

MOTOR SPEED PRODUCT LINE: CAST IRON PUMPS

SERIES 32 & 432

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SERIES DESCRIPTION

Viking 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 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 32/432 Series pumps are illustrated on the following page.

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 32/432 Series 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.



SERIES 32 & 432
Packed Type
Unmounted Pump
C Size



SERIES 432
Mechanical Seal
Unmounted Pump
G Size

OPERATING RANGE:

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

- ① See following pages or consult factory for specific recommendations on individual models or sizes.
- ② Nominal capacities based on handling thin liquids.
- ③ 50 PSI (7 BAR) handling fuel oil less than 100 SSU (21 cSt).

NOMINAL FLOW RATES:

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

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SERIES 32 & 432**

KEY FEATURES & 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.

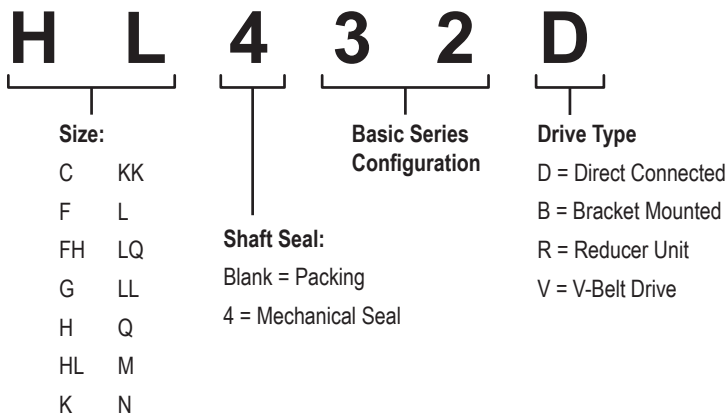
Upright, Opposite & Right Angle Ports

"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.

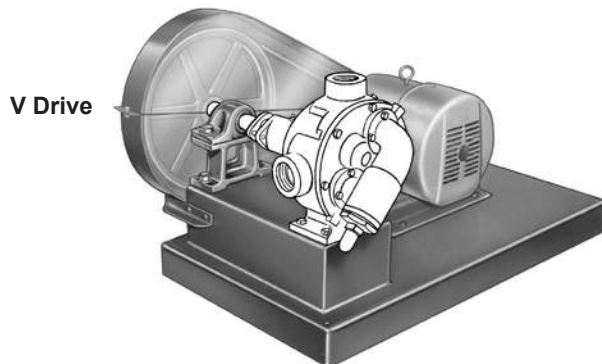
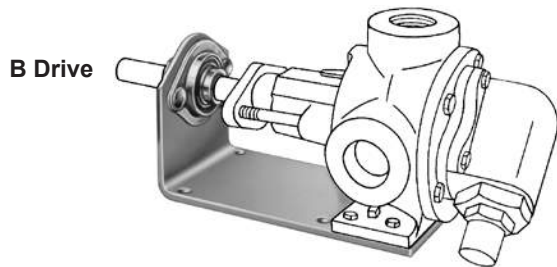
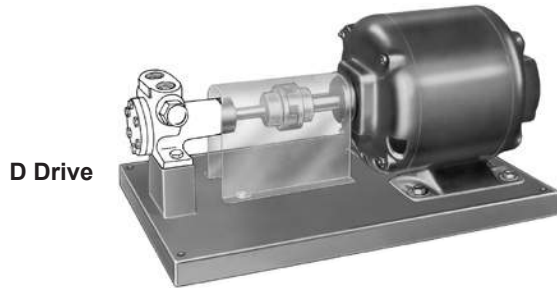
Mechanical Seal

"G", "H" and "HL" sizes illustrated. All 32/432 Series 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:



DRIVE TYPES:



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MATERIALS OF CONSTRUCTION - SERIES 32 & ①432

Standard Component		Standard Material		
		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
Bushings	Series 32 Packed	Carbon Graphite	Bronze	Bronze
	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.

③ Mechanical seal seat has bronze bushing.

