

ROTATING RIGHT

MODEL 165T-5 SINGLE ACTING TRIPLEX PUMP



165T-5

A 165 horsepower 5" stroke horizontal triplex single acting plunger pump. Available in nickel-aluminum-bronze fluid end material at pump speeds up to 400 RPM and multiple accessory gear reduction unit ratios.

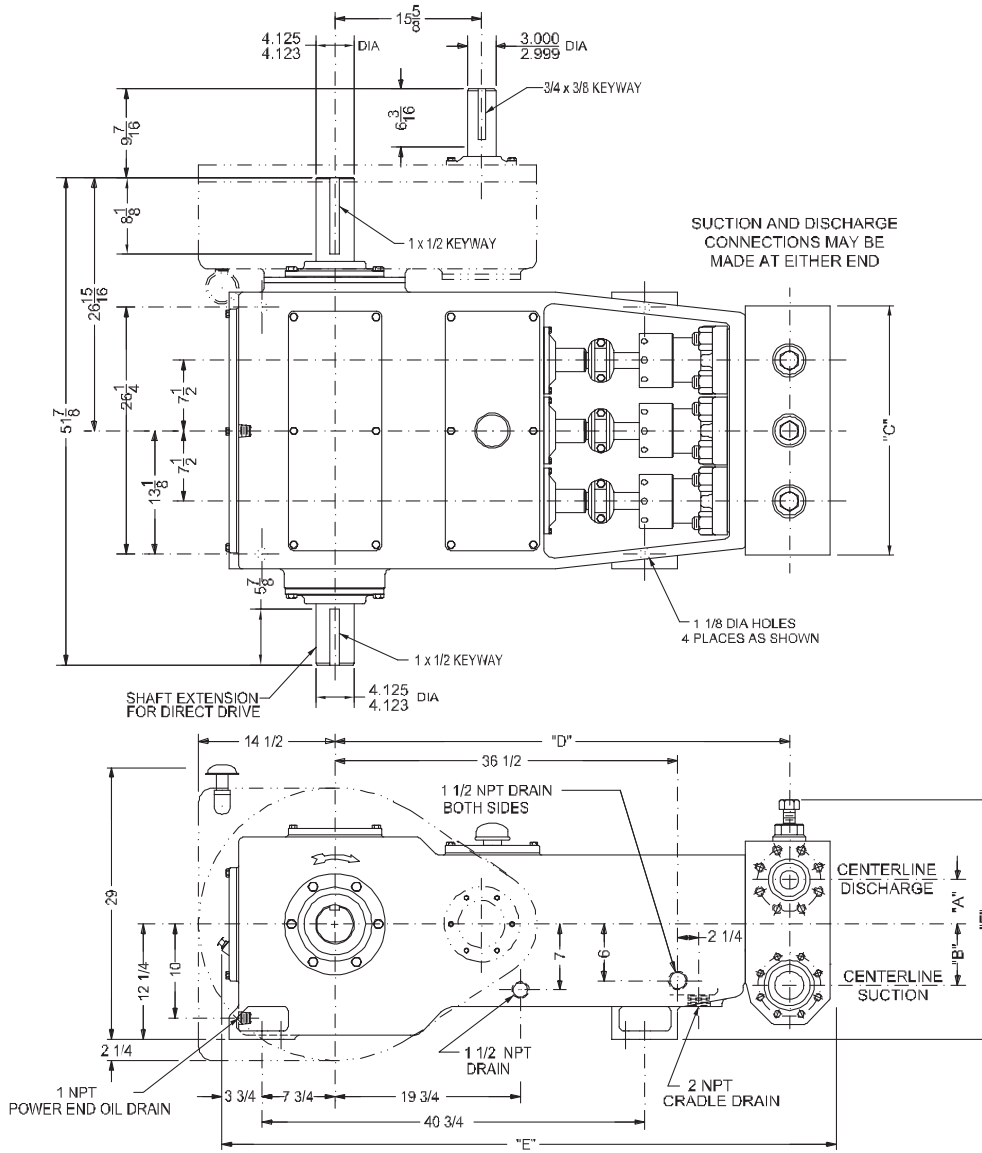
Power End Features:

