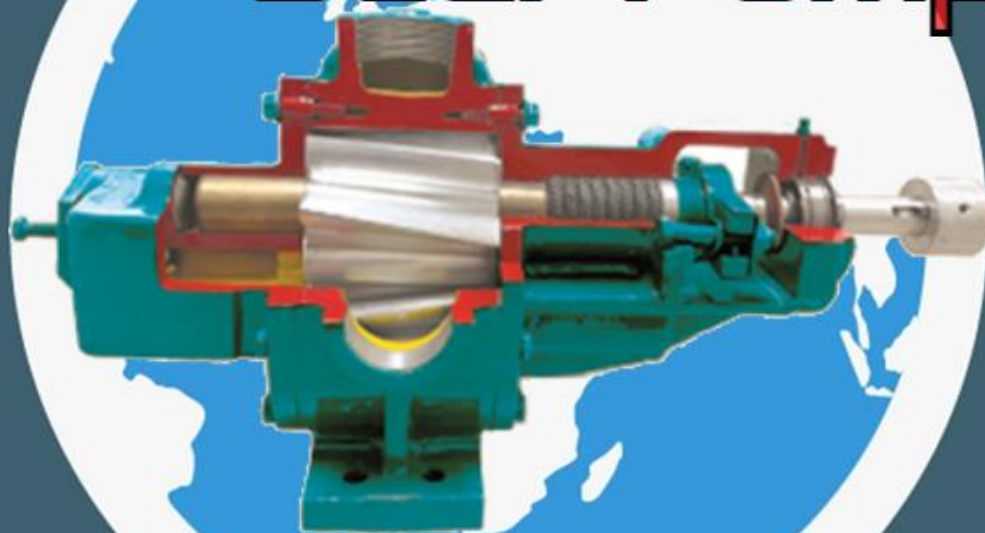


# TITAN PUMPS

Houston, Texas



## Helical External Gear Pump



Roper® Style



MANUFACTURING • SALES • SERVICE

## Titan Manufacturing Inc.

Titan has been supplying its customers quality pumps since 2008. Through the years, Titan has expanded its capabilities to meet the ever-changing needs of its clients. We specialize in a wide range of pumps for the oil and gas, refining, petro-chemical, water and waste water management, oilfield and mining industries. We are once again expanding our product line to cater to our customer needs, and are now proudly presenting Roper® style Helical Gear Pumps.

Titan's reputation and worldwide market share has increased through our valuable partners.



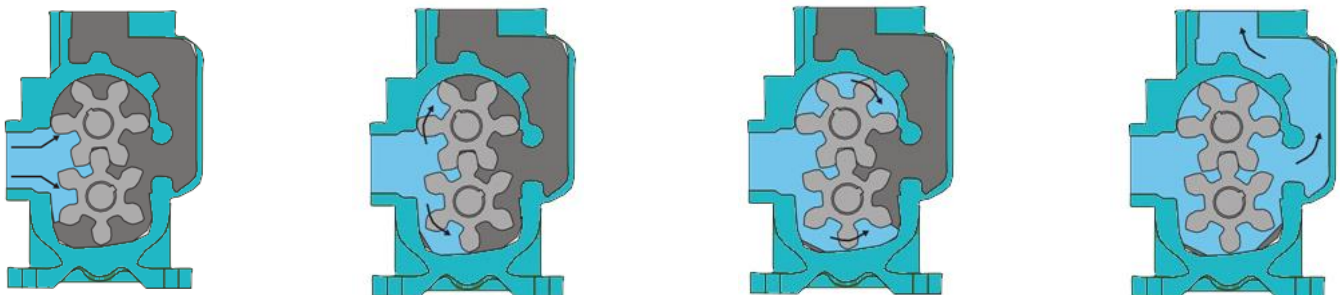
Titan's Houston Texas Facility: 45,000 sq. ft. covered space over a 3.0 acre lot.

## Helical Gear Pumps

These pumps operate smoothly, and with equal efficiency in either direction of rotation. They effectively handle viscous liquids such as asphalt, molasses, fuel, oil, and fluid with viscosity level up to 1,000,000 SSU as well as lighter liquids. They are primarily made of iron, and some models are also available in stainless steel with relief valves in both materials. They are available with packed box or mechanical seal. Due to its design, they can be direct driven, with belt-drive transmission and with built-in gear reducer.

