

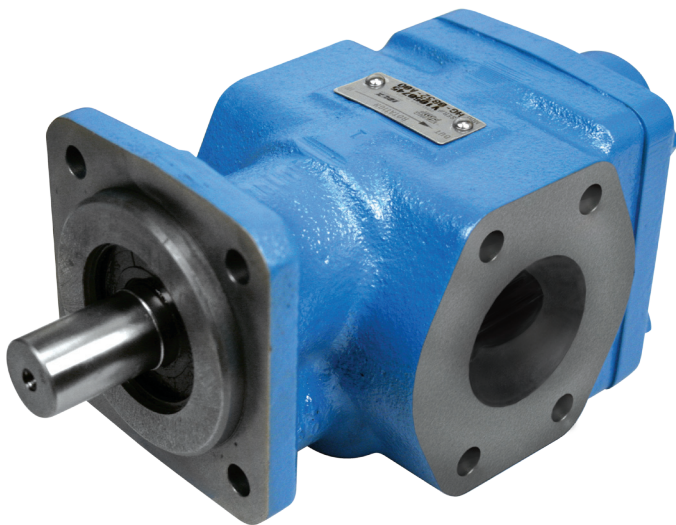
VIKING HG SERIES HELICAL GEAR EXTERNAL GEAR PUMPS

SERIES HG-08 / HG-10

Section	350
Page	350.1
Issue	A

Series Description

Viking's HG series positive displacement pumps are designed to provide low noise transfer and processing of clean, lubricating liquids for applications such as lube oils, fuel oils, edible oils and chemicals.



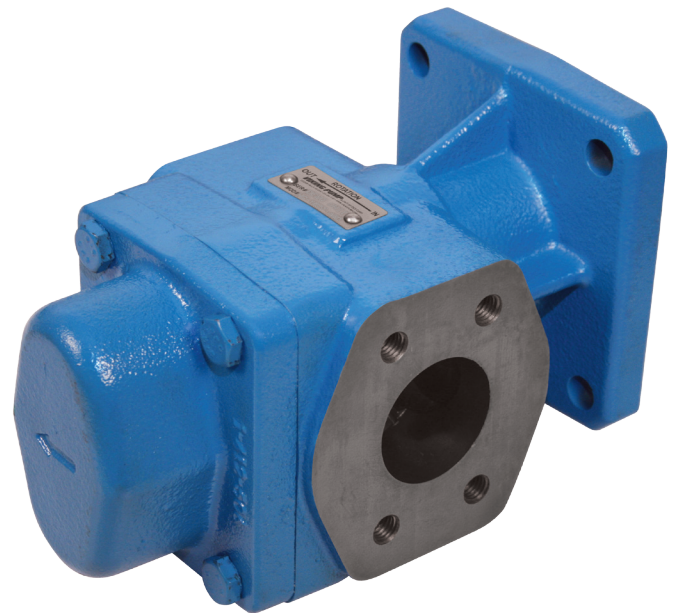
Operating Range:

HG Pumps		
Displacements	No.	4
Flow Range	GPM	5 to 52
	M ³ /Hr	1 to 11.7
Pressure Range	PSI	362 Continuous, 580 Intermittent
	Bar	25 Continuous, 40 Intermittent
Temperature Range*	°F	-40° to 350°
	°C	-40° to 177°
Viscosity Range	SSU	38 to 90,000
	cSt	4 to 20,000

*with optional construction

Key Features and Benefits:

- Helical gears reduce noise and pulsation compared to spur-type gears by preventing trapping of fluid
- Motor-speed operation eliminates the need for speed reduction for most applications
- Casing pilot to 80 mm (HG-08) or 110mm (HG-10) ISO 3019-2 enables coupling to industry standard motor bell housings or foot mount brackets
- O-ring sealed porting to SAE J518 Code 61 with metric threaded fastener holes prevents leakage at high pressures
- Two-piece design with O-ring seal eliminates a second leak point found in 3-piece pumps
- May be mounted horizontally or vertically for smaller footprint
- Internal shaft lubrication channels (suckbacks) cause internal flow along the shafts for lubrication. This also relieves pressure at the seal for longer seal life.
- Dimensionally interchangeable with some other brands of lube pumps

