

## S200 Series

CENTRIFUGAL PUMPS - DESIGNED FOR THE BIO-PHARMACEUTICAL INDUSTRY



## S200 Series Centrifugal Pumps

The Waukesha Cherry-Burrell brand S200 series pumps, are ideal for pharmaceutical applications.

The pumps come standard with a machined from solid stainless steel bar body eliminating "rouging" typically associated with cast pumps, material heat numbers and a documentation package.

The unique design of the pump mounted to a JM pump motor provides a short over-hung load with a one size seal that fits in all models, reducing maintenance and increasing the flexibility of your inventory. SPX FLOW offers a complete range of centrifugal pumps to meet your needs. When it comes to know-how, experience and vast product range within the field of hygienic pumps, look to SPX FLOW to help solve your toughest application challenges.

SPX FLOW, Inc. (NYSE:FLOW) is a leading manufacturer of innovative flow technologies, many of which help define the industry standard in the market segments they serve. From its headquarters in Charlotte, North Carolina, it operates a sales and support network, centers of manufacturing excellence, and advanced engineering facilities, throughout the world. Its cutting-edge flow components and process equipment portfolio includes a wide range of pumps, valves, heat exchangers, mixers, homogenizers, separators, filters, UHT, and drying technology that meet many application needs. Its expert engineering capability also makes it a premium supplier of customized solutions and complete, turn-key packages to meet the most exacting of installation demands.

Incorporating many leading brands, SPX FLOW has a long history of serving the food and beverage and industrial market sectors. Its designs and engineered solutions help customers drive efficiency and productivity, increase quality and reliability, and meet the latest regulatory demands. In-depth understanding of applications and processes, state-of-the-art Innovation Centers, and advanced pilot/testing technology further assist in optimizing processes and reducing timescales to reliably meet production targets.

To learn more about SPX FLOW capabilities, its latest technology innovations and complete service offerings, please visit [www.spxflow.com](http://www.spxflow.com).

Product contact components are machined from wrought less than 5% ferrite level, 316L SS and feature a 20 Ra product contact surface finish. Material heat numbers are available on all product contact components.

### FEATURES AND BENEFITS

#### STANDARD

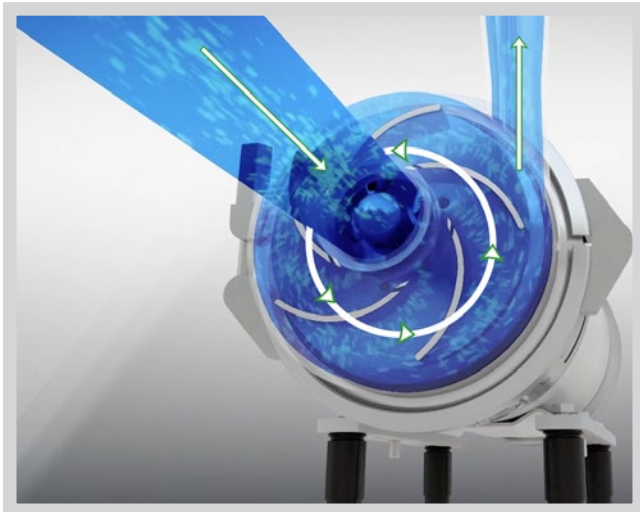
- Designed to be Cleanable-in-Place (CIP)
- High efficiency, low NPSHR design for a wide variety of applications.
- One size mechanical seal for all S200 Series models; reducing parts inventory and cost (commercial seals available)
- Integral impeller/shaft design for fewer parts, greater concentricity and easy maintenance
- Close coupled pumps use NEMA JM Frame motors with larger diameter shafts and bearings (compared to C Frame motors)
- Horizontal, vertical and 45° angle discharge port orientation available
- Impellers, casing, and backplate are machined from wrought 316L SS
- Stainless steel motor adapters
- Reduced validation time
- Documentation package
- FDA approved fluoroelastomers
- USP Class VI elastomers
- 3-A approved and EHEDG certified

#### OPTIONS

- 15 or 20 Ra, electropolish and passivation product contact surface finishes
- Double mechanical seals
- Casing drain
- SS motors
- USP Class VI elastomers
- Stainless steel motors
- SS Leg Kits
- Ra Mapping
- Certified and witness performance testing
- Pedestal mounted pumps
- Stainless steel bases and coupling guards

