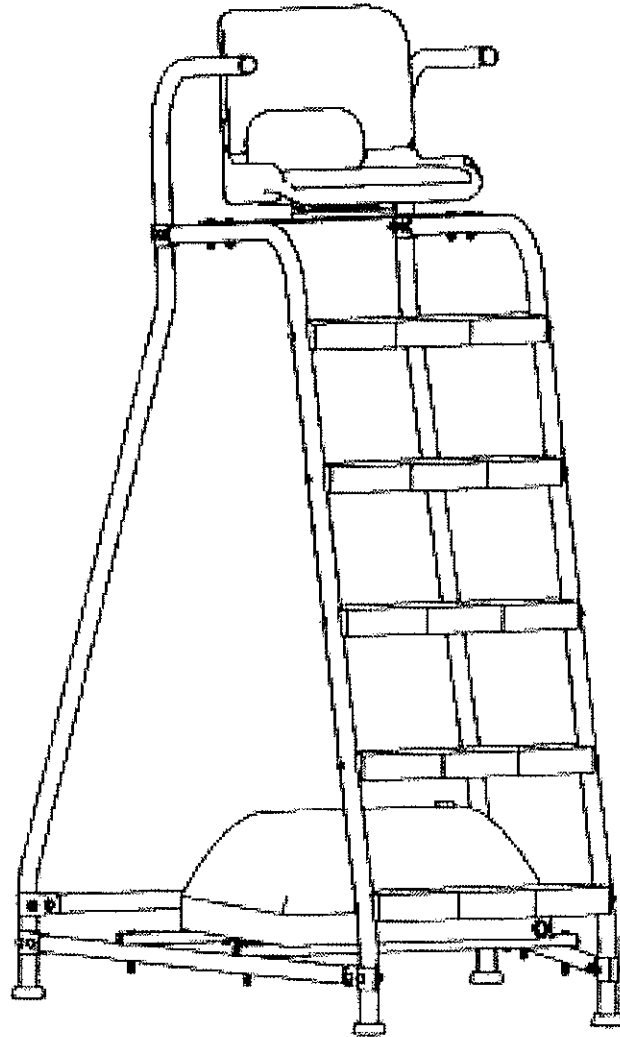


Marshall Guard Chair Ballast Tank



Owner's Manual Assembly, Installation and Operation

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Marshall Guard Chair/Portable Guard Chair Ballast Assembly & Installation Instructions

Please read this entire manual before beginning the assembly or installation process.

Package Contents

Remove all of the parts from the packaging and match each to the parts shown on the exploded parts diagram and parts list.

1	Qty 1	Ballast Tank
2	Qty 1	Short Ballast Support Tube
3	Qty 1	Long Ballast Support Tube
4	Qty 4	1" Square Plug
5	Qty 4	5/16"-18 x 1 3/4" Hex Head Bolt
6	Qty 12	5/16" Flat Washer
7	Qty 8	5/16" Lock Washer
8	Qty 4	5/16"-18 x 3 1/2" Hex Head Bolt
9	Qty 4	5/16"-18 Hex Nut

Tools Required

1/2" Wrench or Socket
1/2" Wrench

Assembly

- Step 1 Insert a 1" Square Plug into each end of both Ballast Support Tubes as shown in Figure 1.
- Step 2 Bolt both Ballast Support Tubes to the bottom of the Ballast Tank as shown in Figure 1. Use four 5/16" flat washers, four 5/16" lock washers, and four 5/16"-18 x 1 3/4" hex head bolts. Tighten all bolts securely.

