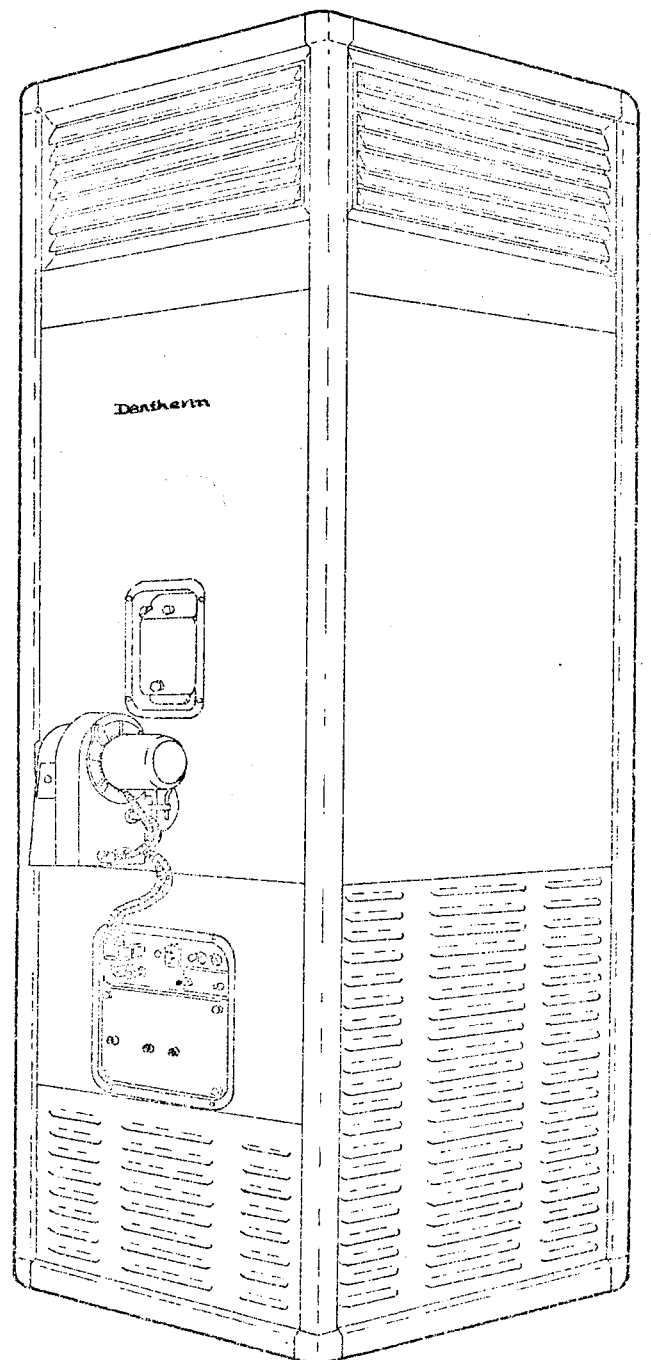


Dantherm

INSTRUCTION MANUAL

KA/KAL



OPERATION

A Dantherm warm air heater is built up of the following main components:

1. Oil Burner
2. Fan
3. Control Panel
4. Room Thermostat (day/night panel)
5. Safety Thermostats
6. Combustion Chamber
7. Heat Exchanger
8. Flue Chamber
9. Cabinet

The heater functions in the following way:

1. When the room thermostat (4) calls for heat, the burner comes into operation via the control box in the control panel (3). If a flame is established, the rest of the starting procedure will continue normally. If this is not the case, the control box will cut off the oil burner and the red light on the control panel will come on.

2. When the temperature in the heater itself has reached a certain temperature (50°C), the combination thermostat in the panel (5) will start the fan.

3. When the room temperature has reached the desired level, the room thermostat will cut off the oil burner while the fan is still running, until the temperature inside the heater has reached 30°C . Then the combination thermostat will cut off the fan.

4. If the temperature inside the heater for some reason or another rises to more than 80°C , the combination thermostat will cut off the oil burner but leave the fan in operation. As soon as the temperature inside the heater has dropped to less than 80°C , the oil burner will automatically start.

5. Should the temperature, even though the burner is switched off, still rise, then the electricity supply to the heater will be cut off altogether by the overheat thermostat, positioned in the panel, when the temperature reaches 100°C . (5).

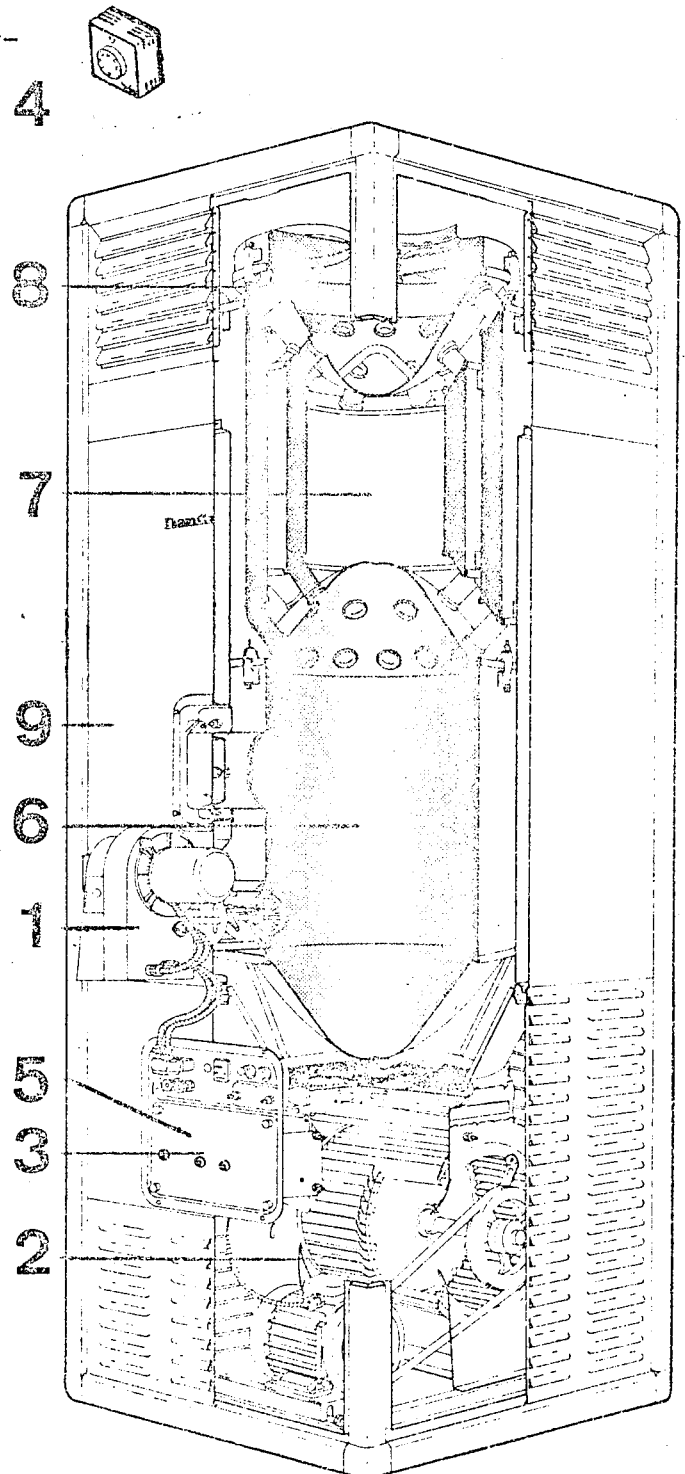


FIG. 1

CONNECTION OF ELECTRICITY

Dantherm warm air heaters are - when they leave the factory fitted with all necessary electrical equipment and only require connection to the mains and room thermostat or day/night panel. At the back of this book there are wiring diagrams showing the internal connections of the heater.

CONNECTION TO MAINS ELECTRICITY

All heaters must be connected to 3 phases, +, neutral and earth. Model KA 15/25 (Model 100) is excepted. It can also be supplied for single phase operation.

Fig. 2 shows how connection to mains is made. When the heater is connected, the direction of rotation of the motor is tested by turning the fan switch to MAN. Air must then be blown out at the top of the heater. If this is not the case, two of the phases are swapped over.

CONNECTION OF THERMOSTAT

The heater is normally supplied with a room thermostat to be connected as shown on fig. 3. Remember to remove the bridge wire between 4 and 2. The thermostat should be placed away from the direct air flow of the heater and at a height of approx. 1.5 m above floor level. The thermostat should be placed in a position where it cannot be exposed to direct sunshine, draught or heat from machinery etc.

When splash proof construction is required, Danfoss type RT4 can be used.

