



MAGMAFLO

POSITIVE DISPLACEMENT ROTARY PUMPS

MANUFACTURED IN DURBAN, SOUTH AFRICA



POSITIVE DISPLACEMENT ROTARY PUMPS

The robust **Magmaflo** pump is the latest in a long line of positive displacement rotary pumps which have proved their reliability and efficiency for over twenty years.

Designed for use in many arduous industrial applications: moving with ease, liquids, which vary in viscosity, from free-flowing fuel and light oils through to heavy duty bitumen and tars.

In one hour the impressive Magmaflo can move up to 180m³ of liquid at viscosities from 1.00CS - 44,000CS (200,000)SSU at temperatures reaching 180°C.

High output at slow speeds coupled with a smooth pumping action eliminates damage to the pumped product. This also means that the **Magmaflo** has greater reliability and pump life - a saving in costs with minimal maintainance and down time.

Tailor-made solutions to the most complex pumping problems are easy for the magmaflo which allow for maximum flexibility in combining pump elements, and a wide choice of materials.

HOW IT WORKS

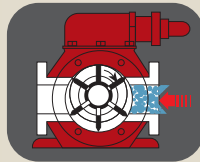
The Magmaflo is a self priming positive displacement pump of simple rotary sliding vane design.

As the rotor revolves, a fixed volume of fluid is discharged. This is moved from the suction port to the discharge port by the vanes which slide within the rotor against the pumping chamber wall.

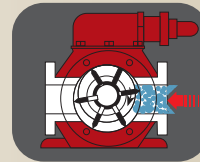
Three forces ensure close contact between the vanes and the pumping chamber wall.

1. Pump rotation produces centrifugal force.
2. Idler rings located within the rotor.
3. Hydraulic pressure from behind the vanes.

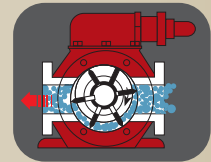
SLIDING VANE PUMP ACTION



1. As the pump rotor revolves, mechanical, centrifugal & hydraulic forces move the sliding vanes outward from their slot in the rotor towards the suction port.



2. A vacuum is created by the expanded chamber & the fluid is drawn in & positioned between the vanes where it is transferred to the outlet port for discharge.



3. As the vanes reach the summit of the cycle they are pressed into their slots by the roof of the pumping chamber.

PRODUCTS WE PUMP



GLUCOSE & MOLASSES



SYRUPS & CHOCOLATE



EDIBLE OILS



PAINT & VARNISHES



CRUDE & LUBE OILS



CELLULOSE ACETATES,
LIQUID YEAST & GLUE



MELTED WAX & FATS



BITUMEN & TAR



LIQUID PARAFFIN



FUEL & LIGHT OILS

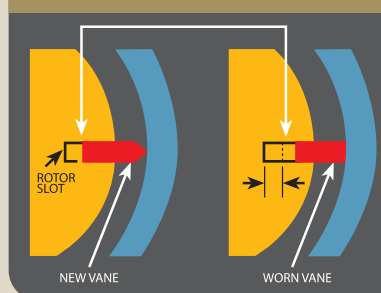


HEXANES & RESINS

SELF-ADJUSTING VANES SUSTAIN EFFICIENCY

The Magmaflo pump maintains high volumetric efficiency throughout service. Because the rotor vanes are self-adjusting, internal pump slip is reduced to a minimum. Suction and discharge capacity is unimpaired even after arduous service. Compensation for wear on the vanes is effected as the vanes are able to slide outward within their slots thereby maintaining the same fine clearance against the pumping chamber.

VANE COMPENSATES FOR WEAR BY SLIDING FURTHER OUT OF ROTOR SLOT



SLIDING VANES COST LESS TO MAINTAIN

The Magmaflo pump is designed to allow for easy maintainance without special tools and in most cases without even having to disconnect the pump from the piping system. To change vanes, simply remove the outer head and replace critically worn vanes as necessary. Routine servicing is just as easy, keeping downtime and maintainance costs to a minimum.

