**SERIES 32 & 432** 

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#### **Series Description**

Viking General Purpose Series 32 pumps are extremely well suited for light, medium and intermittent service handling a variety of liquids. The smaller sizes "C", "F" and "FH" are constructed for heavier duty service. Mechanical seal equipped General Purpose pump models in sizes from "C" thru "HL" shown in this section are available with Underwriters label for handling fuel oil. Model numbers for these pumps must be designated by a suffix -X. "UL" listed models can be equipped with integral relief valve. The additional sizes of unmounted General Purpose pumps are illustrated on the following page. Also for continuous service and for handling viscous liquids, see Viking's line of heavy duty pumps, Section 630.

Viking's unique and unusually simple pump construction makes it adaptable to many diversified installations. The pumps possess excellent vacuum characteristics and will operate and prime at suction lifts up to 25 feet, depending upon the vaporization point of volatile liquids. Because of the cushioned action in providing a continuous and steady stream of liquid without splashing, pounding, foaming or churning, the Viking pump is adaptable to an unlimited number of industrial applications.

All sizes of Viking General Purpose pumps have tapped ports except "LQ", "LL", "Q", "M" and "N" sizes. These have flanged ports ready to accept companion flanges.

"K" through "N" sizes are furnished with conventional packing as standard. A cartridge style triple lip sealing option is available for the "K" through "N" sizes, contact the factory for details.

A supporting anti-friction bearing pillow block is recommended for the end of the pump shaft on all V-belt driven units.



#### **Operating Range:**

② Nominal		GPM	.5 to 450
Flow		m³/h	.1 to 102
	C, F,	PSI	250 PSI for 100 SSU & above 100 PSI for less than 100 SSU ③
	FH	Bar	17 BAR for 21 cSt & above 7 BAR for less than 21 cSt
① Pressure	G, H, HL, K,	PSI	100 PSI for 100 SSU & above 50 PSI for less than 100 SSU
Range	KK, L, LQ, LL	Bar	7 BAR for 21 cSt & above 3 BAR for less than 21 cSt
	Q, M,	PSI	75 PSI for 100 SSU & above 50 PSI for less than 100 SSU
	N	Bar	5 BAR for 21 cSt & above 3 BAR for less than 21 cSt
① Temp.		۰F	-60 to +450
Range		°C	-51 to +232
① Viscosity	·	SSU	31 to 250,000
Range		cSt	1 to 55,000

- 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).

#### **Nominal Flow Rates:**

Pump Size	GPM	m³/h	RPM		
С	.5	.1	1800		
F	1.5	.3	1800		
FH	3	.7	1800		
G	5	1	1200		
н	10	2	1200		
HL	20	4.5	1200		
К	35	8	420		
KK	50	11	420		
L	90	20	420		
LQ	90	20	420		
LL	140	32	520		
Q	200	45	350		
М	280	64	280		
N	450	102	280		

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#### **Key Features and Benefits:**

#### Relief Valve on Casing or Head

 The integral pressure relief valve on casing or head permits by-passing of liquid from discharge back to suction side of pump. Reverse valve when reversing pump rotation on large pumps. Small pumps with relief valve built with right hand suction as standard.

#### Steam Jacketed Head

Jacketed head or plate permits temperature control
of the liquid being pumped. Jacketed plate available
on "G" through "LL" size pumps. Jacketed head
available on "Q" through "N" sizes. Relief valve not
available with jacketed head or plate. For complete
jacketed pumps, see Section 430.

