

Installation Manual

Masking Unit

September 2006 / 53-900452-000

Brunswick 
CUSTOMER SERVICE
A tradition in excellence.

Masking Unit Installation Manual

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Past Revisions: August 2002, October 1999, August 1998

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Reorder Part No. 53-900452-000

Notice: If available, updates to this manual can be found on-line at www.brunswickbowling.com.

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SAFETY

Throughout this publication, “Warnings”, and “Cautions” (accompanied by one of the International HAZARD Symbols) are used to alert the mechanic to special instructions concerning a particular service or operation that may be hazardous if performed incorrectly or carelessly. They are defined below. **OBSERVE AND READ THEM CAREFULLY!**

These “Safety Alerts” alone cannot eliminate the hazards that they signal. Strict compliance to these special instructions when performing the service, plus training and “Common Sense” operation are major accident prevention measures.



NOTE or IMPORTANT!:

Will designate significant informational notes.



WARNING!

Will designate a mechanical or nonelectrical alert which could potentially cause personal injury or death.



WARNING!

Will designate electrical alerts which could potentially cause personal injury or death.



CAUTION!

Will designate an alert which could potentially cause product damage.



Will designate grounding alerts.

SAFETY NOTICE TO USERS OF THIS MANUAL

This manual has been written and published by the Service Department of Brunswick Bowling and Billiards to aid the reader when servicing or installing the products described.

It is assumed that these personnel are familiar with, and have been trained in, the servicing or installation procedures of these products, which includes the use of common mechanic's hand tools and any special Brunswick or recommended tools from other suppliers.

We could not possibly know of and advise the reader of all conceivable procedures by which a service might be performed and of the possible hazards and/or results of each method. We have not attempted any such wide evaluation. Therefore, anyone who uses a service procedure and/or tool, which is not recommended by Brunswick, must first completely satisfy himself that neither his nor the products safety will be endangered by the service procedure selected.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication.

It should be kept in mind, while working on the product, that the electrical system is capable of violent and damaging short circuits or severe electrical shocks. When performing any work where electrical terminals could possibly be grounded or touched by the mechanic, the power to the product should be disconnected prior to servicing and remain disconnected until servicing is complete.

Warranty and Service Policy

If any defects in material or workmanship appear during the first three months after installation, the defective part will be repaired or replaced, at Brunswick's option, with no charge to the Customer.

If any defects in material appear during the nine months following the initial three month warranty period, the defective part will be repaired or replaced, at Brunswick's option, with no charge to the Customer for parts. The Customer must assume all other costs in making the repair or replacement.

All service calls during the first three months of the warranty period, resulting from the inability of the Customer's mechanics to perform required adjustments or maintenance, will be billed directly to the Customer.

Brunswick reserves the right to change the design of any product, but assumes no responsibility to incorporate such design changes on products already sold.

The warranty applies only to new products installed by Brunswick and extends only to the original purchaser. Repairs or replacements made by anyone not approved by Brunswick void the warranty.

Under no circumstances shall the Seller or Manufacturer be liable for loss of profits or other direct or indirect costs, expenses, losses, or damages arising out of defects in or failure of parts.

Replacement Parts Under the Warranty

All service parts are F.O.B. the installation site both during and after the warranty period. The price of parts includes delivery by standard means, such as United Parcel Service (UPS). Any expense resulting from expedited delivery, such as air freight, will be billed to the Customer.

During the one year period, parts which are faulty due to material or workmanship will be replaced or repaired free of charge only if the old part is properly identified and turned in for credit. Identify the defective part by attaching a tag containing the part name and part number. Light bulbs are not covered by the warranty.

Service parts are ordered through the Brunswick Bowling and Billiards Corporation toll free number: 1-800-937-2695. Refer to the "General Information" section of the *Bowling Service Parts Catalog* for address and order information. When ordering service parts, specify part numbers and descriptions to simplify handling. ***Use only Genuine Brunswick Replacement Parts.***

PACKAGING *For Frameworx Masking Unit***1 53-861079-000 Package, Cable, 1st to 2nd Ball Light**

Qty.	Part Number	Description
1	53-300319-000	Cable, 1st to 2nd Ball Light
6	11-603108-000	Tie Wrap, 3-5/8"

1 53-861080-000 Package, Vertical Support, Lower

Qty.	Part Number	Description
1	53-300368-000	Assembly, Support
1	53-300332-000	Support, Gusset
2	11-001273-001	Screw, Hex Head, 5-16-18 x 2-1/4"
2	11-170009-001	Nut, Locking, 5/16-18
2	11-191012-001	Washer, Plain, 5/16-18
5	11-010812-001	Screw, Hex Washer Head, Self Drilling, 1/4-20 x 3/4
2	11-070545-001	Screw, Lag, 5/16 x 2"
4	11-190552-001	Washer, 3/8" x 1-1/4"
1	53-300337-000	Clamp

1 53-861081-000 Package, Kit, End Support, (6')

Qty.	Part Number	Description
2	53-300334-000	Tube, Cross (1 lane)
4	53-300337-000	Clamp
2	53-300336-000	Bracket, Clamp
2	53-300328-000	Support, Upper
4	11-006180-007	Screw, Button Head, 1/4-20 x 5/8"
4	11-170007-001	Nut, Locking, 1/4-20
8	11-010812-001	Screw, Hex Washer Head, Self Drilling, 1/4-20 x 3/4"
2	11-082564-001	Screw, Pan Head, C.R., Tapping, #10 x 1"
2	11-112060-000	E-Z Anchor, Wall

1 53-861092-000 Package, Cross Lane Kit, (1 Lane)

Qty.	Part Number	Description
1	53-300369-000	Assembly, Z-Bar (right-hand)
1	53-300370-000	Assembly, Z-Bar (left-hand)
1	53-300373-000	Assembly, Latch
2	53-300377-002	Cable, Aircraft (57.50")
2	53-300377-001	Cable Aircraft (45")
2	53-300376-000	Spring Extension
1	53-300346-000	Channel, Cross 1 Lane
1	53-300334-000	Tube, Cross 1 Lane

2	53-300347-000	Brace
1	53-300320-000	Shield, Lamp
2	53-300372-000	Label, ON/OFF
1	53-300362-000	Lens
2	11-045310-000	S-Hook
6	11-006180-007	Screw, Button Head, 1/4-20 x 5/8"
4	11-170007-001	Nut, Locking, 1/4-20
2	11-010812-001	Screw Hex Washer Head, Self Drilling, 1/4-20 x 3/4"
4	53-300363-000	Rivet, Tree

1 53-861083-000 Package, Panel Support, Upper Graphic

Qty.	Part Number	Description
1	53-300328-000	Support, Upper
1	53-300329-000	Graphic Top, Upper
2	53-300330-000	Stand Off, Upper
1	53-300338-000	Adapter, Channel
10	111-006180-007	Screw, Button Head, 1/4-20 x 5/8"
10	11-170007-001	Nut, Locking, 1/4-20
2	11-010812-001	Screw, Hex Washer Head, Self Drilling, 1/4-20 x 3/4"

1 53-861084-000 Package, Kit, End Support (10')

Qty.	Part Number	Description
2	53-300334-000	Tube, Cross (1 lane)
4	53-300337-000	Clamp
2	53-300336-000	Bracket, Clamp
1	53-300323-000	Bracket, End, (left-hand)
1	53-300324-000	Bracket, End, (right-hand)
2	53-300350-000	Channel, End Graphic
4	11-006180-007	Screw, Button Head, 1/4-20 x 5/8"
4	11-170007-001	Nut, Locking, 1/4-20
12	11-010812-001	Screw, Hex Washer Head, Self Drilling, 1/4-20 x 3/4"
6	11-082564-001	Screw, Pan Head, C.R., Tapping, #10 x 1"
6	11-112060-000	E-Z Anchor, Wall
8	53-300277-000	U-Channel - Long
6	53-300278-000	U-Channel - Short
16	11-900075-000	Black Vinyl Tape (9/16 x 2-1/2")

1 53-861085-000 Package, Channel, Upper Graphic, (1 Lane)

Qty.	Part Number	Description
1	53-300348-000	Channel, Upper Graphic (1 lane)

1 53-861086-000 Package, Channel, Upper Graphic, (2 Lanes)

Qty.	Part Number	Description
1	53-300340-000	Channel, Upper Graphic (2 lanes)

1 53-861093-000 Package, Kit, Cross Lane, (Lane Pair)

Qty.	Part Number	Description
1	53-300369-000	Assembly, Z-Bar (right-hand)
1	53-300370-000	Assembly, Z-Bar (left-hand)
2	53-300377-003	Cable, Aircraft (60")
2	53-300377-004	Cable, Aircraft (103.25")
2	53-300376-000	Spring Extension
1	53-300327-000	Channel, Cross 2 Lane
1	53-300335-000	Tube, Cross 2 Lane
2	53-300347-000	Brace
2	53-300320-000	Shield, Lamp
2	53-300372-000	Label, ON/OFF
2	53-300362-000	Lens
2	11-045310-000	S-Hook
6	11-006180-007	Screw, Button Head, 1/4-20 x 5/8"
6	11-170007-001	Nut, Locking, 1/4-20
2	11-010812-001	Screw, Hex Washer Head, Self Drilling, 1/4-20 x 3/4"
8	53-300363-000	Rivet, Tree
1	53-300373-000	Assembly, Latch

1 53-861088-000 Package, Kit, Lane Break, (6')

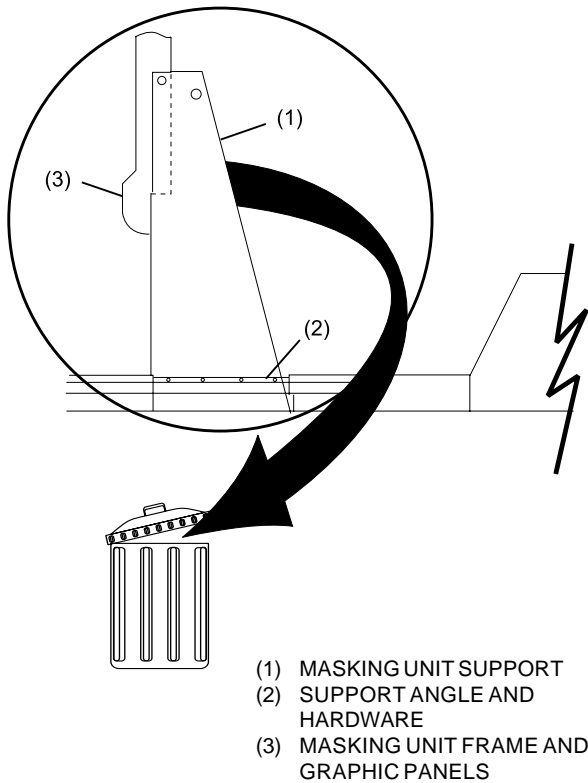
Qty.	Part Number	Description
1	53-300348-000	Channel, Upper Graphic, (1 lane)
1	53-300334-000	Tube, Cross, (1 lane)
2	53-300329-000	Top, Upper Graphic
4	11-006180-007	Screw, Button Head, 1/4-20 x 5/8"
4	11-170007-001	Nut, Locking, Nylon, 1/4-20
8	11-010812-001	Screw, Hex Washer Head, Self Drilling, 1/4-20

1 53-861089-000 Package, Kit, Lane Break, (10')

Qty.	Part Number	Description
2	53-300348-000	Channel, Upper Graphic, (1 Lane)
1	53-300334-000	Tube, Cross, (1 lane)
2	53-300329-000	Top, Upper Graphic
4	11-006180-007	Screw, Button Head, 1/4-20 x 5/8"
4	11-170007-001	Nut, Locking, Nylon, 1/4-20
8	11-010812-001	Screw, Hex Washer Head, Self Drilling, 1/4-20 x 3/4"

STEP 1 Preparation

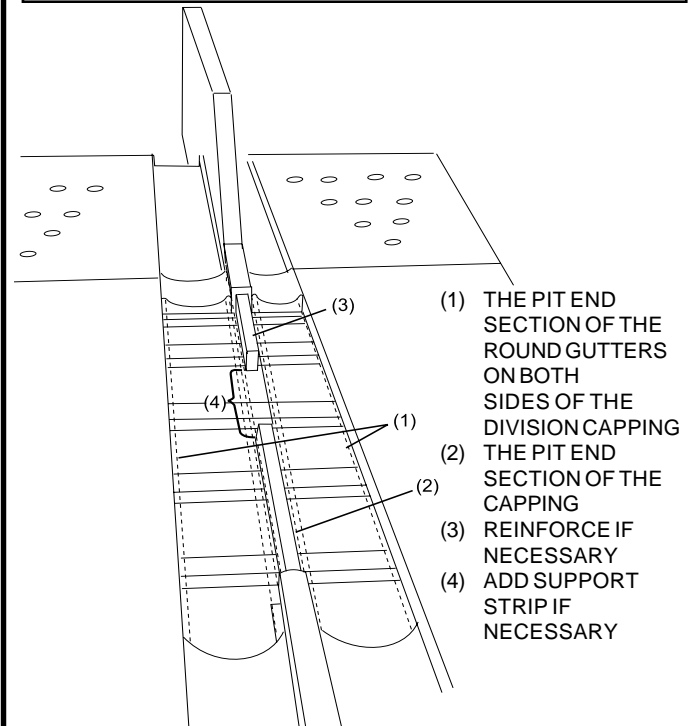
Remove and discard items (1), (2), and (3).



- (1) MASKING UNIT SUPPORT
- (2) SUPPORT ANGLE AND HARDWARE
- (3) MASKING UNIT FRAME AND GRAPHIC PANELS

STEP 2 Preparation

Remove and retain items (1) and (2). Reinforce item (3) if gusset is to be mounted to it. See Step 3. Add piece of capping support if gusset is to be mounted in area (4). See Step 3.

