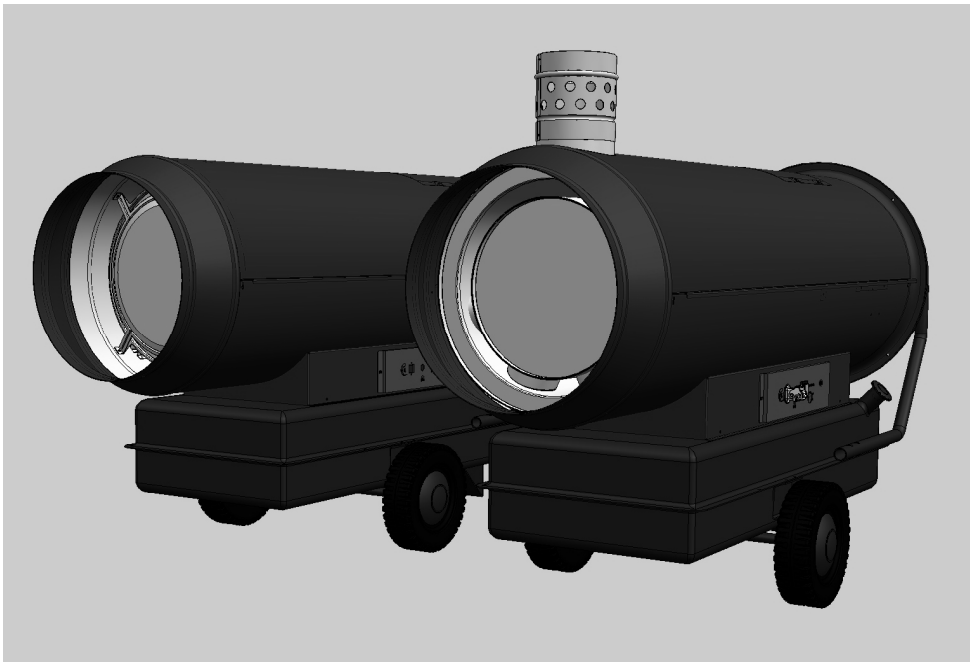


Operating, Installation and Service Instructions

TOR MIR



Direct- and Indirect-fired Fuel Oil/Diesel/ Kerosene Heaters

TOR 67 WU
TOR 115 WU
TOR 175 WU
MIR 37 WU
MIR 55 WU
MIR 85 WU



1. GENERAL SAFETY RULES

- **READ INSTRUCTIONS CAREFULLY. READ AND FOLLOW ALL INSTRUCTIONS. PLACE INSTRUCTIONS IN A SAFE PLACE FOR FUTURE REFERENCE. DO NOT ALLOW ANYONE WHO HAS NOT READ THESE INSTRUCTIONS TO ASSEMBLE, LIGHT, ADJUST OR OPERATE THE HEATER.**
- **IF THE INFORMATION IN THIS MANUAL IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.**
- **SERVICE MUST BE PERFORMED BY A QUALIFIED SERVICE AGENCY.**
- **UNVENTED PORTABLE HEATERS USE AIR (OXYGEN) FROM THE AREA IN WHICH IT IS USED. ADEQUATE COMBUSTION AND VENTILATION AIR MUST BE PROVIDED. REFER TO INSTRUCTIONS.**

WARNING

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

WARNING

FIRE, BURN, INHALATION, AND EXPLOSION HAZARD.
KEEP SOLID COMBUSTIBLES, SUCH AS BUILDING MATERIALS, PAPER OR CARDBOARD, A SAFE DISTANCE AWAY FROM THE HEATER AS RECOMMENDED BY THE INSTRUCTIONS. NEVER USE THE HEATER IN SPACES WHICH DO OR MAY CONTAIN VOLATILE OR AIRBORNE COMBUSTIBLES, OR PRODUCTS SUCH AS GASOLINE, SOLVENTS, PAINT THINNER, DUST PARTICLES OR UNKNOWN CHEMICALS.

WARNING

COMBUSTION BY-PRODUCTS PRODUCED WHEN USING THIS PRODUCT CONTAIN CARBON MONOXIDE, A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS (OR OTHER REPRODUCTIVE HARM).

