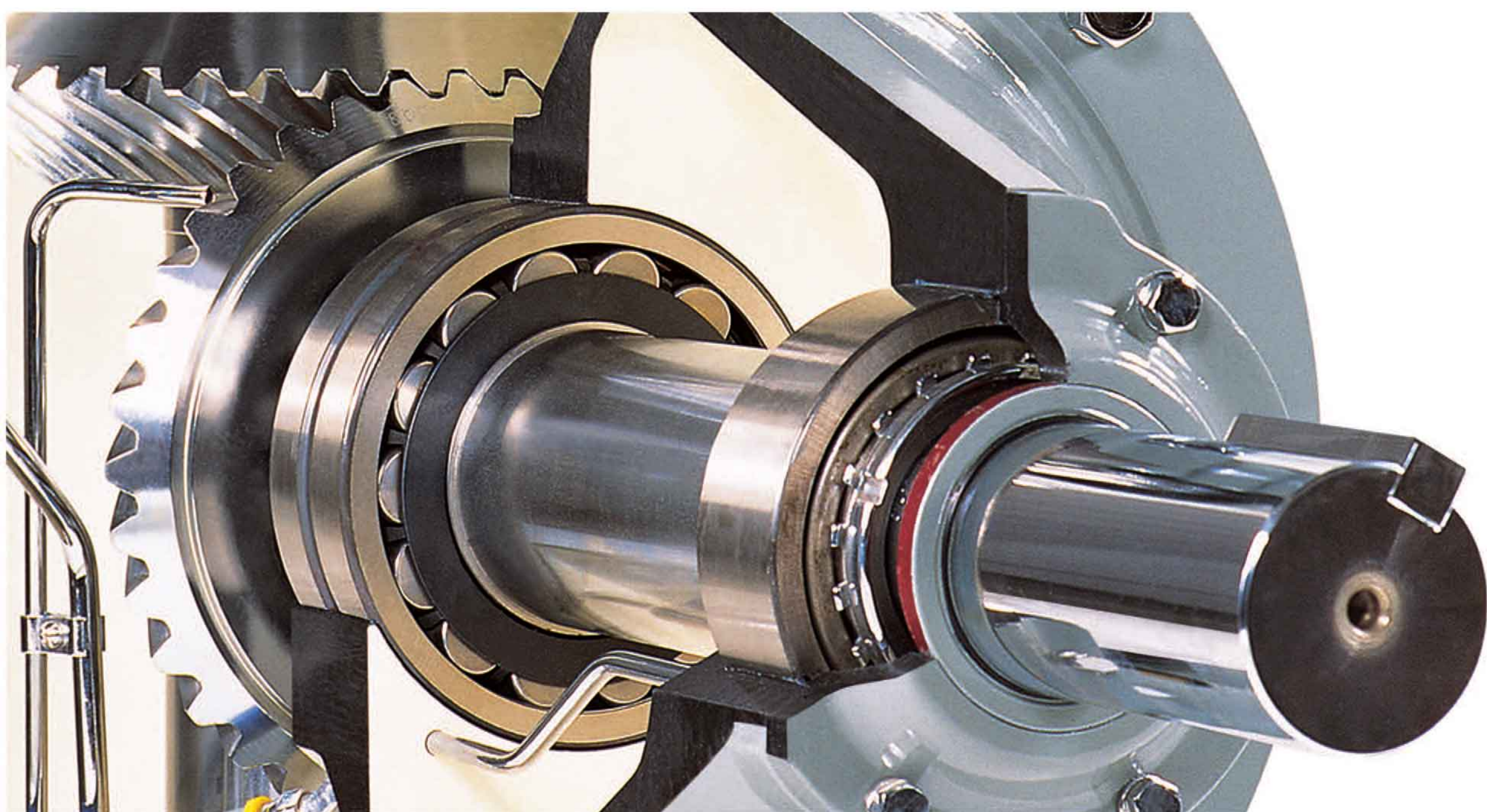


Right Angle Gear Drives



VISION

To be a leading local manufacturer and reliable partner providing engineered products and solutions to our customers.

MISSION

Supporting the socio-economic development of the Kingdom.

- Enhance local content through technology transfer and human capital development.
- Contribute to the development of Oil & Gas, Water and upcoming industrial initiatives.

Manufacturer of engineered metal products and provider of solutions to our customers.

- Exceed customer expectations through partnerships, high quality and timely delivery.
- Focus on operational excellence in the manufacturing of engineered products.

Involved proactively with our key stakeholders.

- Care for our employees, community and the environment.
- Maximize shareholder value through innovation and effective resource utilization.

VALUES

Commitment

Be reliable and add value to our customers.

Empowerment

Trust our employees to make the right decisions.

Integrity

Show transparency in everything we do.

Excellence

Operate professionally, safely and effectively.

Collaboration

Deliver through cooperation and team work.





Saudi Mechanical Industries Company

SMI is a world-class precision manufacturing company, offering a comprehensive service with emphasis on total customer satisfaction. With a dedicated and experienced team of skilled personnel, we provide an efficient service to achieve the required specifications and quality set by our customers.

Under license from Johnson Gear company (USA), Saudi Mechanical Industries Co. manufactures Right Angle Gear Drives with an output range of 20HP to 750HP in a wide selection of ratios to meet all requirements.

The Johnson Right Angle Gear Drive will give years of dependable and efficient service with a minimum of maintenance.

