

Webster®

Fuel Pumps & Valves

BULLETIN
SUBSPMV
NOV 2015

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SUBMITTAL DATA

TRANSFER / SUPPLY PUMP
DUPLEX UNITS
SPMV

DATE

ARCHITECT

ENGINEER

CONTRACTOR

WEBSTER
REPRESENTATIVE

EQUIPMENT PLC Based Duplex Automatic Oil Management Control System

CONTENTS

TRANSFER / SUPPLY PUMP / DUPLEX UNITS SUBMITTAL DATA

DATA

| | | |
|----------|---------------|--------------|
| JOB NAME | MODEL # | |
| LOCATION | | |
| CITY | DUPLEX MANUAL | |
| STATE | ZIP | DUPLEX AUTO. |

PUMP

| | |
|--|-------------------------|
| TOTAL FIRING RATE GPH | MAXIMUM HEAD _____ FEET |
| SUCTION: LIFT IN FEET | FLOW GPH |
| VALVE ADJUST: PRESSURE RANGE MINIMUM _____ PSI | MAXIMUM _____ PSI |

MOTOR

| | | | |
|-------------|-------|----|-----------|
| HORSE POWER | RPM | | |
| VOLTS | PHASE | HZ | ENCLOSURE |

ACCESSORIES

| | |
|------------------------------------|-----------------------|
| CHECK VALVE | VACUUM BREAKER |
| COMPOUND GAUGE | OIL SAFETY VALVE |
| ELECTRIC ALTERNATOR | MECHANICAL ALTERNATOR |
| COMMON DISCHARGE MANIFOLD | SENSORS |
| RELIEF VALVE | REGULATING VALVE |
| CONTAINMENT BASIN WITH LEAK SENSOR | BACK PRESSURE VALVE |
| STRAINERS | BALL VALVES |
| OTHER: | |

SPECIFICATIONS SPMV 086K / 194K / 237K / 388K

| | |
|---------------|---|
| CAPACITIES: | 439, 902, 1114, and 1730 GPH. |
| PRESSURE: | Maximum operating pressure to 80 PSI or 200' of head. |
| MOTORS: | Standard 60 CY. 1725 RPM NEMA "C" face 1/2 through 15 HP available. Single Phase 115/208/230 VAC or Three Phase 208/230/460 VAC. TEFC are available. |
| PUMPS: | 086K, 194K, 237K, 388K |
| PORTING: | 086K-194K 1" NPT side inlet and outlet 237K-388K 1 1/2" x 1 1/4" NPT |
| SEAL: | All models - Double lip type. VITON |
| MOUNTING: | All models - Four bolt foot mount. |
| FILTER: | Use of external line filter recommended. |
| VALVES: | External pressure regulating or relief recommended. |
| GAUGE: | 2 1/2" DIA., Calibrated from 30" of HG vacuum to 100 PSI. For other requirements, contact the factory. |
| INLET VACUUM: | All units - 15" HG <u>maximum</u> . |

NATIONAL FIRE PROTECTION ASSOCIATION COMPLIANCE REQUIRES
FUEL INLET PRESSURE NOT TO EXCEED 3 PSIG.

| | |
|-----------|--|
| CONTROLS: | Duplex automatic see attached Duplex manual with selector switch only. Additional controls are available. Contact the factory. |
|-----------|--|

SPMV Series Single and Duplex Supply Units



Webster SPMV single and duplex supply units are designed for high capacity applications where 430 to 1790 GPH are required. Quiet running, gear type pumps are available in four sizes and incorporated hardened integral shafts, journals and gears, special anti-friction bearings. Buna-N seals, and cast iron gear plates. Standard motors ranging from 1/2 hp to 7.5 hp (373 w to 11.2 kw) are 1725 RPM NEMA "C" face, 115 volt single-phase or 230 volt three-phase, 60 cycle type with TEFC enclosures through 2 hp (1490w) and OPDP enclosures over 2 hp (1490w).

Webster SPMV motor/pump high capacity fuel oil supply units are designed to be used with fuel oils

including JP4. Fluid viscosities should not exceed 6000 SUS. Suction should exceed 10" Hg. Inlet pressures are rated at 34 PSI continuously and 50 PSI for short periods. The unit is designed to operate in -29° F to +200° F conditions, depending on viscosity of oil. The motor is precision aligned and coupled to pump with machined adapter and flexible coupling.

SPECIFICATIONS

Capacity:

430 to 1790 GPH with fluid viscosity to 10,000 SSU.

SPMV Pump Selection Table

| Selection Table | | | SPMV Series Supply Pumps | | | |
|------------------------------|--------------|----------|--------------------------|------|------------------|----------|
| Models and Design Data Table | | | | | | |
| | | Required | Required | | | |
| Pump Head | Type | Motor HP | Motor HP | Max | Valve Adjustment | Max Flow |
| Model No. | | @ 25 psi | @100 psi | Head | Range | @100 psi |
| | | | | | | |
| 086K | Single Stage | .50 | .75 | 200' | No Adjustment | 439 |
| 194K | Single Stage | 1 | 1.75 | 200' | No Adjustment | 900 |
| 237K | Single Stage | 1 | 2 | 200' | No Adjustment | 1115 |
| 388K | Single Stage | 2 | 3.5 | 200' | No Adjustment | 1790 |

External Relief or Regulating Valve Required. The RV3003 is mounted to the discharge manifold on the DA package

Supply Pump and Motor Code Breakdown

Examples: SPM-50AT2R213...SPMB-50AT59BR...SPMV-100BT086K-DA...SPMV-50BT086K-DA-PLC

| Basic Prefix | Pump Head | Dash | Motor HP | Motor Phase | Motor Enclosure | Webster | Dash | No Letter or |
|---------------------|--------------------|------|------------|--------------|-----------------|------------|------|-------------------------|
| Supply Pump & Motor | Series | | .25=1/4 hp | Voltage | TEFC, OPDP | Pump Head | | Blank = Single |
| | No Letter-Standard | | 500=5 hp | A=1 Phase | E- Explosion | P/N Prefix | | DA = Duplex |
| | | | | B=3 Phase | Proof | | | Automatic |
| | | | | X=Special | | | | DM = Duplex Manual |
| | | | | 50 or 60 cy. | | | | DA-PLC |
| | | | | | | | | PLC Control Panel |
| SPM | B-V-No Letter | | .25 - 500 | A, B or X | T, O or E | Pump # | | Blank, DA, DA-PLC or DM |

