

ASSEMBLY OF BOILER SECTIONS WITH HYDRAULIC DRAW-UP EQUIPMENT

USE IN CONJUNCTION WITH REGULAR
INSTALLATION-OPERATION AND MAINTENANCE MANUAL

AMERICAN-Standard
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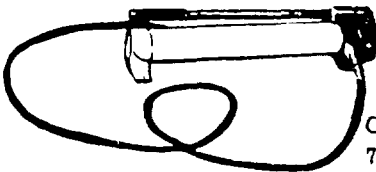
BP-7841 REVISED, 5/66

THIS HYDRAULIC ASSEMBLY KIT CONSISTS OF THE FOLLOWING PARTS

All items listed to be placed in the lower level of the chest

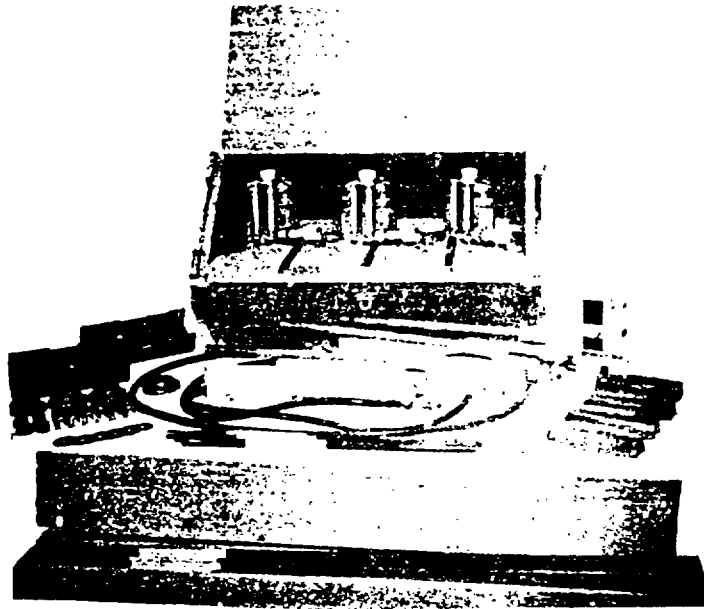
ITEM		Number of Items	DESCRIPTION
		3	3/4" X 15" Special Steel Tie Rod Extensions
		3	3/4" X 24" Special Steel Tie Rod Extensions
	Code 5104	2	4" X 10-1/2" Steel Channel Draw-up Blocks
	Code 5841	6	3/4" Tie Rod Couplings
	Code 0556	4	Cast Iron Draw-up Washers
	Code 6813	6	3/4" Standard Hex Nuts
	Code 3013	4	Cast Iron Draw-up Blocks
	Code 8148	6	3/4" Standard Flat Steel Washers
	Code 2315	3	Cast Iron Draw-up Spacers

All items listed to be placed on the upper shelf of the chest

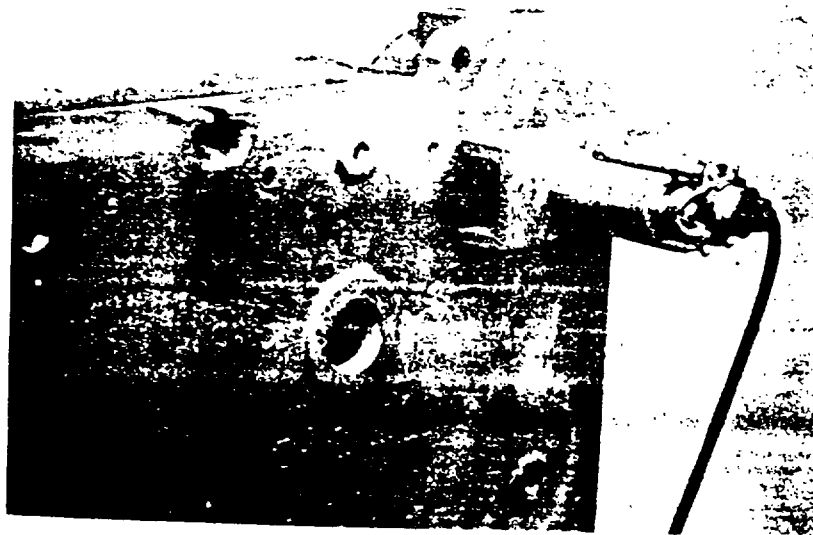
	Code 7295	3	Rams
	Code 7295	3	Pump Sets Complete with Hoses
	Code 6899	1	Can of Special Hydraulic Pump Oil
		1	Hydraulic Assembly Booklet