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

SPECIFICATIONS

Model Number	⑥ Port Size	Nominal Pump Rating				Motor HP Required at Rated Speed Pumping 100 SSU Liquid					Max. Recommended Discharge Pressure PSIG			Max. Recommended Temperature for Cataloged Pump				Steel Fitted Construction Recommended Above This Viscosity		Max. Hydrostatic Pressure		Approx. Shipping Weight With Valve	
						25 PSI (2 BAR)	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		SSU	cSt	PSI	BAR	Lb	KG		
												°F	°C	°F	°C								
C32	C432	¼	½	.11	1800	¼	¼	¼	100	150	③ 250	④ 300	④ 149	④ 225	④ 107	---	---	750	50	5	2.3		
F32	F432	½	1½	.34	1800	¼	¼	¼	100	150	③ 250	④ 300	④ 149	④ 225	④ 107	---	---	750	50	6	2.7		
FH32	FH432	½	3	.68	1800	¼	¼	¾	100	150	③ 250	④ 300	④ 149	④ 225	④ 107	---	---	750	50	6	2.7		
G32	G432	1	5	1.1	1200	⅓	½	¾	50	---	100	300	149	225	107	① 25,000	① 5,500	400	28	15	6.8		
H32	H432	1	10	2.3	1200	½	¾	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	¾	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 2½	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).

④ With special construction, temperature to 500°F. can be handled with seal pumps and to 650°F. with packed pumps. Consult factory.

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.

⑤ Not available in steel fitted construction.

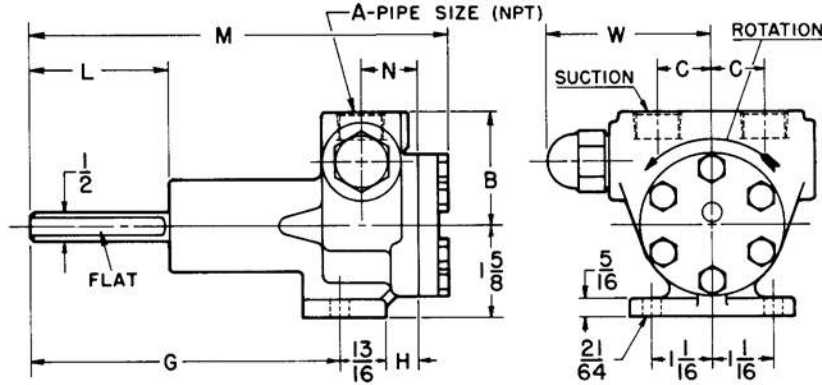
③ With extra clearance, pumps can be used to 500 PSI (34 BAR) on intermittent duty.

⑥ Right hand port only.

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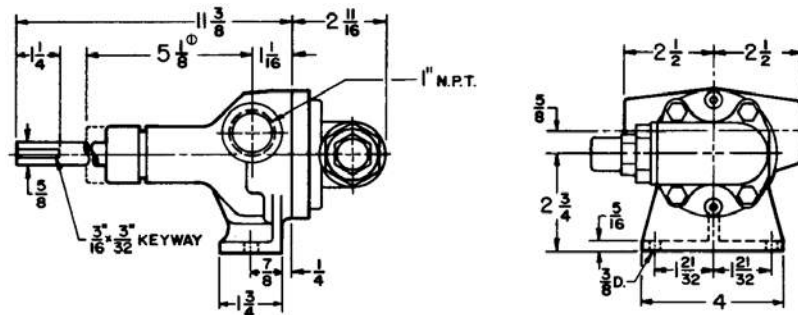
**MOTOR SPEED PRODUCT LINE:
CAST IRON PUMPS
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DIMENSIONS – C - F - FH 32 & 432 (UNMOUNTED PUMPS)



MODEL NO.		A	B	C	G	H	L	M	N	W
PACKED	SEAL									
C32	C432	1/4	1 11/16	3/4	4 25/32	1 7/32	2 1/4	6 11/16	7/8	2 9/16
F32	F432	1/2	2	1 5/16	5	1 9/32	2	7	1	2 7/8
FH32	FH432	1/2	2	1 5/16	5 3/8	1 9/32	2 3/8	7 7/8	1	2 7/8

DIMENSIONS – G 32 & 432 (UNMOUNTED PUMPS)



① Minimum dimension for repacking. Assembled dimension on seal pumps 3 1/16".