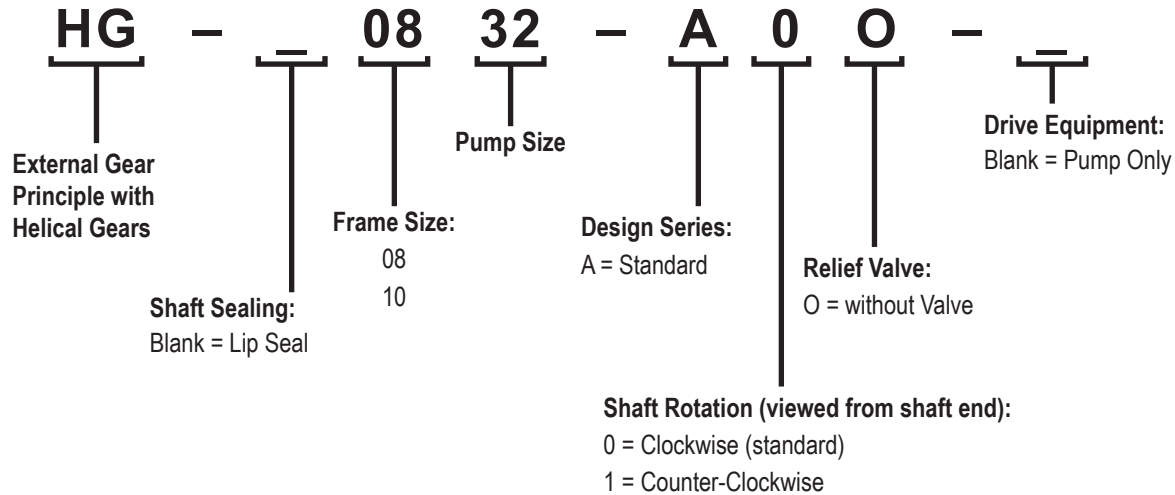


Section	350
Page	350.2
Issue	A

VIKING HG SERIES HELICAL GEAR EXTERNAL GEAR PUMPS

SERIES HG-08 / HG-10

Model Number Key



Materials of Construction

Component	Standard Construction	Options
Casing and Head	Cast Iron ASTM A48	---
Gear / Shafts	Case Hardened Steel GB/T 3077	---
Journal Bearings	Self-Lubricating Dry Sliding Bearing (“DU”: PTFE-impregnated bronze with steel reinforcement)	---
O-Rings	Buna-N	Viton®
Lip Seals	Buna-N	Viton®

Specifications

② Model Number	Standard Port Size (SAE J518 Code 61)	Port Size Options	Theoretical Displacement		④ Nominal Capacity at 50 Hz Motor Speeds		④ Nominal Capacity at 60 Hz Motor Speeds		③ Maximum Continuous Pressure		③ Maximum Intermittent Pressure		① Maximum Recommended Temperature		Approximate Shipping Weight (Pump Only)	
					1450 RPM	1750 RPM	LPM	GPM	BAR	PSI	BAR	PSI	°C	°F	Kg.	Lb.
HG-0825	2	1.5	63.97	3.904	80.3	21.2	99.2	26.2	25	362	40	580	177	350	10.9	24
HG-0832	2	1.5	81.39	4.967	107.1	28.3	131.4	34.7	25	362	40	580	177	350	10.9	24
HG-1024	2	2.5	100.69	6.145	133.2	35.2	163.5	43.2	25	362	40	580	177	350	17.3	38
HG-1027	2	2.5	112.05	6.838	149.9	39.6	183.2	48.4	25	362	40	580	177	350	17.3	38

① Standard Buna-N seals (O-Rings and shaft lip seals) can be used from -40° F to +225° F (-40° C to +107° C). With optional sealing elements of Viton®, temperatures up to +350° F (+177° C) are possible. Extra clearances may be required. Contact factory for recommendations.

③ For maximum recommended discharge pressures when handling other viscosities and/or operating at other speeds, visit www.vikingpump.com/pumpselector.