All items listed to be placed in a separate box

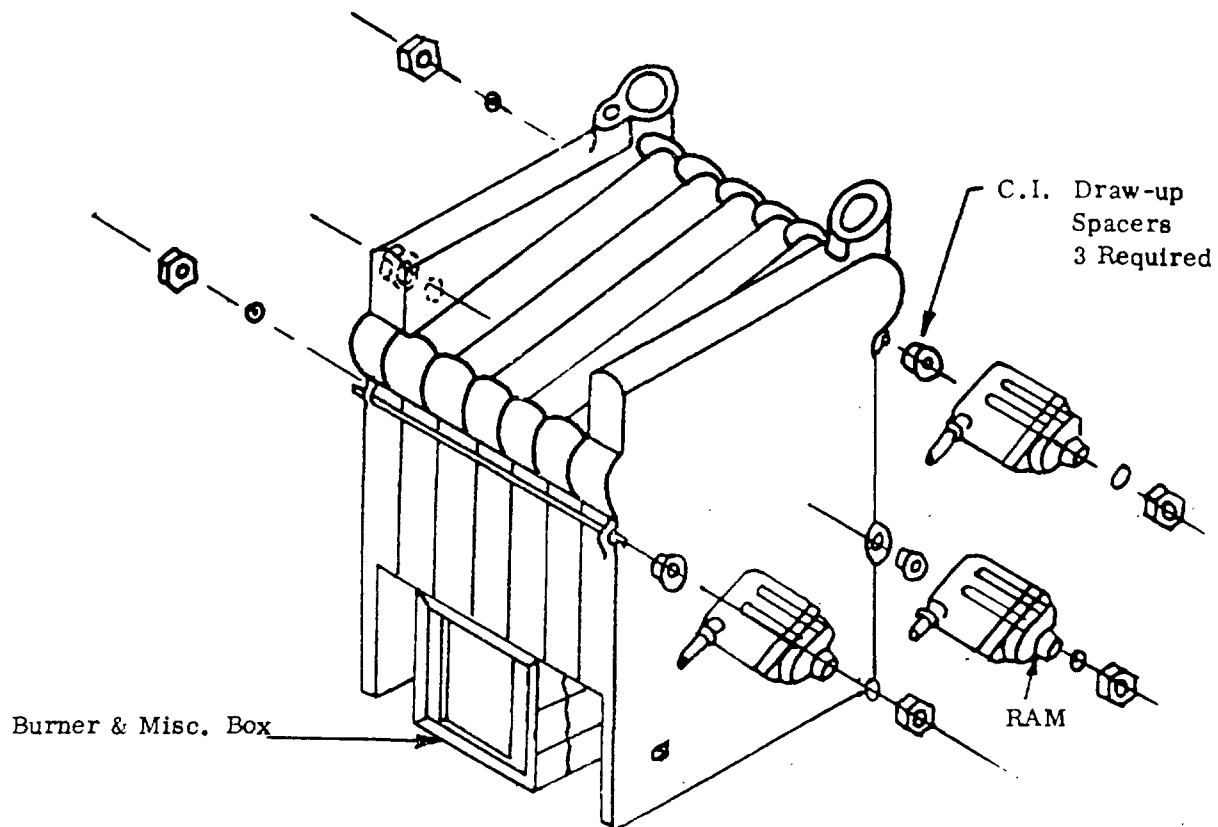
		12	3/4" X 48" Special Steel Tie Rods
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HYDRAULIC DRAW-UP EQUIPMENT



