

#12052

Meyer

4 RPT H ^W/_{AR}

WARNING

CROSS PRESS HIGH

LOW HYD. TANK OIL

POWER

ON
 OFF
WHEN LIT

WORK LIGHTS

BACK UP
 LEFT
 RIGHT

REAR STEER AUTO CENTER

WHEN LIT

WARNING LIGHTS

FLASHERS
 STROBE

BIN FILL

SYSTEM ERROR
 TRAVEL MODE
 MANUAL
 AUTOMATIC

SPEED

AIR KNIFE
 KICKER
 CROSS
 CROSS DIST.

CONTROLS

SIDE
 SIDE DIST.
 BIN FILL
 BIN UNLOAD

SPEED

STEEL ROLL SPACE
 STAR TABLE SPEED
 LEFT
 RIGHT

CONTROLS

SHAKER
 SECONDARY
 PRIMARY
 LEFT
 RIGHT

CONVEYORS

AIR KNIFE
 BOOM
 BIN ~~UNLOAD~~ ^{UNLOAD}
 SIDE

CYLINDERS BOOM

CROSS
 SWING
 LIFT
 OUTER

CONVEYORS

STAR TABLE
 SECONDARY
 SHAKER
 PRIMARY
 MASTER

^{Counter}
 BLADE

WARNING

O
CROSS PRESS
HIGH
WHITE 61

O
LOW HYD.
TANK OIL
YELLOW 20

POWER

O ON
WHEN LIT **O** OFF

WORK LIGHTS

O
BACK UP
BROWN 06

O
LEFT
BLACK 034

O
RIGHT
BLUE 036

REAR STEER
AUTO CENTER

O
WHEN LIT
PURPLE 183

WARNING LIGHTS

O
FLASHERS
YELLOW 53

O
STROBE
RED 29

B I N F I L L

O
SYSTEM
ERROR
WHITE 371

O
TRAVEL
MODE
WHITE 41

O
MANUAL
BLUE 71
ORANGE 72

O
AUTOMATIC
RED 75

S P E E D

O
AIR KNIFE
BLACK
BLUE 1
ORANGE 1

~~**O**
KICKER
PURPLE 84
ORANGE 85~~

O
CROSS
YELLOW 76
GREEN 77

O
CROSS
DIST.
ORANGE 47
WHITE 48

O
SIDE
PURPLE 69
RED 70

O
SIDE
DIST.
GREEN 51
WHITE 52

O
BIN FILL
YELLOW 42
WHITE 43

O
BIN UNLOAD
GREEN 78
BROWN 79

S P E E D

S T A R T A B L E

O
S T E E L R O L L
SPACE
BLACK 151
RED 152

O
K I C K E R
S P E E D
RED 149
YELLOW 150

O
L E F T
WHITE 65
PURPLE 66

O
R I G H T
BROWN 37
GREEN 38

O
S H A K E R
RED 32
YELLOW 33

O
S E C O N D A R Y
ORANGE 4
ORANGE 9

O
L E F T
BLACK
BLUE / WHITE
GREEN / WHITE

O
R I G H T
BLACK
BLUE / BLACK
RED / BLACK

C O N T R O L S

P R I M A R Y

C O N V E Y O R S

O
AIR KNIFE
BLACK 1

O
BOOM
BLACK 22

~~**O**
BIN UNLOAD
ORANGE 50
BLACK 22~~

O
SIDE
YELLOW 5

O
CROSS
BROWN 16

C Y L I N D E R S
B O O M

O
SWING
PURPLE 114
GREEN 115

O
LIFT
WHITE 112
BROWN 113

O
OUTER
ORANGE 110
BLUE 111

C O N V E Y O R S

O
STAR TABLE
RED 82

O
SECONDARY
BROWN 11

O
SHAKER
BLUE 80

O
PRIMARY
BLACK / WHITE

O
MASTER

*Control
Primary
ORANGES*

O
BLADE
BLACK 119
RED 118

WARNING

O
CROSS PRESS
HIGH
BZL-13

O
LOW HYD.
TANK OIL
BZL-13

POWER
O ON
O OFF
WHEN LIT
TGA20 2X464

WORK LIGHTS

O BACK UP 2X464
O LEFT 2X464
O RIGHT 2X464

REAR STEER
AUTO CENTER

O
WHEN LIT
TGA20

WARNING LIGHTS

O FLASHERS 2X464
O STROBE 2X464

B I N F I L L

O SYSTEM ERROR TGA10
O TRAVEL MODE 2X464
O MANUAL 4X203
O AUTOMATIC 2X464

S P E E D

C O N T R O L S

O AIRKNIFE
POT 753-5261
KNOB 664-1654
RESIS. 895-0362

O KICKER
S208C-BK

O CROSS
SS208C-BK

O CROSS
DIST.
SS208C-BK

O SIDE
SS208C-BK

O SIDE
DIST.
SS208C-BK

O BIN FILL
SS208C-BK

O BIN UNLOAD
SS208C-BK

S P E E D

C O N T R O L S

S T A R T A B L E

P R I M A R Y

O STEEL ROLL
SPACE
SS208C-BK

O LEFT
RIGHT
SPEED
SS208C-BK

O SHAKER
SS208C-BK

O SECONDARY
SS208C-BK

O LEFT
POT
KNOB
RESISTOR

O RIGHT
753-5261
664-1654
895-0382

C O N V E Y O R S

C Y L I N D E R S
B O O M

O AIR KNIFE
2X464

O BOOM
2X464

O BIN UNLOAD
TG6143

O SIDE
2X464

O CROSS
2X464

O SWING
4X203

O LIFT
4X203

O OUTER
4X203

C O N V E Y O R S

O STAR TABLE
2X464

O SECONDARY
2X464

O SHAKER
2X464

O PRIMARY
2X464

O MASTER
TG6143

O BLADE
4X203

12052

JOHN D. MYERS FARMS

10/10/11

4RPTHWAR

PLUG #2 RIGHT

| PIN # | | | |
|-------|-------------------------|-----|---|
| 1 | WHITE | 65 | LEFT STAR TABLE RDRS112-30 ACTUATOR |
| 2 | PURPLE | 66 | LEFT STAR TABLE RDRS112-30 ACTUATOR |
| 3 | BROWN | 37 | RIGHT STAR TABLE RDRS112-30 ACTUATOR |
| 4 | GREEN | 38 | RIGHT STAR TABLE RDRS112-30 ACTUATOR |
| 5 | RED | 28 | CB1 TO MD3 / XA2 - +12VDC |
| 6 | RED | 280 | 10 AMP FAST ACTING FUSE CONTINUOUS POWER TO "RTC" IN MD3 MODULE |
| 7 | RED | 149 | STEEL ROLL RDRS112-30 ACTUATOR |
| 8 | YELLOW | 150 | STEEL ROLL RDRS112-30 ACTUATOR |
| 9 | BLACK | 151 | STEEL ROLL SPACE ACTUATOR |
| 10 | RED | 152 | STEEL ROLL SPACE ACTUATOR |
| 11 | WHITE | 371 | BIN FILL SYSTEM ERROR |
| 12 | WHITE | 41 | BIN FILL SYSTEM TRAVEL MODE |
| 13 | BLUE | 71 | BIN FILL SYSTEM MANUAL (DOWN) |
| 14 | ORANGE | 72 | BIN FILL SYSTEM MANUAL (UP) |
| 15 | RED | 75 | BIN FILL SYSTEM AUTOMATIC |
| 16 | BROWN | 11 | SECONDARY SWITCH TO DTS-0373B (A) SOLENOID |
| 17 | RED | 82 | STAR TABLE SWITCH TO DTS-0373B (A) SOLENOID'S (2) |
| 18 | BROWN | 16 | CROSS SWITCH TO DTS-0373B (B) SOLENOID |
| 19 | YELLOW | 5 | SIDE SWITCH TO DTS-0373B (B) SOLENOID |
| 20 | ORANGE | 50 | BIN UNLOAD SWITCH TO SV3-16-0-12T-12DG SOLENOID |
| 21 | BLACK | 22 | BOOM SWITCH TO DTS-0373B (B) SOLENOID |
| 22 | ORANGE | 47 | CROSS DISTRIBUTOR ROLLS RDRS112-30 ACTUATOR |
| 23 | ORANGE WHITE | 48 | CROSS DISTRIBUTOR ROLLS RDRS112-30 ACTUATOR |
| 24 | GREEN | 78 | BIN UNLOAD RDRS112-30 ACTUATOR |
| 25 | BROWN | 79 | BIN UNLOAD RDRS112-30 ACTUATOR |
| 26 | YELLOW | 42 | BIN FILL RDRS112-30 ACTUATOR |
| 27 | WHITE | 43 | BIN FILL RDRS112-30 ACTUATOR |
| 28 | PURPLE | 69 | SIDE RDRS112-30 ACTUATOR |
| 29 | RED | 70 | SIDE RDRS112-30 ACTUATOR |
| 30 | PURPLE | 84 | KICKER SWITCH TO RDRS112-30 ACTUATOR M/S VALVE? |
| 31 | ORANGE | 85 | KICKER SWITCH TO RDRS112-30 ACTUATOR M/S VALVE? |
| 32 | BLUE | 80 | SHAKER / KICKER SWITCH TO DTS-0373B (A) |
| 33 | RED | 028 | CB1 TO COOLER TC-115 SWITCH TO SV3-10-C-8H-12DG SOLENOID |
| 34 | | | |
| 35 | | | |
| 36 | | | |
| 37 | | | |