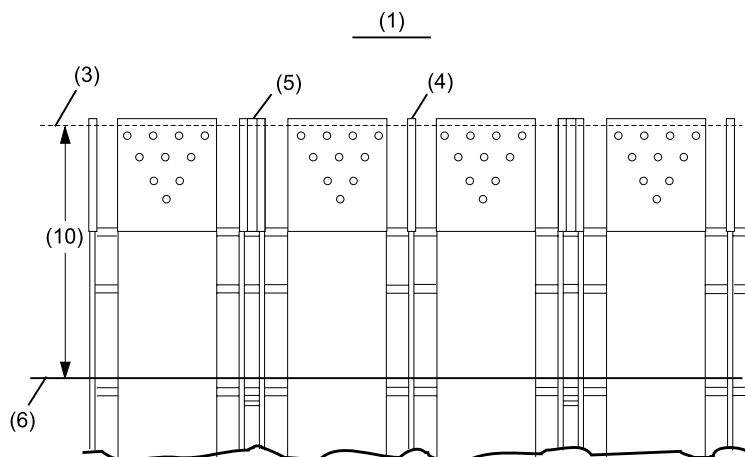


- (1) THE PIT END SECTION OF THE ROUND GUTTERS ON BOTH SIDES OF THE DIVISION CAPPING
- (2) THE PIT END SECTION OF THE CAPPING
- (3) REINFORCE IF NECESSARY
- (4) ADD SUPPORT STRIP IF NECESSARY

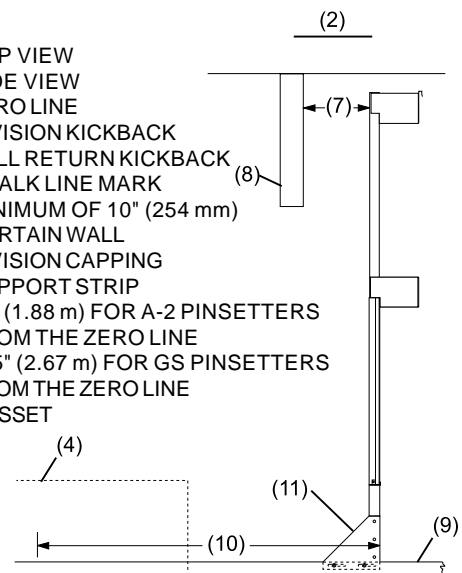
i NOTE: Steps 1 and 2 are for existing centers only

STEP 3 Mark Gusset Locations

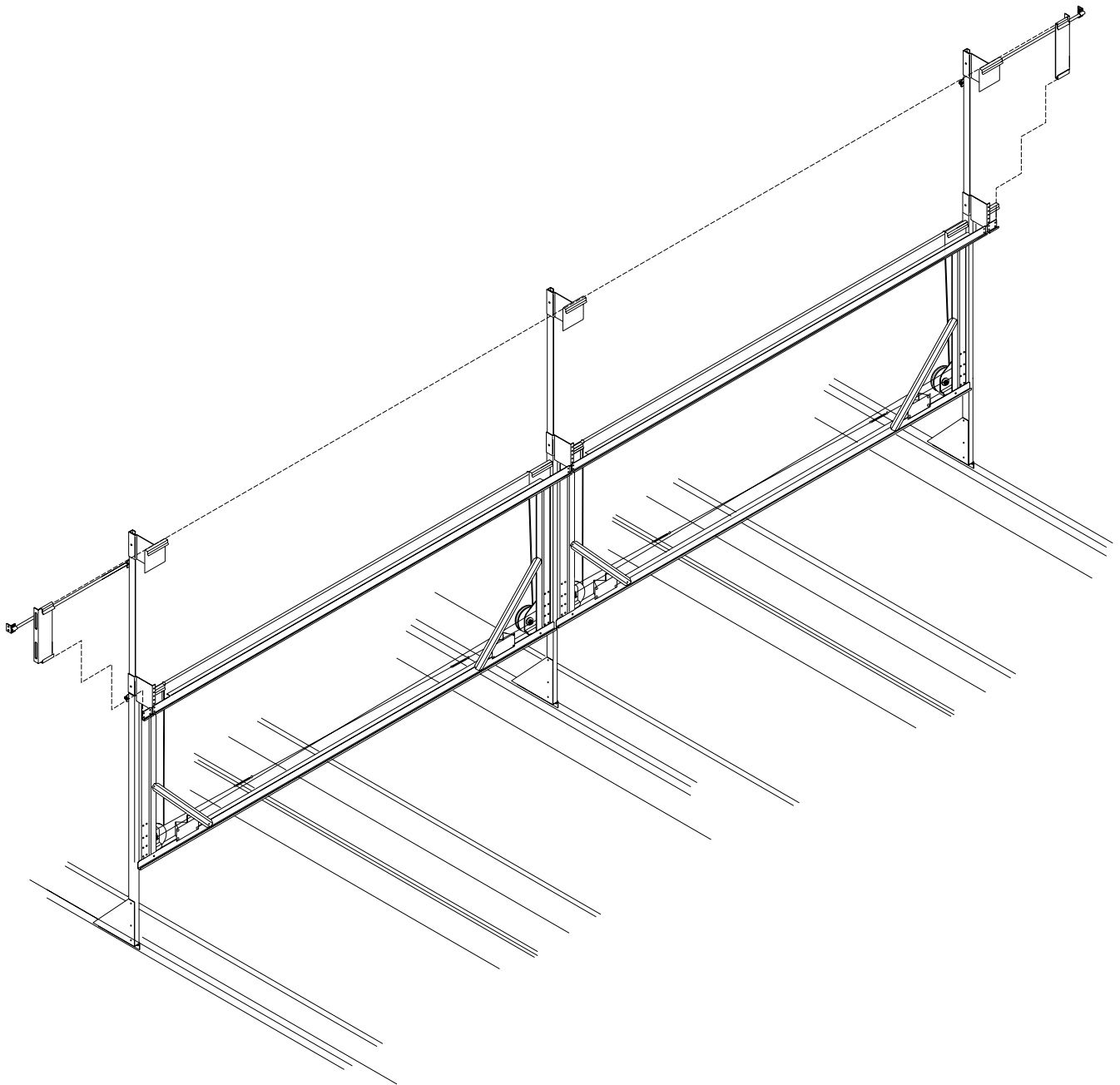
To determine gusset locations mark the division support strips by snapping a chalk line per item (10).



- (1) TOP VIEW
- (2) SIDE VIEW
- (3) ZERO LINE
- (4) DIVISION KICKBACK
- (5) BALL RETURN KICKBACK
- (6) CHALK LINE MARK
- (7) MINIMUM OF 10" (254 mm)
- (8) CURTAIN WALL
- (9) DIVISION CAPPING SUPPORT STRIP
- (10) 74" (1.88 m) FOR A-2 PINSETTERS FROM THE ZERO LINE
105" (2.67 m) FOR GS PINSETTERS FROM THE ZERO LINE
- (11) GUSSET

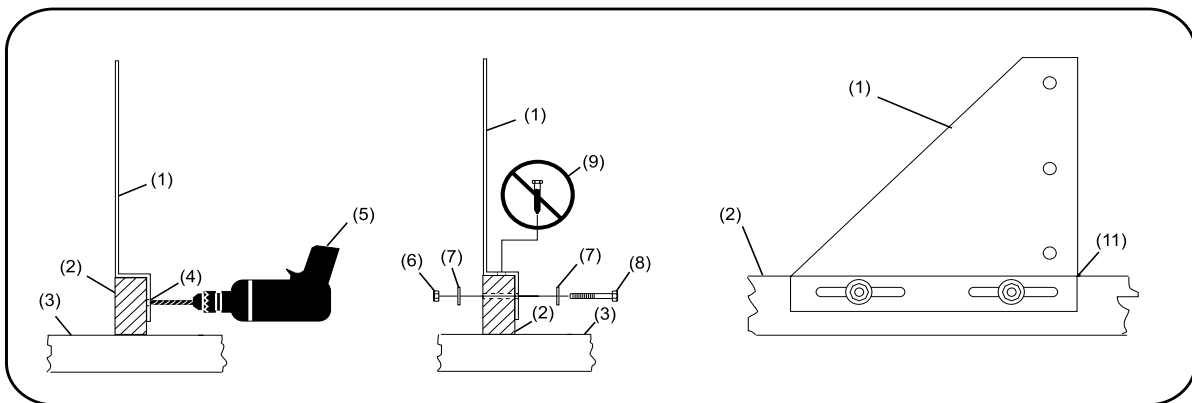
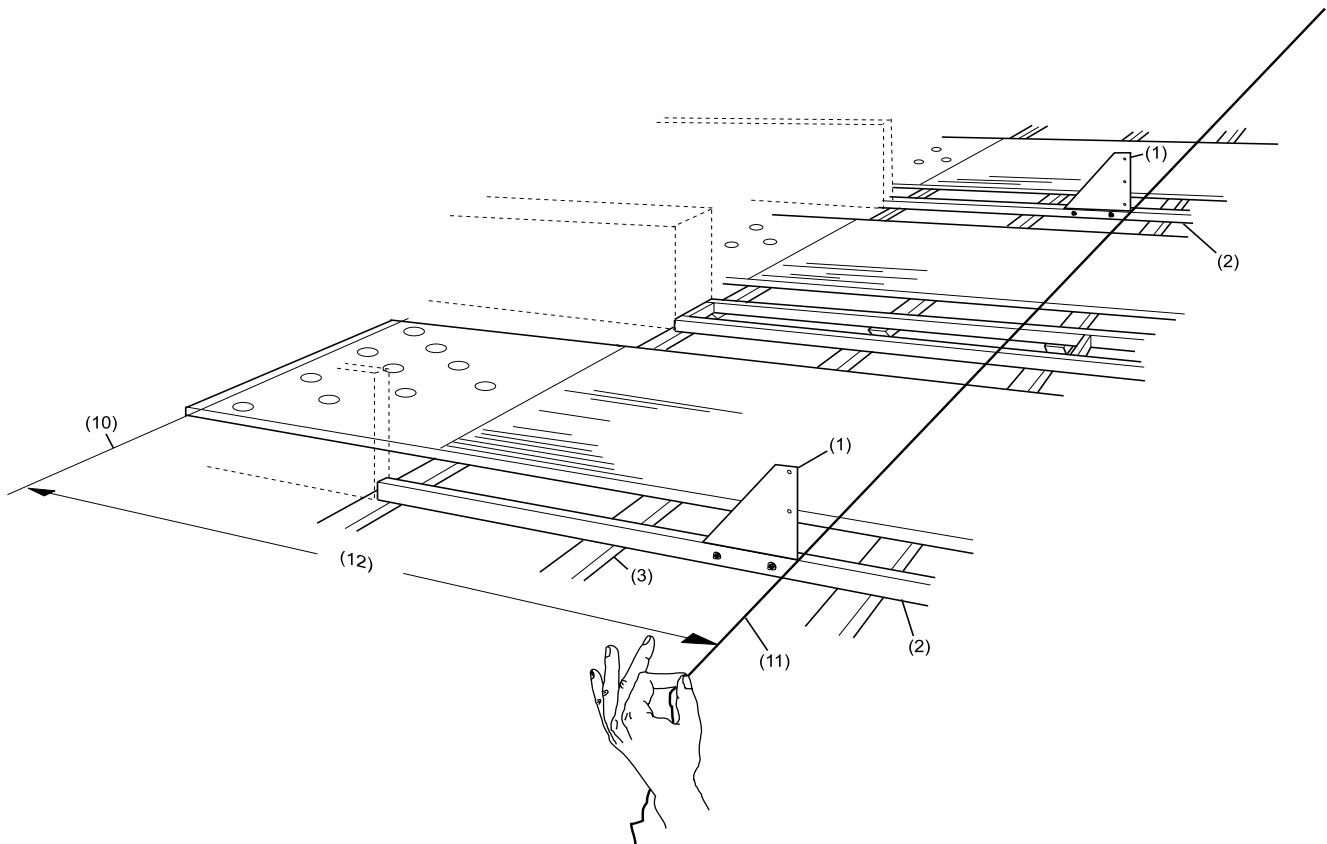


Completed Assembly of a Framework Masking Unit
Two Single lane pairs shown.



STEP 4 *Install Gussets*

Position mounting gussets on snapped chalk line. Drill hole through division capping support using gusset as a template and secure gusset with hardware provided.



(1) GUSSET
 (4) DRILL USING GUSSET AS TEMPLATE
 (5) DRILL
 (7) WASHER 3/8" X 1-1/4"

(2) DIVISION CAPPING SUPPORT
 (6) 5/16-18, LOCKNUT
 (8) 5/16-18 X 2-1/4" HEX HEAD SCREW

(3) I-JOIST
 (9) DO NOT INSTALL LAG SCREW UNTIL END OF INSTALLATION
 (11) CHALK LINE MARK
 (12) 74" (1.88 m) FOR A-2 PINSETTERS FROM THE ZERO LINE 105" (2.67 m) FOR GS PINSETTERS FROM THE ZERO LINE

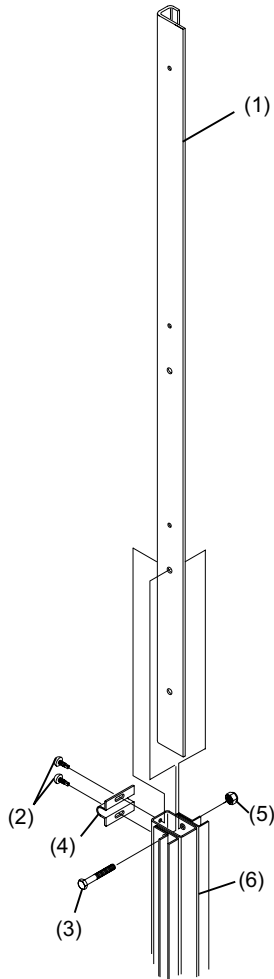
(10) ZERO LINE

(11) CHALK LINE MARK

STEP 5 *Secure Upper Support to Support Assembly*

It will be necessary to partially disassemble the support assembly to attach the upper support.

