



TERMODA

INTELLIGENT ENERGY SOLUTIONS!

PRODUCT CATALOGUE

AUGUST 2025

TM Series | Mechanical Staging/Modulating Mono-Block Burners

Where the world meets energy | WWW.TERMODA.COM



ABOUT TERMODA | INTELLIGENT ENERGY SOLUTIONS

At TERMODA, we believe the future of energy is intelligent, integrated, and sustainable. Founded with a vision to become a truly global player in the energy sector, TERMODA is registered in the United Kingdom and strategically headquartered in the United Arab Emirates – the crossroads where the world meets. From here, we connect innovation with opportunity, delivering advanced energy solutions to clients across the globe, from North America to Asia, from Europe to Africa.

We are more than a supplier – we are a partner in performance. Our scope covers the full spectrum of energy technologies, including:

- Heating Solutions – Industrial and commercial boilers, high-efficiency burners, steam systems, and complete boiler room packages.
- Cooling Solutions – Chillers, industrial refrigeration, HVAC systems, and district cooling technologies.
- CHP (Combined Heat & Power) – Gas and liquid fuel-based cogeneration systems for maximum efficiency.
- Renewable Energy – Solar photovoltaic and thermal systems, wind power integration, biomass solutions.
- Energy Storage – Thermal and electrical storage systems to balance supply and demand.
- Engineering & Automation – Turnkey plant design, energy optimization, control systems, and performance monitoring.
- Fuel Systems & Combustion – From heavy oil atomization to gas firing, we cover the most advanced combustion technologies.

Our multidisciplinary expertise enables us to address the entire energy chain – from production and conversion to distribution, utilization, and optimization. Whether upgrading existing facilities or designing new, state-of-the-art systems, we combine engineering excellence with a strong commitment to sustainability.

OUR PEOPLE – EXPERIENCE THAT POWERS PROGRESS

TERMODA is driven by a leadership team with decades of hands-on experience in the energy industry. Our executives and engineers have successfully delivered projects in power generation, industrial process heating, CHP, district cooling, and renewable integration for clients in oil & gas, manufacturing, utilities, commercial real estate, and governmental sectors.

We bring a proven track record in global sourcing, engineering design, project execution, and after-sales support. This background allows us to manage complex, multinational projects seamlessly – meeting the highest technical standards while respecting local regulations and cultural expectations.

OUR VISION

To be the world's most trusted provider of intelligent energy solutions, recognized for innovation, reliability, and sustainability – enabling industries and communities to thrive while reducing environmental impact.

OUR MISSION

We aim to: Deliver integrated energy solutions that combine heating, cooling, power, and renewables into high-performance systems.

- Lead in engineering innovation that optimizes energy use and lowers emissions.
- Provide end-to-end project execution, from concept and design to commissioning and lifecycle support.
- Build long-term partnerships with clients, suppliers, and communities worldwide.

WHY UAE?

The UAE is a natural hub for our operations – a place where global trade routes, cultures, and technologies converge. From this strategic location, TERMODA can respond quickly to markets in the Middle East, Africa, Asia, and Europe, while maintaining strong connections to our UK base and international clients.

GLOBAL REACH – LOCAL EXPERTISE

We supply and export energy technologies to diverse markets including the United States, Canada, the UK, Germany, Turkey, India, Southeast Asia, and the African continent. Our network of trusted partners and distributors ensures local support wherever our systems are installed.

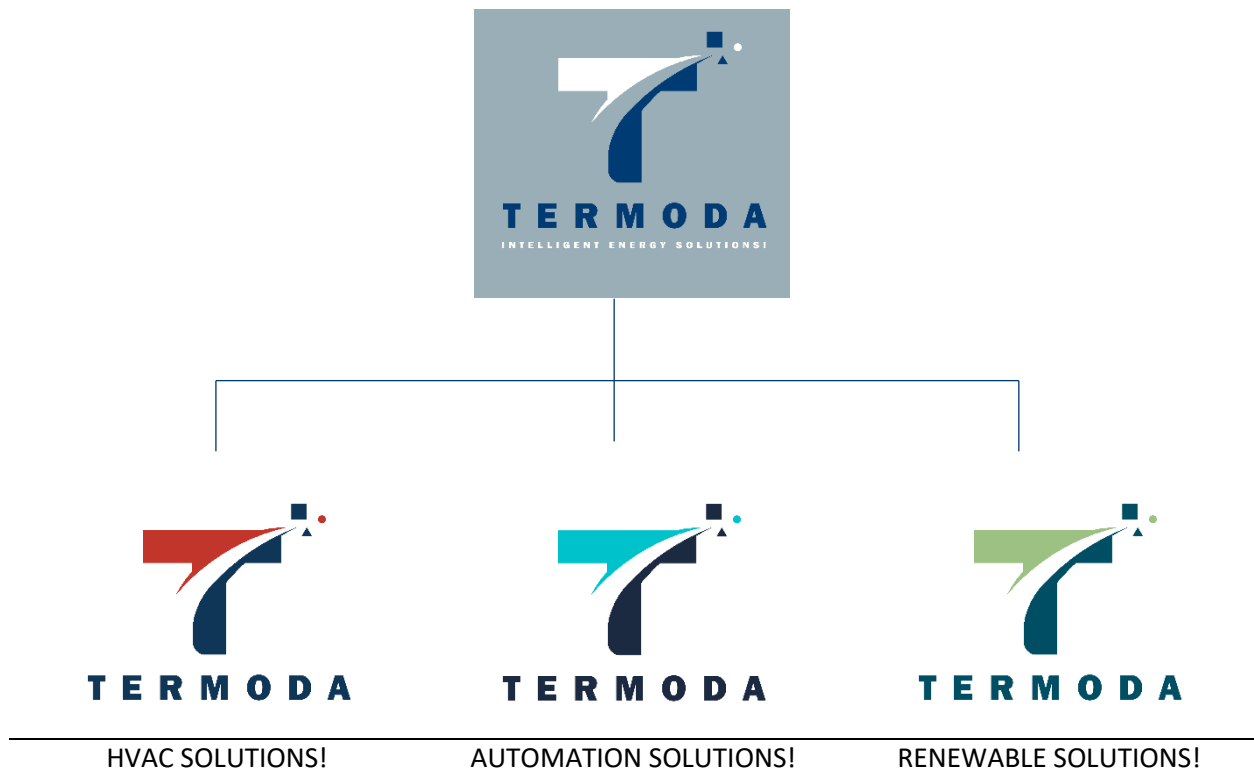
SUSTAINABILITY AT THE CORE

At TERMODA, we see energy efficiency and environmental responsibility not as optional extras, but as essential drivers of our business. By integrating renewable sources, smart controls, and waste-heat recovery into our solutions, we help our clients cut operating costs while reducing their carbon footprint.

TERMODA | Intelligent Energy Solutions

- Where innovation meets reliability
- Where engineering meets sustainability
- Where the world meets energy.

WE ARE ALL TERMODA!



COMBUSTION SOLUTIONS – POWERING EFFICIENCY WITH PRECISION

At TERMODA, we deliver advanced combustion solutions that maximize performance, efficiency, and environmental compliance. Our portfolio includes high-efficiency industrial and commercial burners, multi-fuel systems, and complete combustion packages designed for boilers, CHP plants, and process heating applications. Leveraging decades of engineering expertise, we integrate state-of-the-art controls, fuel atomization technologies, and emission-reduction systems to meet the most demanding operational and regulatory requirements. Whether for new installations or retrofit projects, TERMODA provides turnkey combustion solutions that ensure reliable operation, optimal fuel utilization, and a lower carbon footprint.

BURNERS – FROM 0.5 MW TO 60 MW

TERMODA designs and manufactures burners for a wide range of industrial and commercial applications, with firing capacities up to 60 MW. Available in various configurations, our burners are engineered to match specific process requirements and fuel types, delivering consistent, clean combustion across the full power range. Our electronic modulating mono-block burners, available up to 25 MW, combine compact design with advanced control technology, ensuring precise modulation, high efficiency, and low emissions. These burners are ideal for applications where space efficiency, performance, and automation are equally critical.

TM - GL/S - 605 / LN - SF - FGR

Option: FGR*

Combustion Head Type:

Blank: Normal Flame

SF: Short Flame

Blank: NOx class: II acc to EN-676

LN: Low NOx with Class III acc to EN-676

Reference of approximate Capacity x 10 kW

Operation:

Blank: Two Stage or One Stage

E: Natural Gas, LPG: Electronic Modulating
Light Oil: Two/Three Stage Progressive

M: Natural Gas, LPG: Mechanical Modulating
Light Oil: Two/Three Stage Progressive

