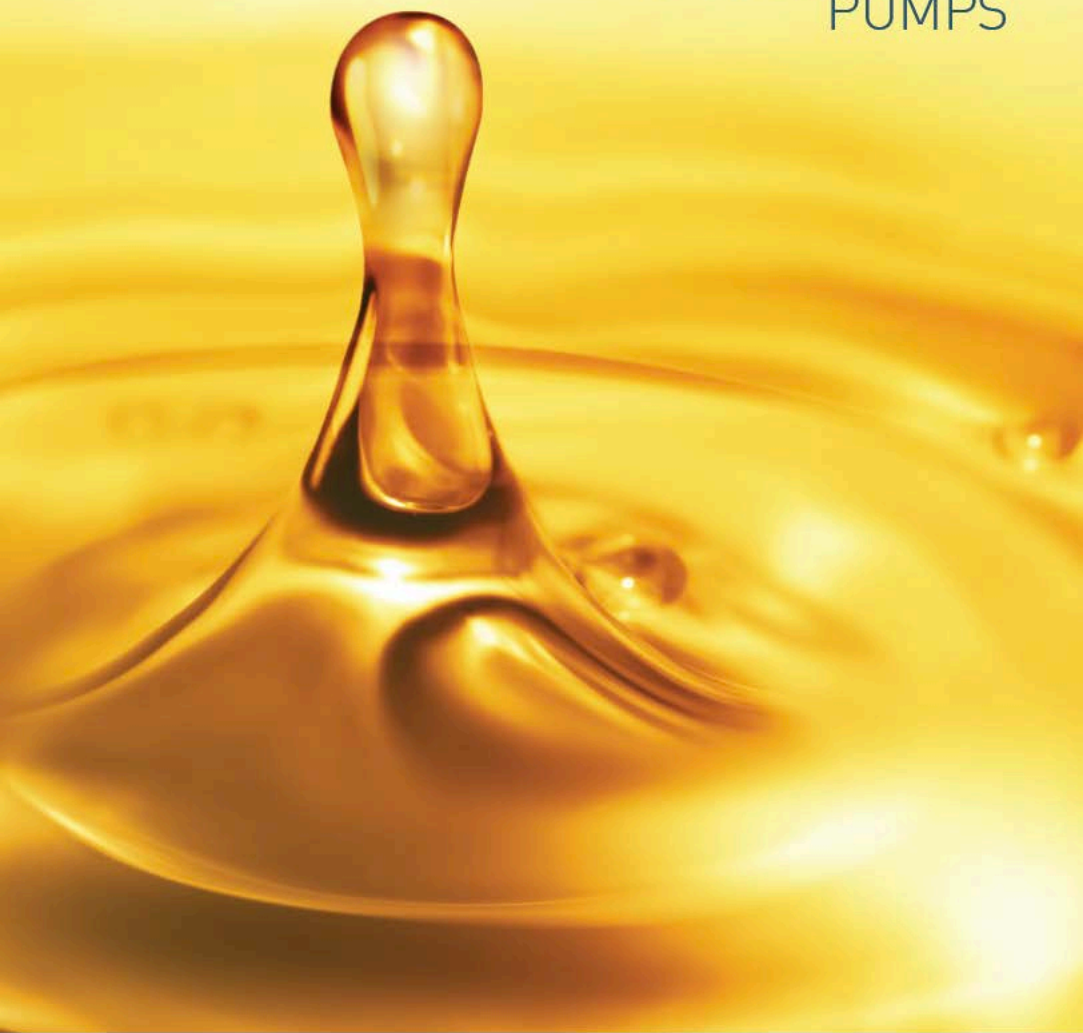


HELICAL GEAR PUMPS



SENTINEL PUMPS

Sentinel pumps are manufactured by a Mexican group with over 70 years of experience transforming metals and fluid handling. Products range includes general services, industrial and process pumps designed for a range of applications.

Sentinel worldwide market has become increased through our valuable commercial partners.



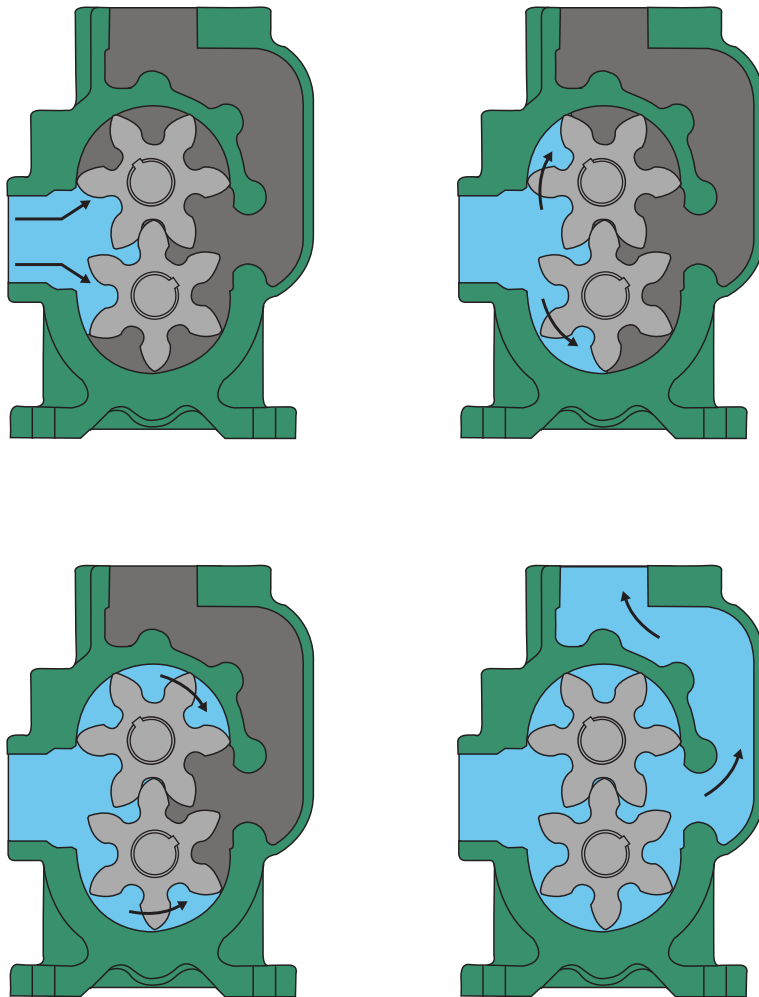
Design types manufactured under Sentinel Brand: Internal Gear, Helical Gear, External Gear, Turbine and Centrifugal.

