

# Q155 Series Medium Pressure Models Q155K & Q155M

Maximum Flow Rate: 78 gpm (295 l/min) 2674 BPD  
Maximum Pressure: 3500 psi (241 bar)

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



**Available  
to Meet  
API 674!**

*Q155 Series medium-pressure model with  
Nickel Aluminum Bronze (NAB) pump head.*

- 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.

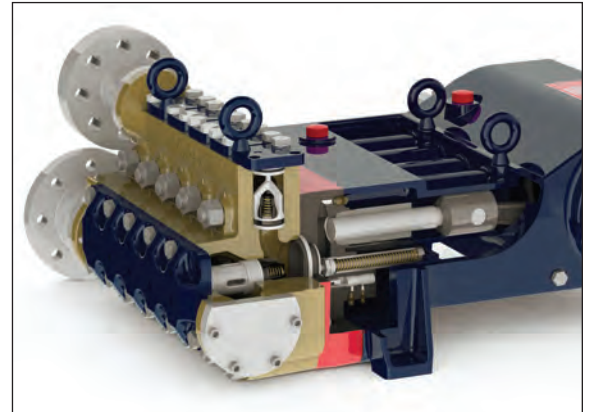
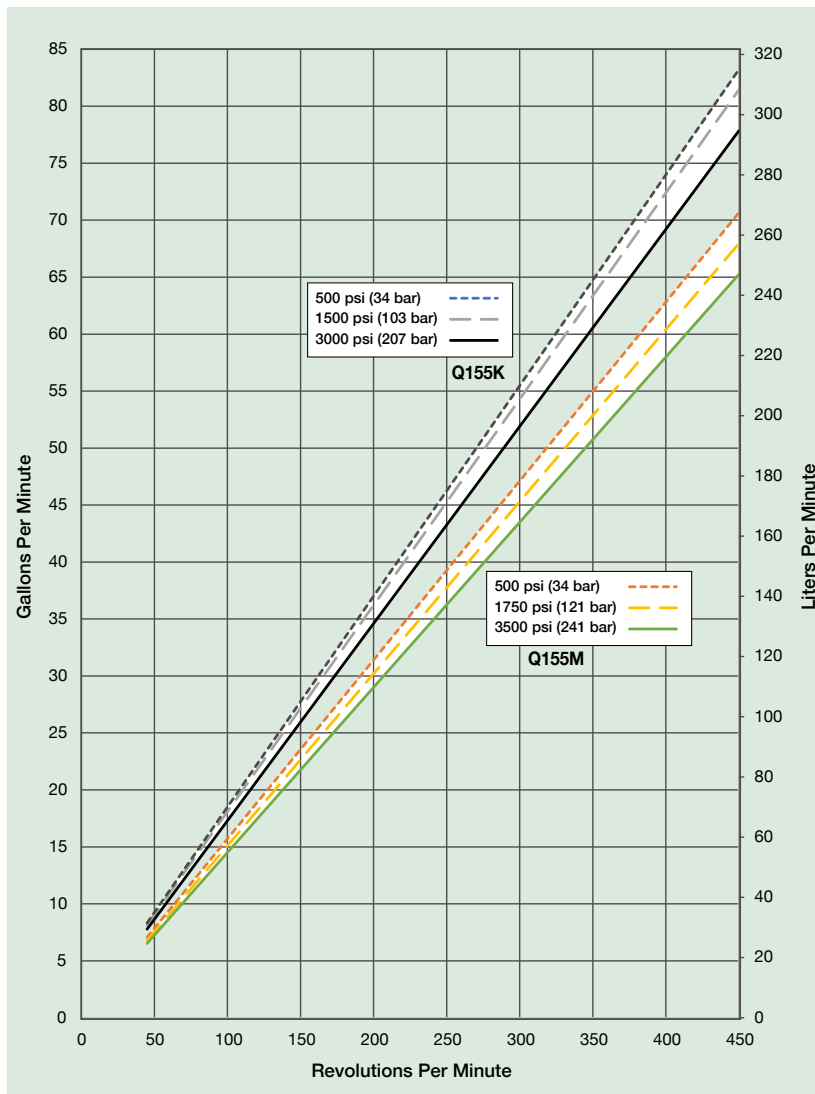
# Q155 Medium Pressure Performance

## Capacities

| Model | Max. Input rpm | Plunger Dia. |    | Max. Flow Capacities |       |      | Max. Pressure Ratings Discharge |     | Inlet |     |
|-------|----------------|--------------|----|----------------------|-------|------|---------------------------------|-----|-------|-----|
|       |                | Inches       | mm | gpm                  | l/min | BPD  | psi                             | bar | psi   | bar |
| Q155K | 450            | 1.75         | 44 | 78                   | 295   | 2674 | 3000                            | 207 | 500   | 34  |
| Q155M | 450            | 1.625        | 41 | 65                   | 246   | 2228 | 3500                            | 241 | 500   | 34  |

