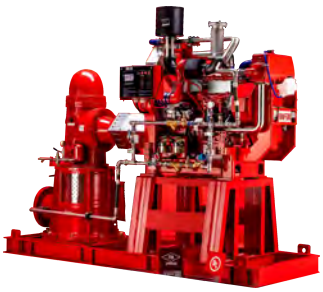
# Vertical turbine fire pump

Vertical turbine fire pump from TPMC delivers robust, high-head water supply from deep wells, rivers, reservoirs, and sumps. Designed for applications where the water source is located below the pump, these multistage units feature a submerged bowl assembly driven by a long vertical shaft. Each additional stage increases discharge head, enabling customized pressure for tall buildings or extensive fire protection networks. The vertical design minimizes footprint while providing reliable flooded-suction operation without priming.

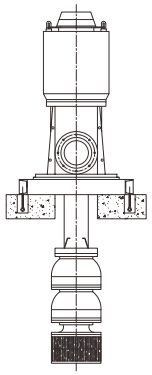








- Certificate: UL Listed / FM Approved
- Standard: NFPA 20
- Configuration: Vertical, multistage, turbine-type
- Flow: 500 ~ 5000 gpm (114 ~ 1136 $m^3$/h)
- Pressure (Head): 39 ~ 368 psi (2.7 ~ 25.4 bar)
- Speed: 1450 rpm (50 Hz) / 1760 rpm (60 Hz); 2-pole (2900/3500 rpm) available
- Liquid: Clean water / raw water, 0°C ~ 40°C
- Surface: Red FBE coating per AWWA C550



## Main parts and material

| | | | |
|---|---|---|---|
| **Bowl assembly** | Ductile iron / Cast iron / SS casing; enclosed or semi-open impellers in bronze or SS (AISI 304/316) | **Shaft & column** | SS or high-strength alloy steel line shaft with SS/bronze shaft sleeves; flanged steel column pipe |
| **Suction strainer** | Heavy-duty brass or SS basket strainer (NFPA 20 compliant) | **Sealing** | Standard mechanical seal, or soft gland packing |
| **Driver** | Vertical hollow-shaft (VHS) / solid-shaft electric motor, or heavy-duty diesel engine with right-angle gear drive | **Controller** | Electrical motor controller, or diesel engine controller |
| **Standard accessories** | Circulation relief valve, air release valve, vibration-proof pressure switch, pressure gauges | **Optional accessories** | Pressure relief valve, gate valves, check valves, flow meter, baseplate for skid-mounted package, etc. |

# Vertical turbine fire pump

## Electric motor drive package

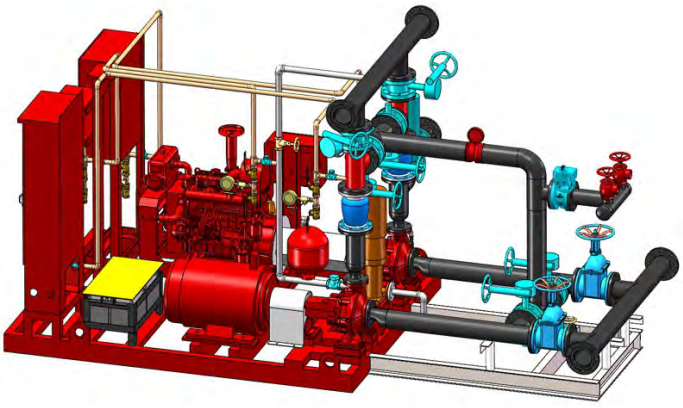
| | |
|---|---|
| **Motor** | · UL Listed, NFPA 20 compliant.<br>· Vertical Hollow Shaft (VHS) or Solid Shaft (VSS) design. TEFC (IP55) or WPI enclosures.<br>· 3-phase, 50/60 Hz, available in low-voltage (208 V - 690 V) or medium-voltage (2.3 kV - 4.16 kV).<br>· Non-reverse ratchet (NRR) prevents reverse rotation. |
| **Controller** | · UL Listed and FM Approved, NFPA 20 & UL 218 compliant.<br>· Across-the-line, wye-delta, or soft-start. Microprocessor-based with auto/manual modes.<br>· Phase-reversal and overload protection, display, transducer, recorder. Dry contacts for BMS/FAS. |

