



**Thermex Rigel**  
Premix Condensing Combi Boiler

## **Combi Boiler Installation And User's Manual**

Read carefully before  
operating the appliance.

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## 1 INTRODUCTION

Thermex Rigel PM 24 kw - 27,99 kw - 35 kw condensing boilers are wall hung boilers designed to produce for heating your house as well as preparing domestic hot water by using natural gas. The boilers are suitable for natural gas fuel.

This installation and usage manual contains detailed instructions and recommendations for safe and efficient use of the boiler, further this manual contains technical data, information for installation and connections, use, maintenance, troubleshooting and explanation of the most possible failures of the appliance.

Please do not operate your appliance before reading this manual and to keep in a safe place for future reference.

## 2 WARNINGS FOR THE USER

- a. Installation and connections of the boiler must be carried out in full conformity with the governing legal regulations, the requirements of local gas distributing Company and the instructions provided by the manufacturer.
- b. Ensure that the flue gas connection is not terminated in a closed compartment and connected with no other appliance but the special chimney made to be used for the connection of more than one appliance and flue gas outlet cap is not clogged.
- c. Ensure that the supply gas complies with the gas type, pressure and capacity of the boiler indicated in the data plate.
- d. Ensure that both central heating system and domestic hot water distribution pipes are cleaned properly before the installation and connection to the boiler. The manufacturer is not responsible of any damages arising from the dirt and small particles left inside the piping and such failures and damages are out of warranty claim.
- e. The commissioning of the boiler must be performed by qualified personnel/Thermex authorised services only. Ensure that electric, water and gas connections to the boiler are carried out in conformity with local requirements as well as to the instructions provided in this manual.
- f. Cleaning of external surfaces of the appliance should be made by using a damp cloth, do not use any chemical or detergent.
- g. In order to use the appliance efficiently for years to come schedule annual maintenance of the boiler with Thermex authorised service.

## 3 CONDITIONS INELIGIBLE FOR WARRANTY

The THERMEX warranty claim does not apply any failures arising from any use of the appliance out of such mentioned in this manual as well as from the following cases:

- a. Happened in appliances not commissioned by authorised THERMEX services,
- b. Arising from installations not confirming the instructions given in this manual as well as those from misuse,
- c. Arising from selecting wrong type of appliance for the intended purpose,
- d. Arising from intervening the appliance by an unauthorized service agency,
- e. Physical failures happened after the appliance has been delivered,
- f. Arising from natural disasters, fire and lightning strike,
- g. Arising from high or low supply voltage out of the limits stated in the data plate or connections to a power supply line with an inefficient earth connection,
- h. Arising from the failure of observing the periodic maintenances specified in the instructions to be done in time by the authorized service agencies,
- i. Arising from other accessories and ancillary products used with the appliance,
- j. Arising from freezing
- k. Manipulation of data plate and warranty certificate,
- l. Using the appliance in a cold water supply network out of the conditions set in this instruction manual,

The warranty does not apply to above specified failures, and repair of such failures is subject to a fee.

## 4 SWITCHING ON THE BOILER

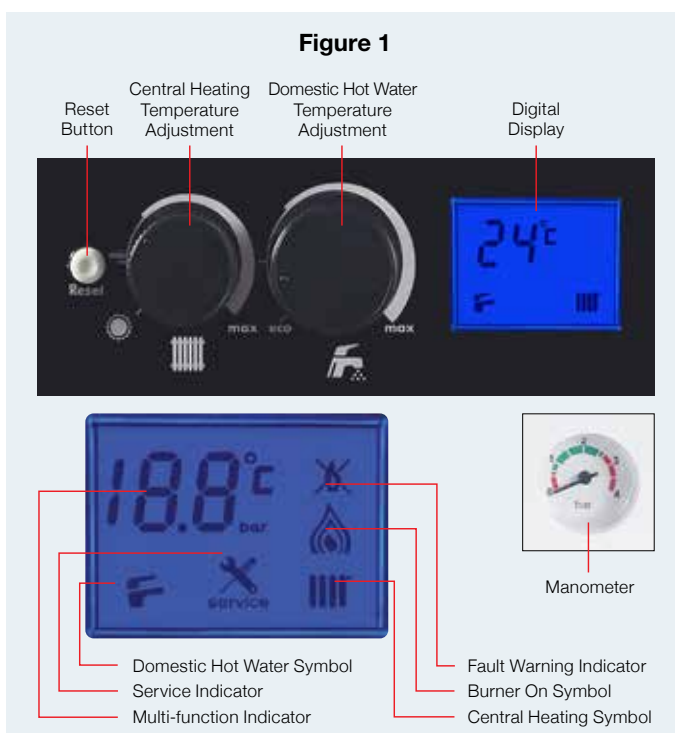
Before starting the boiler ensure electric, gas and water connections are properly made and the appliance is supplied with correct power as stated in the data plate.