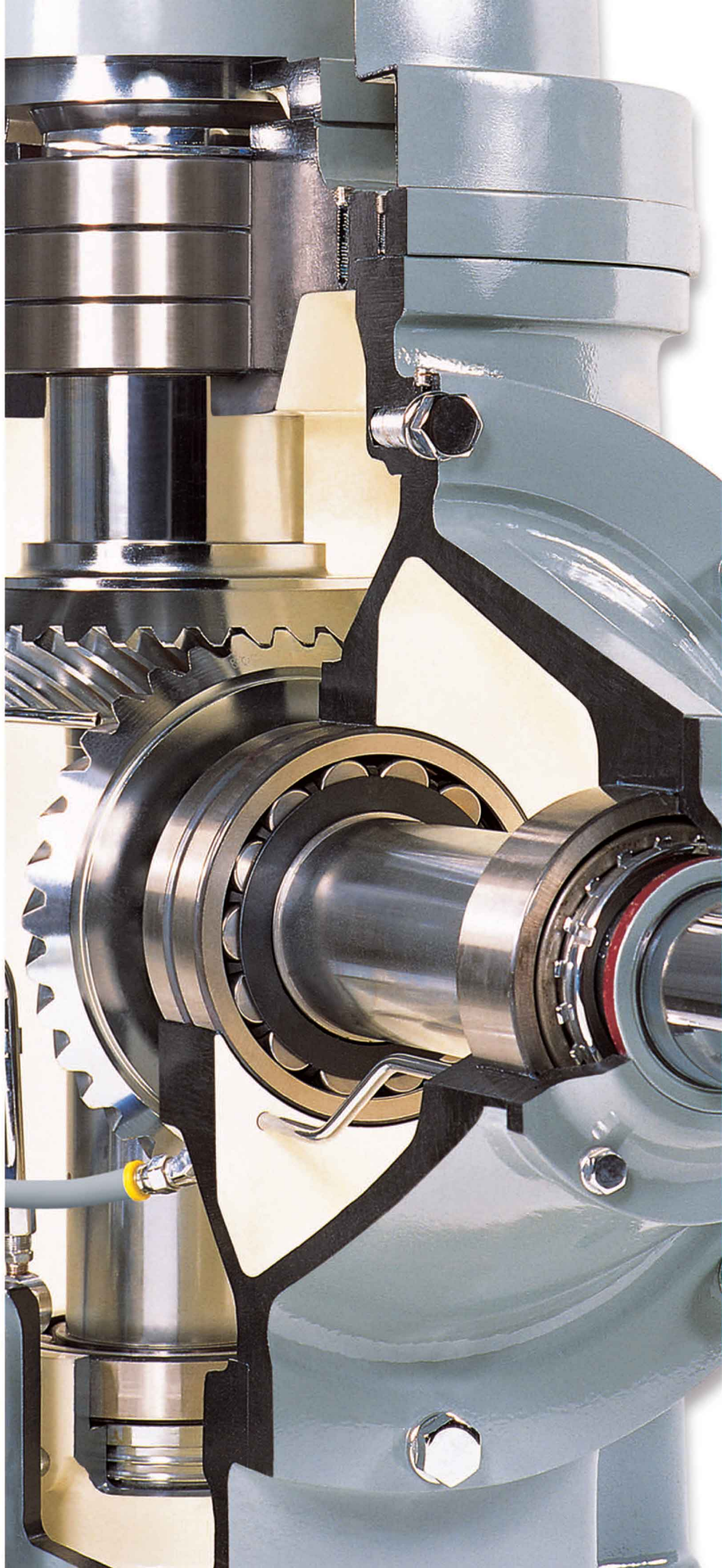
Johnson Right Angle Gear Drives provide positive power transmission from horizontal prime movers to vertical pumps. It offers economy, efficiency, space saving and ability to function well under varying climate conditions. Used in a variety of applications including agricultural irrigation, municipal water supply, sewage disposal and fire fighting pumps.

Johnson Right Angle Gear Drives are manufactured at Saudi Mechanical Industries Co. from basic raw materials to a finished product.

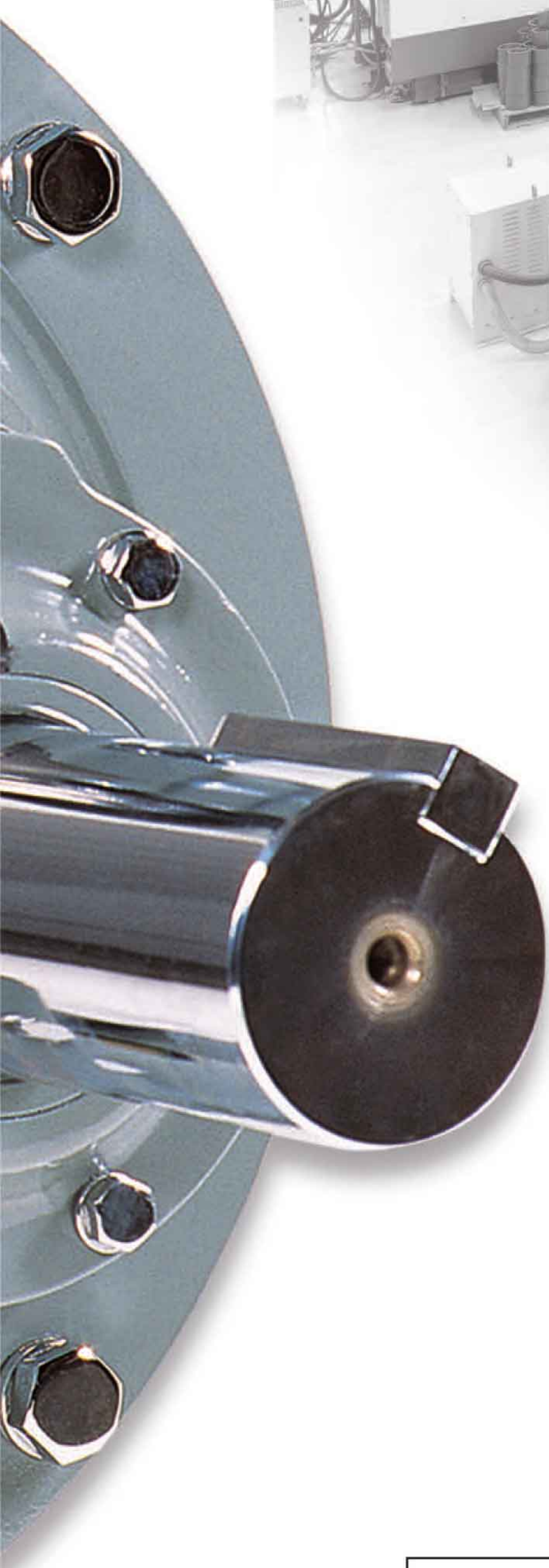
The modern purpose-built factory of Saudi Mechanical Industries Co. and its strong technical base has enabled it to increase its manufacturing capability from raw materials to a growing range of precision engineered products in a variety of specifications.