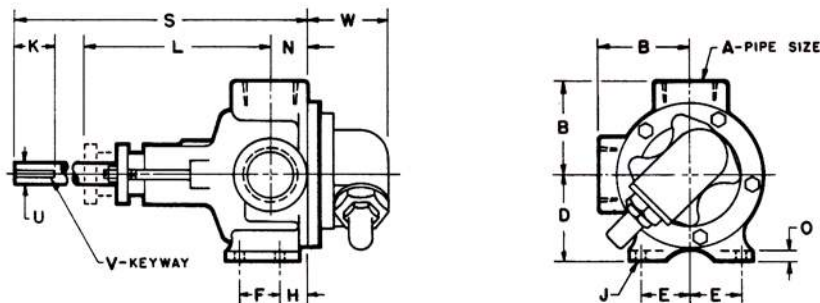
MODEL NO.	
PACKED	SEAL
G32	G432

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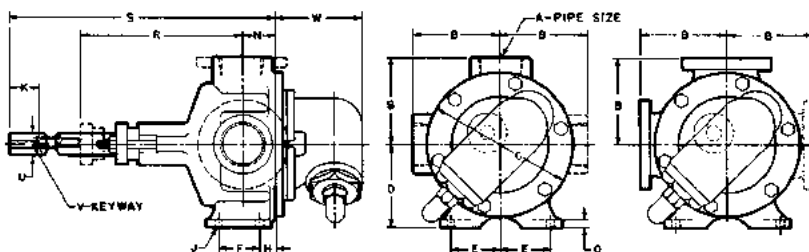
DIMENSIONS – H - HL 32 & 432 (UNMOUNTED PUMPS)



MODEL NO.		A		B	D	E	F	H	J	K	① L	N	O	S	U	V	W
PACKED	SEAL																
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
			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	HL432	1½	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
			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

① Minimum dimension for repacking. Assembled dimension on seal pumps: 3⅞" for Model H432, 4½" for Model HL432.

DIMENSIONS – K - KK - L - LQ 32 (UNMOUNTED PUMPS)



MODEL NO.	A	B	C	D	E	F	H	J	K	N	O	② R	S	U	V	W
K32	1½	4¾	8	4¾	2½	2¼	¾	1⅜	3	1¼	7/16	7%	18¾	1%	¼ x ½	5%
KK32	2	4¾	8	4¾	2½	2¼	¾	1⅜	3	1¼	7/16	7%	18¾	1%	¼ x ½	5%
L32	2	6½	10¼	6	2½	3	1	1⅜	3	1¼	½	9%	21¼	17/16	¾ x 7/16	5%
LQ32	①2½	7¾	10¼	6	2½	3	1	1⅜	3	1¼	½	9%	21¼	17/16	¾ x 7/16	5%

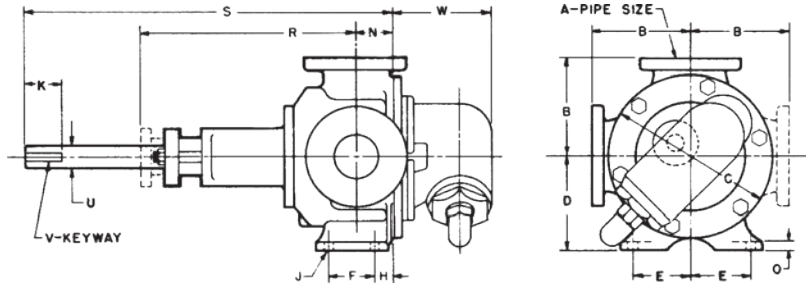
① Ports are suitable for use with 125# ANSI cast iron or 150# ANSI steel companion flanges or flanged fittings. All others tapped for standard pipe.

