



# DUAL FUEL BURNERS

TBML 50 MC - ME

TBML 60 P



CONFORM TO: DIRECTIVE GAS 2009/142/CE | E.M.C. DIRECTIVE 2014/30/UE | L.V. DIRECTIVE 2014/35/UE | MACHINERY DIRECTIVE 2006/42/CE | COMMISSION REGULATION ErP 2013/811/UE AND ErP 2013/813/UE | REFERENCE STANDARD EN676 AND EN267.



TBML 50 MC



TBML 50 ME



TBML 60 P

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Operation:

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil.

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil.

Continuous modulation operation by installing P.I.D. controller in the control panel (to be ordered separately with modulation probe).

Modulation ratio:

Burner with Low NOx and CO emissions on gas according to European standard EN676:

Burner with Low NOx and CO emissions on light oil according to European standard EN267:

Adjusting the combustion head.

Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler.

High ventilation efficiency, low electrical input, low noise.

Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers.

Combustion air intake with butterfly valve. Air flow adjustment:

Fully closing air damper on shutdown to avoid loss of heat through the chimney.

CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter.

CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter.

Possibility to choose gas train with valve tightness control.

Fail proof connectors for burner/gas train connection.

Gas train outlet:

Electric motor for pump drive.

Pump connected to fan motor through electromagnetic clutch.

Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve.

Fuel switch device:

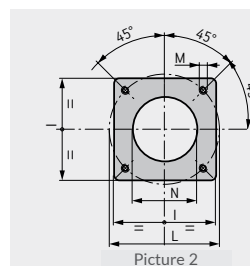
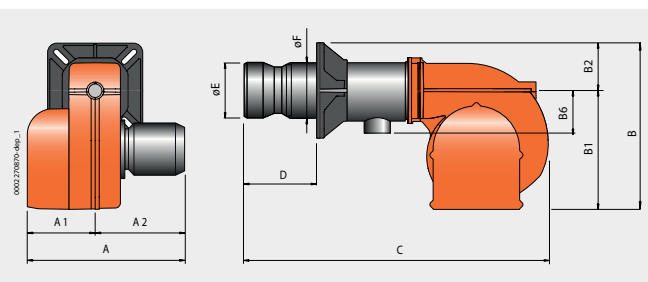
Flame detection by UV photocell.

Control panel with display diagram for working mode with indication lights.

Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment.

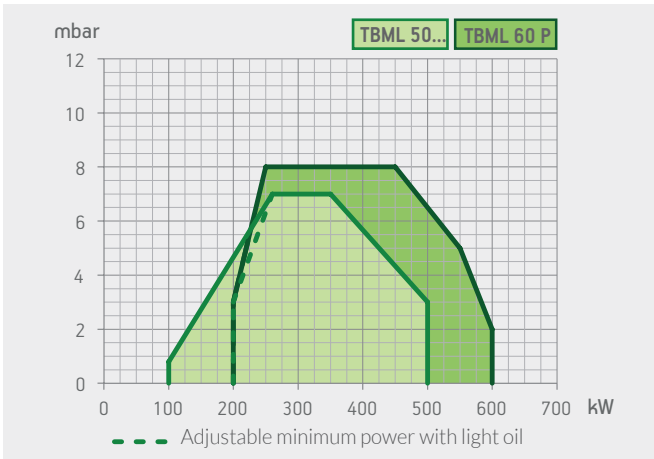
Electric protection rating:

	TBML 50 MC	TBML 50 ME	TBML 60 P
			two-stage
mechanical two-stage progressive/two-stage			
modulating electronic/two-stage			
Continuous modulation operation by installing P.I.D. controller in the control panel (to be ordered separately with modulation probe).	•		
Modulation ratio:	1:5	1:5	
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2	class 2
Adjusting the combustion head.	•	•	•
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler.	•	•	•
High ventilation efficiency, low electrical input, low noise.	•	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers.	•	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney.	•	•	•
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter.			•
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter.	•	•	
Possibility to choose gas train with valve tightness control.			•
Fail proof connectors for burner/gas train connection.	•	•	•
Gas train outlet:	down	down	down
Electric motor for pump drive.			•
Pump connected to fan motor through electromagnetic clutch.	•	•	
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve.	•	•	•
Fuel switch device:	manual	manual	manual
Flame detection by UV photocell.	•	•	•
Control panel with display diagram for working mode with indication lights.	•		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment.		•	
Electric protection rating:	IP40	IP40	IP40