④ Nominal capacity based on 100 SSU (22 cSt) liquid at 100 PSI (7 BAR)

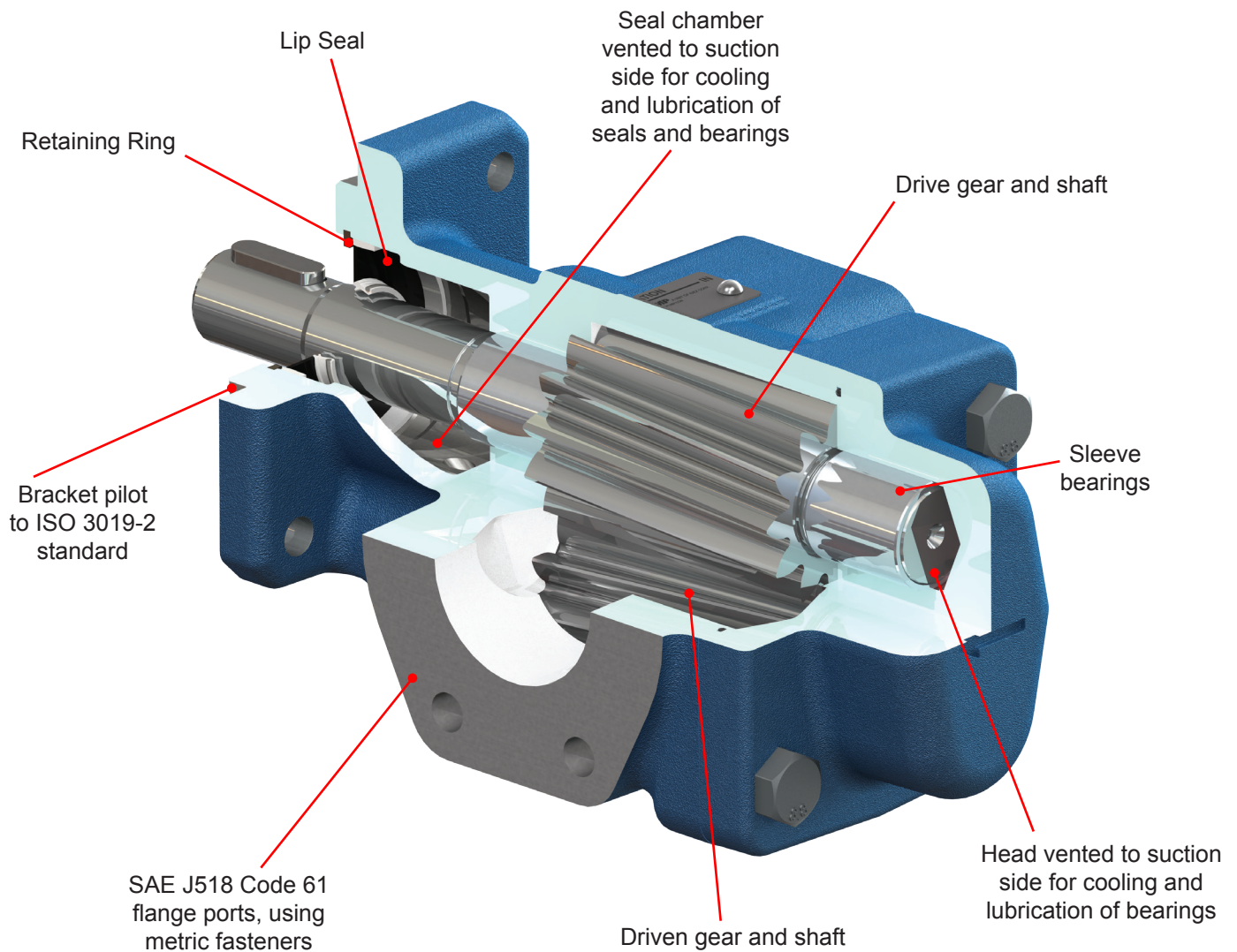
② See model numbering code above.