PIN

3 PIN PLUG - RIGHT

| | | | |
|---|-------|----------------------|---|
| 1 | BLACK | 10 AWG | FRAME GROUND TO PANEL GROUND |
| 2 | BLACK | 10 AWG 20 | FRAME GROUND TO PANEL GROUND |
| 3 | BLACK | 15 | MD3 / XA2 GROUND TO PANEL GROUND |

12052

JOHN D. MYERS FARMS

10/10/11

4RPTHWAR

| PIN # | | | KAR-TECH ENCLOSURE | BELDEN WIRE |
|-------|---------------|------|--|-------------|
| 1 | | | | |
| 2 | ORANGE | 1 | AIR KNIFE POTENTIOMETER TERMINAL #2 TO JUNCTION - 2 | 8468 |
| 3 | BLUE | 1 | AIR KNIFE POTENTIOMETER TERMINAL #3 TO JUNCTION - 3 | 8468 |
| 4 | BLACK | 1 | AIR KNIFE SWITCH - ON / OFF TO JUNCTION - 4 | 8468 |
| 5 | | | | |
| 6 | BLUE / WHITE | | LEFT PRIM. POTENTIOMETER TERMINAL #2 TO JUNCTION - 6 | 8468 |
| 7 | GREEN / WHITE | | LEFT PRIM. POTENTIOMETER TERMINAL #3 TO JUNCTION - 7 | 8468 |
| 8 | BLACK / WHITE | | LEFT / RIGHT PRIMARY SWITCH - ON / OFF TO JUNCTION - 8 | 8468 |
| 9 | | | | |
| 10 | BLUE / BLACK | | RIGHT PRIM. POTENTIOMETER TERMINAL #2 TO JUNCTION - 10 | 8468 |
| 11 | RED / BLACK | | RIGHT PRIM. POTENTIOMETER TERMINAL #3 TO JUNCTION - 11 | 8468 |
| 12 | BLACK | 0020 | KAR-TECH GROUND TO PANEL GROUND | |

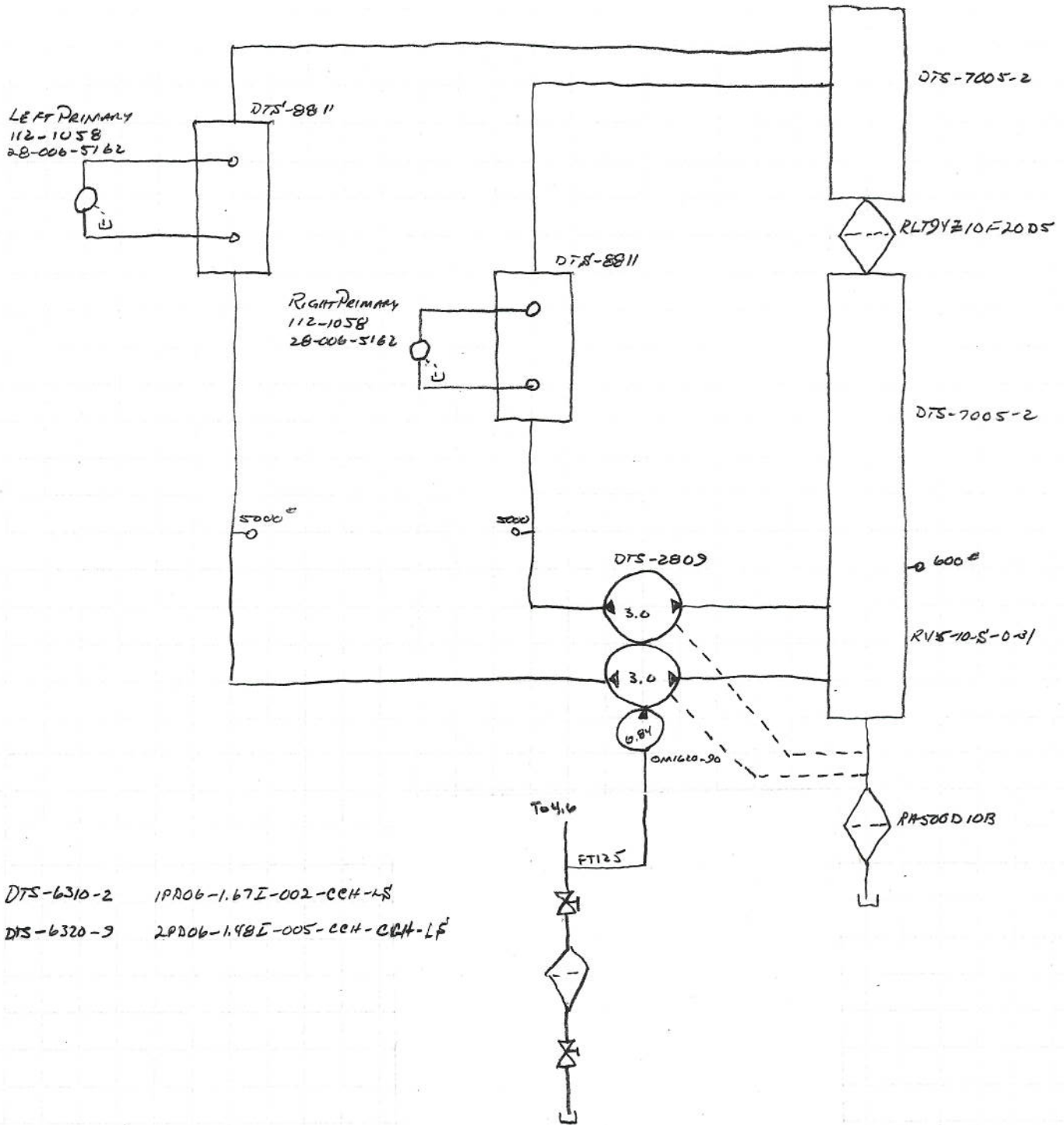
| PIN # | | | KAR-TECH ENCLOSURE | |
|--------------|-------|---------|--|------|
| 1 | WHITE | | AIR KNIFE COIL #1 PIN "A" TO JUNCTION - 1 | 9418 |
| 2 | GREEN | | LEFT PRIMARY COIL #1 - PIN "A" TO JUNCTION - 5 | 9418 |
| 3 | RED | | RIGHT PRIMARY COIL #1 - PIN "A" JUNCTION - 9 | 9418 |
| 4 | BLACK | | PIN "B" PUMP GROUNDS TO JUNCTION - 13 | |
| PUMP COIL #1 | | PIN - A | COMMAND SIGNAL | |
| | | PIN - B | COIL GROUND | |

