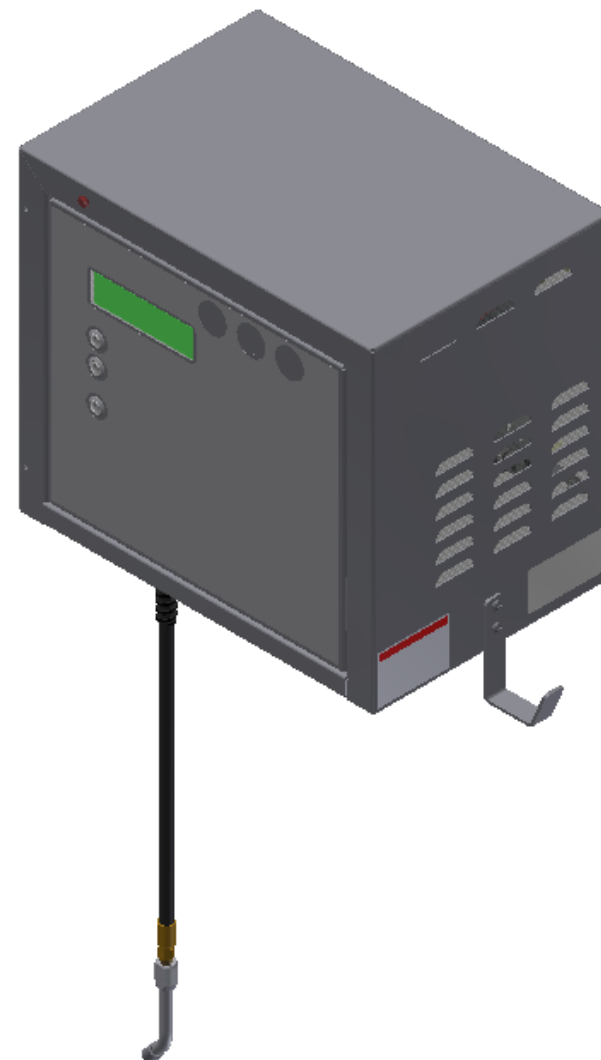




Models – **8670 PROTEL DIGITAL SERIES**

| | |
|------------|--------------------------------------|
| Page 2 | Product Information |
| Page 3 | Specifications |
| Page 4 | Important Safety Instructions |
| Page 5 | Product Dimensions |
| Page 6-9 | Installation |
| Page 10 | Timer Set-Up |
| Page 11 | Operating Instructions & Maintenance |
| Page 11-12 | Troubleshooting |
| Page 13-15 | Protel Specific Troubleshooting |
| Page 16-17 | Parts List |
| Page 18 | Wiring Diagram |



PRODUCT INFORMATION

Please take a moment to fill out the information below in order to aid us with any future sales or service inquiries. Model number and serial number information can be found on the serial tag located inside the control box and/or on the lower exterior of the can. Key number can be found on the tag that comes attached to the keys. There may be more than one key number depending on unit.

Please keep this information with your records.

MODEL#:_____

SERIAL#:_____

KEY NUMBER(S):_____

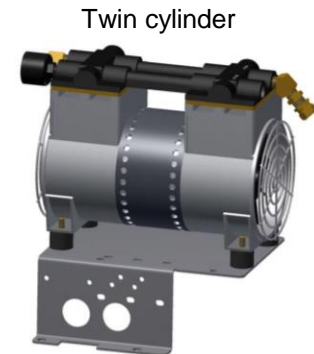
DATE PURCHASED:_____

DISTRIBUTOR:_____

**J.E. Adams Industries
1025 63rd Ave. S.W.
Cedar Rapids, IA 52404
1-800-553-8861
www.jeadams.com**

Specifications

| | |
|-----------------------------|--|
| <u>Unit specifications:</u> | 8670 "P" SERIES |
| Voltage: | 120vac, 60hz |
| Amperage: | (1) 15 amp service is required (twin cylinder compressors or compressor less)* |
| Compressors: | $\frac{3}{4}$ hp, twin cylinder models |
| Water Solenoid: | 120vac, 60hz |
| Timer: | SSAC (standard – other available on request) |
| Weight: | 77 lbs twin cylinder models, no packaging |



DUTY CYCLE: 4 minutes on, 4 minutes off.

NOTE: "UNIT INTENDED FOR COMMECIAL USE ONLY"

IMPORTANT SAFETY INSTRUCTIONS

When using an electrical appliance, basic precautions should always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING (THIS APPLIANCE)

WARNING – To reduce the risk of fire, electric shock, or injury:

- Use only as described in manual. Use only manufactures recommended attachments.
- Do not allow to be used as a toy. Close attention is necessary when used by or near children.
- Do not put any object into openings. Do not use with any opening blocked; keep free of dirt and anything that may reduce flow.
- Keep hair, loose clothing, fingers, and all parts of body away from openings and moving parts.
- Do not use near flammable or combustible liquids, such as gasoline, or use in areas where they may be present.
- Do not use near anything that is burning or smoking, such as cigarettes, matches, or hot ashes.
- Products such as "Fix-A-Flat" are highly combustible and cannot be used in conjunction with air machine!