HELICAL GEAR PUMPS

These pumps operate without problems or difficulties and with equal efficiency in either direction of rotation. They effectively handle viscous liquids such as asphalts, molasses, fuel oil as well as thin liquids. They are made of iron and some models are also made in stainless steel with relief valve in both materials. They are available with packed box or mechanical seal. Due its design, they can be direct driven, with belt-drive transmission and through a built in gear reduction.

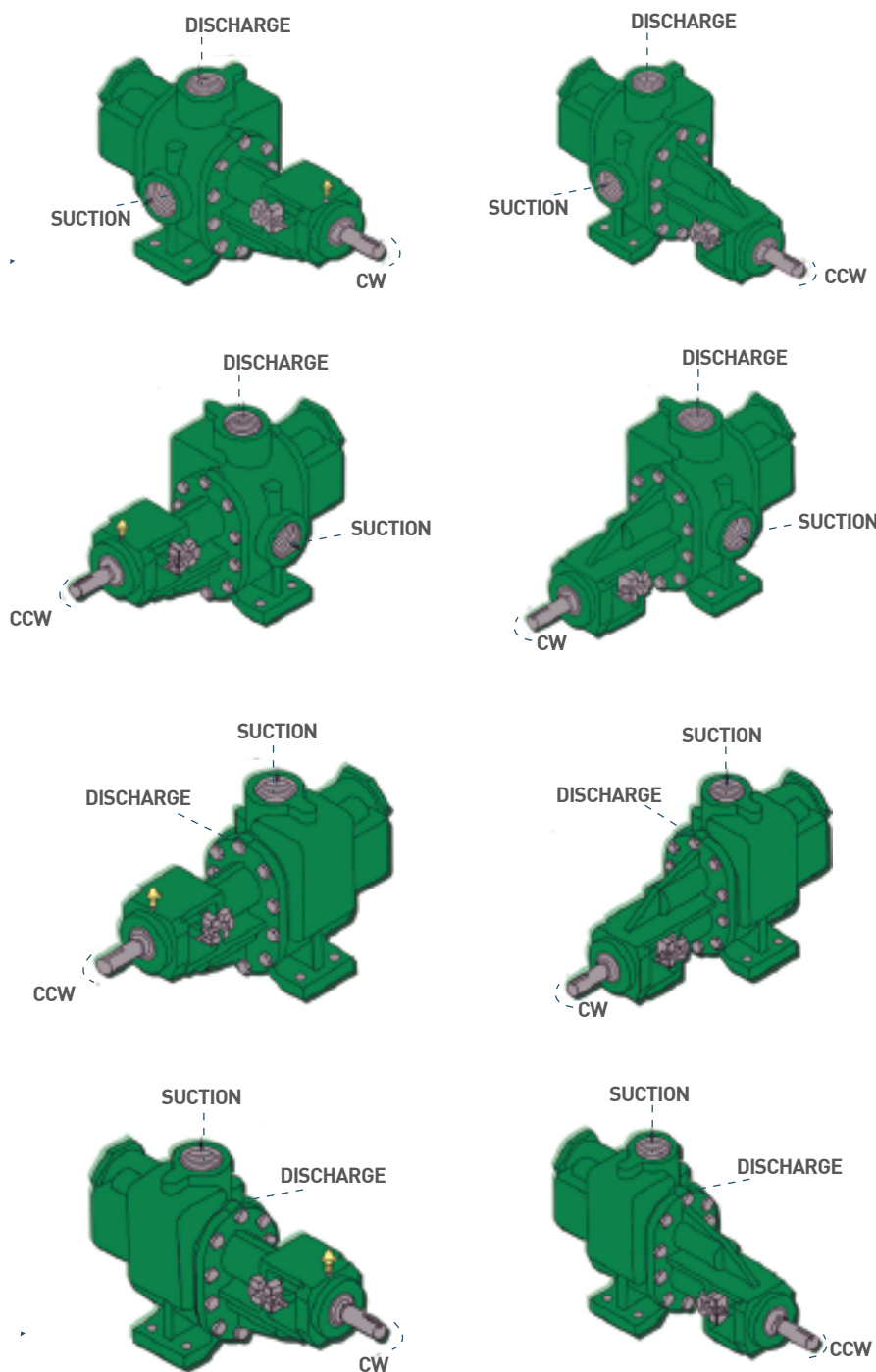
HOW IT WORKS

Because of the helical gear design the point of engagement moves along the length of the gear teeth as the gears rotate. The overlapping of successive discharges from spaces between the teeth makes the discharge flow smooth. This makes helical gear pump operate with a steady discharge and few pulsations.