Installation

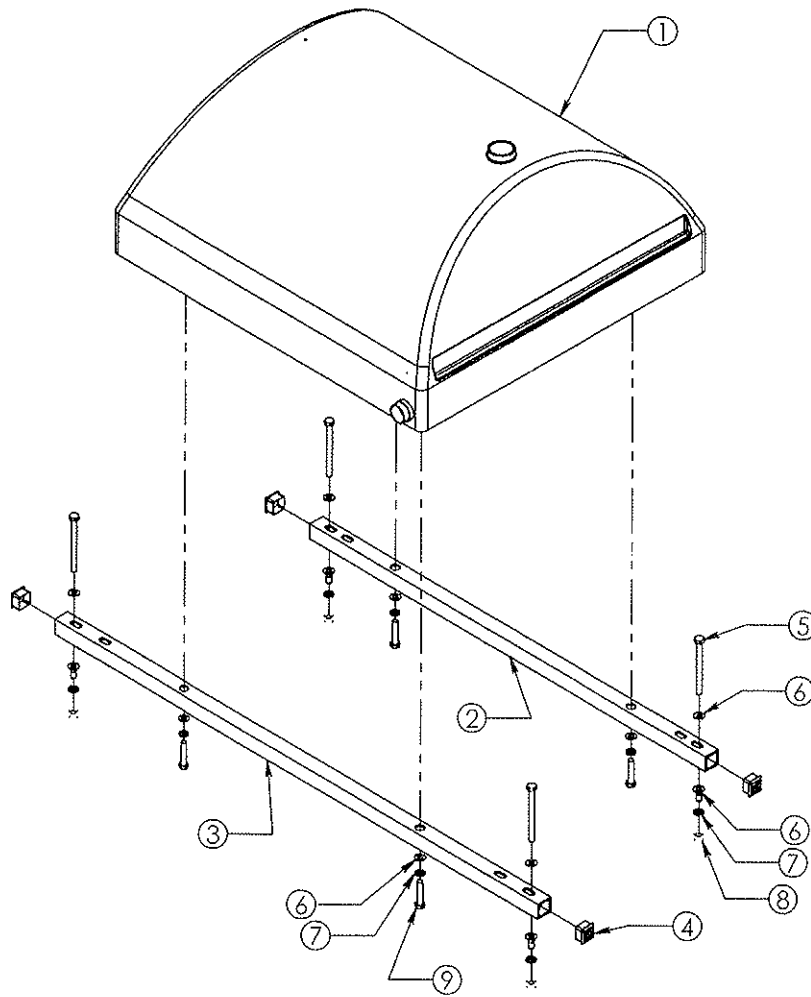
- Step 1 Align the holes in the Ballast Support Tubes with the holes in the frame of your guard chair as shown in Figure 2. Use eight 5/16" flat washers, four 5/16" lock washers, four 5/16"-18 x 3 1/2" hex head bolts, and four 5/16"-18 hex nuts to secure the Ballast Assembly to the guard chair frame. Tighten all bolts securely.

