



**CAUTION:** Read the instructions before using the machine.



**ARCH**  
VAC SYSTEMS



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**INDUSTRIAL VACUUM SYSTEMS**

# IVS Arch Vac System Model 100145 Install & Owner's Guide

[www.IVS-Vacuum.com](http://www.IVS-Vacuum.com)  
800.968.8227

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before using the machine.

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## **INDUSTRIAL VACUUM SYSTEMS**

# **Thank you for your purchase of an IVS Vacuum!**

Our heavy-duty vacuum systems are engineered and manufactured to tackle the toughest vacuuming jobs.

The following are original Instructions for the IVS Arch Bay Vac System Model 100145 along with detailed safety, warranty and installation information.



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## **SAVE THESE INSTRUCTIONS**

### **IMPORTANT SAFETY INSTRUCTIONS**

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

### **READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE**

This Machine is not intended for household use. It is intended for commercial use.

This machine is not intended for wet pick up use.

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

1. This machine must be connected to a permanent electrical power supply in full compliance with all applicable codes and ordinances by qualified personnel only. Read grounding instructions.
2. Do not use on wet surfaces.
3. Do not allow to be used as a toy. Close attention is necessary when used by or near children.
4. Use only as described in this manual. Use only manufacturer's recommended attachments.
5. Do not operate or handle machine with wet hands.
6. Do not put any object into any openings. Do not use with any opening blocked; keep free of dust, lint, hair, and anything that may reduce air flow.
7. Keep hair, loose clothing, fingers, and all parts of the body away from openings and moving parts.
8. Do not pick up anything flammable or combustible liquids, such as gasoline, or use in areas where they may be present.
9. Do not pick up anything that is burning or smoking, such as cigarettes, matches, or hot ashes.
10. Do not pick up hazardous dust or particulate.
11. Do not use without dust bags or filters in place.

### **GROUNDING INSTRUCTIONS**

This machine 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 machine.

### **GROUND FAULT CIRCUIT INTERRUPTER PROTECTION**

To provide additional protection from the risk of electric shock, this product shall only be connected to a circuit that is protected by a ground fault circuit interrupter (GFCI).

### **DANGER**

Installation of this machine must incorporate and provide full disconnection of all poles in the event an overvoltage category III condition. Such incorporation to the fixed wiring must be in accordance with the wiring rules.

## LIMITED WARRANTY

Industrial Vacuum Systems (Company) provides a limited one year warranty on components and piece of equipment produced by the Company to be free from defects in material and workmanship. Electrical assemblies see Appendix A, have a limited two year warranty on the controller to be free from defects in material and workmanship. This limited warranty does not cover equipment that has been damaged due to misuse, misapplication, modification, altered, neglected, attempted theft, vandalism, connection to improper voltage supply, modification, or such parts that are commonly recognized to be subject to wear in normal usage. Normal use products are, but not limited to, those listed on Appendix B; which are warranted for 90 days. Every component and piece of equipment is packaged to assist in safe handling of the product.

Claims must be submitted in writing within the appropriate coverage period as covered by this warranty, from date of shipment, to the Company's warranty/repair department. If the return is approved an RMA and labeling instructions will be issued and the product can be returned. Returned product without the appropriate RMA and label will be issued to scrap and all warranties/replacements will be considered null and void. If the product receiving the RMA is not returned within 20 days from date of issuing the RMA then any credit toward the product will be reduced by 25%. If the product is not returned within 30 days of issuing the RMA then any credit will be reduced by 50%. A testing fee of \$20.00 will be applied, if the product passes all tests related to the written claim, then the fee will be applied and paid prior to return of the product. If the product fails the test then the fee will not be applied.

The Company may charge a 20% restocking fee for returned product and/or an order, which is canceled and/or material has already been ordered and/or received to fill such order. The Company's warranty/repair department will inspect all components, submitted under warranty. Warranty replacement will be based solely on the analysis and confirmation that the product defect was caused by material and/ or workmanship.

The company reserves the right to change the design of the product without assuming any obligation to modify any product previously manufactured or to replace warranted product other than with redesigned product. In some cases it is easier for the customer to send a Company purchased product direct to the manufacturer for replacement. In those cases the customer will be notified that their product falls under that process and should work with that manufacturer directly. Appendix C shows the purchased parts that falls under this case.

This warranty covers the product replacement only; charges for damages, freight and/or labor will not be accepted. There are no warranties expressed or implied which extend beyond this Limited Warranty. The loss of use of the product, loss of time, inconvenience, commercial loss, incidental or consequential damages is not covered. The Company shall not be liable for incidental, special, or consequential damages including without limitation damages resulting from personal, bodily injury or death or damages to or loss of use of property.

APPENDIX A 2-Year Warranty Controllers Sensortron, Multitron, Touchtron, Timers, Liberator

APPENDIX B 90-Day Warranty Components Pressure Hoses, Swivels, Nozzles, Safety Shut-off Guns, Seals, O-Rings, Shop Vac

APPENDIX C Purchased Products that are Handled Direct with the Manufacturer Shop Vac, IDX Big Timer, Bill Acceptors, Compressors, Pump Motors



## Vacuum Motor Warranty

Effective March 2014

Applies to Vacuums and Combination Vacuums and Service Part Kits containing the GinSan Vacuum Motor part number 105111 or 105112.

GinSan will warrant Vacuum motors against defect in original manufacture for a period of one year from the date the vacuum or service part motor ships from GinSan. Additionally, Vacuum Motor Brushes installed in these 2 motors will be warranted against defect in original manufacture for a period of 90 days from the date of shipment from GinSan.

This warranty requires that the vacuum and motor must receive proper operational maintenance that includes proper filter, motor gasket, filter screen, and motor brush maintenance.

GinSan's liability is limited to replacement parts only. Labor for removal or installation is not covered.

Motor or Brush failure resulting from abuse, misuse, filter failure, or improper or inadequate maintenance will not be covered. Motor or Brush failure that is due to brushes worn beyond the physical wear life of the brush is not covered. Except in the case of original factory installation, Motor or Brush failure due to improper or inadequate installation will not be covered.

Warranty claims must be evaluated by GinSan. Replacement Motor(s) and/or Motor Brush Kit(s) must first be ordered and invoiced as a service part. An RMA number will be issued at that time. The customer is required to return the failed Motor and/or Motor Brushes to GinSan with the RMA number prominently on the outside of the package. Failed motors must be shipped within 14 calendar days of the shipping date of the replacement Motor and/or Brushes. Customers are encouraged to record a tracking number from the shipper. Shipper data will be the only data used to determine adherence to this policy.

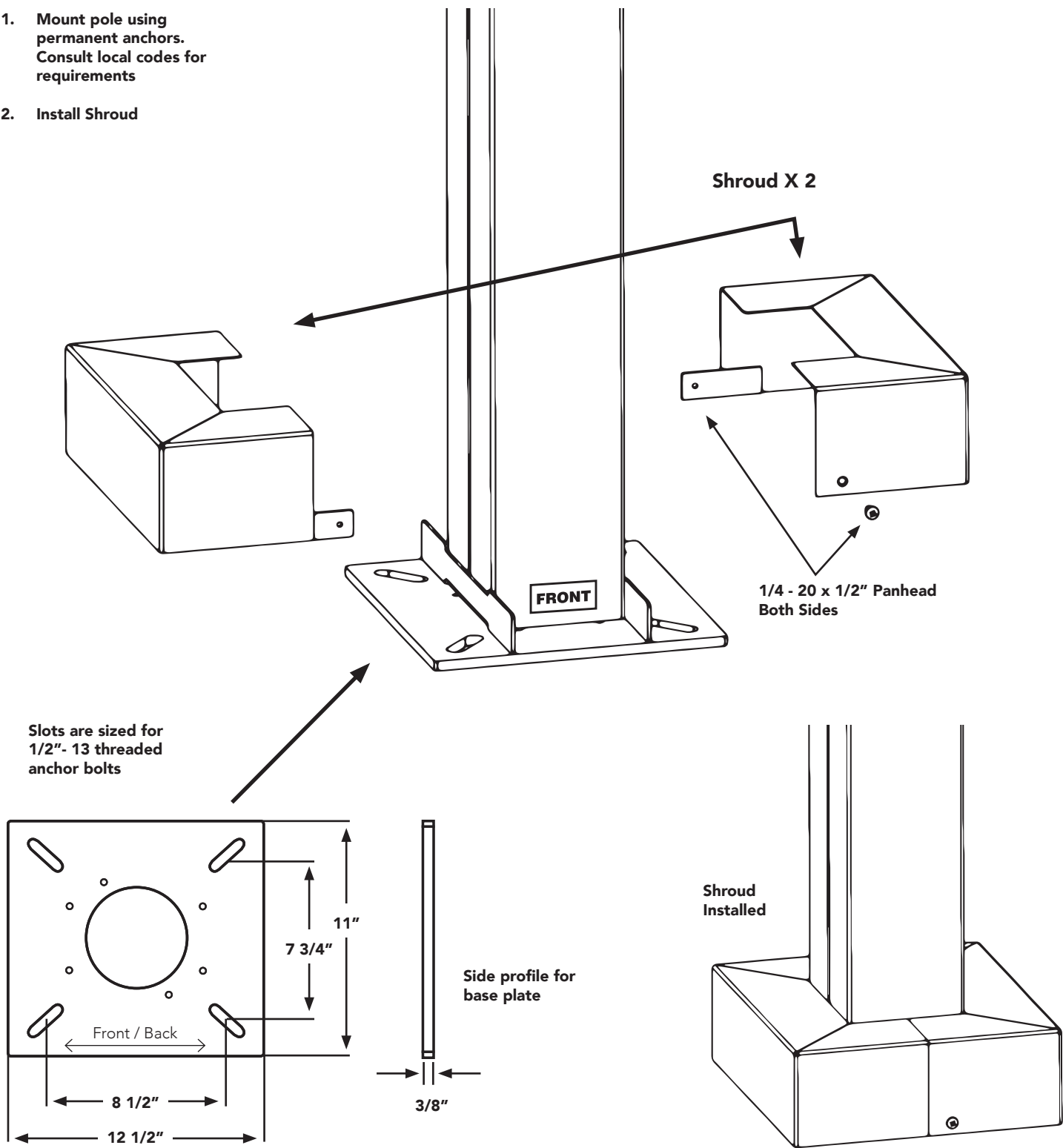
When received, failed Motors and/or Brushes will be evaluated within 5 business days. Motors and/or Brushes that are evaluated as being under warranty will have the invoice for the replacement parts, including shipping, credited within 5 business days of the completion of the evaluation. If a Motor or Brush kit is evaluated to be not covered by this warranty, the customer will be notified within 2 business days. At that time, the customer will have the option to have the failed Motor and/or Brushes returned to them at their expense or they can instruct GinSan to dispose of the components locally.

