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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 |
| Q | 300 | 68 | 300 | 68 |
| QS | 500 | 114 | 500 | 114 |

Operating Range^①:

Cast Iron Series 8124A

| | | |
|-----------------|-----------------------|-----------------------|
| Nominal Flow | (GPM) | 15-500 |
| | (M ³ /hr.) | 3.4-114 |
| 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) | 15-500 |
| | (M ³ /hr.) | 3.4-114 |
| 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) | 15-500 |
| | (M ³ /hr.) | 3.4-114 |
| 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 for individual model information.

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

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MAG DRIVE■■■■■

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

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 9 different sizes with flows to 500 GPM (114 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.

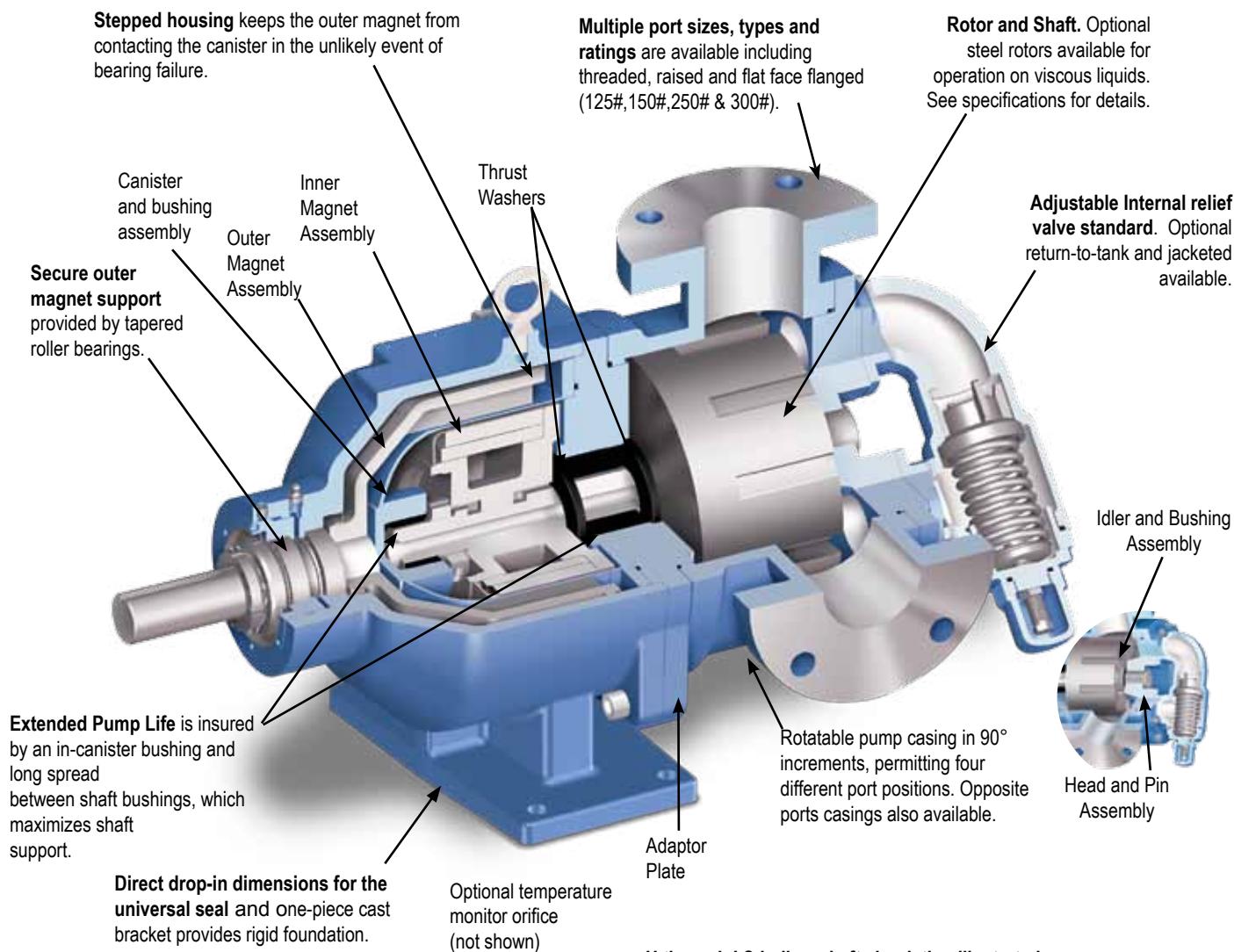
Revolvable Pump Casings Standard on H through LS Sizes

