UNIVERSAL PRODUCT LINE:
STAINLESS STEEL — NON-JACKETED PUMPS

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

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RELATED PRODUCTS

Stainless Steel, Jacketed Pumps: Catalog Section 2702

Stainless Steel, Mag Drive Pumps: Catalog Section 1703

Cast Iron, Non-Jacketed Pumps: Catalog Section 1401

Steel Externals, Non-Jacketed Pumps: Catalog Section 2301

SERIES DESCRIPTION

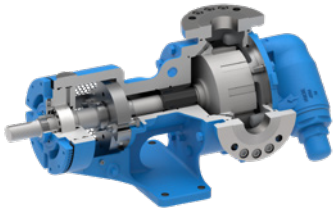
127C Series™, 4127C Series™, 1127C Series™

The Universal Product Line has the broadest range of sealing options of all pumps built by Viking Pump. The U-Plus™ bracket design accepts numerous component seals for use in the stuffing box or behind the rotor, packing, cartridge seals and Viking Pump's own O-Pro® seals.

This is Viking Pump's most versatile line of internal gear pumps with many design and material options. These series are available with the ProPort™ casing and a wide variety of flange types and sizes as well as both 90 degree and opposite port arrangements* enabling flexibility when connecting pumps to piping.

327A Series™, 4327A Series™, 1327A Series™:

Viking's largest size product series in the Universal Product Line offer high capacity and a variety of sealing arrangements including component or cartridge mechanical seals, packing and O-Pro® seals. These products come standard with a jacketed bracket and optional jacketed head.



KK1127C



LL127C

*90 degree port arrangements available in sizes H-Q

OPERATING RANGE

SERIES	NOMINAL FLOW		MAXIMUM PRESSURE		TEMPERATURE RANGE		VISCOSITY RANGE	
	GPM	m^3h	PSI	Bar	°F	°C	SSU	cSt
127C Series™	10 - 320	2.3 - 73	175	12	−120 to +500	−85 to +260	28 to 2,000,000	0.1 to 440,000
1127C Series™	6 - 320	1.4 - 73	175	12	0 to +350	−15 to +175	28 to 2,000,000	0.1 to 440,000
4127C Series™	10 - 320	2.3 - 73	175	12	−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	0 to +350	−15 to +175	28 to 2,000,000	0.1 to 440,000
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

UNIVERSAL PRODUCT LINE:
STAINLESS STEEL — NON-JACKETED PUMPS

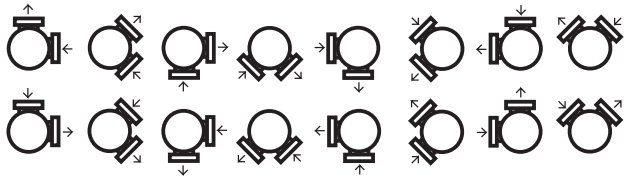
127C Series™, 1127C Series™, 4127C Series™, 327A Series™, 1327A Series™, 4327A Series™

FEATURES & BENEFITS

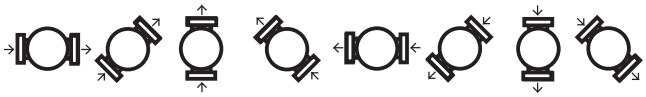
- Positive Displacement Internal Gear pumping principle handles a broad range of viscosities with constant flow rate
- **ProPort™ Casing (127C Series™, 1127C Series™ & 4127C Series™):**
  - » Adaptable port design offers a variety of ports sizes and types, enabling flexibility when connecting pumps to piping
  - » H-Q sizes 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 or difficult to seal applications
  - » Internal circulation promotes flow behind the rotor
- **U-Plus™ Bracket (127C Series™, 1127C Series™ & 4127C Series™):**
  - » Seal options include packing, O-Pro® Guard Seal, single component seals, cartridge lip seals and cartridge single and double mechanical seals
  - » Stainless steel window guards offer protection from rotating parts
- Footed one-piece stainless steel bracket provides rigid mounting to help maintain alignment, which extends seal and bearing life stainless steel construction for reliable handling of corrosive liquids
- 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
- Axial rotor thrust is controlled by double row ball bearing or tapered roller bearings; bushings provide 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
- 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

PORT LOCATION OPTIONS

90° port options:



Opposite port options:



NOTE: See page 2701.7 for a complete list of casing options by size.