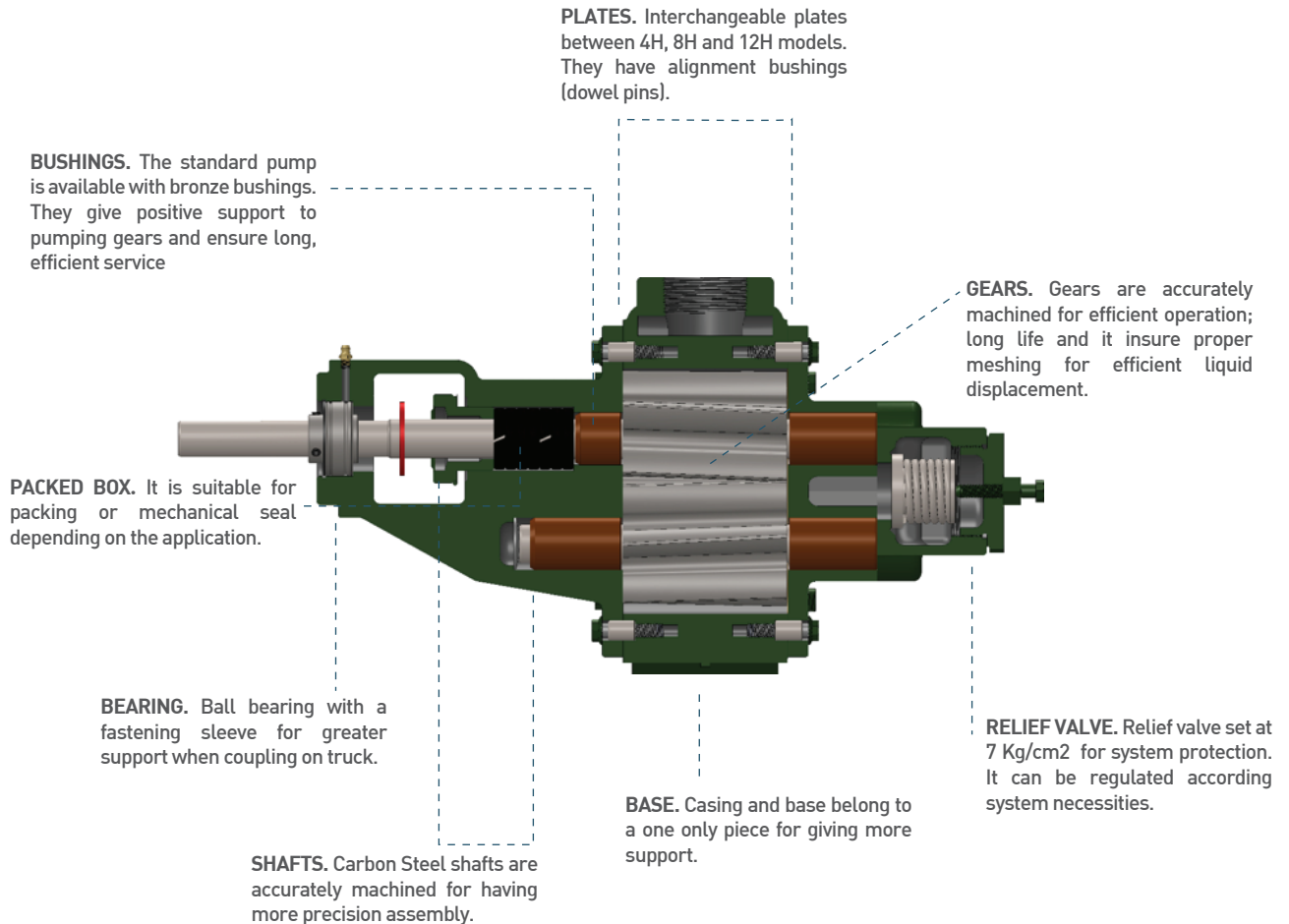


DIRECTION OF ROTATION

Direction of rotation is determined according to the system. The direction of rotation can be inverted as well as putting the suction and discharge ports in different positions, that is why this pump is the most adequate to be mounted on trucks.



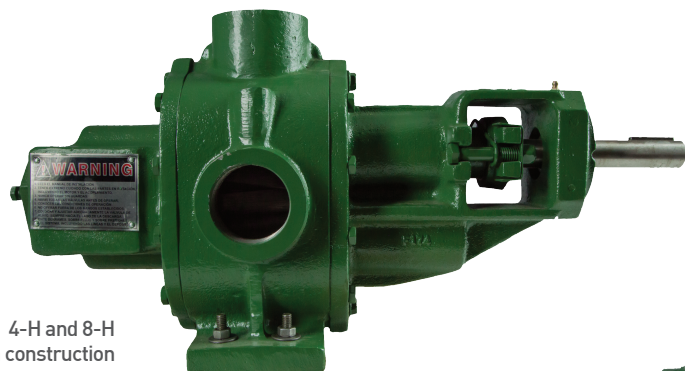
PUMP COMPONENTS



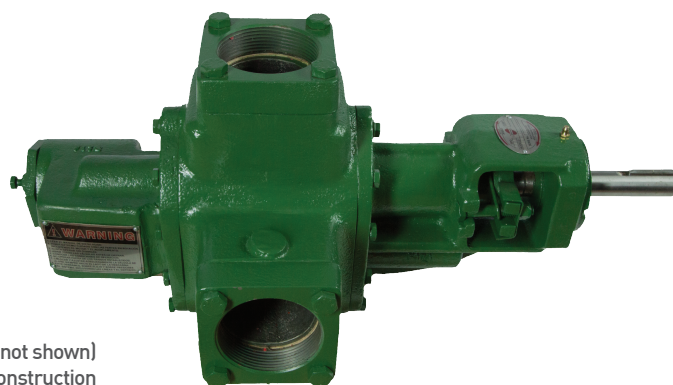
FEATURES

- 1.- H Series pumps operate without problems or difficulties and with equal efficiency in either direction of rotation.
- 2.- They effectively handle viscous liquids such as asphalts, molasses, fuel oil as well as thin liquids.
- 3.- They are made of Iron and Stainless Steel (except model 16-H) with relief valve.
- 4.- They are available with packed box or mechanical seal.
- 5.- Due its design, they can be direct driven, with belt-drive transmission and through a built in gear reduction.
- 6.- Tolerances on casing machined are the minimum to offer the best pump efficiency. It has also two drain plugs to drain pump.

