

**SPUR GEAR PRODUCT LINE:
CAST & DUCTILE IRON SEALLESS MAG DRIVE PUMPS**
SERIES SG-805, SGN-805, SG-807, SGN-807, SG-810, SG-814

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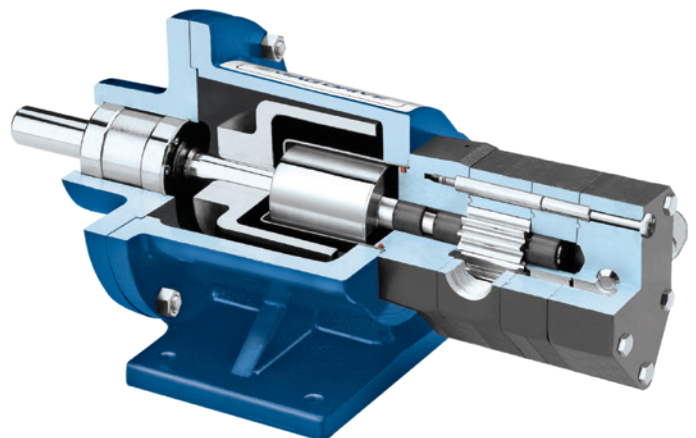
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SERIES DESCRIPTION

Where shaft seal leakage is not allowable, for liquids that are hard to seal, or where seal maintenance is difficult, Viking Mag Drive® sealless SG pumps are the solution. In this type of pump, a canister hermetically seals the liquid within the pump. Inner magnets are connected to the pump drive shaft inside the canister, and an outer magnet assembly rotates outside of the canister, driven by a motor or other drive, so that magnetic forces pass through the canister to the inner magnets and cause the drive shaft to rotate. This eliminates traditional dynamic shaft seals, and problems associated with them (wear, leakage, air infiltration).

A hollow drive shaft allows some liquid to flow by means of pressure differential from the high pressure side of the pump through the shaft, into the canister and back to the low pressure side of the pump. This provides magnet cooling and prevents product stagnation.



RELATED PRODUCTS

Cast Iron Pumps: Catalog Section 1451

OPERATING RANGE

| SERIES | NOMINAL FLOW | | MAXIMUM PRESSURE* | | TEMPERATURE RANGE | | VISCOSITY RANGE | |
|-----------------------------|--------------|--------------|-------------------|-----|-------------------|-------------|-----------------|-------------|
| | GPM | m³/h | PSI | Bar | °F | °C | SSU | cSt |
| SG-805 & SGN-805 | 0.7 - 11.2 | .16 - 2.54 | 500 | 34 | -40 to +450 | -40 to +230 | 28 to 250,000 | 1 to 55,000 |
| SG-807 & SGN-807 | 4 - 32 | .91 - 7.27 | 500 | 34 | -40 to +450 | -40 to +230 | 28 to 250,000 | 1 to 55,000 |
| SG-810 | 25 - 50 | 5.68 - 11.36 | 500 | 34 | -40 to +450 | -40 to +230 | 28 to 250,000 | 1 to 55,000 |
| SG-814 | 70 - 190 | 15.9 - 43.15 | 500 | 34 | -40 to +450 | -40 to +230 | 28 to 250,000 | 1 to 55,000 |

* to 500 PSI (34 Bar) Continuous, to 2,500 PSI (170 Bar) Intermittent Pressure

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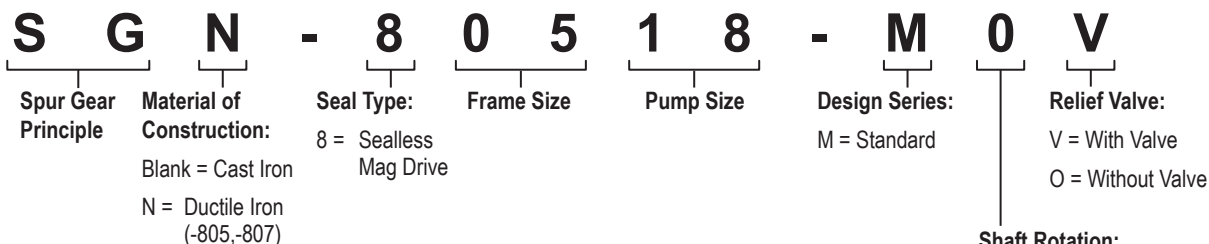
FEATURES & BENEFITS

- Needle bearings provide high pressure capabilities, sleeve bearing options available
- Close-coupled motor mount or foot bracket options to match space or motor requirements

TYPICAL APPLICATIONS

- Fuels and Additives
- Polyurethane Meter / Mix
- Adhesive & Sealant Dispensing
- Pipeline Sampling
- Chemical Metering
- Heat Transfer Oils

MODEL NUMBER KEY



NOTE: Direction of rotation: clockwise is standard, counter-clockwise is optional. Bi-rotational is not available as Mag Drive.

NOTE: Mag Drive pumps are connected to a magnetic coupling, which is specified separately. Coupling options are MD-A and MD-B (SG-805,-807), MD2-B (SG-810) or MD2-C (SG-814). Specify NEMA or IEC face mount for close-coupled or bearing carrier for long-coupled.

Shaft Rotation:

(Viewed from Shaft End)

0 = Clockwise (standard)

1 = Counter-Clockwise (optional)

STANDARD MATERIALS OF CONSTRUCTION

| Component | SG-805, -807 | SGN-805, -807 | SG-810, -814 | Options |
|--|----------------------------------|----------------------------------|--|---------------------------|
| Casing, Bracket, Head, Separation Plate | Cast Iron, ASTM A823 | Ductile Iron, ASTM A536 | ③ Cast Iron, ASTM A48 | Surface Hardening (Vitek) |
| Relief Valve Body | Cast Iron, ASTM A823 | Ductile Iron, ASTM A536 | Cast Iron, ASTM A48 | — |
| Relief Valve Poppet | Hardened Steel | Hardened Steel | Ductile Iron, ASTM A536 | — |
| Relief Valve Spring | Steel, ASTM A229 | Steel, ASTM A229 | Chrome Silicon Spring Steel, ASTM A401 | — |
| Gears | Hardened Steel | Hardened Steel | Hardened Steel | — |
| Shafts | Case-Hardened Steel ASTM A322 | Case-Hardened Steel ASTM A322 | Case-Hardened Steel ASTM A322 | Nitalloy |
| Anti-Friction Needle Bearings | — | — | — | Bearing Steel |
| Sleeve Bearings | Carbon Graphite | Carbon Graphite | Carbon Graphite | Silicon Carbide |
| O-Rings | Buna-N | Buna-N | Buna-N | Neoprene, PTFE, FFKM, FKM |
| Canister | 316L Stainless Steel | 316L Stainless Steel | 316L Stainless Steel | Alloy C |
| Magnetic Coupling Bracket (not wetted) | ④ Cast Iron, ASTM A823 | ④ Cast Iron, ASTM A823 | Cast Iron, ASTM A823 | — |
| Magnets (outer magnets nickel plated, inner magnets sealed in SS canister) | ① Neodymium Iron Boron | ① Neodymium Iron Boron | ① Neodymium Iron Boron | ② Samarium Cobalt |

① Maximum temperature 225°F / 107°C.

② Maximum temperature 500°F / 260°C.

③ Casing is Ductile Iron ASTM A536 Grade 65-45-12 (Vitek Hardened).

④ Magnetic coupling brackets are aluminum for 182/184TC frame motors.

