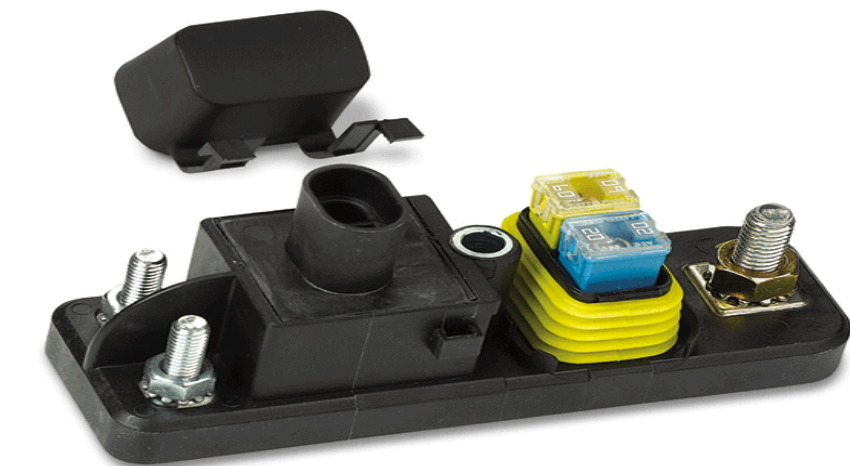
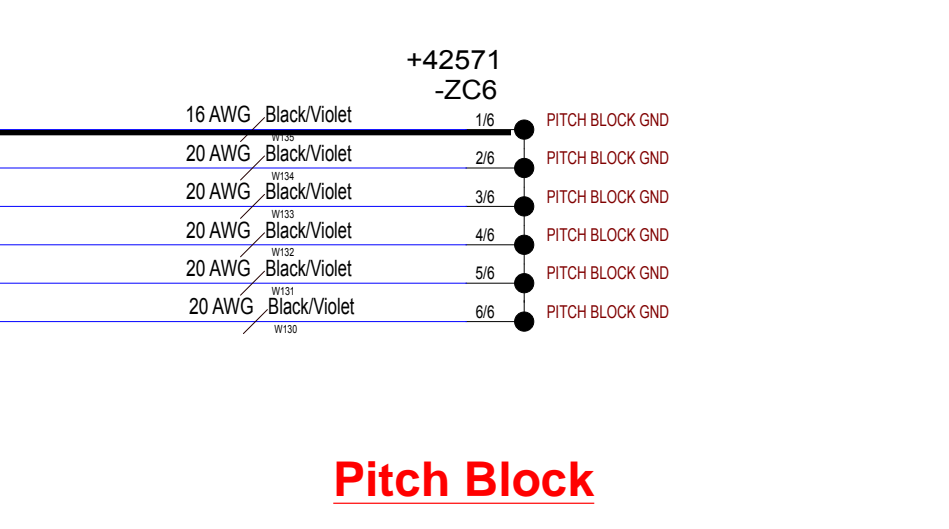
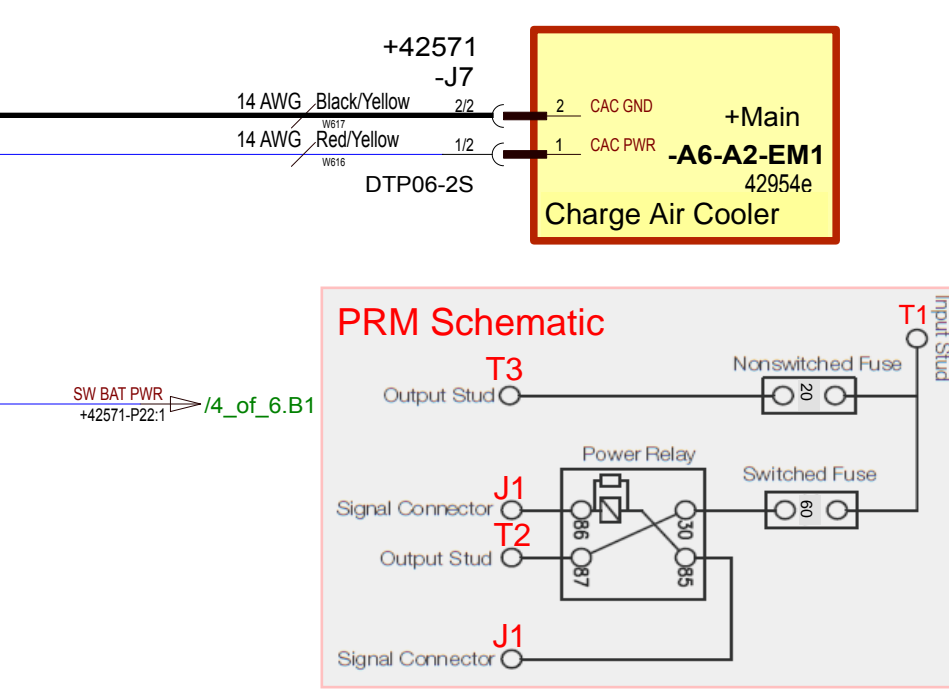
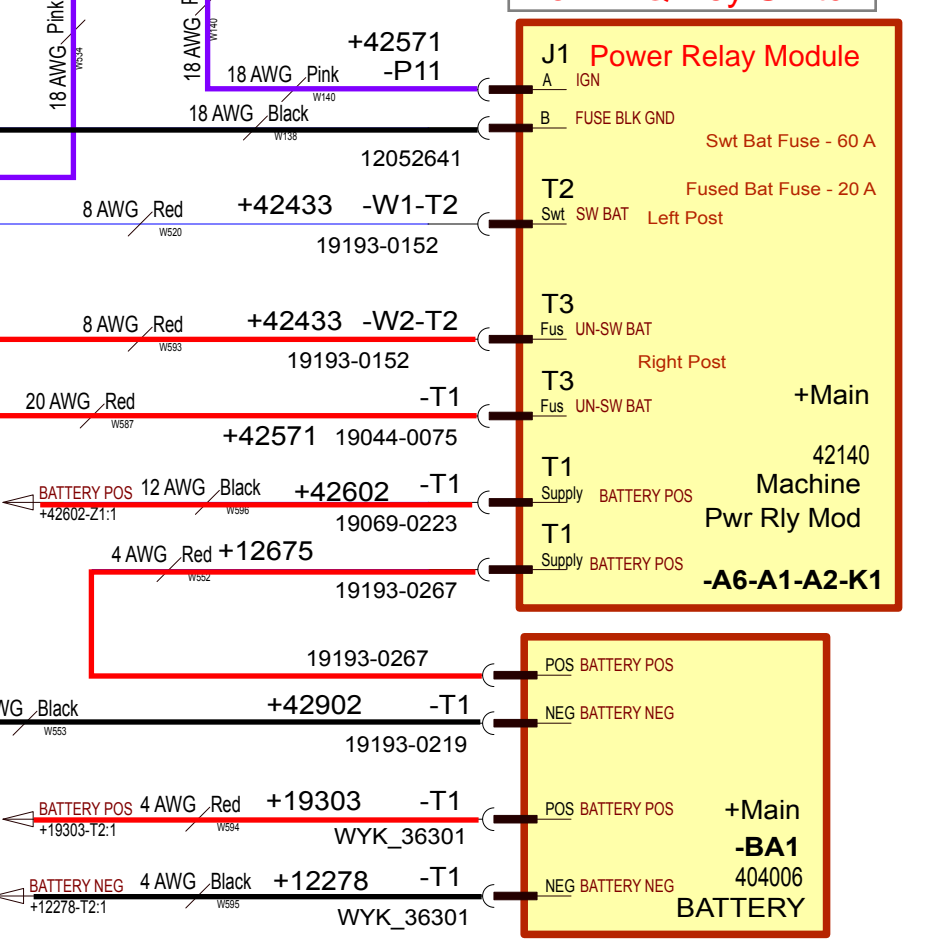