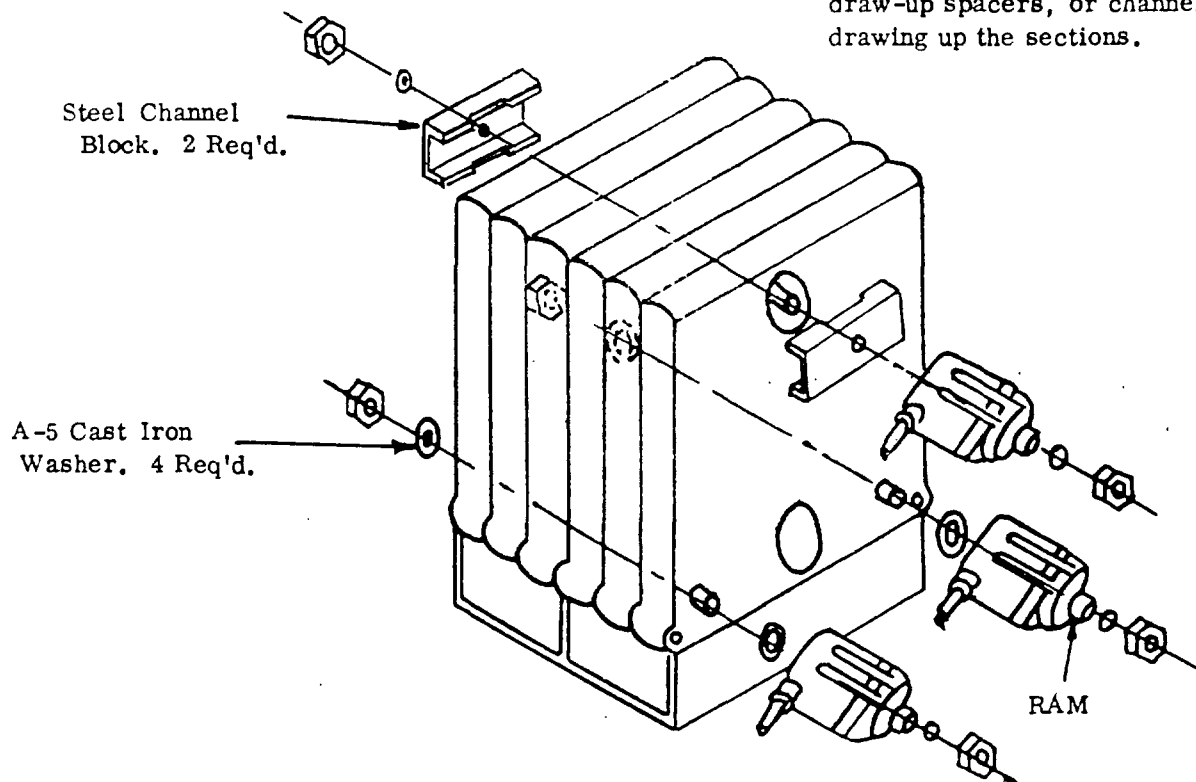
TYPICAL APPLICATION OF HYDRAULIC RAM AND STEEL BLOCK
FOR DRAWING-UP BOILER SECTION ASSEMBLY