Motors and/or Motor Brushes that are covered by warranty will be retained by GinSan and processed according to its internal policies.

This warranty shall apply only to vacuum motors GinSan Part Number 105111 and 105112 and the Motor Brushes installed in them.

# Pole and Shroud Installation

- 1. Mount pole using permanent anchors. Consult local codes for requirements
- 2. Install Shroud



**1. Install tool holder bracket**

- (2) 5/16 Washer  
(2) 5/16 - 18 x 3/4" Bolts

Tool Holder Bracket can be mounted to corresponding holes on front or back of pole

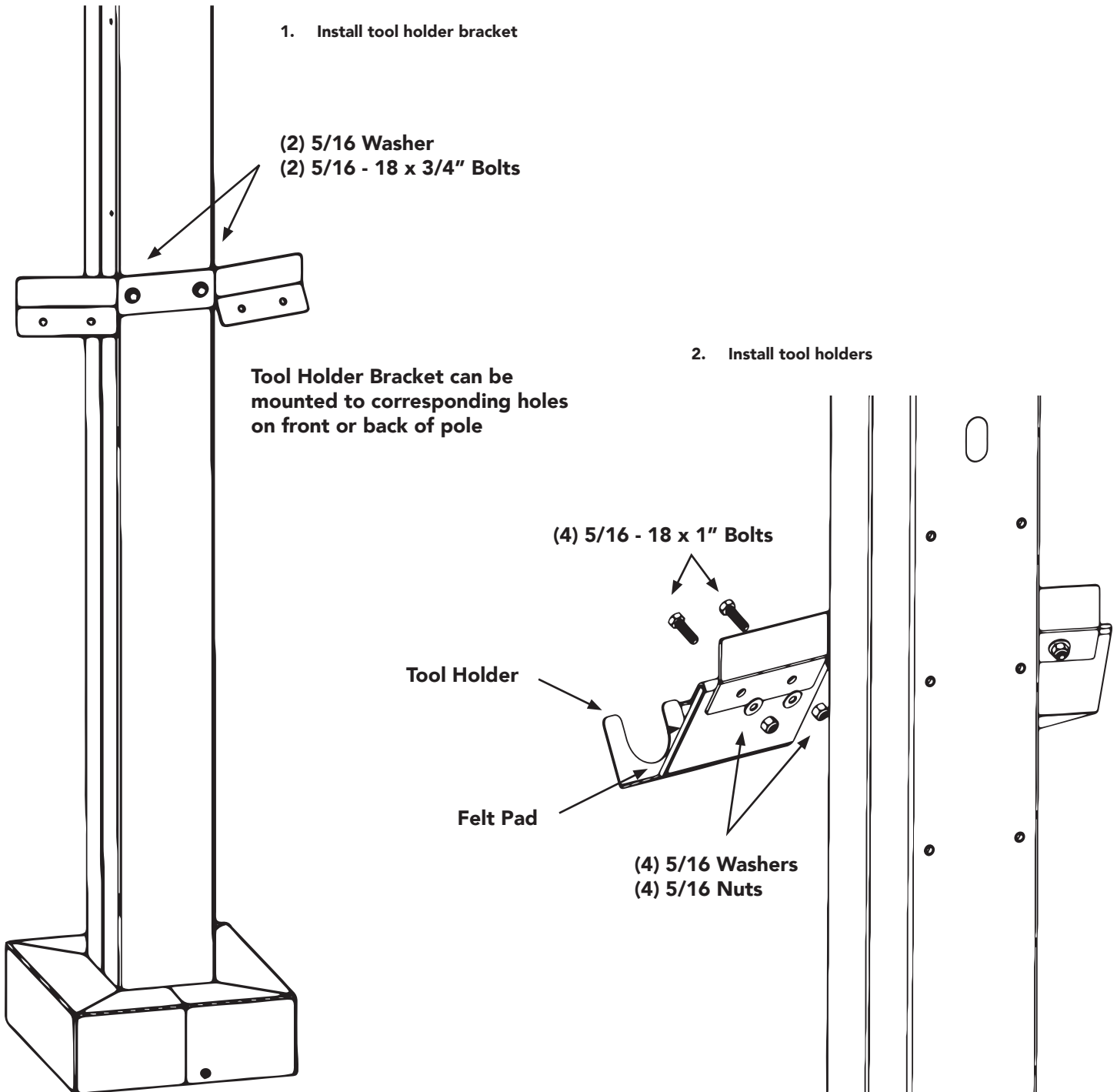
**2. Install tool holders**

- (4) 5/16 - 18 x 1" Bolts

Tool Holder

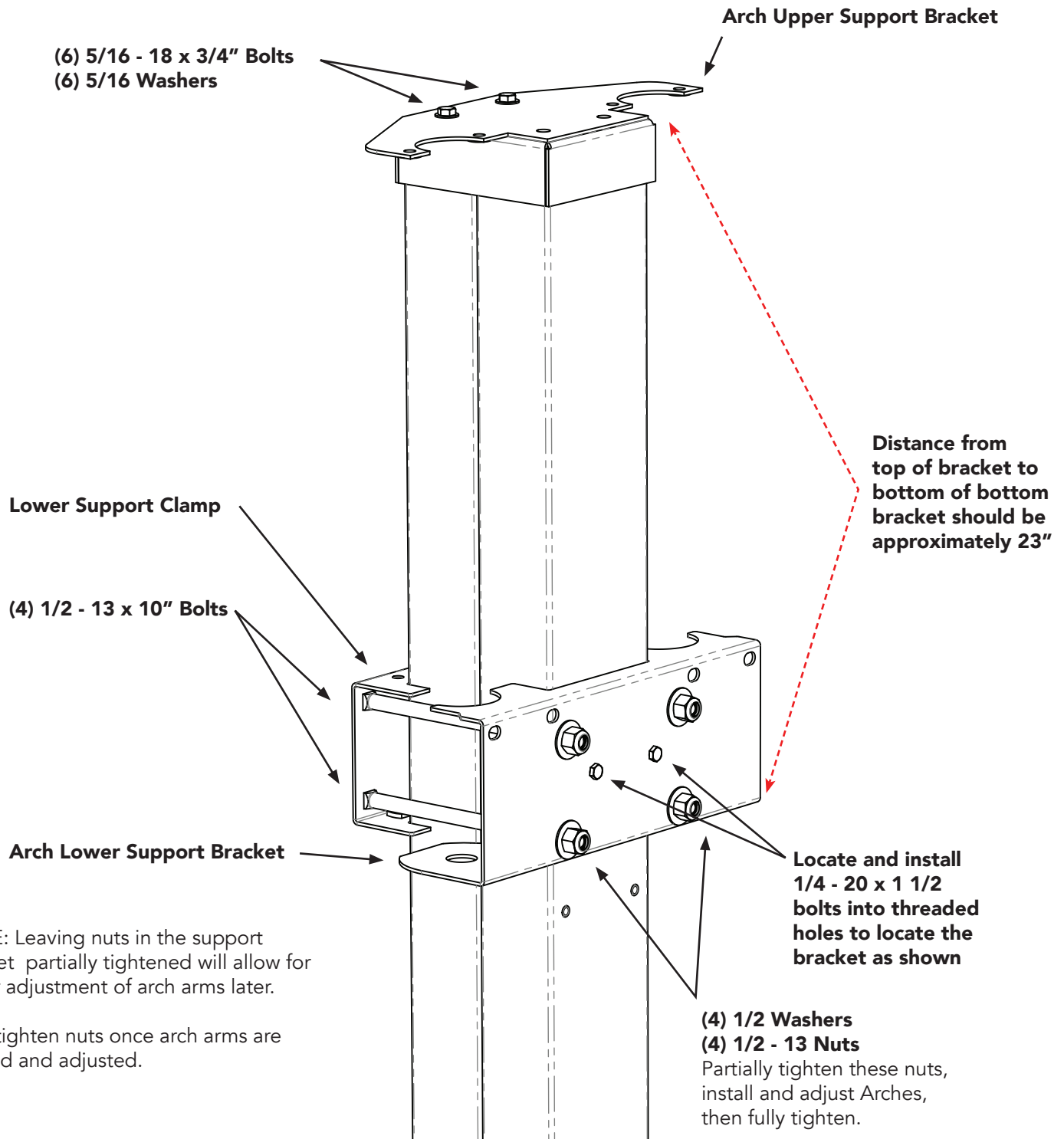
Felt Pad

- (4) 5/16 Washers  
(4) 5/16 Nuts





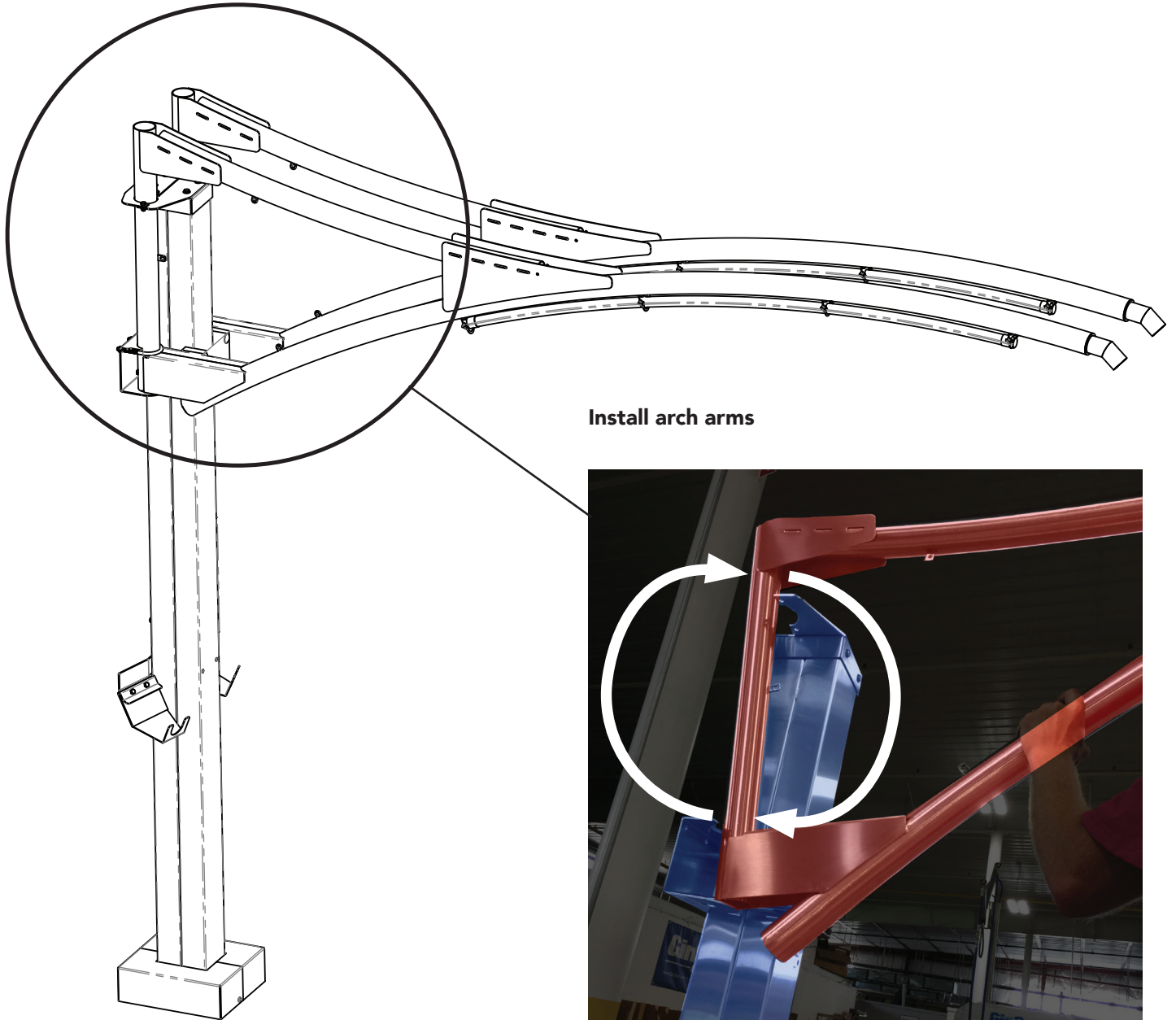
# Upper and Lower Arch Support Bracket Installation



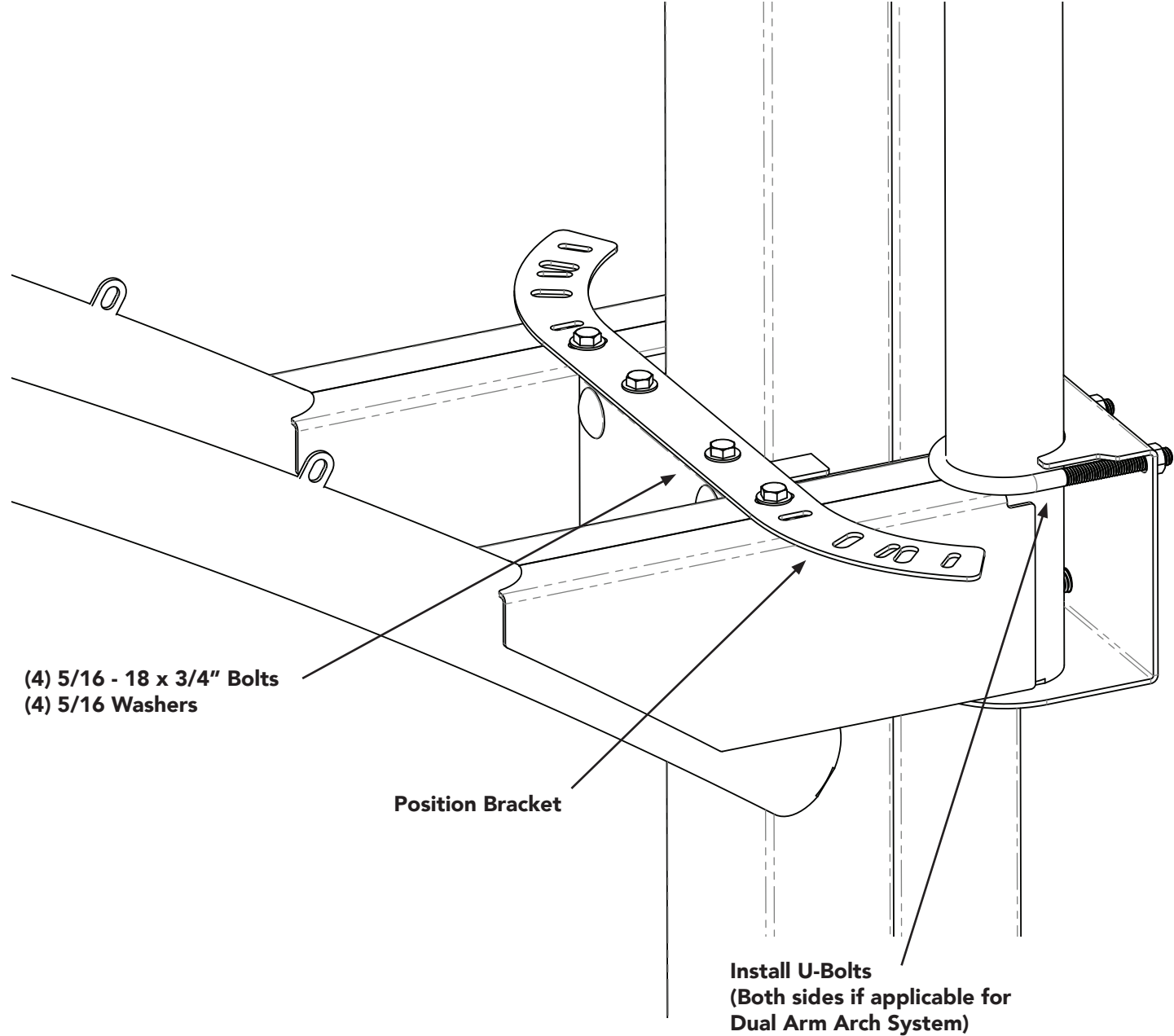
NOTE: Leaving nuts in the support bracket partially tightened will allow for easier adjustment of arch arms later.