- a. Open power supply connection.
- b. Turn gas cock to open position.
- c. The Central Heating temperature adjustment button serves both “off” and Summer/Winter mode selection button. When this button is “off” position the appliance is switched off. When it is “Sun” position the appliance is in Summer mode and only operates for hot water production. When the Central Heating temperature is increased the boiler is in Winter mode and heats central heating as well. **Figure 1**

**WARNING: In Summer mode the boiler does not start unless a hot water tap is opened.**

- d. Adjust your desired temperature by temperature adjustment buttons to put the appliance in operation. (When the temperature adjustment button is used the temperature adjustment is flashes on the display and temperature adjustment changes with 1°C steps. When you have adjusted the desired temperature the LED display returns to the previous status after 5 seconds.)

**WARNING: When the boiler is first started the boiler may show ignition failures and go into block several times till the air in the gas supply line is evacuated. In that case push Reset button for 2 seconds to restart the boiler.**



## 5 DAILY OPERATION OF THE BOILER

Summer/Winter/Only Heating mode selection;

When it is not required to use central heating, the appliance may be switched to Summer mode only to produce domestic hot water. To set Summer mode simply turn central heating temperature adjustment button to “Sun” symbol.

**WARNING: When the appliance is “Off” mode pump anti blocking safety, anti-frost protection and three-way valve motor blocking safety functions are active.**

- a. When the appliance is Summer mode the display shows ( ) sign. To set this mode; turn central heating temperature adjustment button to “Sun” symbol. To adjust domestic hot water temperature turn ( ) button to your desired temperature.

With summer mode pump anti blocking safety and anti-frost protection functions are active.

- b. When the appliance is Winter mode the display shows ( ) and ( ) signs. To set this mode; just turn central heating temperature adjustment button to minimum setting.

To adjust central heating temperature turn ( ) central heating adjustment temperature to set the desired temperature.

To adjust domestic hot water temperature turn ( ) button to your desired temperature. With winter mode pump anti blocking safety and anti-frost protection functions are active.

- c. When the appliance is “only heating” mode the display shows ( ) sig.

With “only heating” mode pump anti blocking and anti-frost protection functions are active.

**WARNING: When the boiler switches on after a heat demand (when the burner is on), ( ) sign is shown in the display.**

## 6 FILLING THE BOILER

Filling water is supplied through the filling valve located in the bottom of the boiler, **Figure 3**. When the boiler is cold the installation should be filled such that the manometer located in the front of the boiler, (**Figure 2**) indicates a water pressure between 1-1,5 bar. When the pressure drops to the critical level the appliance shuts-off automatically. (0-0,3)

Figure 2



Figure 3



## 7 SWITCHING OFF THE BOILER

To switch off the boiler turn central heating adjustment button to “off” position. When the boiler is “off” position the pump antiblockage and anti-frost protection are active and there is electric current in the boiler. In order to switch off the boiler completely, switch the external power supply fuse-circuit breaker to OFF position.

**WARNING: In order anti-frost protection to be active electric and gas supply to the boiler should not be closed. Observe the requirements indicated in Paragraph 4. When the temperature inside the boiler drops below 7°C the burner the anti-frost protection switches, turns on the burner and heats the water up to 10°C.**

## 8 MAINTENANCE OF THE BOILER

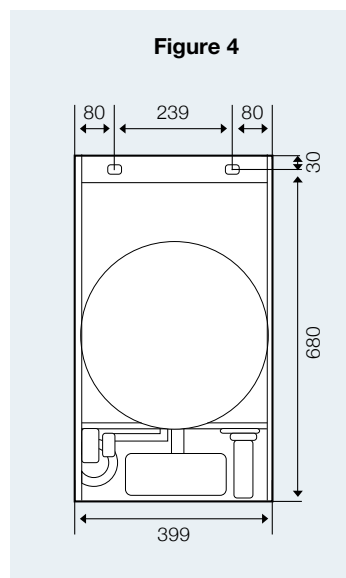
In order to use your appliance trouble-free and efficiently for long years we recommend scheduling annual maintenance, preferably at early winter season, by Thermex authorised service.