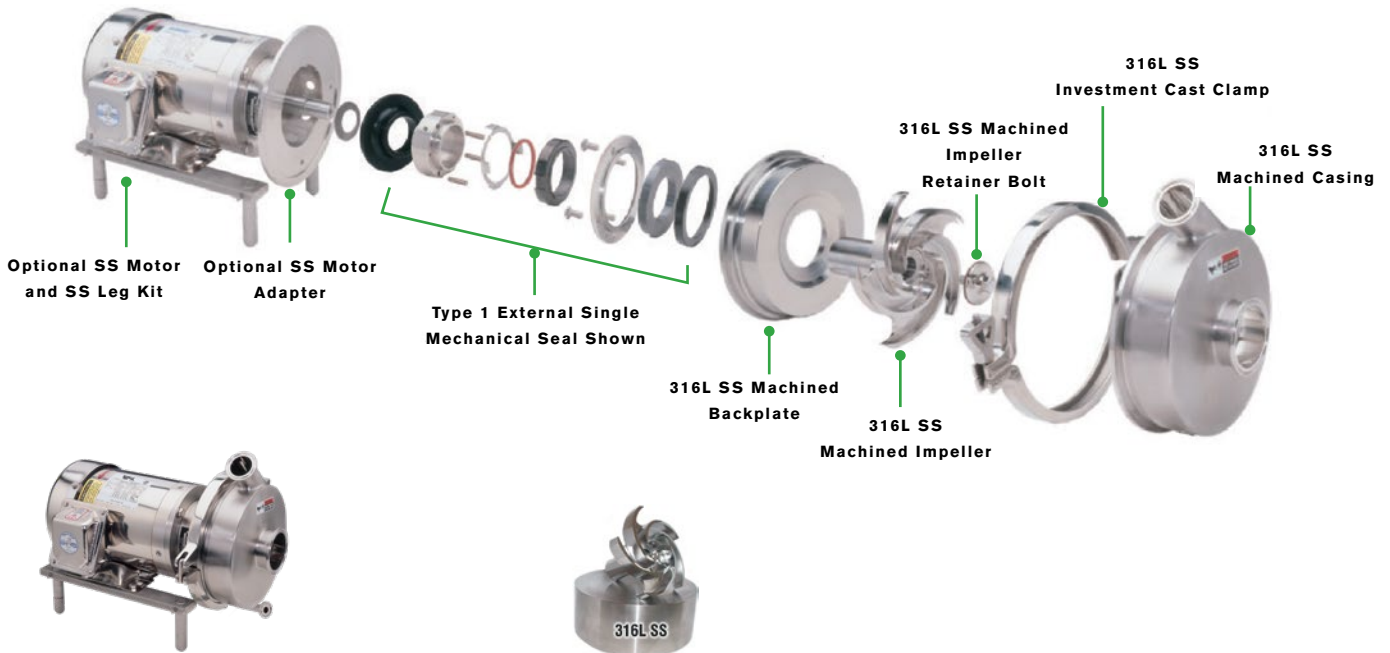
## THEORY OF OPERATION

Low viscous fluids enter through the center inlet and flow around the impeller which turns at various speeds based on application requirements. The fluid then moves to the outer extents of the impeller vanes by centrifugal force and is directed through the outlet. As with other SPX FLOW centrifugal pumps, impeller and casing designs are optimized to perform more efficiently over a wide range of operating conditions. The casing and port are further designed to maximize performance under low NPSH conditions.



## MATERIAL SPECIFICATIONS

### S200 Exploded View



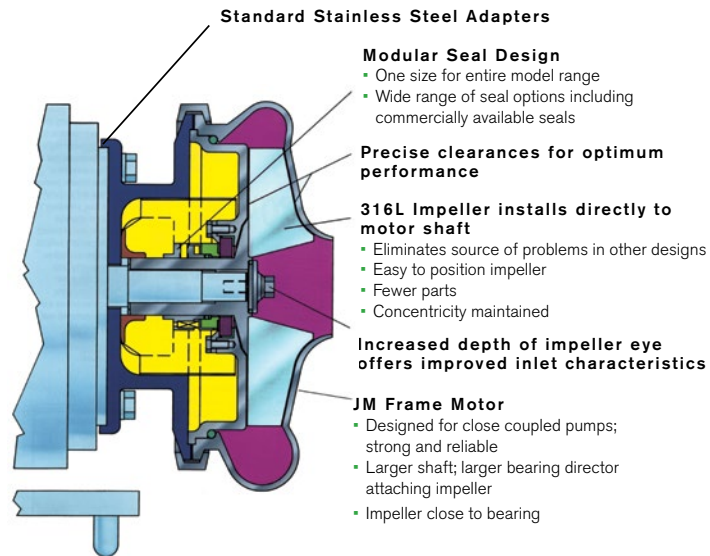
Close coupled Model S2065LV with optional SS Motor, Adapter and Leg Kit shown.