All Universal Mag Drive pumps are equipped with pump casings that can be positioned to meet common piping configurations. H through Q sizes have standard 90° ports which can be turned to any of four positions. The QS size has standard 180° ports with an option of 90° ports allowing you to achieve any of four positions, like the other sizes. Optional opposite ports are available on other 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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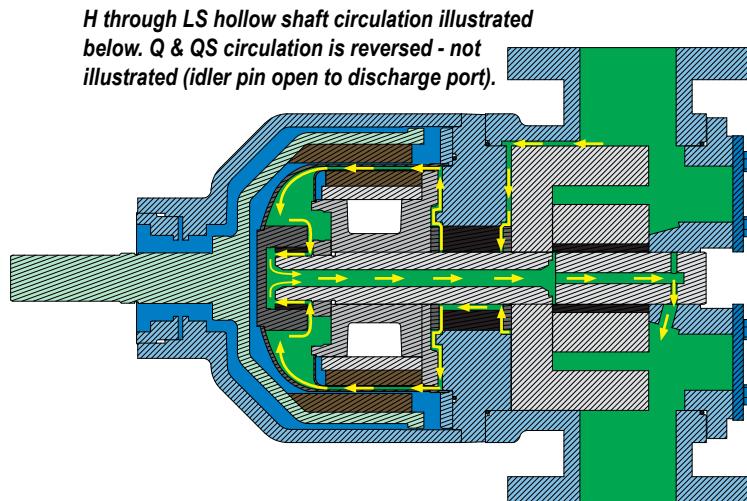
SERIES 8124A (Cast Iron)
8123A (Steel External)
8127A (Stainless Steel)

Pump Construction and Features



Positive Cooling Flow (indicated by small arrows) minimizes potential for thermal product degradation and to cool the magnet area. Pressure differential from the discharge side causes a cooling flow between the pump shaft and bushing, and the canister and magnet through the shaft interior and hollow idler pin back to the pump suction. This cooling flow is reversed when the pump's direction of flow is reversed.

H through LS hollow shaft circulation illustrated below. Q & QS circulation is reversed - not illustrated (idler pin open to discharge port).



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MAG DRIVE

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

Model Number Key

| Field 1 | Field 2 | Field 3 | Field 4 | Field 5 | Field 6 | Field 7 | Field 8 | Field 9 |
|--------------|-----------------------|-------------------|----------|----------|----------|----------------------------------|---------|-------------------------------|
| L | S | 8 | 1 | 2 | 4 | A-325 | | R |
| Size: | Shaft Sealing: | | | | | Series Edition: | | Drive Configurations: |
| H | 8 = Sealless | | | | | A = Original Design | | — = Pump Only |
| HL | | | | | | | | D = Direct Drive |
| K | | Jacketing: | | | | | | R = Reducer Drive |
| KK | | 1 = Non-Jacketed | | | | | | P = Purchased Reducer |
| L | | Bracket | | | | Material of Construction: | | Torque Specifications: |
| LQ | | | | | | 3 = Steel Externals | | H-HL = 20 Ft-lb |
| LL | | | | | | 4 = Cast Iron | | H-HL = 40 Ft-lb |
| LS | | | | | | 7 = Stainless Steel | | K-KK = 90 Ft-lb |
| Q | | | | | | | | K-KK = 180 Ft-lb |
| QS | | | | | | | | L-LS = 325 Ft-lb |
| | | | | | | | | Q-QS = 425 Ft-lb |
| | | | | | | | | Q-QS = 900 Ft-lb |

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.