The factory is equipped with Computer Numerically Controlled machines (CNC) and the latest advanced machinery capable of producing products that meet the strictest international standards.

The combination of precision engineering and high quality materials along with precision manufacturing and quality control are the essence of Johnson Right Angle Gear Drives to ensure a product of reliability and high performance.

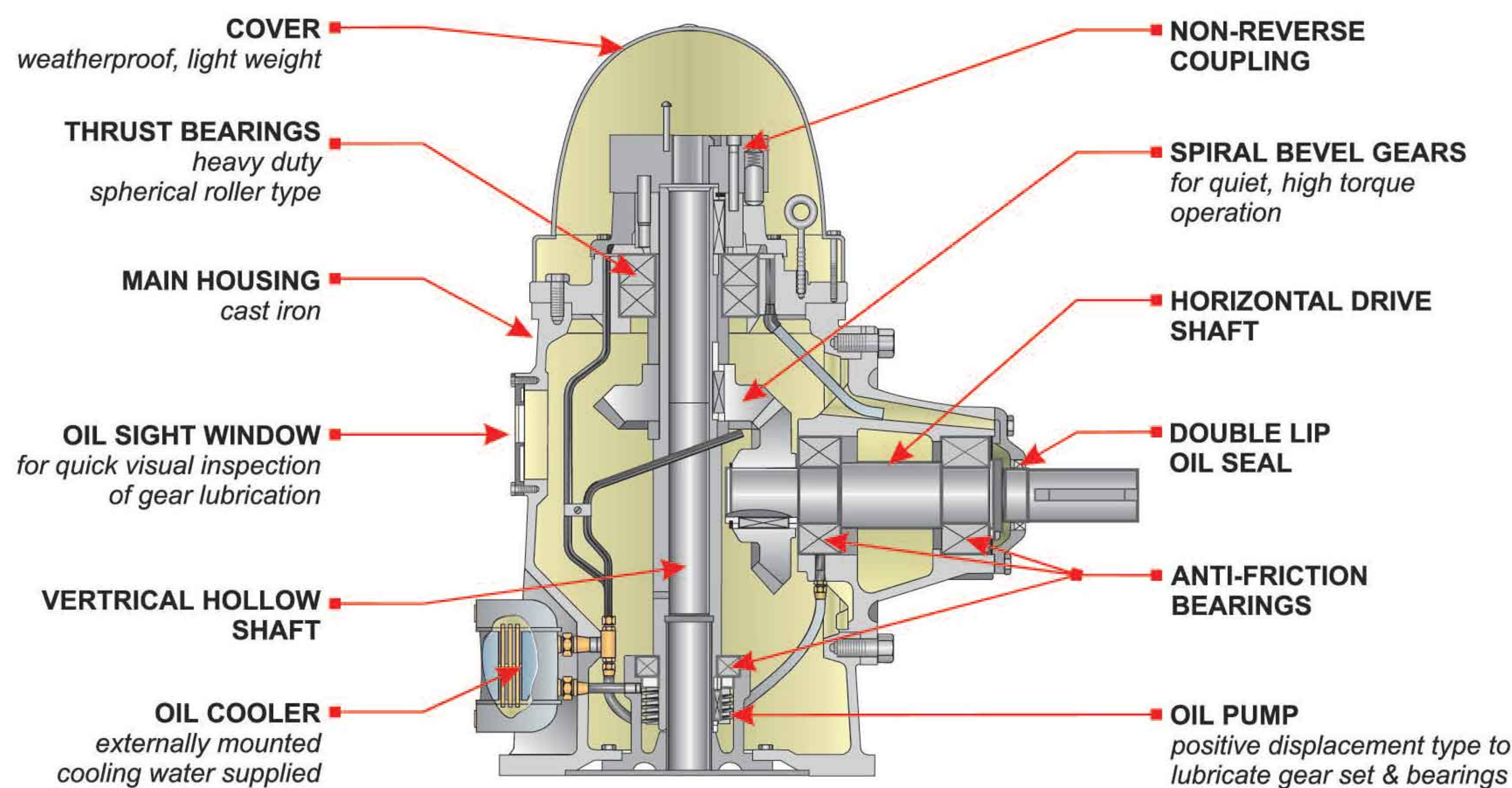


Manufacturing



Quality Management System

Specification



VERTICAL SHAFT R.P.M.	HORIZONTAL SHAFT R.P.M.							
	SPEED INCREASING RATIOS-DRIVER : DRIVEN							
	1:2	4:7	2:3	3:4	4:5	5:6	10:11	1:1
580	290	331	387	435	464	483	527	580
720	360	411	480	540	576	600	655	720
860	430	491	573	645	688	717	782	860
1160	580	663	773	870	928	967	1055	1160
1460	730	834	973	1095	1168	1217	1327	1460
1760	880	1006	1173	1320	1408	1467	1600	1760
3460*	1730	1977	2307	2595	2768	2883	3145	3460

