LIQUID-SPECIFIC PRODUCT LINE:
CAST IRON ASPHALT PUMPS
34 Series™

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RELATED PRODUCTS

Cast Iron, 224C Series™: Catalog Section 2402

Cast Iron, 124E Series™ & 324E Series™:
Catalog Section 1465

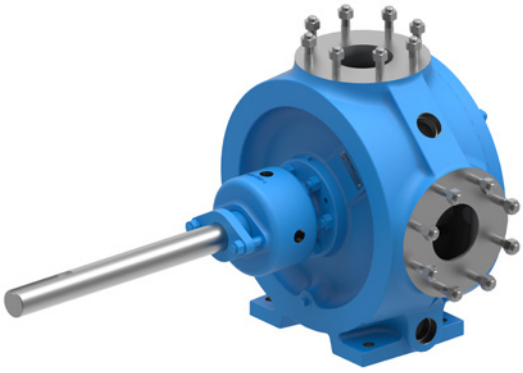
SERIES DESCRIPTION

Viking 34 Series™ Asphalt Pumps are designed to handle asphalts, bitumens, pitch, tar, bunker oils, residual oils and related materials that solidify at ambient temperatures. The 34 Series™ pumps are Viking's simplest asphalt pumps, with a hydraulically-balanced rotor that eliminates the need for thrust control, but also limits the pressures to 100 PSI and less.

These asphalt pumps melt ambient-temperature solids to a liquid state prior to pump startup using integral jacketing for steam or hot oil. The 34 Series™ are available as packed pumps only.



LQ34



M34

OPERATING RANGE

SERIES	NOMINAL FLOW		MAXIMUM PRESSURE		TEMPERATURE RANGE		VISCOSITY RANGE	
	GPM	m^3h	PSI	Bar	°F	°C	SSU	cSt
34 Series™	90 - 450	20 - 102	100	7	−60 to +450	−50 to +230	31 to 250,000	1 to 55,000

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FEATURES & BENEFITS

- **Standard Jacketed Rotor Bearing Sleeve**
  - » Jacket chamber indicated above accommodates the heating or cooling agent. All chambers are suitable for maximum steam pressures of 150 PSI or 365°F.
- **Standard Jacketed Head***
  - » 34 Series™ pumps are equipped with this type of head as standard. Pumps with jacketed heads cannot be furnished with relief valve on head. Some form of pressure relief is recommended in the discharge line.
- **Standard Jacketed Casing**
  - » 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 34 Series™ pumps.
- **Optional Jacketed Valve**
  - » Jacketed valve on non-jacketed head can be furnished on all pump sizes. 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#, 450°F.

MODEL NUMBER KEY

L Q - 3 4

Size:
LQ
Q
M
N

Basic Series Configuration

Heating:
4 = Jacketed

JACKETING

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 hardening in the seal box – affording effective shaft sealing.

Individual chambers surround the casing, head, and rotor bearing sleeve, and each is provided with separate openings for connections with heating lines. 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.

34 Series™ pumps come equipped with jacketing on casing, head, and rotor bearing sleeve 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.

PRESSURE RELIEF VALVES

34 Series™ pumps feature a jacketed head without relief valve standard. A jacketed relief valve can be furnished on a non-jacketed head on all pump sizes.

All positive displacement pumps should have some form of pressure relief, whether in the pump or downstream of the pump, to prevent overpressure situations.

STANDARD MATERIALS OF CONSTRUCTION

Pump Construction	Casing	Head	Rotor	Idler	Rotor Shaft	Idler Pin	Bushings	Shaft Seal	Internal Relief Valve (optional)
								Packed	
Standard Construction	Iron	Iron	⑤ Iron	Iron	Steel	Hardened Steel	Bronze	Standard	Iron
Steel Fitted	Iron	Iron	Steel	① Iron	Steel	Hardened Steel	Bronze	Standard	Iron

SPECIFICATIONS: UNMOUNTED PUMPS

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)	
	Inches	GPM	m³/h	RPM	PSI	Bar	°F	°C	SSU	cPs	PSIG	Bar	Lbs.	Kg.
④ LQ34	② 2½	90	20	420	100	6.9	450	232	25,000	5500	400	27.6	180	82
Q34	② 3	200	45	350	75	5.2	450	232	7,500	1650	400	27.6	350	160
M34	② 4	280	64	280	75	5.2	450	232	25,000	5500	400	27.6	530	240
N34	② 5	450	102	280	75	5.2	450	232	2,500	550	400	27.6	750	340

