

VIKING® GENERAL PURPOSE SPECIAL MOUNTED PUMPS

56 AND 456 SERIES

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FEATURES



SERIES 56 and 456 Pumps
with "M" Drives
"C", "F" and "FH" size pumps

① Pressure Range	250 PSI (17 BAR) for 100 SSU (21 cSt) and above ③ 100 PSI (7 BAR) for less than 100 SSU (21 cSt)
① Temperature Range	-60°F. to +350°F. (-51°C. to +177°C.)
Viscosity Range	28 SSU to 7,500 SSU (1.0 cP to 1,650 cSt)

② **GPM ½ - 1½ - 3**
(m³/hr .1 - .3 - .7)
(Nominal Rating)

The 56M and 456M units are motor mounted and answer the need for more compact, lighter weight equipment. They use the Series 56 and 456 hub type pumps with valves in casings and are mounted to NEMA "C" flange motors. Units are available with ¼, ⅓, ½ or ¾ HP, 1 ph, 1200 RPM or 1800 RPM, special shaft, open or explosion proof motors. All sizes use the mounting flange bracket with pump connected to motor through coupling. Pump can be turned in bracket to any position desired. Mechanical seal equipped Series 456 pump models are available with Underwriters label for handling fuel oil. Model numbers for these pumps must be designated by a suffix -X. "UL" listed models must be equipped with integral relief valve.

Dimensions for Unmounted Pumps and "M" Drive Units —See Page 320.5.

Performance Data for Unmounted Pumps and "M" Drive Units—See Pages 320.9 thru 320.14.

① See following pages or consult factory for specific recommendations on individual models or sizes.

② Nominal capacities based on handling thin liquids.

③ 150 PSI (7 BAR) handling fuel oil less than 100 SSU (21 cSt).

Metric conversions are based on US measurements and rounded to the nearest whole number.



RELIEF VALVE "C", "F" and "FH" SIZES (Standard Equipment)

Permits by-passing of liquid from discharge back to suction side of pump. Prevents building up excessive pressure in discharge line. If reversing pump at any time, valve parts must be inserted in opposite port. Pumps with relief valve built with right hand suction as standard. Left hand special.



MECHANICAL SEAL "C", "F" and "FH" SIZES

All models in the above range can be furnished with mechanical seal as well as conventional packing. The seal is a rotary type packaged unit that is simple and self-adjusting.

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VIKING® GENERAL PURPOSE SPECIAL MOUNTED PUMPS

56 AND 456 SERIES

MOUNTED PUMPS

CONSTRUCTION — 56 AND 456 SERIES (‘‘C’’, ‘‘F’’ AND ‘‘FH’’ SIZES)

Pump Construction	Casing	Head	Rotor and Shaft	Idler	Idler Pin	Casing Bushing		② Valve Parts
						Packed	⑩ Mechanical Seal	
Standard Construction	Iron	Iron	Steel	Steel	Steel	Carbon Graphite	Carbon Graphite	Iron
Bronze Fitted	Iron	Iron	Bronze	Bronze	Steel	Carbon Graphite	Carbon Graphite	Iron

SPECIFICATIONS — ‘‘M’’ DRIVE UNITS (‘‘C’’, ‘‘F’’ AND ‘‘FH’’ SIZES)

Unit Model Number		Unmounted Pump Model Number		Port Size	Nominal Pump Rating			Motor Horsepower Required at Rated Speed Pumping 100 SSU Liquid			Maximum Recommended Discharge Pressure PSIG			Maximum Recommended Temperature For Cataloged Pump °F. (°C.)		Maximum Hydrostatic Pressure PSIG (BAR)	Approximate ⑩ Shipping Weight With Valve and With Power Pounds (KG)
Packed	③ Mech. Seal	Packed	③ Mech. Seal		Inches	GPM (m³/hr)	RPM	50 PSI (3 BAR)	100 PSI (7 BAR)	Less Than 100 SSU	Fuel Oil Less Than 100 SSU	100 SSU and Up	Packed	Mech. Seal			
C56M	C456M	C56	C456	¼	½ (.1)	1800	④ ¼	④ ¼	⑤ 100	⑤ 150	⑥⑦ 250	⑧ 300 (149)	⑧ 225 (107)	750 (51)	42 (19)		
F56M	F456M	F56	F456	½	1½ (.3)	1800	④ ¼	④ ¼	⑤ 100	⑤ 150	⑥⑦ 250	⑧ 300 (149)	⑧ 225 (107)	750 (51)	43 (19.5)		
FH56M	FH456M	FH56	FH456	½	3 (.7)	1800	④ ¼	⅓	⑤ 100	⑤ 150	⑥⑦ 250	⑧ 300 (149)	⑧ 225 (107)	750 (51)	44 (20)		

① Buna N elastomer used in mechanical seal of 456 Series pumps.

