

Assembling Instructions

for »Lollar« 53/55 Cast Iron Boilers

»Lollar« 53: Special Boiler for Oil and Gas Natural Draught Firing

»Lollar« 55: Special Boiler for Oil and Gas Overpressure Firing

Sequence of Assembly

1. General
2. Delivery, Boiler Foundation, Tools/Auxiliaries
3. Mounting (Assembling) Boiler Sections
4. Cold Water Pressure Test
5. Application of Overpressure Sealing Compound
6. Installation of Hardware Items
7. Assembling Boiler Jacket
8. Installation of Burner
9. Installation of Switch Box

2. Delivery

Boiler in separate sections (only assembled if required).
Hardware Items: Case 1 and Case 2.
Rear wall brick in card board box.
Tie bars and brush handles in bundle.
Boiler jacket in crates.
Switch box (delivery upon special order only) packed in cardboard box.

1. General

Observe supplemental mounting instructions for steam boilers. See also pamphlet "Design and Operations Instructions for Steam Boilers" ZK 10.

Use metal bar pressing tools for assembling.

Remove washers and nuts from studs at hubs at front and rear sections prior to pressing.

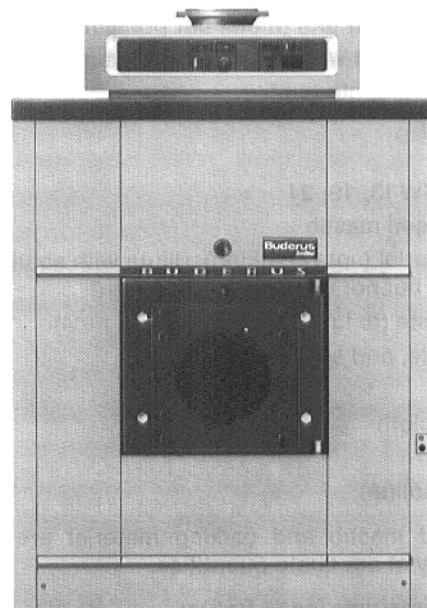
Install centre section with top flow outlet principally as fourth centre section = fifth section from front.

Cleanout cover at front and rear sections is mounted and sealed at factory.

If required, provide soundproofing measures (see also Pamphlet "Soundproofing Measures for Cast Iron Boilers" ZK 8.1).

See special mounting instructions for sound absorbing boiler substructures.

Observe DIN 4752 (e.g. Picture 5) for hot water boilers.
Attention! 53 boilers for natural draught firing operated by slight overpressure at combustion chamber must be additionally calked with overpressure sealing compound everywhere outside at joints of sections. Interior sealing is performed with regular calking material.



»Lollar« 53/55
Special Boiler for Oil and Gas Firing

Placing Boiler

Consider minimum wall clearance required to right hand side (to swing off burner door) and to left hand side (to mount boiler jacket) for arranging foundation and placing boiler.

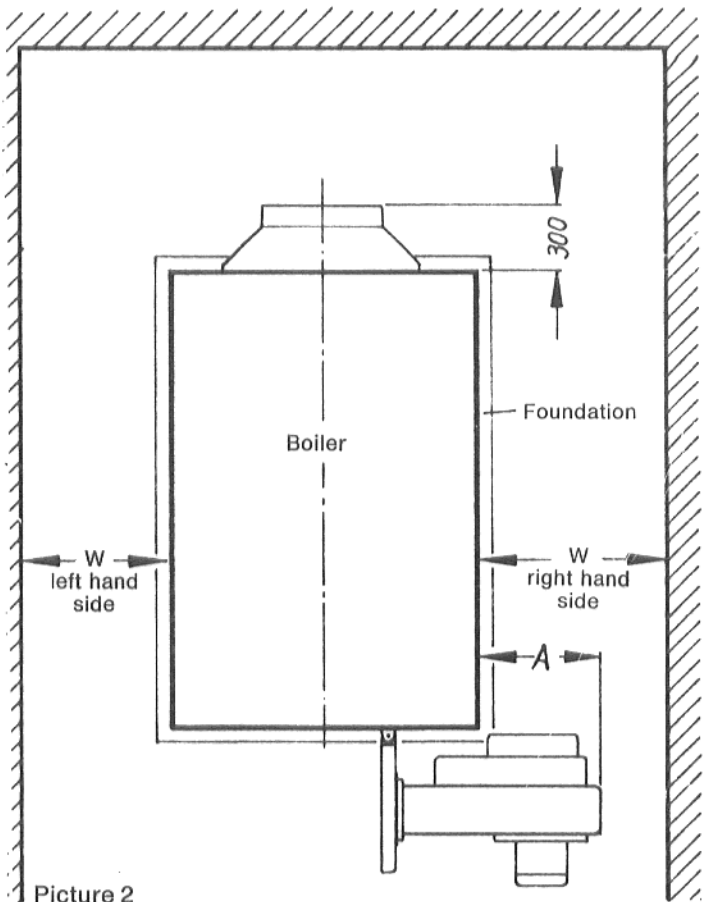
Wall clearance "W" to right hand side = projection of burner A + 10 cm, but 80 cm minimum.

Wall clearance "W" to left hand side = 50 cm minimum.

The following clearances must be observed in front and behind the boiler according to boiler room criteria:

In front of boiler: length of boiler + 100 cm.

Behind the boiler: $\frac{1}{2}$ length of boiler + 50 cm.



Picture 2

3. Mounting Boiler Sections

Assembling Boiler Sections

Attention! When assembling boiler sections, ensure that markings identified in white are on straight line on top right hand side of section.

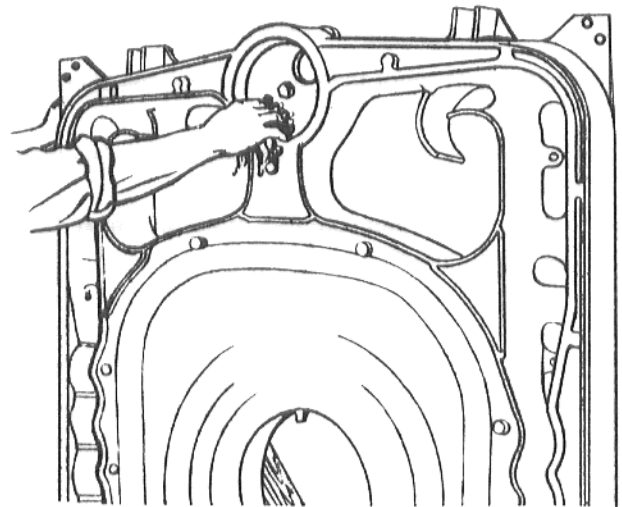
Attention! Remove washers on studs at hubs prior to pressing front and rear sections.

Flow outlet at top of 4th centre section from front (5th section).

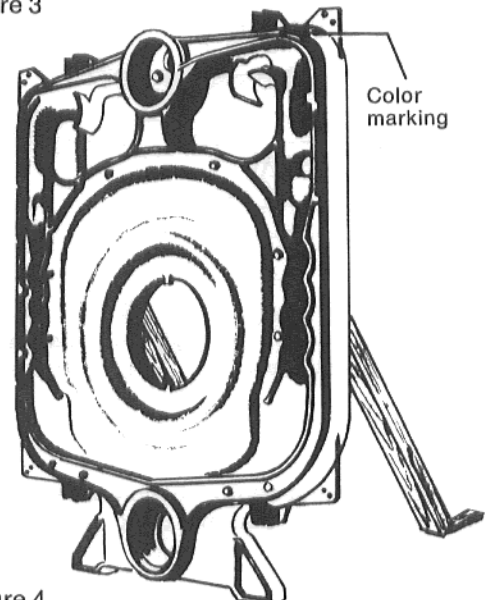
Prior to assembling, clean sealing surfaces of boiler hubs and nipples with gasoline soaked cloth and check for damage. If required clean with emery cloth and/or debur with smooth cut file. Coat nipples and hubs with red lead based mastic to be saturated uniformly (Picture 3).

Any sand remainders or chips noticed at bottom hub during assembling of sections must be removed.

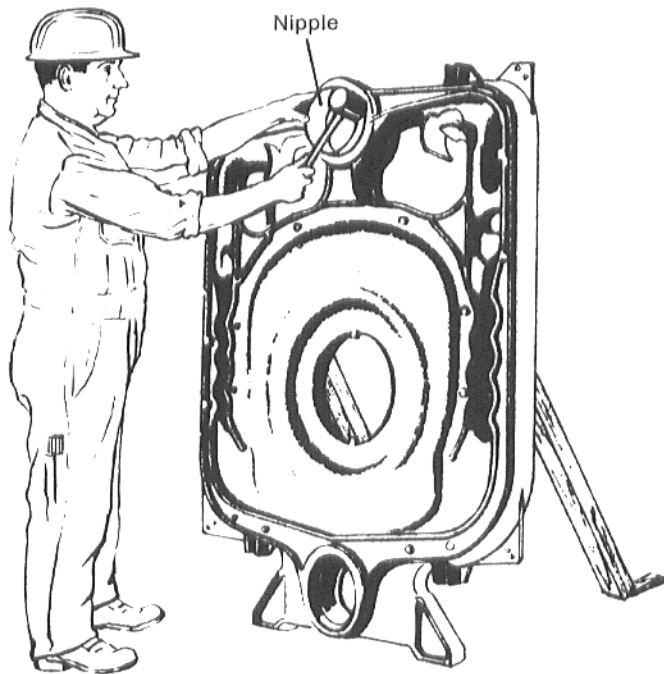
Place **end section** at proposed location. Secure well against tilting.



