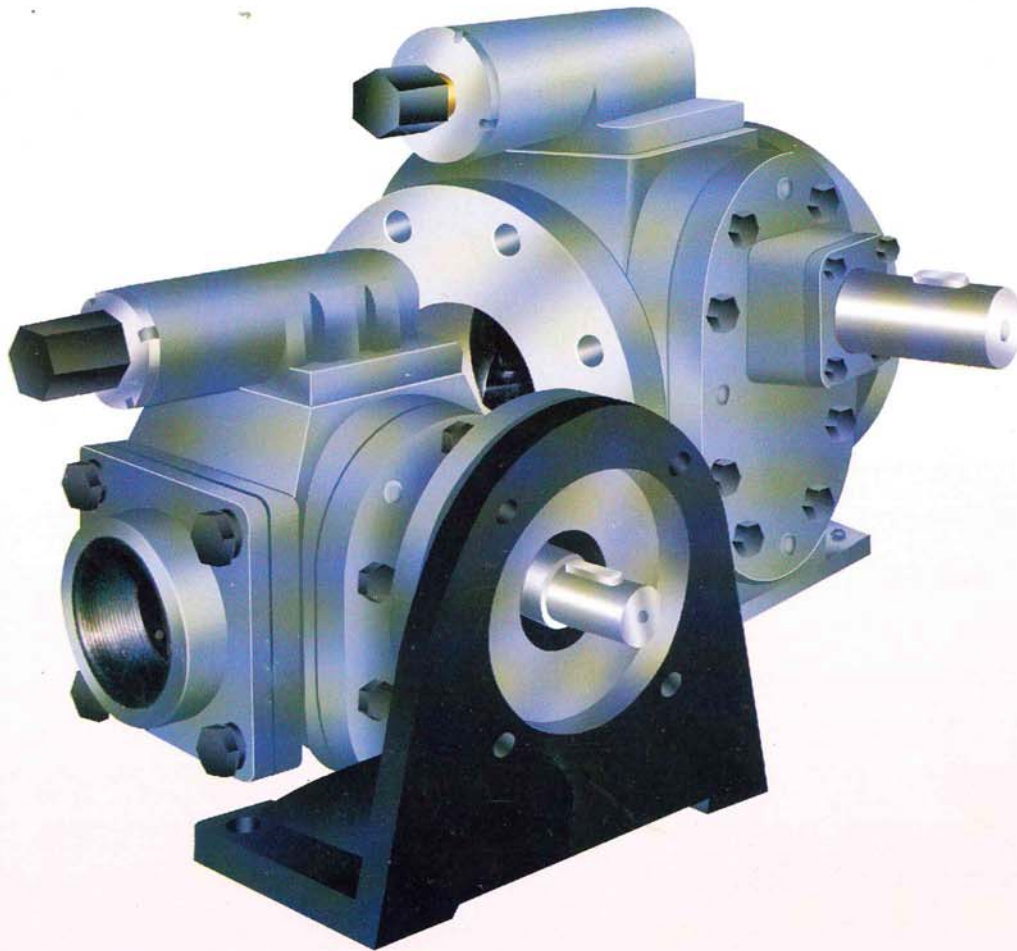




Rotary Gear Pump



type

RDBX - RDNX

From 1/2" to 6" Size, Capacity up to 125 M³/hr
Pressure up to 21 bar Viscosity 1,00,000 CST
temperature - up to 110° C