② Valve integral with pump casing. Right hand suction standard.

③ Mechanical Seal Pumps not recommended on applications with viscosities above 15,000 SSU (3,300 cSt).

④ ¼ HP smallest readily available motor; see performance curves for actual horsepower.

⑤ 50 PSI maximum for bronze fitted pumps.

⑥ 100 PSI maximum for bronze fitted pumps.

⑦ With extra clearance, pumps can be used to 500 PSI (34 BAR) on intermittent duty.

⑧ Temperatures to 350° F. can be handled with special construction.

⑨ Includes ½ HP, 1 PH. open motor.

⑩ Mechanical seal seat has bronze bushing.

Metric conversions are based on US measurements and rounded to the nearest whole number.

VIKING® GENERAL PURPOSE SPECIAL MOUNTED PUMPS

75 AND 475 SERIES

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FEATURES



SERIES 75 and 475
Lip and Mechanical Seal
Unmounted Pumps
"G" and "GG" sizes

Pressure Range	50 PSI (3 BAR) (SERIES 75)
	100 PSI (7 BAR) (SERIES 475)
① Temperature Range	-20°F. to +350°F. (-29°C. to +177°C.)
① Viscosity Range	28 SSU to 2500 SSU (1.0 cP to 550 cSt)

② **GPM 5 - 7 - 10 - 13 - 15 - 20 - 30**
(m³/hr 1 - 1.5 - 2 - 3 - 3.5 - 4.5 - 7)
(Nominal Rating)

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".

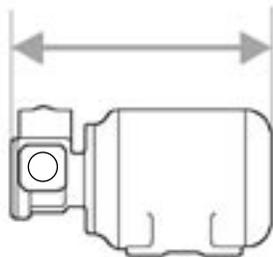
By using a full length key between drive shaft and rotor bore, rigid and positive alignment of pump and drive shaft is assured.

All five pumps operating at 1800 RPM and pumping liquids up to 750 SSU deliver 7, 10, 15, 20 and 30 GPM.

① See following pages or consult factory for specific recommendations on individual models or sizes.

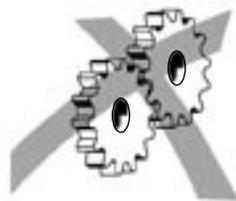
② Nominal capacities based on handling thin liquids.

Metric conversions are based on US measurements and rounded to the nearest whole number.



VIKING CLOSE-COUPLED PUMP FEATURES SAVES 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.

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VIKING® GENERAL PURPOSE SPECIAL MOUNTED PUMPS 75 AND 475 SERIES

MOUNTED AND UNMOUNTED PUMPS

This advanced design of Viking's line of close-coupled pumps is unique in its field for it permits use of STAND-ARD, unmodified NEMA "C" flange ball bearing motors in 1800 and 1200 RPM speeds, 56C, 143TC and 145TC frame sizes.

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 of these many items.

These Viking "gear-within-a-gear", self-priming, positive displacement pumps are ideal for filtering, circulating, transferring, lubricating or booster service.

All five 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.

All five 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.

Dimensions for Unmounted Pumps and "M" Drive Units — See Page 320.6.

Performance Data for Unmounted Pumps and "M" Drive Units—See Pages 320.15 thru 320.19.



SERIES 75 and 475 Pumps with "M" Drive "H", "HJ" and "HL" size pumps.