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

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 | ② Cast Iron ASTM A48 Class 35B | Stainless Steel ASTM A 743, Grade CF8M Case Hardened |
| | Consult Factory | 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 |
| | Optional Material | 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 ASTM A276 Type 316 Hard Coated |
| | 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 ASTM A276 Type 316 Hard Coated |
| 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, Siliconized Graphite | Hardened Cast Iron, Siliconized Graphite | Siliconized Graphite |
| Thrust Washers | Standard | ④ Hardened Cast Iron | ④ Hardened Cast Iron | ④ 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 Materials | Hardened Cast Iron, Silicon Carbide | Hardened Cast Iron, Silicon Carbide | Silicon Carbide |

① KK, LS and QS sizes have ductile iron rotor, ASTM A536 Grade 60-40-18.

② H and HL sizes have powdered metal idler, MPIF Std 35 FC-0208-50.

③ Steel fitted Q and QS sizes have steel idlers.

④ Q and QS contains two sets of thrust washers, one set is carbon graphite as standard.

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||||MAG DRIVE||||

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

Specifications

| Model Number | ⑥ Standard Port Size | ⑦ Capacity at Maximum Rated Speed | | | Max. Hydrostatic Pressure | | ① Max. Discharge Pressure | | ② Max. Recommended Temp. for Standard Pump | | | | Steel Fitted Recommended Above | Approx. Shipping Weight with Valve |
|--------------|----------------------|-----------------------------------|-------|------|---------------------------|-----|---------------------------|-----|--|-----|-----|-----|--------------------------------|------------------------------------|
| | | GPM | M³/Hr | RPM | PSIG | BAR | PSIG | BAR | °F | °C | °F | °C | SSU | Pounds |
| Inches (mm) | | | | | | | | | | | | | | |
| H8124A | ③1.5 (40) | 15 | 3.4 | 1750 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 25,000 | 60 |
| H8123A | ③1.5 (40) | | | | | | | | | | | | | 70 |
| H8127A | ③1.5 (40) | | | | | | 150 | 10 | | | | | | N/A 70 |
| HL8124A | ③1.5 (40) | 30 | 6.8 | 1750 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 7,500 | 60 |
| HL8123A | ③1.5 (40) | | | | | | | | | | | | | 70 |
| HL8127A | ③1.5 (40) | | | | | | 150 | 14 | | | | | | N/A 70 |
| K8124A | ③2 (50) | 80 | 18 | 780 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 25,000 | 195 |
| K8123A | ③2 (50) | | | | | | | | | | | | | 205 |
| K8127A | ③2 (50) | | | | | | 150 | 10 | | | | | | N/A 205 |
| KK8124A | ③2 (50) | 100 | 23 | 780 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 25,000 | 195 |
| KK8123A | ③2 (50) | | | | | | | | | | | | | 205 |
| KK8127A | ③2 (50) | | | | | | 150 | 10 | | | | | | N/A 205 |
| L8124A | ③2 (50) | 135 | 30 | 640 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 25,000 | 280 |
| LQ8124A | ④2.5 (65) | 135 | 30 | 640 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 25,000 | 290 |
| LQ8123A | ④2.5 (65) | | | | | | | | | | | | | 295 |
| LQ8127A | ④2.5 (65) | | | | | | 150 | 10 | | | | | | N/A 295 |
| LL8124A | ④3 (75) | 170 | 39 | 640 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 2,500 | 305 |
| LL8123A | ④3 (75) | | | | | | | | | | | | | 315 |
| LL8127A | ④3 (75) | | | | | | 150 | 10 | | | | | | N/A 315 |
| LS8124A | ④3 (75) | 200 | 45 | 640 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 75,000 | 340 |
| LS8123A | ④3 (75) | | | | | | | | | | | | | 350 |
| LS8127A | ④3 (75) | | | | | | 125 | 10 | | | | | | N/A 350 |
| Q8124A | 4 (100) | 300 | 68 | 520 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 7,500 | 705 |
| Q8123A | 4 (100) | | | | | | | | | | | | | 730 |
| Q8127A | 4 (100) | | | | | | 125 | 9 | | | | | | N/A 730 |
| QS8124A | 6 (150) | 500 | 114 | 520 | 400 | 28 | 200 | 14 | 225 | 107 | 500 | 260 | 75,000 | 775 |
| QS8123A | 6 (150) | | | | | | | | | | | | | 805 |
| QS8127A | 6 (150) | | | | | | 125 | 9 | | | | | | N/A 805 |