- Cast iron power frame
- Ductile Iron connecting rods
- Alloy steel crosshead pins
- Bronze bearing crosshead pin bushings
- Cast iron crossheads with upper/lower oil grooves
- Alloy steel crankshaft with ground journals and polished throws
- Replaceable Stainless Steel intermediate rods
- Flooded sump, splash distribution lubrication
- Heavy-duty, tapered roller crankshaft bearings
- Precision type, aluminum alloy crankpin bearings
- Optional Threaded or Clamp Style Intermediate Rods
- Rod Load - 9800 lbs

Fluid End Features:

- Bolt on or Threaded Valve Covers
- 17-4 Stainless Steel or Nickel Aluminum Bronze Steel stuffing boxes (Includes nuts)
- General Service, Molded Lip or Aramid Fiber plunger packing
- Plungers-Solid Ceramic or Tungsten Carbide coated
- Spherical suction and discharge valves
- Valve Seat & Valve Body: Nitronic 50
- Spring: Inconel
- Cage: 316L Stainless Steel
- Severe duty valves with inserts available

165T-5 Triplex Plunger Pump



Specifications

Pump Size

(maximum plunger size x stroke length in.(mm))
4 x 5 (102 x 127)

Rated bhp at 400 rpm (kw)

165 (123)

Rated plunger load, pounds (Kg)

9800 (4445.2)

Maximum discharge pressure: psi (kPa)

"L" model: 1650 (11,376)

"M" model: 3120 (21,512)

"H" model: 5000 (34,474)

Crankshaft extension: in.(mm)

Diameter: 4.125 (104.8)

Length long side: 8 1/8 (206.4)

Length short side: 5 7/8 (149.2)

Keyway (width x depth): 1 x 1/2 (25.4 x 12.7)

Maximum recommended sheave in.(mm):

50 (1270)

Minimum recommended sheave in.(mm):

36 (914)

For larger sizes: **Contact Factory**

Pinion shaft extension, in.(mm):

if gear reducer is supplied

For belt or chain drive: **Contact Factory**

For direct drive: Diameter: 3.0 (76.2)

Length: 6 3/16 (157.2)

Keyway (width x depth):

3/4 x 3/8 (19.05 x 9.53)

Accessory gear reduction unit:

2.8:1, 3.22:1, 3.46:1, 4.00:1,

4.38:1, 4.78:1, 4.96:1, 5.74:1

Oil Capacity, gallons (L)

Crankcase: 8 (30)

Gear Reducer-varies with ratio:

2.25 to 3.5 (8.52 to 13.25)

Weight, pump only on wood shipping skids

pounds (Kg): 4000 (1814)

Gear reducer, approximate pounds (Kg):

800 (363)

| Pump Model | Flange Connections | | Dimensions (Inches) | | | | | |
|------------|----------------------------|--------------------------|---------------------|-------|--------|--------|--------|---------|
| | Discharge Connection Sizes | Suction Connection Sizes | A | B | C | D | E | F |
| 165-5L | 3 (76.2) API-2000 RJ | 6 (152.4) ANSI-150 FF | 5 11/16 | 7 5/8 | 27 3/4 | 48 3/4 | 65 3/4 | 23 |
| 165-5M | 2 (50.8) API-5000 RJ | 4 (101.6) ANSI-150 FF | 4 3/4 | 6 1/2 | 26 1/2 | 48 3/8 | 64 7/8 | 25 5/16 |
| 165-5H | 2 (50.8) ANSI-2500 RJ | 3 (76.2) API-2000 RJ | 4 3/4 | 6 1/2 | 26 1/2 | 48 3/8 | 64 1/4 | 25 5/16 |