MODELS AVAILABLE



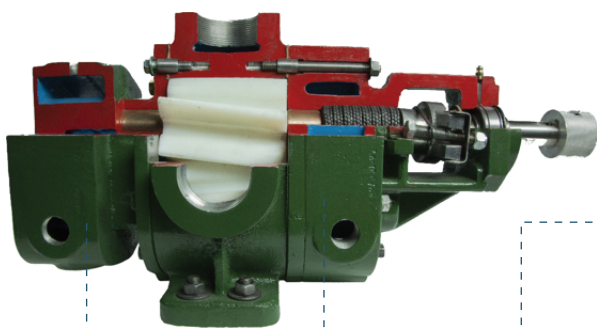
4-H and 8-H
cast iron construction



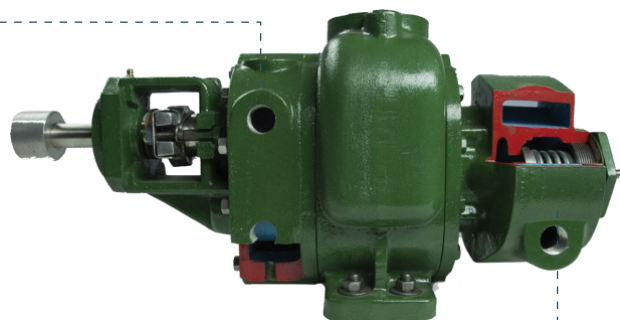
12-H, 16-H (not shown)
20-H (not shown) cast iron construction

JACKETED OPTIONS

(ONLY AVAILABLE FOR 4-H, 8-H AND 12-H)



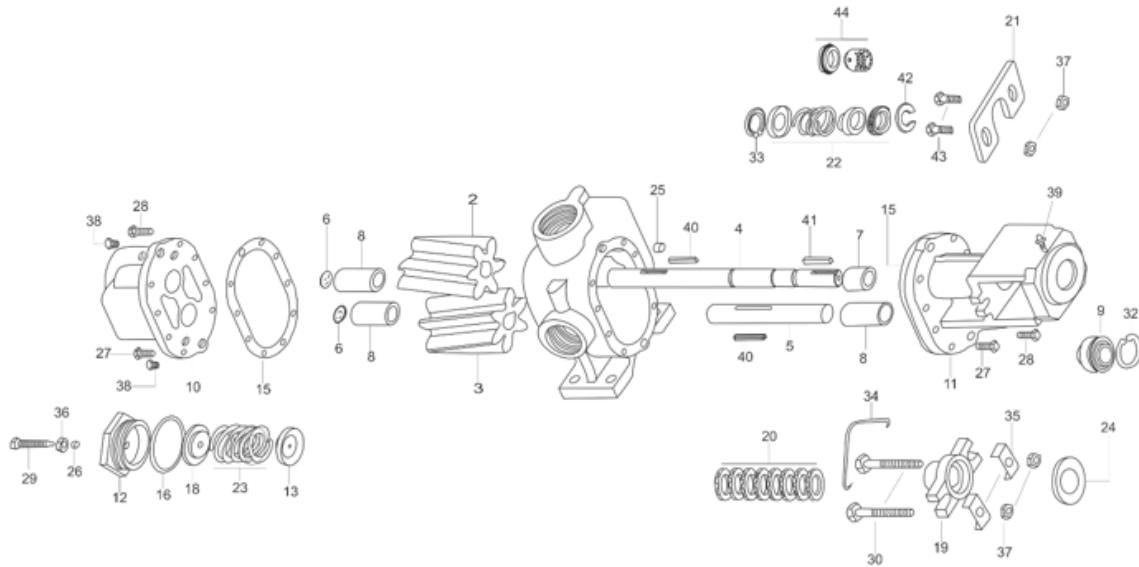
JACKETED PLATES. Provide a cavity or jacket on the external wall of the plates which steam or heat transfer fluid can be passed to control the temperature of the fluid in the pump.



EXPLODED VIEWS

PUMP PARTS STANDARD MODEL

4-H AND 8-H MODELS



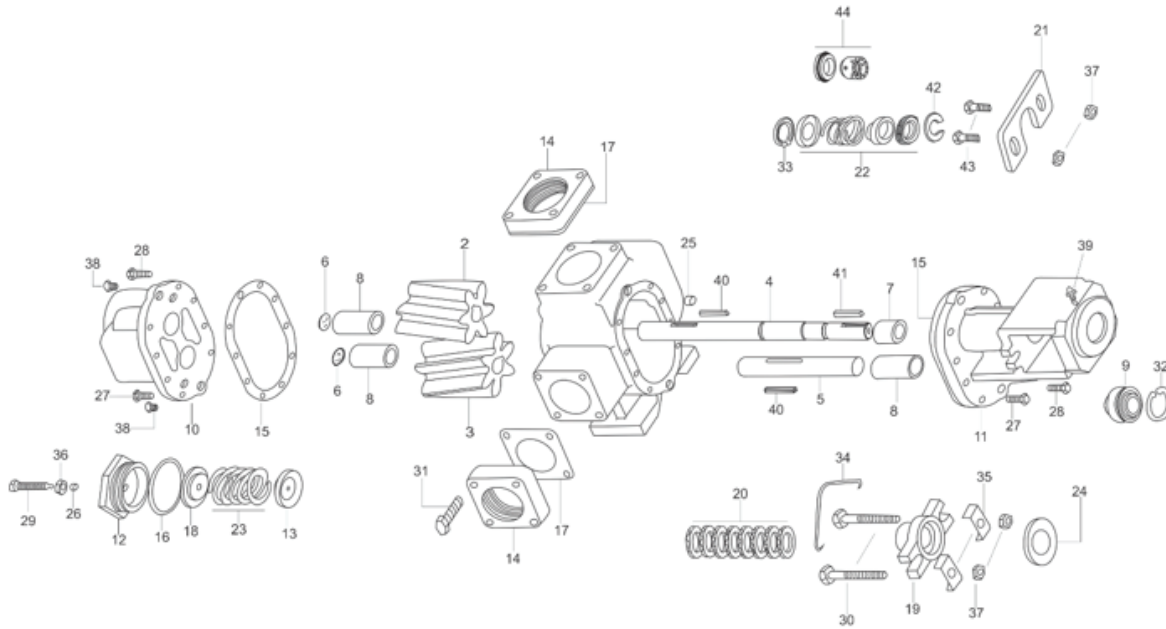
ITEM	DESCRIPTION
1.	Casing
2.	Drive Gear
3.	Idler Gear
4.	Drive Shaft
5.	Idler Shaft
6.	Half Round Cap
7.	Short Bushing
8.	Long Bushing
9.	Bal Bearing
10.	Face Plate Assy, R.V.
11.	Back Plate
12.	Plug Cap R.V.
13.	Poppet
15.	Casing gasket
16.	Relief valve gasket
18.	Spring guide
19.	Packing gland
20.	Packing
21.	Mechanical seal gland
22.	Mechanical seal