Wet-end components are made from wrought 316SS, (UNS 31603) bar or flat stock with composition and manufacturing process controls that limit delta ferrite content to less than 5%.

## Typical product applications

### Pharmaceutical Processing

- USP Purified Water
- USP Water for Injection
- Buffer Distribution & Transfer
- Low Viscosity Product Transfer
- CIP Solutions

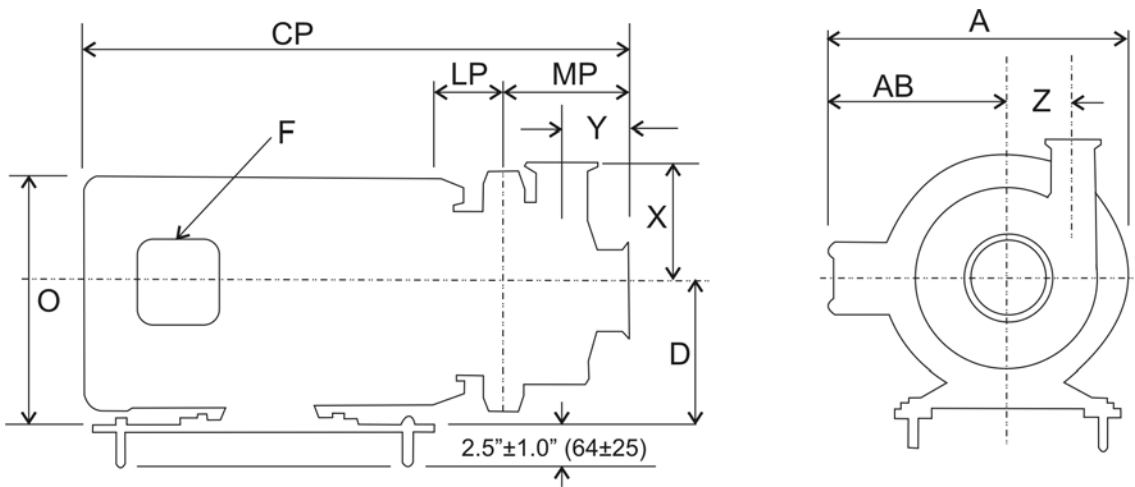


316L Casing - Rugged, strong construction with consistent dimensions

## PRODUCT SPECIFICATIONS

| MODEL          | INLET SIZE INCHES (mm) |              | OUTLET SIZE IMPELLER SIZE INCHES (mm) | MAXIMUM IMPELLER SIZE INCHES (mm) | MAXIMUM CAPACITY GPM (M <sup>3</sup> /HR) |              | MAXIMUM HEAD FEET (METERS) |              |
|----------------|------------------------|--------------|---------------------------------------|-----------------------------------|---|--------------|----------------------------|--------------|
|                |                        |              |                                       |                                   | 1750 RPM                                  | 3500 RPM     | 1750 RPM                   | 3500 RPM     |
| <b>S2045</b>   | 1.5<br>(40)            | 2.0<br>(50)  | 1.5<br>(40)                           | 4.5<br>(114)                      | 97<br>(22)                                | 190<br>(43)  | 22<br>(6)                  | 88<br>(27)   |
| <b>S2065LV</b> | 1.5<br>(40)            | 2.5<br>(65)  | 1.5<br>(40)                           | 6.5<br>(165)                      | 100<br>(23)                               | 195<br>(44)  | 44<br>(13)                 | 173<br>(53)  |
| <b>S2065</b>   | 2.5<br>(65)            |              | 2.0<br>(50)                           | 6.5<br>(165)                      | 245<br>(56)                               | 450<br>(102) | 46<br>(14)                 | 180<br>(55)  |
| <b>S2065HV</b> | 3.0<br>(75)            |              | 2.0<br>(50)                           | 6.5<br>(165)                      | 230<br>(52)                               | 500<br>(114) | 44<br>(13)                 | 180<br>(55)  |