Picture 3



Picture 4



Picture 5

Nipples must sit straight and axially in hub. Insert nipples in hub by slight hammering (use wood or rubber hammer) starting at rear section. Hammer must always hit interior edge (and always crosswise) – not exterior edge – of nipples, otherwise these will be damaged. Any burr resulting from hitting nipples must be removed immediately.

Calking Boiler Sections

Place calking into calking groove on either side of section halves to be joined. Thereby calking must form a continuous bead projecting abrading strip by at least 2 – 3 mm. Abrading strip shall not be coated with calking.

Attention!

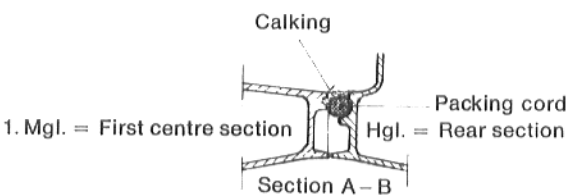
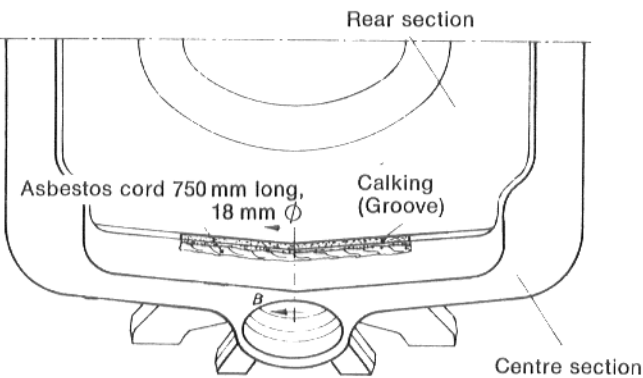
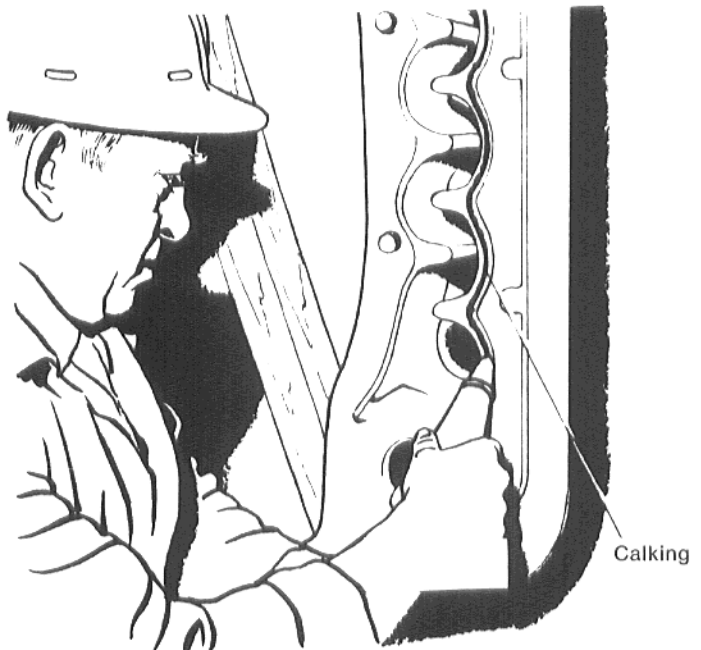
It is important that the two calking grooves of opposite halves of boiler sections are filled uniformly with calking. Do not apply any calking within section of hub.

Place hubs of next section on nipples.

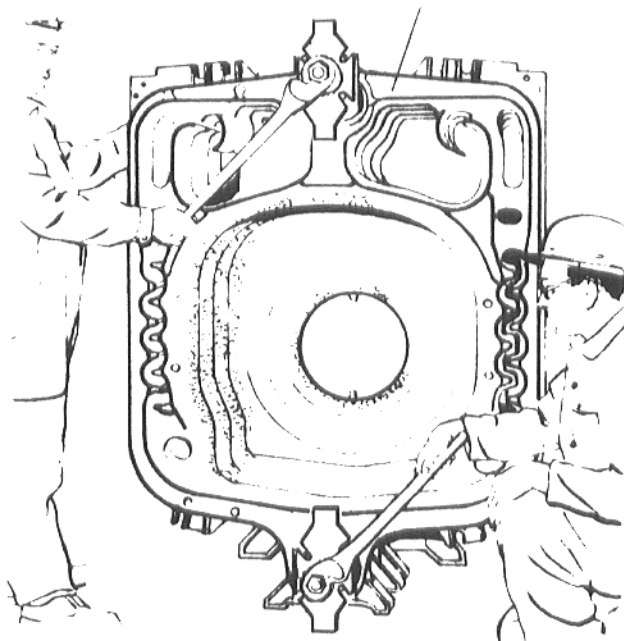
Do never press more than two sections maximum at the same time!

Use metal rod pressing tools and press sections together.

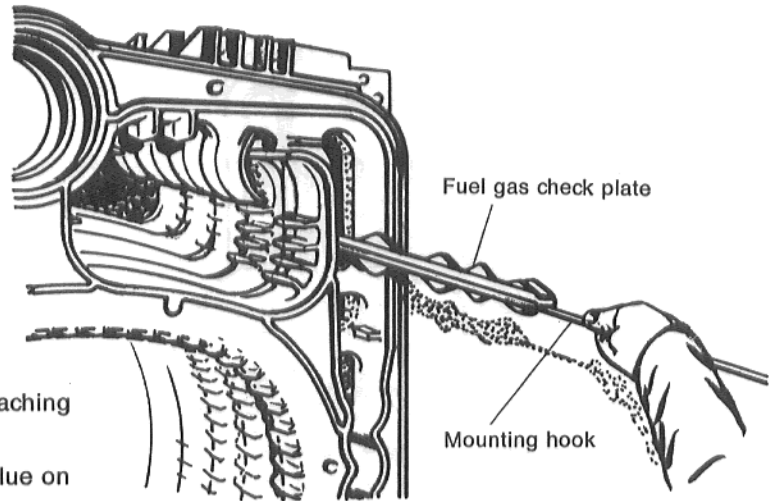
If sealing strips abut, another pressing must be prevented by all means.



After attaching first centre section to rear section, press delivered asbestos packing cord into groove between the two sections. Fill remaining gap with calking (see sketch and Section A-B).



Picture 7



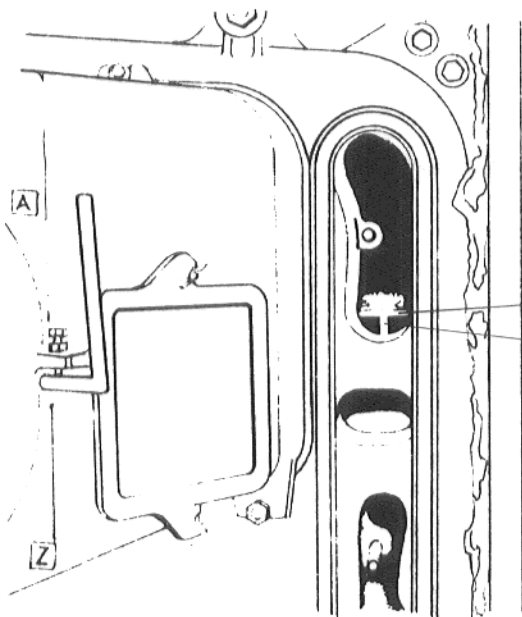
Inserting Fuel Gas Check Plates

Insert delivered fuel gas check plates prior to attaching fourth section.

Fuel gas check plates are inserted in top vertical flue on right and left hand side.

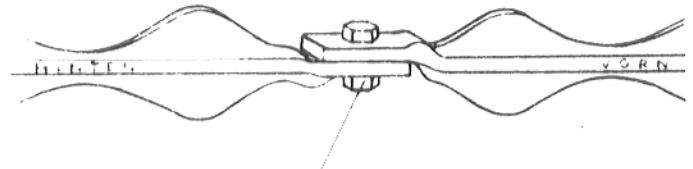
Insert **mounting hook** into existing drilling hole at end of plate and push plate in vertical position all the way to rear until stop at cleanout cover of rear section and turn so that fin points downwards. See also Pictures 8, 9.

Picture 8



Fuel gas check plate inserted when cleanout cover is removed fin points downwards

Picture 9

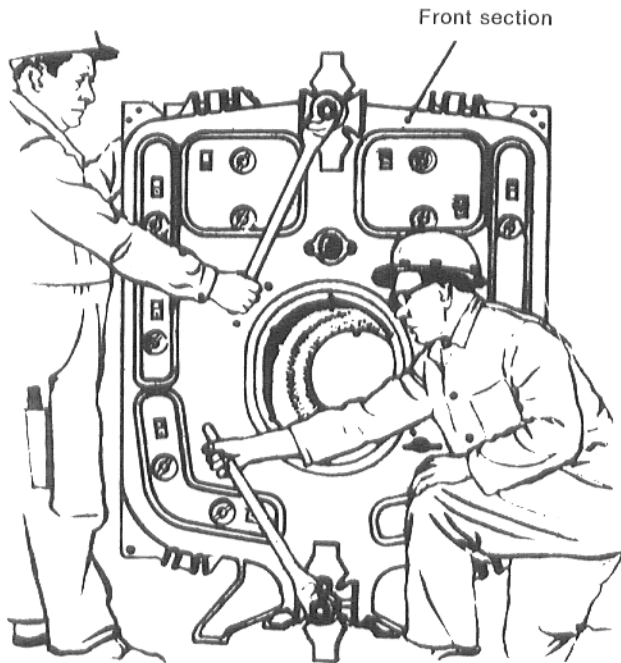


Connect with screws at this location

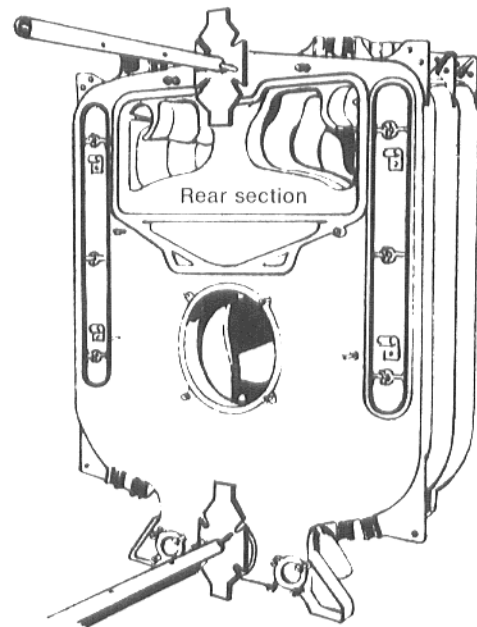
Picture 10

Plates are delivered in one part for boilers consisting of 7 and 8 sections. Plates are delivered in two parts for boilers consisting of 9 to 25 sections.

