

MOTOR SPEED PRODUCT LINE: CAST IRON PUMPS

SERIES 495, 4195

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SERIES DESCRIPTION

Viking's Motor Speed Product Line internal gear pumps represent a technological advance in the science of flow. Through new techniques of feeding the rotor and idler, Viking has achieved what was once considered impossible – high flow rates operating at motor speeds. The largest size (QS) operates at reduced speeds, but still faster than other pumps of similar displacement. Higher speeds mean greater value, with the ability to move more fluid with a smaller pump. It also enables close-coupling to a motor or gearmotor, which eliminates shaft misalignment and results in longer seal and bearing life by preventing wear due to misalignment.

RELATED PRODUCTS

Steel Externals, 493/4193 Series: Catalog Section 1341

Stainless Steel, 4197 Series: Catalog Section 1741



OPERATING RANGE

| SERIES | NOMINAL FLOW | | MAXIMUM PRESSURE | | TEMPERATURE RANGE | | VISCOSITY RANGE | |
|--------|--------------|------------------|------------------|-----|-------------------|-------------|-----------------|----------|
| | GPM | m ³ h | PSI | Bar | °F | °C | SSU | cSt |
| 495 | 8 - 115 | 1.8 - 26 | 250 | 17 | -40 to +300 | -40 to +150 | to 25,000 | to 5,500 |
| 4195 | 8 - 580 | 1.8 - 132 | 250 | 17 | -40 to +300 | -40 to +150 | to 25,000 | to 5,500 |

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FEATURES & BENEFITS

- Direct drive with no gear reducer (with 60 Hz 4 pole motor to 205 GPM / 47 m³/h, 6 pole motor to 350 GPM / 80 m³/h, 8 pole motor to 460 GPM / 104 m³/h)
 - » Reduces cost of installation
 - » Eliminates one shaft alignment
 - » Eliminates one set of couplings and coupling guard
 - » Reduces footprint
 - » Eliminates gearbox lubrication and maintenance
- Close-couple to C-face motor or gearmotor at flows to 350 GPM / 80 m³/h
 - » Eliminates all shaft misalignment and coupling guards
 - » Keeps shafts aligned for longer seal and bearing life
 - » Simplifies mounting on skid frame without extra baseplate
 - » Enables vertical mounting for smallest footprint (up to 350 GPM / 80 m³/h)
- Heavy duty design with sealed-for-life bearings
 - » No relubrication required
 - » Thrust control enables pressures to 250 PSI / 17 BAR (G-AL sizes) or 150 PSI / 10 BAR (KE-QS sizes)
 - » Enables end clearance adjustment for viscosity or to compensate for wear over time
- Gauge ports standard on all sizes.
 - » Allows easy application of gauges or transducers
- Behind-the-rotor mechanical seals with FKM elastomers and Carbon/SiC faces as standard
 - » Eliminates bracket bushing, enables use of antifriction bearing external to liquid
 - » Heavy duty seal provides broad application, long life
 - » Casing weep hole between seal and forward bearing enables detection of seal leakage, prevents intrusion into sealed bearing
- KE-QS sizes are available with ANSI or DIN flanges. No piping adaptors required to conform to local standards
- Opposite porting enables easy in-line mounting to almost any piping system
- Pressure lubricated idler pin lubricates the idler pin/bushing interface to extend life on thin liquids (AS-QS Sizes)
- Static O-ring seals ensure maximum sealing capability on thin liquids (flat gaskets furnished on relief valve only on G-HL sizes)
- Hardened steel idler on KE-QS sizes provides maximum service life and helps protect against cavitation wear on low NPSHa applications

STANDARD MATERIALS OF CONSTRUCTION

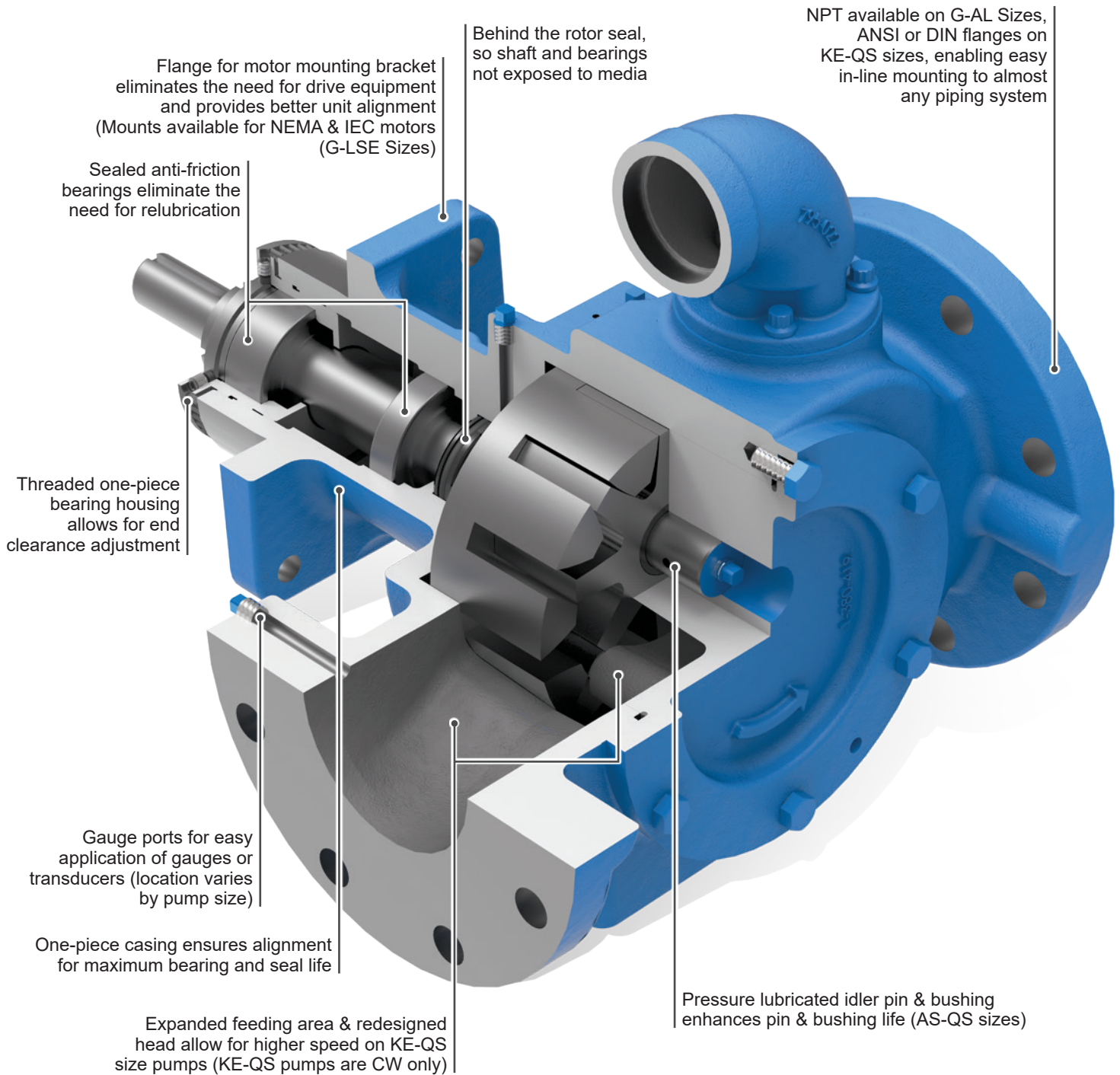
| Component | Standard Material |
|-----------------------|---|
| Bracket / Casing | Cast Iron, ASTM A48, Class 35B |
| Head | Cast Iron, ASTM A48, Class 35B |
| Rotor Shaft | Steel, ASTM A108, Grade 1045 |
| Rotor | Cast Iron, ASTM A48, Class 35B (G, GG, H, HJ, KE, LQE, Q) Ductile Iron, ASTM A536 Grade 60-40-18 (HL, AS, AK, AL, KKE, LSE, QS) |
| Idler | Powdered Metal MPIF 35, FN-0208-45 (G, GG) Powdered Metal MPIF 35, FC-0208-50 (H, HJ, HL) Ductile Iron, ASTM A536 Grade 60-40-18 (AS, AK, AL) Hardened Steel, ASTM A148, Grade 80-50 (KE, KKE, LQE, Q, QS) Hardened Steel, ASTM A148, Grade 80-40 (LSE) |
| Idler Pin | Hardened Steel, ASTM A108, Grade 1045 |
| Idler Bushing | Carbon Graphite |
| Pressure Relief Valve | Cast Iron, ASTM A48, Class 35B |
| Mechanical Seal Faces | Carbon vs. Ni-Resist (G-AL), Carbon vs. Silicon Carbide (KE-QS) |
| Elastomers | FKM |
| Antifriction Bearings | Steel with Buna Seals |

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CUTAWAY VIEW & PUMP FEATURES