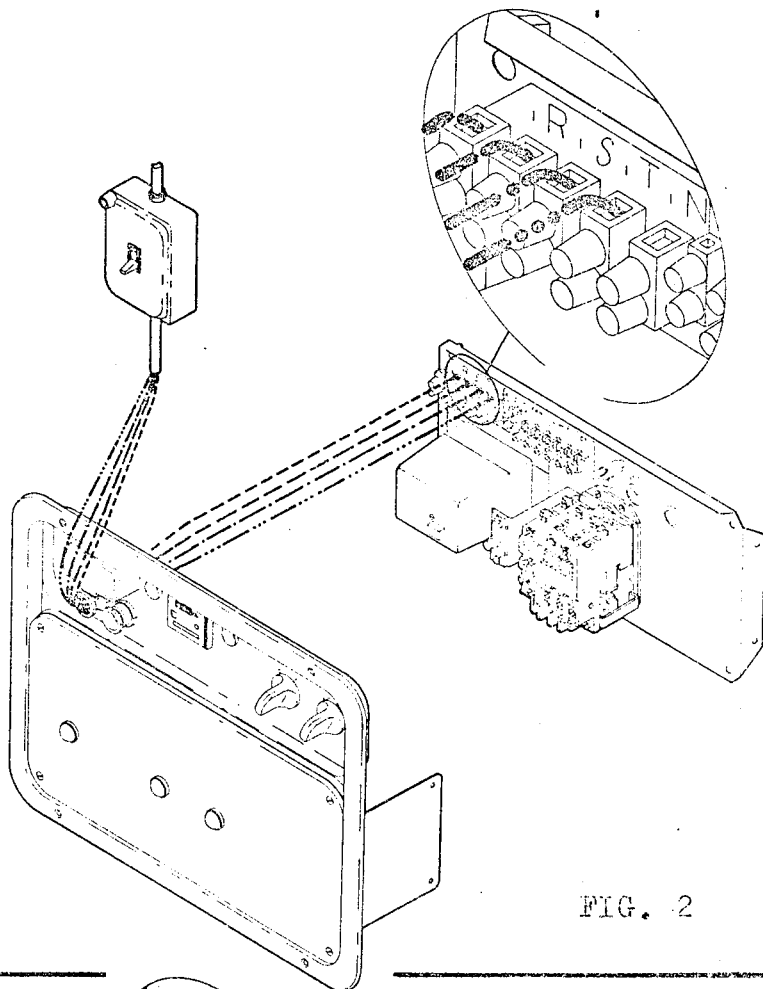


FIG. 2

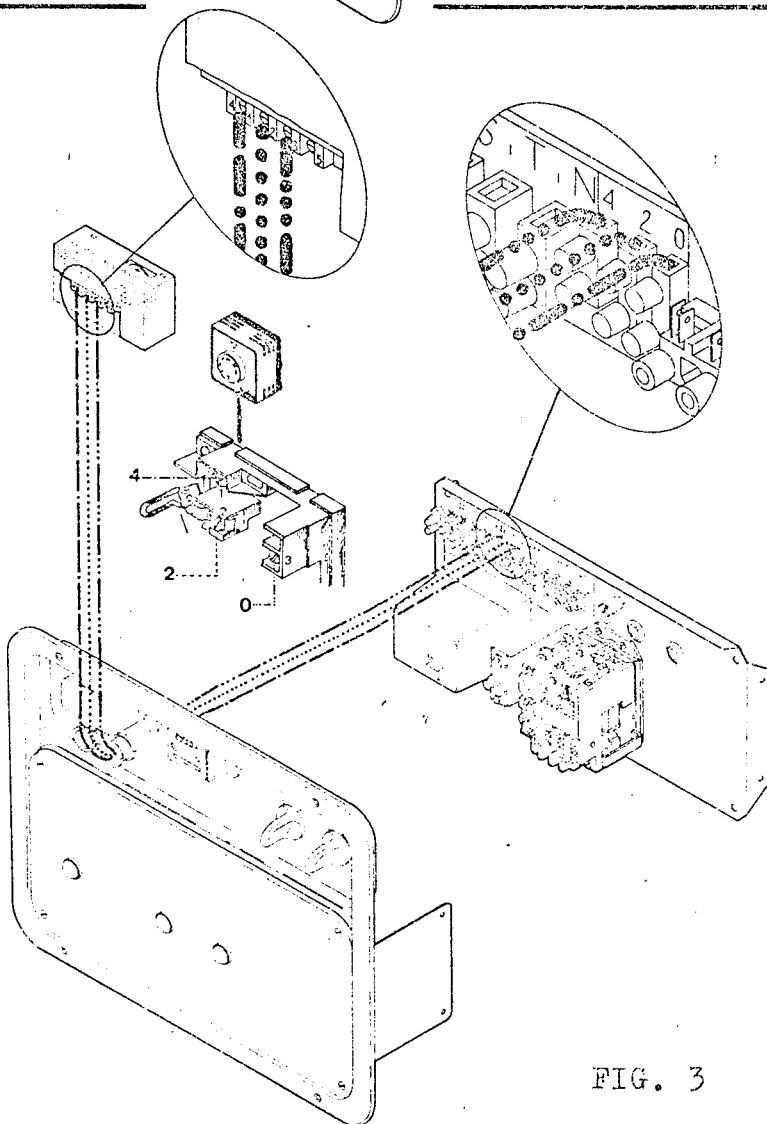


FIG. 3

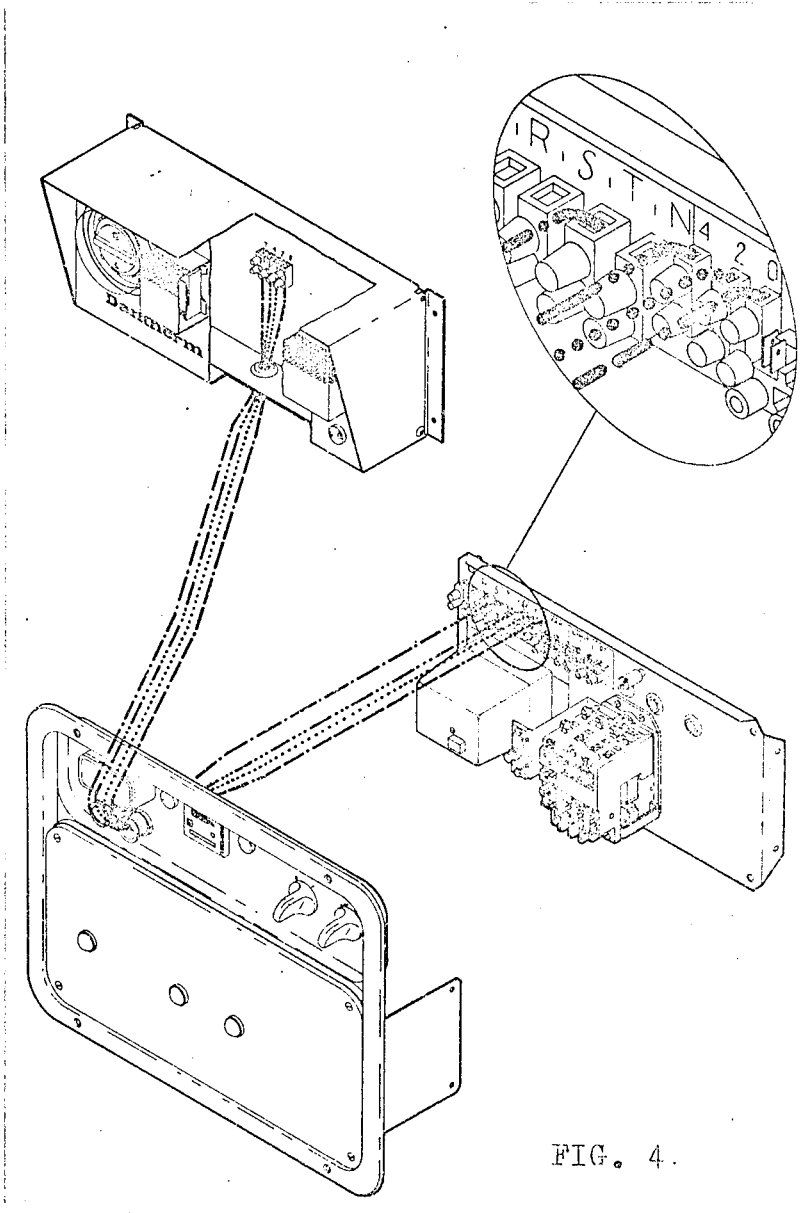


FIG. 4.

DAY/NIGHT PANEL

Instead of the room thermostat, a day/night panel can be used, consisting of two thermostats and a time-switch with week programme. The connection to this is carried out as shown on fig. 4. Instructions for use of the day/night panel is enclosed with each panel.

STARTING OF THE HEATER

PREPARATION

When the heater has been installed and is ready for use, the procedure described below should be followed.

1. Check that the heater is connected to electricity in the correct way and that the current is switched off.
2. Check that there is oil in the tank and that it is the correct type of oil.
3. Check that all valves in the suction line as well as the return line are open.
4. Check that the room thermostat is set at a temperature higher than ambient.
5. Check that the window of the photo cell is clean and facing the flame.
6. Check that all return air openings are free and that the outlet grilles are open - in ductwork, too.
7. Check that the fan switch is in AUT position.
8. Press all reset buttons.
9. Check that the joints of the oil line are tight, that there are no open ends, and that the oil lines are correctly connected to the pump.
10. Check that the small screw is mounted in the pump when using two-pipe system.
11. Check that the oil burner switch is in OFF position.

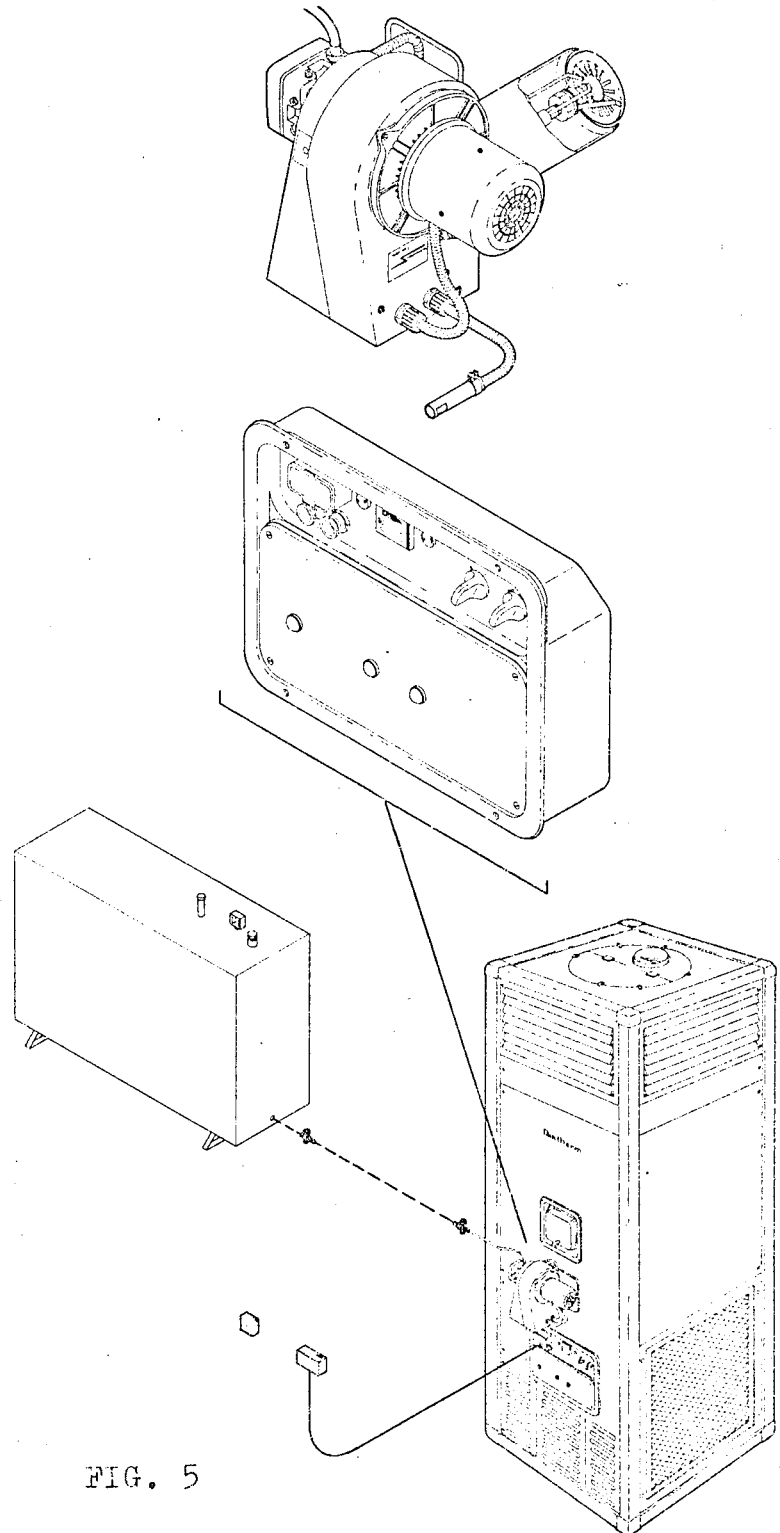


FIG. 5

START-UP

When all tests have been made, switch on the electricity to the heater and start the fan by turning the fan switch to the "MAN" position. The air should now be blown out at the top of the heater. If this is not the case, switch off the electricity to the heater and swap over two phases on the mains connection into the control panel - not the connections to the fan motor. Switch on the electricity again and check that the fan now is running the right way.

After this the oil pipework must be vented. This is done by loosening the small screw, which is positioned in the middle of the bolt at the underside of the pump (see fig. 6). The screw should only be loosened a few turns - not be taken right out. Then remove the photo cell from its bracket at the side of the burner, cover the window of the photo cell with one hand, and switch on the burner by turning the burner switch to "ON". As soon as the burner motor starts running, take the hand away from the window of the photo cell, so that light is coming on to the window. Let the burner run, until a clear stream of oil is coming out of the hole in the side of the bolt at the underside of the pump. Have a bucket ready for the oil. Then stop the burner by turning the burner switch to "OFF", tighten the small screw and replace the photo cell, making sure the window is turned towards the flame. After this the burner can be started again, and after a few seconds a flame will be established.

After 2-3 minutes running the fan motor will start automatically. Check that the fan thermostat is functioning correctly by switching off the burner to allow the fan to stop automatically.

