

HIGH PRESSURE EXTERNAL GEAR PUMPS: DUCTILE IRON CONSTRUCTION

GB-425 Series™

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SERIES DESCRIPTION

Viking's GB-425 Series™ positive displacement pumps build on and improve Viking's rich legacy of dependable solutions for demanding applications that require high pressure when handling thin liquids in the medium to higher flow capacity ranges. These pumps were created with fixed end clearance, ease of preventative maintenance, and motor speed operation. There are 5 models available for this series, all standard in Ductile Iron externals, spur gear style gears, and hardened internal components. The porting utilizes a 6" suction and discharge port on all models and available with adaptable weldneck style flange adapters to meet any system need.

Now with an even more robust construction, with the newly built-in repairable features, Viking's new GB-425 Series™ of pipeline injection pumps provide an even more durable and repairable solution for your oil & gas processing, pipeline injection, and high-pressure transfer needs

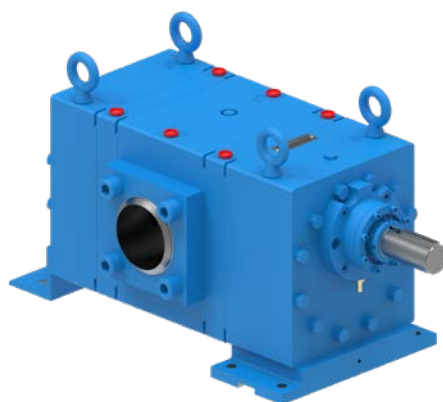
TYPICAL APPLICATIONS

This pump is designed to handle applications that are thin, clean, and lubricating liquids with high differential pressure requirements. Sometimes referred to as: Shipping Pump, Booster Pump, Pipeline Injection Pump, and/or LACT Injection Pump.

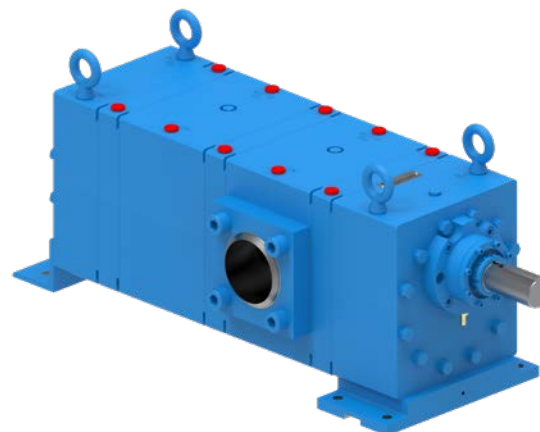
Typical Applications: Shipping Pump, Booster Pump, Pipeline Injection Pump, Crude oil Injection Pump, tank transfer, sump pump applications, and many other liquids requiring high differential pressures supporting multiple application needs.