Machine Control Unit (MCU)
Control system managed by CAN Bus - as well as Inputs/Outputs from switches and various sensors.

Controls functions from Hyd fan to Stroke/Pitch cylinder position.



To Hatz ECU via X5 Plug
From MQ Key Switch



Machine Controller P/N 42072

After installing a new SW into the MCU on a Hatz unit, there will be an engine fault code. If the unit is started, there will be no drive or throttle functions.

After the SW install, you must turn the key to off for 20-30 seconds and everything is fine.

When the MCU cycles off then back on during the SW install, the ECM see's this loss of connectivity to the MCU and results a RED fault.

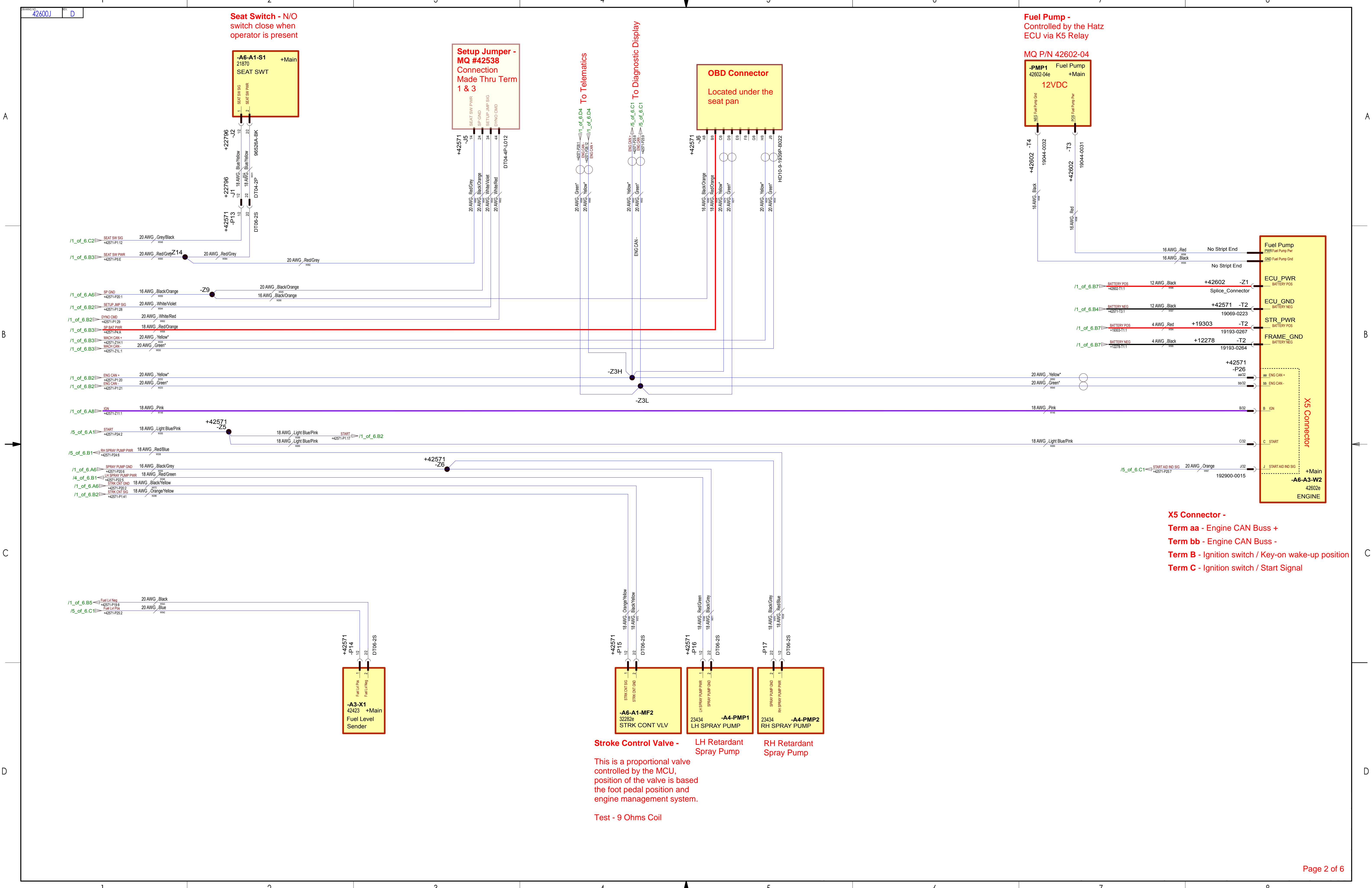
Key Off for 30 sec corrects!

