

MOTOR SPEED PRODUCT LINE: CAST IRON PUMPS

75 Series™ & 475 Series™

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RELATED PRODUCTS

Cast Iron, 432 Series™: Catalog Section 1444

Cast Iron, 456 Series™: Catalog Section 1442

Cast Iron, 495 Series™: Catalog Section 1441

SERIES DESCRIPTION

For compactness, less weight and simplicity of mounting, Viking's line of close-coupled pumps are ideal for direct connecting to other pieces of equipment. The positive, smooth delivery of these pumps makes them preferred for many types of applications including filtering, circulating, transferring, lubricating or booster service.

The five sizes of Viking close-coupled pumps from 5 to 30 GPM are available in this unmounted type ready to connect on other equipment with standard NEMA C flange mounting.

All pumps are available with rotor bore to fit the shaft of a standard motor or other piece of equipment. Bores are furnished in 5/8" and 7/8". By using a full length key between drive shaft and rotor bore, rigid and positive alignment of pump and drive shaft is assured.

This advanced design is unique in its field for it permits use of STANDARD, unmodified NEMA C flange ball bearing motors.

It is extremely close-coupled, reducing needed space, cutting overall weight, eliminating bases, couplings, outboard bearings or any drive equipment and at the same time saves cost.

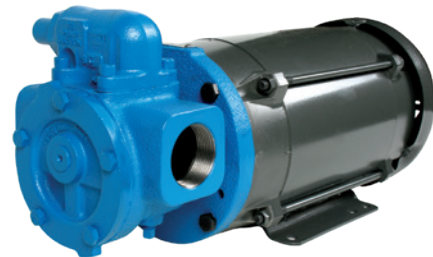
All sizes are equipped with opposite ports. Only two casing sizes are used for all five pumps. The two smaller pumps use one casing and the three larger pumps use the other.

Pumps are built to accept a compact, integral relief valve mounted on top of casing to maintain extreme compactness.

All pumps are available with either mechanical seal suitable for 100 PSI pressure or a lip seal suitable for 50 PSI. No modification of parts are needed to convert from one seal to the other.



HJ475



HL475 with M Drive

OPERATING RANGE

SERIES	NOMINAL FLOW		MAXIMUM PRESSURE		TEMPERATURE RANGE		VISCOSITY RANGE	
	GPM	m³h	PSI	Bar	°F	°C	SSU	cSt
75 Series™	5 - 30	1 - 7	50	3	-20 to +350	-25 to +175	28 to 2,500	.1 to 550
475 Series™	5 - 30	1 - 7	100	7	-20 to +350	-25 to +175	28 to 2,500	.1 to 550

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FEATURES & BENEFITS

- Viking close-coupled pump features save space
 - » Over-all space (length, height and width) is cut to a minimum with Viking's close-coupled pumps. Complete unmounted pump in all five sizes, 5 to 30 GPM, requires only approximately 5" of space.
- No drive equipment needed
 - » No couplings, bases, gears or outboard bearings. Standard motor shafts are keyed directly to the Viking rotor pump gear eliminating all extra drive equipment. Simple and compact.

STANDARD MATERIALS OF CONSTRUCTION

Standard Component		Standard Material
Casing		Iron
Head		Iron
Rotor		Iron
Idler		Steel (G, GG Sizes) Powdered Metal (H, HJ, HL Sizes)
Idler Bushing		Bronze
Shaft Sealing	Lip Seal	Buna-N
	Mechanical Seal	Buna-N, FKM
Internal Relief Valve		Iron

SPECIFICATIONS

Model Number		Port Size	Nominal Pump Rating			Motor Horsepower Required at Rated Speed Pumping 100 SSU Liquid		① Maximum Recommended Discharge Pressure				Maximum Recommended Temperature For Cataloged Pump				Maximum Recommended Viscosity (SSU)		Shipping Weight With Valve			
Lip Seal	Mech. Seal	IN	GPM	m ³ /h	RPM	25 PSI (2 BAR)	50 PSI (3 BAR)	Lip Seal		Mech. Seal		Lip Seal		② Mech. Seal		1800 RPM	1200 RPM	Mounted Units		Unmounted Pumps	
								PSI	BAR	PSI	BAR	°F	°C	°F	°C			Lbs	Kg.	Lbs	Kg.
G75	G475	1	5	1	1200	½	¾	50	3	100	7	225	107	225	107	750	2500	③ 48	③ 22	17	8
			7	1.5	1800																
GG75	GG475	1	7	1.5	1200	½	¾	50	3	100	7	225	107	225	107	750	2500	③ 48	③ 22	17	8
			10	2	1800																
H75	H475	1 ½	10	2	1200	½	1	50	3	100	7	225	107	225	107	750	2500	④ 80	④ 36	24	11
			15	3.5	1800																
HJ75	HJ475	1 ½	13	3	1200	1	1 ½	50	3	100	7	225	107	225	107	750	2500	⑤ 85	⑤ 39	24	11
			20	4.5	1800																
HL75	HL475	1 ½	20	4.5	1200	1 ½	2	50	3	100	7	225	107	225	107	750	2500	⑤ 85	⑤ 39	26	12
			30	7	1800																

① Mechanical seal pump will withstand a hydrostatic test pressure of 400 PSI (28 BAR). Lip seal pump should not be subjected to hydrostatic test. Neither type pump should be used on an application having a suction pressure greater than 15 PSI (1 BAR).