GB-425021



GB-425052



GB-425073

OPERATING RANGE

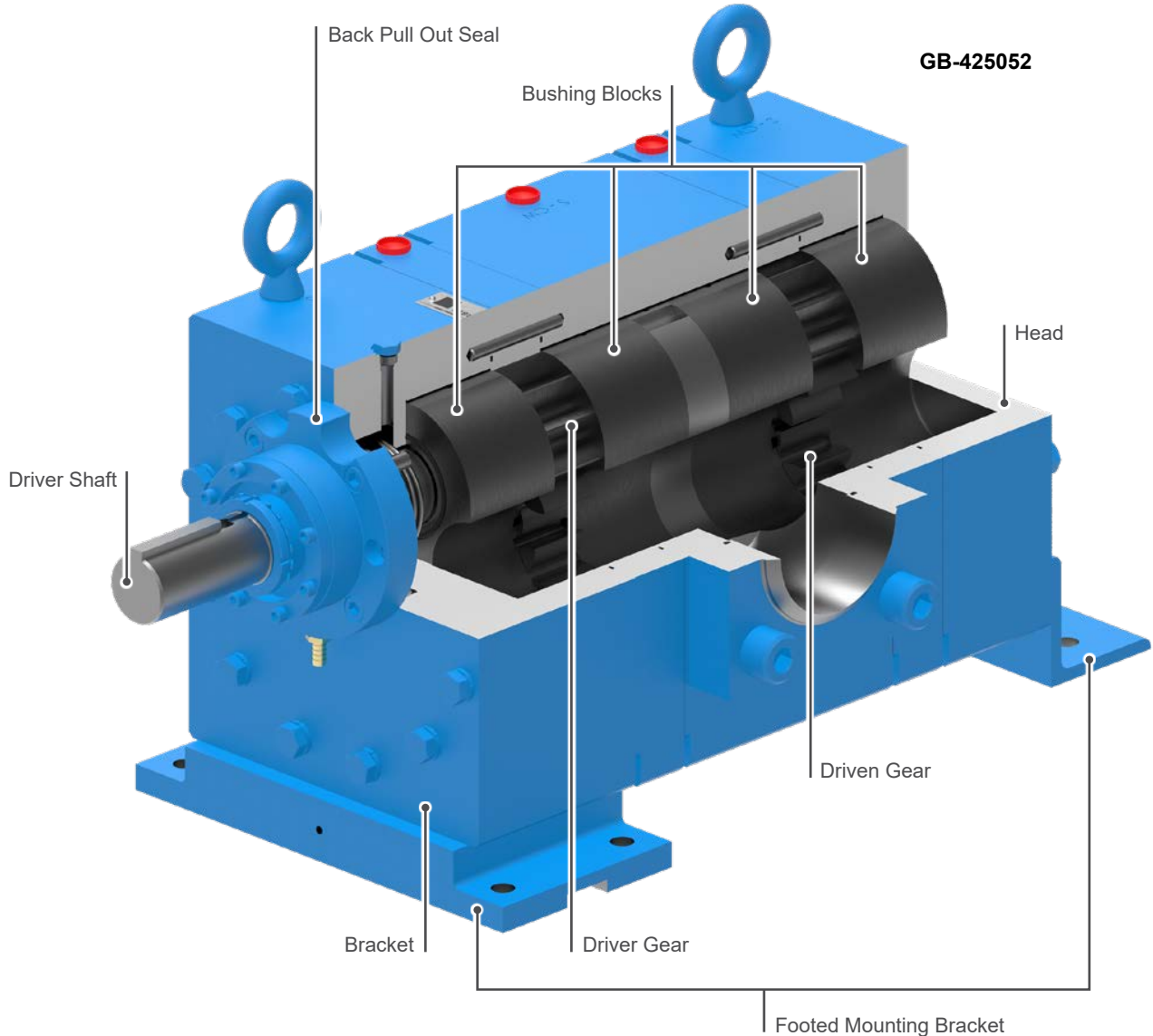
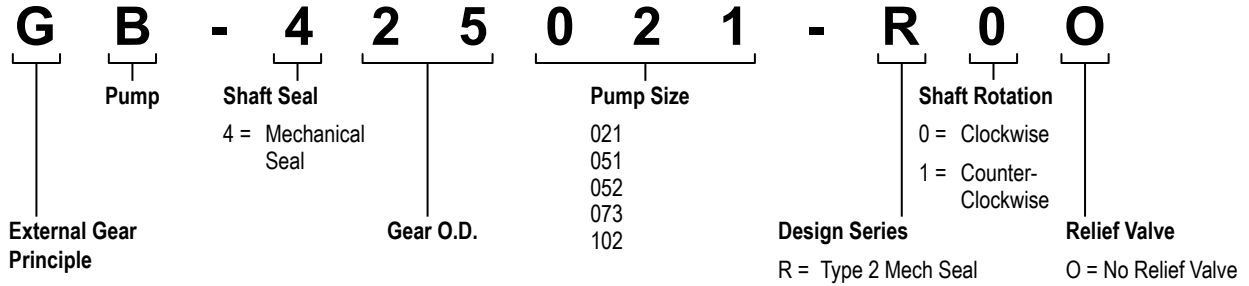
SERIES	NOMINAL FLOW		MAXIMUM PRESSURE	TEMPERATURE RANGE	VISCOSITY	
	GPM	BPD	PSI	°F	SSU	cP
GB-425	200 - 800	6,900 - 27,600	1,500	0 to +350	to 100	to 20