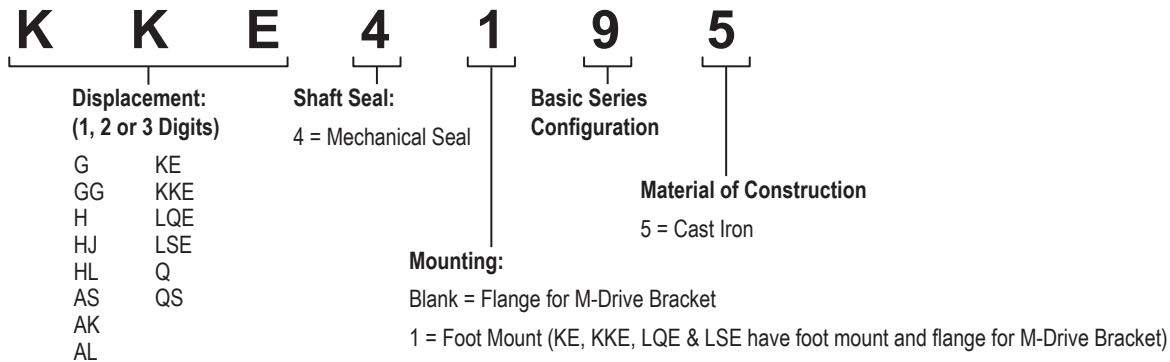


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MOTOR SPEED PRODUCT LINE: CAST IRON PUMPS

SERIES 495, 4195

MODEL NUMBER KEY



SPECIFICATIONS

| Model Number | ① Standard Ports | | Nominal Pump Rating (100 SSU & below) | | | | | | ③ Maximum Differential Pressure | | ⑤ Maximum Hydrostatic Pressure | | Maximum Viscosity | | Maximum Temp. | | Approx. Shipping Weight with Valve | |
|-------------------|------------------|-----------|---------------------------------------|-------------------|------|-------|-------------------|------|---------------------------------|-----|--------------------------------|-----|-------------------|------------|---------------|-----|------------------------------------|-----|
| | Port Size | Port Type | 60 Hz | | | 50 Hz | | | PSIG | BAR | PSIG | BAR | SSU | cSt | °F | °C | Lbs. | Kg. |
| | | | GPM | m ³ /h | RPM | GPM | m ³ /h | RPM | | | | | | | | | | |
| G4195 ② G495 | 1 in. | NPT | 8 | 1.8 | 1750 | 7 | 1.5 | 1450 | 250 | 17 | 400 | 27 | ⑥ 7,500 | ⑥ 1,700 | 300 | 150 | 20 | 9 |
| GG4195 ② GG495 | 1 in. | NPT | 10 | 2.3 | 1750 | 8 | 1.9 | 1450 | 250 | 17 | 400 | 27 | ⑥ 7,500 | ⑥ 1,700 | 300 | 150 | 20 | 9 |
| H4195 ② H495 | 1½ in. | NPT | 15 | 3.4 | 1750 | 12 | 2.8 | 1450 | 250 | 17 | 400 | 27 | 15,000 | 3,300 | 300 | 150 | 44 | 20 |
| HJ4195 ② HJ495 | 1½ in. | NPT | 20 | 4.5 | 1750 | 17 | 3.8 | 1450 | 250 | 17 | 400 | 27 | ⑥ 7,500 | ⑥ 1,700 | 300 | 150 | 44 | 20 |
| HL4195 ② HL495 | 1½ in. | NPT | 30 | 6.8 | 1750 | 25 | 5.6 | 1450 | 250 | 17 | 400 | 27 | 15,000 | 3,300 | 300 | 150 | 44 | 20 |
| AS4195 ② AS495 | 2½ in. | NPT | 55 | 12 | 1750 | 45 | 10 | 1450 | 250 | 17 | 400 | 27 | 15,000 | 3,300 | 300 | 150 | 85 | 39 |
| AK4195 ② AK495 | 2½ in. | NPT | 85 | 19 | 1750 | 70 | 16 | 1450 | 250 | 17 | 400 | 27 | 15,000 | 3,300 | 300 | 150 | 85 | 39 |
| AL4195 ② AL495 | 3 in. | NPT | 115 | 26 | 1750 | 95 | 22 | 1450 | 250 | 17 | 400 | 27 | 15,000 | 3,300 | 300 | 150 | 86 | 39 |
| ④ KE4195 | 4 in. (100 mm) | ① Flange | 150 | 34 | 1750 | 125 | 28 | 1450 | 150 | 10 | 300 | 20 | 25,000 | 5,500 | 300 | 150 | 132 | 60 |
| ④ KKE4195 | 4 in. (100 mm) | ① Flange | 205 | 47 | 1750 | 170 | 39 | 1450 | 150 | 10 | 300 | 20 | 25,000 | 5,500 | 300 | 150 | 133 | 60 |
| ④ LQE4195 | 4 in. (100 mm) | ① Flange | 235 | 53 | 1150 | 195 | 44 | 960 | 150 | 10 | 300 | 20 | 25,000 | 5,500 | 300 | 150 | 220 | 100 |
| ④ LSE4195 | 4 in. (100 mm) | ① Flange | 350 | 80 | 1150 | 290 | 67 | 960 | 150 | 10 | 300 | 20 | 25,000 | 5,500 | 300 | 150 | 222 | 101 |
| ④ Q4195 | 6 in. (150 mm) | ① Flange | 460 | 104 | 750 | 460 | 104 | 750 | 150 | 10 | 300 | 20 | 7,500 | 1,700 | 300 | 150 | 443 | 201 |
| ④ QS4195 | 6 in. (150 mm) | ① Flange | 580 | 132 | 640 | 580 | 132 | 640 | 150 | 10 | 300 | 20 | 25,000 | 5,500 | 300 | 150 | 450 | 204 |

① Flange ports are suitable for use with Class 125 ANSI (inch) or DIN PN-16 (mm) cast iron companion flanges or flanged fittings. Optional Class 250 or DIN PN-25/40.

② 495 models require motor mount bracket, do not have mounting foot. KE, KKE, LQE, LSE 4195 models have both mounting flange for motor bracket and a mounting foot.

③ If suction pressures exceed 100 PSI (7 BAR), consult factory.

④ These sizes can only operate in one direction (clockwise only).

⑤ Maximum hydrostatic pressure for standard pump construction. Rating is dependent on seal, gaskets and ports.

⑥ Steel fitted construction recommended above this viscosity. Maximum viscosity when steel fitted is 15,000 SSU (3,300 cSt). When required "HJ" will have ductile iron rotor.

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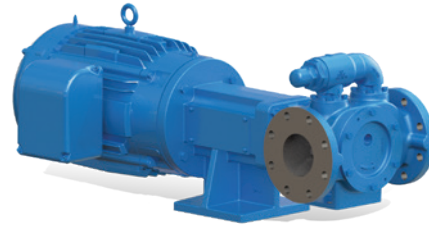
MOUNTING OPTIONS

Flange Motor Mount Units (M-Drive)

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

Sizes: G - AL495 & KE-LSE4195

See chart below for pump sizes and flange mounting brackets available by motor frame.



| ① Pump Model Number - Mounting Flange for Motor Bracket | M-Drive Brackets Available | | | |
|--|------------------------------------|---------|------------------|---------|
| | NEMA Motor | Footed? | IEC B-14 Motor | Footed? |
| G495 | 56C, 143/5TC, 182/4TC | No ③ | 80, 90 | No ③ |
| GG495 | 56C, 143/5TC, 182/4TC | No ③ | 80, 90 | No |
| H495 | 56C, 143/5TC, 182/4TC, 213/5TC | No ③ | 90, 100/112, 132 | Yes |
| HJ495 | 56C, 143/5TC, 182/4TC, 213/5TC | No ③ | 90, 100/112, 132 | Yes |
| HL495 | 56C, 143/5TC, 182/4TC, 213/5TC | No ③ | 90, 100/112, 132 | Yes |
| AS495 | 182/4TC, 213/5TC, 254/6TC, 284/6TC | Yes | 132, 160 | Yes |
| AK495 | 182/4TC, 213/5TC, 254/6TC, 284/6TC | Yes | 132, 160 | Yes |
| AL495 | 182/4TC, 213/5TC, 254/6TC, 284/6TC | Yes | 132, 160 | Yes |
| ① KE4195 | 213/5TC, 254/6TC, 284/6TC | Yes | 132, 160 | Yes |
| ① KKE4195 | 213/5TC, 254/6TC, 284/6TC | Yes | 132, 160 | Yes |
| ① LQE4195 | 324/6TC | Yes | 160/180 ② | Yes |
| ① LSE4195 | 324/6TC | Yes | 160/180 ② | Yes |

① 495 models require a motor mount bracket, they do not have a mounting foot.
KE, KKE, LQE, LSE 4195 models have both mounting flange for motor bracket and a mounting foot.

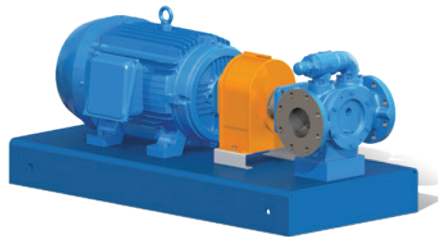
② Only available as B5.

③ Requires footed motor.