LL127C



N327A



Viking Universal Product Line pumps carry a three year limited warranty. See catalog section 1000 for details.

MODEL NUMBER KEY

L S 4 1 2 7 C

Size:
H LS
HL Q
K QS
KK N
L R
LL RS

Shaft Seal:
1 = O-Pro® Seal
4 = Mechanical Seal
Blank = Packing

Jacketing:
1 = No Jacketing
3* = Foot Mount Casing w/ Jacketed Bracket

Basic Series Configuration

Material of Construction:
7 = Stainless Steel

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

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

STANDARD MATERIALS OF CONSTRUCTION

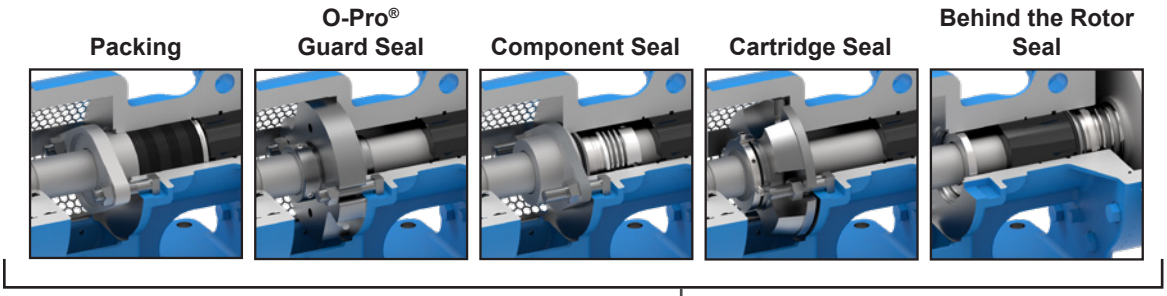
Component	Standard Material
Casing	Stainless Steel, ASTM A743, Class CF8M
Ports	Stainless Steel, ASTM A743, Class CF8M
Head	Stainless Steel, ASTM A743, Class CF8M, Case Hardened
Bracket	Stainless Steel, ASTM A743, Class CF8M
Idler	Stainless Steel, ASTM A743, Class CF8M, Case Hardened
Rotor	Stainless 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 (127C Series™, 327A Series™)	Braided PTFE
O-Pro® Guard Gland & Sleeve (1127C Series™, 1327A Series™)	Stainless Steel, ASTM A743, Class CF8M, Sanitary FKM Elastomers
Standard Mechanical Seal (4127C Series™, 4327A Series™)	Carbon vs. Silicon Carbide Faces, PTFE Elastomers

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

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CUTAWAY VIEW & PUMP FEATURES



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

Internal circulation promotes flow behind the rotor, if needed

Internal relief valve standard**, less valve/ plain head optional

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

Casing Drain

ProPort™ casing offers an adaptable port design with a variety of port sizes and types

