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SERIES 8124A (Cast Iron)
8123A (Steel External)
8127A (Stainless Steel)

Heavy-Duty, Foot-Mounted Sealless Internal Gear Pumps



Model H8124A



Model K8124A

The Universal Mag Drive is the ideal sealing technology within Viking's Universal Seal Series of pumps. It is dimensionally interchangeable with Viking bracket styled heavy duty and Universal Seal pumps, allowing an easy upgrade from packed or mechanical seals to sealless technology. The Universal Mag Drive's hermetic, static sealed canister provides the highest level of liquid containment available by eliminating traditional dynamic shaft seals. It also eliminates housekeeping issues and downtime due to seal failure. This product is designed to handle a broad range of applications requiring continuous duty at pressures up to 200 PSI (14 Bar).

Nominal Flow Rates:

Pump Size	Cast Iron, Ductile Iron & Steel Externals Series		Stainless Steel Series	
	GPM	M ³ /hr	GPM	M ³ /hr
H	15	3.4	15	3.4
HL	30	6.8	30	6.8
K	80	18	80	18
KK	100	23	100	23
L/LQ	135	31	135	31
LL	170	39	170	39
LS	200	45	200	45

Operating Range①:

Cast Iron Series 8124A		
Nominal Flow	(GPM)	15-200
	(M ³ /hr.)	3.4-45
Pressure Range	(PSI)	To 200 PSI
	(Bar)	To 14 Bar
Temp. Range ②	(°F)	-60°F to +500°F
	(°C)	-51°C to +260°C
Viscosity Range	(SSU)	28 SSU to 250,000 SSU
	(cSt)	0.1 cSt to 55,000 cSt

Steel Externals Series 8123A,		
Nominal Flow	(GPM)	15-200
	(M ³ /hr.)	3.4-45
Pressure Range	(PSI)	To 200 PSI
	(Bar)	To 14 Bar
Temp. Range ②	(°F)	-20°F to +500°F
	(°C)	-29°C to +260°C
Viscosity Range	(SSU)	28 SSU to 250,000 SSU
	(cSt)	0.1 cSt to 55,000 cSt

Stainless Steel Series 8127A,		
Nominal Flow	(GPM)	15-200
	(M ³ /hr.)	3.4-45
Pressure Range	(PSI)	To 150 PSI
	(Bar)	To 10 Bar
Temp. Range ②	(°F)	-120°F to +500°F
	(°C)	-84°C to +260°C
Viscosity Range	(SSU)	28 SSU to 250,000 SSU
	(cSt)	0.1 cSt to 55,000 cSt

① Refer to Specification Tables 635.7 individual model information.

② Samarium cobalt magnets required for temperatures over 225° F (107°C)

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Series Description

The Universal Mag Drive provides the product durability and the flexibility of options customers expect from the Viking heavy duty pumps with the added benefit of providing a direct drop-in replacement that has a dimensionally interchangeable footprint with the Viking bracket styled heavy duty and Universal Seal counterpart. This magnetically driven series pumps eliminate the need for complex shaft seals traditionally associated with hazardous, hard-to-seal, or expensive liquids. These pumps are ideal for applications like caustics, isocyanates, adhesives, solvents and mercaptans.

This Series features 7 different sizes with flows to 200 GPM (45 m³/hr), with three materials of construction options. They may be applied to both thin and thick liquids, and operate in either direction. They are also capable of operating under suction lift conditions.

The Universal Mag Drive series continues the tradition of most robust series of internal gear pumps built by Viking Pump. A summary of the major design features and available options appears to the right.



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

Major Design Features & Options

- Positive displacement, internal gear pumping principle.
- Gear and pump geometry has been optimized based on more than 90 years of experience. These pumps are designed to provide exceptional reliability and freedom from down time and maintenance.
- Drop in foot print allows direct replacement of a Viking Universal Seal pump without re-piping.
- Foot-mounted design.
- Comes in three materials of construction: Cast Iron, Steel Externals and Stainless Steel.
- Optional material are available for bushings, idler pins, shafts, rotors, idlers and elastomers.
- Available with 90° ports, which can be rotated in 90° degree increments, or with 180° ports (Check individual sizes).
- Ports are threaded or flanged (Flat Faced or Raised Faced). Jacketed casing available in steel and stainless steel.
- Pumps come with an adjustable internal pressure relief valve on standard design. Jacketed pressure relief valves are available in steel and stainless.
- The pump operates in either direction, allowing one pump to be used for both loading and unloading. There is a slight reduction in capacity at viscosities less than 100 SSU with counter-clockwise rotation.
- Adjustable end clearance for fluid viscosity or temperature by use of head shims.
- Static O-rings at key points assures liquid containment.
- ATEX Conformity. Pumps conforming to ATEX hazard prevention requirements are available
- Short-term Run-dry Capability. Unlike many mag-drive pumps, the Viking Universal Mag Drive series may be run dry for short periods, such as for clear lines when unloading, or in the case of accidental empty tank situations.