Direct Drive (D-Drive)

Pump and motor mounted on a base with coupling and coupling guard.

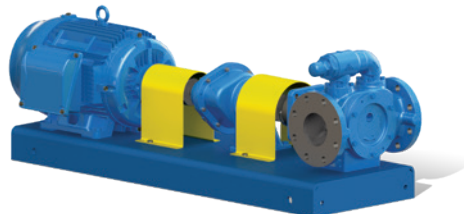
Sizes: G - LSE4195



Reducer Drive (R-Drive)

Pump, Viking C-reducer and motor mounted on a base with couplings and coupling guards.

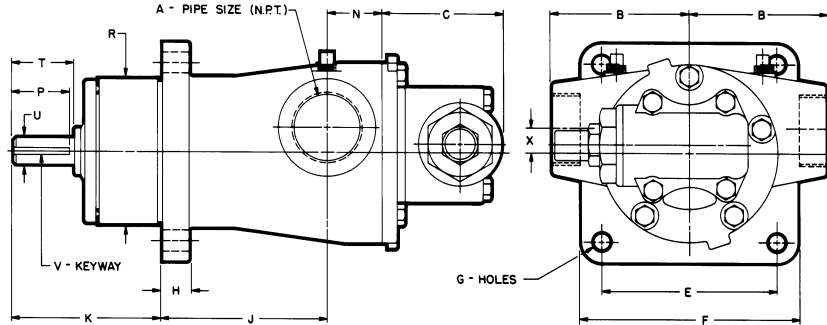
Sizes: Q & QS4195



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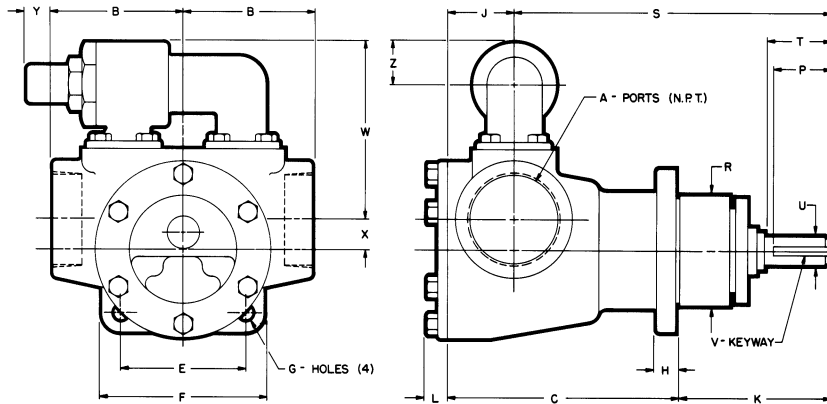
**MOTOR SPEED PRODUCT LINE:
CAST IRON PUMPS
SERIES 495, 4195**

DIMENSIONS – G, GG, H, HJ, HL SIZES (495)



| Model Number | A (in) | | B | C | E | F | G | H | J | K | N | P | R | T | U (in) | V (in) | X |
|------------------------|--------|----|------|------|------|------|------|------|------|------|------|------|------|------|--------|-----------|------|
| G495 GG495 | 1 | in | 2.75 | 2.66 | 3.00 | 4.00 | 0.41 | 0.50 | 3.44 | 2.81 | 1.12 | 0.94 | 2.88 | 1.12 | 0.50 | FLAT | 0.62 |
| | | mm | 70 | 67 | 76 | 102 | 10 | 13 | 87 | 71 | 29 | 24 | 73 | 29 | | | 16 |
| H495 HJ495 HL495 | 1½ | in | 3.75 | 3.28 | 4.75 | 5.88 | 0.56 | 0.75 | 4.50 | 4.00 | 1.50 | 1.50 | 3.88 | 1.62 | 0.75 | .19 x .09 | 0.62 |
| | | mm | 95 | 83 | 121 | 149 | 14 | 19 | 114 | 102 | 38 | 38 | 98 | 41 | | | 16 |

DIMENSIONS – AS, AK, AL SIZES (495)



| Model Number | A (in) | | B | C | E | F | G | H | J | K | L | P | R | S | T | U (in) | V (in) | W | X | Y | Z |
|----------------|--------|----|------|------|------|------|------|------|------|------|------|------|------|-------|------|--------|-----------|------|------|------|------|
| AS495 AK495 | 2½ | in | 5.00 | 8.38 | 4.75 | 6.25 | 0.56 | 0.75 | 2.00 | 5.75 | 0.75 | 2.25 | 4.25 | 12.12 | 2.50 | 1.00 | .25 x .12 | 7.00 | 1.12 | 1.00 | 1.72 |
| | | mm | 127 | 213 | 121 | 159 | 14 | 19 | 51 | 146 | 22 | 57 | 108 | 308 | 64 | | | 178 | 29 | 25 | 40 |
| AL495 | 3 | in | 5.00 | 8.88 | 4.75 | 6.25 | 0.56 | 0.75 | 2.50 | 5.75 | 0.75 | 2.25 | 4.25 | 12.12 | 2.50 | 1.00 | .25 x .12 | 7.00 | 1.12 | 1.00 | 1.72 |
| | | mm | 127 | 225 | 121 | 159 | 14 | 19 | 64 | 146 | 22 | 57 | 108 | 308 | 64 | | | 178 | 29 | 25 | 40 |

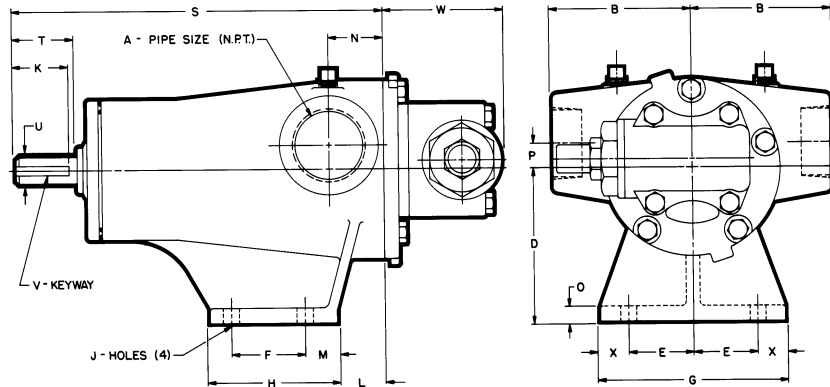
These dimensions are average and not for construction purposes. Certified prints on request.

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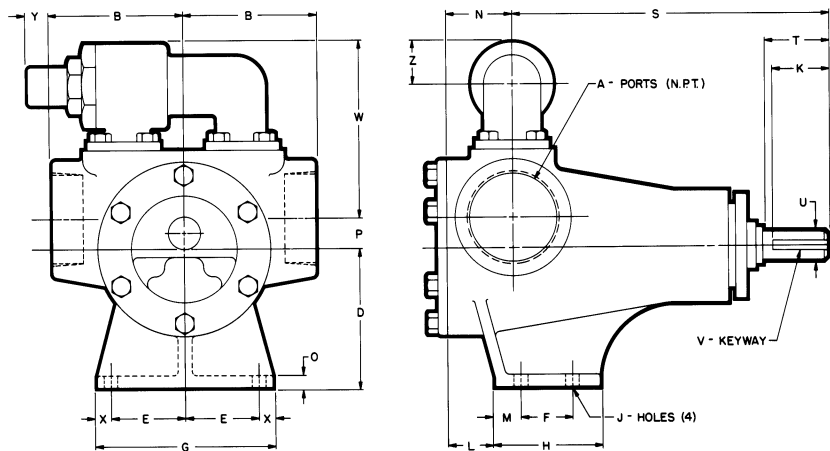
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DIMENSIONS – G, GG, H, HJ, HL SIZES (4195)



| Model Number | A (in) | | B | D | E | F | G | H | J | K | L | M | N | O | P | S | T | U (in) | V (in) | W | X |
|------------------------|--------|----|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|--------|-----------|------|------|
| G495 GG495 | 1 | in | 2.75 | 2.75 | 1.62 | 1.31 | 4.00 | 2.44 | 0.34 | 0.94 | 0.03 | 0.66 | 1.12 | 0.31 | 0.62 | 7.31 | 1.12 | 0.50 | FLAT | 2.66 | 0.38 |
| | | mm | 70 | 70 | 41 | 33 | 102 | 62 | 9 | 24 | 1 | 17 | 29 | 8 | 16 | 186 | 29 | | | 67 | 10 |
| H495 HJ495 HL495 | 1½ | in | 3.75 | 4.12 | 1.75 | 2.00 | 5.00 | 3.50 | 0.41 | 1.50 | 1.25 | 0.88 | 1.50 | 0.44 | 0.62 | 10.00 | 1.62 | 0.75 | .19 x .09 | 3.28 | 0.75 |
| | | mm | 95 | 105 | 44 | 51 | 127 | 89 | 10 | 38 | 32 | 22 | 38 | 11 | 16 | 254 | 41 | | | 83 | 19 |

DIMENSIONS – AS, AK, AL SIZES (4195)