② Temperatures to 350°F (180°C) can be handled with FKM construction.

③ Includes 56C Frame Motor.

④ Includes 143TC Frame Motor.

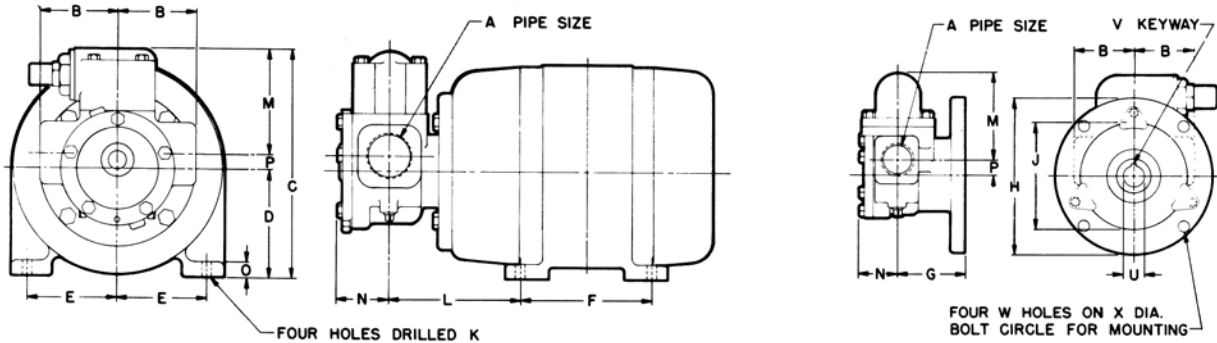
⑤ Includes 145TC Frame Motor.

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DIMENSIONS



NOTE:
ORDER MOTORS WITH 4 1/2" DIA. RABBIT
(FLANGE PILOT - REF. "J" DIMENSION)

MODEL NUMBER		MOTOR FRAME SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	U	V	W	X		
MECH. SEAL	LIP SEAL																						
G475 GG475	G75 GG75	56C	1	2.5	7.69	3.5	2.44	3	2.81	6.5	4.5	.34 SLOT	5.38	3.56	1.56	.13	.63	.18	.47	5.88			
		143TC			7.69	3.5	2.75	4				.34	5.69			.44					.63	.88	.18
		145TC			7.69	3.5	2.75	5				.34	5.69			.44					.63	.88	.18
H475 HJ475 HL475	H75 HJ75 HL75	56C	1 1/2	3.25	8.56	3.5	2.44	3	2.75	6.5	4.5	.34 SLOT	5.31	4.44	2.18	.13	.63	.18	.47	5.88			
		143TC			8.56	3.5	2.75	4				.34	5.63			.44					.63	.88	.18
		145TC			8.56	3.5	2.75	5				.34	5.63			.44					.63	.88	.18
H475 HJ475 HL475	H75 HJ75 HL75	182C	1 1/2	3.25	9.56	4.5	3.75	4.5	2.75	6.5	4.5	.41	5.63	4.44	2.18	.63	.63	.88	.18	.47	5.88		
		184C						5.5					5.63										

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NPSH REQUIRED

Printed performance curves are not available.

Performance curves can be electronically generated with the Viking Pump Curve Generator on vikingpump.com.

NPSH_R data is not available on the curve generator.

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

FOR VISCOSITIES UP TO 750 SSU – See NPSH_R table below.

NPSH_R for high viscosities can be estimated using the following method:

1. Calculate line loss for a 1 foot long pipe of a diameter matching the pump inlet port size. Use your flow rate and max viscosity.
2. Convert this value into Feet of Liquid (S.G. 1.0)
3. Add this value to the NPSH_R value in the chart below.

Pump Size	PUMP SPEED, RPM										
	230	280	350	420	520	640	780	950	1150	1450	1750
G, GG	---	---	---	1.8	2.0	2.2	2.6	3.1	3.9	5.6	7.6
H, HJ, HL	1.7	1.8	1.9	2.1	2.4	2.8	3.4	4.5	6.2	9.5	13.5

Note: NPSH_R – FEET OF LIQUID (Specific Gravity 1.0), Viscosities up to 750 SSU