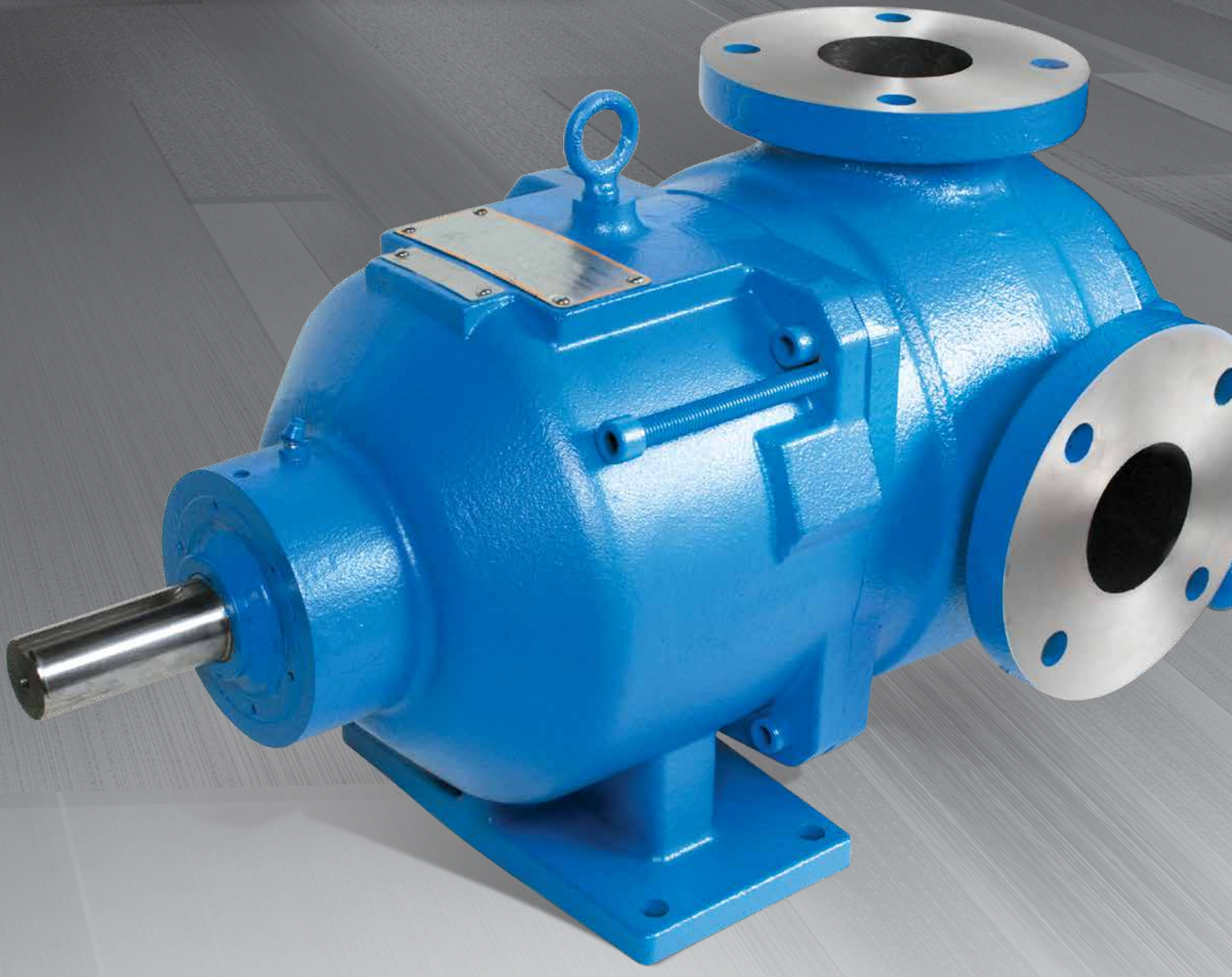
INTERNAL GEAR PUMPS
UNIVERSAL MAG DRIVE

DIMENSIONALLY INTERCHANGEABLE, SEALLESS MAG DRIVE PUMPS FOR CRUCIAL LIQUID CONTAINMENT APPLICATIONS



Capacity
to 500 GPM (114 m^3/h)

Pressure
to 200 PSI (14 BAR)

Viscosity
28 to 250,000 SSU (55,000 cSt)

Temperature
-120°F to +500°F (-85°C to +260°C)

VIKING PUMP
A Unit of IDEX Corporation

VIKING PUMP

Industry & Application Experts

- Application experience spanning more than 100 years
- Viking invented the internal gear pump
- Reliability, quality and performance
- Global service and support

GLOBAL
LEADER
IN POSITIVE DISPLACEMENT
PUMPING
SOLUTIONS

The Universal Mag Drive eliminates shaft seals on hard to seal liquids, reducing downtime and maintenance costs associated with seal failures and replacements.

