

Standard Operating Procedure <b>Pump Testing</b>	SOP No. 8.011
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DCR No.: 97027  
Revision No.: 1

**Effective:** 3-7-97  
**Supersedes:** 3-7-97  
**Revision Date:** 5-7-97  
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- 1 Purpose
  - 1.1 To establish a standard procedure for testing the ability of the pump system to comply with the design requirements.
- 2 Scope
  - 2.1 This procedure applies to each pump.
- 3 Reference
  - 3.1 NEBB Testing Adjusting Balancing Manual for Technicians, First Edition, 1986.
- 4 Definition
  - 4.1 GPM Gallons Per Minute
  - 4.2 RPM Revolutions Per Minute
  - 4.3 TAB Test, Adjust, and Balance
- 5 Responsibility
  - 5.1 TAB technicians shall record all data on Form FN 8.011.1 (Pump Test Report).
  - 5.2 All test reports shall be saved in files, located in the TAB Department of Therma.
  - 5.3 All test equipment utilized shall be in calibration in accordance with NEBB Standards and traceable to the National Institute of Standards and Technology (NIST).
- 6 Materials Requirement
  - 6.1 None

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## 7 Test Equipment

7.1 Differential pressure meter (water)

7.2 Tachometer

7.3 Volt-Ammeter

## 8 General Procedures

8.1 Record all data from the nameplates of the unit and motor on the appropriate locations of the Form FN 8.011.1 (Pump Test Report).

8.2 Record all design values of the pump and motor data on the Form FN 8.011.1 (Pump Test Report).

### 8.3 Test Data

8.3.1 Shut off the discharge valve(s) and energize the pump system.

8.3.2 Measure the discharge, and suction pressures of the pump using a differential pressure meter (water) at the test ports located at the inlet discharge of the pump, record readings.

8.3.3 Turn the pump off, open the discharge valve(s).

8.3.4 Turn the pump on and balance the pump system to the final design conditions, record readings.

8.3.5 Measure the discharge and suction pressure and head using a differential pressure meter (water), record readings.

### 8.4 Pump Data

8.4.1 Verify performance and impeller diameter by plotting the tested shut off head and actual operating head on manufacturer's supply pump performance curve.

### 8.5 Motor Data

8.5.1 Measure the pump's RPM using a tachometer.

8.5.2 Measure the voltage and amperes using a voltmeter and an ammeter.

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8.5.3 Calculate the brake horsepower (BHP) of the motor using the following equation:

$$\text{BHP} = \frac{\text{NPHP} \times \text{MA} \times \text{MVolt}}{\text{NPA} \times \text{NPVolt}}$$

Where:

NPHP = Nameplate Horsepower  
 NPA = Nameplate Amperes  
 NPVolt = Nameplate Voltage  
 MA = Measured Amperes  
 MVolt = Measured Voltage

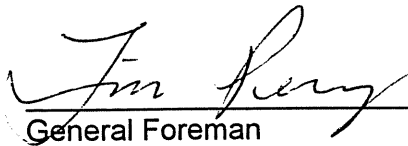
8.5.4 Record all data on the Form FN 8.011.1 (Pump Test Report).

## 9 Review and Approval

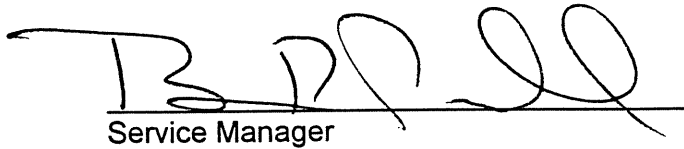
9.1 Return the Forms FN 8.011.1 (Pump Test Report) to the TAB Department for review.

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## Document Approval

  
General Foreman

4-15-97  
Date

  
Service Manager

4-15-97  
Date

  
Quality Assurance Manager

4-16-97  
Date

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