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M mm	N mm	Pic.
TBML 50 MC	770	400	370	455	325	130	160	1020	170 ÷ 340	156	152	260	225 ÷ 300	M12	160	2
TBML 50 ME	640	270	370	455	325	130	160	1020	170 ÷ 340	156	152	260	225 ÷ 300	M12	160	2
TBML 60 P	680	400	280	455	325	130	160	980	140 ÷ 350	150	152	260	225 ÷ 300	M12	160	2



Model	Size of packaging			Weight kg
	L	P	H	
TBML 50 MC	1130	900	540	57
TBML 50 ME	1130	900	540	57
TBML 60 P	1070	800	610	49

DUAL FUEL  
GAS/LIGHT OIL

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	see page 2	100(200)* ÷ 500	<b>TBML 50 MC</b>	<b>56450010</b>	1,5	3N AC 50Hz 400V	0,65	4)
	see page 2	100(200)* ÷ 500	<b>TBML 50 ME</b>	<b>56460010</b>	1,5	3N AC 50Hz 400V	0,65	4)
	class 2	200÷600	<b>TBML 60 P</b>	<b>56470010</b>	1,5	3N AC 50Hz 400V	0,65+0,10	4)
Frequency 60 Hz								
	see page 2	100(200)* ÷ 500	<b>TBML 50 MC</b>	<b>56455410</b>	1,5	3N AC 60Hz 380V	0,65	4)
	see page 2	100(200)* ÷ 500	<b>TBML 50 ME</b>	<b>56465410</b>	1,5	3N AC 60Hz 380V	0,65	4)
	class 2	200÷600	<b>TBML 60 P</b>	<b>56475410</b>	1,5	3N AC 60Hz 380V	0,65+0,10	4)

### TO COMPLETE THE BURNER

DESCRIPTION
TBML 50 ME: modulating probe for LCM 100

### MODULATING MODE

DESCRIPTION	PART NO.
TBML 50 MC: modulation kit	98000057
TBML 50 MC: modulating probe	