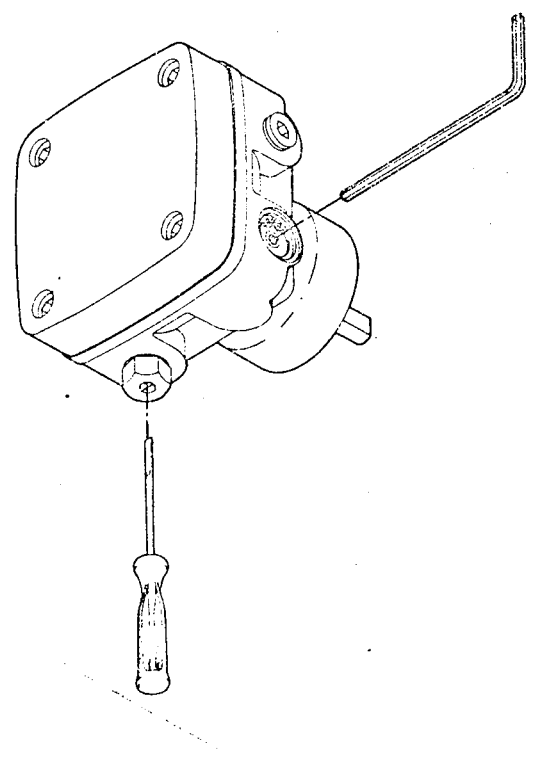


FIG. 6

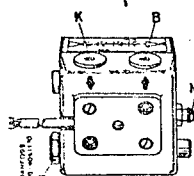


Fig. 1

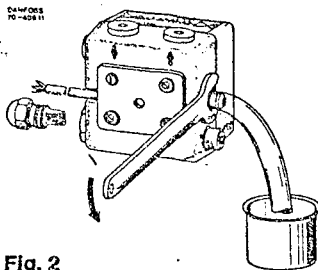


Fig. 2

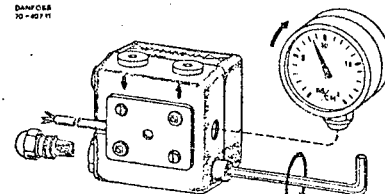


Fig. 3

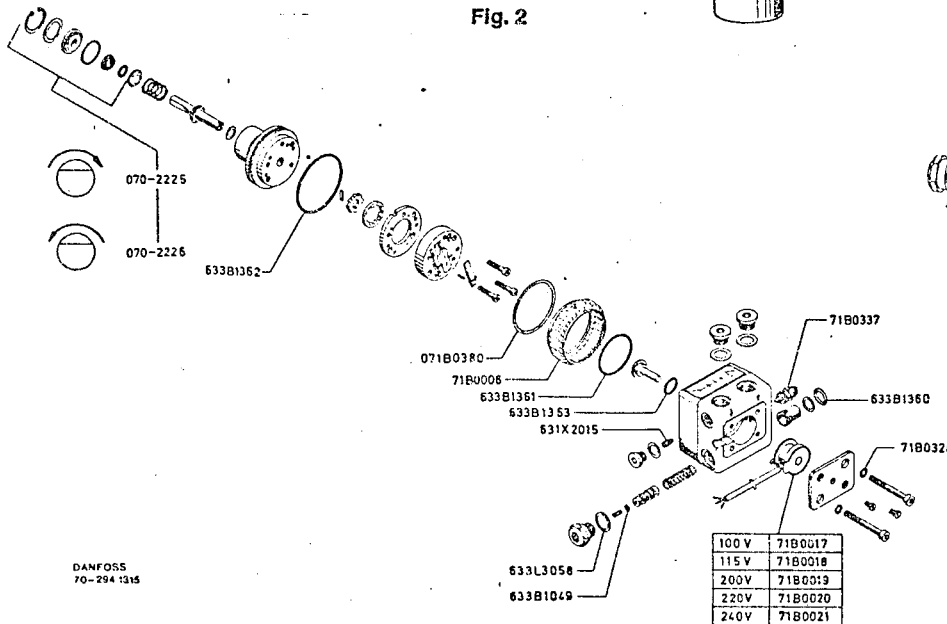


Fig. 4

Fig. 5

H	1,8 mm ³ /s (cSt)						4,3 mm ³ /s (cSt)									
	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 15 mm	Ø 4 mm	Ø 6 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 15 mm				
4.0	100	100	87	100	56	100	44	100	77	100	39	100	19	68		
3.5	100	100	76	100	48	100	38	100	67	100	33	100	17	85		
3.0	100	100	64	100	40	100	32	100	56	100	28	100	14	71		
2.5	100	100	52	100	33	100	26	100	45	100	23	100	11	58		
2.0	79	100	40	100	25	100	20	100	35	100	18	89	11	45		
1.5	55	100	28	100	18	100	14	70	24	100	12	63	8	31		
1.0	31	100	16	79	10	50	8	40	14	72	7	36	5	18		
0.5	7	36	4	18	2	12	2	9	4	19	2	9	1	5		
Dysekapacitet Nozzle capacity Durchleistung Débit du gicleur Munstyckskapacitet Verstärkerkapazität	1,6-2,25 kg/h		2,5-4,0 kg/h		4,5-6,3 kg/h		7,1-10,0 kg/h		1,6-2,25 kg/h		2,5-4,0 kg/h		4,5-6,3 kg/h		7,1-10,0 kg/h	

Oil Pump Types MSLA 032 - MSLA 050

Technical data
 Viscosity range:
 1.3-18.0 mm²/s (cSt) at 20°C
 Speed: 2400-3500 min⁻¹
 Pressure range:
 5-10 bar (p₀) (kp/cm²) at 1.3-2.5 mm³/s (cSt)
 7-15 bar (p₀) (kp/cm²) at 2.5-18 mm³/s (cSt)
 Factory setting: 10 bar (p₀)
 Coil voltage: Shown on the coil.

H	MSLA 032 2600 min ⁻¹			MSLA 050 2600 min ⁻¹		
	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm
4.0	100	100	100	100	100	100
3.5	100	100	100	100	100	100
3.0	100	100	100	100	100	100
2.5	100	100	100	100	100	100
2.0	100	100	100	100	100	100
1.5	100	100	100	100	100	100
1.0	100	100	100	100	100	100
0.5	100	100	100	100	100	100
4.0	100	100	100	66	100	100
3.5	100	100	100	61	100	100
3.0	95	100	100	75	100	100
2.5	89	100	100	70	100	100
2.0	82	100	100	65	100	100
1.5	75	100	100	59	100	100
1.0	68	100	100	54	100	100
0.5	62	100	100	48	100	100

H	MSLA 032 2850 min ⁻¹			MSLA 050 2950 min ⁻¹		
	Ø 8 mm	Ø 10 mm	Ø 12 mm	Ø 8 mm	Ø 10 mm	Ø 12 mm
-0.0	100	100	100	93	100	100
-0.5	100	100	100	81	100	100
-1.0	87	100	100	69	100	100
-1.5	72	100	100	57	100	100
-2.0	57	100	100	42	100	100
-2.5	41	100	100	32	83	100
-3.0	26	64	100	23	50	100
-3.5	10	26	54	8	20	43
-4.0	0	0	0	0	0	0
-0.0	85	100	100	43	100	100
-0.5	45	100	100	35	62	100
-1.0	41	100	100	32	50	100
-1.5	35	81	100	27	47	100
-2.0	28	72	100	22	34	100
-2.5	21	52	100	19	41	65
-3.0	14	35	73	11	26	58
-3.5	8	19	39	6	14	30
-4.0	0	0	5	0	0	0

Connections (Fig. 1)
 The pump is to be connected as follows:
 Single-entry plant at open bypass (G - Fig. 9)
 Double-entry plant at closed bypass (G - Fig. 10).
 E = Nozzle line 1/4 in BSP.F.
 K = Suction line 1/4 in BSP.F.
 B = Return line 1/4 in BSP.F.
 M = Pressure gauge connection, venting 1/4 in BSP.F.

Venting (Fig. 2)
 Venting is only necessary for single-entry plants. In the case of double-entry plants, the pump-vents the system automatically through the return line.

Pressure setting (Fig. 3)

Access to valve (Fig. 4)

The valve is to be stripped down in the following order:
 1) Remove the nozzle nipple (A).
 2) Screw the adjusting screw (B) clockwise into the pump.
 3) Remove the O-ring (C) and the metal ring (D), when the adjusting screw (B) can be unscrewed anti-clockwise from the pump.

Coil replacement (Fig. 5)

Suction line tables

H = suction lift in metres. Positive H-value = tank above level of pump (Fig. 6).
 Negative H-value = tank below level of pump (Fig. 7).
 L = length of suction line in metres.

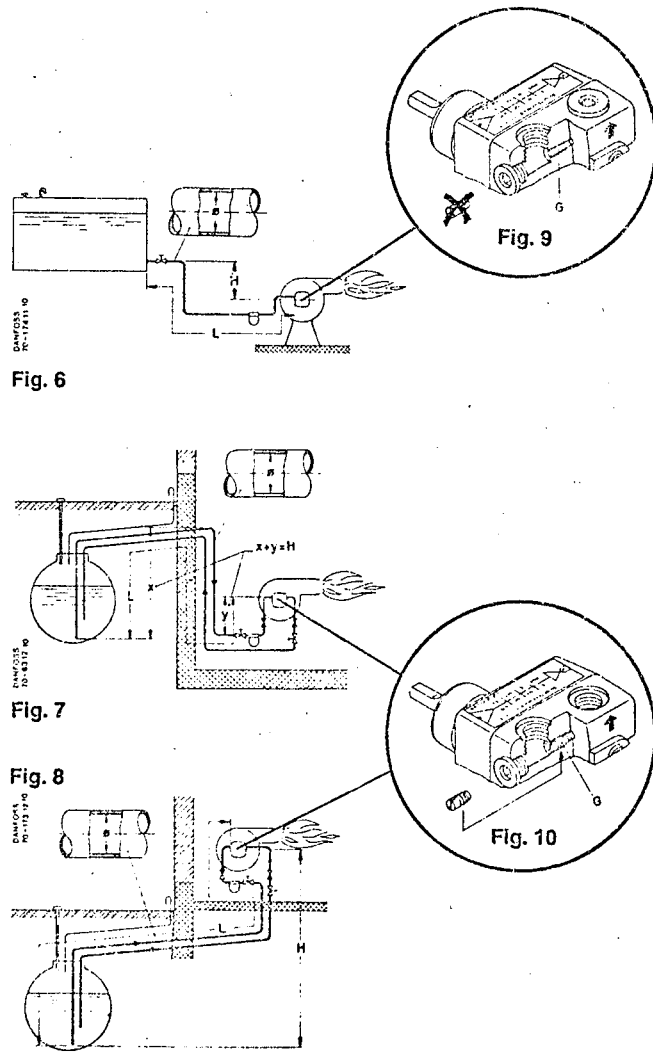


Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

TESTING

Now the testing of the combustion can take place. To carry out the test, the following equipment is required: flue thermometer, CO₂-tester, soot spot tester, flue manometer and oil pressure gauge.

1. Switch off the burner and fit the oil pressure gauge under the pump, in place of the bolt with the vent screw.
2. Start the burner and allow it to run for approx. 15 min. before starting the test.
3. Adjust the oil pressure to 9-10 kg/cm² (130-140 psi) and adjust the air volume until a bright clean flame has been achieved.
4. Check the draught in the flue, this should be min. 0.1 mm WG (0.03" W.G.) Adjust the draught stabilizer until this is achieved.
5. Make a soot spot test, the soot spot should be 1-2. If more than 2, increase the air volume. Check that the flue draught is still correct.
6. Make a CO₂ test and measure the temperature in the flue. The CO₂ percentage should be as high as possible and preferably 11% or more. The flue temperature and the CO₂-%, together gives the combustion efficiency, which should be at least 83% and preferably 88-90%.
7. If the heater is connected to ductwork, check that the amp.-consumption does not exceed the nominal amperage of the motor.

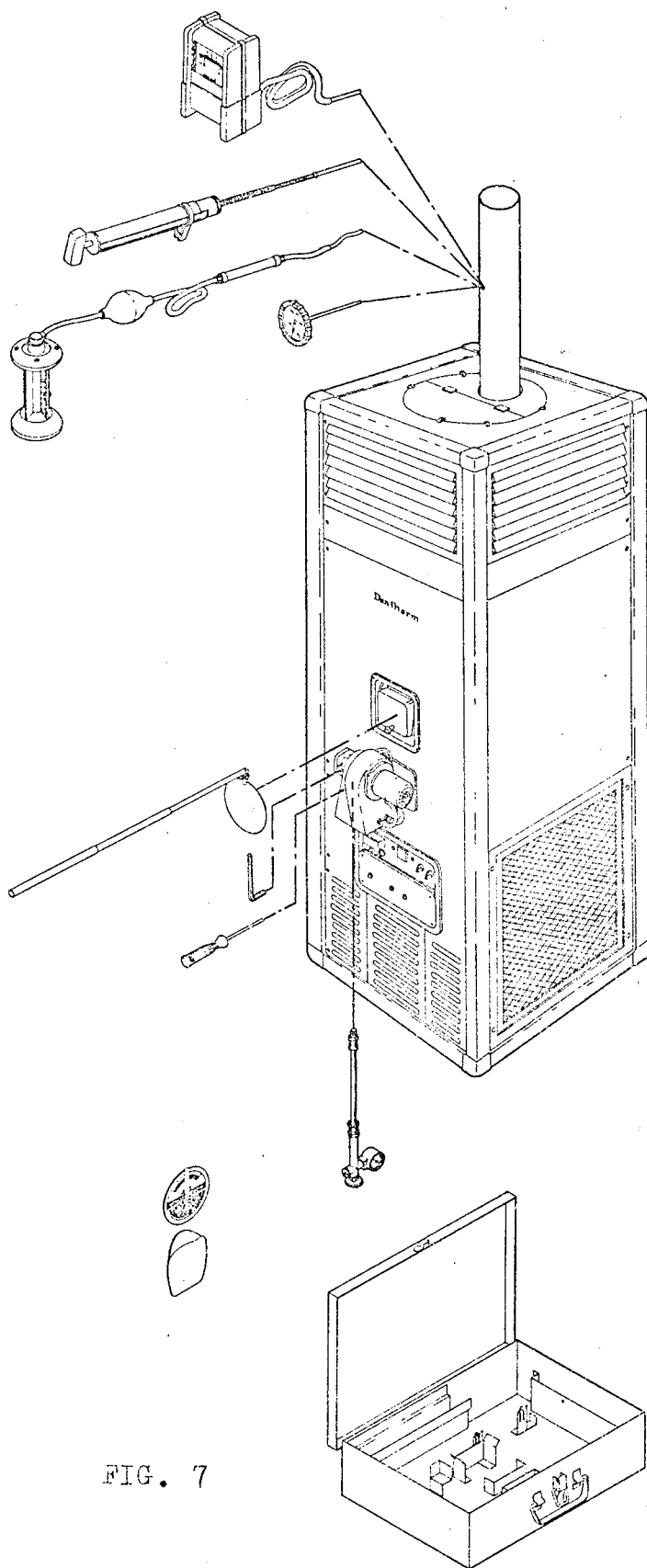


FIG. 7

SERVICE AND MAINTENANCE

A Dantherm warm air heater is designed in such a way that only a minimum of maintenance is required. The user maintenance is limited to cleaning the return air filters (if fitted) and keeping the outside of the heater clean.

