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## ***MTT 1800 Portable Fire Pump System***

### **Equipment Description**

#### **Summary**

This summary outlines basic specifications and supply items for MTT's portable fire pump system. The pump detailed below is rated at 1,800m<sup>3</sup>/h at 180 p.s.i. The unit can be mounted on deck and has multiple flexible suction hoses that can be run through a moon pool or over the gunnels.

#### **Engine**

Lycoming T53-L13 gas turbine rated at 1,400 HP continuous.

- Operates on diesel, kerosene or jet fuels.
- Air-cooled engine with on board oil cooler.
- Mechanical fuel pump.
- 12/24V electrical system with on board battery charge system.
- Oil, fuel & air filtration.
- Full analog gauge package.
- High temperature alarm.
- Low oil pressure alarm.
- Over speed governor control.

#### **Pump**

Aurora split case, centrifugal pump with stainless steel shaft and impeller.

- Model 441 *BF 00-205967-2*
- Cast iron case
- 1,800m<sup>3</sup>/h @ 180 p.s.i.
- 16" side suction w/ 10" top discharge
- Absorbs 1,050 HP
- 1,800 r.p.m.

*10 x 16 x 20 (10-491-20)*

*PENTAIR*

## Equipment Description Continued

### **Container**

The container is fabricated using heavy-duty steel, specifically designed for this pump application.

- The engine room has blast proof lighting and circuitry.
- Sealed access door.
- Anti-slip surface on floor surface.
- Recessed ladder for roof access.
- Safety railing around the roof working area.
- Air inlet with spray deflectors.
- Pump is mounted directly to the engine output shaft with a flexible coupling.
- Lifting hooks are provided at the four upper corners of the unit.
- Milspec 24V gel batteries are rack mounted with a Perko switch.
- Watertight breaker box with external reset buttons.
- Insulated stainless steel exhaust with roof discharge and manual cover.
- Requires 50 or 60Hz AC power for battery charger.
- Yellow interior and exterior finish.

### **Fuel System**

The engine has a mechanical fuel pump, which pulls fuel after engine start up. There is a 450 gallon fuel tank included with the unit. It provides 4-5 hours running time at full power.

- Electric fuel priming pump included.
- Requires a 1" fuel supply line.
- Full fuel water separation and filtration.
- Access pipes for supply lines located in side of container.

### **Pump Suction/Discharge**

- One (1) suction manifold with six (6) six inch (6") intake pipes.
  - Flexible suction hose with foot valves.
- One (1) discharge manifold with four (4) four inch (4") discharge pipes.
  - Four (4) flexible discharge lines.

### **Monitors**

The monitors are solid brass construction 4" I.D. with tiller bar controls. Controls have adjustable brake band swivels that lock the vertical and horizontal positions.

- Four (4) Spectrum Alpha-M Sharpshooter Four solid brass monitors.
  - Two (2) @ 1,000 g.p.m.
  - Two (2) @ 2,000 g.p.m.
- Four (4) Elkhart straight bore brass nozzles.

### **Dimensions**

Length:	13'6"	4.400 mm
Width:	6'	2.100
Weight:	12,600 lbs.	5.5 T

Height : 3.000 mm

## **Operating Instructions**

### **Connect Hoses**

1. Connect all of the six (6) flexible green suction hoses to the intake manifold and verify that the foot valves are fully submersed.
2. Connect the 1.5 inch (1.5") priming hose to priming valve.
3. Connect one end of all four (4) of the flexible discharge hoses to the discharge manifold.
4. Connect the other end of all four (4) of the discharge hoses to the fire monitors.

### **Prime the Pump**

1. Open the 1.5 inch (1.5") priming valve on the intake manifold. This will enable the intake system to fill with water.
2. Open the ¼ inch valve on the manifold.
3. Open the ¼ inch valve on the top of the pump case.
4. After water is flowing from **all** three valves, the pump is primed.
5. Close the valves that were opened in steps 1-3.