Smart Pitch Sensors - Sensor are located inside the R/L pitch cylinder and use a reference voltage of 5VDC.

Mid Pressure Hyd Filter - Filter is located on right side next to Hyd cooler
Filter Swt is NC: Open Circuit = Plugged Filter

High Pressure Hyd Filter - Filter is located on left side next to Hyd cooler
Filter Swt is NC: Open Circuit = Plugged Filter

Pitch Block - Left Valve = Left Pitch Cyl
Right Valve = Right Pitch Cyl
Upper Coil = Pitch Up
Lower Coil = Pitch Down
Black/Violet Wires Are Grounds



A

B

C

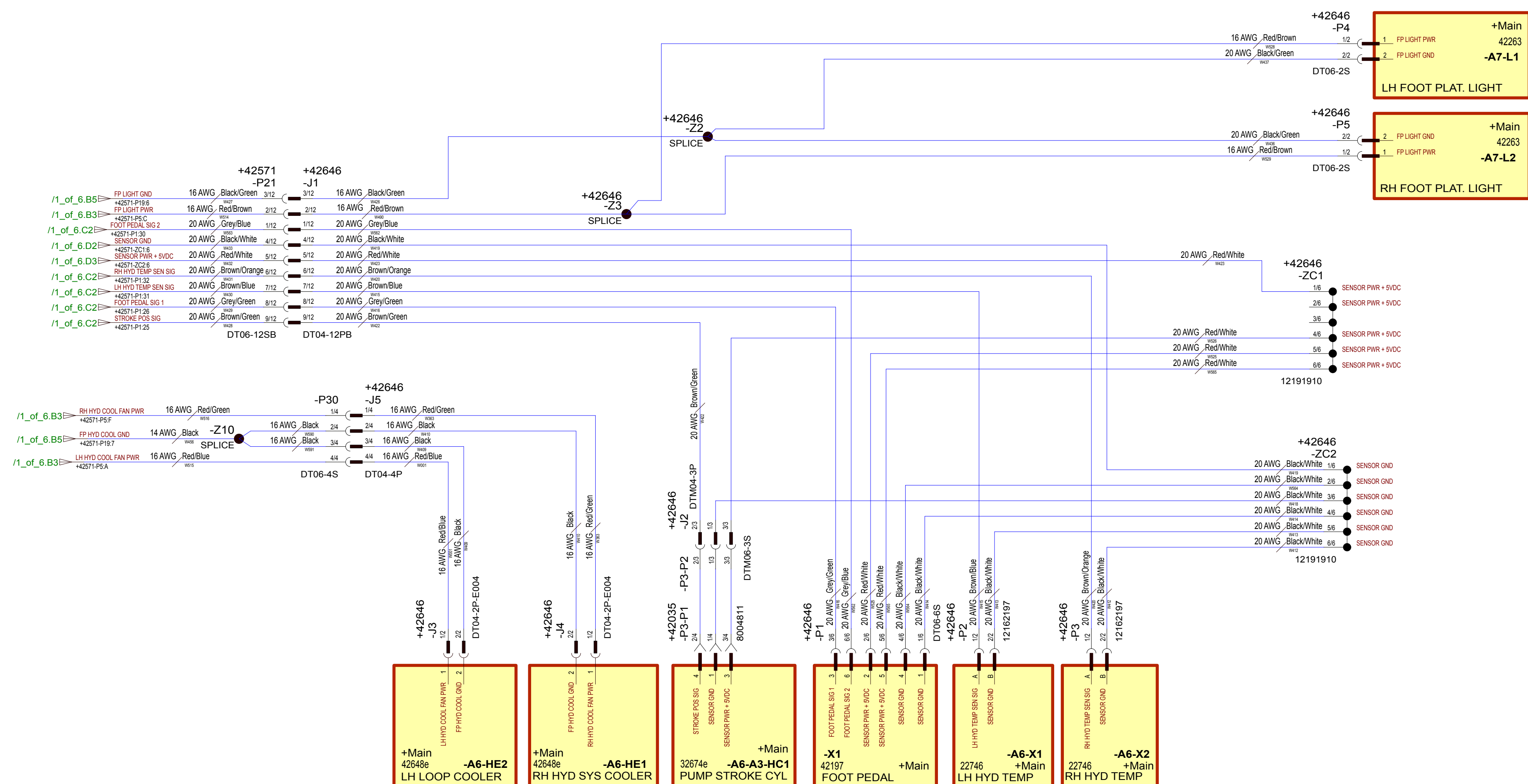
D

A

B

C

D



LH & RH Foot Led Lights -
Controlled by MCU via CAN Buss, signal sent to the MVEC to control relay R3

LH Foot MVEC Relay Location - R3
RH Foot MVEC Relay Location - R3

RH & LH Hyd Fans -
Fans are powered by a LH & RH relay in the MVEC fuse box. Relays are controlled by the MCU via CAN Buss

Stroke Follower Cyl -
Managed by the MCU to achieve max blade speed of 160 RPM on a HTX and 130 RPM on the STX
You must first adjust the left blade speed, then match the right side speed to the left side.