| <b>S2075</b>   | 3.0<br>(75)            |              | 1.5<br>(40)                           | 8.7<br>(221)                      | 125<br>(28)                               | 300<br>(68)  | 79<br>(24)                 | 320<br>(97)  |
| <b>S2085</b>   | 3.0<br>(75)            | 4.0<br>(100) | 2.5<br>(65)                           | 8.7<br>(221)                      | 490<br>(111)                              | 900<br>(204) | 80<br>(24)                 | 312<br>(95)  |
| <b>S2085LV</b> | 2.0<br>(50)            |              | 1.5<br>(40)                           | 8.7<br>(221)                      | 70<br>(16)                                | 140<br>(32)  | 81<br>(24)                 | 310<br>(94)  |
| <b>S2092</b>   | 3.0<br>(75)            |              | 2.0<br>(50)                           | 9.25<br>(235)                     | 380<br>(86)                               | 700<br>(159) | 90<br>(27)                 | 362<br>(110) |

## PRODUCT DIMENSIONS



| FRAME | A INCH (MM) | O INCH (MM) | D INCH (MM) | F INCH (MM) | AB INCH (MM) |
|-------|-------------|-------------|-------------|-------------|--------------|
| 145JM | 9.32 (237)  | 7.1 (180)   | 3.5 (89)    | 0.88 (22)   | 5.73 (145)   |
| 182JM | 9.32 (237)  | 8.1 (206)   | 4.5 (114)   | 0.88 (22)   | 5.73 (145)   |
| 184JM | 11.11 (282) | 8.49 (216)  | 4.5 (114)   | 1.09 (28)   | 6.87 (174)   |
| 213JM | 13.18 (335) | 10.39 (264) | 5.25 (133)  | 1.38 (35)   | 8.04 (204)   |
| 215JM | 13.18 (335) | 10.39 (264) | 5.25 (133)  | 1.38 (35)   | 8.04 (204)   |
| 254JM | 15.34 (390) | 11.39 (289) | 6.25 (159)  | 1.38 (35)   | 9.40 (239)   |
| 256JM | 15.34 (390) | 11.39 (289) | 6.25 (159)  | 1.38 (35)   | 9.40 (239)   |
| 284JM | 20.78 (528) | 14.44 (367) | 7.0 (178)   | 2.0 (51)    | 13.12 (333)  |
| 286JM | 20.49 (520) | 14.44 (367) | 7.0 (178)   | 2.0 (51)    | 13.12 (333)  |
| 324JM | 23.05 (585) | 16.25 (413) | 8.0 (203)   | 2.5 (63)    | 14.61 (371)  |
| 326JM | 23.05 (585) | 16.25 (413) | 8.0 (203)   | 2.5 (63)    | 14.61 (371)  |

