



**Particle Physics Division  
Mechanical Department Engineering Note**

Number: MD-ENG-308

Date: 24 January 2011

Project Internal Reference: None

Project: NOvA FHEP Block Pivoter

Title: NOvA FHEP Block Pivoter Electrical Load Summary

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Reviewer(s):

Key Words: Electrical Power Loads

Applicable Codes: FESHM, NEMA, NEC (NFPA 70).

**Abstract Summary:**

Following an operations readiness review of the FHEP block pivoter in CDF on January 20<sup>th</sup> 2011, one action item was to document the electrical loads for the three hydraulic systems installed on the machine. This engineering note has been prepared to document the electrical loads.

## Discussion / Documentation:

The three hydraulic systems are:

### Kneeling Cylinders Power Unit:

Kneeling Cylinders designed to allow the pivoter to set the pallet down on the floor after the block is rotated to the vertical position.

Kneeling Cylinders use a single hydraulic power unit purchased under P.O. 589622.

Kneeling Cylinders electrical requirements are:

480 Volt, 3 phase, 8.5 amp locked rotor, 4.15 amp nominal operating.

Pump motor is a WEG model 00318EP3E182TC, 3 HP, 1800 rpm, frame 182TC.

Kneeling cylinder power unit motor name plate is shown:



### **Drive Wheel Power Unit:**

Drive wheel hydraulic motors designed to propel the fully loaded pivoter along the floor rails from the block assembly area to the block final located.

Drive wheel hydraulic system uses a single hydraulic power unit purchased under P.O. 587968.

Drive wheel power unit electrical requirements are:

460 Volt, 3 phase, 83.4 amp nominal operating current at full load.

Motor is a WEG W21 Sever Duty, Inverter Duty Motor 15QUT08 , model 07518EP3E365TC, 75 HP, 1775 rpm, frame 364/5TC.

Drive Wheel Power Unit Nameplate photograph:



Drive unit also has a small oil cooler fan. Fan motor is 460 V, 3 phase, 1.2 amp.

### **Pivot Cylinder Power Unit:**

Pivot Cylinders designed to allow the table of the pivoter to rotate from a horizontal orientation to a vertical orientation.

Pivot Cylinders use a single hydraulic power unit purchased under P.O. 587706.

Pivot Cylinder power unit electrical requirements are:

Each hydraulic pump motor is 460 Volt, 3 phase, 35 amp nominal operating current. Note that two identical hydraulic pumps and drive



