JOHNSON GEAR

Right Angle Gear Drive

CELEBRATING 100 YEARS
1905 - 2005

Speed Increasing Ratios (Fig. 1 Rotation) Price List

Model	1:1	10:11	5:6	4:5	3:4	2:3	4:7	1:2
H20	$ 1570	$ N/A	$ 1570	$ N/A	$ 1570	$ 1570	$ N/A	$ N/A
H40	1700	N/A	1700	N/A	1750	1750	1800	1800
H40-12	1700	N/A	1700	N/A	1750	1750	1800	1800
H60	1850	N/A	1850	N/A	1850	1900	1900	1900
H80	2250	2250	2250	2250	2250	2250	2315	2315
H110	2460	2460	2460	2460	2460	2460	2640	2640
H125	2670	2670	2670	2670	2670	2880	2880	2880
H150	3600	3610	3610	3710	3710	3880	3880	3940
H200	3890	3890	3890	3940	3940	4080	4280	4280
H250	6200	6200	6200	6300	6300	6400	6400	6480
H300	6890	6890	6890	6900	6900	6900	6900	6900
H350	8290	8290	8290	8290	8290	8290	8575	N/A
H425	9880	9880	9880	9880	9880	9880	10320	N/A
H500	11500	11500	11500	11800	11800	11900	11900	N/A
H600	14000	N/A	14000	N/A	15000	15000	15000	N/A
H750	21500	21500	21500	21500	21500	22000	22000	22000
H1000	30000	30000	30000	32000	32000	32000	36000	36000
H1200	34000	34000	34000	C/F	C/F	C/F	C/F	C/F
H1500	38000	38000	38000	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	$ 1570	$ N/A	$ 1570	$ 1570	$ N/A	$ N/A	$ N/A	$ N/A	$ N/A	$ N/A
H40	1750	1750	N/A	1800	2000	2000	2000	N/A	2480	N/A	2480
H40-12	1750	1750	N/A	1800	2000	2000	2000	N/A	2480	N/A	2480
H60	1880	1850	N/A	1880	2000	2000	2000	N/A	2630	N/A	2630
H80	2250	2250	2250	2250	2500	N/A	N/A	N/A	N/A	N/A	N/A
H110	2460	2460	2460	2460	2640	2700	2700	N/A	N/A	N/A	3400
H125	2670	2670	2670	2670	2760	2880	2880	N/A	N/A	N/A	3650
H150	3610	3610	3710	3710	3880	3880	3880	N/A	4600	N/A	4600
H200	3890	3890	3940	3940	4080	4280	4280	N/A	5005	N/A	5005
H250	6200	6200	6300	6300	6520	6520	6520	7185	7185	7185	7185
H300	6890	6890	6900	6900	7150	7150	7150	7815	7815	7815	7815
H350	8290	8290	8290	8290	8290	9235	9235	9235	9235	9235	9235
H425	9880	9880	9880	9880	9880	10920	10920	10920	10920	10920	10920
H500	11600	11600	11800	11800	12000	12000	12000	12600	12600	12600	12600
H600	N/A	14000	15000	15000	15000	15200	15200	15850	15850	15850	15850
H750	21800	22000	22000	23000	23000	23000	23000	23000	23000	23000	23000
H1000	30000	30000	32000	32000	32000	36000	36000	36000	36000	36000	36000
H1200	34000	34000	C/F	C/F	C/F	C/F	C/F	C/F	C/F	C/F	C/F
H1500	38000	38000	C/F	C/F	C/F	C/F	C/F	C/F	C/F	C/F	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