Connect one each front and rear plate with screws prior to insertion into boiler (Picture 10).



Picture 11

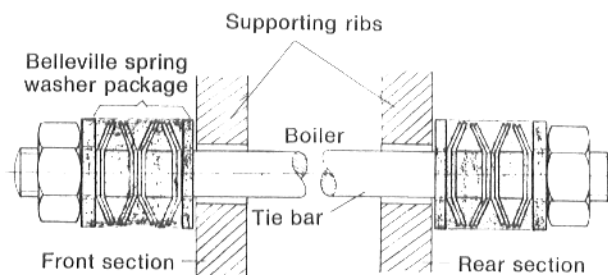


Picture 12

Inserting Tie Bars

After pressing boiler, loosen pressing tool, but do not remove it. Insert tie bars at right and left hand top and right and left hand bottom.

Install **Belleville spring washer package** (wrapped up with adhesive tape) as shown by Picture 13. Place one package at either end of each tie bar. Tighten nuts by hand (watch for uniform projections of tie rods at front and rear). After this, hold one of the two nuts with wrench and tighten the other nuts by $2\frac{1}{2}$ to 3 rotations. Remove pressing tool now!

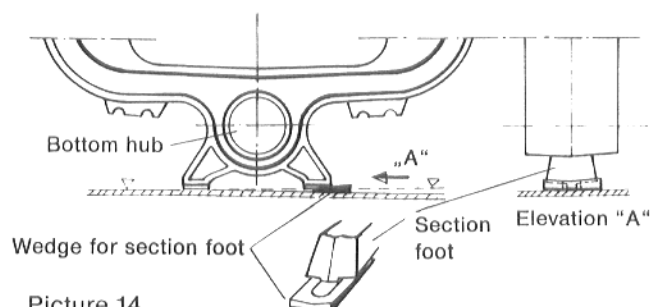


Picture 13

Attention!

All sections (section feet) must stand level everywhere on foundation (floor). There shall be no space left between section foot and base surface. If this, however, occurs, then pull wedges delivered by factory under foot at that location only. Knock in wedges by slight hammering to an extent that they tighten section in straight position.

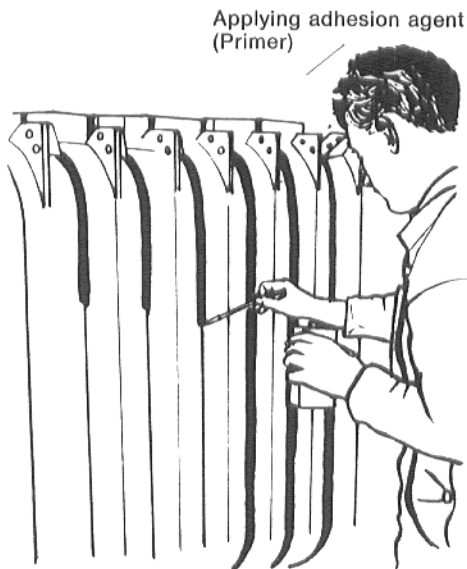
Caution! Do not knock in wedges under tension! Screw on top and bottom front blind flange (with gasket). Use no wedges for section feet in case of sound absorbing boiler substructures.



Picture 14

5. Application of Overpressure Sealing Compound

Applies to »Lollar« 55 Boiler only



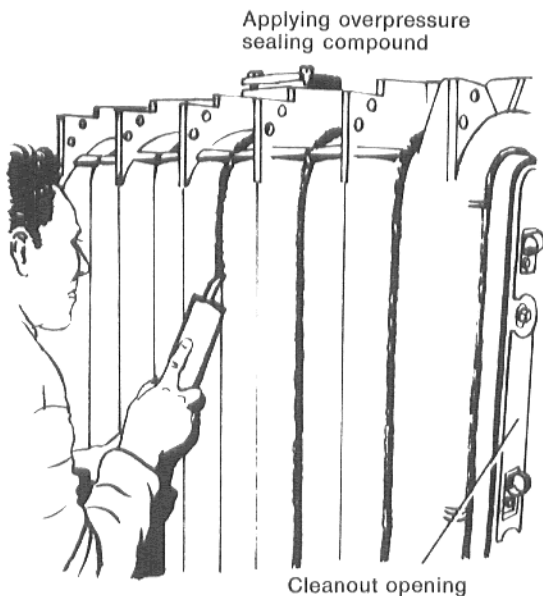
Picture 16

Prior to coating with adhesion agent (primer) and subsequent application of calking, boiler must be free from grease and rust, and dry at these locations.

Ensure, especially after hydrostatic test, that boiler is dry.

After sealing surfaces of exterior abrading strips and surrounding surfaces have been cleaned from dirt and grease, adhesion agent is applied with a brush on either side of calking joints over a width of approximately 30 mm around the boiler (see Picture 16).

Attention! Ensure good ventilation of room during processing of adhesion agent, otherwise bodily harm may be caused.



Picture 17

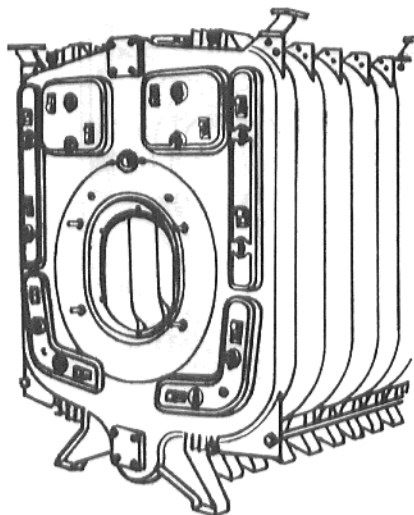
After ventilation period of approximately 30 minutes, overpressure sealing compound will be applied. It is applied with a ratchet pistol into which a plastic bag is inserted (considering processing instructions on cartridge) to exterior of boiler (see Picture 17).

Overpressure sealing compound shall be approximately 12 mm wide and 6 mm high.

The advantage of plastic channel with slight angle is especially noticed at sealing points hardly accessible, specifically at bottom part of boiler sections.

It is **important** to apply overpressure sealing compound at required thickness by all means, especially for possible work operations with spattle or similar items.

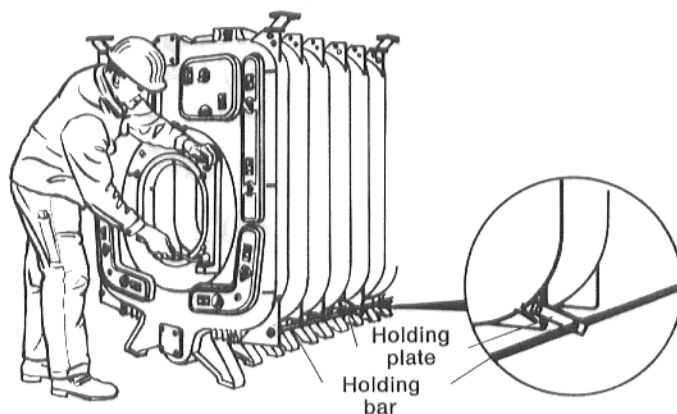
6. Installation of Hardware Items



Picture 18

Front Section

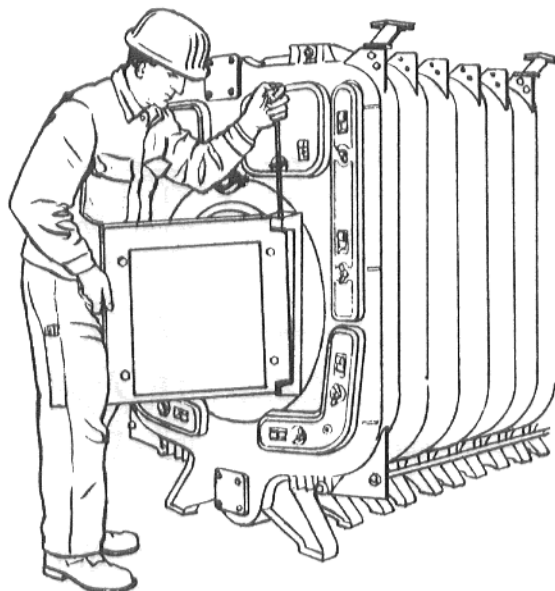
Cleanout covers are mounted and sealed at factory.



Picture 19

Place **hinge strip** for burner door over M16 studs and screw it on.