S: Natural Gas, LPG: Mechanical Staging
Light Oil: Two/Three Stage Progressive

EE: Natural Gas, LPG: Electronic Modulating
Light Oil: Electronic Modulating

Type of Fuel

G: G= Natural Gas

GP: G=Natural gas, P=Propane

GL: G=Natural gas, L=Light oil

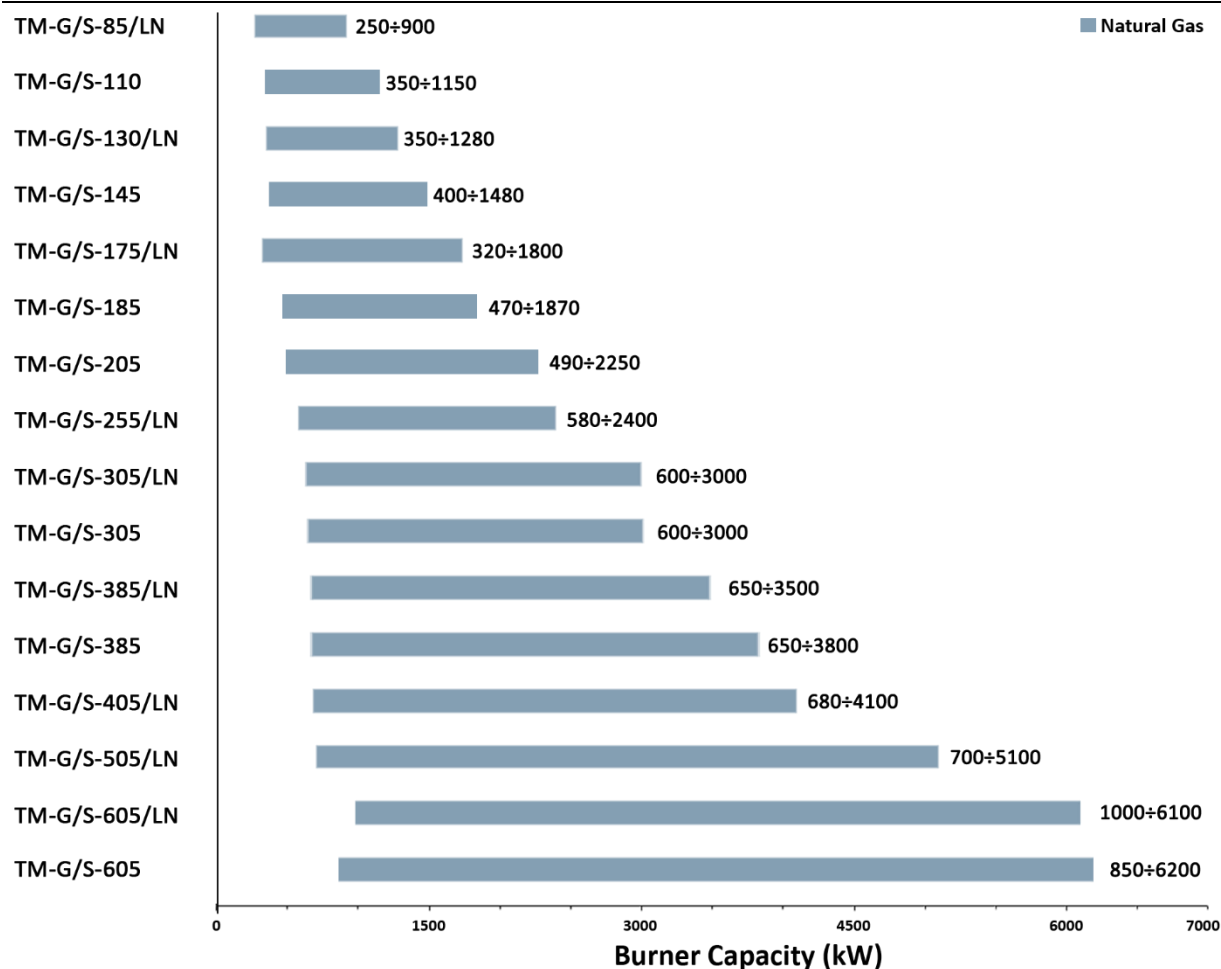
GPL: G=Natural gas, P=Propane, L=Light oil,

