

UNIVERSAL PRODUCT LINE: STAINLESS STEEL — NON-JACKETED PUMPS

127A Series™, 1127A Series™, 4127A Series™, 327A Series™, 1327A Series™, 4327A Series™

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SERIES DESCRIPTION

127A Series™, 4127A Series™, 327A Series™, 4327A Series™

The Universal Product Line has the broadest range of sealing options of all pumps built by Viking. The stuffing box on all sizes accepts packing, numerous component single mechanical seals, or a wide variety of cartridge seals.

The Universal Product Line is Viking Pump's most versatile line of internal gear pumps due to the availability of many design and material options.

1127A Series™, 1327A Series™:

Viking Pump is the leader in internal gear innovation and the latest development is the O-Pro™ Seal technology. The NEW Universal Seal Product Line comes with the O-Pro Guard Seal factory installed. The Universal Product Line combines the tested reliability of the Universal pump & O-rings to create a robust seal and lubrication chamber, all in one.



KK1127A



LL4127A

RELATED PRODUCTS

Stainless Steel, Jacketed Pumps: Catalog Section 1702
 Stainless Steel, Mag Drive Pumps: Catalog Section 1703
 Cast Iron, Non-Jacketed Pumps: Catalog Section 1401
 Steel Externals, Non-Jacketed Pumps: Catalog Section 1301

OPERATING RANGE

SERIES	NOMINAL FLOW		MAXIMUM PRESSURE		TEMPERATURE RANGE		VISCOSITY RANGE	
	GPM	m³h	PSI	Bar	°F	°C	SSU	cSt
127A Series™	10 - 320	2.3 - 73	150	10	-120 to +500	-85 to +260	28 to 2,000,000	0.1 to 440,000
1127A Series™	6 - 320	1.4 - 73	200	14	-15 to +225*	-25 to +105*	28 to 7,500*	0.1 to 1,700*
4127A Series™	10 - 320	2.3 - 73	150	10	-120 to +500	-85 to +260	28 to 2,000,000	0.1 to 440,000
327A Series™	600 - 1,600	136 - 364	200	14	-120 to +500	-85 to +260	28 to 2,000,000	0.1 to 440,000
1327A Series™	475 - 1,280	108 - 290	200	14	-15 to +225*	-25 to +105*	28 to 750*	0.1 to 165*
4327A Series™	600 - 1,600	136 - 364	200	14	-120 to +500	-85 to +260	28 to 2,000,000	0.1 to 440,000

* Range may increase with end clearance adjustment.

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FEATURES & BENEFITS

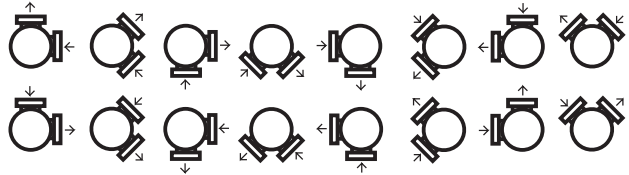
- Positive Displacement Internal Gear pumping principle handles a broad range of viscosities with constant flow rate
- Axial rotor thrust is controlled by double row ball bearing or tapered roller bearings; bushings provided a secondary point of radial shaft support
- Rotatable bearing housing provides easy rotor end clearance adjustment to compensate for viscosity or wear
- Numerous material options are available for bushings, idler pins, shafts, rotors, idlers and elastomers
- Gear and pump geometry has been optimized based on more than 100 years of experience
- Footed stainless steel bracket provides rigid mounting to help maintain alignment, which extends seal and bearing life
- Can use direct drive, gear reducer or gearmotor drive, or belt-drive
- Pressure relief valve standard on non-jacketed pumps; less valve / plain head option available
- Series designed with an enlarged bearing housing; used in conjunction with a spacer coupling permits easy cartridge seal or O-Pro™ Guard seal installation and removal in place without removing the head and rotor/shaft
- Seal options include packing, O-Pro™ Guard Seal, single component seals, cartridge lip seals and cartridge single and double mechanical seals; various seal flush plans are available
- Stainless steel construction for reliable handling of corrosive liquids



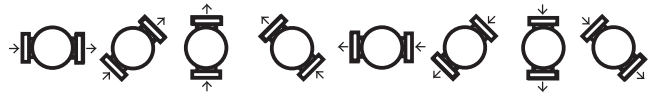
Viking Universal Product Line pumps carry a three year limited warranty. See catalog section 000 for details.