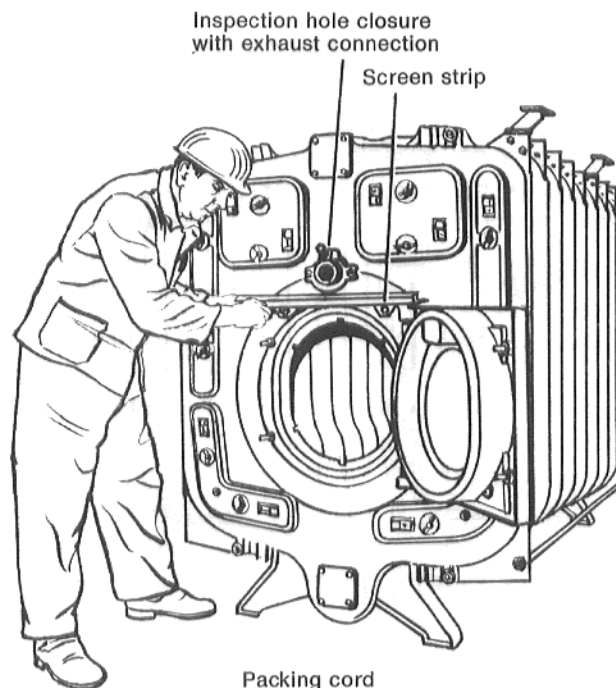
Push holding plate onto holding bar for boiler jacket. Push holding bar through butt straps of end sections and tighten it with counternut at butt strap of front section. Holding bar is supported freely on rear section. Use M8 screw to fasten holding plate to centre section. Insert **burner door** in hinge strip.



Picture 20

Insert hinge pin from top to half height. Insert washer and cotter. Secure cotter. Insert hinge pin until stop.

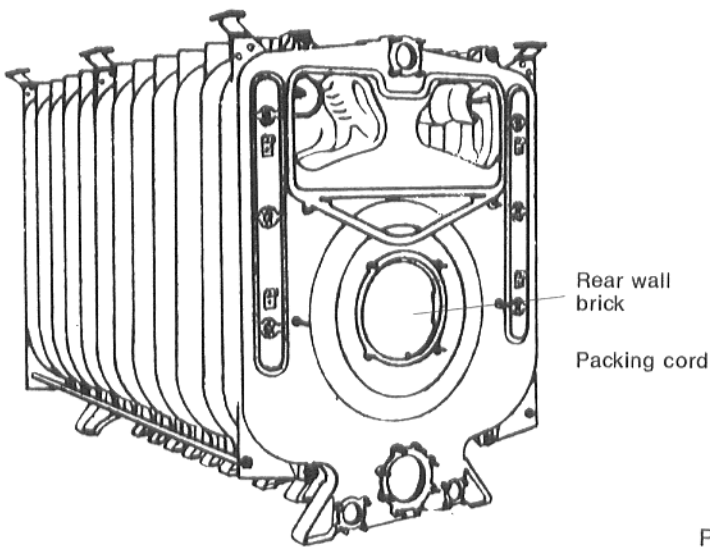
Insert packing cord delivered for burner door in front section (18 mm ϕ) for **55 boiler**.



Picture 21

Secure **screen strip** (above burner door) with two countersunk bolts M 10.

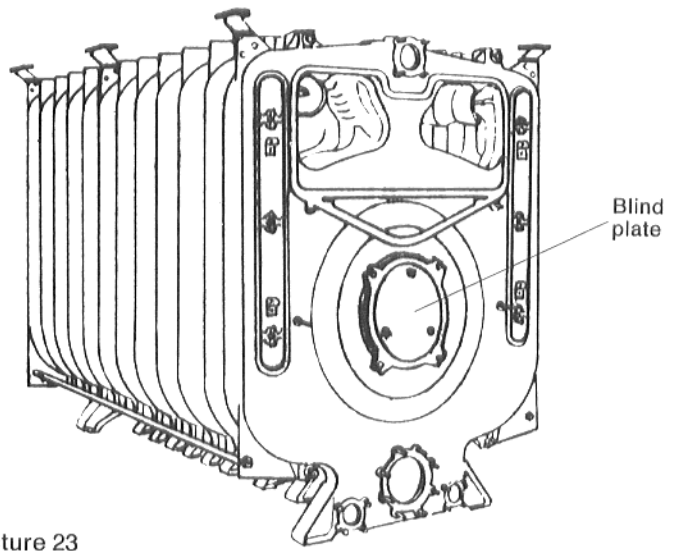
Fasten **inspection hole closure** (including gasket) to front section with studs. Fasten inspection hole closure in such a manner that exhaust connection of inspection hole opening points upwards.



Picture 22

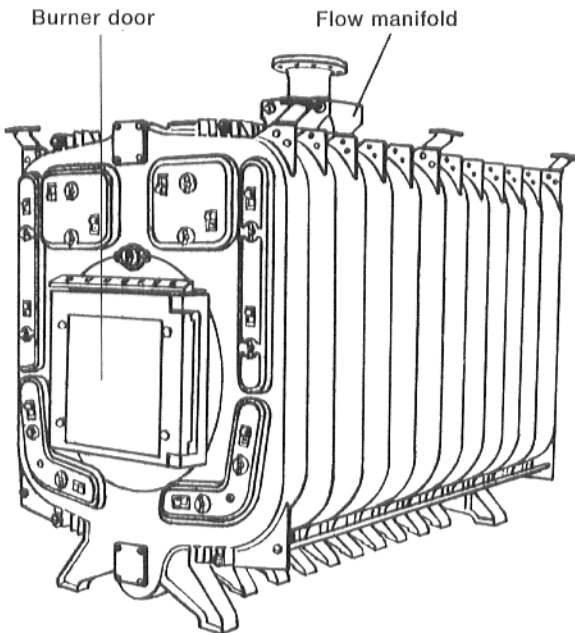
Insert packing cord delivered for blind plate in rear section (14 mm ϕ) for **55 Boiler**.

Screw on **blind plate** with thermal insulation glued in and packing cord.



Picture 23

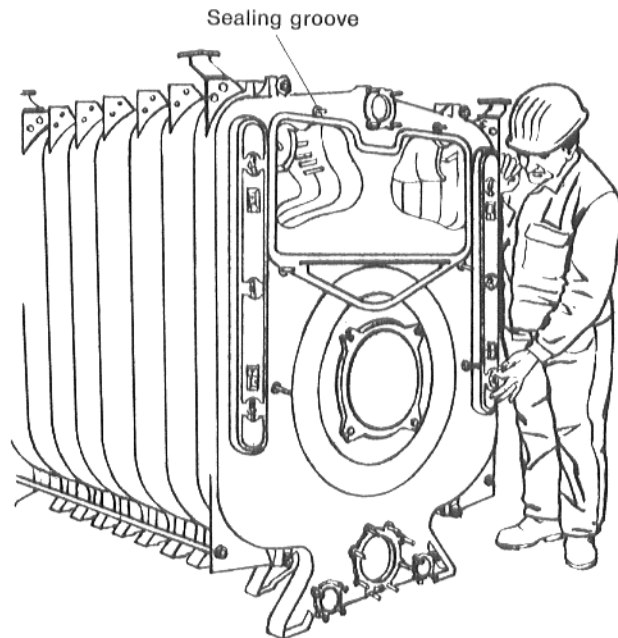
Insert **rear wall brick** into opening at rear section from outside.



Picture 24

Place three (3) standard bricks 1/1–20 delivered in boiler to protect against oil dripping from burner. Locate them beside each other in longitudinal direction on grate at centre so that they adjoin to front section.

Tighten **burner door** uniformly with 4 locking bolts.



Picture 25

Rear Cleanout Covers

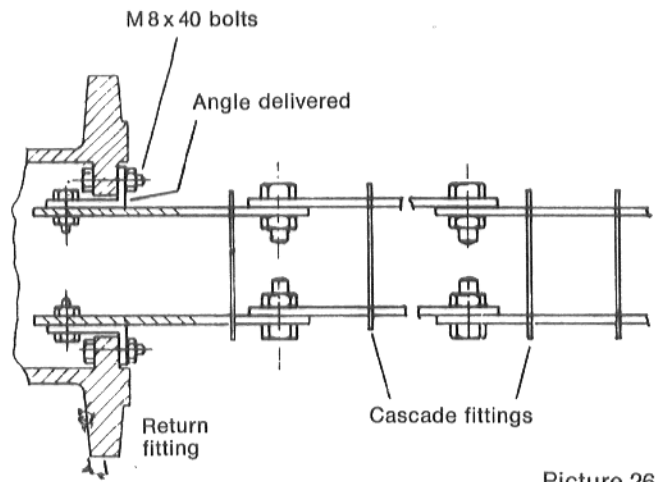
Have already been installed and sealed at factory.

**Installation for Flow Discs (Cascade Fittings) on
»Lollar«53/55 Cast Iron Boiler**

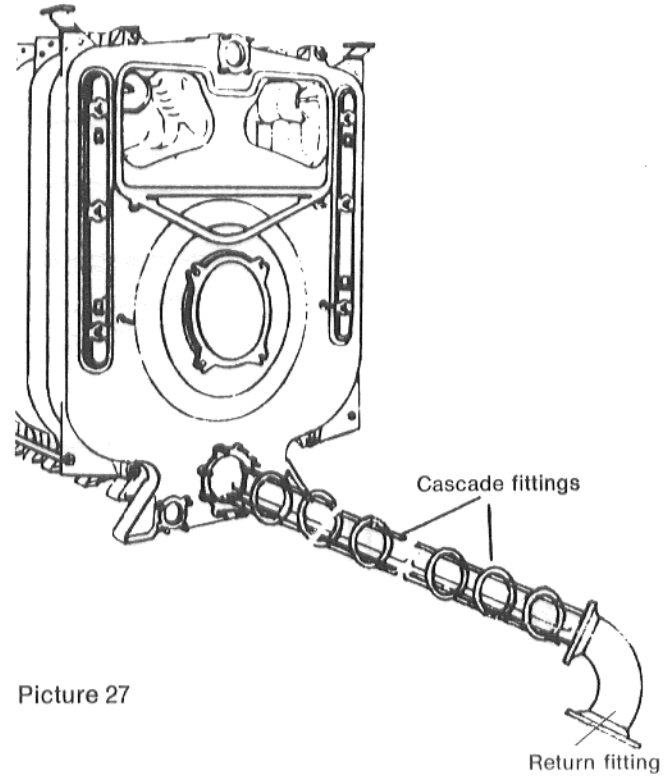
Number of cascade fittings depends on number of sections (see table).