### NOTES

4 Equipped with air closure device.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

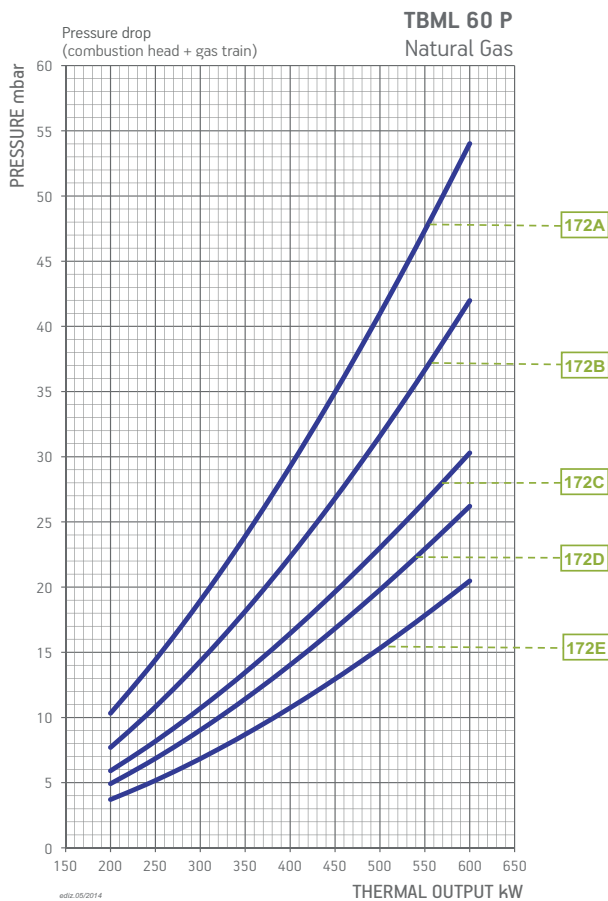
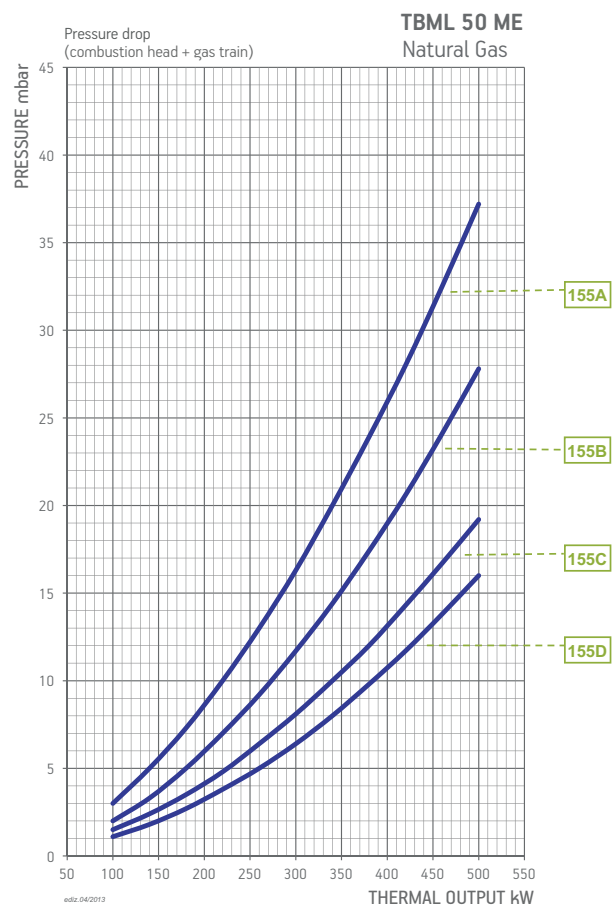
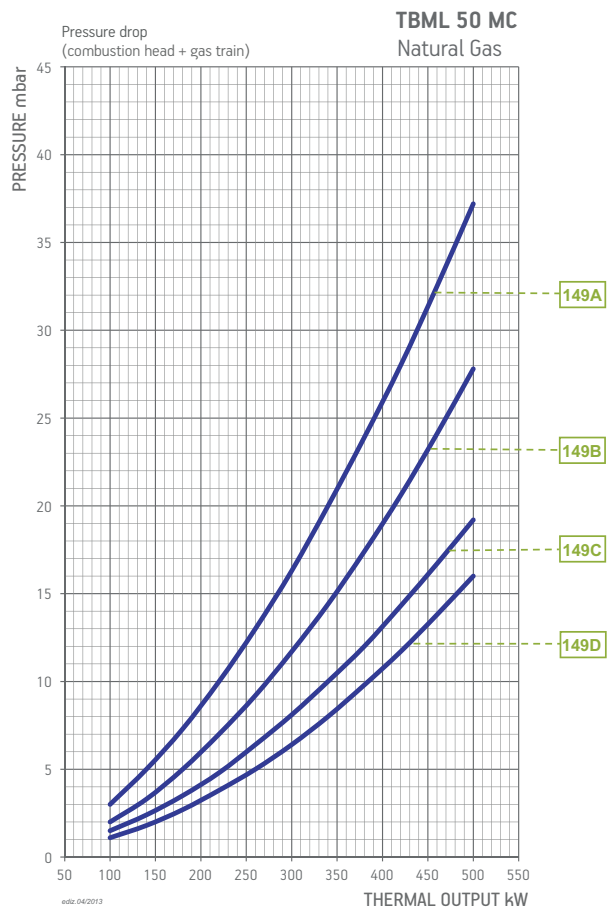
DESCRIPTION	PART NO.
TBML 60 P: line filter 3/8"	98000370
Soundproof burner cover	97980053

### DUAL FUEL BURNERS ACCESSORIES

TBML 50 MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
TBML 50 ME: line filter, flex hoses, nozzles, boiler couplin kit.
TBML 60 P: flex hoses, nozzles, boiler coupling kit, plug for wiring.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Notes
						Part no.	Part no.	Part no.	Part no.		
TBML 50 MC	Natural gas	149A	CE/EXP	360	CTV	19990580	Included	96000004	Included	D7	
		149B	CE/EXP	360		19990581	Included	96000004	Included	D7	
		149C	CE/EXP	360		19990582	Included	-	Included	D7	
		149D	CE/EXP	360		19990583	Included	96000013	Included	D7	
TBML 50 ME	Natural gas	155A	CE/EXP	360	CTV	19990556	Included	96000004	Included	D2	
		155B	CE/EXP	360		19990557	Included	96000004	Included	D2	
		155C	CE/EXP	360		19990558	Included	-	Included	D2	
		155C	CE/EXP	360		19990559	Included	96000013	Included	D2	
TBML 60 P	Natural gas	172A	CE/EXP	360	CTV	19990546	Included	98000004	-	B7	
						19990546	Included	98000004	98000101	B7	12)
		172B	CE/EXP	360		19990547	Included	98000004	-	B7	
						19990547	Included	98000004	98000101	B7	12)
		172C	CE/EXP	360		19990548	Included	-	-	B7	
						19990548	Included	-	98000101	B7	12)
		172D	CE/EXP	360		19990549	Included	96000013	-	B7	
19990549	Included				96000013	98000101	B7	12)			
172E	CE/EXP	500	19990550	Included	96000013	-	B7				
			19990550	Included	96000013	98000102	B7	12)			