PUMP SELECTION GUIDE

SIZE	THEORETICAL DISPLACEMENT PER REV. (Imp.Gal) /Rev		MAXIMUM RPM SPEED	MAXIMUM DISPLACEMENT	
	IGMP	LM		IGMP	LM
20	0,018	0,082	400	7,2	33
40	0,093	0,422	400	37,2	169
50	0,150	0,682	350	52,5	239
75	0,329	1,495	350	115	523
80	0,329	1,495	350	115	523
100	0,589	2,677	350	206	937
150	1,650	7,362	300	495	2208
200	2,64	12,00	250	660	3000

VISCOSITY CONVERSION

1 Poise = 100 centipoise (CP) {dynamic}
 1 Stoke = 100 centistoke (CS) {kinematic}
 Poise = Stoke x Product Specific Gravity
 SSU = Poise x 455 (approx.)
 SSU = centistoke x 4/653 (for values over 70CS)

USEFUL CONVERSIONS

1 IMP GAL = 1.20 US GAL = 4.546 LITRE
 1 IMP GAL = 10.00lb x 5p Gr. weight in lbs
 1m³ = 219.9 IMP.GAL = 35.31cu ft

$$\text{HP} = \frac{\text{TORQUE lb/ft x RPM}}{5250}$$

$$1\text{cm}^3 = .06\text{IN}^3$$

$$1\text{IN}^3 = 16.39\text{cm}^3$$

$$1\text{HP} = .745\text{ Kw}$$

$$\text{bhp} = \frac{\text{GPM x PSI}}{1428 \times \text{Efficiency}}$$

$$1\text{ lb/ft} = 1.36\text{ Nm}$$

$$1\text{ Kg} = 2.205\text{lb}$$

$$\text{head in ft} = \frac{\text{head in PSI x 2.31}}{\text{sg}}$$

FIGURE 01 PERFORMANCE DATA BASED ON 5 BAR & VISCOSITY 32CS (1500SSU)

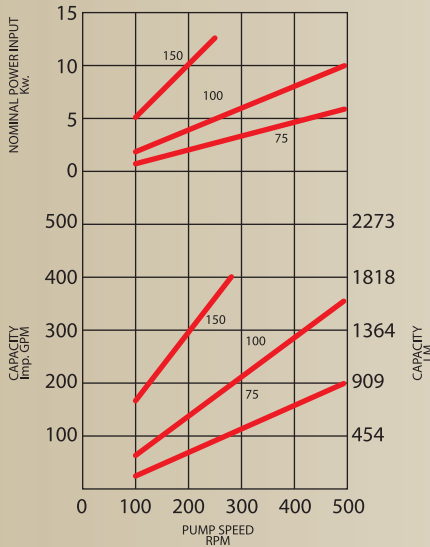


FIGURE 03 PERFORMANCE DATA BASED ON 5 BAR & VISCOSITY 32CS (1500SSU)

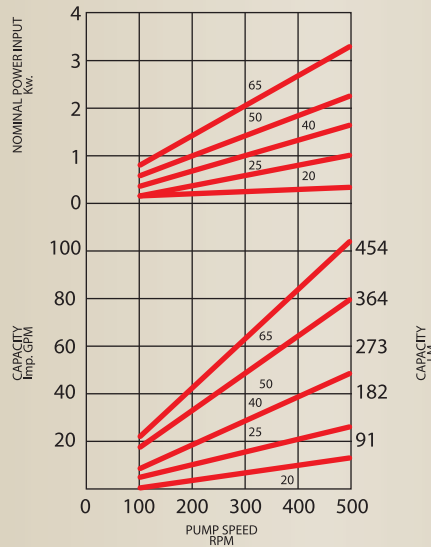


FIGURE 05 PERFORMANCE DATA BASED ON 5 BAR & VISCOSITY 32CS (1500SSU)

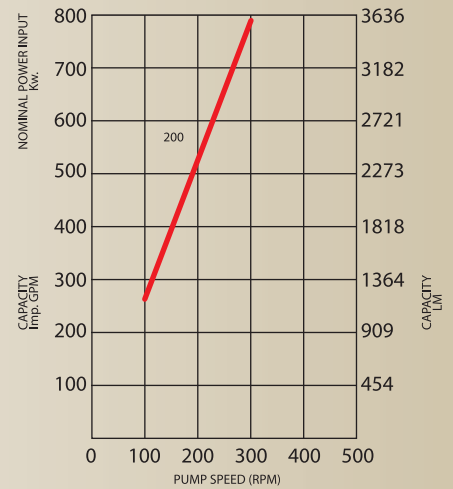


FIGURE 06 PERFORMANCE DATA BASED ON 5 BAR & VISCOSITY 32CS (1500SSU)