Idler

Rotor

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

** All except RS size

SPECIAL MATERIALS & OPTIONS SELECTION GUIDELINES

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

- Extra clearances, depending on viscosity. See ES-2 for recommendations.
- 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).
  O-Pro® 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.
- Internal circulation holes in the ProPort™ casing can be used to promote flow behind the rotor.
- 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.
- 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 behind the rotor 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		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.
H127C	1 ½	10	1.9	1150	400	28	150	10	375	190	49	22
H1127C	1 ½	6	1.4	760	400	28	150	10	225	105	50	23
H4127C	1 ½	10	1.9	1150	400	28	150	10	375	190	51	23
HL127C	1 ½	20	3.7	1150	400	28	150	10	375	190	49	22
HL1127C	1 ½	13	3	760	400	28	150	10	225	105	50	23
HL4127C	1 ½	20	3.7	1150	400	28	150	10	375	190	50	23
K127C	2	50	11	520	400	28	150	10	350	175	137	62
K1127C	2	50	11	520	400	28	150	10	225	105	140	63
K4127C	2	50	11	520	400	28	150	10	350	175	137	62
KK127C	2	65	15	520	400	28	150	10	350	175	137	62
KK1127C	2	65	15	520	400	28	150	10	225	105	139	63
KK4127C	2	65	15	520	400	28	150	10	350	175	136	62
L127C	2 ½	100	23	520	400	28	150	10	350	175	224	102
L1127C	2 ½	100	23	520	400	28	150	10	225	105	227	103
L4127C	2 ½	100	23	520	400	28	150	10	350	175	224	101
LL127C	3	135	31	520	400	28	150	10	350	175	240	109
LL1127C	3	135	31	520	400	28	150	10	225	105	243	110
LL4127C	3	135	31	520	400	28	150	10	350	175	240	109
LS127C	3	160	36	520	400	28	125	9	345	170	259	117
LS1127C	3	160	36	520	400	28	125	9	225	105	262	119
LS4127C	3	160	36	520	400	28	125	9	345	170	259	117
Q127C	4	200	45	350	250	17	175	12	270	130	527	239
Q1127C	4	200	45	350	250	17	175	12	275	135	531	241
Q4127C	4	200	45	350	250	17	175	12	270	130	556	252
QS127C	6	320	73	350	250	17	175	12	270	130	609	276
QS1127C	6	320	73	350	250	17	175	12	275	135	612	278
QS4127C	6	320	73	350	250	17	175	12	270	130	608	276
N327A	6	600	136	350	250	17	200	14	250	120	1,005	455
N1327A	6	475	108	280	250	17	200	14	225	105	1,005	455
N4327A	6	600	136	350	250	17	200	14	250	120	998	453
R327A	8	1,100	250	280	250	17	175	12	225	105	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	225	105	1,435	651
RS327A	10	1,600	364	225	250	17	125	9	225	105	2,500	1,140
RS1327A	10	1,280	290	225	250	17	125	9	225	105	2,465	1,118
RS4327A	10	1,600	364	225	250	17	125	9	225	105	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. H & HL sizes standard with NPT ports.

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

PORT OPTIONS FOR PROPORT™ CASING

Port Options	Pump Sizes								
	H	HL	K	KK	L	LL	LS	Q	QS
1.5" NPT	S	S							
2" NPT			✓	✓	S ✓				
1.5" Class 150 ①	✓ ®	✓ ®							
1.5" Class 300 ②	✓ ®	✓ ®							
2" Class 150 ①	✓	✓	S ®	S ®					
2" Class 300 ②	✓	✓	✓ ®	✓ ®					
2.5" Class 150 ①					S ®				
2.5" Class 300 ②					✓ ®				
3" Class 150 ①			✓	✓	✓ ®	S ®	S ®		
3" Class 300 ②			✓	✓	✓	✓ ®	✓ ®		
4" Class 150 ①			✓ ®	✓ ®	✓	✓	✓	S ®	
4" Class 300 ②					✓	✓	✓	✓ ®	
6" Class 150 ①									S ®
6" Class 300 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