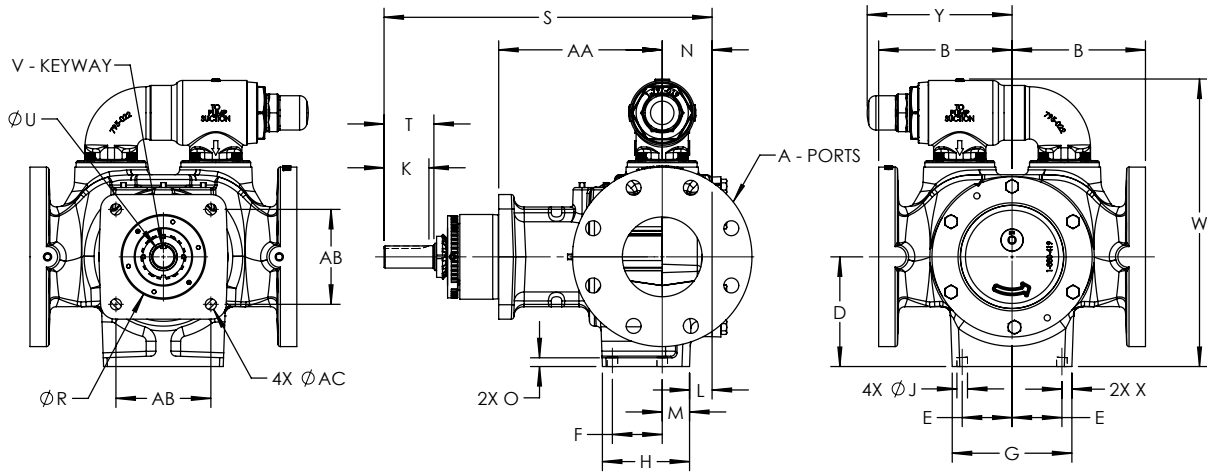
| Model Number | A (in) | | B | D | E | F | G | H | J | K | L | M | N | O | P | S | T | U (in) | V (in) | W | X | Y | Z |
|------------------|--------|----|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|--------|-----------|------|------|------|------|
| AS4195 AK4195 | 2½ | in | 5.00 | 5.25 | 2.88 | 2.00 | 6.75 | 4.00 | 0.41 | 2.25 | 1.25 | 1.00 | 2.00 | 0.44 | 1.12 | 12.12 | 2.50 | 1.00 | .25 x .12 | 7.00 | 0.50 | 1.00 | 1.72 |
| | | mm | 127 | 133 | 73 | 51 | 171 | 102 | 10 | 57 | 32 | 25 | 51 | 11 | 29 | 308 | 60 | | | 178 | 13 | 25 | 40 |
| AL4195 | 3 | in | 5.00 | 5.25 | 2.88 | 2.00 | 6.75 | 4.00 | 0.41 | 2.25 | 1.75 | 1.00 | 2.50 | 0.44 | 1.12 | 12.12 | 2.50 | 1.00 | .25 x .12 | 7.00 | 0.50 | 1.00 | 1.72 |
| | | mm | 127 | 133 | 73 | 51 | 171 | 102 | 10 | 57 | 44 | 25 | 64 | 11 | 29 | 308 | 60 | | | 178 | 13 | 25 | 40 |

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

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**MOTOR SPEED PRODUCT LINE:
CAST IRON PUMPS
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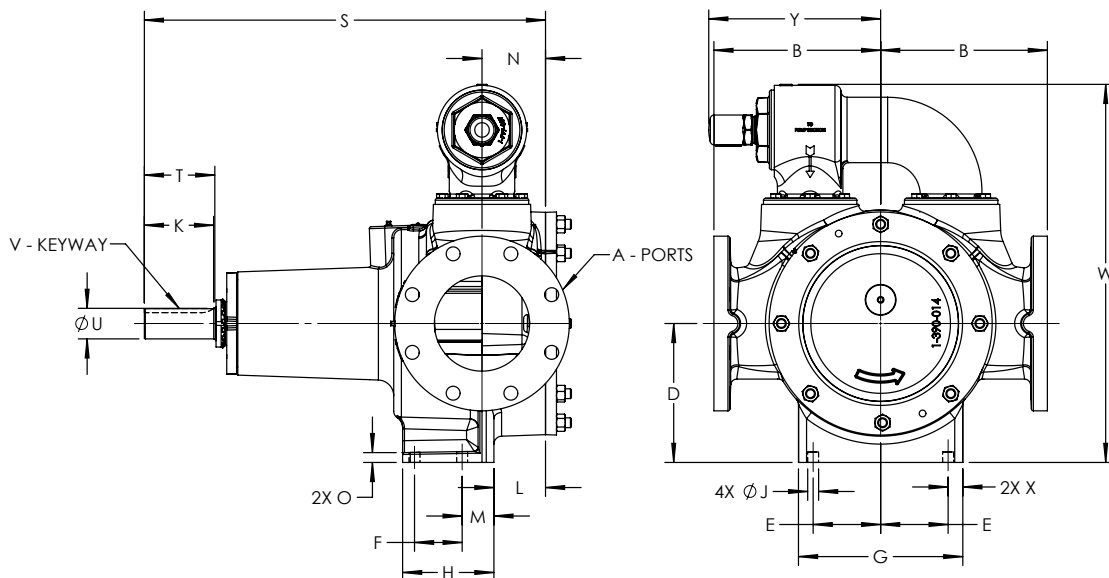
DIMENSIONS – KE, KKE, LQE, LSE SIZES (4195)



| Model Number | | A* | B | D | E | F | G | H | J | K | L | M | N | O | R | S | T | U (in) | V (in) | W | X | Y | AA | AB | AC |
|--------------|----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|--------|-----------|-------|------|------|------|------|------|
| KE4195 | in | 4 | 6.69 | 5.50 | 2.50 | 2.50 | 6.00 | 4.37 | 0.53 | 2.25 | 1.13 | 1.37 | 2.50 | 0.44 | 4.25 | 16.45 | 2.50 | 1.13 | .25 X .12 | 14.42 | 0.50 | 7.26 | 8.20 | 4.76 | 0.56 |
| KKE4195 | mm | 100 | 170 | 140 | 64 | 64 | 152 | 111 | 14 | 57 | 29 | 35 | 64 | 11 | 108 | 418 | 64 | | | 366 | 13 | 184 | 208 | 121 | 14 |
| LQE4195 | in | 4 | 8.50 | 7.00 | 3.00 | 2.75 | 7.24 | 5.00 | 0.53 | 3.25 | 1.50 | 1.25 | 2.75 | 0.51 | 5.25 | 19.03 | 3.50 | 1.44 | .38 X .19 | 19.88 | 0.62 | 9.66 | 9.88 | 4.76 | 0.56 |
| LSE4195 | mm | 100 | 216 | 178 | 76 | 70 | 184 | 127 | 14 | 83 | 38 | 32 | 70 | 13 | 133 | 483 | 89 | | | 505 | 16 | 245 | 251 | 121 | 14 |

* Inch dimensions for Class 125 ANSI flanged ports, mm dimensions for DIN PN-16 flanged ports.

DIMENSIONS – Q, QS SIZES (4195)



| Model Number | | A* | B | D | E | F | G | H | J | K | L | M | N | O | S | T | U (in) | V (in) | W | X | Y |
|--------------|----|-----|-------|------|------|------|-------|------|------|------|------|------|------|------|-------|------|--------|-----------|------|------|------|
| Q4195 | in | 6 | 10.50 | 8.75 | 4.25 | 3.00 | 10.35 | 5.75 | 0.69 | 4.36 | 3.25 | 2.00 | 4.00 | 0.62 | 25.26 | 4.44 | 1.94 | .50 X .25 | 7.00 | 1.00 | 1.72 |
| QS4195 | mm | 150 | 267 | 222 | 108 | 76 | 263 | 146 | 18 | 111 | 83 | 51 | 102 | 16 | 642 | 113 | | | 178 | 25 | 40 |

* Inch dimensions for Class 125 ANSI flanged ports, mm dimensions for DIN PN-16 flanged ports.

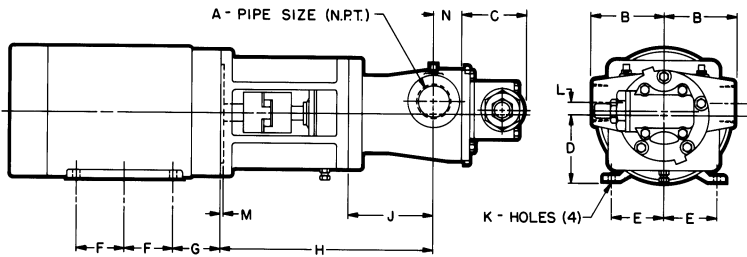
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MOTOR SPEED PRODUCT LINE: CAST IRON PUMPS

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DIMENSIONS – G, GG, H, HJ, HL SIZES – M DRIVE (495)

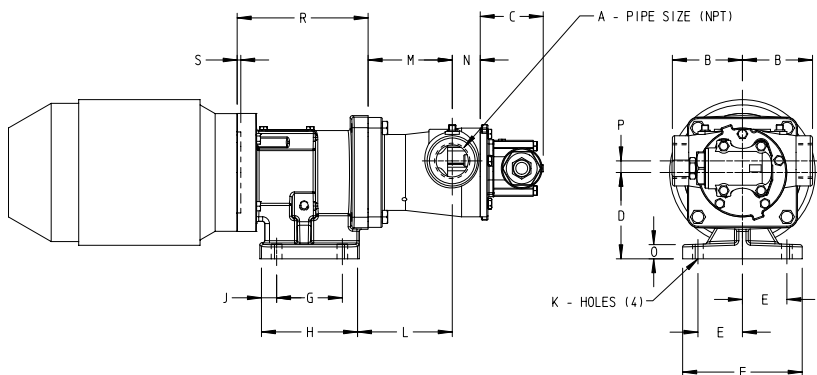


NOTE: Jaw type coupling with straight jaws recommended to facilitate assembly of motor and pump to bracket.