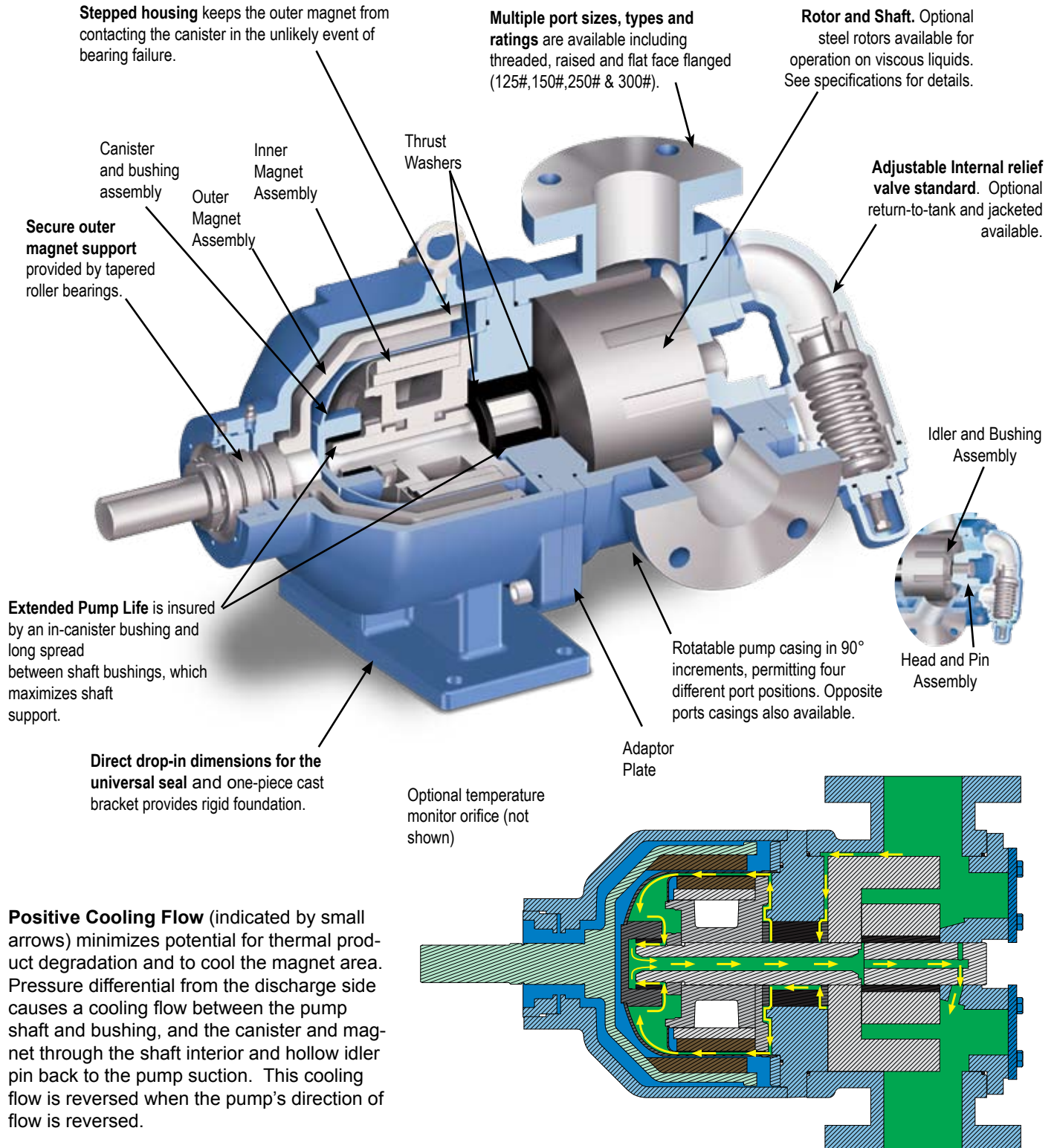
Revolvable Pump Casings Standard on H through LS Sizes