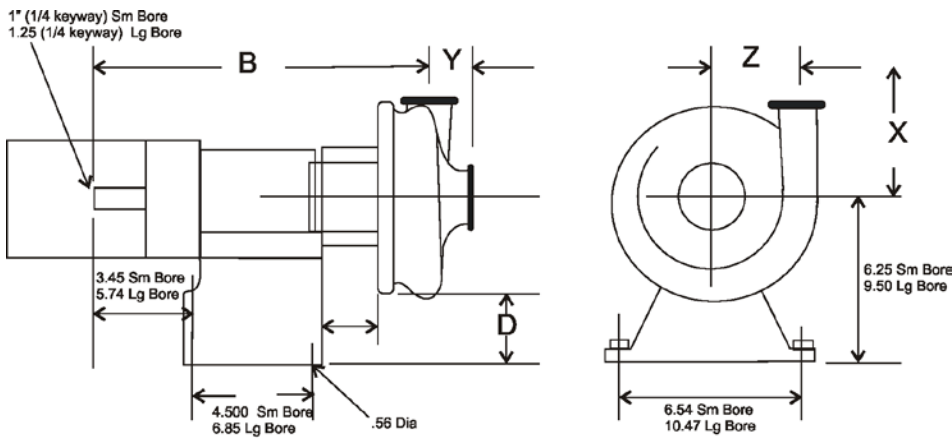
| FRAME        | PUMP SIZE   |             |             |             |             |             |             |             |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|              | S2045       |             | S2065       |             | S2065LV     |             | S2065HV     |             |
|              | LP          | CP          | LP          | CP          | LP          | CP          | LP          | CP          |
|              | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) |
| <b>145JM</b> | 2.92 (74)   | 18.18 (461) | 2.71 (69)   | 18.43 (468) | 2.71 (69)   | 17.93 (455) | 2.71 (69)   | 18.85 (479) |
| <b>182JM</b> | 2.92 (74)   | 19.56 (497) | 2.71 (69)   | 19.81 (503) | 2.71 (69)   | 19.31 (490) | 2.71 (69)   | 20.23 (514) |
| <b>184JM</b> | 2.92 (74)   | 20.81 (529) | 2.71 (69)   | 21.01 (534) | 2.71 (69)   | 20.56 (522) | 2.71 (69)   | 21.43 (544) |
| <b>213JM</b> | --          | --          | 2.97 (75)   | 22.81 (579) | 2.97 (75)   | 22.31 (567) | 2.97 (75)   | 23.23 (590) |
| <b>215JM</b> | --          | --          | 2.97 (75)   | 23.94 (608) | 2.97 (75)   | 23.44 (595) | 2.97 (75)   | 24.36 (618) |
| <b>254JM</b> | --          | --          | 3.97 (101)  | 26.07 (662) | 3.97 (101)  | 25.57 (649) | 3.97 (101)  | 26.49 (673) |
| <b>256JM</b> | --          | --          | 3.97 (101)  | 27.83 (707) | 3.97 (101)  | 27.33 (694) | 3.97 (101)  | 28.25 (718) |
| <b>284JM</b> | --          | --          | 3.97 (101)  | 31.43 (798) | 3.97 (101)  | 30.93 (786) | 3.97 (101)  | 31.85 (809) |
| <b>286JM</b> | --          | --          | 3.97 (101)  | 31.64 (804) | 3.97 (101)  | 31.14 (791) | 3.97 (101)  | 32.06 (814) |
| <b>324JM</b> | --          | --          | --          | --          | --          | --          | --          | --          |
| <b>326JM</b> | --          | --          | --          | --          | --          | --          | --          | --          |

| FRAME        | PUMP SIZE   |             |             |             |             |             |             |             |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|              | S2075       |             | S2085       |             | S2085LV     |             | S2092       |             |
|              | LP          | CP          | LP          | CP          | LP          | CP          | LP          | CP          |
|              | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) | Inches (mm) |
| <b>145JM</b> | 2.75 (70)   | 18.17 (461) | 2.75 (70)   | 18.84 (478) | 2.75 (70)   | 18.17 (461) | 2.75 (70)   | 18.78 (477) |
| <b>182JM</b> | 2.75 (70)   | 19.55 (497) | 2.75 (70)   | 21.21 (513) | 2.75 (70)   | 19.55 (497) | 2.75 (70)   | 20.16 (512) |
| <b>184JM</b> | 2.75 (70)   | 20.80 (528) | 2.75 (70)   | 21.46 (545) | 2.75 (70)   | 20.80 (528) | 2.75 (70)   | 21.41 (544) |
| <b>213JM</b> | 2.84 (72)   | 22.39 (569) | 2.84 (72)   | 23.06 (586) | 2.84 (72)   | 22.39 (569) | 2.84 (72)   | 23.00 (584) |
| <b>215JM</b> | 2.84 (72)   | 23.52 (597) | 2.84 (72)   | 24.19 (614) | 2.84 (72)   | 23.52 (597) | 2.84 (72)   | 24.13 (613) |
| <b>254JM</b> | 3.84 (98)   | 25.65 (651) | 3.84 (98)   | 26.32 (668) | 3.84 (98)   | 25.65 (651) | 3.84 (98)   | 26.26 (667) |
| <b>256JM</b> | 3.84 (98)   | 27.41 (696) | 3.84 (98)   | 28.08 (713) | 3.84 (98)   | 27.41 (696) | 3.84 (98)   | 28.02 (712) |
| <b>284JM</b> | 3.84 (98)   | 31.01 (788) | 3.84 (98)   | 31.68 (805) | 3.84 (98)   | 31.01 (788) | 3.84 (98)   | 31.62 (803) |
| <b>286JM</b> | 3.84 (98)   | 31.22 (793) | 3.84 (98)   | 31.89 (810) | 3.84 (98)   | 31.22 (793) | 3.84 (98)   | 31.83 (808) |
| <b>324JM</b> | 3.84 (98)   | 33.11 (841) | 3.84 (98)   | 33.78 (858) | 3.84 (98)   | 33.11 (841) | --          | --          |
| <b>326JM</b> | 3.84 (98)   | 33.11 (841) | 3.84 (98)   | 33.78 (858) | 3.84 (98)   | 33.11 (841) | --          | --          |