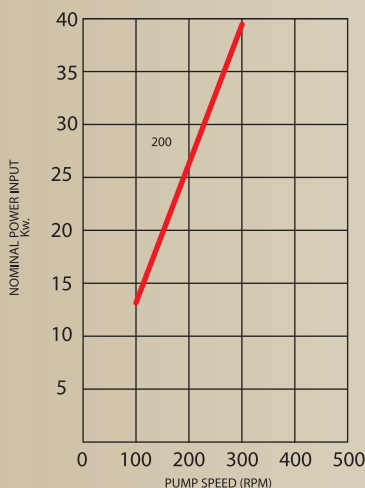


FIGURE 02 PUMP RATED SPEED = 500rpm (20mm - 100mm pumps) = 250 rpm (150mm pumps)

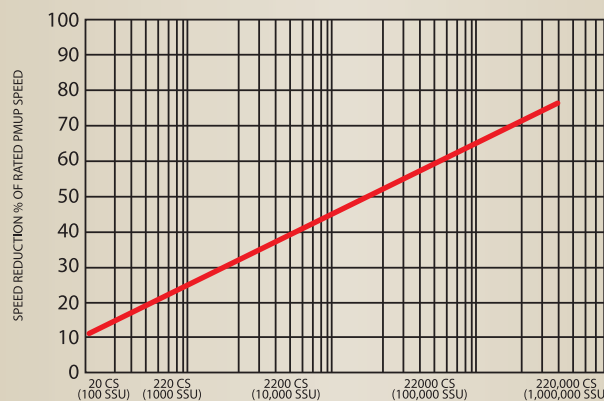
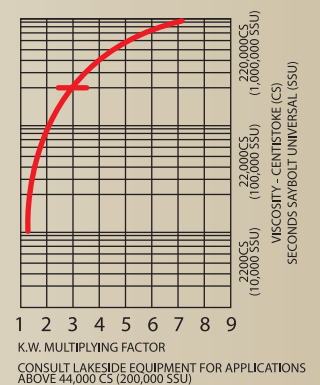


FIGURE 04 ROTARY PUMP SPEED REDUCTION CURVE VISCOSITY - CENTISTOKE (SSU)