Once a year, however, the heater should be checked through by an engineer to ensure that the heater also in the coming year will function satisfactorily with good running economy. This annual check should comprise the following:

1. After start-up of the heater, check of combustion chamber and heat exchanger for damage.
2. Cleaning of combustion chamber, heat exchanger and flue (must in some countries be carried out by authorized companies only).
3. Cleaning and adjusting of swirls plate, electrodes and nozzle, replacing nozzle if required.
4. Cleaning of the burner fan wheel.
5. Check setting of control thermostats. (30 - 50 - 80° C).
6. Cleaning of filter in pump and in oil line (if fitted).
7. Cleaning of main fan. Tightening of belt, replacing belt if required. Cleaning of return air filters.
8. After every 10.000 hours running, replacing grease in the fan motor bearings.
9. After start-up of the heater, check of thermal relays and measuring of amp.-consumption.
10. Check of overheat thermostat, by disconnecting fan motor, with burner running.
11. Check of the photo cell. Measuring the amperage.
12. Check of the flame sequence control box - check of safety cut-off time.
13. Testing as described on page 6.
14. Cleaning of the surfaces of the heater.

FAULT FINDING

In case of breakdowns, first go through the following points:

1. Check that there is oil in the tank and that all valves are open.
2. Check that there is power to the heater (Main isolator).
3. Check if the window of the photo cell is dirty - clean if necessary. Replace the photo cell with the window facing the flame.
4. Check that the room thermostat is set at a temperature higher than ambient. If a remote control station (day/night panel) is fitted, check that the time switch is in the correct position and that the night programme is not switched on manually.
5. Press the reset buttons for overheat thermostat, motor relays and control box.

6. If the heater is fitted with return air filters, clean these.
7. If electrodes, swirler plate or nozzle are dirty, clean these and adjust according to drawings at the back of the book.

If the heater, after carrying out these tests, does still not function, call your service engineer.

INSTALLATION INSTRUCTIONS

In the following, a brief instruction will be given, of how to install the Dantherm heater. Special requirements, as laid down in the laws and by-laws in different countries, are not included and should be checked locally.

POSITIONING OF THE HEATER

If the heater is to be placed in the room to be heated, a number of things should be taken into consideration. It is impossible to give exact rules, and the following should be taken as a general guide only.

The heater should be placed in such a way that the entire room can be covered with direct air throw. The air throw for each heater varies with the size of the heater, but is generally between 15 and 50 meters. (45-150 ft). Longest for the largest heaters.

Places especially exposed to heat loss or draught should be paid particular attention, e.g. doors and windows. These should be covered by a direct throw of air, so that cold draught is quickly mixed with warm air.

If the heater is installed in a separate plant room, fresh-air supply to the burner must be ensured. Either by ducting the air to the burner or by making an opening to the atmosphere, at least 20 cm² (3 sq. inch) per kg of oil burned.

FLUE CONDITIONS

The size and position of the flue connection is shown on each dimension sheet for the heaters. Normally the connection is at the top of the heaters (except model KA 20/30 (KA 120) and horizontal models).

On most of the heaters there are three alternative flue outlets, one of which is factory fitted. To change from one flue outlet to another, follow the following procedure:

1. Dismantle the two half circle plates.
2. Remove the trapezium-shaped bracket (2) and the two covers (3)
3. Remove the flue spigot (4)
4. Fit the flue spigot to the required outlet.
5. Fit covers (3) and bracket (2) to the two remaining outlets.
6. Replace the two half circle plates.

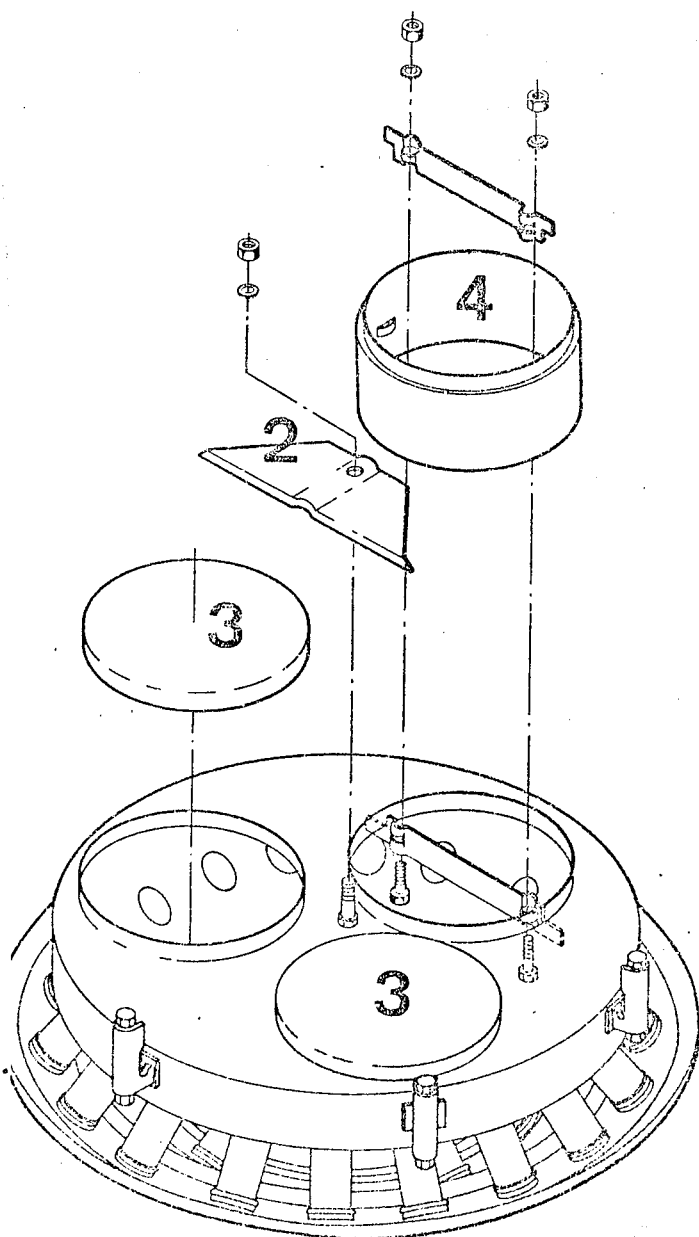


FIG. 8

FLUE CONDITIONS (continued from page 9)

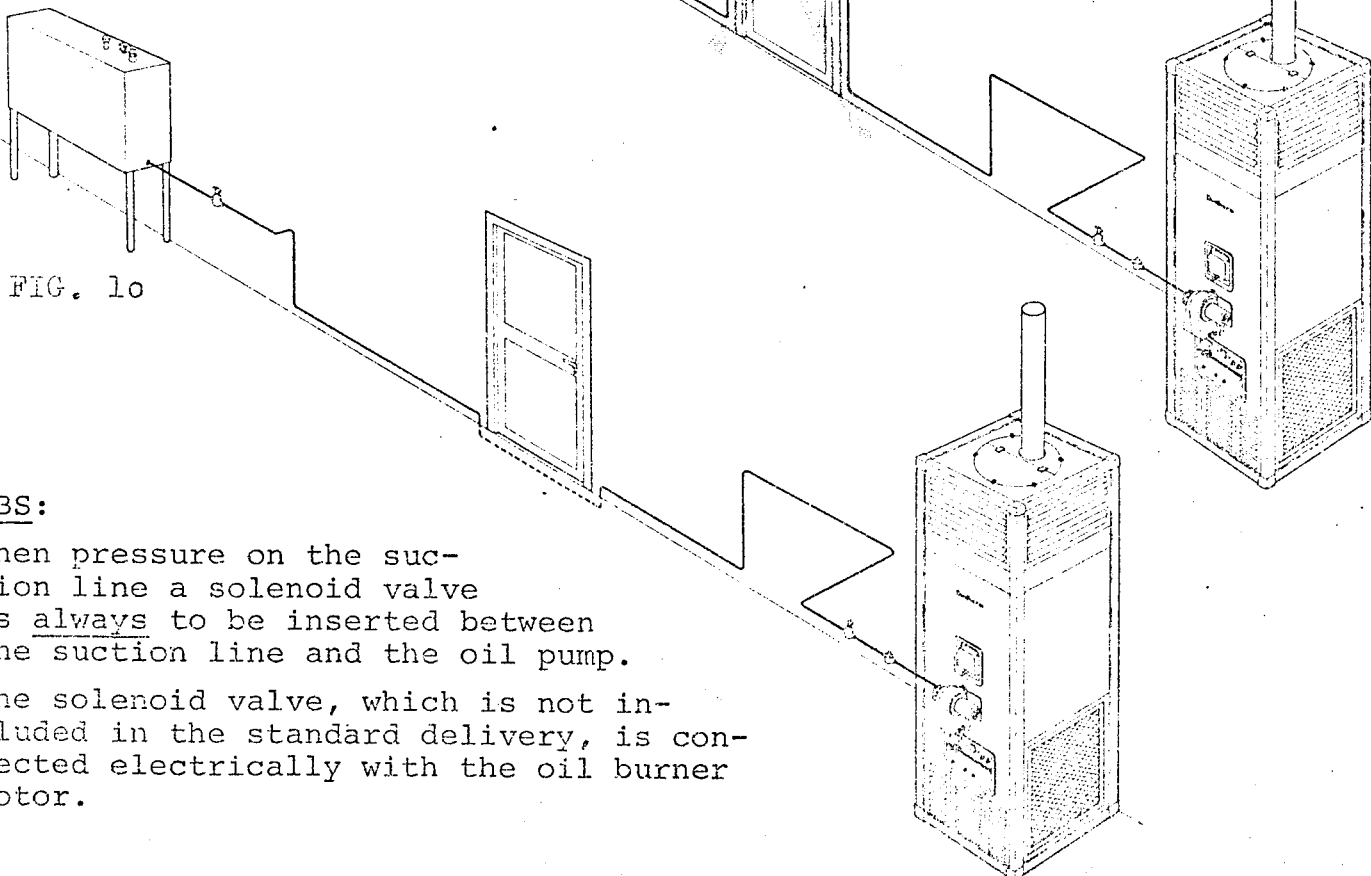
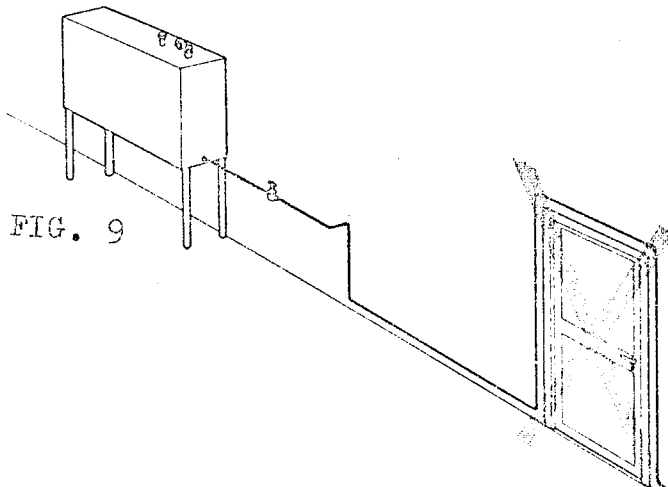
If a sheet metal flue is to be fitted, this should be as straight as possible. If bends are necessary, these should be 45° bends and only in exceptional cases 90° bends. Avoid using horizontal sections in the flue. If it becomes necessary, ensure that there is at least 3 m of vertical flue to each 1 m of horizontal flue.

OIL INSTALLATION

There are three different types of oil supply systems: 1) single pipe gravity feed, 2) two-pipe and 3) pumped systems.

The single pipe system is the simplest and cheapest, and also the most reliable system, provided the conditions for using it are fulfilled.