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VIKING HG SERIES HELICAL GEAR EXTERNAL GEAR PUMPS

SERIES HG-08 / HG-10

Section	350
Page	350.3
Issue	A

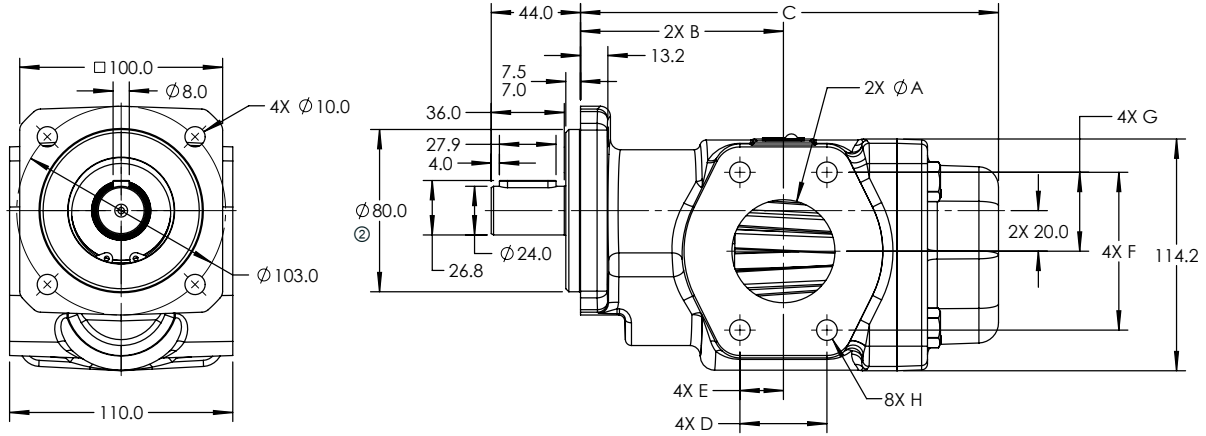


Section	350
Page	350.4
Issue	A

VIKING HG SERIES HELICAL GEAR EXTERNAL GEAR PUMPS

SERIES HG-08 / HG-10

Dimensions - Series HG-08 Unmounted

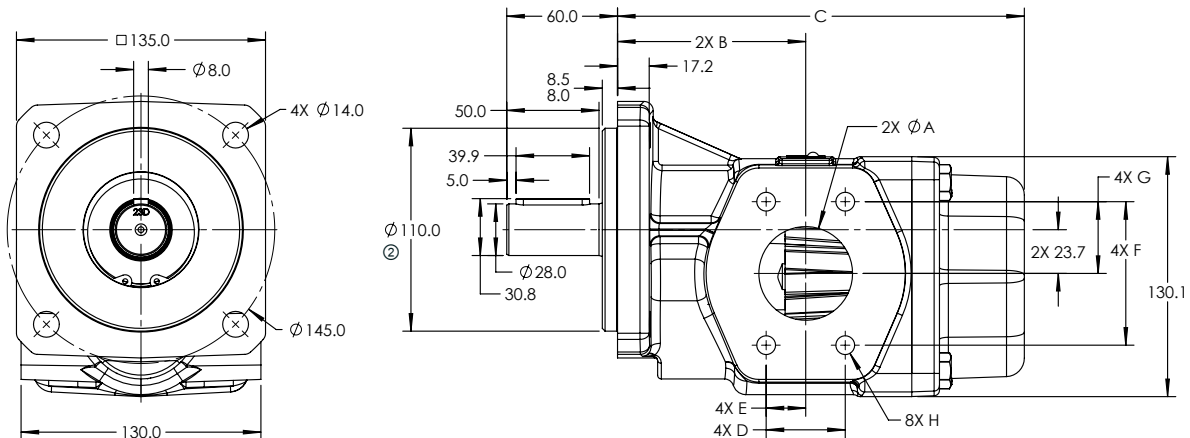


Model No.	A (in)		B	C	D	E	F	G	H
HG-0825 ①	2	in	3.94	8.11	1.69	0.84	3.06	1.53	M12x1.75 0.87 DEEP
		mm	100.0	206.0	42.9	21.4	77.8	38.9	M12x1.75 22.0 DEEP
HG-0832 ①	2	in	3.94	8.11	1.69	0.84	3.06	1.53	M12x1.75 0.87 DEEP
		mm	100.0	206.0	42.9	21.4	77.8	38.9	M12x1.75 22.0 DEEP

① Standard ports. 1 1/2" port optional on HG-0825 & HG-0832. Port standard SAE J518 Code 61 o-ring sealed flange.