| MODEL          | INLET INCH (MM) | OUTLET INCH (MM) | X INCH (MM) | Y INCH (MM) | Z INCH (MM) | MP INCH (MM) |
|----------------|-----------------|------------------|-------------|-------------|-------------|--------------|
| <b>S2045</b>   | 1.5 (38)        | 1.5 (38)         | 3.88 (99)   | 2.56 (65)   | 1.99 (51)   | 4.08 (104)   |
|                | 2.0 (51)        | 1.5 (40)         | 3.88 (99)   | 2.56 (65)   | 1.99 (51)   | 4.08 (104)   |
| <b>S2065</b>   | 2.5 (64)        | 2.0 (51)         | 4.94 (125)  | 2.68 (68)   | 2.88 (73)   | 4.53 (115)   |
| <b>S2065LV</b> | 1.5 (38)        | 1.5 (38)         | 4.94 (125)  | 2.43 (62)   | 3.13 (79)   | 4.03 (102)   |
|                | 2.0 (51)        | 1.5 (38)         | 4.94 (125)  | 2.43 (62)   | 3.13 (79)   | 4.03 (102)   |
|                | 2.5 (64)        | 1.5 (38)         | 4.94 (125)  | 2.43 (62)   | 3.13 (79)   | 4.03 (102)   |
| <b>S2065HV</b> | 3.0 (76)        | 2.0 (51)         | 4.94 (125)  | 3.04 (77)   | 2.88 (73)   | 4.96 (126)   |
| <b>S2075</b>   | 3.0 (76)        | 1.5 (40)         | 6.69 (170)  | 2.70 (69)   | 4.32 (110)  | 4.24 (108)   |
| <b>S2085</b>   | 3.0 (76)        | 2.5 (64)         | 5.75 (146)  | 2.93 (74)   | 3.82 (97)   | 4.91 (125)   |
|                | 4.0 (102)       | 2.5 (64)         | 5.75 (146)  | 2.93 (74)   | 3.82 (97)   | 4.91 (125)   |
| <b>S2085LV</b> | 2.0 (51)        | 1.5 (40)         | 6.69 (170)  | 2.70 (69)   | 4.32 (110)  | 4.24 (108)   |
| <b>S2092</b>   | 3.0 (76)        | 2.0 (51)         | 6.64 (169)  | 3.09 (78)   | 4.6         |              |