EFFICIENT - RELIABLE - PROVEN - COMPACT

The Preferred One

A CLASSIC ROTARY GEAR PUMP SERIES FROM DEL

PUMP OPERATION & PERFORMANCE CHARACTERISTICS : Gear pump is the most versatile rotary positive displacement pump & it scores over other types of Pd pumps viz. Screw, Vane, Lobe, Tracoidal, Radial piston etc. & therefore it is used for the widest range of application i.e. loading- unloading, transfer, fuel pressurizing, hydraulic, lubrication in IC engines, Polymers metering applications etc. Gear pump can develop high pressure up to 210 bar in same configuration simply by tightening the working clearances & improving the workmanship, whereas in screw pump the thread length is needed to increase making the pump bulky & difficult to manufacture. In gear pump each tooth gap contributes to the capacity while in screw pump only one pitch length contributes to the capacity thus gear pumps are always compact & efficient. The capacity of the pump varies directly with speed but remain constant against pressure, however some liquid always by-passes to suction due to running clearance between the casing & impeller causing slip, which depends upon the differential pressure, viscosity of the liquid & the workmanship. Gear pumps are capable of handling liquids of any viscosity, the slip reduces with increase in viscosity but the frictional power increases. Though the pump has a self priming capability some net positive suction head (NPSH) is always required to avoid cavitation, this again depends on the viscosity of the liquid to be pumped & the pumping speed.

INTERNAL POWER LOSSES :

in rotary gear pumps are of two types. The mechanical loss is the power required to overcome friction drag of all the moving part within the pump while viscous loss is power loss due to fluid viscous drag & shearing action of the fluid, this can be calculated from the graph shown here.

HORSE POWER CALCULATION :

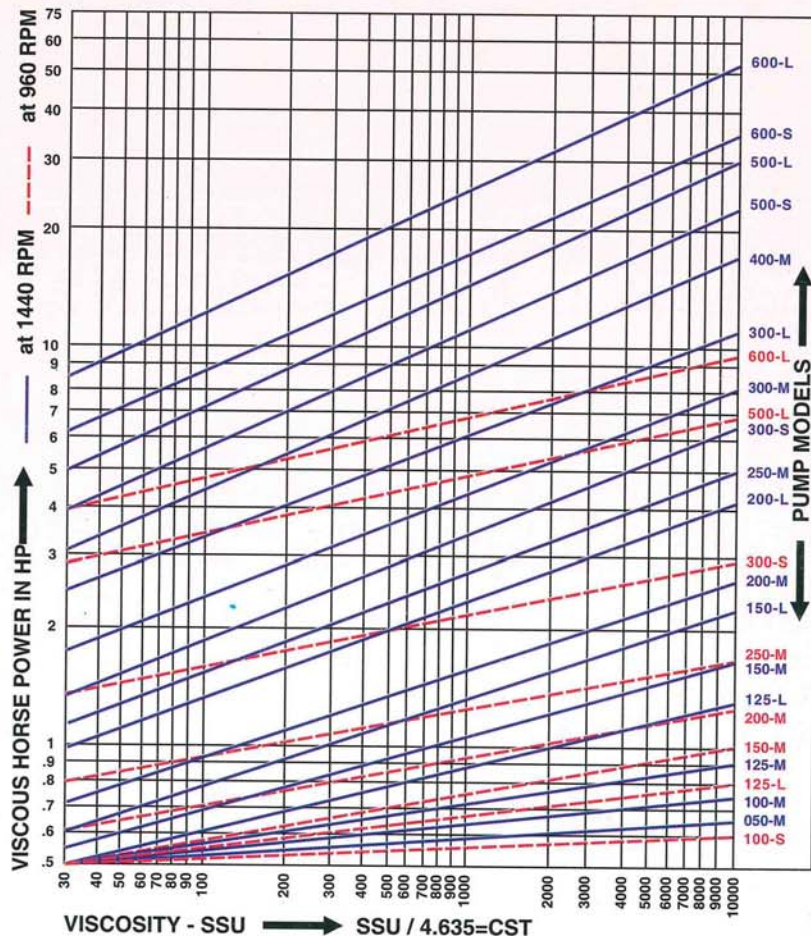
The bhp required to drive a rotary pump is sum of the theoretical HP & internal losses. The former is the actual work done in moving the fluid from inlet pressure condition to outlet pressure condition & is product of constant $C=0.037$, Capacity in M3/hr. & Pressure in Kg/Cm2 Or Constant $C=2.3$, Capacity in GPM & Pressure in PSI.

GEAR PUMP SELECTION & USES :

RDBX/NX series pump are medium pressure pumps designed for viscous pressure application up to 21 Bar. The bush bearing version type RDBX is used for clean or dirty viscous & semi viscous liquid where the shaft surface speed is less. Pump up to 2½" size can be run at 1440 RPM & for higher size the speed should be reduced to

960 RPM or lower. The self-lubricated needle roller bearing type can be used for clear viscous liquid & can be run at 1440 RPM for all the sizes. This pump are ideally suited for fuel pressurizing, hydraulic, medium pressure lubrication & transfer applications.