S = Standard Porting

® = Flanges Designed with a Raised Face

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

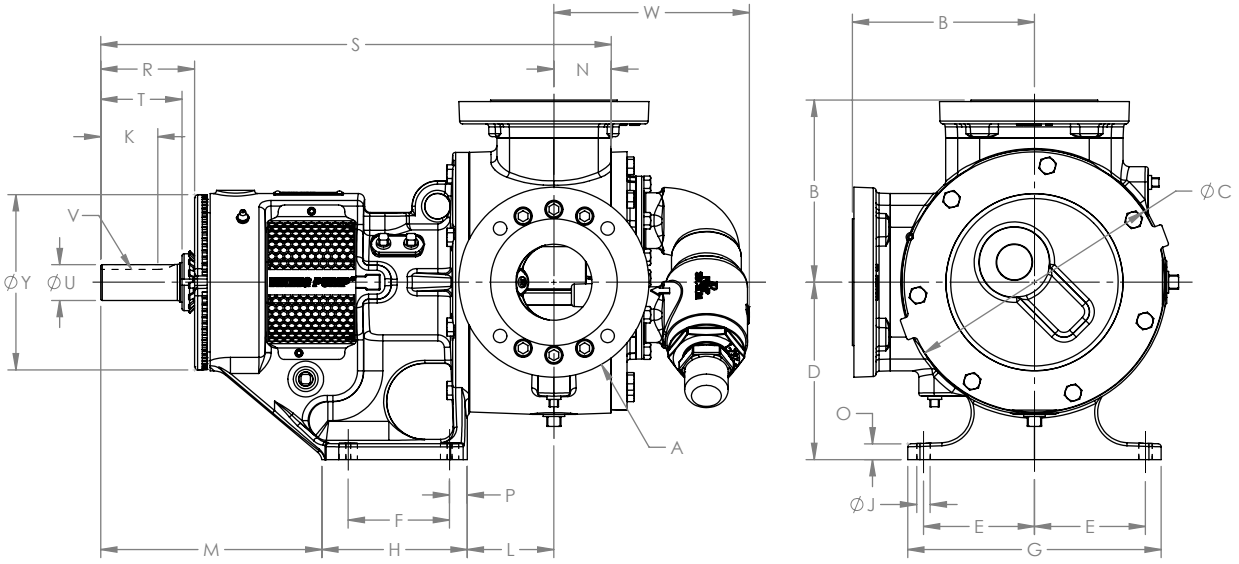
② = Ports are suitable for use with Class 300 steel or stainless steel companion flanges or flanged fittings

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

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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	② ③ F	G	H	J	K	L	M
Packed	O-Pro® Seal	Mechanical Seal													
H127C	H1127C	H4127C	1.5 NPT	in	3.50	4.75	3.50	2.75	2.25	6.75	3.50	0.47	0.99	3.38	5.19
HL127C	HL1127C	HL4127C		mm	89	121	89	70	57	171	89	12	25	86	132
K127C	K1127C	K4127C	2	in	5.25	8.00	5.50	4.00	2.75	9.25	4.00	0.53	1.42	3.00	9.38
KK127C	KK1127C	KK4127C		mm	133	203	140	102	70	235	102	13	36	76	238
L127C	L1127C	L4127C	2.5	in	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.25	3.58	8.89
				mm	183	260	178	111	102	254	137	13	57	91	226
LL127C	LL1127C	LL4127C	3	in	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.25	3.58	8.89
				mm	183	260	178	111	102	254	137	13	57	91	226
LS127C	LS1127C	LS4127C	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	13	65	121	232
Q127C	Q1127C	Q4127C	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	② ③ P	R	S	T	U (in)	V (in)	W	Y
Packed	O-Pro® Seal	Mechanical Seal											
H127C	H1127C	H4127C	in	1.19	0.56	0.62	2.20	13.25	1.62	0.75	.19 x .09	4.04	5.75
HL127C	HL1127C	HL4127C	mm	30	14	16	56	337	41			103	146
K127C	K1127C	K4127C	in	1.75	0.62	0.62	2.84	18.13	2.25	1.12	.25 x .12	7.00	6.75
KK127C	KK1127C	KK4127C	mm	44	16	16	72	461	57			178	171
L127C	L1127C	L4127C	in	1.75	0.62	0.62	3.70	19.63	3.13	1.44	.38 x .19	7.18	7.00
			mm	44	16	16	94	499	80			182	178
LL127C	LL1127C	LL4127C	in	2.25	0.62	0.62	3.70	20.12	3.13	1.44	.38 x .19	7.68	7.00
			mm	57	16	16	94	511	80			195	178
LS127C	LS1127C	LS4127C	in	2.44	0.62	0.62	3.90	21.69	3.50	1.44	.38 x .19	7.72	7.00
			mm	62	16	16	99	551	89			196	178
Q127C	Q1127C	Q4127C	in	3.00	0.75	1.00	5.20	26.75	4.50	1.94	.50 x .25	11.25	8.38
			mm	76	19	25	132	679	114			286	213