Rotations

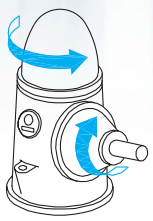

Fig. 1

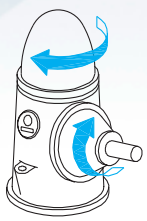

Fig. 2

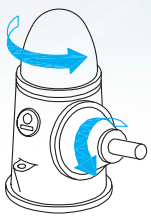

Fig. 3

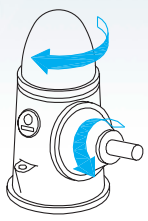

Fig. 4

Adders for Non-Standard Extras

Model	Fig. 2-3-4	Heavy Thrust	Combination	Solid Shaft	Redi-Torq	Slant Drives
H20	$ 485	$ N/A	$ 2000	$ 1040	$ N/A	$ 990
H40	485	N/A	2300	1210	6970	990
H40-12	485	N/A	2300	1210	6970	990
H60	485	N/A	2300	1210	6970	990
H80	485	390	2300	1210	N/A	990
H110	555	450	2550	1210	8500	990
H125	555	500	2550	1210	N/A	990
H150	650	570	2890	1375	9655	1200
H200	650	570	2890	1375	9655	1200
H250	700	700	3200	1650	N/A	1200
H300	700	700	3200	1650	N/A	1200
H350	780	820	3930	1650	N/A	C/F
H425	880	880	4640	1730	N/A	C/F
H500	880	1010	4640	1730	N/A	C/F
H600	1095	1180	7285	2085	N/A	C/F
H750	C/F	1250	C/F	2500	N/A	C/F
H1000	C/F	C/F	C/F	C/F	N/A	C/F
H1200	C/F	C/F	C/F	C/F	N/A	C/F
H1500	C/F	C/F	C/F	C/F	N/A	C/F

Model	Sprag Non-Reverse	Lower Steady Bushing	Cupro-Nickle Oil Cooler	NET ADDERS		
				Marine Package	Plywood Boxing	Synthetic 629 Oil
H20	$ N/A	$ N/A	$ N/A	$ 400	$ 60	$ 25
H40	N/A	460	N/A	400	60	42
H40-12	N/A	460	N/A	400	60	42
H60	400	460	95	400	60	42
H80	400	460	95	400	60	42
H110	400	460	95	525	60	60
H125	400	460	95	525	60	60
H150	500	510	95	700	75	120
H200	500	510	95	700	75	120
H250	550	510	110	775	110	160
H300	550	510	110	775	110	160
H350	550	660	110	850	125	230
H425	550	660	145	850	125	230
H500	550	660	145	850	125	230
H600	550	660	145	900	145	230
H750	C/F	C/F	145	1000	160	400
H1000	C/F	C/F	145	1000	200	400
H1200	C/F	C/F	145	1000	200	400
H1500	C/F	C/F	145	1000	200	400

Please note that H20 & H80's are not available in Figure 2 & 3 rotations. Figure 1 & 4 only. Adder for hollowshaft combination drives and solid shaft type 3 includes standard (XN) motorstand with guards. Non-reverse ratchet is not included for all solid shaft drives, please contact factory for availability. Redi-torq price includes motorstand. Marine package includes stainless steel pipe plugs, seal tube, bolts, washers, epoxy paint and cupro-nickle cooler. Slant drive adder applies only to 30 - 45 deg applications. Contact factory for other applications. Price for slant drives includes lower steady bushing, special oil seal tube, locked coupling, self-release only, additional oil drain plug, Gits oil level sight gage, and modified lubrication system.

Torsional Dampening Couplings

Model	Bore Size	Keyway	Part #	List Price
H40	1 1/2	3/8	TC-VSK15-1500	$1310
H40-12	1 1/2	3/8	TC-VSK15-1500	1310
H60	1 1/2	3/8	TC-VSK15-1500	1310
H80	1 7/8	1/2	TC-VSK15-1875	1310
H110	2	1/2	TC-VSK25-2000	1505
H125	2	1/2	TC-VSK25-2000	1505
H150	2 7/16	5/8	TC-VSK25-2437	1505
H200	2 7/16	5/8	TC-VSK25-2437	1505
H250	2 3/4	5/8	TC-VSK45-2750	1960
H300	2 3/4	5/8	TC-VSK45-2750	1960
H350	2 3/4	5/8	TC-VSK45-2750	1960
H425	3	3/4	TC-VSK50-3000	3610
H500	3 1/2	7/8	TC-VSK50-3500	3610
H600 & UP	C/F	C/F	C/F	C/F

NOTE: The H80 1 7/8 bore coupling is available in 3/8 keyway to fit others.

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 seperating 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.

All Prices are F.O.B. Lubbock, TX

Approximate Shipping Weights and Dimensions

Model	Net Weight Lbs.	Gross Weight. Lbs		Box Dimensions in Inches			Volume
		Domestic & Container	Plywood	Width	Depth	Height	Cu. Ft.
H20	120	145	170	26	19	38	11
H40-12	225	250	280	26	19	38	11
H40	240	265	295	26	19	38	11
H60	250	275	305	26	19	38	11
H80	280	305	335	26	19	38	11
H110	385	410	440	26	19	38	11
H125	395	420	450	26	19	38	11
H150	640	680	720	34	23	47	21
H200	640	680	720	34	23	47	21
H250	900	1000	1050	41	31	54	40
H300	900	1000	1050	41	31	54	40
H350	1350	1470	1520	47	31	56	47
H425	1540	1650	1700	47	31	56	47
H500	1580	1690	1740	47	31	56	47
H600	1970	2100	2200	47	31	56	47
H750	2100	2200	2340	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.

JOHNSON GEAR
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