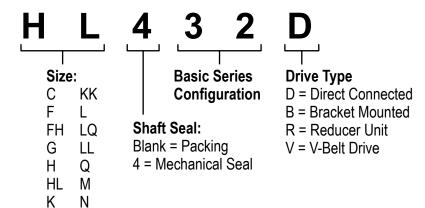
#### Upright, Opposite & Right Angle Ports

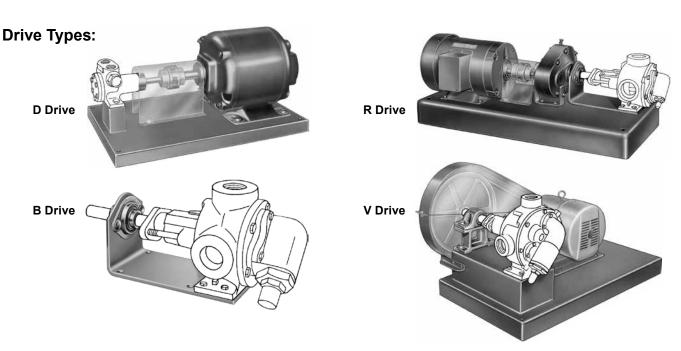
 "C", "F" and "FH" size pumps furnished with upright port casings: "G" size pump with opposite port casing and "H" through "N" size pumps with right angle port casings. Right hand port determined by lo-cation of side port when facing pump from shaft end.

#### • Mechanical Seal

 "G", "H" and "HL" sizes illustrated. All General Purpose pumps are available with packed stuffing boxes. Mechanical seals are available on "C" through "HL" size pumps as standard. The seal is a rotary type packaged unit that is simple and self-adjusting. It works WITH rather than against pressure.

#### **Model Number Key:**





**SERIES 32 & 432** 

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#### Materials of Construction - Series 32 & 1432

04	and and Common and		Standard Material			
<b>ા</b>	andard Component	C, F, FH	G, H, HL	K, KK, L, LQ, LL, Q, M, N		
Casing		Iron	Iron	Iron		
Head		Iron	Iron	Iron		
Rotor		Steel	Iron	Iron		
Rotor Shaft		Steel	Steel	Steel		
Idler		Powdered Metal	Powdered Metal	Iron		
Idler Pin		Nitralloy	Steel	Steel		
D la in a	Series 32 Packed	Carbon Graphite	Bronze	Bronze		
Bushings Series 432 Mechanical Seal		③ Carbon Graphite	Carbon Graphite			
Internal Relief Valve		② Iron	Iron	Iron		

① Buna N elastomer used in Mechanical Seal of 432 Series pumps.

#### **Specifications - Unmounted Pumps**

Model Number		<ul><li>® Nominal</li><li>Port Pump</li><li>Size Rating</li></ul>		Motor HP Required at Rated Speed Pumping 100 SSU Liquid			Maximum Recommended Discharge Pressure PSIG			Maximum Recommended Temperature for Cataloged Pump				Steel Fitted Construction Recommended Above This Viscosity		Maximum Hydrostatic Pressure		Approximate Shipping Weight With Valve			
	① Mech.					25 PSI	50 PSI	100 PSI	Less Than	Fuel Oil Less Than	100 SSU	Packed Mech. Seal		Mech. Seal							
Packed	Seal	Inches	GPM	m³/h	RPM		(3 BAR)		100 SSU	100 SSU	and up	°F	°C	°F	°Ç	SSU	cSt	PSI	BAR	Lb	KG
C32	C432	1/4	1/2	.11	1800	1/4	1/4	1/4	100	150	③ 250	④ 300	④ 149	④ 225	④ 107			750	50	5	2.3
F32	F432	1/2	1½	.34	1800	1/4	1/4	1/4	100	150	③ 250	④ 300	(4) 149	④ 225	④ 107			750	50	6	2.7
FH32	FH432	1/2	3	.68	1800	1/4	1/4	1/3	100	150	③ 250	④ 300	④ 149	④ 225	④ 107			750	50	6	2.7
G32	G432	1	5	1.1	1200	1/3	1/2	3/4	50		100	300	149	225	107	① 25,000	① 5,500	400	28	15	6.8
H32	H432	1	10	2.3	1200	1/2	3/4	1½	50		100	300	149	225	107	① 25,000	① 5,500	400	28	20	9.1
HL32	HL432	1½	20	4.5	1200	3/4	1½	2	50		100	300	149	225	107	① 7,500	① 1,650	400	28	26	11.8
K32		1½	35	8	420	1	2	5	50		100	300	149			25,000	5,500	400	28	65	29.5
KK32		2	50	11	420	1½	3	5	50		100	300	149			7,500	1,650	400	28	70	31.8
L32		2	90	20	420	3	5	10	50		100	300	149			25,000	5,500	400	28	120	54.5
LQ32		2 21/2	90	20	420	3	5	10	50		100	300	149			25,000	5,500	400	28	125	56.8
LL32		② 3	140	32	520	5	7½	15	50		100	300	149			7,500	1,650	400	28	135	61.3
Q32		② 3	200	45	350	7½	10		50		75	300	149			7,500	1,650	400	28	335	152.1
M32		② 4	280	63	280	10	15		50		75	300	149			25,000	5,500	400	28	500	227
N32		② 5	450	102	280	15	25		50		75	300	149			2,500	550	400	28	670	304.2