Product Family Name: TERMODA Mono-bloc type

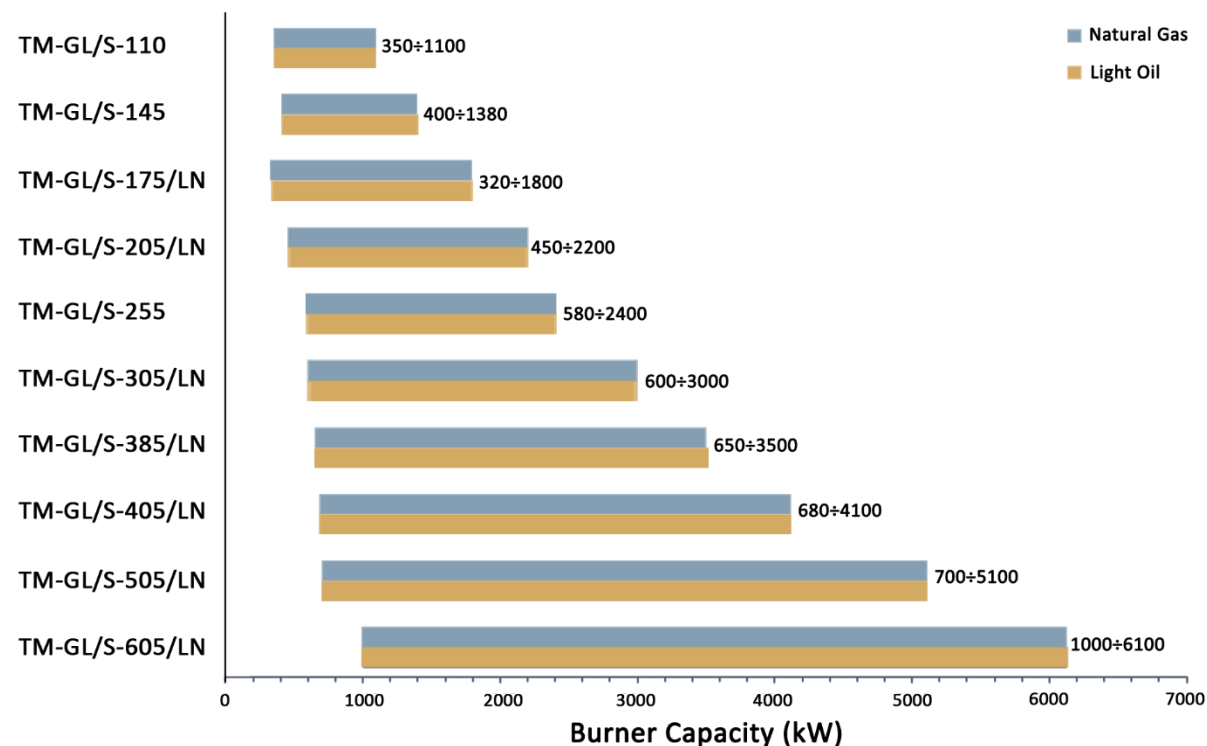
*FGR=Flue Gas Recirculation

FIRING RATE

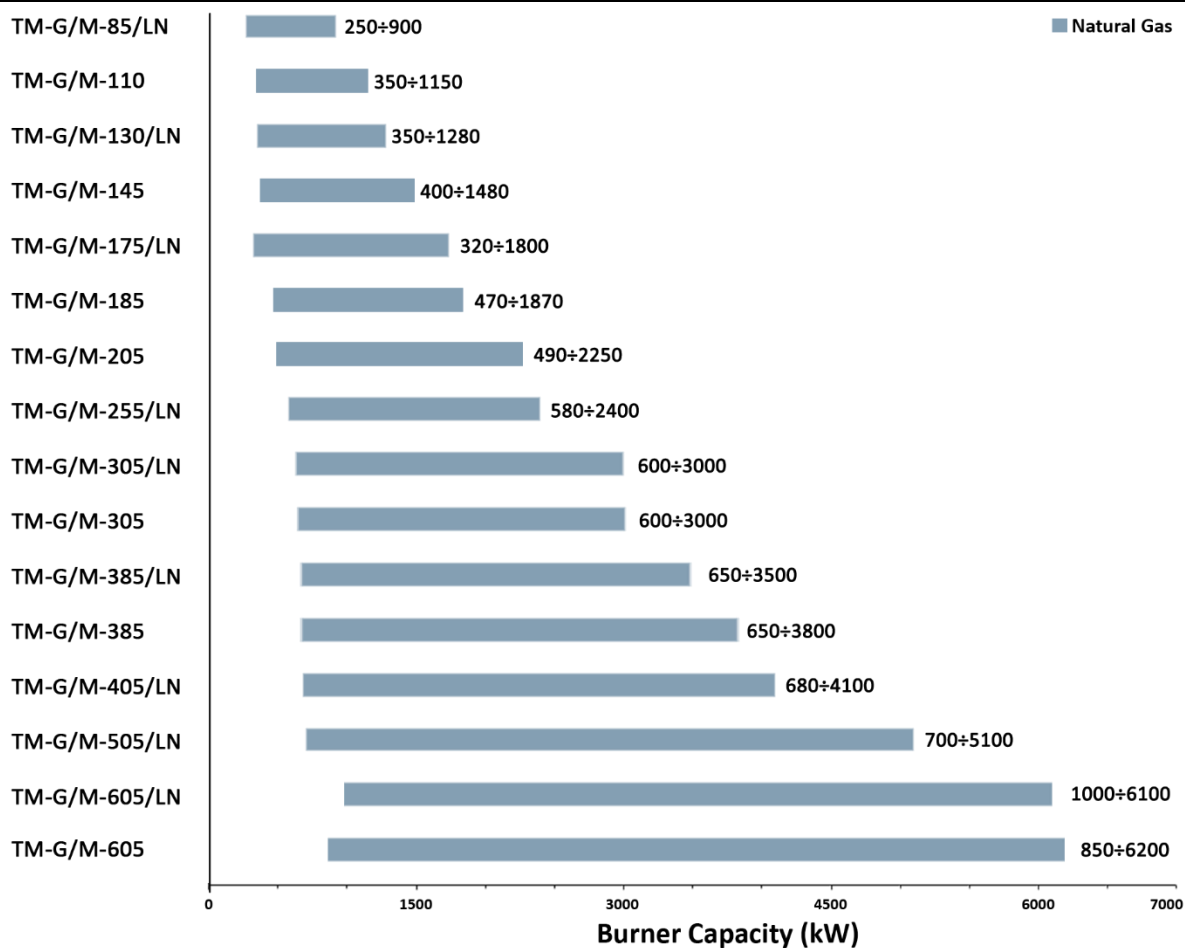
TM-G/S Series



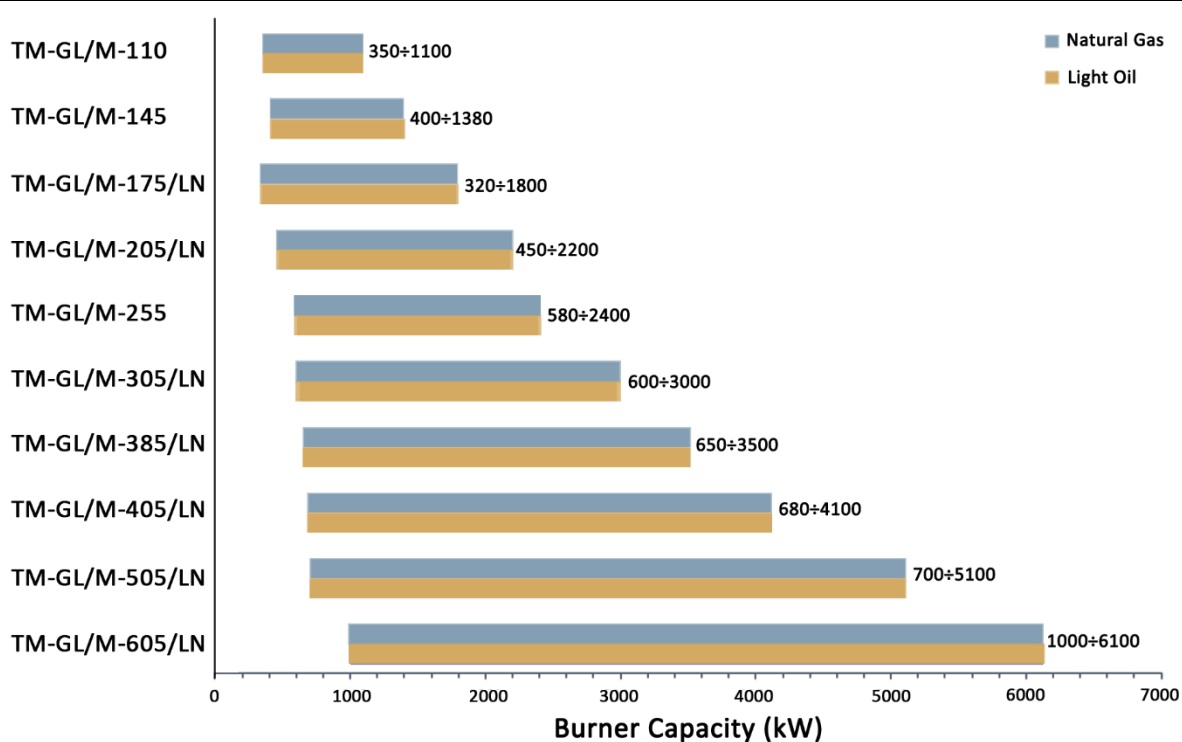
TM-GL/S Series



TM-G/M Series



TM-GL/M Series



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Mechanical Staging Gas Burners (TM-G/S series)



TM-G/S series capacity diagram
TM-G/S series dimension
TM-G/S series technical

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Mechanical Staging Dual Fuel burners (TM-GL/S series)



TM-GL/S series capacity diagram
TM-GL/S series dimension
TM-GL/S series technical

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Mechanical Modulating Gas Burners (TM-G/M series)



TM-G/M series capacity diagram
TM-G/M series dimension
TM-G/M series technical

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Mechanical Modulating Dual Fuel burners (TM-GL/M series)



TM-GL/M series capacity diagram
TM-GL/M series dimension
TM-GL/M series technical

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Specification



Fuels

- Natural gas
- Light oil (viscosity < 6 sCt)
- Other types of fuels (such as heavy oil, LPG, etc.) requires written confirmation from burner department of TERMODA corporation (TERMODA brand).

Applications

TERMODA gas and dual fuel burners are suitable for the following applications.

- Installation on heat exchanger
- Hot water boiler
- Steam boiler and high-pressure hot water boiler
- Hot air generator
- Compatible with all types of combustion chambers according to EN303 standard.

Control

The following methods of regulation are available for TM-G/M and TM-GL/M Series burners:

Oil: Two-stage operation

Gas: Two-stage progressive or modulating operation, with a specific kit (PID regulator and related temperature or pressure sensors).

Technical & Functional Features

- Lightweight and optimized geometry.
- High-quality heat-resistant steel material for all parts of burner head as well as flame covering accessories.
- Air damper for air flow setting and butterfly valve for regulating gas output controlled by a servomotor with variable cam
- Mono-bloc design and fully enclosed aluminum air housing.
- Simple Installation, adjustment, and maintenance.
- Easy access to internal components.
- Engineered to maximize efficiency and fuel cost savings.
- Suitable for firetube, firebox, and water tube boilers
- Equipped with high-quality and reliable electronic devices.
- Up to 10-20 % flame shape control
- High-quality staging controllers by well-known producers.

Compliance with standards

- Designed in accordance with the BS-EN676, BS-EN267 European standards)

Permissible ambient conditions:

- Ambient temperature
- -10 to +40 °C (14 to 104F)
- -15 to +40 °C (5 to 104F)

Air humidity: max. 80 % relative humidity, no condensation.

The combustion air must be free from aggressive substances (such as halogens, chlorides, etc.) and impurities (such as dust, debris, vapors, etc.)

Emission:

The emissions have been measured in various models at maximum output, in accordance with DIN-EN 676 and DIN-EN 297 standards.

The values of CO and NOx during burner operation are lower than 30 and 120 mg/kWh respectively, at 20 % excess air for normal versions. For Low NOx versions (LN series), the values are lower than 20 and 80 mg/kWh for CO and NOx, respectively. consequently, the burner's NOx class is reported as II for normal versions and III for LN versions, and they are approved accordingly. **Special note:**

LN versions have a higher rate of mixing during their operation. This leads to a further decrease in flame length and an increase in flame diameter.

SECTIONAL CATALOGUE

TM-G/S & TM-GL/S Series | Mechanical Staging Mono-block Burners



TERMODA Mechanical Staging Burners

TERMODA mechanical staging burners cover a firing range of 1000 to 6200 kW, and they are manufactured with high quality electro-mechanical accessories with easy installation and commissioning.

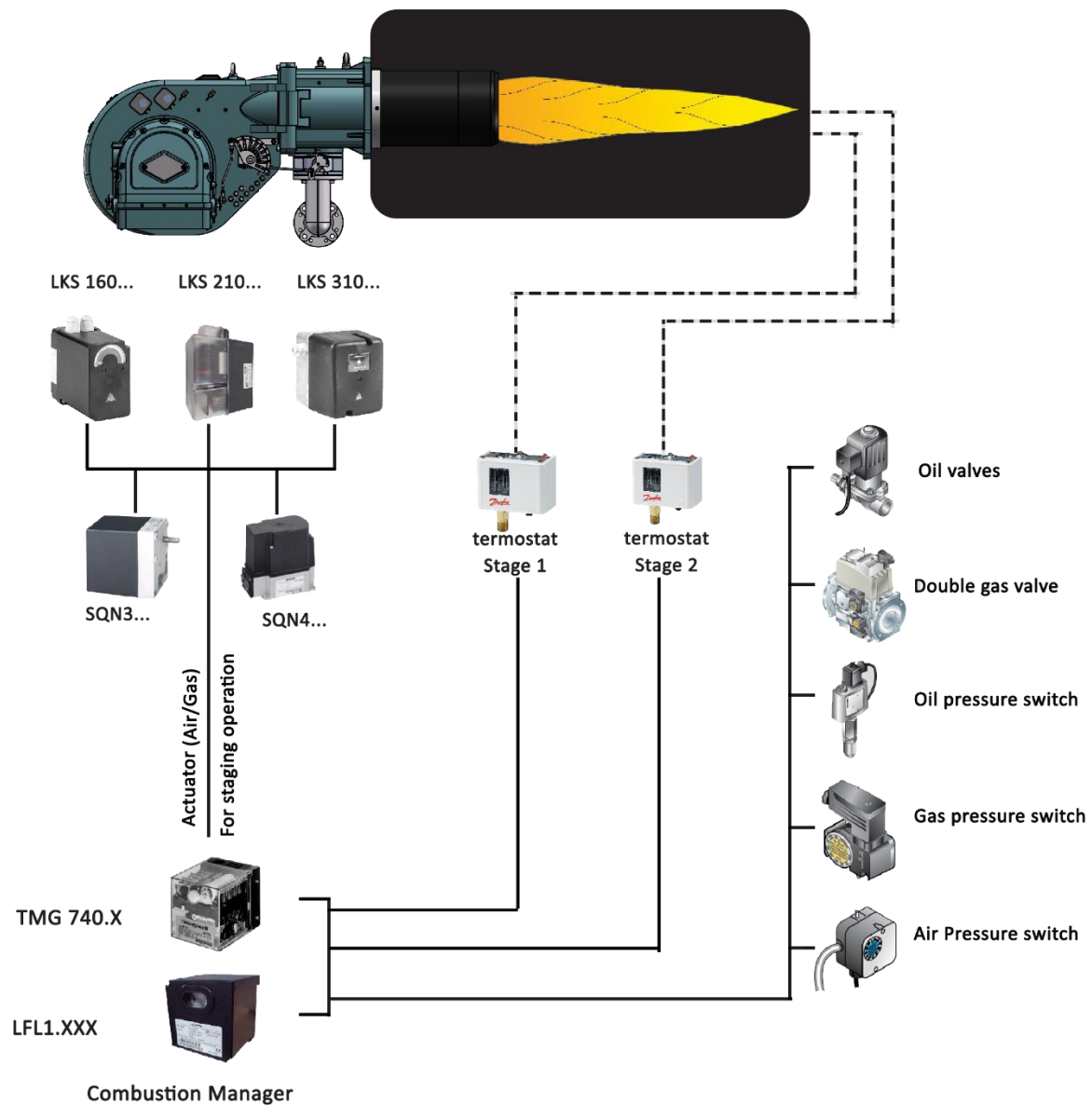
Thanks to the cam mechanism and butterfly valve we have “Staging” operation in gas side. In this type of burner, one actuator opens the damper and butterfly valve to reach the desired stages.

