	Input H.P.	1.74	1.14	.87	.72	.58	.30	—
			Output Torque	33800	33800	33800	33800	33800	33800	33800
1200	**30 x 40**	10150	Input H.P.	1.76	1.16	.88	.73	.58	.30	—
			Output Torque	36200	36200	36200	36200	36200	36200	36200
1250	**50 x 25**	10250	Input H.P.	1.60	1.05	.80	.66	.53	.27	—
			Output Torque	34100	34100	34100	34100	34100	34100	34100
1320	**60** x 22	10200	Input H.P.	1.61	1.06	.80	.66	.53	.28	—
			Output Torque	34800	34800	34800	34800	34800	34800	34800
1380	**30** x 46	10200	Input H.P.	1.50	.99	.75	.62	.50	.26	—
			Output Torque	33800	33800	33800	33800	33800	33800	33800
1440	**40** x 36	10100	Input H.P.	1.53	1.01	.76	.63	.51	.26	—
			Output Torque	35600	35600	35600	35600	35600	35600	35600
1500	**50 x 30**	10300	Input H.P.	1.39	.92	.69	.57	.46	.24	—
			Output Torque	33800	33800	33800	33800	33800	33800	33800
1600	**40 x 40**	10150	Input H.P.	1.43	.94	.71	.59	.47	.24	—
			Output Torque	36200	36200	36200	36200	36200	36200	36200
1650	**30** x 55	10400	Input H.P.	1.18	.78	.59	.49	.39	.20	—
			Output Torque	31000	31000	31000	31000	31000	31000	31000
1800	**60 x 30**	10300	Input H.P.	1.24	.82	.62	.51	.41	.21	—
			Output Torque	33800	33800	33800	33800	33800	33800	33800
1925	35 x 55	10400	Input H.P.	1.06	.70	.53	.44	.35	.18	—
			Output Torque	31000	31000	31000	31000	31000	31000	31000
2000	**50 x 40**	10150	Input H.P.	1.22	.80	.60	.50	.40	.21	—
			Output Torque	36200	36200	36200	36200	36200	36200	36200
2200	**40** x 55	10400	Input H.P.	.97	.64	.47	.40	.32	.17	—
			Output Torque	31000	31000	31000	31000	31000	31000	31000
2300	**50** x 46	10200	Input H.P.	1.04	.68	.52	.43	.34	.18	—
			Output Torque	33800	33800	33800	33800	33800	33800	33800
2400	**60 x 40**	10150	Input H.P.	1.10	.72	.55	.45	.36	.19	—
			Output Torque	36200	36200	36200	36200	36200	36200	36200
2550	**50 x 51**	10400	Input H.P.	.92	.61	.46	.38	.30	.16	—
			Output Torque	32100	32100	32100	32100	32100	32100	32100
2760	**60** x 46	10200	Input H.P.	.93	.61	.46	.38	.31	.16	—
			Output Torque	33800	33800	33800	33800	33800	33800	33800
3060	**60 x 51**	10400	Input H.P.	.82	.54	.41	.34	.27	.14	—
			Output Torque	32100	32100	32100	32100	32100	32100	32100
3300	**60** x 55	10400	Input H.P.	.73	.48	.36	.30	.24	.12	—
			Output Torque	31000	31000	31000	31000	31000	31000	31000
3660	**60 x 61**	10500	Input H.P.	.70	.46	.35	.29	.23	.12	—
			Output Torque	30800	30800	30800	30800	30800	30800	30800

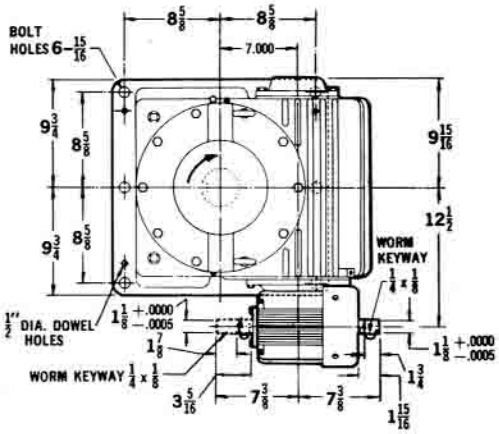
Output torque ratings given in in. lbs.
Overhung load given in pounds at center of output shaft keyway.
For RFD units, use 65% of overhung load figure.
See page 14 for other service factors.

Dimensions in Inches



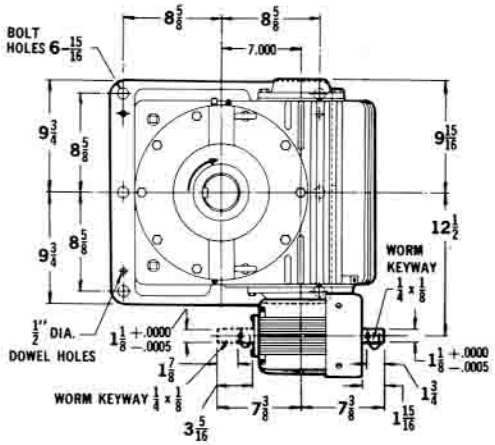
TYPE RFD

Net Wt.—810 Lbs.
Oil Cap.—4 Gal.



STANDARD SHAFT ARRANGEMENTS RFU-RFD UNITS

When ordering, refer to size, type, series and shaft arrangement number. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.

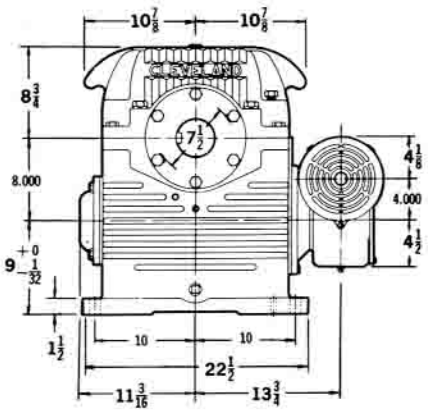


1 2 3 4

DOUBLE REDUCTION SPEED REDUCERS

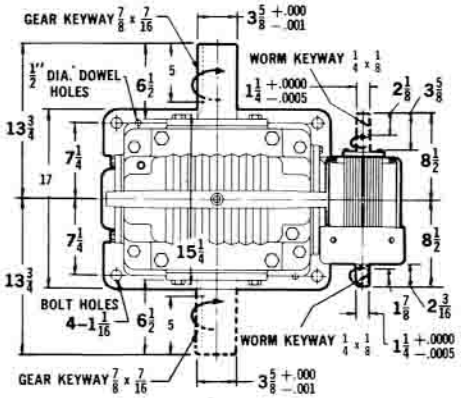
SIZE 40-80

Dimensions in Inches



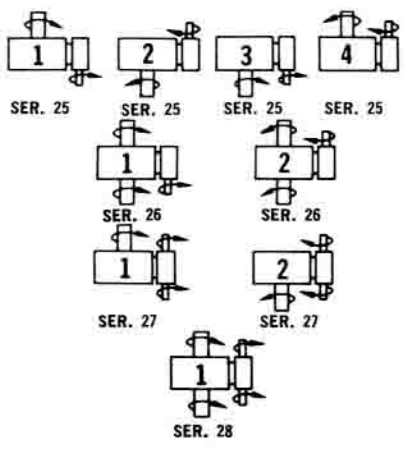
TYPE RFA

Net Wt.—930 Lbs.
Oil Cap.—6¾ Gal.



STANDARD SHAFT ARRANGEMENTS RFA UNITS

When ordering, refer to size, type, series and shaft arrangement number. Shaft extensions may be arranged in any of the nine standard patterns, as illustrated. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.