Typical Markets & Applications

- Petrochemicals
- Isocyanate
- Polyol
- Monomers
- Resins
- Adhesives
- Sodium Hydroxide
- Paints & Coatings
- Printing
- Solvents
- Petroleum & Additives
- Biofuels
- Oil Seeds

The Universal Mag Drive series can reduce maintenance and environmental costs through eliminating the pump shaft seal.

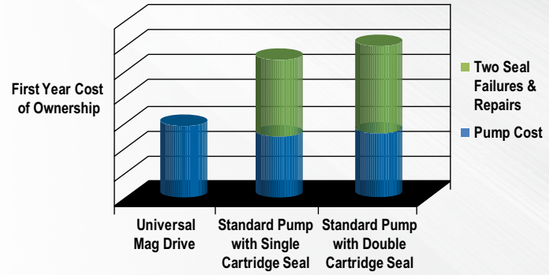
Simply by eliminating the pump shaft seal, the Universal Mag Drive can save you more than 50% of the total pump, parts and downtime cost in one year.

Assuming the cost of:

- Spare mechanical seal
- Mechanical seal accessories
- Two seal replacements and repairs yearly
- Unplanned downtime
- Lost production
- Lost process revenue at $1,000 per hour
- Potential EPA fines for leaks and/or spills

Universal Mag Drive Value vs. Mechanical Seal Pumps

A customized scenario needs to be adapted to fit each customer's application and operating parameters. The accuracy of the calculated savings depends upon the accuracy of customer supplied data. Note that pump configuration and materials used for pumps varies with application. In addition, pumps should only be used for the particular application with the particular liquids specified when pumps are ordered.



Model Number Key

LS 8 1 2 4 A-325 R

Size:
H, HL,
K, KK,
L, LQ,
LL, LS,
Q, QS

Shaft Sealing:
8 = Sealless

Jacketing:
1 = Non-Jacketed Bracket

Basic Series Configuration

Material of Construction:
3 = Steel Externals
4 = Cast Iron
7 = Stainless Steel

Series Edition:
A = Original Design

Torque Specifications:
H-HL = 40 Ft-lb
K-KK = 90 Ft-lb
K-KK = 180 Ft-lb
L-LS = 325 Ft-lb
Q-QS = 425 Ft-lb
Q-QS = 900 Ft-lb

Drive Configurations:
Blank = Pump Only
D = Direct Drive
R = Reducer Drive
P = Purchased Reducer

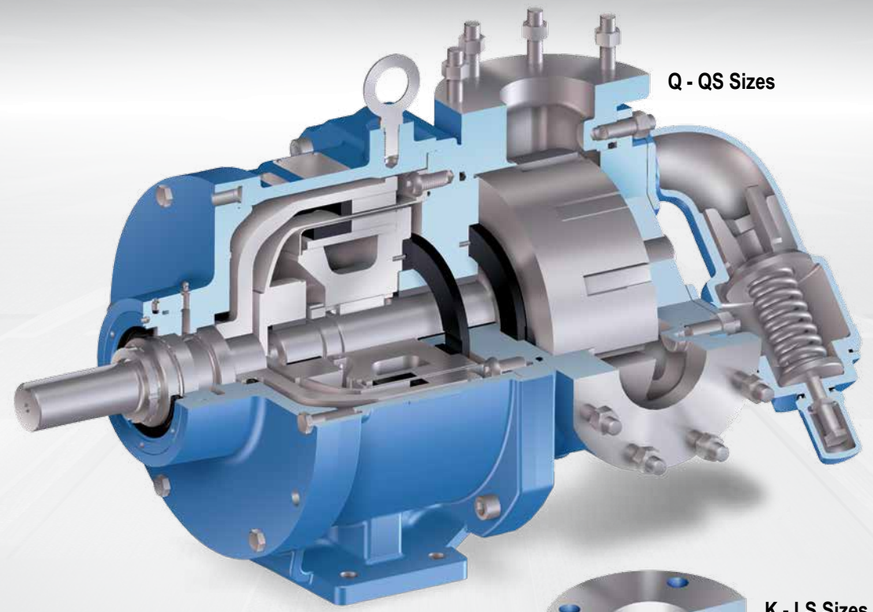
FEATURES & BENEFITS

ADVANCED DURABILITY

- **Proven Design**
  Proven in thousands of tough applications around the world. **Simple design minimizes service requirements while providing unmatched durability and reliability.**
- **3-Year Limited Warranty**
  Best in class warranty that covers workmanship and materials.
  Warranty provides greater peace of mind.
- **Heavy Duty Bearings and Bushings**
  Proven, rugged pump design equipped with heavy-duty bearings and bushings.
  Provides enhanced shaft support extending pump and in-canister bushing life.
- **Innovative Magnet Design**
  Inner magnet is encapsulated in a laser welded stainless steel canister. **One-piece design eliminates O-ring seal, extends pump life and eliminates seal maintenance.**