All Universal Mag Drive pumps are equipped with pump casings that can be positioned to meet common piping configurations. H through LS sizes have standard 90° ports which can be turned to any of four positions. Optional opposite ports are available in some sizes and materials. Direction of flow is reversible so any given port can be used as suction or discharge. The relief valve must "point " to the suction port in all cases.

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Pump Construction and Features



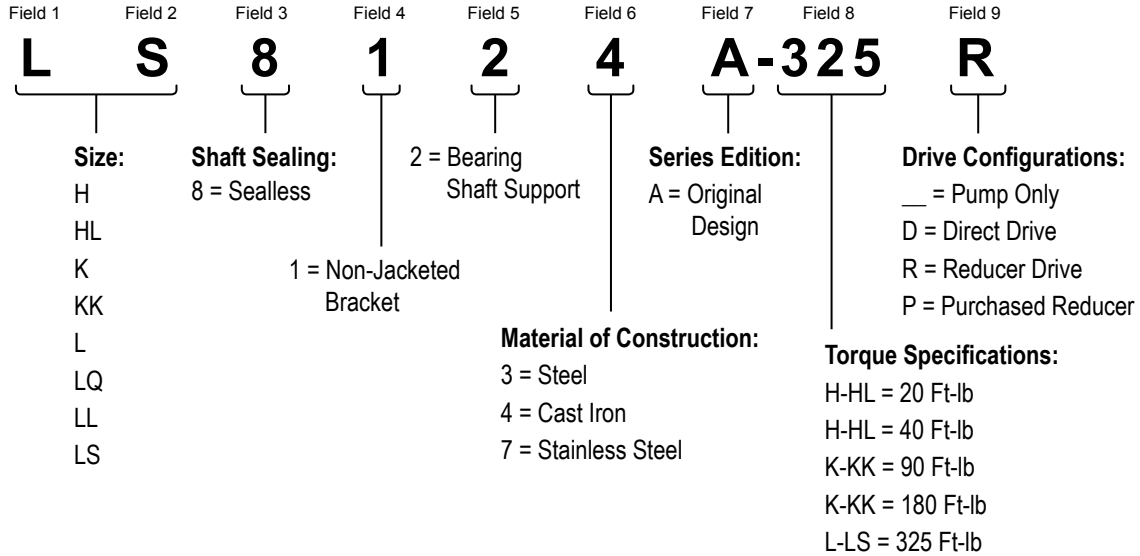
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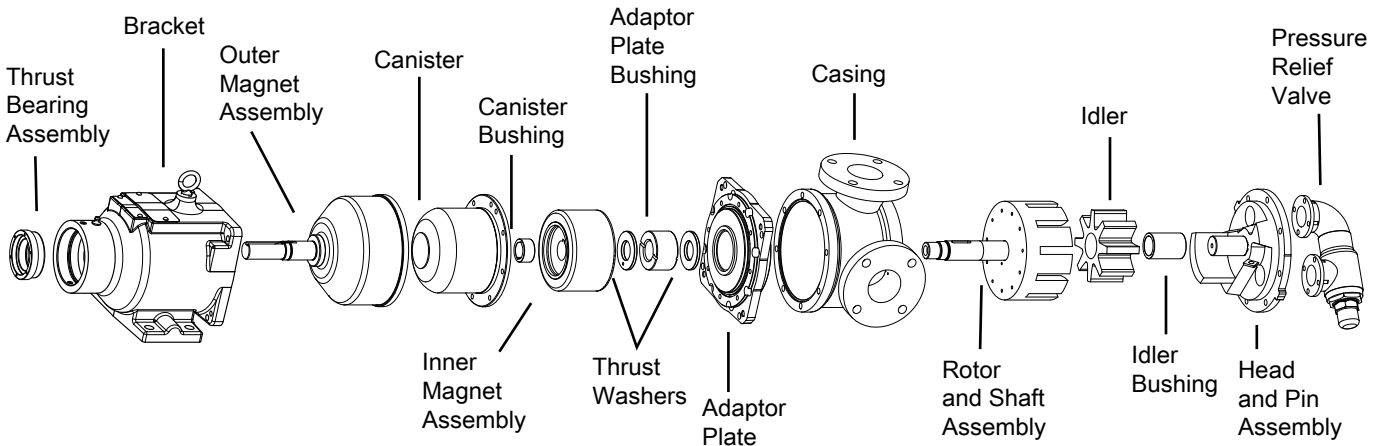
Model Number Key