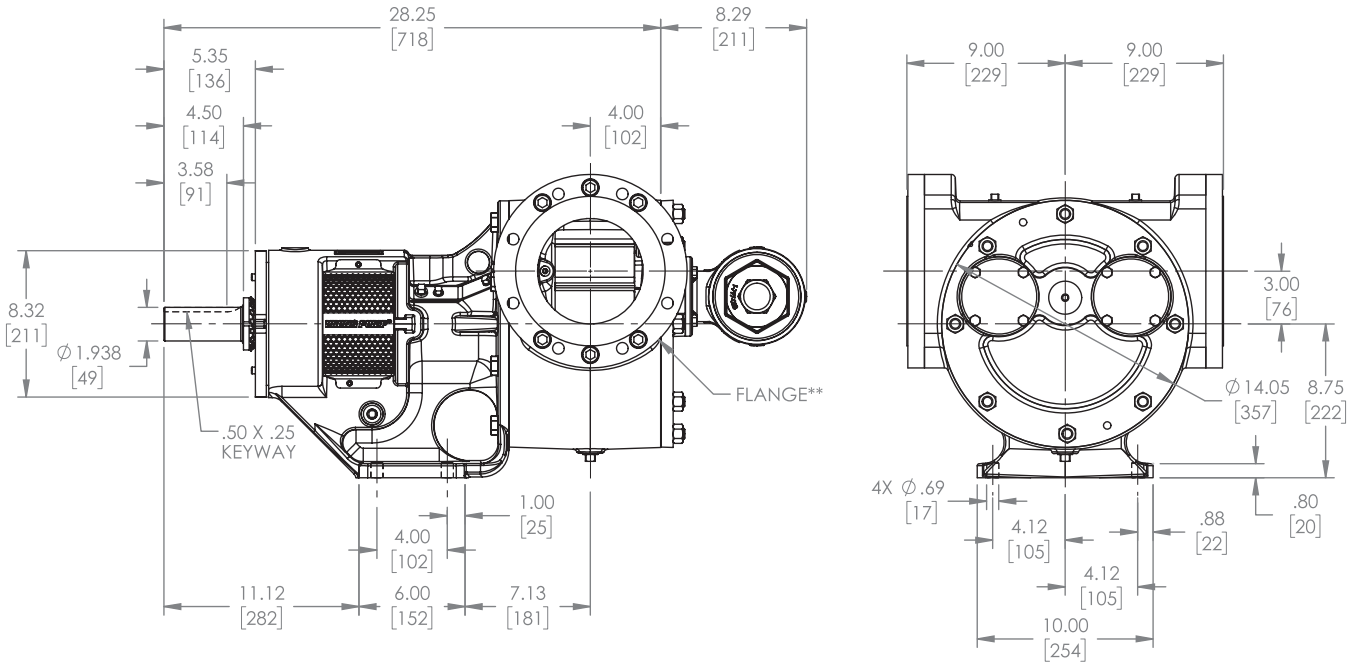
① Unless otherwise noted, ports are suitable for class 150 ANSI stainless steel companion flanges or flanged fittings.

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].