① Mechanical Seal pumps not recommended on applications with viscosities above 15,000 SSU (3,300 cSt).

- With special construction, temperature to 500°F. can be handled with seal pumps and to 650°F. with packed pumps. Consult factory.
- ⑤ Not available in steel fitted construction.
- ® Right hand port only.

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

<sup>3</sup> Mechanical seal seat has bronze bushing.

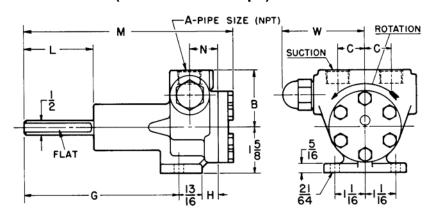
② Ports are suitable for use with 125# ANSI cast iron or 150# ANSI steel companion flanges or flanged fittings. All others tapped for standard pipe.

③ With extra clearance, pumps can be used to 500 PSI (34 BAR) on intermittent duty.

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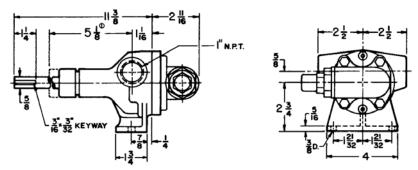
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# Dimensions C - F - FH 32 & 432 (Unmounted Pumps)



MODE	L NO.	Α	В	C	•	u		M	N	w
PACKED	SEAL		В	, c	G	П	L	M	N	VV
C32	C432	1/4	111/16	3/4	425/32	17/32	21/4	611/16	7/8	2%
F32	F432	1/2	2	15/16	5	19/32	2	7	1	21/8
FH32	FH432	1/2	2	15/16	5%	19/32	2%	7%	1	21/8

# **Dimensions G 32 & 432 (Unmounted Pumps)**



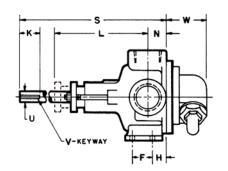
1 Minimum dimension for repacking. Assembled dimension on seal pumps  $3\frac{1}{16}\text{"i}$  .

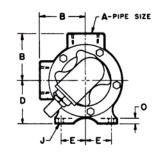
	MODEL NO.									
	PACKED	SEAL								
ı	G32	G432								

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### Dimensions H - HL 32 & 432 (Unmounted Pumps)

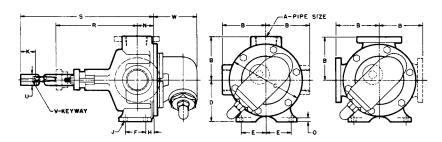




MODE	L NO.	A														-	F			1/	① L	N	0			v	w
PACKED	SEAL			В	D	E	Г	Н	J	K		N	0	S	U	V	, w										
H32	H432	1	in	2.88	2.75	1.63	1.31	0.88	0.34	1.75	5.75	0.88	0.31	11.38	0.75	.19 x .09	2.88										
ПЭ2	П432	'	mm	73.2	69.9	41.4	33.3	22.4	8.6	44.5	146.1	22.4	7.9	289.1	19.1	4.8 x 2.3	73.2										
HL32	111.422	41/	in	3.00	2.75	1.63	1.31	0.88	0.34	1.75	6.00	1.19	0.31	11.38	0.75	.19 x .09	2.88										
nl32	HL432	1½	mm	76.2	69.9	41.4	33.3	22.4	8.6	44.5	152.4	30.2	7.9	289.1	19.1	4.8 x 2.3	73.2										

