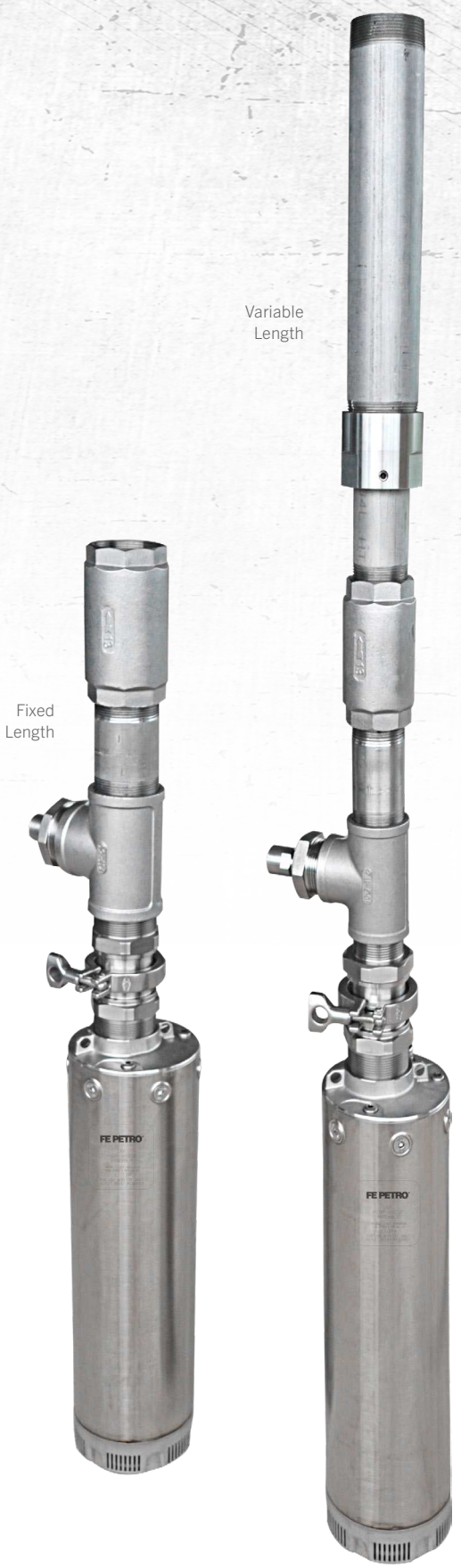
Franklin Fueling Systems

# DIESEL EXHAUST FLUID SUBMERSIBLE TURBINE PUMP KITS

FE Petro™ brand diesel exhaust fluid (DEF) submersible turbine pump (STP) kits feature an all-stainless steel design that makes them completely compatible to transfer DEF/AdBlue®. Kits are available as complete variable length assemblies or as individual assembly kits for fixed length applications, providing everything needed for a DEF/AdBlue® pumping application.




## TECHNICAL ADVANTAGES

### Pump Motor Assembly

- Field-proven Franklin Electric encapsulated motor ensures longevity and impermeability to DEF seepage.
- Heavy-duty shaft provides superior alignment and resistance to stress.
- Double mechanical shaft seals protect the oil-filled bearing chamber from DEF seepage, assuring minimal wear and proper bearing lubrication.
- Stainless steel hydraulics provide superior performance and efficiency.
- EPDM jacketed power cable provides DEF compatibility and longevity.
- All models are suitable for vertical installation where the pump motor is suspended off the bottom of the tank by the discharge piping.

### Submersible Turbine Pump Kit

- Submersible turbine pump kits come complete with variable length column pipe kit, check valve kit, bypass kit, EZ FIT pump motor assembly connection kit, and pump motor assembly.
- Submersible turbine pump kits also available for locally supplied fixed length column pipe applications.
- Bypass relief valve creates a continuous bypass of fluid to keep the motor cool.
- Check valve maintains line pressure while the pump is not in operation.
- EZ FIT PMA connection makes disconnection and reconnection of the PMA quick and easy.
- Each EZ FIT connection comes complete with coupler and gasket to ensure tight connection.

