

# T100 Series Low Pressure Models T100E, T100F & T100H

Maximum Flow Rate: 96 gpm (366.1 l/min) 3292 BPD  
Maximum Pressure: 2100 psi (145 bar)

**Hydra-Cell**<sup>®</sup>  
Seal-less Pumps



T100 Series low-pressure model with Nickel Aluminum Bronze (NAB) pump head

**Available  
to Meet  
API 674!**

- Seal-less design separates the power end from the process fluid end, eliminating leaks, hazards, and the expense associated with seals and packing.
- Low NPSH requirements allow for operation with a vacuum condition on the suction - positive suction pressure is not necessary.
- Can operate with a closed or blocked suction line and run dry indefinitely without damage, eliminating downtime and repair costs.
- Unique diaphragm design handles more abrasives with less wear than gear, screw or plunger pumps.
- Hydraulically balanced diaphragms to handle high pressures with low stress.
- Lower energy costs than centrifugal pumps and other pump technologies.
- Rugged construction for long life with minimal maintenance.
- Compact design and double-ended shaft provide a variety of installation options.

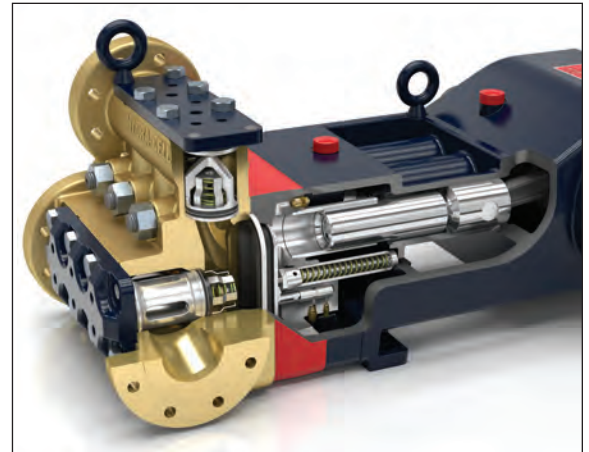
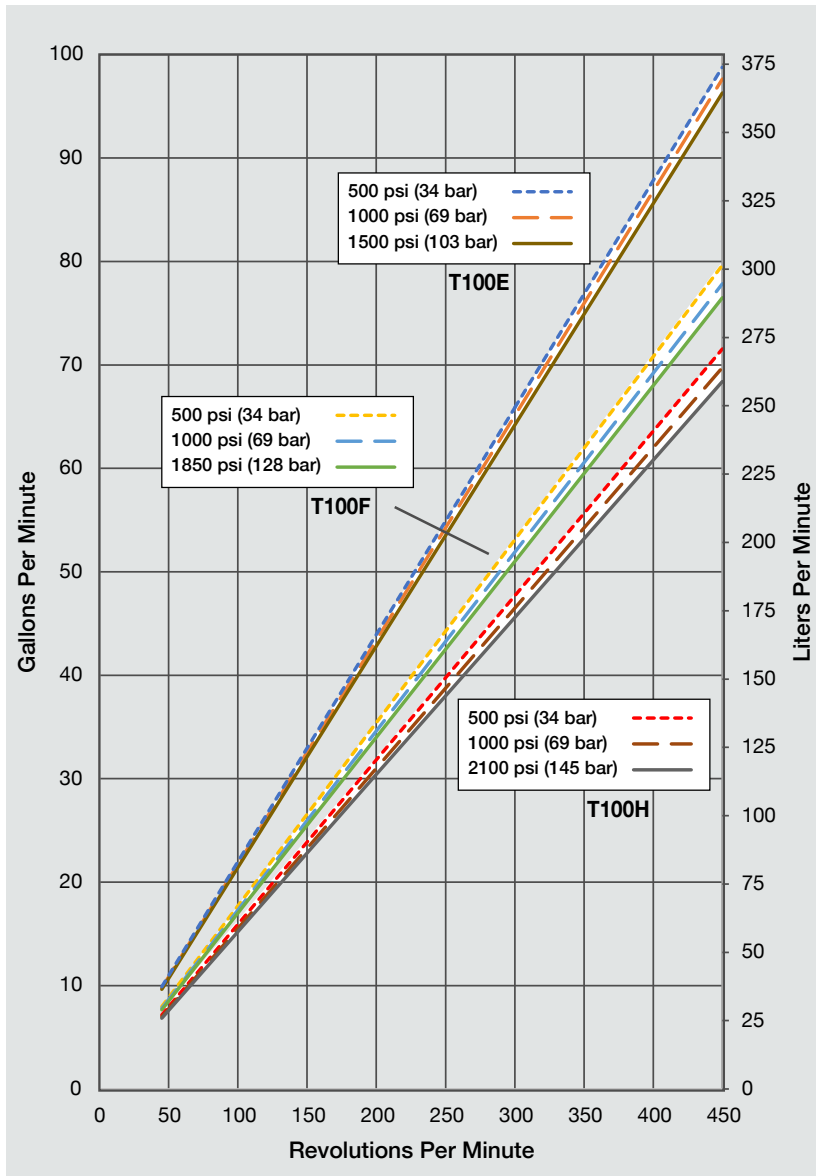
# T100 Series Low Pressure Performance