 $<sup>\</sup>textcircled{1}$  Minimum dimension for repacking. Assembled dimension on seal pumps: 3% for Model H432,  $4\frac{1}{2}$  for Model HL432.

## **Dimensions K - KK - L - LQ 32 (Unmounted Pumps)**



MODEL NO.	Α	В	С	D	E	F	Н	J	К	N	0	② <b>R</b>	s	U	V	w
K32	1½	41//8	8	45/8	21/8	21/4	7/8	13/32	3	1¾	7/16	71/8	181⁄4	11/8	1⁄4 X 1⁄8	51/8
KK32	2	41/8	8	45/8	21/8	21/4	7/8	13/32	3	1¾	7/16	75/8	18¾	11/8	1⁄4 X 1⁄8	51/8
L32	2	6½	101⁄4	6	21/8	3	1	15/32	3	1¾	1/2	91/8	211⁄4	17⁄16	3/8 X 3/16	5%
LQ32	①2½	73/16	101⁄4	6	21/8	3	1	15/32	3	1¾	1/2	91/8	21¼	17/16	3/8 X 3/16	5%

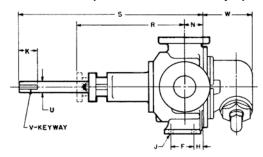
① Ports are suitable for use with 125# ANSI cast iron or 150# ANSI steel companion flanges or flanged fittings. All others tapped for standard pipe.

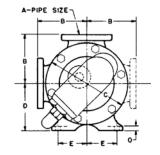
② Minimum dimension for repacking.

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# **Dimensions LL - Q - M - N 32 (Unmounted Pumps)**

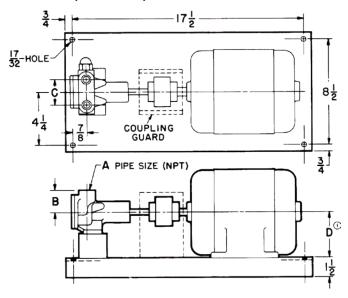




MODEL NO.	① <b>A</b>	В	С	D	E	F	Н	J	к	N	0	② <b>R</b>	S	U	v	w
LL32	3	73/16	101⁄4	6	27/8	3	11/2	15/32	3	21/4	1/2	121/8	21¾	17⁄16	3/8 X 3/16	5%
Q32	3	73/4	14	73/4	41/8	41/4	15/8	11/16	5	3	5/8	137/8	33½	115/16	½ x ¼	83/16
M32	4	91/2	171⁄4	91/2	5	61/4	17/16	11/16	5	4	3/4	13%	34	115/16	½ X ¼	81/2
N32	5	91/2	171⁄4	91/2	5	61/4	15/8	11/16	5	41/2	1	20%	34	27/16	5/8 X 5/16	81/2

① Ports are suitable for use with 125# ANSI cast iron or 150# ANSI steel companion flanges or flanged fittings.

### Dimensions C - F - FH 32 & 432 (D DRIVE)



MODE	EL NO.		В		Approximate Shipping Weight With Valve (Less Power)				
PACKED	SEAL	A	В	C	Pounds	KG			
C32D	C432D	1/4	1 <sup>11</sup> / <sub>16</sub>	1½	26	11.8			
F32D	F432D	1/2	2	1⅓	27	12.3			
FH32D	FH432D	1/2	2	1½	29	13.2			