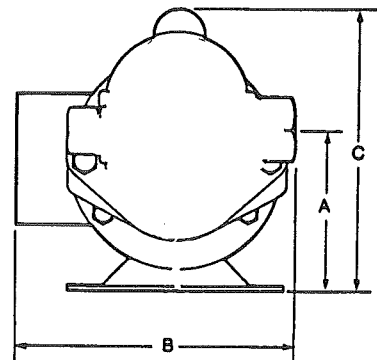
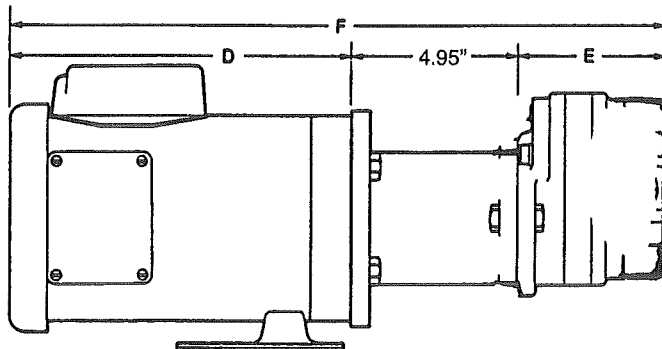
SPMV Series Single and Duplex Supply Units

DIMENSIONS

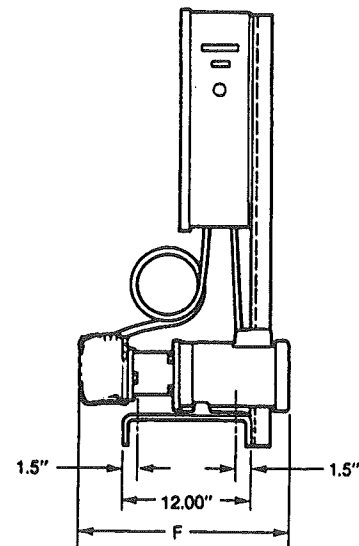
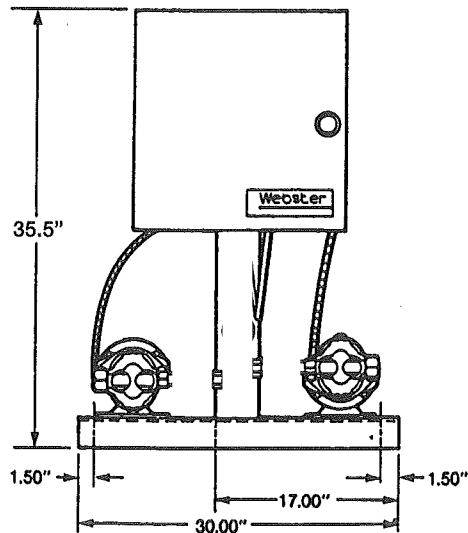
| Motor | | | | | | |
|-------|------------|-----------------|------|-------|-------|-------|
| NEMA | | | | | | |
| HP | Frame Size | Type (Standard) | A | B | C | D |
| .50 | 56C | TEFC | 2.5 | 9.00 | 8.25 | 9.20 |
| .75 | 56C | TEFC | 2.5 | 9.00 | 8.25 | 9.20 |
| 1.00 | 56C | TEFC | 2.5 | 9.00 | 8.25 | 10.20 |
| 1.50 | 56C | TEFC | 2.5 | 9.00 | 8.25 | 11.20 |
| 2.00 | 56C | TEFC | 2.5 | 9.00 | 8.25 | 11.20 |
| 3.00 | 182TC | OPDP | 7.30 | 9.63 | 11.05 | 11.00 |
| 5.00 | 184TC | OPDP | 7.30 | 9.63 | 11.05 | 12.40 |
| 7.50 | 213TC | OPDP | 8.00 | 11.63 | 13.00 | 13.90 |

| F | | | |
|------------|------|---------------|----------------|
| Pump Model | E | Minimum | Maximum |
| 086K | 4.90 | 19.05 (.50HP) | 20.85 (3.00HP) |
| 194K | 5.65 | 19.90 (.75HP) | 23.10 (5.00HP) |
| 237K | 8.80 | 23.15 (.75HP) | 27.85 (7.50HP) |
| 388K | 9.80 | 23.95 (.75HP) | 28.65 (7.50HP) |

SPMV SINGLE SUPPLY UNIT



SPMV DUPLEX SUPPLY UNIT



SPMV Ordering Code

| | | | | | |
|-------------|-----------|----------|----------|-------------|-----------|
| SPMV | 50 | A | T | 086K | DM |
| | 1 | 2 | 3 | 4 | 5 |

MOTOR HORSEPOWER (1725 RPM STANDARD)

| 1 | No. | Description |
|---|-----|-------------|
| | 50 | .50 HP |
| | 75 | .75 HP |
| | 100 | 1.0 HP |
| | 150 | 1.5 HP |
| | 200 | 2.0 HP |
| | 300 | 3.0 HP |
| | 500 | 5.0 HP |
| | 750 | 7.5 HP |

MOTOR HORSEPOWER (1725 RPM STANDARD)

| 4 | Under pressure, read horsepower required at 1750 RPM | | | | |
|---------------|---|-----------|------------|------------|------------|
| | Maximum gph Nominal | 25 psi | 100 psi | 200 psi | 300 psi |
| Pump Model | | | | | |
| 086K | 439 | .50 | .75 | 1.00 | 1.50 |
| 194K | 902 | 1.00 | 1.75 | 2.50 | 3.00 |
| 237K | 1114 | 1.00 | 2.00 | 3.00 | 4.00 |
| 388K | 1791 | 2.00 | 3.50 | 4.50 | 6.00 |

MOTOR PHASE

| 2 | Code | Description |
|---|------|---|
| | A | Single Phase / 60 cycle / 115 / 208 / 230 VAC |
| | B | Three Phase / 60 cycle / 208 / 230 / 460 VAC |
| | X | Consult factory for other types |

MOTOR ENCLOSURE

| 3 | Code | Description |
|---|------|---------------------|
| | T | TEFC Std. thru 2 HP |
| | O | OPDP Std. over 2 HP |

SPMB Duplex Ordering Code

When ordering SPMV Duplex models add suffix:

"DM," for manual control models, or "DA," for automatic control models.