## Capacities

| Model | Max. Input rpm | Plunger Dia. |    | Max. Flow Capacities |       |      | Max. Pressure Ratings Discharge |     | Max. Pressure Ratings Inlet |     |
|-------|----------------|--------------|----|----------------------|-------|------|---------------------------------|-----|-----------------------------|-----|
|       |                | Inches       | mm | gpm                  | l/min | BPD  | psi                             | bar | psi                         | bar |
| T100E | 450            | 2.5          | 64 | 96.0                 | 366.1 | 3292 | 1500                            | 103 | 500                         | 34  |
| T100F | 450            | 2.25         | 57 | 76.5                 | 289.6 | 2623 | 1850                            | 128 | 500                         | 34  |
| T100H | 450            | 2.125        | 54 | 68.0                 | 257.8 | 2332 | 2100                            | 145 | 500                         | 34  |

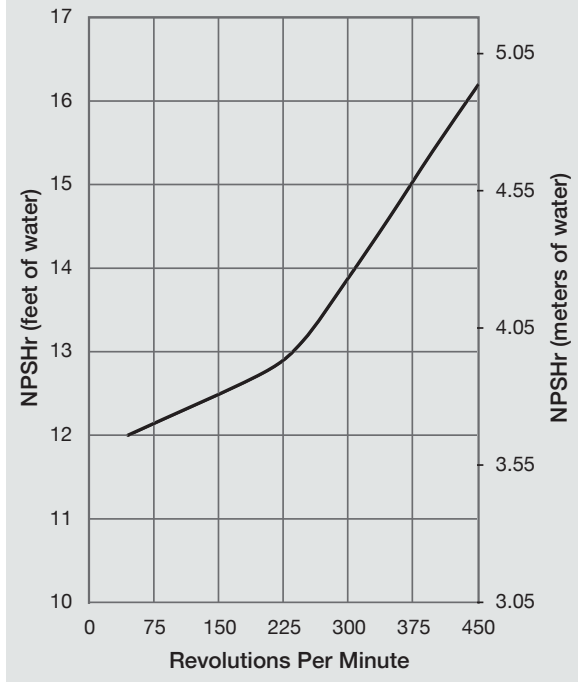
Consult factory when operating below 45 rpm.

## Maximum Flow at Designated Pressure



T100 Series pumps feature the Hydra-Cell seal-less design, eliminating clean-up costs from leaking seals or packing and protecting operators from dangerous fluids such as those containing hydrogen sulfide.

## Net Positive Suction Head (NPSHr)



Due to the Wanner Engineering Continuous Improvement Program, specifications and other data are subject to change.

# T100 Series Low Pressure Specifications

## Flow Capacities

| Model | Pressure psi (bar) | rpm | gpm  | l/min | BPD  |
|-------|--------------------|-----|------|-------|------|
| T100E | 1500 (103)         | 450 | 96.0 | 366.1 | 3292 |
| T100F | 1850 (128)         | 450 | 76.5 | 289.6 | 2623 |
| T100H | 2100 (145)         | 450 | 68.0 | 257.8 | 2332 |

## Delivery

|       | Pressure psi (bar) | gal/rev | liters/rev |
|-------|--------------------|---------|------------|
| T100E | 500 (34)           | 0.220   | 0.831      |
|       | 1000 (69)          | 0.217   | 0.821      |
|       | 1500 (103)         | 0.214   | 0.809      |
| T100F | 500 (34)           | 0.177   | 0.669      |
|       | 1000 (69)          | 0.173   | 0.655      |
|       | 1850 (128)         | 0.170   | 0.644      |
| T100H | 500 (34)           | 0.159   | 0.601      |
|       | 1000 (69)          | 0.155   | 0.587      |
|       | 2100 (145)         | 0.152   | 0.575      |