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MODEL NUMBER KEY



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MATERIALS OF CONSTRUCTION

Component	Standard Offering
Bracket	Ductile Iron (ASTM A536)
Casing	Ductile Iron (ASTM A536)
Head / Separation Plate	Ductile Iron (ASTM A536)
Bushing Block	Gray Iron (ASTM A823) with DLC Surface Hardening
Gears	Heat Treated Steel (ASTM A322) with DLC Surface Hardening
Shaft	Heat Treated Steel (ASTM A322)
Bushings	DU (PTFE-Impregnated Bronze w/ Steel Reinforcement)
O-Rings	FKM
Mechanical Seal	Carbon / Silicon Carbide ①

① Standard Mechanical Seal – John Crane Type 2 Elastomer Bellows Seals

PERFORMANCE

Pump Model	① Ports	Nominal Flow @ 750PSI (1,190 rpm) on 4 cP			Nominal Flow @ 1,500PSI (1,190 rpm) on 4 cP			Maximum Continuous Pressure	Maximum Recommended Temperature	Approximate Shipping Weight (Pump Only)
		GPM	BPH	BPD	GPM	BPH	BPD			
Ductile Iron	Inch									
GB-425021	6"	170	245	5,890	150	212	5,100	1,500	350	1,375
GB-425052	6"	345	490	11,770	298	425	10,200	1,500	350	1,786
GB-425073	6"	515	735	17,655	446	638	15,300	1,500	350	2,473
GB-425051	6"	340	488	11,720	–	–	–	750	350	1,500
GB-425102	6"	685	975	23,440	–	–	–	750	350	2,037

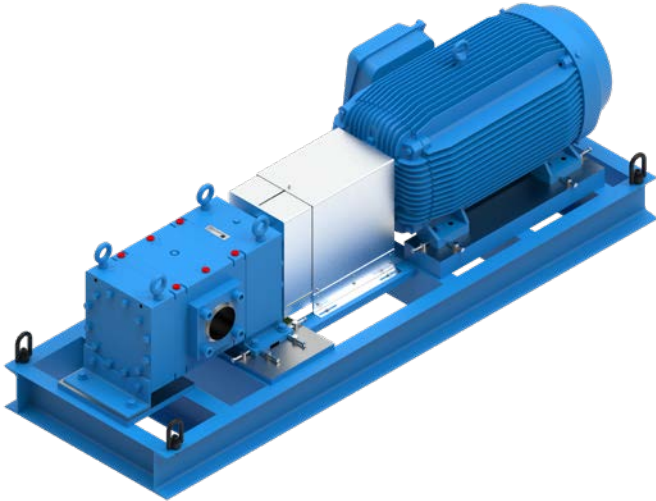
① 6" 4-bolt port uses 3000 Series Square Flange.

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DRIVE OPTIONS

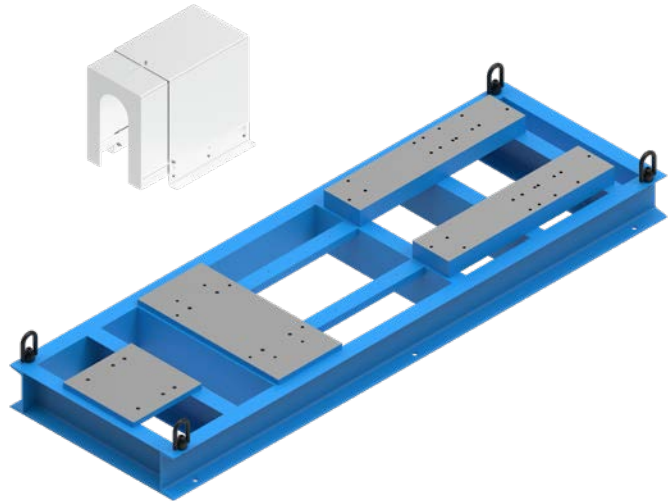


Base Mounted Units (“D” Drive)

GB-425 Series™ external gear pumps can be mounted to a Viking structural steel base providing solid mounting for all of the drive equipment (pump and motor). Available as complete unit with spec motor, JC A Series spacer coupling, aluminum coupling guards, and alignment jacking bolts.