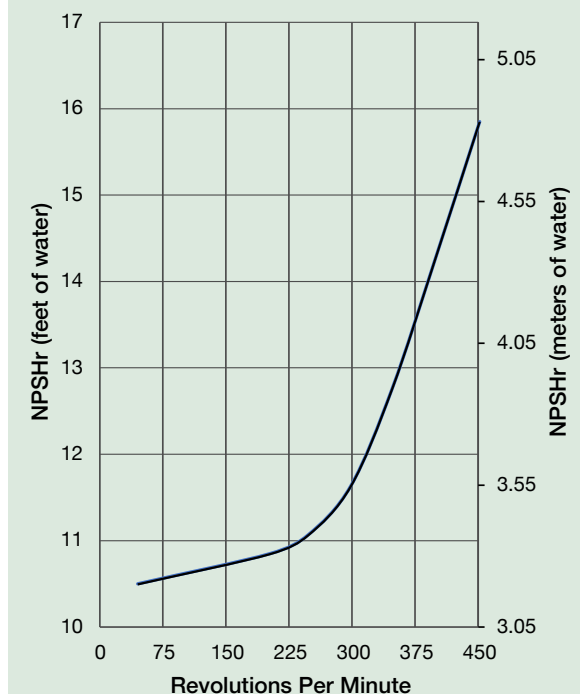
Consult factory when operating below 45 rpm.

## Maximum Flow at Designated Pressure



Hydra-Cell Q155 is a positive displacement, multiple-diaphragm pump featuring a seal-less design that provides full containment of the pumping chamber. This means there are no VOC emissions when operating Hydra-Cell and no packing or dynamic seals that pose environmental issues from leakage.

## Net Positive Suction Head (NPSHr)



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

# Q155 Medium Pressure Specifications

## Flow Capacities

| Model | Pressure psi (bar) | rpm | gpm  | l/min | BPD  |
|-------|--------------------|-----|------|-------|------|
| Q155K | 3000 (207)         | 450 | 78.0 | 295.3 | 2674 |
| Q155M | 3500 (241)         | 450 | 65.0 | 246.1 | 2228 |

## Delivery

|       | Pressure psi (bar) | gal/rev | liters/rev |
|-------|--------------------|---------|------------|
| Q155K | 500 (34)           | 0.185   | 0.700      |
|       | 1500 (103)         | 0.181   | 0.685      |
|       | 3000 (207)         | 0.173   | 0.654      |
| Q155M | 500 (34)           | 0.157   | 0.592      |
|       | 1750 (121)         | 0.151   | 0.573      |
|       | 3500 (241)         | 0.145   | 0.547      |

## rpm

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

## Maximum Discharge Pressure

|                 |       |                    |
|-----------------|-------|--------------------|
| Metallic Heads: | Q155K | 3000 psi (207 bar) |
|                 | Q155M | 3500 psi (241 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 Weld-On: 4" / SCH. 40 4" NPT, 4" Class 300 RF ANSI

## Discharge Ports Weld-On: 2" / SCH. 160 2" NPT, 2" Class 2500 RTJ ANSI

## 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 32 US quarts (30.3 liters) - blank back cover 34 US quarts (32.2 liters) - oil level back cover See page 5 for oil selection and specification.

## Weight

|                 |                    |
|-----------------|--------------------|
| Metallic Heads: | 1700 lbs. (771 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!

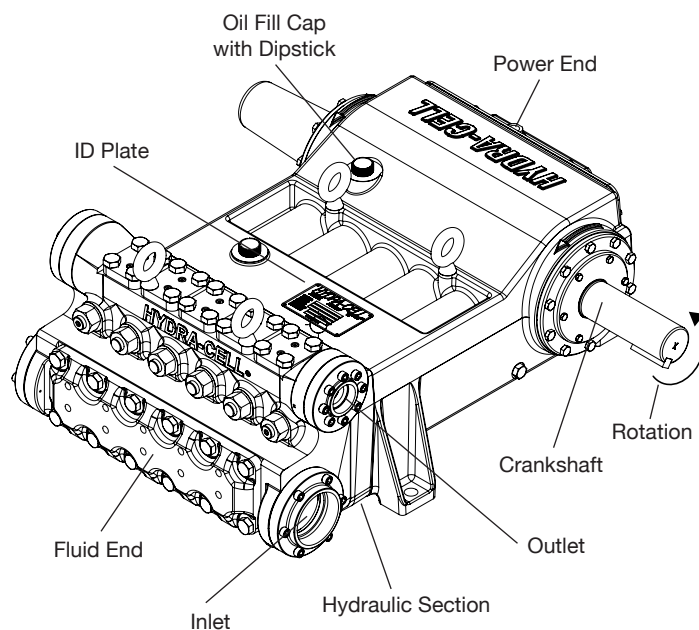
When sizing motors with variable speed drives (VFD): It is very important to select a motor and a VFD rated for constant torque inverter duty service and that the motor is rated to meet the torque requirements of the pump throughout desired speed range.