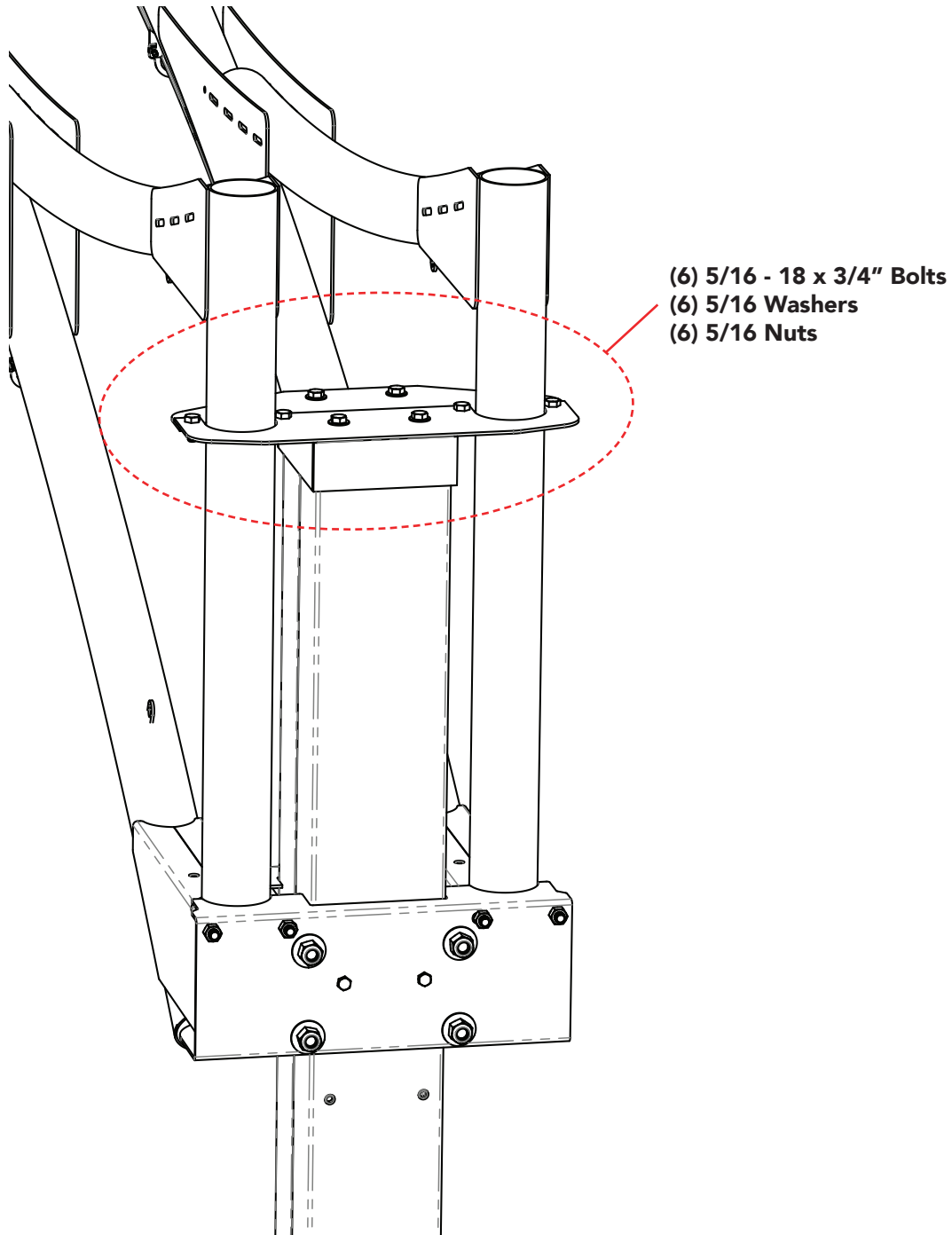
Fully tighten nuts once arch arms are leveled and adjusted.