COUPLING IS GUARDED WITH PLATES OVER SIDE OPENINGS ON MOUNTING BRACKET.

| MODEL | A | B | C | J | L | M | N | MOTOR FRAME | D | E | F | G | H | K | |
|---------------|----|------|------|------|------|------|------|-------------|------------|------|------|------|------|-------|------|
| G495 GG495 | 1 | in | 2.75 | 2.66 | 3.44 | .62 | .19 | 1.12 | NEMA 56C | 3.50 | 2.44 | 1.50 | 2.56 | 8.88 | .34 |
| | | mm | 70 | 67 | 87 | 16 | 5 | 29 | | 89 | 62 | 38 | 65 | 225 | 9 |
| | 1 | in | 2.75 | 2.66 | 3.44 | .62 | .19 | 1.12 | NEMA 143TC | 3.50 | 2.75 | 2.00 | 2.88 | 8.88 | .34 |
| | | mm | 70 | 67 | 87 | 16 | 5 | 29 | | 89 | 70 | 51 | 73 | 225 | 9 |
| | 1 | in | 2.75 | 2.66 | 3.44 | .62 | .19 | 1.12 | NEMA 145TC | 3.50 | 2.75 | 2.50 | 2.88 | 8.88 | .34 |
| | | mm | 70 | 67 | 87 | 16 | 5 | 29 | | 89 | 70 | 64 | 73 | 225 | 9 |
| | 1 | in | 2.75 | 2.66 | 3.44 | .62 | .19 | 1.12 | NEMA 182TC | 4.50 | 3.75 | 2.25 | 3.38 | 9.56 | .41 |
| | | mm | 70 | 67 | 87 | 16 | 5 | 29 | | 144 | 95 | 57 | 86 | 243 | 10 |
| 1 | in | 2.75 | 2.66 | 3.44 | .62 | .19 | 1.12 | NEMA 184TC | 4.50 | 3.75 | 2.75 | 3.38 | 9.56 | .41 | |
| | mm | 70 | 67 | 87 | 16 | 5 | 29 | | 114 | 95 | 70 | 86 | 243 | 10 | |
| G495 GG495 | 1 | in | 2.75 | 2.66 | 3.44 | 0.62 | 0.19 | 1.12 | IEC 80 | 3.15 | 2.46 | 1.97 | 1.97 | 8.36 | 0.39 |
| | | mm | 69.9 | 67.6 | 87.4 | 15.7 | 4.8 | 28.4 | | 80.0 | 62.5 | 50.0 | 50.0 | 212.3 | 10.0 |
| | 1 | in | 2.75 | 2.66 | 3.44 | 0.62 | 0.19 | 1.12 | IEC 90 | 3.54 | 2.76 | 1.97 | 2.21 | 8.71 | 0.39 |
| | | mm | 69.9 | 67.6 | 87.4 | 15.7 | 4.8 | 28.4 | | 90.0 | 70.0 | 50.0 | 56.0 | 221.2 | 10.0 |

DIMENSIONS – H, HJ, HL SIZES – IEC FRAME M DRIVE (495)



Brackets are designed for IEC motors with B14 mounting face.

NOTE: Jaw type coupling with straight jaws recommended to facilitate assembly of motor and pump to bracket.

COUPLING IS GUARDED WITH PLATES OVER SIDE OPENINGS ON MOUNTING BRACKET.

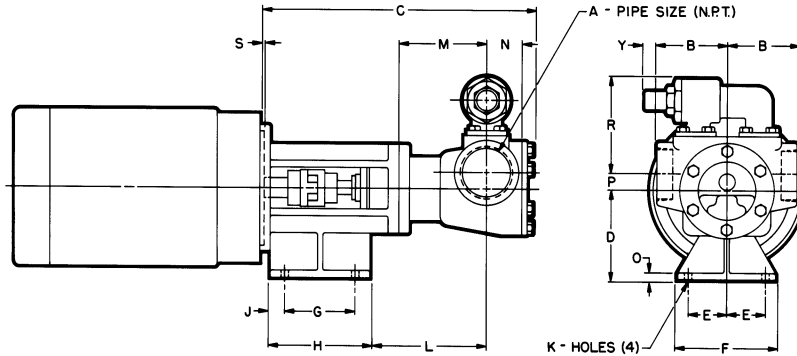
| MODEL | A (in) | B | C | M | N | P | MOTOR FRAME | D | E | F | G | H | J | K | L | O | R | S |
|-------|--------|------|------|------|------|------|-------------|------|------|------|------|------|------|------|------|------|------|------|
| H495 | in | 3.75 | 3.28 | 4.50 | 1.50 | 0.62 | IEC 90 | 4.62 | 2.38 | 6.40 | 3.52 | 5.14 | 0.81 | 0.57 | 4.92 | 0.75 | 6.61 | 0.19 |
| | mm | 95 | 83 | 114 | 38 | 16 | | | 117 | 61 | 163 | 89 | 131 | 21 | 15 | 125 | 19 | 168 |
| HJ495 | in | 3.75 | 3.28 | 4.50 | 1.50 | 0.62 | IEC 100/112 | 4.62 | 2.38 | 6.40 | 3.52 | 5.14 | 0.81 | 0.57 | 4.98 | 0.75 | 7.01 | 0.19 |
| | mm | 95 | 83 | 114 | 38 | 16 | | | 117 | 61 | 163 | 89 | 131 | 21 | 15 | 129 | 19 | 178 |
| HL495 | in | 3.75 | 3.28 | 4.50 | 1.50 | 0.62 | IEC 132 | 5.32 | 2.95 | 7.48 | 4.50 | 6.09 | 0.80 | 0.57 | 5.11 | 0.75 | 8.16 | 0.25 |
| | mm | 95 | 83 | 114 | 38 | 16 | | | 135 | 75 | 190 | 114 | 155 | 20 | 15 | 130 | 19 | 207 |

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

| | |
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**MOTOR SPEED PRODUCT LINE:
CAST IRON PUMPS
SERIES 495, 4195**

DIMENSIONS – AS, AK, AL SIZES – M DRIVE (495)



| Model Number | Motor Frame | A (in) | | B | C | D | E | F | G | H | J | K | L | M | N | O | P | R | S | Y |
|----------------|-------------|--------|----|------|------------|------|------|------|------|------|------|------|-----------|------|------|------|------|------|------|------|
| AS495 AK495 | NEMA ① | 2½ | In | 5.00 | ① 19.06 | 6.25 | 2.75 | 7.00 | 5.00 | 7.00 | 1.00 | 0.56 | ① 8.44 | 6.38 | 2.00 | 0.50 | 1.12 | 7.00 | 0.19 | 1.00 |
| | | | mm | 127 | ① 484 | 159 | 70 | 178 | 127 | 178 | 25 | 14 | ① 214 | 162 | 51 | 13 | 29 | 178 | 5 | 25 |
| | IEC 132 | 2½ | In | 5.00 | 18.16 | 6.25 | 2.75 | 7.00 | 5.00 | 7.24 | 1.12 | 0.56 | 7.75 | 6.38 | 2.00 | 0.50 | 1.12 | 7.12 | 0.25 | 6.00 |
| | | | mm | 127 | 461 | 159 | 70 | 178 | 127 | 184 | 28 | 14 | 197 | 162 | 51 | 13 | 28 | 181 | 6 | 152 |
| | IEC 160 | 2½ | In | 5.00 | 19.58 | 6.50 | 2.75 | 7.50 | 6.00 | 8.26 | 1.13 | 0.56 | 7.75 | 6.38 | 2.00 | 0.62 | 1.12 | 7.12 | 0.25 | 6.00 |
| | | | mm | 127 | 497 | 165 | 70 | 191 | 152 | 210 | 29 | 14 | 197 | 162 | 51 | 16 | 28 | 181 | 6 | 152 |
| AL495 | NEMA ① | 3 | In | 5.00 | ① 19.56 | 6.25 | 2.75 | 7.00 | 5.00 | 7.00 | 1.00 | 0.56 | ① 8.44 | 6.38 | 2.50 | 0.50 | 1.12 | 7.00 | 0.19 | 1.00 |
| | | | mm | 127 | ① 497 | 159 | 70 | 178 | 127 | 178 | 25 | 14 | ① 214 | 162 | 64 | 13 | 29 | 178 | 5 | 25 |
| | IEC 132 | 3 | In | 5.00 | 18.66 | 6.25 | 2.75 | 7.00 | 5.00 | 7.24 | 1.12 | 0.56 | 7.75 | 6.38 | 2.50 | 0.50 | 1.12 | 7.12 | 0.25 | 6.00 |
| | | | mm | 127 | 20 | 159 | 70 | 178 | 127 | 184 | 28 | 14 | 197 | 162 | 64 | 13 | 28 | 181 | 6 | 152 |
| | IEC 160 | 3 | In | 5.00 | 20.08 | 6.50 | 2.75 | 7.50 | 6.00 | 8.26 | 1.13 | 0.56 | 7.75 | 6.38 | 2.50 | 0.62 | 1.12 | 7.12 | 0.25 | 6.00 |
| | | | mm | 127 | 510 | 165 | 70 | 191 | 152 | 210 | 29 | 14 | 197 | 162 | 64 | 16 | 28 | 181 | 6 | 152 |

① Dimensions are correct for 182TC through 215TC motors. For 254TC/256TC motors, add .88" to the dimensions shown.