② Minimum dimension for repacking.

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**MOTOR SPEED PRODUCT LINE:
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DIMENSIONS – LL - Q - M - N 32 (UNMOUNTED PUMPS)

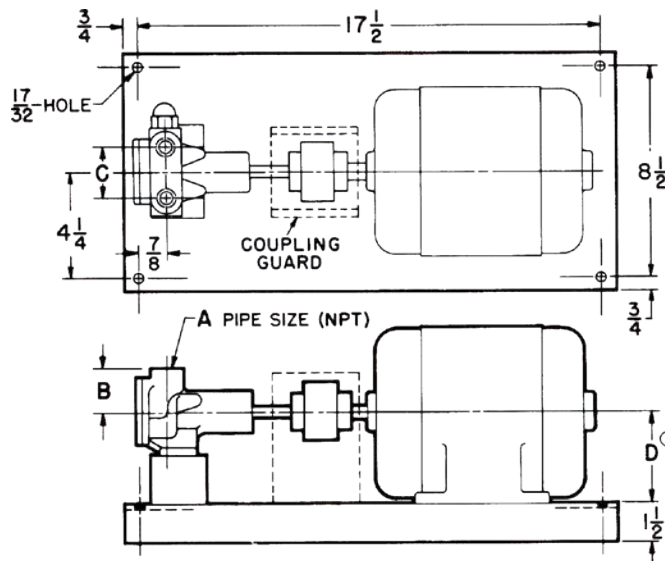


MODEL NO.	① A	B	C	D	E	F	H	J	K	N	O	② R	S	U	V	W
LL32	3	7 ³ / ₁₆	10 ¹ / ₄	6	2 ¹ / ₂	3	1 ¹ / ₂	1 ⁵ / ₃₂	3	2 ¹ / ₄	1/2	12 ¹ / ₂	21 ¹ / ₄	1 ⁷ / ₁₆	3/8 x 3/16	5 ³ / ₈
Q32	3	7 ³ / ₄	14	7 ³ / ₄	4 ¹ / ₂	4 ¹ / ₄	1 ¹ / ₂	1 ¹ / ₁₆	5	3	3/8	13 ³ / ₈	33 ¹ / ₂	1 ¹⁵ / ₁₆	1/2 x 1/4	8 ³ / ₁₆
M32	4	9 ¹ / ₂	17 ¹ / ₄	9 ¹ / ₂	5	6 ¹ / ₄	1 ⁷ / ₁₆	1 ¹ / ₁₆	5	4	3/4	13 ³ / ₈	34	1 ¹⁵ / ₁₆	1/2 x 1/4	8 ¹ / ₂
N32	5	9 ¹ / ₂	17 ¹ / ₄	9 ¹ / ₂	5	6 ¹ / ₄	1 ¹ / ₂	1 ¹ / ₁₆	5	4 ¹ / ₂	1	20 ¹ / ₂	34	2 ¹ / ₁₆	5/8 x 3/16	8 ¹ / ₂

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

② Minimum dimension for repacking.

DIMENSIONS – C - F - FH 32 & 432 (D DRIVE)



MODEL NO.		A	B	C	Approximate Shipping Weight With Valve (Less Power)	
PACKED	SEAL				Pounds	KG
C32D	C432D	1/4	1 ¹ / ₁₆	1 ¹ / ₂	26	11.8
F32D	F432D	1/2	2	1 ¹ / ₈	27	12.3
FH32D	FH432D	1/2	2	1 ¹ / ₈	29	13.2