165T-5 Triplex Plunger Pump

Performance Data

| PUMP | English Units | | | | | 100 RPM | | 200 RPM | | 250 RPM | | 300 RPM | | 350 RPM | | 400 RPM | |
|---------------------------|------------------|----------------------|-------------|-------------|-----------------|---------|------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
| | Plunger Dia. In. | Plunger Area Sq. In. | BPD per RPM | GPM per RPM | Max. Press. PSI | BPD | GPM | BPD | GPM | BPD | GPM | BPD | GPM | BPD | GPM | BPD | GPM |
| 165T-5L | 4.000 | 12.5664 | 27.9770 | 0.8160 | 780 | 2798 | 81.6 | 5596 | 163.2 | 6995 | 204.0 | 8394 | 244.8 | 9792 | 285.6 | 11191* | 326* |
| | 3.750 | 11.0447 | 24.5892 | 0.7172 | 887 | 2459 | 71.7 | 4918 | 143.4 | 6148 | 179.3 | 7377 | 215.2 | 8607 | 251.0 | 9836 | 286.9 |
| | 3.500 | 9.6211 | 21.4199 | 0.6247 | 1019 | 2142 | 62.5 | 4284 | 124.9 | 5355 | 156.2 | 6426 | 187.4 | 7497 | 218.7 | 8568 | 249.9 |
| | 3.250 | 8.2958 | 18.4692 | 0.5387 | 1181 | 1847 | 53.9 | 3694 | 107.7 | 4618 | 134.7 | 5541 | 161.6 | 6465 | 188.5 | 7388 | 215.5 |
| | 3.000 | 7.0686 | 15.7371 | 0.4590 | 1386 | 1574 | 45.9 | 3148 | 91.8 | 3935 | 114.7 | 4722 | 137.7 | 5508 | 160.6 | 6295 | 183.6 |
| | 2.750 | 5.9396 | 13.2235 | 0.3857 | 1650 | 1323 | 38.6 | 2645 | 77.1 | 3306 | 96.4 | 3968 | 115.7 | 4629 | 135.0 | 5290 | 154.3 |
| 165T-5M | 2.750 | 5.9396 | 13.2235 | 0.3857 | 1650 | 1323 | 38.6 | 2645 | 77.1 | 3306 | 96.4 | 3968 | 115.7 | 4629 | 135.0 | 5290 | 154.3 |
| | 2.500 | 4.9087 | 10.9285 | 0.3187 | 1996 | 1093 | 31.9 | 2186 | 63.7 | 2733 | 79.7 | 3279 | 95.6 | 3825 | 111.6 | 4372 | 127.5 |
| | 2.375 | 4.4301 | 9.8630 | 0.2877 | 2212 | 987 | 28.8 | 1973 | 57.5 | 2466 | 71.9 | 2959 | 86.3 | 3453 | 100.7 | 3946 | 115.1 |
| | 2.250 | 3.9761 | 8.8521 | 0.2582 | 2465 | 886 | 25.8 | 1771 | 51.6 | 2214 | 64.5 | 2656 | 77.5 | 3099 | 90.4 | 3541 | 103.3 |
| | 2.125 | 3.5466 | 7.8959 | 0.2303 | 2763 | 790 | 23.0 | 1580 | 46.1 | 1974 | 57.6 | 2369 | 69.1 | 2764 | 80.6 | 3159 | 92.1 |
| | 2.000 | 3.1416 | 6.9943 | 0.2040 | 3120 | 700 | 20.4 | 1399 | 40.8 | 1749 | 51.0 | 2099 | 61.2 | 2448 | 71.4 | 2798 | 81.6 |
| 165T-5H | 2.000 | 3.1416 | 6.9943 | 0.2040 | 3120 | 700 | 20.4 | 1399 | 40.8 | 1749 | 51.0 | 2099 | 61.2 | 2448 | 71.4 | 2798 | 81.6 |
| | 1.875 | 2.7612 | 6.1473 | 0.1793 | 3549 | 615 | 17.9 | 1230 | 35.9 | 1537 | 44.8 | 1845 | 53.8 | 2152 | 62.8 | 2459 | 71.7 |
| | 1.750 | 2.4053 | 5.3550 | 0.1562 | 4074 | 536 | 15.6 | 1071 | 31.2 | 1339 | 39.0 | 1607 | 46.9 | 1875 | 54.7 | 2142 | 62.5 |
| | 1.625 | 2.0739 | 4.6173 | 0.1347 | 4725 | 462 | 13.5 | 924 | 26.9 | 1155 | 33.7 | 1386 | 40.4 | 1617 | 47.1 | 1847 | 53.9 |
| | 1.500 | 1.7671 | 3.9343 | 0.1147 | 5000 | 394 | 11.5 | 787 | 22.9 | 984 | 28.7 | 1181 | 34.4 | 1377 | 40.2 | 1574 | 45.9 |
| Brake Horsepower Required | | | | | | 42 | 83 | 104 | 124 | 144 | 165 | | | | | | |