NOTE: Jaw type coupling with straight jaws recommended to facilitate assembly of motor and pump to bracket.

COUPLING IS GUARDED WITH PLATES OVER SIDE OPENINGS ON MOUNTING BRACKET.

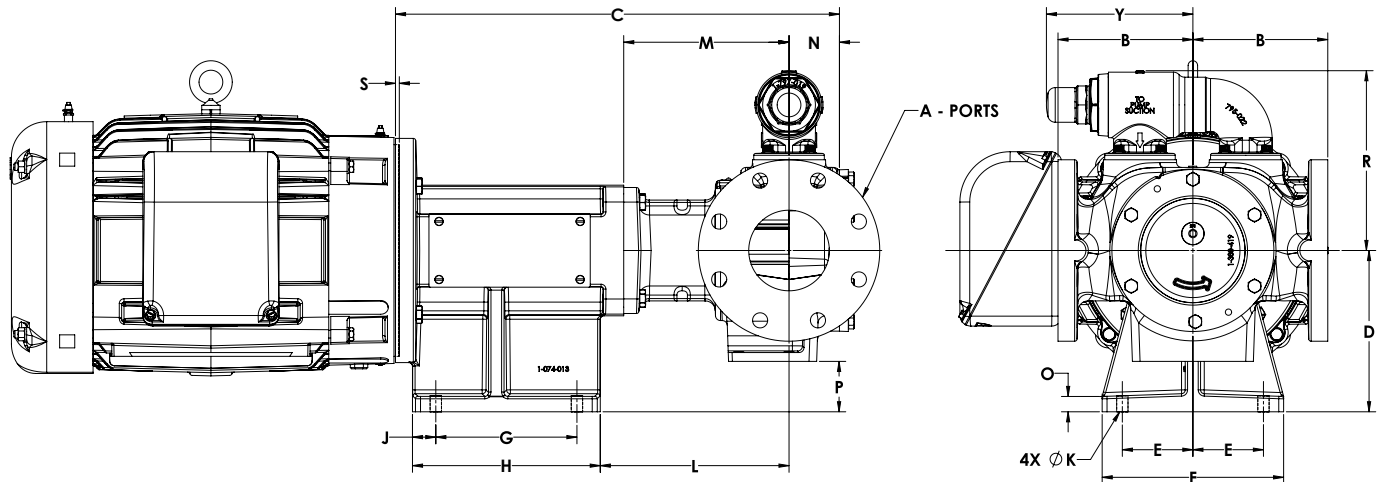
These dimensions are average and not for construction purposes. Certified prints on request.

MOTOR SPEED PRODUCT LINE: CAST IRON PUMPS

SERIES 495, 4195

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DIMENSIONS – KE, KKE, LQE, LSE SIZES – PUMP, M DRIVE, MOTOR (4195)



| Model Number | Motor | A* | | B | C | D | E | F | G | H | J | K | L | M | N | O | P | R | S | Y | |
|-------------------|--------------------|--------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|------|-------|-------|-------|-------|
| KE4195 KKE4195 | NEMA 213/215 | 4 | in | 6.69 | 20.51 | 6.25 | 2.75 | 7.00 | 5.00 | 7.24 | 1.12 | 0.56 | 10.14 | 8.20 | 2.50 | 0.50 | 0.75 | 8.92 | 0.19 | 7.26 | |
| | | 100 | mm | 169.9 | 521.0 | 158.8 | 69.9 | 177.8 | 127.0 | 183.9 | 28.4 | 14.2 | 257.6 | 208.3 | 63.5 | 12.7 | 19.1 | 226.6 | 4.8 | 184.4 | |
| | NEMA 254/256 | 4 | in | 6.69 | 21.39 | 6.25 | 2.75 | 7.00 | 5.00 | 7.24 | 1.12 | 0.56 | 11.02 | 8.20 | 2.50 | 0.50 | 0.75 | 8.92 | 0.19 | 7.26 | |
| | | 100 | mm | 169.9 | 543.3 | 158.8 | 69.9 | 177.8 | 127.0 | 183.9 | 28.4 | 14.2 | 279.9 | 208.3 | 63.5 | 12.7 | 19.1 | 226.6 | 4.8 | 184.4 | |
| | NEMA 284/286 | 4 | in | 6.69 | 22.02 | 8.00 | 3.50 | 9.00 | 7.00 | 9.31 | 1.16 | 0.56 | 9.36 | 8.20 | 2.50 | 0.76 | 2.50 | 8.92 | 0.19 | 7.26 | |
| | | 100 | mm | 169.9 | 559.3 | 203.2 | 88.9 | 228.6 | 177.8 | 236.5 | 29.5 | 14.2 | 237.7 | 208.3 | 63.5 | 19.3 | 63.5 | 226.6 | 4.8 | 184.4 | |
| | IEC 132 | 4 | in | 6.69 | 18.08 | 6.25 | 2.75 | 7.00 | 5.00 | 7.24 | 1.12 | 0.56 | 9.58 | 8.20 | 2.50 | 0.50 | 0.75 | 8.92 | 0.25 | 7.26 | |
| | | 100 | mm | 169.9 | 459.2 | 158.8 | 69.9 | 177.8 | 127.0 | 183.9 | 28.4 | 14.2 | 243.3 | 208.3 | 63.5 | 12.7 | 19.1 | 226.6 | 6.4 | 184.4 | |
| | IEC 160 | 4 | in | 6.69 | 19.40 | 6.50 | 2.75 | 7.50 | 6.00 | 8.26 | 1.13 | 0.56 | 9.57 | 8.20 | 2.50 | 0.62 | 1.00 | 8.92 | 0.25 | 7.26 | |
| | | 100 | mm | 169.9 | 492.8 | 165.1 | 69.9 | 190.5 | 152.4 | 209.8 | 28.7 | 14.2 | 243.1 | 208.3 | 63.5 | 15.7 | 25.4 | 226.6 | 6.4 | 184.4 | |
| | LQE4195 LSE4195 | NEMA 324/326 | 4 | in | 8.50 | 25.3 | 8.25 | 3.88 | 10.00 | 7.25 | 9.85 | 1.30 | 0.88 | 10.71 | 9.88 | 2.75 | 0.75 | 1.25 | 12.88 | 0.19 | 9.66 |
| | | | 100 | mm | 215.9 | 642.6 | 209.6 | 98.6 | 254.0 | 184.2 | 250.2 | 33.0 | 22.4 | 272.0 | 251.0 | 69.9 | 19.1 | 31.8 | 327.2 | 4.8 | 243.7 |
| IEC 160 | | 4 | in | 8.50 | 21.63 | 7.50 | 3.25 | 9.00 | 7.25 | 9.81 | 1.28 | 0.88 | 10.34 | 9.88 | 2.75 | 0.75 | 0.50 | 12.88 | 0.25 | 9.66 | |
| | | 100 | mm | 215.9 | 549.4 | 190.5 | 82.6 | 228.6 | 184.2 | 249.2 | 32.5 | 22.4 | 262.6 | 251.0 | 69.9 | 19.1 | 12.7 | 327.2 | 6.4 | 243.7 | |
| IEC 180 | | 4 | in | 8.50 | 21.63 | 7.50 | 3.25 | 9.00 | 7.25 | 9.81 | 1.28 | 0.88 | 10.34 | 9.88 | 2.75 | 0.75 | 0.50 | 12.88 | 0.25 | 9.66 | |
| | | 100 | mm | 215.9 | 549.4 | 190.5 | 82.6 | 228.6 | 184.2 | 249.2 | 32.5 | 22.4 | 262.6 | 251.0 | 69.9 | 19.1 | 12.7 | 327.2 | 6.4 | 243.7 | |

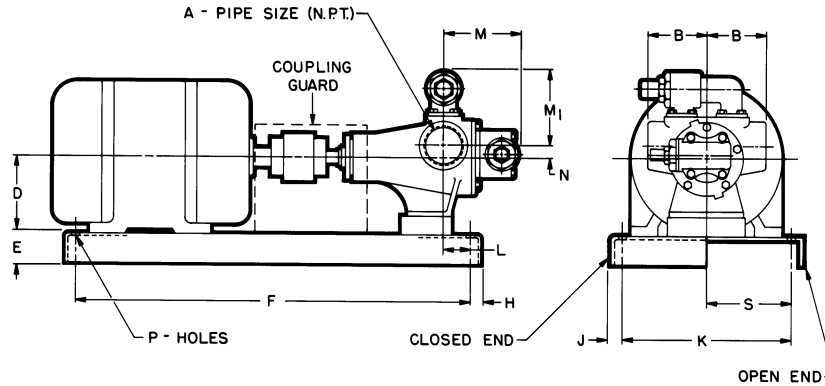
* Inch dimensions for Class 125 ANSI flanged ports, mm dimensions for DIN PN-16 flanged ports.