RATING TABLE

FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
4.000" PRIMARY
8.000" SECONDARY

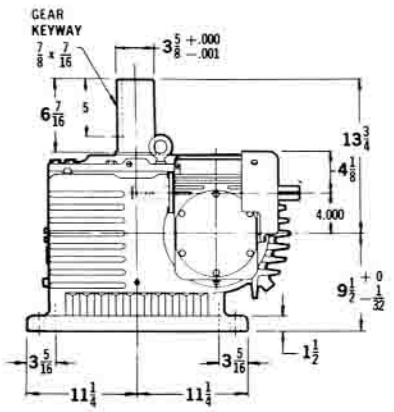
DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
74.91	**7¼ x 10⅓**	11800	Input H.P.	12.9	10.6	9.34	8.41	7.44	3.90	—
			Output Torque	26200	32800	38300	41600	45600	46300	46300
79.75	7¼ x 11	11700	Input H.P.	12.9	10.6	9.34	8.41	7.20	3.68	—
			Output Torque	27600	34600	40200	43800	46500	46500	46500
91.83	**7¼ x 12⅔**	11500	Input H.P.	12.9	10.6	9.34	8.41	6.78	3.49	—
			Output Torque	31300	39000	45500	45500	49600	49600	49600
103.3	**10 x 10⅓**	11800	Input H.P.	10.5	8.71	7.62	6.88	5.61	2.90	—
			Output Torque	28700	36200	42000	45700	46300	46300	46300
110.0	10 x 11	11700	Input H.P.	10.5	8.71	7.62	6.64	5.35	2.76	—
			Output Torque	30200	38100	44000	46500	46500	46500	46500
126.7	**10 x 12⅔**	11500	Input H.P.	10.5	8.71	7.60	6.30	5.06	2.62	—
			Output Torque	34100	43100	49600	49600	49600	49600	49600
130.9	**12⅔ x 10⅓**	11800	Input H.P.	8.78	7.31	6.33	5.56	4.57	2.36	—
			Output Torque	29500	37400	42900	45500	46300	46300	46300
139.3	12⅔ x 11	11700	Input H.P.	8.78	7.31	6.33	5.41	4.37	2.25	—
			Output Torque	31000	39300	45000	46500	46500	46500	46500
155.0	**10 x 15½**	11500	Input H.P.	10.5	8.25	6.34	5.23	4.22	2.18	—
			Output Torque	40500	48500	49100	49100	49100	49100	49100
170.5	15½ x 11	11700	Input H.P.	7.63	6.31	5.45	4.51	3.64	1.88	—
			Output Torque	32300	40600	46500	46500	46500	46500	46500
196.3	**12⅔ x 15½**	11500	Input H.P.	8.78	6.80	5.15	4.26	3.42	1.77	—
			Output Torque	41700	49100	49100	49100	49100	49100	49100
240.2	**15½ x 15½**	11500	Input H.P.	7.63	5.69	4.31	3.56	2.86	1.48	—
			Output Torque	43300	49100	49100	49100	49100	49100	49100
302.2	**15½ x 19½**	11400	Input H.P.	7.20	4.85	3.67	3.04	2.44	1.26	—
			Output Torque	49300	50600	50600	50600	50600	50600	50600
380.2	**19½ x 19½**	11400	Input H.P.	6.10	4.00	3.05	2.51	2.02	1.04	—
			Output Torque	50600	50600	50600	50600	50600	50600	50600
403.0	**26 x 15½**	11500	Input H.P.	5.12	3.68	2.78	2.30	1.85	.96	—
			Output Torque	45000	49100	49100	49100	49100	49100	49100
468.0	**19½ x 24**	11400	Input H.P.	5.16	3.38	2.57	2.12	1.71	.88	—
			Output Torque	50100	50100	50100	50100	50100	50100	50100
507.0	**26 x 19½**	11400	Input H.P.	4.81	3.16	2.40	1.97	1.59	.82	—
			Output Torque	50600	50600	50600	50600	50600	50600	50600
565.5	**29 x 19½**	11400	Input H.P.	4.37	2.87	2.18	1.80	1.45	.75	—
			Output Torque	50600	50600	50600	50600	50600	50600	50600
604.5	**19½ x 31**	11400	Input H.P.	4.30	2.84	2.14	1.77	1.42	.74	—
			Output Torque	50300	50300	50300	50300	50300	50300	50300
696.0	**29 x 24**	11400	Input H.P.	3.95	2.60	1.97	1.62	1.31	.68	—
			Output Torque	50100	50100	50100	50100	50100	50100	50100
741.0	19½ x 38	11400	Input H.P.	3.83	2.45	1.86	1.53	1.24	.66	—
			Output Torque	51500	51500	51500	51500	51500	51500	51500
806.0	**26 x 31**	11400	Input H.P.	3.24	2.13	1.62	1.33	1.07	.55	—
			Output Torque	50300	50300	50300	50300	50300	50300	50300
864.0	36 x 24	11400	Input H.P.	3.12	2.05	1.56	1.27	1.03	.53	—
			Output Torque	50100	50100	50100	50100	50100	50100	50100
899.0	**29 x 31**	11400	Input H.P.	3.10	2.02	1.55	1.27	1.03	.53	—
			Output Torque	50300	50300	50300	50300	50300	50300	50300

Bold face listing in "Total Reduction" and/or "Primary X Secondary Ratio" columns indicates stock ratios. Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
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 in the rating tables.

TYPE RFU

Net Wt.—1040 Lbs.
Oil Cap.—5¾ Gal.



SIZE 40-80

DOUBLE REDUCTION SPEED REDUCERS

RATING TABLE

FOR UNITY SERVICE FACTOR

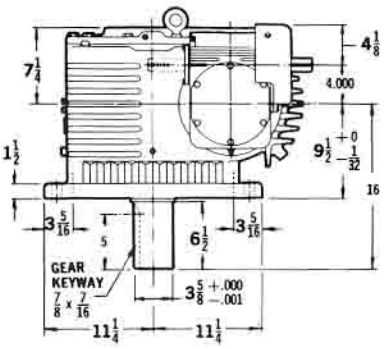
WORM GEARING CENTERS
4.000" PRIMARY
8.000" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
988.0	**26** x 38	11400	Input H.P.	3.00	1.97	1.50	1.23	1.00	.51	—
			Output Torque	51500	51500	51500	51500	51500	51500	51500
1102	**29** x 38	11400	Input H.P.	2.74	1.80	1.37	1.13	.91	.47	—
			Output Torque	51500	51500	51500	51500	51500	51500	51500
1189	**29 x 41**	11400	Input H.P.	2.56	1.67	1.28	1.05	.85	.44	—
			Output Torque	49700	49700	49700	49700	49700	49700	49700
1240	**40 x 31**	11400	Input H.P.	2.43	1.60	1.22	1.00	.81	.42	—
			Output Torque	50300	50300	50300	50300	50300	50300	50300
1276	**29** x 44	11500	Input H.P.	2.37	1.56	1.18	.97	.79	.41	—
			Output Torque	49500	49500	49500	49500	49500	49500	49500
1368	36 x 38	11400	Input H.P.	2.30	1.51	1.15	.95	.76	.40	—
			Output Torque	51500	51500	51500	51500	51500	51500	51500
1476	36 x **41**	11400	Input H.P.	2.11	1.39	1.05	.87	.70	.36	—
			Output Torque	49700	49700	49700	49700	49700	49700	49700
1550	**50 x 31**	11400	Input H.P.	2.04	1.34	1.02	.84	.68	.35	—
			Output Torque	50300	50300	50300	50300	50300	50300	50300
1584	36 x 44	11500	Input H.P.	1.98	1.30	.99	.82	.66	.34	—
			Output Torque	49500	49500	49500	49500	49500	49500	49500
1640	**40 x 41**	11400	Input H.P.	1.96	1.29	.98	.81	.65	.34	—
			Output Torque	49700	49700	49700	49700	49700	49700	49700
1748	46 x 38	11400	Input H.P.	1.91	1.26	.95	.79	.63	.33	—
			Output Torque	51500	51500	51500	51500	51500	51500	51500
1760	**40** x 44	11500	Input H.P.	1.85	1.22	.92	.76	.61	.32	—
			Output Torque	49500	49500	49500	49500	49500	49500	49500
1836	36 x **51**	11700	Input H.P.	1.73	1.14	.86	.71	.57	.30	—
			Output Torque	47200	47200	47200	47200	47200	47200	47200
1900	**50** x 38	11400	Input H.P.	1.80	1.19	.90	.74	.60	.31	—
			Output Torque	51500	51500	51500	51500	51500	51500	51500
2050	**50 x 41**	11400	Input H.P.	1.61	1.06	.80	.66	.53	.28	—
			Output Torque	49700	49700	49700	49700	49700	49700	49700
2200	**50** x 44	11500	Input H.P.	1.56	1.02	.78	.64	.52	.27	—
			Output Torque	49500	49500	49500	49500	49500	49500	49500
2460	**60 x 41**	11400	Input H.P.	1.45	.95	.72	.60	.48	.25	—
			Output Torque	49700	49700	49700	49700	49700	49700	49700
2640	**60** x 44	11500	Input H.P.	1.37	.90	.68	.56	.45	.23	—
			Output Torque	49500	49500	49500	49500	49500	49500	49500
2760	46 x **60**	12000	Input H.P.	1.19	.78	.59	.49	.40	.20	—
			Output Torque	43400	43400	43400	43400	43400	43400	43400
3060	**60 x 51**	11700	Input H.P.	1.19	.78	.59	.49	.40	.20	—
			Output Torque	47200	47200	47200	47200	47200	47200	47200
3300	55 x **60**	12000	Input H.P.	1.06	.70	.53	.44	.35	.18	—
			Output Torque	43400	43400	43400	43400	43400	43400	43400
3600	**60 x 60**	12000	Input H.P.	.98	.65	.49	.40	.32	.17	—
			Output Torque	43400	43400	43400	43400	43400	43400	43400
3685	55 x 67	12200	Input H.P.	.97	.64	.48	.40	.32	.17	—
			Output Torque	42200	42200	42200	42200	42200	42200	42200
4020	**60** x 67	12200	Input H.P.	.90	.59	.45	.37	.30	.15	—
			Output Torque	42200	42200	42200	42200	42200	42200	42200