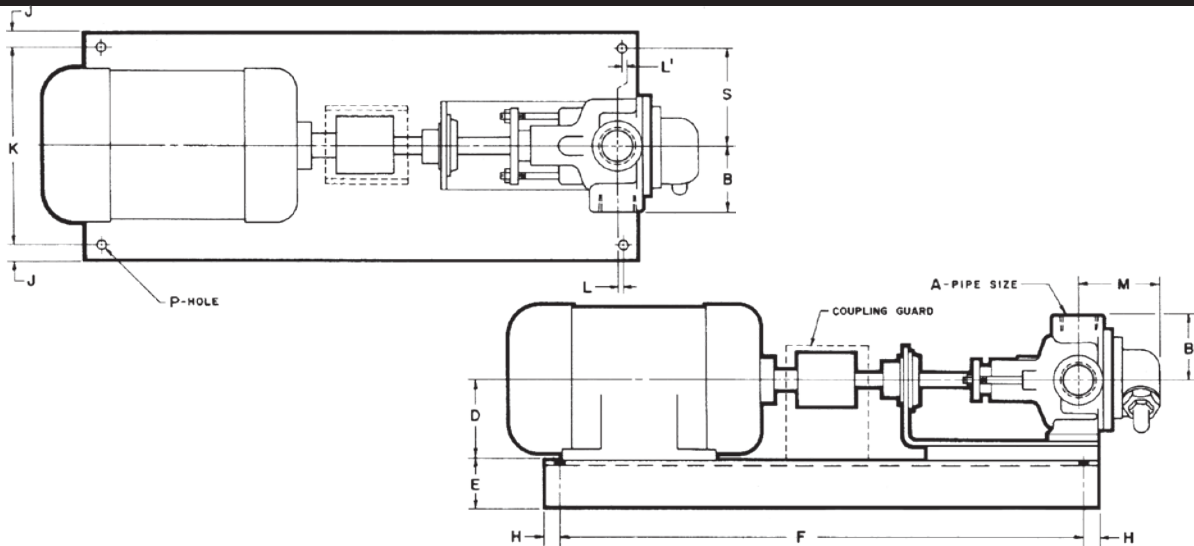
① Centerheight is 3" with 48 frame motor. Centerheight is 3¹/₂" with 56 frame motor.

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DIMENSIONS – G - H - HL 32 & 432 (D DRIVE)



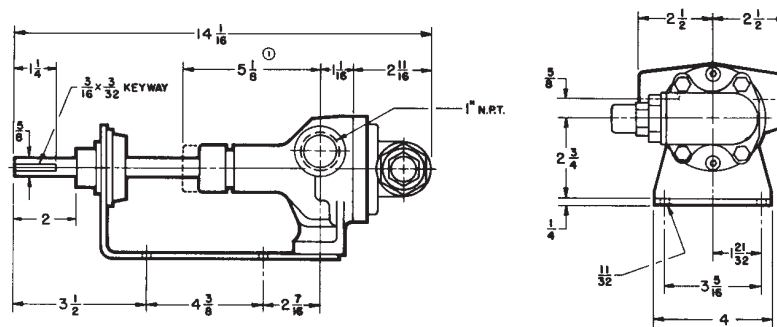
MODEL NO.		A	B	D	E	F	H	J	K	L	L ₁	M	P	S	Approximate Shipping Weight With Valve (Less Power)	
PACKED	SEAL														Pounds	KG
①G32D	①G432D	1	2½	②3½	1½	20½	¾	¾	8½		⅝ ₃₂	¾	½	4¼	45	20.4
H32D	H432D	1	2¾	②3½	1½	20½	¾	¾	8½		⅞	¾	½	4¼	70	31.8
HL32D	HL432D	1½	3	②3½	1½	20½	¾	¾	8½	⅜ ₁₆		4¼ ₁₆	½	4¼	75	34.1
①G32D	①G432D	1	2½	③4½	2 ¹⁵ / ₁₆	25	1	1½	9	1		¾	⅞ ₁₆	4½	45	20.4
H32D	H432D	1	2¾	③4½	2 ¹⁵ / ₁₆	25	1	1½	9	1 ¹ / ₁₆		¾	⅞ ₁₆	4½	70	31.8
HL32D	HL432D	1	3	③4½	2 ¹⁵ / ₁₆	25	1	1½	9	1 ¹ / ₈		4¼ ₁₆	⅞ ₁₆	4½	75	34.1

① All "G" pumps are equipped with opposite ports with openings ⅝" 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. Frame 213 on up, larger base required.