Model numbers for the Universal Mag Drive series, begin with the displacement, followed by the pump series. The last number of the series indicates the material of construction for the external components. This is followed by the coupling and drive unit designations.

Neodymium iron boron magnets are the standard. For application temperatures over 225 ° F (107°C), Samarium Cobalt magnets are available in all sizes.

Component Identification



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Materials of Construction - All Series

Component		Cast Iron Series 8124A	Steel Externals Series 8123A	Stainless Steel Series 8127A
Casing		Cast Iron ASTM A48, Class 35B	Steel ASTM A216, Grade WCB	Stainless Steel ASTM A 743, Grade CF8M
Head		Cast Iron ASTM A48, Class 35B	Steel ASTM A216, Grade WCB	Stainless Steel ASTM A 743, Grade CF8M Case Hardened
Bracket		Cast Iron ASTM A48, Class 35B	Cast Iron ASTM A48, Class 35B	Cast Iron ASTM A48, Class 35B
Idler		② Cast Iron ASTM A48 Class 35B	② Cast Iron ASTM A48 Class 35B	Stainless Steel ASTM A 743, Grade CF8M Case Hardened
		Consult Factory	Consult Factory	Non-Galling Stainless and PPS Composite
Rotor	Standard	① Cast Iron ASTM A48, Class 35B	① Cast Iron ASTM A48, Class 35B	Stainless Steel ASTM A 743, Grade CF8M Case Hardened
	Steel Fitted	Steel ASTM A148, Grade 80-50	Steel ASTM A148, Grade 80-50	NA
Rotor Shaft	Standard	Steel ASTM A108, Grade 1045	Steel ASTM A108, Grade 1045	Hard Coated Stainless Steel
	Optional Material	Hardened Steel ASTM A108, Grade 1045	Hardened Steel ASTM A108, Grade 1045	NA
Idler Pin		Hardened Steel ASTM A108, Grade 1045	Hardened Steel ASTM A108, Grade 1045	Hard Coated Stainless Steel
Idler Bushing	Standard	Carbon Graphite	Carbon Graphite	Carbon Graphite
	Optional Material	Hardened Cast Iron, Silicon Carbide	Hardened Cast Iron, Silicon Carbide	Silicon Carbide
Internal Pressure Relief Valve		Cast Iron ASTM A48, Class 35B	Steel ASTM A216, Grade WCB	Stainless Steel ASTM A 743, Grade CF8M
Canister		316L Stainless Steel	316L Stainless Steel	316L Stainless Steel
Canister Bushing	Standard	Carbon Graphite	Carbon Graphite	Carbon Graphite
	Optional Material	Hardened Cast Iron, Silicon Carbide	Hardened Cast Iron, Silicon Carbide	Silicon Carbide
Thrust Washers	Standard	Hardened Cast Iron	Hardened Cast Iron	Silicon Carbide
	Optional Material	Silicon Carbide	Silicon Carbide	NA
Coupling Magnets	Standard	Neodymium Iron Boron	Neodymium Iron Boron	Neodymium Iron Boron
	Optional Material	Samarium Cobalt	Samarium Cobalt	Samarium Cobalt
O-rings	Standard	Buna N	Buna N	PTFE (Derivative) Encapsulated
	Optional Materials	Viton®, PTFE (Derivative) Encapsulated, Kalrez®	Viton®, PTFE (Derivative) Encapsulated, Kalrez®	Viton®, Kalrez®
Adaptor Plate		Cast Iron ASTM A48, Class 35B	Steel ASTM A216, Grade WCB	Stainless Steel ASTM A743, Grade CF8M
Adaptor Bushing	Standard	Carbon Graphite	Carbon Graphite	Carbon Graphite
	Optional	Hardened Cast Iron, Silicon Carbide	Hardened Cast Iron, Silicon Carbide	Silicon Carbide

① KK and LS sizes have ductile iron rotor, ASTM A536 Grade 60-40-18.
② H and HL sizes have powdered metal idler, MOIF Std 35 FC-0208-50.