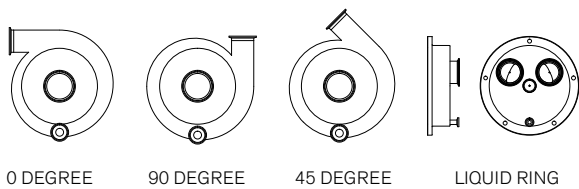
**PRODUCT DIMENSIONS CONT.**



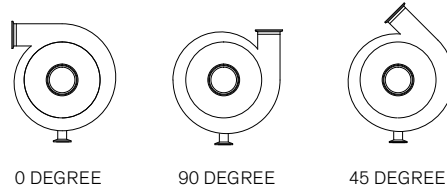
| MODEL    | INLET INCH (MM) | OUTLET INCH (MM) | B                 |                   | D                 |                   |
|----------|-----------------|------------------|-------------------|-------------------|-------------------|-------------------|
|          |                 |                  | SM BORE INCH (MM) | LG BORE INCH (MM) | SM BORE INCH (MM) | LG BORE INCH (MM) |
| PS2045   | 1.5 (40)        | 1.5 (40)         | 15.0 (381)        | --                | 2.7 (69)          | --                |
|          | 2.0 (50)        | 1.5 (40)         | 15.0 (381)        | --                | 2.7 (69)          | --                |
| PS2065LV | 1.5 (40)        | 1.5 (40)         | 14.9 (378)        | 18.6 (472)        | 1.7 (43)          | 4.9 (124)         |
|          | 2.0 (50)        | 1.5 (40)         | 14.9 (378)        | 18.6 (472)        | 1.7 (43)          | 4.9 (124)         |
|          | 2.5 (65)        | 1.5 (40)         | 14.9 (378)        | 18.6 (472)        | 1.7 (43)          | 4.9 (124)         |
| PS2065   | 2.5 (65)        | 2.0 (50)         | 15.1 (384)        | 18.9 (480)        | 1.7 (43)          | 4.9 (124)         |
| PS2065HV | 3.0 (75)        | 2.0 (50)         | 15.2 (386)        | 18.9 (480)        | 1.7 (43)          | 4.9 (124)         |
| PS2075   | 3.0 (75)        | 1.5 (40)         | 14.7 (373)        | 18.4 (472)        | .6 (15)           | 3.9 (99)          |
| PS2085LV | 2.0 (50)        | 1.5 (40)         | 14.7 (373)        | 18.4 (472)        | .6 (15)           | 3.9 (99)          |
| PS2085   | 3.0 (75)        | 2.5 (65)         | 15.1 (384)        | 18.9 (480)        | .6 (15)           | 3.9 (99)          |
|          | 4.0 (100)       | 2.5 (65)         | 15.1 (384)        | 18.9 (480)        | .6 (15)           | 3.9 (99)          |
| PS2092   | 3.0 (75)        | 2.0 (50)         | 14.9 (378)        | 18.6 (472)        | .6 (15)           | 3.9 (99)          |

**CASING DRAIN OPTIONS**

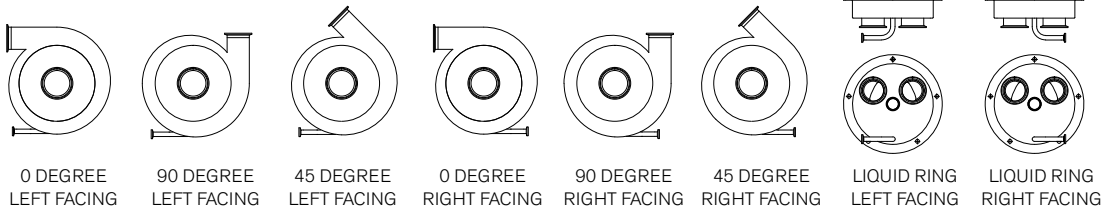
**FRONT FACING - MODELS S2065-S2092**



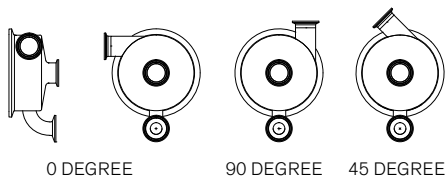
**BOTTOM FACING - MODELS S2045-S2092**



**TANGENTIAL - MODELS S2045-S2092**



**FRONT FACING WITH 90 DEGREE ELBOW - MODELS S2045-S2092**



## SUPPORT TOOLS

SPX FLOW is experienced with components utilized in the bio-pharmaceutical industry and the part traceability required with every pump we manufacture. SPX FLOW supplies this stringent documentation in an attractive, easy to navigate PDF package so you can easily archive this information for future reference. This important, critical information is also available 24/7 on our material test reports/certification documentation website tool. In addition to these services SPX FLOW also wants to ensure you size and order the correct pump based on your application needs. We have partnered with PUMP-FLO® to bring our customers a straightforward sizing program that can be accessed by simply creating and registering an account.

### EXTRACTS FROM SUPPLIED DOCUMENTATION:

### MATERIAL TEST REPORTS / CERTIFICATION DOCUMENTATION LOOK UP TOOL:

SCAN FOR LOOK UP TOOL

### PUMP SIZING AND SELECTION WEBSITE:



Based in Charlotte, North Carolina, SPX FLOW, Inc. (NYSE: FLOW) is a multi-industry manufacturing leader. For more information, please visit [www.spxflow.com](http://www.spxflow.com)

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