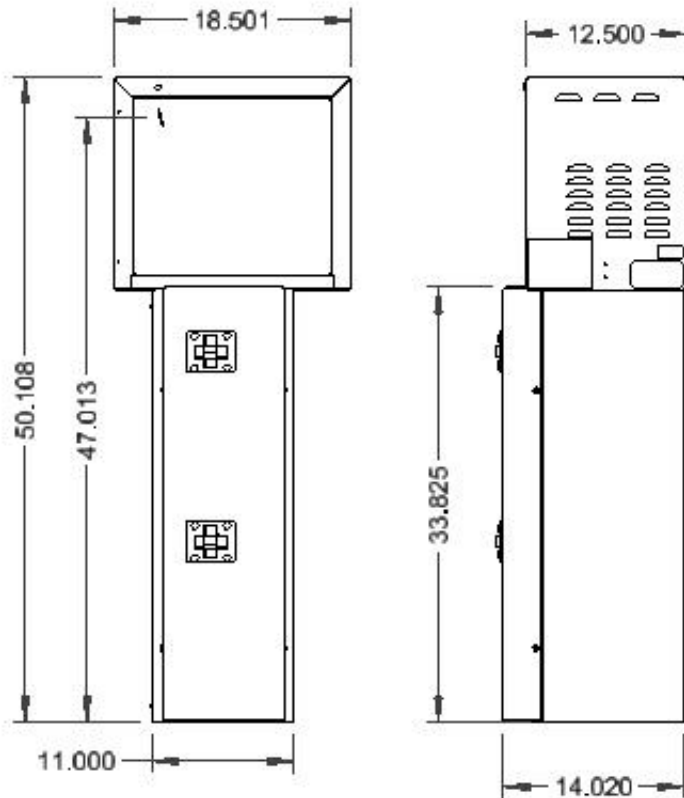


SAVE THESE INSTRUCTIONS

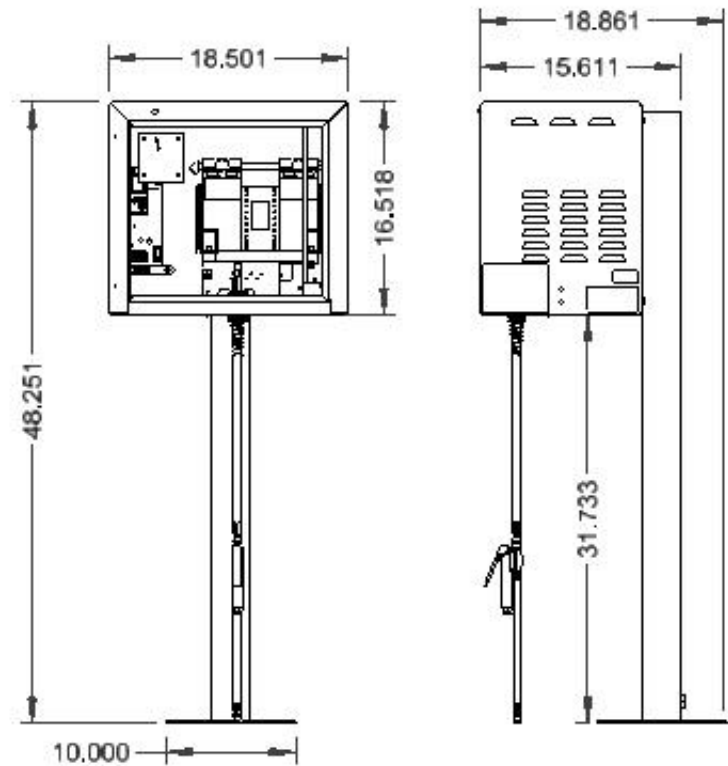


- **Installation Instructions:**
- Determine location to mount unit ("**DANGER**" "**THIS EQUIPMENT INCORPORATES PARTS SUCH AS SWITCHES, MOTORS, OR THE LIKE THAT TEND TO PRODUCE ARCS OR SPARKS THAT CAN CAUSE AN EXPLOSION. WHEN LOCATED IN GASOLINE-DISPENSING AND SERVICE STATIONS INSTALL AND USE AT LEAST 20 FEET (6 M) HORIZONTALLY FROM THE EXTERIOR ENCLOSURE OF ANY DISPENSING PUMP AND AT LEAST 18 INCHES (450 MM) ABOVE A DRIVEWAY OR GROUND LEVEL.**")
- Run electrical service to that location.
- **Grounding Instructions:** This appliance must be connected to a grounded metal, permanent wiring system; or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the appliance.
- All local and national electric codes must be followed for installation and use.
- Licensed electricians are recommended for installation.

PRODUCT DIMENSIONS



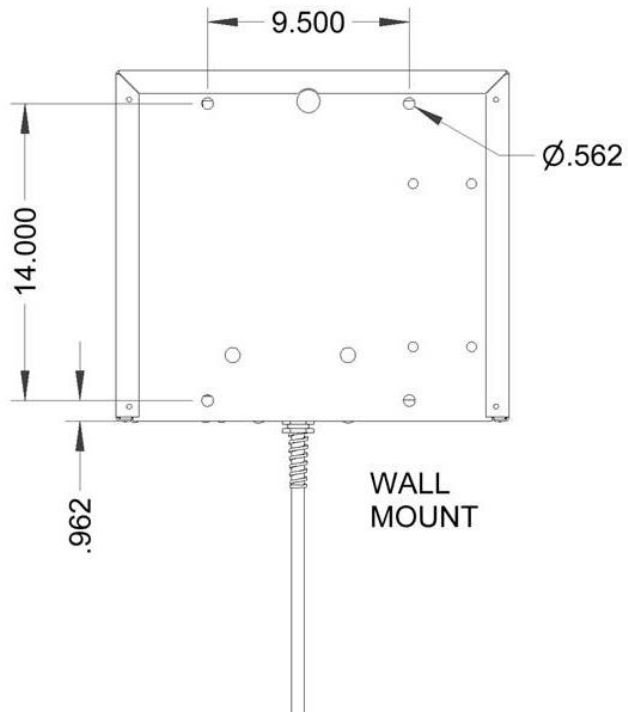
AIR/WATER MACHINE
WITH 6025-DIG BASE.



AIR MACHINE
WITH 8819 BASE.

* For compressor less units air supply to be routed by customer to solenoid inside air machine*

Wall mounting:



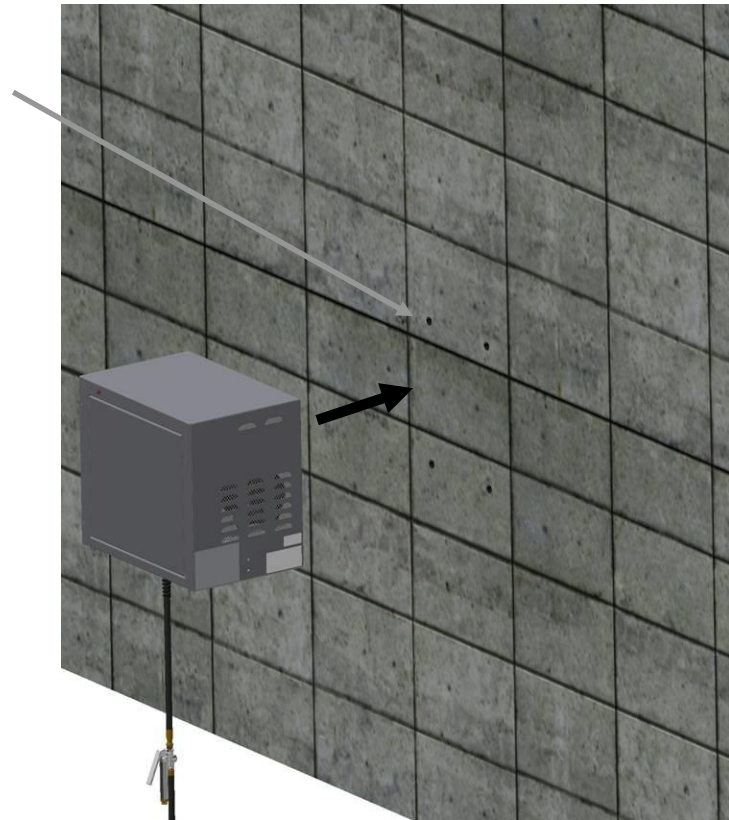
WALL MOUNTING PATTERN, REAR VIEW:

Use minimum 3/8" diameter bolt and drill/anchor at least 4" into block or concrete.

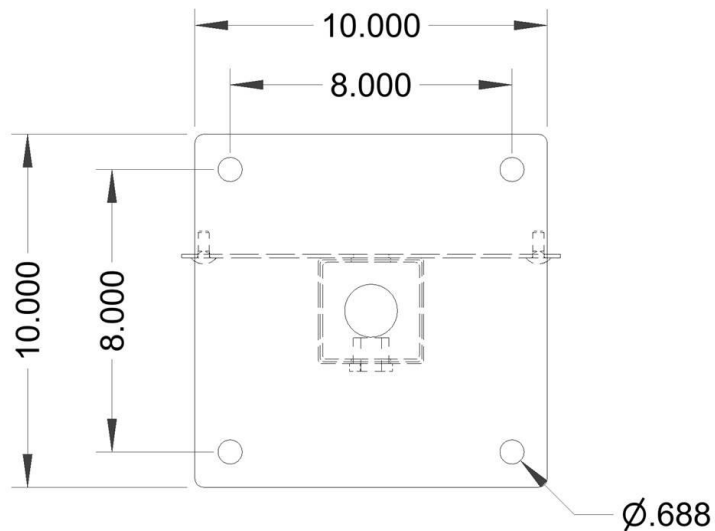
Drill holes according to rear of cabinet 9.5" x 14" bolt pattern.

After drilling holes in concrete wall for mounting, open cabinet door and lift/align cabinet to wall and fasten with customer supplied hardware.

Use two people!!



8819 pedestal mounting:



PEDESTAL MOUNTING PATTERN, BOTTOM VIEW:

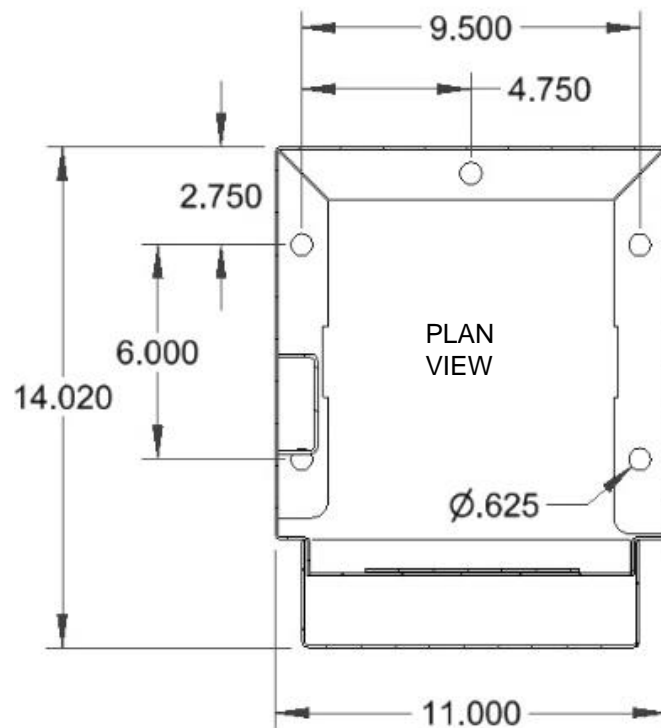
Use minimum 3/8" diameter stud and
drill/anchor at least 4" into concrete.

After mounting pedestal to concrete,
open cabinet door and lift/align cabinet to
pedestal with nuts/washers to carriage
bolts on pedestal mounting plate.

Use two people!!



6025/6026 reel base mounting:



REEL BASE MOUNTING PATTERN, BOTTOM VIEW:

Use minimum 3/8" diameter stud and drill/anchor at least 4" into concrete.

After mounting reel base to concrete, open cabinet door and set air cabinet onto reel base. Fasten cabinet with bolts provided to reel base.

Use two people!!



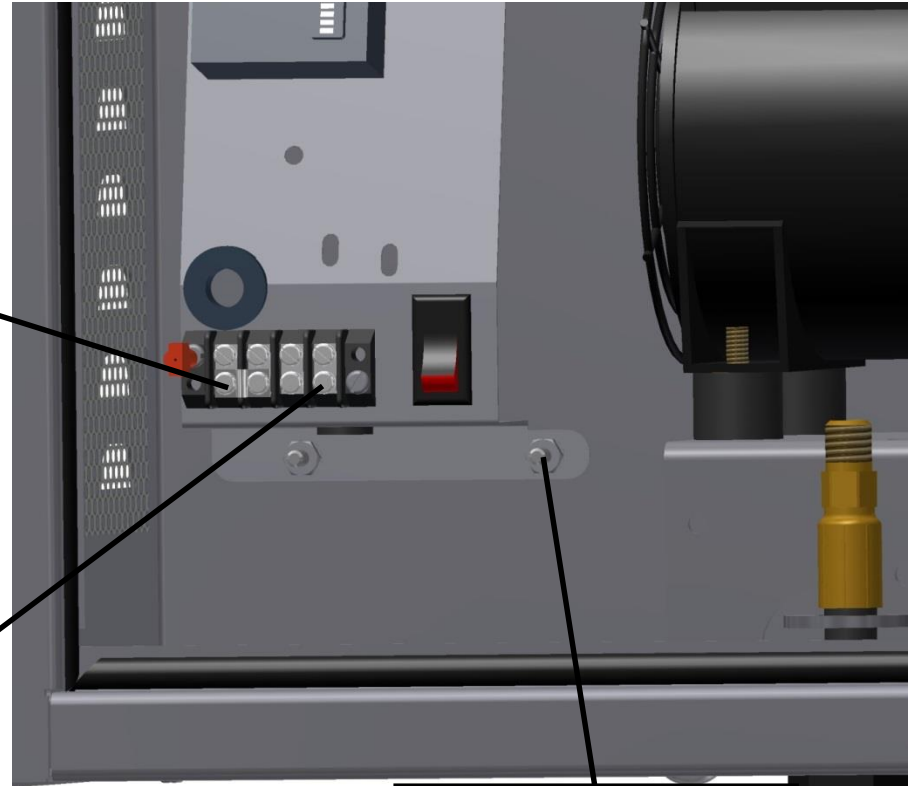
Install the 8545-4 lines to the air compressor and *water solenoid* inside the air cabinet and then to the hose reels in the base.