ITEM	DESCRIPTION
23.	Spring
24.	Deflector
25.	Dowel pin
26.	Nut
27.	Head capscrew
28.	Capscrew dowel pin
29.	Adjusting screw
30.	Packing gland screw
32.	Bearing retaining ring
33.	Mechanical seal retaining ring
34.	Clip, spring
35.	Packing gland clip
36.	Nut, lock and seal
37.	Packing gland nut
38.	Pipe plug
39.	Lube fitting
40.	Key, gear
41.	Drive key
42.	Mechanical seal holder
43.	Mechanical seal gland screw
44.	O'ring mechanical seal

EXPLODED VIEWS

PUMP PARTS STANDARD MODELS

12-H MODEL



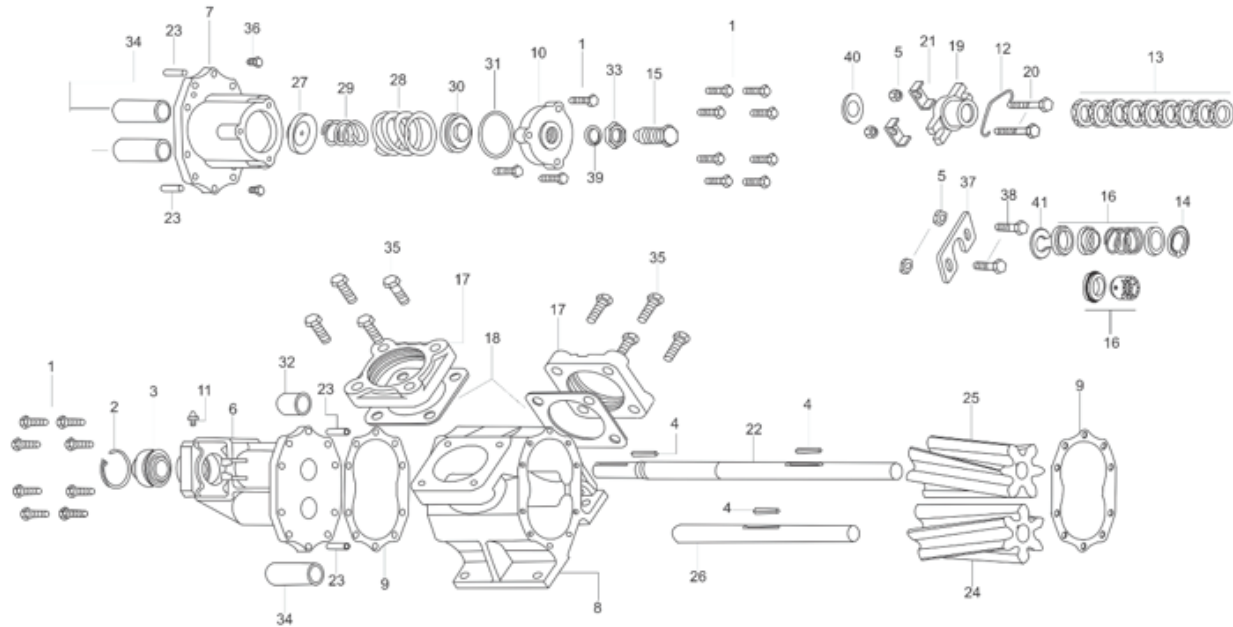
ITEM	DESCRIPTION
1.	Casing
2.	Drive gear
3.	Idler gear
4.	Drive shaft
5.	Idler shaft
6.	Half round cap
7.	Short bushing
8.	Long bushing
9.	Ball bearing
10.	Face plate assy R.V.
11.	Back plate
12.	Plug cap R.V.
13.	Poppet
14.	Flange
15.	Casing gasket
16.	Relief valve gasket
17.	Flange gasket
18.	Spring guide
19.	Packing gland
20.	Packing
21.	Mechanical seal gland
22.	Mechanical seal
23.	Spring
24.	Deflector

ITEM	DESCRIPTION
25.	Dowler pin
26.	Nut
27.	Head cap screw
28.	Capscrew dowel pin
29.	Adjusting screw
30.	Packing gland screw
31.	Flange screw
32.	Bearing retaining ring
33.	Mechanical seal retaining ring
34.	Clip spring
35.	Packing gland clip
36.	Nut, lock and seal
37.	Packing gland nut
38.	Pipe plug
39.	Lube fitting
40.	Key, gear
41.	Drive key
42.	Mechanical seal holder
43.	Mechanical seal gland screw
44.	O'ring mechanical seal

