LIQUID SPECIFIC PRODUCT LINE:
CAST IRON — BXB PUMPS

1124C-BXB Series™, 1224C-BXB Series™

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RELATED PRODUCTS

Cast Iron, Jacketed Pumps: Catalog Section 2402

Cast Iron, Mag Drive Pumps: Catalog Section 1403

Steel Externals, Non-Jacketed Pumps: Catalog Section 2301

Stainless Steel, Non-Jacketed Pumps: Catalog Section 2701

SERIES DESCRIPTION

1124C-BXB Series™

The 1124C-BXB Series™ non-jacketed internal gear pumps are part of Viking Pump's Liquid Specific Product Line. They feature the O-Pro® Barrier Seal, making them an ideal solution for demanding applications such as starch and adhesives, where mechanical seals often fail and traditional packing can leak and create cleanup issues.

1224C-BXB Series™

The 1224C-BXB Series™ jacketed internal gear pumps are also part of the Liquid Specific Product Line and incorporate the O-Pro® Barrier Seal. These pumps are supplied standard with jacketing chambers to allow effective control of product temperature in applications requiring thermal management.

ProPort™ Casing

Both series are compatible with Viking Pump's ProPort™ casing, which supports a wide range of port types and sizes, along with 90 degree and opposite port arrangements. This design flexibility simplifies integration into existing piping systems and helps improve installation efficiency across a variety of applications.

HL1224C-BXB

KK1124C-BXB

LS1124C-BXB

OPERATING RANGE

SERIES	NOMINAL FLOW		MAXIMUM PRESSURE		TEMPERATURE RANGE		VISCOSITY RANGE	
	GPM	m^3h	PSI	Bar	°F	°C	SSU	cSt
1124C-BXB Series™	8 - 200	1.8 - 45	200	14	0 to +350	−15 to +175	100 to 2,000,000	20 to 440,000
1224C-BXB Series™	8 - 200	1.8 - 45	200	14	0 to +350	−15 to +175	100 to 2,000,000	20 to 440,000

LIQUID SPECIFIC PRODUCT LINE:
CAST IRON — BXB PUMPS

1124C-BXB Series™, 1224C-BXB Series™

FEATURES & BENEFITS

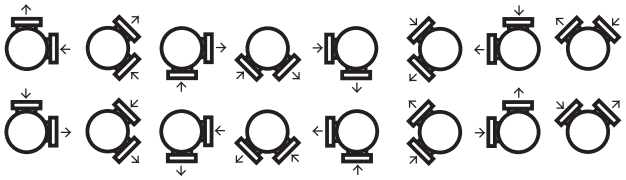
- Positive Displacement Internal Gear pumping principle handles a broad range of viscosities with constant flow rate
- O-Pro® Barrier Seal
  - » Combines the seal and bracket bushing into a single, O-ring sealed gland that supports the shaft and is used in place of traditional packing or mechanical seals to prevent process liquid from leaking
  - » External lubrication of the O-Pro® Barrier minimizes bushing wear and improves seal reliability
- U-Plus™ Bracket
  - » While standard with the O-Pro® Barrier seal, BXB pumps use the U-Plus™ bracket, which can house numerous seal options including O-Pro® seals, packing, single component seals (stuffing box or behind the rotor), cartridge lip seals, and single or double cartridge seals
  - » Stainless steel window guards offer protection from rotating parts
  - » Footed one-piece iron bracket provides rigid mounting to help maintain alignment, which extends seal and bearing life
- Axial rotor thrust is controlled by a double row bearing and the O-Pro® Barrier provides a secondary point of radial shaft support
- Rotatable bearing housing provides easy rotor end clearance adjustment to compensate for wear
- Gear and pump geometry has been optimized based on more than 100 years of experience
- Can be used with direct drive, gear reducer or gearmotor drive, or belt drive
- 1224C-BXB Series™ feature integrated thermal jacketing, enabling the use of steam or other thermal fluids to control and maintain the pumped fluid's temperature
- Optional ProPort™ Casing
  - » Adaptable port design offers a variety of port sizes and types, simplifying integration into existing piping systems and enhances installation efficiency
  - » All sizes are available with optional opposite porting
  - » Casing drain allows the pump to be drained without removing the head
  - » Optional O-ring joint seals for high pressure of difficult to seal applications

3 YEAR LIMITED WARRANTY

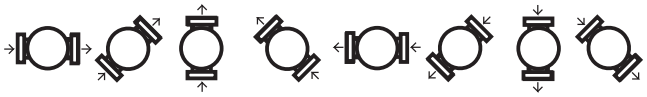
For warranty details, please go to: vikingpump.com/warranty

PORT LOCATION OPTIONS

90° Port Options:



Opposite Port Options:



NOTE: See page 2402.9 for a complete list of port options for ProPort™ casing by size.

