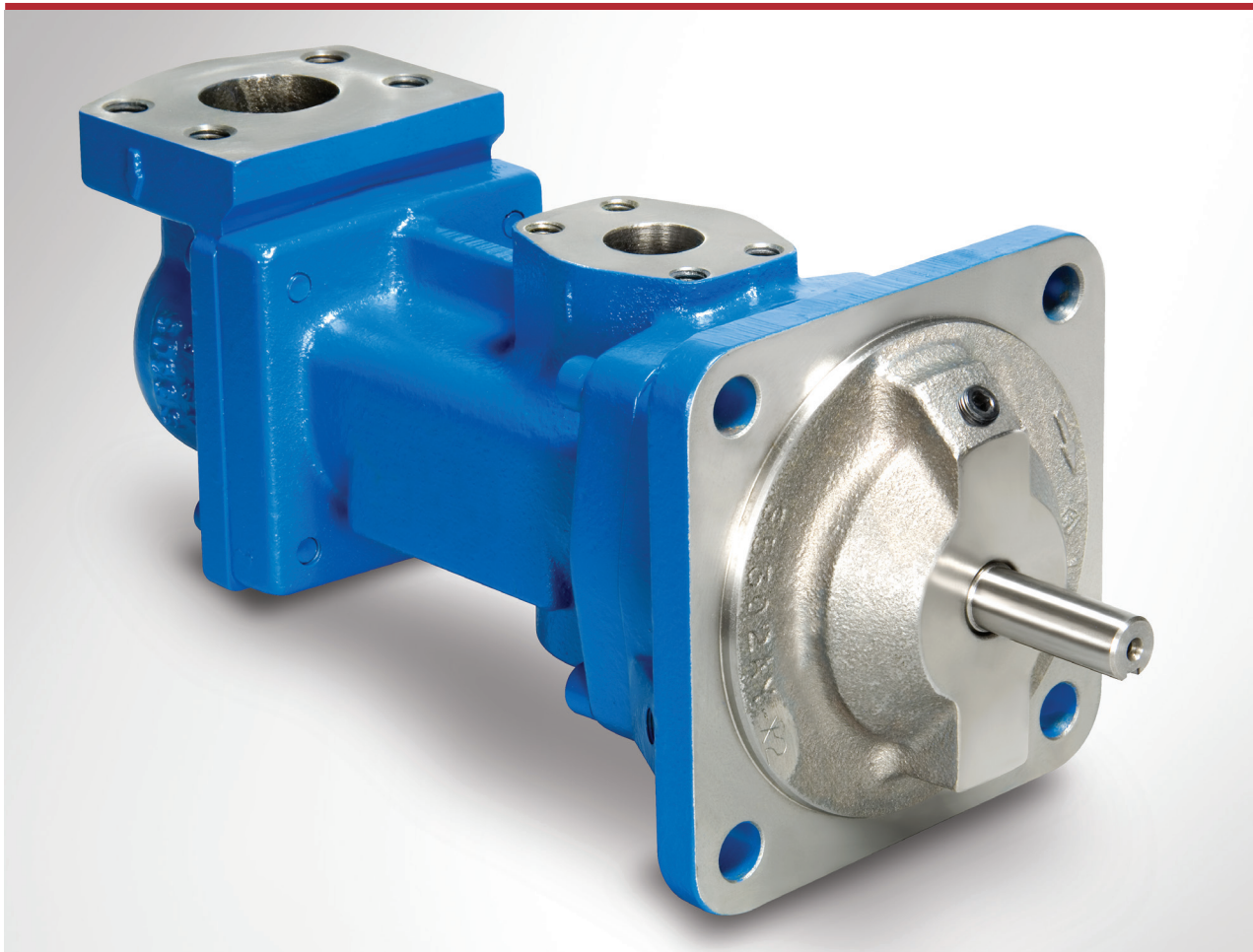


# IMO PUMP® 3G SERIES

THREE-SCREW PUMP



[circorpt.com/three-screw-pump](http://circorpt.com/three-screw-pump)



