

JOHNSON GEAR

Right Angle Gear Drive
CELEBRATING 100 YEARS
1905 - 2005

Speed Increasing Ratios (Fig. 1 Rotation)

Model	1:1	10:11	5:6	4:5	3:4	2:3	4:7	1:2
H20	2140	N/A	2140	N/A	2140	2420	N/A	N/A
H40	2900	2900	3200	3200	3200	3340	3340	3340
H60	2960	3450	3450	3660	3660	3660	3660	3660
H80	3320	3720	3720	3720	3950	3720	3720	3720
H110	3600	3960	3960	3960	4280	3960	3840	3840
H125	3850	4110	4110	4580	4580	4220	4110	4110
H150	4800	4800	4800	5000	5000	5100	5100	5100
H200	5720	5720	5720	5720	6240	6240	6240	6240
H250	9120	9610	9610	9610	9610	10100	10100	10100
H300	9910	11100	11520	11520	11520	11520	11520	11520
H350	12770	12770	12770	12880	12880	12990	12990	N/A
H425	15570	15570	15570	15680	15680	15790	15790	N/A
H500D	16280	16280	19140	19140	19140	19920	20170	20170
H600D	20000	20000	22680	22680	22680	24550	24550	24550
H750D	32500	34400	30250	34400	34400	37400	37400	37400
H1000D	41960	44860	49780	49780	52000	52000	52000	52000
H1200D	46560	46560	46560	C/F	C/F	C/F	C/F	C/F
H1500D	52160	52160	52160	C/F	C/F	C/F	C/F	C/F



Speed Decreasing Ratios (Fig. 1 Rotation)

Model	11:10	6:5	5:4	4:3	3:2	7:4	2:1	9:4	5:2	11:4	3:1
H20	N/A	2140	N/A	2140	2800	N/A	N/A	N/A	N/A	N/A	N/A
H40	2990	2990	3190	3020	3450	N/A	N/A	N/A	N/A	N/A	N/A
H60	3220	3220	3220	3220	3660	N/A	N/A	N/A	N/A	N/A	N/A
H80	3320	3320	3320	3320	3720	N/A	N/A	N/A	N/A	N/A	N/A
H110	3600	3600	3600	3600	3960	5170	5170	N/A	N/A	N/A	7260
H125	3850	3850	3850	3850	4220	5910	5910	N/A	N/A	N/A	7980
H150	4800	4800	4800	4800	5100	6640	6640	N/A	8690	N/A	8690
H200	5810	5810	5810	5810	6020	9400	9400	N/A	9400	N/A	9400
H250	9610	9610	9610	9610	9610	11500	11500	11500	11500	11500	11500
H300	11100	11100	11100	11100	11100	13500	13500	13500	13500	13500	13500
H350	12770	12770	12770	12770	12990	14430	14430	14430	14430	14430	14430
H425	15570	15570	15570	15570	15790	16010	16010	16010	16010	16010	16010
H500D	19920	18660	18660	18660	19920	20170	20170	20170	20170	20170	20170
H600D	24550	22680	24550	22680	24550	24550	24550	24550	24550	24550	24550
H750D	34400	32500	32500	32500	34440	41730	41730	41730	41730	41730	41730
H1000D	44860	44860	47770	47770	47770	47770	47770	47770	47770	47770	47770
H1200D	46560	46560	C/F	C/F	C/F	C/F	C/F	C/F	C/F	C/F	C/F
H1500D	52160	52160	C/F	C/F	C/F	C/F	C/F	C/F	C/F	C	C/F

Prices shown are for Hollow Shaft Fig. 1 and include standard non-reverse ratchet and coupling. Models H60 and larger include oil coolers. See next page for Non-Standard adders. All prices in U.S. Currency & subject to change without notice. All prices are F.O.B. shipping point. C/F = Contact Factory. N/A - Not Available