# SPECIFICATIONS

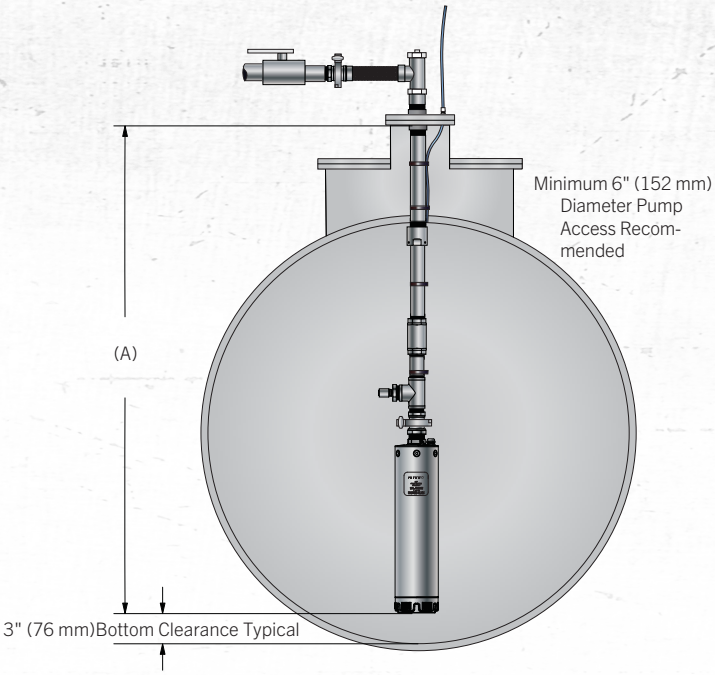
**Pump Motor Assembly**

- Materials: Stainless steel construction including impellers/diffusers, inlet/outlet, and outer shell
- Pump type: All models are 5.1" (130 mm) outside diameter centrifugal type pump
- Power cable: 23' (7m) black polyethylene jacketed power cable
- 60 Hz pump motor: Two-stage pump with 2" NPT female outlet
- Motor rating: Continuous operation with motor cooling provided by product flow and protected from dry running

**Submersible Turbine Pump Kit**

- All stainless steel hardware and Viton® or EPDM seals
- Bypass relief valve cracking pressure of 30-40 psi (2.1-2.8 bar) and 4 gpm (15 lpm) minimum flow at the discharge of all models
- Non-return check valve cracking pressure of 3 psi (0.2 bar) between product piping and bypass relief valve of all models
- Liquid compatibility: All models are intended for use with Diesel Exhaust Fluid (DEF). DEF is a non-flammable, non-combustible liquid that has a specific gravity of 1.09 at 68 ˚F (20 ˚C), and is made per ISO 22241-1 specifications with 32.5% urea and distilled or deionized water. As defined by ISO 22241-1, DEF is the same as AUS 32® (aqueous urea solution) and also commonly known as AdBlue®

**Variable Length Range**



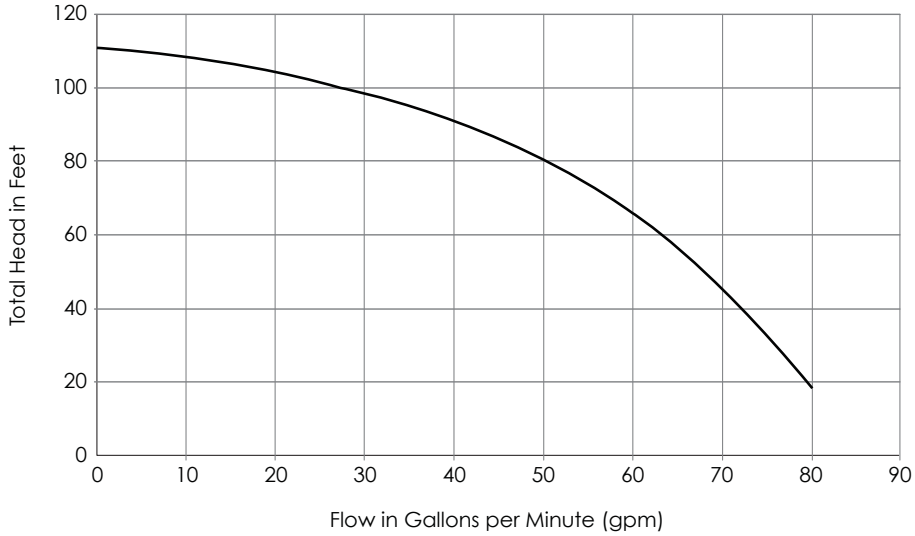

Variable Length Range (A)

| Model Length Range | Model Length Designation |
|---|---|
| 69" - 102" (1,750 mm - 2,590 mm) | VL1 |
| 102" - 166" (2,590 mm - 4,215 mm) | VL2 |