NOTE: This mounting arrangement requires on-site coupling alignment.

*Dimensions for Base Mounted Pumps (“D” Drive) —
See Pages 1656.6 - 1656.7.*



Base Package Standard Features

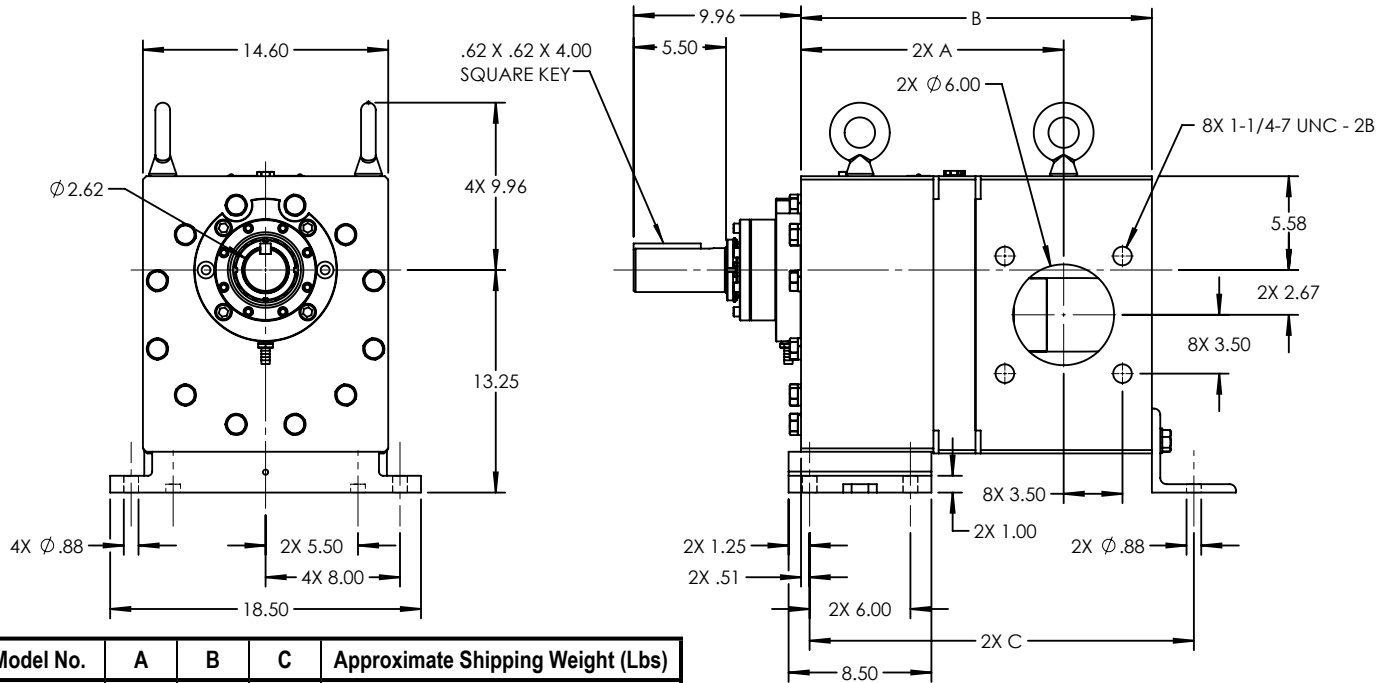
GB-425 Series™ Base packages are available from Viking as a turn key pump and motor package to allow maximum flexibility for future pump needs (CPL), ease of alignment with jacking bolts and milled mounting pads, and integrated swivel lifting lugs for proper rigging and unit mobility. The Viking base package also includes a standard adjustable aluminum coupling guard covering our spacer coupling for easy seal access.