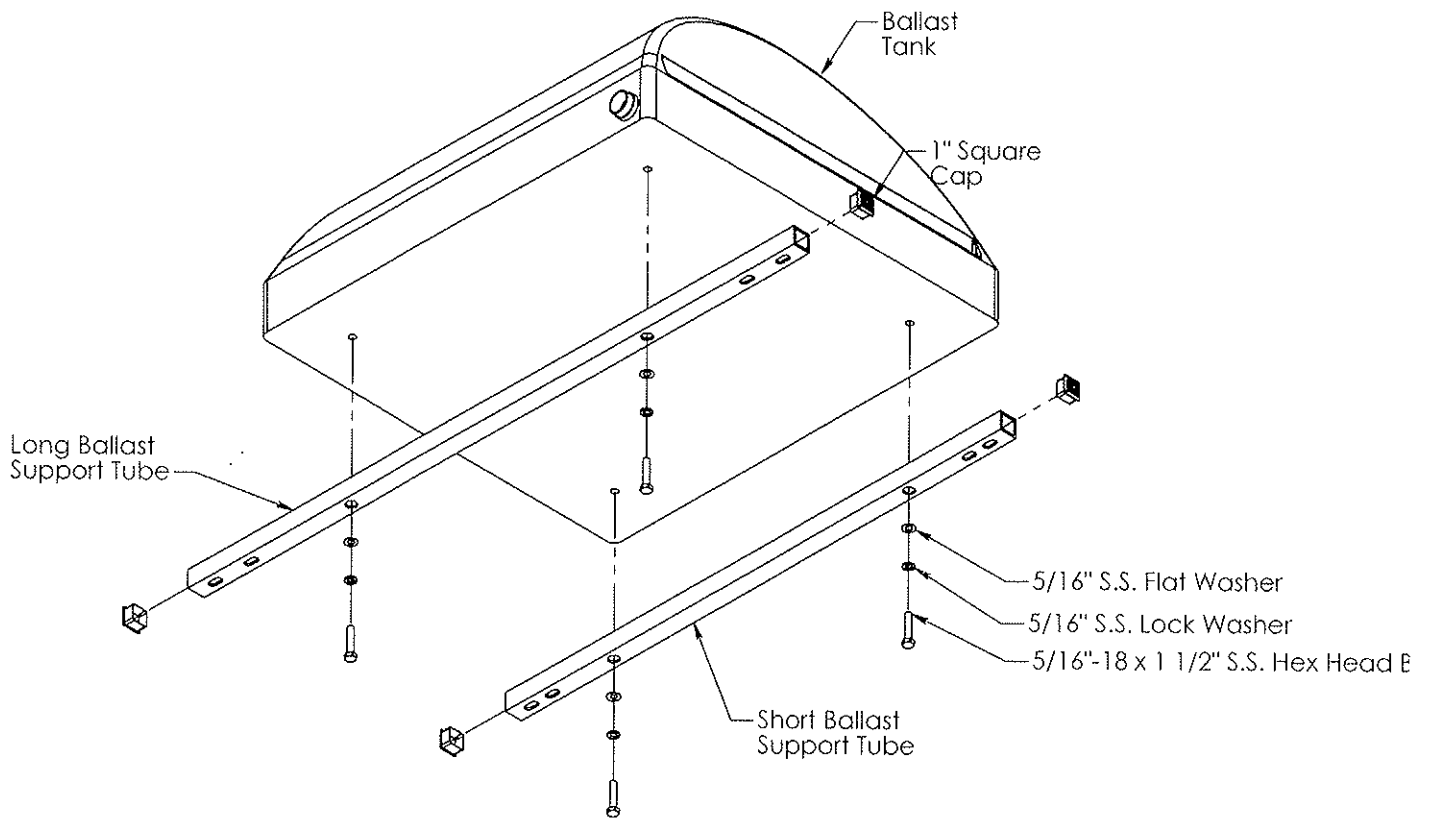
Operation

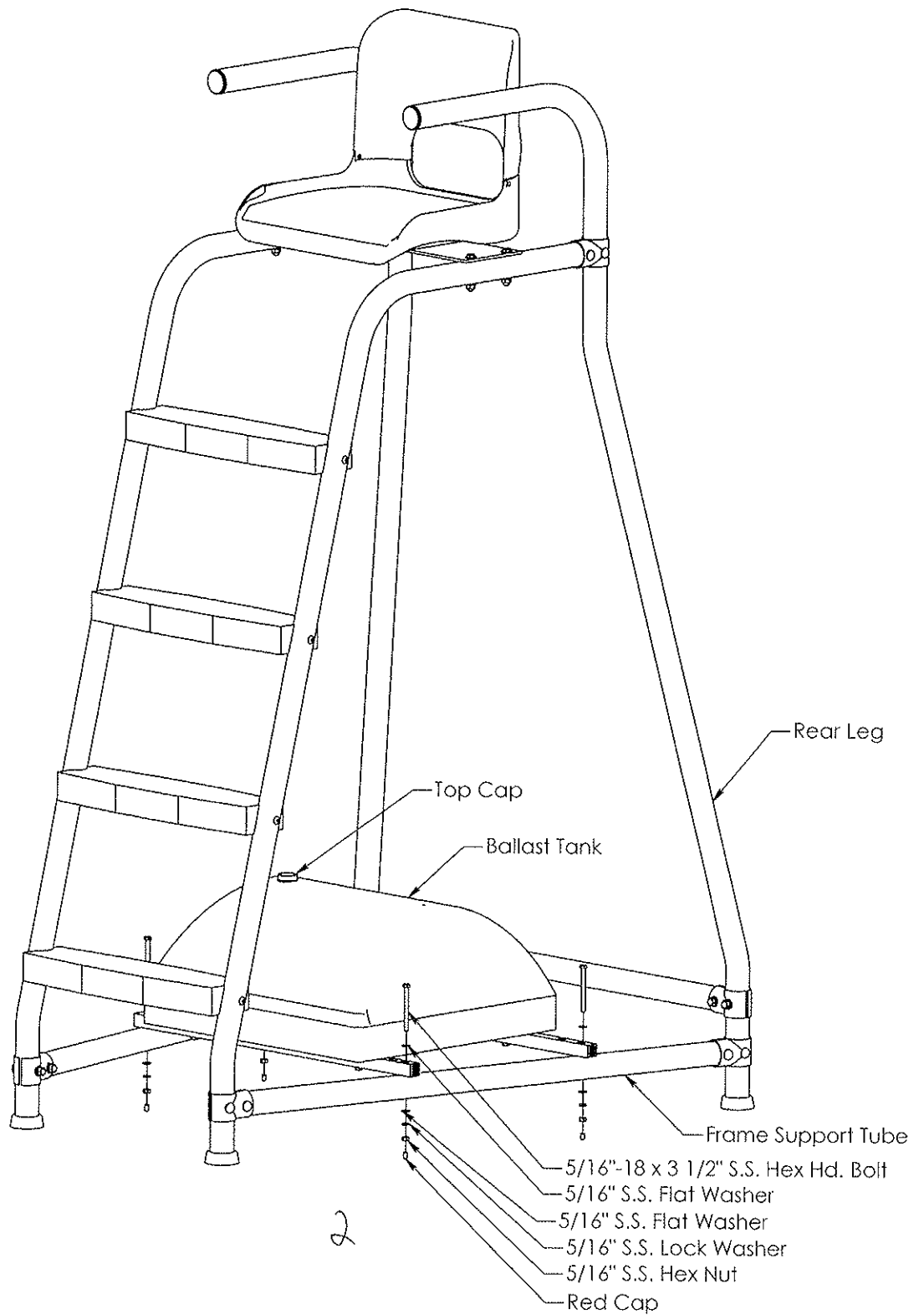
- Step 1 To fill the Ballast Tank, remove the top cap on the Ballast Tank and fill the tank with water. Replace the top cap when the tank is full. See Figure 2.
- Step 2 To empty the Ballast Tank, remove the drain cap and the top cap and allow the water to completely drain. Replace both caps. See Figure 2.

WARNING: INJURY COULD OCCUR IF THE GUARD CHAIR IS MOVED WITH A FILLED BALLAST TANK. DRAIN THE TANK COMPLETELY BEFORE MOVING THE CHAIR.

ITEM NO.	QTY.	DESCRIPTION
1	1	Ballast Tank
2	1	Short Ballast Support Tube
3	1	Long Ballast Support Tube
4	4	SQR. PLUG 1" FITS .870 I.D.
5	4	Hex Head Bolt 5/16"-18 x 3 1/2"
6	12	5/16" Flat Washer
7	8	5/16" Lock Washer
8	4	Hex Nut 5/16"-18
9	4	Hex Head Bolt 5/16"-18 x 1 1/2"
10	4	5/16" Bolt Cap







Ballast System for Marshall Platforms **Retrofit Assembly and Installation Instructions**

Please read this entire manual before beginning the assembly or installation process. Spectrum Products makes no guarantee of safety or compatibility if this ballast assembly is installed on any non-Spectrum equipment.