*Air/ Water machines only

Open door to air machine
to access terminal strip.

NOTE: AIR MACHINE SHOULD BE INSTALLED PER LOCAL ELECTRICAL CODES BY QUALIFIED ELECTRICIAN.

Consult electrical diagram on last page of manual for specifics. Connect 120V black "hot" here.

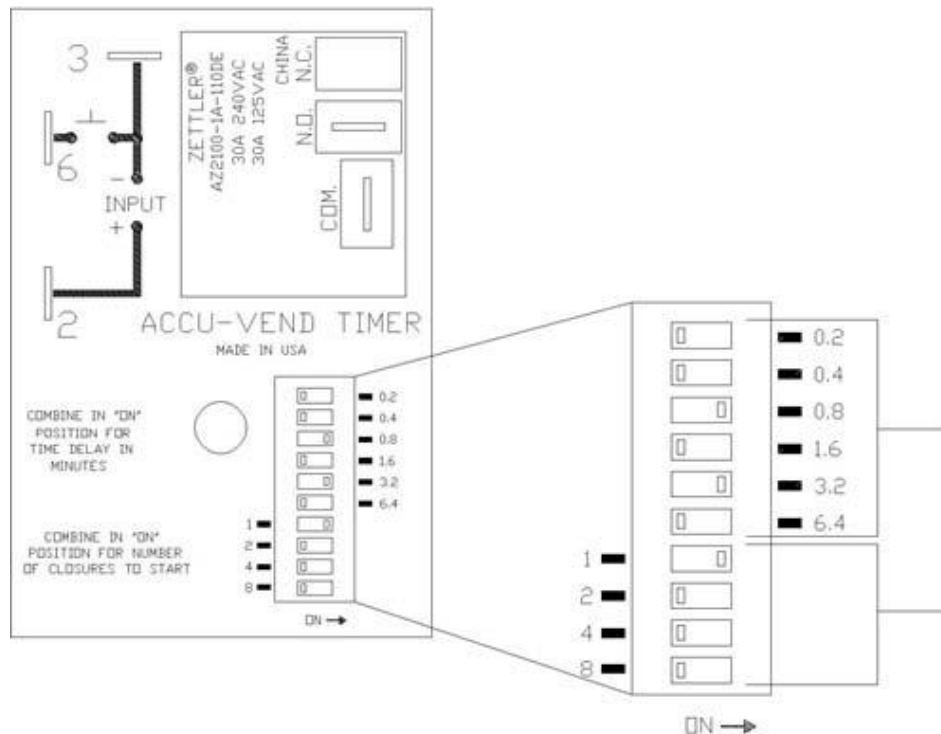


Consult electrical
diagram on last page of
manual for specifics.
Connect green "ground"
here.

****Note: A true ground from electrical service must be applied to unit. Failure to use a true ground will result in erratic machine function and failure.****

Programming:

The below timer pictured is the standard SSAC model that allows the end user to select the "coins to start" and the "total time" by settings series of dip switches. The number of "coins to start" dip switch is how many quarters are needed to make the machine come on. In the below example, the "one coin" dip is selected which makes the unit come on with one coin. The "total time" will then need to be set, but a good rule of thumb would be 4 minutes which requires dip switches 3.2 and .8 to be set to on. This scenario means 1 quarter will provide 4 minutes of vacuum time. The total time can always be changed by adding or subtracting time. If the operator would later decide to increase the cost of the unit to "2" quarters, the 2 dip switch would need to be in the on position (all others off) and the time dip switches would still be 3.2 and .8 dips selected for 4 minutes. Timer is non accumulating so "coins to start" setting is just to make the machine come on time and "time" is total time regardless of coins to start.



Time in minutes dip switch settings:

0.2 = 12 seconds

0.4 = 24 seconds

0.8 = 48 seconds

1.6 = 96 seconds

3.2 = 192 seconds

6.4 = 384 seconds

Total time

(non accumulating)

Coins to start

Machine Operating Instructions:

- 1) Read safety instructions on previous pages.
- 2) Insert coins (or bills) to start.
- 4) Using increase or decrease buttons select desired pressure.
- 5) Apply chuck to tire valve stem and fill to desired pressure. NOTE: For best results, remove valve stem covers on all tires before depositing money.
- 6) Hang hose up when finished.

Maintenance:

- **All servicing of machine should be conducted by an authorized service representative!**
- Periodically inspect hose, chuck, and chuck washer for wear or fatigue.
- Every month remove filter from compressor and clean.
- Periodically inspect electrical wires and connections for wear or fatigue.
- Clean canister with a stainless steel cleaner as needed.
- Decals can be cleaned with mild soap and water.
- Replacement parts can be ordered through JE Adams or your nearest dealer.

WHEN PERFORMING MAINTENANCE OR TROUBLE-SHOOTING, TURN POWER OFF! QUALIFIED PERSONNEL ONLY!