**Pump Motor Performance**

DEF-PMA150A (Single-Phase) and

DEF-PMA150D (Three-Phase)




Note: Performance is based on pumping water (1.00 specific gravity). Pressure is taken at the discharge outlet of the pump motor.

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Viton® is a registered trademark of E. I. du Pont de Nemours and Company.

AUS 32® is a registered trademark of GBZI Ltd.

# ORDERING INFORMATION

### Variable Length Diesel Exhaust Fluid Submersible Turbine Pump Kits

Each variable length submersible turbine pump kit comes complete with variable length column pipe kit (VL1 or VL2), check valve kit, bypass kit, EZ FIT pump motor assembly connection kit, and pump motor assembly (single- or three-phase).

| Model | Description |
|---|---|
| 403469901 | 60 Hz, single-phase, VL1 69" - 102" (1,750 mm - 2,590 mm) variable length diesel exhaust fluid submersible turbine pump kits (includes components #1 - #5 below) |
| 403470901 | 60 Hz, single-phase, VL2 102" - 166" (2,590 mm - 4,215 mm) variable length diesel exhaust fluid submersible turbine pump kits (includes components #1 - #5 below) |
| 403478901 | 60 Hz, three-phase, VL1 69" - 102" (1,750 mm - 2,590 mm) variable length diesel exhaust fluid submersible turbine pump kits (includes components #1 - #4 and #6 below) |
| 403479901 | 60 Hz, three-phase, VL2 102" - 166" (2,590 mm - 4,215 mm) variable length diesel exhaust fluid submersible turbine pump kits (includes components #1 - #4 and #6 below) |

### Variable Length Components

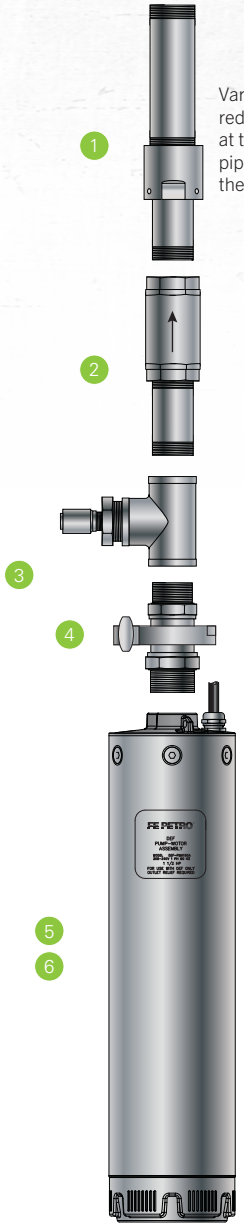
1. Variable length column pipe kit, 2" to 1½" NPT (not sold separately)
2. Check valve kit
3. Bypass kit
4. Pump motor assembly connection kit
5. 6 Pump motor assembly (single- or three-phase)

### Variable Length Diesel Exhaust Fluid Submersible Turbine Pump Replacement Kits

| Item # | Model | Description |
|---|---|---|
| 2 | 403463901 | Check valve kit (includes 1½" NPT non-return check valve and 1½" NPT × 4" long nipple on inlet) |
| 3 | 403461901 | Bypass kit (includes ½" NPT bypass relief valve, ½" NPT × 1½" NPT bushing in 1½" NPT tee) |
| 4 | 403454901 | Pump motor assembly connection kit (includes 2" NPT male inlet × 1½" NPT male outlet EZ FIT connection |
| 5 | 403383903 | 60 Hz, single-phase pump motor assembly (DEF-PMA150A) |
| 6 | 403383933 | 60 Hz, three-phase pump motor assembly (DEF-PMA150D) |