# U-Bolt and Position Bracket Installation

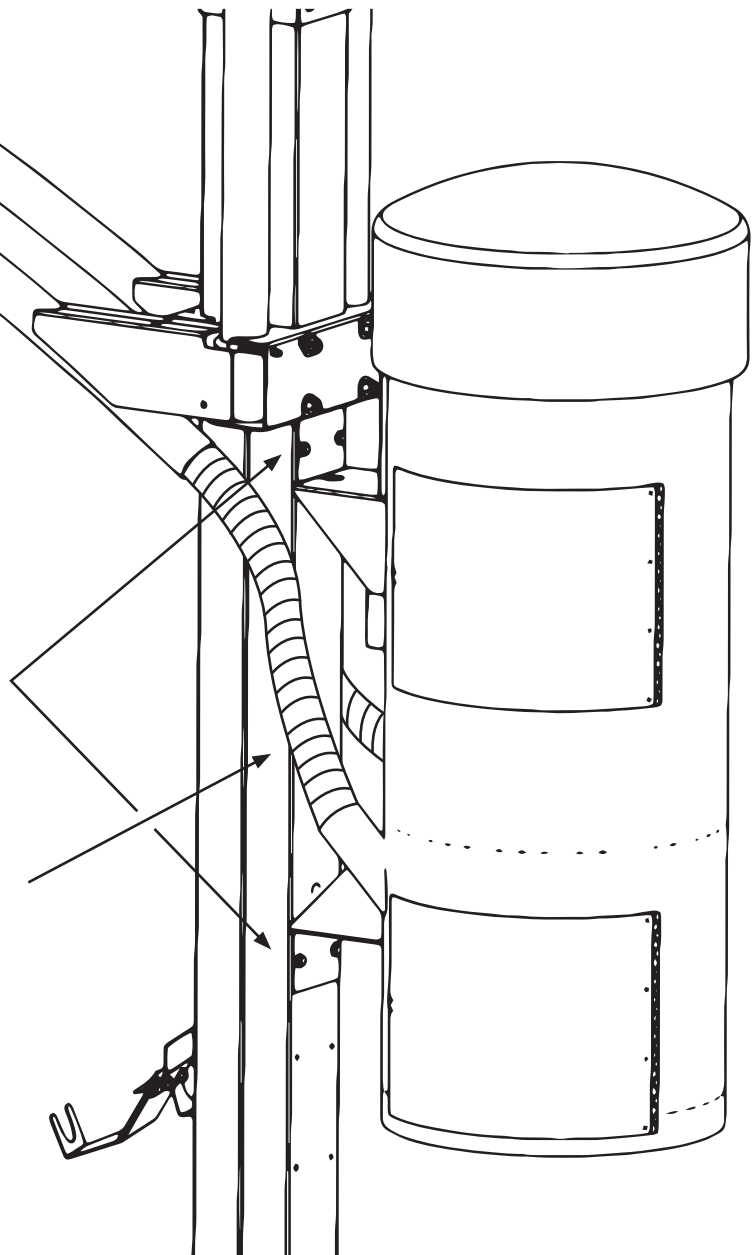




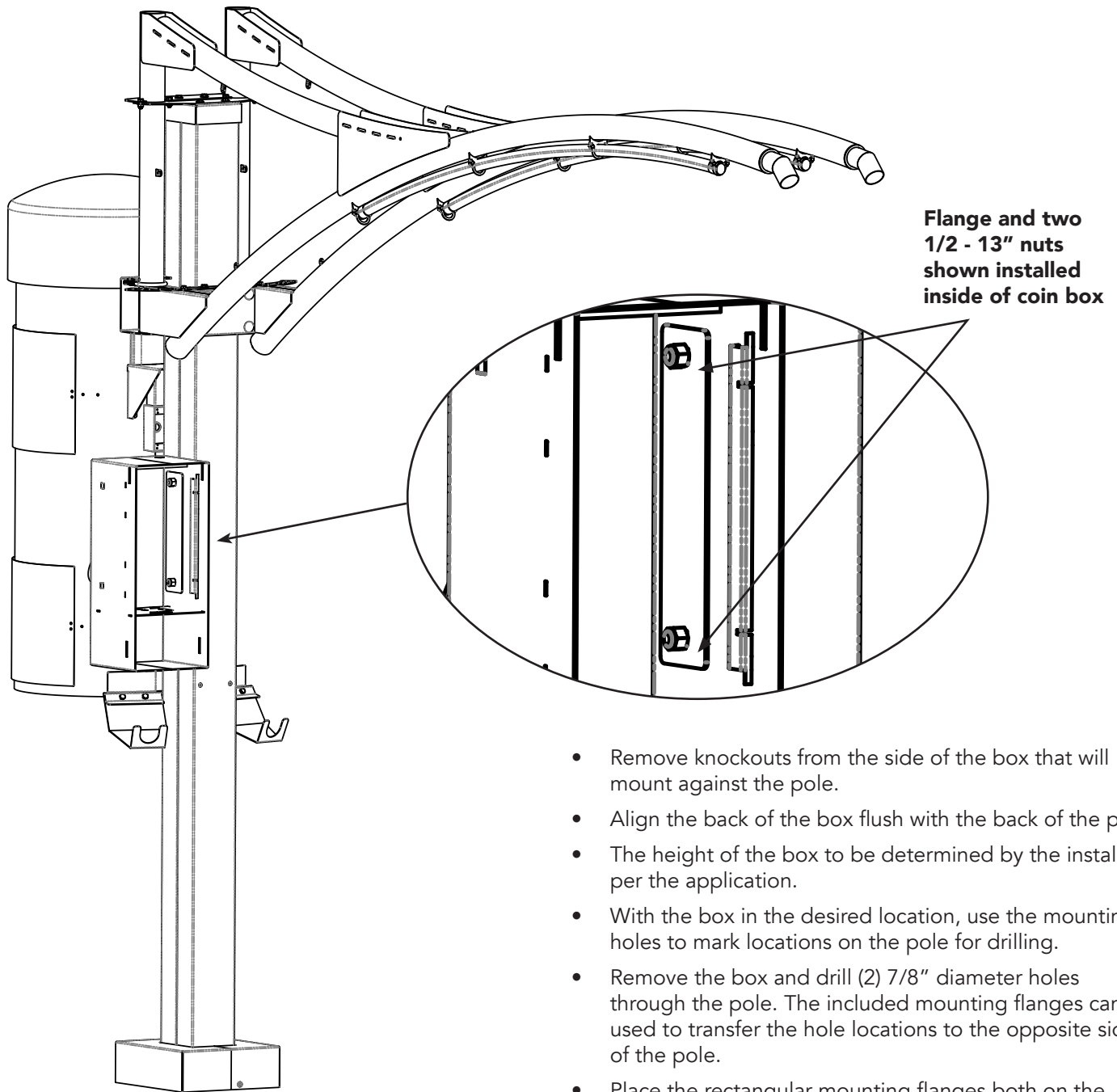
Hang vacuum  
onto pole

(4) 5/16 - 18 x 3/4 Bolts  
(4) 5/16 Washers  
(4) 5/16 Nuts

Install flex hoses as shown by twisting  
into place. If the hoses are too tight,  
lubricate with soapy water or apply  
light heat with a heat gun.