INSPECTION & TESTING : All pumps are assembled after due inspection of each & every parts & than they are tested for duty parameters in accordance with API-676 & JIS-B 8312-1976. Third party inspection are also offered, we are approved by following consultants & inspection agencies.



EIL - KPG - UHDE - TCE - PDIL - JACCOB H&G - TOYO - LURGI - LLOYD - IRS - BVQI - SIMMONS

A DEL ENTERPRISES



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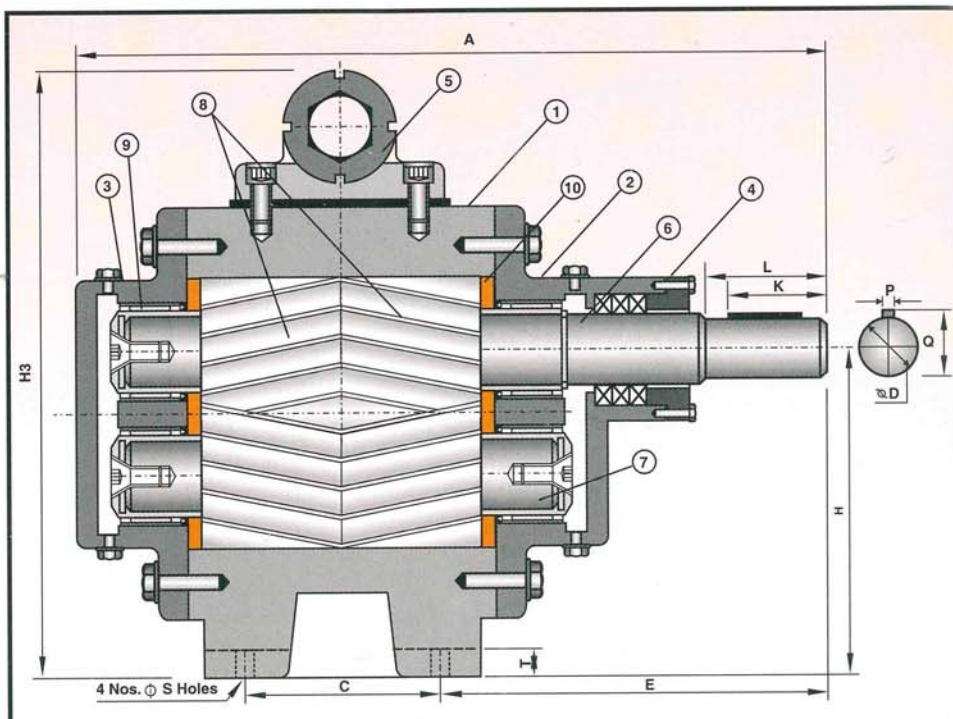
Rotary gear pump

Handling high volume of viscous liquid at medium pressure is a challenge & calls for expertise. We at DEL have acquired this over last 25 years through in house research & development based on customer feed back & field trials

The proven range of rotary twin gear pump type 'RDRN' have been modified to achieve high pressure by reducing the bearing span, balancing the hydraulic force & blocking the slippage path but without compromising on the basic features prominent with all ROTODEL rotary pumps viz the compactness, efficiency, reliability & low noise level.

A pair of impeller with herringbone gear fitted on hardened & ground shaft with shaft sleeves in floating design supported on either side on needle / bush bearings located on end covers with ltb. wearing plate packed in between and placed inside close tolerance accurately machined casing with built in pressure relief valve makes the pump. Size 1/2" to 2 1/2" are provided with BSP thread inlet - outlet flange connections & they are available with foot or flange mounting. Size 3" to 6" are foot mounted with inlet-outlet port drilled to ASA-300 class. Type RDBX is a bush bearing version & is offered upto 2 1/2" size.

This pump can also be offered with different MOC viz. CI, CS, Bronze, SS etc. Pump upto 35 bar are also offered in this series by further reducing the bearing span. The flange type pump coupled with flange type electric motor is offered in horizontal as well as vertical construction.