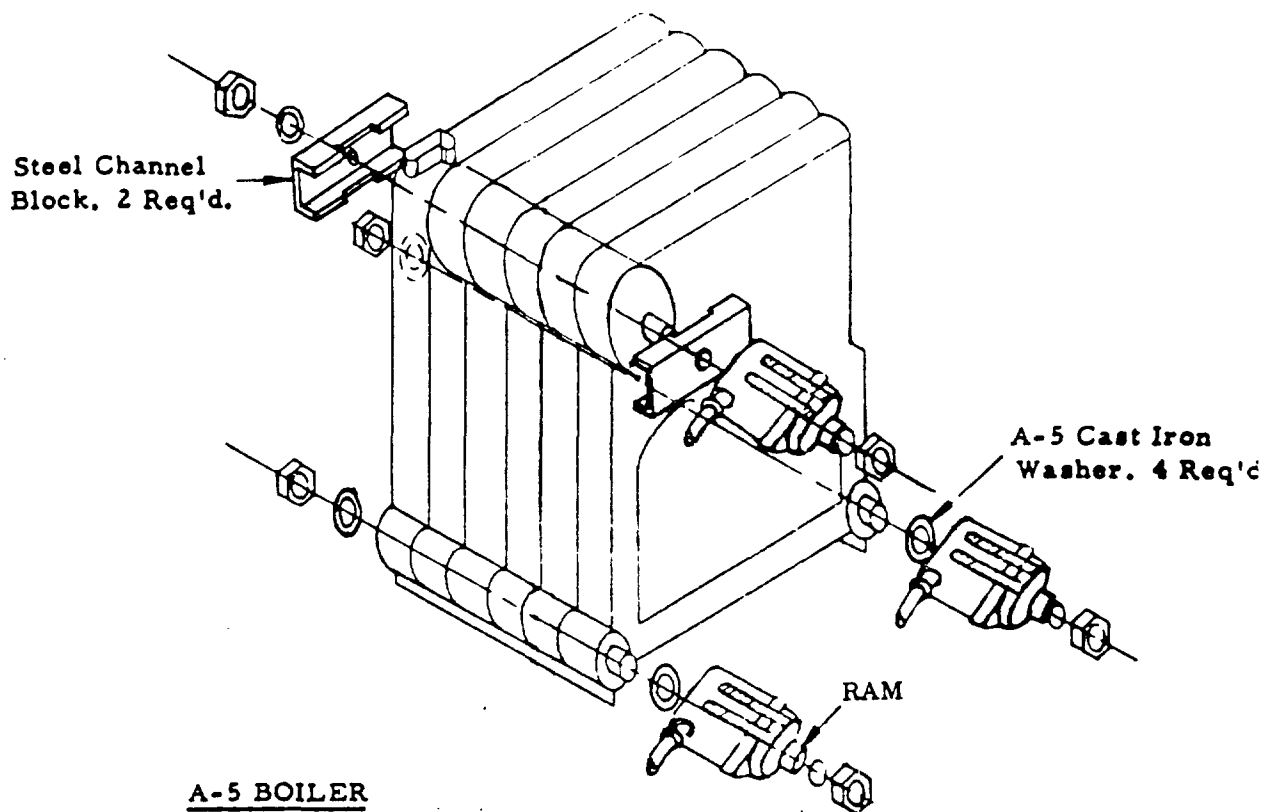
G-40 BOILER

IMPORTANT

The bottom face of the hydraulic ram cylinders must be against the draw-up spacers, or channels, when drawing up the sections.