## rpm

|                  |   |
|------------------|---|
| Maximum:         | 450   |
| Maximum API 674: | 375   |
| Minimum:         | 45 (Consult factory for speeds less than 45 rpm.) |

## Maximum Discharge Pressure

|                 |       |                    |
|-----------------|-------|--------------------|
| Metallic Heads: | T100E | 1500 psi (103 bar) |
|                 | T100F | 1850 psi (128 bar) |
|                 | T100H | 2100 psi (145 bar) |

## Maximum Inlet Pressure

500 psi (34 bar)

## Operating Temperature

|          |                  |
|----------|------------------|
| Maximum: | 180 °F (82.2 °C) |
| Minimum: | 40 °F (4.4 °C)   |

Consult factory for temperatures outside this range.

## Maximum Solids Size

800 microns

## Input Shaft

Left or Right Side

## Inlet Ports

3-1/2 inch Class 300 RF ANSI Flange

## Discharge Ports

2 inch Class 900 RF ANSI Flange

## Plunger Stroke Length

3.5 Inches (88.9 mm)

## Shaft Diameter

3 inch (76.2 mm)

## Shaft Rotation

Uni-directional (See rotation arrow.)

## Oil Capacity

18 US quarts (17 liters) - blank back cover

20.5 US quarts (19.4 liters) - oil level back cover

See page 5 for oil selection and specification.

## Weight

Metallic Heads: 1100 lbs. (499 kg)

## Calculating Required Horsepower (kW)\*

$$\frac{\text{gpm} \times \text{psi}}{1,460} = \text{electric motor hp}^*$$

$$\frac{\text{lpm} \times \text{bar}}{511} = \text{electric motor kW}^*$$

\* hp (kW) is required application power.

## Attention!

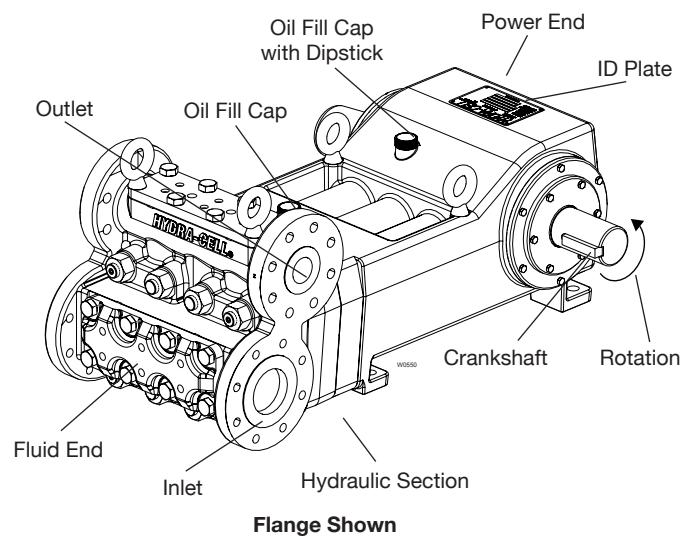
When sizing motors with variable speed drives (VFD): It is very important to select a motor and a VFD rated for constant torque inverter duty service and that the motor is rated to meet the torque requirements of the pump throughout desired speed range.

## Fluid End Materials

|                           |                              |
|---------------------------|------------------------------|
| Manifold:                 | Nickel Aluminum Bronze (NAB) |
|                           | Duplex Alloy 2205            |
|                           | 316L Stainless Steel CF3M    |
| Diaphragm/Elastomers:     | Hastelloy CX2M               |
|                           | FKM                          |
|                           | Buna-N                       |
| Diaphragm Follower Screw: | Aflas                        |
|                           | EPDM                         |
|                           | 316 Stainless Steel          |
| Valve Spring Retainer:    | 316 SST                      |
|                           | Hastelloy C                  |
| Check Valve Spring:       | Elgiloy                      |
|                           | Hastelloy C                  |
| Valve Disc/Seat :         | Tungsten Carbide             |
|                           | 17-4 PH Stainless Steel      |
|                           | Nitronic 50                  |
| Outlet Valve Retainer:    | Hastelloy C                  |
|                           | 316 Stainless Steel          |
| Plug-Outlet Valve Port:   | 316 Stainless Steel          |
|                           | 316 Stainless Steel          |
| Inlet Valve Retainer:     | 316 Stainless Steel          |
|                           | 316 Stainless Steel          |

