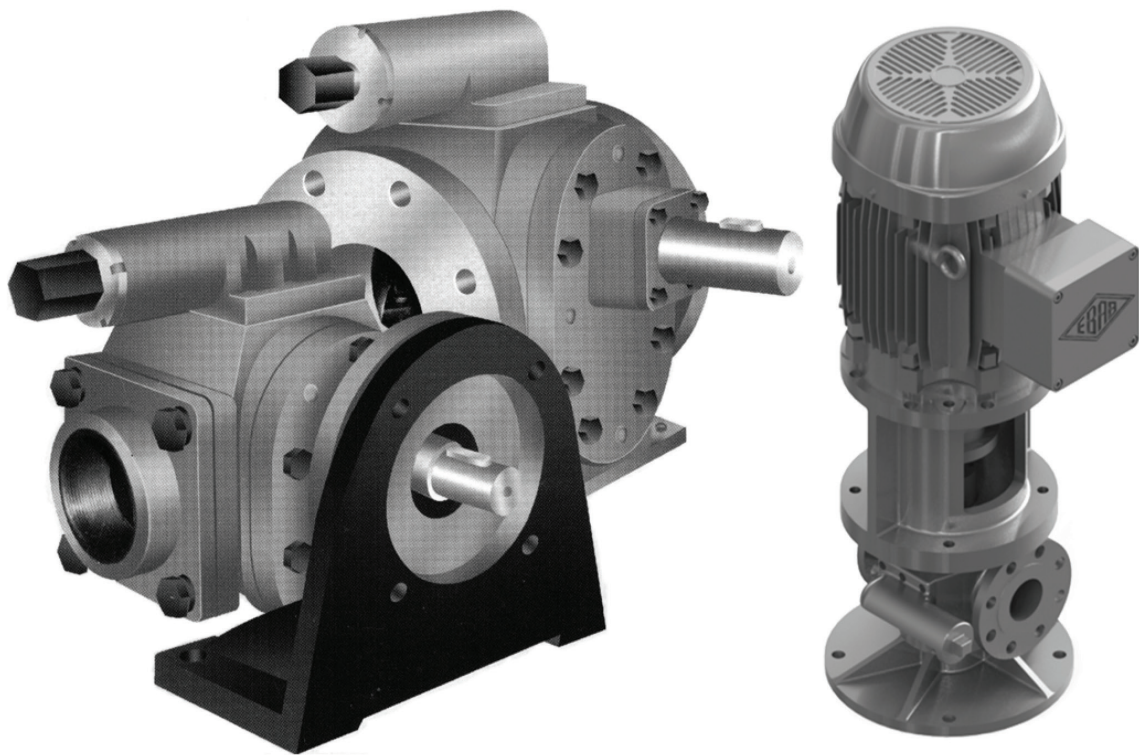


Rotary Gear Pump

RNH SERIES

From ½" to 6" size, capacity up to 125m³/hr Pressure up to 21 bar viscosity 100,000 cst Temperature up to 110 oc.

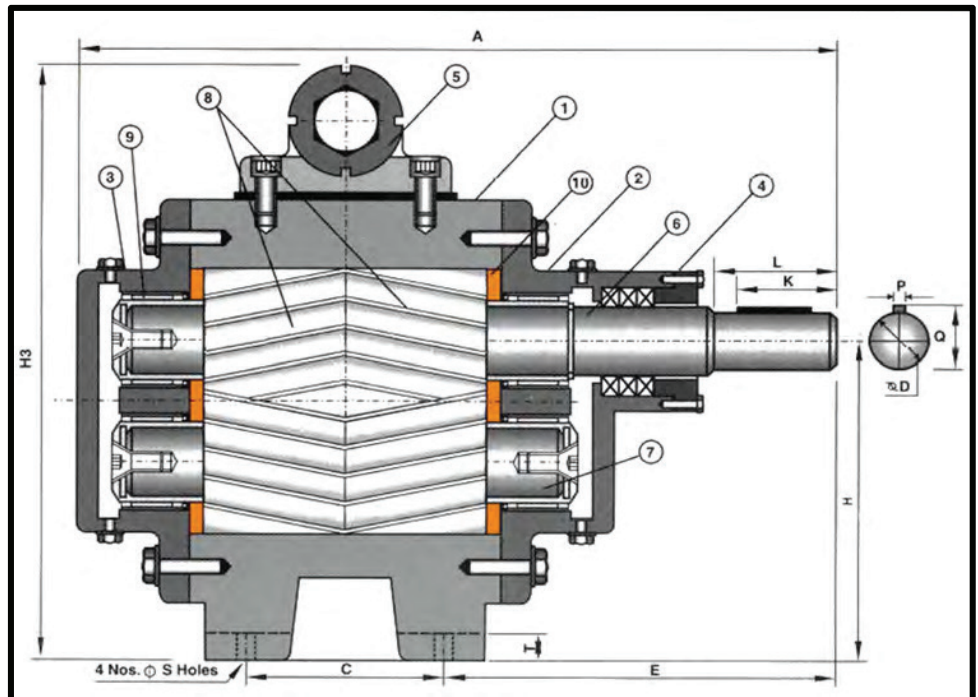


RNH SERIES

The proven range of rotary twin gear pump type "RNH" 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 INNO rotary pumps viz the compactness, efficiency, reliability & low noise level.