PACKAGE CONTENTS:

Remove all of the parts from the packaging and match each to the parts shown on the following parts list:

<u>ITEM</u>	<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	1	Ballast Tank
2	1	Short Ballast Support Tank
3	1	Long Ballast Support Tube
4	4	1" Square Plug
5	4	5/16" – 18x 1 ½" Stainless Steel Hex Head Bolt
6	12	5/16" Stainless Steel Lock Washer
7	8	5/16" Stainless Steel Lock Washer
8	4	5/16" 18 x 3 ½" Stainless Steel Hex Head Bolt
9	4	5/16" –18 Stainless Steel Hex Nut
10	1	3/8" Diameter Drill Bit
11	1	1/8" Diameter Drill Bit
12	4	Red Caps

TOOLS REQUIRED:

Variable speed electric hand drill
½" Open-end wrench or socket
½" Open-end wrench
Center punch
Hammer
Marking pen
Deburring tool (optional)
4 ft. level
Tape measure

BALLAST ASSEMBLY INSTRUCTIONS

1) INSTALL 1" SQUARE PLUGS [FIGURE 1]:

Insert a 1" Square Plug into each end of both **Ballast Support Tubes** as shown in **Figure 1**. Gently tap each 1" Square Plug with a hammer until they are flush with the ends of the **Ballast Support Tubes**.

2) ATTACH SUPPORT TUBES TO BALLAST TANK (PHOTO 1) [FIGURE 1]:

With the **Ballast Tank** upside down on the floor, place the **Ballast Support Tubes** on the bottom surface of the tank and align with the mounting holes. Make sure the **Long Ballast Support Tube** is towards the side with the drain hole (see **Photo 1**). Bolt the **Ballast Support Tubes** to the **Ballast Tank** using four (4) 5/16"-18 x 1 1/2" Hex Head Bolts, four (4) 5/16" Lock Washers and four (4) 5/16" Flat Washers as shown in **Photo 1** and **Figure 1**. Tighten the bolts using a 1/2" open-end wrench or 1/2" socket.

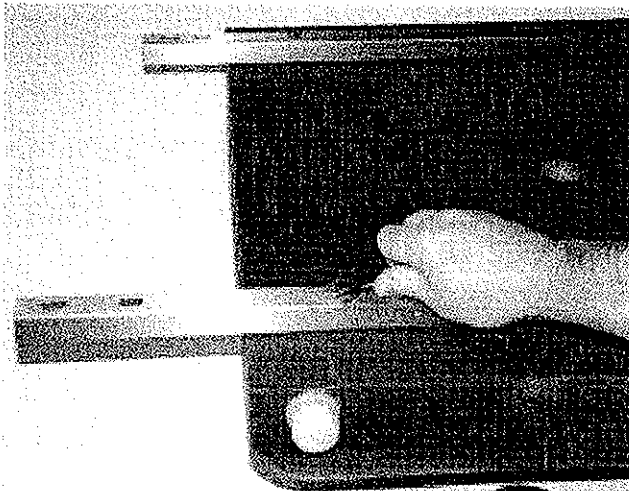


PHOTO 1

BALLAST ASSEMBLY INSTALLATION INSTRUCTIONS

1) ALIGN BALLAST ASSEMBLY w/MARSHALL FRAME [FIGURE 2]:

Place the assembled **Ballast System** on the **Frame Support Tubes** of the Marshall Platform. Slide the **Ballast System** forwards or backwards until four corresponding slotted holes of the **Ballast Support Tubes** (either inside or outside pairs) line up with the center of the **Frame Support Tubes** (this is approximate placement only).

2) SQUARE THE ASSEMBLY – MARK HOLES (PHOTO 2) [FIGURE 2]:

With a tape measure, measure from the **Rear Legs** of the Marshall to each back corner of the **Long Ballast Support Tube** as shown in **Photo 2**. Move each corner slightly until the measurements are equal. This will make the **Ballast System** square with the Marshall

frame. Mark the centers of all four mounting holes with a black marker (**Photo 2**). Remove the Ballast Assembly and extend the marks over the top of the tube.

Note: It is not possible to align the **Ballast System** so that the **Ballast Support Tubes** don't extend past the outside diameter of the **Frame Support Tubes**. See **Step 8** for instructions on trimming the **Ballast Support Tubes**.