MODEL NUMBER KEY

L S 1 1 2 4 C - B X B

Size:
H L
HL LL
K LS
KK

Shaft Seal:
1 = O-Pro® Seal

Jacketing:
1 = No Jacketing
2 = Jacketed

Basic Series Configuration

Material of Construction:
4 = Cast Iron

Bracket Type:
C = U-Plus™ Bracket for Stuffing Box or Behind the Rotor Seals

Application-Specific Construction

LIQUID SPECIFIC PRODUCT LINE:
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1124C-BXB Series™, 1224C-BXB Series™

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STANDARD MATERIALS OF CONSTRUCTION

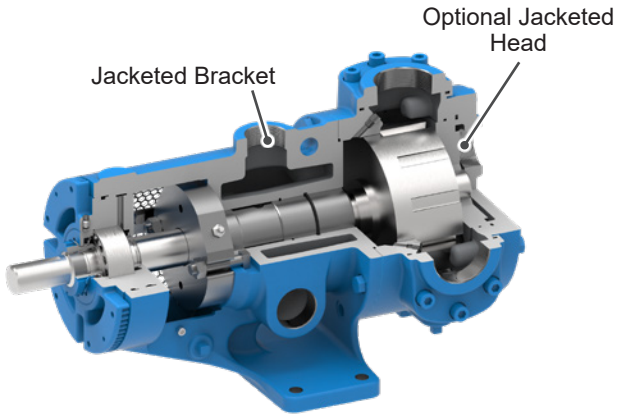
Component	Standard Material
Casing	**Standard:** Cast Iron, ASTM A48, Class 35B **Optional ProPort™ Casing:** Cast Iron, ASTM A48, Class 35B
Bolt-on Ports	Cast Iron, ASTM A48, Class 35B
Head	Cast Iron, ASTM A48, Class 35B
Bracket	Cast Iron, ASTM A48, Class 35B
Idler	① Cast Iron, ASTM A48, Class 35B
Rotor	② Cast Iron, ASTM A48, Class 35B
Shaft	Hardened High Strength Steel, ASTM A434, Grade 4140, Class BC
Idler Pin	Hardened Steel, ASTM A108, Grade 1045
Idler Bushing	Carbon Graphite
Pressure Relief Valve	Cast Iron, ASTM A48, Class 35B
O-Pro® Barrier Seal	Hardened Cast Iron, Sanitary FKM Elastomers

① H & HL sizes have a powdered metal idler:
Powdered Metal MPIF 35, FC-0208-45 (G) ,
Powdered Metal MPIF 35, FC-0208-50 (H, HL)

② KK & LS sizes have ductile iron rotor: ASTM A536 Grade 60-40-18.

JACKETING (1224C-BXB SERIES™)

Jacketed pumps provide a cavity, or jacket, on the external wall of the pump through which steam or heat transfer liquid can be passed to control the temperature of the fluid in the pump. The heat transfer medium flows in a closed loop back to the boiler or heater. Applications include “melting” ambient temperature solids like wax which solidify in the pump when it cools, and maintaining precise temperature control in processes like manufacturing polymers and epoxy resins.



Jacketed Pump Cutaway – KK1224C-BXB
Shown with ProPort™ Casing and NPT ports

SPECIFICATIONS

Model Number	③ Standard NPT Port Size	Nominal Pump Rating (100 SSU & below)			④ Maximum Hydrostatic Pressure		① Maximum Discharge Pressure		② Max. Recommended Temperature for Standard Pump		Approx. Shipping Weight with Valve	
	Inches	GPM	m^3/h	RPM	PSIG	BAR	PSIG	BAR	°F	°C	Lbs.	Kg.
H1124C-BXB	1 ½	8	1.8	1000	400	28	200	14	350	175	40	18
H1224C-BXB	1 ½	8	1.8	1000	400	28	200	14	350	175	42	19
HL1124C-BXB	1 ½	18	4	1000	400	28	200	14	350	175	41	19
HL1224C-BXB	1 ½	18	4	1000	400	28	200	14	350	175	44	20
K1124C-BXB	2	80	18	780	400	28	200	14	350	175	111	51
K1224C-BXB	2	80	18	780	400	28	200	14	350	175	117	53
KK1124C-BXB	2	100	23	780	400	28	200	14	350	175	112	51
KK1224C-BXB	2	100	23	780	400	28	200	14	350	175	118	54
L1124C-BXB	2	135	31	640	400	28	200	14	350	175	175	80
L1224C-BXB	2	135	31	640	400	28	200	14	350	175	184	84
LL1124C-BXB	3	140	32	520	300	21	200	14	350	175	200	91
LL1224C-BXB	3	140	32	520	300	21	200	14	350	175	208	95
LS1124C-BXB	3	140	32	520	300	21	200	14	350	175	229	104
LS1224C-BXB	3	200	45	640	300	21	200	14	350	175	235	107

① For maximum recommended discharge pressures at different viscosities, see performance curves, which can be electronically generated with the Viking Pump Curve Generator, located on www.vikingpump.com. If suction pressure exceeds 50 PSIG, consult factory. Higher pressures possible with factory approval based on application details.