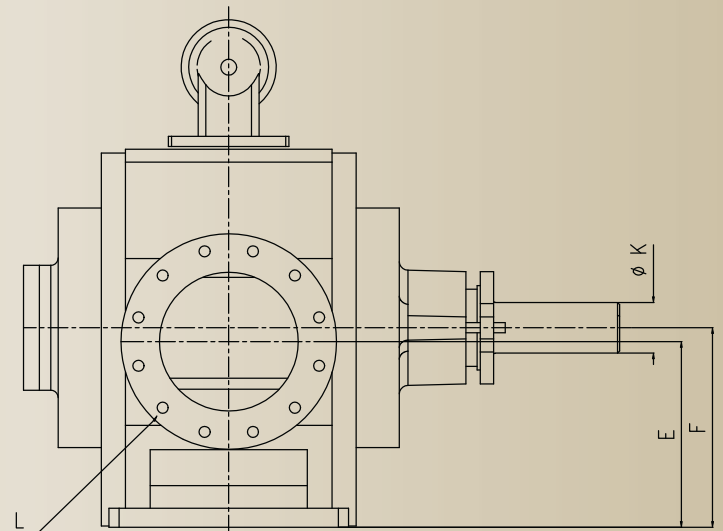
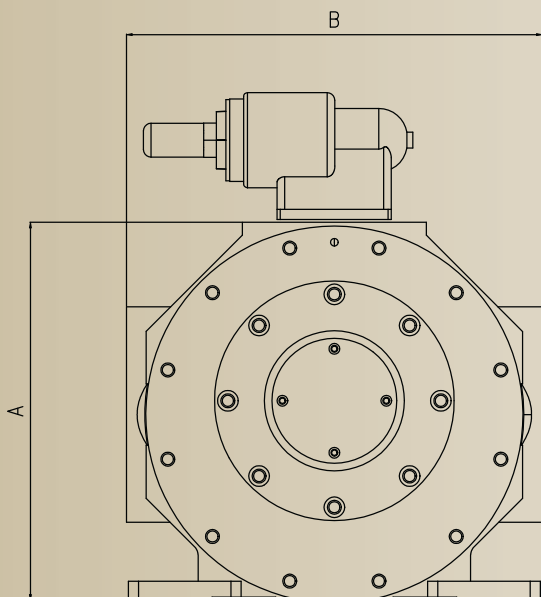
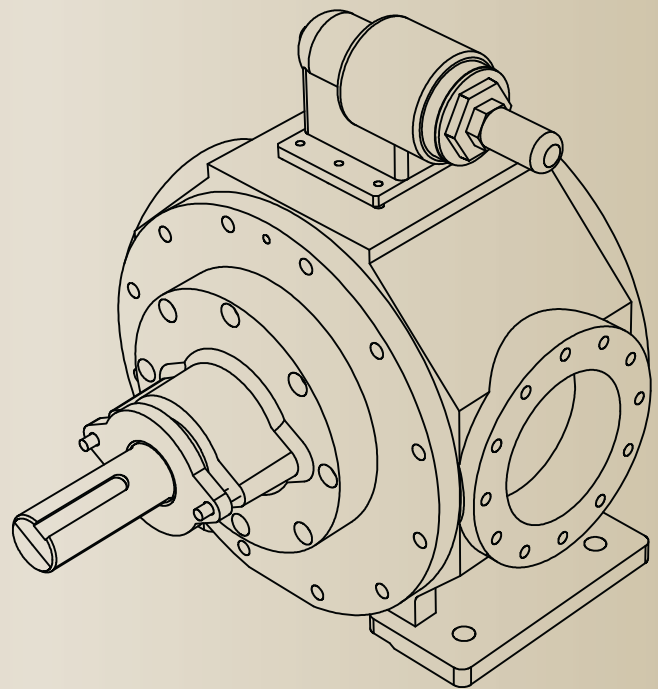
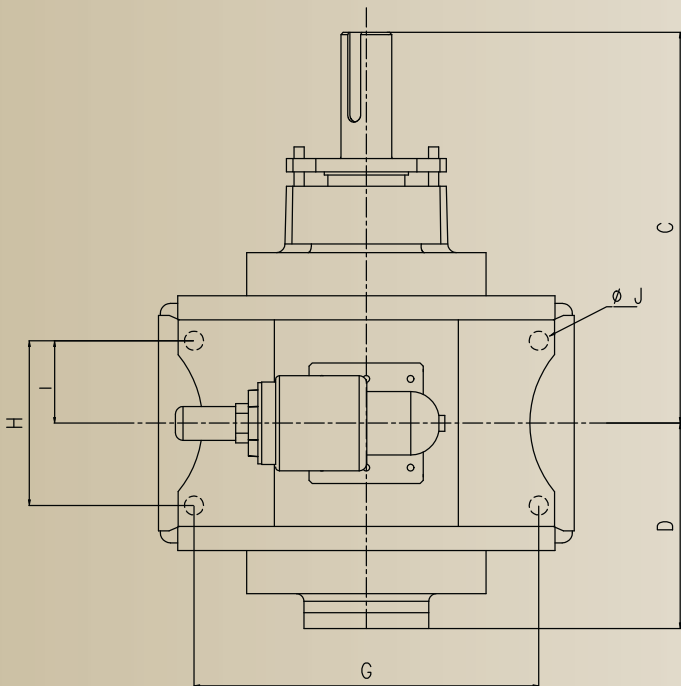
PUMP TYPES & DIMENSIONS

DIMENSIONS IN MILLIMETERS (mm)