SERIES 75 and 475 unmounted pumps viewed from power end. "G" and "GG" size

CONSTRUCTION — 75 AND 475 SERIES ("G" THROUGH "HL" SIZES)

Pump Construction	Casing	Head	Rotor	Idler	Idler Bushing	Shaft Sealing		Internal Relief Valve
						Lip Seal	Mechanical Seal	
Standard Construction	Iron	Iron	Iron	① Iron	Bronze	Buna N	Buna N	Iron

SPECIFICATIONS — "M" DRIVE UNITS AND UNMOUNTED PUMPS ("G" THROUGH "HL" SIZES)

Unit Model Number		Unmounted Pump Model No.		Port Size Inches	Nominal Pump Rating		Motor H.P. Required at Rated Speed Pumping 100 SSU Liquid		② Maximum Recommended Discharge Pressure PSIG (BAR)		Maximum Recommended Temperature for Cataloged Pump °F. (°C.)		Maximum Recommended Viscosity for 1800 and 1200 RPM Operation SSU		Shipping Weight With Valve Pounds (KG)	
Lip Seal	Mech. Seal	Lip Seal	Mech. Seal		GPM (m³/hr)	RPM	25 PSI (2 BAR)	50 PSI (3 BAR)	Lip Seal	Mech. Seal	Lip Seal	③ Mech. Seal	1800 RPM	1200 RPM	Mounted Units	Unmounted Pumps
G75M	G475M	G75	G475	1	5 (1)	1200	½	¾	50 (3)	100 (7)	225 (107)	225 (107)	750	2500	④ 48 (22)	17 (8)
					7 (1.5)	1800										
GG75M	GG475M	GG75	GG475	1	7 (1.5)	1200	½	¾	50 (3)	100 (7)	225 (107)	225 (107)	750	2500	④ 48 (22)	17 (8)
					10 (2)	1800										
H75M	H475M	H75	H475	1½	10 (2)	1200	½	1	50 (3)	100 (7)	225 (107)	225 (107)	750	2500	⑤ 80 (36)	24 (11)
					15 (3.5)	1800										
HJ75M	HJ475M	HJ75	HJ475	1½	13 (3)	1200	1	1½	50 (3)	100 (7)	225 (107)	225 (107)	750	2500	⑥ 85 (39)	24 (11)
					20 (4.5)	1800										
HL75M	HL475M	HL75	HL475	1½	20 (4.5)	1200	1½	2	50 (3)	100 (7)	225 (107)	225 (107)	750	2500	⑥ 85 (39)	26 (12)
					30 (7)	1800										

① "G" and "GG" size have steel idlers.

② 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 25 PSIG (8 BAR).

③ Temperatures to 350° F. can be handled with special construction.

④ Includes 56C Frame Motor.

⑤ Includes 143TC Frame Motor.

⑥ Includes 145TC Frame Motor.

Metric conversions are based on US measurements and rounded to the nearest whole number.

VIKING® GENERAL PURPOSE SPECIAL MOUNTED PUMPS

56 AND 456 SERIES

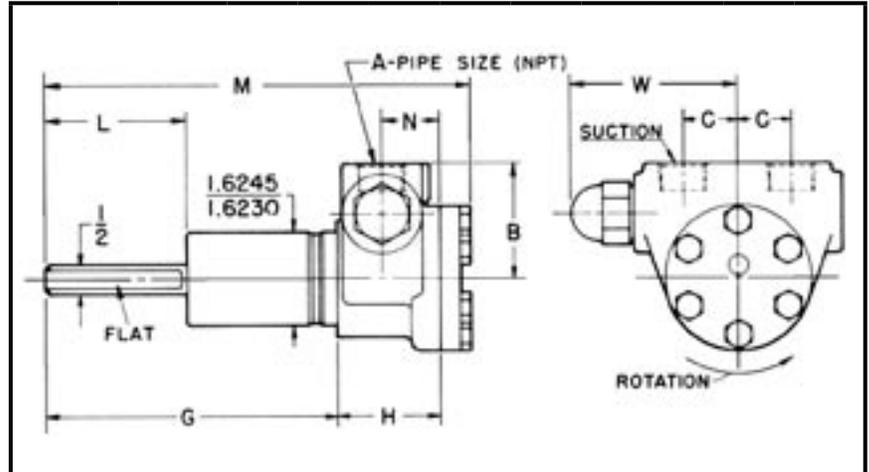
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DIMENSIONS

These dimensions are average and not for construction purposes. Certified prints on request.

For specifications, see pages 320.1 and 320.2.