② Extra clearances are required above 225°F / 105°C. Higher temperatures can be handled with special construction, consult factory.

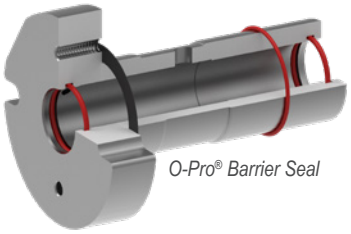
③ Ports are tapped for standard (NPT) pipe. H through L ports are standard at 90°.

④ Maximum hydrostatic pressure for standard pump construction. Rating is dependent on gaskets and ports.

LIQUID SPECIFIC PRODUCT LINE:
CAST IRON — BXB PUMPS

1124C-BXB Series™, 1224C-BXB Series™

CUTAWAY VIEW & PUMP FEATURES – 1124C-BXB SERIES™ *(NON-JACKETED)*



O-Pro® Barrier Seal

O-Pro® Barrier is a single piece seal that replaces both the bracket bushing and seal

U-Plus™ bracket seal chamber accepts a variety of seal types

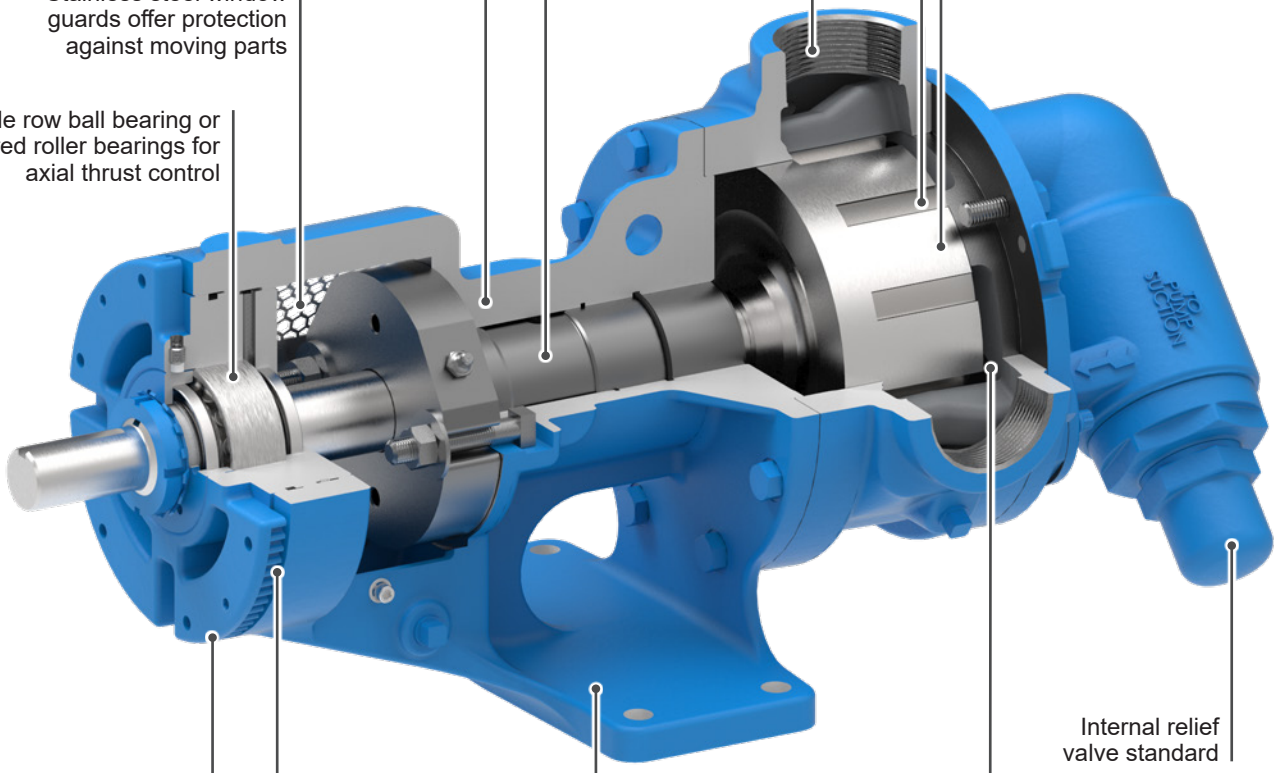
Stainless steel window guards offer protection against moving parts