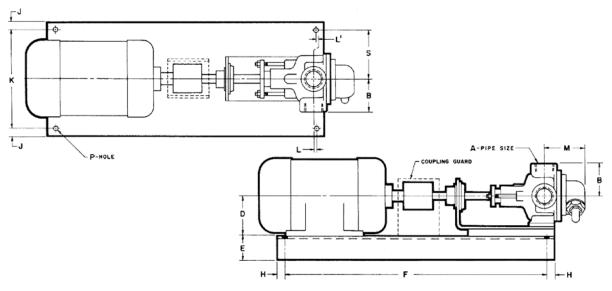
 $<sup>\ \, \</sup>textcircled{1}$  Centerheight is 3" with 48 frame motor. Centerheight is  $3\frac{1}{2}$  " with 56 frame motor.

② Minimum dimension for repacking.

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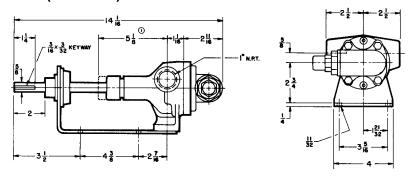
### Dimensions G - H - HL 32 & 432 (D DRIVE)



MODE	EL NO.	А	В	D	E	F	Н	J	К	L	L <sub>1</sub>	М	Р	s		Approximate Shipping Weight With Valve (Less Power)	
PACKED	SEAL														Pounds	KG	
①G32D	①G432D	1	2½	@3½	1½	20½	3/4	3/4	8½		5/32	3¾	1/2	41/4	45	20.4	
H32D	H432D	1	21/8	@3½	1½	20½	3/4	3/4	8½		1/8	33/4	1/2	41/4	70	31.8	
HL32D	HL432D	1½	3	@31/2	1½	20½	3/4	3/4	8½	3/16		41/16	1/2	41/4	75	34.1	
①G32D	①G432D	1	2½	341/2	215/16	25	1	1½	9	1		3¾	9/16	41/2	45	20.4	
H32D	H432D	1	21/8	34½	215/16	25	1	11/2	9	11/16		33/4	9/16	41/2	70	31.8	
HL32D	HL432D	1	3	34½	215/16	25	1	11/2	9	13/s		41/16	9/16	4½	75	34.1	

① All "G" pumps are equipped with opposite ports with openings %" above shaft center line. See drawing page 310.9. ② For motor frames 56, 143T and 145T. ③ For motor frames 182, 182T, 184 and 184T. Frame 48 (3" center line), smaller base required.

## Dimensions G 32 & 432 (B DRIVE)



MODE	L NO.	Approximate Shipping Weight With Valve (Less Power)						
PACKED	SEAL	Pounds	KG					
G32B	G432B	18	8.2					

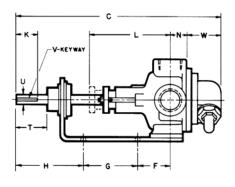
① Minimum dimension for repacking. Assembled dimension for seal pump 31/16.

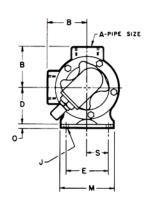
Frame 213 on up, larger base required.

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## Dimensions H - HL 32 & 432 (B DRIVE)

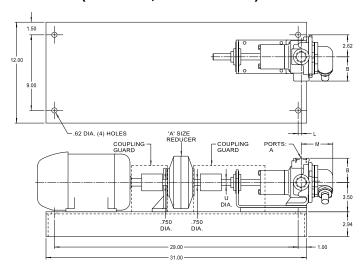




MODE	EL NO.											1									Approximate Weight Wi (Less P	th Valve
PACKED	SEAL	Α	В	С	D	Ε	F	G	Н	J	K	L	M	N	0	S	Т	U	V	W	Pounds	KG
H32B	H432B	1	21/8	141⁄4	23/4	315/16	23/4	4 <del>%</del>	3¾	11/32	11⁄4	5¾	4	7/8	1/4	1 <sup>21</sup> / <sub>32</sub>	23/16	3/4	³∕ <sub>16</sub> X ³∕ <sub>32</sub>	21/8	23	10.4
HL32B	HL432B	1½	3	14	23/4	315/16	23/4	43/8	3½	11/32	11⁄4	6	4	13/16	1/4	1 <sup>21</sup> / <sub>32</sub>	2	3/4	³∕ <sub>16</sub> X ³∕ <sub>32</sub>	21/8	28	12.7

 $<sup>\</sup>odot$  Minimum dimension for repacking. Assembled dimension on seal pumps: 3% – for Model H432B,  $4\frac{1}{2}$ " – for Model HL432B.