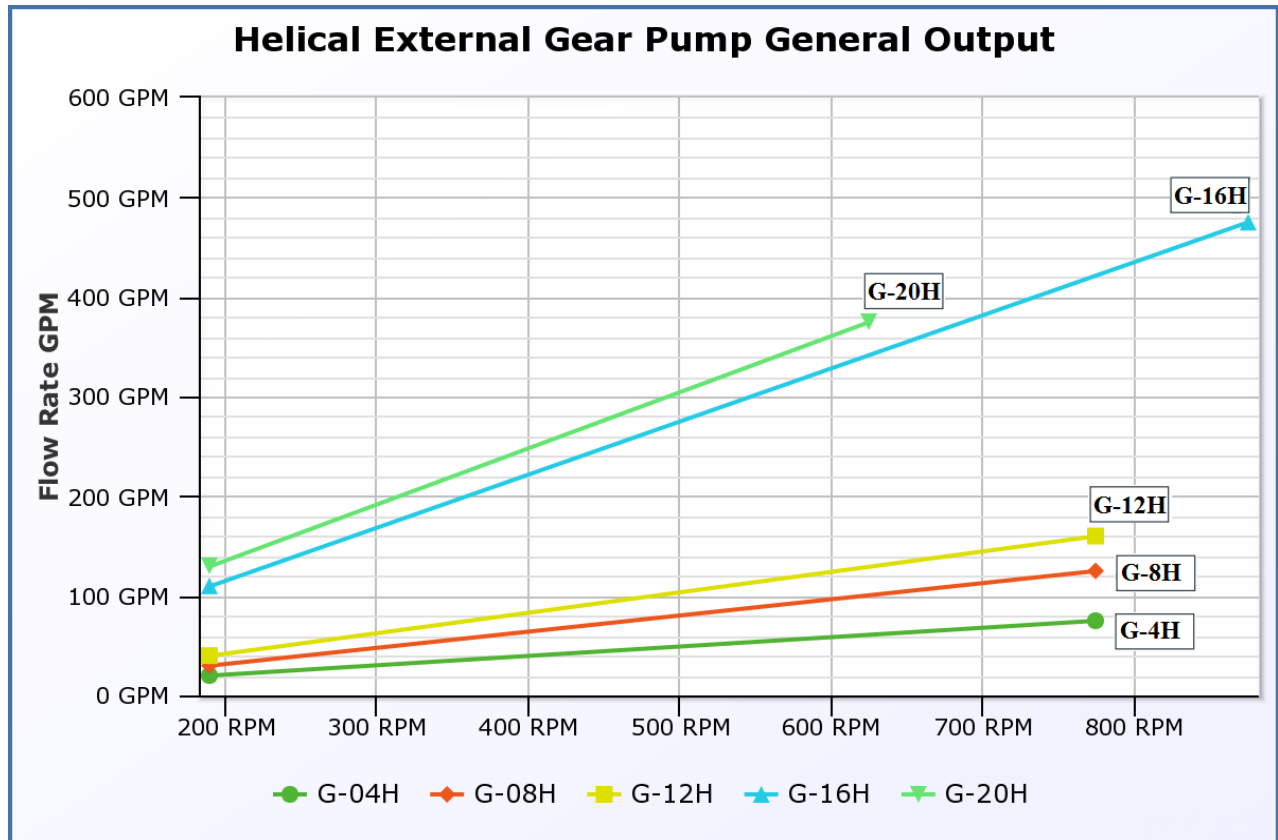
## How It Works

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 pumps operate with a steady discharge and fewer pulsations.



## General Pump Output Curve

The maximum operating speed of series G-04H, G-08H, and G-12H pumps is around 750 RPM. G-16H, operates around 900 RPM. G-20, operates around 600RPM This will always depend on the operating conditions of each individual system (flow, discharge pressure, viscosity, etc.)



Cross-Reference Chart		
G-H Series Model	Port Size	Roper® Model
G-04H	2 X 2 NPT *	T3611 HBRV
G-08H	2 X 2 NPT *	T3617 HBRV
G-12H	3 X 3 ASA 125# FF **	T3622 HBFRV
G-16H	4 X 4 ASA 125# FF	T3648 HBFRV
G-20H	4 X 4 ASA 125# FF	T3658 HBFRV

\*Models available in 316SS

\*\*Models available in 316SS with flanges ASA 150# FF in 316SS

**HBRV:** NPT connections with Outboard Bearing and Relief Valve

**HBFRV:** Flanged Ports with Outboard Bearing and Relief Valve



## Direction of Rotation

Direction of rotation is determined according to the system. The pump works with bidirectional efficacy, so the direction of rotation can be inverted. The suction and discharge ports can be modified to different positions, that is why this pump is the most appropriate to be mounted on trucks. All modifications can be made in the field simply by disassembling, and reassembling the pump. There are no additional parts needed for any configuration. The relief valve must always be on the discharge side of the pump.