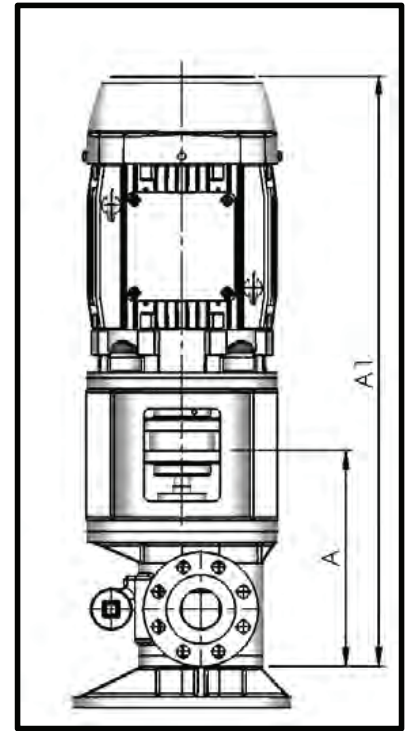
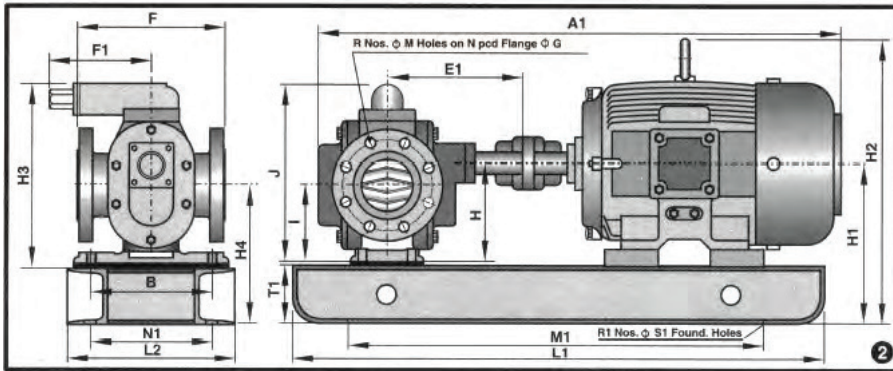
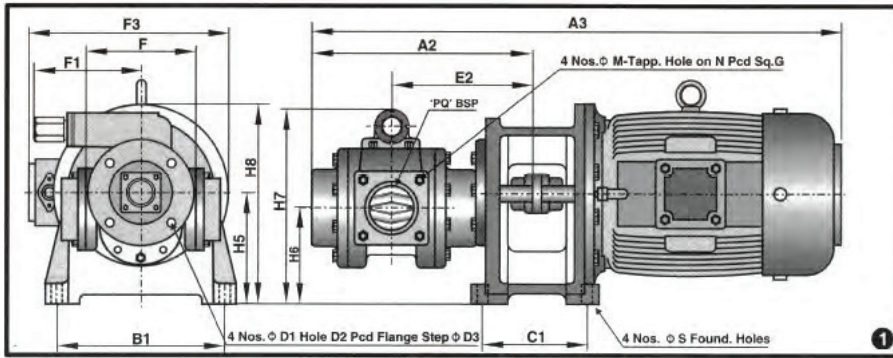
A pair of impeller with herringbone gear fitted on hardened & ground shaft with shaft sleeves in floating design supported on either side on needle / bush bearings located on end covers with ltb. wearing plate packed in between and placed inside close tolerance accurately machined casing with built in pressure relief valve makes to pump. Size ½" to 2 ½" 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 RNX is a bush bearing version & is offered up to 2 ½" size.

This pump can also be offered with different MOC viz. CI, CS, Bronze, SS etc. Pump up to 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.