ALLWEILER® HOUTTUIN™  
IMO® WARREN®

## IMO PUMP®

### PRODUCT PERFORMANCE YOU CAN RELY ON

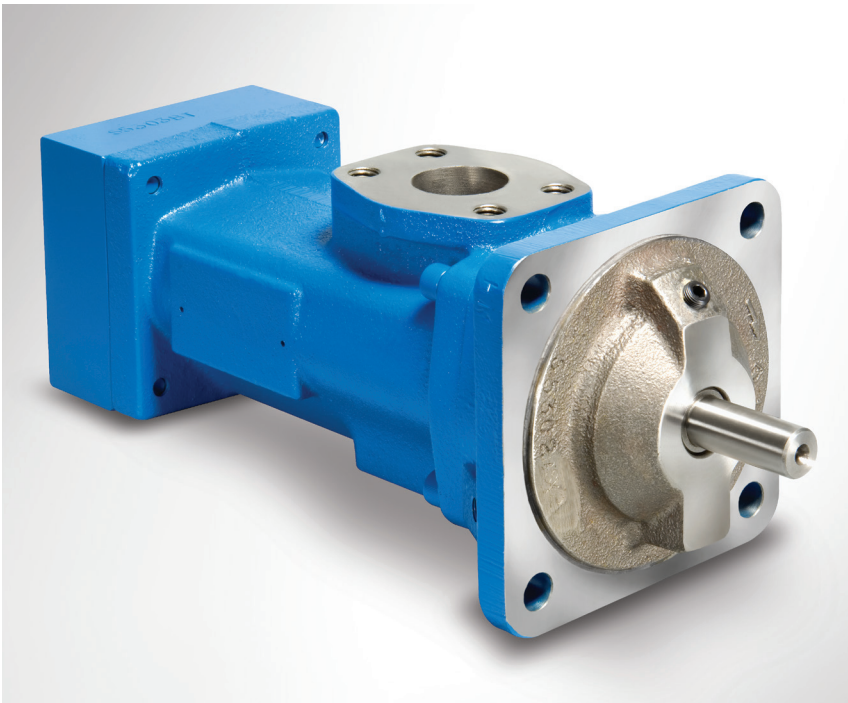
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At CIRCOR, we focus on delivering the best overall value and lowest total cost of ownership for our customers. We are proud to deliver performance-based products, like the Imo Pump® 3G Series, that decrease maintenance, increase intervals between service and reduce energy costs.

We design our products to be of “heavy duty – industrial grade” construction. Certain models are specifically designed for specific “severe duty” service in marine, navy, industrial process, crude oil pipelines or power generation applications.

Manufacturing is accomplished under ISO9001 Management Systems, and we have also received TS 16949 certification, the highest automotive quality standard issued.

CIRCOR’s experienced engineering staff stands ready to assist you in solving any design, engineering or process issue.

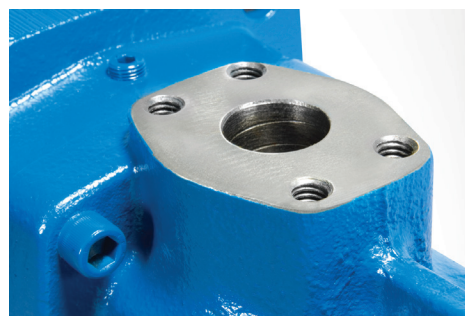


3G118 with axial inlet

## CUSTOMER SUPPORT

Visit our web site – [www.circorpt.com](http://www.circorpt.com) – for fast, convenient customer service that allows you to:

- Contact our customer support line
- Review order status
- Submit application data for initial product quotation
- Search a database that includes part lists for three screw and gear pumps, repair kits and for current and discontinued pumps no longer manufactured
- Learn more about Imo products, including three screw pumps, gear pumps and navy/marine pumps



## APPLICATIONS

The 3G series pump is intended for use in lubrication, hydraulic and control oil services such as those found on rotating machinery or other equipment needing forced lubrication, circulation or fluid transfer. This series is available in seventeen displacements fitted into five casing sizes.

All pumps are fitted with mechanical shaft seals. Inlet porting can be either radial (elbow), rotatable in 90 degree increments, or axial.