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Specifications

Model Number	⑤ Standard Port Size	⑦ Capacity at Maximum Rated Speed			Max. Hydrostatic Pressure		① Max. Discharge Pressure		② Max. Recommended Temp. for Standard Pump (°F)				Steel Fitted Recommended Above	Approx. Shipping Weight with Valve
									Standard Construction		High Temperature Construction			
	Inches (mm)	GPM	M ³ /Hr	RPM	PSIG	BAR	PSIG	BAR	°F	°C	°F	°C	SSU	Pounds
H8124A	③ 1.5 (40)	15	3.4	1750	400	28	200	14	225	107	500	260	25,000	60
H8123A	⑤ 1.5 (40)						150	10						70
H8127A	⑤ 1.5 (40)						N/A	70						
HL8124A	③ 1.5 (40)	30	6.8	1750	400	28	200	14	225	107	500	260	7,500	60
HL8123A	⑤ 1.5 (40)						150	14						70
HL8127A	⑤ 1.5 (40)						N/A	70						
K8124A	③ 2 (50)	80	18	780	400	28	200	14	225	107	500	260	25,000	195
K8123A	⑤ 2 (50)						150	10						205
K8127A	⑤ 2 (50)						N/A	205						
KK8124A	③ 2 (50)	100	23	780	400	28	200	14	225	107	500	260	25,000	195
KK8123A	⑤ 2 (50)						150	10						205
KK8127A	⑤ 2 (50)						N/A	205						
L8124A	③ 2 (50)	135	30	640	400	28	200	14	225	107	500	260	25,000	280
LQ8124A	④ 2.5 (65)	135	30	640	400	28	200	14	225	107	500	260	25,000	290
LQ8123A	⑤ 2.5 (65)						150	10						295
LQ8127A	⑤ 2.5 (65)						N/A	295						
LL8124A	④ 3 (75)	170	39	640	400	28	200	14	225	107	500	260	2,500	305
LL8123A	⑤ 3 (75)						150	10						315
LL8127A	⑤ 3 (75)						N/A	315						
LS8124A	④ 3 (75)	200	45	640	400	28	200	14	225	107	500	260	75,000	340
LS8123A	⑤ 3 (75)						150	10						350
LS8127A	⑤ 3 (75)						N/A	350						

① For maximum recommended discharge pressures see performance curves.

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

③ Ports are tapped for standard (NPT) pipe.

④ Ports are suitable for use with 125# ANSI cast iron companion flanges or flanged fittings.

⑤ Ports are suitable for 150# ANSI steel or stainless steel companion flanges or flanged fittings.

⑥ See p.635.9 for other port type and size options.

⑦ Nominal capacity on medium viscosity liquids with clockwise rotation. There is a slight reduction in capacity at viscosities less than 100 SSU with counter-clockwise rotation.

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8123A (Steel External)
8127A (Stainless Steel)**

Special Materials and Options Selection Guidelines

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

- Steel fitted construction recommended on Cast Iron and Steel Externals pumps above the following viscosities, according to pump size:

Viscosity	H	HL	K	KK	L	LQ	LL	LS
	SSU	25,000	7,500	25,000	25,000	25,000	25,000	2,500
cSt	5,500	1,650	5,500	5,500	5,500	5,500	550	16,500

- Extra clearances required, depending on viscosity.
- 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 low viscosities or non-lubricating liquids – Below 100 SSU (20 cSt)

- Carbon graphite bushings.
- Cast iron idler for iron or steel pumps, or PPS or 770 stainless alloy idler for stainless steel pumps.

For high temperatures – Above 225° F (107°C)

- Samarium cobalt magnets required. Maximum temperature is 500° F (260° C)
- High temperature elastomers – Buna up to 225°F (107°C); Viton® up to 350°F (177°C); PTFE up to 400°F (204°C); or Kalrez® up to 550°F (288°C);
- High temperature relief valve above 350°F (177°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 (232°C), special materials requirements may be needed. Contact factory for recommendations.

PPS - Reinforced polyphenylene sulfide.