PORT LOCATION OPTIONS

90° port options:



Opposite port options:



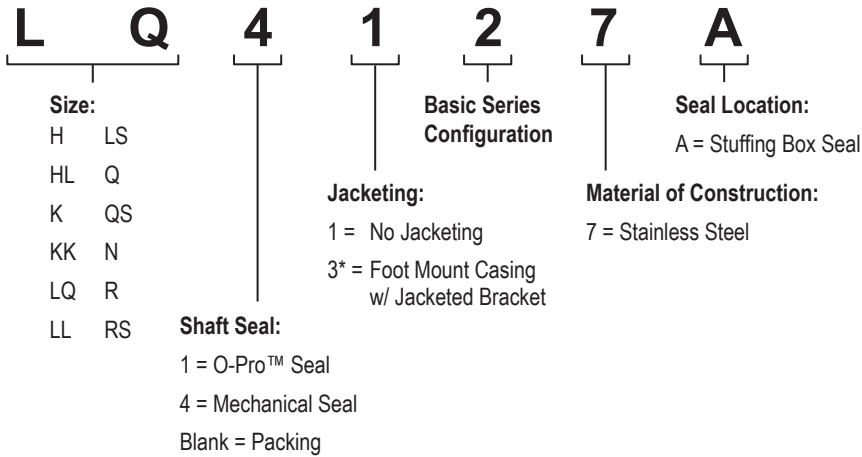
NOTE: See page 1701.7 for a complete list of casing options by size.

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MODEL NUMBER KEY



* Note: Only the N through RS sizes are foot mount casing with jacketed bracket.

STANDARD MATERIALS OF CONSTRUCTION

Component	Standard Material
Casing	Stainless Steel, ASTM A743, Class CF8M
Head	Stainless Steel, ASTM A743, Class CF8M, Case Hardened
Bracket	Stainless Steel, ASTM A743, Class CF8M
Idler	Stainless Steel, ASTM A743, Class CF8M, Case Hardened
Rotor	Stainless Steel, ASTM A743, Class CF8M, Case Hardened
Shaft	① Stainless Steel, ASTM A276, Type XM-19 or 316 Condition B
Idler Pin	Hard Coated Stainless Steel, ASTM A276, Type 316, Colmonoy #6 Coated
Idler Bushing	Carbon Graphite
Bracket Bushing	Carbon Graphite
Pressure Relief Valve	Stainless Steel, ASTM A743, Grade CF8M
Standard Packing (127A Series™, 327A Series™)	Braided PTFE
O-Pro™ Guard Seal (1127A Series™, 1327A Series™)	Stainless Steel, ASTM A743
O-Pro™ Guard Gland & Sleeve (1127A Series™, 1327A Series™)	Stainless Steel, ASTM A743, Class CF8M, Sanitary FKM Elastomers
Standard Mechanical Seal (4127A Series™, 4327A Series™)	Carbon vs. Silicon Carbide Faces, PTFE Elastomers

① N, R and RS shafts are Colmonoy #6 coated.

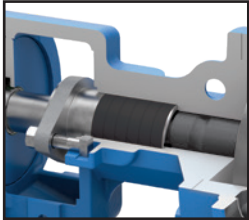
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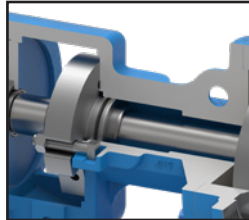
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CUTAWAY VIEW & PUMP FEATURES