Double row ball bearing or tapered roller bearings for axial thrust control

Multiple port sizes, types and ratings with optional ProPort™ casing including threaded or flanged (Class 125, Class 250)

Idler

Rotor



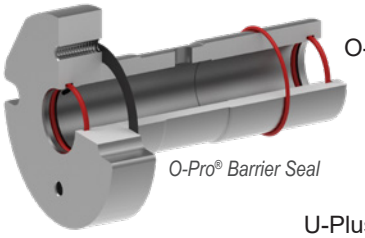
Internal relief valve standard

Large diameter threaded bearing housing allows easy seal removal

One-piece cast bracket with seal between bearings provides rigid foundation to maximize seal and bearing life

Rotor end clearance can be adjusted to compensate for wear or for higher temperatures or viscosities by rotating the threaded bearing housing

CUTAWAY VIEW & PUMP FEATURES – 1224C-BXB SERIES™ *(JACKETED)*



O-Pro® Barrier Seal

O-Pro® Barrier is a single piece seal that replaces both the bracket bushing and seal

Multiple port sizes, types and ratings with optional ProPort™ casing including threaded or flanged (Class 125, Class 250)

U-Plus™ bracket seal chamber accepts a variety of seal types

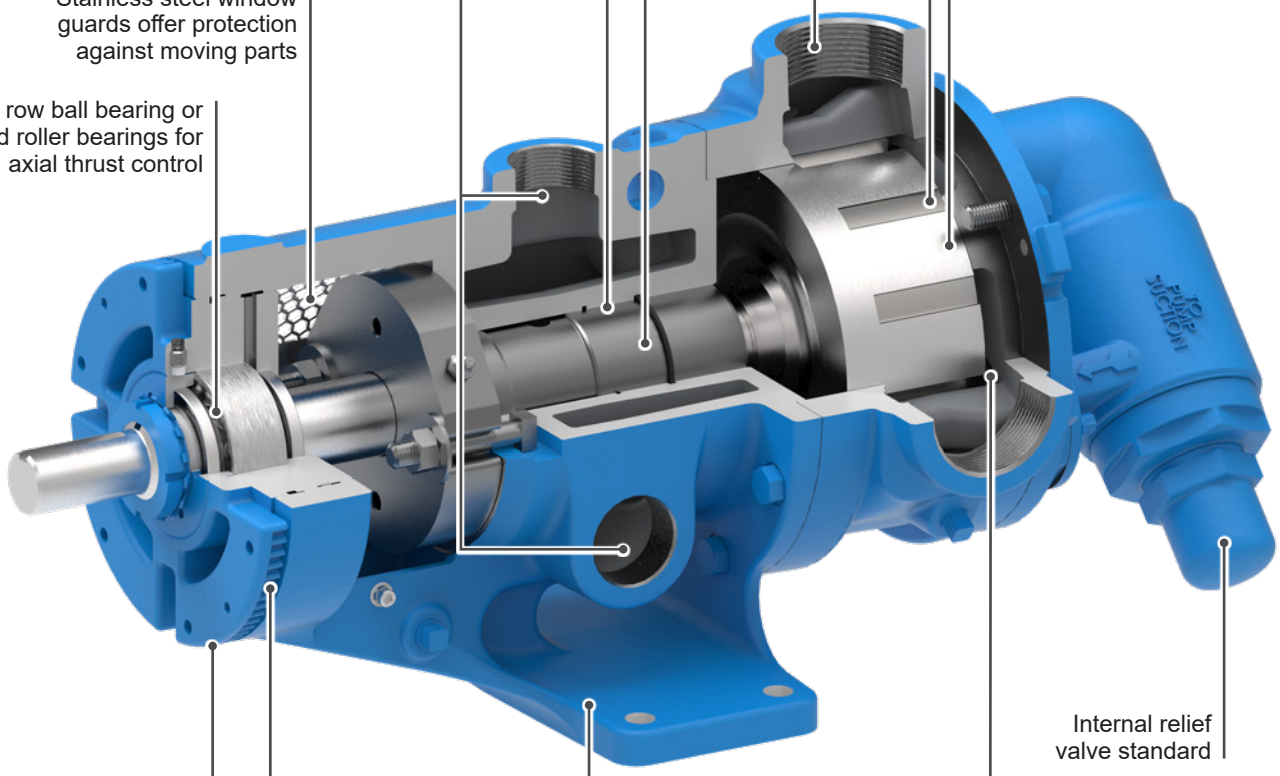
Jacketing for steam, hot oil, or water circulation to maintain a constant temperature