Fig. 1



Fig. 2

ROTATION



Fig. 3



Fig. 4

Johnson Gear, Inc. -- Price List -- September 1, 2013

Adders for Non-Standard Extras						
Model	Figure 2 - 3 - 4	Heavy Thrust	Manual Combination	Solid Shaft	Redi- Torq	Slant Drives
H20	1420	N/A	4670	3320	N/A	2010
H40	1820	N/A	5160	3640	14650	2010
H60	1820	N/A	5160	3640	14650	2010
H80	1820	1330	5160	3640	N/A	2010
H110	1760	1450	6180	3640	17400	2010
H125	1760	1450	6180	3640	N/A	2010
H150	2450	1450	7200	3880	19600	2370
H200	2560	1450	7370	3880	19600	2370
H250	2690	2440	10310	4590	N/A	2370
H300	2690	2440	10310	4590	N/A	2370
H350	2690	2600	10640	4590	N/A	C/F
H425	2690	3040	10960	5570	N/A	C/F
H500D	3810	3420	11400	6230	N/A	C/F
H600D	3810	3420	15730	6230	N/A	C/F
H750D	C/F	3420	C/F	6500	N/A	C/F
H1000D	C/F	C/F	C/F	C/F	N/A	C/F
H1200D	C/F	C/F	C/F	C/F	N/A	C/F
H1500D	C/F	C/F	C/F	C/F	N/A	C/F

						NET ADDERS	
Model	Sprag Non- Reverse	Lower Steady Bushing	Cupro- Nickel Oil Cooler	Marine Package	Factory Mutual FM Label	Synthetic 629 Oil	Plywood Boxing
H20	N/A	N/A	N/A	720	360	40	120
H40	N/A	910	N/A	910	360	60	160
H60	480	910	370	910	360	60	160
H80	480	910	370	910	360	60	160
H110	480	910	370	1070	360	110	180
H125	480	910	370	1070	360	110	180
H150	590	1080	640	1450	360	220	240
H200	590	1080	640	1450	360	220	240
H250	650	1080	820	1910	360	240	270
H300	650	1080	820	1910	360	240	270
H350	650	1810	820	1910	360	370	320
H425	710	1810	910	1910	360	370	320
H500D	710	1810	910	1910	360	370	320
H600D	710	1810	910	2420	360	370	370
H750D	C/F	C/F	C/F	2420	C/F	600	540
H1000D	C/F	C/F	C/F	C/F	C/F	600	540
H1200D	C/F	C/F	C/F	C/F	C/F	600	640
H1500D	C/F	C/F	C/F	C/F	C/F	600	720

Prices Subject To Change Without Notice



JOHNSON GEAR

Right Angle Gear Drive

CELEBRATING 100 YEARS
1905 - 2005

1110 N. AVE. T

LUBBOCK, TEXAS 79415

Phone 806-749-6400, Fax 806-749-6477

PRICE LIST

September 1, 2013

PROPELLER PUMP GEAR DRIVES

RATIO	2:1	5:2	3:1	7:2	4:1	9:2	5:1	11:2	6:1
MODEL									
M80P	4590	5280	5280	N/A	N/A	N/A	N/A	N/A	N/A
M200P	6970	8060	8050	N/A	N/A	N/A	N/A	N/A	N/A
M16AH	10850	10850	10850	11040	11040	N/A	11360	N/A	N/A
M20A	17800	17800	17800	18990	18990	18990	18990	18990	18990
M22A	32590	32590	32590	32590	32590	32590	32590	32590	32590
M26A	47410	47410	47410	47410	47410	47410	47410	47410	47410
M30A	58370	58370	58370	58370	58370	58370	58370	58370	58370
M32A	CONTACT FACTORY								
M34A	CONTACT FACTORY								
M36A	CONTACT FACTORY								
M40A	CONTACT FACTORY								
M44A	CONTACT FACTORY								
M48A	CONTACT FACTORY								
M52A	CONTACT FACTORY								