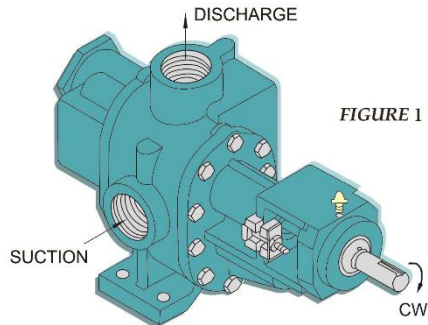


FIGURE 1

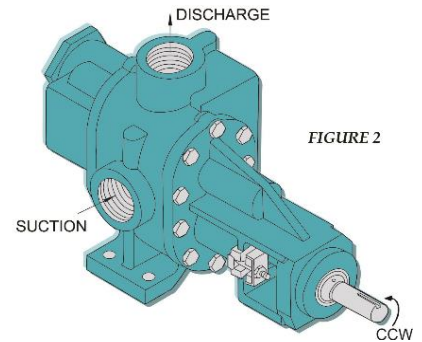


FIGURE 2

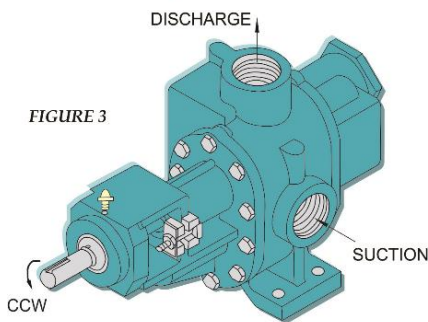


FIGURE 3

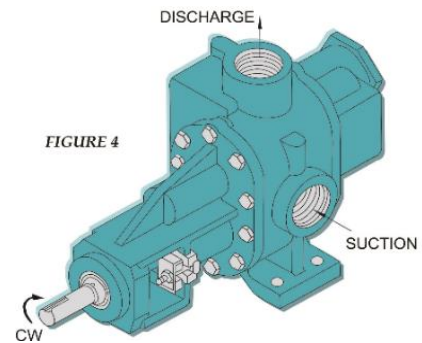


FIGURE 4

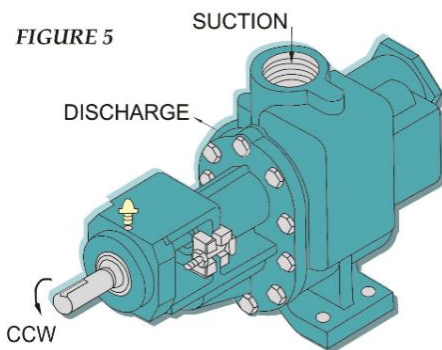


FIGURE 5

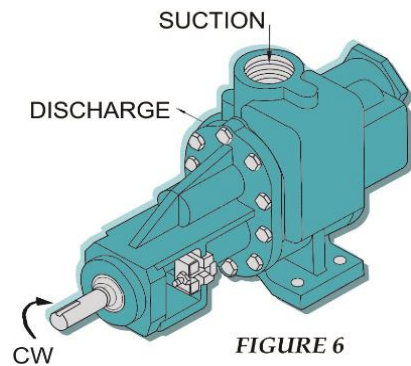


FIGURE 6

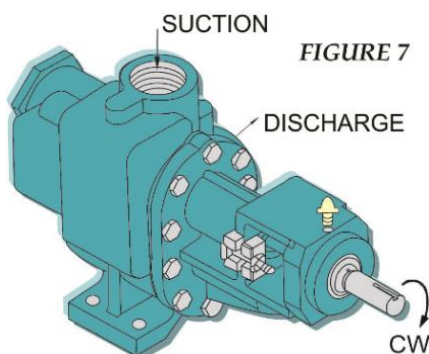


FIGURE 7

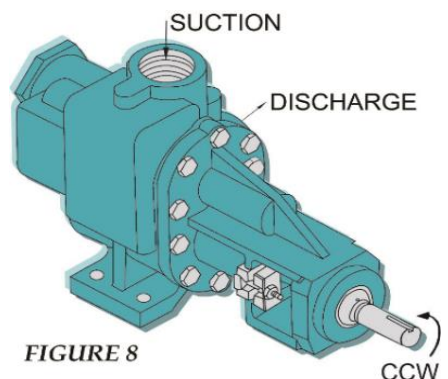
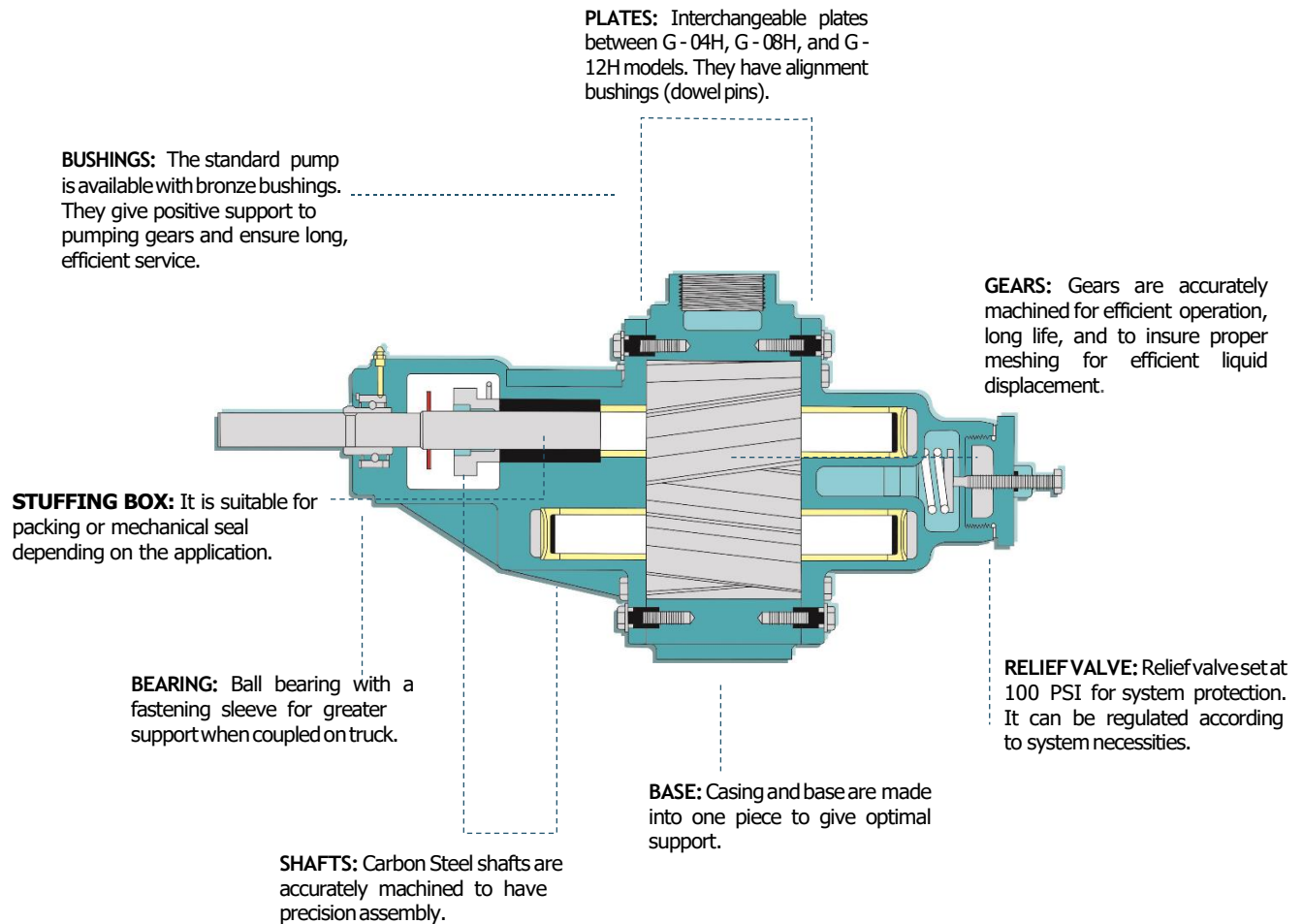


FIGURE 8

## Pump Components



## Features

1. Titan G-H (Helical) series pumps operate without problems or difficulties, and with equal efficiency in either direction of rotation.
2. They effectively handle viscous liquids such as asphalt, molasses, fuel, and oil as well as lighter liquids. Jacketed options are available in G-04H, G-08H, and G-12H for temperature sensitive applications.
3. They are made of Iron and Stainless Steel (except models G-16H & G-20H) with relief valve.
4. They are available as packed box or with mechanical seal.
5. Due to its design, they can be direct driven or belt-driven.
6. Tolerances on casing are machined to the minimum, this offers the best pumping efficiency. It also has two drain plugs to drain the pump.
7. The maximum operating speed of series G-04H, G-08H, and G-12H pumps is around 750 RPM. G-16H, operates around 900 RPM. G-20, operates around 600RPM. This will always depend on the operating conditions of each individual system (flow, discharge pressure, viscosity, etc.)

## Models Available



G-04H and G-08H  
cast iron construction



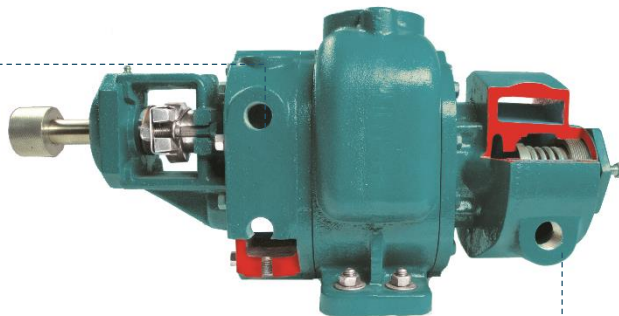
G-12H, G-16H (not shown), G-20H  
(not shown) cast iron construction

## Jacketed Options

(only available for G-04H, G-08H, and G-12H)