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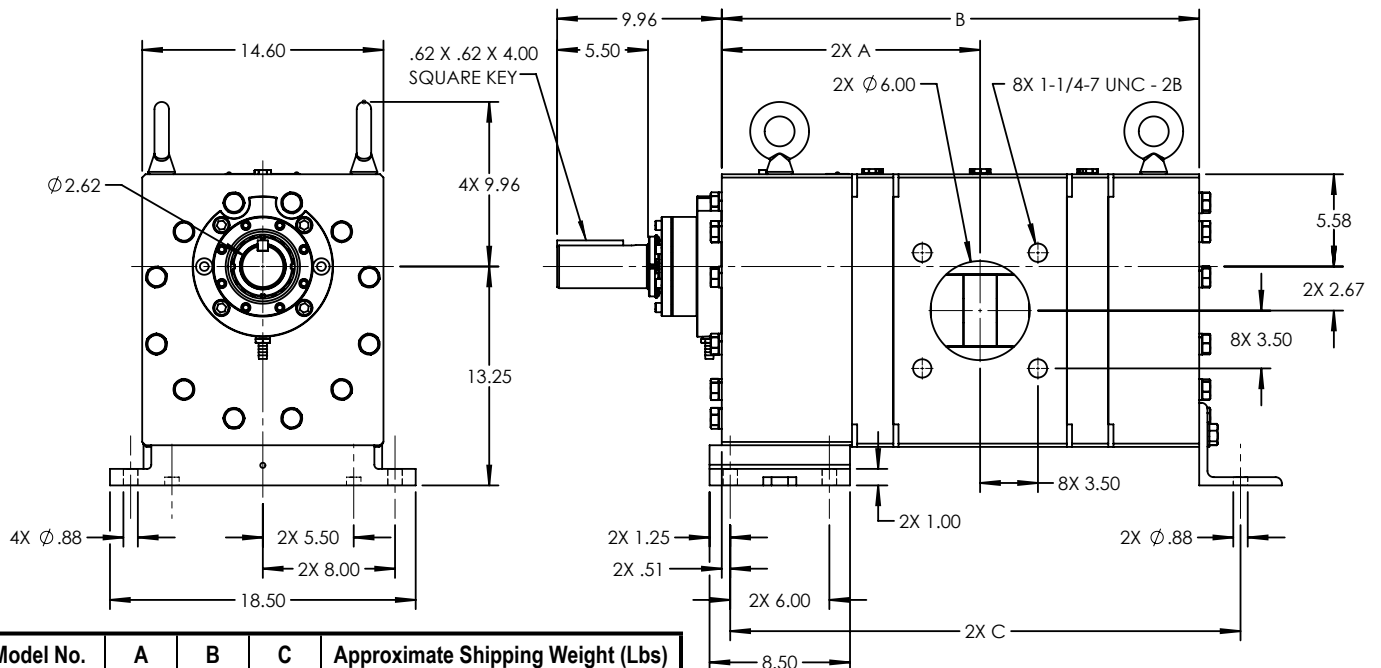
DIMENSIONS – GB-425021 & GB-425051 (PUMP ONLY)



Model No.	A	B	C	Approximate Shipping Weight (Lbs)
GB-425021	15.63	20.88	22.87	1,370
GB-425051	18.14	23.39	25.38	1,500

NOTE: Dimensions in inches

DIMENSIONS – GB-425052 & GB-42102 (PUMP ONLY)



Model No.	A	B	C	Approximate Shipping Weight (Lbs)
GB-425052	15.63	28.89	30.88	1,788
GB-425102	18.14	33.89	35.88	2,050