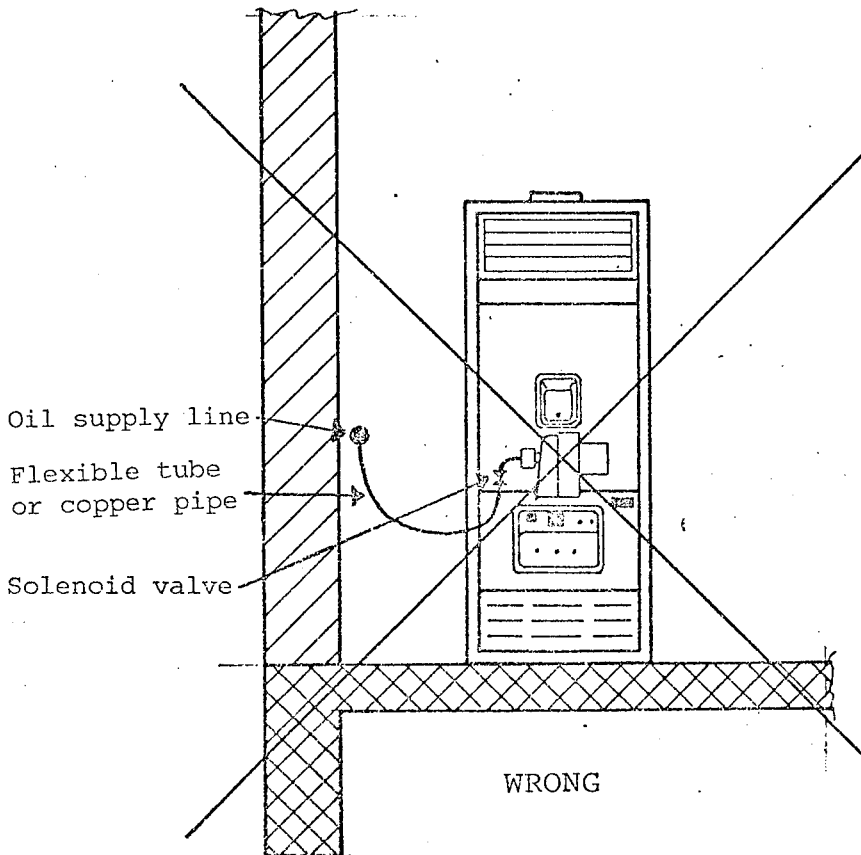
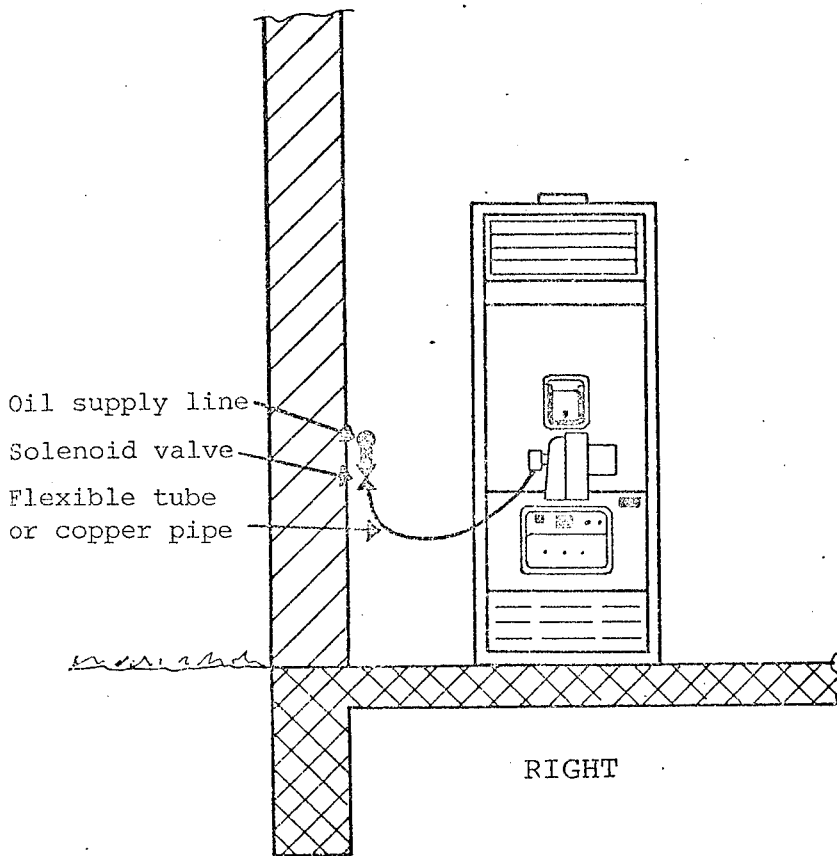
A single pipe system must only be used, when the bottom of the oil tank is above the level of the pump on the oil burner, and the oil line must have a direct fall towards the pump. It is therefore not possible to let the oil line run over a door (fig 9 and 10



OBS:

When pressure on the suction line a solenoid valve is always to be inserted between the suction line and the oil pump.

The solenoid valve, which is not included in the standard delivery, is connected electrically with the oil burner motor.



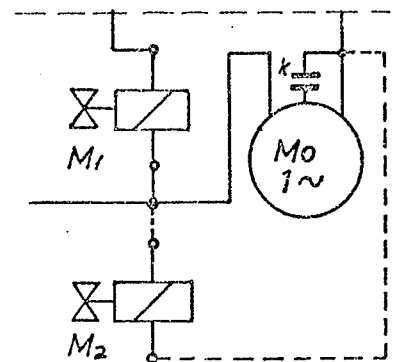
SOLENOID VALVE

In those cases where the oil burner is supplied with oil from a tank positioned above the oil burner level, or where the oil supply comes from a pressure plant with pump, a pressurized system, an oil lift pump or the like, a solenoid valve shall be inserted on the oil supply line itself before the connection pipe, copper pipe or flexible tube to the oil burner.

Escaping oil from a cracked copper pipe or a leaky oil tube may cause great oil damage and/or fire damage.

Dirt in the oil may cause the built-in valve in the oil pump not to shut tightly so that oil seeps into the heater - and also for this reason an extra solenoid valve should be inserted in plants with pressurized oil supply.

Wiring diagram for the connection of an extra solenoid valve



- M₀: Motor for oil burner
- M₁: Built-in solenoid valve
- M₂: Extra solenoid valve

TWO-PIPE SYSTEM

When it is not possible to obtain a direct fall in the oil-line, a two-pipe system must be used. The conditions for using this system are, that suction height and suction length do not exceed the figures shown in the chart below.

It should be noted that this chart is based on a total of four 90° bends in the suction line, one check-valve and one hand shut-off valve.

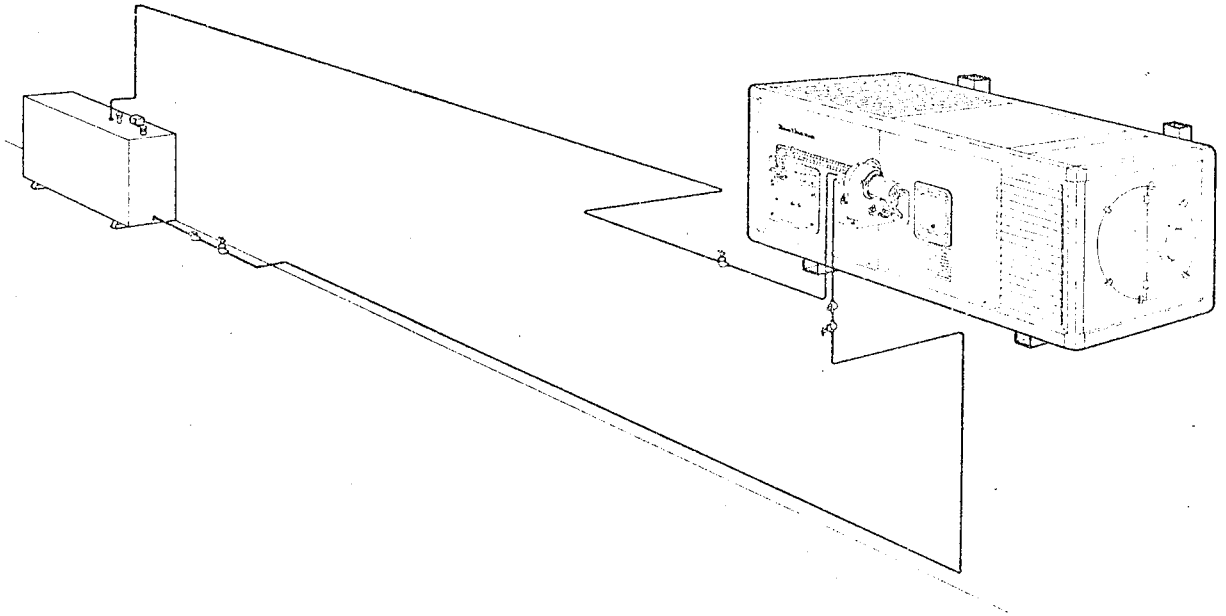


FIG. 11

PRESSURIZED SYSTEMS

If neither of the previous systems can be used, one of the pressurized systems might be used. The most common systems are:

1. Oil-lifter
2. Daily Service Tank
3. Single-pipe pumped system
4. Ring-main system.

The oil-lifter system is the simplest of the above, comprising a standard oil lifter (usually "BM Type 346") with pump, level control, reservoir and check-valve. This unit is fitted at a level higher than that of the pump on the oil burner, so that a direct gravity feed line can be installed from the oil-lifter to the heater. Between the tank and the oil-lifter a two-pipe system is fitted (8 mm (5/16") copper pipe) (see fig. 12).

The day tank system is essentially the same as the oil-lifter system, but the tank is separate, placed at a level higher than that of the pump on the heater. Level control is built into the tank, and one or two pumps are installed to bring the oil from the main tank to the daily service tank.

This system is used where the oil-lifter capacity of 17 l/h (3.75 gal/h) is insufficient (see fig. 13).

On smaller installations, where the oil tank is placed far away from the heater, a single-pipe pressurized system may be used. A separate feed pump is installed at or near the tank, and a pressure regulating valve is fitted to ensure a constant pressure in the line to the heater. Because of the higher pressure in the oil line (maximum 4 kp/cm² (57 psi)) this must be made of steel tubing to avoid leakage. (see fig. 14).

On larger installations, where several heaters are to be supplied from one tank, it will often be necessary to use a pressurized ring-main system. Usually two pumps are installed, one of them being a stand-by pump, in the vicinity of the tank, and a pressure regulating valve ensures a constant pressure in the system. By very large installations it may be necessary to fit diagonals in the network, to quickly even out the pressure by sudden changes in the oil consumption. Here too it is necessary to use steel lines (maximum 4 kp/cm² (57 psi)). (see fig. 15).

OBS:

When pressure on the suction line, a solenoid valve is always to be inserted between the suction line and the oil pump.

The solenoid valve, which is not included in the standard delivery, is connected electrically with the oil burner motor.

PIPE SIZES

On smaller installations it will usually be easiest to use copper tubing as oil line, whereas steel tubing is normally preferred on large installations. Where pipework is exposed with risk of mechanical damage, steel tubing should also be used.

The chart below gives guidelines for the length of pipe in relation to the oil consumption and the level of the tank above the pump.

A (m) \ 1 oil	1 oil					
	5	15	30	50	75	100
0	50	50	40	25	15	10
0.3	50	50	50	30	20	15
0.6	50	50	50	40	25	20
1.0	50	50	50	50	30	25
1.3	50	50	50	50	40	30
1.5	50	50	50	50	50	35

DIMENSION CHART

The necessary height of the bottom of the tank above the level of the pump is determined by the length of pipe-work. The chart shows the relation between the height difference between pump and tank (A), oil volume and length of piping (8 mm (5/16") internal diameter tubing).