The components of these burners are as follows:

Mechanical components, burner head, flame tube, and cam mechanism, safety accessories, ignition devices, flame scanners, burners controllers such as Shokouh/Honeywell TMG or Siemens LFL, burner actuators, accessories of power system, ventilation motor, fan wheel, safety devices, and air pressure switches.



Burner Management System Overview

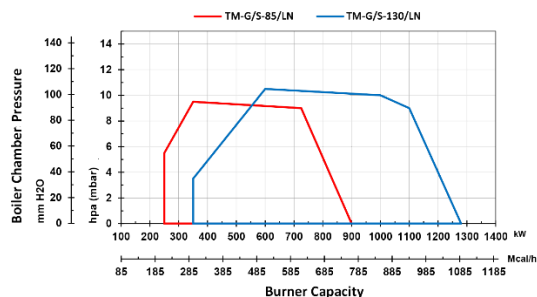


To obtain staging operation, the TM-G/S series of burners require two thermostats and actuator with 2-stage.

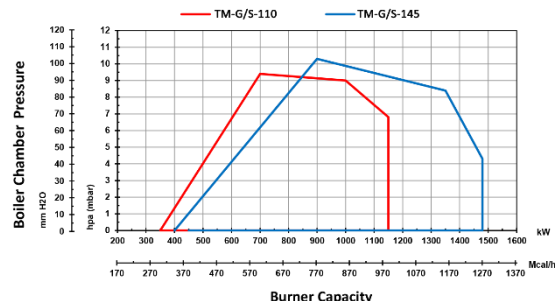
Burner Selection: Capacity And Working Diagram

Gas Burner

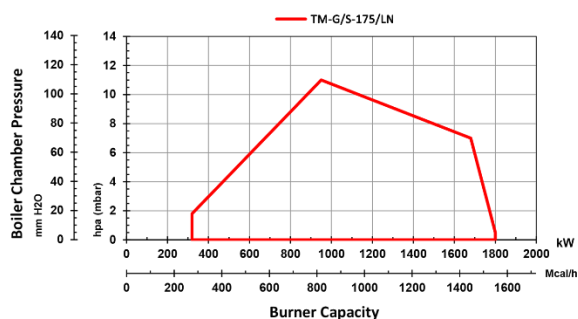
Burner	Capacity (kW)	Turn Down
TM-G/S-85/LN	NG: 250-900	1:3
TM-G/S-130/LN	NG: 350-1280	1:3



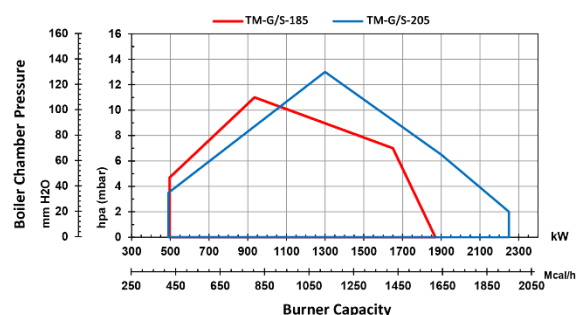
Burner	Capacity (kW)	Turn Down
TM-G/S-110	NG: 350-1150	1:3
TM-G/S-145	NG: 400-1480	1:4



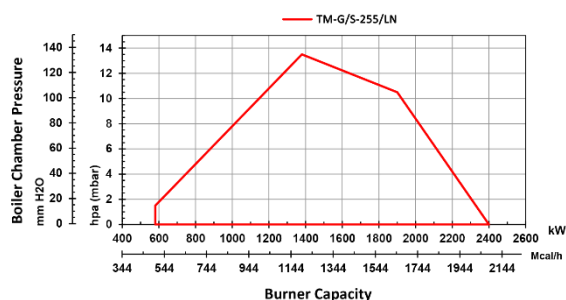
Burner	Capacity (kW)	Turn Down
TM-G/S-175/LN	NG: 320-1800	1:5



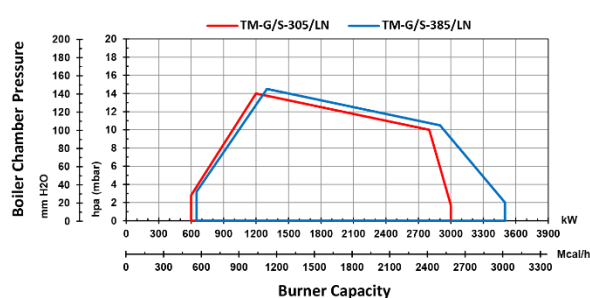
Burner	Capacity (kW)	Turn Down
TM-G/S-185	NG: 470-1870	1:4
TM-G/S-205	NG: 490-2250	1:4



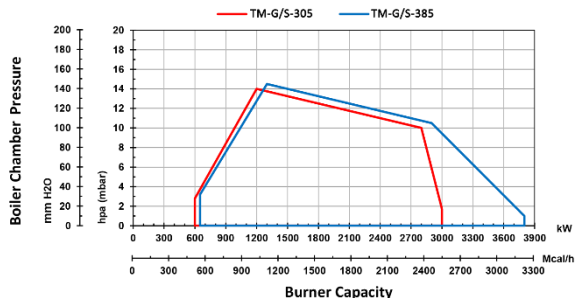
Burner	Capacity (kW)	Turn Down
TM-G/S-255/LN	NG: 580-2400	1:4



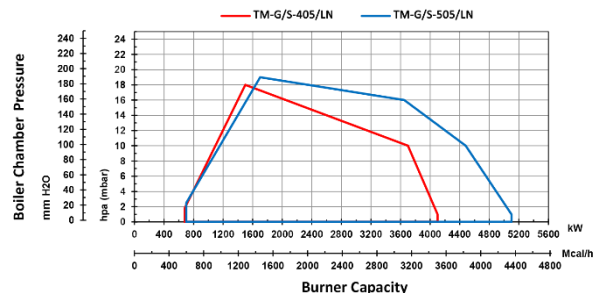
Burner	Capacity (kW)	Turn Down
TM-G/S-305/LN	NG: 600-3000	1:5
TM-G/S-385/LN	NG: 650-3500	1:5



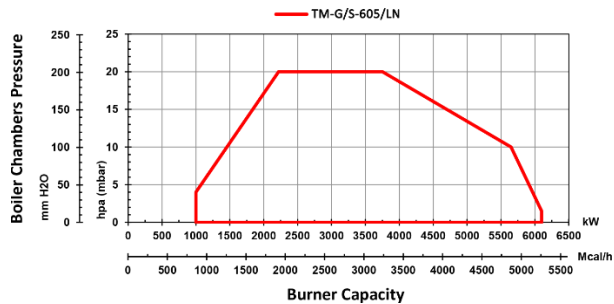
Burner	Capacity (kW)	Turn Down
TM-G/S-305	NG: 600-3000	1:5
TM-G/S-385	NG: 650-3800	1:5



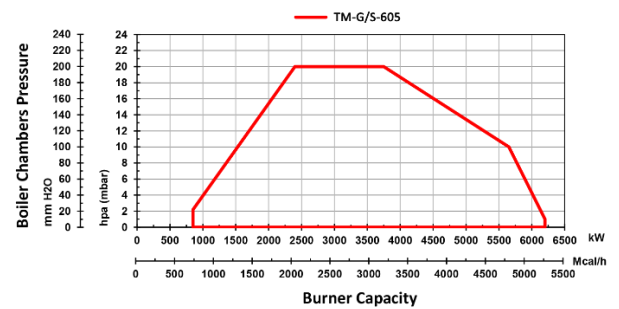
Burner	Capacity (kW)	Turn Down
TM-G/S-405/LN	NG: 680-4100	1:6
TM-G/S-505/LN	NG: 700-5100	1:7



Burner Capacity Turn Down
TM-G/S-605/LN NG: 1000-6100 1:6



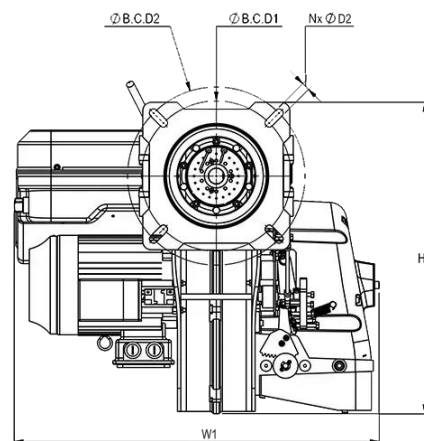
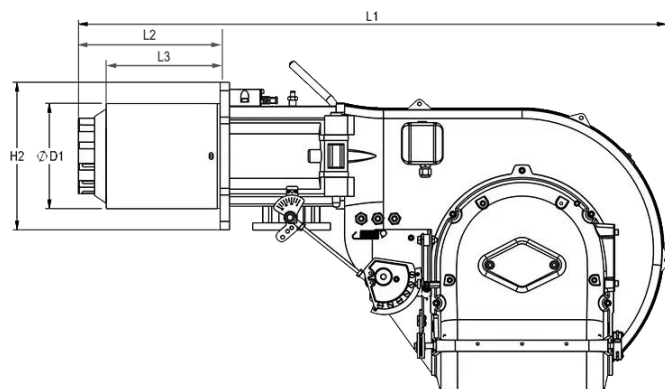
Burner Capacity Turn Down
TM-G/S-605 NG: 850-6200 1:7



Working diagrams for gas and light fuel oil burner are certified in accordance with BS-EN 676 and BS-EN 267. The firing rate diagram has been obtained considering the ambient temperature of 20°C and atmospheric pressure of 1013 mbar (Sea level condition). For installation at higher altitudes, a reduction in capacity of 1% per 100 m above sea level should be taken into account.