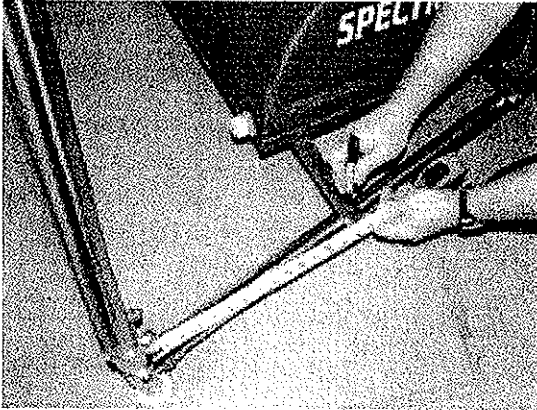


PHOTO 2

3) ESTABLISH CENTERLINE OF SUPPORT TUBES (PHOTO 3):

Take the four-foot level and place it across both **Frame Support Tubes**. Press down and drag the edge of the level over the marks as shown in **Photo 3**. This will produce a scratch-mark at the exact top center of the tube. Repeat as necessary to establish the center of all four hole locations.

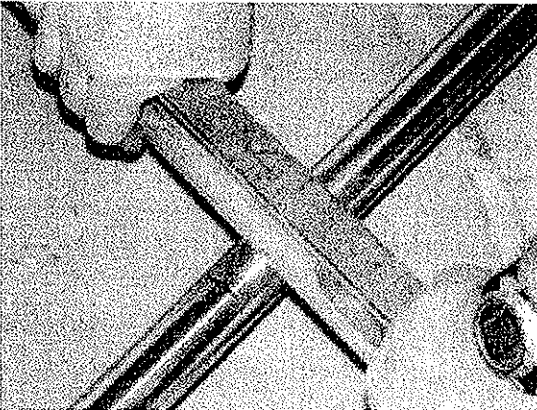


PHOTO 3

4) CENTER-PUNCH THE HOLE LOCATIONS (PHOTO 4):

Using the center-punch and the hammer, mark the center of each hole location (the intersection of the black line and the scratch mark made in steps 2 & 3). Place the center-punch at the intersection and tap lightly with a hammer as shown in **Photo 4**.

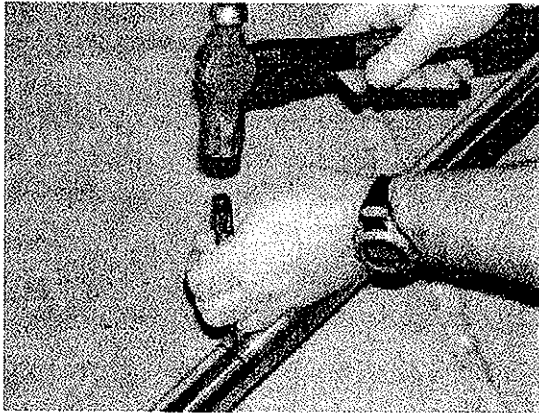


PHOTO 4

5) DRILL PILOT-HOLES (PHOTO 5):

Using the variable-speed electric hand drill and the 1/8" Drill Bit, drill a pilot-hole at each of the marked and center-punched locations. Place the tip of the bit inside the punched indentation. Hold the drill/bit square to the tube as shown in **Photo 5**. Using slow to medium speed and high pressure, drill a pilot hole through the top of the Marshall's **Frame Support Tube** (**Caution: do not press down so hard that the drill bit bends excessively. This may cause the bit to walk or break**).

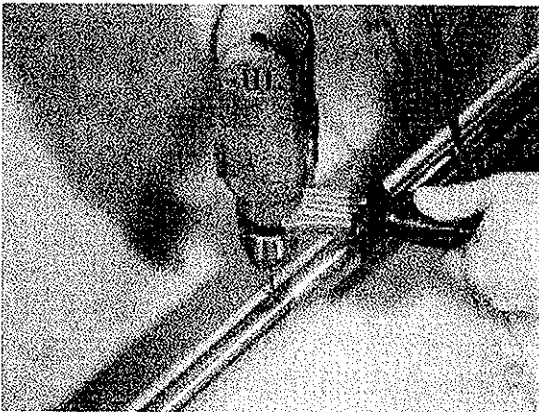


PHOTO 5

6) DRILL 3/8" HOLES (PHOTO 6):

Replace the 1/8" bit with the 3/8" Drill Bit. Drill 3/8" diameter holes at each location as shown in **Photo 6**. Drill through both the top and bottom of the tubes, keeping the drill bit as perpendicular to the tube as possible. Again, for best results use a slow to medium speed and high pressure on the bit. Deburr the holes.