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SPECIFICATIONS

| ⑤ Model Number | Port Size Inches | Nominal Capacity at 50 Hz Motor Speeds (1450 RPM) | | Nominal Capacity at 60 Hz Motor Speeds (1750 RPM) | | Maximum Continuous Pressure | | Approximate Shipping Weight (Pump with Valve, but Less Power) | | ② Magnetic Coupling | | | ① Maximum Working Pressure | | Approximate Shipping Weight (Coupling Only, Ready to Accept but Less Power) | |
|----------------------|---------------------|---|-------------------|---|-------------------|-----------------------------|-----|---|------|------------------------|--------|-------------|-------------------------------|-----|---|-----|
| | | GPM | m ³ /h | GPM | m ³ /h | PSIG | BAR | Lbs. | Kg. | Series | Torque | | PSIG | BAR | Lbs. | Kg. |
| | | | | | | | | | | | Ft-Lbs | Nm | | | | |
| SG-80518 | ½ ③ | 0.57 | 0.13 | 0.7 | 0.16 | 500 | 34 | 6 | 2.7 | MD-A | 4 9 | 5.4 12.2 | 1000 | 69 | 31 | 14 |
| SG-80525 | ½ ③ | 0.84 | 0.19 | 1 | 0.23 | 500 | 34 | 6 | 2.7 | | | | | | | |
| SG-80535 | ½ ③ | 1.14 | 0.26 | 1.4 | 0.32 | 500 | 34 | 6 | 2.7 | | | | | | | |
| SG-80550 | ½ ③ | 1.67 | 0.38 | 2 | 0.45 | 500 | 34 | 7 | 3.2 | | | | | | | |
| SG-80570 | ½ ③ | 2.33 | 0.53 | 2.8 | 0.64 | 500 | 34 | 7 | 3.2 | | | | | | | |
| SG-80510 | ½ ③ | 3.30 | 0.75 | 4 | 0.91 | 500 | 34 | 8 | 3.6 | | | | | | | |
| SG-80514 | ¾ ③ | 4.62 | 1.05 | 5.6 | 1.27 | 500 | 34 | 9 | 4.1 | | | | | | | |
| SG-80519 | ¾ ③ | 6.30 | 1.43 | 7.6 | 1.73 | 200 | 14 | 10 | 4.5 | | | | | | | |
| SG-80528 | ¾ ③ | 9.29 | 2.11 | 11.2 | 2.54 | 100 | 7 | 11 | 5.0 | | | | | | | |
| SG-80741 | 1 ③ | 3.30 | 0.75 | 4 | 0.91 | 500 | 34 | 15 | 6.8 | MD-A | 4 9 | 5.4 12.2 | 1000 | 69 | 31 | 14 |
| SG-80758 | 1 ③ | 4.62 | 1.05 | 5.6 | 1.27 | 500 | 34 | 17 | 7.7 | | | | | | | |
| SG-80782 | 1 ③ | 6.65 | 1.51 | 8 | 1.82 | 500 | 34 | 18 | 8.2 | | | | | | | |
| SG-80711 | 1 ③ | 9.29 | 2.11 | 11.2 | 2.54 | 500 | 34 | 19 | 8.6 | | | | | | | |
| SG-80716 | 1 ③ | 13 | 3.01 | 16 | 3.63 | 500 | 34 | 20 | 9.1 | | | | | | | |
| SG-80722 | 1½ x 1¼ ③ | 18 | 4.14 | 22 | 5.00 | 500 | 34 | 41 | 18.6 | MD-B | 40 | 54.0 | 500 | 28 | 71 | 32 |
| SG-80732 | 1½ x 1¼ ③ | 27 | 6.02 | 32 | 7.27 | 500 | 34 | 43 | 19.5 | | | | | | | |
| SG-81013 | 1½ ④ | 21 | 4.70 | 25 | 5.68 | 500 | 34 | 49 | 22.1 | MD2-B | 14 | 19.0 | 700 | 48 | 145 | 66 |
| SG-81026 | 2 ④ | 41 | 9.41 | 50 | 11.36 | 500 | 34 | 54 | 24.5 | | 32 | 43.4 | | | 67.8 | 145 |
| SG-81420 | 2 ④ | 58 | 13.17 | 70 | 15.90 | 500 | 34 | 130 | 59.1 | MD2-C | 40 | 54.2 | 350 | 24 | 31 | 14 |
| SG-81436 | 3 ④ | 104 | 23.52 | 125 | 28.39 | 290 | 20 | 158 | 71.5 | | 90 | 122.0 | | | 31 | 14 |
| SG-81456 | 4 ④ | 157 | 35.75 | 190 | 43.15 | 190 | 13 | 189 | 85.8 | | 135 | 183.0 | | | 31 | 14 |
| | | | | | | | | | | | 180 | 244.0 | | | | |

NOTE: Maximum temperature (standard construction) 225°F, 107°C. Higher temperatures can be handled with Samarium Cobalt magnets and optional O-ring elastomers. See page 1453.14 for torque and temperature limits.

- ① Optional high pressure canisters available. Consult factory.
- ② See page 1453.14 for "Selecting the correct Mag Drive coupling."
- ③ NPT standard. Consult factory for other port size or type options such as BSP, SAE O-Ring or other.
- ④ SAE J518 Code 61 flange with metric threaded fastener holes standard. Consult factory for other port sizes or type options such as NPT, BSP, SAE O-Ring or other.
- ⑤ Frame sizes 05 and 07 are also available in ductile iron (SGN)

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MOUNTING OPTIONS



Motor Mounted Units (M Drive)

Pump and motor mounted to a flange mounting bracket with magnetic coupling.

This mounting arrangement eliminates the need for on-site coupling alignment that is normally required with a base mounted unit.

Series SG-805 & -807 pumps may be close coupled to NEMA-C faced motors and SG-810 & -814 to both NEMA-C and IEC B5 flanged motors to provide an easily-assembled, compact pumping unit. This mounting arrangement eliminates the need for on-site coupling alignment that is normally required for a base-mounted unit

Series:

SG-805, SGN-805, SG-807, SGN-807, SG-810, SG-814



Foot Bracket Mounted Pumps (B Drive)

Pump is mounted to a foot bracket.

Series SG-8 pumps are available with a bearing carrier mounted to the magnetic coupling to provide an external drive shaft for long-coupling to a reducer, gear motor or other drive. The 3.5" shaft height on MD-A couplings matches the shaft height on Viking "A" series reducers, as well as NEMA 56, 143 and 145 T motors. The 6.25" shaft height on MD-B couplings matches shaft height on 254/256 T motors. The MD2-B coupling for SG-810 has 5.5" shaft height matching Viking "B" reducers.

