



Instruction and Operation Manual

DG series
Oil and gas fired
Hot water steel boilers

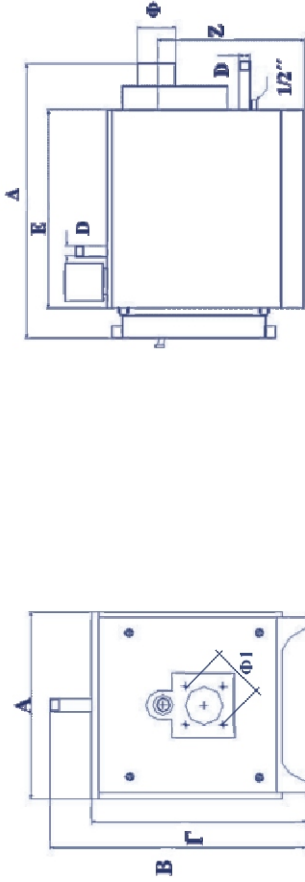


- Thank you for your trust to Thermolev products.
- For the effective use of this boiler it is necessary to read carefully the present guidance manual, before the operation of the boiler.
- Keep the guidance manual in a safe place with the guarantee of the boiler, for any possible use

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BOILER DG TECHNICAL DATA - TABLE [A]

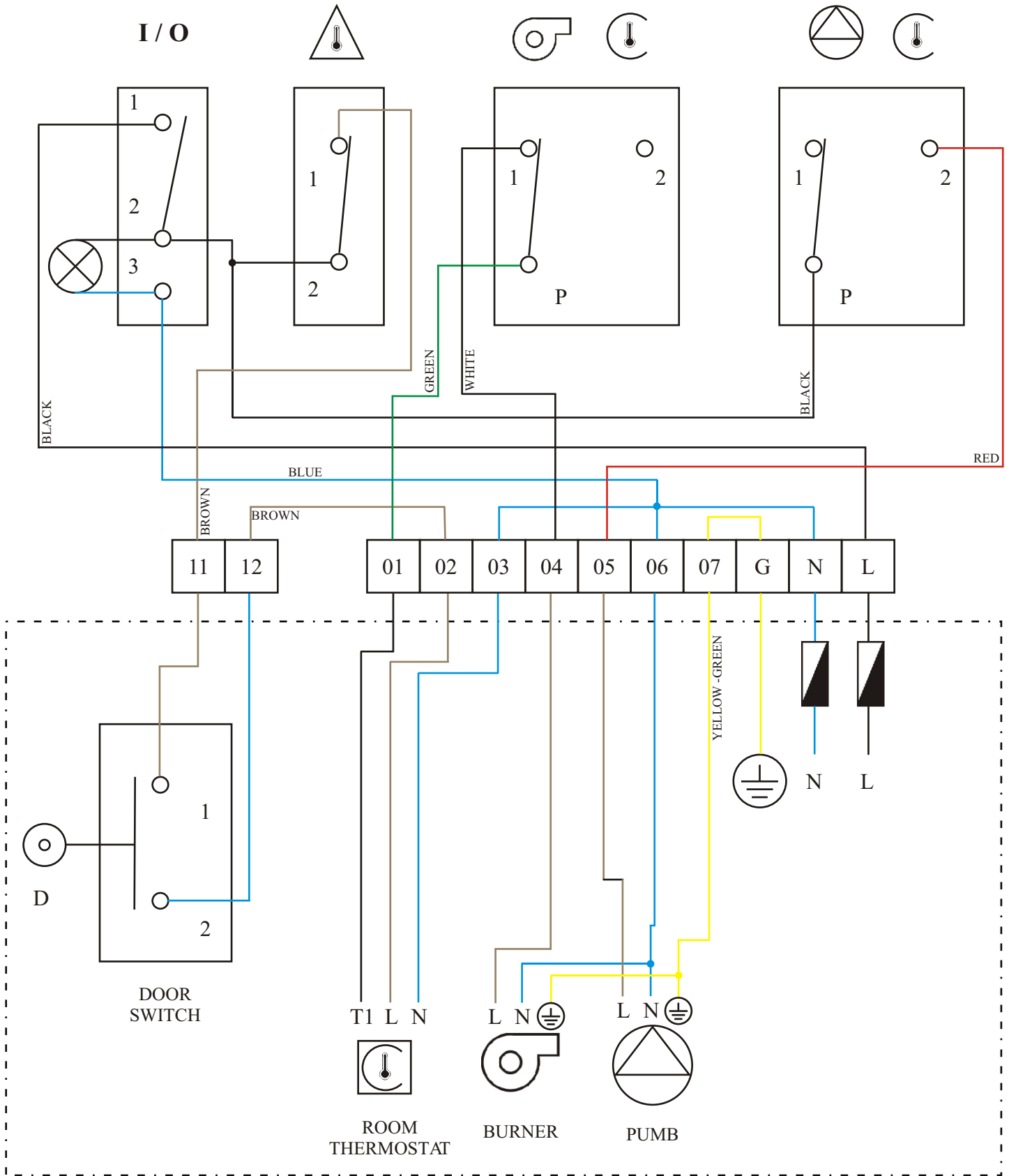


Type	Heat Output [kcal/h]	Heat Output [kw]	Efficiency [%]	Max Heat Input [kw]	A [mm]	B [mm]	Γ [mm]	Δ [mm]	E [mm]	Z [mm]	Φ [mm]	Φ1 [mm]	D [in]	Max work.pr. [bar]	W.Pr.Drop [mbar] (Δt 15°C)	Pressure Comb.Ch. [mbar]	Weight [kg]
DG 030	30000	34,7	89,65	38,7	545	635	620	810	575	455	118	140	1 1/4"	5,0	8	0,25	117
DG 040	40000	46,3	89,70	51,6	615	765	705	875	640	535	148	147	1 1/4"	5,0	9	0,25	154
DG 050	50000	57,9	89,75	64,5	615	765	705	945	720	535	148	147	1 1/4"	5,0	10	0,30	163
DG 060	60000	69,4	89,80	77,3	655	820	745	1005	780	575	148	147	1 1/2"	5,0	10	0,40	190
DG 080	80000	92,6	89,89	103,0	705	910	815	1090	790	600	177	163	2"	5,0	12	0,70	273
DG 100	100000	115,7	89,99	128,6	705	910	815	1200	890	600	177	163	2"	5,0	13	0,80	293
DG 130	130000	150,5	90,13	166,9	770	1080	975	1315	1000	755	196	178	2 1/2"	5,0	18	1,20	394
DG 160	160000	185,2	90,27	205,1	770	1080	975	1565	1260	755	196	178	2 1/2"	5,0	20	1,40	473
DG 200	200000	231,5	90,47	255,9	770	1080	975	1835	1510	755	196	222	2 1/2"	5,0	21	1,80	535