Do not clean external surfaces of your appliance with detergent or chemical materials.

Check your installation before making connections to the boiler and ensure that the installation pipes are free from dirt or any particles.

## 9 INSTALLATION INSTRUCTIONS

Boiler package contains:



Boiler, support Styrofoam, installation hanging equipment, user's manual, warranty certificate and service booklet.

The locations where the boiler can be installed should be selected by observing the relevant regulations and requirements set forth by standard codes of practice in force as well as local gas company standards. Installation hanging

equipment should be fixed on the wall in such way to carry the weight of the boiler. The hanging bracket should be fixed level, **Figure 4**.

Condensate drain should be laid with continuous 2° downward slope and to be connected to the waste water drain. The drain hose should be insulated against freezing.

A suitable filter and a ball valve must be installed to the water inlet to the boiler, **Figure 5**.

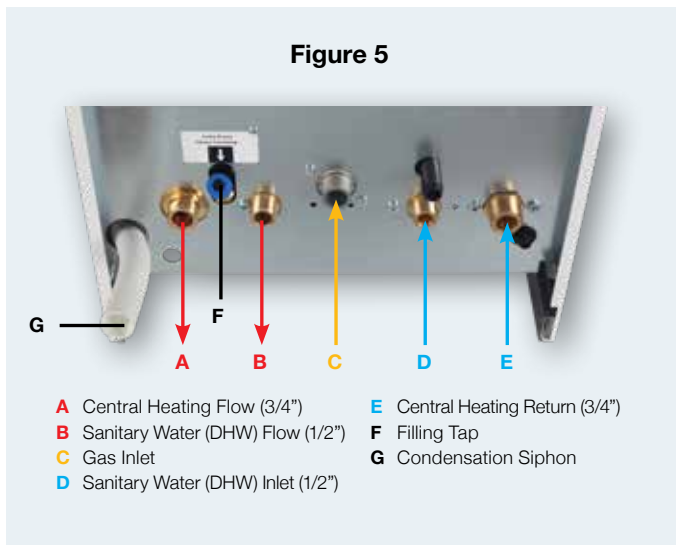
Check that the maximum water mains pressure does not exceed 6 bars; if it does, a pressure reducing valve must be installed.

Make sure that the gas category for which the boiler was designed corresponds to the category available in the location where it will be used and the supplied gas pressure, as well as the gas installation is in conformity with data plate.

Check that the gas installation is in conformity with data plate.

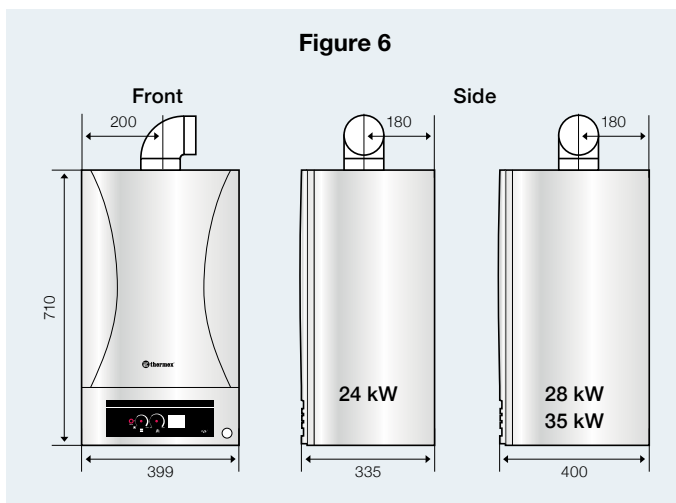
If the boiler is installed in an open balcony, it should be installed inside a cabinet. The cabin should be removable.

If the boiler is inside a cabinet; a minimum gap of 5 cm from the sides, 50 cm from the bottom and 3 cm from the front must be provided when installing the boiler.



## 10 DIMENSIONS OF THE BOILER

Dimensions of the boiler are given in **Figure 6**.



## 11 CONNECTING THE FLUE

When connecting the flue, the flue gas accessories supplied by the manufacturer must be used. When selecting the location of the boiler the position of flue gas connection and flue terminal should be considered. For flue connection the requirements set forth by the local authorities and gas distributing company must be observed.