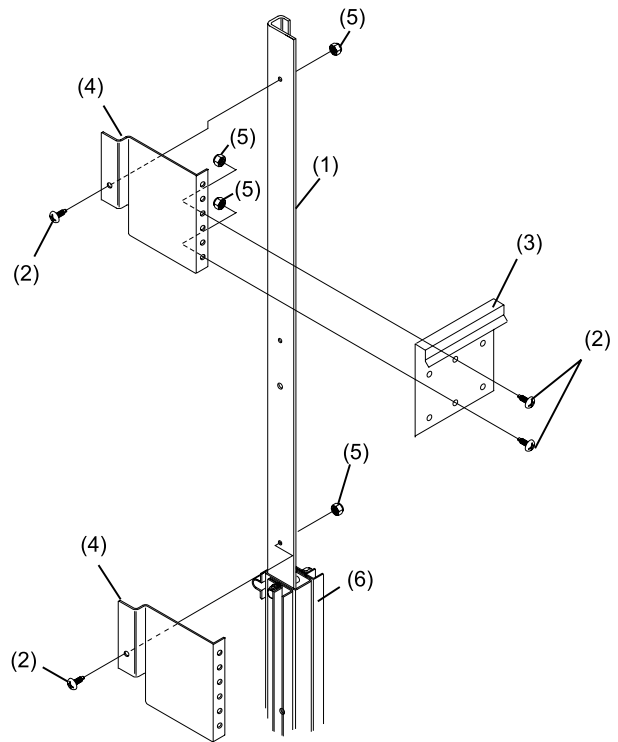
i **IMPORTANT:** *This assembly must be complete before attaching to gusset because ceiling height could obstruct assembly.*



- (1) UPPER SUPPORT
- (2) 1/4-20 HEX HEAD SELF TAPPING
- (3) 1/4-20 X 2" HEX HEAD CAP SCREW
- (4) CROSS TUBE CLAMP
- (5) 1/4-20 LOCKNUT
- (6) SUPPORT ASSEMBLY

STEP 6 *Secure Upper Graphic Panel Standoffs and Supports to Support Assembly*

Position graphic support standoffs making sure the notched standoff is in the lower position. Attach graphic panel standoffs and supports with provided hardware.

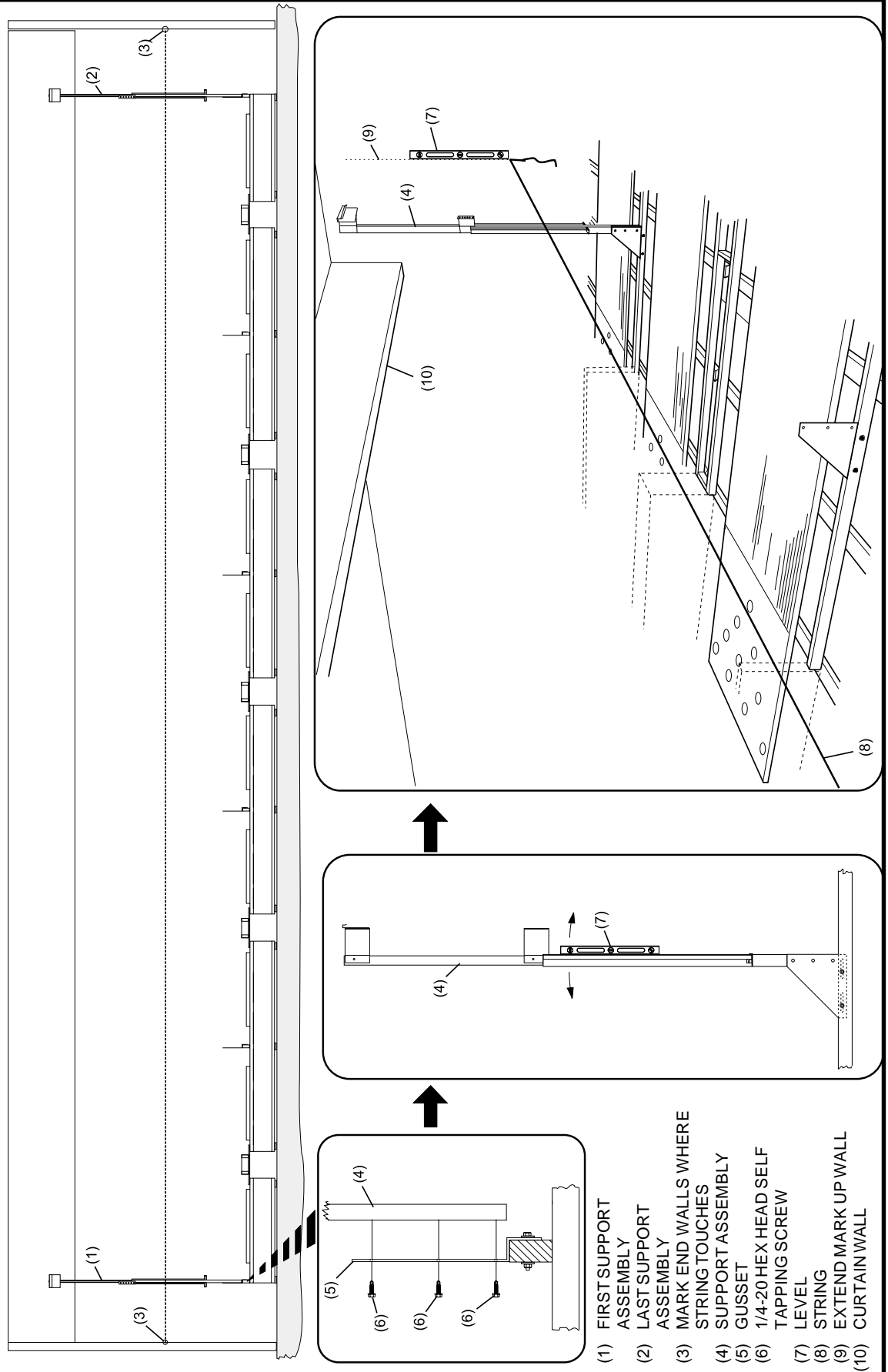


- (1) UPPER SUPPORT
- (2) 1/4-20 BUTTON HEAD C.R. SCREW
- (3) UPPER GRAPHIC PANEL SUPPORT
- (4) UPPER GRAPHIC STANDOFF
- (5) 1/4-20 LOCKNUT
- (6) SUPPORT ASSEMBLY

STEP 7

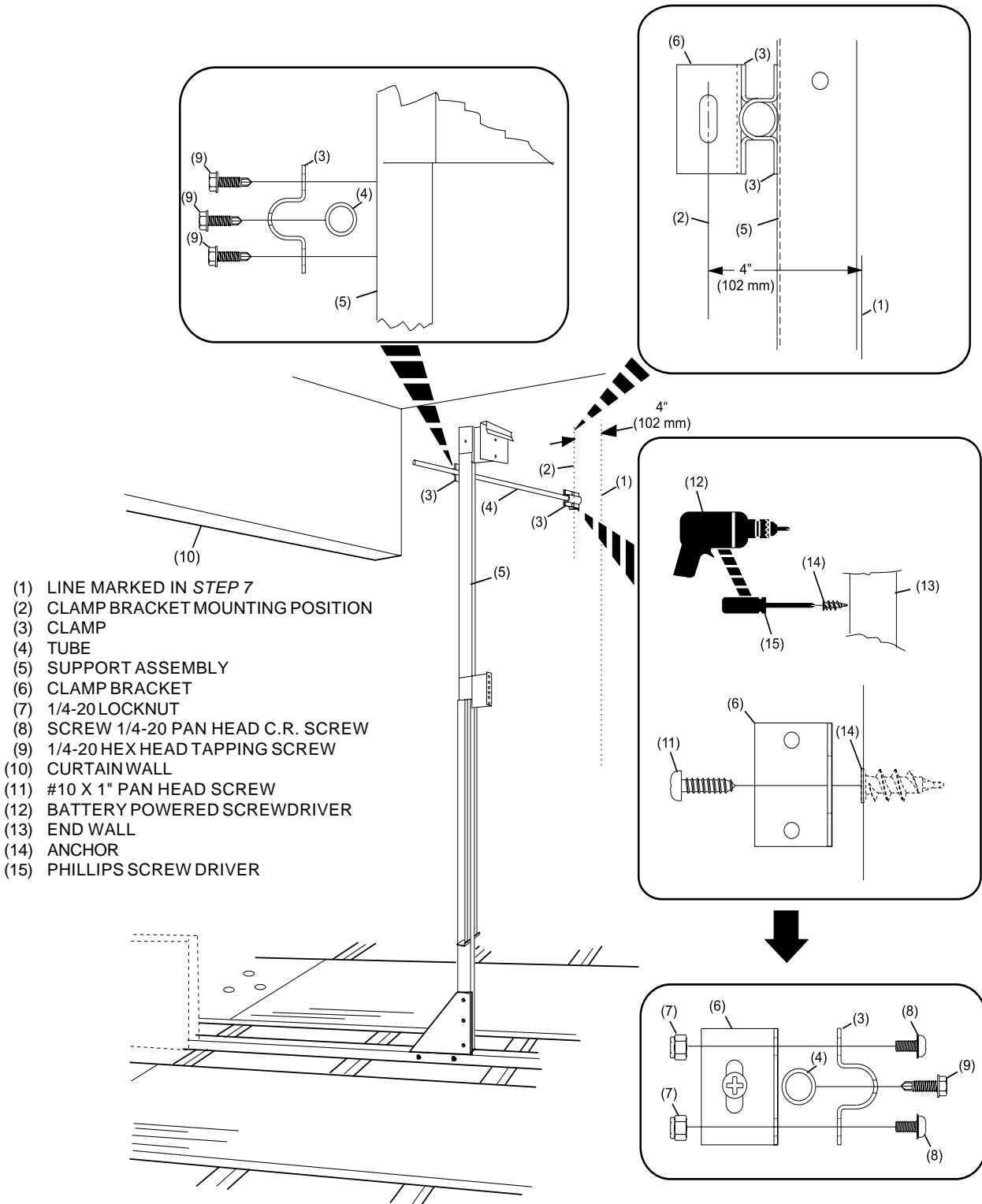
Install First Lane and Last Lane Support Assemblies

Position support assemblies on the mounting gussets with hardware provided. Make plumb and tighten. Stretch a line from left end wall to right end wall so it just touches the face of the plumbed support assemblies. Mark end walls where string meets them and extend vertically plumbed line up wall to position of end wall support mounting bracket.



STEP 8 *Mount Left-Hand and Right-Hand End Wall Kits*

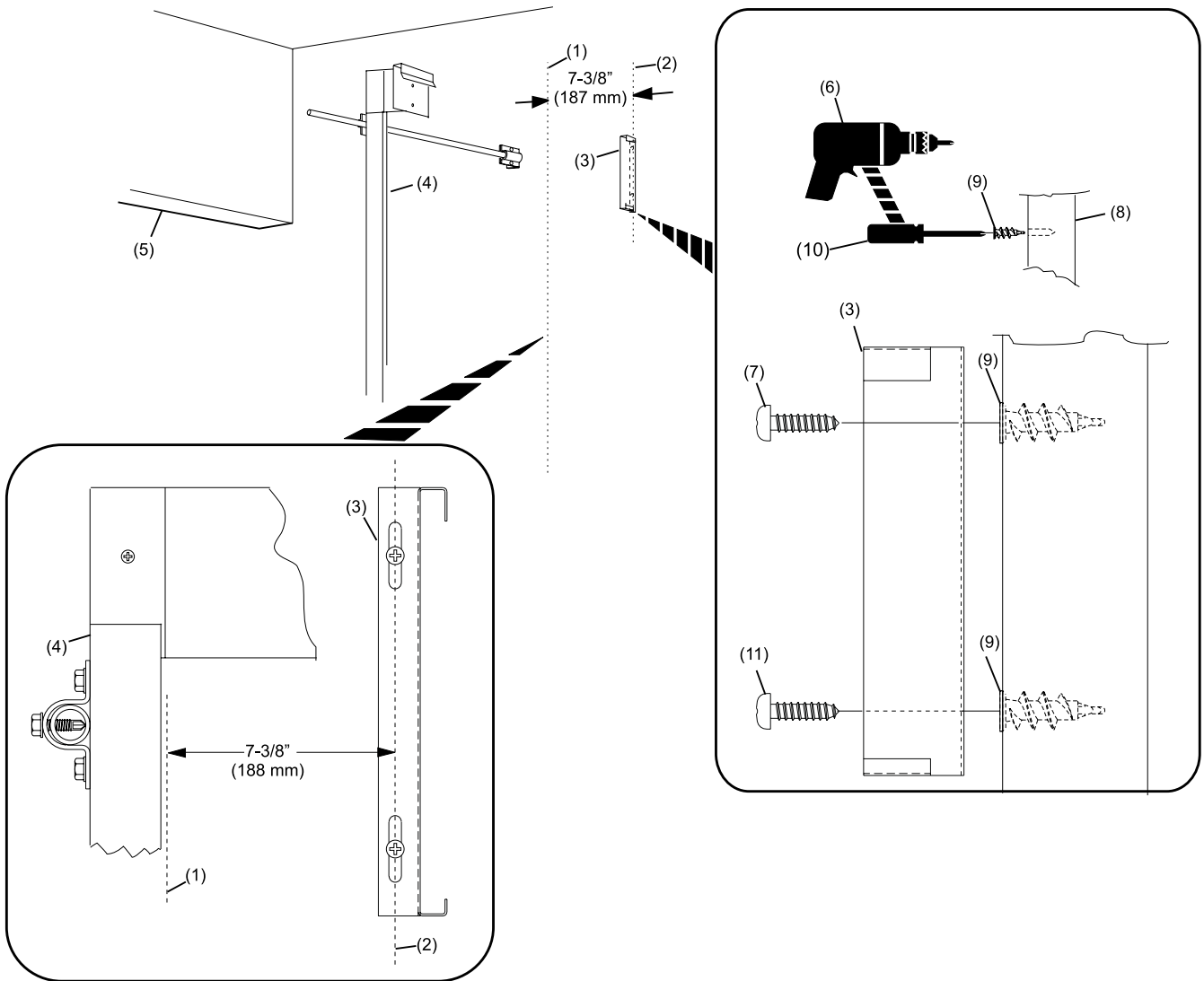
Attach horizontal tubing from end wall bracket to first and last vertical support assembly. Tighten tube clamps.



- (1) LINE MARKED IN STEP 7
- (2) CLAMP BRACKET MOUNTING POSITION
- (3) CLAMP
- (4) TUBE
- (5) SUPPORT ASSEMBLY
- (6) CLAMP BRACKET
- (7) 1/4-20 LOCKNUT
- (8) SCREW 1/4-20 PAN HEAD C.R. SCREW
- (9) 1/4-20 HEX HEAD TAPPING SCREW
- (10) CURTAIN WALL
- (11) #10 X 1" PAN HEAD SCREW
- (12) BATTERY POWERED SCREWDRIVER
- (13) END WALL
- (14) ANCHOR
- (15) PHILLIPS SCREW DRIVER

STEP 9 *Mount Left-Hand and Right-Hand End Wall Kits Continued...*

Attach end graphic bracket with provided hardware.