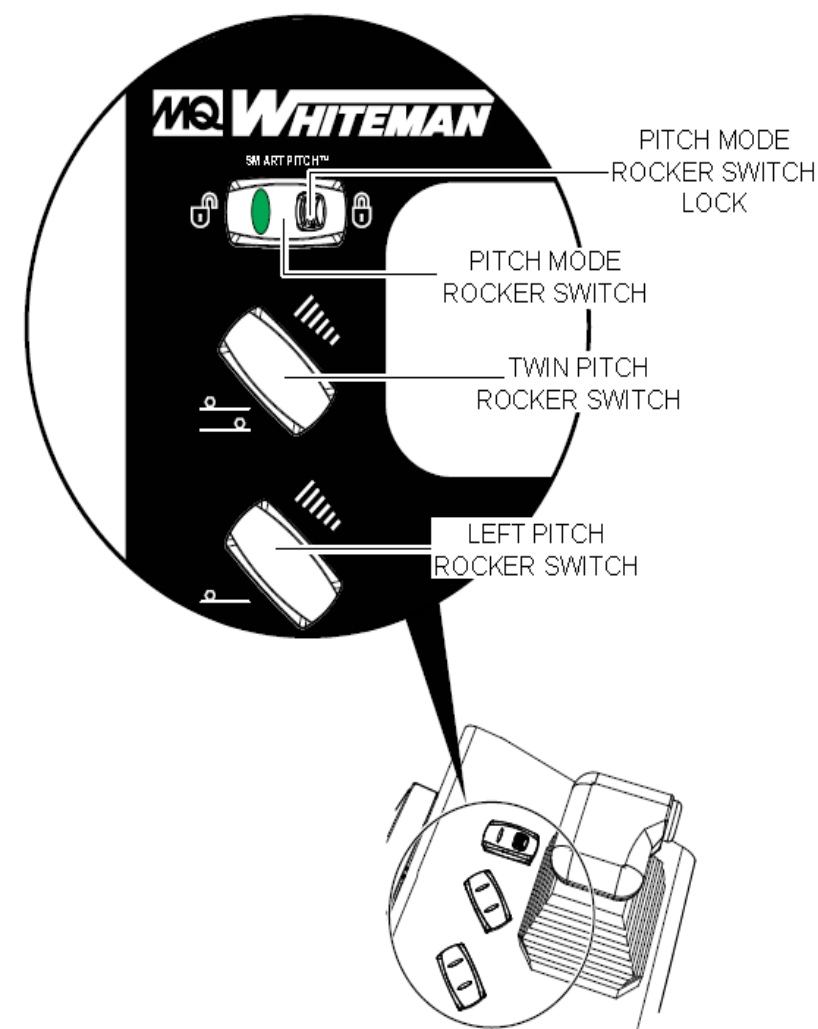
Foot Pedal -
No Pre-adjustment needed, will require recalibrating when replaced
Foot Pedal faults will always illuminate a RED stop lamp.

Hydraulic Temp Sensor -
Hydraulic temp are viewable using the WST tool.
180°F = Illuminate Amber Light
190°F = Illuminate Red Light

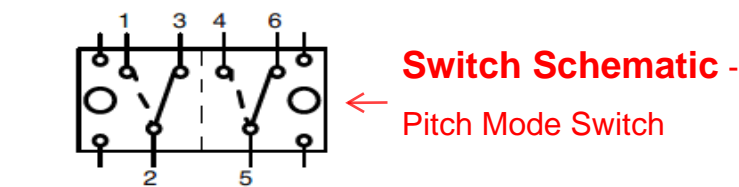
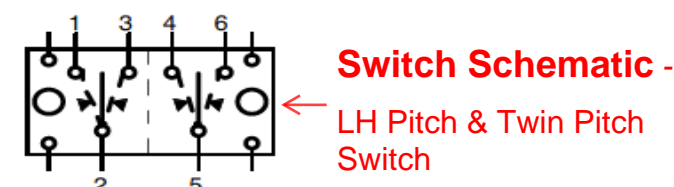
Hyd fan On/Off Defaults -
Off@ 125°F
On@ 145°F
If either Hyd temp sensor see above 145°F both fans will turn on.

Requires calibration on new set up and after max blade speed has been adj or Zero Stroke reset.
Stroke cylinder faults will always illuminate a RED stop lamp.