Example: SPMV-50AT/086K-DA

| 5 | Code | Duplex Units |
|---|--------|--|
| | DM | Duplex with manual controls |
| | DA | Duplex with standard automatic controls |
| | DA-PLC | Duplex with PLC OIL Management Control Panel |

When sizing SPMV units, remember that the pressures indicated are at the pump outlet.

All pumps relying on atmospheric pressure to push the fuel oil into them are subject to cavitation. As fuel viscosity (thickness) increases, the tendency for cavitation becomes greater. Therefore, it is best to mount the pump at the base of the tank and to use the largest diameter, shortest length, and straightest inlet possible.

A large diameter inlet pipe or hose necked-down at the pump is preferable to a longer length of similar diameter pipe because the fuel tends to adhere to the inside of the pipe.

When initially starting a unit, it is desirable and sometimes necessary to have a vent valve or plug on the pressure side of the pump to facilitate its priming.

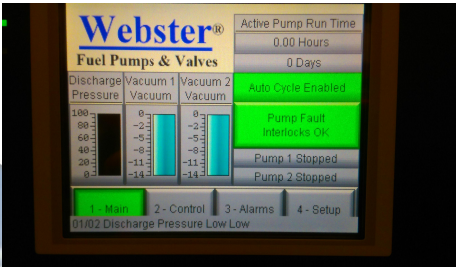
The Duplex Automatic Pump and Motor PLC Based Oil Management Control Panel options are as follows.

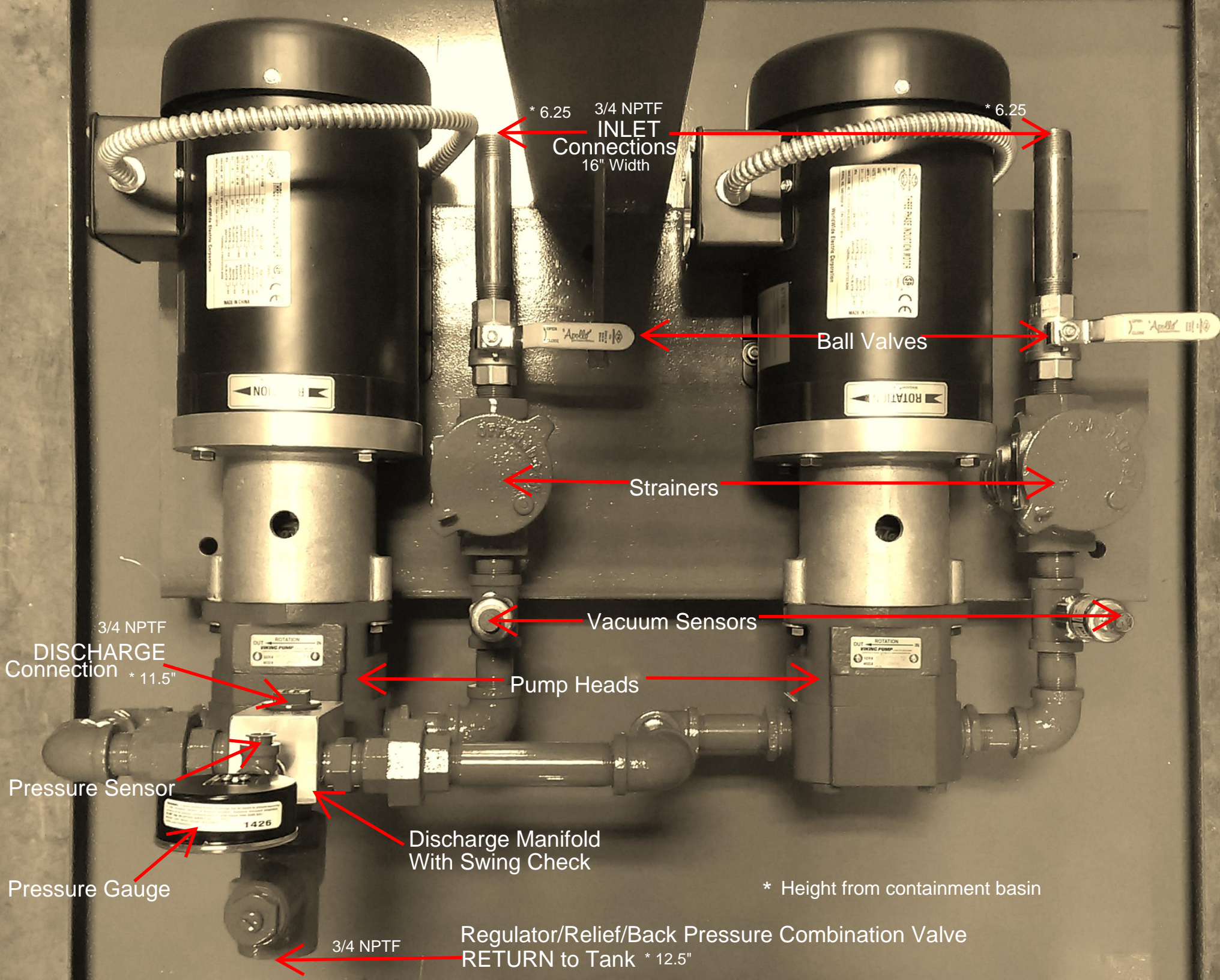
- Microprocessor Base Programmable Logic Controller
- Remote Monitoring Capabilities via Ethernet and or Wireless Communication. Internet connection is needed to interface with the PLC panel in order to provide real time remote monitoring.
- Audio and Visual Alarm
- Duplex Automatic Panel with Automatic Switch Over
- High/Low Level and Leak Detection Interface with Alarm and Shut Down
- Automatic Alternation to allow for equal run time between pump sets every 14 days
- Pressure Transducer to detect pump failure and to allow back-up pump to energize
- 6" LED Touch Display Panel
- Vacuum and Pressure Monitoring
- Motor Starters with MCP's (Motor circuit protector)
- Quick Disconnect
- ETM Time Elapsed Recorders for Each Pump Set for Later Verification
- Event Summary
- NEMA 4/12 Enclosure
- Control System is equipped to monitor and control
 1. Hand-Off-Automatic Control
 2. Lead Pump Selection – Auto/Manual
 3. Pump Status – Off/Run/Standby
 4. Pressure and Vacuum Status - Normal/High/Low
 5. Main Tank/Day Tank Status – Normal/High/Low/Leak
- Controllers are field expandable using plug-in input modules to monitor up to 4 storage tanks and 12 discriminating leak sensors.
- Motor Failure Alarm
- Light to indicate normal power on, run, and off conditions
- Remote HMI Access for real time remote monitoring and control (APP Download Required)
- Advanced features of Touch Panel: Remote Access and Control feature. Send email with embedded PLC data, Send logged data to an external PC, Retrieve logged panel data remotely via the internet, Clear old logged data on a routing frequency. Unit can communicate with different brands of PLCs at the same time.