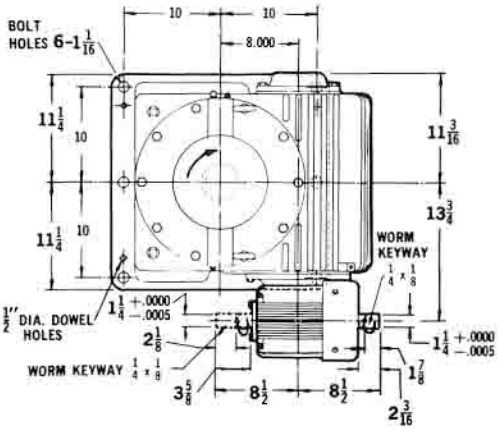
Output torque ratings given in in. lbs.
Overhung load given in pounds at center of output shaft keyway.
For RFD units, use 65% of overhung load figure.
See page 14 for other service factors.

Dimensions in Inches



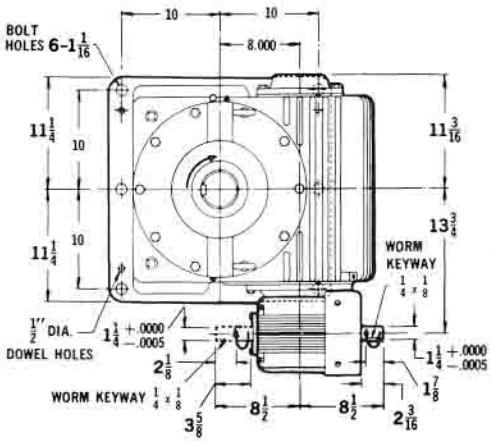
TYPE RFD

Net Wt.—1080 Lbs.
Oil Cap.—5¾ Gal.



STANDARD SHAFT ARRANGEMENTS RFU-RFD UNITS

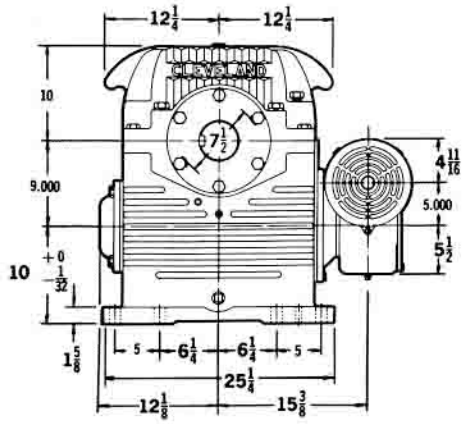
When ordering, refer to size, type, series and shaft arrangement number. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.



DOUBLE REDUCTION SPEED REDUCERS

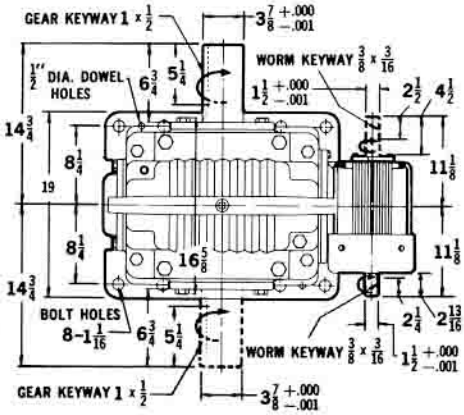
SIZE 50-90

Dimensions in Inches



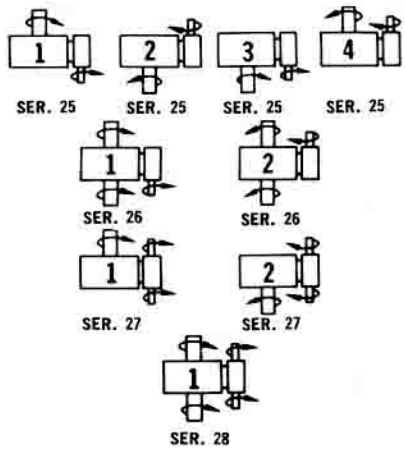
TYPE RFA

Net Wt.—1240 Lbs.
Oil Cap.—11 Gal.



STANDARD SHAFT ARRANGEMENTS RFA UNITS

When ordering, refer to size, type, series and shaft arrangement number. Shaft extensions may be arranged in any of the nine standard patterns, as illustrated. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.



RATING TABLE

FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
5.000" PRIMARY
9.000" SECONDARY

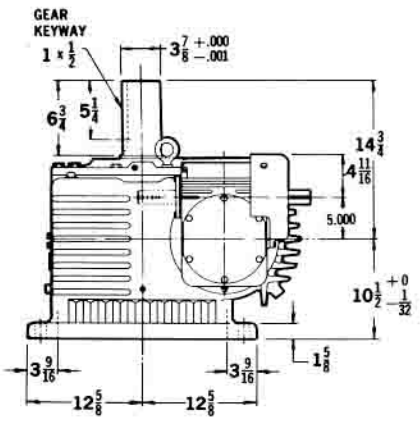
DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
74.00	**7⅔ x 10**	12200	Input H.P.	20.7	17.0	14.9	12.5	10.1	5.22	—
			Output Torque	42100	52600	60900	62000	62000	62000	62000
93.73	**7⅔ x 12⅔**	12000	Input H.P.	20.7	16.5	13.0	11.1	8.95	4.65	—
			Output Torque	52000	63100	65500	66600	66600	66600	66600
106.7	**10⅔ x 10**	12200	Input H.P.	16.1	13.3	10.8	8.93	7.20	3.72	—
			Output Torque	46000	58000	62000	62000	62000	62000	62000
114.7	**7⅔ x 15½**	11900	Input H.P.	19.6	14.3	11.2	9.44	7.60	3.94	—
			Output Torque	58100	64600	67000	68200	68200	68200	68200
135.2	**10⅔ x 12⅔**	12000	Input H.P.	16.1	12.2	9.30	7.70	6.20	3.20	—
			Output Torque	57200	66100	66600	66600	66600	66600	66600
160.4	**12⅔ x 12⅔**	12000	Input H.P.	14.2	10.4	7.87	6.51	5.24	2.71	—
			Output Torque	59000	66600	66600	66600	66600	66600	66600
181.5	**14⅓ x 12⅔**	12000	Input H.P.	13.5	9.38	7.10	5.86	4.73	2.45	—
			Output Torque	63000	66600	66600	66600	66600	66600	66600
196.3	**12⅔ x 15½**	11900	Input H.P.	13.5	9.20	6.96	5.76	4.64	2.40	—
			Output Torque	65700	68200	68200	68200	68200	68200	68200
222.2	**14⅓ x 15½**	11900	Input H.P.	12.2	8.16	6.17	5.11	4.11	2.13	—
			Output Torque	66700	68200	68200	68200	68200	68200	68200
253.3	**20 x 12⅔**	12000	Input H.P.	10.2	7.02	5.32	4.40	3.54	1.83	—
			Output Torque	63600	66600	66600	66600	66600	66600	66600
286.7	**14⅓ x 20**	11900	Input H.P.	10.0	6.70	5.07	4.20	3.38	1.75	—
			Output Torque	67100	68500	68500	68500	68500	68500	68500
310.0	**20 x 15½**	11900	Input H.P.	9.08	5.97	4.54	3.74	3.01	1.55	—
			Output Torque	68200	68200	68200	68200	68200	68200	68200
344.0	**14⅓ x 24**	11900	Input H.P.	8.23	5.51	4.12	3.45	2.78	1.44	—
			Output Torque	64200	65400	65400	65400	65400	65400	65400
400.0	**20 x 20**	11900	Input H.P.	7.35	4.83	3.67	3.02	2.43	1.26	—
			Output Torque	68500	68500	68500	68500	68500	68500	68500
500.0	**25 x 20**	11900	Input H.P.	6.01	3.96	3.00	2.47	1.99	1.03	—
			Output Torque	68500	68500	68500	68500	68500	68500	68500
600.0	**30 x 20**	11900	Input H.P.	5.23	3.44	2.61	2.15	1.73	.89	—
			Output Torque	68500	68500	68500	68500	68500	68500	68500
720.0	**30 x 24**	11900	Input H.P.	4.30	2.84	2.15	1.77	1.42	.74	—
			Output Torque	65400	65400	65400	65400	65400	65400	65400
775.0	**25 x 31**	11900	Input H.P.	4.41	2.90	2.20	1.81	1.46	.76	—
			Output Torque	69600	69600	69600	69600	69600	69600	69600
800.0	**40 x 20**	11900	Input H.P.	4.18	2.75	2.08	1.72	1.39	.71	—
			Output Torque	68500	68500	68500	68500	68500	68500	68500
875.0	**25 x 35**	11900	Input H.P.	4.03	2.65	2.01	1.66	1.34	.69	—
			Output Torque	70000	70000	70000	70000	70000	70000	70000
930.0	**30 x 31**	11900	Input H.P.	3.81	2.50	1.40	1.57	1.26	.65	—
			Output Torque	69600	69600	69600	69600	69600	69600	69600
1000	**25 x 40**	11900	Input H.P.	3.59	2.36	1.79	1.47	1.19	.61	—
			Output Torque	68000	68000	68000	68000	68000	68000	68000
1120	**56 x 20**	11900	Input H.P.	3.21	2.11	1.60	1.32	1.06	.55	—
			Output Torque	68500	68500	68500	68500	68500	68500	68500
1152	**48 x 24**	11900	Input H.P.	3.01	1.98	1.50	1.27	1.00	.52	—
			Output Torque	65400	65400	65400	65400	65400	65400	65400