EASY INSTALLATION

- **Dimensionally Interchangeable**
  Proven, dimensionally interchangeable design for Viking's Universal Seal and Heavy-Duty Bracketed pumps as well as competitive pumps that duplicate Viking's foot print. **Provides simple solution for upgrading existing pumps, utilizing existing reducer, motor, coupling, guard, wiring and base.**
- **Multiple Port Configurations**
  Multiple port sizes, types and ratings are available including threaded and flanged.
  Provides an easy solution to match customer requirements for quick, easy installation.
- **Rotatable Casing**
  Universal Mag Drive pumps are equipped with casings that can be positioned to meet common piping configurations, including 90° and opposite porting. **Shortens and simplifies installation with no special tools required for quick installation.**
- **No Special Tools Required**
  Jack bolts for coupling disassembly are standard with the pump. **Simplifies maintenance and reduces planned downtime.**
- **Drive Options**
  Multiple drive options are available including reducer, and variable speed drive. **Drive configurations provide easy solutions to match customer requirements for quick, easy installation.**
- **Lifting Lug Included**
  Allows for easier pump handling when installing, removing or disassembling pump. **Simplifies installation.**



APPLICATION FLEXIBILITY

- **Externally Adjustable Relief Valve**
  Relief valve can be adjusted without disassembly when process conditions change. **Provides maximum process up-time.**
- **Multiple Material Options**
  Wide array of pump construction materials available for internal and external components allow broad chemical and temperature compatibility on lubricating and non-lubricating liquids to match your application need. **Custom configured pumps lengthen the life of the pump for lower total cost of ownership.**
- **Short-Term Run-Dry Capability**
  Short-term run-dry capability is possible due to state of the art design and magnet technology. **Protects the pump during priming and accidental empty-tank situations.**
- **Bi-directional Pump Design**
  Bi-directional pumping design eliminates cost of a second pump and the piping needed for loading or unloading or line stripping. **Provides application flexibility and reduces system costs.**
- **Adjustable End Clearance**
  Allows the pump to be adjusted for different viscosities and temperatures if process changes, increasing productivity. **Maximizes pump efficiency, extending life.**

LOWER COST OF OWNERSHIP

- **Dual Thrust Control Washers**
  Positive control of rotor position for more accurate flow, also reduces pump wear. **Provides lower life cycle costs and improves process control capability.**
- **Optimized Efficiency**
  Proven, optimized gear and pump geometry maximizes overall efficiency. **Reduces product operating cost, providing a lower total cost of ownership.**
- **Relief Valve, Standard**
  Pumps come with an adjustable internal pressure relief valve on standard design (jacketed pressure relief valves also available). **Protects pump from over-pressure.**
- **Higher Pressure Capabilities**
  Thrust control, enhanced shaft support and a wide selection of materials permits higher pressure capabilities. **Permits single pump standardization for multiple liquids and applications.**

MATERIALS OF CONSTRUCTION

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	Standard	② Cast Iron ASTM A48 Class 35B	② Cast Iron ASTM A48 Class 35B	Stainless Steel ASTM A 743, Grade CF8M Case Hardened
	Optional Material	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		Hardened Steel ASTM A108, Grade 1045	Hardened Steel ASTM A108, Grade 1045	Hard Coated Stainless Steel ASTM A276 Type 316 Hard Coated
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	Viton®	Viton®	PTFE (Derivative) Encapsulated
	Optional Materials	PTFE (Derivative) Encapsulated, Kalrez®	PTFE (Derivative) Encapsulated, Kalrez®	Viton®, Kalrez®
Adapter Plate		Cast Iron ASTM A48, Class 35B	Steel ASTM A216, Grade WCB	Stainless Steel ASTM A743, Grade CF8M
Adapter 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 a 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 idler.

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

Consult factory for more options.