OPTIONS - TO BE ADDED TO THE LIST PRICE OF STANDARD DRIVES

MODEL	Special Rotation Fig.2,3,4	Extra Heavy Thrust	Vertical Solid Shaft	Opposed Thrust Bearings	Marine Package	Copper Water Cooler	Combination Motor Stand		Net Export Box	Sprag Non-Reverse	Slant Drives
							Manual	Automatic			
M80P	2110	1310	3770	C/F	970	160	6320	C/F	120	INCL	2590
M200P	2830	2560	4000	C/F	1440	160	7300	C/F	160	INCL	3770
M16AH	1650	C/F	4000	INCL	1210	C/F	9420	C/F	160	INCL	4230
M20A	2830	C/F	4230	INCL	1440	C/F	9890	C/F	170	INCL	2710
M22A	3290	C/F	4470	INCL	1690	C/F	10590	C/F	200	INCL	5180
M26A	5180	C/F	4940	INCL	1930	C/F	11070	C/F	240	INCL	5650
M30A	6590	C/F	6820	INCL	2180	C/F	12250	C/F	380	INCL	5940
M32A	CONTACT FACTORY										
M34A	CONTACT FACTORY										
M36A	CONTACT FACTORY										
M40A	CONTACT FACTORY										
M44A	CONTACT FACTORY										
M48A	CONTACT FACTORY										
M52A	CONTACT FACTORY										

C/F = Contact Factory N/A = Not Available INCL = Included

Propeller Pump Drives are fan cooled and require no additional water cooling. Marine Package includes stainless steel hardware, nameplate, oil tube, and epoxy paint. If sea water cooler, or shell and tube external cooler is required, please contact factory.

Torsional Dampening Couplings

Model	Bore Size	Keyway	Part #	List Price
H40/60/80	1 7/8	1/2	TC-VSK15-1875	\$1,470
H110/125	2	1/2	TC-VSK25-2000	\$1,690
H150/200	2 7/16	5/8	TC-VSK25-2437	\$1,690
H250/300/350	2 3/4	5/8	TC-VSK45-2750	\$2,200
H425	3	3/4	TC-VSK50-3000	\$4,040
H500	3 1/2	7/8	TC-VSK50-3500	\$4,040
H600 & UP	C/F	C/F	C/F	C/F

Increase Your Pumping System Protection

The use of diesel engines to drive right angle drives and pumping systems has increased over recent years and with that, technological improvements in components have caused drastic reductions in engine weight, increased compression ratios and turbo charging. These changes have resulted in the transfer of power from the engine to the driven equipment to not be as smooth as before.

Premature failure of the components in a pump system can occur when operating at or near (+/- 10%) a torsional resonant speed. With engine driven systems, it is not uncommon for one or more resonant speeds to exist between zero (0) rpm and the operating speed of the system. Continued operation at a resonant speed will result in torsional vibrations, which can be damaging to all components in the system. Vibratory torque, much higher than the rated torque of the driven components, is not uncommon.

Typical modes of failure are broken crank shafts, drive line shafts, drive line shafts twisting in two, broken input shafts, and broken gear teeth. Unusual rumbling and clattering noise from the gear drive at specific speed is the most common indication of

torsional vibrations. As the speed is increased or decreased, the noise will disappear. Noise is a result of the gear teeth separating and clashing together very rapidly when the vibratory torque exceeds the drive torque, typically at a resonant speed. Transition through a resonant speed is not normally damaging, but operation at or near the resonant speed, should be avoided.

To avoid operation at a resonant speed, it may be necessary to make a change to the speed of the engine with respect to the pump, or change the elastic characteristics; a torsional coupling needs to be added to the system.

The torsional coupling is designed and installed with systems using U-joint type drive-lines and standard gear drives. The coupling is usually self-supporting and is selected with the best compromise of torsional characteristics for engines operating between 1200 and 2400 rpm. In most cases, the coupling can be installed with minimal modifications to the drive-line shaft and guarding system. Guarding systems, should always be used around rotating shafts and couplings. Johnson Gear does not supply guarding systems.