## Power End Materials

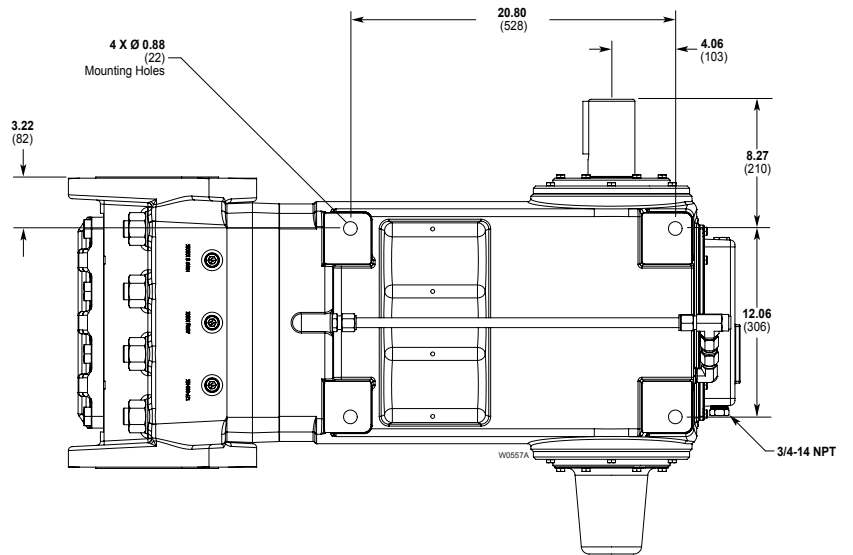
|                  |                                    |
|------------------|------------------------------------|
| Crankshaft:      | Forged Q&T Alloy Steel             |
| Connecting Rods: | Ductile Iron                       |
| Crossheads:      | 12L14 Steel                        |
| Crankcase:       | Ductile Iron                       |
| Bearings:        | Spherical Roller (crankshaft main) |
|                  | Steel Backed Babbitt (crankpin)    |
|                  | Bronze (wristpin)                  |



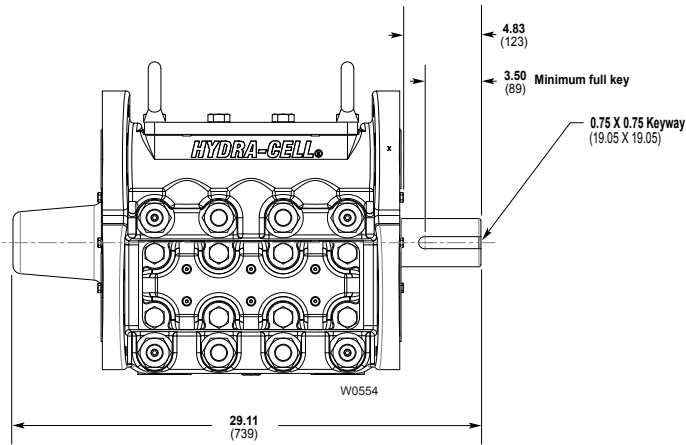
# T100 Series Low Pressure Drawings

Flanged Version inches (mm)