DIMENSIONS – 56 AND 456 SERIES UNMOUNTED PUMPS

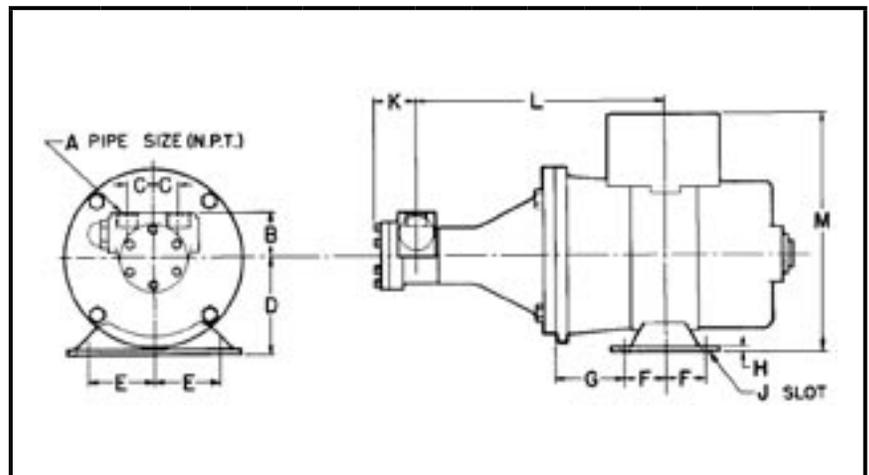


MODEL NO.		A	B	C	G	H	L	M	N	W
PACKED	SEAL									
C56	C456	1/4	1 11/16	3/4	4 21/32	1 15/32	2 1/4	6 11/16	7/8	2 9/16
F56	F456	1/2	2	1 5/16	4 19/32	1 27/32	2	7	1	2 7/8
FH56	FH456	1/2	2	1 5/16	4 31/32	1 27/32	2 3/8	7 3/8	1	2 7/8

NOTE: Shafts as shown on these pumps will **NOT** work on "M" drive units shown below. "G" dimension of 3 3/8" is required.

For specifications, see pages 320.1 and 320.2.

DIMENSIONS – 56 AND 456 SERIES ("M" DRIVE)



MODEL NO.		A	B	C	D	E	F	G	H	J	K	L	Ⓜ
PACKED	SEAL												
C56M	C456M	1/4	1 11/16	3/4	3 1/2	2 7/16	1 1/2	2 9/16	1/8	1 1/32	1 7/16	8 31/32	9
F56M	F456M	1/2	2	1 5/16	3 1/2	2 7/16	1 1/2	2 9/16	1/8	1 1/32	1 9/16	9 7/32	9
FH56M	FH456M	1/2	2	1 5/16	3 1/2	2 7/16	1 1/2	2 9/16	1/8	1 1/32	1 9/16	9 7/32	9

Ⓜ This dimension approximate. Depends on motor manufacturer, size and type of enclosure.

NOTE: Pump may be turned in bracket to any position desired.

Overall dimension of pump and motor will vary depending on motor frame, type of enclosure and manufacturer.