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

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**MOTOR SPEED PRODUCT LINE:
CAST IRON PUMPS
SERIES 495, 4195**

DIMENSIONS – G, GG, H, HJ, HL, AS, AK, AL SIZES – D DRIVE (4195)



| Model | Motor | A (in) | | B | D | E | F | H | J | K | L | M | M ₁ | N | P | S |
|------------------------------|---------------|--------|----|------|------|------|-------|------|------|-------|------|------|----------------|------|------|------|
| G4195 GG4195 | NEMA 56 | 1 | in | 2.75 | 3.50 | 1.50 | 20.50 | 0.75 | 0.75 | 8.50 | 0.38 | 3.81 | — | 0.63 | 0.63 | 4.25 |
| | | | mm | 70 | 89 | 38 | 521 | 19 | 19 | 216 | 10 | 97 | | 16 | 16 | 108 |
| | NEMA 143/145 | 1 | in | 2.75 | 3.50 | 1.50 | 20.50 | 0.75 | 0.75 | 8.50 | 0.38 | 3.81 | | 0.63 | 0.63 | 4.25 |
| | | | mm | 70 | 89 | 38 | 521 | 19 | 19 | 216 | 10 | 97 | | 16 | 16 | 108 |
| | NEMA 182/184 | 1 | in | 2.75 | 4.50 | 1.50 | 20.50 | 0.75 | 0.75 | 8.50 | 0.38 | 3.81 | | 0.63 | 0.63 | 4.25 |
| | | | mm | 70 | 114 | 38 | 521 | 19 | 19 | 216 | 10 | 97 | | 16 | 16 | 108 |
| | NEMA 213/215 | 1 | in | 2.75 | 5.25 | 2.94 | 29.00 | 1.00 | 1.50 | 9.00 | 1.90 | 3.81 | | 0.63 | 0.63 | 4.50 |
| | | | mm | 70 | 133 | 75 | 737 | 25 | 38 | 229 | 48 | 97 | | 16 | 16 | 114 |
| H4195 HJ4195 HL4195 | NEMA 56 | 1½ | in | 3.75 | 4.12 | 1.50 | 20.50 | 0.75 | 0.75 | 8.50 | — | 4.78 | — | 0.62 | 0.63 | 4.25 |
| | | | mm | 95 | 105 | 38 | 521 | 19 | 19 | 216 | — | 121 | | 16 | 16 | 108 |
| | NEMA 143/145 | 1½ | in | 3.75 | 4.12 | 1.50 | 20.50 | 0.75 | 0.75 | 8.50 | — | 4.78 | | 0.62 | 0.63 | 4.25 |
| | | | mm | 95 | 105 | 38 | 521 | 19 | 19 | 216 | — | 121 | | 16 | 16 | 108 |
| | NEMA 182/184 | 1½ | in | 3.75 | 4.50 | 2.94 | 29.00 | 1.00 | 1.50 | 9.00 | 0.25 | 4.78 | | 0.62 | 0.63 | 4.50 |
| | | | mm | 95 | 114 | 75 | 737 | 25 | 38 | 229 | 6 | 121 | | 16 | 16 | 114 |
| | NEMA 213/215 | 1½ | in | 3.75 | 5.25 | 2.94 | 29.00 | 1.00 | 1.50 | 9.00 | 0.25 | 4.78 | | 0.62 | 0.63 | 4.50 |
| | | | mm | 95 | 133 | 75 | 737 | 25 | 38 | 229 | 6 | 121 | | 16 | 16 | 114 |
| | NEMA 254/256 | 1½ | in | 3.75 | 6.50 | 3.25 | 28.75 | 1.00 | 1.00 | 17.00 | — | 4.78 | | 0.62 | 0.63 | 8.50 |
| | | | mm | 95 | 165 | 83 | 730 | 25 | 25 | 432 | — | 121 | | 16 | 16 | 216 |
| AS4195 AK4195 AL4195 * | NEMA 143/145T | 2½ | in | 5.00 | 5.25 | 2.94 | 29.00 | 1.00 | 1.50 | 9.00 | 1.75 | — | 6.97 | 1.12 | 0.63 | 4.50 |
| | | | mm | 127 | 133 | 75 | 737 | 25 | 38 | 229 | 45 | | 177 | 28 | 16 | 114 |
| | NEMA 182/184 | 2½ | in | 5.00 | 5.25 | 2.94 | 29.00 | 1.00 | 1.50 | 9.00 | — | | 6.97 | 1.12 | 0.63 | 4.50 |
| | | | mm | 127 | 133 | 75 | 737 | 25 | 38 | 229 | — | | 177 | 28 | 16 | 114 |
| | NEMA 213/215 | 2½ | in | 5.00 | 5.25 | 2.94 | 34.00 | 1.00 | 1.50 | 9.00 | — | | 6.97 | 1.12 | 0.63 | 4.50 |
| | | | mm | 127 | 133 | 75 | 864 | 25 | 38 | 229 | — | | 177 | 28 | 16 | 114 |
| | NEMA 254/256 | 2½ | in | 5.00 | 6.25 | 4.00 | 39.00 | 1.38 | 1.38 | 16.00 | 3.75 | | 6.97 | 1.12 | 0.63 | 8.00 |
| | | | mm | 127 | 159 | 102 | 991 | 35 | 35 | 406 | 95 | | 177 | 28 | 16 | 203 |
| | NEMA 284/286 | 2½ | in | 5.00 | 7.00 | 4.00 | 39.00 | 1.38 | 1.38 | 16.00 | 1.75 | | 6.97 | 1.12 | 0.63 | 8.00 |
| | | | mm | 127 | 178 | 102 | 991 | 35 | 35 | 406 | 45 | | 177 | 28 | 16 | 203 |

* 3" port on AL4195D.

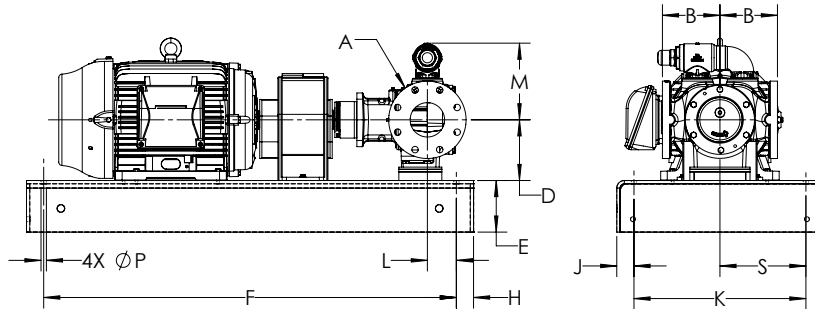
These dimensions are average and not for construction purposes. Certified prints on request.

MOTOR SPEED PRODUCT LINE: CAST IRON PUMPS

SERIES 495, 4195

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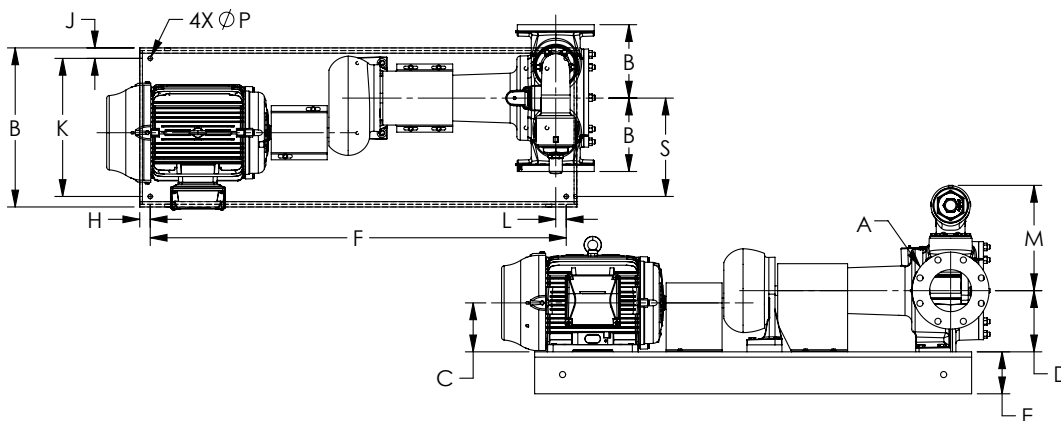
DIMENSIONS – KE, KKE, LQE, LSE, Q SIZES – D DRIVE (4195)