NOTE: Installer should be familiar with PLC based controls and remote wireless interface in order to enable all the features this panel can provide.

The Complete PLC Duplex Pump and Motor Assembly will also include...

- Flow rates available from 430GPH up to 1790 GPH
- Discharge pressures from 10-55 psig
- 1725 rpm Direct Drive Motors
- Two Pump and Motor assemblies
- One Compound Gauge on discharge block
- One Discharge connection
- One regulator/relief/back pressure valve combination on common discharge manifold
- Two Inlet Strainers
- Containment Basin (36" x 24") with drain plug, leak sensor and fork lift access
- Inlet Isolation Valves





* 6.25 3/4 NPTF
INLET
Connections
16" Width

* 6.25

Ball Valves

Strainers

Vacuum Sensors

Pump Heads

3/4 NPTF
DISCHARGE
Connection * 11.5"

Pressure Sensor

Pressure Gauge

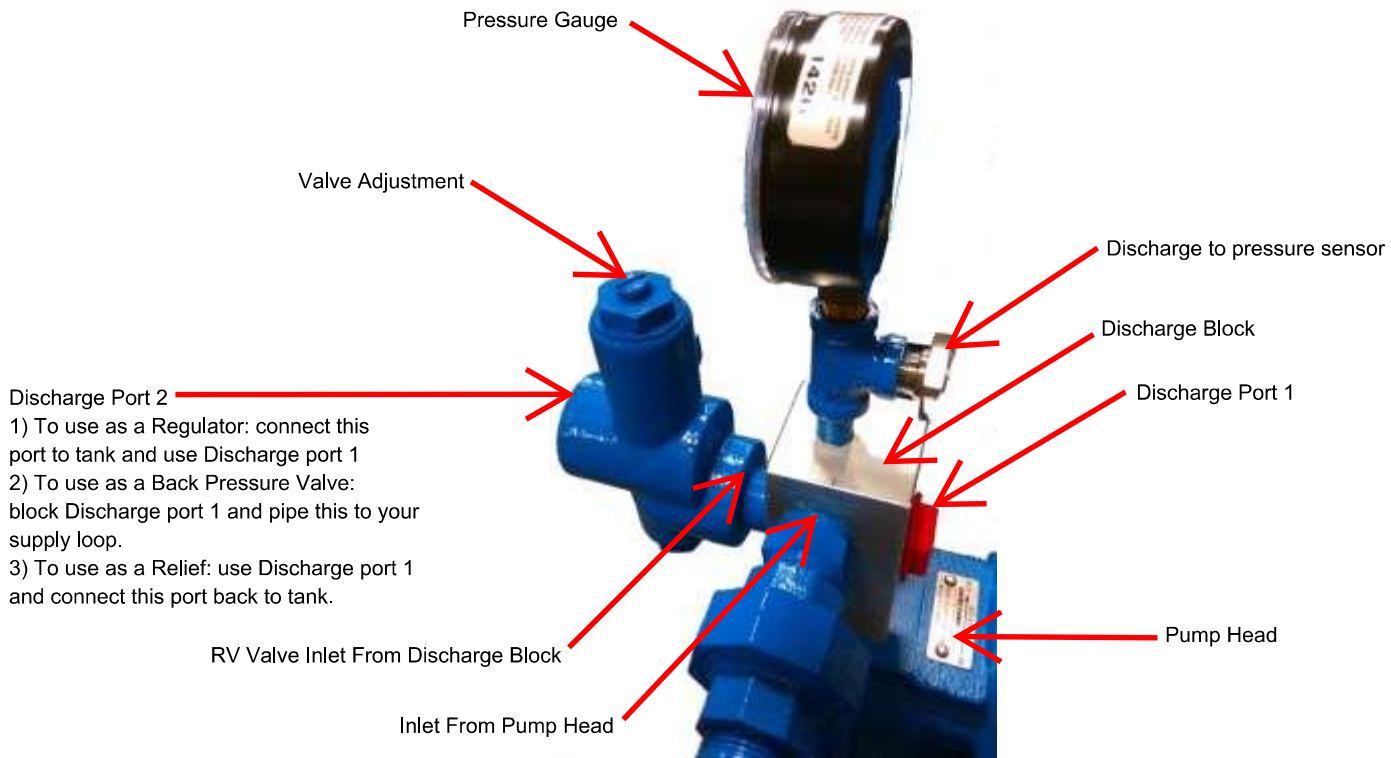
Discharge Manifold
With Swing Check

* Height from containment basin

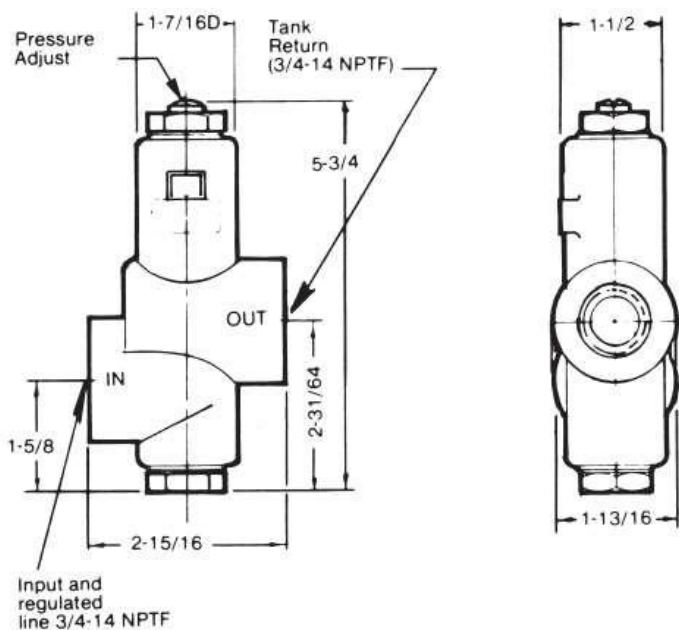
3/4 NPTF

Regulator/Relief/Back Pressure Combination Valve
RETURN to Tank * 12.5"

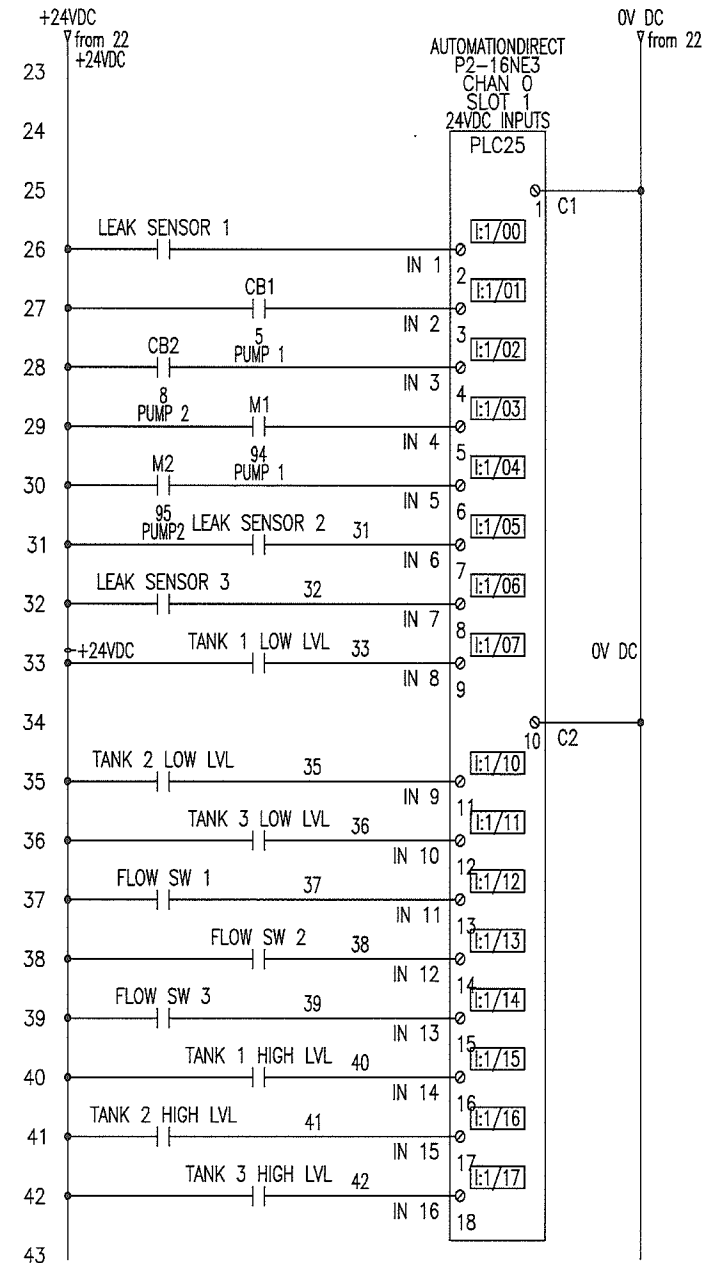
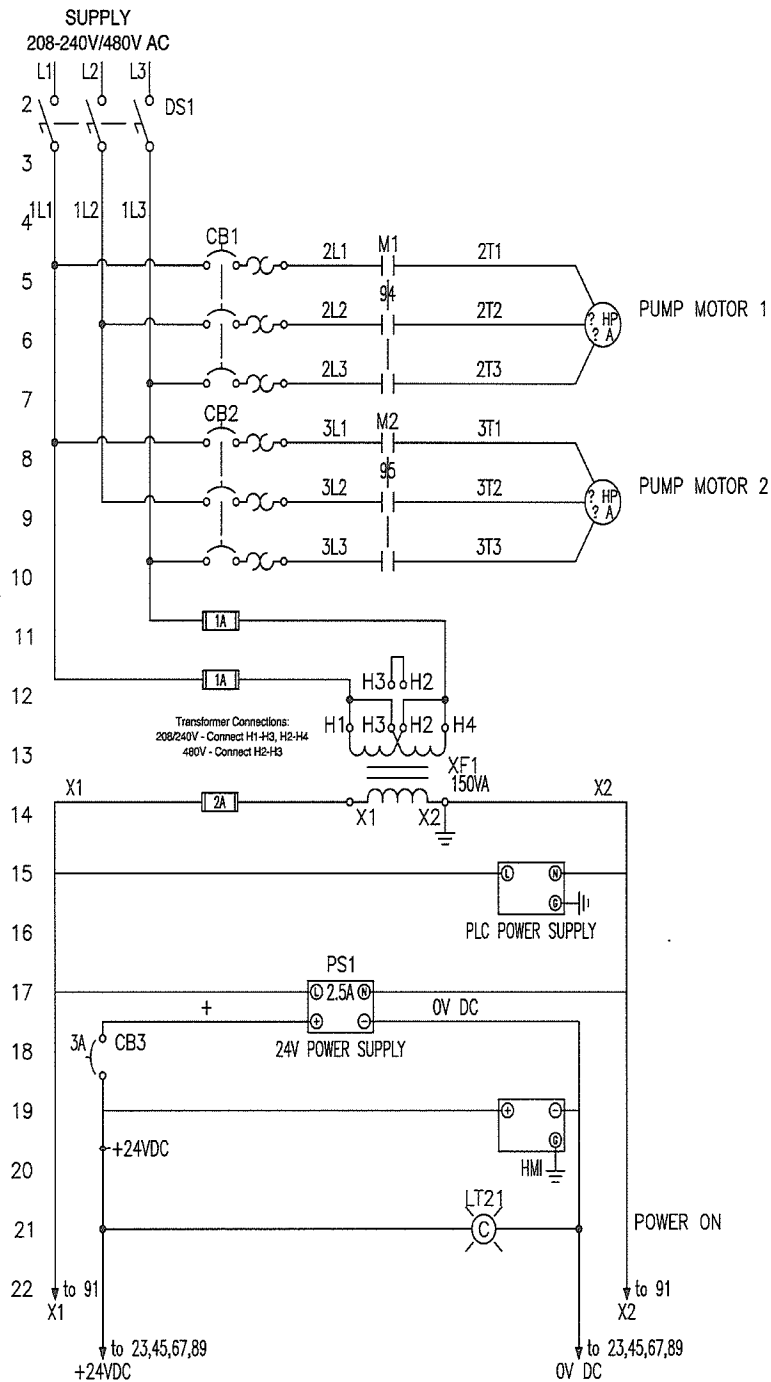
Discharge Manifold Description and Set-up