① For maximum recommended discharge pressures see performance curves, which can be electronically generated with the Viking Pump Selector Program, located on www.vikingpump.com.

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 ANSI Class 125 cast iron companion flanges or flanged fittings.

⑤ Ports are suitable for ANSI Class 150 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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SERIES 8124A (Cast Iron)
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 | Q | QS |
|-----------|--------|-------|--------|--------|--------|--------|-------|--------|-------|--------|
| SSU | 25,000 | 7,500 | 25,000 | 25,000 | 25,000 | 25,000 | 2,500 | 75,000 | 7,500 | 75,000 |
| cSt | 5,500 | 1,650 | 5,500 | 5,500 | 5,500 | 5,500 | 550 | 16,500 | 1,650 | 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.

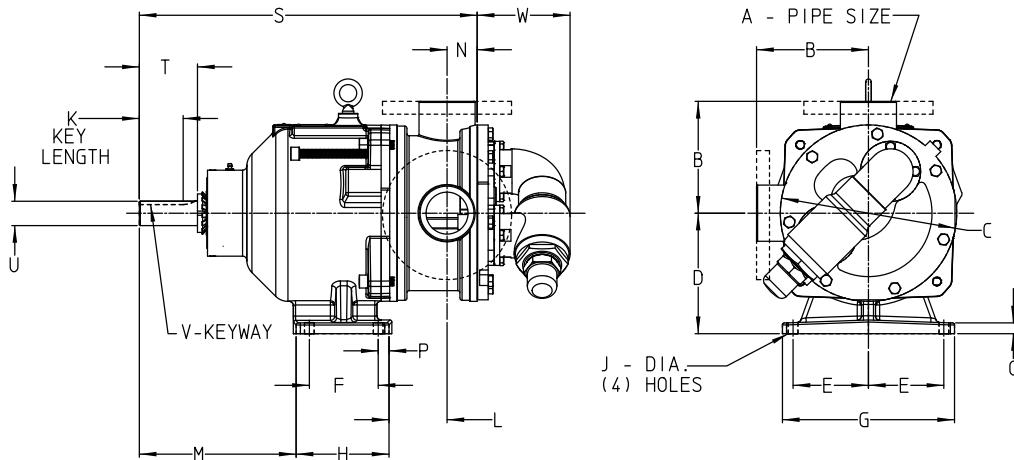
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MAG DRIVE**