VERTICAL SHAFT R.P.M.	HORIZONTAL SHAFT R.P.M.										
	SPEED DECREASING RATIOS-DRIVER : DRIVEN										
	11:10	6:5	5:4	4:3	3:2	7:4	2:1	9:4	5:2	11:4	3:1
580	638	696	725	733	870	1015	1160	1305	1450	1595	1740
720	792	864	900	960	1080	1260	1440	1620	1800	1980	2160
860	946	1032	1075	1147	1290	1505	1720	1935	2150	2365	2580
1160	1276	1392	1450	1547	1740	2030	2320	2610	2900	3190	3480
1460	1606	1752	1825	1947	2190	2555	2920	3285	3650	--	--
1760	1936	2112	2200	2347	2640	3080	3520	--	--	--	--

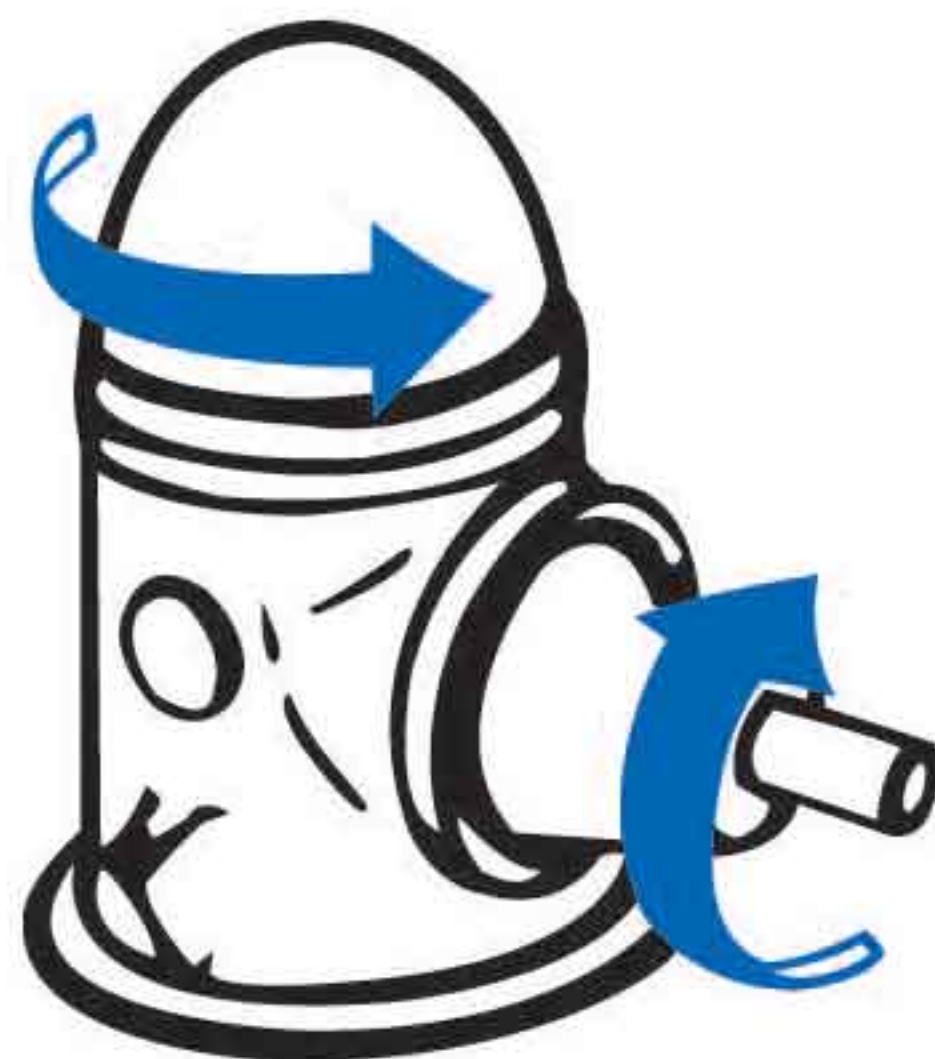


Fig 1

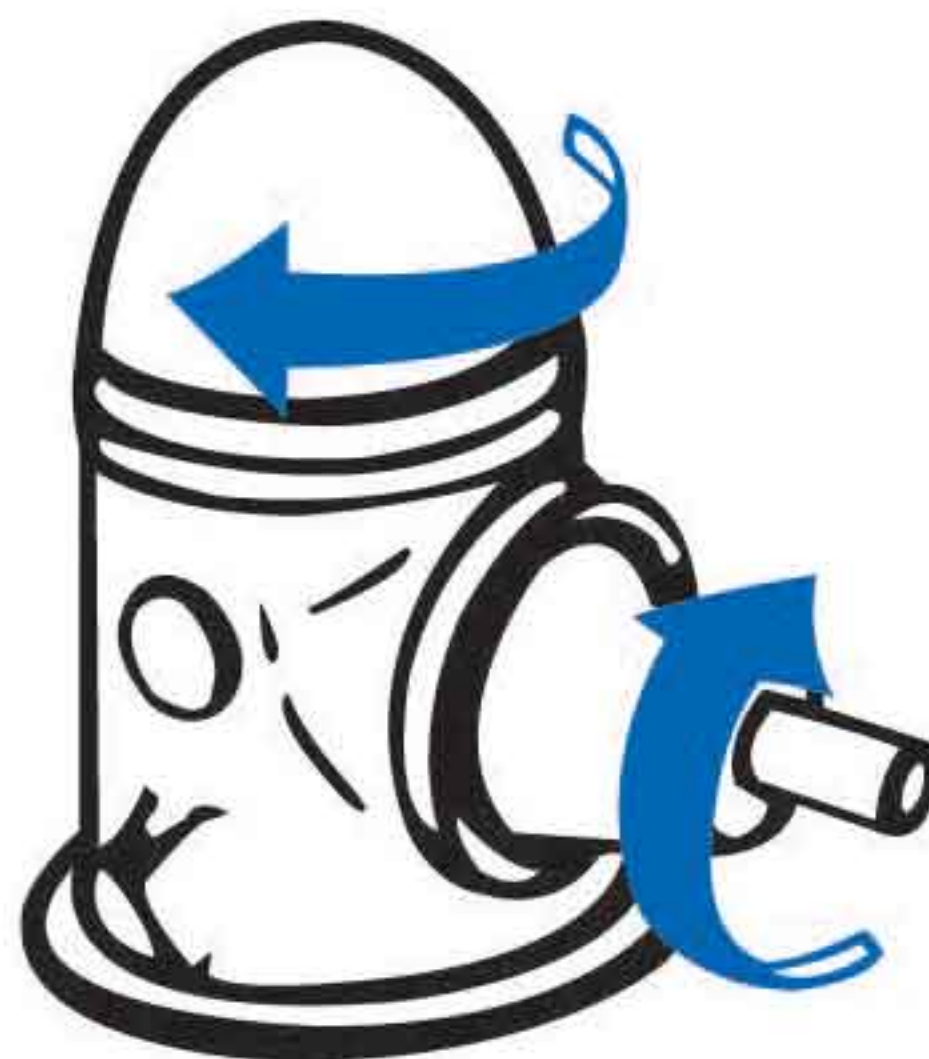


Fig 2



Fig 3

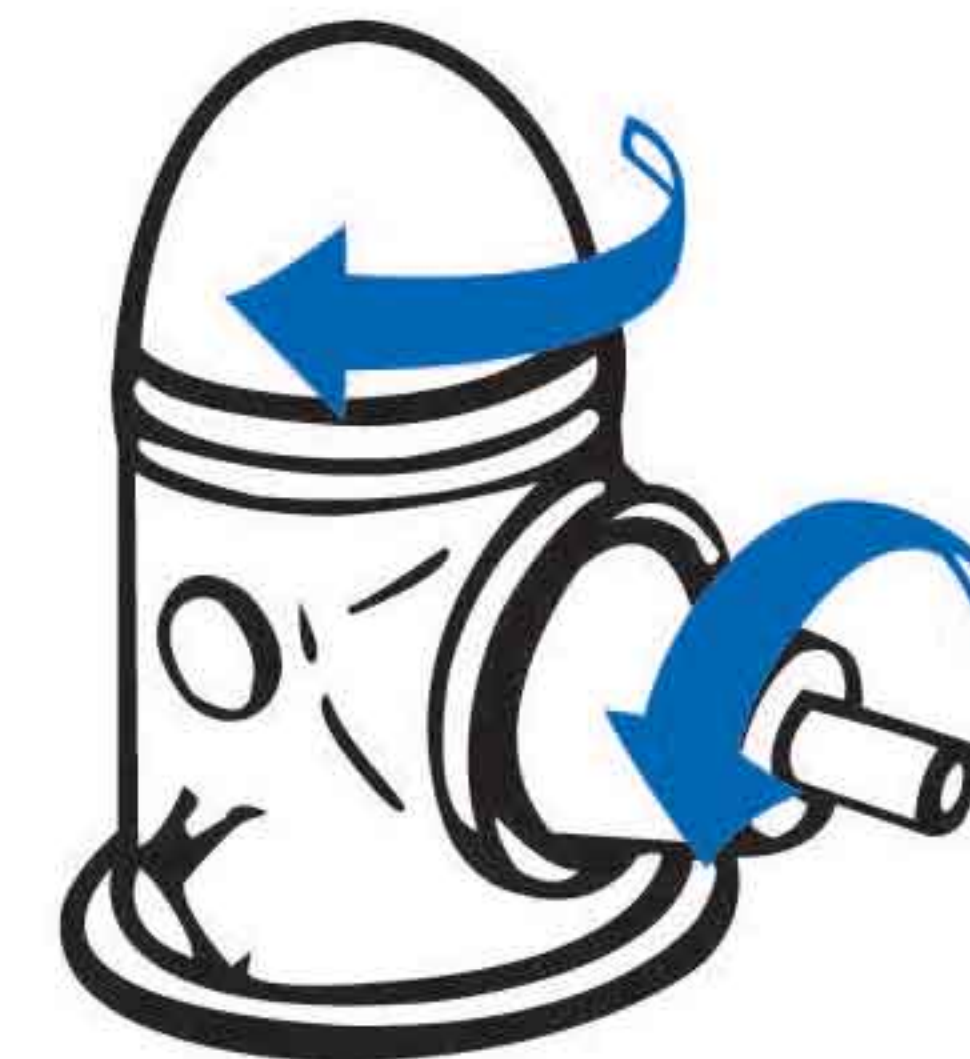
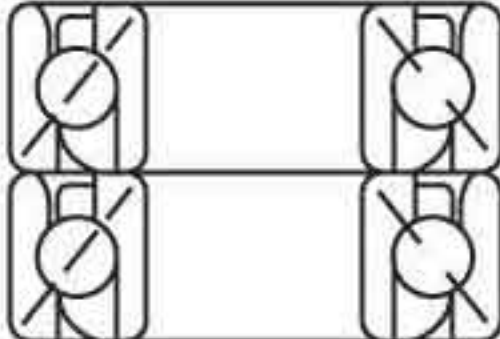
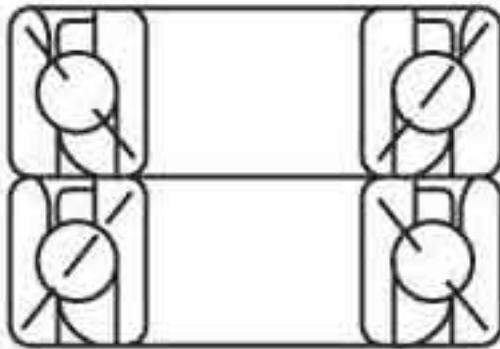
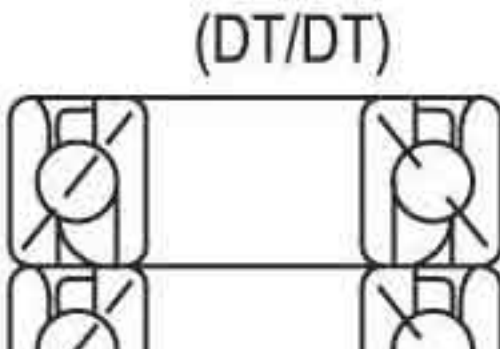
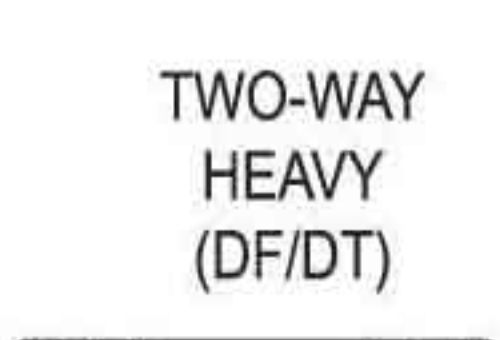
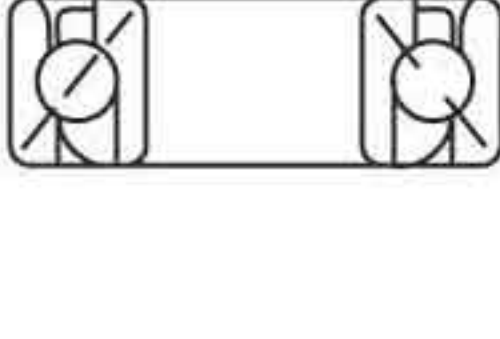
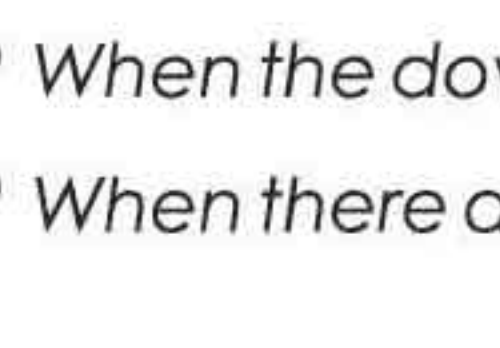
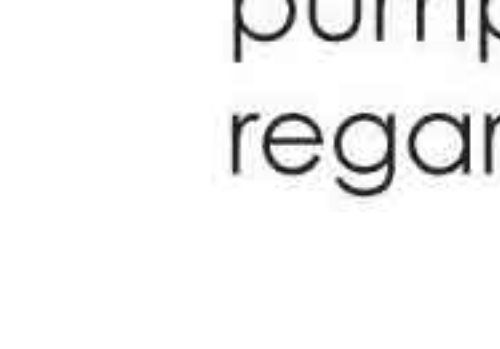