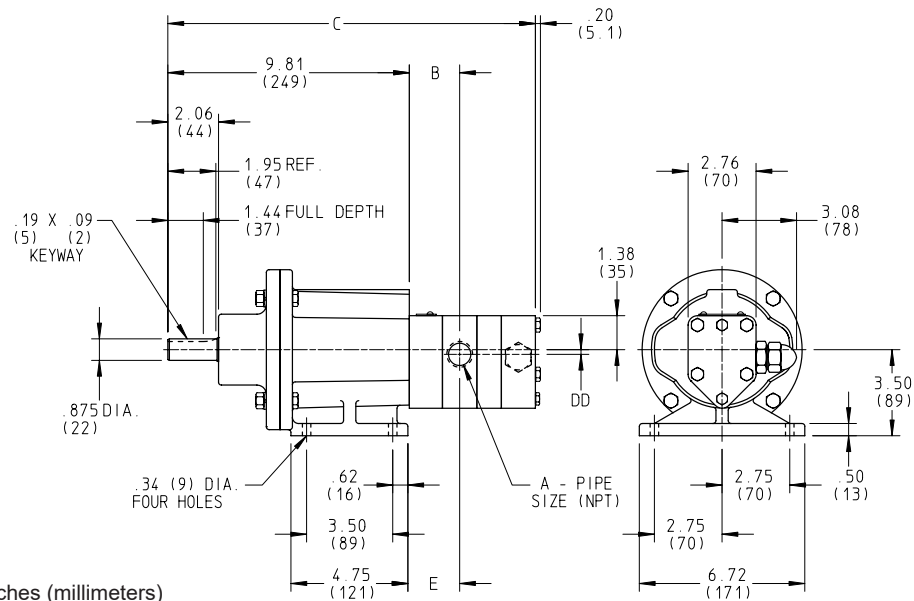
Series:

SG-805, SGN-805, SG-807, SGN-807, SG-810, SG-814

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DIMENSIONS – SG-805 & SGN-805 SERIES – MD-A
(B DRIVE – FOOTED BRACKET)



NOTE: Dimensions in inches (millimeters)

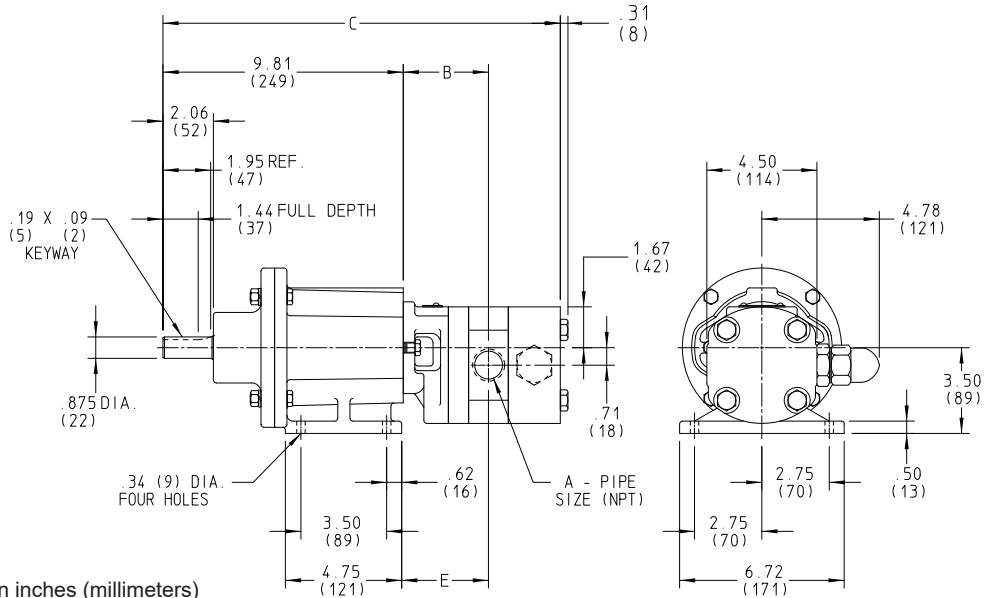
| Model Number | A (in) | | WITH R/V | | | LESS R/V | | | DD |
|-------------------------------|--------|----|----------|-------|------|----------|-------|------|------|
| | | | B | C | E | B | C | E | |
| SG-80518MD-A SGN-80518MD-A | 1/2 | in | 2.02 | 13.71 | 2.08 | 2.21 | 12.71 | 2.27 | 0.31 |
| | | mm | 51 | 348 | 53 | 56 | 323 | 58 | 8 |
| SG-80525MD-A SGN-80525MD-A | 1/2 | in | 2.09 | 13.78 | 2.15 | 2.28 | 12.78 | 2.34 | 0.31 |
| | | mm | 53 | 350 | 55 | 58 | 325 | 59 | 8 |
| SG-80535MD-A SGN-80535MD-A | 1/2 | in | 2.19 | 13.88 | 2.25 | 2.38 | 12.88 | 2.44 | 0.31 |
| | | mm | 56 | 352 | 57 | 60 | 327 | 62 | 8 |
| SG-80550MD-A SGN-80550MD-A | 1/2 | in | 2.34 | 14.03 | 2.40 | 2.53 | 13.03 | 2.59 | 0.31 |
| | | mm | 59 | 356 | 61 | 64 | 331 | 66 | 8 |
| SG-80570MD-A SGN-80570MD-A | 1/2 | in | 2.54 | 14.23 | 2.60 | 2.73 | 13.23 | 2.79 | 0.31 |
| | | mm | 65 | 361 | 66 | 69 | 336 | 71 | 8 |
| SG-80510MD-A SGN-80510MD-A | 1/2 | in | 1.84 | 14.53 | 1.90 | 1.84 | 13.53 | 1.90 | 0.31 |
| | | mm | 47 | 369 | 48 | 47 | 344 | 48 | 8 |
| SG-80514MD-A SGN-80514MD-A | 3/4 | in | 2.04 | 14.93 | 2.10 | 2.04 | 13.93 | 2.10 | 0.19 |
| | | mm | 52 | 379 | 53 | 52 | 354 | 53 | 5 |
| SG-80519MD-A SGN-80519MD-A | 3/4 | in | 2.29 | 15.43 | 2.35 | 2.29 | 14.43 | 2.35 | 0.19 |
| | | mm | 58 | 392 | 60 | 58 | 367 | 60 | 5 |
| SG-80528MD-A SGN-80528MD-A | 3/4 | in | 2.04 | 16.33 | 2.10 | 2.04 | 15.33 | 2.10 | 0.19 |
| | | mm | 52 | 415 | 53 | 52 | 389 | 53 | 5 |

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

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**DIMENSIONS – SG-807 & SGN-807 SERIES – MD-A
(B DRIVE – FOOTED BRACKET)**



NOTE: Dimensions in inches (millimeters)

| Model Number | A (in) | | WITH R/V | | | LESS R/V | | |
|-------------------------------|--------------|----|----------|-------|------|----------|-------|------|
| | | | B | C | E | B | C | E |
| SG-80741MD-A SGN-80741MD-A | 1 | in | 3.07 | 15.81 | 3.13 | 3.26 | 14.19 | 3.32 |
| | | mm | 78 | 402 | 80 | 83 | 360 | 84 |
| SG-80758MD-A SGN-80758MD-A | 1 | in | 3.24 | 15.98 | 3.30 | 3.43 | 14.36 | 3.49 |
| | | mm | 82 | 406 | 84 | 87 | 365 | 89 |
| SG-80782MD-A SGN-80782MD-A | 1 | in | 3.48 | 16.22 | 3.54 | 3.67 | 14.60 | 3.73 |
| | | mm | 88 | 412 | 90 | 93 | 371 | 95 |
| SG-80711MD-A SGN-80711MD-A | 1 | in | 3.81 | 16.55 | 3.87 | 4.00 | 14.93 | 4.06 |
| | | mm | 97 | 420 | 98 | 102 | 379 | 103 |
| SG-80716MD-A SGN-80716MD-A | 1 | in | 4.31 | 17.05 | 4.37 | 4.50 | 15.43 | 4.56 |
| | | mm | 109 | 433 | 111 | 114 | 392 | 116 |
| SG-80722MD-A SGN-80722MD-A | 1½ S 1¼ D | in | 4.25 | 20.20 | 4.31 | 4.25 | 18.58 | 4.31 |
| | | mm | 108 | 513 | 109 | 108 | 472 | 109 |
| SG-80732MD-A SGN-80732MD-A | 1½ S 1¼ D | in | 4.28 | 20.72 | 4.34 | 4.27 | 19.10 | 4.33 |
| | | mm | 109 | 526 | 110 | 108 | 485 | 110 |