TROUBLESHOOTING:

ALWAYS DISCONNECT POWER BEFORE TROUBLESHOOTING!!

| Problem | Possible cause | Solution |
|----------------------|--|------------------------------------|
| Unit is not powered. | Breaker inside fuse panel is not in the on position. | Turn breaker on. |
| | No power to machine. | Check incoming power line voltage. |
| | Machine power switch is not on. | Remove dome and flip switch. |
| | Loose connection. | Check incoming power connection. |

| | | |
|--|--|--|
| Unit runs but will not inflate tire. | Air is leaking from unit somewhere. | Turn power off to unit, apply chuck to air source with at least 30lbs of pressure and listen carefully for leaks inside cabinet or air hose. Replace faulty component if leaking. |
| | If no system leaks, is compressor putting out enough pressure? | If compressor cannot force air into tire, the compressor may have exceeded its life span and need rebuilt (about 1000 hours). |
| | Chuck washer is worn out? | Replace rubber washer inside chuck with JE Adams PN 8533-3CW. |
| | Temperature is below freezing and condensation off compressor has froze in air hose. | Remove air hose and chuck and bring into warm area to thaw. |
| Unit keeps tripping breaker from incoming power source | Wrong size breaker or other components running on same circuit. | Install correct breaker for compressor and make sure line is a dedicated power source. |
| | Compressor or timer might be shorted out? | Isolate problem component and replace if necessary. |
| Unit will not start | Possible component failure | Check key components to isolate failure: |
| | | Timer: Verify proper input voltage. Activate timer. If no output voltage is present when timer should be active, replace timer. |
| | | Coin mech: If using a mechanical coin mech, remove the wires leading to the timer from the coin mech and tap them together one time for each coin necessary to start the timer. If machine starts, replace the coin mech. |
| Unit will not dispense water (water machines only). | Is source water turned on and not frozen? | Turn on water to system and make sure temperature is above 32 deg. |
| | Is water solenoid getting power from timer? | If getting power from timer, replace solenoid. |

Caution! -lethal voltage is present in all compressed air vending machines. Repair should only be attempted by trained technicians. Note -Tests should be performed in order for proper diagnosis.

1.00 Check for loose connections:

Loose or broken wires can cause misleading symptoms. Check all connections before proceeding.

2.00 Check AC power:

The pressure regulator circuit board and solenoids operate from a 24VAC power transformer. The LCD display should have white LED back-lighting and the unit should indicate a 32 psi set point and 0 psi during idle mode. If the display fails this check, the board is most likely not receiving 24VAC power. If power is present at the 0.250" tab terminals, replace the digital pressure board and/or display.

3.00 Adjust set point :

Adjust the set point with the up and down buttons. The buzzer should beep with every adjustment.

3.01 Potential faults if set point does not increment or decrement:

Loose or broken push button wires
Push button
Digital pressure board

3.02 Potential faults if the buzzer does not beep:

Loose or broken buzzer wiring
Buzzer
Digital pressure board

4.00 Read tire pressure :

With the compressor off, attach the air chuck to a tire. The display should indicate the tire pressure. The buzzer should beep when stable pressure is detected. Note the pressure and remove the chuck. Measure the tire with an accurate hand-held tire gauge. Compare the two readings.

Note -stick gauges are notoriously inaccurate, use a quality instrument for this procedure. Make sure a good seal is achieved for each measurement. Any air escaping during this procedure will greatly affect accuracy. The test tire should be at 32 to 50 psi for best results.

4.01 Potential faults if pressure is not within a few psi of measured tire pressure:

Tire chuck
Leaks in fittings or hose
Loose or broken pressure sensor cable
Solenoid stuck open
Pressure sensor

Digital pressure board:

4.02 Potential faults if pressure is within a few psi of measure tire pressure:

Digital pressure board requires calibration
Faults listed under 4.01

5.00 Calibration :

Skip this step if tire accuracy is within acceptable limits.

Tools:

Michelin MN-12279 Tire Gauge recommended (displays pressure to 0.1 PSI resolution).

Notes:

Make sure the compressor is off before entering the calibration mode and remains off during the entire calibration process.

5.01 Press and hold the "PROGRAM" button on the digital pressure circuit board. After approximately 2 seconds, the buzzer will beep and "CAL" will be displayed. Release the button. The exhaust solenoid will be enabled for 2 seconds after which all of the display segments will be turned on to allow for visual inspection of the display. After an additional 3 seconds, the exhaust solenoid will be disabled and the display will show the pressure in 0.1 psi increments (example "P 0.3").

Note -during the time that all display segments are enabled, the pressure board is adjusting the pressure sensor input for 0 psi measurements. The pressure displayed initially will include any previously calculated offset.

5.02 Attach the air chuck to the tire until the unit starts beeping, indicating that the pressure reading is stable. Remove the air chuck from the tire (the captured pressure reading will continue to be displayed until the chuck is attached to the tire again). Measure the tire pressure with the Michelin tire gauge and press the up or down button so that the pressure displayed matches the pressure measured with the Michelin tire gauge. Note -Make sure a good seal is achieved for each measurement. Any air escaping during this procedure will greatly affect accuracy. The test tire should be at 32 to 50 psi for best results.

5.03 **The calibration mode can be exited in one of three ways:**
1) Pressing the PROGRAM button for less than 2 seconds will exit the calibration mode without saving the new calibration values.
2) Holding the PROGRAM button for 2 seconds until the beeper starts beeping rapidly will save the new calibration values.
3) The pressure board will automatically exit calibration mode if no button is pressed or no change in pressure reading is detected for 60 seconds and the new calibration values will not be saved.

Tire inflation/deflation

6.01 Deposit the required number of quarters to activate the compressor. Adjust the set point to the desired tire pressure. Attach the tire chuck to the tire and verify a good seal is achieved. The digital pressure board should detect the tire and begin the process unless it is flat. Depressing the flat tire button will dispense air until the tire is detected. The buzzer should beep several times when the tire pressure matches the set point.

6.02 **Potential faults during inflation/deflation test:**
Loose or broken solenoid wires
Current sensor cable
Leaks between compressor and manifold
Foreign debris in solenoid seal area
Solenoid
Weak compressor
Faulty over-pressure relief valve
Digital pressure board

| BILL OF MATERIALS | | | |
|-------------------|-------------|---------------------------------|-----|
| ITEM | PART NUMBER | DESCRIPTION | QTY |
| 43 | 9862 | 110VAC 3/4 TWIN GAST COMPRESSOR | 1 |
| 44 | 9871A | PROTEL DIGI AIR DOOR ASSEMBLY | 1 |
| 124 | 5901D2 | RED WIRE NUT | 1 |
| 125 | 5943E3220 | 12GA BLK MTW WIRE | 8" |
| 126 | 5900D3 | SPADE, 10-12GA, YELLOW | 1 |