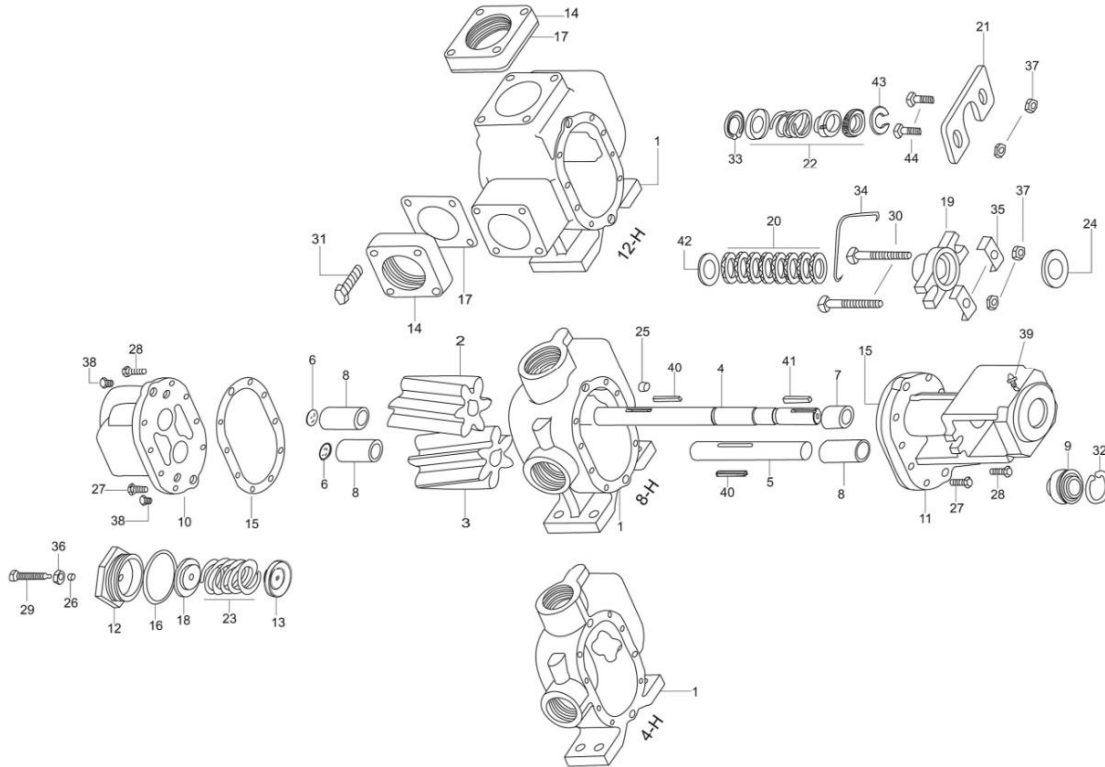


**JACKETED PLATES:** Provides a cavity or jacket on the external wall of the plates where steam or heat transfer fluid can be passed to control the temperature of the fluid in the pump.



# Exploded View Pump Parts Standard Models

G-04H, G-08H, and G-12H Models

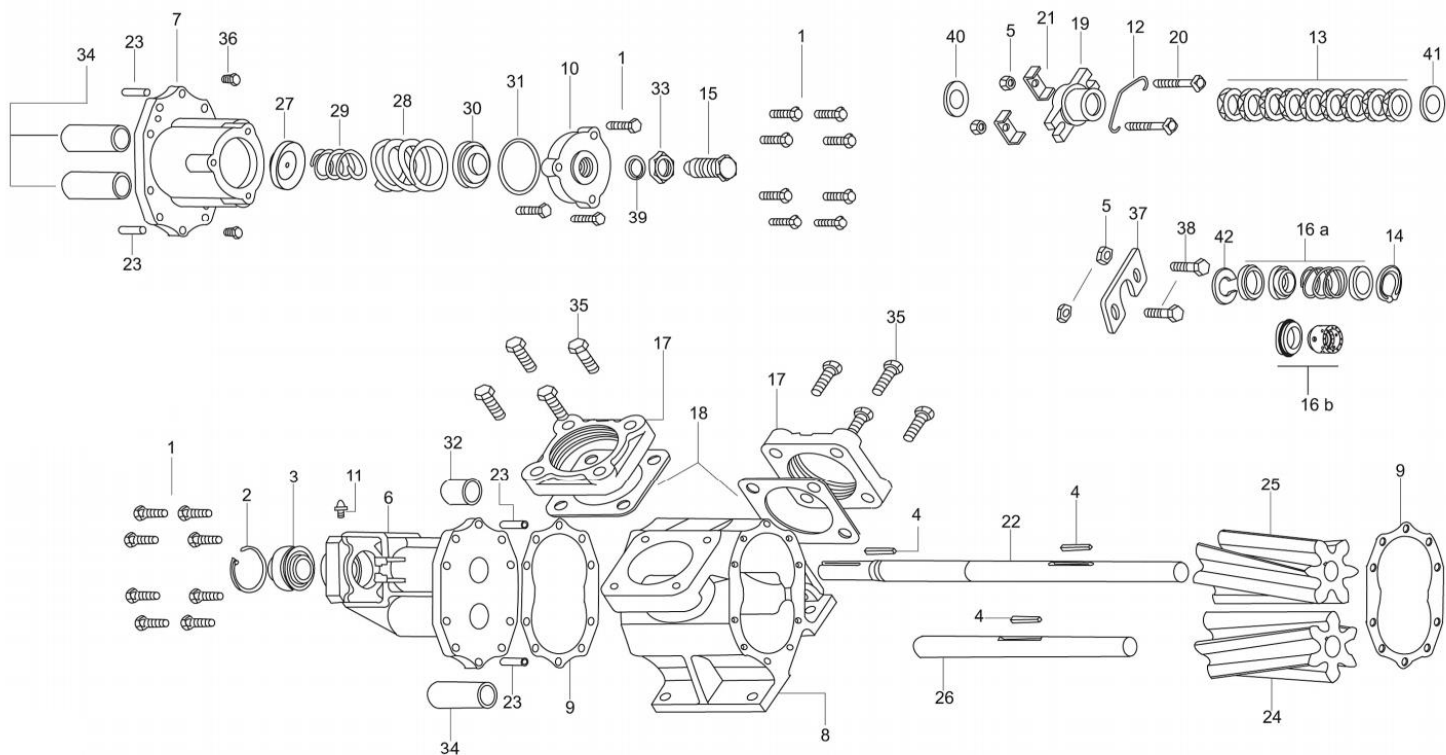


ITEM	DESCRIPTION
1.	Casing
2.	Drive Gear (Right Hand)
3.	Idler Gear (Left Hand)
4.	Drive Shaft
5.	Idler Shaft
6.	Half Round Cap
7.	Short Bushing
8.	Long Bushing
9.	Ball Bearing
10.	Face Plate Assy, R.V.
11.	Back Plate
12.	Plug Cap R.V.
13.	Poppet
14.	Flange
15.	Casing Gasket
16.	Relief Valve Gasket
17.	Flange Gasket
18.	Spring Guide
19.	Packing Gland
20.	Packing
21.	Mechanical Seal Gland
22.	Mechanical Seal

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
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.	Lantern Ring
43.	Mechanical Seal Holder
44.	Mechanical Seal Gland Screw