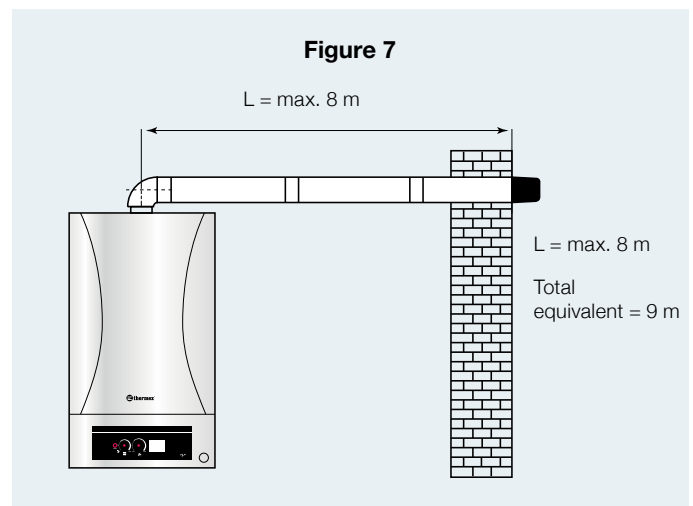
Flue connection must not be made to:

- a. Building stairwells,
- b. Building aisles,
- c. Light-wells,

- d. On the chimney walls
- e. Balconies
- f. Elevator shafts.

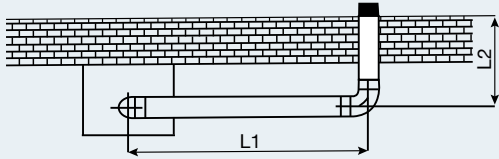
The followings must be observed when making flue connection:

- a. Flue terminal vertical distance to eaves and roof coverings should be minimum 1,5 m from the top and should also extend further from such eaves and roof coverings.
- b. Minimum vertical distance above the ground should be 0,3 m and in places where there is an impact risk the flue terminal must be covered with a wire net.
- c. When the flue terminal is extended off the wall it must extend minimum 50 mm outside the wall.
- d. Horizontally connected flue connections must be installed with 3% upward slope.
- e. Where the appliance is installed to penthouses flue terminal should be minimum 40 cm above the roof. In such cases the roof must be insulated with non-combustible material.
- f. Maximum length of the flue connection is 9 m. Maximum length is shortened by 1 meter for each additional 90° elbow and 0,5 meter for each additional 45° elbow.
- g. Roof tightness must be fully ensured with vertical flue applications. In case where tightness cannot be ensured any failure or damage which may arise is out of warranty claim.



In the use of additional elbows,  
 90° → 1 m  
 45° → 0,5 m → total equivalent length decreases.

Figure 8



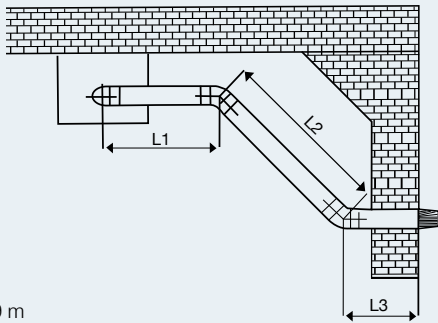
$L1 + L2 = 7 \text{ m}$   
 Total equivalent = 9 m  
 90° elbow = equal to 1 m flue length  
 45° elbow = equal to 0,5 m flue length

## 12 ELECTRIC CONNECTION

The appliance must be connected to a power supply line with an efficient earth connection.

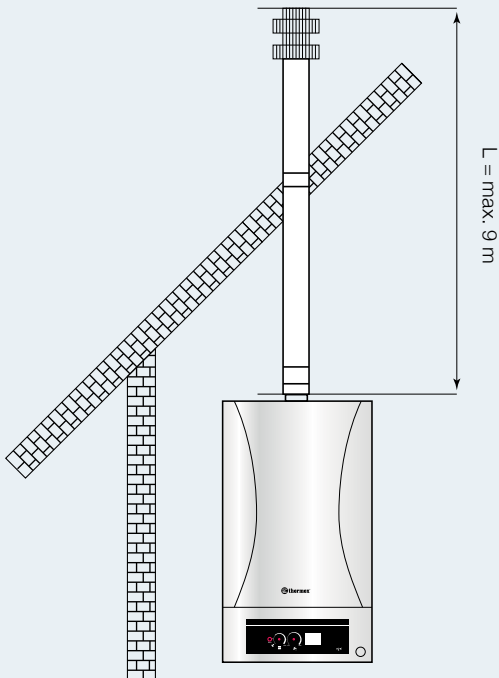
The appliance must be connected to 220~230V single phase power supply line with efficient earth connection through (3-10 A) V- Automatic circuit breaker.