Bold face listing in "Total Reduction" and/or "Primary X Secondary Ratio" columns indicates stock ratios. Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
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 in the rating tables.

TYPE RFU

Net Wt.—1460 Lbs.
Oil Cap.—10 Gal.



SIZE 50-90

DOUBLE REDUCTION SPEED REDUCERS

RATING TABLE

FOR UNITY SERVICE FACTOR

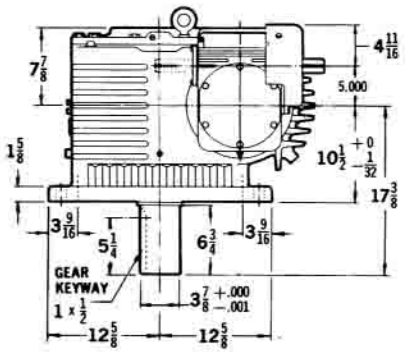
WORM GEARING CENTERS
5.000" PRIMARY
9.000" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
1200	**30 x 40**	11900	Input H.P.	3.10	2.02	1.54	1.27	1.03	.53	—
			Output Torque	68000	68000	68000	68000	68000	68000	68000
1275	**25 x 51**	12200	Input H.P.	2.90	1.91	1.45	1.19	.96	.50	—
			Output Torque	64600	64600	64600	64600	64600	64600	64600
1344	**56 x 24**	11900	Input H.P.	2.65	1.74	1.32	1.09	.88	.45	—
			Output Torque	65400	65400	65400	65400	65400	65400	65400
1380	**30** x 46	12100	Input H.P.	2.79	1.83	1.39	1.15	.92	.48	—
			Output Torque	67200	67200	67200	67200	67200	67200	67200
1400	**40** x 35	11900	Input H.P.	2.80	1.84	1.39	1.15	.93	.48	—
			Output Torque	70000	70000	70000	70000	70000	70000	70000
1488	**48 x 31**	11900	Input H.P.	2.65	1.74	1.32	1.09	.88	.45	—
			Output Torque	69600	69600	69600	69600	69600	69600	69600
1530	**30 x 51**	12200	Input H.P.	2.50	1.64	1.24	1.03	.83	.43	—
			Output Torque	64600	64600	64600	64600	64600	64600	64600
1600	**40 x 40**	11900	Input H.P.	2.48	1.63	1.24	1.02	.82	.42	—
			Output Torque	68000	68000	68000	68000	68000	68000	68000
1736	**56 x 31**	11900	Input H.P.	2.33	1.53	1.16	.96	.77	.40	—
			Output Torque	69600	69600	69600	69600	69600	69600	69600
1920	**48 x 40**	11900	Input H.P.	2.16	1.42	1.07	.89	.72	.37	—
			Output Torque	68000	68000	68000	68000	68000	68000	68000
2040	**40 x 51**	12200	Input H.P.	2.01	1.32	1.00	.83	.67	.34	—
			Output Torque	64600	64600	64600	64600	64600	64600	64600
2240	**56 x 40**	11900	Input H.P.	1.91	1.26	.95	.79	.63	.33	—
			Output Torque	68000	68000	68000	68000	68000	68000	68000
2448	**48 x 51**	12200	Input H.P.	1.75	1.15	.87	.72	.58	.30	—
			Output Torque	64600	64600	64600	64600	64600	64600	64600
2576	**56** x 46	12100	Input H.P.	1.72	1.13	.86	.71	.57	.29	—
			Output Torque	67200	67200	67200	67200	67200	67200	67200
2856	**56 x 51**	12200	Input H.P.	1.54	1.01	.77	.63	.51	.26	—
			Output Torque	64600	64600	64600	64600	64600	64600	64600
2976	**48 x 62**	12500	Input H.P.	1.43	.94	.71	.59	.47	.24	—
			Output Torque	58900	58900	58900	58900	58900	58900	58900
3264	**64 x 51**	12200	Input H.P.	1.47	.97	.73	.61	.49	.25	—
			Output Torque	64600	64600	64600	64600	64600	64600	64600
3472	**56 x 62**	12500	Input H.P.	1.26	.83	.63	.52	.42	.22	—
			Output Torque	58900	58900	58900	58900	58900	58900	58900
3640	**56** x 65	12800	Input H.P.	1.20	.79	.60	.49	.40	.21	—
			Output Torque	57900	57900	57900	57900	57900	57900	57900
3968	64 **x 62**	12500	Input H.P.	1.15	.76	.57	.47	.38	.20	—
			Output Torque	58900	58900	58900	58900	58900	58900	58900
4160	64 x 65	12800	Input H.P.	1.10	.72	.55	.45	.36	.19	—
			Output Torque	57900	57900	57900	57900	57900	57900	57900
4550	70 x 65	12800	Input H.P.	1.02	.67	.51	.42	.34	.17	—
			Output Torque	57900	57900	57900	57900	57900	57900	57900
5120	64 x 80	13000	Input H.P.	.82	.54	.41	.34	.27	.14	—
			Output Torque	49000	49000	49000	49000	49000	49000	49000
5600	70 x 80	13000	Input H.P.	.76	.50	.38	.31	.25	.13	—
			Output Torque	49000	49000	49000	49000	49000	49000	49000

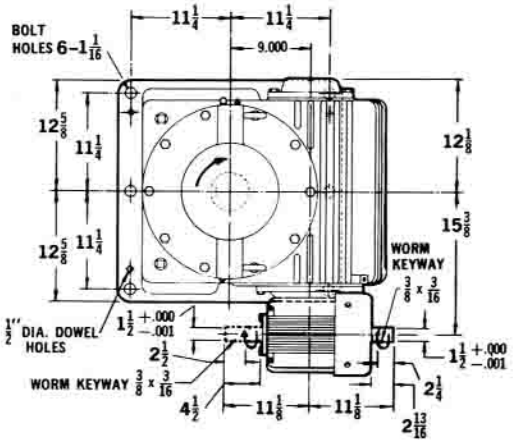
Output torque ratings given in in. lbs.
Overhung load given in pounds at center of output shaft keyway.
For RFD units, use 65% of overhung load figure.
See page 14 for other service factors.