LARGE 16 PIN PLUG

| PIN # | | | FOOT PEDAL PLUG - LEFT | |
|-------|--------|-----|-----------------------------------|--------|
| 1 | RED | | +VBATT - +12VDC POWER SUPPLY | 10 AWG |
| 2 | RED | 52 | CB3 - + 12VDC POWER SUPPLY | |
| 3 | PURPLE | 83 | AUTO CENTER SWITCH TO RELAY | |
| 4 | PURPLE | 183 | AUTO CENTER SWITCH TO STATUS LAMP | |
| 5 | BLUE | 55 | LEFT STEER PEDAL TO RELAY | |
| 6 | ORANGE | 56 | RIGHT STEER PEDAL TO RELAY | |
| 7 | RED | | + BATT - +12 VDC POWER SUPPLY | 10 AWG |
| 8 | BROWN | 153 | LEFT PRIMARY REVERSE | |
| 9 | ORANGE | 154 | RIGHT PRIMARY REVERSE | |
| 10 | BLACK | | -BATT - GROUND | 10 AWG |
| 11 | GREEN | 155 | SECONDARY REVERSE | |
| 12 | YELLOW | 156 | LEFT PRIMARY FORWARD | |
| 13 | RED | 157 | RIGHT PRIMARY FORWARD | |
| 14 | RED | | CAMERA +VBATT | |
| 15 | BLACK | | -VBATT - BATTERY GROUND | |
| 16 | BLACK | | CAMERA -VBATT | |

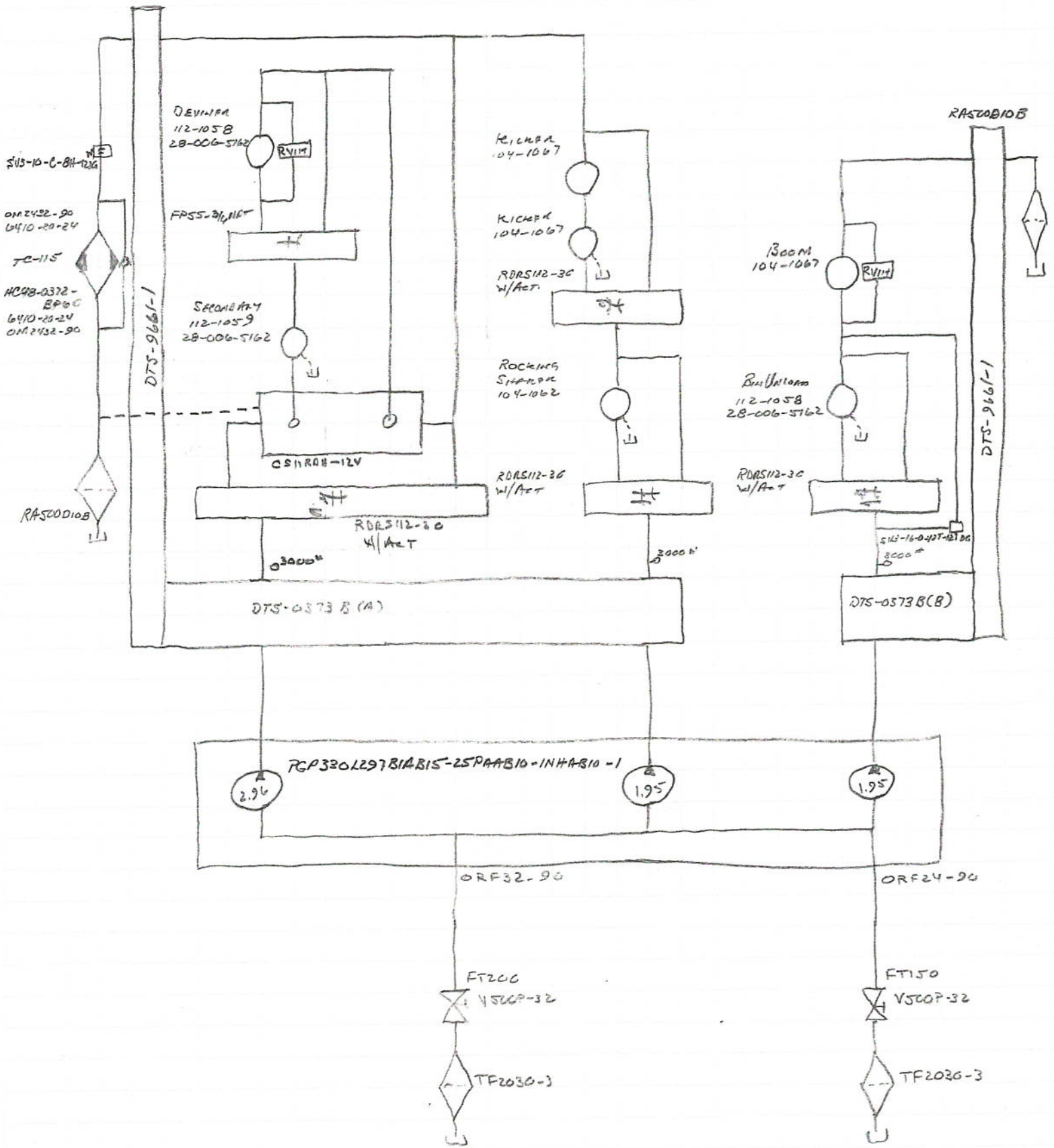
| | | | | |
|--|--------|-----|---------------------------|--|
| | RED | 120 | STEERING BOX TO MV4 VALVE | |
| | YELLOW | 121 | STEERING BOX TO MV4 VALVE | |