### **Start Engine**

1. Open the exhaust door.
2. Open the fuel valve.
3. Check engine oil level. The tank should be 50% full in the sight glass.
4. Turn the battery switch to the "On" position.
5. Turn the control switch to the "Local" position. The gauges will cycle through a test sequence.
6. Turn the fuel switch to the "On" position.
7. Press the "Start Engage" and "Start Fuel" buttons simultaneously. Hold them down (the engine will accelerate) until the "N1" gauge shows 50% idle speed.
8. Engine should continue to accelerate to approximately 62%.

### **Check Parameters**

1. Engine temperature should be approximately 850 – 950 degrees F at idle. Maximum temperature is 1350 degrees F.
2. Pump should develop pressure (maximum of 160 p.s.i.) at approximately 1800 R.P.M. on the "N2" gauge.

### **Pump Operation**

1. Accelerate/decelerate the pump by pressing the throttle control switch.
2. Monitors are operated manually.

### **Shut Down**

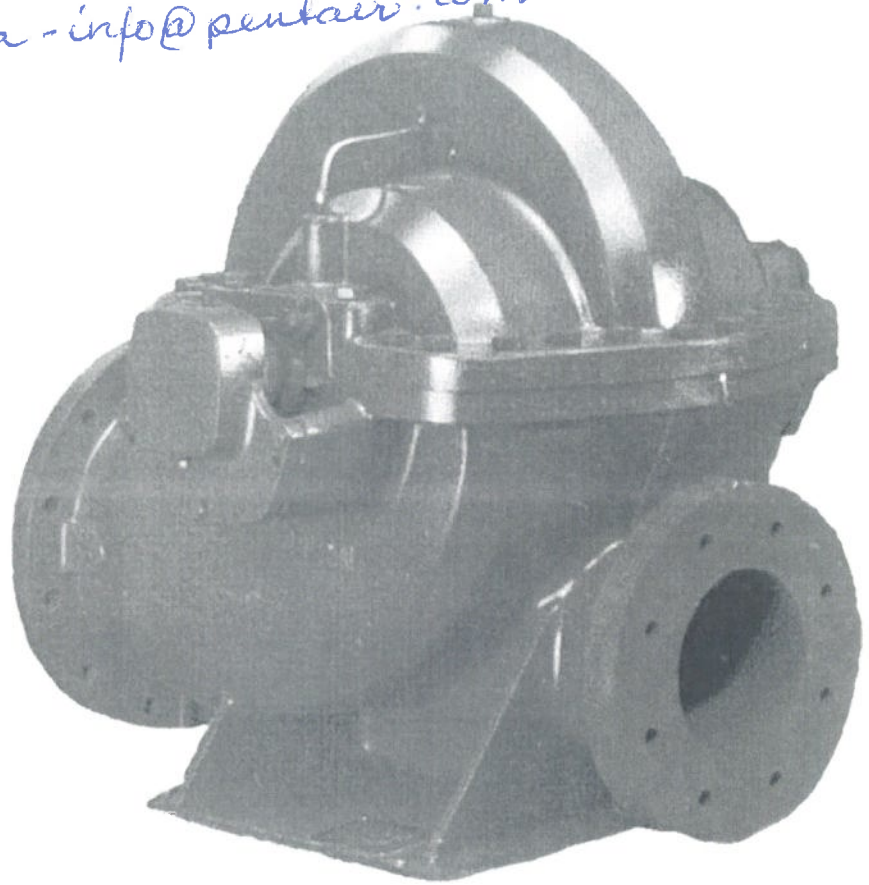
1. Throttle the pump down until the "N1" gauge indicates 62% idle speed.
2. Idle the engine for approximately two (2) minutes to cool.
3. Turn the fuel valve to the "Off" position.
4. Turn the battery switch to the "Off" position.
5. Allow the engine to cool for approximately five (5) minutes.
6. Close the exhaust door.