Idler

Rotor

Stainless steel window guards offer protection against moving parts

Double row ball bearing or tapered roller bearings for axial thrust control



Internal relief valve standard

Large diameter threaded bearing housing allows easy seal removal

One-piece cast bracket with seal between bearings provides rigid foundation to maximize seal and bearing life

Rotor end clearance can be adjusted to compensate for wear or for higher temperatures or viscosities by rotating the threaded bearing housing

SPECIAL MATERIALS & OPTIONS SELECTION GUIDELINES

For High Viscosities – Above 2,500 SSU (550 cSt)

- Steel fitted construction recommended above the following viscosities, according to pump size:

Viscosity	Pump Size						
	H	HL	K	KK	L	LL	LS
SSU	25,000	7,500	25,000	75,000	25,000	2,500	75,000
cSt	5,500	1,700	5,500	17,000	5,500	550	17,000

- Extra clearances, depending on viscosity. See ES-2 for recommendations.
- Larger ports may be required depending on suction conditions.
- Pump should be operated at slower than normal speeds, which may require a larger pump.
- For viscosities over 250,000 SSU (55,000 cSt), contact factory for additional pump construction and operation recommendations.

For low viscosities or non-lubricating liquids – Below 100 SSU (20 cSt)

- Carbon graphite bushings.
- Pump should be operated at slower than normal speeds, which may require a larger pump.

For high temperatures – Above 350°F (175°C)

- High temperature elastomers.
- High temperature bushings recommended depending on temperature, size and specific material. See ESB-3 for recommendations.
- Additional operating clearances may be required depending on temperature, size and specific material. See ES-2 for recommendations.
- For temperatures above 450°F (230°C), special materials and sealing requirements may be needed. Contact factory for recommendations.
- Pump should be operated at slower than normal speeds, which may require a larger pump.

For abrasive or dirty liquids

- If possible, filter or strain out the abrasives present.
- Wear resistant hardened idler bushing - hardened cast iron, tungsten carbide or Colmonoy coated.
- Abrasive-resistant idler pin.
- For high concentrations of abrasives or particle sizes greater than 250 microns (0.010 in), contact factory for recommendations.
- Pump should be operated at slower than normal speeds, which may require a larger pump.
- Consult factory for specific recommendations.

PORT OPTIONS FOR OPTIONAL PROPORT™ CASING

Port Options	Pump Sizes						
	H	HL	K	KK	L	LL	LS
1.5" NPT	✓ **	✓ **					
2" NPT			✓	✓	✓		
1.5" Class 125 ①	✓	✓					
1.5" Class 250 ②	✓	✓					
2" Class 125 ①	✓	✓	✓	✓			
2" Class 250 ②	✓	✓	✓	✓			
2.5" Class 125 ①					✓		
2.5" Class 250 ②					✓		
3" Class 125 ①			✓	✓	✓	✓	✓
3" Class 250 ②			✓	✓	✓	✓	✓
4" Class 125 ①			✓	✓	✓	✓	✓
4" Class 250 ②					✓	✓	✓
6" Class 125 ①							
6" Class 250 ②							
DIN 32 PN16 *	✓	✓					
DIN 40 PN16 *	✓	✓					
DIN 50 PN16 *			✓	✓			
DIN 65 PN16 *			✓	✓	✓	✓	
DIN 80 PN16 *			✓	✓	✓	✓	✓
DIN 100 PN16 *					✓	✓	✓
DIN 150 PN16 *							