(1) LINE MARKED IN STEP 7

(2) MARK A LINE 7.375 (187 mm)
FROM REFERENCE LINE
TOWARD FOULLINE

(3) END GRAPHIC BRACKET

(4) SUPPORT ASSEMBLY

(5) CURTAIN WALL

(6) BATTERY POWERED
SCREWDRIVER

(7) #10 X 1" PAN HEAD SCREW

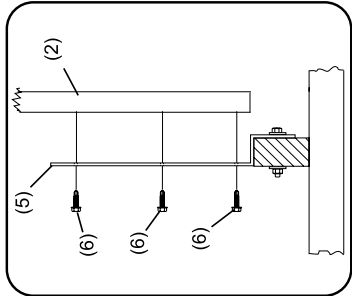
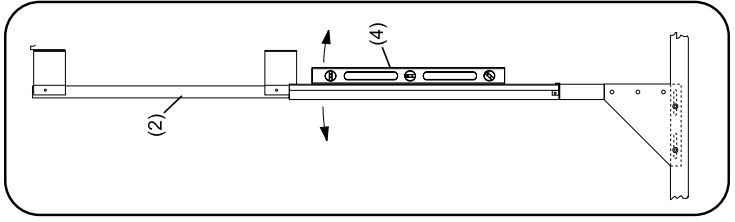
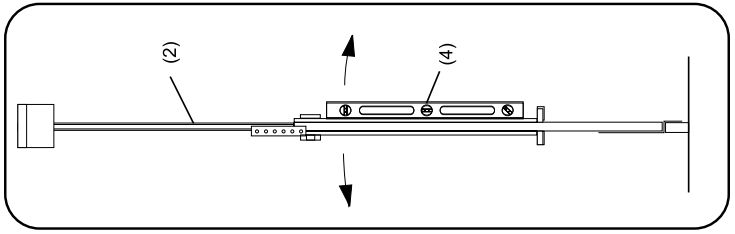
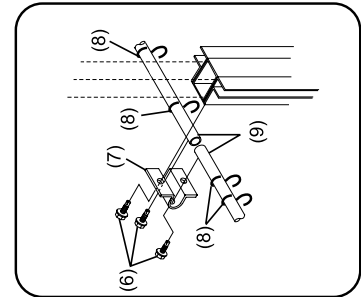
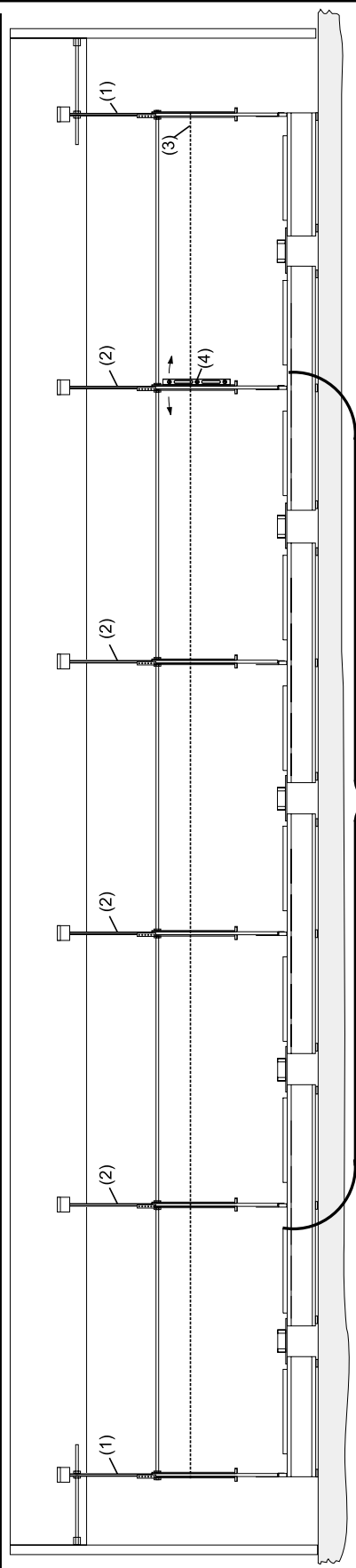
(8) END WALL

(9) ANCHOR

(10) PHILLIPS SCREWDRIVER

STEP 10 *Install Intermediate Support Assemblies*

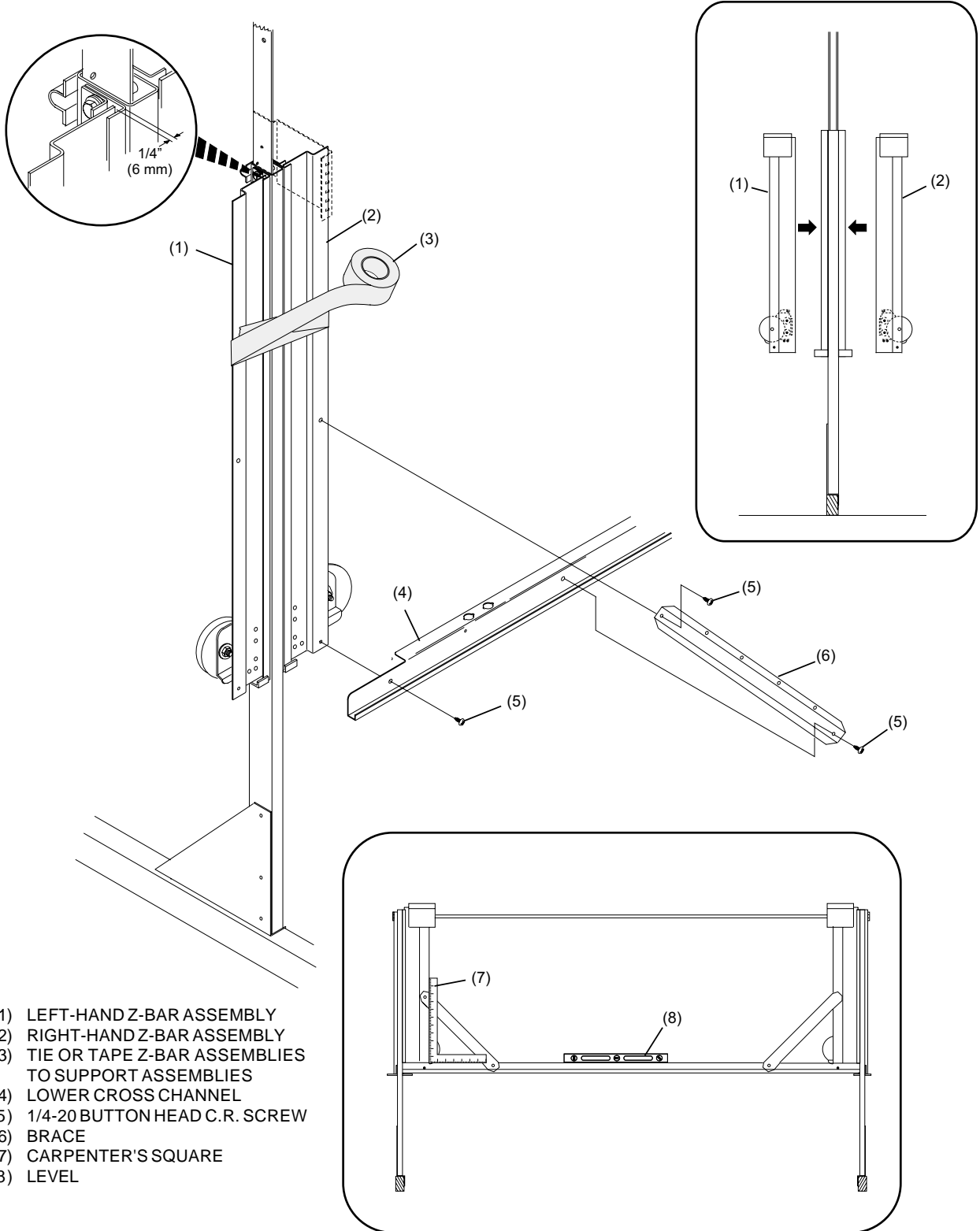
Stretch string between installed end support assemblies and position intermediate support assemblies and position intermediate tubing with provided gussets with hardware provided. Make plumb to string and tighten. Install cross support tubing with provided hardware.



- (1) PREVIOUSLY INSTALLED END SUPPORT ASSEMBLIES
- (2) INTERMEDIATE SUPPORT ASSEMBLY
- (3) TIE STRING FROM LEFT-HAND END SUPPORT TO RIGHT-HAND END SUPPORT ASSEMBLY
- (4) LEVEL
- (5) GUSSET
- (6) 1/4"-20 HEX HEAD TAPPING SCREW
- (7) CLAMP
- (8) PLACE TWO "S" HOOK ON CROSS TUBES BEFORE SECURING
- (9) CROSS TUBE

STEP 11 *Install Z-Bar and Cross Channel*

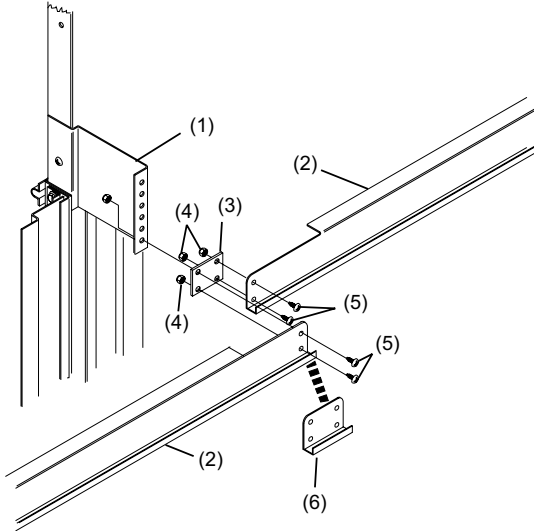
Tie or tape Z-bar assemblies to support assemblies secure cross channel to Z-bar with provided hardware. Check for level, squareness and maintain 1/4" spacing between Z-bar assemblies. Illustration is as viewed from pinsetter.



- (1) LEFT-HAND Z-BAR ASSEMBLY
- (2) RIGHT-HAND Z-BAR ASSEMBLY
- (3) TIE OR TAPE Z-BAR ASSEMBLIES TO SUPPORT ASSEMBLIES
- (4) LOWER CROSS CHANNEL
- (5) 1/4-20 BUTTON HEAD C.R. SCREW
- (6) BRACE
- (7) CARPENTER'S SQUARE
- (8) LEVEL

STEP 12 *Install Upper Cross Channel*

Install upper cross channels with hardware provided.



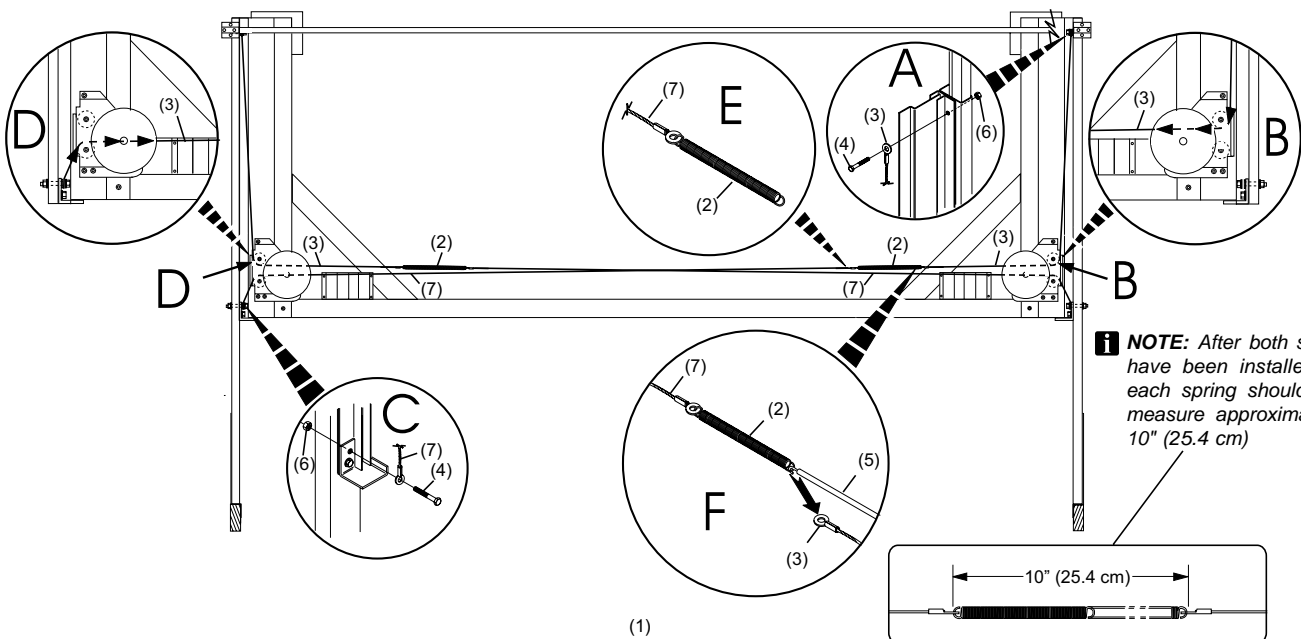
- (1) UPPER STANDOFF
- (2) SUPPORT ANGLE AND HARDWARE
- (3) CHANNEL ADAPTER
- (4) 1/4-20 LOCKNUT
- (5) 1/4-20 BUTTON HEAD C.R. SCREW
- (6) END GRAPHIC CHANNEL - USE ON FIRST AND LAST SUPPORT ASSEMBLY ONLY

STEP 13 *Install Long and Short Pulley Cables and Tension Springs*

Follow steps "A" - "F" to install long and short pulley cables, and springs. (A) Start with short cable and using provided hardware, connect short cable to upper anchor point. (B) Route short cable through pulley area. (C) Connect long cable to lower anchor point. (D) Route long cable through pulley area. (E) Connect loose end of Long cable to spring. (F) Holding Short cable in hand stretch SPRING with spring tool and connect the short cable to it.

i **IMPORTANT!** Do not stretch spring by hand.

Repeat to install opposite side cables and spring.