EXPLODED VIEWS

PUMP PARTS STANDARD MODELS

16-H MODEL

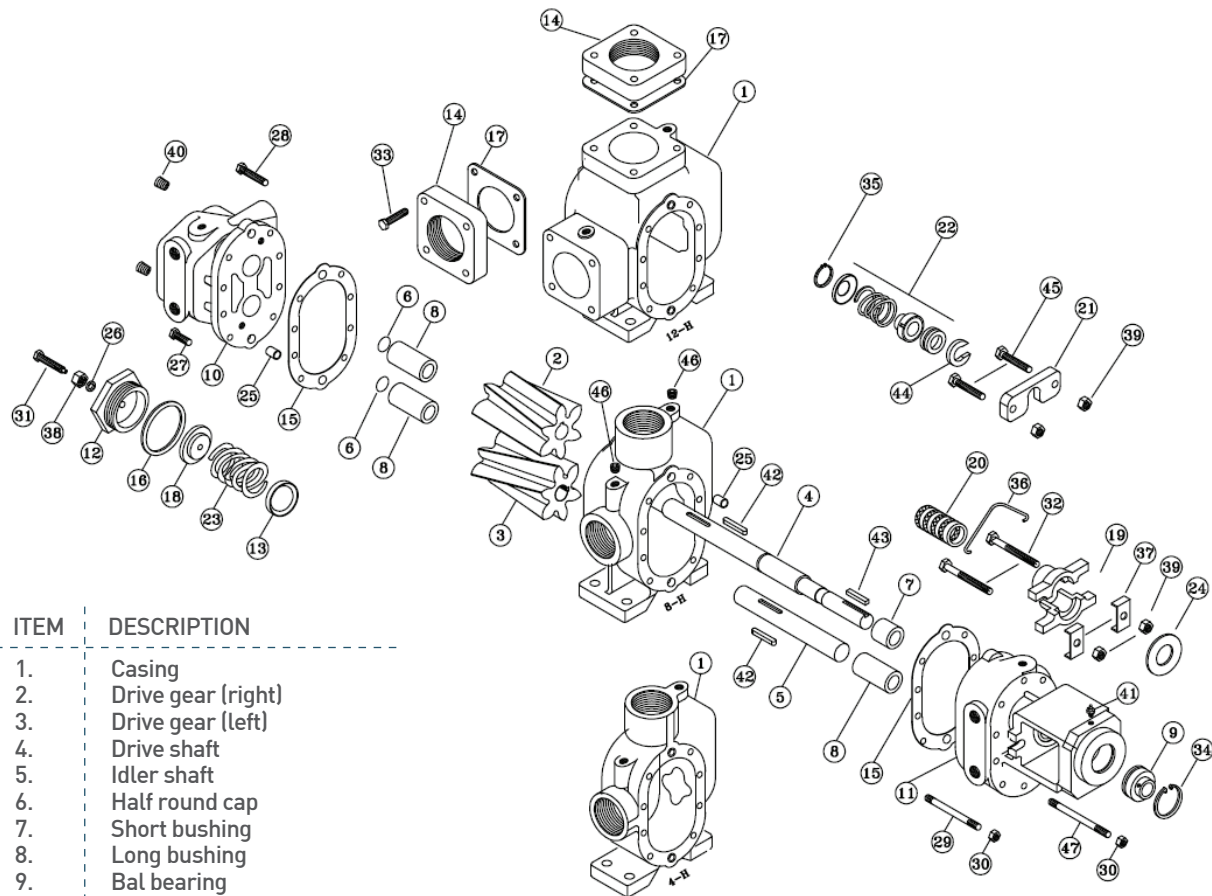


ITEM	DESCRIPTION	ITEM	DESCRIPTION
1.	Plate screw	25.	Drive gear
2.	Bearing retaining ring	26.	Idler shaft
3.	Ball bearing	27.	Poppet
4.	Drive key	28.	High press spring
5.	Packing gland nut	29.	Spring
6.	Back plate	30.	Spring guide
7.	Face plate assy R.V.	31.	Relieve valve gasket
8.	Casing	32.	Short bushing
9.	Casing gasket	33.	Nut, lock and seal
10.	Plug cap R.V.	34.	Long Bushing
11.	Lube fitting	35.	Flange cap screw
12.	Clip, spring	36.	Pipe plug
13.	Packing	37.	Mechanical seal gland
14.	Mechanical seal retaining ring	38.	Mechanical seal gland screw
15.	Adjusting screw	39.	Nut
16.	Mechanical seal	40.	Deflector
17.	Flange	41.	O'ring mechanical seal
18.	Flange gasket		
19.	Packing gland		
20.	Packing gland screw		
21.	Packing gland clip		
22.	Drive shaft		
23.	Dowel pin		
24.	Idler gear		

EXPLODED VIEWS

PUMP PARTS STANDARD MODELS

JACKETED MODELS



ITEM	DESCRIPTION
1.	Casing
2.	Drive gear (right)
3.	Drive gear (left)
4.	Drive shaft
5.	Idler shaft
6.	Half round cap
7.	Short bushing
8.	Long bushing
9.	Bal bearing
10.	Face plate assy R.V. JKT
11.	Back plate JKT
12.	Plug cap R.V.
13.	Poppet
14.	Flange (12H)
15.	Casing gasket
16.	Relief valve gasket
17.	Flange gasket (12H)
18.	Spring guide
19.	Packing gland
20.	Packing
21.	Mechanical seal gland
22.	Mechanical seal
23.	Spring
24.	Deflector
25.	Dowel pin
26.	Nut
27.	Head capscrew
28.	Capscrew dowel pin
29.	Short stud (8)
30.	Nut for stud

ITEM	DESCRIPTION
31.	Adjusting screw
32.	Packing gland screw
33.	Flange screw
34.	Bal bearing retaining ring
35.	Mechanical seal retaining ring
36.	Clip, spring
37.	Packing gland clip
38.	Nut, lock and seal
39.	Packing gland nut
40.	Pipe plug
41.	Lube fitting
42.	Key, gear
43.	Drive key
44.	Mechanical seal holder
45.	Gland screw
46.	Plug
47.	Long stud (2)

MATERIALS OF CONSTRUCTION

CONSTRUCTION	CASING	GEARS	SHAFTS	PLATES	PACKING	BUSHINGS	MECHANICAL SEAL	RELIEF VALVE
STANDARD	Cast Iron	Cast Iron	Steel 1045	Cast Iron	Teflon w/ graphite	Bronze	(1)	Cast Iron
316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Teflon w/ graphite	Carbon graphite	(1)	316 Stainless Steel