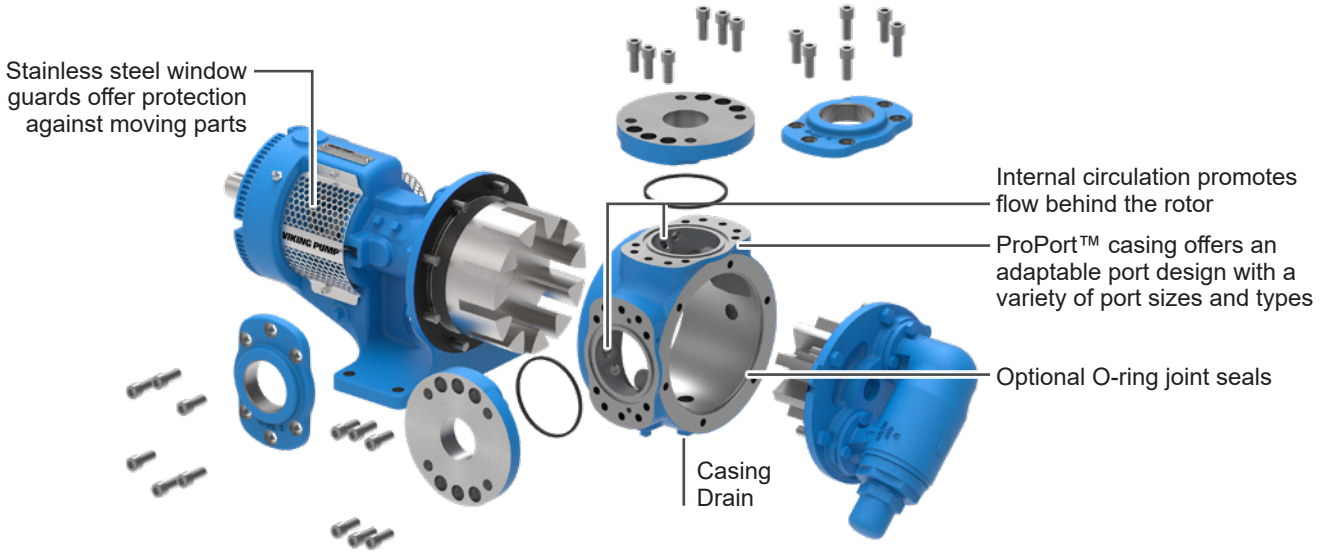
✓ = Available Port Option

① = Ports are suitable for use with Class 125 cast iron and Class 150 steel or stainless steel companion flanges or flanged fittings.

② = Ports are suitable for use with Class 250 cast iron and Class 300 steel or stainless steel companion flanges or flanged fittings

* Ports are suitable for use with DIN PN16 steel or stainless steel companion flanges or flanged fittings

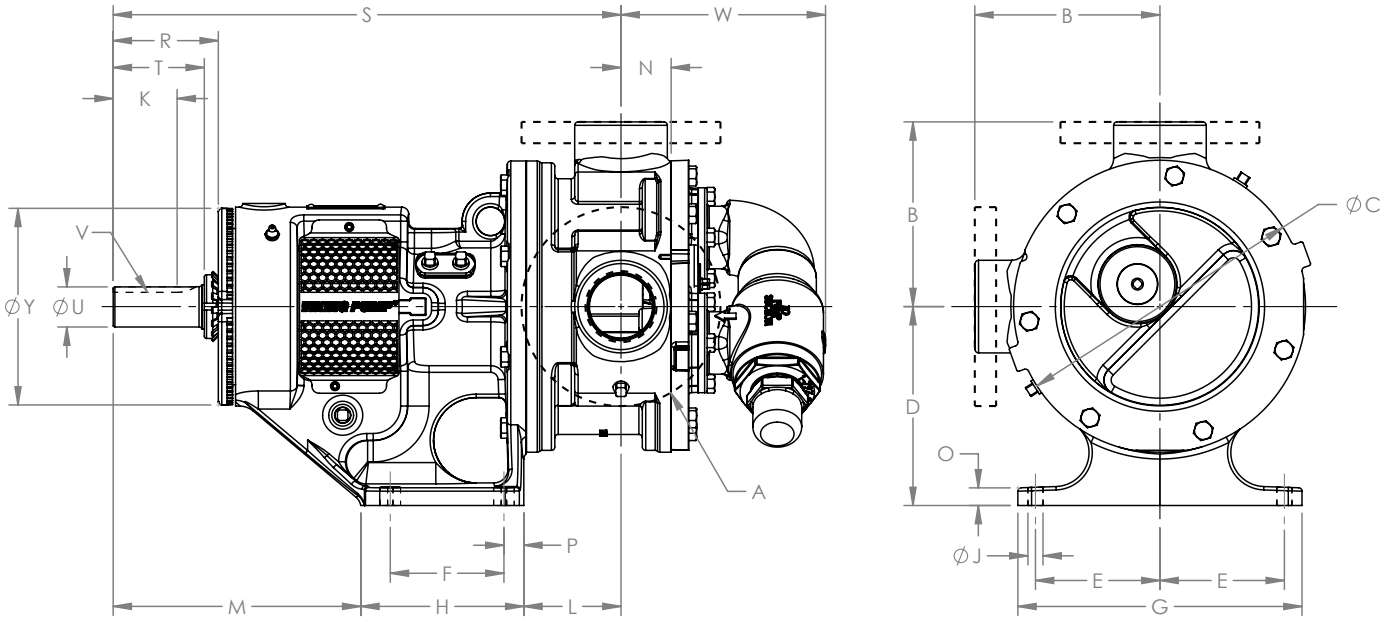
** Please note dimensional difference when replacing legacy product.