| PUMP | Metric Units | | | | | 100 RPM | | 200 RPM | | 250 RPM | | 300 RPM | | 350 RPM | | 400 RPM | |
|--------------------|-----------------|------------------------------|----------------------------|----------------|-----------------|--------------------|--------|--------------------|--------|--------------------|--------|--------------------|--------|--------------------|--------|--------------------|--------|
| | Plunger Dia. mm | Plunger Area cm ² | M ³ /Hr per RPM | L/Sec. per RPM | Max. Press. kPa | M ³ /Hr | L/Sec. | M ³ /Hr | L/Sec. | M ³ /Hr | L/Sec. | M ³ /Hr | L/Sec. | M ³ /Hr | L/Sec. | M ³ /Hr | L/Sec. |
| 165T-5L | 102 | 81.073 | 0.1853 | 0.0515 | 5377 | 18.5 | 5.1 | 37.1 | 10.3 | 46.3 | 12.9 | 55.6 | 15.4 | 64.9 | 18.0 | 74.1* | 20.6* |
| | 95 | 71.256 | 0.1629 | 0.0452 | 6118 | 16.3 | 4.5 | 32.6 | 9.0 | 40.7 | 11.3 | 48.9 | 13.6 | 57.0 | 15.8 | 65.1 | 18.1 |
| | 89 | 62.072 | 0.1419 | 0.0394 | 7023 | 14.2 | 3.9 | 28.4 | 7.9 | 35.5 | 9.9 | 42.6 | 11.8 | 49.7 | 13.8 | 56.8 | 15.8 |
| | 83 | 53.521 | 0.1223 | 0.0340 | 8145 | 12.2 | 3.4 | 24.5 | 6.8 | 30.6 | 8.5 | 36.7 | 10.2 | 42.8 | 11.9 | 48.9 | 13.6 |
| | 76 | 45.604 | 0.1042 | 0.0290 | 9559 | 10.4 | 2.9 | 20.8 | 5.8 | 26.1 | 7.2 | 31.3 | 8.7 | 36.5 | 10.1 | 41.7 | 11.6 |
| | 70 | 38.320 | 0.0876 | 0.0243 | 11376 | 8.8 | 2.4 | 17.5 | 4.9 | 21.9 | 6.1 | 26.3 | 7.3 | 30.7 | 8.5 | 35.0 | 9.7 |
| 165T-5M | 70 | 38.320 | 0.0876 | 0.0243 | 11376 | 8.8 | 2.4 | 17.5 | 4.9 | 21.9 | 6.1 | 26.3 | 7.3 | 30.7 | 8.5 | 35.0 | 9.7 |
| | 64 | 31.669 | 0.0724 | 0.0201 | 13765 | 7.2 | 2.0 | 14.5 | 4.0 | 18.1 | 5.0 | 21.7 | 6.0 | 25.3 | 7.0 | 29.0 | 8.0 |
| | 60 | 28.581 | 0.0653 | 0.0181 | 15252 | 6.5 | 1.8 | 13.1 | 3.6 | 16.3 | 4.5 | 19.6 | 5.4 | 22.9 | 6.4 | 26.1 | 7.3 |
| | 57 | 25.652 | 0.0586 | 0.0163 | 16994 | 5.9 | 1.6 | 11.7 | 3.3 | 14.7 | 4.1 | 17.6 | 4.9 | 20.5 | 5.7 | 23.5 | 6.5 |
| | 54 | 22.881 | 0.0523 | 0.0145 | 19052 | 5.2 | 1.5 | 10.5 | 2.9 | 13.1 | 3.6 | 15.7 | 4.4 | 18.3 | 5.1 | 20.9 | 5.8 |
| | 51 | 20.268 | 0.0463 | 0.0129 | 21512 | 4.6 | 1.3 | 9.3 | 2.6 | 11.6 | 3.2 | 13.9 | 3.9 | 16.2 | 4.5 | 18.5 | 5.1 |
| 165T-5H | 51 | 20.268 | 0.0463 | 0.0129 | 21512 | 4.6 | 1.3 | 9.3 | 2.6 | 11.6 | 3.2 | 13.9 | 3.9 | 16.2 | 4.5 | 18.5 | 5.1 |
| | 48 | 17.814 | 0.0407 | 0.0113 | 24471 | 4.1 | 1.1 | 8.1 | 2.3 | 10.2 | 2.8 | 12.2 | 3.4 | 14.3 | 4.0 | 16.3 | 4.5 |
| | 44 | 15.518 | 0.0355 | 0.0099 | 28092 | 3.5 | 1.0 | 7.1 | 2.0 | 8.9 | 2.5 | 10.6 | 3.0 | 12.4 | 3.4 | 14.2 | 3.9 |
| | 41 | 13.380 | 0.0306 | 0.0085 | 32580 | 3.1 | 0.8 | 6.1 | 1.7 | 7.6 | 2.1 | 9.2 | 2.5 | 10.7 | 3.0 | 12.2 | 3.4 |
| | 38 | 11.401 | 0.0261 | 0.0072 | 34474 | 2.6 | 0.7 | 5.2 | 1.4 | 6.5 | 1.8 | 7.8 | 2.2 | 9.1 | 2.5 | 10.4 | 2.9 |
| Kilowatts Required | | | | | | 31 | 62 | 78 | 92 | 108 | 123 | | | | | | |