Cascade fittings consist of several cascades of three or four parts. Cascade fittings are installed from rear into bottom hub of completely assembled boiler. In case of narrow space behind boiler, it is advisable to push a portion of cascade into hub and to fasten the other portions with screws (according to table). Push screwed cascade fittings farther into hub and install the next portion as specified before. Cascade is fastened to return fitting at cast noses existing in fitting using two M8x40 bolts (Picture 26 and 27).

Attach return fitting with cascade fittings to rear section.



Picture 26



Picture 27

Number of sections	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Cascade type flow discs 3 parts	1	-	-	2	1	-	3	2	1	-	3	2	1	-	3	2	1	5
consisting of 4 parts	-	1	1	-	1	2	-	1	2	3	1	2	3	4	2	3	4	-

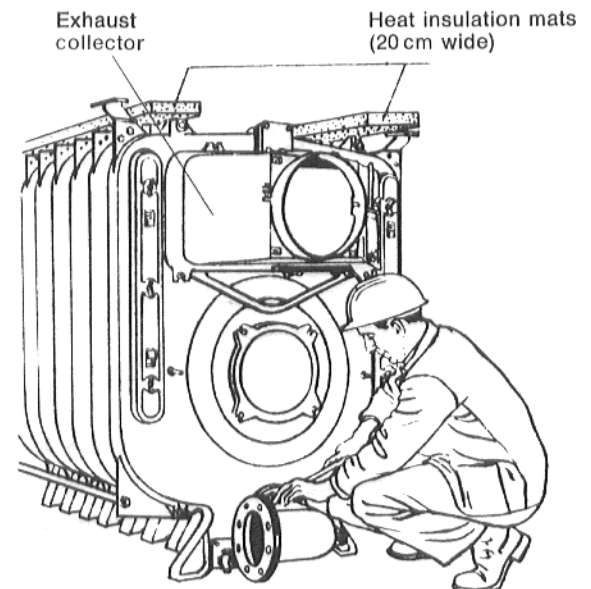
Attaching Exhaust Collector

Insert asbestos packing cord into sealing groove.

Secure **exhaust collector** with screws.

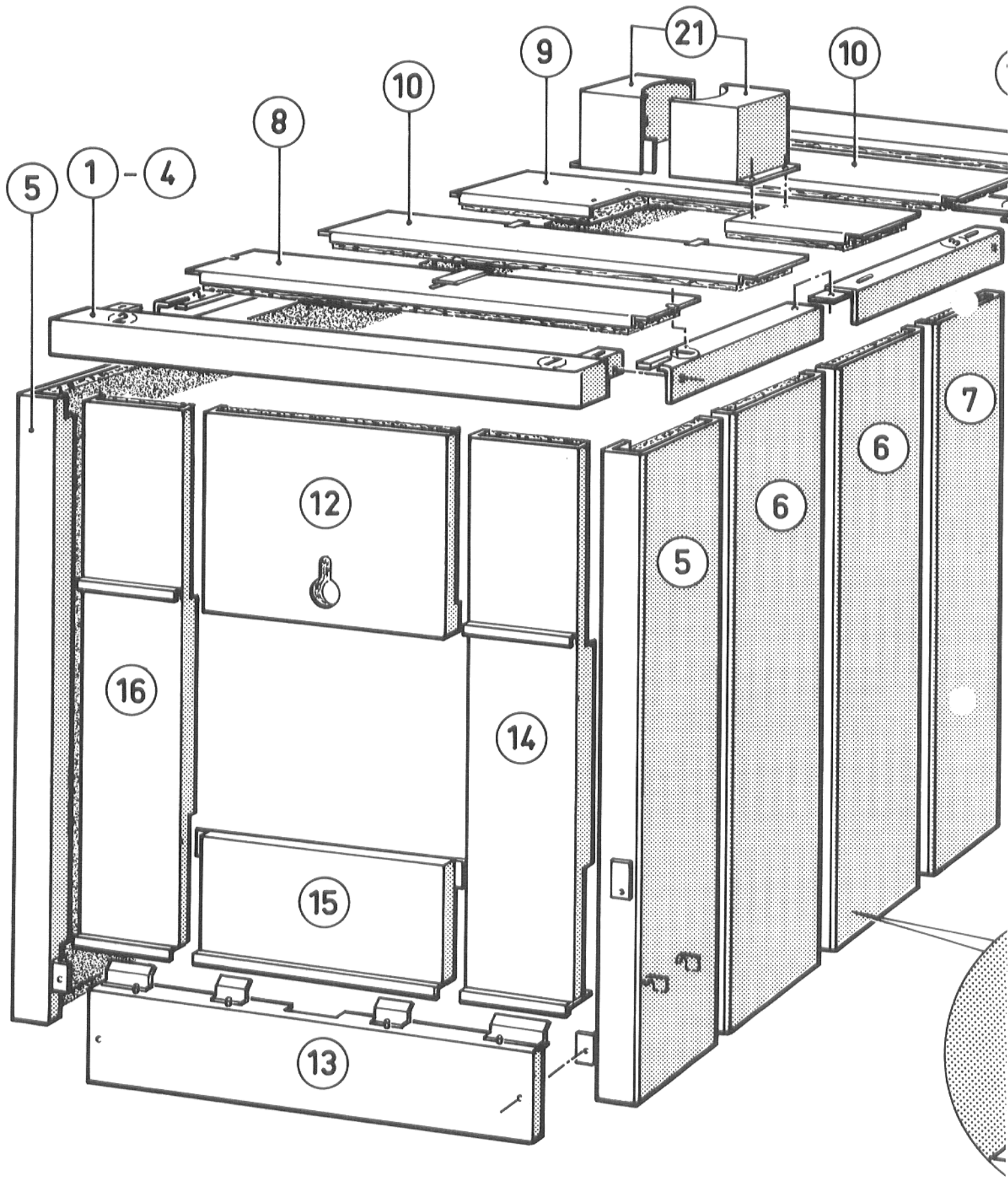
(Pressing tool can be used for later replacing of sections without exhaust collector required to be removed.)

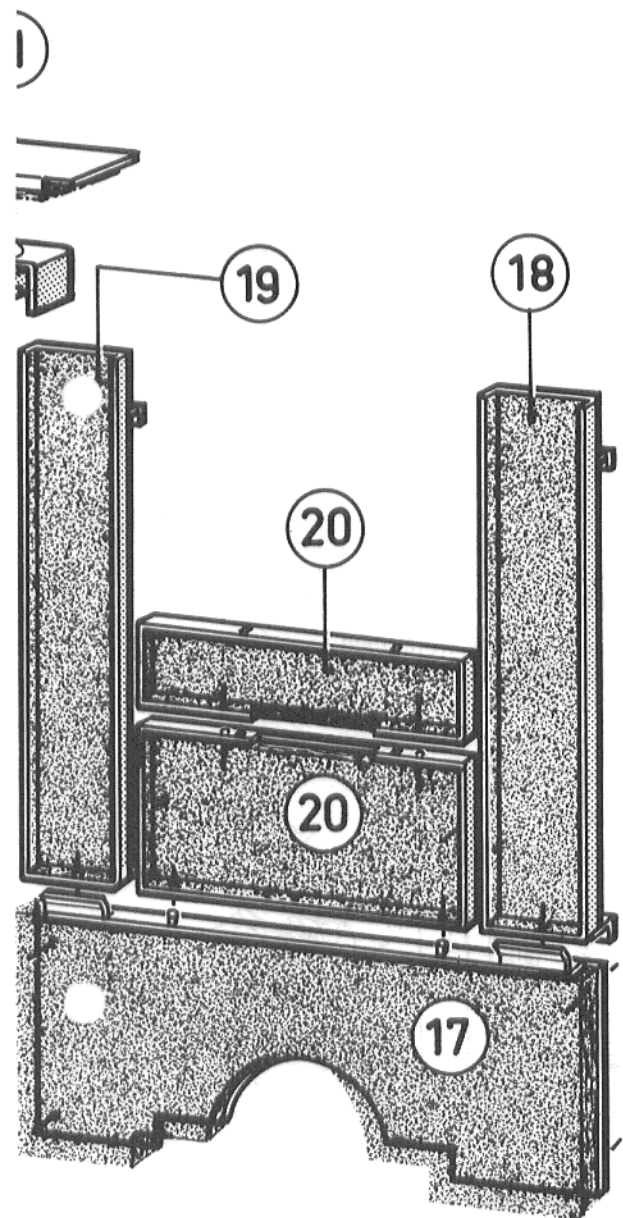
Install flue liner on upgrade if possible!