LH Clam Shell



Operator Action	Green Status LED	Trowel Action
N/A	Blinking	Pitch Calibration Error, Calibration Cycle Underway, Not Yet Calibrated
Panning Mode ¹	Blinking	Left and Right Rotors/Blades are flat .9s on, .1s off
Manual Pitch Mode Active (Left, Unlocked Position)	OFF	Pitch is manually controlled by Left Pitch Switches
Smart Pitch™ Mode Active (Right, Locked Position)	ON	Left and Right rotors are synchronized.
	OFF	Left and Right rotors are not synchronized.
	Blinking	Left and Right rotor synchronization process is underway. .1s on, .1s off



LH/Twin Pitch Switch Voltage Output -

- * 2.3 VDC Static Viewed Using WST Tool
- * System Voltage Up Position
- * 0 VDC Down Position

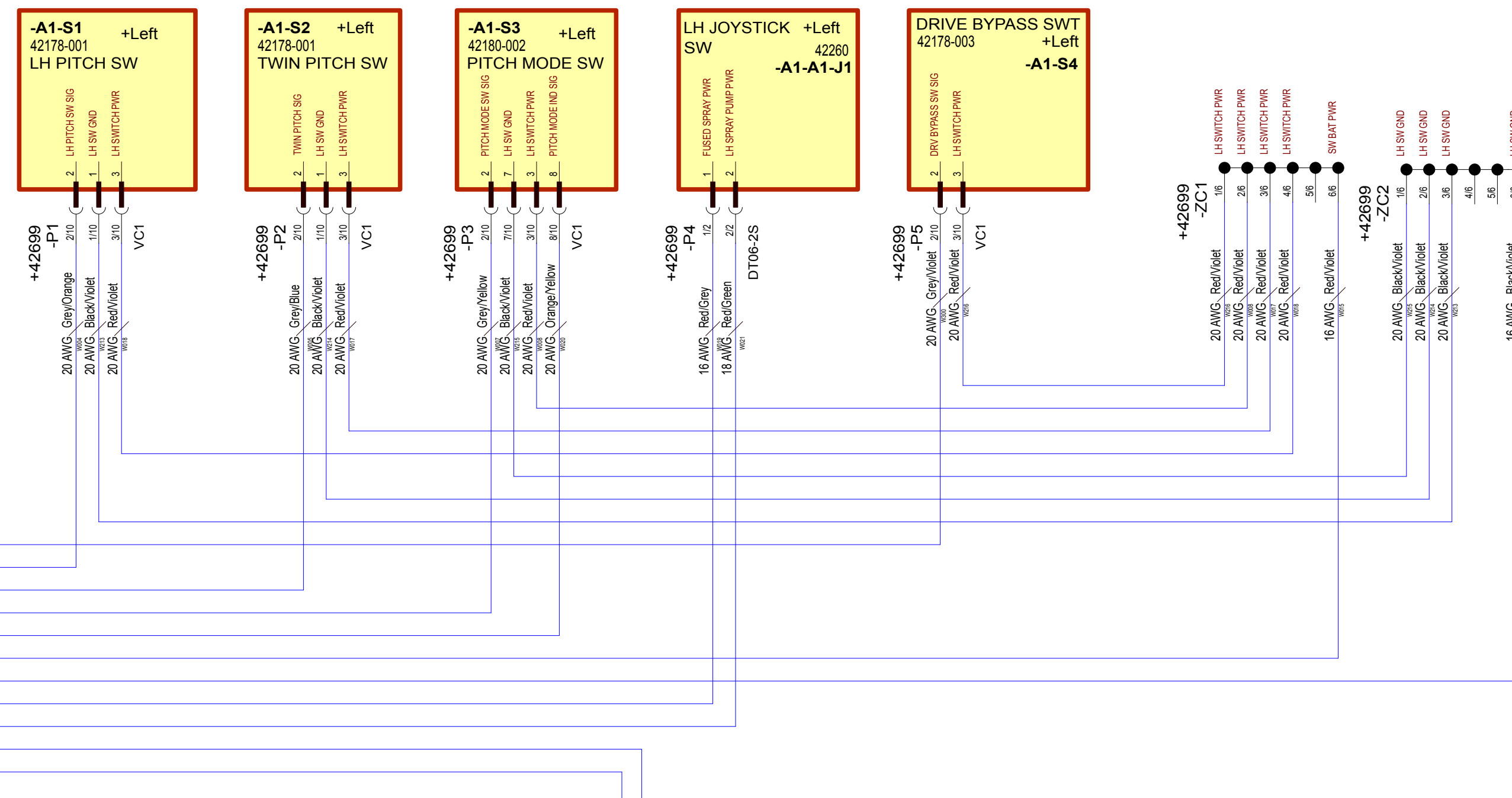
Pitch Mode Switch -

LED light is an output from the MCU.

LH Retardant Spray Switch

Drive Bypass Switch -

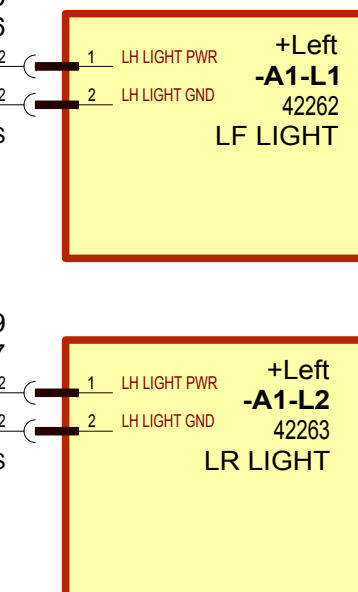
Allows slow rotor rotation while the operator is out of the seat during removal from the concrete pad. Operates at 65% blade speed