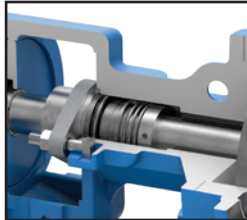
Packing



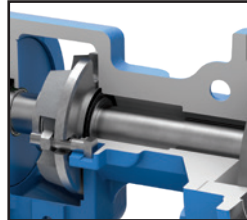
O-Pro™ Guard Seal



Component Seal

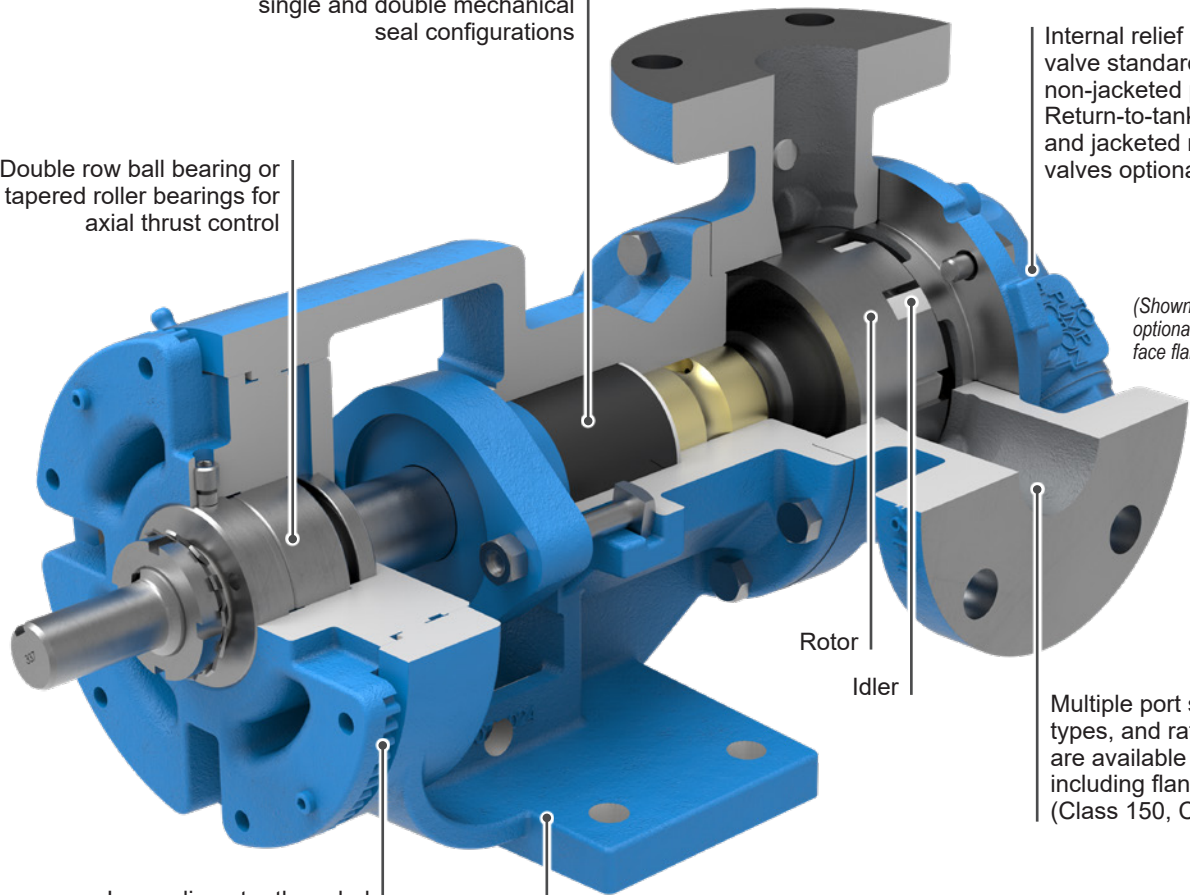


Cartridge Seal



Seal chamber accepts packing, O-Pro™ seal and a variety of component and cartridge style mechanical and lip seals, in both single and double mechanical seal configurations

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



Internal relief valve standard on non-jacketed pumps. Return-to-tank and jacketed relief valves optional

(Shown with optional raised face flanges)

Rotor

Idler

Multiple port sizes, types, and ratings are available including flange (Class 150, Class 300)

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

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SPECIAL MATERIALS & OPTIONS SELECTION GUIDELINES

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

- Extra clearances, depending on viscosity. See ES-2 for recommendations.
 - » 1127A Series™ & 1327A Series™ pumps only available with standard clearance.
- Special Sealing:
 - PTFE Type 9 seals good up to 25,000 SSU (5,500 cSt).
 - Packed gland good up to 2,000,000 SSU (440,000 cSt).
 - Cartridge triple lip seals available to 2,000,000 SSU (440,000 cSt).
- 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)

- 770 stainless steel or PPS idler to prevent galling.
- Pump should be operated at slower than normal speeds, which may require a larger pump.

For high temperatures – Above 225°F (105°C)

- High temperature elastomers – PTFE up to 450°F (230°C); FKM up to 350°F (175°C)
- 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.
 - » 1127A Series™ & 1327A Series™ pumps only available with standard clearance.
- 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 bushings - silicon carbide, tungsten carbide or Colmonoy coated.
- Abrasive-resistant idler pin - tungsten carbide or Colmonoy plus TC filler coated pins.
- Hard-coated shaft.
- Abrasive-resistant seals.
- 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.