GENERAL HAZARD WARNING

FAILURE TO COMPLY WITH THE PRECAUTIONS AND INSTRUCTIONS PROVIDED WITH THIS HEATER, CAN RESULT IN DEATH, SERIOUS BODILY INJURY AND PROPERTY LOSS OR DAMAGE FROM HAZARDS OF FIRE, EXPLOSION, BURN, ASPHYXIATION, CARBON MONOXIDE POISONING, AND/OR ELECTRICAL SHOCK. ONLY PERSONS WHO CAN UNDERSTAND AND FOLLOW THE INSTRUCTIONS SHOULD USE OR SERVICE THIS HEATER.
IF YOU NEED ASSISTANCE OR HEATER INFORMATION SUCH AS AN INSTRUCTION MANUAL, LABELS, ETC. CONTACT THE MANUFACTURER.

WARNING

NOT FOR HOME OR RECREATIONAL VEHICLE USE

WARNING

YOUR SAFETY IS IMPORTANT TO YOU AND TO OTHERS,
SO PLEASE READ THESE INSTRUCTIONS BEFORE YOU OPERATE THIS HEATER

- THE ELECTRICAL SYSTEM TO WHICH THE APPLIANCE IS CONNECTED MUST COMPLY WITH ALL SAFETY REGULATIONS IN FORCE. A RESIDUAL CURRENT CIRCUIT BREAKER MUST BE PROVIDED ON THE MAIN DISTRIBUTION BOARD.
- UNPLUG THE HEATER BEFORE ATTEMPTING ANY SERVICE OR MAINTENANCE.
- ALWAYS CHECK THE POWER SUPPLY CABLE BEFORE USE. IT MUST NOT BE BENT, CRUSHED, OR ANYWAY DAMAGED.
- THE POWER SUPPLY CABLE MUST BE REPLACED ONLY BY QUALIFIED PERSONNEL.
- ONLY USE AN ORIGINAL POWER CABLE WITH A 3-PIN GROUNDED PLUG.
- DO NOT TOUCH THE EXHAUST GAS OUTLET. DANGER OF BURNS!

2. PRODUCT DESCRIPTION

- Mobile space heater with:
 - closed combustion chamber and gas exhaust duct (indirect-fired models)
 - open combustion chamber (direct-fired models)

3. TECHNICAL SPECIFICATIONS

3.1 Indirect-fired heaters

Model #	MIR 37 WU	MIR 55 WU	MIR 85 WU
Firing rate (BTU/hr)	125,200	180,900	288,700
Air Flow Rate (ft ³ /min)	1180	1470	2650
Fuel Types	#1-2 Fuel Oil / Diesel / Kerosene		
Fuel Consumption (gal/hr)	0.88	1.28	2.04
Fuel Nozzle	0.65 60°H	1.00 60° H	1.50 80° W
Efficiency (%)	87.1	87.1	88.5
Noise Level at 2m (dB(A))	75	73	73
Voltage (V)	115V 60Hz 1ph		
Electrical Power (W)	460	460	800
Current Rating (A)	7.0	7.0	12.5
Weight (lb)	154	178	282
Lenght (in)	47	54.8	68.0
Width (in)	24	27.6	29.5
Height (in)	31	32.7	40.4
Flue Diameter (in)	6	6	6
Tank Capacity (gal)	14	26.5	36.0
Fuel Pressure (psi)	175	175	175
Air Lock Setting	1	2	3.5

3.2 Direct-fired heaters

Model #	TOR 67 WU	TOR 115 WU	TOR 175 WU
Firing rate (BTU/hr)	227,000	396,500	607,000
Air Flow Rate (ft ³ /min)	1650	2825	3240
Fuel Types	#1-2 Fuel Oil / Diesel / Kerosene		
Fuel Consumption (gal/hr)	1.60	2.80	4.28
Fuel Nozzle	1.25 60°S	2.25 80°W	3.50 80°S
Efficiency (%)	100	100	100
Noise Level at 2m (dB(A))	73	73	76
Voltage (V)	115V 60Hz 1ph		
Electrical Power (W)	460	800	1100
Current Rating (A)	7	12.5	17.5
Weight (lb)	142	223	264
Lenght (in)	55.3	66.1	76.3
Width (in)	24.4	27.2	29.6
Height (in)	29.5	35.4	40.8
Tank Capacity (gal)	14	26	36
Fuel Pressure (psi)	175	175	175
Air Lock Setting	1.5	3.5	9.0