B

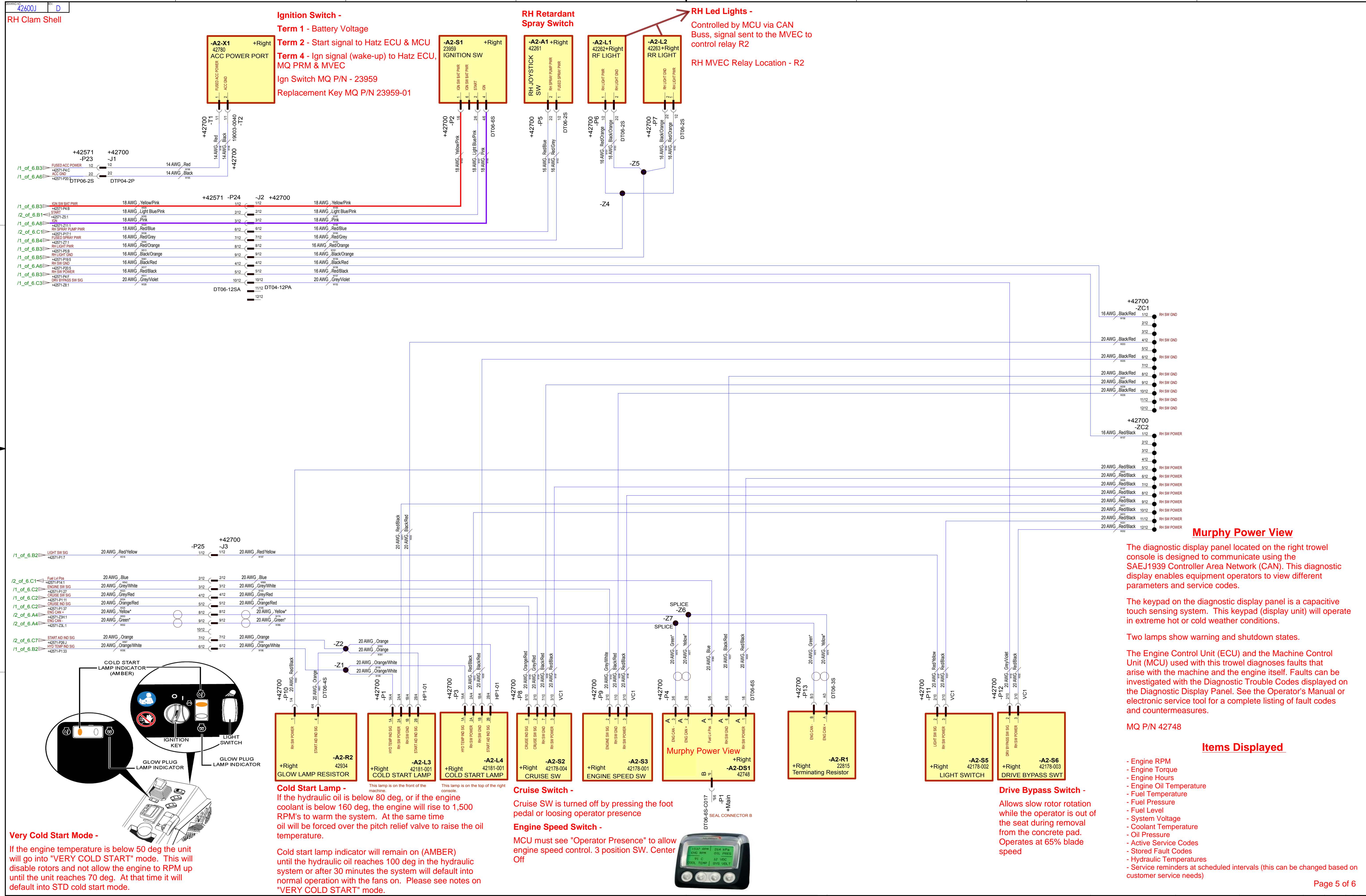
C

D



LH Led Lights -
Controlled by MCU via CAN Buss, signal sent to the MVEC to control relay R1

LH MVEC Relay Location - R1



RH Clam Shell

Ignition Switch -
Term 1 - Battery Voltage
Term 2 - Start signal to Hatz ECU & MCU
Term 4 - Ign signal (wake-up) to Hatz ECU, MQ PRM & MVEC
 Ign Switch MQ P/N - 23959
 Replacement Key MQ P/N 23959-01

RH Retardant Spray Switch

RH Led Lights -
 Controlled by MCU via CAN Buss, signal sent to the MVEC to control relay R2
 RH MVEC Relay Location - R2

Murphy Power View

The diagnostic display panel located on the right trowel console is designed to communicate using the SAEJ1939 Controller Area Network (CAN). This diagnostic display enables equipment operators to view different parameters and service codes.

The keypad on the diagnostic display panel is a capacitive touch sensing system. This keypad (display unit) will operate in extreme hot or cold weather conditions.

Two lamps show warning and shutdown states.

The Engine Control Unit (ECU) and the Machine Control Unit (MCU) used with this trowel diagnoses faults that arise with the machine and the engine itself. Faults can be investigated with the Diagnostic Trouble Codes displayed on the Diagnostic Display Panel. See the Operator's Manual or electronic service tool for a complete listing of fault codes and countermeasures.