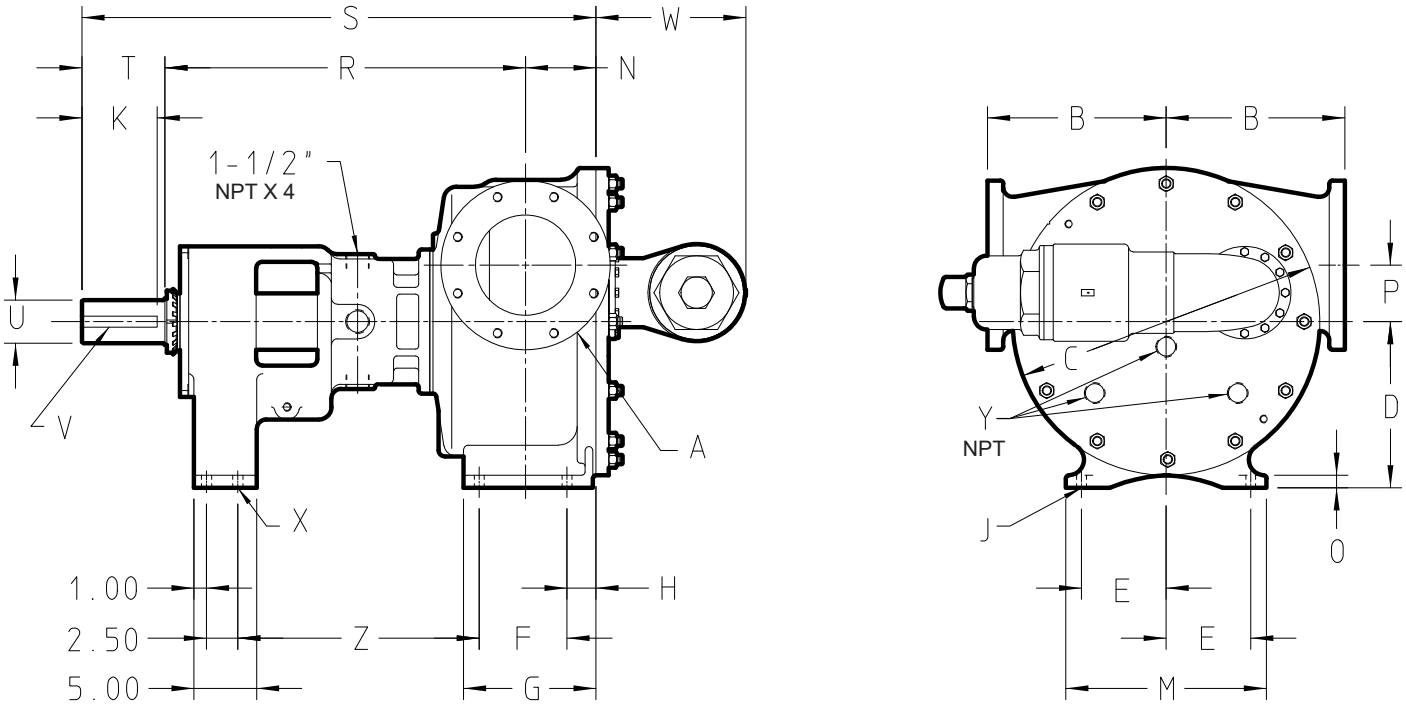
DIMENSIONS – QS SIZE

Dimensions shown in inches with millimeter equivalent shown in parentheses



** 127C Series™ / 1127C Series™ / 4127C Series™ ports suitable for use with Class 150 ANSI stainless steel companion flanges or flanged fittings. Ports are tapped for installation of studs..