Picture 28

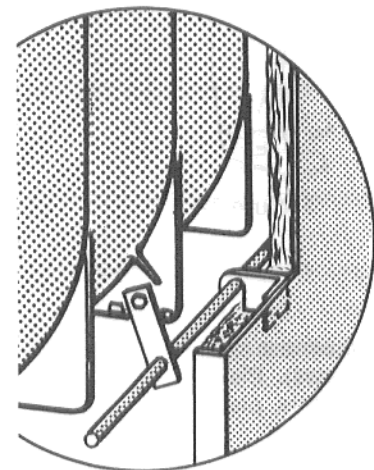
7. Assembly of Boiler Jacket





Sequence of Assembly

- Assemble front, rear, and centre frame sections (1–4)
- Right and left front sidewalls of boiler (5)
- Right and left hand centre walls (6)
- Right and left rear sidewalls of boiler (7)
- Front cover plate (8)
- Cover plate with cutout (flow outlet) (9)
- Centre cover plates (10)
- Rear cover plate (11)
- Top centre cleaning port (front) (12)
- Front bottom traverse (13)
- Right hand cleaning port (14)
- Bottom centre cleaning port (15)
- Left hand cleaning port (16)
- Rear bottom traverse (17)
- Right hand cleaning port (18)
- Left hand cleaning port (19)
- Cover plate(s) (20)
- Cover hood (21)



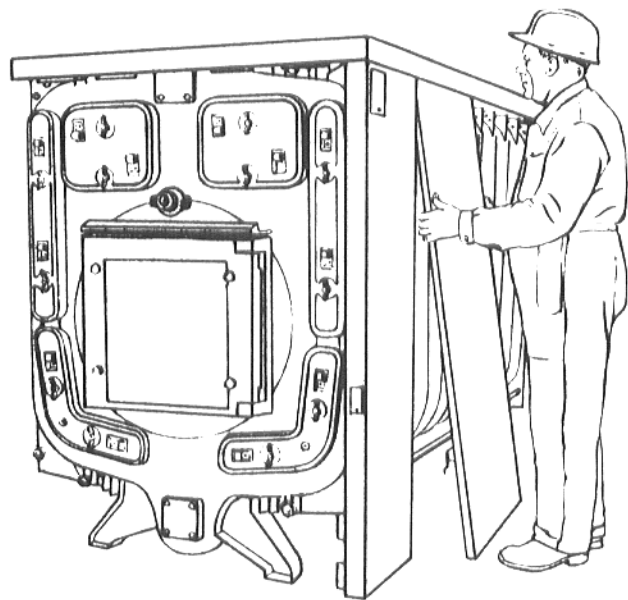
Bolt frame for boiler jacket together. Ensure that numbers on front and side portions agree with each other.

Butt straps for capillary tubes are dotted on right hand side of frame. Place frame on aligned brackets (recess of frame is always at rear, Picture 29).

Adapt centre brackets to elevation and bolt all brackets to boiler and frame.

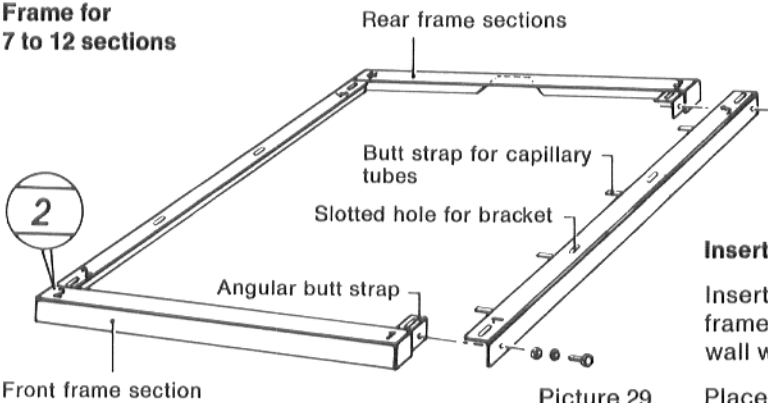
Bolt frame to front and rear brackets (with hexagonal bolts).

Prior to placing frame on top, place delivered heat insulation mats (20 cm wide) on right and left hand side between holders of tie rods and brackets.



Picture 31

Frame for 7 to 12 sections



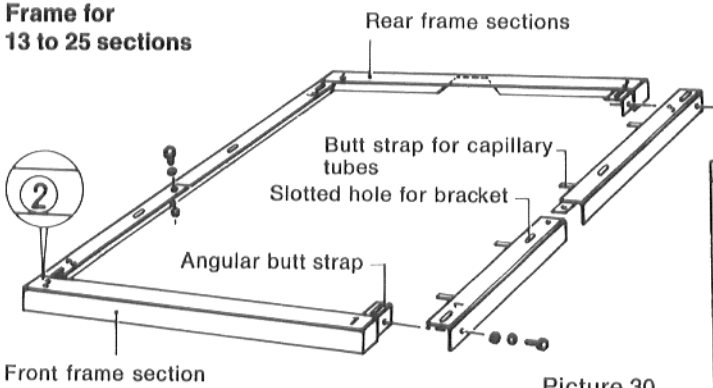
Picture 29

Inserting Side Walls

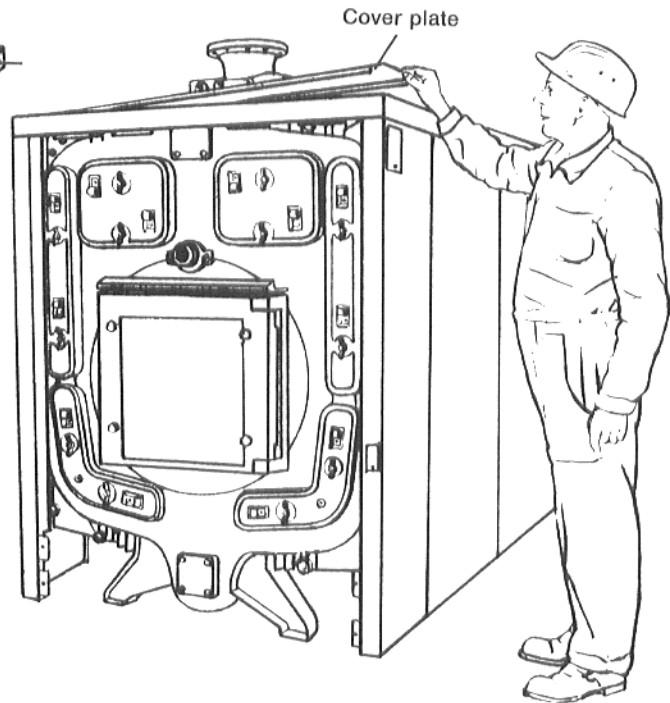
Insert right front side wall startedly from bottom between frame and dotted butt straps in frame (inside) and place wall with holding angles onto holding bar at bottom.

Place centre sidewalls (to adjoin front wall) as required. Place right rear sides. Place left hand sidewalls in same sequence.

Frame for 13 to 25 sections



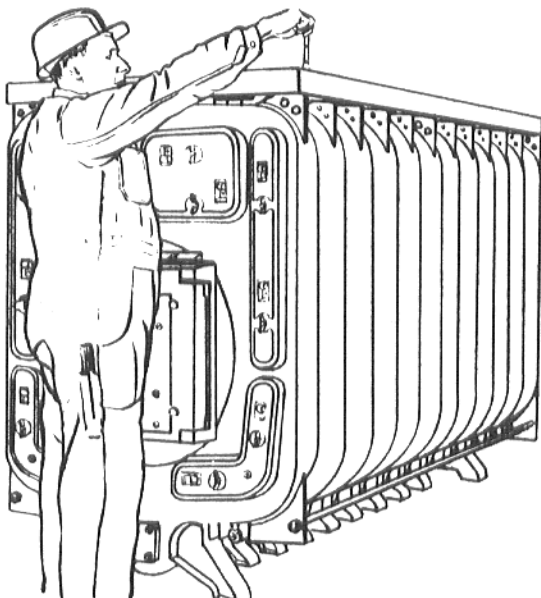
Picture 30

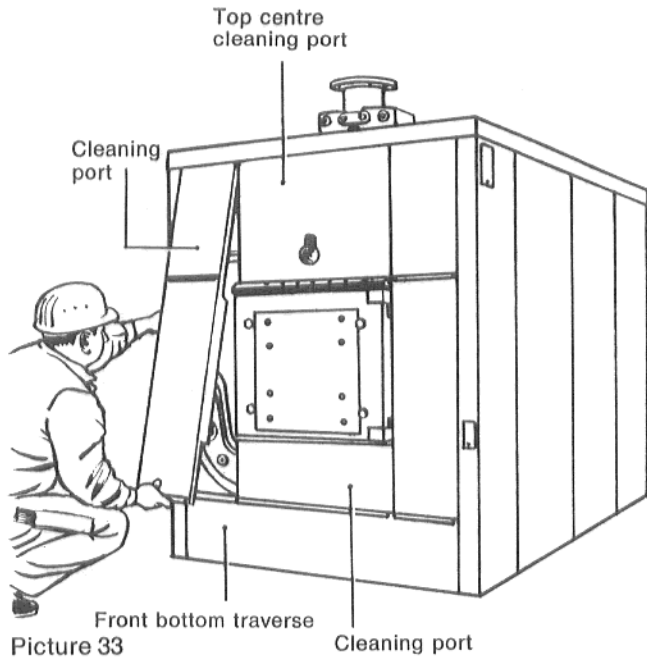


Picture 32

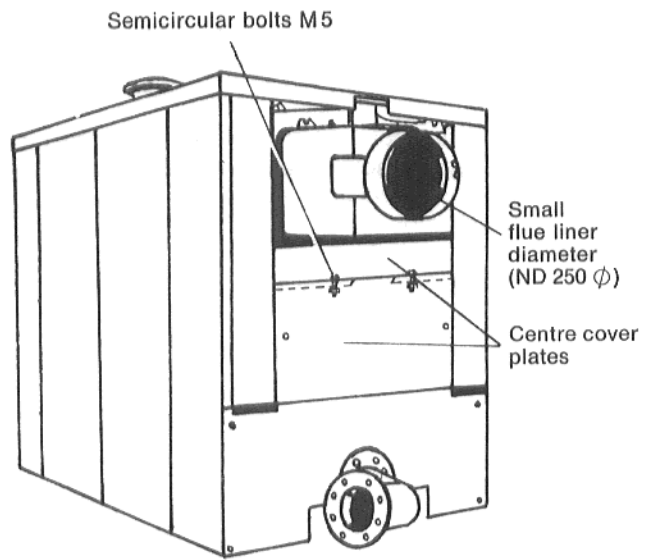
Placing Boiler Cover

Place front cover plate on top of frame and secure with screws (chromium plated fillister head screws). Place cover plate with cutout for flow outlet. After this, place centre and rear cover plates. Boiler cover is not passable!