### Dimensions G - H - HL 32 & 432 (R DRIVE, A REDUCER)



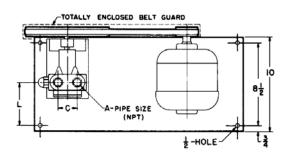
MODE	MODEL NO.	A	В	L	м	U	Approximate Shipping Weight With Valve (Less Power)		
PACKED	SEAL						Pounds	KG	
① G32R	① G432R	1	2½	5/8	3¾	5/8	65	30	
H32R	H432R	1	27/8	9/16	3¾	3/4	70	32	
HL32R	HL432R	1½	3	1/4	41/16	3/4	75	34	

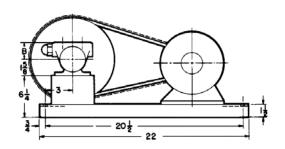
① All "G" pumps are equipped with opposite ports with openings  $\frac{5}{8}$ " above shaft center line.

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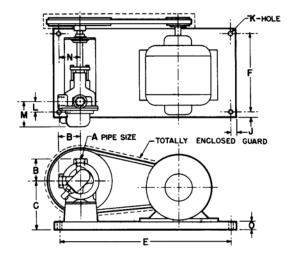
### Dimensions C - F - FH 32 & 432 (V DRIVE)





MODE	EL NO.	Α.	В	C		Approximate Shipping Weight With Valve (Less Power)				
PACKED	SEAL	A	В		L	Pounds	KG			
C32V	C432V	1/4	111/16	1	47/8	35	16			
F32V	F432V	1/2	2	17⁄8	415/16	40	18			
FH32V	FH432V	1/2	2	17⁄8	415/16	45	20			

#### Dimensions G - H - HL 32 & 432 (V DRIVE)



MODEL NO.		А	В	С	Е	F	J	к	L	М	N	0	Approximate Shipping Weight With Valve (Less Power)	
PACKED	SEAL												Pounds	KG
① G32V	① G432V	1	① 2½	8%	18¾	101⁄4	3/4	1/2	113/16	3¾	23/4	11⁄4	65	30
H32V	H432V	1	21/8	8%	18¾	101⁄4	3/4	1/2	1%	3¾	23/4	11⁄4	70	32
HL32V	HL432V	1½	3	8%	18¾	101⁄4	3/4	1/2	23/16	41/16	23/4	11⁄4	75	34

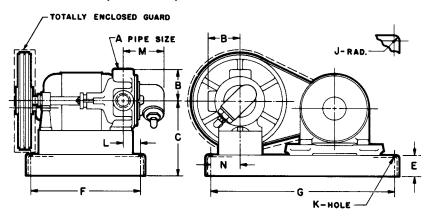
 $<sup>\</sup>odot$  All "G" pumps are equipped with opposite ports with openings %" above shaft center line. See drawing page 310.9. Base shown for motor frame 56 and smaller.

Larger Base always required with motor frames 143T, 145T, 182, 182T, 184, 184T.