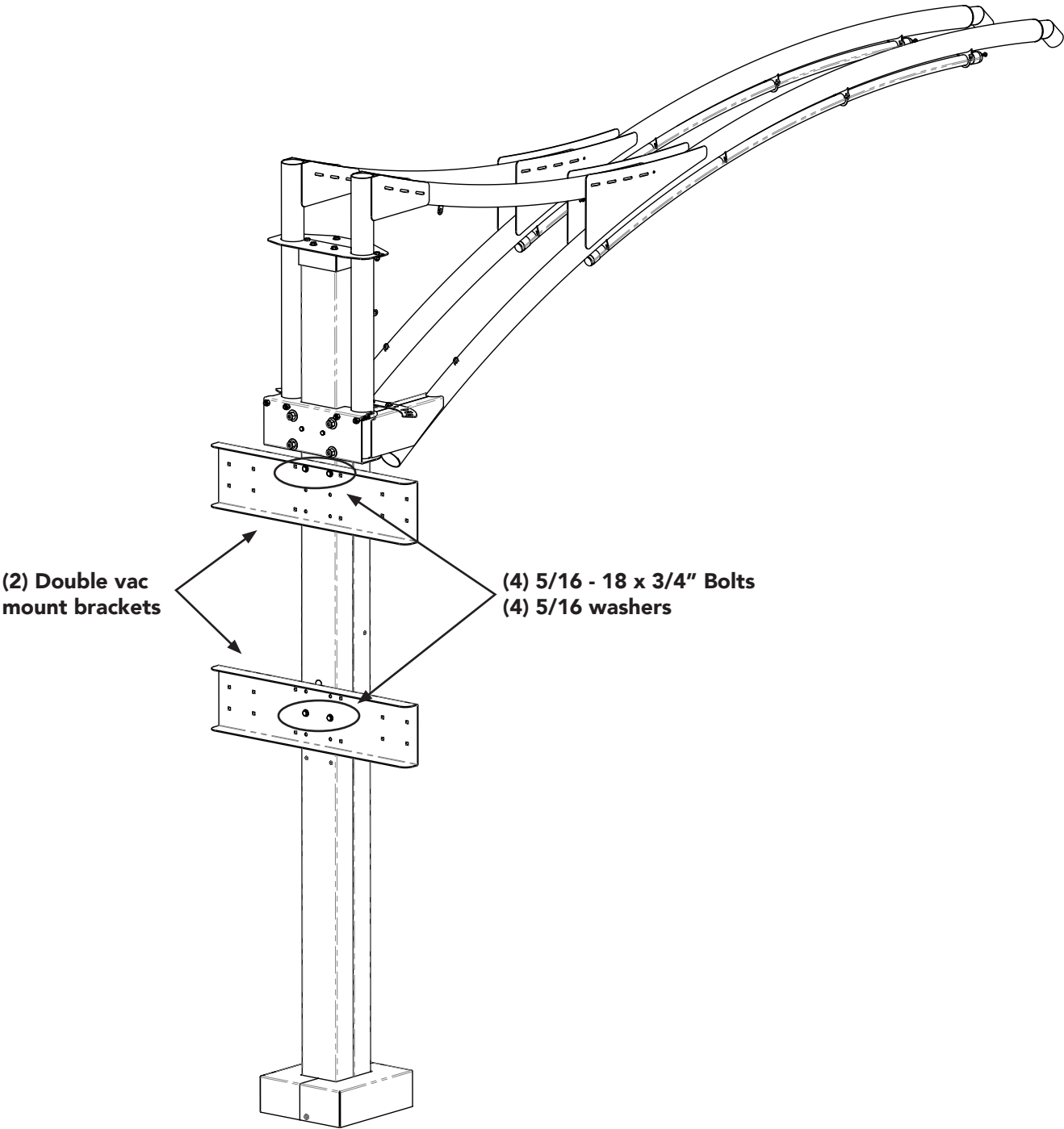


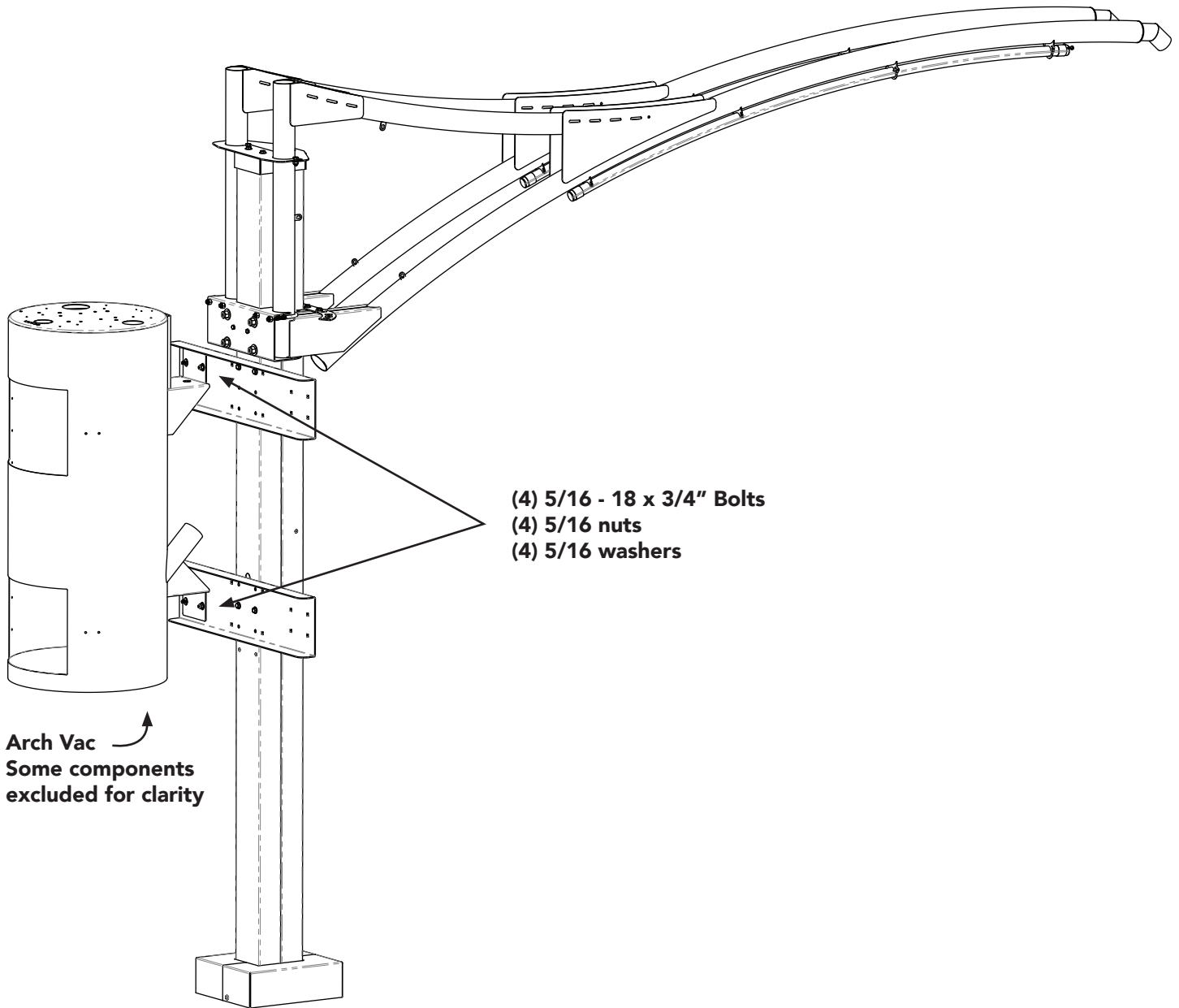




- Remove knockouts from the side of the box that will mount against the pole.
- Align the back of the box flush with the back of the pole.
- The height of the box to be determined by the installer per the application.
- With the box in the desired location, use the mounting holes to mark locations on the pole for drilling.
- Remove the box and drill (2) 7/8" diameter holes through the pole. The included mounting flanges can be used to transfer the hole locations to the opposite side of the pole.
- Place the rectangular mounting flanges both on the inside of the box and on the opposite side of the pole and install (2) 1/2" carriage bolts as shown with the nuts on the inside of the box.

# Double Vac Mount Installation

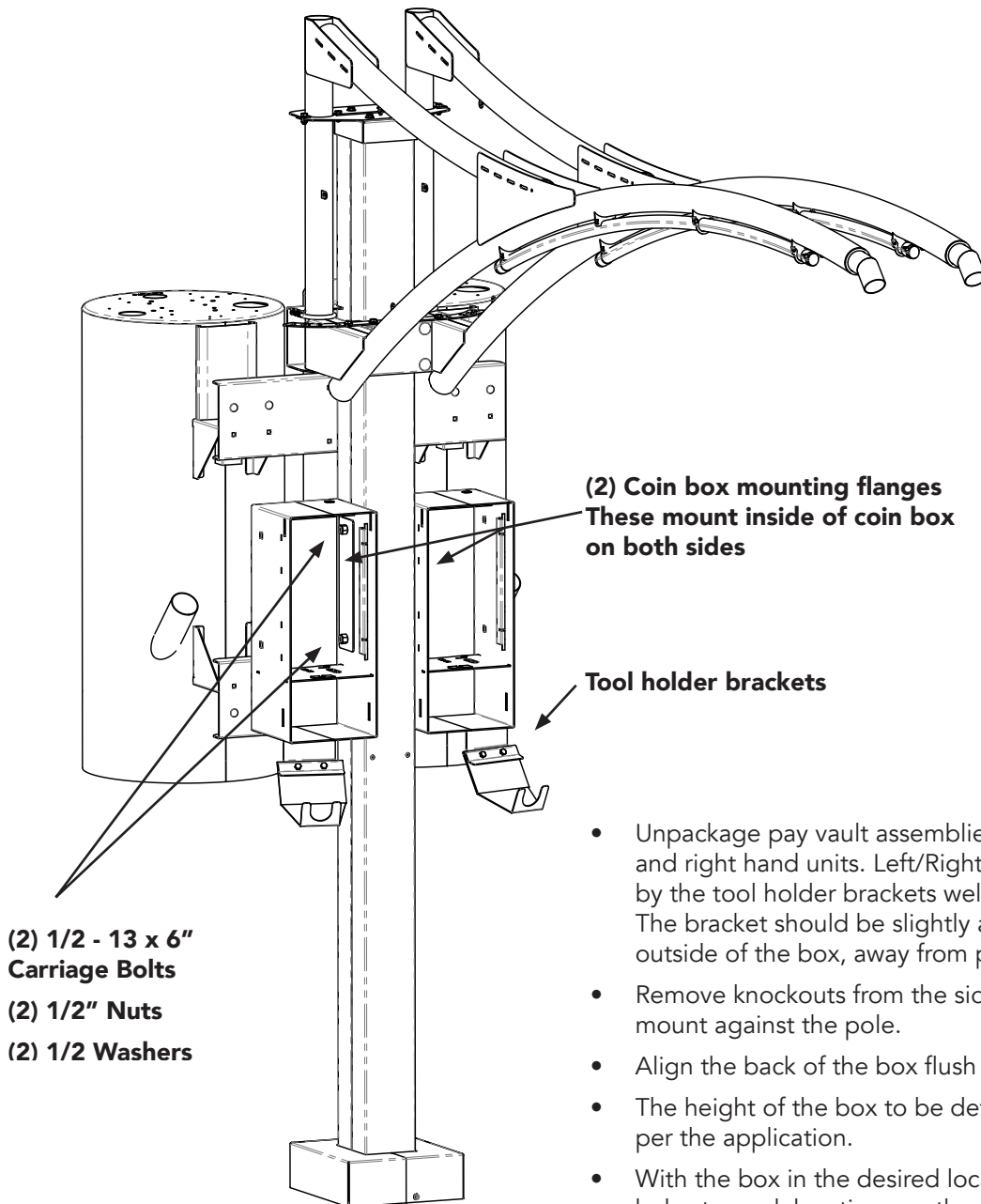




Arch Vac  
Some components  
excluded for clarity

- (4) 5/16 - 18 x 3/4" Bolts
- (4) 5/16 nuts
- (4) 5/16 washers