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VIKING® GENERAL PURPOSE SPECIAL MOUNTED PUMPS

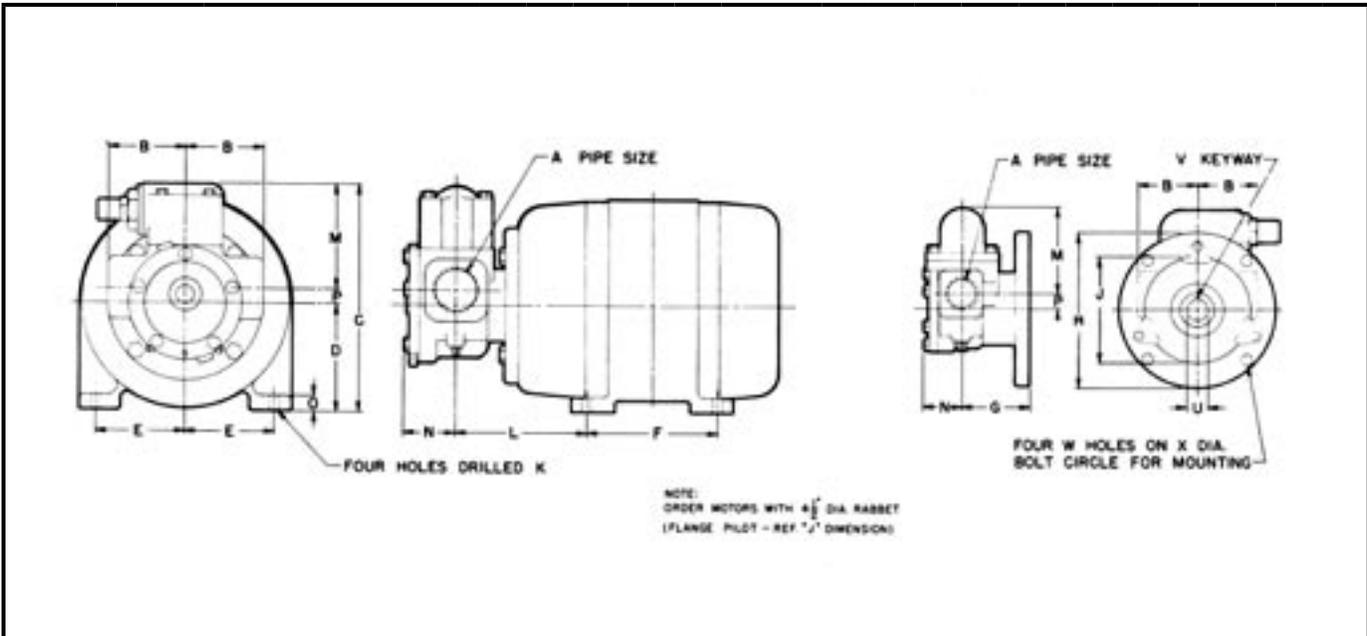
56 AND 456 SERIES

DIMENSIONS

These dimensions are average and not for construction purposes. Certified prints on request.

For specifications, see pages 320.3 and 320.4.

DIMENSIONS – 75 AND 475 SERIES UNMOUNTED PUMPS AND (“M” DRIVE)



MODEL NUMBERS				MOTOR FRAME SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	U	V	W	X			
MOTOR MOUNTED		UNMOUNTED																								
MECH. SEAL	LIP SEAL	MECH. SEAL	LIP SEAL																							
G475M	G75M	G475	G75	56C	1	2 1/2	7 1/16	3 1/2	2 7/16	3	2 13/16	6 1/2	4 1/2	1 1/32	5 3/8	3 9/16	1 9/16	1/8	5/8	3/16	15/32	5 7/8				
OR	OR	OR	OR	143TC			7 1/16	3 1/2	2 3/4	4				1 1/32	5 11/16			1 1/32	5 11/16	7/16				5/8	7/8	3/16
GG475M	GG75M	GG475	GG75	145TC			7 1/16	3 1/2	2 3/4	5				1 1/32	5 11/16			1 1/32	5 11/16	7/16				5/8	7/8	3/16
H475M	H75M	H475	H75	56C	1 1/2	3 1/4	8 9/16	3 1/2	2 7/16	3	2 3/4	6 1/2	4 1/2	1 1/32	5 5/16	4 7/16	2 3/16	1/8	5/8	3/16	15/32	5 7/8				
HJ475M	HJ75M	HJ475	HJ75	143TC			8 9/16	3 1/2	2 3/4	4				1 1/32	5 5/8			1 1/32	5 5/8	7/16				5/8	7/8	3/16
HL475M	HL75M	HL475	HL75	145TC			8 9/16	3 1/2	2 3/4	5				1 1/32	5 5/8			1 1/32	5 5/8	7/16				5/8	7/8	3/16
H475M	H75M	H475	H75	182C	1 1/2	3 1/4	9 9/16	4 1/2	3 3/4	4 1/2	2 3/4	6 1/2	4 1/2	1 3/32	5 5/8	4 7/16	2 3/16	5/8	5/8	7/8	3/16	15/32	5 7/8			
HJ475M	HJ75M	HJ475	HJ75	182TC						4 1/2					6 3/8											
HL475M	HL75M	HL475	HL75	184C						5 1/2					5 5/8											
				184TC						5 1/2					6 3/8											

Note: 182TC and 184TC frame motors require a special shaft, 7/8" shaft U dimension, 2 1/8" AH dimension and also 4 1/2" rabbet for 75 and 475 pumps.