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**900 SERIES**

(441 BF 00-205967-2)

**SPLIT CASE FIRE PUMP**

(10-16-20)

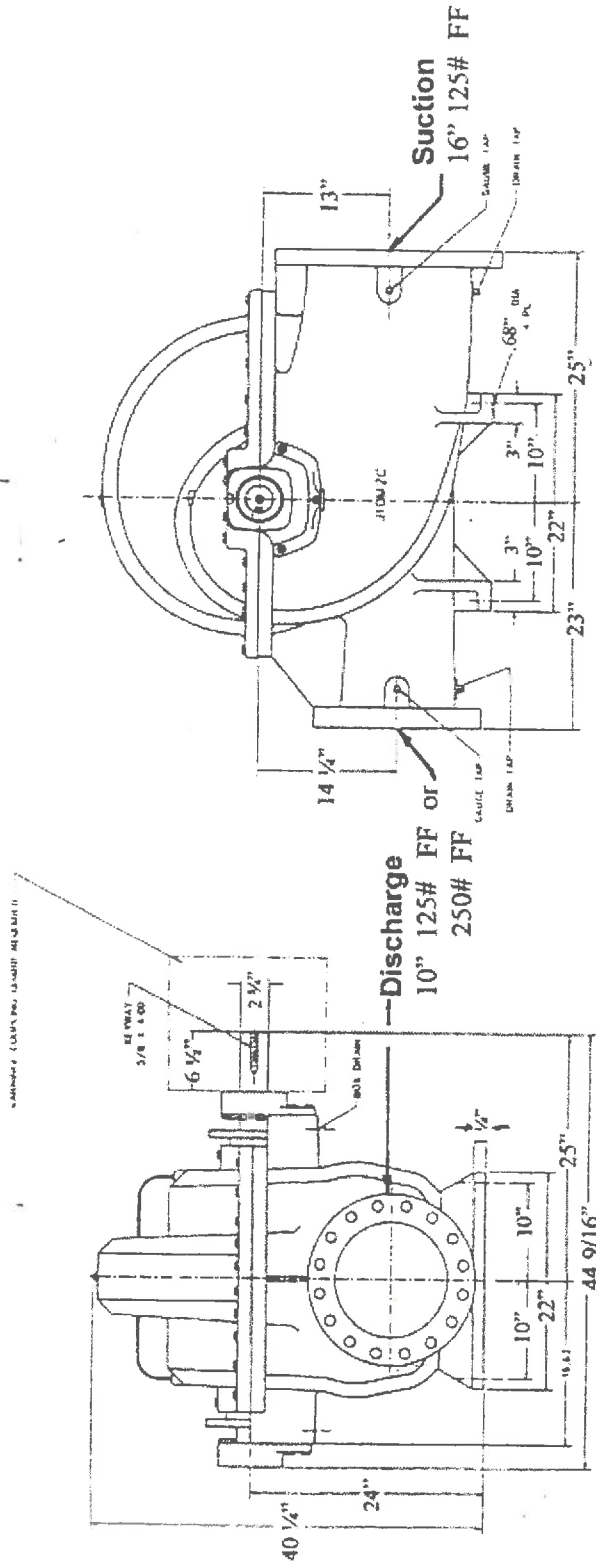
**REPAIR PARTS INDEX**

1900 RPM

Read and understand the pump and motor instructions before attempting to install, disassemble or repair the pump.

**OP AURORA**  
PENTAIR PUMP GROUP

**PUMP SYSTEMS**



**Right Hand Rotation**  
*(looking at the pump shaft)*

*Max case pressure: 300 psi  
(2.1 bar)*

1. Installation dimensions are ± 3/8" unless otherwise noted.
2. Not for construction unless certified.
3. All dimensions are in inches.
4. Discharge and Suction Flanges - American standard flat face.

DRAWING TITLE			
Aurora model 441 size 10 x 16 x 20 BF			
SCALE	DRAWN BY	DATE	DWG. NO.
none	GK	11/2/99	