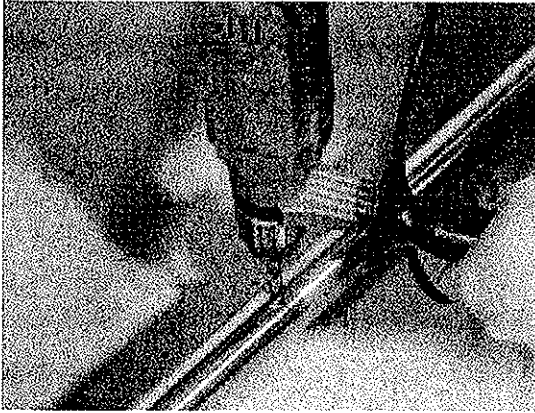


PHOTO 6

7) MOUNT THE BALLAST SYSTEM (PHOTO 7) [FIGURE 2]:

Place the Ballast System back onto the Frame Support Tubes and align with the mounting holes that were drilled in steps 2 through 6. Attach the Ballast System to the Marshall using four (4) **5/16"-18 x 3 1/2" Hex Head Bolts**, eight (8) **5/16" Flat Washers**, four (4) **5/16" Lock Washers** and four (4) **5/16"-18 Hex Nuts** as shown in **Photo 7** and **Figure 2**. Tighten the bolts using two (2) **1/2"** open-end wrenches or **1/2"** sockets. Install four (4) **Red Caps**, one on the threaded end of each of the Hex Bolts.

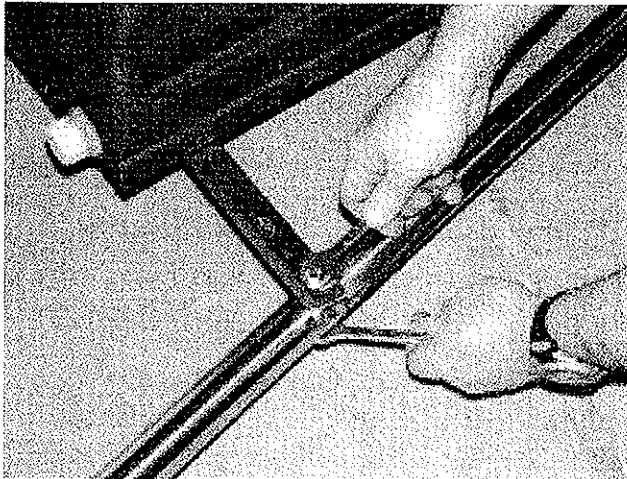


PHOTO 7

8) TRIM TUBE ENDS (OPTIONAL):

On older platforms where the inside holes are used, the Ballast Support Tubes will stick out past the Frame Support Tubes by about two inches. It is recommended that this excess tubing be cut off using a hacksaw or reciprocating saw with the appropriate blade. Cut the ends square, deburr the tube ends and re-install the **1" Square Plugs**. (Note: this can also be done before installing the Ballast System for convenience). Make sure to cut the ends square (90 degrees) or the **1" Square Plugs** will not fit into the tube-ends.

OPERATION

1) FILLING THE BALLAST TANK:

To fill the **Ballast Tank**, remove the **Top Cap** on the **Ballast Tank** and fill the tank with water. Replace the **Top Cap** when the **Ballast Tank** is full (see **Figure 3**).

2) EMPTYING THE BALLAST TANK:

To empty the **Ballast Tank**, remove the **Drain Cap** and the **Top Cap** and allow the water to drain completely. Replace both caps (see **Figure 3**).

WARNING: DO NOT ATTEMPT TO MOVE OR TRANSPORT THE MARSHALL PLATFORM WHEN THE BALLAST SYSTEM CONTAINS WATER. DAMAGE TO THE PLATFORM OR PERSONAL INJURY COULD RESULT.