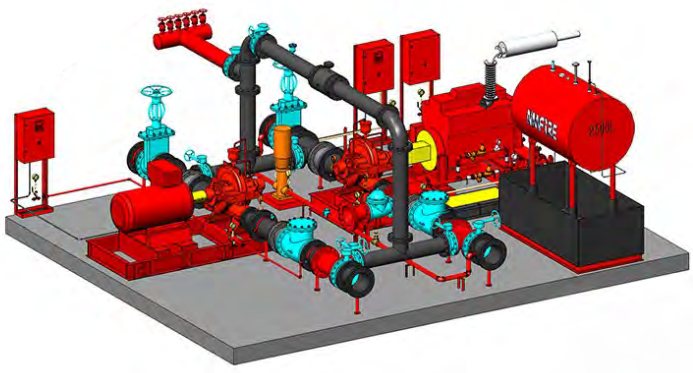
## Diesel engine drive package

| | |
|---|---|
| **Engine** | · UL Listed and FM Approved, NFPA 20 compliant.<br>· Diesel engine drives through a flexible coupling to a heavy-duty UL/FM right-angle gear drive.<br>· Radiator/HX cooled; dual batteries; jacket water heater; elec. governor; fuel day tank with filter/sep.<br>· Instrumentation: oil pressure, coolant temperature, battery voltage. |
| **Controller** | · UL Listed and FM Approved, NFPA 20 compliant.<br>· Auto start/stop, manual override. Dual battery chargers (12/24V).<br>· Microprocessor monitors: oil press, coolant temp, battery V, speed, run-time. Dry contacts for BMS/FAS. |

## Jockey pump & controller (Optional)

| | |
|---|---|
| **Pump** | · CE certified.<br>· Electric-motor-driven pressure-maintenance pump.<br>· Typically sized at 1-3% of main pump capacity with set pressure 10-20 psi above main pump start pressure. |
| **Controller** | · CE certified.<br>· Automatically starts/stops jockey pump to maintain system pressure between main pump operations.<br>· Enclosure options (NEMA 2 / IP55) match main pump controllers. |





# Vertical turbine fire pump

## Available sizes (Electric motor drive)

| US system | | | Metric system | | | Stages | Ref. No. |
|---|---|---|---|---|---|---|---|
| Capacity (gpm) | Pressure (psi) | Head (ft) | Capacity ($m^3$/h) | Pressure (bar) | Head (m) | | |
| 500 | 43 ~ 277 | 99 ~ 640 | 114 | 3.0 ~ 19.1 | 30 ~ 195 | 3 ~ 9 | U0301 |
| 750 | 42 ~ 300 | 97 ~ 693 | 170 | 2.9 ~ 20.7 | 30 ~ 211 | 3 ~ 10 | U0302 |
| 1000 | 39 ~ 270 | 90 ~ 624 | 227 | 2.7 ~ 18.6 | 27 ~ 190 | 3 ~ 10 | U0303 |
| 1250 | 50 ~ 270 | 116 ~ 624 | 284 | 3.4 ~ 18.6 | 35 ~ 190 | 3 ~ 10 | U0304 |
| 1500 | 45 ~ 200 | 104 ~ 462 | 341 | 3.1 ~ 13.8 | 32 ~ 141 | 2 ~ 7 | U0305 |
| 2000 | 47 ~ 197 | 109 ~ 455 | 454 | 3.2 ~ 13.6 | 33 ~ 139 | 2 ~ 6 | U0306 |
| 2500 | 60 ~ 185 | 139 ~ 427 | 568 | 4.1 ~ 12.8 | 42 ~ 130 | 2 ~ 4 | U0307 |
| 3000 | 55 ~ 210 | 127 ~ 485 | 681 | 3.8 ~ 14.5 | 39 ~ 148 | 2 ~ 4 | U0308 |
| 3500 | 55 ~ 210 | 127 ~ 485 | 795 | 3.8 ~ 14.5 | 39 ~ 148 | 2 ~ 4 | U0309 |
| 4000 | 77 ~ 200 | 178 ~ 462 | 908 | 5.3 ~ 13.8 | 54 ~ 141 | 2 ~ 4 | U0310 |
| 4500 | 70 ~ 190 | 162 ~ 439 | 1022 | 4.8 ~ 13.1 | 49 ~ 134 | 2 ~ 4 | U0311 |
| 5000 | 70 ~ 180 | 162 ~ 416 | 1136 | 4.8 ~ 12.4 | 49 ~ 127 | 2 ~ 4 | U0312 |