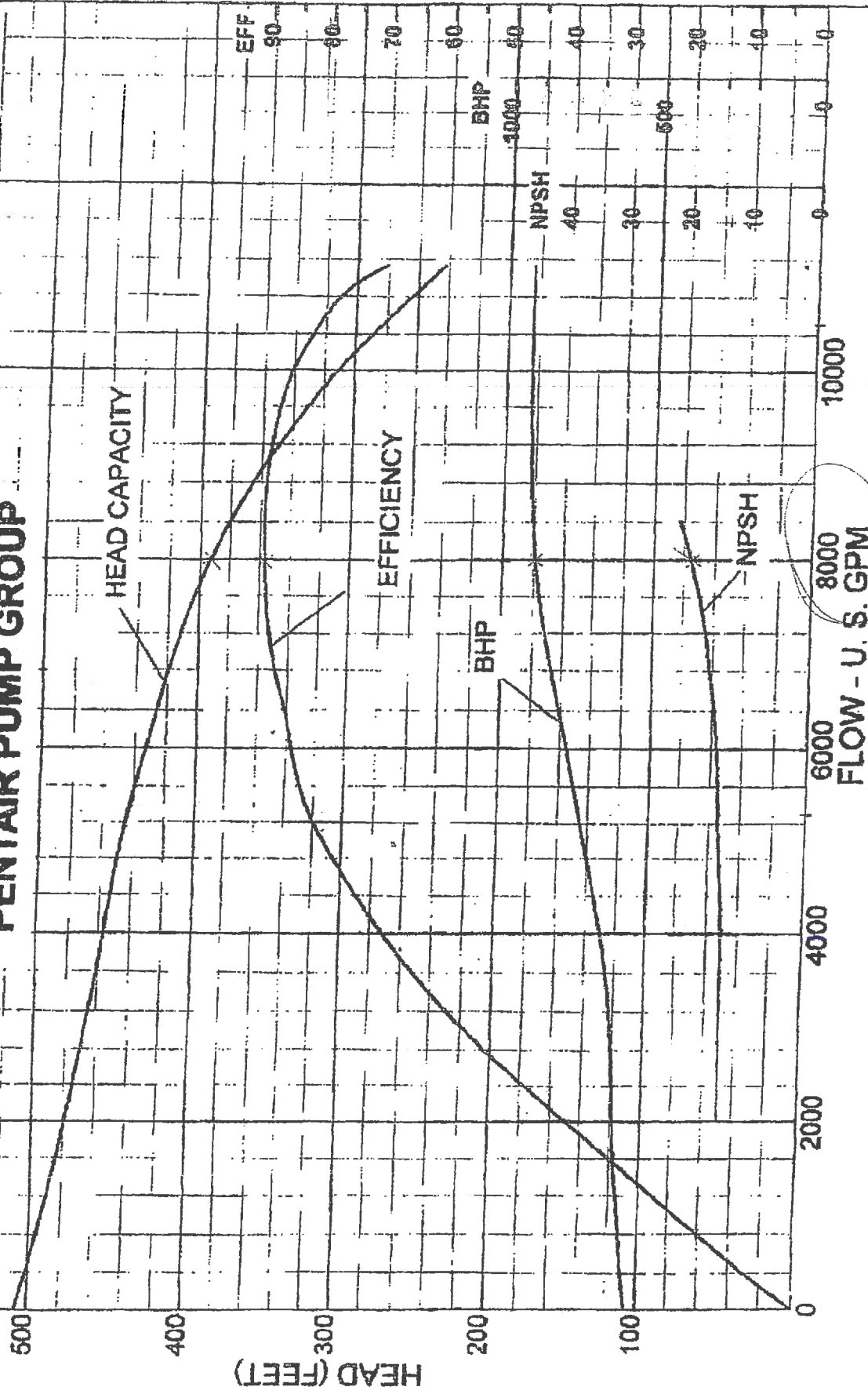
SIZE : 10x16x20

TYPE : 441

R. P. M. 1785

20.76" IMP. DIA.