3G series pumps are available in either cast iron or steel case material. Cast iron pumps are available with an internal, tamper resistant relief valve as an option. Porting on the 95 through 162 rotor size pumps can be either SAE straight thread or SAE 4-bolt, Code 61, flange pad. Porting on the 187 through 250 pumps is SAE 4-bolt, Code 61, flange pad.

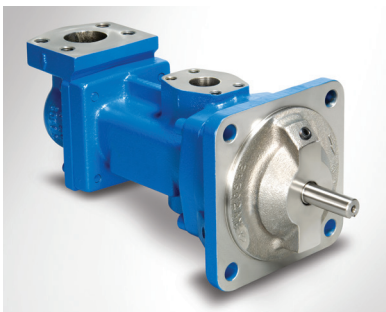
Steel case pumps are equipped with SAE 4-bolt flange pads. All SAE flange pads accept 4-bolt, O-ring sealed, Code 61 mating flanges of either socket weld or NPT style.

3G pumps are designed for flange mounting and can be provided with mating foot brackets or pump to motor (C-face) brackets. Flange or foot mounting is available on all rotor sizes. Pumps can also be supplied for vertical tank mounting.

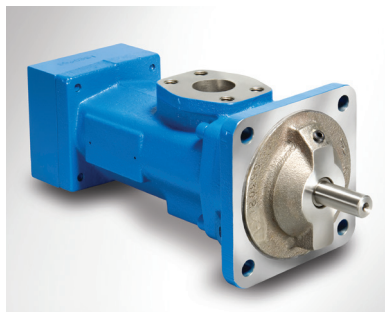
## PERFORMANCE

SHOWN AT 200 SSU (43 CST) @ 225 PSID (14.6 BAR)

| Rotor Size | 3G      |         |       |       |
|------------|---------|---------|-------|-------|
|            | Min RPM | Max RPM | GPM   | GPM   |
| 95A E      | 1400    | 5000    | 1.29  | 8.43  |
| 95SP       | 1500    | 5000    | 1.86  | 11.13 |
| 95SC       | 1200    | 5000    | 1.86  | 14.44 |
| 118SP      | 1200    | 4000    | 2.91  | 17.38 |
| 118SC      | 950     | 4000    | 2.84  | 22.56 |
| 143SJ      | 950     | 4000    | 4.22  | 30.45 |
| 143SE      | 950     | 4000    | 4.42  | 34.15 |
| 143SC      | 950     | 4000    | 6.06  | 41.03 |
| 162SP      | 950     | 4000    | 6.41  | 46.82 |
| 162SC      | 950     | 4000    | 9.56  | 60.1  |
| 187SY      | 950     | 4000    | 11.28 | 67.5  |
| 187SM      | 950     | 4000    | 13.5  | 81.4  |
| 187SC      | 950     | 4000    | 16.52 | 94.1  |
| 200SC      | 950     | 4000    | 20.64 | 114.8 |
| 250AL      | 950     | 4000    | 26.91 | 146.5 |
| 250SP      | 950     | 3600    | 33.18 | 161   |