DIMENSIONS – G 32 & 432 (B DRIVE)



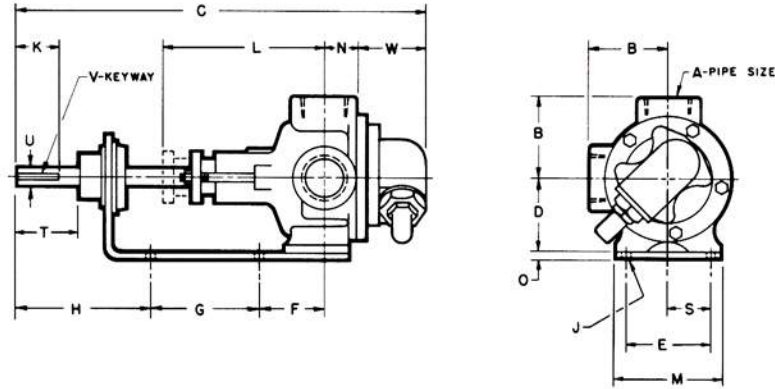
MODEL NO.		Approximate Shipping Weight With Valve (Less Power)	
PACKED	SEAL	Pounds	KG
G32B	G432B	18	8.2

① Minimum dimension for repacking. Assembled dimension for seal pump 3¹⁵/₁₆."

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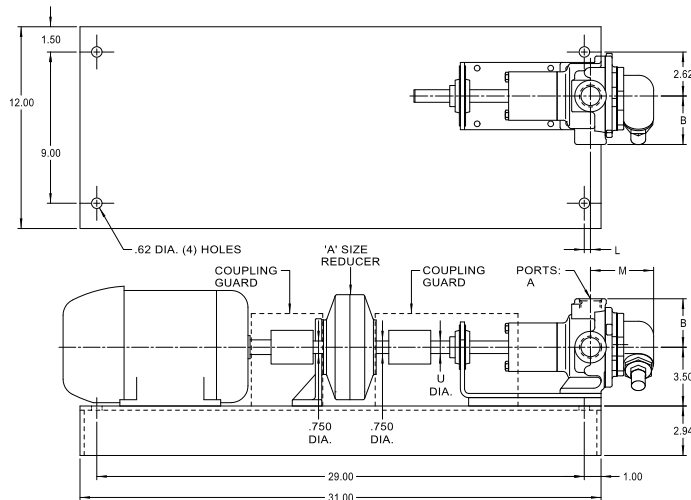
DIMENSIONS – H - HL 32 & 432 (B DRIVE)



MODEL NO.		A	B	C	D	E	F	G	H	J	K	L ^①	M	N	O	S	T	U	V	W	Approximate Shipping Weight With Valve (Less Power)	
PACKED	SEAL																				Pounds	KG
H32B	H432B	1	2½	14¼	2¼	3 ¹⁵ / ₁₆	2¼	4¾	3¾	1 ¹ / ₃₂	1¼	5¼	4	7/8	¼	1 ²¹ / ₃₂	2 ⁷ / ₁₆	¾	¾ ₁₆ X ¾ ₃₂	2½	23	10.4
HL32B	HL432B	1½	3	14	2¼	3 ¹⁵ / ₁₆	2¼	4¾	3½	1 ¹ / ₃₂	1¼	6	4	1 ³ / ₁₆	¼	1 ²¹ / ₃₂	2	¾	¾ ₁₆ X ¾ ₃₂	2½	28	12.7

① Minimum dimension for repacking. Assembled dimension on seal pumps: 3/8" – for Model H432B, 4½" – for Model HL432B.