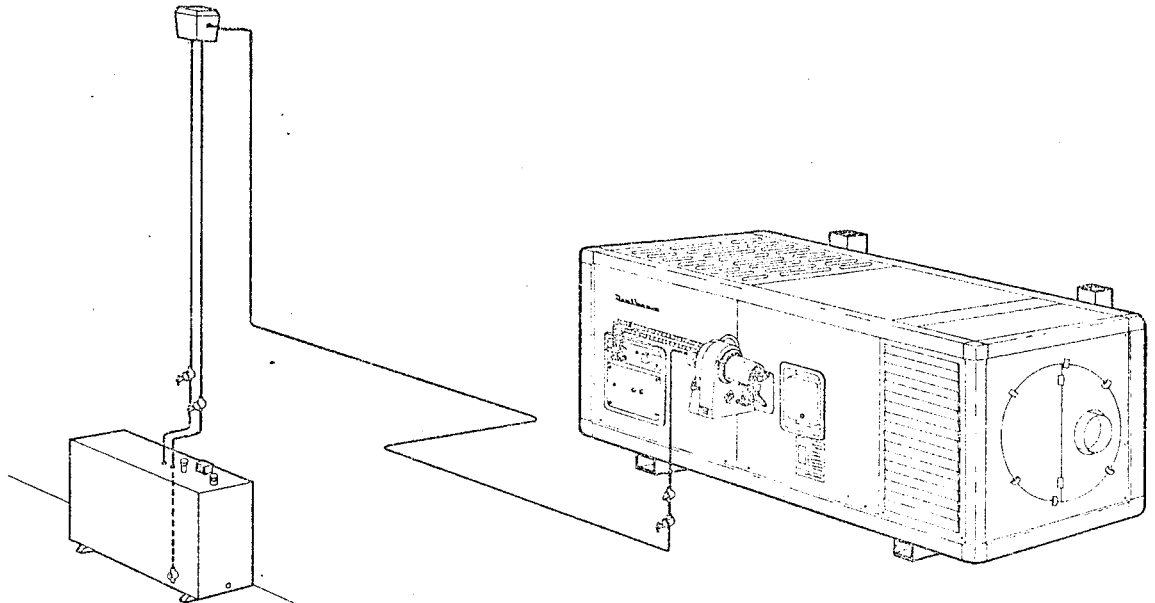


FIG. 12

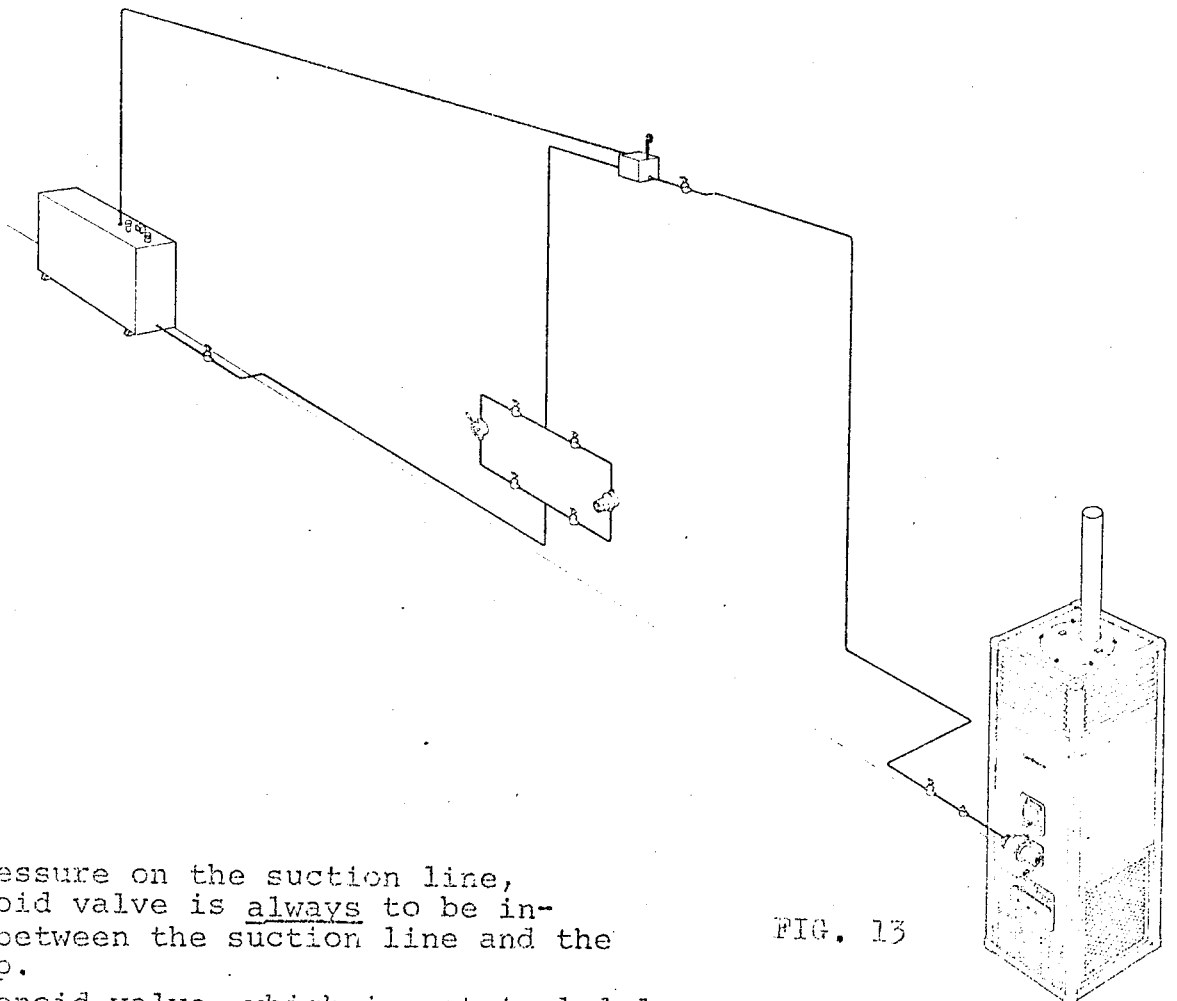


FIG. 13

OBS:

When pressure on the suction line, a solenoid valve is always to be inserted between the suction line and the oil pump.

The solenoid valve, which is not included in the standard delivery, is connected electrically with the oil burner motor.

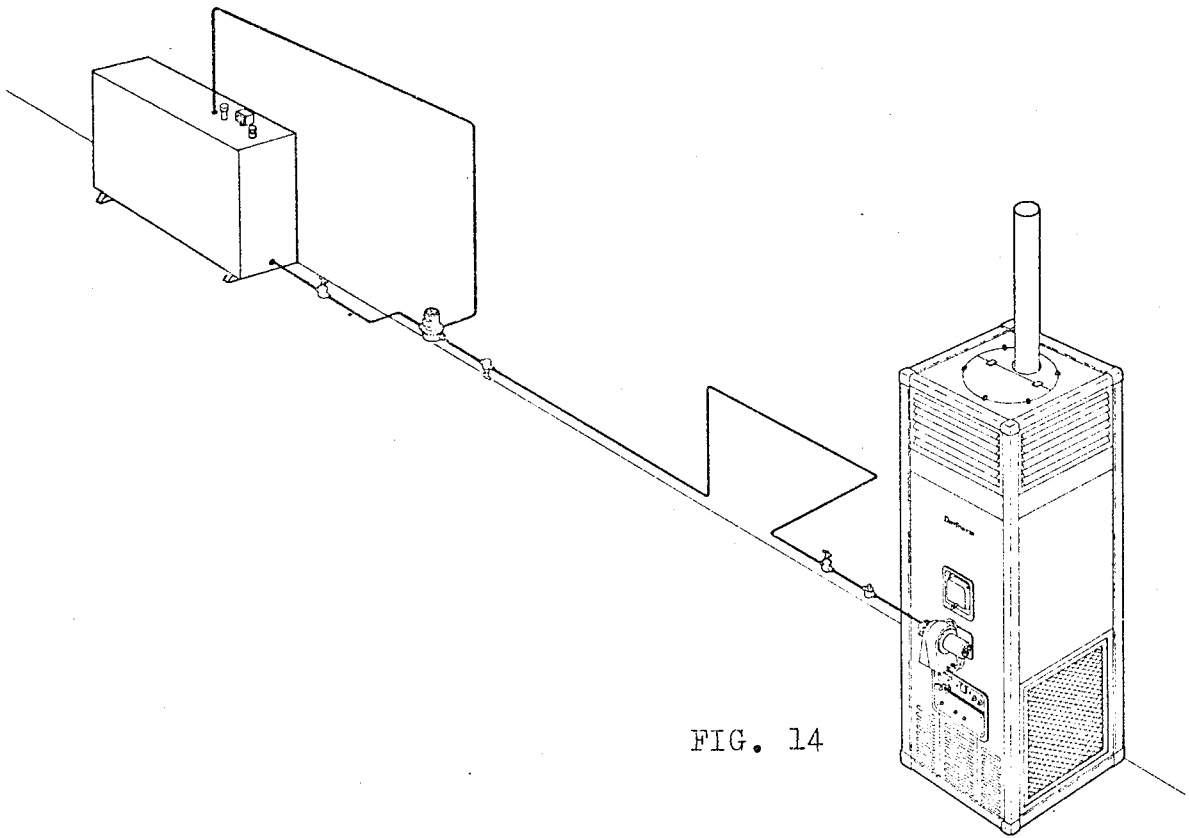


FIG. 14

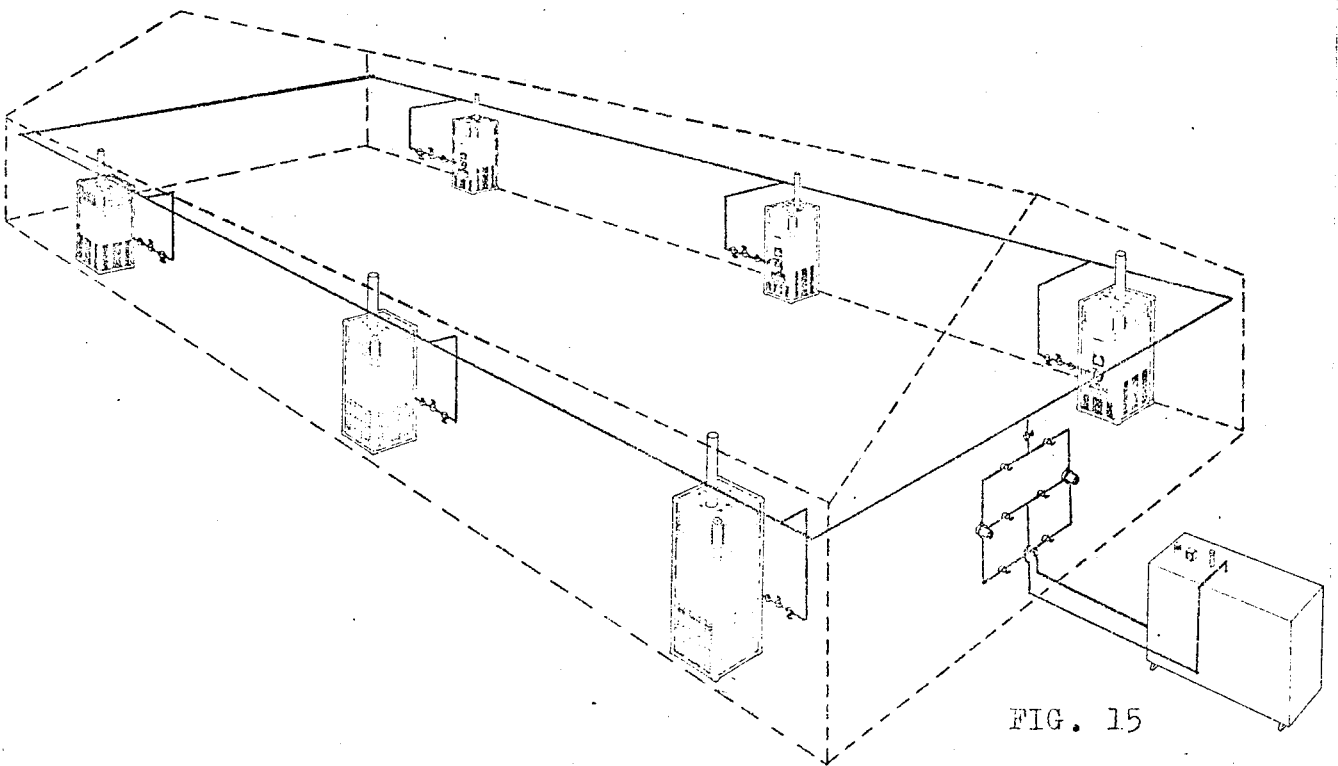


FIG. 15

OBS:

When pressure on the suction line, a solenoid valve is always to be inserted between the suction line and the oil pump.

The solenoid valve, which is not included in the standard delivery, is connected electrically with the oil burner motor.

ANCILLARIES

Dantherm supplies a range of standard ancillaries, which can be used for installation of the heaters under special conditions. They are:

1. Return air filters
2. Combustion air spigot
3. Fresh air grille
4. Cover panel
5. Duct spigot
6. Telescopic duct spigot
7. Multi-leaf damper

It will not normally be necessary to use any of these components, but where special conditions apply, the above mentioned parts will make the installation work easier and quicker, because they have been manufactured especially for the Dantherm heater, and no tools, apart from a screwdriver, are necessary for the installation of them.

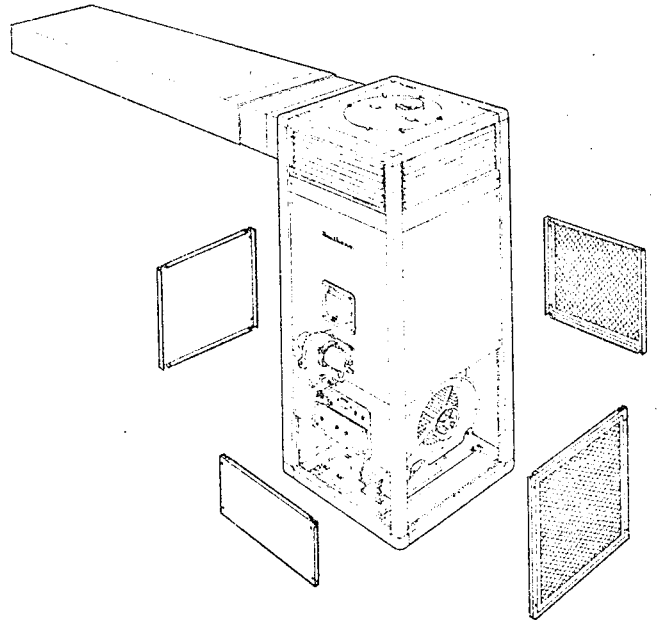


FIG. 16

TELESCOPIC DUCT SPIGOT

One of the most common cases is that warm air is to be supplied to a room adjoining that in which the heater is installed. In place of the usual outlet grille at the top of the heater, a telescopic duct spigot is fitted, to pass through the partitioning wall. The grille that was removed from the heater is then positioned on the other side of the wall, to provide a neat finish to an easily installed and efficient system. The spigot is delivered in eight separate parts in a flat cardboard box and is assembled as shown in fig. 17.