10/27/11
 #12052
 NEVER
 4RPT HWAR

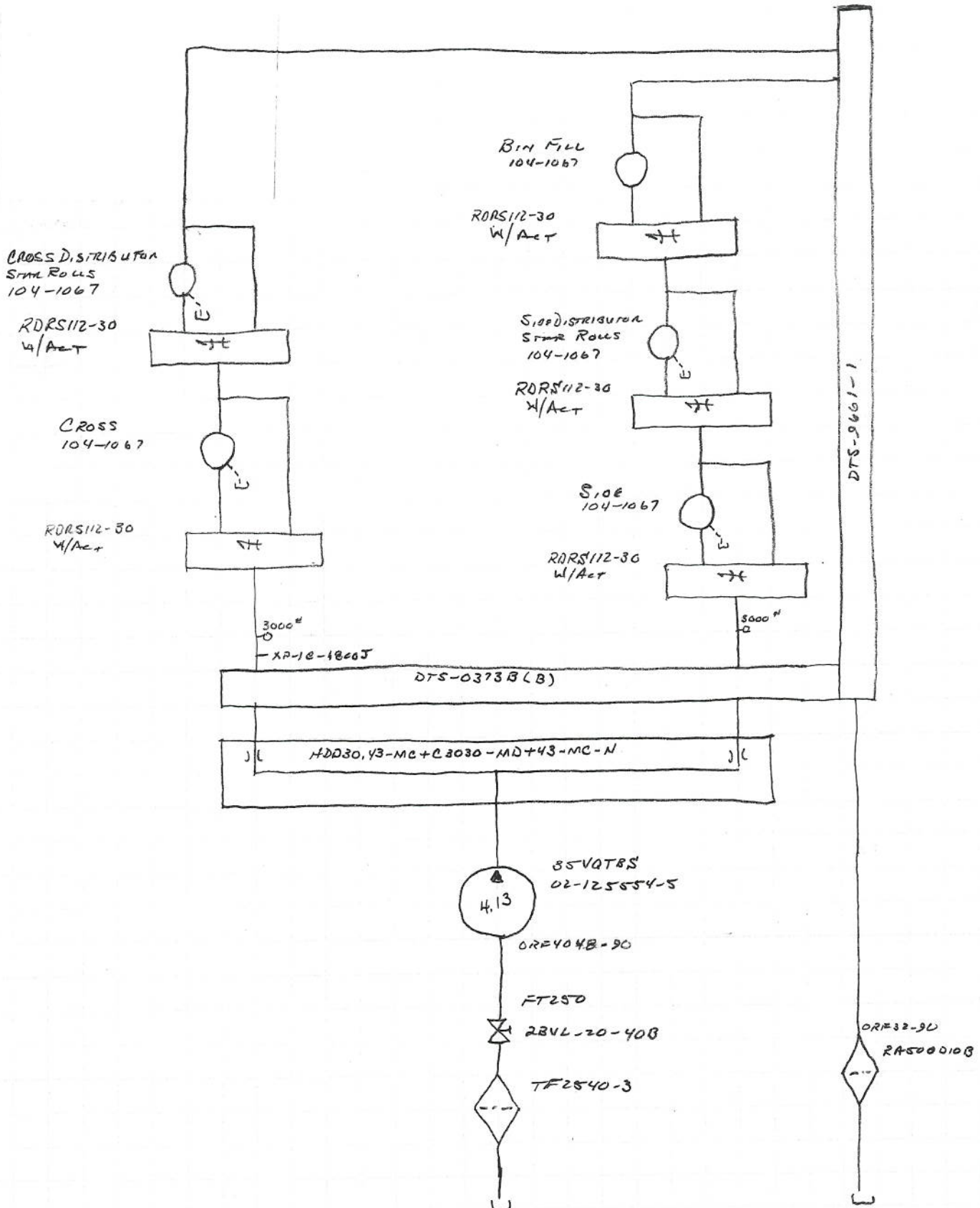


DTS-6310-2 1PRO6-1.67E-002-CEH-L5
 DTS-6320-3 2PD06-1.98E-005-CEH-CEH-LF

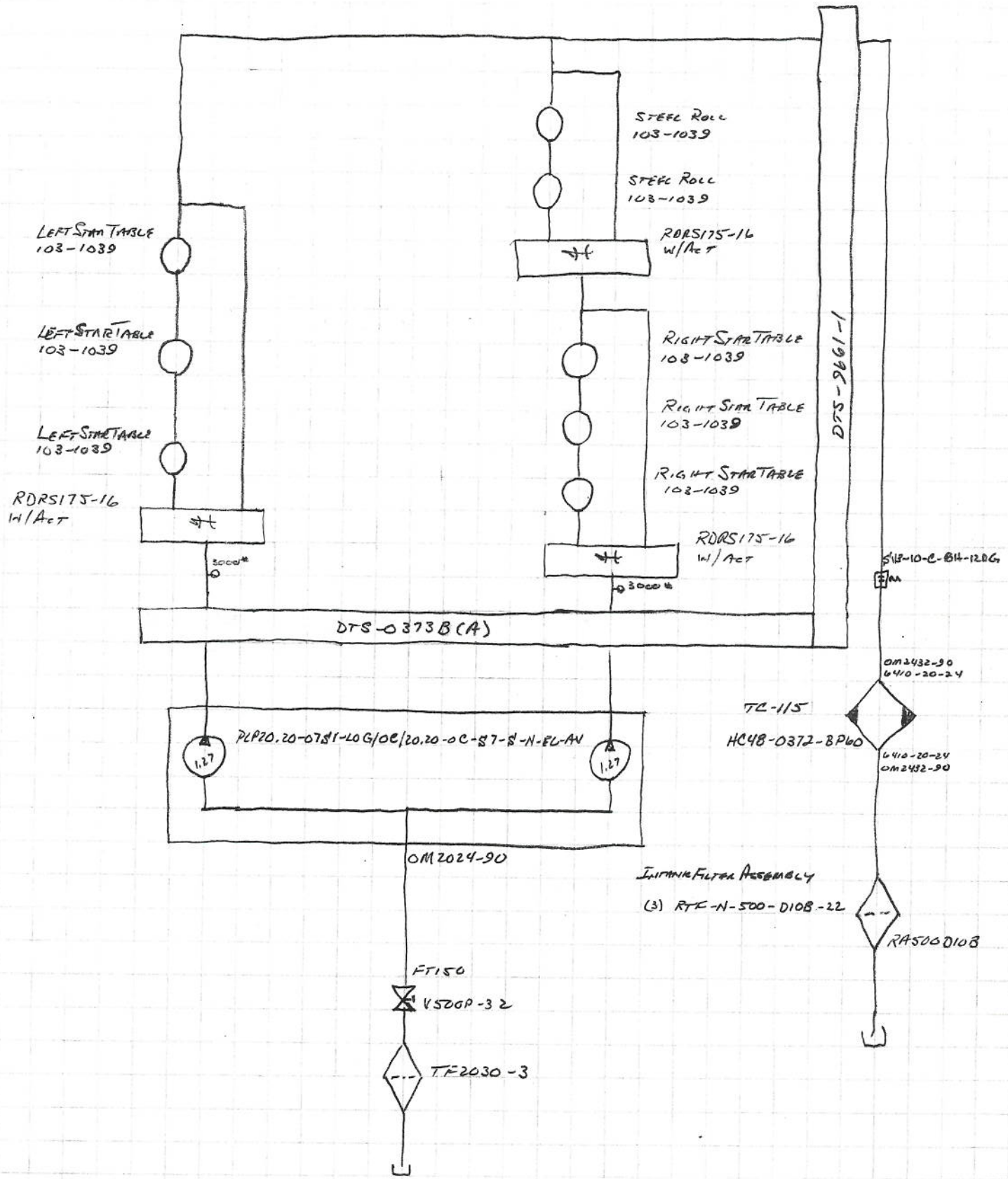
10/24/11
 E/2052
 JOHN D. NILES FROMS
 4RPTH WARR