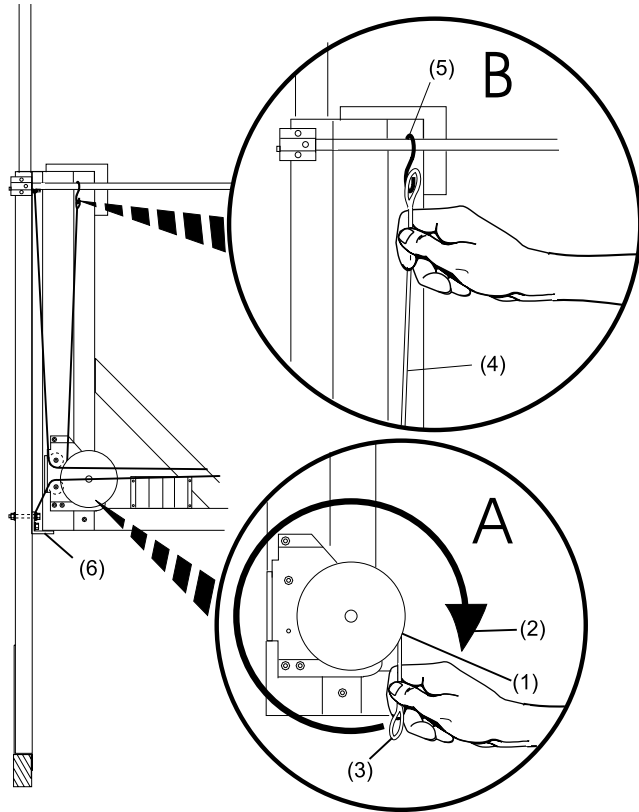


i **NOTE:** After both springs have been installed, each spring should measure approximately 10" (25.4 cm)

- (1) VIEW FROM PINSETTER
- (2) SPRING
- (3) SHORT CABLE
- (4) 1/4-20 X 2" HEX HEAD CAP SCREW
- (5) SPRING TOOL
- (6) 1/4-20 LOCKNUT
- (7) LONG CABLE

STEP 14 *Spring Load Cord Wheel*

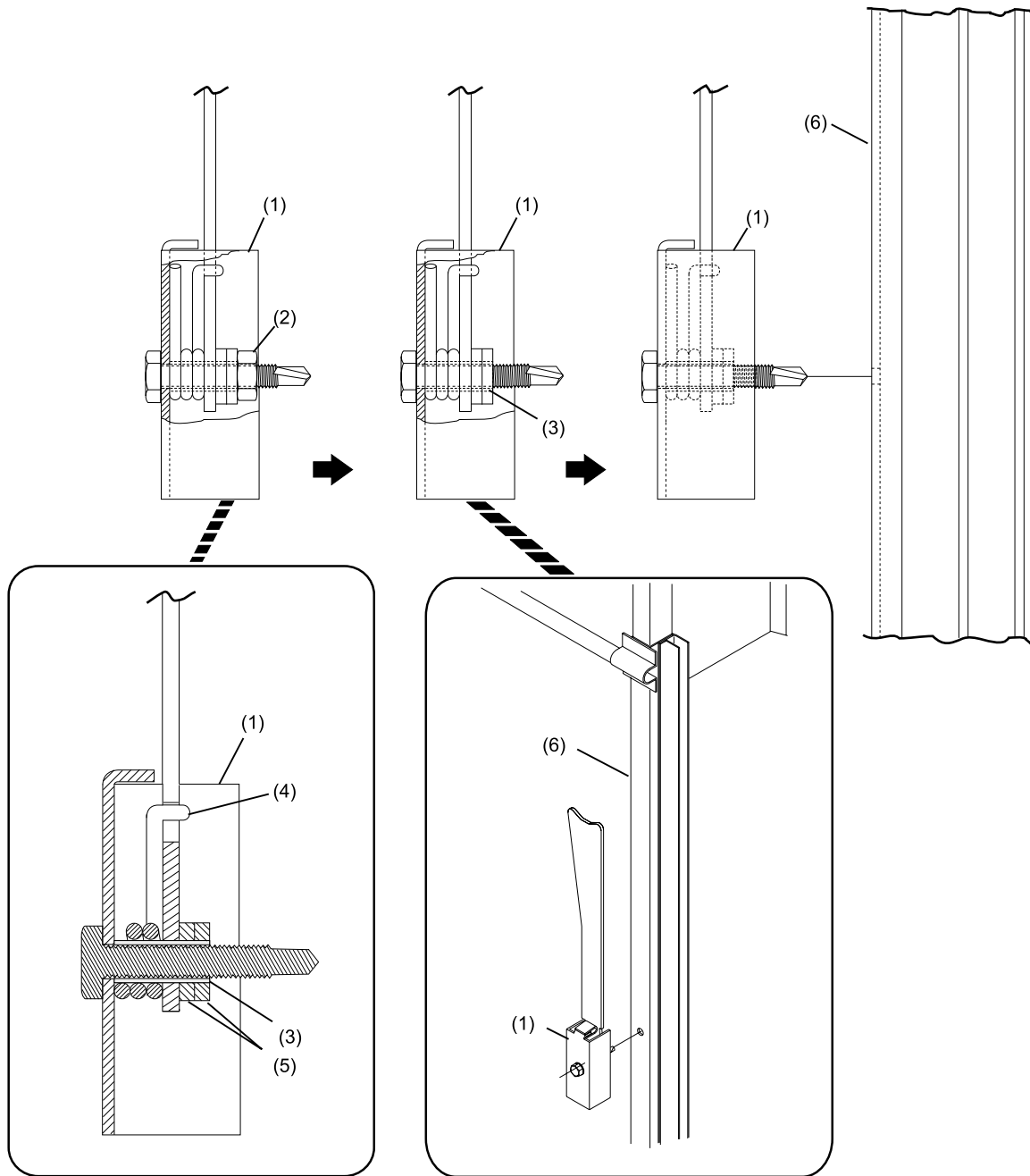
Grasp cord and turn cord wheel 5-6 revolutions. Stretch cord upward and attach to "S" hook.



- (1) CORD REEL ASSEMBLY
- (2) WIND WHEEL 5-6 TIMES CLOCK WISE
- (3) GRASP CORD TO WIND
- (4) CORD
- (5) "S" HOOK
- (6) STOP BRACKET

STEP 15 *Install Latch*

Remove shipping nut. Make sure spacer sleeve is in position. Secure latch assembly to support Assembly.



(1) LATCH ASSEMBLY

(4) SPRING

(2) REMOVE AND DISCARD SHIPPING NUT

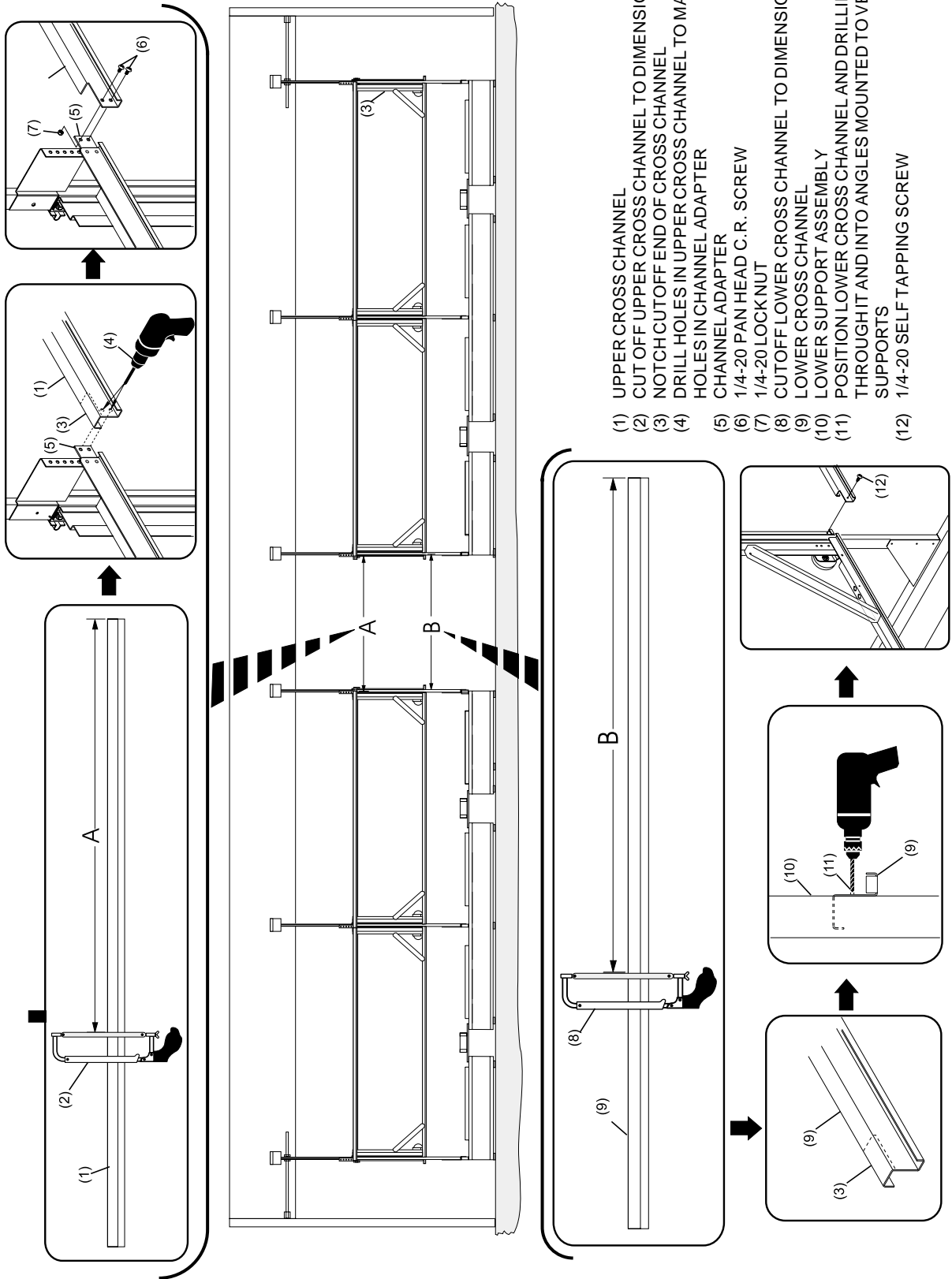
(5) WASHERS

(3) MAKE SURE SLEEVE IS INSIDE SPRING, LATCH LEVER, AND WASHERS

(6) SUPPORT ASSEMBLY

STEP 16 Cross Channel Installation For Lane Breaks

Measure "A" and "B". Cutoff cross channels to dimensions "A" and "B". Notch cutoff ends. Drill appropriate holes and secure with hardware provided.

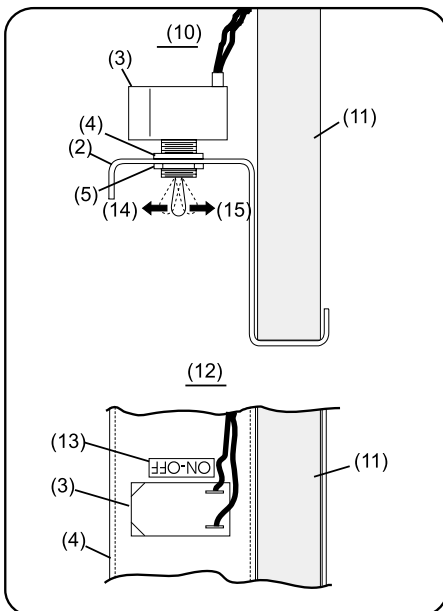
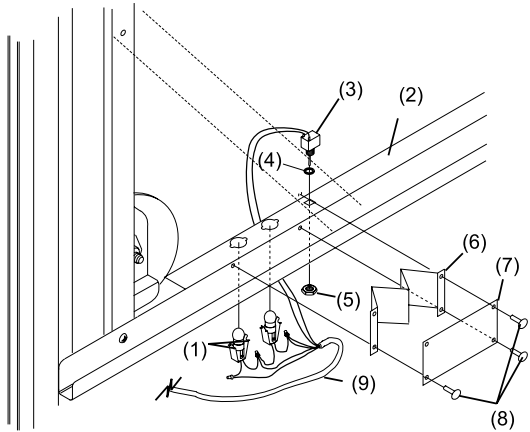


- (1) UPPER CROSS CHANNEL
- (2) CUT OFF UPPER CROSS CHANNEL TO DIMENSION "A"
- (3) NOTCH CUTOFF END OF CROSS CHANNEL
- (4) DRILL HOLES IN UPPER CROSS CHANNEL TO MATCH HOLES IN CHANNEL ADAPTER
- (5) CHANNEL ADAPTER
- (6) 1/4-20 PAN HEAD C.R. SCREW
- (7) CUTOFF LOWER CROSS CHANNEL TO DIMENSION "B"
- (8) LOWER CROSS CHANNEL
- (9) LOWER SUPPORT ASSEMBLY
- (10) POSITION LOWER CROSS CHANNEL AND DRILLING THROUGH IT AND INTO ANGLES MOUNTED TO VERTICAL SUPPORTS
- (12) 1/4-20 SELF TAPPING SCREW

STEP 17 Install Ball Lights

Squeeze flange on light socket and insert into hole in cross channel. Thread round nut halfway on toggle switch then insert into hole in cross channel, secure with thin nut. Position lens over baffle and secure to cross tube with tree rivet. Check switch for position and install "On-Off" decal. Route cable to pinsetter.

i IMPORTANT! On Masking Units installed with GS-X or GS-CPO pinsetters with Nexgen electronics, the ON/OFF switch should not be installed. Cut wires and discard switch.