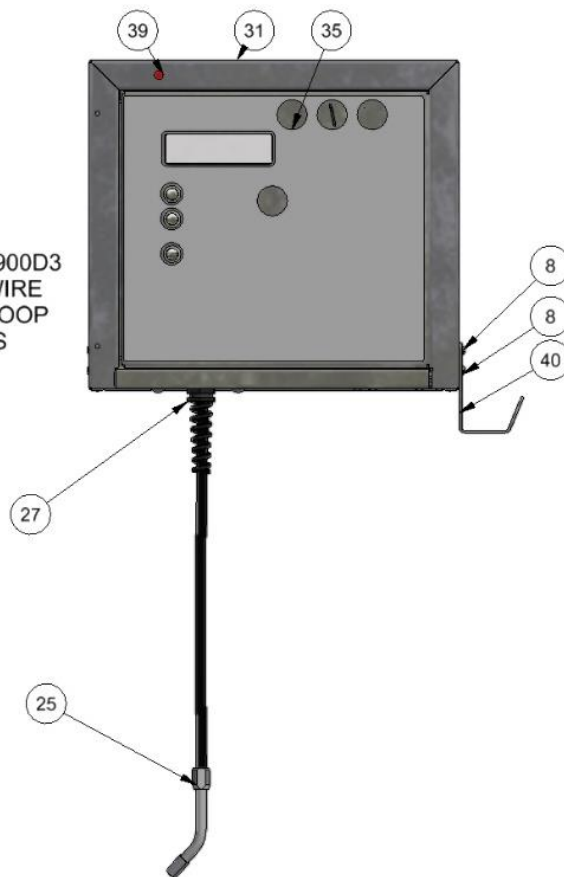
| BILL OF MATERIALS | | | |
|-------------------|---------------|--|-----|
| ITEM | PART NUMBER | DESCRIPTION | QTY |
| 1 | 5600D2 | 5/16-18 x .75 CARR BOLT | 2 |
| 2 | 5601D8 | 1/4-20 x 3/8 HHCS-ZINC PLATED | 5 |
| 3 | 5603D2 | NUT, NYLOCK, 1/4-20, SS | 1 |
| 4 | 5603D5 | 1/4 Std NC Nylock Nut | 3 |
| 5 | 5606D1 | #10 SAE WASHER | 4 |
| 6 | 5611D2 | NUT, 10-24 UNC KEPP- ZINC | 4 |
| 7 | 5611D3 | NUT, 8-32 UNC KEPP-SS | 2 |
| 8 | 5631d1 | 1/4-20 SCREW, ONE-WAY HEAD | 2 |
| 9 | 5636D4 | SCREW, #10-24x1.50, PH, PD, SS | 2 |
| 10 | 5800D6 | 90 DEG. NPT STREET ELBOW | 3 |
| 11 | 5816D1 | 1/4" STREET TEE | 1 |
| 12 | 5871B4 | CAPS, VINYL TP-9 .30 X 1" BROWN | 2 |
| 13 | 6408 | CARDBOARD INSERT | 1 |
| 14 | 6409 | CARDBOARD BOX | 1 |
| 15 | 7128D2 | 1/4 PIPE PLUG, HEX SOC BRASS | 1 |
| 16 | 8036 | NUT, 1/4-20 UNC KEPS | 2 |
| 17 | 8081 | CABLE TIE MOUNTS | 2 |
| 18 | 8084 | CABLE TIES | 10 |
| 19 | 8131-2 | TRANSFORMER, 110/220-24 1.66A | 1 |
| 20 | 8155A | LOCK ASSY-W/MEDECO CAM LOCK | 1 |
| 21 | 8180 | WARNING, WIRE TEMP RATING | 1 |
| 22 | 8183 | DECAL, "DISCONNECT POWER" | 1 |
| 23 | 8437D002 | ETL DECAL, AIR MACHINES | 1 |
| 24 | 8532-25 | 25' AIR HOSE | 1 |
| 25 | 8533-13 | OPEN FLOW CHUCK | 1 |
| 26 | 8545-13 | HOSE ASSEMBLY 13" | 1 |
| 27 | 8549 | FLEX STRAIN RELIEF | 1 |
| 28 | 8596 | NUT, 5/16-18 HEX | 4 |
| 29 | 8597 | 5/16 WASHER | 4 |
| 30 | 8598 | 5/16 LOCK WASHER | 4 |
| 31 | 8659-3W-DIGP | WELDMENT, AIR MACHINE, PROTEL DIGITAL | 1 |
| 32 | 8659-75-W-PLT | LOCK BAR PLATED | 1 |
| 33 | 8670-1000-1W | BRACKET WELDMENT, PROTEL MANIFOLD ASSY | 1 |
| 34 | 8670-8DIGP | COMPRESSOR MOUNT, PROTEL DIGITAL | 1 |
| 35 | 8670DIGP-DKIT | DECAL KIT, DOOR DECAL, DIG AIR | 1 |
| 36 | 8670KIT602-03 | PROTEL DIGI AIR KIT # KIT0000602-03 | 1 |
| 37 | 8670KIT613-00 | PROTEL HEAT KIT, KIT0000613-00 | 1 |
| 38 | 8673 | TIMER ASSEMBLY-SSAC | 1 |
| 39 | 8673-9 | NEON LIGHT ASSEMBLY | 1 |
| 40 | 8678 | HOSE HANGER | 1 |
| 41 | 8732 | NAMEPLATE SERIAL TAG, UL | 1 |
| 42 | 8764 | DECAL, DANGER EXPLOSION | 1 |

NOTE 1

WIRE UNIT AS SHOWN IN 8670 SERIES DIGITAL PROTEL AIR.


NOTE 2

CUT SPADE CONNECTOR OFF BLUE AND BLACK WIRE OF COMPRESSOR. ATTACH 8" 12GA BLACK AND TWIST NUT ALL 3 WIRES TOGETHER. ADD 5900D3 TO THE 8" 12GA WIRE. THE SINGLE WIRE THEN IS TO BE RAN THRU SENSOR LOOP THEN WIRE PLUGGED INTO TIMER AS SHOWN ON SCHEMATIC.