10/24/11
E12052
MEYER
HRPT/KAR

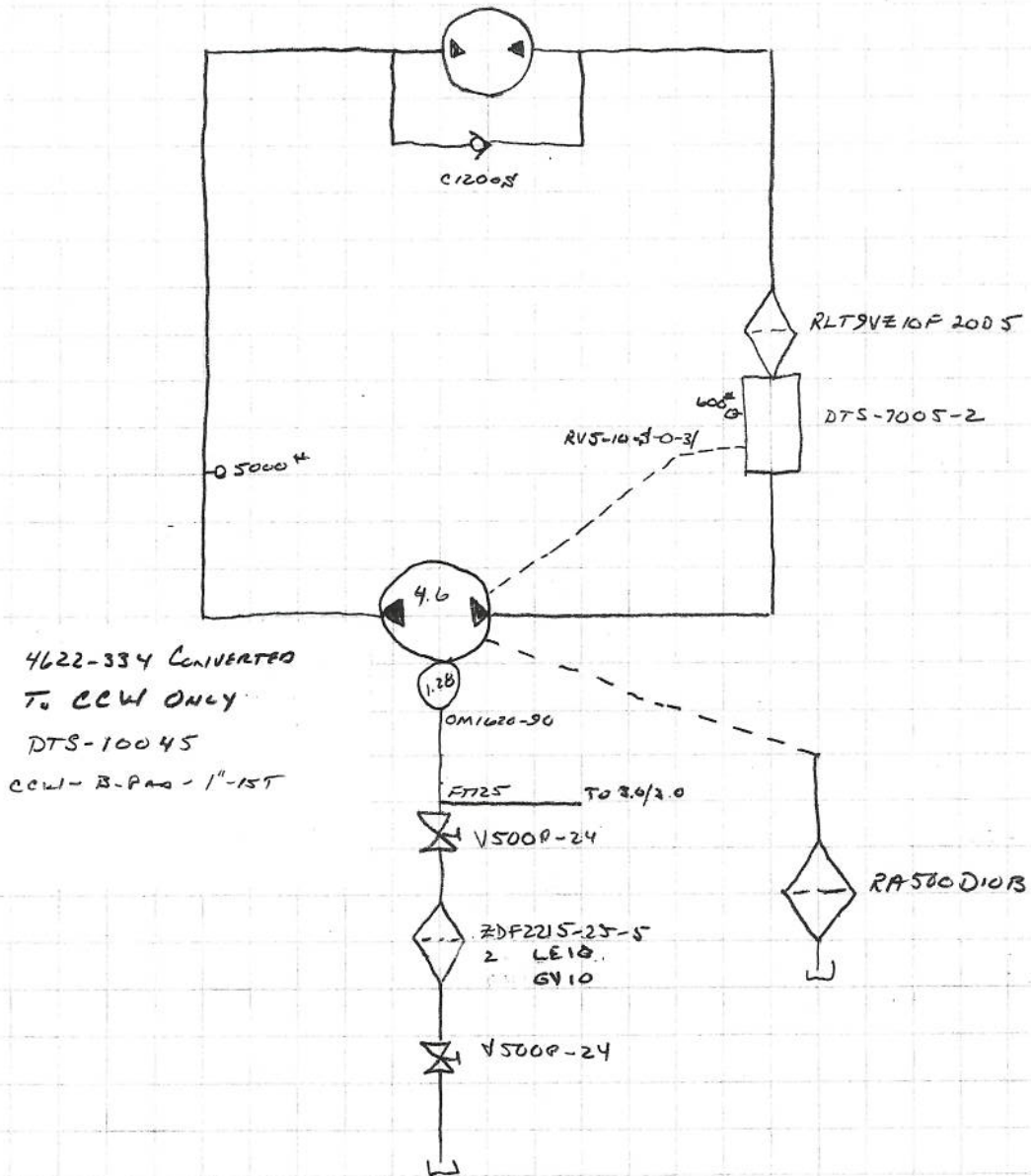


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#12052
MEYER
HROTHWAR

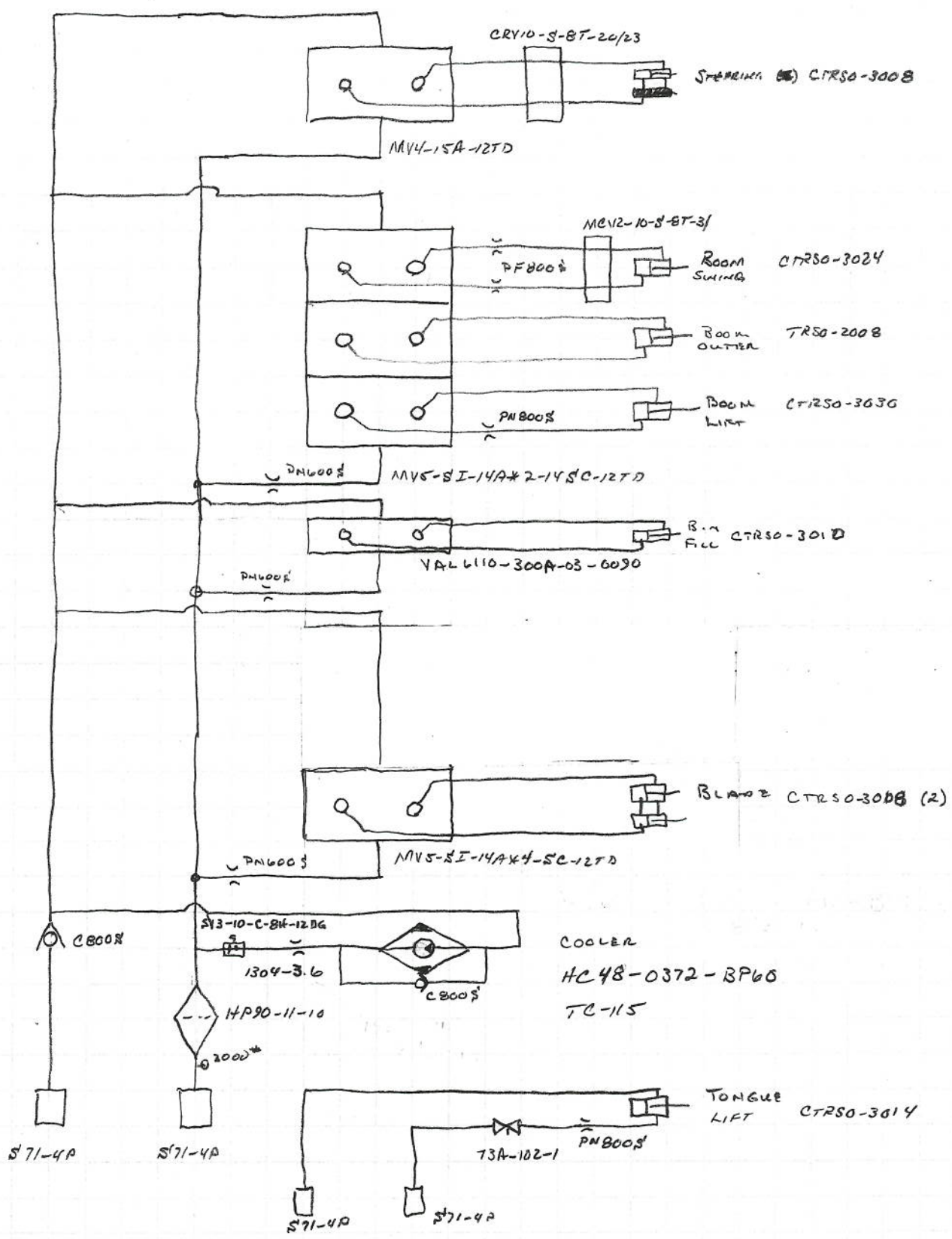


10/27/11
#12052
MEYER
HRPTHWAR

AIR KNIFE
PGM 350A946VCEB17-98
615-15R



10/24/11
 #12052
 NEVER
 4RATHWAR



EATON

Hydraulics

Electronic Proportional (EP) Control for Heavy Duty Series 2 Piston Pumps

Model 33
Model 39
Model 46

Model 54
Model 64

1/5/07

The Electronic Proportional (EP) Control is ideal for a wide range of mobile and industrial applications where electrical control of pump displacement is desired. Eaton's robust design incorporates an electronic module, proportional solenoids and a valve assembly.

Pump displacement is controlled by an input command signal which is converted into proportional current output by the electronic module. The proportional solenoid-actuated valve assembly then converts the current output into proportional pump displacement.

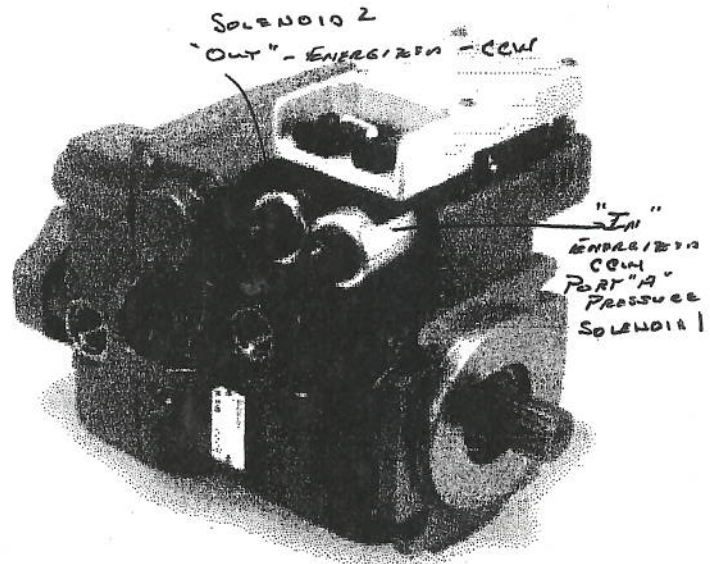
Designed to meet the rigorous duty cycle requirements of off-highway equipment, the EP Control utilizes an electronic module encapsulated in an aluminum enclosure and environmentally-sealed Metri-Pack® connectors to assure maximum protection from the elements. The EP Control is designed to resist Electromagnetic Interference (EMI) which could affect proper operation.