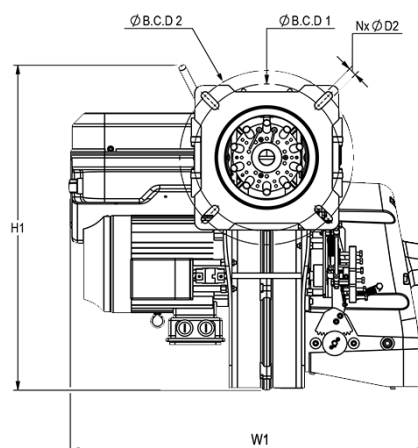
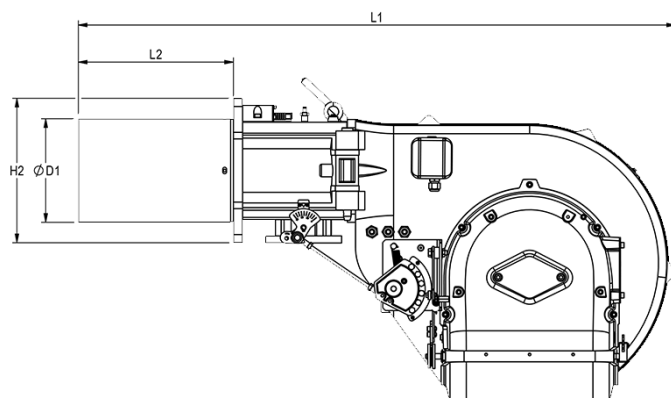
General Dimension: TM-G/S Series

TM-G/S-85/LN, TM-G/S-130/LN

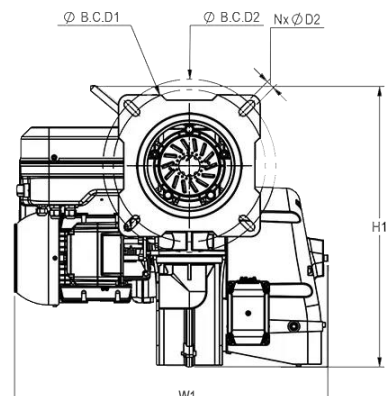
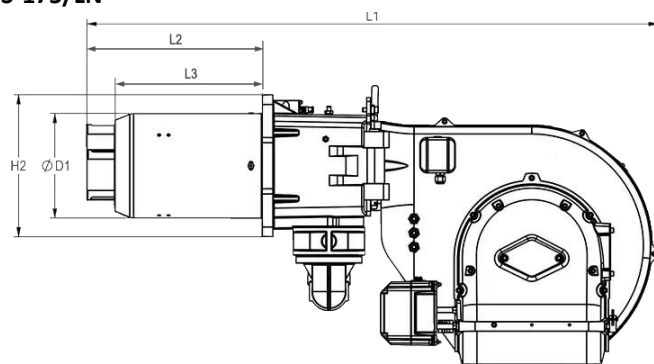


Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/S-85/LN	1068	255	205	641	600	265	193	15	4	270	320
TM-G/S-130/LN	1072	260	205	641	600	265	193	15	4	270	320

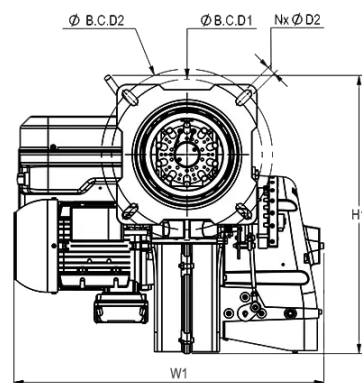
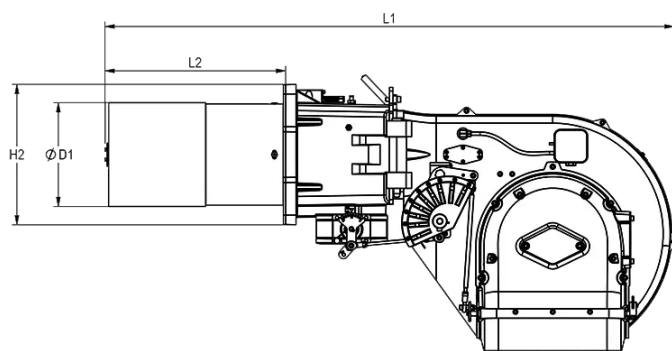
TM-G/S-110, TM-G/S-145



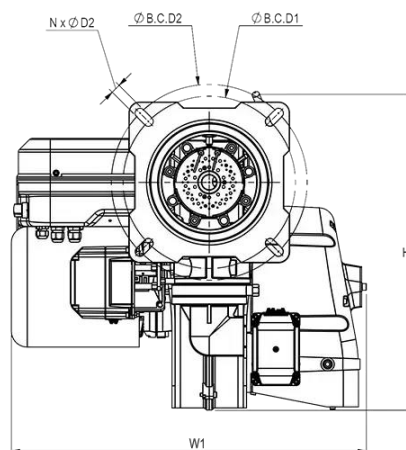
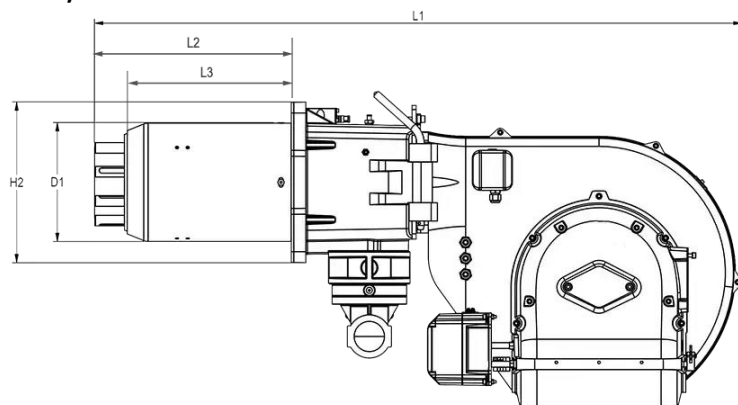
Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/S-110	1066	254	643	600	265	184	15	4	270	320
TM-G/S-145	1097	285	643	600	265	194	15	4	270	320

TM-G/S-175/LN


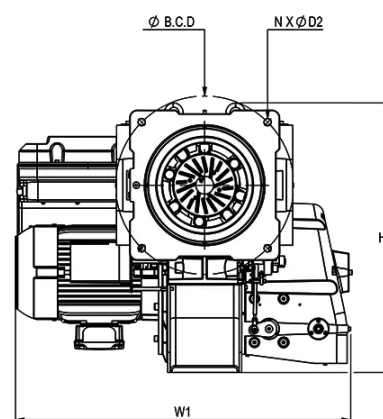
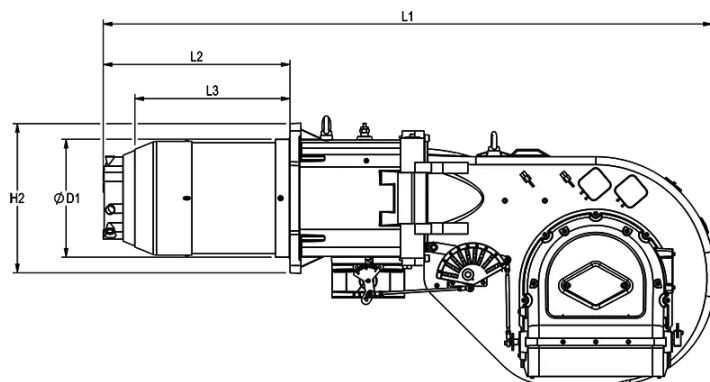
Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/S-175/LN	1213	373	312	665	598	302	226	18	4	323	367

TM-G/S-185, TM-G/S-205


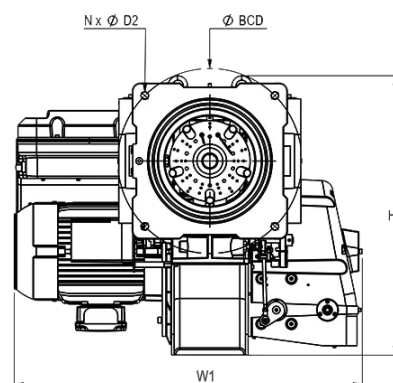
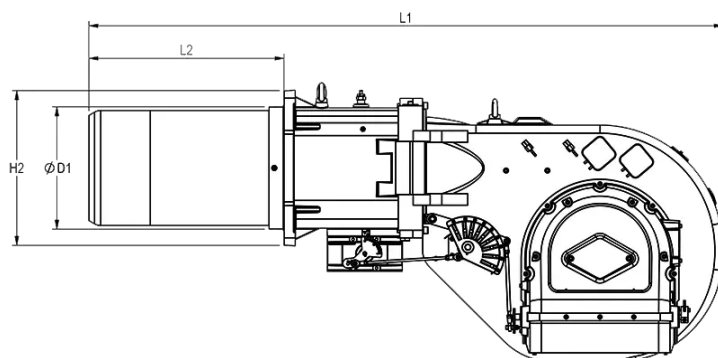
Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/S-185	1229	388	666	598	302	223	18	4	323	367
TM-G/S-205	1229	388	666	598	302	223	18	4	323	367