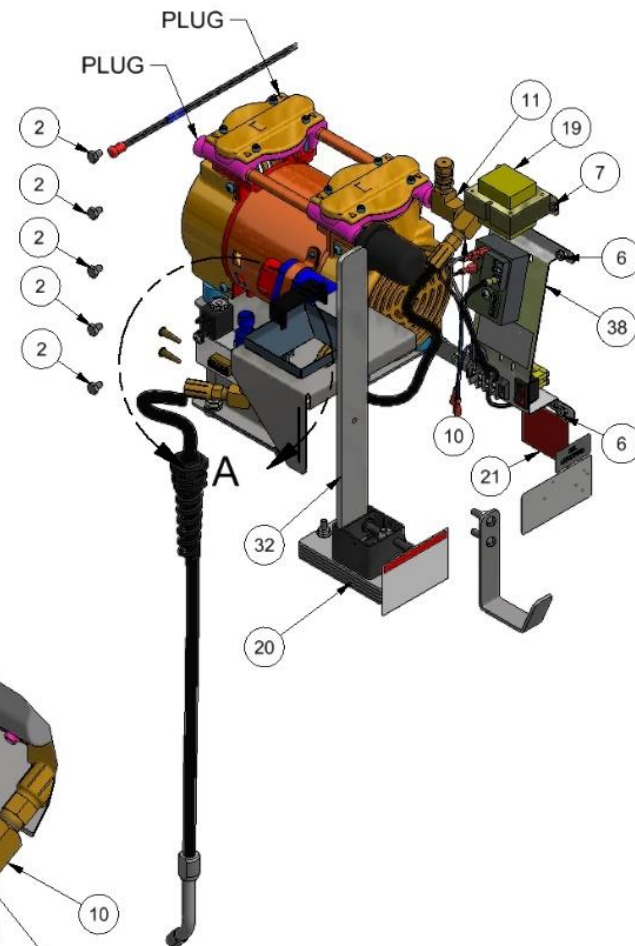
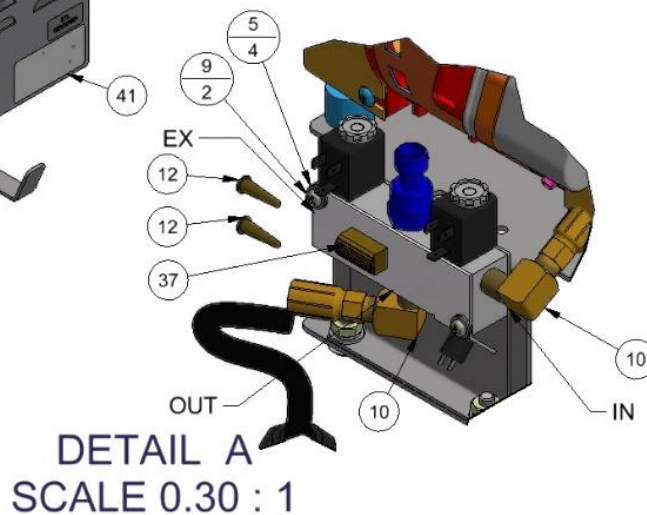
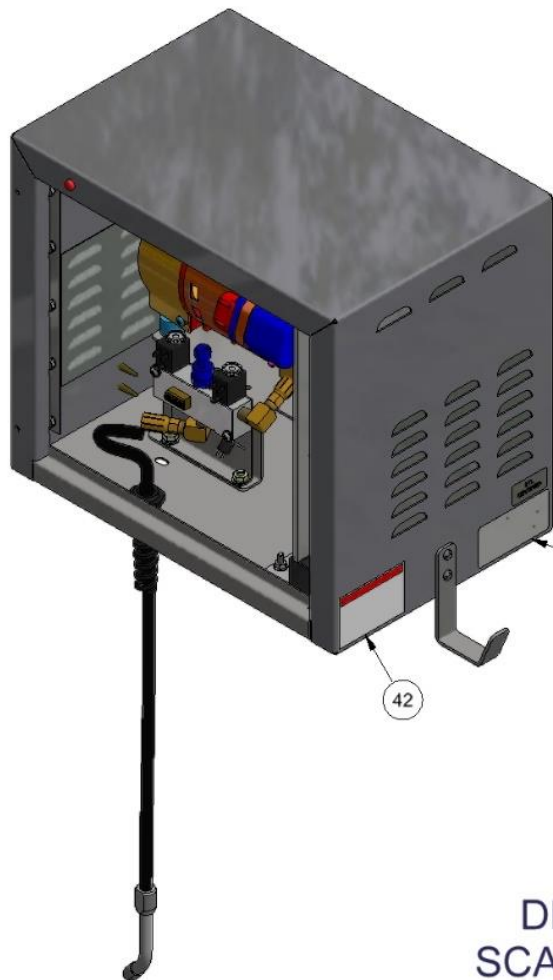
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|-----|------|---|-----------|-----|
| G | 8229 | REMOVED EXTERNAL BRASS FILTERS, MODIFIED NOTE 2 CONCENRING FILTERS. | 3/19/2018 | CAK |
| F | 8144 | ADDED 5901D2, 5943E3220 AND 5900D3; ADDED NOTE 2 | 12/20/17 | CAK |
| E | 7941 | REM 8670-1000-1, 5611D3, 5663D5. ADD 5636D4, 5606D1, 8670-1000-1W | 2-2-17 | CK |
| D | 7601 | ADD 8180 DECAL BELOW OR NEAR TERMINAL STRIP | 102815 | JF |
| C | 7493 | ADDED (1) 7128D2 | 6-8-15 | CK |
| B | 7471 | ADDED (1) 8437D002 | 5-21-15 | CK |
| REV | NO. | DESCRIPTION | DATE | BY |


THIS DOCUMENT SHALL NOT BE REPRODUCED NOR SHALL THE INFORMATION THEREIN BE USED BY OR DISCLOSED TO OTHERS EXCEPT AS AUTHORIZED BY J.E. ADAMS INDUSTRIES

| | | | |
|---|-------------------|-------------------|---|
| TITLE: ASSEMBLY, AIR MACHINE, PROTEL DIGI AIR | | | |
| UNSPECIFIED TOLERANCES 1 PL ± .040 2 PL ± .020 3 PL ± .003 ANGLE ± 1° | MATERIAL: | |  CEDAR RAPIDS, IOWA |
| | DRAWN BY: CHAD K. | | |
| | DATE: 8/12/2013 | | |
| | SCALE | SHEET 1 / 2 | |
| | | PART NO 8670-DIGP | REV: G |