Fig 4



- **STANDARD ROTATION:** The direction of rotation of the vertical shaft is as viewed from above and the rotation of the horizontal shaft is as seen from the stub end. (Fig. 1)
- Gear drives with special rotations (Fig. 2,3 and 4) and gear drives with speed decreasing ratios of 7:4 or higher are manufactured upon order.

Thrust Capacity

BEARING ARRANGEMENTS	MODEL	VERTICAL	H.P.	STANDARD		HEAVY		Two way Downthrust or Upthrust Max.	MODEL	VERTICAL	H.P.	STANDARD		HEAVY		Two way Downthrust or Upthrust Max.
		SHAFT R.P.M.		DOWNTHRUST ONLY (lbs)						SHAFT R.P.M.		DOWNTHRUST ONLY (lbs)				
				MIN.	MAX.	MIN.	MAX.					MIN.	MAX.			
STANDARD (DT) 	H20	1160	15		1400	750	2300	1400	H200	720	100	3600	12000	3400	16200	6750
		1460	17		1300	750	2200	1300		860	116	3300	11000	3200	15300	6300
		1760	20		1200	750	2000	1200		1160	144	3050	10200	3000	14300	5700
		3460	30		1000	750	1600	1000		1460	172	2850	9500	2850	13500	5300
TWO-WAY (DF) 	H40	1160	30	900	4400			2600	H300	720	150	3750	13700	3750	18800	8200
		1460	35	850	4200			2500		860	174	3550	13000	3600	17900	7800
		1760	40	800	4000			2400		1160	216	3350	12200	3350	16700	7300
										1460	258	3150	11500	3150	15700	6900
STANDARD HEAVY (DT/DT) 	H60	860	34	1450	6000			3600	H350	720	175	4250	16300	4200	20000	9800
		1160	43	1300	5500			3300		860	203	4050	15500	4000	19000	9300
		1460	52	1250	5200			3100		1160	252	3750	14400	3750	17800	8600
		1760	60	1200	5000			3000		1460	301	3550	13600	3500	16700	8200
TWO-WAY HEAVY (DF/DT) 	H80	860	46	2050	7400	1500	9700	4400	H425	720	213	4650	18700	4750	25000	11200
		1160	58	1950	6900	1500	9100	4100		860	246	4450	17900	4550	24000	10700
		1460	69	1800	6400	1500	8300	3800		1160	306	4150	16600	4200	22000	10000
		1760	80	1700	6000	1500	8000	3000		1460	366	3900	15700	4000	21000	9400
TWO-WAY HEAVY (DF/DT) 	H110	860	63	2350	7400	1800	9700	4400	H500	720	250	5250	18700	5250	25000	11200
		1160	80	2200	6900	1800	9100	4100		860	290	5000	17900	5050	24000	10700
		1460	95	2050	6400	1800	8500	3800		1160	360	4650	16600	4600	22000	10000
		1760	110	1900	6000	1800	8000	3000		1460	430	4400	15700	4400	21000	9400
TWO-WAY HEAVY (DF/DT) 	H125	720	63	2900	8500	2800	12200	5100	H600	720	300	5500	20000	5450	26000	12000
		860	72	2700	8000	2650	11600	4800		860	348	5200	19000	5250	25000	11400
		1160	90	2550	7500	2500	10800	4500		1160	432	4900	17800	4850	23000	10700
		1460	108	2400	7000	2300	10100	4200		1460	516	4600	16700	4600	22000	10000
TWO-WAY HEAVY (DF/DT) 	H150	1760	125	2200	6500	2200	9500	3900	H750	1760	600	4400	16000	4400	21000	9600
		720	75	3050	9800	3150	15000	5900		720	CONSULT FACTORY					
		860	87	2950	9400	3000	14300	5600		860						
		1160	108	2750	8800	2800	13300	5300		1160						
TWO-WAY HEAVY (DF/DT) 	H150	1460	129	2600	8300	2600	12500	5000	H750	1460	CONSULT FACTORY					
		1760	150	2500	8000	2500	12000	4800		1760						