4. INSTALLATION INSTRUCTIONS

4.1. General instructions

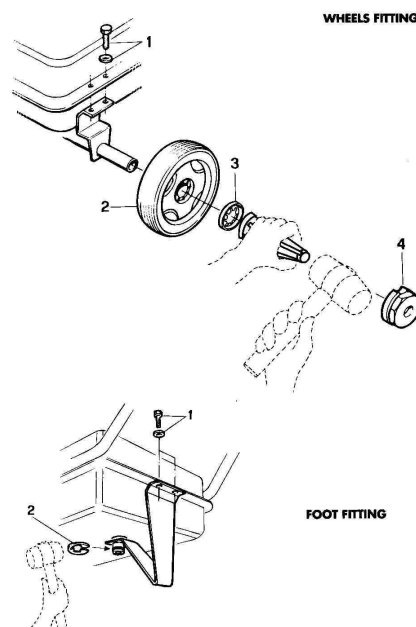
- THE INSTALLATION OF THE EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REGULATION OF AUTHORITIES HAVING JURISDICTION AND CSA B139.
- The heater must be operated only by properly trained personnel. The manufacturer's instructions must be followed.
- The heater must be installed and operated so that people are not exposed to dangers deriving from exhaust gases, from the hot air flow and in such a way that no fire risks exist.
- It is forbidden to install the heater in the surroundings of flammable materials, combustible products, or in explosive atmospheres.
- When an **indirect-fired** heater connected to a flue pipe is used in a closed room, provide a minimum opening area of 1 ft³ per US gallon capacity at the unit level.
- When a **direct-fired** heater - or an **indirect-fired** heater **not** connected to a flue pipe - is used in a closed room, provide a minimum opening area of 3 ft² per US gallon capacity at the unit level and a continuous, natural air circulation through windows and doors.
- For the use of the heater the general and special fire safety regulations in force in all fields of applications must be followed. In any case the following minimum safety clearances from flammable materials or objects in the surroundings of the heater must be ensured:

Sides:	2 ft (610 mm)	Air inlet:	2 ft (610 mm)
Top:	5 ft (1520 mm)	Air outlet:	10 ft (3050 mm)
Flue pipe:	3 ft (915 mm)		

- Floors and ceilings must be made of fireproof materials in the place where the heater is operated.
- The air inlet and outlet must never be blocked for any reason.
- Install the heater on a flat, level floor in a steady position.
- It is forbidden to connect direct-fired heaters to air ducts.

4.2 Assembling the heater

- Before operating the heater, assemble axle, wheels and lower support following the diagram below:



Maintenance and checks

- Depending on the operational conditions, usually every year, the heater should be checked by qualified personnel.
- Prior to start-up, the user must check for any evident non-compliance with rules of use, safety and protection.

5. INSTRUCTIONS FOR USE

5.1 Start-up

- The heater is factory set for operation without room thermostat.
- If operation with room (remote) thermostat is desired, remove the socket cover (Fig. 1 nr. 1) and insert the thermostat plug into the socket.
- Fill the tank with fuel of proper type.
- Connect the supply plug to a 115V ~ 60 Hz single phase earthed socket. The green lamp indicates that the heater is powered.
- **WARNING: THE APPLIANCE MUST BE GROUNDED**

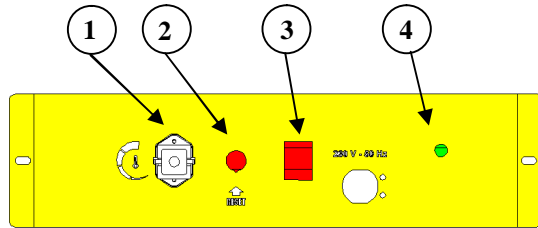
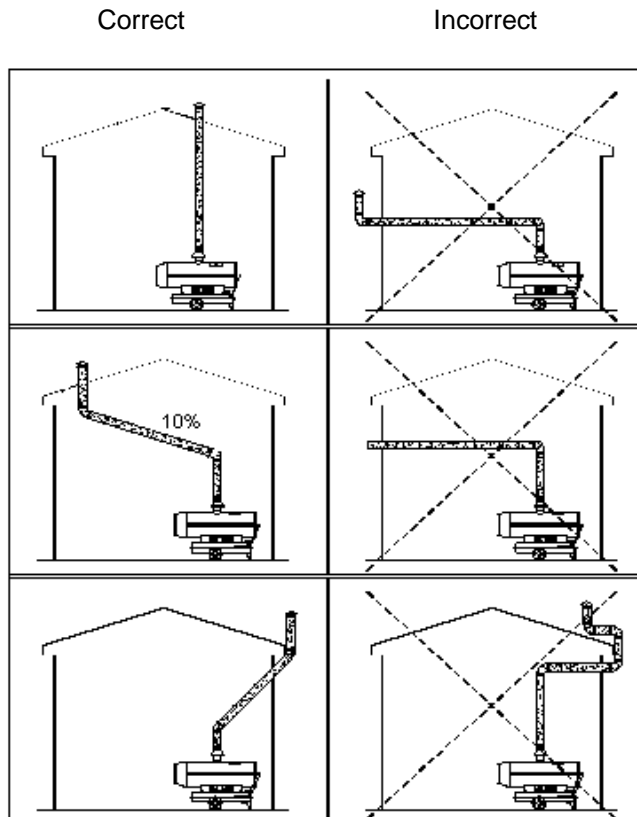