Picture 33



Picture 35

Insert top center cleaning port under frame at top and behind screen strip at bottom.

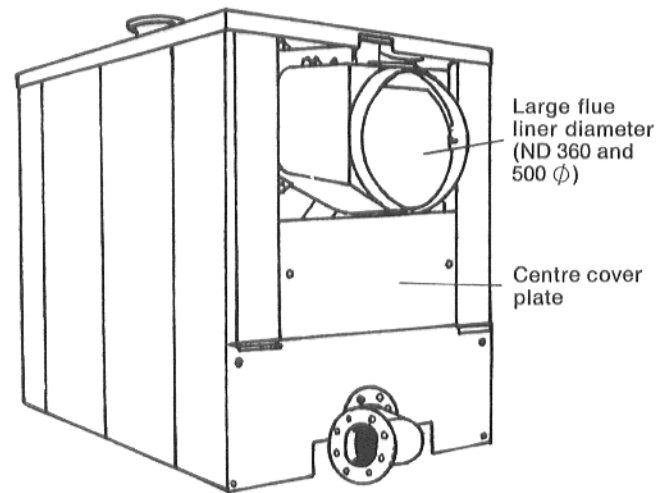
Bolt **front bottom traverse** to butt straps of sidewalls (with chromium plated fillister head screws).

Insert **right hand cleaning port** similarly to sidewalls between frame and sheet metal butt straps and place bottom drilling hole onto pin of bottom traverse.

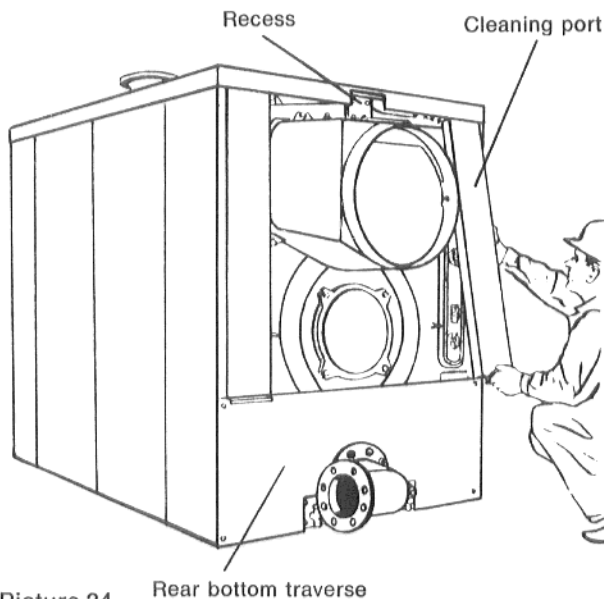
Push bottom centre cleaning port with lateral holding straps under right hand cleaning port and place it onto pins of bottom traverse.

Place **left hand cleaning port** as required for right hand cleaning port.

The **two cover plates delivered** are to be bolted together and attached to boilers with small flue liner diameter (ND 250).



Picture 36



Picture 34

Narrow cover plate will not be needed for boilers with large flue liner diameter (ND 360 and 500). Fasten **large cover plate** only.

Place **centre cover plates** over studs and secure with nuts.

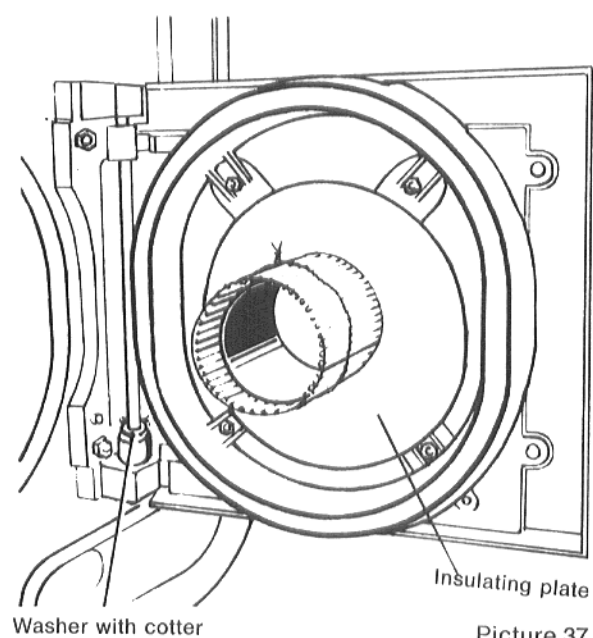
Bolt **rear bottom traverse** to sidewalls. Insert left and right hand cleaning ports into frame and place drilling hole onto pins of traverse.

8. Installation of Burner

Installation of Oil Burner

Burner plate is drilled at factory for P 53/55 boiler, if diameter of burner pipe was indicated by order. Remove steel inserting plate to drill holes for installation of burner.

If burner opening has not yet been drilled, it shall be cut out by gas cutting, and holes shall be drilled for installation of burner. Rebolt steel inserting plate to burner door. It is sealed by asbestos cord in burner door. Cut out insulating plate and insert it.



Picture 37

Fill space at burner door between fire tube and sealing frame with refractory ramming material.

(Plicast-Verilite will be delivered by factory.)

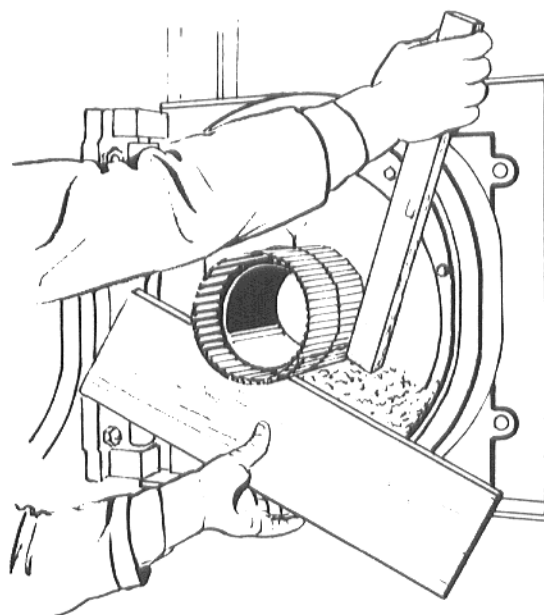
Prepare refractory ramming material.

Wrap up burner pipe with corrugated cardboard and tie or glue corrugated cardboard. Press in refractory ramming material using board or wood lath (Pictures 37 and 38).

It is advisable to tamp thoroughly around burner pipe from bottom to top.

Corrugated cardboard burns at start-up of burner leaving an adequate expansion space between refractory ramming material and burner pipe.

Connect exhaust outlet of inspection hole closure to burner to keep sight glass free from deposits.

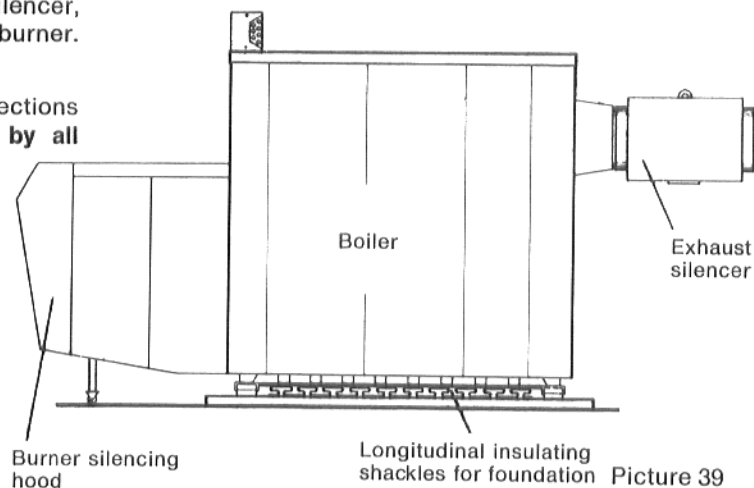


Picture 38

Soundproofing Measures

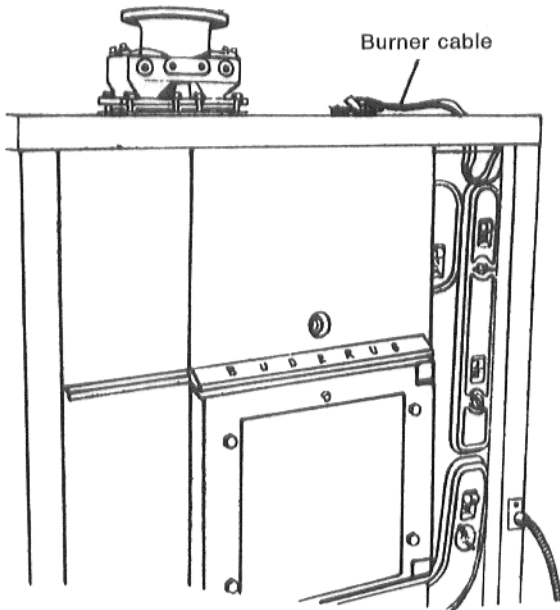
Sound absorbing boiler substructure, exhaust silencer, and silencing hood for forced draught oil or gas burner. Demand special documents if needed.