PARTS LIST WITH Material of Construction

SR.	ITEM	QT	MATERIAL
01	PUMP CASING	1	CI/CS/SS
02	FRONT COVER	1	CI/CS/SS
03	BACK COVER	1	CI/CS/SS
04	GLAND COVER	1	CI/CS/SS
05	R. V. BODY	1	CI/CS/SS
06	ROTOR SHAFT	1	EN 9/19/SS
07	STATOR SHAFT	1	EN 9/19/SS
08	IMPELLER GEAR	4	EN 24/SS
09	NEEDLE BRG	4	IKO / INA
10	WEAR PLATE	4	LTB
11	R. V. PISTON	1	EN 8/SS
12	R. V. SPRING	1	SPRI. STEEL
13	R. V. AD SCREW	1	EN 8/SS
14	BASE PLATE	1	M.S.
15	COUP. GUARD	1	ALUMN.
16	COUPLING	1	FLEXIBLE
17	COUP. KEY	1	EN 8/SS
18	SEALING SYS.	2	OS/MS/GP
19	DOWEL PIN	4	SILV. ST.
20	COMP. FLANGE	2	MS/SS
21	H/T HEX BOLT	12	EN 8/SS
22	INNER SLEEVE	4	EN - 31-57
23	V-SEAL	4	NITRILE.RU.
24	SNAP RING	1	EN - 31
25	C. S. SCREW	3	EN - 24

PUMP MOTOR CODING

SIGN # INDICATES PUMP SIZE
5 - SHORT, 6 - MEDIUM, 7 - LONG

SIGN @ INDICATES PUMP TYPE
6 - RDBX, 7 - RDNX,

AVAILABLE MODEL SIZE & CAPACITY

MODEL PQ' BSP SIZE	1440 RPM CAPACITY			PUMP GD ² IN KGM ²	ELE. MOTOR H.P.	FR. SIZE
	LPM	US GPM	M ³ /HR			
50	05.00	01.32	0.30	0.0001	0.50	71 M
SML	08.33	02.21	0.50	0.0002	1.00	80 M
1/2"	16.66	04.42	1.00	0.0003	1.50	90 S
100	25.00	06.60	1.50	0.0005	1.00	80 M
SML	33.32	08.80	2.00	0.0007	2.00	90 L
1"	41.65	11.00	2.50	0.0008	3.00	100 L
125	50.00	13.25	3.00	0.0005	2.00	90 L
SML	60.00	16.66	3.60	0.0006	3.00	100 L
1.1/4"	83.00	22.00	5.00	0.0008	5.00	112 M
150	100.00	26.50	6.00	0.0045	3.00	100 L
SML	125.00	33.00	7.50	0.0057	5.00	112 M
1.1/2"	150.00	39.75	9.00	0.0068	7.50	132 S
200	166.60	44.16	10.00	0.0068	5.00	112 M
SML	200.00	53.00	12.00	0.0081	10.00	132 M
2"	250.00	66.25	15.00	0.0100	15.00	160 M
250	300.00	79.50	18.00	0.0160	7.50	132 S
SML	333.00	88.33	20.00	0.0174	15.00	160 M
2.1/2"	350.00	92.75	21.00	0.0185	20.00	160 L
300	400.00	106.00	24.00	0.0361	25.00	180 M
SML	450.00	119.00	27.00	0.0469	30.00	180 L
3"	600.00	159.00	36.00	0.0560	35.00	200 L
400	700.00	185.50	42.00	0.0750	40.00	200 L
SML	800.00	212.00	48.00	0.0870	50.00	225 S
4"	900.00	238.50	54.00	0.0980	60.00	225 M
500	1000.00	265.00	60.00	0.1680	60.00	225 M
SML	1200.00	318.00	72.00	0.2800	75.00	250 M
5"	1400.00	371.00	84.00	0.2410	100.00	280 S
600	1666.00	441.50	100.00	0.3245	75.00	250 M
SML	1915.00	508.00	115.00	0.3683	100.00	280 S
6"	2082.00	552.00	125.00	0.3947	120.00	280 M