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SPECIFICATIONS

Model Number	③ Standard Port Size	Nominal Pump Rating (100 SSU & below)			④ Maximum Hydrostatic Pressure		① Maximum Discharge Pressure for 100 SSU liquid at rated speed		② Maximum Recommended Temperature for Standard Pump		Approx. Shipping Weight with Valve	
	Inches	GPM	m ³ /h	RPM	PSIG	BAR	PSIG	BAR	°F	°C	Lbs.	Kg.
H127A	1 ½	10	1.9	1150	400	28	150	10	375	190	48	22
H1127A	1 ½	6	1.4	760	400	28	150	10	225	105	50	23
H4127A	1 ½	10	1.9	1150	400	28	150	10	375	190	48	22
HL127A	1 ½	20	3.7	1150	400	28	150	10	375	190	50	23
HL1127A	1 ½	13	3	760	400	28	150	10	225	105	50	23
HL4127A	1 ½	20	3.7	1150	400	28	150	10	375	190	50	23
K127A	2	50	11	520	400	28	150	10	350	175	125	57
K1127A	2	50	11	520	400	28	150	10	225	105	50	23
K4127A	2	50	11	520	400	28	150	10	350	175	125	57
KK127A	2	65	15	520	400	28	150	10	350	175	130	59
KK1127A	2	65	15	520	400	28	150	10	225	105	126	57
KK4127A	2	65	15	520	400	28	150	10	350	175	130	59
LQ127A	2 ½	100	23	520	400	28	150	10	350	175	205	93
LQ1127A	2 ½	100	23	520	400	28	150	10	225	105	181	82
LQ4127A	2 ½	100	23	520	400	28	150	10	350	175	205	93
LL127A	3	135	31	520	400	28	150	10	350	175	240	109
LL1127A	3	135	31	520	400	28	150	10	225	105	219	99
LL4127A	3	135	31	520	400	28	150	10	350	175	240	109
LS127A	3	160	36	520	400	28	150	10	345	170	220	100
LS1127A	3	160	36	520	400	28	150	10	225	105	230	104
LS4127A	3	160	36	520	400	28	150	10	345	170	220	100
Q127A	4	200	45	350	250	17	150	10	270	130	460	209
Q1127A	4	200	45	350	250	17	150	10	275	135	472	214
Q4127A	4	200	45	350	250	17	150	10	270	130	460	209
QS127A	6	320	73	350	250	17	150	10	270	130	560	254
QS1127A	6	320	73	350	250	17	150	10	275	135	508	230
QS4127A	6	320	73	350	250	17	150	10	270	130	560	254
N327A	6	600	136	350	250	17	200	14	250	120	810	367
N1327A	6	475	108	280	250	17	200	14	225	105	640	290
N4327A	6	600	136	350	250	17	200	14	250	120	810	367
R327A	8	1,100	250	280	250	17	175	12	175	80	1,435	651
R1327A	8	880	200	225	250	17	175	12	225	105	1,509	684
R4327A	8	1,100	250	280	250	17	175	12	175	80	1,435	651
RS327A	10	1,600	364	280	250	17	125	9	175	80	2,500	1,140
RS1327A	10	1,280	290	225	250	17	125	9	225	105	1,973	895
RS4327A	10	1,600	364	280	250	17	125	9	175	80	2,500	1,140

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 suitable for Class 150 ANSI stainless steel companion flanges or flanged fittings.

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

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OPTIONAL CASINGS

Size	Standard Casings		Optional Casings						
	Ports (Inches)	Rotatable Data							
H	1.5" ①®	Fully Rotatable	1.5" ②®	2" ①®	2" ②®				
HL	1.5" ①®	Fully Rotatable	1.5" ②®	2" ①®	2" ②®				
K	2" ①®	Ports cannot face down	2" ②®	2.5" ①®	2.5" ②®	3" ①®	3" ②®	4" ①®	4" ②®
KK	2" ①®	Ports cannot face down	2" ②®	2.5" ①®	2.5" ②®	3" ①®	3" ②®	4" ①®	4" ②®
LQ	2.5" ①®	Ports cannot face down	2.5" ②®	4" ①®	4" ②®				
LL	3" ①®	Ports cannot face down	3" ②®	4" ①®	4" ②®				
LS	3" ①®	Fully Rotatable	3" ②®	4" ①®	4" ②®	4" ②⊙	6" ①®		
Q	4" ①®	Fully Rotatable	3" ①®	4" ②®	5" ①®	6" ①®*	6" ①®	6" ①⊙	6" ②⊙
QS	6" ①⊙	Rotatable with special casing	6" ①®	6" ②⊙					
N	6" ①⊙	Not Rotatable							
R	8" ①⊙	Not Rotatable							
RS	10" ①⊙	Not Rotatable							

① Ports suitable for Class 150 ANSI steel or stainless steel companion flanges or flanged fittings.

② Ports suitable for Class 300 ANSI steel or stainless steel companion flanges or flanged fittings.