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



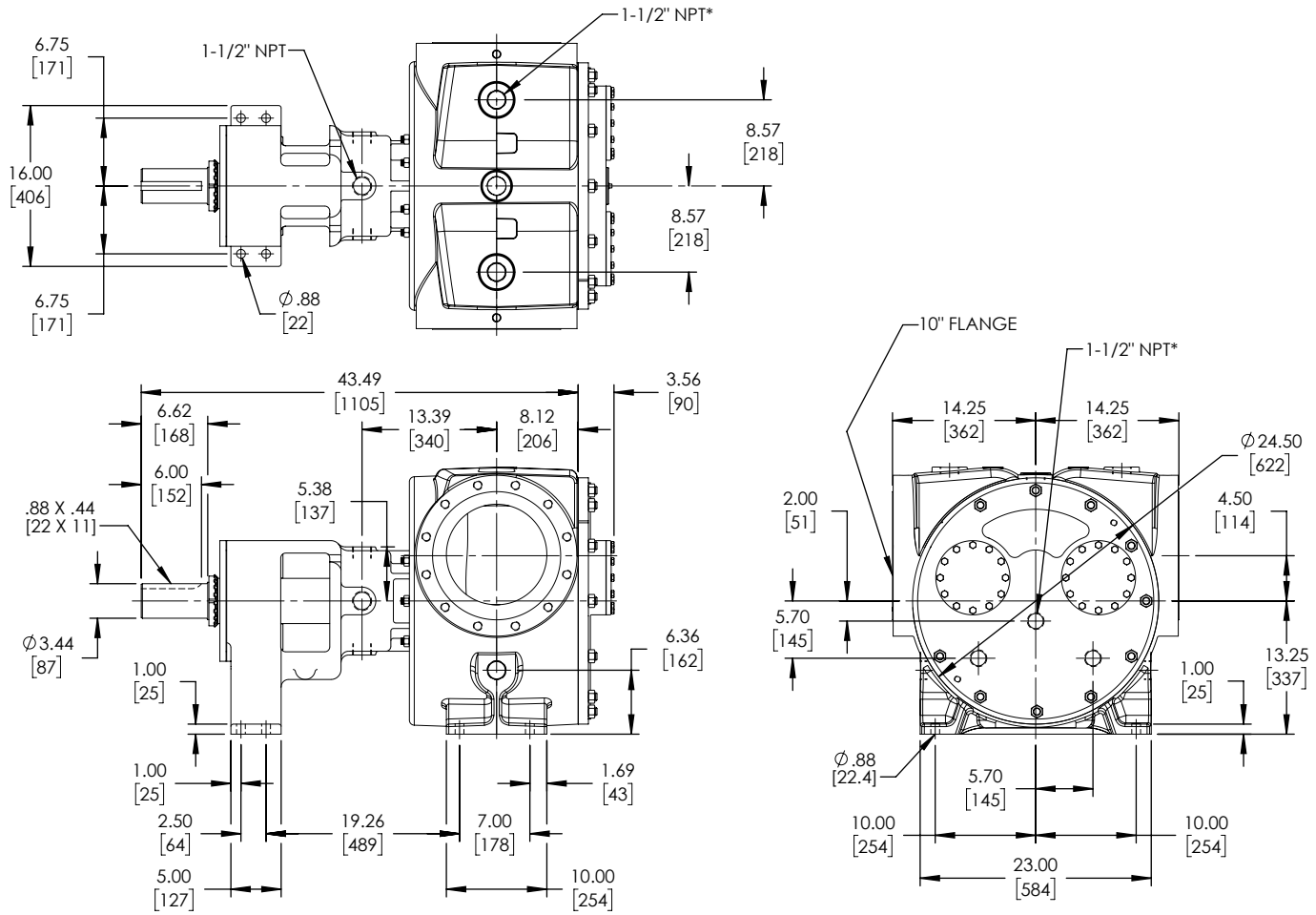
Model Number			A (in)		B	C	D	E	F	G	H	J	K	M	N
Packed	O-Pro® Seal	Stuffing Box Seal													
N327A	N1327A	N4327A	① 6	in	9.75	17.25	9.50	5.00	6.25	8.69	1.62	0.69	4.50	12.00	4.50
				mm	248	438	241	127	159	221	41	18	114	305	114
R327A	R1327A	R4327A	① 10	in	14.25	24.50	13.25	6.75	7.00	10.56	2.31	0.78	6.00	16.00	5.62
				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. Ports are tapped for installation of studs.

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.

DIMENSIONS – RS SIZE – JACKETED BRACKET (327A SERIES™, 1327A SERIES™, 4327A SERIES™)



NOTE: RS size pumps are only available with a jacketed casing, as shown. RS pumps standard with raised face flanged ports.

NPSH REQUIRED

Printed performance curves are not available.

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

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	—	—	—	—
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	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—