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Notes
					Part no.	Part no.	Part no.	Part no.		
TBML 50 MC	LPG	CE/EXP	360	CTV	19990580	Included	96000004	Included	D7	
TBML 50 ME	LPG	CE/EXP	360	CTV	19990556	Included	96000004	Included	D2	
TBML 60 P	LPG	CE/EXP	360	CTV	19990547	Included	98000004	-	B7	
					19990547	Included	98000004	98000101	B7	12)

To choose the correct gas train please refer to the information on Burners Catalogue.

## NOTES

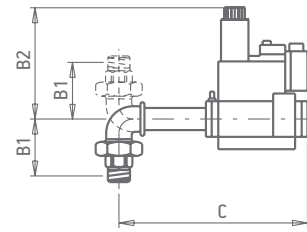
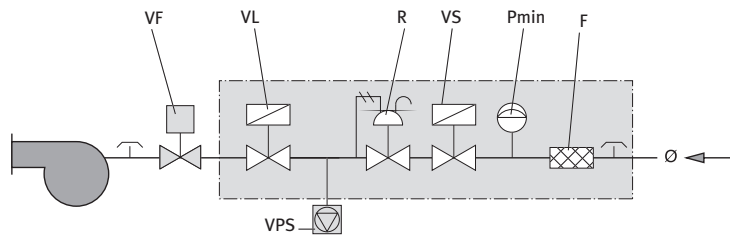
12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.

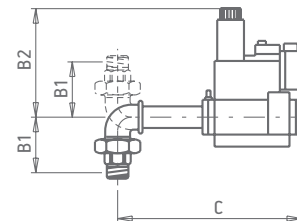
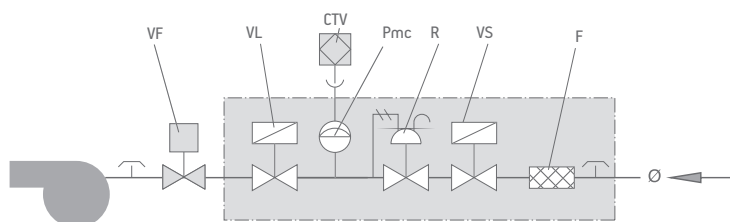
# GAS TRAIN STRUCTURE AND COMPOSITION

## B7



Gas train Part no.	Position								Gas train dimensions mm			Size of packaging mm	Weight kg
	F	Pmin	R	VF	VL	VPS	VS	Ø	B1	B2	C	L x P x H	
19990546 (MB...410 - 1")	●	●	●	◆	●	■	●	1"1/4	95	260	490	400 x 300 x 280	8
19990547 (MB...412 - 1"1/4)	●	●	●	◆	●	■	●	1"1/4	95	260	490	400 x 300 x 280	8
19990548 (MB...415 - 1"1/2)	●	●	●	◆	●	▲	●	1"1/2	103	170	600	460 x 250 x 460	11
19990549 (MB...420 - 2")	●	●	●	◆	●	▲	●	2"	114	220	600	460 x 250 x 460	13
19990550 (VGD20.503 - 2")	●	●	●	◆	●	▲	●	2"	114	285	890	990 x 300 x 500	15