The EP Control offers maximum design and application flexibility with two different types of command input options and compatibility with both 12 and 24 Vdc power supplies. Typical input devices include joysticks (1-6 Vdc) and PLCs (± 4 -20 mA).

For precise, repeatable operation, closed-loop current control is used to compensate for resistance and voltage changes of the proportional solenoids due to temperature variation. In the event of a power loss or loss of signal, the EP Control automatically returns the pump to neutral. Mechanical feedback of the swashplate position provides closed-loop control to maintain the selected displacement setting over a wide range of operating conditions. Solenoids have integral manual override actuators.

EP Control Features

- Robust, flexible electronic pump control
- Electronic module encapsulated for environmental protection
- Automotive style environmentally sealed Metri-Pack® connectors
- Closed-loop current control compensates for resistance change of the proportional solenoids due to temperature variations
- Return to neutral for loss of power or loss of command input signal
- Mechanical feedback of swashplate position for closed-loop control
- Two choices for command input signal
- Operates from 12 or 24 Vdc power supply
- Ease of installation
- Operating temperature range -40° to +85° C
- On-pump mounting for many installations
- External neutral adjustment
- Manual override capability
- Drive module qualification per SAE J1455, SAE J1113, CISPR 25
- External fuse (customer supplied): 3A



Electronic Module Qualification (Contact Eaton for Specific Levels)

- SAE J1455 - Recommended Environmental Practices for Electronic Equipment Design
 - Humidity/Temperature Extreme Cycling
 - Salt Spray
 - Splash & Immersion
 - Steam Cleaning/High Pressure Wash
 - Vibration
 - Mechanical Shock
 - Temperature Cycling
 - Load Dump Transients
 - Inductive Load Switching Transients
- SAE J1113 - Electromagnetic Susceptibility Measurement Procedures for Vehicle Components
 - EMI/EMC - Conducted & Radiated Immunity
- CISPR 25 - International Electrotechnical Commission "Limits and Methods of Measurement of Radio Disturbance Characteristics for the Protection of Receivers used on Board Vehicles"
 - EMI/EMC - Conducted & Radiated Emissions

EATON

Hydraulics

Electronic Proportional (EP) Control for Medium Duty 72400 Piston Pumps

The Electronic Proportional (EP) Control is ideal for a wide range of mobile and industrial applications where electrical control of pump displacement is desired. Eaton's robust design incorporates an electronic module, proportional solenoids and a valve assembly.

Pump displacement is controlled by an input command signal which is converted into proportional current output by the electronic module. The proportional solenoid-actuated valve assembly then converts the current output into proportional pump displacement.

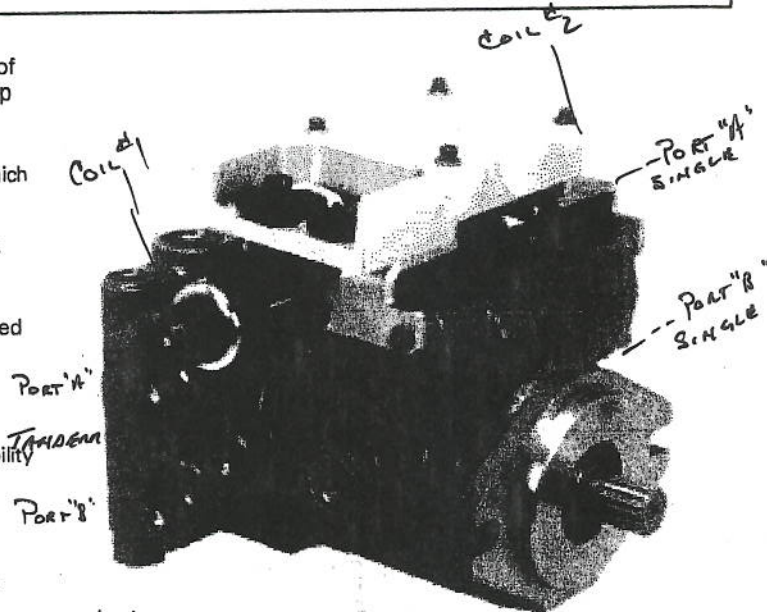
Designed to meet the rigorous duty cycle requirements of off-highway equipment, the EP Control utilizes an electronic module encapsulated in an aluminum enclosure and environmentally-sealed Metri-Pack® connectors to assure maximum protection from the elements. The EP Control is designed to resist Electromagnetic Interference (EMI) which could affect proper operation.

The EP Control offers maximum design and application flexibility with two different types of command input options and compatibility with both 12 and 24 Vdc power supplies. Typical input devices include joysticks (1-8 Vdc) and PLCs (± 4 -20 mA).

For precise, repeatable operation, closed-loop current control is used to compensate for resistance and voltage changes of the proportional solenoids due to temperature variation. In the event of a power loss or loss of signal, the EP Control automatically returns the pump to neutral. Mechanical feedback of the swashplate position provides closed-loop control to maintain the selected displacement setting over a wide range of operating conditions. Solenoids have integral manual override actuators.

EP Control Features

- Robust, flexible electronic pump control
- Electronic module encapsulated for environmental protection
- Automotive style environmentally sealed Metri-Pack® connectors
- Closed-loop current control compensates for resistance change of the proportional solenoids due to temperature variations
- Return to neutral for loss of power or loss of command input signal
- Mechanical feedback of swashplate position for closed-loop control
- Two choices for command input signal
- Operates from 12 or 24 Vdc power supply
- Ease of installation
- Operating temperature range -40° to +85° C
- On-pump mounting for many installations
- External neutral adjustment
- Manual override capability
- Drive module qualification per SAE J1455, SAE J1113, CISPR 25
- External fuse (customer supplied): 3A