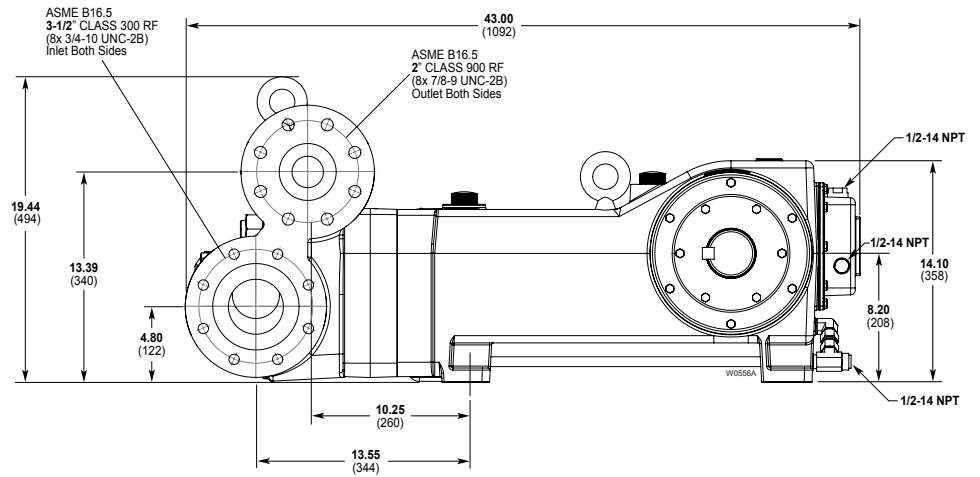
## Bottom View



## Front View



## Side View



**Note:** Representative drawings only. Contact factory for additional drawings of specific models and configurations.

# T100 Series Low Pressure How to Order

## Ordering Information

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| T | 1 | 0 | 0 |   | R |   |   |   |    |    |    |    |    |

A complete T100 Series Low Pressure Model Number contains 14 digits including 9 customer-specified design and materials options, for example: T100ERDGHFEHAO.

## Low Pressure

| Digit      | Order Code | Description   |
|------------|------------|---|
| <b>1-4</b> | T100       | <b>Pump Configuration</b><br>Shaft-driven                 |
| <b>5</b>   |            | <b>Performance</b>  |
|            | E          | Max. 96.0 gpm (366.1 l/min) 3292 BPD @ 1500 psi (103 bar) |
|            | F          | Max. 76.5 gpm (289.6 l/min) 2623 BPD @ 1850 psi (128 bar) |
|            | H          | Max. 68.0 gpm (257.8 l/min) 2332 BPD @ 2100 psi (145 bar) |
| <b>6</b>   |            | <b>Pump Head Version</b>                                  |
|            | R          | ANSI Flange Ports (RF on Inlet / RTJ on Discharge)        |
| <b>7</b>   |            | <b>Pump Head Material</b>                                 |
|            | D          | Nickel Aluminum Bronze (NAB)                              |
|            | G          | Duplex Alloy 2205   |
|            | S          | 316L Stainless Steel CF3M                                 |
|            | T          | Hastelloy CX2M  |
| <b>8</b>   |            | <b>Diaphragm &amp; O-ring Material</b>                    |
|            | A          | Aflas   |
|            | E          | EPDM (requires EPDM-compatible oil - Digit 13 oil code D) |
|            | G          | FKM   |
|            | T          | Buna-N  |
| <b>9</b>   |            | <b>Valve Seat Material</b>                                |
|            | D          | Tungsten Carbide*   |
|            | H          | 17-4 Stainless Steel                                      |
|            | N          | Nitronic 50   |
|            | T          | Hastelloy C   |
| <b>10</b>  |            | <b>Valve Material</b>                                     |
|            | D          | Tungsten Carbide*   |
|            | F          | 17-4 Stainless Steel                                      |
|            | N          | Nitronic 50   |
|            | T          | Hastelloy C   |
| <b>11</b>  |            | <b>Valve Springs</b>                                      |
|            | E          | Elgiloy   |
|            | T          | Hastelloy C   |

| Digit     | Order Code | Description  |
|-----------|------------|--|
| <b>12</b> |            | <b>Valve Spring Retainers</b>                                |
|           | S          | 316 SST  |
|           | T          | Hastelloy C  |
| <b>13</b> |            | <b>Hydra-Oil</b>   |
|           | A          | 10W30 standard-duty oil                                      |
|           | B          | 40-wt.   |
|           | D          | EPDM-compatible oil  |
|           | E          | Food-contact oil   |
|           | H          | 15W50 high-temp severe-duty synthetic oil                    |
| <b>14</b> |            | <b>Oil Level Monitor Cover</b>                               |
|           | C          | Float switch, normally closed                                |
|           | O          | Float switch, normally open                                  |
|           | S          | Float switch, Class I, Div. 1, Groups C & D, normally closed |
|           | T          | Float switch, Class I, Div. 1, Groups C & D, normally open   |
|           | W          | Float switch, ATEX/IECEX, 4-20 mA analog output              |
|           | X          | Float switch, ATEX/IECEX, discrete output, normally-closed   |
|           | Y          | No switch, flat cover  |

**Note:** The Oil Level Monitor Cover is an assembly that replaces the previous back cover on T100 Series pumps. It contains a float switch assembly that can trigger an alarm or shutdown when pre-defined levels of high or low oil are reached. It may also be ordered without a float switch cover.

\*Tungsten Carbide valve seat and disc are a matched set and must be purchased together.

# Hydra-Cell®

## Seal-less Pumps

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