Fig.1

Indirect fired heaters

Connect the heater to a flue pipe or to an exhaust duct. To get a proper draught (at least 0,1 mbar) in the flue pipe the exhaust gas path must rise. Avoid any elbows and bends in the first part of the flue pipe for at least 3 m. For operation of heater in closed rooms without flue refer to the instructions for installation (par. 4)

- If a remote thermostat is used, set it on maximum temperature.
- Turn switch to position "ON"
- Set the desired temperature on room thermostat.



Caution (indirect-fired heaters)

When this heater is connected to a flue pipe, the flue pipe shall terminate in a vertical section at least two feet long and sufficient draft shall be created to assure safe and proper operation of the heater.

Where back drafts may occur a vertical cap should be used on the exit from the flue pipe.

Horizontal runs of the flue pipe should have a rise 1 in 10 away from the heater

5.2. Reset after lockout – Safety air pressure switch

- The heater is equipped with a Reset pushbutton. When the heater locks out, the red lamp on the pushbutton (fig. 1 n°2) lights up. In this case push the Reset button (see also the par. "Troubleshooting") to restart the heater.
- The heater is also equipped with an air pressure switch that senses the airflow pressure and locks the heater out in the event of unit overheating. If this occurs, detect and eliminate the cause of overheating before using the heater again. Have the heater inspected by a qualified technician if required. See point above for resetting.

5.3. Shut down.

- Set switch to “OFF” to shut the flame off. The fan will go on rotating for 1 min 45 sec to cool the heater down. The fan motor will automatically stop at the end of the aftercooling time, then the unit can be disconnected from mains.

Never disconnect the power plug to stop the heater while in operation

The big amount of heat produced could damage the components: allow cooling sequence to take place

6. MAINTENANCE

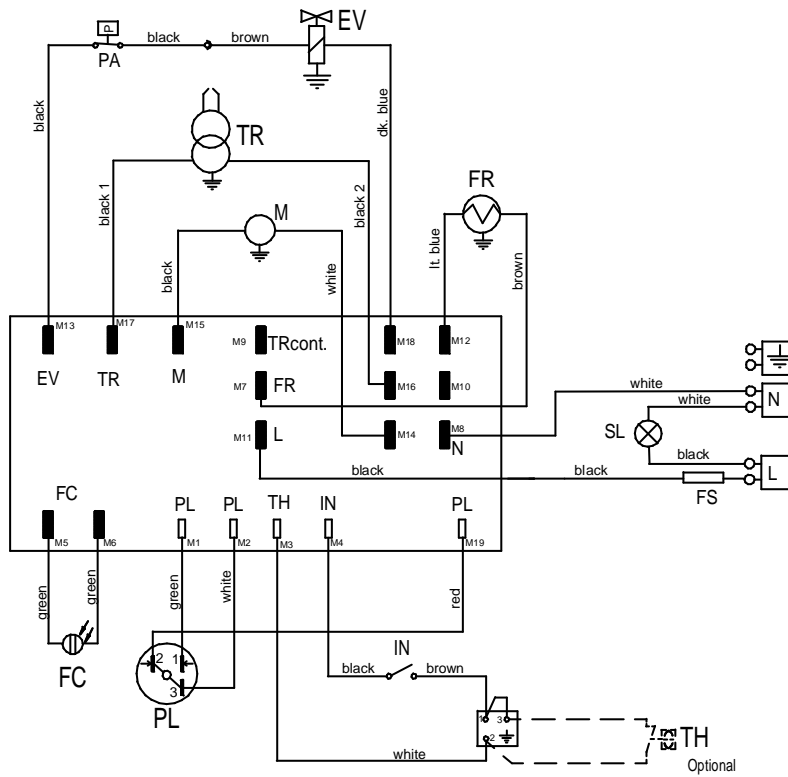
- **Before carrying out any maintenance operation, disconnect the power plug.**
- **Maintenance must be carried out by qualified personnel (see also par. 7)**
- The appliance must be thoroughly cleaned once a year to ensure good combustion and long life.
- Clean periodically
 - the oil spraying nozzle and its filter;
 - the oil pump filter
 - the main fuel filter cartridge
 - the ignition electrodes
 - the fan blades
 - the inside of the appliance, using compressed air
 - the flame sensor with a mild detergent
- Periodically check cables and electrical connections.
- Check the oil filter and replace if necessary.