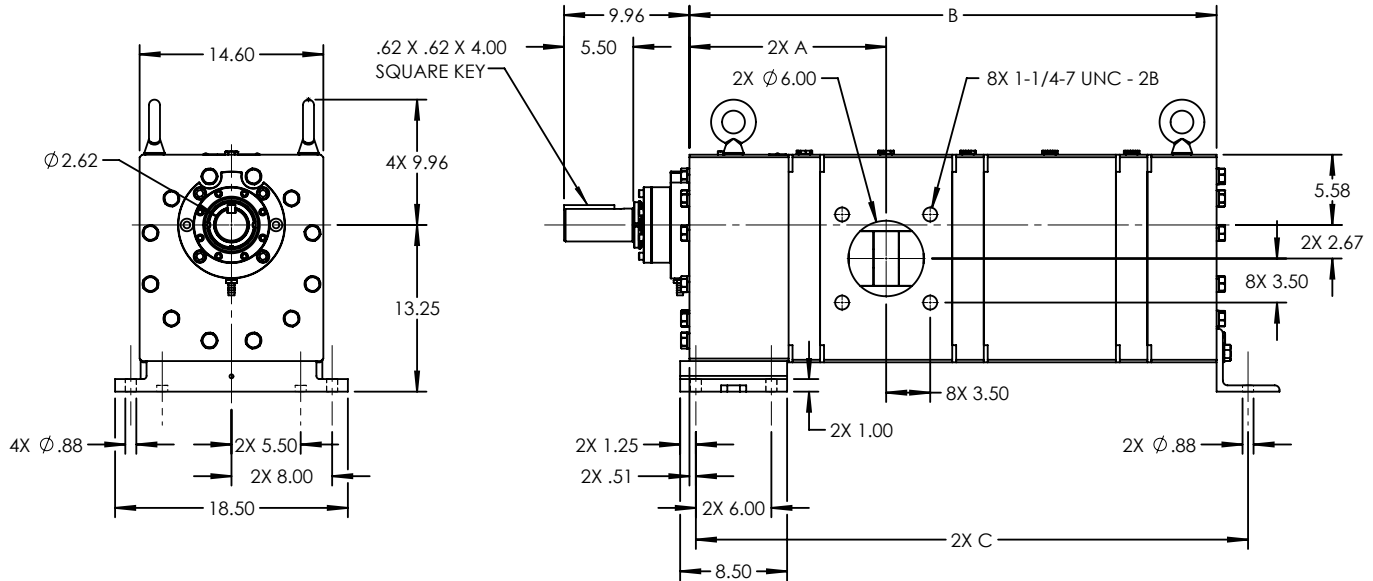
NOTE: Dimensions in inches

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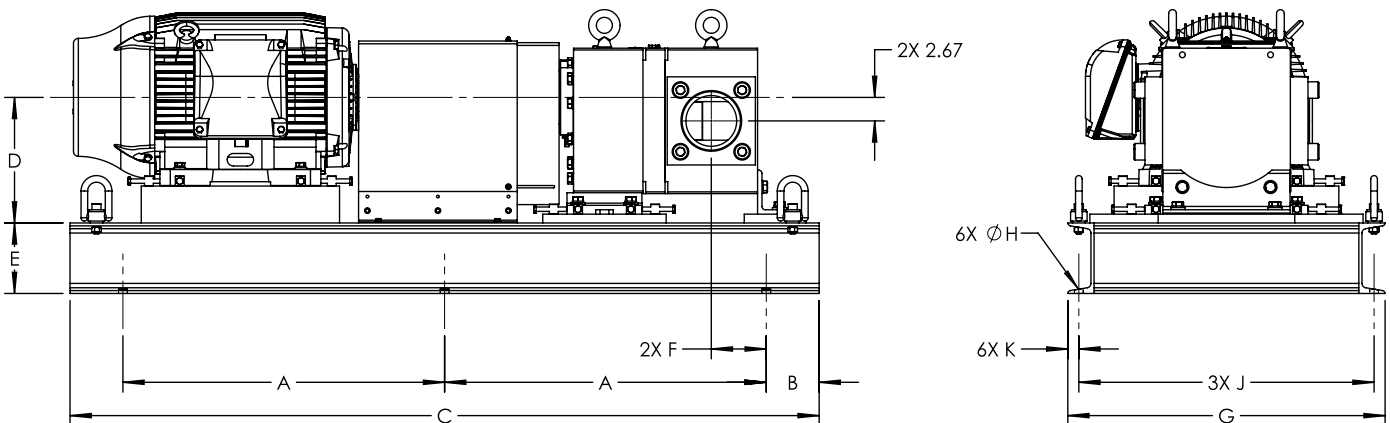
DIMENSIONS – GB-425073 (PUMP ONLY)