## G-16H Model



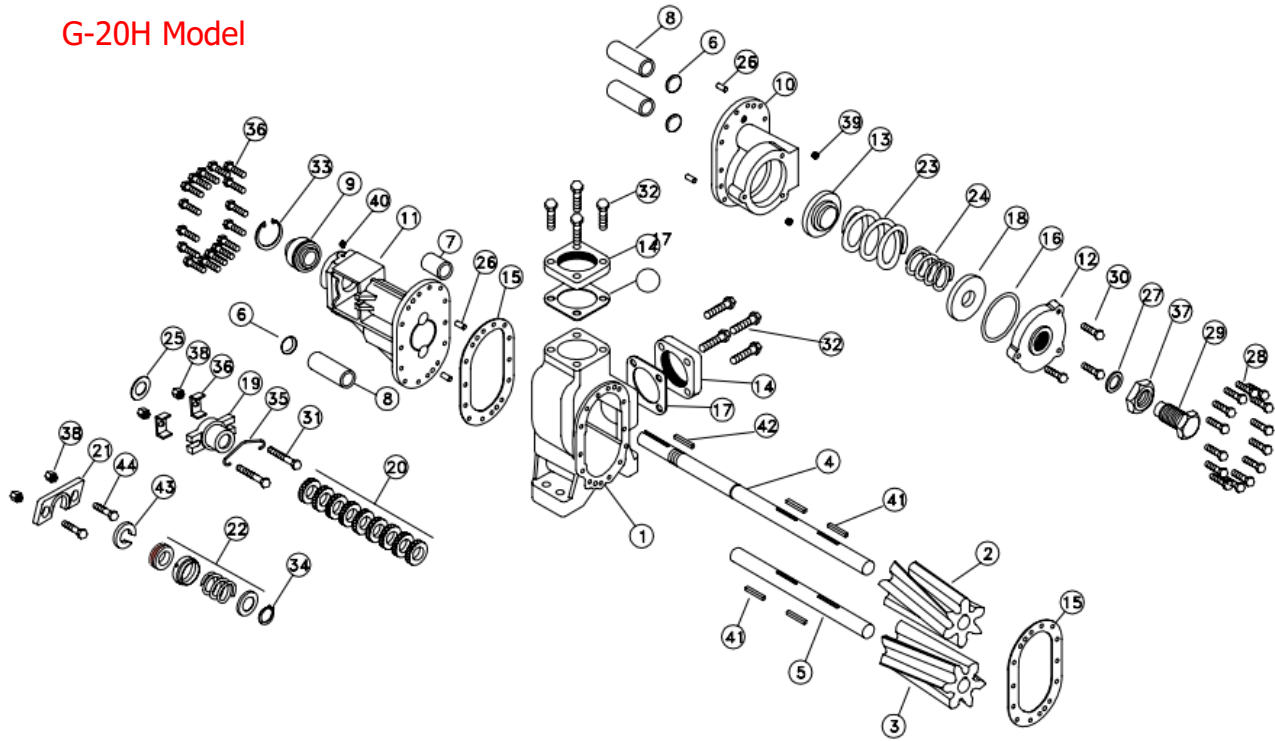
ITEM	DESCRIPTION
1.	Plate Screw
2.	Bearing Retaining Ring
3.	Ball Bearing
4.	Drive Key
5.	Packing Gland Nut
6.	Back Plate
7.	Face Plate Assy R.V.
8.	Casing
9.	Casing Gasket
10.	Plug Cap R.V.
11.	Lube Fitting
12.	Clip, Spring
13.	Packing
14.	Mechanical Seal Retaining Ring
15.	Adjusting Screw
16.	Mechanical Seal
17.	Flange
18.	Flange Gasket
19.	Packing Gland
20.	Packing Gland Screw
21.	Packing Gland Clip
22.	Drive Shaft
23.	Dowel Pin
24.	Idler Gear (Left Hand)

ITEM	DESCRIPTION
25.	Drive Gear (Right Hand)
26.	Idler Shaft
27.	Poppet
28.	Main Spring
29.	Auxiliary Spring
30.	Spring Guide
31.	Relief Valve Gasket
32.	Short Bushing
33.	Nut, Lock and Seal
34.	Long Bushing
35.	Flange Capscrew
36.	Pipe Plug
37.	Mechanical Seal Gland
38.	Mechanical Seal Gland Screw
39.	Nut
40.	Deflector
41.	Lantern Ring
42.	Mechanical Seal Holder