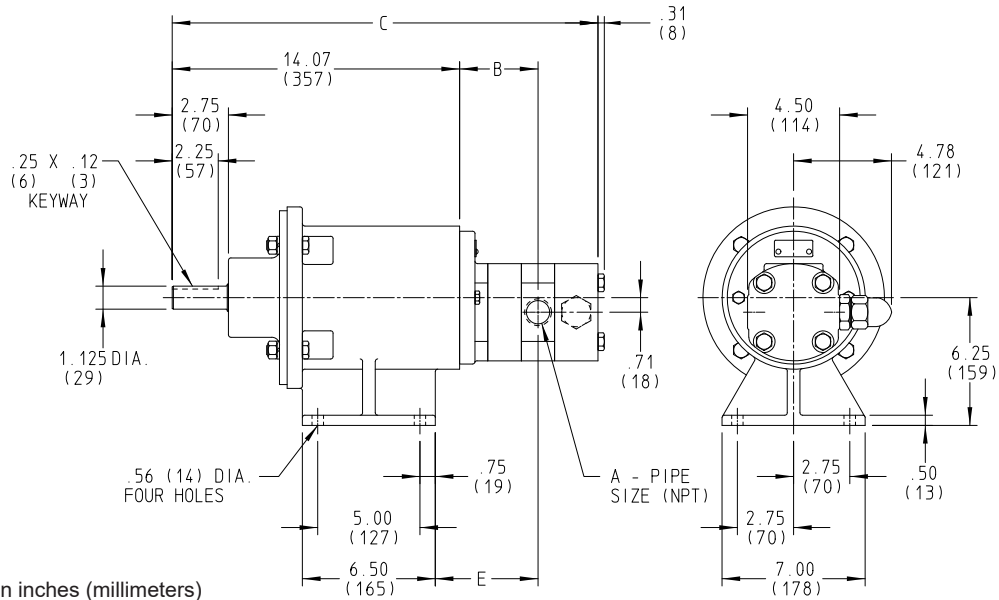
S = Suction Port
D = Discharge Port

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

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DIMENSIONS – SG-807 & SGN-807 SERIES – MD-B
(B DRIVE – FOOTED BRACKET)



NOTE: Dimensions in inches (millimeters)

| Model Number | A (in) | | WITH R/V | | | LESS R/V | | |
|-------------------------------|--------------|----|----------|-------|------|----------|-------|------|
| | | | B | C | E | B | C | E |
| SG-80741MD-B SGN-80741MD-B | 1 | in | 3.07 | 20.07 | 3.13 | 3.26 | 18.45 | 3.32 |
| | | mm | 78 | 510 | 80 | 83 | 469 | 84 |
| SG-80758MD-B SGN-80758MD-B | 1 | in | 3.24 | 20.24 | 3.30 | 3.43 | 18.61 | 3.49 |
| | | mm | 82 | 514 | 84 | 87 | 473 | 89 |
| SG-80782MD-B SGN-80782MD-B | 1 | in | 3.48 | 20.48 | 3.54 | 3.67 | 18.86 | 3.73 |
| | | mm | 88 | 520 | 90 | 93 | 479 | 95 |
| SG-80711MD-B SGN-80711MD-B | 1 | in | 3.81 | 20.81 | 3.87 | 4.00 | 19.19 | 4.06 |
| | | mm | 97 | 529 | 98 | 102 | 487 | 103 |
| SG-80716MD-B SGN-80716MD-B | 1 | in | 4.31 | 21.30 | 4.37 | 4.50 | 19.68 | 4.56 |
| | | mm | 109 | 541 | 111 | 114 | 500 | 116 |
| SG-80722MD-B SGN-80722MD-B | 1½ S 1¼ D | in | 4.25 | 24.46 | 4.31 | 4.25 | 22.83 | 4.31 |
| | | mm | 108 | 621 | 109 | 108 | 580 | 109 |
| SG-80732MD-B SGN-80732MD-B | 1½ S 1¼ D | in | 4.28 | 24.98 | 4.34 | 4.27 | 23.36 | 4.33 |
| | | mm | 109 | 634 | 110 | 108 | 593 | 110 |

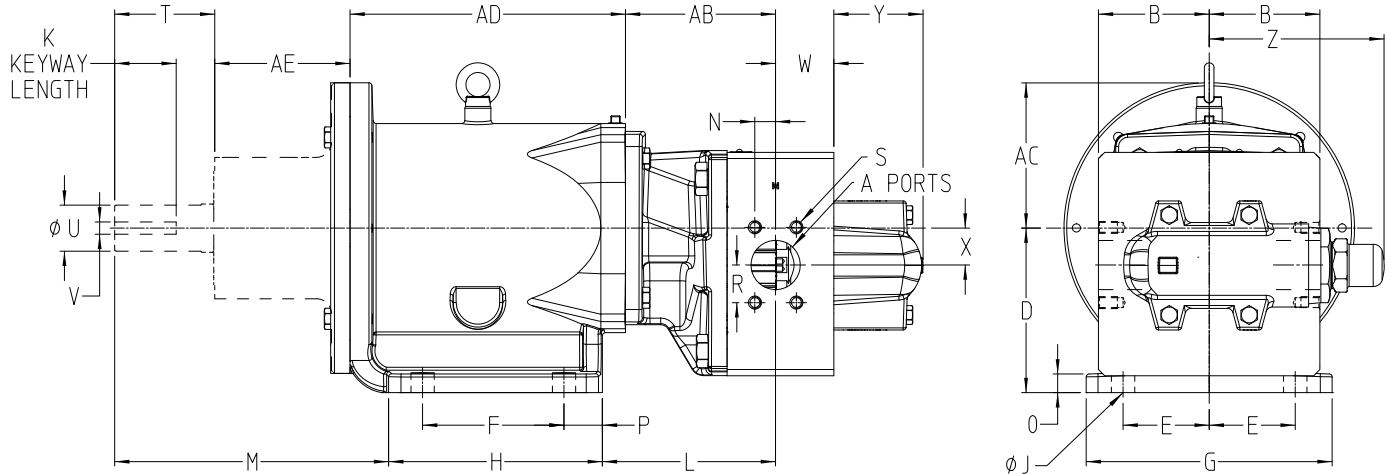
S = Suction Port
 D = Discharge Port

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DIMENSIONS – SG-810 SERIES MD2-B & SG-814 SERIES MD2-C (B DRIVE – FOOTED BRACKET)



| Pump | | AB | W ^① | W ^② | N | R | S | A (in) | X | Y | L ^③ | L ^④ | Z | B |
|----------|----|------|----------------|----------------|------|------|-------------------|--------|------|------|----------------|----------------|------|------|
| SG-81013 | in | 5.91 | 2.13 | 2.07 | 1.90 | 0.70 | M12 x 1.75 x 19.5 | 1.50 | 1.00 | 3.63 | 6.98 | 6.85 | 6.63 | 3.00 |
| | mm | 150 | 54 | 53 | 48 | 18 | | | 25 | 92 | 177 | 174 | 168 | 76 |
| SG-81026 | in | 6.13 | 2.88 | 2.82 | 1.53 | 0.84 | M12 x 1.75 x 19.5 | 2.00 | 1.00 | 3.63 | 7.20 | 7.07 | 6.63 | 3.00 |
| | mm | 156 | 73 | 72 | 39 | 21 | | | 25 | 92 | 183 | 180 | 168 | 76 |
| SG-81420 | in | 6.10 | 2.43 | 2.37 | 0.84 | 1.53 | M12 x 1.75 x 19.5 | 2.00 | 1.50 | 3.63 | — | 7.04 | 7.09 | 4.50 |
| | mm | 155 | 62 | 60 | 21 | 39 | | | 38 | 92 | — | 179 | 180 | 114 |
| SG-81436 | in | 6.80 | 2.73 | 3.27 | 1.21 | 2.09 | M16 x 2 x 28.5 | 3.00 | 1.50 | 3.63 | — | 7.74 | 7.09 | 4.50 |
| | mm | 173 | 69 | 83 | 31 | 53 | | | 38 | 92 | — | 197 | 180 | 114 |
| SG-81456 | in | 7.19 | 4.94 | 4.88 | 1.53 | 2.56 | M16 x 2 x 28.5 | 4.00 | 1.50 | 3.63 | — | 8.13 | 7.09 | 4.50 |
| | mm | 183 | 126 | 124 | 39 | 65 | | | 38 | 92 | — | 207 | 180 | 114 |