DG 250	250000	289,4	90,70	319,0	805	1100	980	1985	1670	755	215	222	2 1/2"	5,0	24	2,10	636
DG 300	300000	347,2	90,94	381,8	965	1210	1090	2130	1765	830	245	flange	3"	5,0	40	2,90	814
DG 350	350000	405,1	91,18	444,3	965	1210	1090	2205	1845	830	245	flange	3"	5,0	40	3,50	992
DG 400	400000	463,0	91,42	506,4	1030	1300	1185	1985	1695	830	345	flange	4"	5,0	27	3,90	1100
DG 450	450000	520,8	91,66	568,2	1030	1300	1185	2100	1840	830	345	flange	4"	5,0	28	4,10	1221
DG 500	500000	578,7	91,90	629,7	1030	1300	1185	2300	2040	830	345	flange	4"	5,0	29	4,30	1343
DG 550	550000	636,6	91,98	692,1	1030	1300	1185	2500	2240	830	345	flange	4"	5,0	31	4,55	1417
DG 600	600000	694,4	92,05	754,4	1230	1485	1345	2590	2150	1000	345	flange	5"	5,0	29	4,80	1490
DG 700	700000	810,2	92,21	878,7	1230	1485	1345	2860	2420	1000	345	flange	5"	5,0	31	5,20	1654
DG 800	800000	925,9	92,36	1002,5	1490	1740	1590	2750	2290	1205	398	flange	5"	5,0	37	5,70	1718
DG 1000	1000000	1157,4	92,67	1249,0	1490	1740	1590	2950	2510	1205	398	flange	5"	5,0	38	5,90	2220
DG 1200	1200000	1388,9	92,97	1493,9	1490	1740	1590	3180	2720	1205	398	flange	6"	5,0	47	6,40	2710
DG 1400	1400000	1620,4	93,28	1737,1	1490	1740	1590	3070	2610	1205	398	flange	6"	5,0	44	6,60	3227
DG 1600	1600000	1851,9	93,59	1978,8	1490	1740	1590	3440	2980	1205	398	flange	6"	5,0	47	6,80	3688
DG 1800	1800000	2083,3	93,89	2218,8	1490	1740	1590	3810	3350	1205	398	flange	7"	5,0	50	7,00	4149
DG 2000	2000000	2314,8	94,20	2457,3	1490	1740	1590	4180	3720	1205	398	flange	7"	5,0	52	7,20	4610