# Exploded View Pump Parts Standard Model

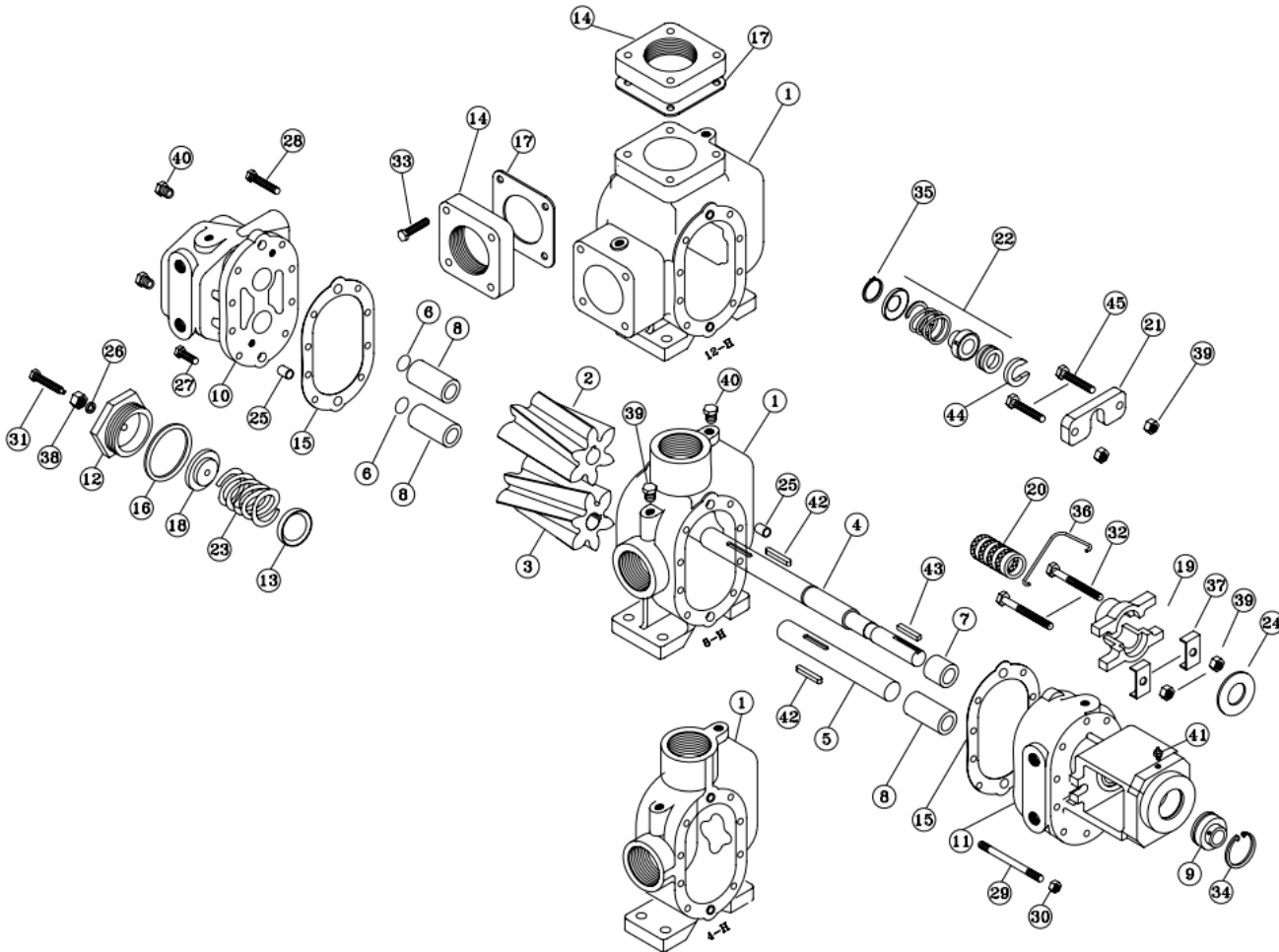
G-20H Model



Item	Description
1.	Casing
2.	Drive Gear (Right)
3.	Idler Gear (Left)
4.	Drive Shaft
5.	Idler Shaft
6.	Half Round Cap
7.	Short Bushing
8.	Long Bushing
9.	Bearing
10.	Front Cover
11.	Back Cover
12.	Relief Valve Cover
13.	Poppet
14.	Flange 20H
15.	Casing Gasket
16.	Relief Valve Gasket
17.	Flange Gasket 20H
18.	Spring Seat Guide
19.	Packing Press
20.	Packing
21.	Mechanical Seal Gland
22.	Mechanical Seal

Item	Description
23.	Main Spring
24.	Auxiliary Spring (Optional)
25.	Deflector Sheave
26.	Guide Pin
27.	Nut
28.	Cap Screw
29.	Regulation Screw
30.	Valve Cover Screw
31.	Packing Gland Screw
32.	Flange Screw
33.	Ball Bearing Retaining Ring
34.	Mechanical Seal Retaining Ring
35.	Clip, Spring
36.	Packing Gland Clip
37.	Nut, Lock and Seal
38.	Packing Gland Nut
39.	Pipe Plug
40.	Lube Fitting
41.	Key, Gear
42.	Drive Key
43.	Mechanical Seal Holder
44.	Gland Screw

## G-04H, G-08H, and G-12H Jacketed Model



Item	Description
1.	Casing
2.	Drive Gear (Right hand)
3.	Idler gear (left hand)
4.	Drive shaft
5.	Idler Shaft
6.	Half Round Cap
7.	Short Bushing
8.	Long Bushing
9.	Bearing
10.	Face Plate ASSY R.V. JKT
11.	Back Plate JKT
12.	Relief Valve Cover
13.	Poppet
14.	Flange (08H)
15.	Casing Gasket

Item	Description
16.	Relief Valve Gasket
17.	Flange Gasket (08H)
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.	Ball 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

## Model Number Key: Titan External Helical Gear Pump

1<sup>st</sup>      2<sup>nd</sup>      3<sup>rd</sup>      4<sup>th</sup>      5<sup>th</sup>      6<sup>th</sup>      7<sup>th</sup>      8<sup>th</sup>

G 04H 1 0 0 1 1 1

Gear Pump	Size	Series	Configuration	Jacketed	Seal Type	Material	Bushing
G	04H	1 = 3600 Series	0 = Pump without Gear Reducer	0 = Non-Jacketed	0 = Packed Pump	1 = Cast Iron	1 = Carbon Bushing
	08H		1 = Pump with Gear Reducer	1 = Jacketed	1 = Buna Mechanical Seal	2 = 316SS	2 = Bronze Bushing
	12H				2 = Viton Mechanical Seal		
	16H						
	20H						

## Material 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	Note:(1)	Cast Iron
316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Teflon w/ graphite	Carbon graphite	Note:(1)	316 Stainless Steel

Note: (1) To install a mechanical seal requires the following: mechanical seal gland, mechanical seal gland screws, and mechanical seal gland O-rings (item numbers depend on model)

## General Performance Calculation Chart

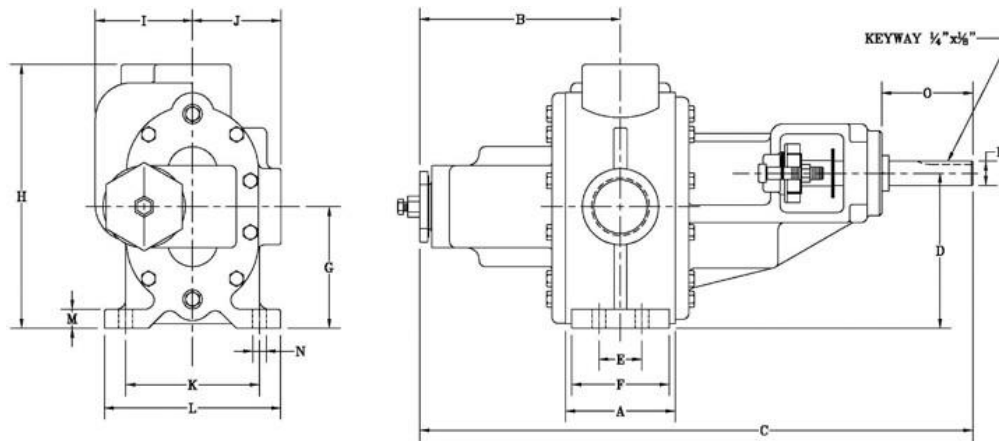
General Performance Calculation Chart								
Fluid: Oil SAE-30; Viscosity: 500 SSU, @ Temperature: 36 °C (96.8 °F)								
MODEL	G-04H				G-08H			
MATERIAL OF CONSTRUCTION	CAST IRON AND SS316				CAST IRON AND SS316			
PORTS	2" X 2" NPT				2" X 2" NPT			
RPM	700				700			
Lt/Min	269.6	258.3	236.5	222.3	405.0	389.9	353.9	334.0
GPM	71.25	68.25	62.5	58.75	107.0	102.75	93.5	88.25
Kg/cm <sup>2</sup>	1.8	3.5	7.0	8.8	1.8	3.5	7.0	8.8
PSI	25.0	50.0	100.0	125.0	25.0	50.0	100	125
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 (96.8 °F)														
MODEL	G-12H				G-16H					G-20H				
MATERIAL OF CONSTRUCTION	CAST IRON AND SS316				CAST IRON					CAST 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	299.8	273.4	248	221.9	206	358	355	353	350	287
Kg/cm <sup>2</sup>	1.8	3.5	7.0	8.8	1.8	3.5	5.3	7.0	8.0	1.76	3.5	5.3	7.0	8.79
PSI	25	50	100	125	25	50	75	100	113	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