Dimensions in Inches



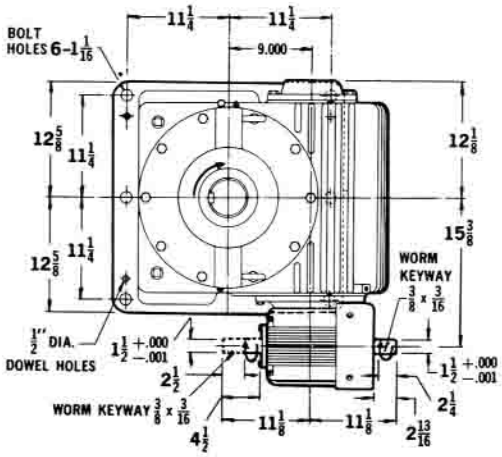
TYPE RFD

Net Wt.—1520 Lbs.
Oil Cap.—10 Gal.



STANDARD SHAFT ARRANGEMENTS RFU-RFD UNITS

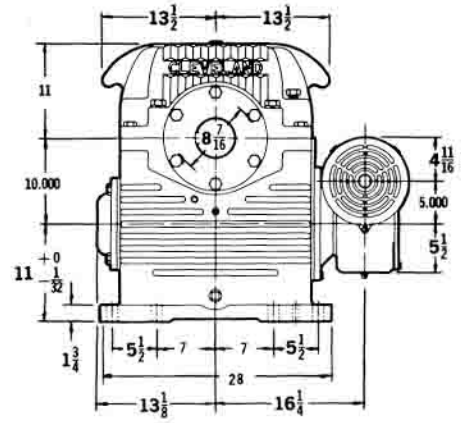
When ordering, refer to size, type, series and shaft arrangement number. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.



DOUBLE REDUCTION SPEED REDUCERS

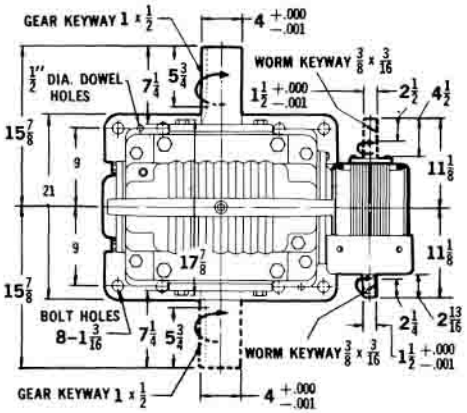
SIZE 50-100

Dimensions in Inches



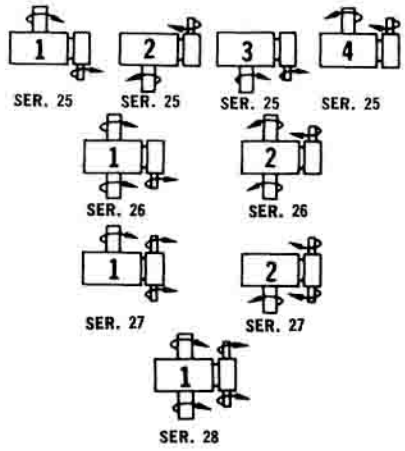
TYPE RFA

Net Wt.—1530 Lbs.
Oil Cap.—13½ Gal.



STANDARD SHAFT ARRANGEMENTS RFA UNITS

When ordering, refer to size, type, series and shaft arrangement number. Shaft extensions may be arranged in any of the nine standard patterns, as illustrated. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.



RATING TABLE

FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
5.000" PRIMARY
10.000" SECONDARY

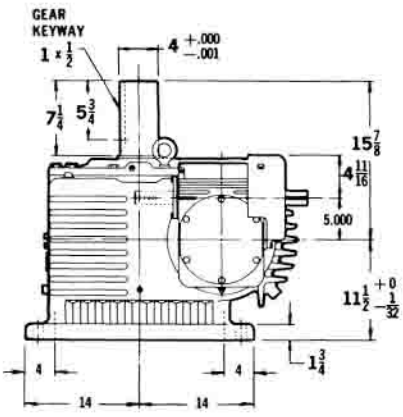
DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
70.00	7 x 10	13500	Input H.P.	21.5	17.6	15.7	14.4	12.8	7.33	—
			Output Torque	42500	53000	62300	68700	75700	82900	82900
83.25	7⅖ x 11¼	13400	Input H.P.	20.7	17.0	15.2	13.7	12.3	6.35	—
			Output Torque	48000	59600	70300	76800	84500	84500	84500
92.50	7⅖ x 12½	13300	Input H.P.	20.7	17.0	15.2	13.7	11.3	5.85	—
			Output Torque	53300	66000	77300	84300	85400	85400	85400
98.67	7⅖ x 13⅓	13200	Input H.P.	20.7	17.0	15.2	13.4	10.8	5.57	—
			Output Torque	55900	69500	81900	87400	87400	87400	87400
106.7	10⅔ x 10	13500	Input H.P.	16.1	13.3	11.8	10.8	9.60	4.96	—
			Output Torque	47100	59400	70000	76500	82900	82900	82900
120.0	10⅔ x 11¼	13400	Input H.P.	16.1	13.3	11.8	10.8	8.72	4.50	—
			Output Torque	52300	66000	77600	84500	84500	84500	84500
133.3	10⅔ x 12½	13300	Input H.P.	16.1	13.3	11.8	9.76	7.86	4.09	—
			Output Torque	57500	72500	85400	85400	85400	85400	85400
142.2	10⅔ x 13⅓	13200	Input H.P.	16.1	13.3	11.6	9.61	7.75	4.00	—
			Output Torque	61000	77000	87400	87400	87400	87400	87400
160.0	10⅔ x 15	13200	Input H.P.	16.1	13.3	10.6	8.77	7.08	3.65	—
			Output Torque	68100	86000	88600	88600	88600	88600	88600
179.2	14⅓ x 12½	13300	Input H.P.	13.5	11.0	9.16	7.57	6.12	3.16	—
			Output Torque	62500	78500	85400	85400	85400	85400	85400
190.0	12⅔ x 15	13200	Input H.P.	14.2	11.7	8.85	7.33	5.90	3.05	—
			Output Torque	70600	88600	88600	88600	88600	88600	88600
213.3	10⅔ x 20	13000	Input H.P.	16.0	11.1	8.45	6.99	5.64	2.92	—
			Output Torque	85000	89900	90600	90600	90600	90600	90600
225.0	20 x 11¼	13400	Input H.P.	10.2	8.37	7.17	5.94	4.77	2.47	—
			Output Torque	58600	74200	84500	84500	84500	84500	84500
266.7	20 x 13⅓	13200	Input H.P.	10.2	8.37	6.42	5.31	4.18	2.21	—
			Output Torque	67900	85000	87400	87400	87400	87400	87400
300.0	20 x 15	13200	Input H.P.	10.2	8.10	6.18	5.07	4.08	2.11	—
			Output Torque	75500	88600	88600	88600	88600	88600	88600
336.8	14⅓ x 23½	12900	Input H.P.	11.0	7.35	5.56	4.60	3.71	1.92	—
			Output Torque	86300	88200	88200	88200	88200	88200	88200
400.0	20 x 20	13000	Input H.P.	9.80	6.45	4.89	4.03	3.24	1.68	—
			Output Torque	90600	90600	90600	90600	90600	90600	90600
470.0	20 x 23½	12900	Input H.P.	8.40	5.53	4.19	3.46	2.78	1.43	—
			Output Torque	88200	88200	88200	88200	88200	88200	88200
530.0	20 x 26½	12900	Input H.P.	7.70	5.06	3.84	3.16	2.55	1.32	—
			Output Torque	88100	88100	88100	88100	88100	88100	88100
600.0	30 x 20	13000	Input H.P.	7.00	4.60	3.49	2.88	2.32	1.20	—
			Output Torque	90600	90600	90600	90600	90600	90600	90600
662.5	25 x 26½	12900	Input H.P.	6.30	4.14	3.14	2.59	2.08	1.08	—
			Output Torque	88100	88100	88100	88100	88100	88100	88100
720.0	20 x 36	13000	Input H.P.	6.30	4.14	3.14	2.59	2.08	1.08	—
			Output Torque	91100	91100	91100	91100	91100	91100	91100
800.0	40 x 20	13000	Input H.P.	5.60	3.68	2.79	2.30	1.85	.96	—
			Output Torque	90600	90600	90600	90600	90600	90600	90600
900.0	25 x 36	13000	Input H.P.	5.20	3.42	2.59	2.14	1.72	.89	—
			Output Torque	91000	91000	91000	91000	91000	91000	91000

Bold face listing in "Total Reduction" and/or "Primary X Secondary Ratio" columns indicates stock ratios. Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
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 in the rating tables.