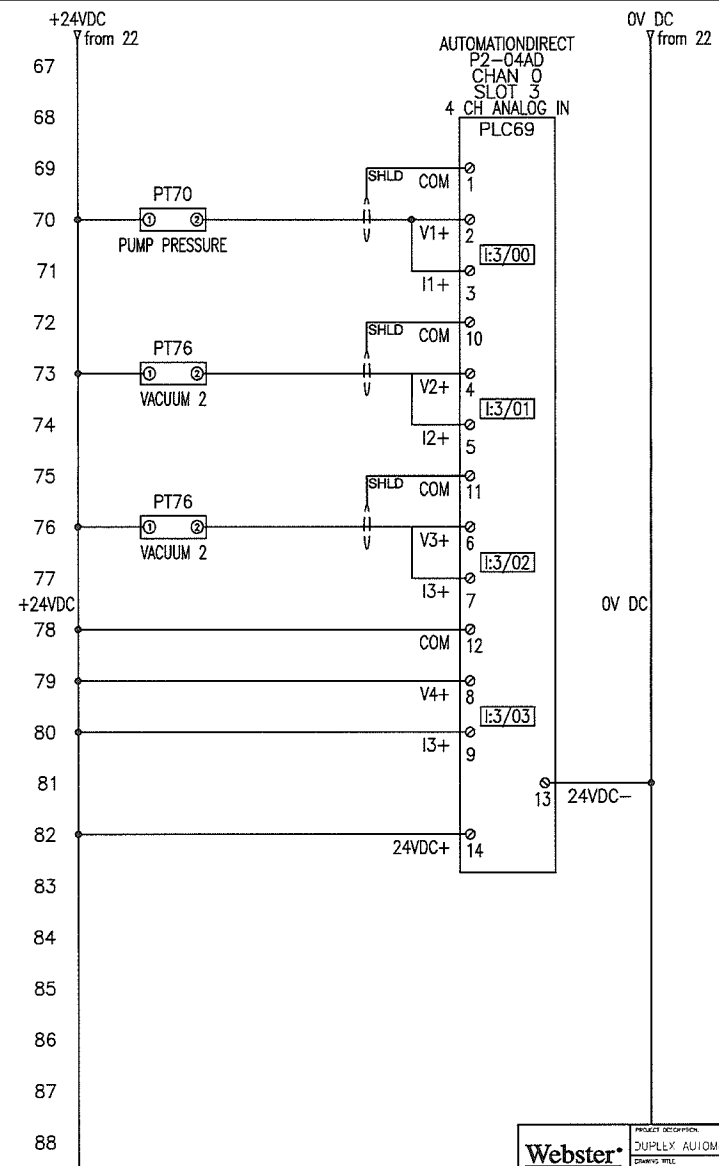
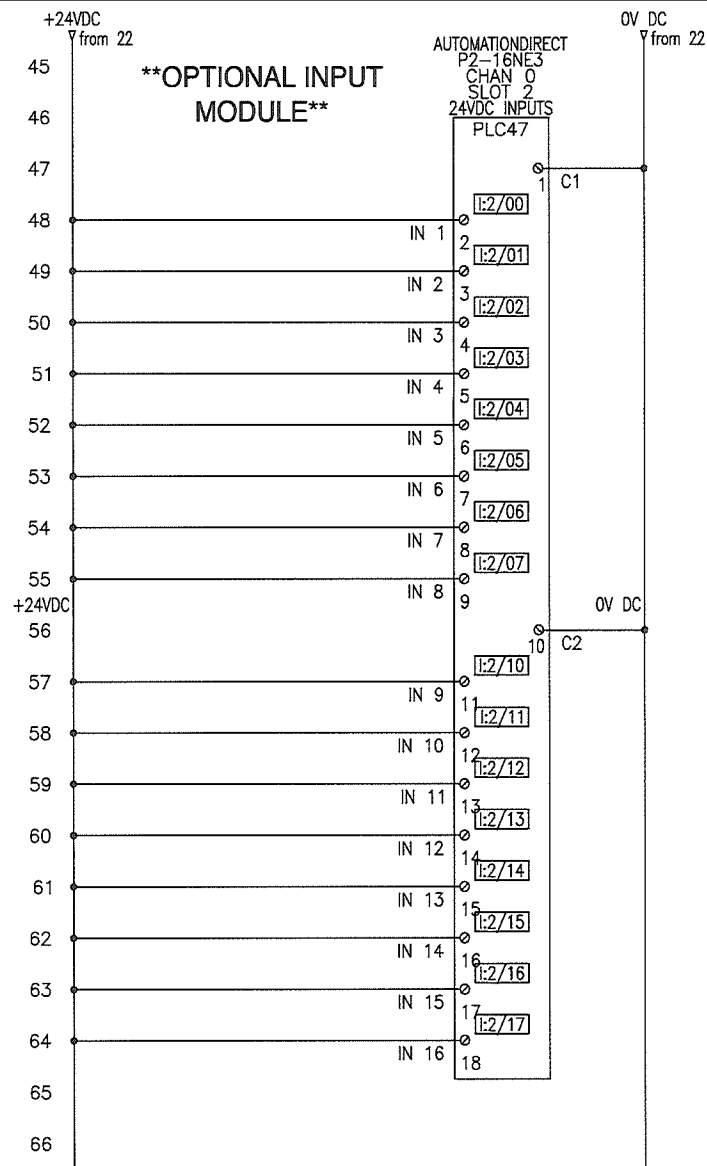
RV-3000