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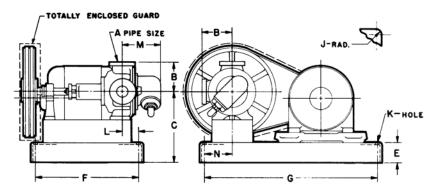
### Dimensions K - KK - L - LQ 32 (V DRIVE)



												Approximate Shipping Weight With Valve (Less Power)	
MODEL NO.	Α	В	С	E	F	G	J	K	L	M	N	Pounds	KG
K32V	1½	47/8	131/16	31/4	17	28¾	1	1/2	211/16	6%	4%16	210	95
KK32V	2	47/8	131/16	31/4	17	28¾	1	1/2	211/16	61/8	4%16	215	98
L32V	2	6½	15½	3½	18½	31	1	5/8	1 <sup>7</sup> / <sub>8</sub>	71/8	6½	280	127
LQ32V	① 2½	73/16	15½	3½	18½	31	1	5/8	17/8	71/8	6½	290	132

① Ports are suitable for use with 125# ANSI cast iron or 150# ANSI steel companion flanges or flanged fittings. All others tapped for standard pipe.

### Dimensions LL - Q - M - N 32 (V DRIVE)



	①											Approximate Shipping Weight With Valve (Less Power)		
MODEL NO.	Ä	В	С	E	F	G	J	K	L	M	N	Pounds	KG	
LL 32V	3	73/16	15½	3½	18½	31	1	5/8	17/8	75/8	6½	315	143	
Q32V	3	73/4	② 13¾	6	27	49	1½	<sup>13</sup> / <sub>16</sub>	21/8	113/16	8½	750	341	
M32V	4	9½	3 15½	6	27	49	1½	<sup>13</sup> / <sub>16</sub>	31/16	12½	8½	1100	500	
N32V	5	9½	20½	6	27	49	1½	<sup>13</sup> / <sub>16</sub>	31/16	13	9½	1300	590	

① Ports are suitable for use with 125# ANSI cast iron or 150# ANSI steel companion flanges or flanged fittings.

② Dimension "C" (13½) shown is for 19" or 25" O.D. sheave (lesser reductions). Dimension "C" is 20¼" when 33.5" O.D. sheave is used (maximum reduction). ③ Dimension "C" (15½) shown is for 19" or 25" O.D. sheave (lesser reductions). Dimension "C" is 22" when 33.5" O.D. sheave is used (maximum reduction)

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#### **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.

NPSH<sub>R</sub> data is not available on the pump selector.

### NPSH<sub>R</sub> - FEED OF LIQUID (SP. GR. 1.0), Viscosities to 750 SSU

NPSH<sub>A</sub> (Net Positive Suction Head Available) must be greater than the NPSH<sub>R</sub> (Net Positive Suction Head Required) given in the above table.

VISCOSITY - Above chart applies to viscosities up thru 750 SSU. Consult factory or Viking representative for viscosities above 750 SSU.

For liquids other than water, divide by specific gravity.

PUMP		PUMPS SPEED, RPM														
SIZE	100	125	155	190	230	280	350	420	520	640	780	950	1150	1450	1750	
С	-	-	-	-	-	-	-	-	-	-	-	1.7	1.9	2.2	2.4	
F, FH	-	-	-	-	-	-	-	-	-	1.8	1.9	2.1	2.3	2.8	3.4	
G	-	-	-	-	-	-	-	1.8	2.0	2.2	2.6	3.1	3.9	5.6	7.6	
H, HL	-	-	-	-	1.7	1.8	1.9	2.1	2.4	2.8	3.4	4.5	6.2	9.5	13.5	
K, KK	-	1.7	1.8	1.9	2.1	2.3	2.8	3.3	4.4	6.3	9.1	24.4	-	-	-	
L, LQ, LL	1.7	1.8	2.0	2.2	2.5	3.0	3.8	5.0	7.3	10.8	17.7	32.0	-	-	-	
Q	1.9	2.1	2.3	2.7	3.3	4.2	6.1	8.4	12.7	-	-	-	-	-	-	
М	2.1	2.3	2.8	3.4	4.3	6.0	9.0	12.7	-	-	<b>\</b> -	-	-	-	-	
N	2.1	2.5	3.5	4.5	6.3	9.5	15.0	29.5	-	-	\-	-	-	-	-	

## Catalog Speed Rating\*

<sup>\*</sup> Limit for most models.

Some models exceed this limit.

See Viking Pump catalog for details.