② Casing pilot to ISO 3019-2, 80 mm

Dimensions - Series HG-10 Unmounted



Model No.	A (in)		B	C	D	E	F	G	H
HG-1024 ①	2	in	4.02	8.68	1.69	0.84	3.06	1.53	M12x1.75 0.87 DEEP
		mm	102.0	220.5	42.9	21.4	77.8	38.9	M12x1.75 22.0 DEEP
HG-1027 ①	2	in	4.02	8.68	1.69	0.84	3.06	1.53	M12x1.75 0.87 DEEP
		mm	102.0	220.5	42.9	21.4	77.8	38.9	M12x1.75 22.0 DEEP

① Standard ports. 2 1/2" port optional on HG-1024 & HG-1027. Port standard SAE J518 Code 61 o-ring sealed flange.

② Casing pilot to ISO 3019-2, 100 mm

VIKING HG SERIES HELICAL GEAR EXTERNAL GEAR PUMPS

SERIES HG-08 / HG-10

Section	350
Page	350.5
Issue	A

PERFORMANCE CURVE NOTES

Printed performance curves are not available.

Performance curves can be electronically generated with the Viking Pump Selector Program. This program can be located on www.vikingpump.com/pumpselector for the general public.

For authorized distributors, this program can be found listed under the “Products” tab at www.idexconnect.com. Security passwords are required to access IDEXconnect.

INLET CONDITIONS: The performance curves show “Based on 10 (or 15) In.-Hg.” which is Viking’s standard test condition. This is **not** the maximum vacuum capability of the pump.

NPSH (Net Positive Suction Head): The NPSH_R (Net Positive Suction Head **Required** by the pump) is given in the table below and applies for viscosities through 750 SSU. NPSH_A (Net Positive Suction Head **Available** in the system) must be greater than NPSH_R.

For a complete explanation of NPSH, see Viking Application Data Sheet, AD-19.

FOR VISCOSITIES ABOVE 750 SSU (NPSH_R data not available): The performance curves are based on 15 In.-Hg. While vacuums up to 20 In.-Hg. will not generally result in any loss of capacity, it is recommended that the suction line size and possibly the pump port size be increased to hold the expected vacuum to 15 In.-Hg. or less, when measured at the pump suction port. Vacuum above 20 In.-Hg. should be avoided. (Refer to “Engineering Data” Catalog Section 510 for information helpful in determining suction line size.)

MECHANICAL EFFICIENCY: The Mechanical Efficiency (expressed in percent) can be calculated by using the following formula:

$$\text{Mechanical Efficiency} = \frac{(\text{Differential Pressure, PSI}) (\text{Capacity, GPM}) (100)}{(\text{Horsepower, BHP}) (1715)}$$

HG SERIES NET POSITIVE SUCTION HEAD REQUIRED (NPSH_R) ① FEET OF LIQUID (SP. GR. 1.0), VISCOSITIES - 38 SSU TO 750 SSU

Pump Size	Pump Speed (RPM)						
	640	950	1150	1450	1750	3000	3450
HG-0825	3.1	3.4	3.6	4.1	4.6	N/A	N/A
HG-0832	3.1	3.5	3.8	4.3	5.1	N/A	N/A
HG-1024	4.1	4.5	4.9	5.6	6.7	N/A	N/A
HG-1027	4.2	4.6	5.1	6.0	7.4	N/A	N/A

1 m = 3.28 feet

1 foot = 0.305 m

① - At pump suction port

N/A - Not Applicable - pump not rated for speeds listed.

METRIC CONVERSION: The following table has been compiled for conversion to metric values.

Vacuum		Pressure	
(Inches-Mercury) In.-Hg.	(Kilopascal) kPa*	(lbf/in. ²) PSI	(Kilopascal) kPa*
1	3.4	1	6.9
5	17	25	172
10	34	50	345
15	51	100	690
20	68	150	1034
25	85	200	1379
		250	1724
		500	3448

*100 kPa = 1 bar

DISPLACEMENT AND ELEMENT SIZE TABLE

Pump Size	Theoretical Displacement		“Theoretical Displacement (per 100 rev)”		Approximate Size of Elements			
	in3/rev	cm3/rev	Gal.	Liters	Gear O.D.		Gear Length	
					Inches	mm	Inches	mm
0825	3.904	63.97	1.69	6.3973	2.00	51	2.5	63
0832	4.967	81.39	2.15	8.1386			3.2	80
1024	6.145	100.7	2.66	10.069	2.40	61	2.4	62
1027	6.838	112.0	2.96	11.205			2.7	69