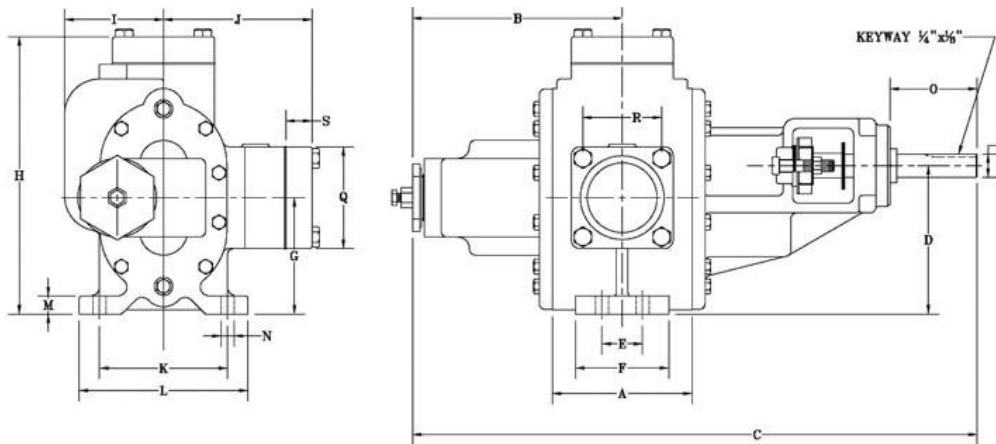
Note: The above chart is for information only. Data shown here can change depending on operating condition of a particular system and application. It should not be used as a selection guide. Please consult with Titan's engineering department before making a selection.



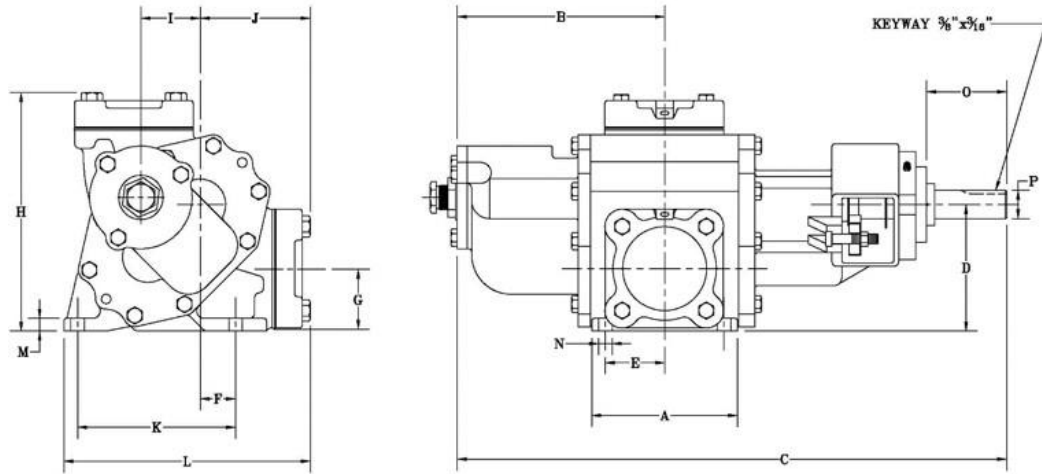
## Standard Pump Dimensions



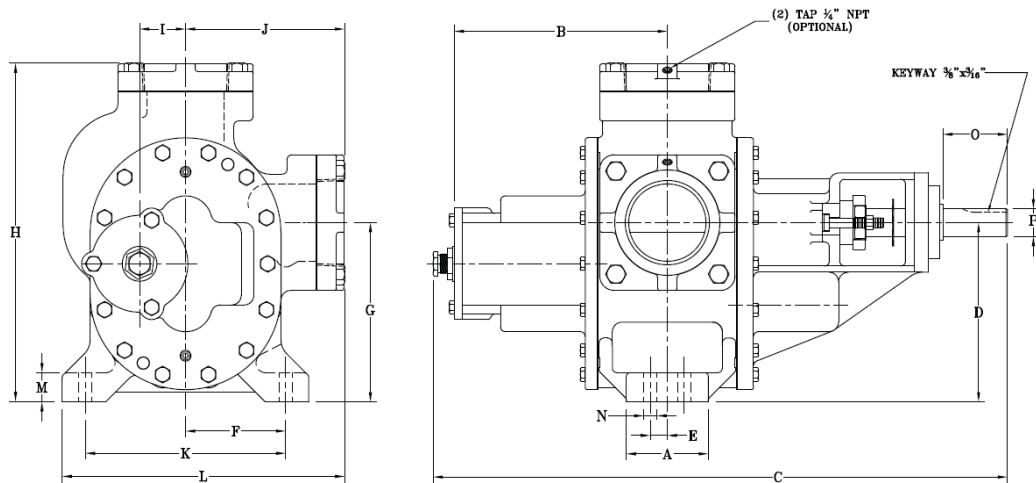
MODEL	MATERIAL	INLET	OUTLET	DIMENSIONS															
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
G-04H SCREWED	CAST IRON / 316SS	2" NPT	2" NPT	3.0	7.50	21.25	6.44	1.75	3.0	5.0	10.75	4.0	3.64	5.50	7.25	0.78	0.56	3.75	1.0
G-08H SCREWED				4.50	8.25	22.75	6.44	1.75	4.0	5.0	10.85	4.0	3.64	5.50	7.25	0.78	0.56	3.75	1.0



MODEL	MATERIAL	INLET	OUTLET	DIMENSIONS																		
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
G-12H FLANGED	CAST IRON / 316SS	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	4.38	3.38	1.12