LIQUID SPECIFIC PRODUCT LINE:
CAST IRON — BXB PUMPS

1124C-BXB Series™, 1224C-BXB Series™

DIMENSIONS – 1124C-BXB SERIES™



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

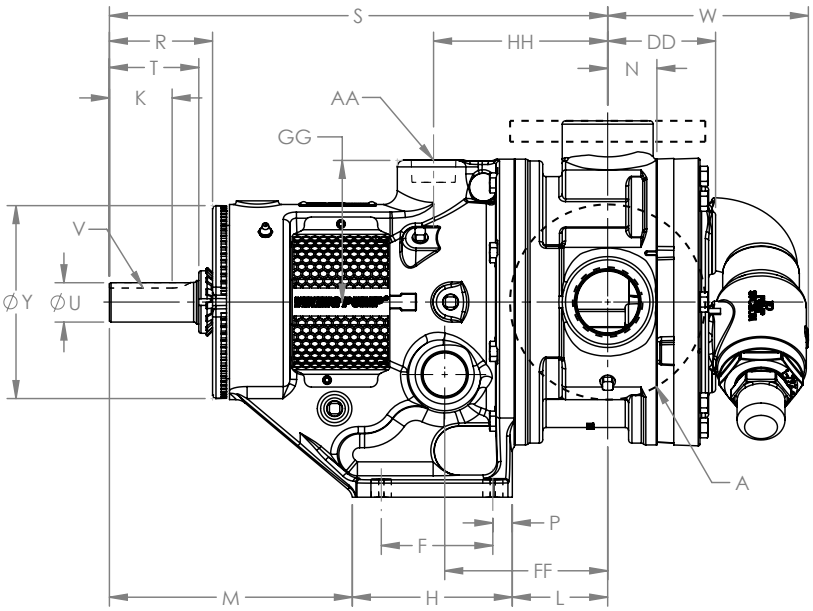
Model Number / O-Pro® Seal	A (in)		B	C	D	E	F	G	H	J	K	L
H1124C-BXB HL1124C-BXB	① 1.5	in	3.00	4.75	3.50	2.75	2.25	6.75	3.50	0.47	0.99	3.38
		mm	76	121	89	70	57	171	89	12	25	86
K1124C-BXB KK1124C-BXB	① 2	in	5.12	8.00	5.50	4.00	2.75	9.25	4.00	0.53	1.42	3.00
		mm	130	203	140	102	70	235	102	13	36	76
L1124C-BXB	① 2	in	6.50	10.25	7.00	4.38	4.00	10.00	5.38	0.53	1.42	3.38
		mm	165	260	178	111	102	254	137	13	36	86
LL1124C-BXB	② 3	in	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	1.42	3.38
		mm	183	260	178	111	102	254	137	13	36	86
LS1124C-BXB	② 3	in	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.55	4.75
		mm	183	260	178	111	102	254	137	13	65	121

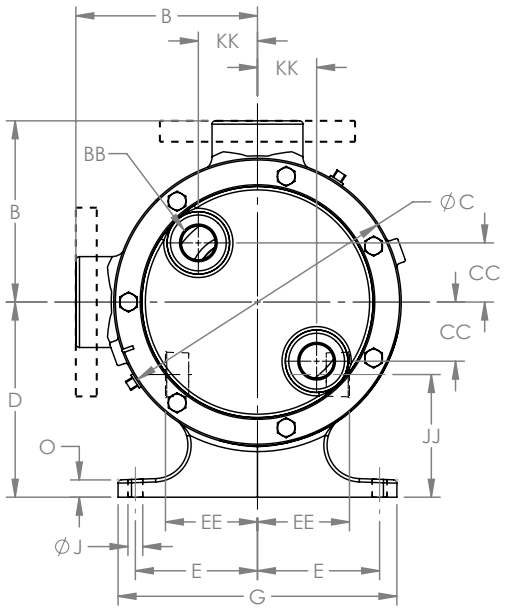
Model Number / O-Pro® Seal		M	N	O	P	R	S	T	U (in)	V (in)	W
H1124C-BXB HL1124C-BXB	in	5.19	1.19	0.56	0.62	10.44	13.25	1.62	0.75	.19 x .09	2.85
	mm	132	30	14	16	265	337	41			72
K1124C-BXB KK1124C-BXB	in	9.38	1.75	0.62	0.62	14.12	18.12	2.25	1.12	.25 x .12	5.25
	mm	238	44	16	16	359	460	57			133
L1124C-BXB	in	9.12	1.75	0.62	0.62	15.62	19.62	2.25	1.44	.38 x .19	5.43
	mm	232	44	16	16	397	498	57			138
LL1124C-BXB	in	9.12	2.25	0.62	0.62	15.62	20.12	2.25	1.44	.38 x .19	5.43
	mm	232	57	16	16	397	511	57			138
LS1124C-BXB	in	9.12	2.44	0.62	0.62	15.75	21.69	3.50	1.44	.38 x .19	5.43
	mm	232	62	16	16	400	551	89			138

① Ports are tapped for standard (NPT) pipe. Other thread standards available.