**SERIES 8124A (Cast Iron)
8123A (Steel External)
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 | U④ | V | W |
|--------------|-----------|----|------|-------|------|------|------|-------|------|------|------|------|-------|------|------|------|-------|------|-------|-----------|------|
| H8124A | ① 1.5 | in | 3.00 | 4.75 | 3.50 | 2.75 | 2.25 | 6.75 | 3.50 | .47 | 0.99 | 3.38 | 5.19 | 1.19 | 0.56 | 0.63 | 13.26 | 1.62 | 0.75 | .19 x .09 | 2.90 |
| HL8124A | | mm | 76.2 | 120.6 | 88.9 | 69.8 | 57.1 | 171.4 | 88.9 | 11.9 | 25.1 | 85.8 | 131.8 | 30.2 | 14.2 | 15.7 | 336.8 | 41.1 | 19.0 | | 73.7 |
| H8123A | ③ 1.5 | in | 4.00 | 4.75 | 3.50 | 2.75 | 2.25 | 6.75 | 3.50 | .47 | 0.99 | 3.38 | 5.19 | 1.19 | 0.56 | 0.63 | 13.26 | 1.62 | 0.75 | .19 x .09 | 2.90 |
| HL8123A | | mm | 102 | 120.6 | 88.9 | 69.8 | 57.1 | 171.4 | 88.9 | 11.9 | 25.1 | 85.8 | 131.8 | 30.2 | 14.2 | 15.7 | 336.8 | 41.1 | 19.0 | | 73.7 |
| HL8127A | | mm | | | | | | | | | | | | | | | | | | | |
| H8127A | | mm | | | | | | | | | | | | | | | | | | | |
| K8124A | ① 2 | in | 5.12 | 8.00 | 5.50 | 4.00 | 2.75 | 9.25 | 3.95 | .56 | 1.42 | 3.03 | 9.39 | 1.75 | .62 | .60 | 18.12 | 2.25 | 1.125 | .25 x .12 | 5.25 |
| KK8124A | | mm | 130 | 203 | 140 | 102 | 70 | 235 | 100 | 14 | 31 | 77 | 239 | 44 | 16 | 15 | 460 | 57 | 28 | | 133 |
| K8123A | ③ 2 | in | 5.25 | 8.00 | 5.50 | 4.00 | 2.75 | 9.25 | 3.95 | .56 | 1.42 | 3.03 | 9.39 | 1.75 | .62 | .60 | 18.12 | 2.25 | 1.125 | .25 x .12 | 5.25 |
| KK8123A | | mm | 133 | 203 | 140 | 102 | 70 | 235 | 100 | 14 | 31 | 77 | 239 | 44 | 16 | 15 | 460 | 57 | 28 | | 133 |
| KK8127A | | mm | | | | | | | | | | | | | | | | | | | |
| L8124A | ① 2 | in | 6.50 | 10.25 | 7.00 | 4.38 | 4.00 | 10.00 | 5.40 | .56 | 2.55 | 3.37 | 9.11 | 1.75 | .62 | .63 | 19.63 | 3.38 | 1.438 | .38 x .19 | 5.40 |
| L8124A | | mm | 165 | 260 | 178 | 112 | 102 | 254 | 137 | 14 | 65 | 86 | 231 | 44 | 16 | 16 | 499 | 86 | 36 | | 137 |
| LQ8124A | ②③ 2.5 | in | 7.19 | 10.25 | 7.00 | 4.38 | 4.00 | 10.00 | 5.40 | .56 | 2.55 | 3.37 | 9.11 | 1.75 | .62 | .63 | 19.63 | 3.38 | 1.438 | .38 x .19 | 5.40 |
| LQ8123A | | mm | 183 | 260 | 178 | 112 | 102 | 254 | 137 | 14 | 65 | 86 | 231 | 44 | 16 | 16 | 499 | 86 | 36 | | 137 |
| LQ8127A | | mm | | | | | | | | | | | | | | | | | | | |
| LL8124A | ②③ 3 | in | 7.19 | 10.25 | 7.00 | 4.38 | 4.00 | 10.00 | 5.40 | .56 | 2.55 | 3.37 | 9.11 | 2.25 | .62 | .63 | 20.13 | 3.38 | 1.438 | .38 x .19 | 5.40 |
| LL8123A | | mm | 183 | 260 | 178 | 112 | 102 | 254 | 137 | 14 | 65 | 86 | 231 | 57 | 16 | 16 | 511 | 86 | 36 | | 137 |
| LL8127A | | mm | | | | | | | | | | | | | | | | | | | |
| LS8124A | ②③ 3 | in | 7.19 | 10.25 | 7.00 | 4.38 | 4.00 | 10.00 | 5.40 | .56 | 2.55 | 4.74 | 9.11 | 2.44 | .62 | .63 | 21.69 | 3.38 | 1.438 | .38 x .19 | 5.40 |
| LS8123A | | mm | 183 | 260 | 178 | 112 | 102 | 254 | 137 | 14 | 65 | 120 | 231 | 62 | 16 | 16 | 551 | 86 | 36 | | 137 |
| LS8127A | | mm | | | | | | | | | | | | | | | | | | | |

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.