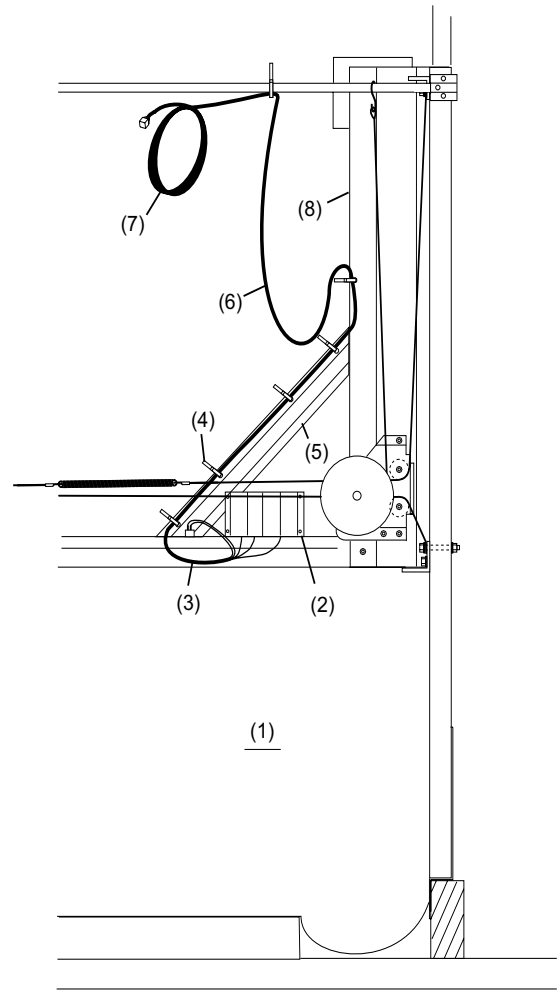


- | | |
|-------------------------|--------------------|
| (1) LIGHT SOCKET FLANGE | (9) LIGHT ASSEMBLY |
| (2) CROSS CHANNEL | (10) SIDE VIEW |
| (3) TOGGLE SWITCH | (11) GRAPHIC PANEL |
| (4) ROUNDNUT | (12) TOP VIEW |
| (5) THINNUT | (13) LABEL |
| (6) BAFFLE | (14) OFF |
| (7) LENS | (15) ON |
| (8) TREE RIVET | |

STEP 18 Route Ball Light Cable

Use the four holes in the brace to secure the light cable with cable ties. Use one hole in Z-bar to secure cable. Secure cable to cross tube with one cable tie, making sure to leave a 20" (508 mm) service loop. Route cable the rest of the way to pinsetter as needed.

i NOTE: Make sure enough cable is left in the service loop to accommodate the upward travel of Z-bar assembly.

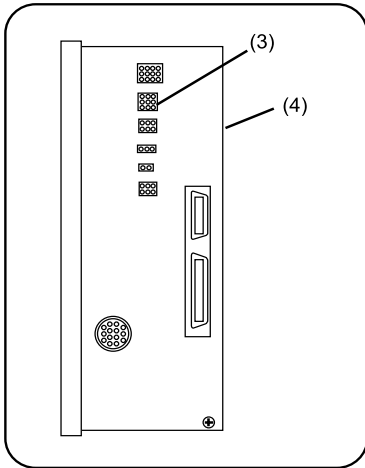


- | |
|--|
| (1) VIEW FROM BACK OF MASKING UNIT |
| (2) LAMPHOUSING |
| (3) LIGHT CABLE |
| (4) CABLE TIE |
| (5) BRACE |
| (6) 20" (508 mm) SERVICE LOOP |
| (7) ROUTE REMAINDER OF CABLE TO PINSETTER ELECTRICAL BOX AS NEEDED |

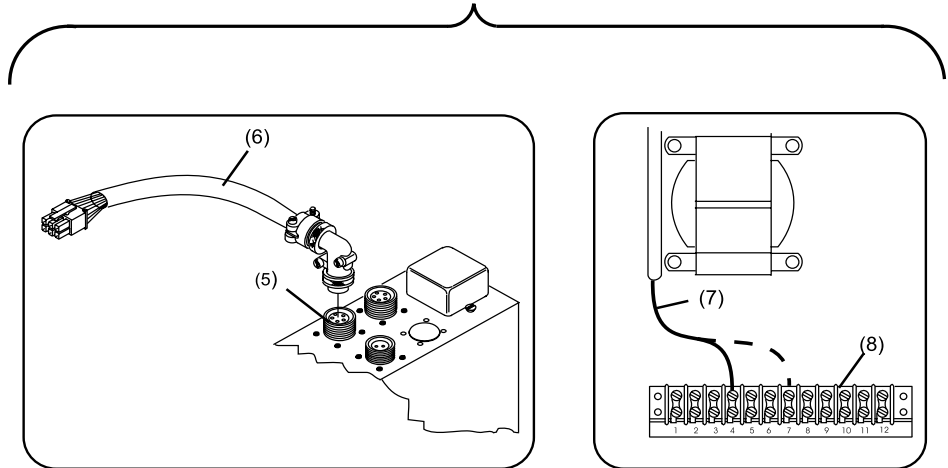
STEP 19 *Connect Light Cable to Pinsetter*

Terminate connection at GS electronics box or A-2 controller box depending upon pinsetter type.

(1)
"GS" PINSETTERS



(2)
"A" or "A-2" PINSETTERS

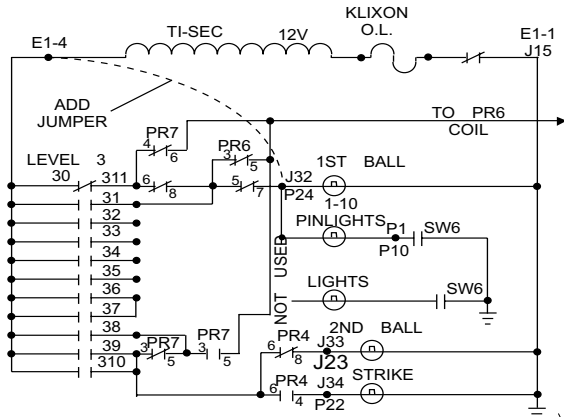


- (1) "GS" PINSETTERS (UNIVERSAL SILVER BOX PICTURED)
- (2) "A" OR "A2" PINSETTERS
- (3) P7-HV MASKING UNIT OR P2/P22 ON NEXGEN ELECTRONICS BOX
- (4) HIGH VOLTAGE BOX OR NEXGEN ELECTRONICS BOX
- (5) CN5 (5 POSITION)
- (6) ADAPTER CABLE (PART NUMBER 53-860586-000)
- (7) MOVE WIRE NUMBER 43
- (8) LOW VOLTAGE TERMINAL STRIP

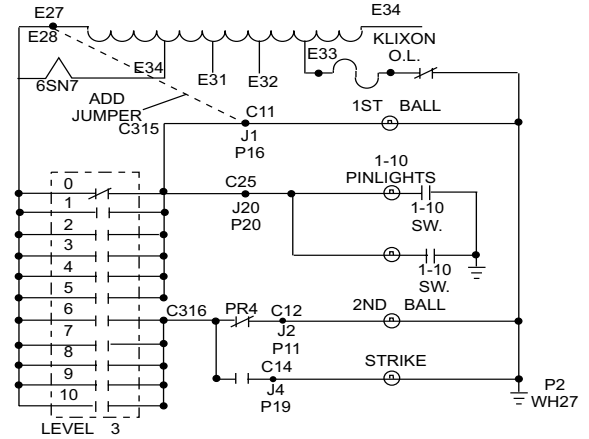
AMF INSTALLATIONS *Make Electrical Connections (AMF)*

First ball light must always be on.

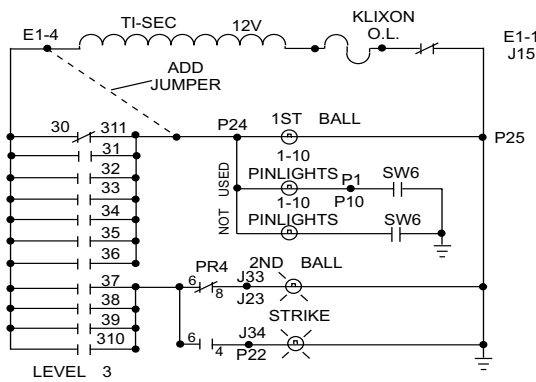
82-30 Forward Chassis (earlier type)



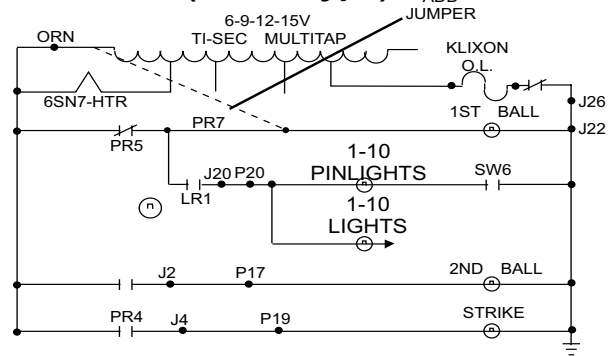
82-30 4400 Series Stepper Chassis



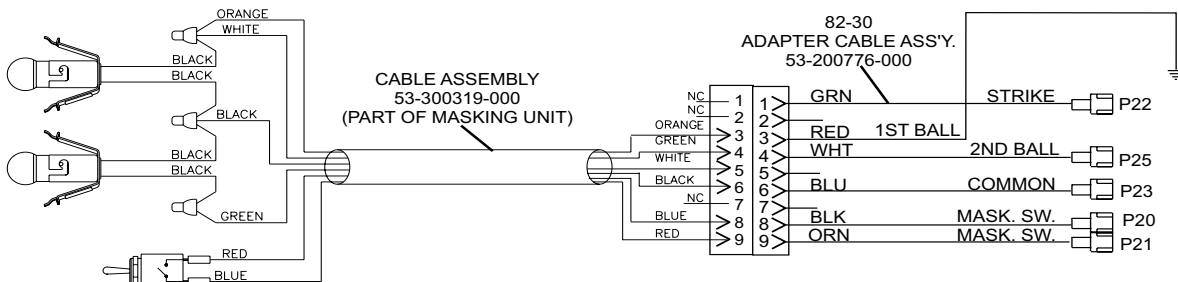
82-30 Rear Chassis



82-30 4400 Series Latching Relay (oldest type)



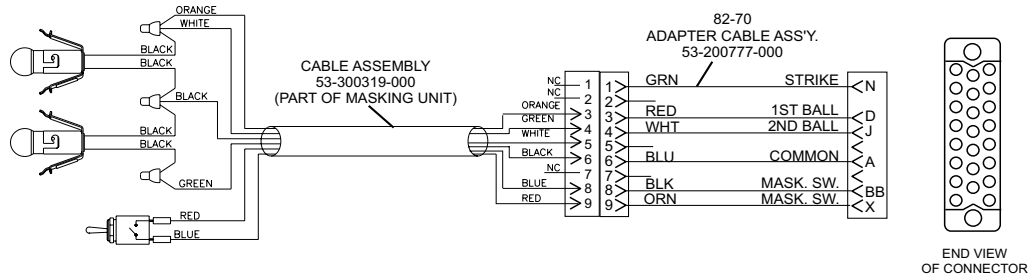
82-30 Adapter Cable



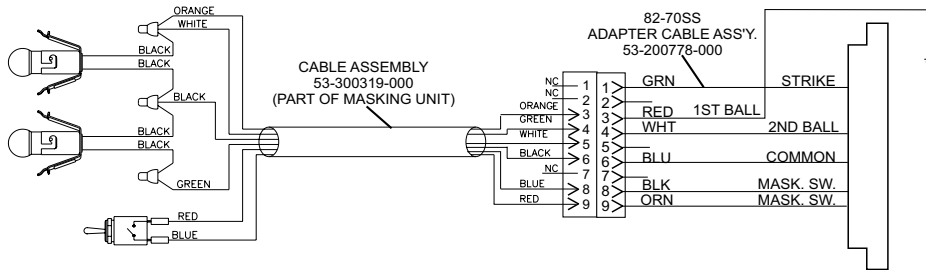
AMF INSTALLATIONS *Make Electrical Connections (AMF)*

First ball light must always be on.

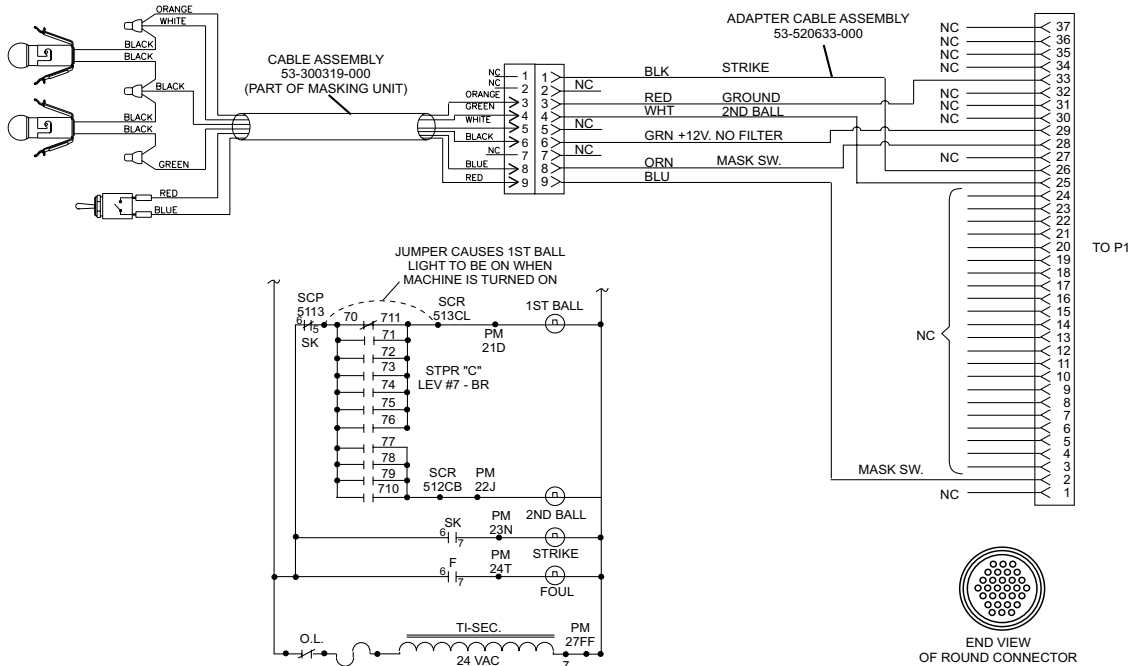
82-70 Adapter Cable



82-70 SS Cable Assembly

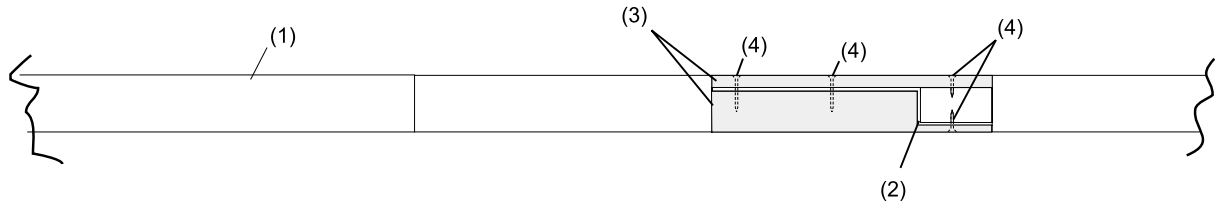


82-70 MP/82-70 SS W/Round Masking Unit Plug



STEP 21 *Reinstall old gutter and capping*

A piece of wood capping must be cut to fit around gusset to prevent ball damage. Refer to Figure Below. Similar procedure is necessary for metal capping.