## Fluid End Materials

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





# Q155 Medium Pressure **How to Order**

## Ordering Information

|                          |                          |                          |                          |              |              |              |              |              |               |               |               |               |               |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| <sup>1</sup><br><b>Q</b> | <sup>2</sup><br><b>1</b> | <sup>3</sup><br><b>5</b> | <sup>4</sup><br><b>5</b> | <sup>5</sup> | <sup>6</sup> | <sup>7</sup> | <sup>8</sup> | <sup>9</sup> | <sup>10</sup> | <sup>11</sup> | <sup>12</sup> | <sup>13</sup> | <sup>14</sup> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|

A complete Q155 Series Medium Pressure Model contains 14 digits including 10 customer-specified design and materials options, for example: Q155MRSTDDESEX.

## Medium Pressure

| Digit      | Order Code  | Description                                                                     |
|------------|-------------|---------------------------------------------------------------------------------|
| <b>1-4</b> | <b>Q155</b> | <b>Pump Configuration</b><br>Shaft-driven                                       |
| <b>5</b>   | <b>K</b>    | <b>Performance</b><br>Max. 78.0 gpm (295.3 l/min) 2674 BPD @ 3000 psi (207 bar) |
|            | <b>M</b>    | Max. 65.0 gpm (246.1 l/min) 2228 BPD @ 3500 psi (241 bar)                       |
| <b>6</b>   | <b>A</b>    | <b>Pump Head Version</b><br>NPT Threaded Ports (Steel)                          |
|            | <b>C</b>    | Weld Neck (Steel)                                                               |
|            | <b>D</b>    | Weld Neck (316L Stainless Steel)                                                |
|            | <b>E</b>    | Weld Neck (Hastelloy)                                                           |
|            | <b>F</b>    | Weld Neck (Duplex Alloy 2205)                                                   |
|            | <b>G</b>    | ANSI Flange Ports (Duplex Alloy 2205)                                           |
|            | <b>R</b>    | ANSI Flange Ports (Steel)                                                       |
|            | <b>S</b>    | ANSI Flange Ports (316L Stainless Steel)                                        |
|            | <b>T</b>    | ANSI Flange Ports (Hastelloy)                                                   |
| <b>7</b>   | <b>D</b>    | <b>Pump Head Material</b><br>Nickel Aluminum Bronze (NAB)                       |
|            | <b>G</b>    | Duplex Alloy 2205                                                               |
|            | <b>S</b>    | 316 Stainless Steel CF3M                                                        |
|            | <b>T</b>    | Hastelloy CX2M                                                                  |
| <b>8</b>   | <b>A</b>    | <b>Diaphragm &amp; O-ring Material</b><br>Aflas                                 |
|            | <b>E</b>    | EPDM (requires EPDM-compatible oil - Digit 13 oil code D)                       |
|            | <b>G</b>    | FKM                                                                             |
|            | <b>T</b>    | Buna-N                                                                          |
| <b>9</b>   | <b>D</b>    | <b>Valve Seat Material</b><br>Tungsten Carbide*                                 |
|            | <b>H</b>    | 17-4 Stainless Steel                                                            |
|            | <b>N</b>    | Nitronic 50                                                                     |
|            | <b>T</b>    | Hastelloy C                                                                     |
| <b>10</b>  | <b>D</b>    | <b>Valve Material</b><br>Tungsten Carbide*                                      |
|            | <b>F</b>    | 17-4 Stainless Steel                                                            |
|            | <b>N</b>    | Nitronic 50                                                                     |
|            | <b>T</b>    | Hastelloy C                                                                     |

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

| Digit     | Order Code | Description                                                     |
|-----------|------------|-----------------------------------------------------------------|
| <b>11</b> | <b>E</b>   | <b>Valve Springs</b><br>Elgiloy                                 |
|           | <b>T</b>   | Hastelloy C                                                     |
| <b>12</b> | <b>M</b>   | <b>Valve Spring Retainers</b><br>PVDF                           |
|           | <b>P</b>   | Polypropylene                                                   |
|           | <b>S</b>   | 316 SST                                                         |
|           | <b>T</b>   | Hastelloy C                                                     |
| <b>13</b> | <b>A</b>   | <b>Hydra-Oil</b><br>10W30 standard-duty oil                     |
|           | <b>B</b>   | 40-wt.                                                          |
|           | <b>D</b>   | EPDM-compatible oil                                             |
|           | <b>E</b>   | Food-contact oil                                                |
|           | <b>H</b>   | 15W50 high-temp severe-duty synthetic oil                       |
| <b>14</b> | <b>C</b>   | <b>Oil Level Monitor Cover</b><br>Float switch, normally closed |
|           | <b>O</b>   | Float switch, normally open                                     |
|           | <b>S</b>   | Float switch, Class I, Div. 1, Groups C & D, normally closed    |
|           | <b>T</b>   | Float switch, Class I, Div. 1, Groups C & D, normally open      |
|           | <b>W</b>   | Float switch, ATEX/IECEX, 4-20 mA analog output                 |
|           | <b>X</b>   | Float switch, ATEX/IECEX, discrete output, normally-closed      |
|           | <b>Y</b>   | No switch, flat cover                                           |

**Note:** The Oil Level Monitor Cover is an assembly that replaces the previous back cover on Q155 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.

# Hydra-Cell®

## Seal-less Pumps



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