BOILER DG TECHNICAL DATA - TABLE [B]

Type	Fuel Type	Flame Operation	Temp. Control Rate [°C]	Combustion Chamber			Temp. Flue [°C]	Restrictors				Exit flue gas mass flow [kg/h]	Standby loss [%]		
				Type	Length [m]	Diameter [m ²]		Volume [m ³]	Length [mm]	Diameter [mm]	Step L. [m ²]			Ext.Diam [mm]	Quantity [pieces]
DG 030	Oil / Gas	Reversal	60 - 90	Cylindrical	0,520	0,294	0,034	185	480	5	20	37	7	57,73	0,5600
DG 040	Oil / Gas	Reversal	60 - 90	Cylindrical	0,590	0,329	0,049	185	545	5	20	44	9	76,97	0,5584
DG 050	Oil / Gas	Reversal	60 - 90	Cylindrical	0,660	0,329	0,055	185	625	5	20	44	9	96,21	0,5569
DG 060	Oil / Gas	Reversal	60 - 90	Cylindrical	0,735	0,349	0,069	185	682	5	20	44	9	115,45	0,5553
DG 080	Oil / Gas	Reversal	60 - 90	Cylindrical	0,720	0,369	0,075	185	690	5	20	44	12	153,94	0,5521
DG 100	Oil / Gas	Reversal	60 - 90	Cylindrical	0,820	0,369	0,086	185	790	5	20	44	12	192,42	0,5490
DG 130	Oil / Gas	Reversal	60 - 90	Cylindrical	0,915	0,449	0,142	185	913	5	20	44	15	250,14	0,5443
DG 160	Oil / Gas	Reversal	60 - 90	Cylindrical	1,170	0,449	0,181	185	1162	5	20	44	15	307,87	0,5395
DG 200	Oil / Gas	Reversal	60 - 90	Cylindrical	1,440	0,449	0,223	185	1412	5	20	44	15	384,84	0,5332
DG 250	Oil / Gas	Reversal	60 - 90	Cylindrical	1,530	0,480	0,270	185	1572	5	20	44	17	481,05	0,5254
DG 300	Oil / Gas	Reversal	60 - 90	Cylindrical	1,620	0,589	0,432	185	1615	5	40	44	23	577,26	0,5175
DG 350	Oil / Gas	Reversal	60 - 90	Cylindrical	1,700	0,589	0,453	185	1695	5	40	44	23	673,47	0,5096
DG 400	Oil / Gas	Reversal	60 - 90	Cylindrical	1,520	0,589	0,405	185	1515	5	40	44	33	769,68	0,5018
DG 450	Oil / Gas	Reversal	60 - 90	Cylindrical	1,630	0,589	0,435	185	1660	5	40	44	33	865,89	0,4939
DG 500	Oil / Gas	Reversal	60 - 90	Cylindrical	1,850	0,589	0,493	185	1850	5	40	44	33	962,09	0,4860
DG 550	Oil / Gas	Reversal	60 - 90	Cylindrical	2,050	0,589	0,547	185	2050	5	40	44	33	1058,30	0,4782
DG 600	Oil / Gas	Reversal	60 - 90	Cylindrical	1,900	0,740	0,800	185	1960	5	40	52	40	1154,51	0,4703
DG 700	Oil / Gas	Reversal	60 - 90	Cylindrical	2,150	0,740	0,906	185	2190	5	40	52	40	1346,93	0,4546
DG 800	Oil / Gas	Reversal	60 - 90	Cylindrical	1,990	0,925	1,314	185	2021	5	40	52	52	1539,35	0,4388
DG 1000	Oil / Gas	Reversal	60 - 90	Cylindrical	2,210	0,925	1,459	185	2241	5	40	52	52	1924,19	0,4074
DG 1200	Oil / Gas	Reversal	60 - 90	Cylindrical	2,400	0,925	1,585	185	2451	5	40	52	52	2309,03	0,3759
DG 1400	Oil / Gas	Reversal	60 - 90	Cylindrical	2,290	0,925	1,512	185	2350	5	40	52	66	2693,87	0,3444
DG 1600	Oil / Gas	Reversal	60 - 90	Cylindrical	2,660	0,925	1,757	185	2720	5	40	52	66	3078,70	0,3129
DG 1800	Oil / Gas	Reversal	60 - 90	Cylindrical	3,030	0,925	2,001	185	3090	5	40	52	66	3463,54	0,2815
DG 2000	Oil / Gas	Reversal	60 - 90	Cylindrical	3,400	0,925	2,245	185	3460	5	40	52	66	3848,38	0,2500