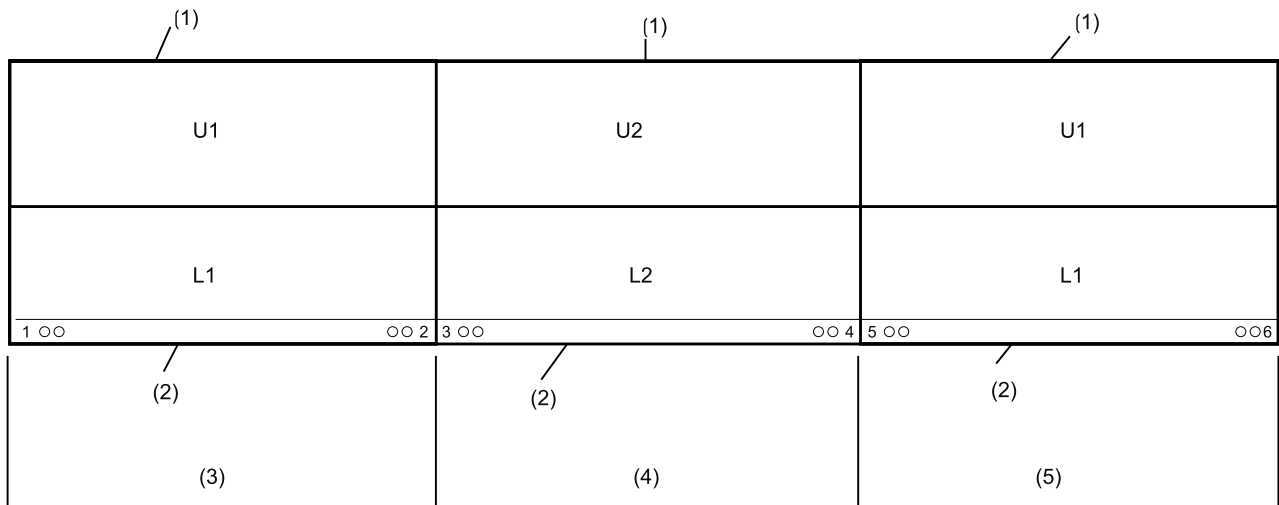


- (1) KICKBACK
- (2) GUSSET
- (3) CUT CAPPING PIECES
- (4) SCREWS PROVIDED BY CUSTOMER
PREDRILL THROUGH GUSSET
WHERE NECESSARY

STEP 22 *Graphic Lane Panel Locations*

Reference panel codes.

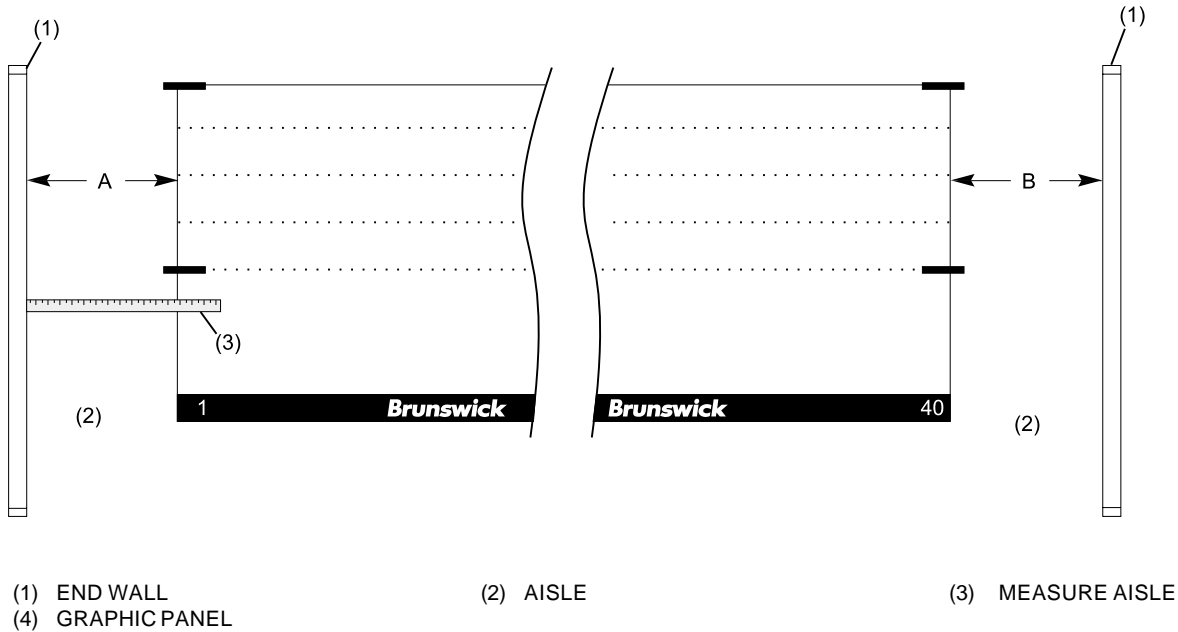
i **NOTE:** Some graphic scenes are contained entirely on one panel while others require two panels to complete a scene. Care must be taken to properly arrange panels prior to adhering lane numerals to panels. Graphic panels should be handled with clean white gloves to prevent transfer of oil or dirt from hands to the graphic panels.



- (1) UPPER GRAPHIC
- (2) LOWER GRAPHIC
- (3) LANES 1 AND 2
- (4) LANES 3 AND 4
- (5) LANES 5 AND 6

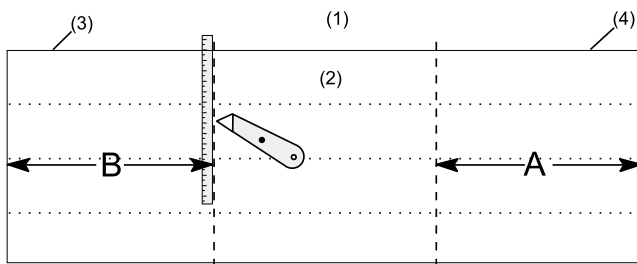
STEP 23 Measure to determine if both aisle graphic panels can be cut from one panel (if aisle measures less than 22" see step 22)

Measure "A" and "B" for aisle graphic panels. If $A + B < 133"$ (3.38 m) both aisle graphic panels can be cut from one lane graphic panel. If $A + B > 133"$ (3.38 m) each aisle graphic panel will be cut from one lane panel (requires two lane panels).



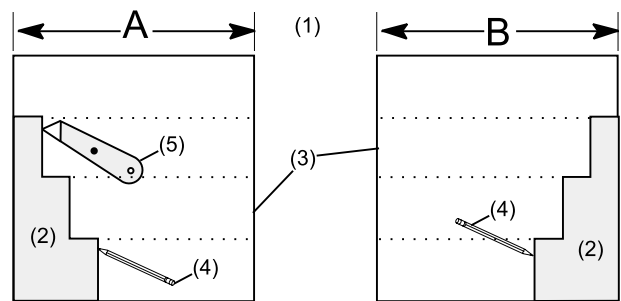
STEP 24 Cut panels to dimensions "A" and "B"

Following the graphic below will ensure a factory edge where aisle graphic panels meet lane graphic panels.



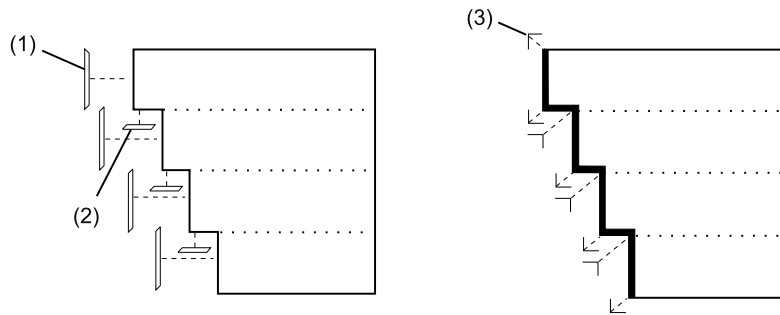
STEP 25 Cutting Aisle panels

Use a pencil to trace template onto cut panels. Cut panels with a razor knife.



STEP 26 *Finish Aisle Panels*

Install U-Channel. Cover U-Channel seams with black tape.

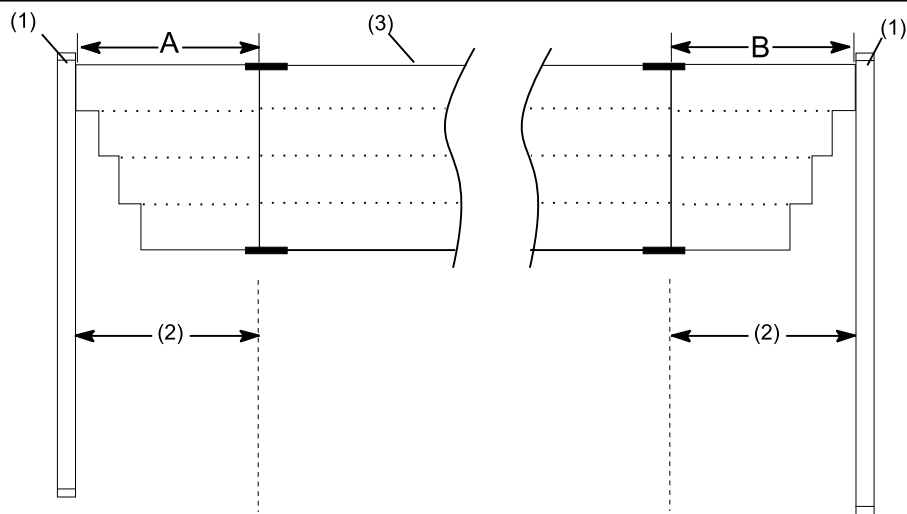


(1) LONG PLASTIC U-CHANNEL

(2) SHORT PLASTIC U-CHANNEL

(3) BLACK TAPE (EIGHT PLACES)

STEP 27 *Install Cut Aisle graphic fill Panels*



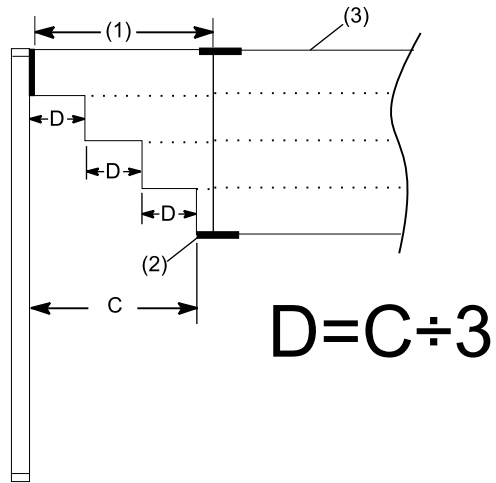
(1) END WALL

(2) AISLE

(3) UPPER GRAPHICS

STEP 28 For Aisles less than 22" (559 mm) wide

To find "C" measure from end wall to outside edge of end graphic channel. Divide "C" by three to get "D" (width of steps).



- (1) LESS THAN 22" (5559 mm)
- (2) END GRAPHIC CHANNEL
- (3) UPPER GRAPHICS

Frameworkx Masking Unit

ADD-ON KIT ONLY

The following section to be used for installing new style Frameworkx masking units next to original style Frameworkx masking units.

FRAMEWORX MASKING UNIT ADD-ON KIT

The Frameworkx Masking Unit Add-On Kit 53-861091-000 contains the necessary materials to adapt a new Frameworkx masking unit to an existing Frameworkx single-panel upper masking unit or a Frameworkx 4-panel upper masking unit. This may be necessary when adding new lanes to an existing center. This kit allows you to make the transition from old to new. Add-on kit must be ordered separately.

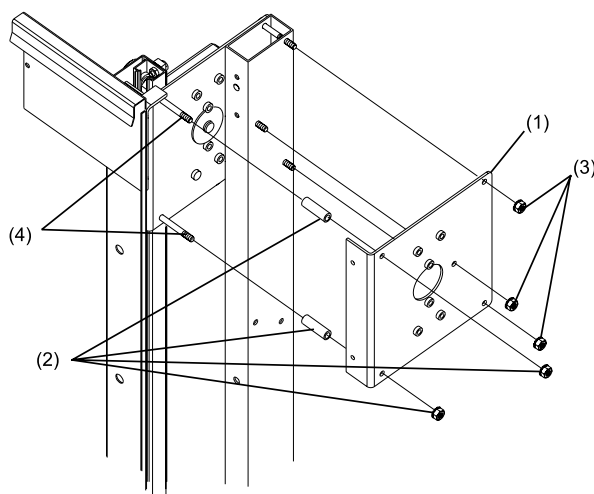
i **NOTE:** If adding on to an existing Frameworkx 4-panel upper masking unit, it will be necessary to reconstruct the upper part of the masking unit (per the following instructions) and replace the 4 upper graphic panels with a single graphic panel.

PACKAGING For Frameworkx Masking Unit Add-On Kit 53-861091-000

Qty.	Part Number	Description
1	53-861091-000	Frameworkx Masking Unit Add-On Kit
3	53-300375-000	Bracket
1	11-610700-000	Bracket, "L", 2" x 2"
2	11-024288-001	Screw, Truss Head, 1/4" x 5/8"
1	11-001184-001	Screw, Hex Head, 1/4" x 1"
3	11-170007-001	Nut, Nylok, 1/4-20
9	11-010812-001	Screw, Drill Point, Hex Washer Head, 1/4 x 3/4"
2	11-040097-001	Screw, Flat Head C.R., #10 x 1-1/2"
1	53-861079-000	Package, Cable, 1st to 2nd Ball Light

STEP 1 Disassembly of Existing Masking Unit End Support Assembly (add-on end only)

Remove lower graphic panel and retain for reinstallation. Remove division capping and retain for reinstallation. Remove five nuts from end plate and remove end plate. Leave three screw through the vertical support tube and replace nuts, cut remaining two screws and discard.