| Model | Motor | | A* | B | D | E | F | H | J | K | L | M | P | S |
|--------------------|-----------------|----|-----|-------|-------|-------|--------|------|------|-------|------|-------|------|-------|
| KE4195 KKE4195 | NEMA 213/215 | in | 4 | 6.69 | 5.50 | 4.00 | 37.75 | 2.00 | 2.00 | 14.75 | 3.37 | 8.92 | 0.63 | 7.38 |
| | | mm | 100 | 169.9 | 139.7 | 101.6 | 958.9 | 50.8 | 50.8 | 374.7 | 85.6 | 226.6 | 16.0 | 187.3 |
| | NEMA 254/256 | in | 4 | 6.69 | 6.25 | 6.00 | 48.00 | 2.00 | 2.00 | 20.00 | 3.37 | 8.92 | 0.63 | 10.00 |
| | | mm | 100 | 169.9 | 158.8 | 152.4 | 1219.2 | 50.8 | 50.8 | 508.0 | 85.6 | 226.6 | 16.0 | 254.0 |
| | NEMA 284/286 | in | 4 | 6.69 | 7.00 | 6.00 | 48.00 | 2.00 | 2.00 | 20.00 | 3.37 | 8.92 | 0.63 | 10.00 |
| | | mm | 100 | 169.9 | 177.8 | 152.4 | 1219.2 | 50.8 | 50.8 | 508.0 | 85.6 | 226.6 | 16.0 | 254.0 |
| LQE4195 LSE4195 | NEMA 284/286 | in | 4 | 8.50 | 7.31 | 6.00 | 48.00 | 2.00 | 2.00 | 20.00 | 3.25 | 12.88 | 0.63 | 10.00 |
| | | mm | 100 | 215.9 | 185.7 | 152.4 | 1219.2 | 50.8 | 50.8 | 508.0 | 82.6 | 327.2 | 15.9 | 254.0 |
| | NEMA 324/326 | in | 4 | 8.50 | 8.06 | 6.00 | 58.50 | 2.00 | 2.00 | 18.75 | 3.25 | 12.88 | 0.63 | 9.38 |
| | | mm | 100 | 215.9 | 204.7 | 152.4 | 1485.9 | 50.8 | 50.8 | 476.3 | 82.6 | 327.2 | 15.9 | 238.1 |
| | NEMA 364/365 | in | 4 | 8.50 | 9.06 | 6.00 | 58.50 | 2.00 | 2.00 | 18.75 | 3.25 | 12.88 | 0.63 | 9.38 |
| | | mm | 100 | 215.9 | 230.1 | 152.4 | 1485.9 | 50.8 | 50.8 | 476.3 | 82.6 | 327.2 | 15.9 | 238.1 |
| Q4195 | IEC 280 | in | 6 | 10.50 | 11.37 | 6.00 | 68.00 | 2.00 | 2.00 | 32.00 | 1.00 | 15.06 | 0.88 | 16.00 |
| | | mm | 150 | 266.7 | 288.8 | 152.4 | 1727.2 | 50.8 | 50.8 | 812.8 | 25.4 | 382.5 | 22.4 | 406.4 |

* Inch dimensions for Class 125 ANSI flanged ports, mm dimensions for DIN PN-16 flanged ports.

DIMENSIONS – Q, QS SIZES – R DRIVE (4195)



| Model | Motor | | A* | B | C | D | E | F | H | J | K | L | M | P | S |
|-----------------|-----------------|----|------|-------|-------|-------|-------|--------|------|------|-------|------|-------|------|-------|
| Q4195 QS4195 | NEMA 254/256 | in | 6.00 | 10.50 | 6.25 | 8.75 | 6.00 | 59.50 | 1.50 | 1.50 | 19.75 | 1.50 | 15.06 | 0.63 | 14.07 |
| | | mm | 150 | 266.7 | 158.8 | 222.3 | 152.4 | 1511.3 | 38.1 | 38.1 | 501.7 | 38.1 | 382.5 | 15.9 | 357.4 |
| | NEMA 284/286 | in | 6.00 | 10.50 | 7.00 | 8.75 | 6.00 | 59.50 | 1.50 | 1.50 | 19.75 | 1.50 | 15.06 | 0.63 | 14.07 |
| | | mm | 150 | 266.7 | 177.8 | 222.3 | 152.4 | 1511.3 | 38.1 | 38.1 | 501.7 | 38.1 | 382.5 | 15.9 | 357.4 |
| | NEMA 324/326 | in | 6.00 | 10.50 | 8.00 | 8.75 | 6.00 | 68.00 | 2.00 | 2.00 | 20.00 | 1.00 | 15.06 | 0.63 | 14.81 |
| | | mm | 150 | 266.7 | 203.2 | 222.3 | 152.4 | 1727.2 | 50.8 | 50.8 | 508.0 | 25.4 | 382.5 | 15.9 | 376.2 |

* Inch dimensions for Class 125 ANSI flanged ports, mm dimensions for DIN PN-16 flanged ports.

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

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MOTOR SPEED PRODUCT LINE: CAST IRON PUMPS SERIES 495, 4195

NPSH REQUIRED

Printed performance curves are not available.

Performance curves can be electronically generated with the Viking Pump Selector Program on vikingpump.com.

NPSHR data is not available on the pump selector.

Increasing the operating speed of positive displacement pumps increases the NPSH_R (Net Positive Suction Head – Required by pump) and sound levels. These are two factors that should be considered when selecting the correct pump for the application. Below are charts for the NPSH_R and sound levels of the Motor Speed Series pumps.

NPSH (Net Positive Suction Head): The NPSH_R (Net Positive Suction Head Required by the pump) is given in the table below and applies for viscosities through 750 SSU. NPSH_A (Net Positive Suction Head – Available in the system) must be greater than the NPSH_R. For a complete explanation of NPSH, see Application Data Sheet AD-19.

FOR VISCOSITIES UP TO 750 SSU – See NPSH_R table below.

NPSH_R for high viscosities can be estimated using the following method:

1. Calculate line loss for a 1 foot long pipe of a diameter matching the pump inlet port size. Use your flow rate and max viscosity.
2. Convert this value into Feet of Liquid (S.G. 1.0)
3. Add this value to the NPSH_R value in the chart below.

| PUMP SIZE | PUMPS SPEED, RPM | | | | | | |
|------------|------------------|-----|--------|------|------|------|------|
| | 520 | 640 | 780 | 950 | 1150 | 1450 | 1750 |
| G, GG | 1.6 | 2.2 | 2.6 | 3.1 | 3.9 | 5.6 | 7.6 |
| H, HJ, HL | 2 | 2.8 | 3.4 | 4.5 | 6.2 | 9.5 | 13.5 |
| AS, AK, AL | 2.8 | 3.9 | 5.5 | 7.7 | 11.2 | 16.8 | 23.3 |
| ① KE, KKE | 4.4 | 4.9 | 5.7 | 7 | 8.9 | 12.8 | 17.9 |
| ① LQE, LSE | 7.3 | 9.3 | 10.9 | 13.1 | 16.1 | — | — |
| ① Q, QS | 6.8 | 9 | ② 12.2 | — | — | — | — |

Note: NPSH_R – FEET OF LIQUID (Specific Gravity 1.0), Viscosities up to 750 SSU

① These pumps utilize a directional design.

② Applies to Q pump only. QS pump max speed is 640 RPM.

EXPECTED NOMINAL SOUND LEVELS FOR MOTOR SPEED PUMPS

The sound pressure level, measured in dB(A), is a measurement of the deviation in the atmospheric pressure caused by a sound wave. The measurement is taken at a distance of approximately 1 meter from the sound source. The sound pressure levels are for the pump only using a 100 SSU liquid, at 100 PSI discharge pressure, at the speeds indicated. Background noise and ancillary equipment, such as drives and motors, in the operating environment will likely cause the actual sound pressure level to deviate from the information in the table below.

Local national laws and regulations on noise exposure in the workplace should be observed during operation.

| PUMP SIZE | PUMPS SPEED, RPM | | | | | | |
|------------|------------------|-----|------|-----|------|------|------|
| | 520 | 640 | 780 | 950 | 1150 | 1450 | 1750 |
| G, GG | — | — | — | 62 | 63 | 63 | 63 |
| H, HJ, HL | — | — | — | 68 | 70 | 75 | 80 |
| AS, AK, AL | — | — | — | 82 | 84 | 86 | 88 |
| ① KE, KKE | — | — | — | 84 | 86 | 87 | 89 |
| ① LQE, LSE | — | 88 | 89 | 91 | 93 | — | — |
| ① Q, QS | 91 | 93 | ② 94 | — | — | — | — |

Note: NPSH_R – FEET OF LIQUID (Specific Gravity 1.0), Viscosities up to 750 SSU

① These pumps utilize a directional design.

② Applies to Q pump only. QS pump max speed is 640 RPM.