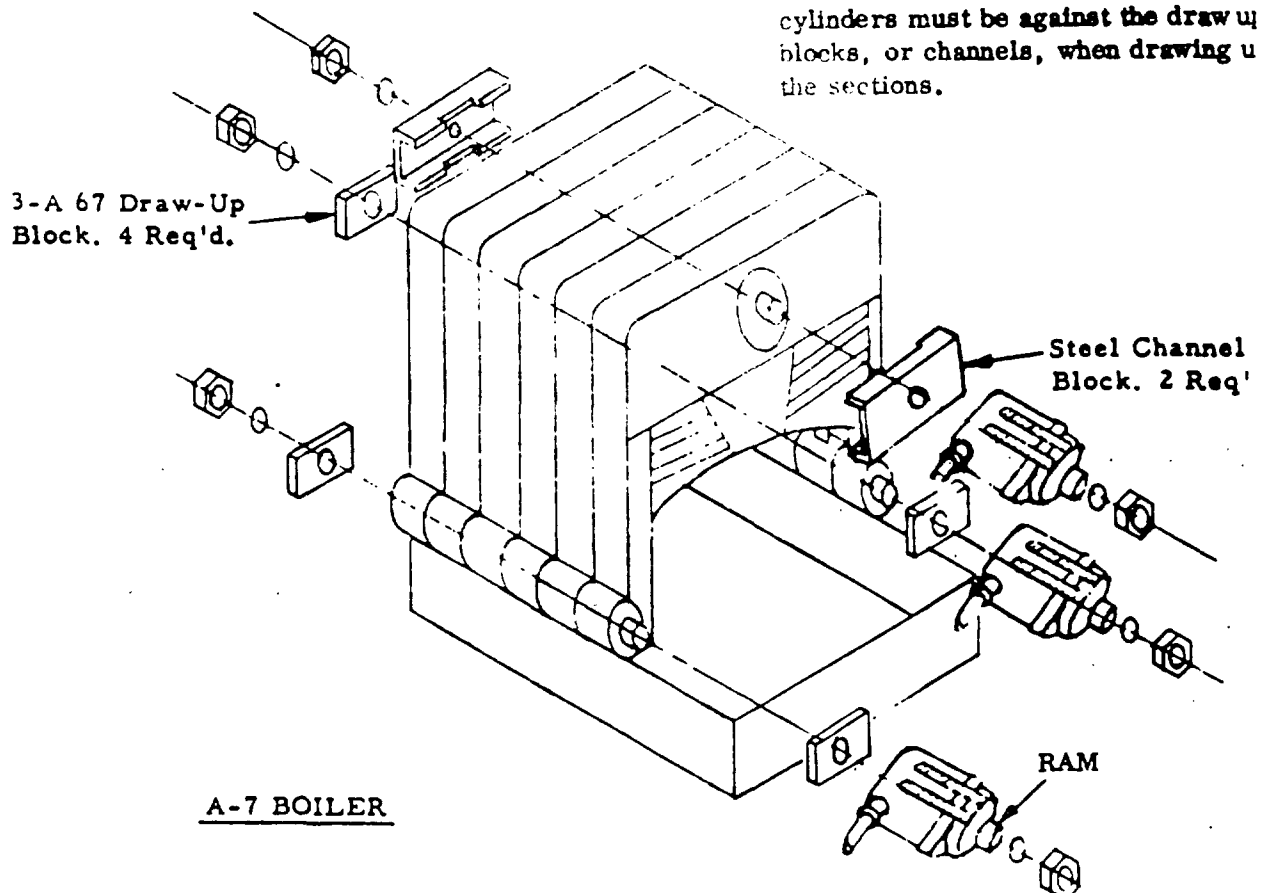


G-60 BOILER



IMPORTANT

The bottom face of the hydraulic ram cylinders must be against the draw up blocks, or channels, when drawing up the sections.



INSTRUCTIONS FOR ASSEMBLING TIE-ROD SECTIONS WITH OOWATONNA TAPPING EQUIPMENT

The Hydraulic method of drawing up tie-rod sections together can be used satisfactorily if the following instructions are observed:

1. Consult the Installation-Operation and Maintenance Manual furnished with each particular type boiler as to arrangement of sections, cleaning of nipples and nipple ports, oiling and driving of the nipples.

Drive each section well up on the nipples of the adjoining section with heavy piece of timber striking sections squarely over nipple ports.
2. Do not apply hydraulic pressure directly against a raised tapping boss opposite an upper nipple port. Use the stroke stopper block with the OPEN SIDE against the section and the cutouts in the channel flanges over the boss when required, so that pressure is applied around but NOT ON THE BOSS properly.
3. Observe the spacing between the sections carefully when operating the hydraulic pumps. It is possible that some of the nipples, particularly the upper nipples may not draw up uniformly as the hydraulic pressure is applied to the sections. The larger the nipple, the greater the pressure requirement. If the spacing between a row of nipples is not even, strike the section with an aluminum hammer directly over the nipple port where the space is noticeably larger.
4. CAUTION -- Do not operate ram after the end of the limit of the stroke which is 2" for the Owatonna cylinder. Relieve the pressure, push the ram back into the cylinder and re-tighten draw-up rod nuts.

Do not allow rams to operate against tie rod couplings in any case.
5. Boilers which are being drawn up thru nipple ports should have rods approximately centered in the opening. Draw-up block should be adjusted in a horizontal position where possible. In any case the block should bear flat against the surface, also equally on each side of openings or depressions, such as found on the Oatmont or Oatmont fronts. Adjustments are easily made with a hammer when the rods are under light tension.
6. See that extension rods are at least one inch on each end to prevent stripping of threads.
7. Be sure that rod couplings have clearance for movement, otherwise it is possible for them to bind and possibly cause damage. Use short rod extensions on the end opposite from where the rams are operated. Extreme care must be used to see that rod couplings do not come in contact with all nipples. Draw-up washers or blocks when sections are being drawn together.
8. The rods provided with the Owatonna Draw-up Kit are made of high tensile strength steel so that a number of sections can be safely drawn together in one operation. CAUTION -- All personnel should remain clear of area at both ends of boiler in line with the tie rods when pressure is being applied to draw up the sections. Covering of the rod ends is strongly recommended as a safety measure.