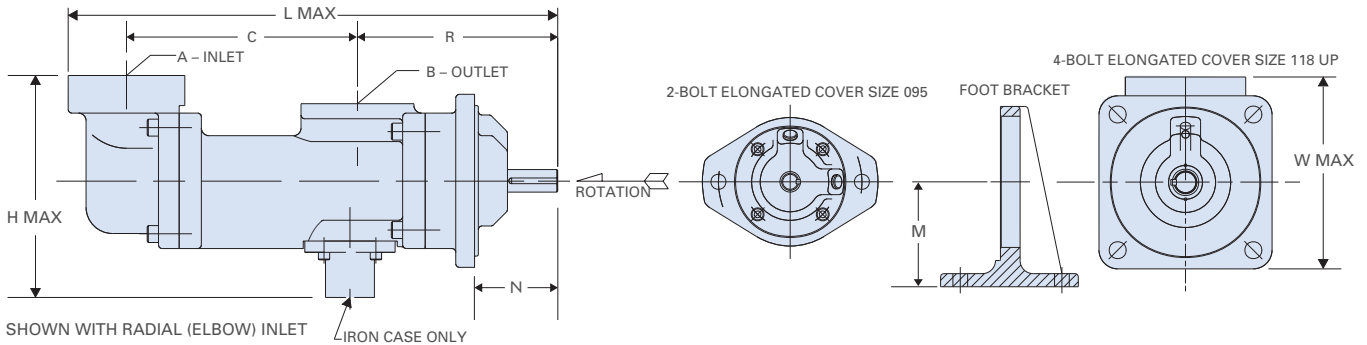


3G143 with right angle inlet

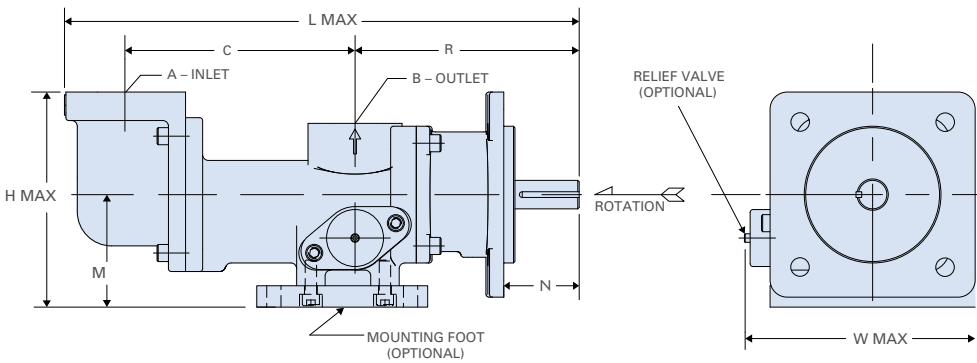


3G118 with axial inlet

## 2-210 GPM (7-7795) L/M – PRESSURE TO 250 PSIG (17 BAR)



| PUMP SIZE | A     |      | B     |      | C    |       | H    |       | L     |       | M    |       | N    |      | R    |       | W    |       | WEIGHT* |      |
|-----------|-------|------|-------|------|------|-------|------|-------|-------|-------|------|-------|------|------|------|-------|------|-------|---------|------|
|           | INCH  | MM   | INCH  | MM   | INCH | MM    | INCH | MM    | INCH  | MM    | INCH | MM    | INCH | MM   | INCH | MM    | INCH | MM    | LBS.    | KG   |
| 95        | 1     | 25.4 | 3/4   | 19   | 4.66 | 118.4 | 4.57 | 116.1 | 10.83 | 275.1 | 2.25 | 57.2  | 1.88 | 47.8 | 5.02 | 127.5 | 5.25 | 133.4 | 18      | 8.0  |
| 250       | 1-1/2 | 38.1 | 1     | 25.4 | 6    | 152.4 | 5.76 | 146.3 | 2.80  | 353.3 | 4    | 101.6 | 2.80 | 71.1 | 6.19 | 157.2 | 9    | 228.6 | 34      | 15.4 |
| 143/162   | 2     | 50.8 | 1-1/2 | 38.1 | 7.67 | 194.8 | 7.57 | 192.3 | 2.76  | 413.1 | 4    | 101.6 | 2.76 | 70.1 | 6.65 | 168.9 | 7.75 | 196.9 | 44      | 20.0 |



| PUMP SIZE | A    |       | B                |      | C     |       | H     |       | L     |       | M    |       | N    |      | R     |       | W    |       | WEIGHT* |      |
|-----------|------|-------|------------------|------|-------|-------|-------|-------|-------|-------|------|-------|------|------|-------|-------|------|-------|---------|------|
|           | INCH | MM    | INCH             | MM   | INCH  | MM    | INCH  | MM    | INCH  | MM    | INCH | MM    | INCH | MM   | INCH  | MM    | INCH | MM    | LBS.    | KG   |
| 187/200   | 3    | 76.2  | 2                | 50.8 | 10.06 | 255.5 | 9.44  | 239.8 | 22.52 | 572   | 4.94 | 125.5 | 3.31 | 84.1 | 9.84  | 249.9 | 5.62 | 142.7 | 117     | 8.0  |
| 250       | 4    | 101.6 | 2 <sup>1/2</sup> | 63.5 | 12.61 | 320.3 | 10.19 | 258.8 | 25.84 | 656.3 | 4.94 | 125.5 | 3.31 | 84.1 | 10.21 | 259.3 | 5.62 | 142.7 | 131     | 59.4 |