If sound attenuating substructures are used, connections to lines shall be provided with compensators **by all means**.

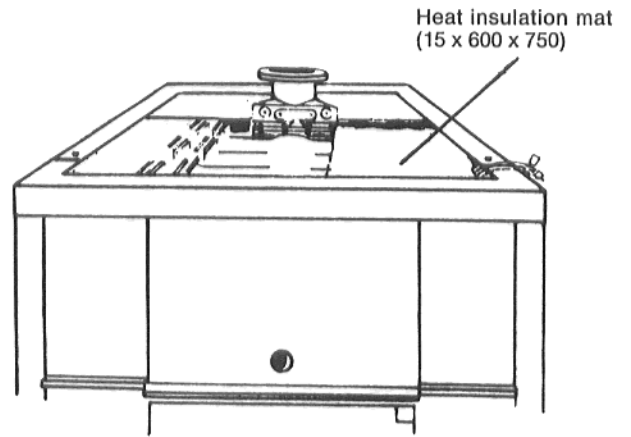


Picture 39

9. Installation of Control Module



Picture 41



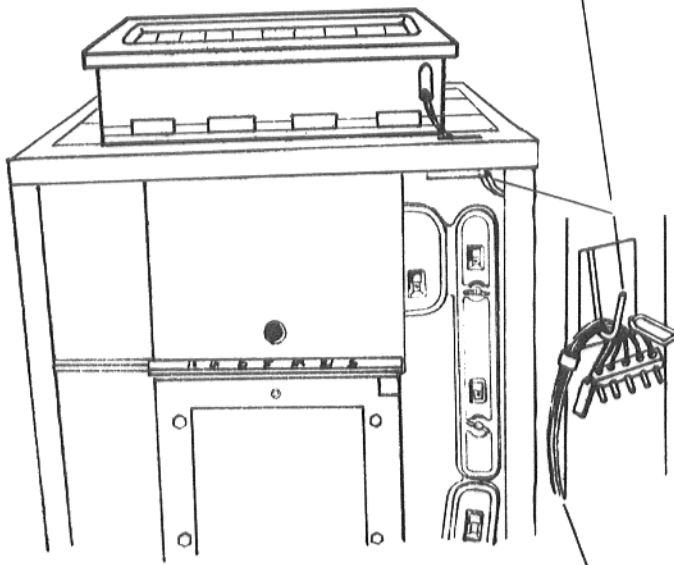
Picture 40

Installation of Control Module

Prior to placing control module on top of boiler the heat insulation mat (15 x 600 x 750) delivered by factory is to be placed under front caover plate at right front all the way up to flow manifold (Picture 40).

Remove **right hand cleaning flap**.

Remove **cover of control module**.



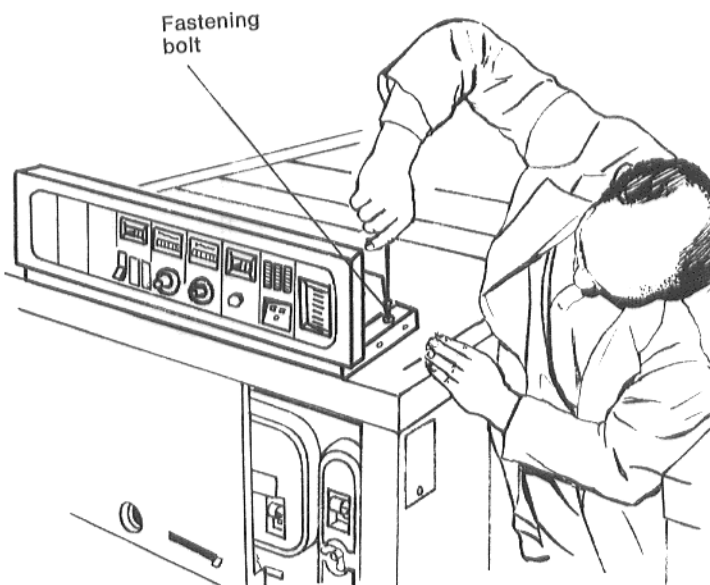
Picture 42

Burner cable

Remove **cover plates** at front wall and cover plate to insert burner cable. Pull **burner cable** upwards through cable duct and cutout towards cover plate (Picture 42).

Secure **cover plate** (with burner cable) with screws.

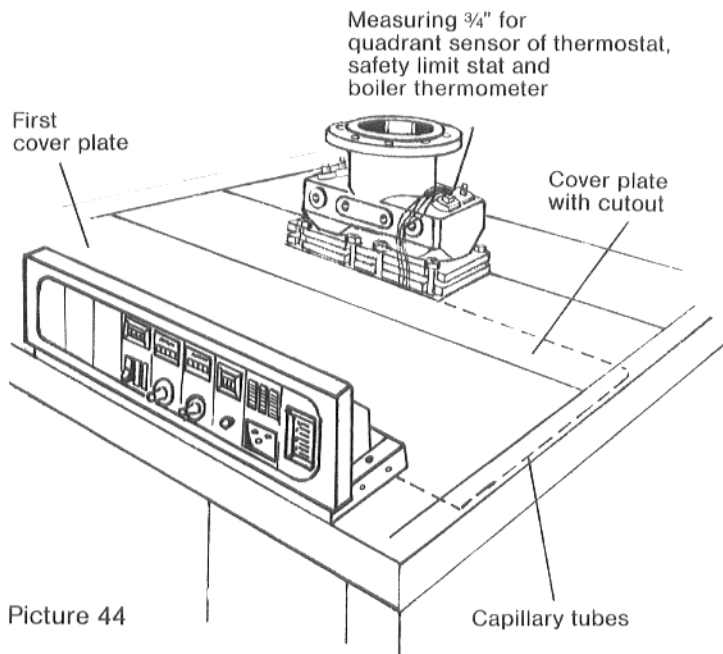
Remove **first cover plate**, as well as **cover plate with cutout** for flow manifold.



Picture 43

Place **control module** on top of boiler and unroll **capillary tubes**. Remove cover plate (for capillary tubes) from first cover plate, insert **capillary tubes** and route them to flow manifold. Secure capillary tubes by clamping them under cover frame with spot-welded clips (see als Picture 44).

Place **control module** on first cover plate and bolt it with fastening bolts inside the control module.

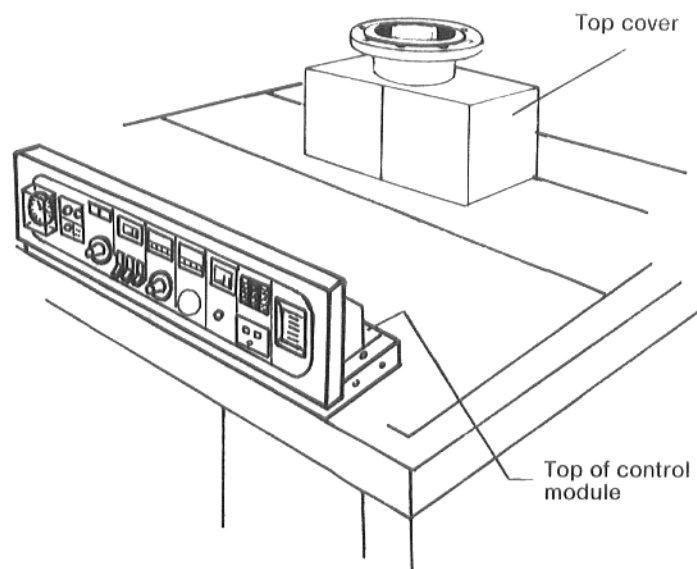


Insert **temperature sensor** of control units into **sensor pocket** and secure by means of fastening screw.

Plug in **connections** of the different cable connections as marked.

Screw down fastening screws into bush section of plug strip.

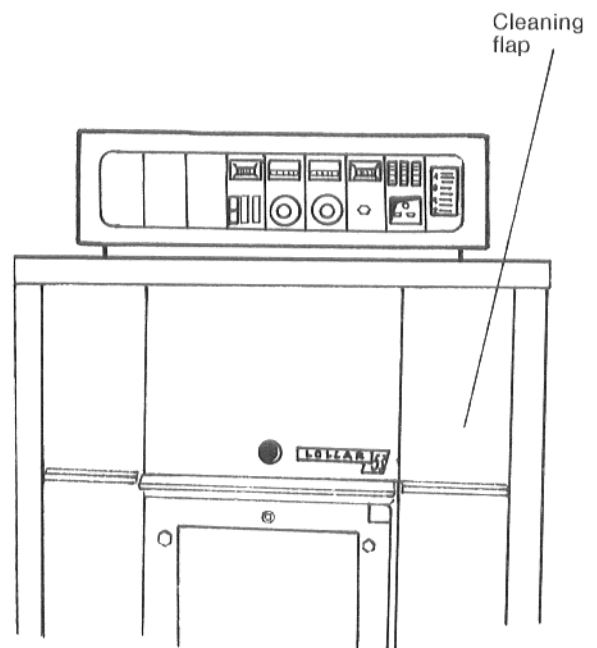
Place **cover plate** on boiler.



Picture 45

Put **back top of control module** and screw down from the top.

Mount **top cover** (for flow manifold).



Picture 46

Insert **cleaning flap** (right).

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