TYPE RFU

Net Wt.—1740 Lbs.
Oil Cap.—13 Gal.



SIZE 50-100

DOUBLE REDUCTION SPEED REDUCERS

RATING TABLE

FOR UNITY SERVICE FACTOR

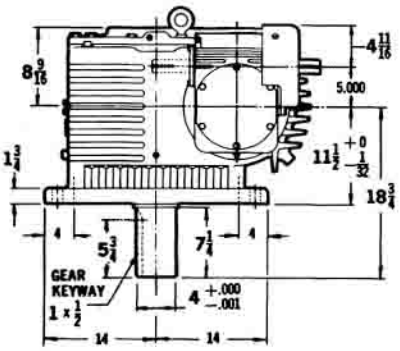
WORM GEARING CENTERS
5.000" PRIMARY
10.000" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
985.0	**25 x 39**	13000	Input H.P.	4.57	3.00	2.28	1.88	1.51	.78	—
			Output Torque	86400	86400	86400	86400	86400	86400	86400
1080	**30** x 36	13000	Input H.P.	4.51	2.96	2.25	1.86	1.49	.77	—
			Output Torque	91000	91000	91000	91000	91000	91000	91000
1170	**30 x 39**	13000	Input H.P.	4.03	2.65	2.01	1.66	1.34	.69	—
			Output Torque	86400	86400	86400	86400	86400	86400	86400
1220	**40 x 30½**	12900	Input H.P.	3.87	2.54	1.92	1.59	1.28	.66	—
			Output Torque	88300	88300	88300	88300	88300	88300	88300
1350	**30** x 45	13200	Input H.P.	3.64	2.39	1.82	1.50	1.21	.62	—
			Output Torque	86200	86200	86200	86200	86200	86200	86200
1440	**40** x 36	13000	Input H.P.	3.59	2.36	1.79	1.47	1.19	.61	—
			Output Torque	91000	91000	91000	91000	91000	91000	91000
1560	**40 x 39**	13000	Input H.P.	3.20	2.10	1.59	1.32	1.06	.55	—
			Output Torque	86400	86400	86400	86400	86400	86400	86400
1666	34 x **49**	13300	Input H.P.	3.06	2.01	1.52	1.26	1.01	.52	—
			Output Torque	83500	83500	83500	83500	83500	83500	83500
1800	**40** x 45	13200	Input H.P.	2.89	1.90	1.44	1.19	.96	.50	—
			Output Torque	86200	86200	86200	86200	86200	86200	86200
2025	45 x 45	13200	Input H.P.	2.63	1.73	1.31	1.08	.87	.45	—
			Output Torque	86200	86200	86200	86200	86200	86200	86200
2205	45 x **49**	13300	Input H.P.	2.45	1.61	1.22	1.01	.81	.42	—
			Output Torque	83500	83500	83500	83500	83500	83500	83500
2520	**56** x 45	13200	Input H.P.	2.27	1.49	1.13	.94	.75	.39	—
			Output Torque	86200	86200	86200	86200	86200	86200	86200
2784	**48 x 58**	13700	Input H.P.	2.00	1.32	.99	.82	.66	.34	—
			Output Torque	79600	79600	79600	79600	79600	79600	79600
3136	64 x **49**	13300	Input H.P.	1.91	1.26	.95	.79	.63	.33	—
			Output Torque	83500	83500	83500	83500	83500	83500	83500
3430	70 x **49**	13300	Input H.P.	1.79	1.18	.89	.74	.59	.33	—
			Output Torque	83500	83500	83500	83500	83500	83500	83500
3712	64 x **58**	13700	Input H.P.	1.61	1.06	.80	.66	.53	.28	—
			Output Torque	79600	79600	79600	79600	79600	79600	79600
4160	64 x 65	14000	Input H.P.	1.47	.97	.73	.61	.49	.25	—
			Output Torque	75600	75600	75600	75600	75600	75600	75600
4550	70 x 65	14000	Input H.P.	1.37	.90	.68	.56	.45	.23	—
			Output Torque	75600	75600	75600	75600	75600	75600	75600
5056	64 x 79	14300	Input H.P.	1.04	.68	.52	.43	.34	.18	—
			Output Torque	64800	64800	64800	64800	64800	64800	64800
5330	70 x 79	14300	Input H.P.	1.00	.66	.50	.40	.33	.17	—
			Output Torque	64800	64800	64800	64800	64800	64800	64800
5760	64 x 90	14300	Input H.P.	.86	.57	.43	.35	.28	.15	—
			Output Torque	54700	54700	54700	54700	54700	54700	54700
6080	64 x 95	14300	Input H.P.	.77	.51	.38	.32	.25	.13	—
			Output Torque	51600	51600	51600	51600	51600	51600	51600
6300	70 x 90	14300	Input H.P.	.78	.51	.39	.32	.26	.13	—
			Output Torque	54700	54700	54700	54700	54700	54700	54700
6650	70 x 95	14300	Input H.P.	.71	.47	.35	.29	.24	.12	—
			Output Torque	51600	51600	51600	51600	51600	51600	51600

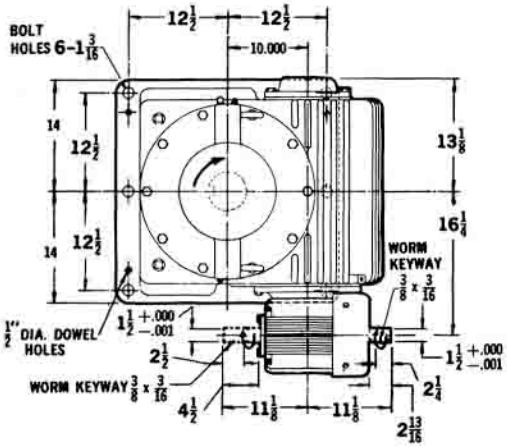
Output torque ratings given in in. lbs.
Overhung load given in pounds at center of output shaft keyway.
For RFD units, use 65% of overhung load figure.
See page 14 for other service factors.

Dimensions In Inches



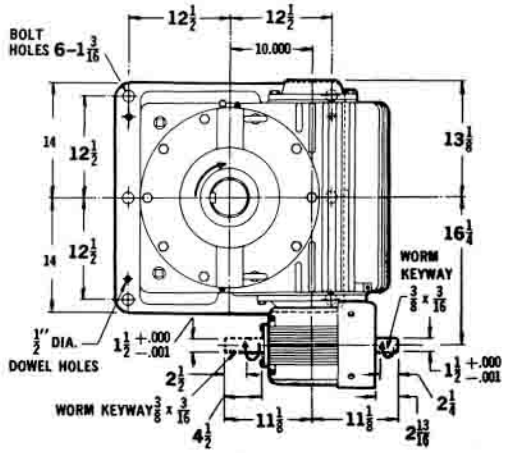
TYPE RFD

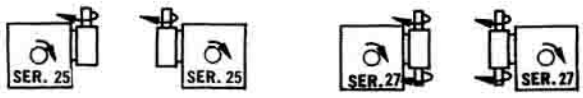
Net Wt.—1825 Lbs.
Oil Cap.—13 Gal.



STANDARD SHAFT ARRANGEMENTS RFU - RFD UNITS

When ordering, refer to size, type, series and shaft arrangement number. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.