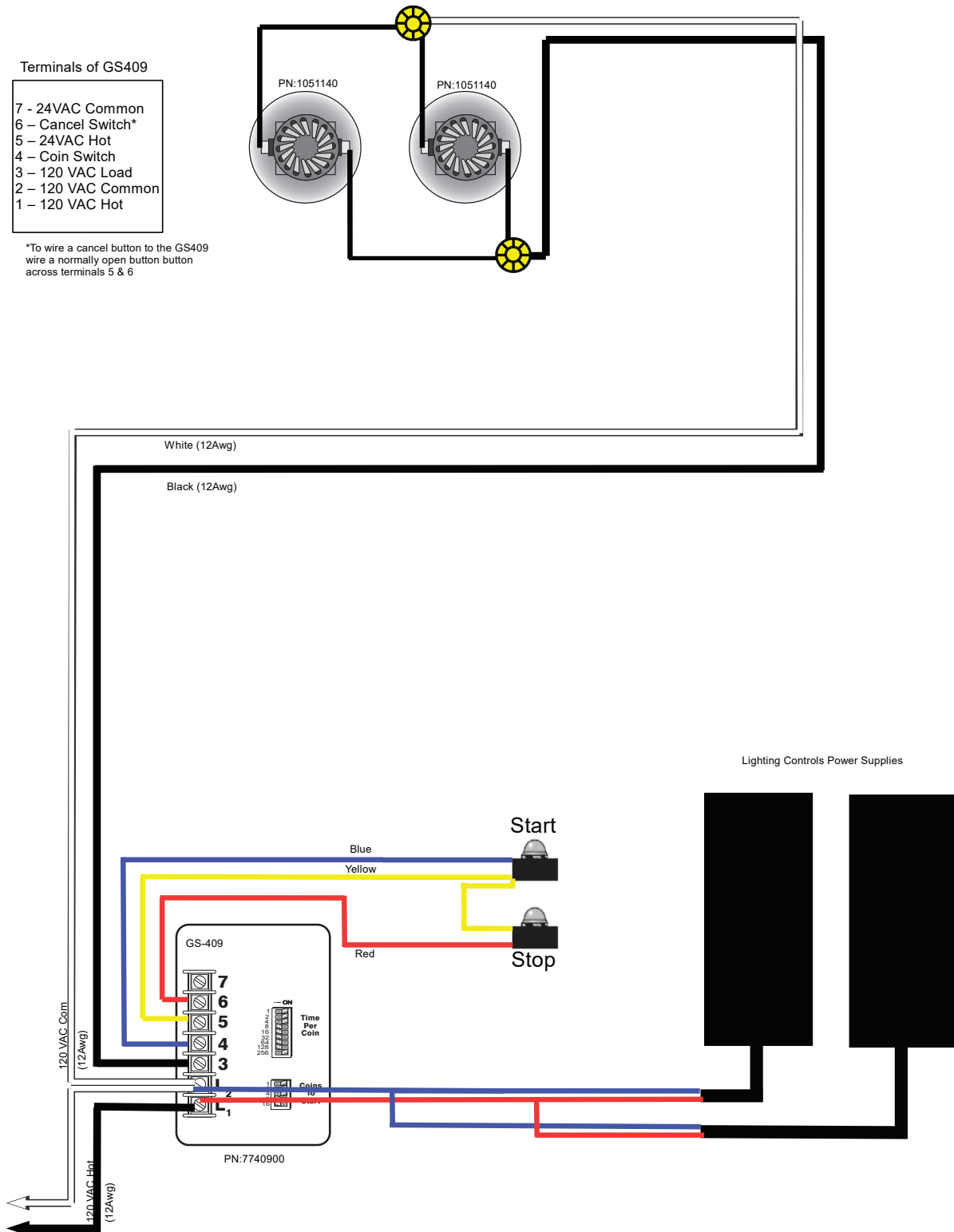
- Unpackage pay vault assemblies and identify left hand and right hand units. Left/Right hand can be identified by the tool holder brackets welded on the bottom. The bracket should be slightly angled toward the outside of the box, away from pole.
- Remove knockouts from the side of the box that will mount against the pole.
- Align the back of the box flush with the back of the pole.
- The height of the box to be determined by the installer per the application.
- With the box in the desired location, use the mounting holes to mark locations on the pole for drilling.
- Remove the box and drill (2) 7/8" diameter holes through the pole. The included mounting flanges can be used to transfer the hole locations to the opposite side of the pole.
- Place the rectangular mounting flanges both on the inside of the box and on the opposite side of the pole and install (2) 1/2" carriage bolts as shown with the nuts on the inside of the box.