Note: (1) To instal mechanical seal it is required the following: mechanical seal gland, mechanical seal gland screws and mechanical seal gland O'rings (item numbers depend on model)

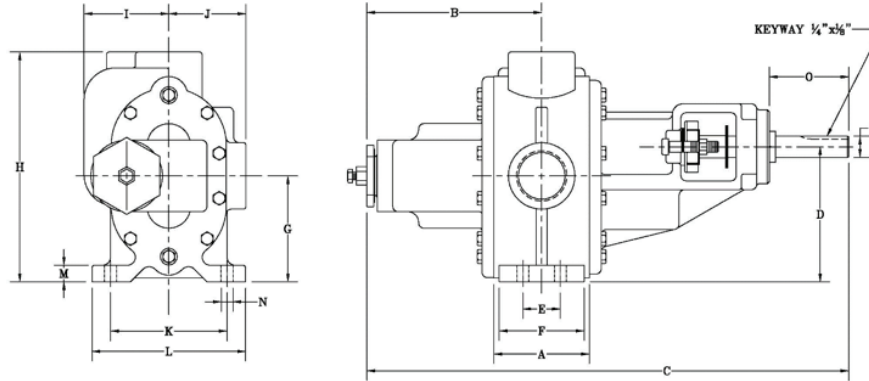
CALCULATION CHART

CALCULATION CHART								
FLUID: Oil SAE-30; Viscosity: 500 SSU, Temperature: 36 °C								
MODEL	4-H				8-H			
MATERIAL OF CONSTRUCTION	IRON AND SS 316				IRON AND SS 316			
PORTS	2" X 2" NPT				2" X 2" NPT			
RPM	700				700			
Lt/min	550.1	529.9	493.3	476.9	1135.0	1035.0	939.0	840.0
GPM	145.35	140.0	130.3	126.0	229.8	273.4	248.0	221.9
Kg/cm ²	1.8	3.5	7.0	8.8	1.8	3.5	5.3	7.0
Lb/in ²	25.0	50.0	100.0	125.0	25.0	50.0	75.0	100.0
HP	3.3	4.5	6.7	7.7	4.5	6.2	9.7	11.9

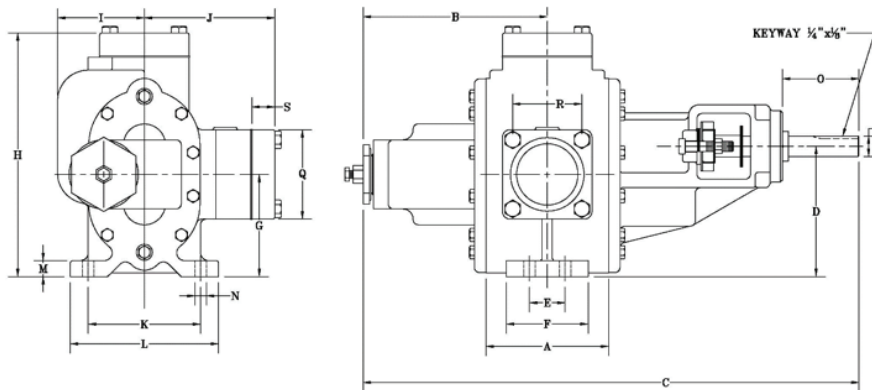
FLUID: Oil SAE-30; Viscosity: 500 SSU, Temperature: 36 °C														
MODEL	12-H				16-H					20-H				
MATERIAL OF CONSTRUCTION	IRON AND SS 316				IRON					IRON				
PORTS	3" X 3" FLANGED				4" X 4" FLANGED					4" X 4" FLANGED				
RPM	700				600					600				
Lt/min	550.1	529.9	493.3	476.9	1135	1035	939	840	780	1355	1343	1336	1324	1086
GPM	145.35	140	130.3	126	229.8	273.4	248	221.9	206	358	355	353	350	287
Kg/cm ²	1.8	3.5	7	8.8	1.8	3.5	5.3	7	8	1.76	3.52	5.27	7.03	8.79
Lb/in ²	25	50	100	125	25	50	75	100	114	25	50	75	100	125
HP	6.4	8.1	12.5	15.4	16	21.5	27	32	35	15.2	20.5	25.8	31	36.2

Note: Above chart is just informative. All data shown there can change depending on operating condition on a particular system. It must not be used as a selection guide.