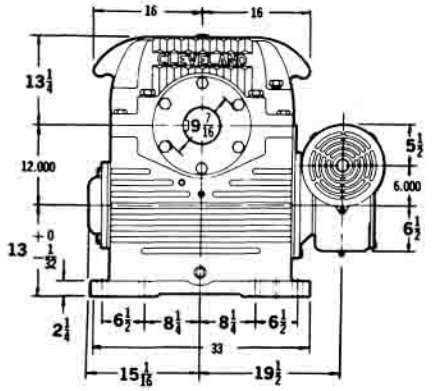




DOUBLE REDUCTION SPEED REDUCERS

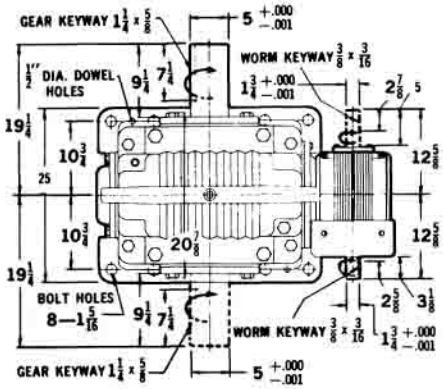
SIZE 60-120

Dimensions in Inches



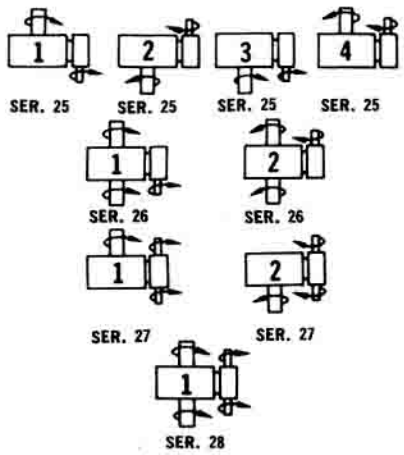
TYPE RFA

Net Wt.—2370 Lbs.
Oil Cap.—23 Gal.



STANDARD SHAFT ARRANGEMENTS RFA UNITS

When ordering, refer to size, type, series and shaft arrangement number. Shaft extensions may be arranged in any of the nine standard patterns, as illustrated. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.



RATING TABLE

FOR UNITY SERVICE FACTOR

WORM GEARING CENTERS
6.000" PRIMARY
12.000" SECONDARY

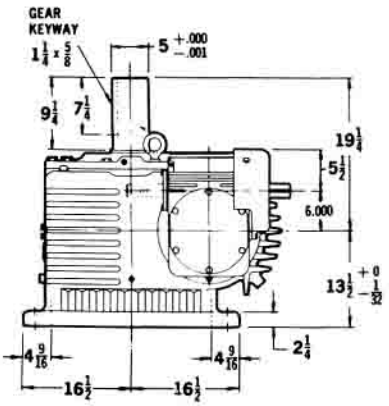
DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
70.00	7 x 10	22500	Input H.P.	33.2	27.0	23.8	22.2	20.0	11.1	—
			Output Torque	66500	82500	101500	107500	120000	132000	132000
78.75	7 x 11¼	22400	Input H.P.	33.2	27.0	23.8	22.2	20.0	10.8	—
			Output Torque	74000	91600	105000	119000	126000	132000	132000
85.75	7 x 12¼	22300	Input H.P.	33.2	27.0	23.8	22.2	19.6	10.2	—
			Output Torque	80000	99300	122000	129000	137000	137000	137000
93.73	12⅔ x 7²/₅	21500	Input H.P.	21.6	17.6	15.9	14.6	13.4	8.62	—
			Output Torque	57300	71000	84000	93000	103000	125000	125000
101.3	7²/₅ x 13⅔	22100	Input H.P.	30.1	25.3	22.3	19.4	15.7	8.10	—
			Output Torque	86100	107000	125000	136000	136000	136000	136000
113.5	7²/₅ x 15⅓	22000	Input H.P.	30.1	25.3	22.3	18.4	14.8	7.66	—
			Output Torque	96000	119000	139000	140000	140000	140000	140000
126.7	12⅔ x 10	22500	Input H.P.	21.6	17.6	15.9	14.0	12.5	6.47	—
			Output Torque	77000	95500	113000	125000	132000	132000	132000
134.8	11 x 12¼	22300	Input H.P.	24.9	20.3	18.2	15.7	12.7	6.55	—
			Output Torque	91600	113000	134000	137000	137000	137000	137000
150.3	11 x 13⅔	22100	Input H.P.	24.9	20.3	17.7	14.6	11.8	6.10	—
			Output Torque	101000	125000	136000	136000	136000	136000	136000
168.7	11 x 15⅓	22000	Input H.P.	24.9	20.3	15.3	12.6	10.2	5.27	—
			Output Torque	113000	139000	140000	140000	140000	140000	140000
180.0	9 x 20	21600	Input H.P.	27.6	19.7	15.5	12.8	10.4	5.35	—
			Output Torque	128500	140000	145000	145000	145000	145000	145000
200.0	20 x 10	22500	Input H.P.	15.2	12.5	11.3	10.2	8.23	4.25	—
			Output Torque	80100	100000	117500	132000	132000	132000	132000
220.0	11 x 20	21600	Input H.P.	23.8	16.9	12.8	10.6	8.55	4.29	—
			Output Torque	135000	144000	145000	145000	145000	145000	145000
247.5	11 x 22½	21600	Input H.P.	21.3	15.2	11.4	9.45	7.60	3.93	—
			Output Torque	132000	140000	141000	141000	141000	141000	141000
253.3	12⅔ x 20	21600	Input H.P.	21.6	15.0	11.4	9.40	7.56	3.91	—
			Output Torque	138500	145000	145000	145000	145000	145000	145000
293.3	14⅔ x 20	21600	Input H.P.	19.4	13.1	9.00	8.20	6.60	3.42	—
			Output Torque	142000	145000	145000	145000	145000	145000	145000
306.7	20 x 15⅓	22000	Input H.P.	15.2	10.8	8.18	6.76	5.45	2.82	—
			Output Torque	117000	140000	140000	140000	140000	140000	140000
366.7	14⅔ x 25	21600	Input H.P.	19.4	10.8	8.18	6.76	5.45	2.82	—
			Output Torque	142000	145000	145000	145000	145000	145000	145000
400.0	20 x 20	21600	Input H.P.	15.2	10.0	7.59	6.25	5.03	2.60	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
440.0	14⅔ x 30	21600	Input H.P.	14.2	9.50	7.20	5.95	4.78	2.48	—
			Output Torque	142000	145000	145000	145000	145000	145000	145000
460.0	30 x 15⅓	22000	Input H.P.	10.8	7.75	5.85	4.85	3.90	2.02	—
			Output Torque	118000	140000	140000	140000	140000	140000	140000
500.0	20 x 25	21600	Input H.P.	13.0	8.55	6.49	5.35	4.30	2.22	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
600.0	20 x 30	21600	Input H.P.	11.3	7.44	5.64	4.64	3.74	1.93	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
612.5	24½ x 25	21600	Input H.P.	10.7	7.04	5.34	4.40	3.54	1.83	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000

Bold face listing in "Total Reduction" and/or "Primary X Secondary Ratio" columns indicates stock ratios. Stock ratios should be selected whenever possible for quickest delivery and lowest cost.
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 in the rating tables.

TYPE RFU

Net Wt.—2690 Lbs.
Oil Cap.—19½ Gal.