All dimensions are typical. For certified outline drawing, refer to Resources section at [www.imopump.com](http://www.imopump.com)

## SPECIFICATIONS

|                        |  |
|------------------------|--|
| <b>Casing</b>          | Cast iron or cast steel.   |
| <b>Rotors</b>          | Power rotor is ductile (nodular) iron. Idler rotors are gray iron.   |
| <b>Shaft Seal</b>      | <p><b>Type V:</b> Fluoroelastomer bellows mechanical seal with carbon on ni-resist faces, fluoroelastomer O-rings, recommended for viscosities below 3000 SSU (650 CST) and distillate fuel oils.</p> <p><b>Type H:</b> Metal bellows balanced, positive drive mechanical seal with carbon on silicon carbide faces, fluoroelastomer O-rings, recommended for viscosities above 3000 SSU (650 CST).</p> <p><b>Type J:</b> Metal bellows balanced, positive drive mechanical seal with carbon on silicon carbide faces, neoprene elastomer O-rings.</p> <p><b>Type N:</b> No shaft seal (must use mounting option I).</p> |
| <b>Bearing</b>         | Internal, ball type, lubricated by pumped liquid.  |
| <b>Relief Valve</b>    | Optional internal, tamper resistant, built-in pressure relief valve for viscosities not exceeding 1500 SSU (324 CST). Specify differential set pressure in 15 PSI (1.03 BAR) increments, i.e. 60, 75...210. (This relief valve is intended for momentary protection for the pump against over pressure. It is not intended to be a system pressure control device). Minimum setpressure is 60 PSID (4.1 BAR). Maximum set pressure is 210 PSID (14.5 BAR).   |
| <b>Viscosity Range</b> | 32 to 3000 SSU (2 to 650 CST) type "V" seal.<br>32 to 15,000 SSU (2 to 3200 CST) type "H" seal.  |
| <b>Inlet Pressure</b>  | 50 PSIG (3.4 BAR) normal maximum.  |
| <b>Outlet Pressure</b> | 250 PSIG (17 BAR) maximum [(to 300 PSIG (20.7 BAR)] with inlet at 50 PSIG (3.4 BAR). Operation at differential pressures below 40 PSI (2.8 BAR) may require pump modification - consult Imo Pump with full operation range data.   |
| <b>Temperature</b>     | Temperature 0 to 225°F (-18 to 107°C)  |
| <b>Drive Rotation</b>  | Drive/Rotation Direct only. Clockwise facing pump shaft standard. Counterclockwise optional.   |
| <b>Max Speeds</b>      | Size 95: 5000 rpm. Sizes 118 - 200: 4000 rpm. Size 250 1.3D & 1.6D leads: 4000 rpm maximum. Size 250 2D lead: 3250 rpm. Higher speeds are possible for all sizes and leads when inlet pressure exceeds 0 psig.   |
| <b>Mounting</b>        | Mounting may be foot or flange mounted in any orientation. Vertical tank mounts available.   |



## Connections

| PORT TYPE AVAILABILITY         |           |            |
|--------------------------------|-----------|------------|
| INLET PORT TYPE                | IRON CASE | STEEL CASE |
| Axial SAE Straight Thread      | Yes       | No         |
| Axial SAE 4-Bolt Pad, Code 61  | Yes       | Yes        |
| Radial SAE Straight Thread     | Yes       | No         |
| Radial SAE 4-Bolt Pad, Code 61 | Yes       | Yes        |
| OUTLET PORT TYPE               | IRON CASE | STEEL CASE |
| Radial SAE Straight Thread     | Yes       | No         |
| Radial SAE 4-Bolt Pad, Code 61 | Yes       | Yes        |

Straight thread for use with O-ring fittings. SAE pad is for use with mating SAE 4-bolt 3000 PSI flanges.

## Filtration

Inlet strainers are required to keep contaminants and abrasives out of the pump and must be selected in consultation with the strainer vendor to prevent pump starvation. Normally, 60 mesh (0.01 inch- 238 micron) for light and 1/8-3/16 inch (3-5mm) openings for heavy oils are recommended. Return line filters for closed loop systems also recommended.