TM-G/S-255/LN


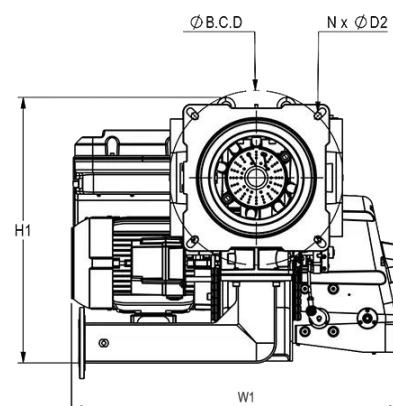
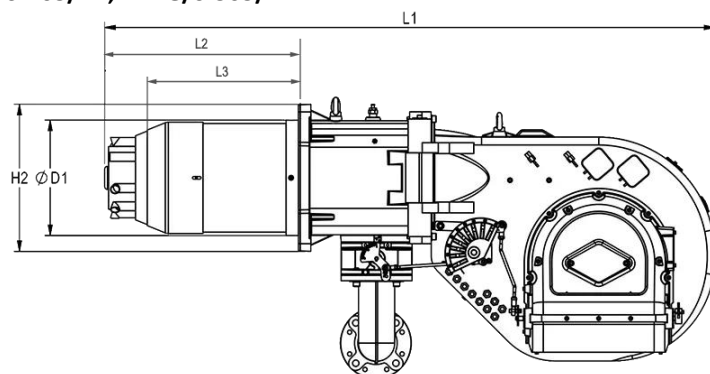
Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/S-255/LN	1214	374	312	762	598	302	226	18	4	323	368

TM-G/S-305/LN, TM-G/S-385/LN


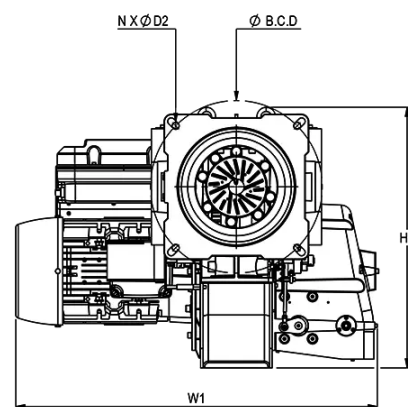
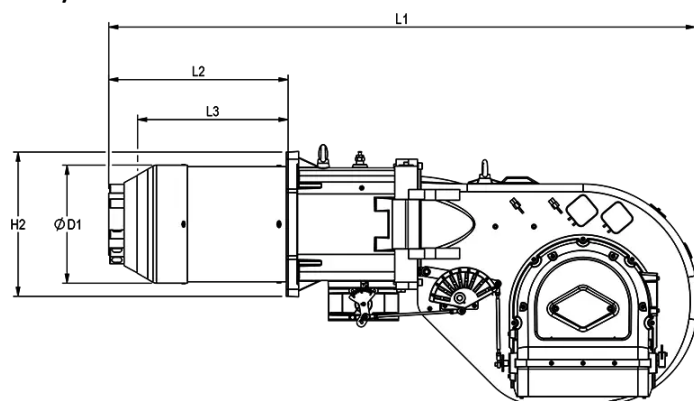
Burner Type	L1	L2	L3	W1	H1	H2	D1	D2	N	B.C.D
TM-G/S-305/LN	1675	514	427	930	798	413	328	20	4	490
TM-G/S-385/LN	1675	514	427	930	798	413	328	20	4	490

TM-G/S-305, TM-G/S-385


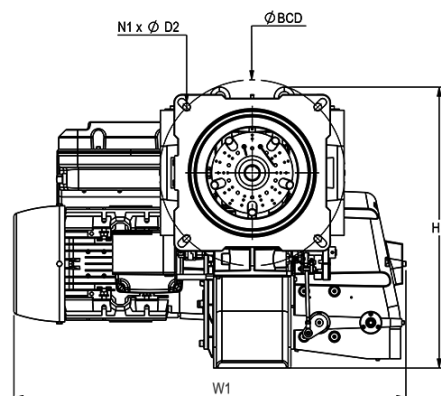
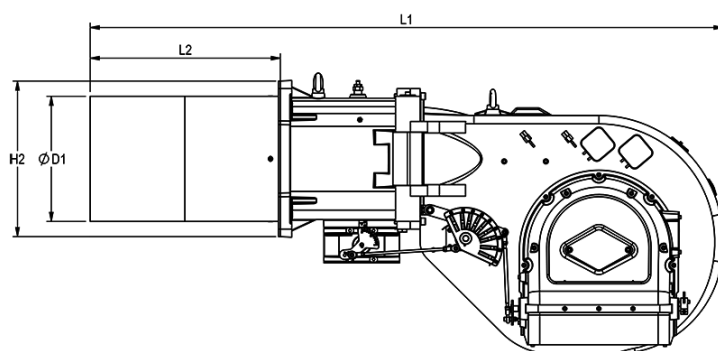
Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D
TM-G/S-305	1689	520	927	741	413	328	20	4	490
TM-G/S-385	1689	520	927	741	413	328	20	4	490

TM-G/S-405/LN, TM-G/S-505/LN


Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D
TM-G/S-405/LN	1721	552	433	1035	798	413	328	20	4	490
TM-G/S-505/LN	1721	552	433	1035	798	413	328	20	4	490

TM-G/S-605/LN


Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D
TM-G/S-605/LN	1675	512	430	1035	798	413	340	20	4	490

TM-G/S-605


Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D
TM-G/S-605	1665	502	1035	741	410	336	20	4	490

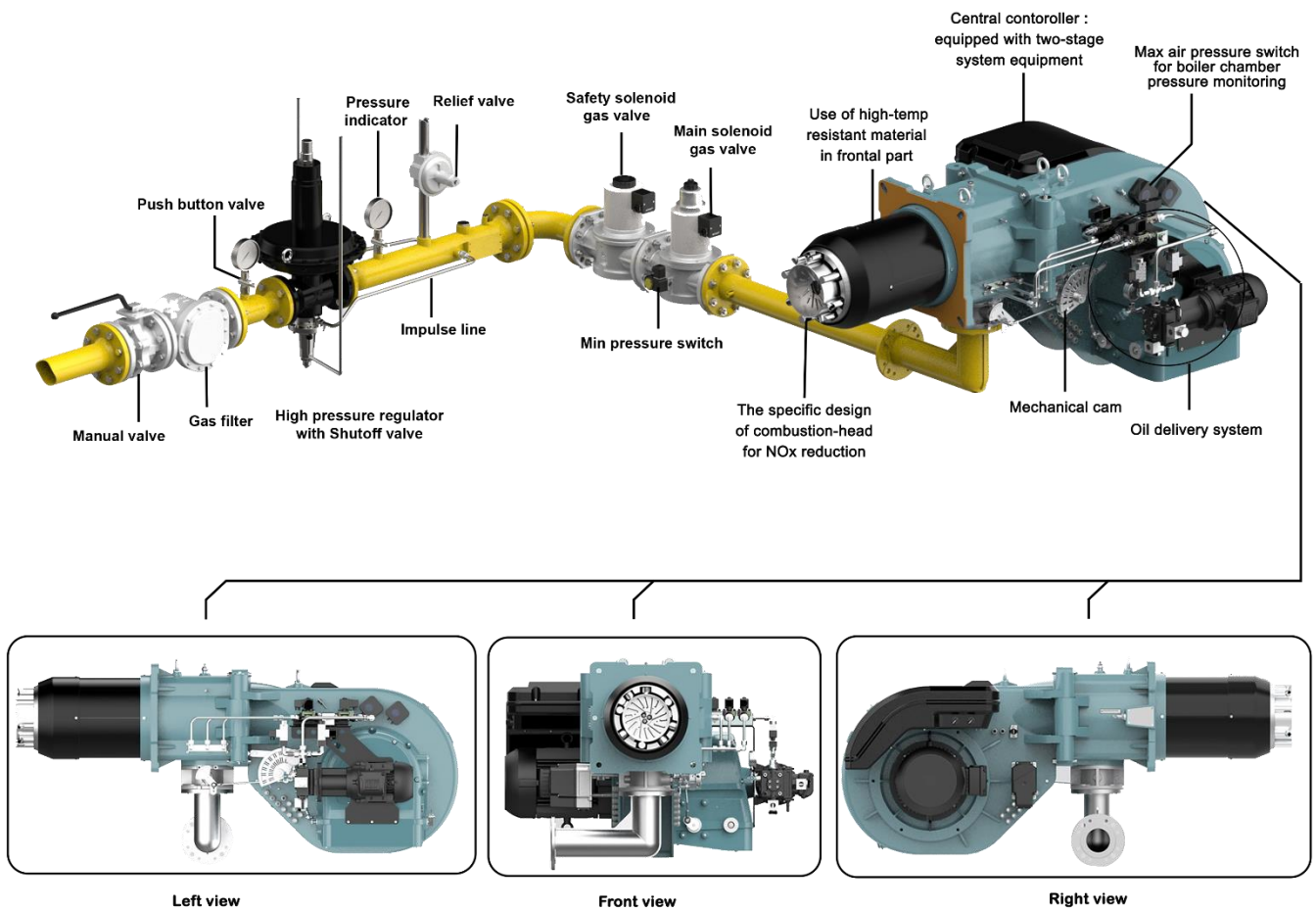
Technical Data: TM-G/S Series

The TM-G/S series burner includes ventilation system with an AC motor, ignition transformer, and electrodes. Additionally, it features an electrical panel equipped with power contactors, fuses, relays, a central controller, air pressure switches, soundproofing material, and lamp signals for operational supervision, and etc.

