

VIKING® JACKETED ASPHALT PUMPS

SERIES 34 AND 434

Section	430
Page	430.1
Issue	G

FEATURES

① Pressure Range	To 100 PSI (6.9 Bar)
① Temperature Range	-60°F. to +450°F. (-51°C. to +232°C.)
① Viscosity Range	31 SSU to 250,000 SSU (1 cP to 55,000 cPs.)
① Flow Range	20 to 450 GPM (4.5 to 102 m³/Hr)

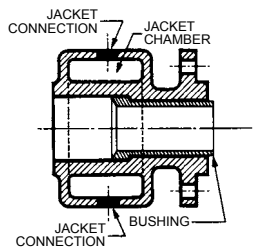


SHAFT SEAL OPTIONS

Series 34 pumps are furnished with packing. Series 434 pumps may be furnished with cartridge lip seal, single cartridge mechanical seal, or double cartridge mechanical seal. Seal type must be designated when ordering. Note that steam or heat transfer oil quench is recommended for Series 434 pumps.



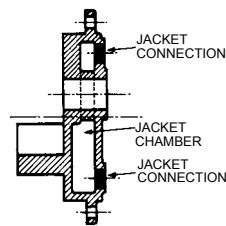
Series 434 Cutaway View



JACKETED ROTOR BEARING SLEEVE

(Standard Equipment)

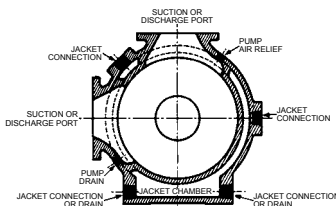
Jacket chamber indicated above accommodates the heating or cooling agent. All chambers are suitable for maximum steam pressures of 150 PSI or 365°F.



JACKETED HEAD

(Standard Equipment)

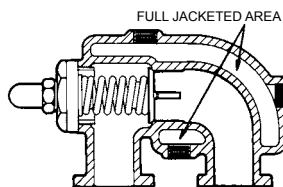
Series 34 and 434 pumps are equipped with this type of head as standard. Pumps with jacketed heads cannot be furnished with relief valve on head. The valve must be installed in line.



JACKETED CASING

(Standard Equipment)

Complete jacketed casing section shown above. All pumps are available with right-hand ports as standard. Left-hand on special order only. All jacketed features are furnished as standard on Series 34 and 434 pumps.



JACKETED VALVE

(On Request)

Jacketed valve on unjacketed head can be furnished on "KK" through "N" pumps. Note the complete jacketing of the valve. Eliminates liquid solidifying in the valve. Maximum steam pressure 150# or 365°F. Maximum heat transfer oil pressure 150# or 650°F.

Viking Jacketed Pumps are specifically designed for handling asphalt, heavy petroleum, coal tar, soap solutions, and other heavy, viscous liquids which present temperature control problems. To overcome these problems of maintaining a flowing state necessary for efficient handling of these liquids, the Viking jacketed pumps feature complete jacketing of all external parts and extra clearances on all working parts. In addition, the rotor bearing sleeve jacket prevents these heavy viscous liquids from congealing or hardening in the packing or mechanical seal box – affording effective shaft sealing and consequent leak-resistance.

Individual chambers surround the casing, head, and rotor bearing sleeve and each is provided with separate openings for connections with heating or cooling lines. See illustration at left showing location of chambers and connections. Casings are furnished in right hand port construction as standard (determined by location of side port when facing shaft end of pump). Left hand port construction on special order only.

All pumps in this section come equipped with jacketing on casing, head, and rotor bearing sleeve (except HL model) as standard. Pumps are available with any one, or any combination, of the three jackets, but must be so designated when ordering. A complete jacketed pump is recommended for most installations.

① Values shown represent minimums or maximums. Some special construction or consideration may be required before a cataloged pump can be applied to an application involving maximum pressure or minimum or maximum temperature and/or viscosity.

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

Section	430
Page	430.2
Issue	G

VIKING® JACKETED ASPHALT PUMPS SERIES 34 AND 434

SPECIFICATIONS

This series of pumps is available either unmounted or as driven units. Material of construction is cast iron with packing or mechanical seals for versatile sealing on all models.