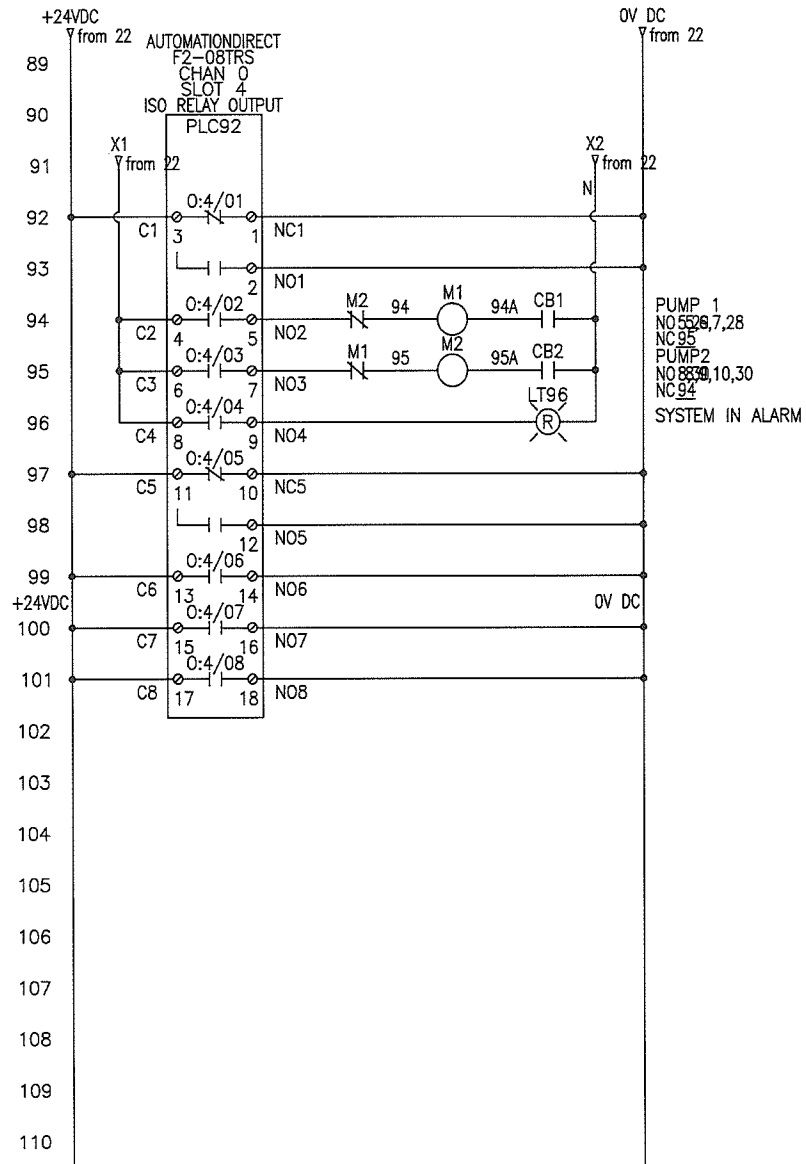
The RV3003 has a 10-55 PSI Adjustment



| | | |
|--|---|------------------------------------|
| Webster Fuel Pumps & Valves 275 MAIN RD FRANKFORT, KY 10601 P.O. BOX 107 722 0025 FAX 502-722-4599 | PROJECT DESCRIPTION DUPLEX AUTOMATIC CONTROL PANEL | |
| | DRAWING TITLE 240/480 VOLT THREE PHASE PLC CONTROL | |
| | SCALE: NTS DATE: 8-15-15 PROJECT NO: 4124315 | DRAWN BY: JFOX APPROVED: C.L.Z. |
| | DWG NO: 4124315 | |