① Less Relief Valve ② With Relief Valve ③ MD2-B ④ MD2-C **NOTE:** Dimensions in inches (millimeters)

DIMENSIONS – "U" MODELS

| Coupling | | D | E | F | G | H | J | K | M | O | P | T | U | V | AC | AD | AE |
|------------------------|----|------|------|------|-------|------|------|------|-------|------|------|------|------|------|------|-------|------|
| MD2-B (SG-810) | in | 5.50 | 2.75 | 4.88 | 7.00 | 6.52 | 0.56 | 2.12 | 7.30 | 0.53 | 0.88 | 2.72 | 1.13 | 0.25 | 4.50 | 9.30 | 2.87 |
| MD2-C (SG-810, SG-814) | in | 6.69 | 3.75 | 5.75 | 10.00 | 8.69 | 0.95 | 2.50 | 11.14 | 0.76 | 1.56 | 4.07 | 1.88 | 0.50 | 5.91 | 11.20 | 5.50 |

DIMENSIONS – "M" MODELS

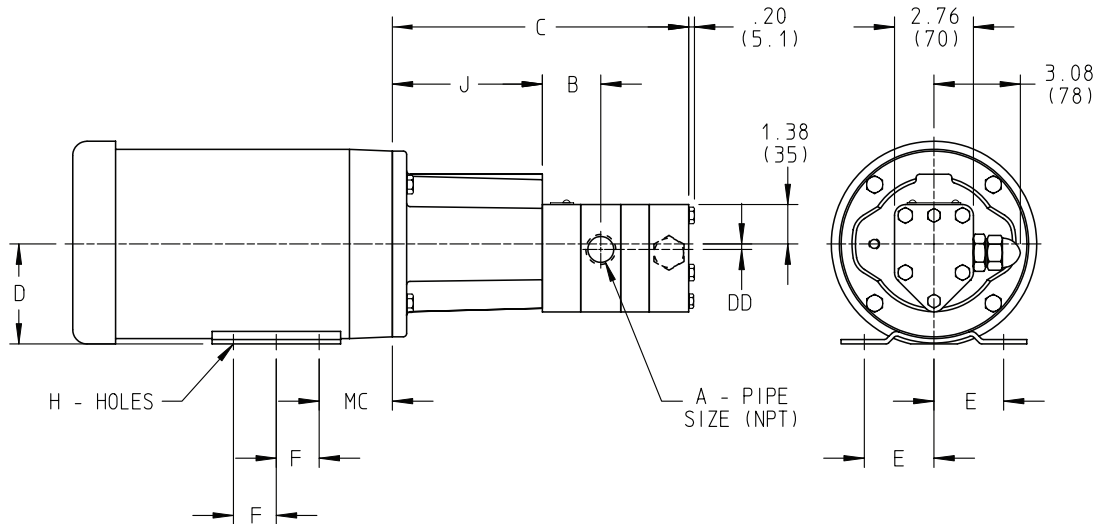
| Coupling | | D | E | F | G | H | J | K | M | O | P | T | U | V | AC | AD | AE |
|----------------|----|-----|----|-----|-----|-----|----|----|-----|----|----|-----|----|----|-----|-----|-----|
| MD2-B (SG-810) | mm | 145 | 70 | 89 | 178 | 130 | 15 | 46 | 192 | 14 | 22 | 56 | 28 | 8 | 125 | 216 | 78 |
| MD2-C (SG-814) | mm | 170 | 95 | 146 | 254 | 221 | 24 | 63 | 283 | 19 | 36 | 103 | 48 | 14 | 150 | 285 | 140 |

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**DIMENSIONS – SG-805 & SGN-805 SERIES – MD-A NEMA C
 (M DRIVE – FOOTLESS BRACKET)**



NOTE: Dimensions in inches (millimeters)
NOTE: Footless bracket requires footed motor.

| Model Number | A (in) | WITH R/V | | LESS R/V | | DD | |
|-------------------------------|--------|----------|------------|--------------|------------|--------------|-----------|
| | | B | C | B | C | | |
| SG-80518MD-A SGN-80518MD-A | ½ | in mm | 2.02 51 | 9.15 232 | 2.21 56 | 8.15 207 | 0.31 8 |
| SG-80525MD-A SGN-80525MD-A | ½ | in mm | 2.09 53 | 9.22 234 | 2.28 58 | 8.22 209 | 0.31 8 |
| SG-80535MD-A SGN-80535MD-A | ½ | in mm | 2.19 56 | 9.32 237 | 2.38 60 | 8.32 211 | 0.31 8 |
| SG-80550MD-A SGN-80550MD-A | ½ | in mm | 2.34 59 | 9.47 241 | 2.53 64 | 8.47 215 | 0.31 8 |
| SG-80570MD-A SGN-80570MD-A | ½ | in mm | 2.54 65 | 9.67 246 | 2.73 69 | 8.67 220 | 0.31 8 |
| SG-80510MD-A SGN-80510MD-A | ½ | in mm | 1.84 47 | 9.97 253 | 1.84 47 | 8.97 228 | 0.31 8 |
| SG-80514MD-A SGN-80514MD-A | ¾ | in mm | 2.04 52 | 10.37 263 | 2.04 52 | 9.37 238 | 0.19 5 |
| SG-80519MD-A SGN-80519MD-A | ¾ | in mm | 2.29 58 | 10.87 276 | 2.29 58 | 9.87 251 | 0.19 5 |
| SG-80528MD-A SGN-80528MD-A | ¾ | in mm | 2.04 52 | 11.77 299 | 2.04 52 | 10.77 274 | 0.19 5 |

| Motor Frame Size | D | E | F | H | J (in) | MC |
|------------------|------|------|------|--------------|--------|------|
| 56C | 3.50 | 2.44 | 1.50 | 0.34 SLOT | 5.25 | 2.56 |
| | 89 | 62 | 38 | 9 | | 65 |
| 143TC | 3.50 | 2.75 | 2.00 | 0.34 | 5.25 | 2.88 |
| | 89 | 70 | 51 | 9 | | 73 |
| 145TC | 3.50 | 2.75 | 2.50 | 0.34 | 5.25 | 2.88 |
| | 89 | 70 | 64 | 9 | | 73 |
| 182TC | 4.50 | 3.75 | 2.25 | 0.41 | 5.69 | 3.62 |
| | 114 | 95 | 57 | 10 | | 92 |
| 184TC | 4.50 | 3.75 | 2.75 | 0.41 | 5.69 | 3.62 |
| | 114 | 95 | 70 | 10 | | 92 |
| 213TC* | 5.25 | 4.25 | 2.75 | 0.41 | 5.69 | 4.50 |
| | 133 | 108 | 70 | 10 | | 114 |