NOTE: Jacketed pump sizes are typical to non-jacketed pumps

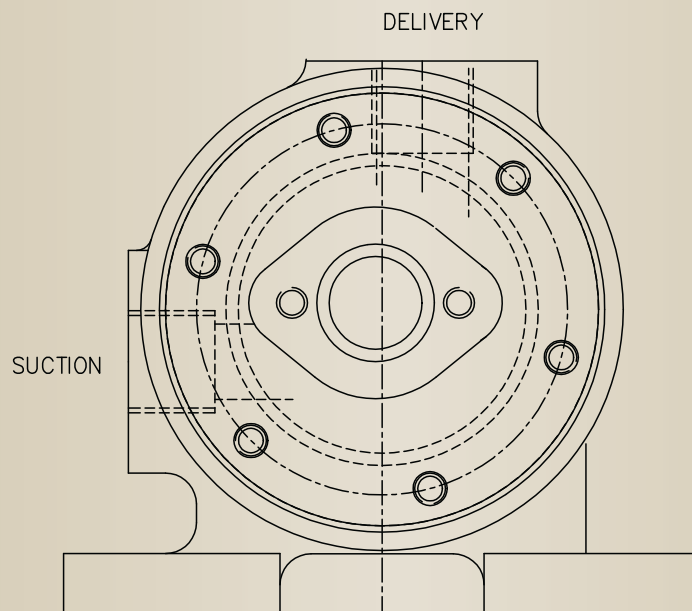
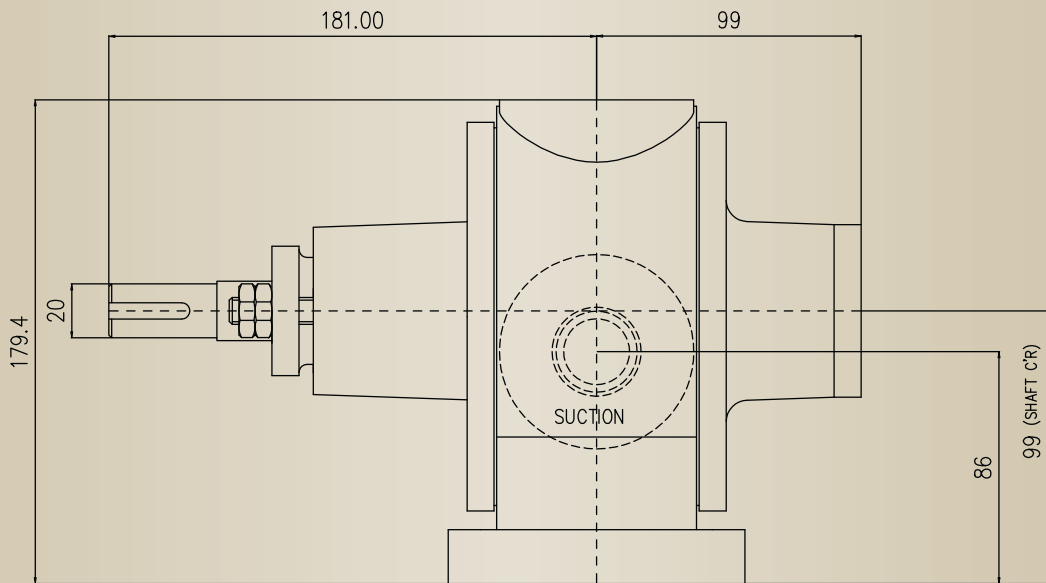
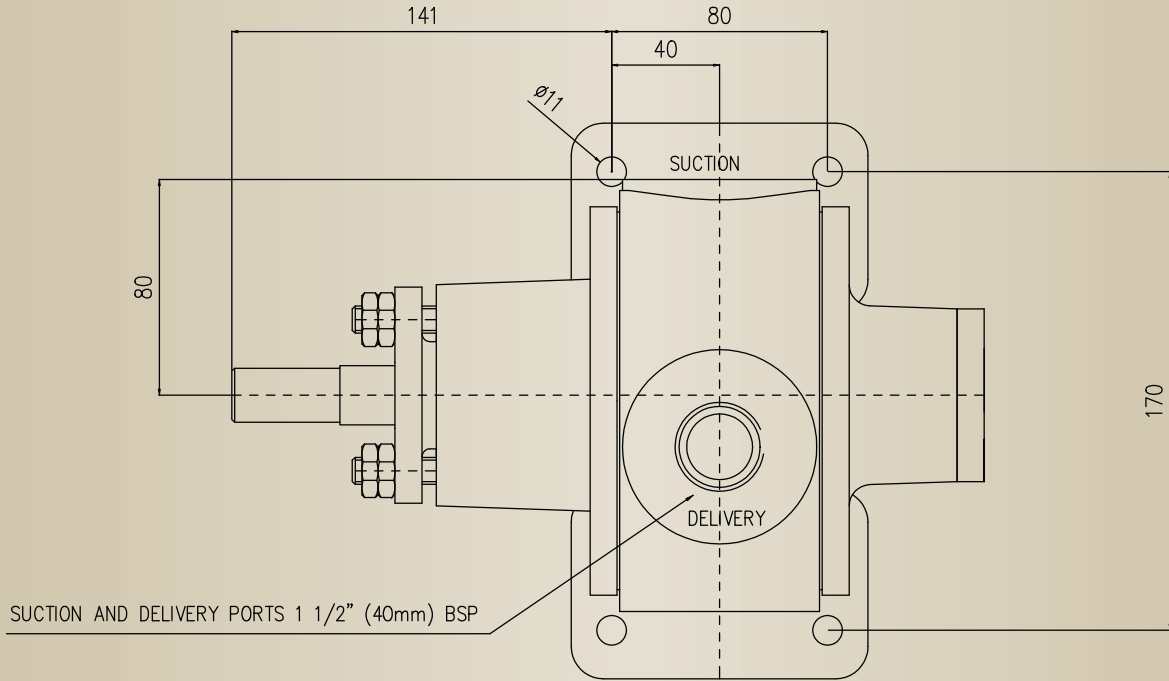
EG: 50JRV = 50mm Jacketed Rotary Vane Pump (J-Jacketed; R-Rotary; V-Vane)