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UNIVERSAL MAG DRIVE SPECIFICATIONS

Pump Model	⑥ Standard Port Size		⑦ Capacity at Maximum Rated Speed			Maximum Hydrostatic Pressure		① Maximum Discharge Pressure		② Maximum Recommended Temperature		Approximate Shipping Weight	
	mm	in.	m^3/h	GPM	RPM	BAR	PSI	BAR	PSI	°C	°F	Kg.	Lbs.
H8124A	40 ③	1.5 ③	3.4	15	1750	28	400	14	200	107	225	27	60
H8123A	40 ⑤	1.5 ⑤										32	70
H8127A								10	150				
HL8124A	40 ③	1.5 ③	6.8	30	1750	28	400	14	200	107	225	27	60
HL8123A	40 ⑤	1.5 ⑤										32	70
HL8127A								10	150				
K8124A	50 ③	2 ③	18	80	780	28	400	14	200	107	225	88	195
K8123A	50 ⑤	2 ⑤										93	205
K8127A								10	150				
KK8124A	50 ③	2 ③	23	100	780	28	400	14	200	107	225	88	195
KK8123A	50 ⑤	2 ⑤										93	205
KK8127A								10	150				
L8124A	50 ③	2 ③	30	135	640	28	400	14	200	107	225	127	280
LQ8124A	65 ④	2.5 ④	30	135	640	28	400	14	200	107	225	132	290
LQ8123A	65 ⑤	2.5 ⑤										134	295
LQ8127A								10	150				
LL8124A	75 ④	3 ④	39	170	640	28	400	14	200	107	225	93	205
LL8123A	75 ⑤	3 ⑤										143	315
LL8127A								10	150				
LS8124A	75 ④	3 ④	45	200	640	28	400	14	200	107	225	154	340
LS8123A	75 ⑤	3 ⑤										159	350
LS8127A								10	125				
Q8124A	100	4	68	300	520	28	400	14	200	107	225	320	705
Q8123A												331	730
Q8127A								10	125				
QS8124A	150	6	114	500	520	28	400	14	200	107	225	352	775
QS8123A												365	805
QS8127A								9	125				

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. Other options are available, consult factory.

④ Ports are suitable for use with ANSI Class 125 cast iron companion flanges or flanged fittings. Other options are available, consult factory.

⑤ Ports are suitable for ANSI Class 150 steel or stainless steel companion flanges or flanged fittings. Other options are available, consult factory.

⑥ Consult factory for other port size or type 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.

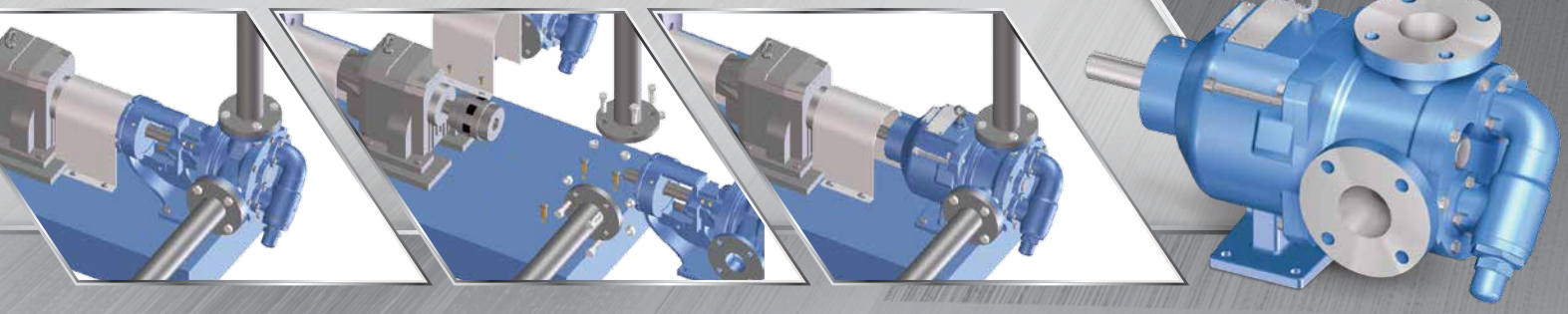
VERTICAL INTEGRATION & INTERCHANGEABILITY

Viking Pump has been a global leader in positive displacement pumping solutions since 1911. With a vertically integrated manufacturing process, we have the tools, processes and systems to produce our products in-house; from the initial engineering analysis, through design layout, foundry casting, machining, final assembly, testing and shipping. Viking pumps are uniquely designed for the task at hand, from simple solutions to your most advanced and demanding needs.

PRODUCTION PROCESS

Dimensionally Interchangeable Design

The Universal Mag Drive series provides a dimensionally interchangeable footprint with the Viking's Universal Seal, Heavy-Duty Bracketed and other similar manufacturer's pumps. This allows for an easy upgrade from packing or mechanical seals to sealless Mag Drive technology, providing the highest level of liquid containment available in the marketplace today.



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