# AURORA PUMP A MEMBER OF PENTAIR PUMP GROUP



MIT  
↑  
JKA  
↑

DRAWN BY : J. KAGE APPROVED BY :

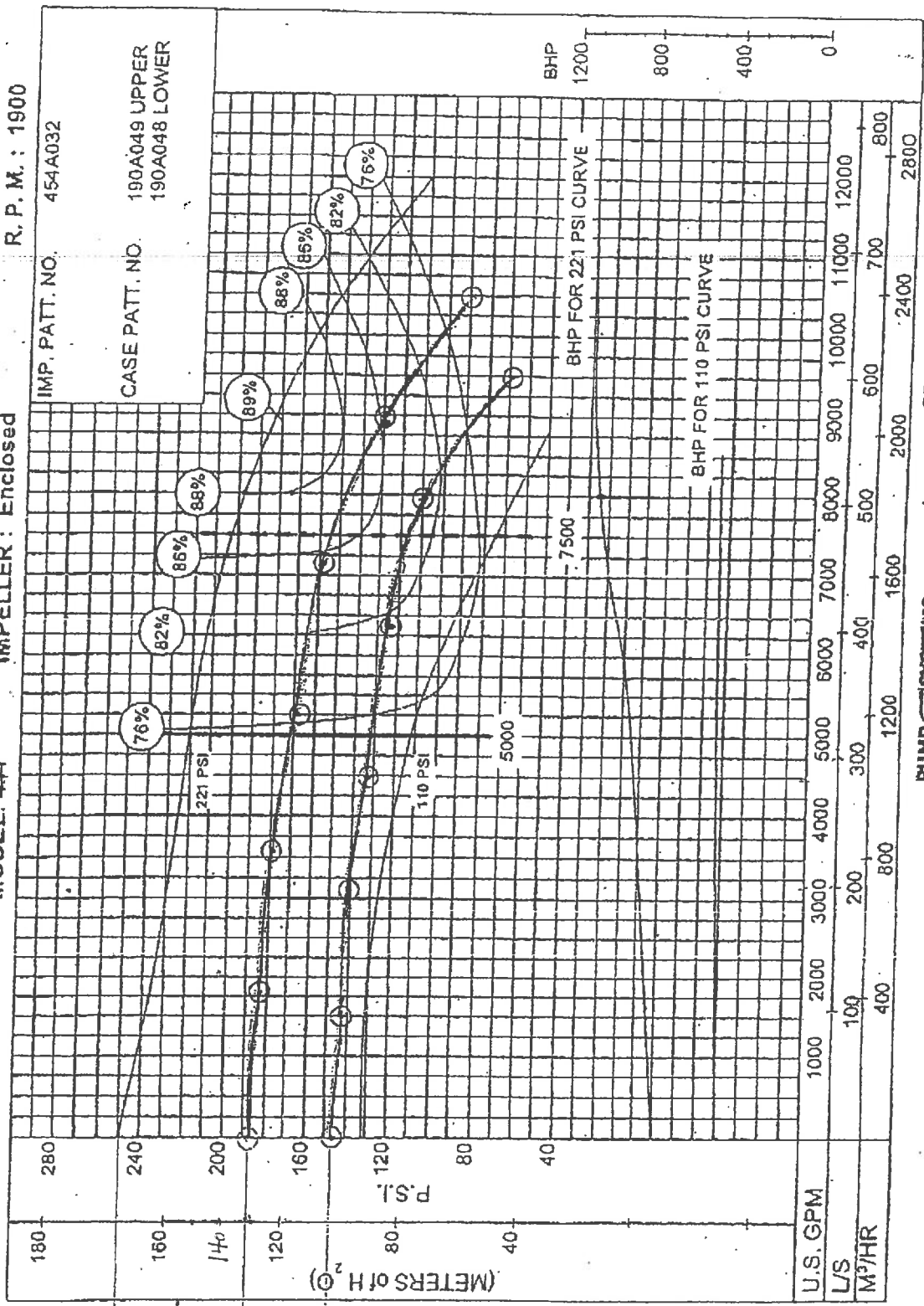
DATE : 8/9/99

PC-169819S

SN: LE-01379 AX

441 10N16K20 BF

SIZE: 180 160 140 120 80 40  
MODEL: 441 IMPELLER: Enclosed R. P. M.: 1900  
IMP. PATT. NO. 454A032  
CASE PATT. NO. 190A049 UPPER  
190A048 LOWER



PUMP SYSTEMS INC. (604) 733-0670  
Point of Operation is 4 3300 40 PC-168643

FFI

10500 GPM

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**PENTAIR PUMP GROUP**

110 TO 221 P.S.I.

Dec 21 '01 12:13 P.05

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