Model No.	A	B	C	Approximate Shipping Weight in Pounds
GB-425073	15.63	41.89	43.88	2,475

NOTE: Dimensions in inches

DIMENSIONS – GB-425021 (PUMP & MOTOR)



Motor Frame Size	Pump Model No.	A	B	C	D	E	F	G	H	J	K	Approximate Shipping Weight in Pounds
364T-365T	GB-425021	33.75	6.00	79.50	14.25	8.00	6.25	36.00	1.00	33.50	1.25	3,700
404T-405T	GB-425021	36.50	6.00	85.00	14.25	8.00	6.24	36.00	1.00	33.50	1.25	3,995
444T-449T	GB-425021	44.25	6.00	100.50	14.25	8.00	6.47	36.00	1.00	33.50	1.25	6,475

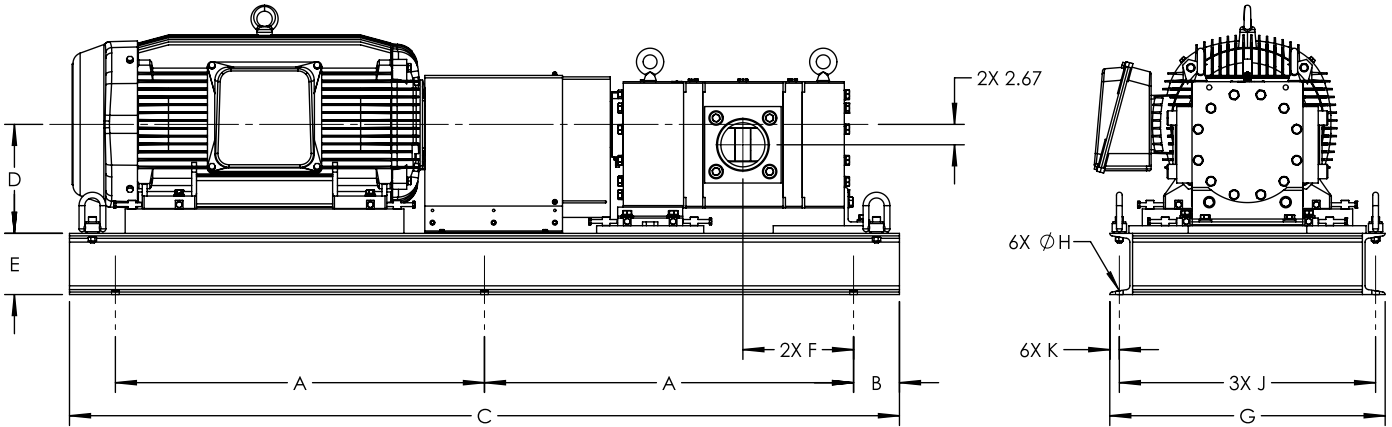
NOTE: Dimensions in inches

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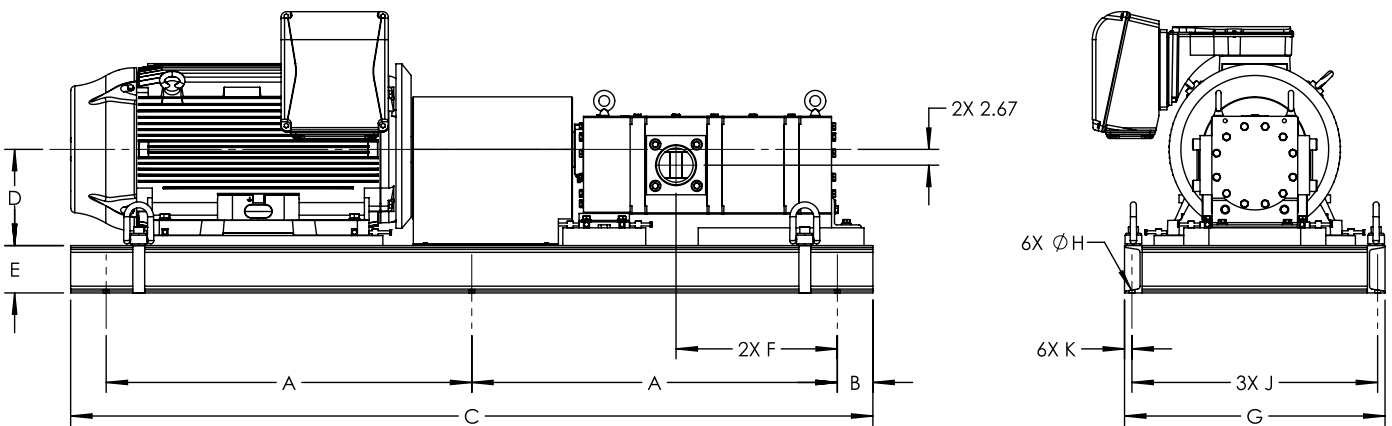
DIMENSIONS – GB-425051 & GB-425052 (PUMP & MOTOR)