DIMENSIONS – G - H - HL 32 & 432 (R DRIVE, A REDUCER)



MODEL NO.		A	B	L	M	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	2½	9/16	3¾	¾	70	32
HL32R	HL432R	1½	3	¼	4 ¹ / ₁₆	¾	75	34

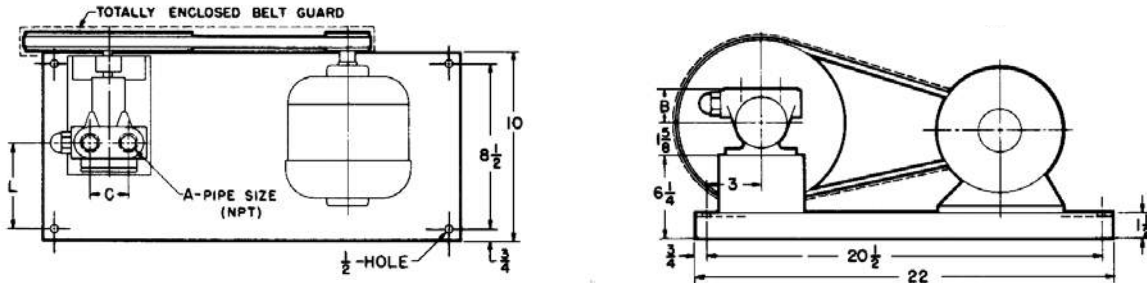
① All "G" pumps are equipped with opposite ports with openings 5/8" above shaft center line.

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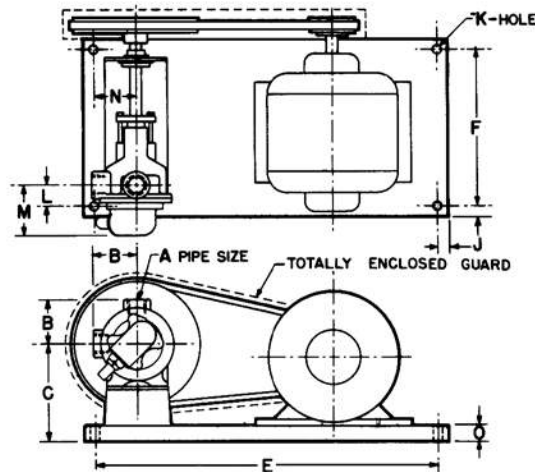
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DIMENSIONS – C - F - FH 32 & 432 (V DRIVE)



MODEL NO.		A	B	C	L	Approximate Shipping Weight With Valve (Less Power)	
PACKED	SEAL					Pounds	KG
C32V	C432V	¼	1 ¹¹ / ₁₆	1	4 ⁷ / ₈	35	16
F32V	F432V	½	2	1 ⁷ / ₈	4 ¹⁵ / ₁₆	40	18
FH32V	FH432V	½	2	1 ⁷ / ₈	4 ¹⁵ / ₁₆	45	20

DIMENSIONS – G - H - HL 32 & 432 (V DRIVE)



MODEL NO.		A	B	C	E	F	J	K	L	M	N	O	Approximate Shipping Weight With Valve (Less Power)	
PACKED	SEAL												Pounds	KG
① G32V	① G432V	1	① 2½	8%	18¾	10¼	¾	½	1 ¹³ / ₁₆	3¾	2¾	1¼	65	30
H32V	H432V	1	2%	8%	18¾	10¼	¾	½	1%	3¾	2¾	1¼	70	32
HL32V	HL432V	1½	3	8%	18¾	10¼	¾	½	2 ¹ / ₁₆	4 ¹ / ₁₆	2¾	1¼	75	34

① All "G" pumps are equipped with opposite ports with openings 5/8" above shaft center line. See drawing page 310.9.