Figure 9



$L1 + L2 + L3 = 7 \text{ m}$   
 Total equivalent = 9 m

Figure 10



## 13 ERROR CODES

The appliance displays certain failures or warnings on the display to inform the user, **Figure 11**. In such case if the error does not disappear after performing the indicated action the closest authorised service must be called to fix the error of the appliance.

Figure 11

Display Code	Remote Code	Description of Error	Required Action
1.A	11	Outside sensor failure	Check the wiring
2.A	12	Return sensor failure - operates if low water flow measurement is active only	Check the wiring
3.A	13	High water pressure warning, over 2,5 bar	Decrease pressure adjustment under 2 bar
4.A	14	Internal parameter error - Main card failure	Parameter error - Main card replacement
5.A	15	Low water flow warning	
6.A	16	Ignition electrode voltage failure	Voltage unbalance
7.A	17	Low water flow warning	
8.A	18	Sensor failure	If temperature difference between flow-return sensors greater smaller than 5 degrees an error signal is produced
9.A	19	Fan speed control failure - Low rpm	Control fan
10.A	20	Fan speed control failure - High rpm	
11.A	21	Over temperature (if temperature increases over 89 degrees)	The error disappears under 75 degrees
12.A	22	If water pressure drops under 0,5 bar longer than 5 seconds	Pump should be stopped
13.A	23	Water pressure sensor failure	
14.A	24	Main heat exchanger freezing warning, under 2 degrees	Pump runs 5 minutes
16.A	26	Domestic hot water sensor failure	Check sensor wiring
17.A	27	Central heating sensor failure	Check sensor wiring
1.L	1	Eeprom parameter failure - Main card	Card control
2.L	2	STB thermostat	The fail is signalled, all requests are inhibited, the TWV is switched in CH direction and the Pump is activated until the STB is open. It's cleared by the Reset activation if STB is closed.
3.L	3	Flame control failure	Reset the boiler
4.L	4	No flame failure	Reset the boiler
5.L	5	Flame failure even no ignition	Reset the boiler
6.L	6	Flue gas thermostat failure	Control
7.L	7	Ignition failure	Control main card