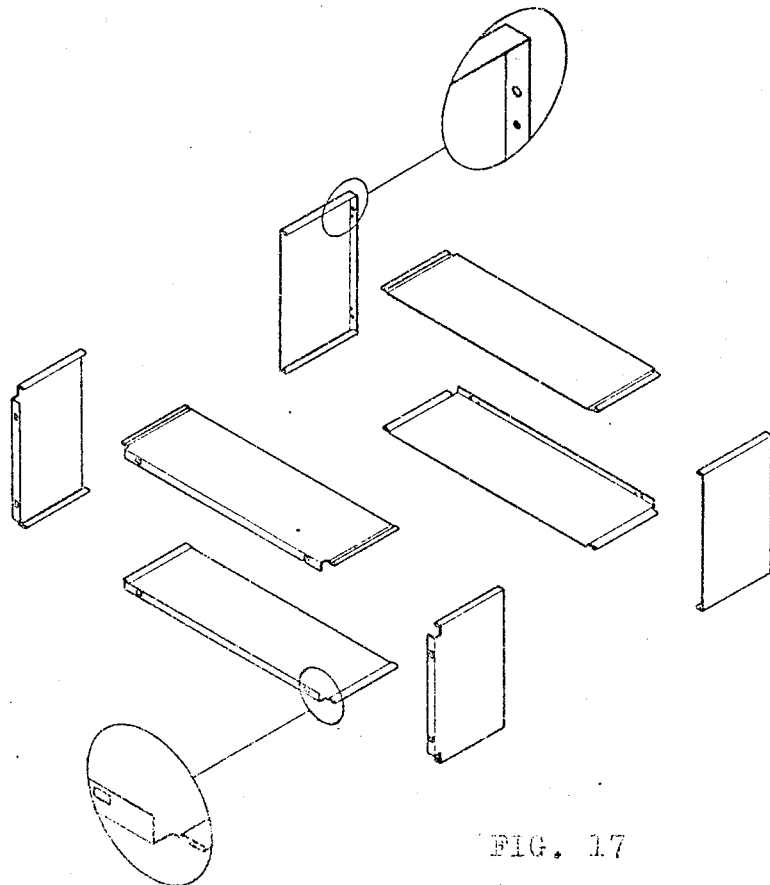


FIG. 17

DUCT SPIGOT

Where a ducted system is to be connected to a Dantherm air heater, this is easily done by means of a duct spigot which is fitted to the heater in place of one of the outlet grilles. The spigot is delivered in four separate parts in a flat cardboard box and is assembled as shown in fig. 18.

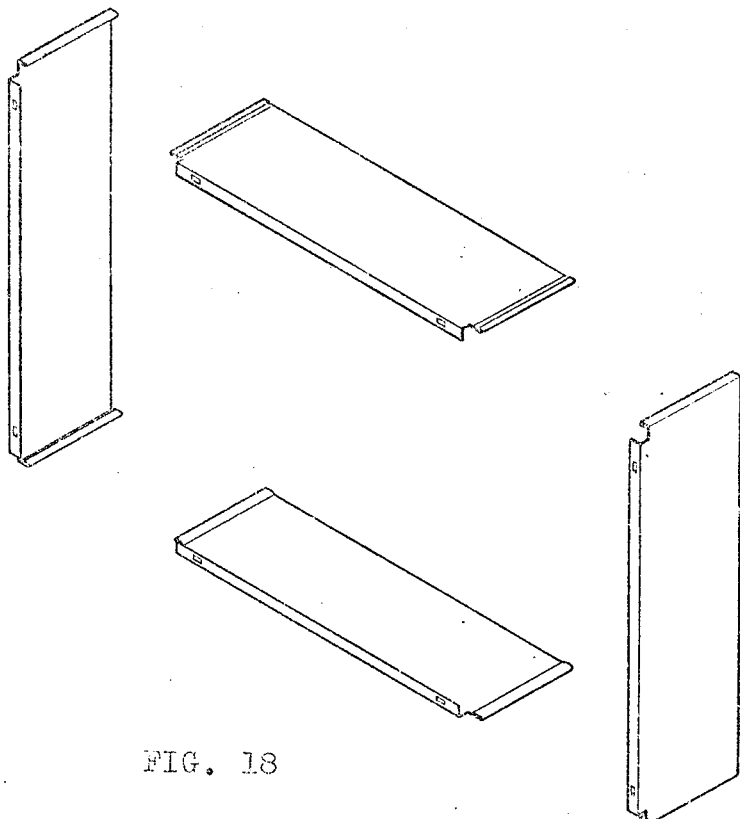


FIG. 18

RETURN AIR FILTER AND COVER PANEL

If the heater is installed in a room with a dusty atmosphere, return air filters should be fitted. The filters are fitted to the heater in place of the standard return air louvres - on at least two sides - on the other sides cover panels are fitted (see fig. 16). It is important that the filters are cleaned regularly, as the heater otherwise may overheat because of too little air.

FRESH AIR GRILLE AND MULTI-LEAF DAMPER

Where a building is to have fresh air supplied through the heater, either partly or totally, this is done by using a telescopic duct spigot, a fresh air grille and a multi-leaf damper. During the winter, the heater can then operate on 100% return air, and during the summer on part fresh air. If the heater is to run on 100% fresh air continuously, the multi-leaf damper is not required, and the standard return air louvres are replaced by cover panels (see fig. 19).

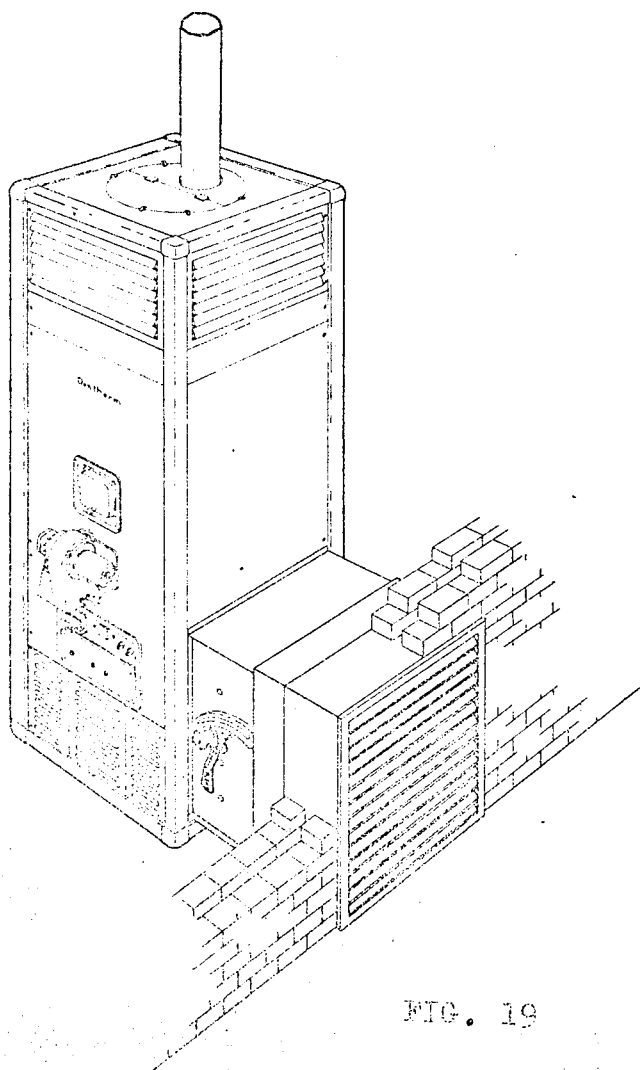


FIG. 19

COMBUSTION AIR SPIGOT

Where the combustion air for the burner cannot be taken from the room in which the heater is installed, it can be ducted and connected to the burner by means of a combustion air spigot. This is shown in fig. 20, and is e.g. necessary if the heater is installed in a plant room from which return air to the heater is taken, or if there is dust or explosive fumes (e.g. petrol fumes) in the air. It will usually be best to make at least the first part of the combustion air duct out of flexible tubing, to allow the hinged burner to be serviced without disconnecting the duct.

OTHER EQUIPMENT

All the above mentioned components are standard equipment for the Dantherm heaters, being extensively used on installations. But Dantherm can also supply other, more special, components such as humidifiers, filter banks, fire dampers, dampermotors, special controls etc.

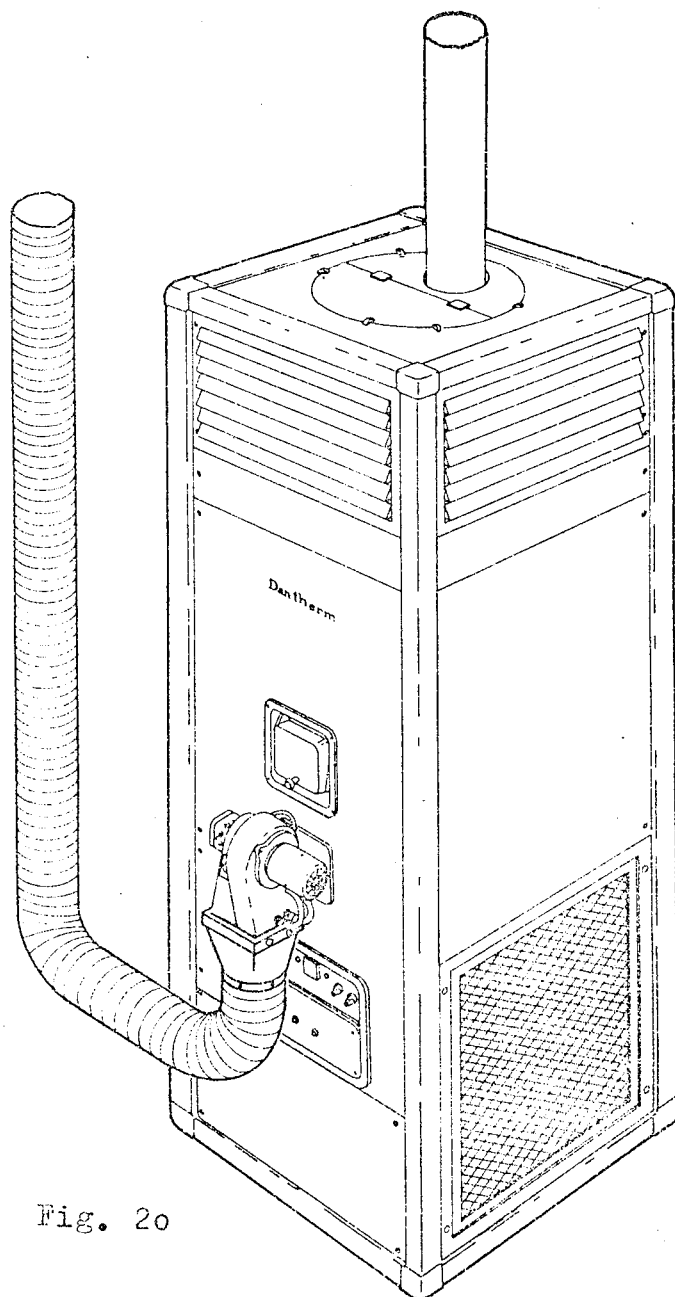
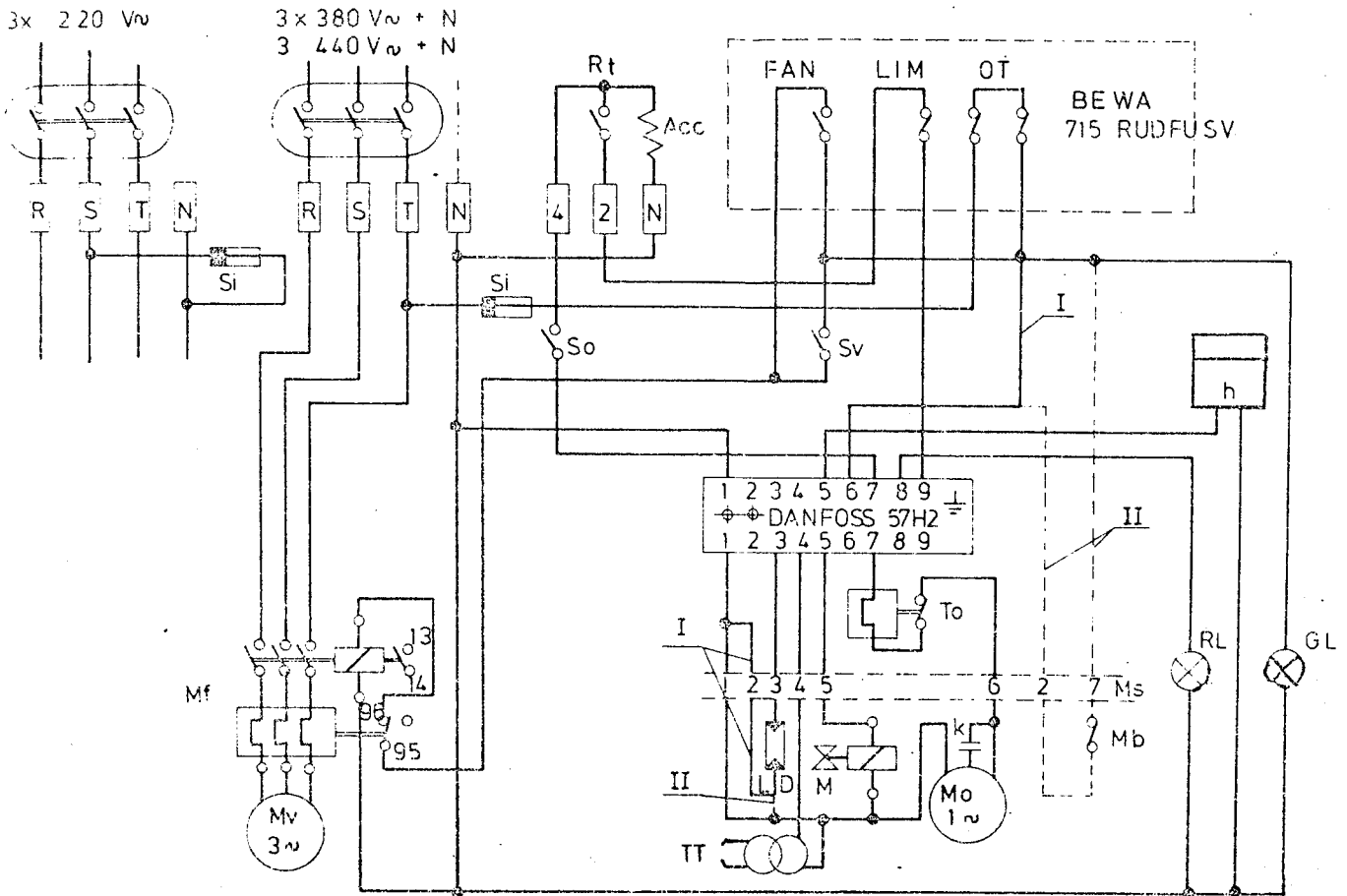
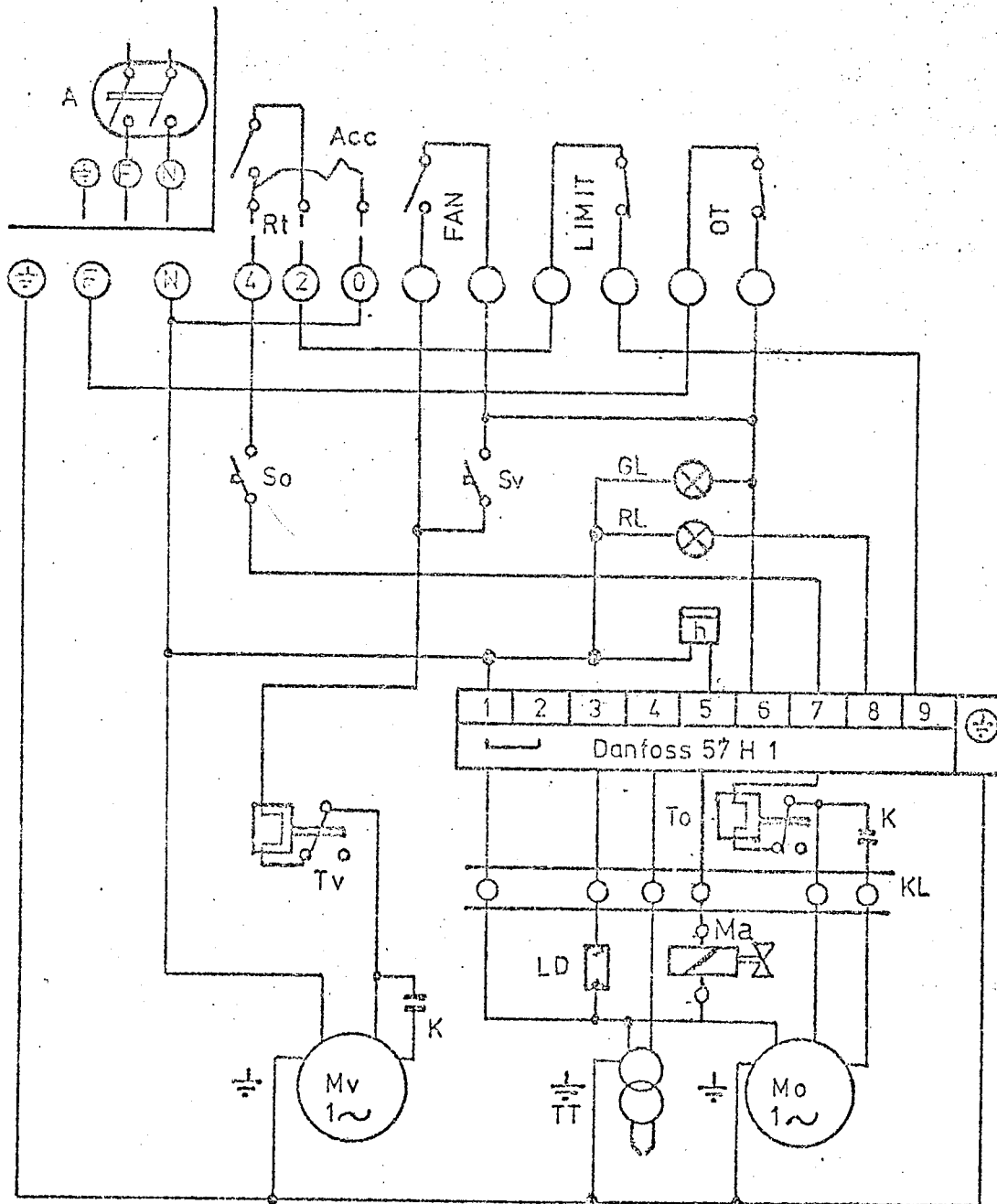