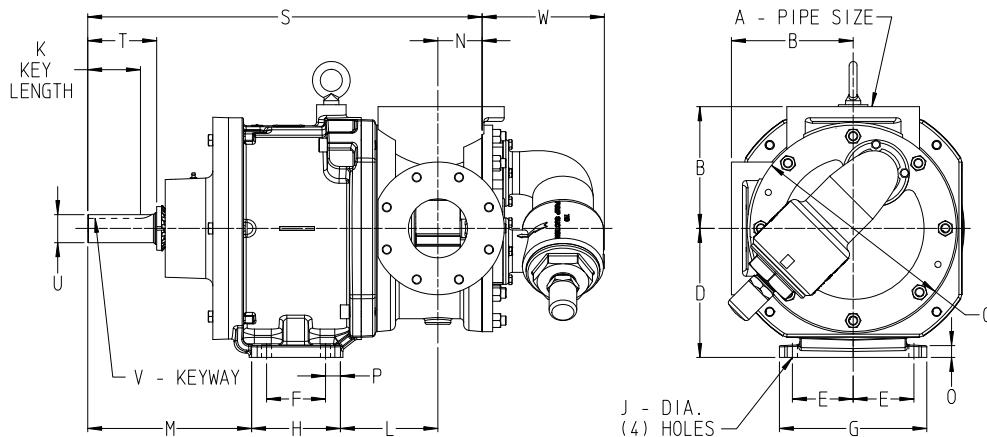
③ Series 8123A and 8127A ports are suitable for 150# ANSI steel or stainless steel companion flanges or flanged fittings.

④ When replacing on existing units, sizes L, LL and LQ may require a different size coupling half.

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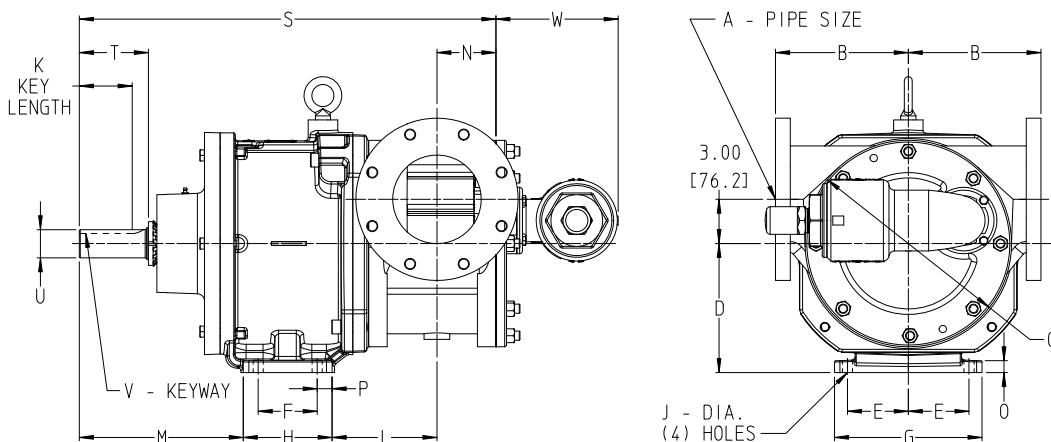
**SERIES 8124A (Cast Iron)
8123A (Steel External)
8127A (Stainless Steel)**

Dimensions - Q Size – All Materials of Construction



| Model Number | A (in) | B | C | D | E | F | G | H | J | K | L | M | N | O | P | S | T | U④ | V | W |
|--------------|-----------|----|------|-------|------|------|------|-------|------|------|------|------|-------|------|------|------|-------|------|------|-----------|
| Q8124A | ②③ 4 | in | 8.25 | 14.00 | 8.75 | 4.12 | 4.00 | 10.00 | 6.00 | 0.69 | 3.58 | 6.62 | 11.13 | 3.00 | 0.80 | 1.00 | 26.75 | 4.68 | 1.94 | 8.29 |
| Q8123A | | mm | 210 | 356 | 222 | 105 | 102 | 254 | 152 | 18 | 91 | 168 | 283 | 76 | 20 | 25 | 679 | 119 | 49 | .50 x .25 |
| Q8127A | | | | | | | | | | | | | | | | | | | 211 | |