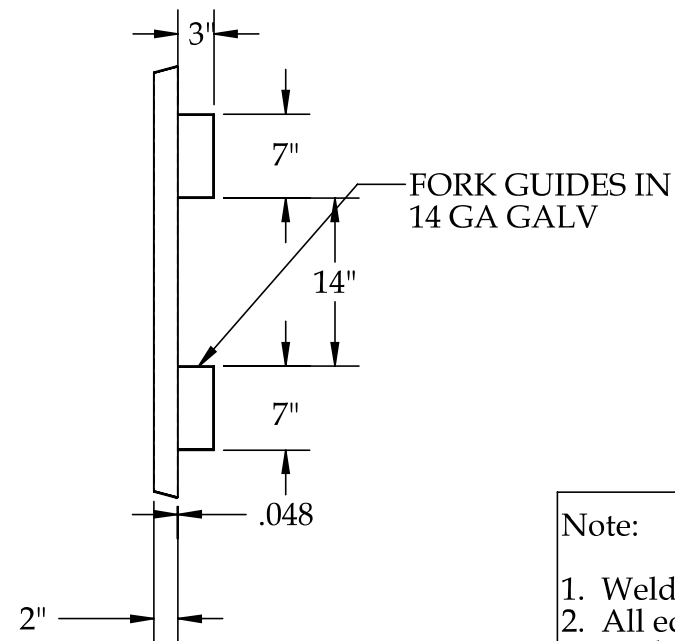
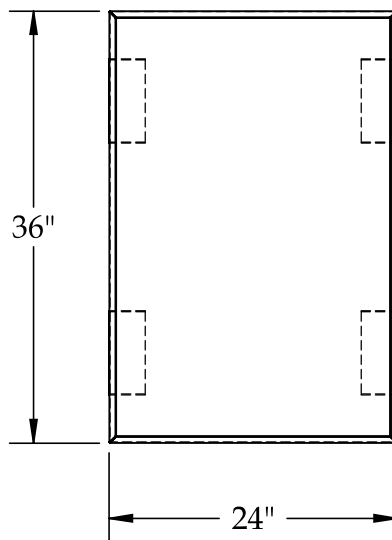
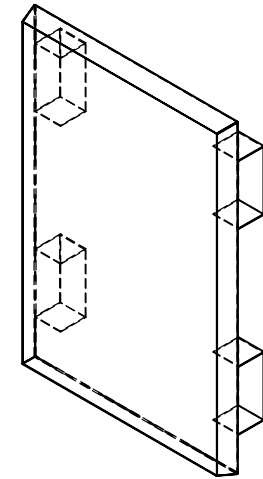
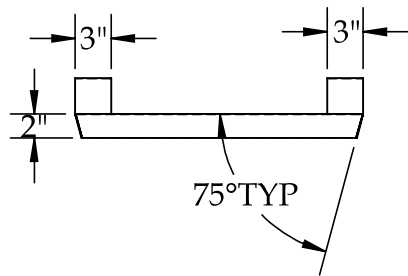


| | | |
|---|--|---|
| Webster Fuel Pumps & Valves 219 1-John Road Frankfort, KY 40601 Phone: 502.223.0025 Fax: 502.223.1629 | PRODUCT DESCRIPTION: DUPLEX AUTOMATIC CONTROL PANEL | |
| | DRAWING TITLE: 240/480 VOLT THREE PHASE P-C CONTROL | |
| | SCALE: NIS DATE: 8-15-15 DWG. NO.: 1104.115 | DRAWN BY: JLOX APPROVED: C.L.Z. DESIGNED: |
| | SHEET: F2 | |



OVER SIZE
 D

| | | | |
|--|---|-----------------|----------------------------------|
| Webster Fuel Pumps & Valves 219 HARMON ROAD FRANKFORT, KY. 40601 PHONE: 502.223.0025 FAX: 502.223.1629 | PROJECT DESCRIPTION DUPLEX AUTOMATIC CONTROL PANEL | | |
| | DRAWING TITLE 240/480 VOLT T-THREE PHASE PLC CONTROL | | |
| | SCALE: NIS | DRAWN BY: JLOX | |
| | DATE: 8-15-15 | APPROVED: C...2 | |
| | PROJECT CODE | DISCIPLINE | SHEET DWG NO.: 41043-5 - 3 |



Note:

1. Weld Corners Water Tight
2. All edges hemmed at .5"
3. No burrs or weld splatter
4. Minimize burn marks

36" X 24" Containment Basin

P/N 56444-1

Webster, Inc. warrants that Heating Products shall be free from defects in materials and workmanship for a period of two (2) years from the date of manufacture, or one (1) year from the date of installation, whichever period expires first. Webster will rebuild or replace, at its option, all Heating Products proven to its satisfaction to be defective within such warranty period and returned to the Webster factory, transportation charges prepaid. Webster's sole obligation and buyer's exclusive remedy hereunder is limited to such rebuilding or replacement.

No products may be returned to the Webster factory unless the prior written consent for said return shall have been obtained from the Heating Products Customer Service Department in Frankfort, Kentucky. This Limited Warranty does not cover shipping costs to and from the Webster factory, any costs for labor or otherwise related to product removal or replacement, or any other costs of any nature without prior written consent by Webster.

Parts, products and accessories made by others are warranted only to the extent of the original manufacturer's warranty to Webster.

This warranty shall not apply to acts of God, war or civil insurrection, nor shall it apply to products which, in the sole judgment of Webster, have been subject to negligence, abuse, accident, misapplication, tampering, alteration; nor due to other than normal application, use or service, including but not limited to, operational failures caused by corrosion, rust or other foreign materials in the system, or operation at pressures in excess of recommended maximums.

Purchaser shall be solely responsible for determining suitability for use of Webster Heating Products. Webster shall not in any event whatsoever, have any liability with respect to such determinations.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. WEBSTER SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR CONTINGENT DAMAGES WHATSOEVER.

NOTE TO CONSUMERS: THIS LIMITED WARRANTY IS EXTENDED TO THE COMMERCIAL CUSTOMERS, DEALERS AND INSTALLERS OF WEBSTER ONLY. THE SUPPLIER/INSTALLER WILL EXTEND WARRANTY COVERAGE TO YOU WHICH COVERS WEBSTER'S PRODUCTS. WEBSTER'S WARRANTY TO SUCH CUSTOMERS, DEALERS AND INSTALLERS WILL BACK UP THE WARRANTY EXTENDED TO THE CONSUMER.