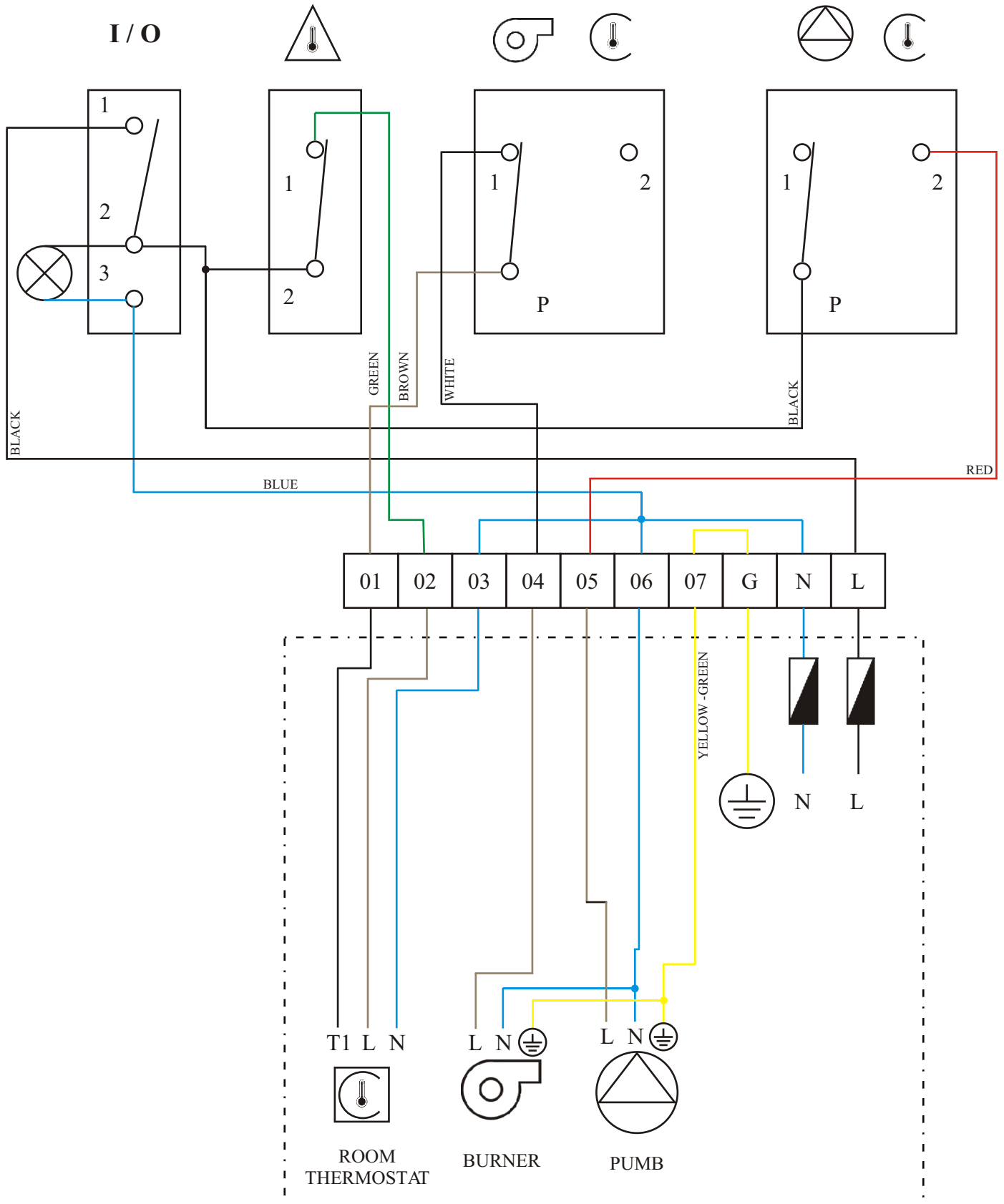
THERMOLEV 3. BOILER CONTROL PANEL - WIRING DIAGRAM FOR THE DG TYPE - GAS BURNING