Motor Frame Size	Pump Model No.	A	B	C	D	E	F	G	H	J	K	Approximate Shipping Weight in Pounds
444T-449T	GB-425051	48.25	6.00	108.50	14.25	8.00	11.96	36.00	1.00	33.50	1.25	6,665
444T-449T	GB-425052	48.25	6.00	108.50	14.25	8.00	14.47	36.00	1.00	33.50	1.25	6,950
586T-589T	GB-425052	55.25	6.00	122.50	16.25	8.00	14.25	44.00	1.00	41.50	1.25	9,090

NOTE: Dimensions in inches

DIMENSIONS – GB-425073 & GB-425102 (PUMP & MOTOR)



Motor Frame Size	Pump Model No.	A	B	C	D	E	F	G	H	J	K	Approximate Shipping Weight in Pounds
444T-449T	GB-425073	54.75	6.00	121.50	14.25	8.00	27.47	36.00	1.00	33.50	1.25	7,780
586T-589T	GB-425073	61.75	6.00	135.50	16.25	8.00	27.25	44.00	1.00	41.50	1.25	10,050
444T-449T	GB-425102	54.75	6.00	121.50	14.25	8.00	24.96	36.00	1.00	33.50	1.25	7,355
586T-589T	GB-425102	61.75	6.00	135.50	16.25	8.00	24.74	44.00	1.00	41.50	1.25	9,625

NOTE: Dimensions in inches

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PERFORMANCE CURVES

Contact Viking Pump for performance curves for specific application conditions.

NPSH (NET POSITIVE SUCTION HEAD)

The NPSH_R (Net Positive Suction Head Required by the pump) is given in the table below and applies to 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.

GB-425 Series™
Net Positive Suction Head Required (NPSHR) ①
Feet of Liquid (S.G. 1.0)
Viscosities - 38 SSU to 750 SSU

Pump Size	Pump Speed (RPM)			
	640	780	950	1150
GB-425021	7.2	8.1	10.7	15.9
GB-425051	7.5	8.5	11.3	16.7
GB-425052	7.4	8.4	11.2	16.6
GB-425073	7.6	8.6	11.4	16.8
GB-425102	8.0	9.2	12.1	17.7

1 meter = 3.28 feet

1 foot = 0.305 m

① - At pump suction port

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 1510 for information helpful in determining suction line size.)

Mechanical Efficiency:

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

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

CPL (COMMON PORT LOCATION) OPTION

Viking's Common Port Location (CPL) base units allow for ease of downsizing pumps once wells come off of IP (Initial Production). This feature is special order (on some models), and allows customers to drop in smaller flow rated pumps into the exact base and drive as the original with no / minimal piping changes required. Contact Viking Pump for more information on this drive package option.

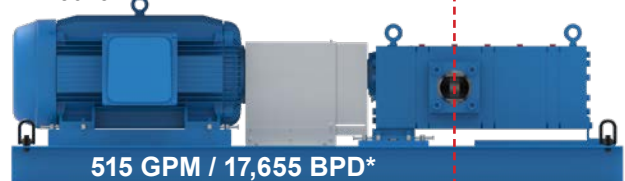
GB-425021:



GB-425052:



GB-425073:



* Nominal Flow