PART LIST WITH Material of Construction				AVAILABLE MODEL SIZE & CAPACITY					
SR	ITEM	QT	MATERIAL	MODEL 'PQ' BSQ SIZE	LPM (1450 RPM)	LPM (950 RPM)	M ³ /HR	ELE. MOTOR H.P.	FR. SIZE
1	PUMP CASING	1	CI/CS/SS	12L	16.66 (1.00)	10.99	1.00	1.50	90S
2	FRONT COVER	1	CI/CS/SS						
3	BACK COVER	1	CI/CS/SS						
4	GLAND COVER	1	CI/CS/SS	25M	33.32 (2.00)	21.98	2.00	2.00	90L
5	R. V. BODY	1	CI/CS/SS						
6	ROTOR SHAFT	1	AISI 1055/4041/SS	32M	60.00 (3.60)	39.58	3.60	3.00	100L
7	STATOR SHAFT	1	AISI 1055/4041/SS						
8	IMPELLER GEAR	4	AISI 4340/ SS	40L	150.00	98.96	9.00	7.50	132S
9	NEEDLE BRG	4	IKO/INA						
10	WEAR PLATE	4	LTB	50L	250.00	164.93	15.00	15.00	160M
11	R.V. PISTON	1	AISI 1040/SS						
12	R.V. SPRING	1	SPRING STEEL	65L	350.00	230.90	21.00	20.00	160L
13	R.V. AD SCREW	1	AISI 1040/SS						
14	BASE PLATE	1	M.S.	80M	450.00	296.88	27.00	30.00	180L
15	COUP. GUARD	1	ALUMN.						
16	COUPLING	1	FLEXIBLE	80L	600.00	395.83	36.00	35.00	200L
17	COUP. KEY	1	AISI 1040/SS						
18	SEALING SYS.	2	OS/MS/GP	100L	900.00	593.75	54.00	60.00	225M
19	DOWEL PIN	4	SILV. ST.						
20	COM.FLANGE	2	MS/SS	125L	1400.0	923.61	84.00	100.00	280S
21	H/T HEX BOT	12	AISI 1040/SS						
22	INNER SLEEVE	4	AISI 52100	150S	1666.0	1099.10	100.0	75.00	250M
23	V-SEAL	4	NITRILE.RU.						
24	SNAP RING	1	AISI 52100	150L	2082.0	1373.54	125.0	120.00	280M
25	C. S. SCREW	3	AISI 4340						

RNH SERIES



MODEL	DIMENSION																SHAFT					FLANGE			WEIGHT BP-COU PUMP BP-COU IN KG.		
	OVERALL						MOUNTING										R1	ØD	K	ØD1		ØD2	ØD3				
	A1	J	H2	L1	L2	H3	A2	A3	B1	C1	E2	H5	H6	H1	H4	M1				N1	T			P		G	R
	A	A					F1	F3	B	C	E1	F	H								T1			Q		L	M
12L	522	139	225	475	180	162	196	460	125	75	123	100	89	134	123	430	140	04	11.5		8	66	52	7.5			
		206					112	173	119	40	133	100	71					15	04	22	Sq 65						
		151					175	180	8.5	15	58	112	60					40	13	25	M8	66.6	04				
25M	560	219	225	525	180	165	209	508	155	85	131	120	104	134	118	480	140	04	15	05	25	10	83	68	11		
		185					112	203	125	45	143	120	80					40	17	30	M8	73	04				
		219					200	220	8.5	15	69	112	64					40	17	30	M8	73	04				
32M	630	250	289	600	200	195	236	610	190	110	153	120	100	154	134	545	160	04	21		10	105	85	14.5			
		205					141	245	155	50	168	135	90					15	06	30	Sq 80						
		293					220	220	10	15	81	141	70					50	23.5	40	M10	85	04				
40L	764	234	362	700	250	241	278	677	230	130	180	145	123	186	164	645	216	04	24		14	125	100	18.75			
		205					153	265	170	55	195	145	100					20	08	40	Sq100						
		293					255	270	12	15	95	153	78					50	27	50	M12	106	04				
		234					338	762	290	180	222	190	164					04	27		14	140	115				
50L	950	339	435	900	285	286	173	285	200	70	223	165	112	229	203	830	230	20	08	40	Sq120			21			
		261					315	340	12	19	94	173	86					65	30	55	M12	127	04				
		375					355	882	290	180	223	190	161					04	32		14	152	125				
65L	1030	338	445	950	315	294	173	325	225	80	250	190	132	239	210	700	254	25	10	50	Sq135			23			
		436					320	340	15	19	104	173	103					75	35	60	M14	149	04				
		338																04	37								
80M	1165	436	568	1150	330	342	205			180	90	289	280	180	284	250	850	279	25	10	55	210			73		
		338								19	19	244	205	146				100	40	65	22	168	08				
		436																04	37								
80L	1235	375	616	1200	355	362	205			180	90	289	280	180	304	270	900	318	25	10	55	210			37		
		487								19	19	244	205	146				100	40	65	22	168	08				
		420																04	47								
100L	1360	487	666	1400	406	404	230			180	130	323	300	200	329	289	900	356	28	14	70	254			58		
		533								19	22	258	230	160				100	50.5	80	22	200	08				
		467																04	52								
125L	1590	550	854	1600	520	479	230			200	150	346	340	225	409	363	1150	457	28	16	75	279			76		
		467								22	22	271	230	179				150	56	85	22	235	08				
		550																04	57								
150S	1510	467	819	1650	470	471	245			215	170	358	345	250	404	354	1150	406	28	16	80	317			78		
		550								22	22	293	245	200				150	61	95	22	270	12				
		467																04	57								
150L	1610	550	879	1700	520	501	245			200	150	346	340	225	434	384	1150	457	28	16	80	317			85		
		550								22	22	271	230	179				150	61	95	22	270	12				

RNH SERIES

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 $m^3/hr.$ & Pressure in Kg/Cm^2 Or Constant $C=2.3$, Capacity in GPM & Pressure in PSI .

GEAR PUMP SELECTION & USES:

RNH 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 2" 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 pressuring, hydraulic, medium pressure lubrication & transfer applications.

INSPECTION & TESTING: All pumps are assembled after due inspection of each & every parts are tested for duty parameters in accordance with API-676.