⊙ Opposite Ports

® 90° port arranged for Right Hand inlet (viewed from shaft end)

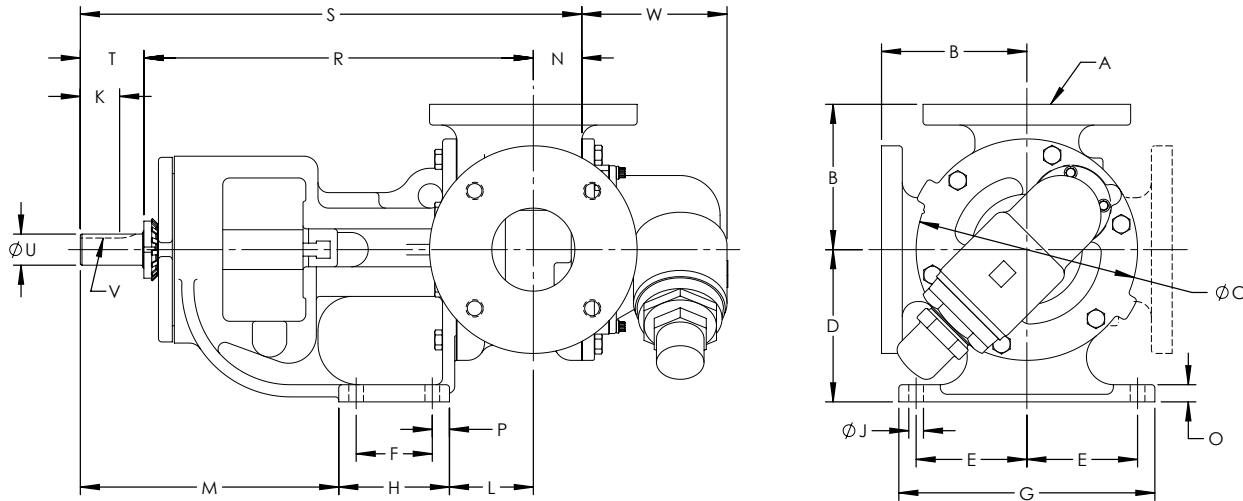
* Core smaller than port size

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DIMENSIONS – H THROUGH Q SIZES



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

Model Number			① A (in)	B	C	D	E	F	G	H	J	K	L	M	
Packed	O-Pro™ Seal	Mechanical Seal													
H127A	H1127A	H4127A	1.5	in	4.00	4.75	3.50	2.75	2.25	6.75	3.50	0.47	0.99	3.38	5.19
HL127A	HL1127A	HL4127A		mm	102	121	89	70	57	171	89	12	25	86	132
K127A	K1127A	K4127A	2	in	5.25	8.00	5.50	4.00	2.75	9.25	4.00	0.53	1.42	3.00	9.38
KK127A	KK1127A	KK4127A		mm	133	203	140	102	70	235	102	14	36	76	238
LQ127A	LQ1127A	LQ4127A	2.5	in	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	1.42	3.38	9.12
				mm	183	260	178	111	102	254	137	14	36	86	232
LL127A	LL1127A	LL4127A	3	in	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	1.42	3.38	9.12
				mm	183	260	178	111	102	254	137	14	36	86	232
LS127A	LS1127A	LS4127A	3	in	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.55	4.75	9.12
				mm	183	260	178	111	102	254	137	14	65	121	232
Q127A	Q1127A	Q4127A	4	in	8.25	14.00	8.75	4.12	4.00	10.00	6.00	0.69	3.58	6.62	11.12
				mm	210	356	222	105	102	254	152	18	91	168	282

Model Number			N	O	P	R	S	T	U (in)	V (in)	W	
Packed	O-Pro™ Seal	Mechanical Seal										
H127A	H1127A	H4127A	in	1.19	0.56	0.62	10.44	13.25	1.62	0.75	.19 x .09	2.85
HL127A	HL1127A	HL4127A	mm	30	14	16	265	337	41			72
K127A	K1127A	K4127A	in	1.75	0.62	0.62	14.12	18.12	2.25	1.12	.25 x .12	5.25
KK127A	KK1127A	KK4127A	mm	44	16	16	359	460	57			133
LQ127A	LQ1127A	LQ4127A	in	1.75	0.62	0.62	15.62	19.62	2.25	1.12	.25 x .12	5.43
			mm	44	16	16	397	498	57			138
LL127A	LL1127A	LL4127A	in	2.25	0.62	0.62	15.62	20.12	2.25	1.12	.25 x .12	5.43
			mm	57	16	16	397	511	57			138
LS127A	LS1127A	LS4127A	in	2.44	0.62	0.62	15.75	21.69	3.50	1.44	.38 x .19	5.43
			mm	62	16	16	400	551	89			138
Q127A	Q1127A	Q4127A	in	3.00	0.75	1.00	19.25	26.75	4.50	1.94	.50 x .25	8.25
			mm	76	19	25	489	679	114			210

① Ports are suitable for Class 150 ANSI stainless steel companion flanges or flanged fittings.