7. TROUBLESHOOTING

TROUBLE	CAUSE	SOLUTION
Heater does not start	No power	Check main distribution board and power supply line
	Faulty cable/connections	Check/have cable replaced by a qualified electrician
	Burnt fuse Room thermostat set too low	Check and replace if required Set room thermostat on a higher temperature
	Room thermostat socket cap not inserted	Insert cap into the thermostat socket
	Heater in lock-out mode	Reset
Heater starts, flame ignites but then heater locks out	Dirty or faulty flame sensor	Clean or replace
	Faulty burner control unit	Contact service personnel
Heater starts, flame does not ignite and then heater locks out	Clogged nozzle	Clean or replace
	Flame sensor receives an external light signal during ignition sequence	Check for external lights (sun, lamps, etc.)
	Faulty burner control unit	Contact service personnel
	No fuel	Fill tank
	Ignition fault, dirty or incorrectly spaced electrodes	Clean electrodes, contact service personnel if required
Heater starts, but combustion is not good	Dirty or blocked nozzle	Clean or replace
	Clogged filters	Clean or replace
	Leakes in fuel circuit	Check and eventually replace
	Oil pump provides low pressure	Contact service personnel
	Insufficient combustion air	Wrong air lock setting
	Insufficient ventilation air	Contact service personnel
Heater stops as the air pressure switch functions	The appliance has overheated	See par. 5.2.
	Faulty pressure switch	Contact service personnel

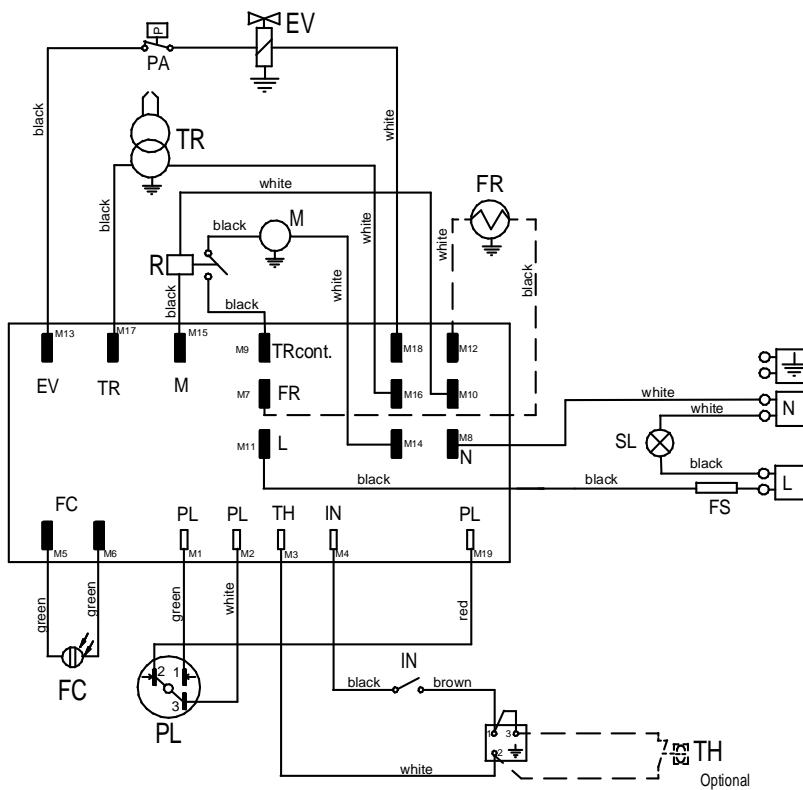
8. WIRING DIAGRAM

TOR 67 WU, TOR 115 WU
MIR 37 WU, MIR 55 WU, MIR 85 WU



- EV Fuel Solenoid Valve
- TR Ignition Transformer
- M Motor
- SL Warning Lamp
- PA Air Pressure Switch
- FS Fuse
- FC Flame Sensor
- PL Reset Button
- IN Switch
- TH Remote Thermostat
- FR Heated Filter

TOR 175 WU



- EV Fuel Solenoid Valve
- TR Ignition Transformer
- M Motor
- SL Warning Lamp
- PA Air Pressure Switch
- FS Fuse
- FC Flame Sensor
- PL Reset Button
- IN Switch
- TH Remote Thermostat
- FR Heated Filter
- R Relay



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