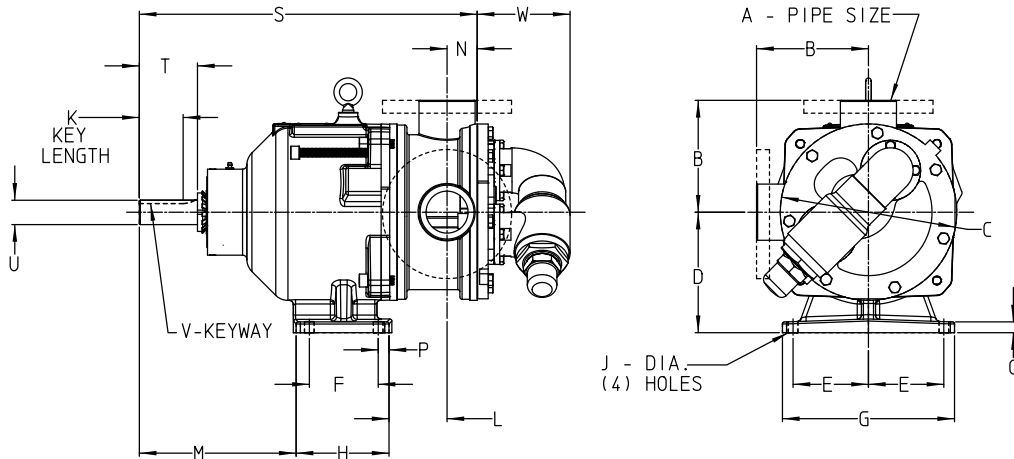
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8127A (Stainless Steel)**

Dimensions - H through LS Sizes – All Materials of Construction –



Model Number	A (in)	B	C	D	E	F	G	H	J	K	L	M	N	O	P	S	T	U ^①	V	W	
H8124A HL8124A	① 1.5	in mm	3.00 76.2	4.75 120.6	3.50 88.9	2.75 69.8	2.25 57.1	6.75 171.4	3.50 88.9	.47 11.9	0.99 25.1	3.38 85.8	5.19 131.8	1.19 30.2	0.56 14.2	0.63 15.7	13.26 336.8	1.62 41.1	0.75 19.0	.19 x .09 73.7	2.90
H8123A HL8123A HL8127A H8127A	③ 1.5	in mm	4.00 102	4.75 120.6	3.50 88.9	2.75 69.8	2.25 57.1	6.75 171.4	3.50 88.9	.47 11.9	0.99 25.1	3.38 85.8	5.19 131.8	1.19 30.2	0.56 14.2	0.63 15.7	13.26 336.8	1.62 41.1	0.75 19.0	.19 x .09 73.7	2.90
K8124A KK8124A	① 2	in mm	5.12 130	8.00 203	5.50 140	4.00 102	2.75 70	9.25 235	3.95 100	.56 14	1.42 31	3.03 77	9.39 239	1.75 44	.62 16	.60 15	18.12 460	2.25 57	1.125 28	.25 x .12 133	5.25
K8123A K8127A KK8123A KK8127A	③ 2	in mm	5.25 133	8.00 203	5.50 140	4.00 102	2.75 70	9.25 235	3.95 100	.56 14	1.42 31	3.03 77	9.39 239	1.75 44	.62 16	.60 15	18.12 460	2.25 57	1.125 28	.25 x .12 133	5.25
L8124A	① 2	in mm	6.50 165	10.25 260	7.00 178	4.38 112	4.00 102	10.00 254	5.40 137	.56 14	2.55 65	3.37 86	9.11 231	1.75 44	.62 16	.63 16	19.63 499	3.38 86	1.438 36	.38 x .19 137	5.40
LQ8124A LQ8123A LQ8127A	②③ 2.5	in mm	7.19 183	10.25 260	7.00 178	4.38 112	4.00 102	10.00 254	5.40 137	.56 14	2.55 65	3.37 86	9.11 231	1.75 44	.62 16	.63 16	19.63 499	3.38 86	1.438 36	.38 x .19 137	5.40
LL8124A LL8123A LL8127A	②③ 3	in mm	7.19 183	10.25 260	7.00 178	4.38 112	4.00 102	10.00 254	5.40 137	.56 14	2.55 65	3.37 86	9.11 231	2.25 57	.62 16	.63 16	20.13 511	3.38 86	1.438 36	.38 x .19 137	5.40
LS8124A LS8123A LS8127A	②③ 3	in mm	7.19 183	10.25 260	7.00 178	4.38 112	4.00 102	10.00 254	5.40 137	.56 14	2.55 65	4.74 120	9.11 231	2.44 62	.62 16	.63 16	21.69 551	3.38 86	1.438 36	.38 x .19 137	5.40