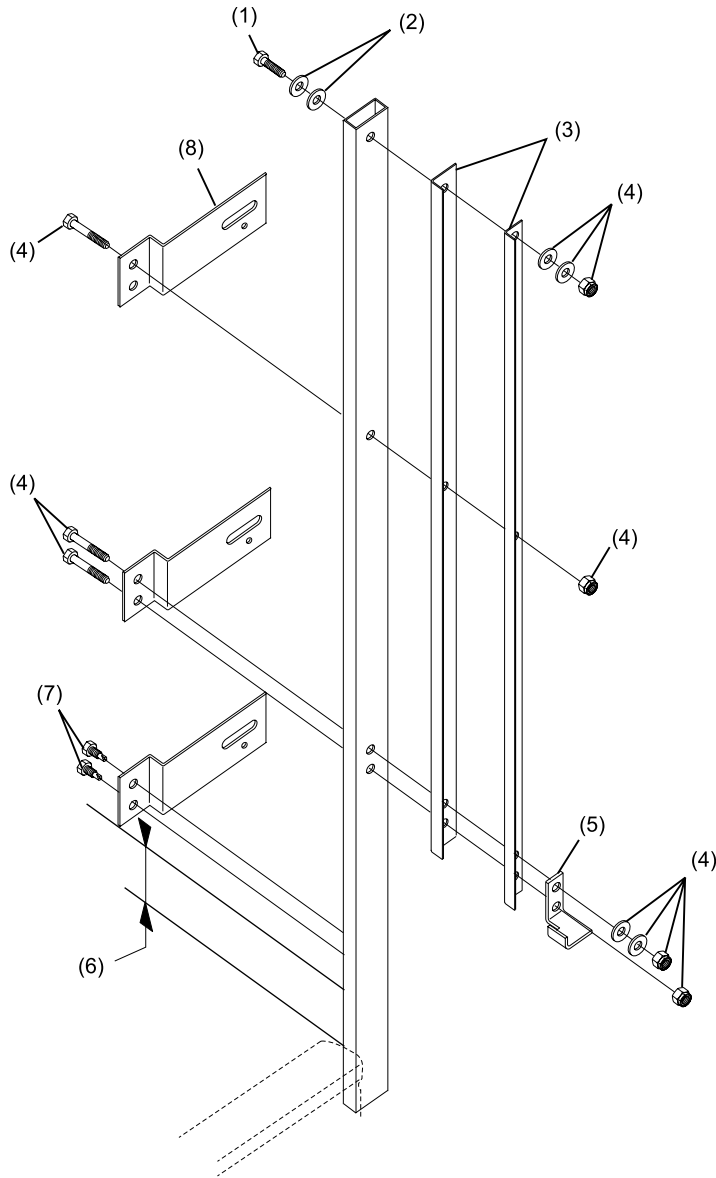


- (1) REMOVE PLATE
- (2) DISCARD
- (3) REINSTALL NUTS AFTER REMOVAL OF END PLATE
- (4) CUT OFF AND REMOVE

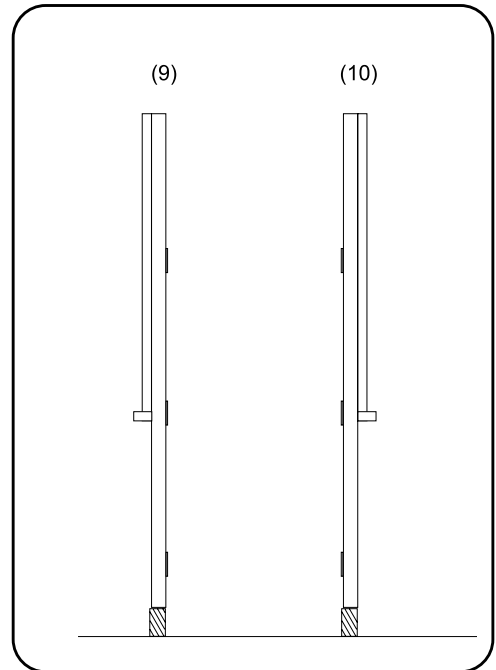
STEP 2 *Re-Assemble a Lower Vertical Support From Package 53-861091-000*

Remove appropriate left or right side channels and stop from side the kit is to be added to. Using existing hardware and hardware contained in package 53-861091-000 secure the three brackets from kit.

i IMPORTANT: For clearance reasons, place all nuts on channel side of support as shown.



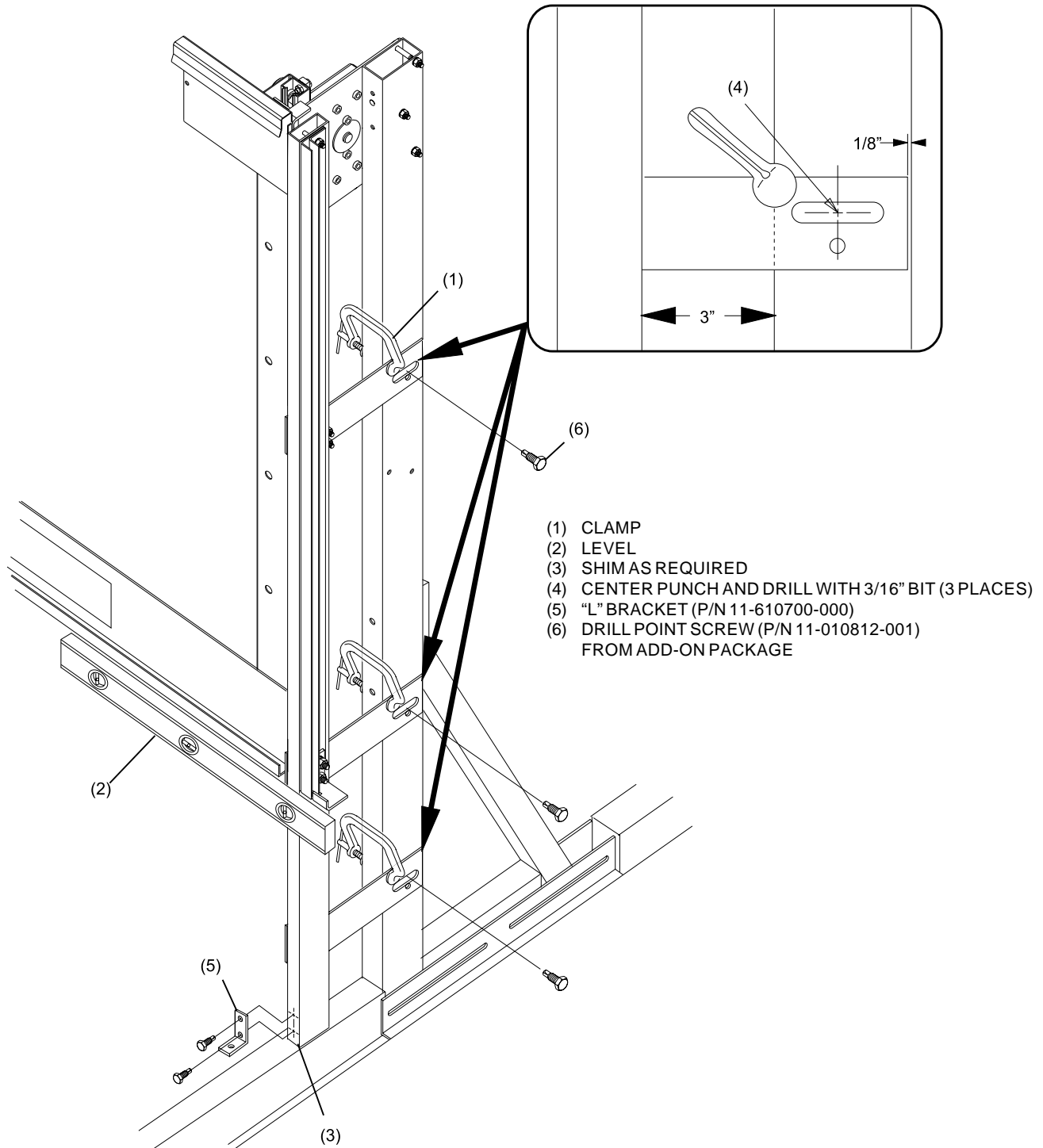
- (1) REPLACE WITH 1/4-20 X 1" SCREW (P/N 11-001184-001) FROM ADD-ON PACKAGE
- (2) DO NOT USE WASHERS HERE
- (3) SIDE CHANNELS
- (4) EXISTING HARDWARE
- (5) STOP
- (6) LOCATE BRACKET 3" ABOVE CAPPING
- (7) DRILL POINT SCREW (P/N 11-010812-001) FROM ADD-ON PACKAGE
- (8) BRACKET (P/N 53-300375-000)
- (9) LEFT-HAND BUILD
- (10) RIGHT-HAND BUILD



RIGHT-HAND ASSEMBLY SHOWN

STEP 3 *Mounting Add-On Vertical Support Assembly*

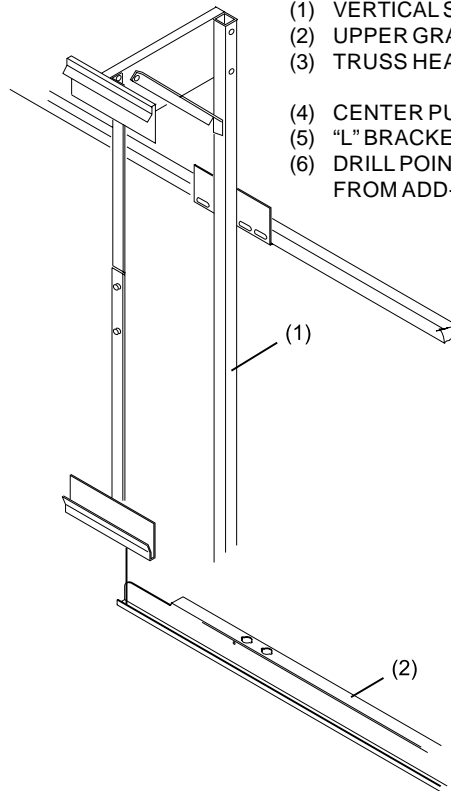
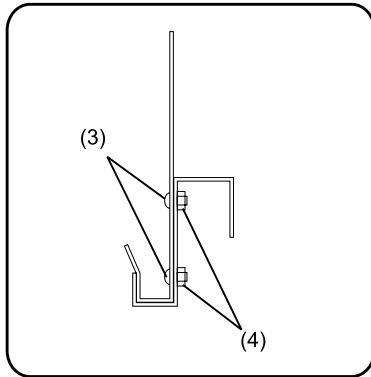
Place modified lower vertical on support and clamp in place, make sure it is level with existing masking unit. Add shims as required. Center punch and drill with 3/16" bit at center of each brackets slot. Add "L" bracket at bottom front of new vertical support with self tapping screws. Attach brackets to old support with self tapping screws. Complete installation of masking units.



STEP 4 *Install Add-On Upper Graphic Channel to Existing Single Tier Upper*

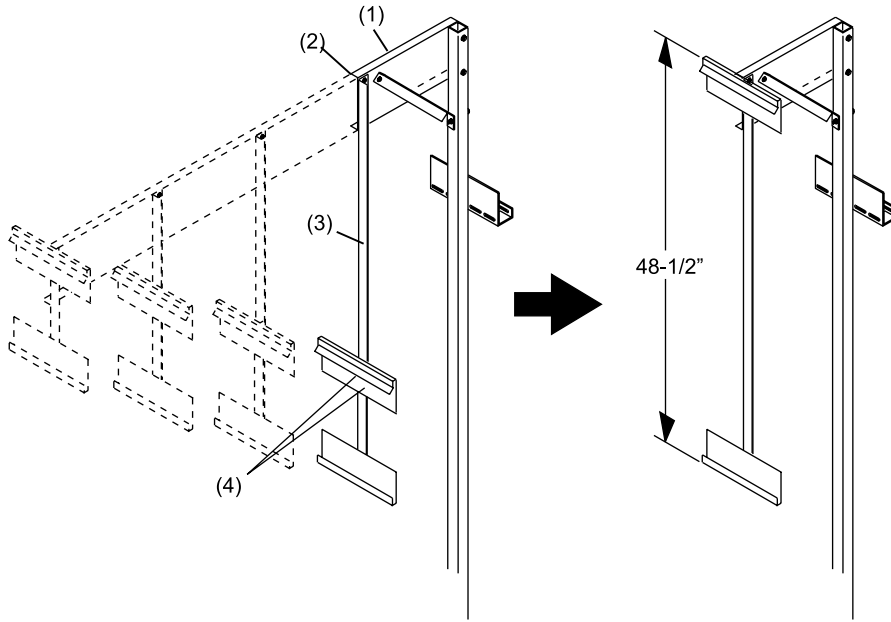
Align new upper graphic channel with vertical support. Slide opposite end of upper graphic channel over existing bracket. Drill clearance hole for 1/4-20 pan head screw and install.

- (1) VERTICAL SUPPORT
- (2) UPPER GRAPHIC CHANNEL
- (3) TRUSS HEAD, 1/4-20 X 5/8" SCREW (P/N 11-024288-001)
- (4) CENTER PUNCH AND DRILL WITH 3/16" BIT (3 PLACES)
- (5) "L" BRACKET (P/N 11-610700-000)
- (6) DRILL POINT SCREW (P/N 11-010812-001)
FROM ADD-ON PACKAGE



STEP 5 *Install Add-On Upper Graphic Channel to Existing Four Tier Upper*

Cut off horizontal extension after first graphic support hanger. Drill out upper graphic bracket. Reposition upper graphic bracket and use as template to drill new mounting holes. Remount upper graphic bracket. Attach graphic support to new style masking unit as shown in manual. Slide other end of graphic support over existing old style masking unit and clamp in place. Drill clearance hole and install screws.



- (1) HORIZONTAL EXTENSION
- (2) CUT HERE
- (3) BRACKET HANGER
- (4) DRILL OUT AND MOVE TO TOP

STEP 6 *Alignment and Locking in Position*

Install all graphic panels and align. Adjust position of add-on mounting brackets if required. Using mounting bracket as template drill 3/16" hole in support and secure bracket in position. Install lag screws in "L" brackets. Cut retained division capping to fit around new vertical support and reinstall.