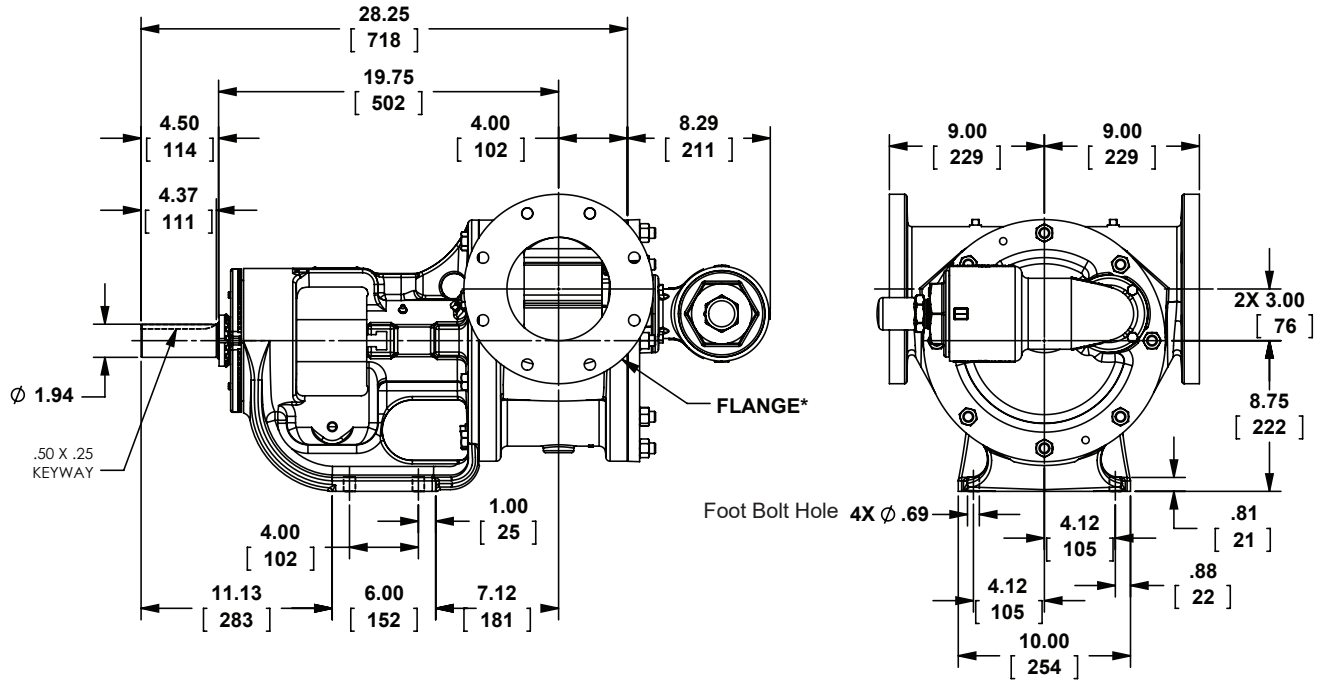
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DIMENSIONS – QS SIZE