## Terminals of GS409

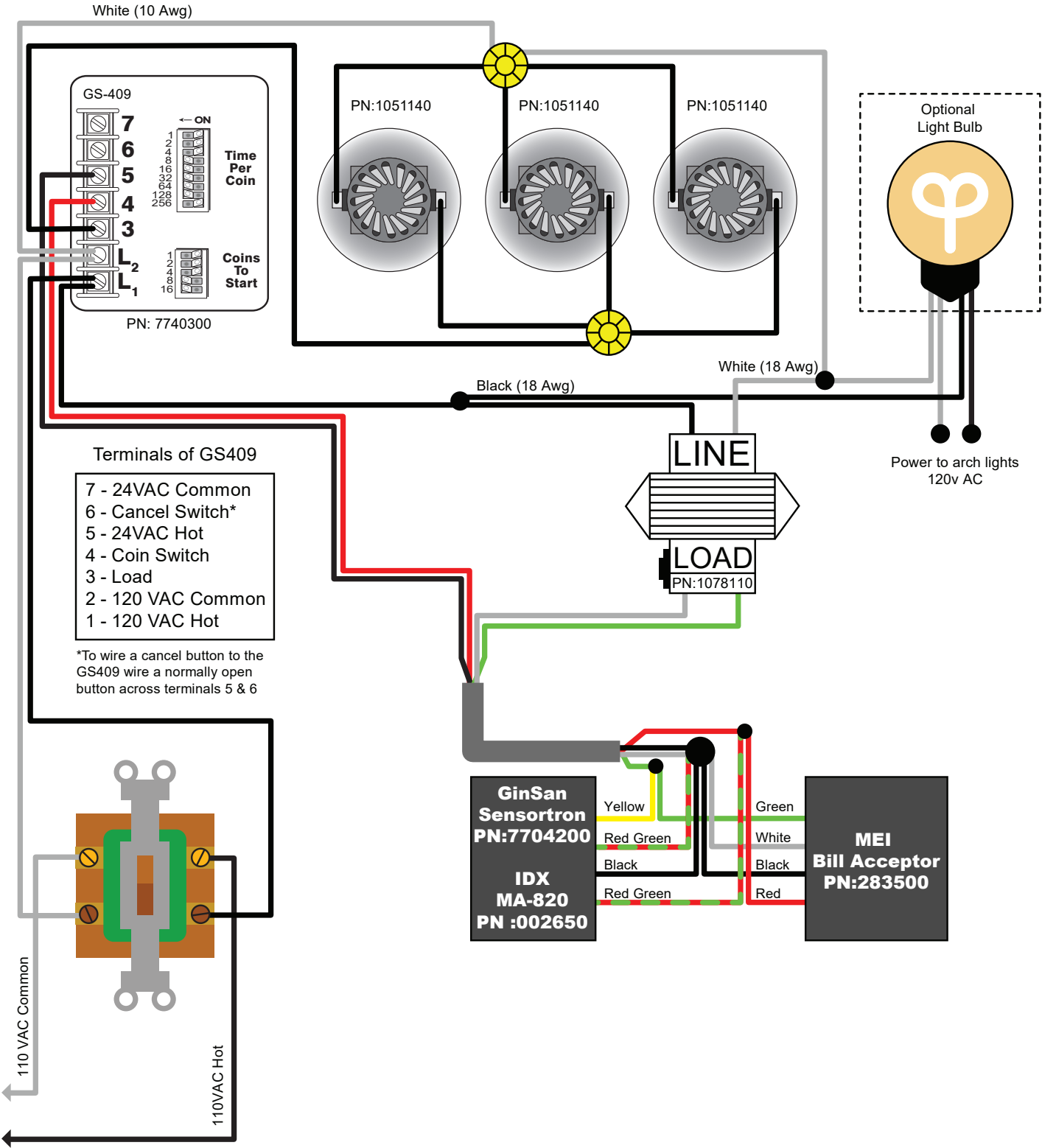
- 7 - 24VAC Common
- 6 - Cancel Switch\*
- 5 - 24VAC Hot
- 4 - Coin Switch
- 3 - 120 VAC Load
- 2 - 120 VAC Common
- 1 - 120 VAC Hot

\*To wire a cancel button to the GS409 wire a normally open button across terminals 5 & 6