DRAW-UP ROD AND BLOCK SCHEDULE

Boiler Sizes	Special Draw-Up Rods			Steel Channel Block	A-5 Cast Iron Washer	3-A 67 Draw-Up Block	Cast Iron Draw-Up Spacer
	15" Rod	24" Rod	48" Rod				
G-403		3					3
G-404 thru G-406	3	3					3
G-407 & G-408			3				3
G-409 & G-4010	3		3				3
G-606 & G-607			3	2	4		
G-608 thru G-6010	3		3	2	4		
G-6011		3	3	2	4		
G-6013	3	3	3	2	4		
G-6015			3	2	4		
G-6017 & G-6019	3		6	2	4		
G-6021		3	3	2	4		
G-6022	3	3	3	2	4		
G-6025			9	2	4		
G-6028	3		9	2	4		
G-6031		3	9	2	4		
G-6033			12	2	4		
G-6037	3		12	2	4		
G-6041	3	3	12	2			
A-504	3	3		2	4		
A-505 & A-506			3	2	4		
A-507 thru A-509	3		3	2	4		
A-510 & A-511		3	3	2	4		
A-705			3	2		4	
A-706 & A-707	3		3	2		4	
A-708		3	3	2		4	
A-709 & A-710	3	3	3	2		4	
A-711			6	2		4	
A-712 & A-713	3		6	2		4	
A-714		3	6	2		4	
Oakmont							
84 & 85	3	3		2	2	2	
86 & 87			3	2	2	2	
88 & 89	3		3	2	2	2	
Severn							
17 & 21	3	3		2	2	2	
25 & 29			3	2	2	2	
33 & 37	3		3	2	2	2	

NOTE: Use Tie Rod Couplings packed with the regular boiler parts when additional Couplings are required for drawing up the G-60 Boiler

DRAW-UP ROD AND BLOCK SCHEDULE (Con't.)

Boiler Sizes	Special Draw-Up Rods			Steel Channel Block	A-5 Cast Iron Washer	3-A 67 Draw-Up Block
	15" Rod	24" Rod	48" Rod			
Exbrook						
207			3	2		4
208 thru 2010	3		3	2		4
2011 thru 2013	3	3	3	2		4
#2 Redflash						
6 Section	3	3		2		4
7 & 8 Section			3	2		4
9 & 10 Section	3		3	2		4
11 & 12 Section		3	3	2		4
13 Section	3	3	3	2		4
#3 Redflash						
6 Section						
7, 8, 9 Section	3		3	2		4

NOTE: Refer to the following pages for instructions pertaining to each type of boiler.

G-40 GAS BOILER

- a. Sub-assemble sections for the entire boiler.
- b. Use cast iron draw-up spacers on special tie rods between tie rod lugs and ram of hydraulic pumps. Use only 3/4" steel washers and 3/4" hex. nuts on tie rods at opposite end of boiler.
- c. Use 24" rods for 3 section boiler.
Use 15" and 24" rods for 4-5-6 section boilers.
Use 48" rods for 7 & 8 section boilers
Use 15" and 48" rods for 9 and 10 section boilers.
- d. Remove the special draw-up rods, and replace with regular tie rods. Refer to page 6 of the Installation Manual for adjusting the tie rod nuts.

G-60 GAS BOILER

- a. Sub-assemble the sections, 19 or less, on the base.
- b. Use steel channel blocks for upper rod which would be inserted through the upper nipple ports and 6" tapping on the end section.
- c. Use A-5 washers on the lower rods which should be inserted in the cored holes located above the 4" nipple ports. The raised side of the A-5 washer should bear against the section.
- d. Use 48" rods for 6-7-15-25 and 33 section boilers.
Use 48" and 15" rods for 8-9-10-17-19-28 and 37 section boilers.
Use 48" and 24" rods for 11-21 and 31 section boilers.
Use 48", 24" and 15" rods for 13-22 and 41 section boilers.
- e. Boilers of 21 to 41 sections should be drawn up as two units. After drawing up the first 19 sections, sub-assemble the remainder of the sections on the base with tie rods coupled together thru the entire boiler. Place blocks and rams on the extended rods and draw up the remaining sections.
- f. Insert regular tie rod in the upper tie rod hole and remove special rod from the upper tapping. Replace the two lower special rods with regular tie rods. Refer to page 9 of the G-60 Installation Manual for adjusting the tie rod nuts.