- N.G. operation: Mechanical Staging

Power system		Power management system	
Burner	Motor(kW/PH/V/HZ/rpm)	Controller	Actuator (N.M)
TM-G/S-85/LN	1.5 /3 /380-400 /50 /2840	Shokouh/ Siemens	2.5 or 3
TM-G/S-110	1.5 /3 /380-400 /50 /2840	Shokouh/ Siemens	2.5 or 3
TM-G/S-130/LN	2.2 /3 /380-400 /50 /2840	Shokouh/ Siemens	2.5 or 3
TM-G/S-145	2.2 /3 /380-400 /50 /2840	Shokouh/ Siemens	2.5 or 3
TM-G/S-175/LN	4 /3 /380-400 /50 /2840	Shokouh/ Siemens	3
TM-G/S-185	5.5 /3 /380-400 /50 /2840	Shokouh/ Siemens	3
TM-G/S-205	5.5 /3 /380-400 /50 /2840	Shokouh/ Siemens	3
TM-G/S-255/LN	5.5 /3 /380-400 /50 /2840	Shokouh/ Siemens	3
TM-G/S-305/LN TM-G/S-305	7.5 /3 /380-400 /50 /2900	Siemens	10
TM-G/S-385/LN TM-G/S-385	7.5 /3 /380-400 /50 /2900	Siemens	10
TM-G/S-405/LN	11 /3 /380-400 /50 /2900	Siemens	10
TM-G/S-505/LN	11 /3 /380-400 /50 /2900	Siemens	10
TM-G/S-605/LN TM-G/S-605	15 /3 /380-400 /50 /2900	Siemens	10

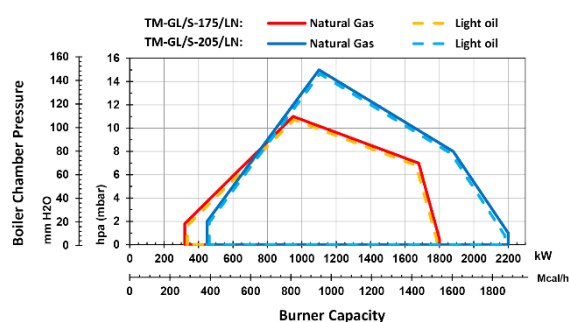
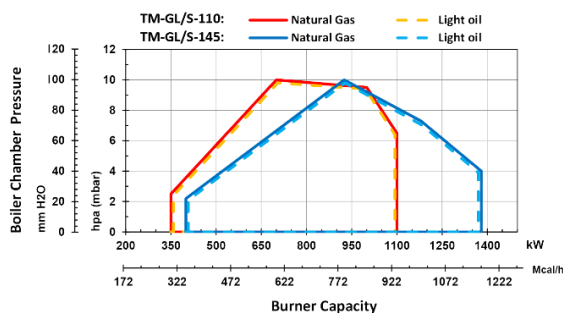
TERMODA TM-GL/S Series Burner



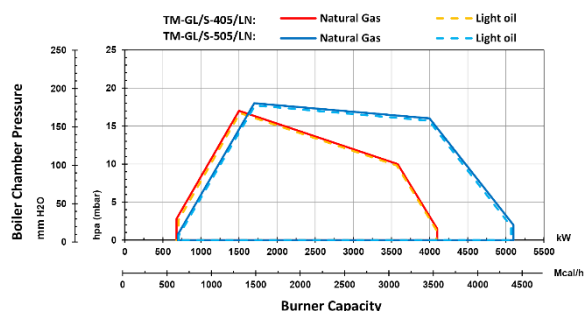
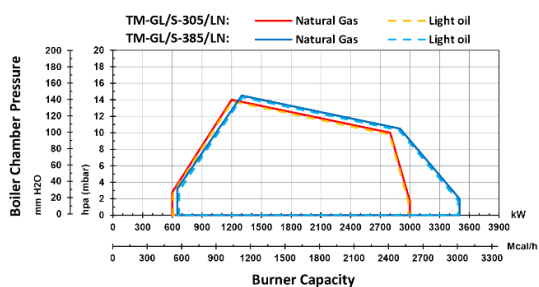
Burner Selection: Capacity and Working Diagram

Dual-fuel Burner

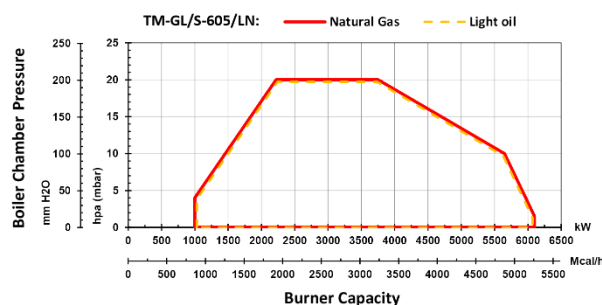
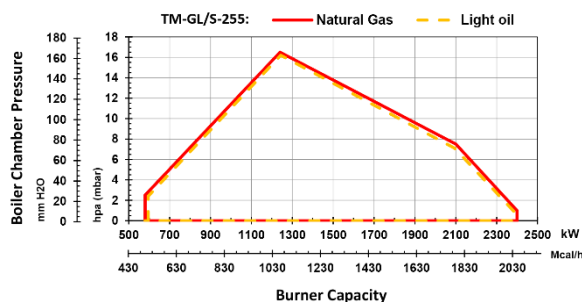
Burner	Capacity (kW)	Turn down	Burner	Capacity (kW)	Turn down
TM-GL/S-110	NG: 350-1100 LFO: 350-1100	1:3 1:3	TM-GL/S-175/LN	NG: 320-1800 LFO: 320-1800	1:5 1:5
TM-GL/S-145	NG: 400-1380 LFO: 400-1380	1:4 1:4	TM-GL/S-205/LN	NG: 450-2200 LFO: 450-2200	1:5 1:5



Burner	Capacity (kW)	Turn down	Burner	Capacity (kW)	Turn down
TM-GL/S-305/LN	NG: 600-3000 LFO: 600-3000	1:5 1:5	TM-GL/S-405/LN	NG: 680-4100 LFO: 680-4100	1:6 1:6
TM-GL/S-385/LN	NG: 650-3500 LFO: 650-3500	1:5 1:5	TM-GL/S-505/LN	NG: 700-5100 LFO: 700-5100	1:7 1:7



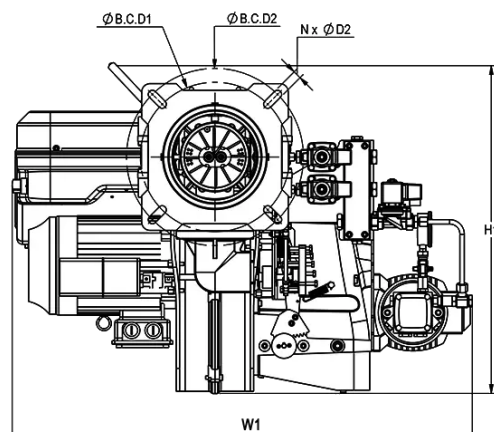
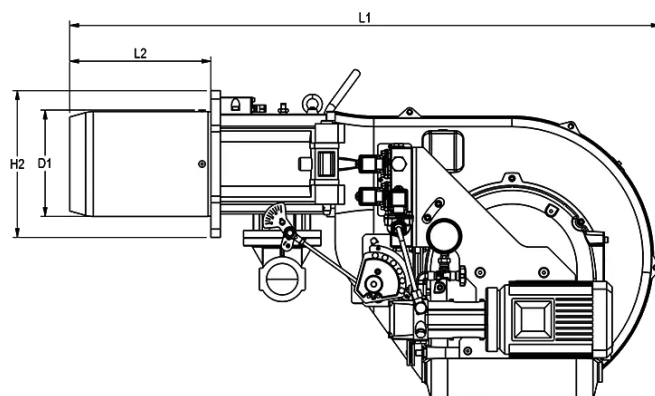
Burner	Capacity (kW)	Turn down	Burner	Capacity (kW)	Turn down
TM-GL/S-255	NG: 580-2400 LFO: 580-2400	1:4 1:4	TM-GL/S-605/LN	NG: 1000-6100 LFO: 1000-6100	1:6 1:6



Working diagrams for gas and light fuel oil burners are certified following BS-EN 676 and BS-EN 267. The firing rate diagram has been obtained considering the ambient temperature of 20°C and atmospheric pressure of 1013 mbar (Sea level condition).