SPECIFICATIONS: PUMP JACKETING

Model Number	Maximum Temperature/Pressure Of Fluid in Jackets							
	Steam (Saturated)				Heat Transfer Oil			
	Temperature		Pressure		Temperature		Pressure	
	°F	°C	PSIG	Bar	°F	°C	PSIG	Bar
④ LQ34	365	185	150	10.4	450	232	150	10.4
Q34	365	185	150	10.4	450	232	150	10.4
M34	365	185	150	10.4	450	232	150	10.4
N34	365	185	150	10.4	450	232	150	10.4

① Q Size has steel idler when steel fitted construction is required.

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

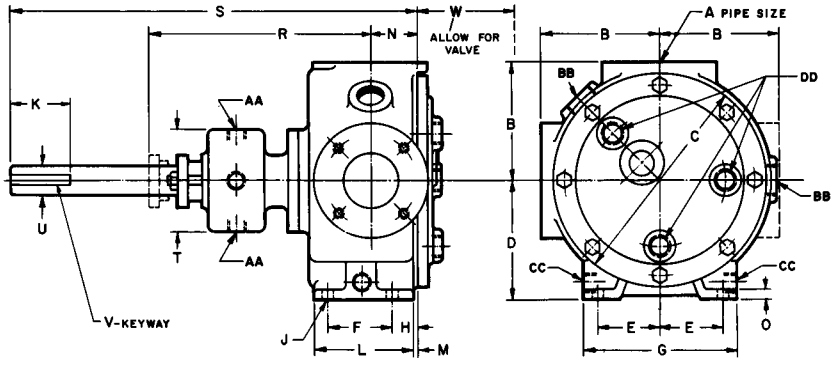
③ For use at higher temperatures, consult factory for recommended materials of construction.

④ LQ size has two-piece jacketed head construction.

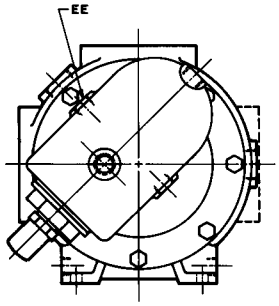
⑤ N Size has ductile iron rotor as standard.

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DIMENSIONS



Jacketed Head Standard



Optional Jacketed Relief Valve Shown

Model Number	A (inch)		B	C	D	E	F	G	H	J	K	L	M
LQ34	① 2½	in	7.19	10.25	6.00	2.88	3.00	7.00	1.00	.47	3.00	4.62	.12
		mm	183	260	152	73	76	178	25	12	76	117	3
Q34	① 3	in	8.00	14.00	7.75	4.12	4.25	10.00	1.62	.75	5.00	6.50	.25
		mm	203	356	197	105	108	254	41	19	127	165	6
M34	① 4	in	9.50	17.25	9.50	5.00	6.25	12.00	1.44	.75	5.00	8.69	.19
		mm	241	438	241	127	159	305	37	19	127	221	5
N34	① 5	in	9.50	17.25	9.50	5.00	6.25	12.00	1.62	.75	5.00	8.50	.19
		mm	241	438	241	127	159	305	41	19	127	216	5

Model Number		N	O	② R	S	T	U	V	W	JACKET CONNECTIONS (N.P.T.) AA	BB	CC	DD	EE
LQ34	in	1.75	.62	11.62	21.25	5.50	1.44	.38 x .19	7.88	¾	1½	¾	③ 1	1
	mm	44	16	295	540	140	37		200					
Q34	in	3.00	.62	13.88	33.50	6.75	1.94	.50 x .25	10.62	¾	1½	1	1¼	1
	mm	76	16	353	851	171	49		270					
M34	in	4.00	.75	13.38	34.00	6.75	1.94	.50 x .25	10.25	¾	1½	1	1½	1
	mm	102	19	340	864	171	49		260					
N34	in	4.50	.75	18.12	34.00	8.50	2.44	.62 x .31	10.25	¾	2	1½	1½	1
	mm	114	19	460	864	216	62		260					

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 LQ 34 heads have two jacket openings only (near vertical centerline). Q, M, and N head jacket opening per drawing.

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]														
	100	125	155	190	230	280	350	420	520	640	780	950	1150	1450	1750
LQ	1.7	1.8	2.0	2.2	2.5	3.0	3.8	5.0	7.3	10.8	—	—	—	—	—
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	—	—	—	—	—	—	—	—

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