	A	B	C	D	E	F	G	H	I	Ø J	Ø K	L
RV40	275	220	275	117	94	100.35	190	80	40	13	24	1 1/2" (48mm) BSP
RV50	217	294	346.5	146	109.4	117.9	185	80	40	14	28	115 PCD, 4X Ø18
RV75	262	240	353	142	124	135.9	200	90	45	14	28	103 X 103, 4 X m16
RV80	283	320	356.5	149	137	148	240	148	74	14	32	160 PCD, 8 X m16
RV100	367	400	484	240	189.5	202.3	317	152	76	18	50	180 PCD, 8 X m16
RV150	532	557	501.5	278	274.5	293	460	220	110	24	70	240 PCD, 8 x m20
RV200	595.5	656	616.5	324	293	314.8	544	260	130	30	80	295 PCD, 12 X m20

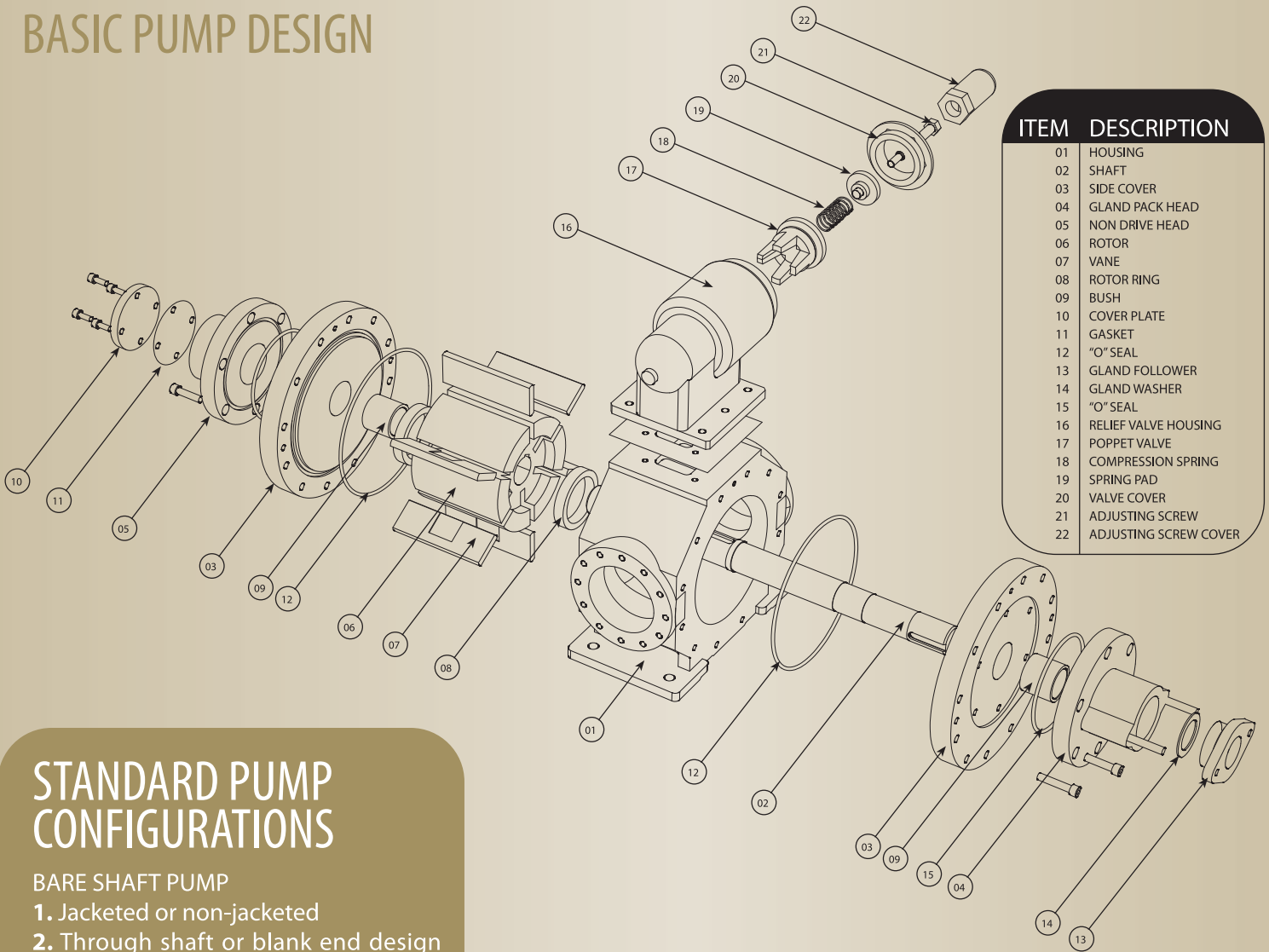


PUMP TYPES & DIMENSIONS

Rv20 and Rv30



BASIC PUMP DESIGN



ITEM	DESCRIPTION
01	HOUSING
02	SHAFT
03	SIDE COVER
04	GLAND PACK HEAD
05	NON DRIVE HEAD
06	ROTOR
07	VANE
08	ROTOR RING
09	BUSH
10	COVER PLATE
11	GASKET
12	"O" SEAL
13	GLAND FOLLOWER
14	GLAND WASHER
15	"O" SEAL