Dimensions shown in inches with millimeter equivalent shown in parentheses



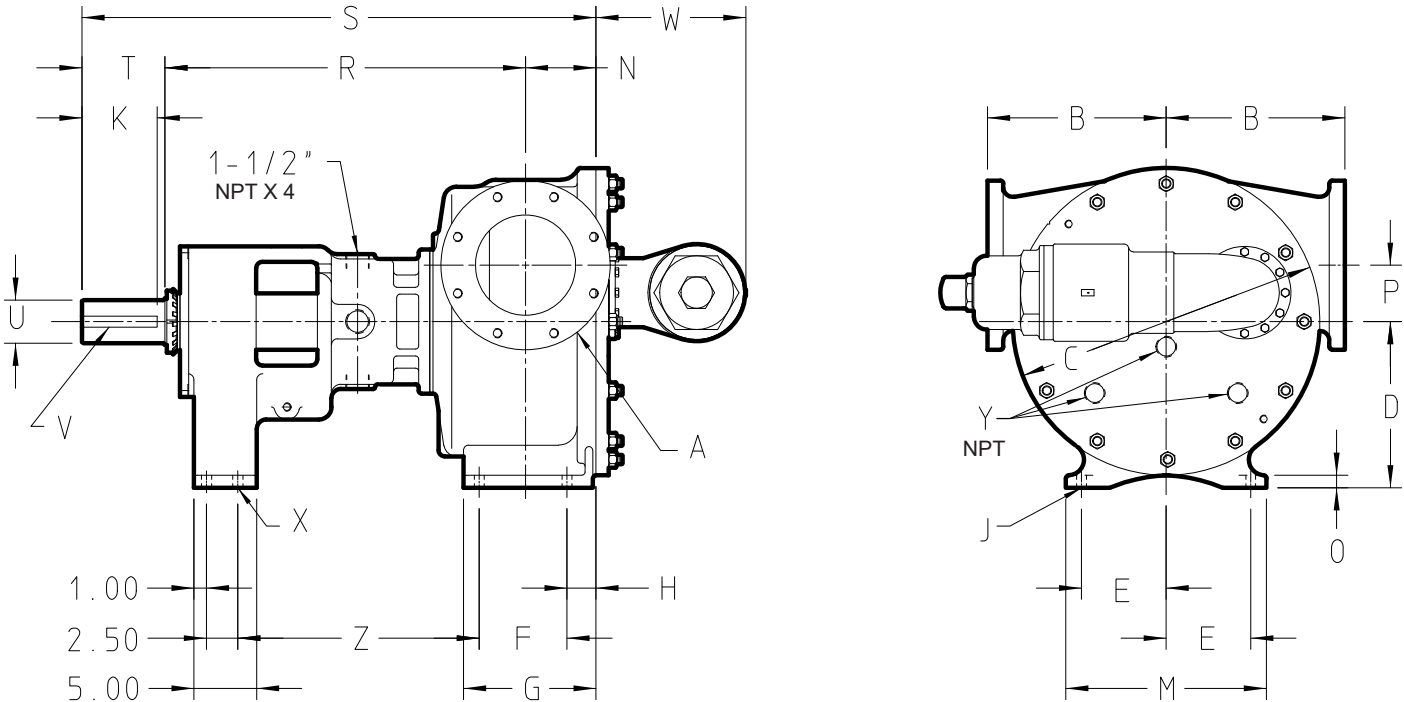
* 127A Series™ / 1124A Series™ / 4127A Series™ ports suitable for use with Class 150 ANSI stainless steel companion flanges or flanged fittings. They are studded, not through-bolt.

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DIMENSIONS – N & R SIZES – JACKETED BRACKET (327A SERIES™, 1327A SERIES™, 4327A SERIES™)



Model Number			A (in)		B	C	D	E	F	G	H	J	K	M	N
Packed	O-Pro™ Seal	Stuffing Box Seal													
N327A	N1327A	N4327A	①	in	9.75	17.25	9.50	5.00	6.25	8.69	1.62	0.69	4.50	12.00	4.50
			6	mm	248	438	241	127	159	221	41	18	114	305	114
R327A	R1327A	R4327A	①	in	14.25	24.50	13.25	6.75	7.00	10.56	2.31	0.78	6.00	16.00	5.62
			10	mm	362	622	337	171	178	268	59	20	152	406	143

Model Number				O	P	R	S	T	U (in)	V (in)	W	X	Y	Z
Packed	O-Pro™ Seal	Stuffing Box Seal												
N327A	N1327A	N4327A	in	1.00	3.00	26.00	36.50	6.00	2.44	.62 x.31	8.63	0.69	—	18.94
			mm	25	76	660	927	152			219	18	—	481
R327A	R1327A	R4327A	in	1.00	4.50	28.75	41.00	6.62	3.44	.88 x.44	12.00	0.69	1.25	19.25
			mm	25	114	730	1041	168			305	18	1.25	489

① Ports are suitable for use with Class 150 ANSI stainless steel companion flanges or flanged fittings.