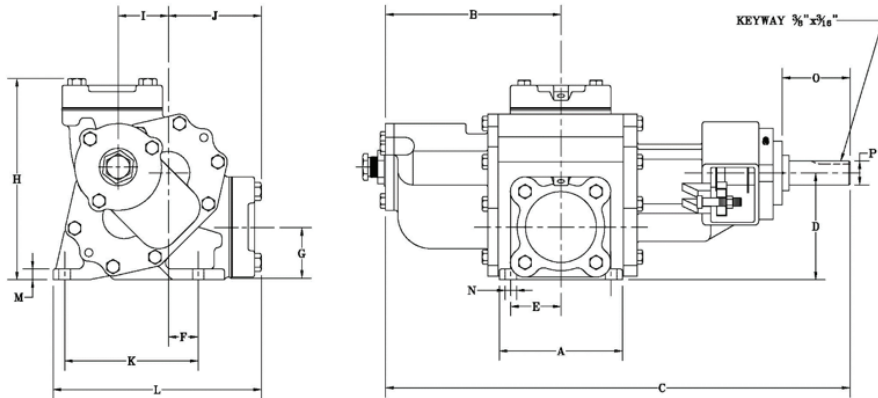
STANDARD PUMP DIMENSIONS



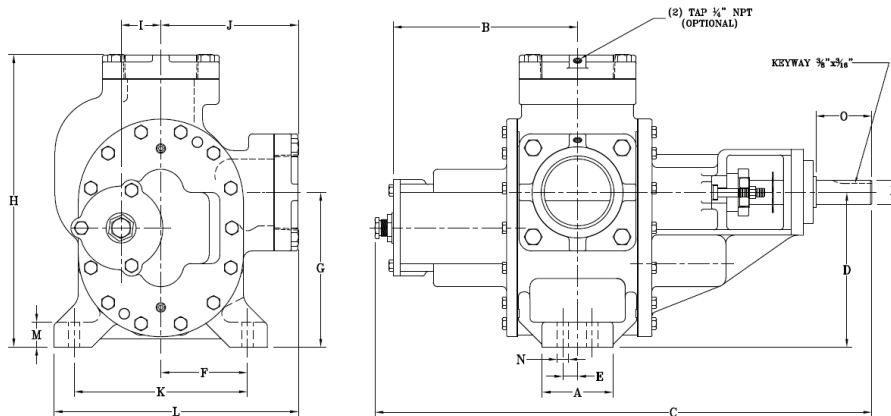
MODEL	MAT'L	INLET	OUT	DIMENSIONS																
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
4 - H SCREWED	CAST / IRON SS	2"	2"	3.0	7.50	21.25	6.44	1.75	3.0	5.0	10.75	4.0	3.64	5.50	7.25	0.78	0.56	3.75	1.0	
8H SCREWED		NPT	NPT	4.50	8.25	22.75	6.44	1.75	4.0	5.0	10.85	4.0	3.64	5.50	7.25	0.78	0.56	3.75	1.0	



MODEL	MAT'L	INLET	OUT	DIMENSIONS																
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
12 - H FLANGED	CAST / IRON SS	3"	3"	6.0	9.0	24.25	6.44	1.75	4.0	5.0	12.12	4.25	6.50	5.50	7.25	0.78	0.56	3.75	1.0	
																	Q	R	S	
																	4.38	3.38	1.12	

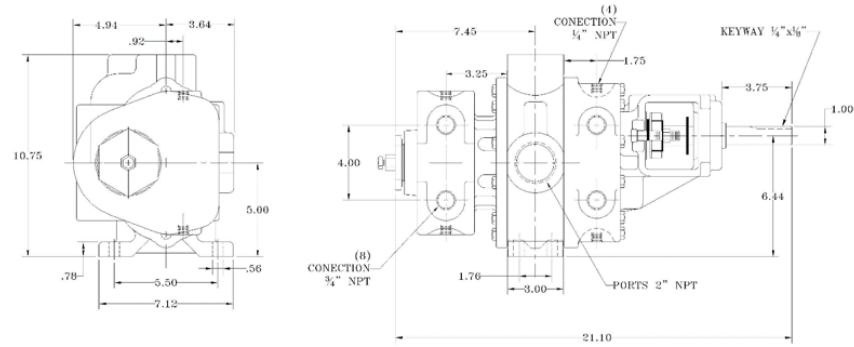


MODEL	MAT'L	INLET	OUT.	DIMENSIONS															
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
16 - H FLANGED	CAST IRON	4"	4"	7.5	10.5	27.81	6.44	6.0	1.94	3.18	12.03	3.40	5.70	8.0	12.62	0.64	0.68	4.06	1.437

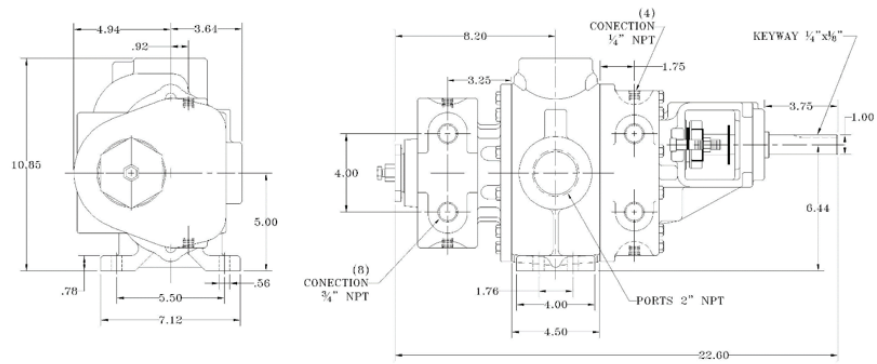


MODEL	MAT'L	INLET	OUT.	DIMENSIONS															
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
20 - H FLANGED	CAST IRON	4"	4"	4.25	11.03	28.63	9.25	0.88	5.18	9.25	17.50	2.38	8.25	10.36	14.62	1.50	0.69	3.34	1.437

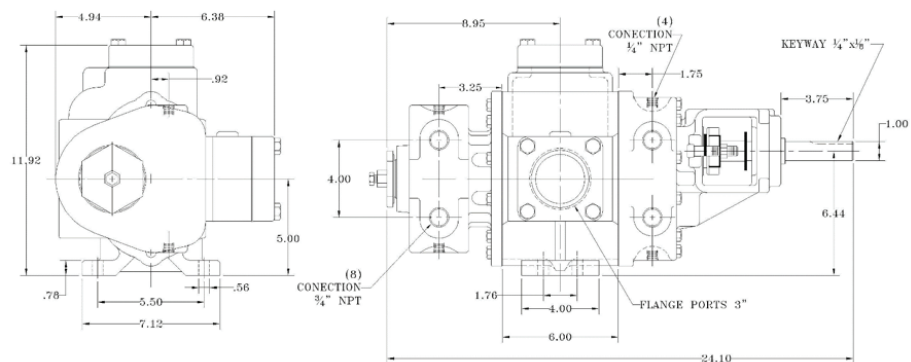
JACKETED PUMP DIMENSIONS



Dimensional drawing model 4 - H JKT



Dimensional drawing model 8 - H JKT



Dimensional drawing model 12 - H JKT

SENTINEL HELICAL GEAR PUMPS

INTERNATIONAL SALES

Tel: +5255-5715-1682

internationalsales@dd-pumps.com

www.d-pumps.com

Emiliano Zapata 41, Col. San Juan Ixhuatepec,
Tlalnepantla, Edo. de México