## Accessories

Pre-engineered, completely mounted pump/driver assemblies with baseplates or NEMA 'C' face motor adapters are available.

## MEETING YOUR BIGGEST CHALLENGES

### INDUSTRY LEADING PRODUCTS, SERVICES AND SOLUTIONS

CIRCOR is a global leader in critical fluid handling products and technologies. Through our fluid-handling platform and global operations, we manufacture positive displacement industrial pumps, valves and systems used in oil and gas, power generation, commercial marine, defense, industrial and lubrication markets. The specialists at CIRCOR are committed to redefining what's possible for your business by providing the solutions you need to meet your toughest challenges.



## Model No. Code Example

**AA 3G / N V I N F B 118SP 000**

Design Sequence

Pump Series

Separator

Fixed Designator

Seals

- V = Fluorocarbon Bellows mechanical seal, carbon on Ni-resist, Fluorocarbon O-rings
- H = Metal bellows balanced mechanical seal, carbon on silicon carbide, Fluorocarbon O-rings
- N = No shaft seal (must use mounting "I"), Fluorocarbon O-rings
- J = Metal Bellows balanced mechanical seal, carbon on silicon carbide, Neoprene O-rings

Case Material and Outlet Port

- I = Iron case, SAE straight thread port\*
  - P = Iron case, SAE 4-bolt port pad
  - S = Steel case, SAE 4-bolt port pad
  - X = Special
- \*Not available on Rotor Sizes 187 thru 250

Inlet Port

- J = Axial inlet, SAE straight thread port\*
  - K = Axial inlet, SAE 4-bolt port pad
  - L = Radial inlet, SAE straight thread port\*
  - M = Radial inlet, SAE 4-bolt pad
  - N\*\* = Axial inlet, SAE straight thread port\*
  - P\*\* = Axial inlet 4-bolt port pad
  - R\*\* = Radial inlet, straight thread port\*
  - S\*\* = Radial inlet 4-bolt port pad
- \* Not Available on Rotor Sizes 187 thru 250  
\*\* Not available on 95 rotor size or N seal pumps

Designator for Special Modifications

Size / Lead / Rotation

- |                   |                    |
|-------------------|--------------------|
| 095AE = 1.2D, CW  | 162SP = 1.6D, CW   |
| 095AF = 1.2D, CCW | 162SR = 1.6D, CCW  |
| 095SP = 1.6D, CW  | 162SC = 2.0D, CW   |
| 095SR = 1.6D, CCW | 162SD = 2.0D, CCW  |
| 095SC = 2.0D, CW  |                    |
| 095SD = 2.0D, CCW | 187SY = 1.45D, CW  |
|                   | 187SZ = 1.45D, CCW |
| 118SP = 1.6D, CW  | 187SM = 1.75D, CW  |
| 118SR = 1.6D, CCW | 187SN = 1.75D, CCW |
| 118SC = 2.0D, CW  | 187SC = 2.0D, CW   |
| 118SD = 2.0D, CCW | 187SD = 2.0D, CCW  |
|                   |                    |
| 143SJ = 1.5D, CW  | 200SC = 2.0D, CW   |
| 143SK = 1.5D, CCW | 200SD = 2.0D, CCW  |
| 143SE = 1.7D, CW  |                    |
| 143SF = 1.7D, CCW | 250AL = 1.3D, CW   |
| 143SC = 2.0D, CW  | 250AM = 1.3D, CCW  |
| 143SD = 2.0D, CCW | 250SP = 1.6D, CW   |
|                   | 250SR = 1.6D, CCW  |
|                   | 250SC = 2.0D, CW   |
|                   | 250SD = 2.0D, CCW  |

Relief Valve Set Range (Limit 1500 ssu)

- A = No relief valve
  - B = 60/75 psi differential\*
  - C = 90/105/120 psi differential\*
  - D = 135/150/165 psi differential\*
  - E = 180/195/210 psi differential\*
- \*Iron Case Pump only

Mounting

- C = SAE flange mount
  - F = Foot mount
  - I = Integral flange mount\*
- Note: Must specify "N" for "Seals"

### CIRCOR

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