② Ports are suitable for use with Class 125 ANSI cast iron and Class 150 ANSI steel or stainless steel companion flanges or flanged fittings.

DIMENSIONS – 1224C-BXB SERIES™





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

Model Number / O-Pro® Seal	① A (in)		B	C	D	E	②③ F	G	H	J	K	L	M	N	O	②③ P	R
H1224C-BXB HL1224C-BXB	1.5	in	3.00	4.75	3.50	2.75	2.25	6.75	3.50	0.47	0.99	3.38	5.19	1.19	0.56	0.62	2.20
		mm	76	121	89	70	57	171	89	12	25	86	132	30	14	16	56
K1224C-BXB KK1224C-BXB	2	in	5.12	8.00	5.50	4.00	2.75	9.25	4.00	0.53	1.42	3.00	9.38	1.75	0.62	0.62	2.84
		mm	130	203	140	102	70	235	102	13	36	76	238	44	16	16	72
L1224C-BXB	2	in	6.50	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.25	3.58	8.89	1.75	0.62	0.62	3.70
		mm	165	260	178	111	102	254	137	13	57	91	226	44	16	16	94
LL1224C-BXB	3	in	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.25	3.58	8.89	2.25	0.62	0.62	3.70
		mm	183	260	178	111	102	254	137	13	57	91	226	57	16	16	94
LS1224C-BXB	3	in	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.55	4.75	9.12	2.44	0.62	0.62	3.90
		mm	183	260	178	111	102	254	137	13	65	121	232	62	16	16	99

Model Number / O-Pro® Seal		S	T	U (in)	V (in)	W*	Y	AA (in)	BB (in)	CC	DD	EE	FF	GG	HH	JJ	KK
H1224C-BXB HL1224C-BXB	in	12.06	1.62	0.75	.19 x .09	4.04	1.83	0.75	0.50	0.94	2.41	5.75	2.30	5.75	5.75	5.75	2.30
	mm	306	41			103	47			24	61	146	58	146	146	146	58
K1224C-BXB KK1224C-BXB	in	16.38	2.25	1.12	.25 x .12	7.00	2.75	1.25	1.25	1.75	3.25	6.75	2.92	6.75	6.75	6.75	2.92
	mm	416	57			178	70			44	83	171	74	171	171	171	74
L1224C-BXB	in	17.88	2.25	1.44	.38 x .19	7.18	3.25	1.25	1.00	3.00	3.81	6.75	2.93	6.75	6.75	6.75	2.93
	mm	454	57			182	83			76	97	171	74	171	171	171	74
LL1224C-BXB	in	17.88	2.25	1.44	.38 x .19	7.18	3.25	1.25	1.00	3.00	4.31	6.75	2.93	6.75	6.75	6.75	2.93
	mm	454	57			182	83			76	110	171	74	171	171	171	74
LS1224C-BXB	in	19.25	3.50	1.44	.38 x .19	7.72	3.30	1.25	1.00	3.00	4.50	7.00	4.03	7.00	7.00	7.00	4.03
	mm	489	89			196	84			76	114	178	102	178	178	178	102

① Unless otherwise noted, ports are suitable for class 125 ANSI iron companion flanges or flanged fittings.

② H-HL bracket foot has slotted foot mounting holes. Dimension F = 1.65-2.38 [42-60] and dimension P = 0.52-0.65 [13-16].

③ L-LL-LS bracket foot has slotted foot mounting holes. Dimension F = 3.81-4.19 [81-106] and dimension P = 0.45-0.64 [12-16].

LIQUID SPECIFIC PRODUCT LINE:
CAST IRON — BXB PUMPS

1124C-BXB Series™, 1224C-BXB Series™

NPSH REQUIRED

Printed performance curves are not available.

Performance curves can be electronically generated with the Viking Pump Curve Generator on vikingpump.com.

NPSHR data is not available on the pump selector.

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	PUMPS SPEED, RPM														
	100	125	155	190	230	280	350	420	520	640	780	950	1150	1450	1750
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	—	—	—	—
L	1.6	1.8	2.0	2.2	2.5	3.0	3.8	5.0	7.3	10.8	—	—	—	—	—
LL	1.6	1.8	2.0	2.2	2.5	3.0	3.8	5.0	7.3	—	—	—	—	—	—
LS	1.6	1.8	2.0	2.2	2.5	3.0	3.8	5.0	7.3	10.8	—	—	—	—	—

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