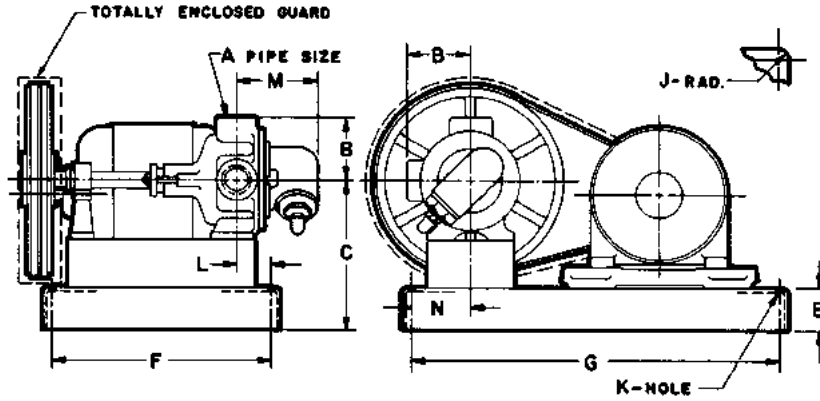
Base shown for motor frame 56 and smaller.

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

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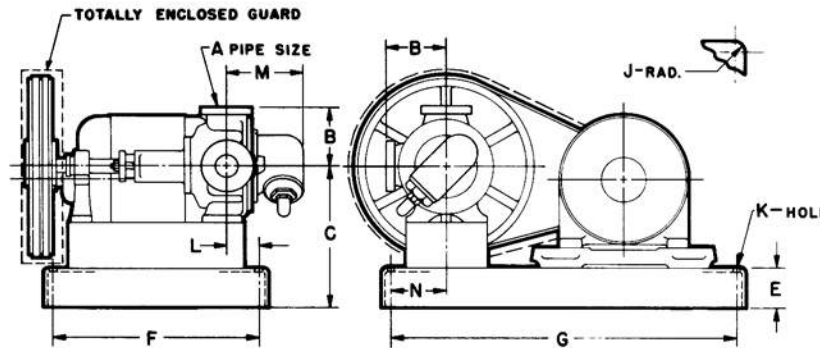
DIMENSIONS – K - KK - L - LQ 32 (V DRIVE)



MODEL NO.	A	B	C	E	F	G	J	K	L	M	N	Approximate Shipping Weight With Valve (Less Power)	
												Pounds	KG
K32V	1½	4¾	13¼ ₁₆	¾	17	28¾	1	½	2¼ ₁₆	6¾	4¼ ₁₆	210	95
KK32V	2	4¾	13¼ ₁₆	¾	17	28¾	1	½	2¼ ₁₆	6¾	4¼ ₁₆	215	98
L32V	2	6½	15½	¾	18½	31	1	¾	1¾	7¾	6½	280	127
LQ32V	① 2½	7¼ ₁₆	15½	¾	18½	31	1	¾	1¾	7¾	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)



MODEL NO.	① A	B	C	E	F	G	J	K	L	M	N	Approximate Shipping Weight With Valve (Less Power)	
												Pounds	KG
LL 32V	3	7¼ ₁₆	15½	¾	18½	31	1	¾	1¾	7¾	6½	315	143
Q32V	3	7¾	② 13¾	6	27	49	1½	1¾ ₁₆	2¾	11¾ ₁₆	8½	750	341
M32V	4	9½	③ 15½	6	27	49	1½	1¾ ₁₆	3¼ ₁₆	12½	8½	1100	500
N32V	5	9½	20½	6	27	49	1½	1¾ ₁₆	3¾ 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" (13¾) 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)

**MOTOR SPEED PRODUCT LINE:
CAST IRON PUMPS
SERIES 32 & 432**

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PERFORMANCE CURVE NOTES

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.

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

PUMP SIZE	PUMPS SPEED, RPM														
	100	125	155	190	230	280	350	420	520	640	780	950	1150	1450	1750
C	-	-	-	-	-	-	-	-	-	-	-	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	-	-	-	-	-	-
M	2.1	2.3	2.8	3.4	4.3	6.0	9.0	12.7	-	-	-	-	-	-	-
N	2.1	2.5	3.5	4.5	6.3	9.5	15.0	29.5	-	-	-	-	-	-	-

Catalog Speed Rating*

*Limit for most models.

Some models exceed this limit.

See Viking Pump catalog for details.