16	RELIEF VALVE HOUSING
17	POPPET VALVE
18	COMPRESSION SPRING
19	SPRING PAD
20	VALVE COVER
21	ADJUSTING SCREW
22	ADJUSTING SCREW COVER

STANDARD PUMP CONFIGURATIONS

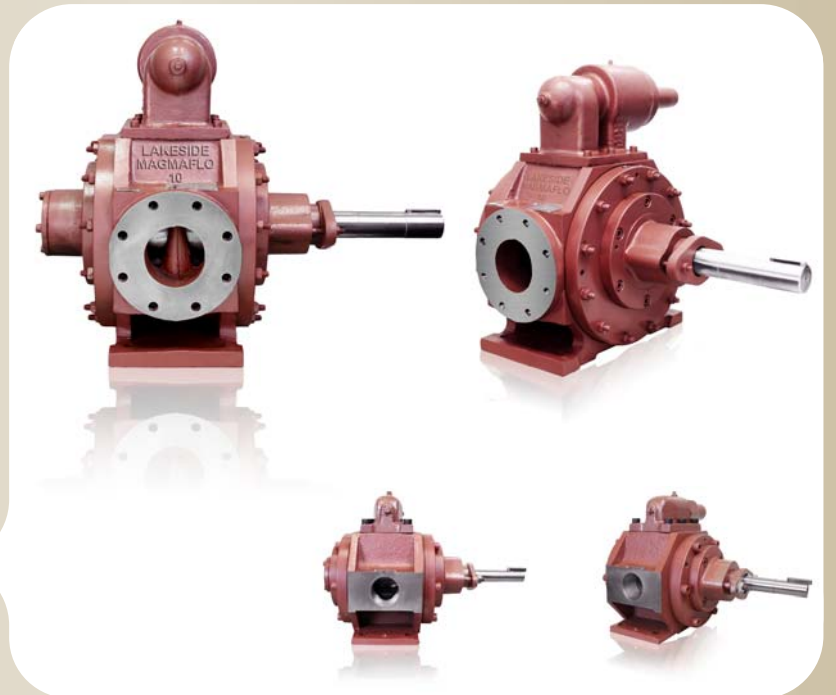
BARE SHAFT PUMP

1. Jacketed or non-jacketed
2. Through shaft or blank end design
3. Connecting ports available - flanged or threaded
4. Mechanical seal or packed gland. Plain bearing, or roller bearing
5. Seal flushing arrangement
6. Foot mounted

PUMPING UNIT

These are supplied complete with motorised (electric, hydraulic, I.C or pneumatic) drive units to meet with your specification.

1. Direct or indirect drive system
2. Constant or variable drive system
3. Electronic variable drive system
4. Electrical switch gear
5. Flow control meters, shut-off valves etc...



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