Volumetric Rate is based on 100% Volumetric Efficiency. Brake Horsepower/Kilowatts Required is based on 90% Mechanical Efficiency. For Operation below 200 RPM, an auxiliary lubrication system is required. Not all plunger sizes are shown. Contact National-Oilwell for additional information. *Spherical Valves must be installed when the pump is fitted with 4.0" (102mm) plungers

Accessories

Rotating Right offers a full line of accessories to ensure long trouble free and safe operation of your multiplex pumps.

Accessories Include:

- Pulsation Dampeners - Suction & Discharge
- Vibration Shock Switches
- Liquid Level Gauges & Switches
- Pressure Safety Valves
- Plunger Lubricators
- Fire Safety Valves
- High Discharge Pressure Switch
- Condensate Drain
- N.A.C.E. Valving
- Lubricator Level Controller
- API Valves
- Drive Options



Expendables



With our worldwide buying power Rotating Right is well equipped to provide a wide range of replacement parts & expendables for virtually all multiplex plunger pumps regardless of make or model.

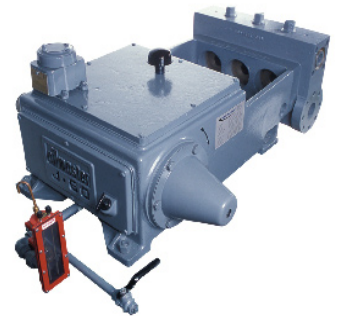


Our expendables inventory includes plungers, packing, brass, valves, bearings, crankshafts, connecting rods and seals.



Repair & Overhauls

Rotating Right service technicians follow strict quality control procedures for every pump repair and overhaul. The use of consistent and reliable re-manufacturing techniques ensure your equipment is returned to you in "Like New" condition.



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