*Dimensions for Unmounted Pumps — See Page 430.4.
Performance Data for Pumps — See Pages 430.7 through 430.18.*

CONSTRUCTION — SERIES 34 AND 434 (“HL” THROUGH “N” SIZES)

Pump Construction	Casing	Head	Rotor	idler	Rotor Shaft	Idler Pin	Bushings	Shaft Seal		Jacketed Internal Relief Valve
								Packed	Cartridge Seal	
Standard Construction	Iron	Iron	Iron	Iron	Steel	Hardened Steel	Bronze	Standard	Lip Seal	Iron
Steel Fitted	Iron	Iron	Steel	① Iron	Steel	Hardened Steel	Bronze	Standard	Lip Seal	Iron

SPECIFICATIONS

TABLE 1 — UNMOUNTED PUMP

Model Number		Port Size	Nominal Pump Rating			Maximum Recommended Discharge Pressure for 100 SSU and Above		③ Maximum Recommended Temperature for Cataloged Pump		Steel Fitted Construction Recommended Above This Viscosity		Maximum Hydrostatic Pressure		Approximate Shipping Weight (Pump Only)	
Packed	Seal	Inches	GPM	m ³ /hr	RPM	PSI	Bar	°F	°C	SSU	cPs	PSIG	Bar	LBs	KGs
HL34	HL434	1½	20	4.5	1200	100	6.9	450	232	7,500	1650	400	27.6	26	12
KK34	KK434	2	50	10	420	100	6.9	450	232	7,500	1650	400	27.6	70	32
LQ34	LQ434	② 2½	90	20	420	100	6.9	450	232	25,000	5495	400	27.6	180	82
Q34	Q434	② 3	200	45	350	75	5.2	450	232	7,500	1650	400	27.6	350	160
M34	M434	② 4	280	64	280	75	5.2	450	232	25,000	5495	400	27.6	530	240
N34	N434	② 5	450	102	280	75	5.2	450	232	2,500	550	400	27.6	750	340

TABLE 2 — PUMP JACKETING ④

Model Number		Maximum Temperature/Pressure Of Fluid in Jackets							
		Steam (Saturated)				Heat Transfer Oil			
		Temperature		Pressure		Temperature		Pressure	
Packed	Seal	°F	°C	PSIG	Bar	°F	°C	PSIG	Bar
HL34	HL434	365	185	150	10.4	650	343	150	10.4
KK34	KK434	365	185	150	10.4	650	343	150	10.4
LQ34	LQ434	365	185	150	10.4	650	343	150	10.4
Q34	Q434	365	185	150	10.4	650	343	150	10.4
M34	M434	365	185	150	10.4	650	343	150	10.4
N34	N434	365	185	150	10.4	650	343	150	10.4

① “Q” Size has steel idler.

② Ports are suitable for use with 125# ANSI cast iron or 150# ANSI steel or ductile iron companion flanged fittings. All other tapped for standard pipe (NPT).

③ For use at higher temperatures, consult factory for recommended materials of construction.

④ “HL” Size does not have jacketed rotor bearing sleeve.

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

VIKING® JACKETED ASPHALT PUMPS

SERIES 34 AND 434

Section	430
Page	430.3
Issue	G

SPECIAL INFORMATION



HL34 Cutaway View

RETROFIT KITS

Retrofit kits are available that allow converting new KK, LQ, Q, M, and N packed pumps (series 34) to mechanically sealed pumps (series 434). Kit numbers are listed in the P430 price pages along with a list of parts that come in the kit. Packed pumps already in use can also be converted but a new rotor and shaft assembly will most likely be required (there will be wear on the shaft under the packing) and also new gaskets. Note that the kits do not include the mechanical seal.

GENERAL INSTALLATION NOTES

1. Vent air from stuffing box before start up. The seal may fail prematurely if this is not done.
2. Preheat seal prior to introducing hot product.
3. Use of low pressure (2 - 4 psi) continuous flow steam quench on the atmospheric side is recommended.
4. For double seals, pressurize seal chamber before startup.
5. Do not start pump until it is fully heated. Mechanical seal will fail almost instantly if hard product is in the seal chamber.
6. Do not use the PS II cartridge lip seal for filled asphalt or any product containing abrasives.
7. When converting an existing installation to a mechanical seal, special attention must be placed on the condition of the pump. All pumps should be inspected to make sure the rotor shaft is in good condition. Any wear due to packing will result in mechanical seal leakage. In general, the rotor and shaft assembly should be replaced. N size pumps can use the same rotor bearing sleeve assembly without modification. Outboard face of this assembly will need to be cleaned to make sure there is a good surface for the mechanical seal to seal against.
8. Most asphalt pumps are V-Belt driven. Packing is quite tolerant of any misalignment but mechanical seals are not. Make sure sheaves are aligned properly (see TSM 000) and that the rotor shaft is properly supported with a pillow block bearing. It is also important to make sure the mechanical seal is properly lined with the rotor shaft. This is done at the time of seal installation. Be sure to recheck alignment when the rotor shaft is inserted in the pillow block bearing.