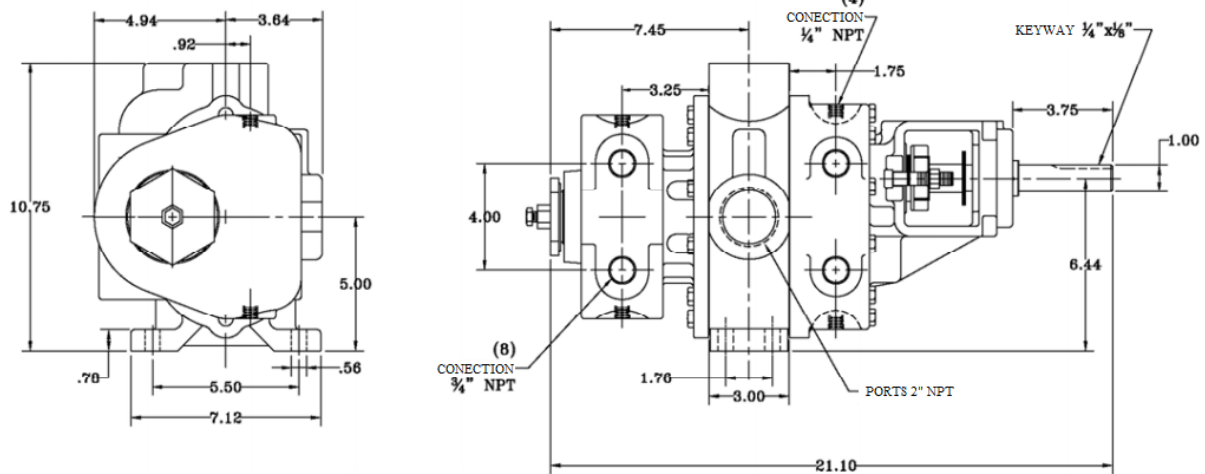


MODEL	MATERIAL	INLET	OUTLET	DIMENSIONS: Angled Gears															
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
G-16H FLANGED	CAST IRON	4"	4"	7.5	10.5	27.81	6.44	6.0	1.94	3.18	12.03	3.40	5.70	8.0	12.62	0.64	0.68	4.06	1.437

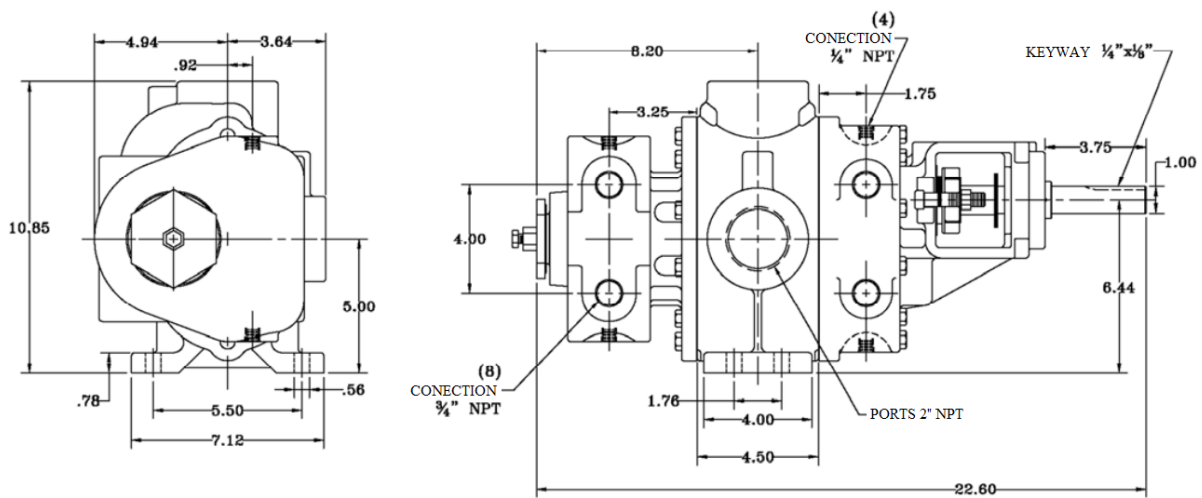


MODEL	MATERIAL	INLET	OUTLET	DIMENSIONS															
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
G-20H FLANGED	CAST IRON	4"	4"	4.25	11.03	28.63	9.25	0.88	5.18	9.25	17.50	2.38	8.25	10.36	14.62	1.50	0.69	3.34	1.437

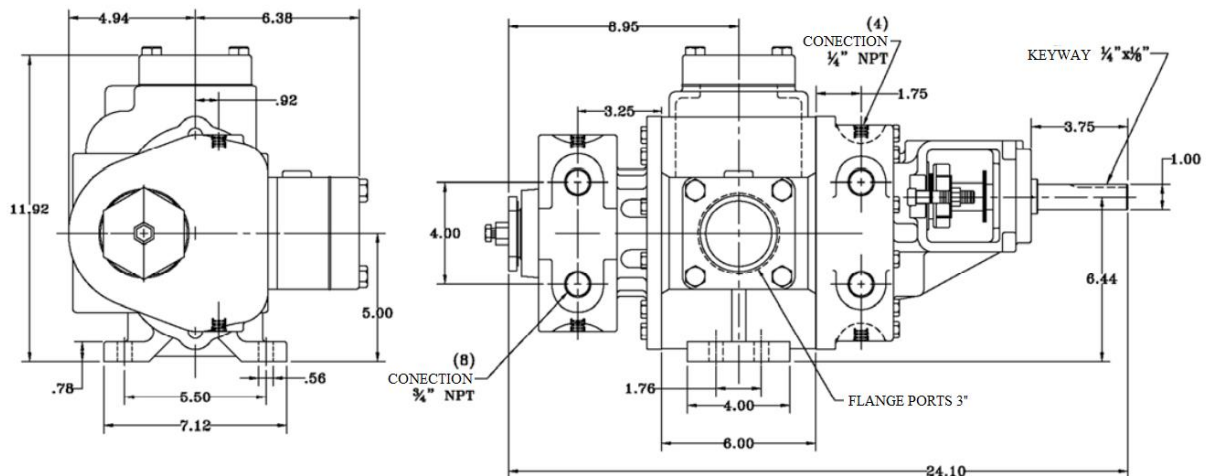
## Jacketed Pump Dimensions



Dimensional drawing model G - 04H JKT



Dimensional drawing model G - 08H JKT



Dimensional drawing model G - 12H JKT

# TITAN PUMPS

Houston, Texas

*Engineered for High Performance...*

ISO  
9001:2015  
CERTIFIED



ANSI  
4196



Rotary Gear  
Viking® Style



Trash  
Gorman Rupp® Style



AODD  
Wilden® Style



AODD  
Wilden® Style

## Applications:

- Chemical / Process
- Refining / Petrochemical
- Mining
- Drilling Industry
- Water Treatment
- Construction
- Municipal
- & more...



Trash  
Gorman Rupp® Style

**...The Choice is Yours!**



Durco® Style



Vertical  
Turbine



Deep Well  
Submersible



Progressing Cavity Pump  
Moyno® Style



Mining  
Warman® Style

*"Pumping  
By Design"*

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.... Give us a call!**

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email: [sales@titanpumpsinc.com](mailto:sales@titanpumpsinc.com)