- Unless otherwise specified, Saudi Johnson Gear units are equipped with a thrust bearing arrangement necessitating a minimum downthrust to prevent bearing separation. Ratings are shown in the Standard column apply, see above.
- When the downthrust exceeds the values of the STANDARD column, select a suitable size from the HEAVY THRUST column.
- When there are conditions of sustained upthrust, or minimum downthrust is not available in the installation, other bearing arrangement can be provided.

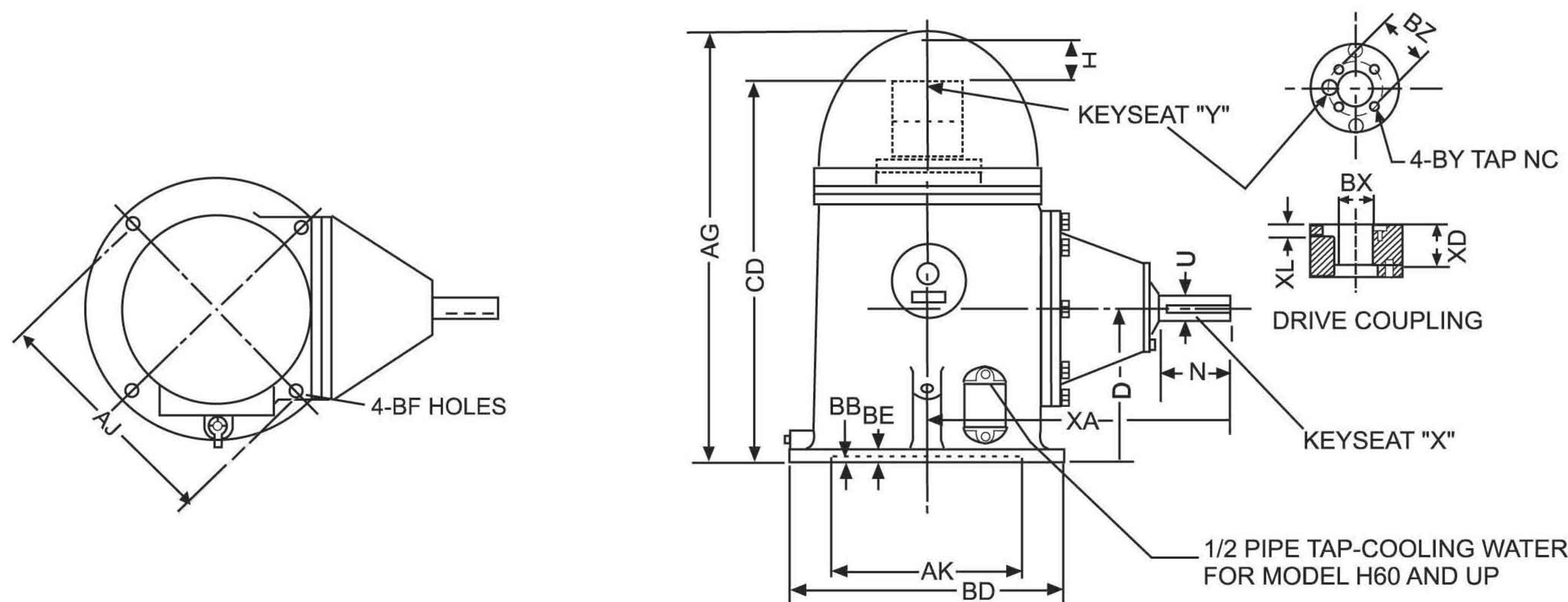
Power Ratings

The Johnson Gear Drive model number indicates the normal horsepower at 1760 RPM of the vertical pump shaft. Horsepower and thrust capacities are based on vertical shaft speed and apply regardless of gear ratios.

SERVICE FACTOR: Ratings in the catalog tables incorporate an adequate service factor for continuous duty when driving a centrifugal or turbine type deep well pump. To select the correct size gear drive, use the tabulated values directly to match the horsepower required by the pump. On other applications consult the factory.

The **AGMA** service factor for the spiral bevel gears is 1.5 or greater. Specific values for given applications are available on request.

Dimensions



CD and H dimensions for all heavy thrust drives and U-XA-N and XD dimensions for all speed decreasing ratios in models H150 and up are subject to change.