Section	430
Page	430.4
Issue	G

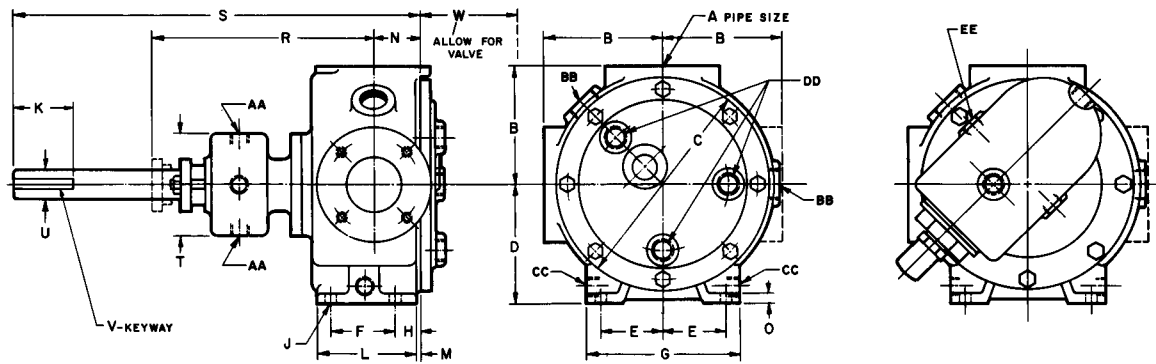
VIKING® JACKETED ASPHALT PUMPS SERIES 34 AND 434

DIMENSIONS

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

For specifications, see page 430.2.

DIMENSIONS — 34 AND 434 SERIES UNMOUNTED PUMPS “HL”–“N” SIZE



MODEL NO.		A	B	C	D	E	F	G	H	J	K	L	M	N	O	② R	S	T	U	V	W	JACKET CONNECTIONS (N.P.T.)				
																						AA	BB	CC	DD	EE
HL34 HL434	in mm	1½	3.00 76	4.75 120	3.75 95	1.62 41	1.31 33	4.00 102	.88 22	.34 9	1.75 44	2.44 62	.25 6	1.38 35	N/A N/A	6.00 152	11.12 282	N/A N/A	.75 19	.19 x .09	N/A N/A	N/A	¾	N/A	⊙ ½	N/A
KK34 KK434	in mm	2	4.88 124	8.00 203	6.00 152	2.88 73	3.00 76	7.00 178	1.00 25	.41 10	3.00 76	4.62 117	.25 6	1.75 44	N/A N/A	9.00 229	18.75 476	4.12 105	1.12 28	.25 x .12	7.12 181	½	1	N/A	½	1
LQ34 LQ434	in mm	⊙ 2½	7.19 183	10.25 260	6.00 152	2.88 73	3.00 76	7.00 178	1.00 25	.47 12	3.00 76	4.62 117	.12 3	1.75 44	.62 16	11.62 295	21.25 540	5.50 140	1.44 37	.38 x .19	7.88 200	¾	1½	¾	⊙ 1	1
Q34 Q434	in mm	⊙ 3	8.00 203	14.00 356	7.75 197	4.12 105	4.25 108	10.00 254	1.62 41	.75 19	5.00 127	6.50 165	.25 6	3.00 76	.62 16	13.88 353	33.50 851	6.75 171	1.94 49	.50 x .25	10.62 270	¾	1½	1	1¼	1
M34 M434	in mm	⊙ 4	9.50 241	17.25 438	9.50 241	5.00 127	6.25 159	12.00 305	1.44 37	.75 19	5.00 127	8.69 221	.19 5	4.00 102	.75 19	13.38 340	34.00 864	6.75 171	1.94 49	.50 x .25	10.25 260	¾	1½	1	1½	1
N34 N434	in mm	⊙ 5	9.50 241	17.25 438	9.50 241	5.00 127	6.25 159	12.00 305	1.62 41	.75 19	5.00 127	8.50 216	.19 5	4.50 114	.75 19	18.12 460	34.00 864	8.50 216	2.44 62	.62 x .31	10.25 260	¾	2	1½	1½	1

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

② Minimum dimension for repacking.

③ HL and LQ 34 and 434 heads have two jacket openings only, (near vertical centerline). “KK”, “Q”, “M”, and “N” head jacket opening per drawing.