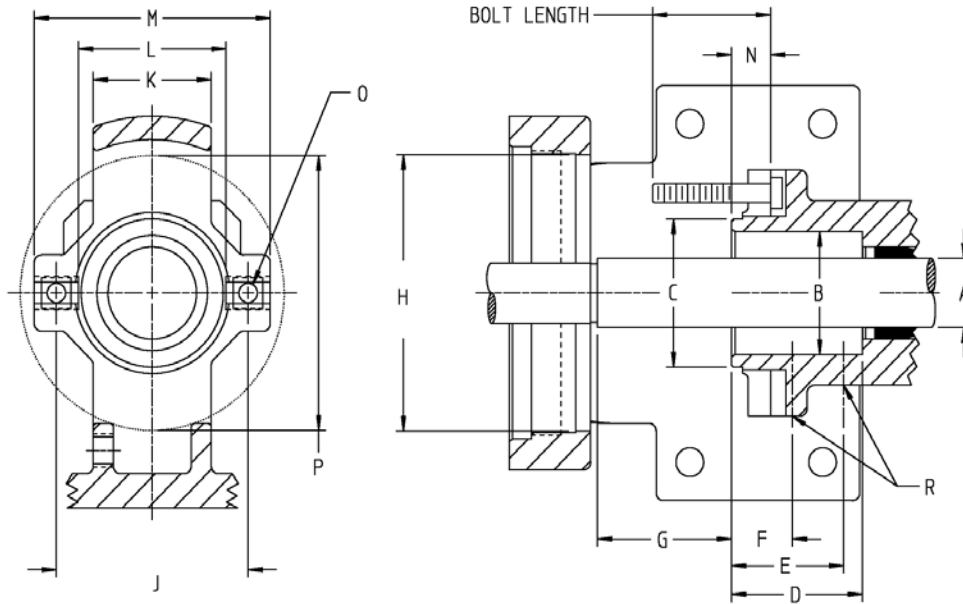
NOTE: The N size is standard with a jacketed bracket and non-jacketed head and non-jacketed relief valve, while the “R” size is standard with a jacketed bracket, a jacketed head, and a non-jacketed relief valve. “RS” contact factory for jacketing options.

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UNIVERSAL PRODUCT LINE: STAINLESS STEEL — NON-JACKETED PUMPS

127A Series™, 1127A Series™, 4127A Series™, 327A Series™, 1327A Series™, 4327A Series™

DIMENSIONS – STUFFING BOX SEAL CHAMBER



Pump Size		A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R
H & HL	In	1.12	2.00	2.41	2.22	1.90	1.03	2.27	4.50	3.00 to 3.50	2.00	2.50	4.00	0.66	5/16	4.47	1/8
	mm		51	61	56	48	26	58	114	76 to 89	51	64	102	17		114	3
K & KK	In	1.44	①2.31	3.00	3.13	2.25	1.25	3.00	5.25	3.50 to 4.50	2.50	3.00	5.00	0.38	7/16	5.25	1/4
	mm		①58.7	76	80	57	32	76	133	89 to 114	64	76	127	10		133	6
LQ, & LL	In	1.44	①2.31	3.00	3.13	2.25	1.25	4.00	5.25	3.50 to 4.50	2.50	3.00	5.00	0.44	7/16	5.25	1/4
	mm		①58.7	76	80	57	32	102	133	89 to 114	64	76	127	11		133	6
LS	In	1.62	2.38	2.80	2.70	2.25	1.16	3.52	5.25	3.25 to 4.50	3.00	2.80	5.00	0.46	7/16	5.25	1/4
	mm		60	71	69	57	30	89	133	83 to 114	76	71	127	12		133	6
Q & QS	In	2.44	3.42	4.50	4.00	2.50	1.53	4.10	6.75	5.50 to 6.25	3.20	4.50	7.20	0.56	5/8	6.75	1/4
	mm		87	114	102	64	39	104	171	140 to 159	81	114	183	14		171	6
N	In	3.44	4.69	—	5.56	1.65	—	4.91	8.81	6.75	—	—	—	—	②3/4	9.00	1/4
	mm		119	—	141	42	—	125	224	171	—	—	—	—		229	6
R & RS	In	4.50	5.75	—	5.56	1.53	—	4.79	9.81	7.75	—	—	—	—	②3/4	9.81	1/4
	mm		146	—	141	39	—	122	249	197	—	—	—	—		249	6

① Bracket is counter bored to a diameter of 2.687 inches (68 mm), 0.12 inches (3 mm) deep from stuffing box face.

② Studs are used in place of cap screws.

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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.

$NPSH_R$ – 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
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	—	—	—	—
LQ	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	—	—	—	—	—
Q, QS	1.9	2.1	2.3	2.7	3.3	4.2	6.1	8.4	12.7	—	—	—	—	—	—
N	2.1	2.3	3.5	4.5	6.3	9.5	15.0	—	—	—	—	—	—	—	—
R	6.1	7.1	8.3	10.1	12.1	15.2	—	—	—	—	—	—	—	—	—
RS	7.0	8.5	10.4	13.1	17.2	22.4	—	—	—	—	—	—	—	—	—

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