1/5/07

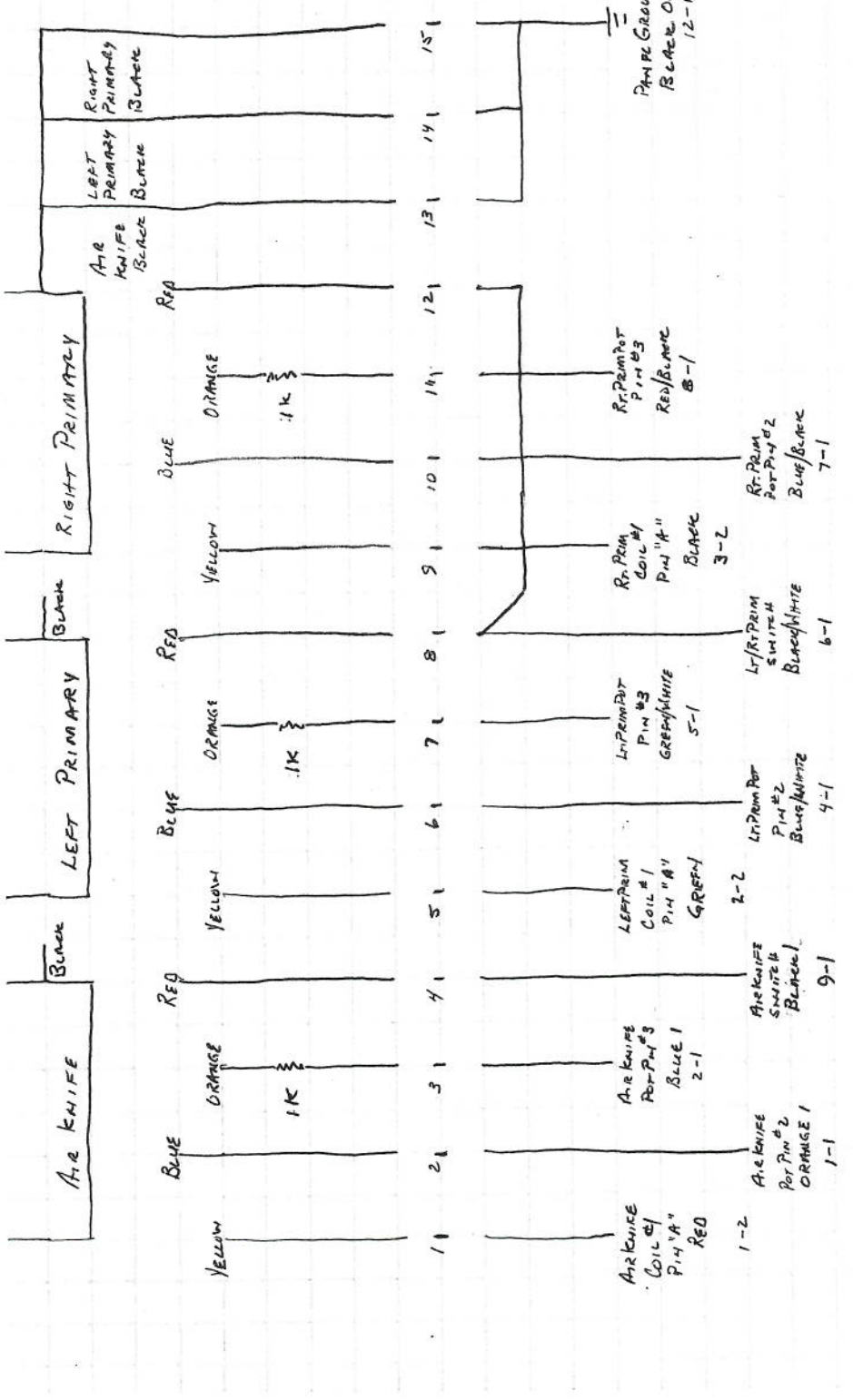
ENERGIZFA - CEV1

#1 COIL NEXT TO PRESSURE PORTS - "IN"
PRESSURE OUT PORT "A"

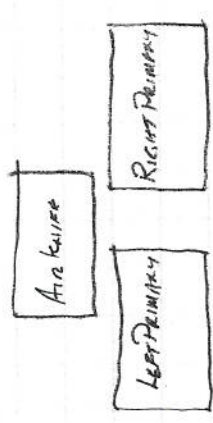
#2 COIL AWAY FROM PORTS - "OUT"

Electronic Module Qualification (Contact Eaton for Specific Levels)

- SAE J1455 - Recommended Environmental Practices for Electronic Equipment Design
 - Humidity/Temperature Extreme Cycling
 - Salt Spray
 - Splash & Immersion
 - Steam Cleaning/High Pressure Wash
 - Vibration
 - Mechanical Shock
 - Temperature Cycling
 - Load Dump Transients
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 - EMI/EMC - Conducted & Radiated Emissions



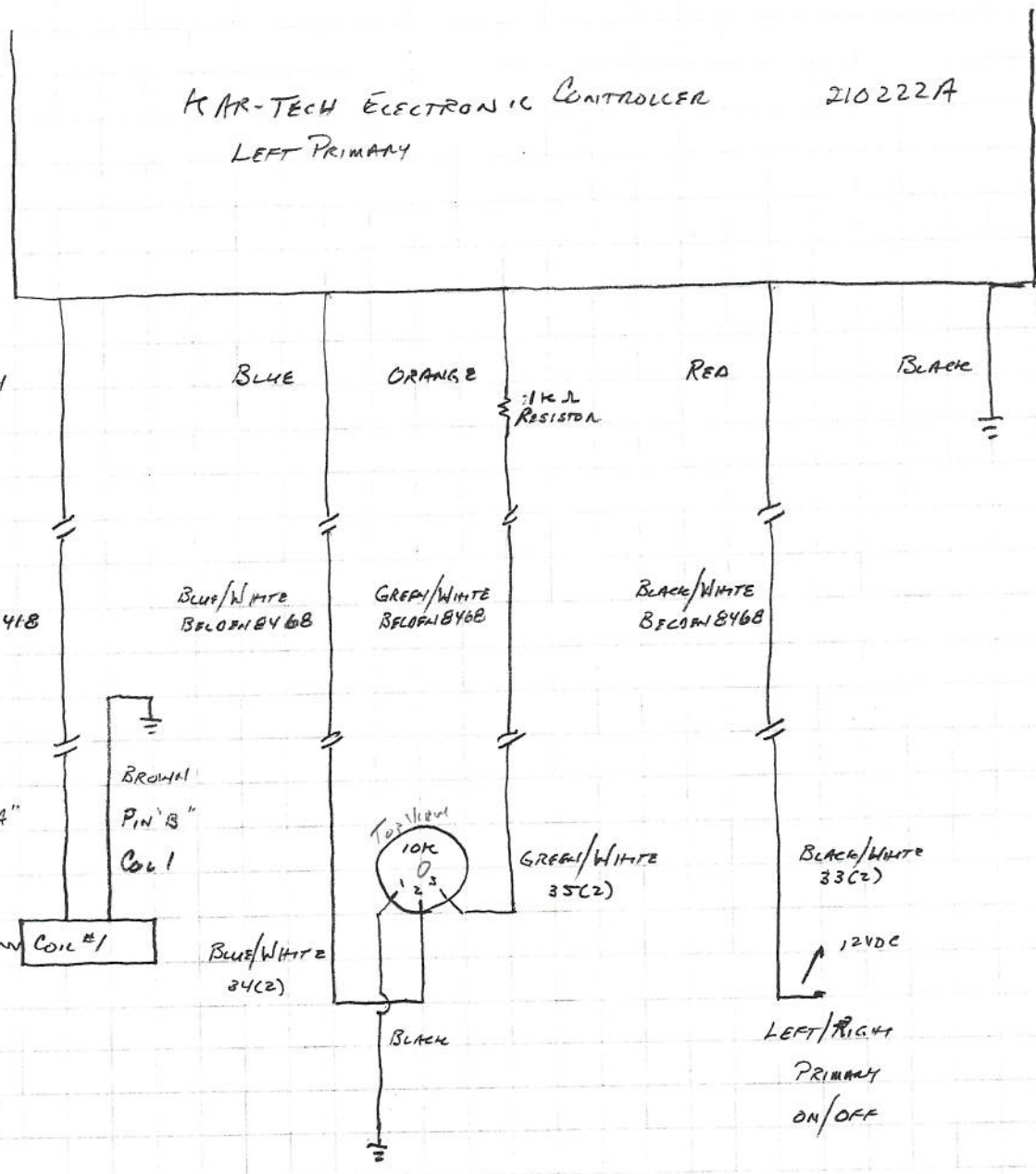
POTENTIOMETER TO KAR-TECH CONTROLLER BELAPH 8468
 KARTECH CONTROLLER TO PUMM BCDPH 9418