## D2



Gas train Part no.	Position								Gas train dimensions mm			Size of packaging mm	Weight kg
	CTV	F	Pmc	R	VF	VL	VS	Ø	B1	B2	C	L x P x H	
19990556 (MB... 410 - 1")	●	●	●	●	◆	●	●	1"1/4	95	160	390	300 x 210 x 300	8
19990557 (MB... 412 - 1"1/4)	●	●	●	●	◆	●	●	1"1/4	95	160	390	300 x 210 x 300	8
19990558 (MB... 415 - 1"1/2)	●	●	●	●	◆	●	●	1"1/2	103	170	490	460 x 250 x 460	11
19990559 (MB... 420 - 2")	●	●	●	●	◆	●	●	2"	114	220	520	520 x 410 x 410	13

**CTV** Valve tightness control.  
**F** Filter.  
**LDU** LDU valve tightness control.  
**Pct** Pressure switch for gas control.  
**Pmax** Maximum pressure switch.  
**Pmc** Minimum and control pressure switch gas leaks.  
**Pmin** Minimum pressure switch.  
**R** Pressure regulator.  
**RF** Pressure regulator with filter.

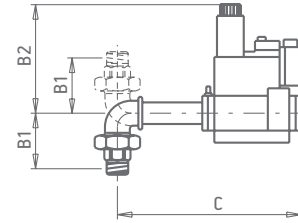
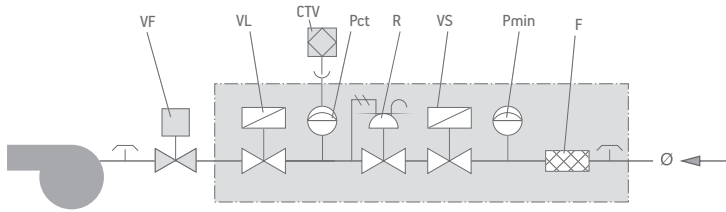
**RFP** Pressure regulator with filter for pilot gas train.  
**RM** Manual flow rate regulator.  
**RP** Pneumatic regulator.  
**VF** Regulator throttle valve.  
**VL** Operating valve.  
**VL2** Two-stage operating valve.  
**VLP** Operating pilot valve.  
**VLR** Operating valve with pressure regulator.

**VP** Pilot valve.  
**VPS** VPS valve tightness control.  
**VS** Safety valve.  
**VSP** Safety pilot valve.  
**Ø** Gas train diameter.  
**Ø1** Main gas train diameter.  
**Ø2** Pilot gas train diameter.

● As standard.  
 ▲ As standard for burners with an output of more than 1200 kW, on request for burners with an output of less than 1200 kW.  
 ■ On request.  
 ◆ Mounted on burner.

# GAS TRAIN STRUCTURE AND COMPOSITION

## D7



Gas train Part no.	Position									Gas train dimensions mm			Size of packaging mm	Weight
	CTV	F	Pct	Pmin	R	VF	VL	VS	Ø	B1	B2	C	L x P x H	kg
19990580 (MB...410 - 1")	●	●	●	●	●	◆	●	●	1"1/4	95	160	390	300x210x300	8
19990581 (MB...412 - 1"1/4)	●	●	●	●	●	◆	●	●	1"1/4	95	160	390	300x210x300	8
19990582 (MB...415 - 1"1/2)	●	●	●	●	●	◆	●	●	1"1/2	103	170	490	460x250x460	11
19990583 (MB...420 - 2")	●	●	●	●	●	◆	●	●	2"	114	220	520	520x410x410	13

**CTV** Valve tightness control.  
**F** Filter.  
**LDU** LDU valve tightness control.  
**Pct** Pressure switch for gas control.  
**Pmax** Maximum pressure switch.  
**Pmc** Minimum and control pressure switch gas leaks.  
**Pmin** Minimum pressure switch.  
**R** Pressure regulator.  
**RF** Pressure regulator with filter.

**RFP** Pressure regulator with filter for pilot gas train.  
**RM** Manual flow rate regulator.  
**RP** Pneumatic regulator.  
**VF** Regulator throttle valve.  
**VL** Operating valve.  
**VL2** Two-stage operating valve.  
**VLP** Operating pilot valve.  
**VLR** Operating valve with pressure regulator.

**VP** Pilot valve.  
**VPS** VPS valve tightness control.  
**VS** Safety valve.  
**VSP** Safety pilot valve.  
**Ø** Gas train diameter.  
**Ø1** Main gas train diameter.  
**Ø2** Pilot gas train diameter.

● As standard.  
 ▲ As standard for burners with an output of more than 1200 kW, on request for burners with an output of less than 1200 kW.  
 ■ On request.  
 ◆ Mounted on burner.



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