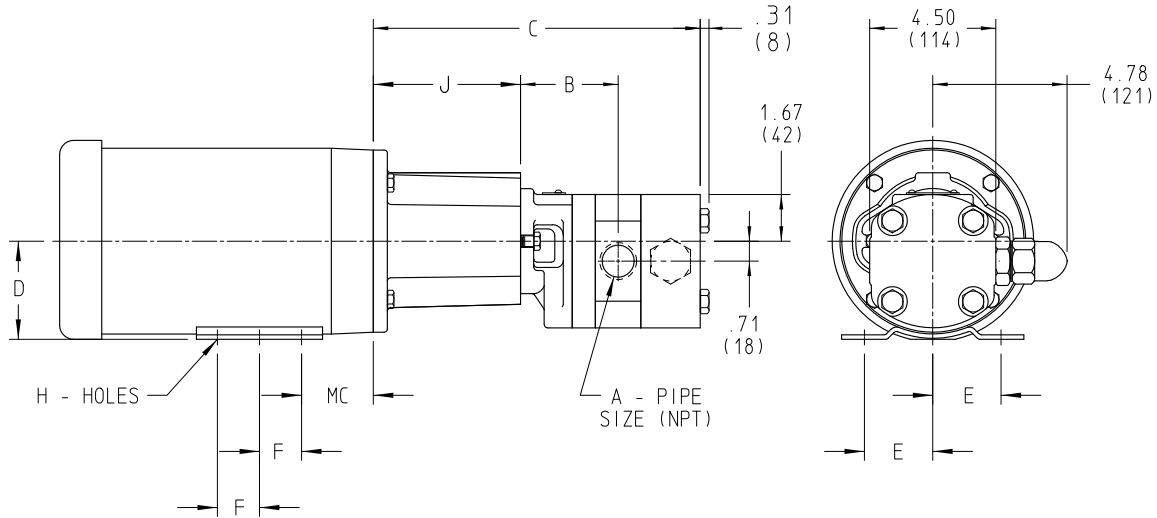
* Motor shaft must be modified to resemble 182TC-184TC shaft length, diameter and key.

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

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SPUR GEAR PRODUCT LINE:
CAST & DUCTILE IRON SEALLESS MAG DRIVE PUMPS
SERIES SG-805, SGN-805, SG-807, SGN-807, SG-810, SG-814

**DIMENSIONS – SG-807 & SGN-807 SERIES – MD-A NEMA C
(M DRIVE – FOOTLESS BRACKET)**



NOTE: Dimensions in inches (millimeters)

NOTE: Footless bracket requires footed motor.

| Model Number | A (in) | WITH R/V | | LESS R/V | |
|-------------------------------|--------------|------------|-------|----------|-------|
| | | B | C | B | C |
| SG-80741MD-A SGN-80741MD-A | 1 | in 3.07 | 11.25 | 3.26 | 9.63 |
| | | mm 78 | 286 | 83 | 245 |
| SG-80758MD-A SGN-80758MD-A | 1 | in 3.24 | 11.42 | 3.43 | 9.80 |
| | | mm 82 | 290 | 87 | 249 |
| SG-80782MD-A SGN-80782MD-A | 1 | in 3.48 | 11.66 | 3.67 | 10.04 |
| | | mm 88 | 296 | 93 | 255 |
| SG-80711MD-A SGN-80711MD-A | 1 | in 3.81 | 11.99 | 4.00 | 10.37 |
| | | mm 97 | 305 | 102 | 263 |
| SG-80716MD-A SGN-80716MD-A | 1 | in 4.31 | 12.49 | 4.50 | 10.87 |
| | | mm 109 | 317 | 114 | 276 |
| SG-80722MD-A SGN-80722MD-A | 1½ S 1¼ D | in 4.25 | 15.64 | 4.25 | 15.02 |
| | | mm 108 | 397 | 108 | 356 |
| SG-80732MD-A SGN-80732MD-A | 1½ S 1¼ D | in 4.75 | 16.64 | 4.75 | 15.02 |
| | | mm 121 | 423 | 121 | 382 |

| Motor Frame Size | D | E | F | H | J (in) | MC |
|------------------|------|------|------|--------------|--------|------|
| 56C | 3.50 | 2.44 | 1.50 | 0.34 SLOT | 5.25 | 2.56 |
| | 89 | 62 | 38 | 9 | | 65 |
| 143TC | 3.50 | 2.75 | 2.00 | 0.34 | 5.25 | 2.88 |
| | 89 | 70 | 51 | 9 | | 73 |
| 145TC | 3.50 | 2.75 | 2.50 | 0.34 | 5.25 | 2.88 |
| | 89 | 70 | 64 | 9 | | 73 |
| 182TC | 4.50 | 3.75 | 2.25 | 0.41 | 5.69 | 3.62 |
| | 114 | 95 | 57 | 10 | | 92 |
| 184TC | 4.50 | 3.75 | 2.75 | 0.41 | 5.69 | 3.62 |
| | 114 | 85 | 70 | 10 | | 92 |
| 213TC* | 5.25 | 4.25 | 2.75 | 0.41 | 5.69 | 4.50 |
| | 133 | 108 | 70 | 10 | | 114 |

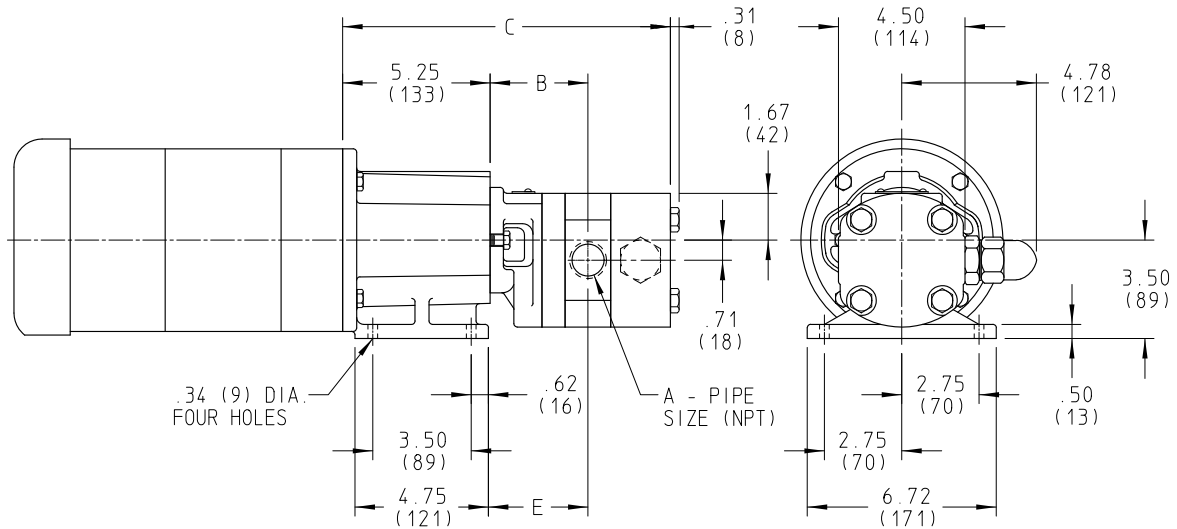
* Motor shaft must be modified to resemble 182TC-184TC shaft length, diameter and key.