MQ P/N 42748

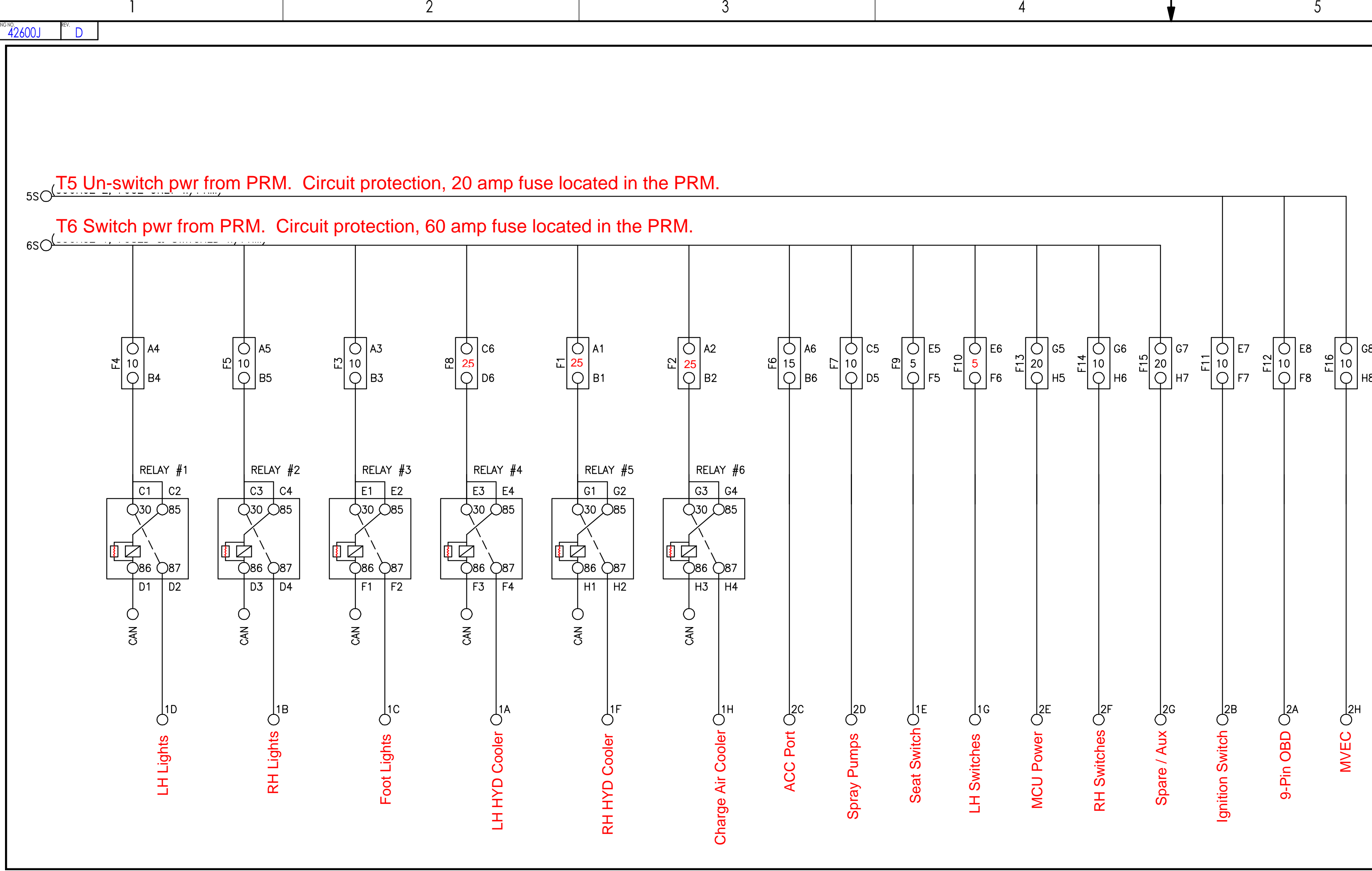
Items Displayed

Very Cold Start Mode -
 If the engine temperature is below 50 deg the unit will go into "VERY COLD START" mode. This will disable rotors and not allow the engine to RPM up until the unit reaches 70 deg. At that time it will default into STD cold start mode.

Cold Start Lamp -
 If the hydraulic oil is below 80 deg, or if the engine coolant is below 160 deg, the engine will rise to 1,500 RPM's to warm the system. At the same time oil will be forced over the pitch relief valve to raise the oil temperature.
 Cold start lamp indicator will remain on (AMBER) until the hydraulic oil reaches 100 deg in the hydraulic system or after 30 minutes the system will default into normal operation with the fans on. Please see notes on "VERY COLD START" mode.

Cruise Switch -
 Cruise SW is turned off by pressing the foot pedal or losing operator presence
Engine Speed Switch -
 MCU must see "Operator Presence" to allow engine speed control. 3 position SW. Center Off