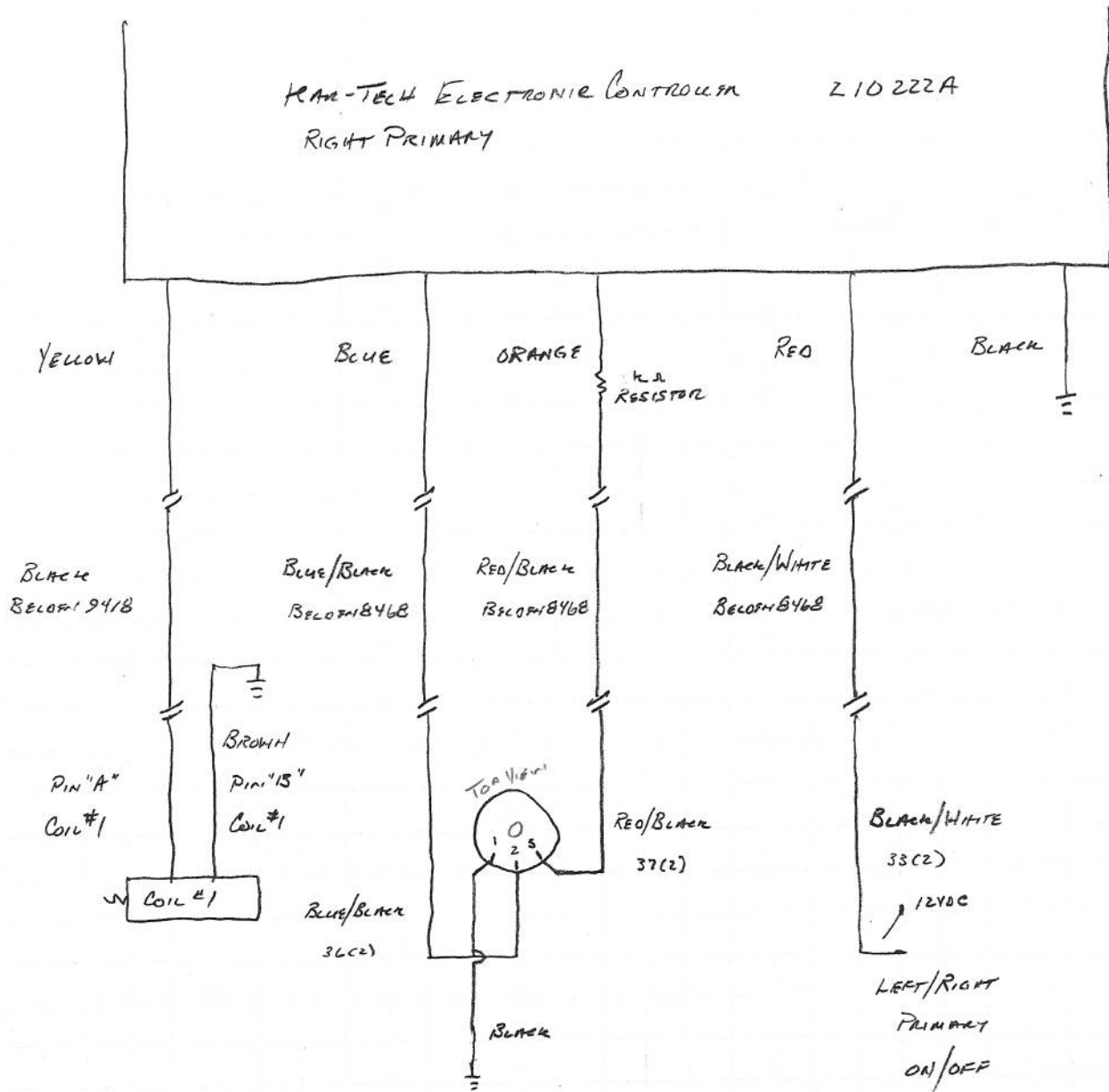


AIR KNIFE SETTINGS:

- VOLTAGE - 6.2V
- FAN RPM - 2000 RPM
- PUMP FSC - 2400 psi
- TRACER - 1000 RPM P10

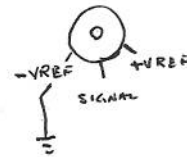
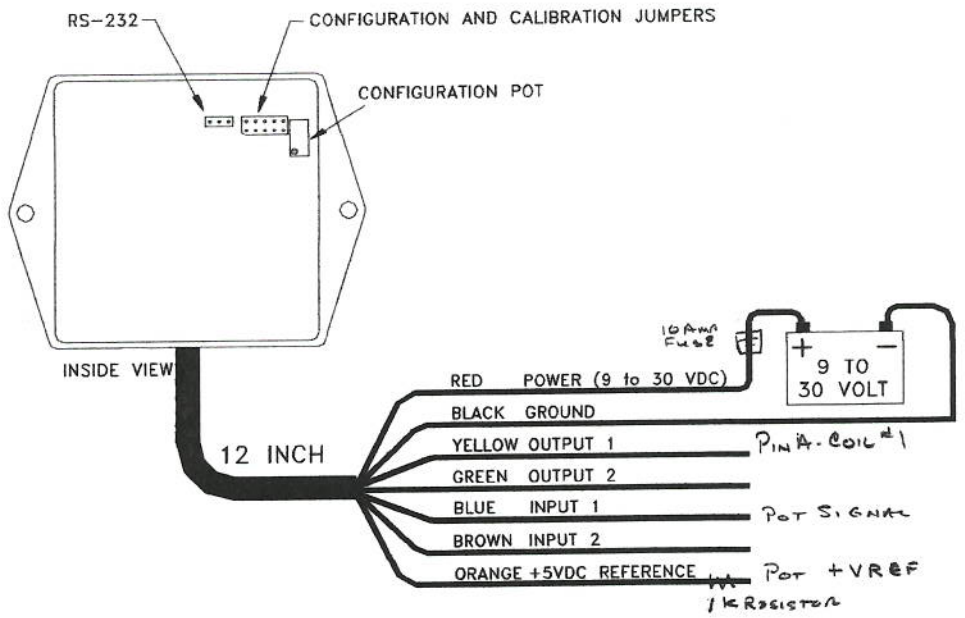
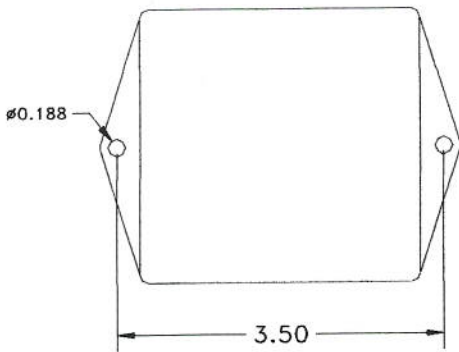
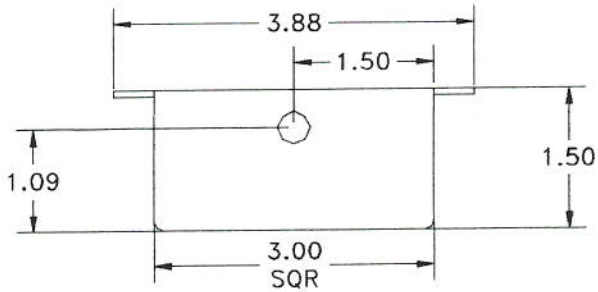
| | Full | 1/2 | OFF |
|--------|------|-----|-----|
| YELLOW | 7.6 | 4.0 | 0.0 |
| BLUE | 4.4 | 2.1 | 0.0 |
| ORANGE | 4.9 | 4.9 | 4.9 |
| RED | 12 | 12 | 0.0 |





2012 Build
MICRO VALVE DRIVER

210222A
 (2001-0461)



μ VD Control Module

Table 1: Configuration Jumper Settings

| Configuration Option | Configuration Jumpers to Install |
|----------------------|----------------------------------|
| 1 Input / 1 Output | Configuration Jumper 1 |
| 1 Input / 2 Output | Configuration Jumper 2 |
| 2 Input / 2 Output | Configuration Jumpers 1 and 2 |

INSTALL JUMPER

Table 2: Calibration Jumper Settings

| Output Parameter | Calibration Jumpers to Install |
|---------------------------------|---------------------------------|
| Proportional Output 1 Minimum | Calibration Jumper 1 |
| Proportional Output 1 Maximum | Calibration Jumper 2 |
| Proportional Output 1 Ramp Time | Calibration Jumpers 1 and 2 |
| Proportional Output 2 Minimum | Calibration Jumpers 1 and 3 |
| Proportional Output 2 Maximum | Calibration Jumpers 2 and 3 |
| Proportional Output 2 Ramp Time | Calibration Jumpers 1, 2, and 3 |
| Proportional Outputs Frequency | Calibration Jumper 3 |