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

SPUR GEAR PRODUCT LINE:
CAST & DUCTILE IRON SEALLESS MAG DRIVE PUMPS
 SERIES SG-805, SGN-805, SG-807, SGN-807, SG-810, SG-814

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**DIMENSIONS – SG-807 & SGN-807 SERIES – MD-A NEMA C
 (M DRIVE – FOOTED BRACKET)**



NOTE: Dimensions in inches (millimeters)

NOTE: Footed bracket requires footless motor.

| Model Number | A (in) | | WITH R/V | | | LESS R/V | | | Motor Frame |
|-------------------------------|--------------|----|----------|-------|------|----------|-------|------|-----------------------|
| | | | B | C | E | B | C | E | |
| SG-80741MD-A SGN-80741MD-A | 1 | in | 3.07 | 11.25 | 3.13 | 3.26 | 9.63 | 3.32 | 56C 143TC 145TC |
| | | mm | 78 | 286 | 80 | 83 | 245 | 84 | |
| SG-80758MD-A SGN-80758MD-A | 1 | in | 3.24 | 11.42 | 3.30 | 3.43 | 9.80 | 3.49 | |
| | | mm | 82 | 290 | 84 | 87 | 249 | 89 | |
| SG-80782MD-A SGN-80782MD-A | 1 | in | 3.48 | 11.66 | 3.54 | 3.67 | 10.04 | 3.73 | |
| | | mm | 88 | 269 | 90 | 93 | 255 | 95 | |
| SG-80711MD-A SGN-80711MD-A | 1 | in | 3.81 | 11.99 | 3.87 | 4.00 | 10.37 | 4.06 | |
| | | mm | 97 | 305 | 98 | 102 | 263 | 103 | |
| SG-80716MD-A SGN-80716MD-A | 1 | in | 4.31 | 12.49 | 4.37 | 4.50 | 10.87 | 4.56 | |
| | | mm | 109 | 317 | 111 | 114 | 276 | 116 | |
| SG-80722MD-A SGN-80722MD-A | 1½ S 1¼ D | in | 4.25 | 15.64 | 4.31 | 4.25 | 14.02 | 4.31 | |
| | | mm | 108 | 397 | 109 | 108 | 356 | 109 | |
| SG-80732MD-A SGN-80732MD-A | 1½ S 1¼ D | in | 4.75 | 16.64 | 4.81 | 4.75 | 15.02 | 4.81 | |
| | | mm | 121 | 423 | 122 | 121 | 382 | 122 | |

S = Suction Port

D = Discharge Port

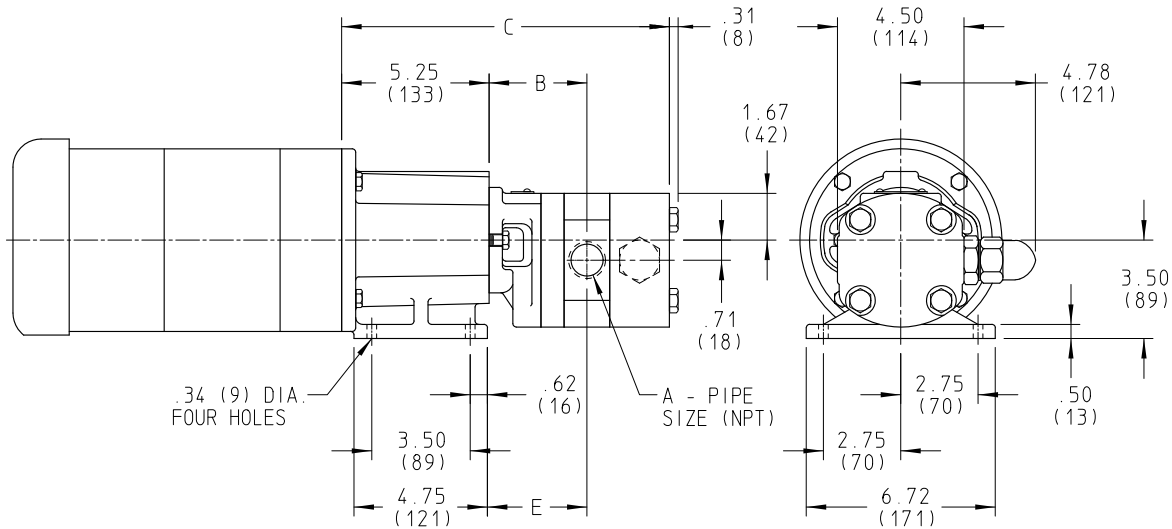
Footed bracket is only available for up to NEMA 145TC frame motors (4.5" rabbet) -
 180TC and 210TC motor frames with 8.5" rabbet are only available with footless bracket.

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

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SPUR GEAR PRODUCT LINE:
CAST & DUCTILE IRON SEALLESS MAG DRIVE PUMPS
SERIES SG-805, SGN-805, SG-807, SGN-807, SG-810, SG-814

**DIMENSIONS – SG-807 & SGN-807 SERIES – MD-B NEMA C
(M DRIVE – FOOTED BRACKET)**



NOTE: Dimensions in inches (millimeters)

NOTE: Footed bracket requires footless motor.

| Model Number | A (in) | | WITH R/V | | | LESS R/V | | | DD |
|-------------------------------|--------------|----|----------|-------|------|----------|-------|------|---|
| | | | B | C | E | B | C | E | |
| SG-80741MD-B SGN-80741MD-B | 1 | in | 2.60 | 13.97 | 3.79 | 2.80 | 12.35 | 3.98 | 182TC/184TC 213TC/215TC 254TC/256TC ① |
| | | mm | 66 | 355 | 96 | 71 | 314 | 101 | |
| SG-80758MD-B SGN-80758MD-B | 1 | in | 2.77 | 14.14 | 3.96 | 2.97 | 12.52 | 4.15 | |
| | | mm | 70 | 359 | 101 | 75 | 318 | 105 | |
| SG-80782MD-B SGN-80782MD-B | 1 | in | 3.01 | 14.38 | 4.20 | 3.21 | 12.76 | 4.39 | |
| | | mm | 76 | 365 | 107 | 82 | 324 | 112 | |
| SG-80711MD-B SGN-80711MD-B | 1 | in | 3.34 | 14.17 | 4.53 | 3.54 | 13.09 | 4.72 | |
| | | mm | 85 | 374 | 115 | 90 | 332 | 120 | |
| SG-80716MD-B SGN-80716MD-B | 1 | in | 3.84 | 15.20 | 5.03 | 4.04 | 13.59 | 5.22 | |
| | | mm | 98 | 386 | 128 | 103 | 345 | 133 | |
| SG-80722MD-B SGN-80722MD-B | 1½ S 1¼ D | in | 3.78 | 18.35 | 4.97 | 3.78 | 16.73 | 4.97 | |
| | | mm | 96 | 466 | 126 | 96 | 425 | 126 | |
| SG-80732MD-B SGN-80732MD-B | 1½ S 1¼ D | in | 4.28 | 19.35 | 5.47 | 4.28 | 17.73 | 5.47 | |
| | | mm | 109 | 491 | 139 | 109 | 450 | 139 | |

S = Suction Port

D = Discharge Port

Coupling will accept NEMA motor frames 182TC-256TC.