This torsional coupling is designed to be installed with systems using U-joint type drive lines and standard gear drives. The bonded-rubber element is manufactured by Ringfeder and is self supporting. The coupling has been selected with the best compromise of torsional characteristics for engines operating between 1200 and 2400 rpm. In most cases the standard element will work. If all operating parameters are known, a torsional vibration analysis can be performed at an extra cost. If needed, rubber elements with different torsional characteristics can be supplied. Different selections may be determined by operation or analysis.
(Ringfeder Corp. - 201-666-3320)

In most cases, the coupling can be installed with minimal modifications to the drive line shaft length and guarding system.

WARNING: ROTATING SHAFTS AND COUPLINGS ARE DANGEROUS AND CAN CAUSE SERIOUS INJURY. AN ADEQUATE GUARD MUST BE INSTALLED AROUND THE COUPLING AND DRIVE SHAFT BEFORE OPERATION OF THE GEAR DRIVE. THE GUARD IS NOT SUPPLIED BY JOHNSON GEAR, INC.

JOHNSON GEAR, INC. – LUBBOCK, TEXAS
PHONE 806-7496400, FAX 806-749-6477

All Prices are F.O.B. Lubbock, TX
Approximate Shipping Weights and Dimensions

Model	Gross Weight. Lbs		Box Dimensions in Inches			Volume	
	Net Weight Lbs.	Domestic & Container	Plywood	Width	Depth	Height	Cu. Ft.
H20	160	195	220	26	19	38	11
H40	310	335	375	26	19	38	11
H60	320	335	375	26	19	38	11
H80	320	335	375	26	19	38	11
H110	445	470	500	26	19	38	11
H125	450	480	510	26	19	38	11
H150	710	750	790	34	23	47	21
H200	710	750	790	34	23	47	21
H250	955	1050	1100	41	31	54	40
H300	955	1050	1100	41	31	54	40
H350	1430	1495	1575	47	31	56	47
H425	1540	1650	1700	47	31	56	47
H500	1625	1735	1785	47	31	56	47
H600	2000	2070	2130	47	31	56	47
H750	2200	2300	2440	47	31	64	54
H1000	2100	2200	2340	47	31	64	54
H1200	3160	3260	3500	54	36	64	72
H1500	3160	3260	3500	54	36	64	72

(1) Weights are for standard hollowshaft drives only. Refer to factory for other types.

(2) Reinforced cardboard box kit for domestic & container shipment.

(3) Plywood box kit for export shipment. Subject to price extra indicated on p.2.

Warranty

1. The Johnson Right Angle Gear Drive is warranted to be free from defects in material and workmanship under normal use and service for a period of one year from the date of factory shipment by us for the original purchaser and then only when operated within the rated capacity for which it was sold and in accordance with recognized usage and practice. Our obligation under this warranty is limited to the replacement of any part or parts which shall be returned to us with transportation charges prepaid, within one year after shipment for the original purchaser; and, which it is determined by the company, to have proven defective under normal and proper use. This warranty shall not apply to any drive which has been altered or repaired outside our factory without our written consent and approval, or any drive which has been subject to misuse, neglect, accident, improper oiling, or torsional damage.

2. We make no warranty of any kind whatever, express or implied, in regard to bearings, trade accessories, machinery, or other articles of merchandise not manufactured by us. The bearings which we have selected for the thrust position will cover most installations, but there are many cases which will require special treatment.

3. Johnson Gear is a supplier of only one component in the pumping system; we have no control over system design, or engine selection. It is the responsibility of those who select the equipment for the pumping project to assure that damage to any component does not occur due to Torsional Vibration. Johnson Gear will award a three-year warranty to any drive that is equipped with a torsional dampening devise, located between the engine flywheel and the gear drive.

4. No warranty or guarantee is binding upon the company and no asserted breach thereof can be claimed against the company unless the company has been notified in detail and in writing of any alleged defect within seven (7) days after the discovery thereof.

5. The express warranties and guarantee contained herein are exclusive and are made in lieu of any other representation by the company or its agents, and any implied warranty of Merchantability or Fitness for a Particular Purpose are hereby expressly disclaimed. It is agreed that the language contained herein shall be the final and exclusive expression of the agreement with respect to sale of equipment by the company.