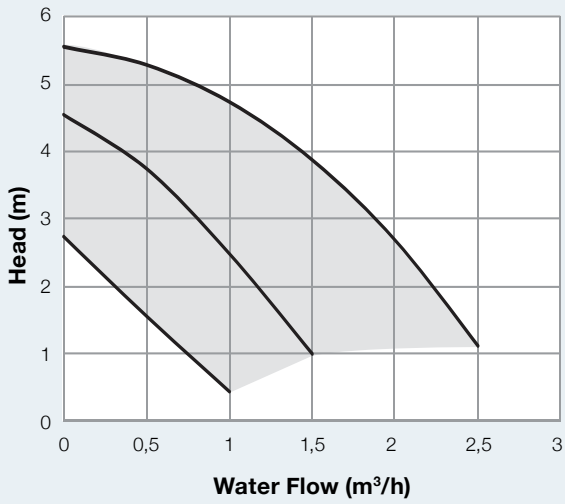


**14 TECHNICAL DATA**
**Figure 12**

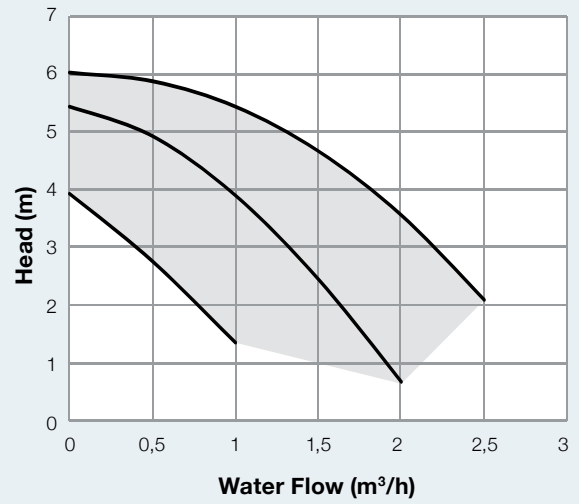
Condensing Boiler Models	Unit	Thermex Rigel PM 24	Thermex Rigel PM 28	Thermex Rigel PM 35
Gas Type		G20	G20	G20
Gas Inlet Pressure (for G20)	mbar	20	20	20
Type		C13, C33	C13, C33	C13, C33
Category		I2H (G20=20 mbar)	I2H (G20=20 mbar)	I2H (G20=20 mbar)
<b>Central Heating System</b>				
Maximum Efficiency (Partial Load)	%	108	108,1	108
Efficiency Class (92/42/EEC)		★★★★	★★★★	★★★★
Central Heating Nominal Power (50-30°C)	kW	24	27,99	35
Central Heating Minimum Power (50-30°C)	kW	5,3	6,28	7,44
Central Heating Nominal Power (80-60°C)	kW	21,5	25,1	31,2
Central Heating Minimum Power (80-60°C)	kW	4,9	5,7	6,8
Maximum Nominal Input (Qi)	kW	22,6	25,9	32,3
Minimum Nominal Input (Qi)	kW	5,2	6,1	7,2
Central Heating Temperature Adjustment	°C	30-80	30-80	30-80
Central Heating Circuit Max. Pressure	bar	3	3	3
Central Heating Circuit Min. Pressure	bar	0,8	0,8	0,8
NOx Class		6	6	6
Gas Consumption - at Maximum Power	m³/h	2,38	2,74	3,42
Gas Consumption - at Minimum Power	m³/h	0,57	0,64	0,76
Expansion Vessel Capacity	Liter	8	8	8
Expansion Vessel Pre-charged Pressure	bar	1	1	1
<b>Domestic Hot Water (DHW) System</b>				
DHW Heating Power, Max	kW	21,5	27,5	32,2
DHW Heating Power, Min	kW	4,9	5,7	6,8
DHW Volume (ΔT = 30°C, Max)	l/min.	10,3	13,2	15,4
DHW Volume (ΔT = 25°C, Max)	l/min.	12,3	15,8	18,4
DHW Temperature Adjustment	°C	30-60	30-60	30-60
Maximum Operating Pressure	bar	9	9	9
Minimum Operating Pressure	bar	0,3	0,3	0,3
Annual Electric Power Consumption for DHW Production	GJ	16,4	16,5	16,7
<b>Electrical Specifications</b>				
Power Supply Voltage	VAC	230	230	230
Power Supply Frequency	Hz	50	50	50
Power Consumption	W	160	160	190
Electric System Protection Grade	-	IP X4D	IP X4D	IP X4D
<b>Connections to Installation</b>				
Gas Connection	inch	3/4	3/4	3/4
Central Heating Circuit Flow / Return	inch	3/4	3/4	3/4
DHW Inlet / Outlet	inch	1/2	1/2	1/2
<b>General Specifications</b>				
Sound Power	dB(A)	51	52	52
Flue Diameter - Ø	mm	60/100	60/100	60/100
Dimensions (Height x Width x Depth), Without Package	mm	710 x 399 x 335	710 x 399 x 400	710 x 399 x 400
Dimensions (Height x Width x Depth), With Package	mm	760 x 430 x 392	760 x 430 x 460	760 x 430 x 460
Weight (Without Package)	kg	33,6	36,6	37,8
Weight (With Package)	kg	35,6	39,2	40,4

**Pump Operating Field**

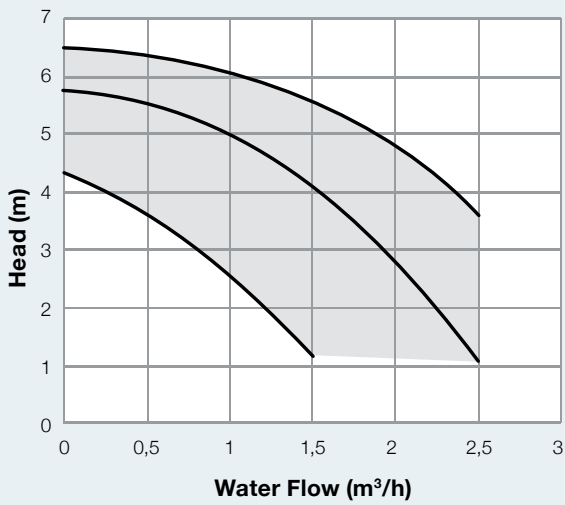
**Thermex Rigel PM (24 kW)**



**Thermex Rigel PM (28 kW)**



**Thermex Rigel PM (35 kW)**



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