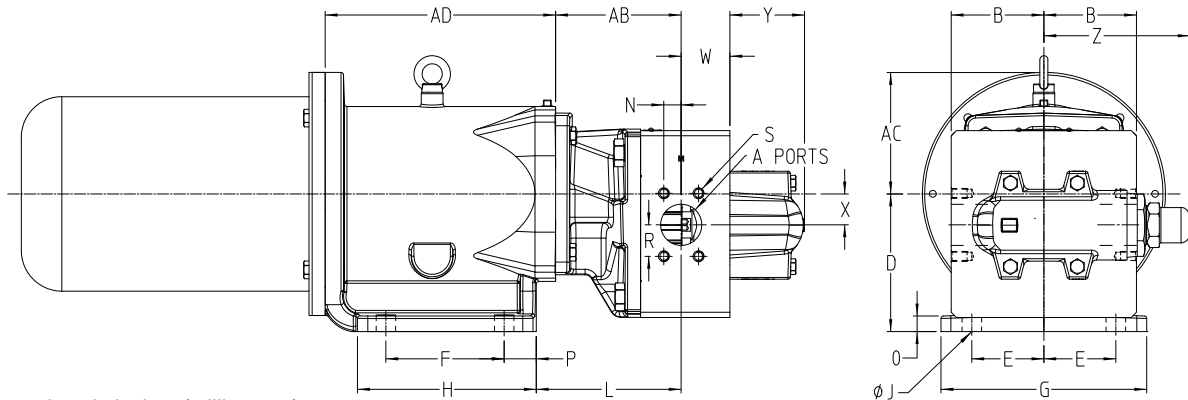
① NEMA 254TC-256TC will require shaft modification reducing shaft extension by 5/8".

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

SPUR GEAR PRODUCT LINE:
CAST & DUCTILE IRON SEALLESS MAG DRIVE PUMPS
 SERIES SG-805, SGN-805, SG-807, SGN-807, SG-810, SG-814

| | |
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DIMENSIONS – SG-810 SERIES MD2-B & SG-814 SERIES MD2-C (M DRIVE – FOOTED BRACKET)



NOTE: Dimensions in inches (millimeters)

| Pump | | AB | W | N | R | S | A (in) | X (in) | Y | L | Z | B |
|----------|----|------|------|------|------|-------------------|--------|--------|------|------|------|------|
| SG-81013 | in | 5.91 | 2.13 | 1.90 | 0.70 | M12 x 1.75 x 19.5 | 1.50 | 1.00 | 3.63 | 6.98 | 6.63 | 3.00 |
| | mm | 150 | 54 | 48 | 18 | | | | 92 | 177 | 168 | 76 |
| SG-81026 | in | 6.13 | 2.88 | 1.53 | 0.84 | M12 x 1.75 x 19.5 | 2.00 | 1.00 | 3.63 | 7.20 | 6.63 | 3.00 |
| | mm | 156 | 73 | 39 | 21 | | | | 92 | 183 | 168 | 76 |
| SG-81420 | in | 6.10 | 2.37 | 0.84 | 1.53 | M12 x 1.75 x 19.5 | 2.00 | 1.50 | 3.63 | 7.04 | 7.11 | 4.50 |
| | mm | 155 | 60 | 21 | 39 | | | | 92 | 179 | 181 | 114 |
| SG-81436 | in | 6.80 | 3.27 | 1.21 | 2.09 | M16 x 2 x 28.5 | 3.00 | 1.50 | 3.63 | 7.74 | 7.11 | 4.50 |
| | mm | 173 | 83 | 31 | 53 | | | | 92 | 197 | 181 | 114 |
| SG-81456 | in | 7.19 | 4.88 | 1.53 | 2.56 | M16 x 2 x 28.5 | 4.00 | 1.50 | 3.63 | 8.13 | 7.11 | 4.50 |
| | mm | 183 | 124 | 39 | 65 | | | | 92 | 207 | 181 | 114 |

DIMENSIONS – "U" MODELS FOR NEMA C FACE MOTORS

| Coupling | NEMA Drive | | D | E | F | G | H | J | O | P | AD |
|----------------|----------------|----|------|------|------|-------|------|------|------|------|-------|
| MD2-B (SG-810) | 182/184TC | in | 5.50 | 2.75 | 4.25 | 7.00 | 5.78 | 0.56 | 0.53 | 0.78 | 8.92 |
| | 213/215TC | in | 5.50 | 2.75 | 4.88 | 7.00 | 6.41 | 0.56 | 0.53 | 0.78 | 9.30 |
| | 254/256TC | in | 6.50 | 2.75 | 5.50 | 7.00 | 7.03 | 0.56 | 0.53 | 0.78 | 9.92 |
| MD2-C (SG-814) | 213 thru 256TC | in | 6.69 | 3.75 | 5.75 | 10.00 | 8.53 | 0.95 | 0.76 | 1.40 | 11.95 |
| | 284/286TC | in | 6.69 | 3.75 | 5.75 | 10.00 | 8.53 | 0.95 | 0.76 | 1.40 | 12.49 |

DIMENSIONS – "M" MODELS FOR IEC B5 FLANGE MOTORS

| Coupling | IEC Drive | | D | E | F | G | H | J | O | P | AD |
|----------------|-----------|----|-----|-----|-----|-----|-----|----|----|----|-----|
| MD2-B (SG-810) | 100/112 | mm | 145 | 70 | 89 | 178 | 128 | 15 | 14 | 19 | 216 |
| | 132.00 | mm | 170 | 70 | 108 | 178 | 146 | 15 | 14 | 19 | 236 |
| MD2-C (SG-814) | 132 | mm | 170 | 95 | 146 | 254 | 217 | 24 | 19 | 36 | 284 |
| | 160/180 | mm | 203 | 120 | 165 | 305 | 235 | 24 | 19 | 35 | 314 |

Requires unfooted motor.

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

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SPUR GEAR PRODUCT LINE: CAST & DUCTILE IRON SEALLESS MAG DRIVE PUMPS SERIES SG-805, SGN-805, SG-807, SGN-807, SG-810, SG-814

NPSH REQUIRED

Printed performance curves are not available.

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

NPSH_R data is not available on the curve generator.

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 Curve Generator, located on www.vikingpump.com.

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 |
| Application Temp. (°C) | 20 | 38 | 52 | 66 | 79 | 93 | 107 |
| 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 |
| Application Temp. (°C) | 79 | 93 | 149 | 204 | 260 |
| TCF | .74 | .73 | .69 | .63 | .59 |

Table 2: Temperature Correction Factors

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" (AAT) from Table 3. Viking couplings have a built-in service factor, so if you have calculated the AAT correctly, you can be comfortable with a coupling that is equal to your calculated torque.

| MAGNETIC COUPLING TORQUE RATING TABLE | | |
|---------------------------------------|-----------------|-------|
| Coupling Size | Torque (FT-LBS) | Nm |
| MD-A4 | 4 | 5.4 |
| MD-A9 | 9 | 12.2 |
| MD-B40 | 40 | 54.2 |
| MD2-B14 | 14 | 19.0 |
| MD2-B32 | 32 | 43.4 |
| MD2-B50 | 50 | 67.8 |
| MD2-C40 | 40 | 54.2 |
| MD2-C90 | 90 | 122.0 |
| MD2-C135 | 135 | 183.0 |
| MD2-C180 | 180 | 244.0 |

Table 3

EXAMPLE

1. An application calls for pumping 1 GPM of 100 SSU (22 cSt) liquid at 400 PSI (27 Bar), at 100°F (38C), with a 1750 RPM motor. From the pump selector, an SG-80525 is selected, providing .95 GPM (3.6 LPM) at 1750 RPM, with .35 BHP (.26 kW).

2. Calculate torque (T).

$$\begin{aligned} \text{TORQUE (T)} &= \frac{.35}{1750} \times 5252 \\ &= 1.05 \text{ FT-LB} \end{aligned}$$

3. From the temperature correction factor table, the correction factor (TCF) = .94.

4. Calculate adjusted application torque.

$$\begin{aligned} \text{ADJUSTED APPLICATION TORQUE} &= \frac{1.05}{.94} \\ &= 1.12 \text{ FT-LB} \end{aligned}$$

5. Select coupling.

THE NEODYMIUM MD-A4 (4 FT-LB RATING > 1.12 FT-LB AAT) COUPLING IS THE PROPER SELECTION