--- TO BE WIRED BY THE INSTALLER

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4. BOILER CONTROL PANEL - WIRING DIAGRAM FOR THE DG TYPE - OIL BURNING



----- TO BE WIRED BY THE INSTALLER

5. Placement

Select the installation place.

- Select the right place for the placement of the boiler, where the water and the electricity supply are available.
- The existence of correct ventilation apertures is necessary in the boiler's room when the boiler operates with gas.
- The room must be spacious to make easy the installation and the annual services.
- No inflammable and any other kind of things must be stored in the boilers room.

6. Protection

➤ Before the use

1. The use of DG boiler series is the heat of water heating. Only approved oil or gas burners according the European standard EN 267, DIN 4787 and if they agree with the technical characteristics of the boiler can be used.
2. It is prohibit the use of any other fuel.

In case boiler series DG operates with oil

3. First check for any fume leak that may exist in the installation of the boiler. This is very important so it is good to be really careful.
4. Check boiler's door to be very well closed in case of fume leak.
5. Clean very well the oil that can be found outside the oil tank

➤ Checkpoints before the operation

1. Check if there is any leak at the pipe connections
2. Check the water amount in the heating installation.
 - 8a check the amount of water in the expansion tank, for open circuit installation
 - 8b check the water pressure (adjust the settle up valve), for close circuit installation
3. Turn on the circulator and take the air out from all the radiators.

➤ Remarks during the operation

1. Keep the boiler's room tidy and never store flammable materials!!
2. Check if the spark and the combustion are right (from the flame check point).
3. If the boiler is going to be for long time stopped, it is good to disconnect the power Supply.

7.Operation

1. Check the existence of water in the heating circuit by opening the clearing valve.
2. Be sure that the pipes are full of water.
3. Be sure that the burner is earthed.
4. Supply the burner with AC power 220V / 50Hz.
5. Settle the boiler thermostat in the desired temperature.
6. If the boiler doesn't start after 3-4 tries, call authorized technician.
7. In case that boiler series DG works with oil, fill the tank with oil before it will be completely empty. Otherwise air will exist in the circuit and there is a possibility of flaming weakness.

8. Security systems

➤ Water low level

If the level of the water or the pressure of the water faults down of the permissible level then:

- ✓Boiler must stop working.
- ✓Check for any leaks in the circuit.
- ✓When the quantity of the water comes again to normal levels then the boiler can start working.

➤Overheating

When the boiler's temperature overrun the maximum thermostat temperature, then the burner stop working for safety reasons.

If this happen again, call authorized technician.

➤Danger in case of oil leak

In case of oil leak call a licensed technician for reparation

➤Gas danger

If you smell gas you should fall the following steps

Close the gas valve and open a window immediately

Do not use doorbell, telephone appliance and do not activate any electric switch.

If you live in a flat inform your neighbours without using doorbell.

Do not smoke and do not use lighter.

Go outside your house to call a licensed technician and also inform the supply gas company.

9. Necessary check

Steel boiler series DG oil-gas

➤ Regular check

1. Take away the flammable materials from the boiler's room.
2. Keep the boiler and the parts around it, clean.
3. Often check for gas or oil leaking.
4. Check the connections of the chimney pipe and look if they are fixed correct and if there is any fume's leaking.
5. Check if there is any water leaking in the boiler or in the pipes.