Dimensions - QS Size – All Materials of Construction



| Model Number | A (in) | B | C | D | E | F | G | H | J | K | L | M | N | O | P | S | T | U④ | V | W |
|--------------|-----------|----|------|-------|------|------|------|-------|------|------|------|------|-------|------|------|------|-------|------|------|-----------|
| QS8124A | ②③ 6 | in | 9.00 | 14.00 | 8.75 | 4.12 | 4.00 | 10.00 | 6.00 | 0.69 | 3.58 | 7.12 | 11.13 | 4.00 | 0.80 | 1.00 | 28.25 | 4.68 | 1.94 | 8.29 |
| QS8123A | | mm | 229 | 356 | 222 | 105 | 102 | 254 | 152 | 18 | 91 | 181 | 283 | 102 | 20 | 25 | 718 | 119 | 49 | .50 x .25 |
| QS8127A | | | | | | | | | | | | | | | | | | | 211 | |

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.

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

Optional Casings for Different Port Configurations

| Model Number | Standard Ports † | Optional Casings | | | | | |
|--------------|------------------|------------------|--------|--------|--------|-----------------------|--------------------|
| H8124A | 1.5"① | 1.5"②® | 1.5"③® | 2"②® | | | |
| H8123A | 1.5"④ | 1.5"⑤® | 2"④® | 2"⑤® | | | |
| H8127A | 1.5"④ | 1.5"⑥® | 2"④® | 2"⑥® | | | |
| HL8124A | 1.5"① | 1.5"②® | 1.5"③® | 2"②® | | | |
| HL8123A | 1.5"④ | 1.5"⑤® | 2"④® | 2"⑤® | | | |
| HL8127A | 1.5"④ | 1.5"⑥® | 2"④® | 2"⑥® | | | |
| K8124A | 2"① | 2"②® | 2"③® | 2.5"①◎ | 2.5"②® | 3"②® | 4"②® |
| K8123A | 2"④ | 2"⑤® | 2.5"④® | 2.5"⑤® | 3"④® | 3"⑤® | 4"④® 4"⑤® |
| K8127A | 2"④ | 2"⑥® | 2.5"④® | 2.5"⑥® | 3"④® | 3"⑥® | 4"④® 4"⑥® |
| KK8124A | 2"① | 2"②® | 2"③® | 2.5"①◎ | 2.5"②® | 3"②® | 4"②® |
| KK8123A | 2"④ | 2"⑤® | 2.5"④® | 2.5"⑤® | 3"④® | 3"⑥® | 4"④® 4"⑤® |
| KK8127A | 2"④ | 2"⑥® | 2.5"④® | 2.5"⑥® | 3"④® | 3"⑥® | 4"④® 4"⑥® |
| L8124A | 2"① | 2"® | | | | | |
| LQ8124A | 2.5"② | 2.5"③® | 3"②® | 4"②® | 6"②®* | Side 5"②®, Top 6"② | |
| LQ8123A | 2.5"④ | 2.5"⑤® | 3"⑤® | 4"④® | 4"⑤® | 6"④® | |
| LQ8127A | 2.5"④ | 2.5"⑥® | 4"④® | 4"⑥® | | | |
| LL8124A | 3"② | 3"③® | 4"②® | 5"②®* | | | |
| LL8123A | 3"④ | 3"⑤® | 4"④® | 4"⑤® | | | |
| LL8127A | 3"④ | 3"⑥® | 4"④® | 4"⑥® | | | |
| LS8124A | 3"② | 3"③® | 4"②®* | | | | |
| LS8123A | 3"④ | 3"⑤® | 4"④® | 4"⑥® | | | |
| LS8127A | 3"④ | 3"⑥® | 4"④® | 4"⑤◎ | 6"④® | | |
| Q8124A | 4"② | 4"③® | 3"②® | 5"②® | 6"②(O) | Side 4"②®, Top 8"② | Side 6"②®, Top 8"② |
| Q8123A | 4"④ | 4"⑤® | 5"④® | 5"⑤® | 6"④®* | 6"⑤®* | 6"④(O) 6"⑤(O) |
| Q8127A | 4"④ | 3"④® | 4"⑤® | 5"④® | 6"④®* | 6"④® | 6"④(O) 6"⑤(O) |
| QS8124A | 6"②(O) | | | | | | |
| QS8123A | 6"④(O) | 6"④® | 6"⑤(O) | | | | |
| QS8127A | 6"④(O) | 6"④® | 6"⑤(O) | | | | |