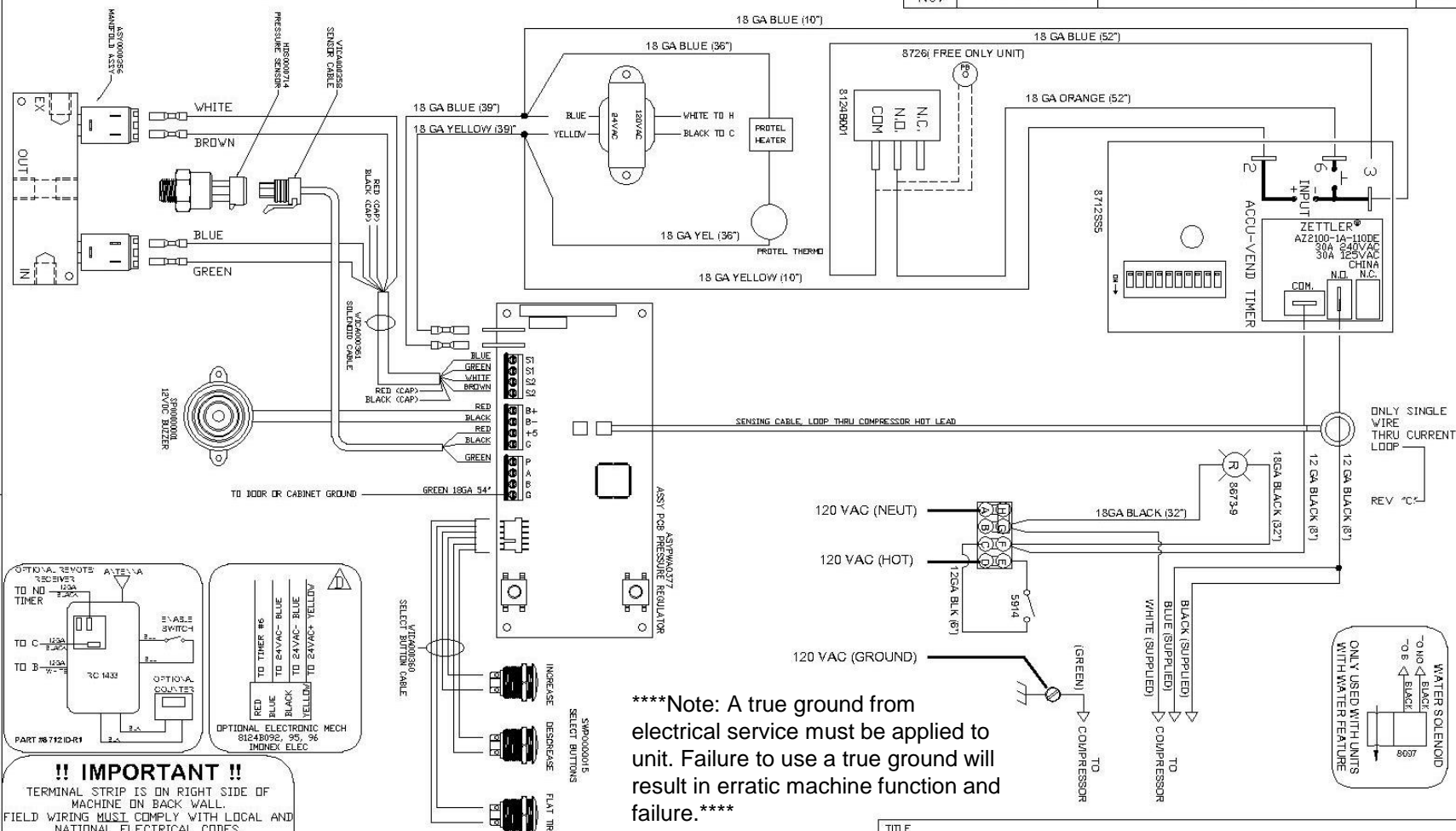
REV: G

NOTE 2
 PROTOL MAIFOLD SUPPLIED WITH
 INTERNAL FILTERS ON THE IN AND
 OUT PORTS.




| | | | | |
|--|-----------------------|---|-----------|--|
| TITLE | | | | |
| ASSEMBLY, AIR MACHINE, PROTOL DIGI AIR | | | | |
| UNSPECIFIED TOLERANCES | | MATERIAL | | |
| 1 PL $\pm .040$ | DRAWN BY CHAD K. | CEDAR RAPIDS, IOWA | | |
| 2 PL $\pm .020$ | |  | | |
| 3 PL $\pm .003$ | | | | |
| DATE 8/12/2013 | SHEET 2 / 2 | | | |
| ANGLE $\pm 1^\circ$ | PART NO. 8670-DIGP | | | |
| | | | REV. G | |

| REV | NO. | DESCRIPTION | DATE | BY |
|---|-----|-------------|------|----|
| THIS DOCUMENT SHALL NOT BE REPRODUCED NOR SHALL THE INFORMATION THEREIN BE USED BY OR DISCLOSED TO OTHERS EXCEPT AS AUTHORIZED BY J.E. ADAMS INDUSTRIES | | | | |



!! IMPORTANT !!
TERMINAL STRIP IS ON RIGHT SIDE OF
MACHINE ON BACK WALL.
FIELD WIRING **MUST** COMPLY WITH LOCAL AND
NATIONAL ELECTRICAL CODES.
***10AMP SERVICE IS
REQUIRED
FOR GAST UNITS***

| | | | | |
|-----|------|--|----------|-----|
| D | 8509 | ADDED WIRING FOR OPTIONAL ELECTRONIC MECH | 10/15/19 | JRF |
| C | 8144 | CHANGED DRAWING FOR 1 WIRE TO GO THRU LOOP | 12/20/17 | CAK |
| B | 7446 | ADDED REMOTE START WIRE INFO | 4-7-15 | CK |
| REV | NO. | DESCRIPTION | DATE | BY |

| | | | |
|--|----------------------|--|-------------|
| TITLE | | 8670 DIGI PROTEL SERIES | |
| UNSPECIFIED TOLERANCES | SCALE | NONE | |
| | DRAWN BY | CK | |
| | DATE | 8-12-13 | |
| | REL. FOR PROD. | | |
| FRACT. $\pm 1/32$ 2 PL $\pm .020$ 3 PL $\pm .010$ ANGLE $\pm 1.0^\circ$ | |  CEDAR RAPIDS, IOWA J.E. ADAMS INDUSTRIES, LTD. | |
| | | PART NO. | 8670 SERIES |
| | | REV. | D |