SIZE 60-120

DOUBLE REDUCTION SPEED REDUCERS

RATING TABLE

FOR UNITY SERVICE FACTOR

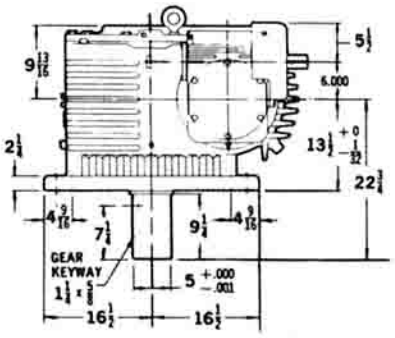
WORM GEARING CENTERS
6.000" PRIMARY
12.000" SECONDARY

DOUBLE REDUCTION WORM GEAR

Total Reduction	Primary X Secondary Ratio	Overhung Load Capacity		1750 RPM	1150 RPM	870 RPM	720 RPM	580 RPM	300 RPM	100 RPM
700.0	35 x 20	21600	Input H.P.	9.39	6.18	4.68	3.86	3.10	1.61	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
750.0	30 x 25	21600	Input H.P.	8.93	5.86	4.46	3.67	2.95	1.53	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
800.0	40 x 20	21600	Input H.P.	8.47	5.56	4.23	3.48	2.80	1.45	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
900.0	30 x 30	21600	Input H.P.	7.77	5.10	3.88	3.19	2.57	1.33	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
1000	40 x 25	21600	Input H.P.	7.13	4.68	3.55	2.93	2.36	1.22	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
1112	24½ x 45	22100	Input H.P.	6.69	4.40	3.34	2.75	2.21	1.14	—
			Output Torque	139000	139000	139000	139000	139000	139000	139000
1250	50 x 25	21600	Input H.P.	5.94	3.90	2.96	2.44	1.96	1.02	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
1350	45 x 30	21600	Input H.P.	5.60	3.68	2.79	2.30	1.85	.96	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
1420	40 x 35½	21800	Input H.P.	5.29	3.48	2.64	2.17	1.75	.91	—
			Output Torque	138000	138000	138000	138000	138000	138000	138000
1500	50 x 30	21600	Input H.P.	5.14	3.38	2.56	2.11	1.70	.88	—
			Output Torque	145000	145000	145000	145000	145000	145000	145000
1600	40 x 40	22000	Input H.P.	5.05	3.32	2.52	2.08	1.67	.86	—
			Output Torque	144000	144000	144000	144000	144000	144000	144000
1800	45 x 40	22000	Input H.P.	4.60	3.02	2.29	1.89	1.52	.79	—
			Output Torque	144000	144000	144000	144000	144000	144000	144000
2000	50 x 40	22000	Input H.P.	4.18	2.75	2.08	1.72	1.39	.71	—
			Output Torque	144000	144000	144000	144000	144000	144000	144000
2250	45 x 50	22300	Input H.P.	3.72	2.45	1.85	1.53	1.23	.64	—
			Output Torque	138000	138000	138000	138000	138000	138000	138000
2400	60 x 40	22000	Input H.P.	3.46	2.27	1.72	1.42	1.15	.59	—
			Output Torque	144000	144000	144000	144000	144000	144000	144000
2500	50 x 50	22300	Input H.P.	3.41	2.24	1.69	1.40	1.13	.58	—
			Output Torque	138000	138000	138000	138000	138000	138000	138000
2655	45 x 59	22900	Input H.P.	3.08	2.03	1.53	1.27	1.02	.53	—
			Output Torque	126000	126000	126000	126000	126000	126000	126000
3000	60 x 50	22300	Input H.P.	2.94	1.93	1.46	1.21	.97	.50	—
			Output Torque	138000	138000	138000	138000	138000	138000	138000
3150	45 x 70	23500	Input H.P.	2.46	1.62	1.22	1.01	.82	.42	—
			Output Torque	114000	114000	114000	114000	114000	114000	114000
3500	50 x 70	23500	Input H.P.	2.27	1.49	1.13	.94	.75	.39	—
			Output Torque	114000	114000	114000	114000	114000	114000	114000
3953	67 x 59	22900	Input H.P.	2.24	1.47	1.11	.92	.74	.38	—
			Output Torque	126000	126000	126000	126000	126000	126000	126000
4200	60 x 70	23500	Input H.P.	1.96	1.29	.98	.80	.65	.34	—
			Output Torque	114000	114000	114000	114000	114000	114000	114000
4690	67 x 70	23500	Input H.P.	1.81	1.19	.90	.74	.60	.31	—
			Output Torque	114000	114000	114000	114000	114000	114000	114000
5293	67 x 79	23500	Input H.P.	1.30	.86	.65	.53	.43	.22	—
			Output Torque	102000	102000	102000	102000	102000	102000	102000

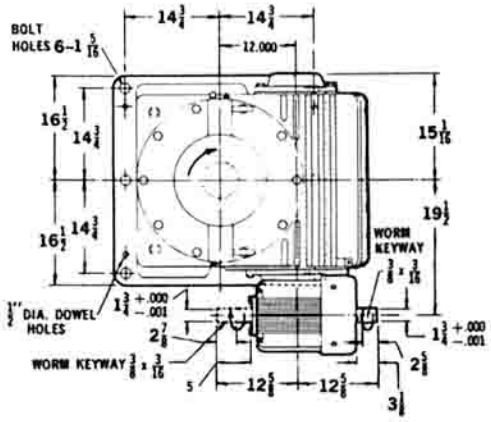
Output torque ratings given in in. lbs.
Overhung load given in pounds at center of output shaft keyway.
For RFD units, use 65% of overhung load figure.
See page 14 for other service factors.

Dimensions in Inches



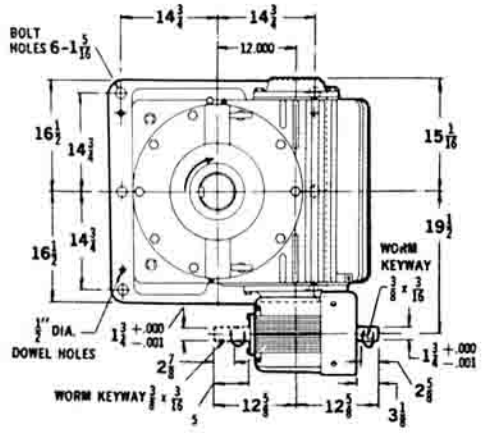
TYPE RFD

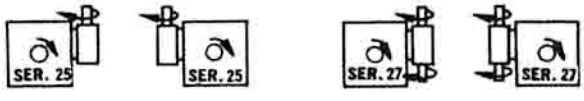
Net Wt.—2820 Lbs.
Oil Cap.—19½ Gal.



STANDARD SHAFT ARRANGEMENTS RFU-RFD UNITS

When ordering, refer to size, type, series and shaft arrangement number. Arrows show relative shaft rotations where both worms have the same hand of thread; when one left hand and one right hand worm are employed, rotations are reversed. Worms may be rotated in either direction.

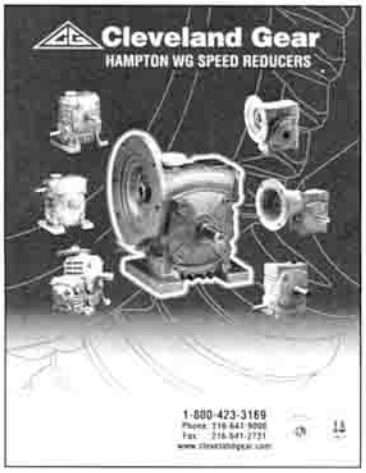




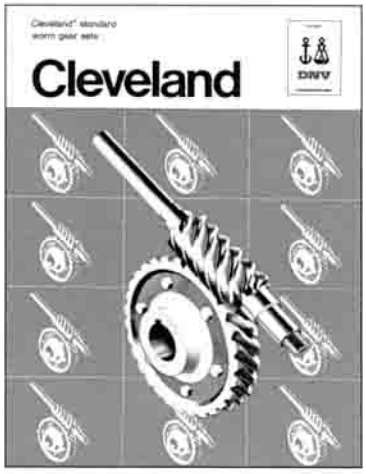
1 2 3 4

CLEVELAND GEAR'S LIBRARY OF INFORMATION

"MUSTS" FOR YOUR ENGINEERING DEPARTMENT



Brochure # 800
Hampton WG Speed Reducers
Provides horsepower, torque ratings, dimensional data and part/ maintenance information on Single and Double Reduction Speed Reducers



Catalog # 600
Open Gearing
Provides application classifications and service factor tables; available ratios; dimensions for standard worm shafts and gears.

Catalog # 400
Modular Speed Reducers
Extensive data on design features and selections for both single and double reduction drives.

Catalog #300
Redi II Enclosed Drives
Comprehensive reference with selection guide and rating tables - for single through quadruple reduction, helical and bevel helical speed reducers.

Catalog #200
Speed Variators
Includes detailed data on features, applications and selection procedures for Cleveland's ball-type, mechanical, variable speed drives.

CALL TOLL-FREE: 1-800-423-3169

CLEVELAND GEAR

First in gears. First in excellence.

Phone: 216-641-9000
Fax: 216-641-2731
www.clevelandgear.com

Cleveland Gear Co., Inc.
Subsidiary of Vesper Corporation
3249 East 80th St.
Cleveland, OH 44104

Printed in the U.S.A.

Catalog #500A QDI-2.5-704