① Port(s) tapped for standard (NPT) pipe.

② Port(s) suitable for use with ANSI Class 125 cast iron companion flanges or flanged fittings.

③ Port(s) suitable for use with ANSI Class 250 cast iron companion flanges or flanged fittings.

④ Port(s) suitable for ANSI Class 150 steel or stainless steel companion flanges or flanged fittings.

⑤ Port(s) suitable for ANSI Class 300 steel or stainless steel companion flanges or flanged fittings

⑨ 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-Q) or opposite (QS) with right hand inlet viewed from the shaft end.

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

Selecting the Correct Viking Mag Drive® Coupling

1. Find pump HP and speed from the performance curves, which can be electronically generated with the Viking Pump Selector Program, located on www.vikingpump.com/pumpselector.

2. Calculate the application torque (T), using this formula:

$$T \text{ (FT-LB)} = \frac{\text{HP}}{\text{SPEED}} \times 5252$$

3. Select the temperature correction factor (TCF) from Table 1 or Table 2.

| STANDARD NEODYMIUM MAGNETS (For Application Temperatures Below 225°F.) | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|
| Application Temp. (°F) | AMB | 100 | 125 | 150 | 175 | 200 | 225 |
| TCF | 1.0 | .94 | .88 | .82 | .76 | .70 | .64 |

Table 1: Temperature Correction Factors

| OPTIONAL SAMARIUM COBALT MAGNETS (For Application Temperatures Above 225°F.) | | | | | |
|---|-----|-----|-----|-----|-----|
| Application Temp. (°F) | 175 | 200 | 300 | 400 | 500 |
| TCF | .74 | .73 | .69 | .63 | .59 |

Table 2: Temperature Correction Factors

EXAMPLE

1. An HL8124A is required to pump 30 GPM of 20 cSt liquid at 1750 RPM, 50 PSI differential pressure

Temperature is 150°F.

From the pump selector, required HP is 2.8.

2. Calculate torque (T).

$$\text{TORQUE (T)} = \frac{2.8}{1750} \times (5252)$$

$$= 8.40 \text{ FT LB}$$

3. From the temperature correction factor table, the correction factor (TCF) = .82.

4. Calculate adjusted application torque.

$$\text{ADJUSTED APPLICATION TORQUE} = \frac{8.40}{.82}$$

$$= 10.25 \text{ FT-LB}$$

5. Select coupling.

**THE NEODYMIUM 20 FT-LB COUPLING IS
THE PROPER SELECTION**

4. Divide calculated application torque by TCF to get adjusted application torque.
5. Select coupling with rating equal to or greater than "adjusted application torque" from Table 3.

| MAGNETIC COUPLING TORQUE RATING TABLE | |
|---------------------------------------|-----------------|
| Pump Size | Torque (FT-LBS) |
| H & HL | 20 |
| | 40 |
| K & KK | 90 |
| | 180 |
| L, LQ, LL, LS | 325 |
| | 425 |
| Q & QS | 900 |
| | |

Table 3

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

Performance Curve Notes

Printed performance curves are not available.

Performance curves can be electronically generated with the Viking Pump Selector Program. This program can be located on www.vikingpump.com for the general public.

For authorized distributors, this program can be found listed under the "Products" tab at www.idexconnect.com. Security passwords are required to access IDEXconnect.