**Note:**

1. The pressure ranges shown represent the available performance envelope across listed stage counts at nominal speeds. Actual performance curves and drive power selection are provided upon request for selected duty point. Contact TPMC for details.
2. All ratings comply with NFPA 20 (150% capacity at not less than 65% of rated head; shut-off head not more than 140% of rated head).

## Available sizes (Diesel engine drive)

| US system | | | Metric system | | | Stages | Ref. No. |
|---|---|---|---|---|---|---|---|
| Capacity (gpm) | Pressure (psi) | Head (ft) | Capacity ($m^3$/h) | Pressure (bar) | Head (m) | | |
| 500 | 43 ~ 277 | 136 ~ 769 | 114 | 4.1 ~ 23.0 | 42 ~ 234 | 3 ~ 9 | U0321 |
| 750 | 42 ~ 300 | 189 ~ 850 | 170 | 5.7 ~ 25.4 | 58 ~ 259 | 3 ~ 10 | U0322 |
| 1000 | 39 ~ 270 | 150 ~ 628 | 227 | 4.5 ~ 18.8 | 46 ~ 191 | 3 ~ 10 | U0323 |
| 1250 | 50 ~ 270 | 150 ~ 670 | 284 | 4.5 ~ 20.0 | 46 ~ 204 | 3 ~ 10 | U0324 |
| 1500 | 45 ~ 200 | 162 ~ 571 | 341 | 4.8 ~ 17.0 | 49 ~ 174 | 2 ~ 7 | U0325 |
| 2000 | 47 ~ 197 | 148 ~ 649 | 454 | 4.4 ~ 19.4 | 45 ~ 198 | 2 ~ 6 | U0326 |
| 2500 | 60 ~ 185 | 155 ~ 647 | 568 | 4.6 ~ 19.3 | 47 ~ 197 | 2 ~ 4 | U0327 |
| 3000 | 55 ~ 210 | 127 ~ 508 | 681 | 3.8 ~ 15.2 | 39 ~ 155 | 2 ~ 4 | U0328 |
| 3500 | 55 ~ 210 | 162 ~ 508 | 795 | 4.8 ~ 15.2 | 49 ~ 155 | 2 ~ 4 | U0329 |
| 4000 | 77 ~ 200 | 180 ~ 462 | 908 | 5.4 ~ 13.8 | 55 ~ 141 | 2 ~ 4 | U0330 |
| 4500 | 70 ~ 190 | 162 ~ 439 | 1022 | 4.8 ~ 13.1 | 49 ~ 134 | 2 ~ 4 | U0331 |
| 5000 | 70 ~ 180 | 162 ~ 416 | 1136 | 4.8 ~ 12.4 | 49 ~ 127 | 2 ~ 4 | U0332 |

**Note:**

1. The pressure ranges shown represent the available performance envelope across listed stage counts at nominal speeds. Actual performance curves and drive power selection are provided upon request for selected duty point. Contact TPMC for details.
2. All ratings comply with NFPA 20 (150% capacity at not less than 65% of rated head; shut-off head not more than 140% of rated head).