MODEL	CD	D	U	XA	N	AG	H	BE	BD	AJ	AK	BB	BF	KEYSEAT X	BX		XD
															MAX	STD.	
H20	14-1/2	6-3/8	1-1/8	13	2-3/4	18	3	5/8	10	9-1/8	8-1/4	3/16	7/16	1/4 X 1/8 X 2-1/4	1	+	1-1/4
H40(12)	20-1/4	9	1-1/2	16	3-1/2	24-3/4	4	3/4	12	9-1/8	8-1/4	3/16	7/16	3/8 X 3/16 X 2-3/4	1-1/2	+	1-3/4
H40	20-1/4	9	1-1/2	16	3-1/2	24-3/4	4	3/4	16-1/2	14-3/4	13-1/2	3/16	11/16	3/8 X 3/16 X 2-3/4	1-1/2	1	1-3/4
H60	20-1/4	9	1-1/2	16	3-1/2	24-3/4	4	3/4	16-1/2	14-3/4	13-1/2	3/16	11/16	3/8 X 3/16 X 2-3/4	1-1/2	1	1-3/4
H80	20-1/4	9	1-7/8	16-1/2	3-1/2	24-3/4	4	3/4	16-1/2	14-3/4	13-1/2	3/16	11/16	1/2 X 1/4 X 2-3/4	1-1/2	1-1/4	1-3/4
H110	25	11-3/8	2	17-1/2	3-1/2	29-1/2	4	1	16-1/2	14-3/4	13-1/2	3/16	11/16	1/2 X 1/4 X 2-3/4	1-1/2	1-1/4	2-1/8
H125	25	11-3/8	2	17-1/2	3-1/2	29-1/2	4	1	16-1/2	14-3/4	13-1/2	3/16	11/16	1/2 X 1/4 X 2-3/4	1-1/2	1-1/4	2-1/8
H150	30	13-1/4	2-7/16	20-1/2	4-3/4	34-1/2	4	1	20	14-3/4	13-1/2	3/16	11/16	5/8 X 5/16 X 3-3/4	1-15/16	1-1/2	2-3/8
H200	30	13-1/4	2-7/16	20-1/2	4-3/4	34-1/2	4	1	20	14-3/4	13-1/2	3/16	11/16	5/8 X 5/16 X 3-3/4	1-15/16	1-1/2	2-3/8
H300	34-1/4	15	2-3/4	24	5-1/2	40	5-1/4	1-1/8	20	14-3/4	13-1/2	3/16	11/16	5/8 X 5/16 X 3-3/4	2	1-11/16	2-5/8
H350	38-1/2	16-1/2	2-3/4	29	5-1/2	46	7	1-1/4	24-1/4	22*	13-1/2	3/16	15/16	5/8 X 5/16 X 3-3/4	2-3/16	1-11/16	3
H425	39-1/2	16-1/2	3	30	5-3/4	46	6-1/4	1-1/4	24-1/4	22*	13-1/2	3/8	15/16	3/4 X 3/8 X 4-3/4	2-7/16	1-15/16	3-3/8
H500	39-1/2	16-1/2	3-1/2	31	6-3/4	46	6-1/4	1-1/4	24-1/4	22*	13-1/2	3/8	15/16	7/8 X 7/16 X 5-1/2	2-7/16	1-15/16	3-3/8
H600	42-1/2	16-1/2	3-3/4	33	7-1/2	51	8	1-1/4	24-1/4	22*	13-1/2	3/8	15/16	7/8 X 7/16 X 5-1/2	2-11/16	1-15/16	4
H750	45	20-1/2	3-3/4	33	7-1/2	56	11	1-5/16	24-1/4	22*	13-1/2	3/8	15/16	7/8 X 7/16 X 5-1/2	2-11/16	2-3/16	4

Tolerances: Shaft extensions +0.000-0.001
Base Rabbet AK +0.002, +0.005
Coupling Bore BX +0.0005 +0.0015
*Also 5/8-11 Tap on 14-3/4 Bolt Circle 1" Deep

+ = Consult factory

Dimensions in Inches



BX BORE	BZ BOLT CIRCLE	BY TAP	XL DEPTH	Y KEYSEAT
3/4	1-3/8	10-32	5/16	3/16 X 3/32
1	1-3/8	10-32	7/16	1/4 X 1/8
1-3/16	1-3/4	1/4-20	7/16	1/4 X 1/8
1-1/4	1-3/4	1/4-20	9/16	1/4 X 1/8
1-7/6	2-1/8	1/4-20	9/16	3/8 X 3/16
1-1/2	2-1/8	1/4-20	9/16	3/8 X 3/16
1-11/16	2-1/2	1/4-20	9/16	3/8 X 3/16
1-15/16	2-1/2	1/4-20	11/16	1/2 X 1/4
2-3/16	3-1/4	3/8-16	11/16	1/2 X 1/4
2-7/6	3-1/4	3/8-16	11/16	5/8 X 5/16
2-11/16	3-3/4	3/8-16	11/16	5/8 X 5/16

Quality Control



It is the fundamental objective of Saudi Mechanical Industries Co. to provide High Quality Johnson Gears.

Saudi Mechanical Industries Co. shall always aim to achieve a level of Customer Satisfaction and Quality image that will portray the Company as a leader in its defined markets. All Johnson Gear units are passing a very restricted procedure and test facility to present our client a very efficient quality unit.



Service & Warranty

Saudi Mechanical Industries provides a separate and fully equipped centre for service and spare parts of Johnson Gears. The centre caters for all requirements of service maintenance, reproduction and itemized part sales. A test station is the final step of service which guarantees proper performance under actual field conditions.

The Johnson Right Angle Gear Drive is warranted to be free from defects in materials and workmanship under normal use and service for a period of one year from the date of factory shipment. Warranty is only when operated within the rated capacity for which it was supplied and in accordance with recognized usage and practice.

Packing & Weights

Approximate Shipping Weights and Dimensions

Model	Net Weight Lbs.	Gross Weight - Lbs.			Box Dimensions - Inches			Volume Cu. Ft.
		Domestic	Container	Plywood	Width	Depth	Height	
H20	120	145	160	175	25	19	37	10
H40	240	265	280	295	25	19	37	10
H60	250	275	290	305	25	19	37	10
H80	280	305	320	335	25	19	37	10
H110	385	410	425	440	25	19	37	10
H125	395	420	435	450	25	19	37	10
H150	640	680	700	720	33	23	44	19
H200	640	680	700	720	33	23	44	19
H300	900	1000	1000	1050	40	30	51	35
H350	1390	1500	1500	1550	46	30	52	42
H425	1590	1700	1700	1750	46	30	52	42
H500	1610	1720	1720	1770	46	30	52	42
H600	2050	2230	—	2230	50	31	59	53

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





RELIABILITY &
ENDURANCE

www.smi.com.sa



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