### Variable Length Accessories and Repair Parts

| Model | Description |
|---|---|
| 403713921 | Single-phase electrical kit, includes m/n STP-CBS, 208-240 Volt pump control with 120 Volt coil (p/n 400818921) and 25 uF / 370 V capacitor (p/n 400170936, for use with DEF-PMA150A) |
| 401220903 | Three-phase 208-240 Volt pump control box with overload protection and 120 Volt coil (STP-CB3) |
| 403408931 | 1½" NPT non-return check valve (part of component #2, valve only) |
| 403409931 | ½" NPT bypass relief valve (part of component #3, valve only) |
| 403468901 | DEF-PMA hardware pack (part of component #5 or #6, includes cable grip, cable ties, and documentation) |
| 400170936 | Capacitor, 25 uF / 370 V (for use with DEF-PMA150A) |




Variable length column pipe kit reduces from 2" NPT column pipe at the top to an 1½" NPT column pipe at the bottom connection to the check valve kit

# ORDERING INFORMATION

Fixed Length Components

1. Column pipe, 2" NPT (locally supplied)
2. Check valve kit
3. Bypass kit
4. Pump motor assembly connection kit
5. 6 Pump motor assembly (single- or three-phase)

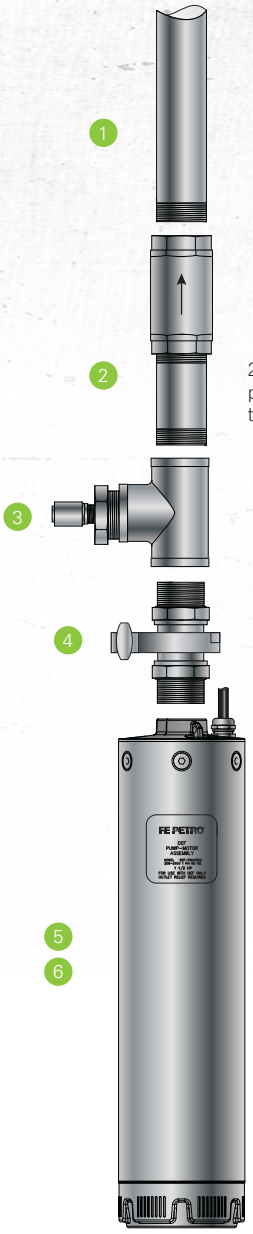
### Fixed Length Diesel Exhaust Fluid Submersible Turbine Pump Kits

Individual assembly kits can be ordered for fixed length submersible turbine pump kit applications.

| Item # | Model | Description |
|---|---|---|
| 2 | 403464901 | Check valve kit (includes 2" NPT non-return check valve and 2" NPT × 4" long nipple on inlet) |
| 3 | 403462901 | Bypass kit (includes ½" NPT bypass relief valve, ½" NPT × 2" NPT bushing in 2" NPT tee) |
| 4 | 403456901 | Pump motor assembly connection kit (includes 2" NPT male inlet × 2" NPT male outlet EZ FIT connection |
| 5 | 403383903 | 60 Hz, single-phase pump motor assembly (DEF-PMA150A) |
| 6 | 403383933 | 60 Hz, three-phase pump motor assembly (DEF-PMA150D) |

### Fixed Length Accessories and Repair Parts

| Model | Description |
|---|---|
| 403713921 | Single-phase electrical kit, includes m/n STP-CBS, 208-240 Volt pump control with 120 Volt coil (p/n 400818921) and 25 uF / 370 V capacitor (p/n 400170936) |
| 401220903 | Three-phase 208-240 Volt pump control box with overload protection and 120 Volt coil (STP-CB3) |
| 403408932 | 2" NPT non-return check valve (part of component #2, valve only) |
| 403409931 | ½" NPT bypass relief valve (part of component #3, valve only) |
| 403468901 | DEF-PMA hardware pak (part of component #5 or #6, includes cable grip, cable ties, and documentation) |
| 400170936 | Capacitor, 25 uF / 370 V (for use with DEF-PMA150A) |




2" NPT fixed length column pipe supplied locally (length to suit application)

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