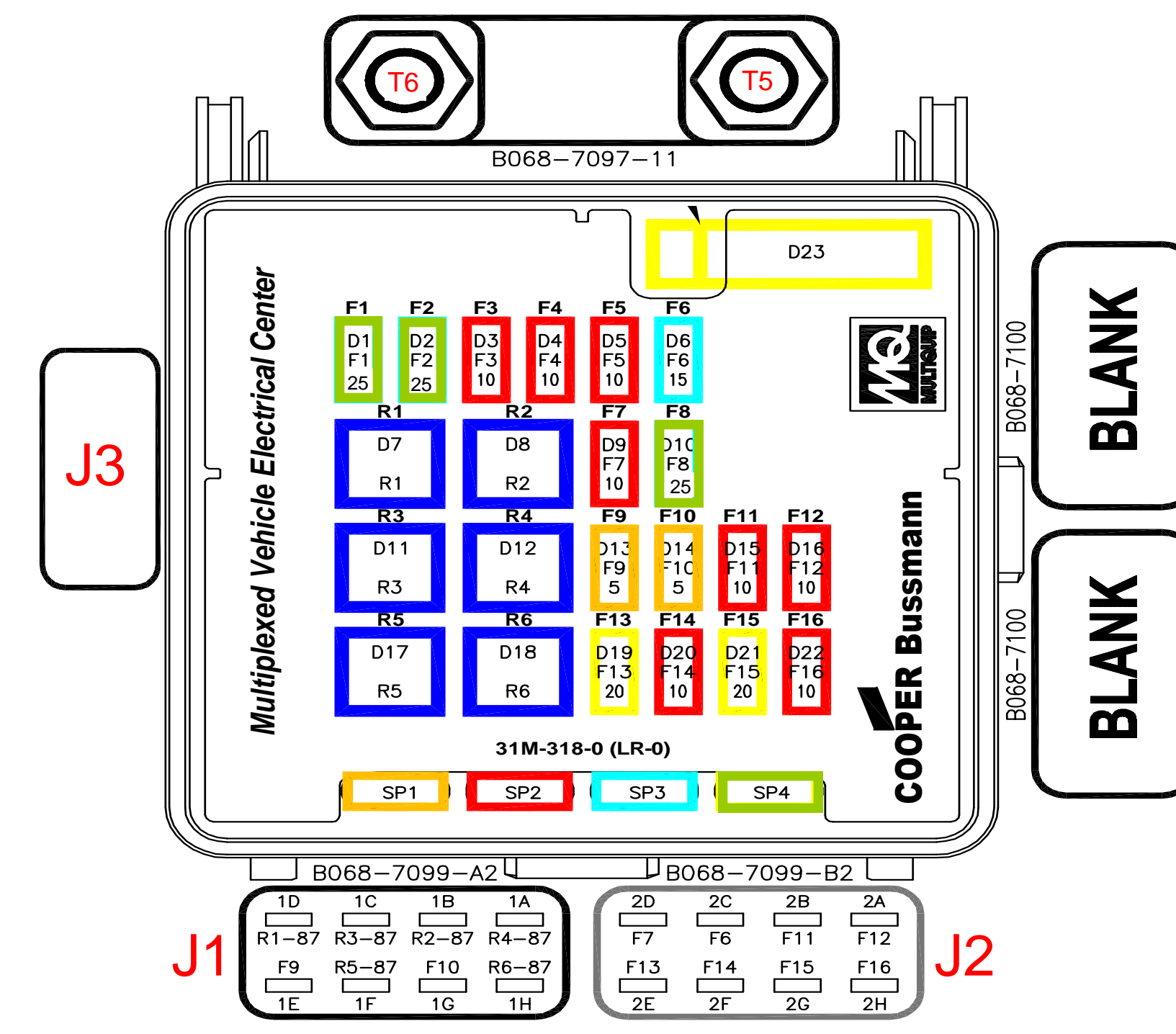
Drive Bypass Switch -
 Allows slow rotor rotation while the operator is out of the seat during removal from the concrete pad. Operates at 65% blade speed



Multiplexed Vehicle Electrical Center (mVEC)

MQ Part Number 42893

The MQ multiplexed Vehicle Electrical Center (mVEC) offers CAN Network oversight over our high power circuits on the HTXG6DF trowel power distribution. The mVEC acts as a slave module on a J1939 network communicating via the MCU to control hydraulic fan relays as well as all the LED lights.



MVEC Fuse Location

- F1 - RH HYD Cooler
- F2 - Charge Air Cooler
- F3 - LED Foot Lights
- F4 - LH LED Lights
- F5 - RH LED Lights
- F6 - ACC Port
- F7 - Spray Pumps
- F8 - LH HYD Cooler
- F9 - Seat Switch
- F10 - LH Switches
- F11 - Ignition Switch
- F12 - 9-Pin OBD
- F13 - MCU Power
- F14 - RH Switches
- F15 - Spare Aux
- F16 - MVEC Power

J1 - Term Description J2 - Term Description J3 - Term Description

Black	Grey	
1A - LH HYD Cooler	2A - 9-Pin OBD	1 - MVEC Power
1B - RH LED Lights	2B - Ignition Switch	3 - MVEC Ground
1C - Foot LED Lights	2C - ACC Port	5 - CAN Shield
1D - LH LED Lights	2D - Spray Pumps	6 - Machine CAN Buss +
1E - Seat Switch	2E - MCU Power	8 - Ignition Switch
1F - RH HYD Cooler	2F - RH Switches	12 - Machine CAN Buss -
1G - LH Switches	2G - Spare / Aux	
1H - Charge Air Cooler	2H - MVEC Power	

Machine Specification

HTX6H	STX6H
Operating Weight - 2,446	Operating Weight - 2,544
Width - 95 inches	Width - 117 inches
Max Rotor Speed - 160	Max Rotor Speed - 130
Blades Per Rotor - 6	Blades Per Rotor - 6
Fuel Cap - 10 Gal	Fuel Cap - 10 Gal

Service Intervals

- Engine Oil Change - 50hr, after that change every 500hrs
- Engine Air Filter Change - Every 400 hrs or 200 hrs in dusty environment
- Engine Fuel Filter - 500 hrs or every 2 years
- Engine Crankcase Filter - 500 hrs or every 2 years
- Engine Coolant Change - 1000 hrs
- Engine Poly V-Belt - 3000 hrs
- At 4000 clean the entire EGR section (EGR precooler, EGR valve, EGR main cooler as well as EGR mixing nozzle)
- Hydraulic Oil Change - 2000 hrs
- Hydraulic Oil Filter Change - 1000 hrs

Hatz Engine Information

Model - 4H50TIC
 HP - 70
 Fuel System Type - Bosch Common Rail

Fluid Capacities and Type

Engine Oil Type - 15W/40
 Engine Oil Cap - 6.62 qt
 Engine Coolant - Extended Life Coolant

Hydraulic Oil Type - Parker Duraclean ISO 46
 Hydraulic Cap - 8 Gal

Check out our service website for more information just like this!
service.multiquip.com

HTX - STX6H Service Edits RevB