Fig. 20



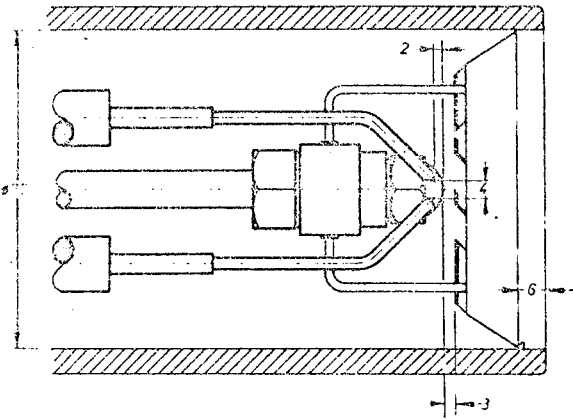
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|--------|--|----|---|
| A | Main switch | RL | Red fault signal lamp (oil burner) |
| Acc | Accelerator | Rt | Room thermostat |
| FAN | Aut. switch f. fan | Si | Fuse (is not used in model 120-160-200-300) |
| GL | Green control lamp | So | Manual switch for oil burner |
| h | Hour meter f. oil burner | Sv | Manual switch for fan |
| K | Condensator | To | Thermal relay f. oil burner |
| Klixon | Aut. circuit breaker | TT | Ignition transformer |
| LD | Photo-unit | | |
| LIMIT | Aut. circuit breaker f. oil burner | | |
| M | Solenoid valve | | |
| Mf | Motor contactor | | |
| Mo | Motor f. oil burner | | |
| Ms | Multiple plug | | |
| Mv | Motor f. fan | | |
| OT | Aut. circuit breaker f. oil burner and fan | | |

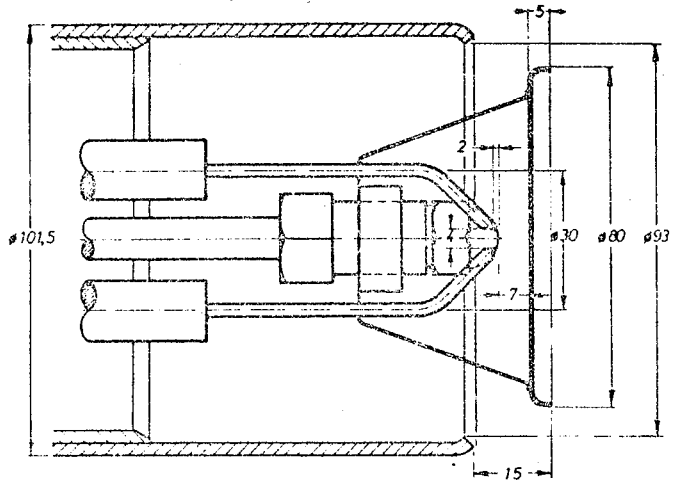
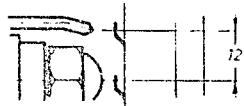


- | | | | |
|-------|--|----|-----------------------------|
| A | Main switch | Rt | Room thermostat |
| Acc | Accelerator | So | Manual switch f. oil burner |
| FAN | Aut. switch f. fan | Sv | Manual switch f. fan |
| GL | Green control lamp | To | Thermal relay f. oil burner |
| h | Hour meter | TT | Ignition transformer |
| K | Condensator | Tv | Thermal relay f. fan |
| KL | Terminals | | |
| LD | Photo-unit | | |
| LIMIT | Aut. circuit breaker f. oil burner | | |
| Ma | Solenoid valve | | |
| Mo | Motor f. oil burner | | |
| Mv | Motor f. fan | | |
| OT | Aut. circuit breaker f. oil burner and fan | | |
| RL | Red fault signal lamp (oil burner) | | |

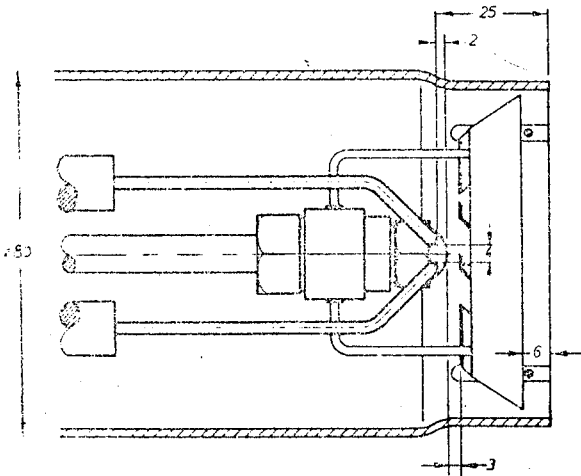
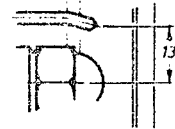
Indstilling af brænderhoved
 Adjustment of burner head
 Einstellung von Brennerkopf
 Réglage de la tête de combustion
 Innstilling av brennerhode



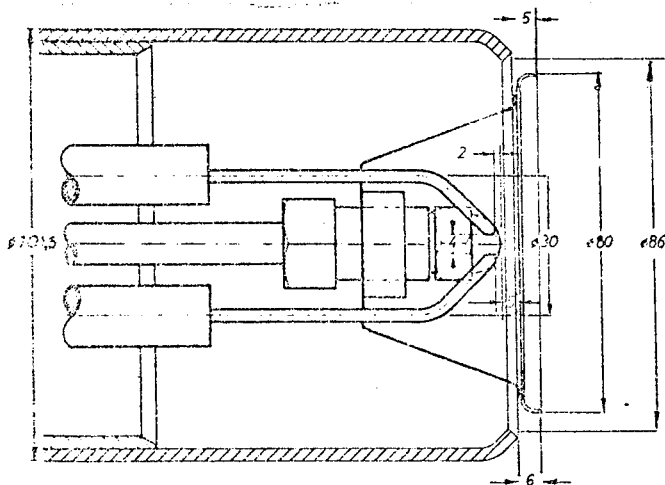
15/25 20/30
 (100 - 120)



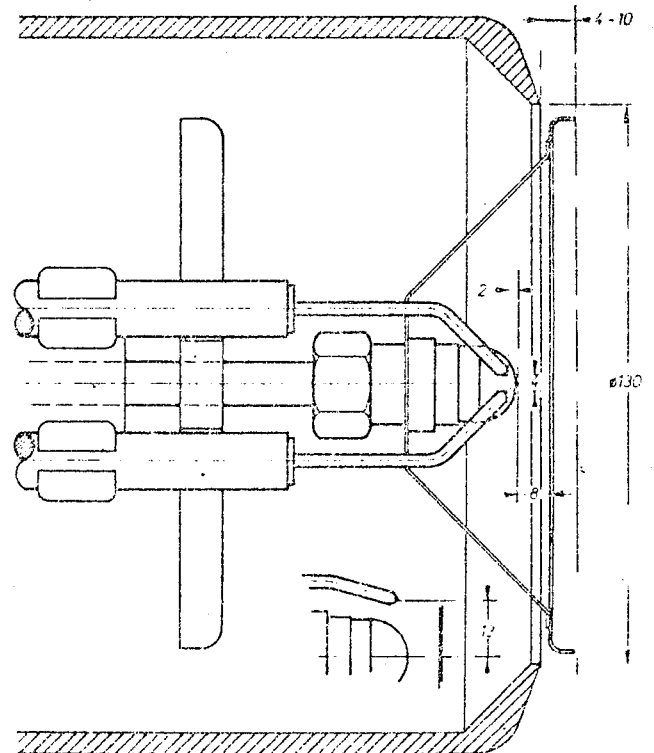
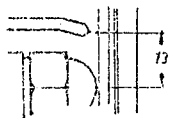
80/130
 (500)



30/40 40/50
 (160 - 200)



50/70 70/100
 (300 - 400)



120/180 160/230
 (750 - 1000)