① Series 8124A ports are tapped for standard (NPT) pipe.
 ② Series 8124A, sizes LQ, LL and LS ports are suitable for use with 125# ANSI cast iron flanges or flanged fittings.
 ③ Series 8123A and 8127A ports are suitable for 150# ANSI steel or stainless steel companion flanges or flanged fittings.
 ④ When replacing on existing units, sizes L, LL and LQ may require a different size coupling half.

**SERIES 8124A (Cast Iron)
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8127A (Stainless Steel)**

Optional Casings for Different Port Configurations

Model Number	Standard Ports †	Optional Casings							
H8124A	1.5"①	1.5"②R	1.5"③R	2"②R					
H8123A	1.5"④	1.5"⑤R	2"④R	2"⑤R					
H8127A	1.5"④	1.5"⑤R	2"④R	2"⑤R					
HL8124A	1.5"①	1.5"②R	1.5"③R	2"②R					
HL8123A	1.5"④	1.5"⑤R	2"④R	2"⑤R					
HL8127A	1.5"④	1.5"⑤R	2"④R	2"⑤R					
K8124A	2"①	2"②R	2"③R	2.5"①⑥	2.5"②R	3"②R	4"②R		
K8123A	2"④	2"⑤R	2.5"④R	2.5"⑤R	3"④R	3"⑤R	4"④R	4"⑤R	
K8127A	2"④	2"⑤R	2.5"④R	2.5"⑤R	3"④R	3"⑤R	4"④R	4"⑤R	
KK8124A	2"①	2"②R	2"③R	2.5"①⑥	2.5"②R	3"②R	4"②R		
KK8123A	2"④	2"⑤R	2.5"④R	2.5"⑤R	3"④R	3"⑤R	4"④R	4"⑤R	
KK8127A	2"④	2"⑤R	2.5"④R	2.5"⑤R	3"④R	3"⑤R	4"④R	4"⑤R	
L8124A	2"①	2"②R							
LQ8124A	2.5"②	2.5"③R	3"②R	4"②R	6"②R*	Side 5"②R, Top 6"②			
LQ8123A	2.5"④	2.5"⑤R	3"③R	4"④R	4"⑤R	6"④R			
LQ8127A	2.5"④	2.5"⑤R	4"④R	4"⑤R					
LL8124A	3"②	3"③R	4"②R	5"②R*					
LL8123A	3"④	3"⑤R	4"④R	4"⑤R					
LL8127A	3"④	3"⑤R	4"④R	4"⑤R					
LS8124A	3"②	3"③R	4"②R*						
LS8123A	3"④	3"⑤R	4"④R	4"⑤R					
LS8127A	3"④	3"⑤R	4"④R	4"⑤R	4"⑤⑦	6"④R			

- ① Port(s) tapped for standard (NPT) pipe.
- ② Port(s) suitable for use with 125# ANSI cast iron companion flanges or flanged fittings.
- ③ Port(s) suitable for use with 250# ANSI cast iron companion flanges or flanged fittings.
- ④ Port(s) suitable for 150# ANSI steel or stainless steel companion flanges or flanged fittings.
- ⑤ Port(s) suitable for 300# ANSI steel or stainless steel companion flanges or flanged fittings
- Ⓝ Non-Rotatable Ports at 90 degree angle, contact factory for available orientation (right hand or left hand)
- Ⓞ Opposite Ports
- Ⓡ 90° port arranged for right hand inlet (viewed from shaft end).
- * Core smaller than port size.

Contact factory for flange details (e.g. flat face or raised face flanges)

†Standard port configuration is 90° which may be rotated (H-LS).

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Performance Curve Notes

Printed performance curves are not available at this time.

Performance curves can be electronically generated with the Viking Pump Selector Program. For authorized distributors, this program can be found listed under the “Products” tab at www.idexconnect.com. Security passwords are required to access IDEXconnect.