DG boiler oil use

6. Check regularly for oil leaks in the oil tank or in the pipes
- 6.1 Often clearing out the water from the oil tank, this helps for the right operation of the boiler (avoiding unpleasant complications)

Cleaning of the oil filter

- 6.2 In case, the oil filter needs to get clear, you should close the oil supply from the provider valve.
- 6.3 Clean very good the oil filter and the inside part where the filter lay with light oil or oil.

Cleaning the oil tank

- 6.4 It is possible to gather some quantity of water in the oil tank or in the oil supply pipe, especially after a long time without clearing them. In this situation open the clear up valve of the tank and let the water to run out of it until oil start to run out.

➤ Check fume's exit

5. It is necessary to check the chimney pipe one time per year. If you find something faults, call authorized technician.

10. Service

Boiler needs service **once** a year. The service must check and clean:

- ✓ Flame pipes
- ✓ Fumes
- ✓ Flame chamber
- ✓ Chimney

All the parts of the boiler that are close to the flame must be cleaned in order to extend their long-life.

11. Part replacement

1. There isn't any part of the boiler which can be broken down in a small term time, but if it is necessary the replacement of any boiler's part, call our commercial representative.
2. For any intervention to the boiler, please call only authorized technician.
3. Intervention to the boiler from someone who isn't authorized technician may cause you more problems.

12. Locate and problem solve

a) For boiler series DG oil use

EVENT	POSSIBLE REASON	SOLVE WAY
Unable to ignite	<ul style="list-style-type: none"> ✓The oil valve is closed. ✓There is no oil in the tank ✓There is air in the oil supply pipes. ✓The oil filter needs to get clean. ✓Other reason. 	<ul style="list-style-type: none"> ✓Open the gas valve. ✓Fill the oil tank ✓Take the air out ✓Clean the oil filter and the burner. ✓Call authorized technician.
Burner is starting but stops again immediately.	<ul style="list-style-type: none"> ✓The oil in the tank is not enough. ✓The oil filter needs to get clean. ✓Bad quality of oil, or there are foreign objects in the oil. 	<ul style="list-style-type: none"> ✓Fill the oil tank. ✓Clean the oil filter. ✓Replace the dirty oil with new.
Irregular noise from the process of the combustion.	<ul style="list-style-type: none"> ✓Big quantity of air into the burner combustion. ✓Hyperbolic oil supplying. Other reason. 	<ul style="list-style-type: none"> ✓Call authorized technician.
Chimney smoke.	<ul style="list-style-type: none"> ✓Bad oil quality. ✓The quantity of incoming air is too small. ✓Other reason. 	<ul style="list-style-type: none"> ✓Replace the oil. ✓Call authorized technician.
Other reason	<ul style="list-style-type: none"> ✓Oil leaking from the oil's pipes. ✓Water leaking from the water's pipes. 	<ul style="list-style-type: none"> ✓Call authorized technician.

b) For boiler series DG gas use

If you notice a problem with your gas boiler call immediately authorized technician and gas company.

Read carefully page 8, protection for gas leak.

14. Guarantee

Heating Industry THERMOLEV gives guarantee for the good operation of the boilers, according the following rulers.

Guarantee rules

- 1.We undertake without any cost the restoration of any boiler's breakdown, if the breakdown is because of making fault or faulty material.
- 2.Breakdown caused from third person is not covered.
- 3.The guarantee is not cover boiler's low output, which is depending in faulty choice of expansion vessel, installation, connect, chimney, etc.
- 4.Installation and equipment of the boiler room must be according to the force law. Installation of the boiler need to be done from thermo-hydraulic or technician who are licensed.
- 5.It must take place, boiler's yearly service from authorize for this workshop.
- 6.The boiler's control panel guarantee is for one year.
- 7.We must have received the guarantee special clipping in 30 days after you have complete it , in order the guarantee to be valid.

Remarks

For the boiler's right operation, it is necessary the follows:

- ✓Select the right expand vessel.
 - ✓Placing of oil valve, oil filter and security valve.
- For gas use: Place the correct gas train according burner's type.
- ✓The ignition of the burner must be from authorized technician.

Note:

Avoiding the guarantee and faking manufactures register table gives company the possibility to get the guarantee invalid.

Thermolev heating industry gives you the present guarantee form. Guarantee is for the good operation, for the first eight [8] years of the boiler's life.

As the start date of the guarantee is the date of the boiler's purchase from our commercial cooperating market.

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