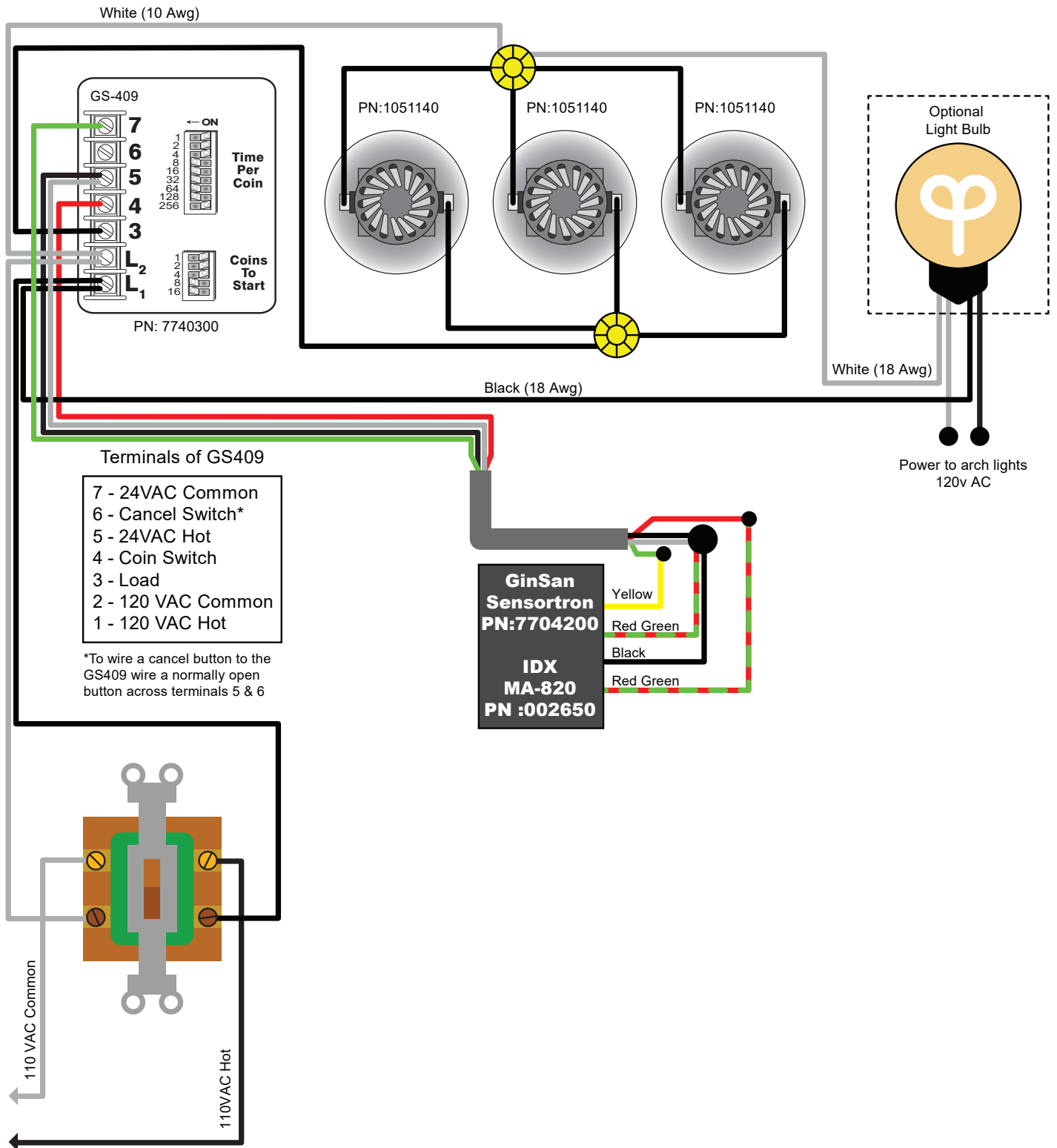




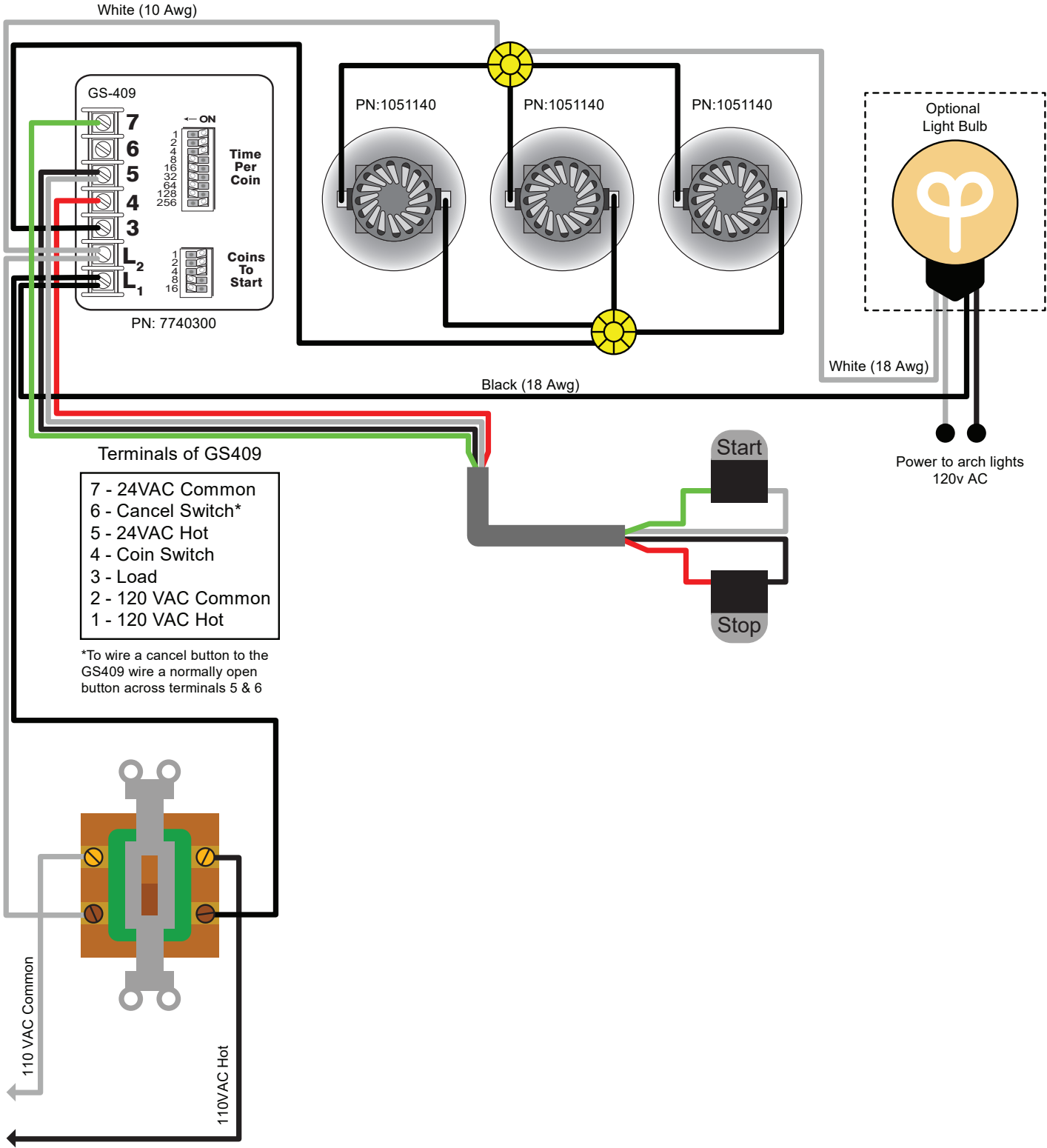
# Wiring Diagram: GS403 with Coin and Bill Acceptor



# Wiring Diagram: GS403 with Coin Acceptor

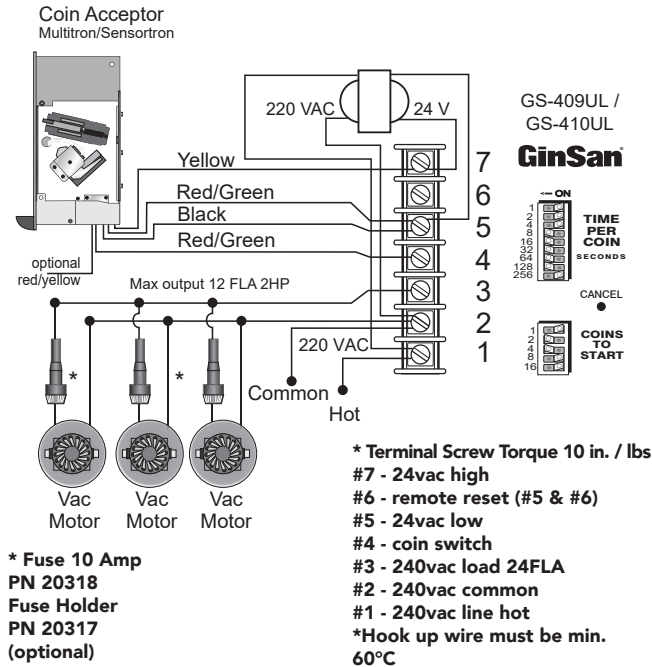


# Wiring Diagram: GS409 with Push to Start/Stop



**GS-409 / GS-410 UL Timer - Non-Accumulating**  
Wiring Instructions & Technical Information on Vacuum  
Applications 220 Volts AC 60Hz  
Requires a 220 VAC to 24 VAC Transformer 4VA or Greater

**Once Timer Starts,  
ADDITIONAL COINS  
WILL NOT ADD TIME!**



Setting the **COIN to START** Switch  
The **Coins to Start** is determined by  
adding the total number of switches in  
the "On" position.  
**Example: 1 + 2 = 3 coins to start**



## Starting the Timer

Jump a wire between terminals #4 and #5. A count will register  
in the timer for every jump, which is the same as putting coins  
in the coin acceptor

## If Timer Fails to Start

Disconnect the coin switch wire on terminal #5 and repeat  
starting procedure.

## If timer starts at this point, the trouble may be...

1. A bad coin switch or acceptor.
2. Broken wire or bad connection.
3. Wires shorted between terminals #4 and #5 or shorted  
between #5 and #6.

## Timer Starts on One Less Coin than Setting

Coin switch wired wrong (should be wired to normally open  
terminal & common terminal).

## Setting the TIME PER COIN Switch

Determine amount of coins to start the timer.

**Example: 3 coins to start**

Convert time desired to seconds.

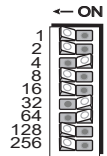
**Example: 5min. = 300 seconds**

Divide the total time (seconds) by the coins  
to start the timer.

**Example: 300 sec. / 3 = 100 seconds per coin**

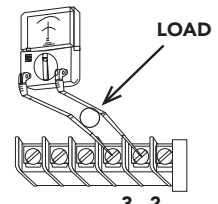
The **Time per Coin** is determined by adding the total  
seconds of the switches in the "On" position. If for instance,  
the desired time is 100 seconds, switch on the number of  
switches needed to add up to 100 seconds.

**Example: 100 sec.=64+32+4**



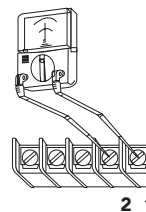
## Checking Power Out to Motors

A load of no less than .5 amps has to  
be hooked across terminals #2 and #3,  
to indicate time turning on. Without a  
load on the timer, it may not turn on or  
shut off. A volt meter across terminals  
#2 and #3 will indicate timer turning on  
and read output voltage. Check amp  
draw of motors using a clamp-on type  
amp meter.



## Checking Power to Timer

Using a volt meter across terminals 1  
and 2 will indicate incoming voltage.

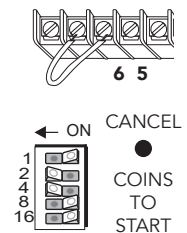


## Stopping the Timer

Use a jumper wire and touch across  
terminals #5 and #6. Or Press the Cancel  
button.

## If Timer Will Not Stop

All time switches are in the off position.



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