A-5 BOILER

- a. Sub-assemble sections for the entire boiler.
- b. Use steel channel blocks at top, at front and rear of boiler. OPEN SIDE OF CHANNEL MUST BE AGAINST SECTIONS WITH CUTOUT IN CHANNEL CLEARING THE 3-5/8" DIA. BOSS ON THE BACK.
- c. Use A-5 washers in 2-1/2" tappings at bottom, front and rear.
- d. Use 24" and 15" rods for 4 section boilers.
Use 48" rods for 5 and 6 section boilers.
Use 48" and 15" rods for 7-8-9 section boilers.
Use 48" and 24" rods for 10 and 11 section boilers
- e. Install regular tie rods in the tie rod lugs and adjust nuts as directed on page 5 of the A-5 Installation Manual
- f. Remove the special rods

A-7 BOILER

- a. Sub-assemble sections on base except for the Back Section.
- b. Use steel channel blocks, Front and Rear for upper rod used in large nipple port.
- c. Use 3-A-67 blocks over 1-1/2" lower tappings at Front and 3" nipple ports on next to Back Section.
- d. Use 48" rods on 5 and 11 section boilers.
Use 48" and 15" rods on 6-7-12 and 13 section boilers
Use 48" and 24" rods for 8 and 14 section boilers.
Use 48", 24" and 15" rods for 9 and 10 section boilers.
- e. Remove the special rods and assemble the Back Section.
- f. Draw up the Back with regular tie rods as directed on page 7 of the A-7 Installation Manual

OAKMONT BOILER

- a. Sub-assemble all of the sections on the base.
- b. Use steel channel blocks at top, for Front and Rear of boiler. OPEN SIDE OF CHANNEL MUST BE AGAINST BACK SECTION WITH CUTOUT IN CHANNEL BLOCK CLEARING THE 2-3/4" DIA. BOSS.
- c. Use 3-A-67 blocks at Rear and A-5 washers at Front for lower rods.
- d. Use 24" and 15" rods for #84 and #85 boilers.
Use 48" rods for #86 and #87 boilers.
Use 48" and 15" rods for #88 and #89 boilers.
- e. Remove the special rods and install the regular tie rods in the tie rod lugs.
- f. Add safety nuts and washers as directed on page 4 of the Oakmont Installation Manual.

SEVERN BOILER

- a. Sub-assemble all sections on the base except for the Back.
- b. Use steel channel blocks for the upper rod.
- c. Use A-5 washers at Front and 3-A-67 Blocks at Rear on lower rods.
- d. Use 24" and 15" rods for #17 and #21 boilers.
Use 48" rods for #25 and #29 boilers.
Use 48" and 15" rods for #33 and #37 boilers.
- e. Remove the special rods and assemble the Back Section.
- f. Draw up the Back with regular tie rods as directed on page 3 of the Severn Boiler Installation Manual.

NO. 2 REDFLASH & EXBROOK BOILERS

- a. Sub-assemble all sections on the base except for the Front Section.
- b. Use steel channel blocks for the upper rod.
- c. Use 3-A-67 Blocks for the lower rods, Front and Rear.
- d. Use 24" and 15" rods for 6 section boiler.
Use 48" rods for 7 and 8 section boilers.
Use 48" and 15" rods for 9-10-11-12 section boilers.
Use 48", 24" and 15" rods for 13 section boiler.
- e. Remove the special rods and assemble the Front Section.
- f. Draw up the Front with regular tie rods as directed on page 4 of the No. 2 Redflash and the Exbrook Installation Manuals.

NO. 3 REDFLASH BOILER

- a. Sub-assemble all sections on the base except for the Front Section.
- b. Use steel channel blocks for the upper rod.
- c. Use 3-A-67 Blocks for the lower rods, Front and Rear.
- d. Use 48" rods for 6 section boiler.
Use 48" and 15" rods for 7-8-9 section boilers.
- e. Remove the special rods and assemble the Front Section.
- f. Draw up the Front with regular tie rods as directed on page 7 of the Installation Manual.