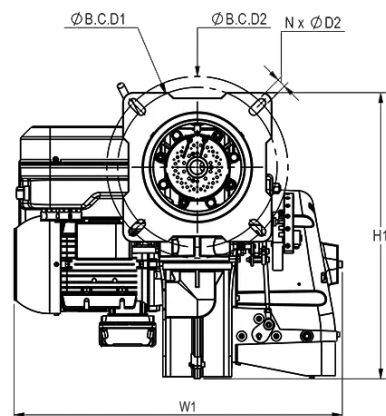
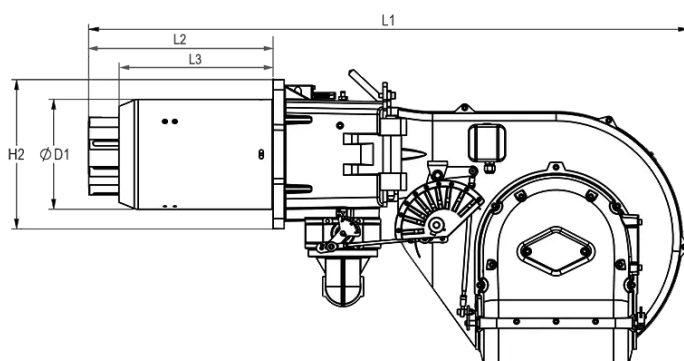
General Dimension: TM-GL/S Series

TM-GL/S-110, TM-GL/S-145

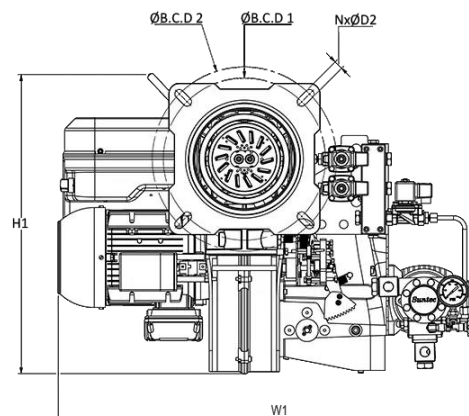
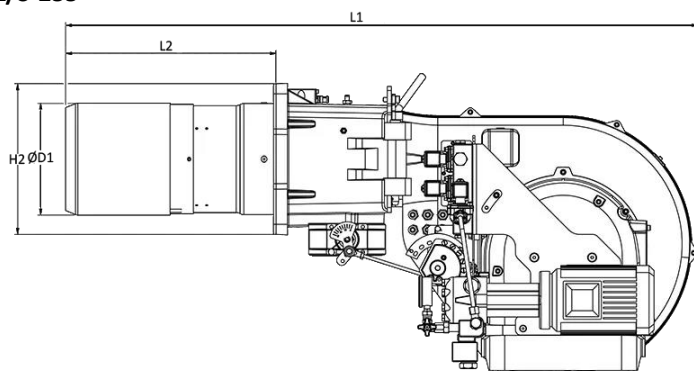


Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-GL/S-110	1068	255	830	598	265	184	15	4	270	320
TM-GL/S-145	1068	255	830	598	265	194	15	4	270	320

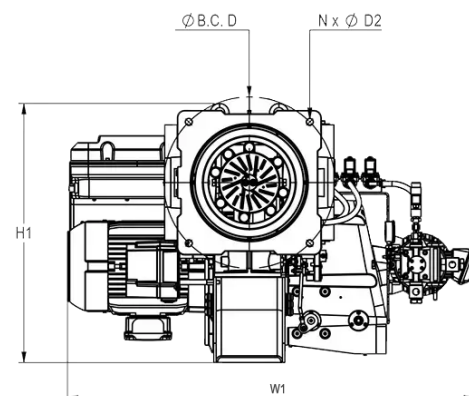
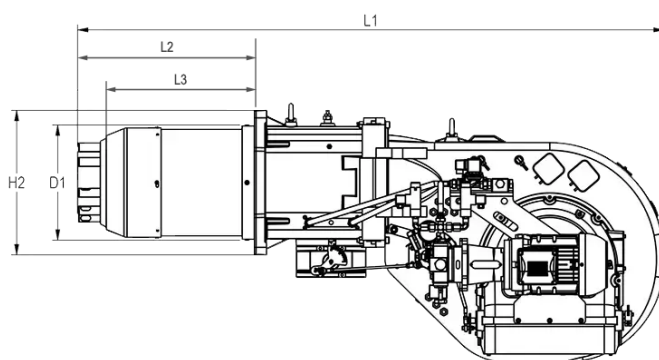
TM-GL/S-175/LN, TM-GL/S-205/LN



Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-GL/S-175/LN	1213	373	312	875	598	300	226	18	4	323	367
TM-GL/S-205/LN	1213	373	312	875	598	300	226	18	4	323	367

TM-GL/S-255


Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D.1	B.C.D.2
TM-GL/S-255	1260	419	312	833	598	300	223	18	4	323	367

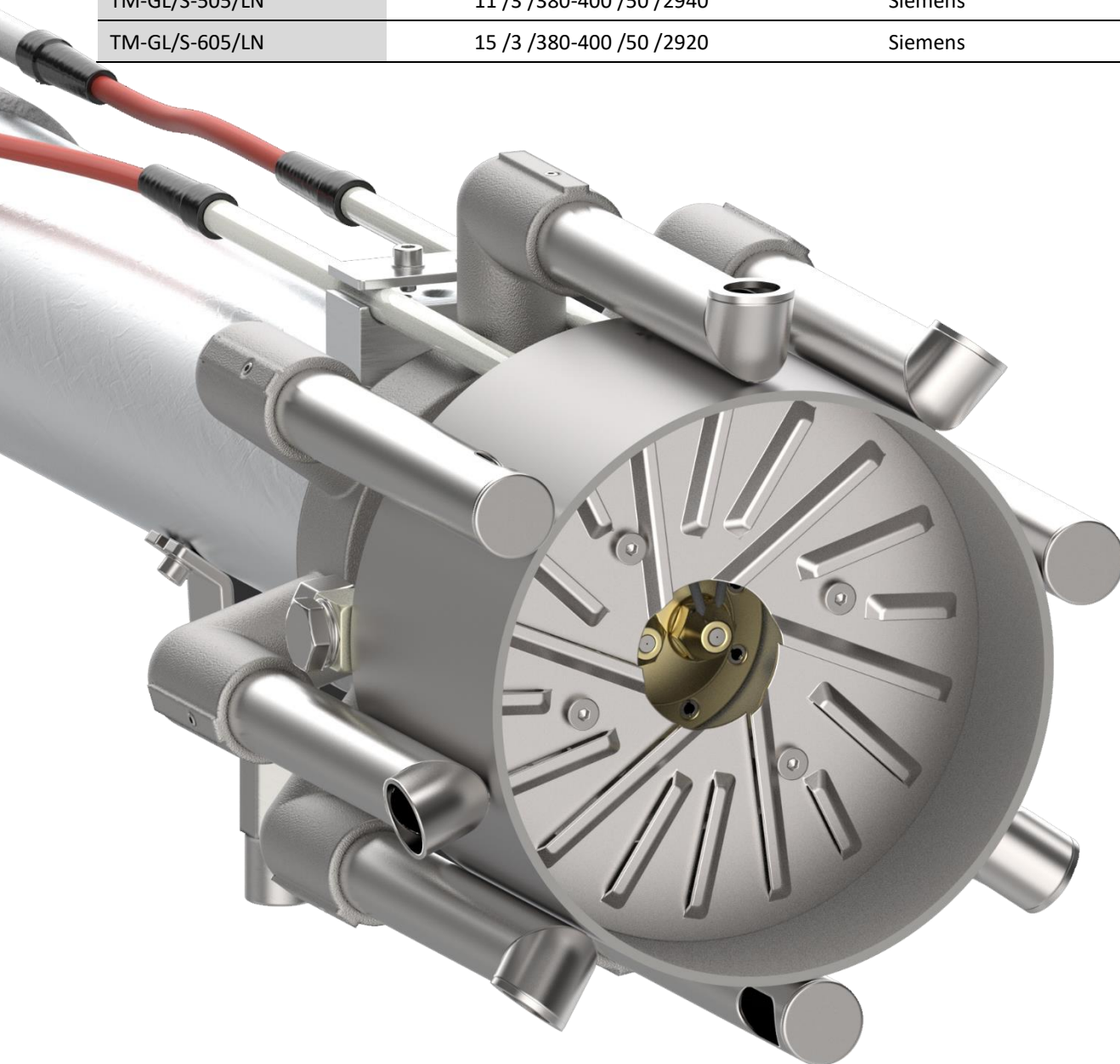
TM-GL/S-305/LN, TM-GL/S-385/LN, TM-GL/S-405/LN, TM-GL/S-505/LN, TM-GL/S-605/LN


Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D
TM-GL/S-305/LN	1683	514	427	1137	741	410	328	20	4	490
TM-GL/S-385/LN	1683	514	427	1137	741	410	328	20	4	490
TM-GL/S-405/LN	1683	514	431	1249	741	410	328	20	4	490
TM-GL/S-505/LN	1683	514	431	1249	741	410	328	20	4	490
TM-GL/S-605/LN	1680	512	430	1245	741	410	340	20	4	490

Technical Data: TM-GL/S Series

- N.G. operation: Mechanical Staging
- LFO operation: II or III Stages

Power system		Power management system	
Burner	Motor(kW/PH/V/HZ/rpm)	Controller	Actuator (N.M)
TM-GL/S-110	1.5 /3 /380-400 /50 /2840	Shokouh/ Siemens	2.5 or 3
TM-GL/S-145	2.2 /3 /380-400 /50 /2840	Shokouh/ Siemens	2.5 or 3
TM-GL/S-175/LN	4 /3 /380-400 /50 /2840	Shokouh/ Siemens	3
TM-GL/S-205/LN	5.5 /3 /380-400 /50 /2840	Shokouh/ Siemens	3
TM-GL/S-255	5.5 /3 /380-400 /50 /2840	Shokouh/ Siemens	3
TM-GL/S-305/LN	7.5 /3 /380-400 /50 /2940	Siemens	10
TM-GL/S-385/LN	7.5 /3 /380-400 /50 /2940	Siemens	10
TM-GL/S-405/LN	11 /3 /380-400 /50 /2940	Siemens	10
TM-GL/S-505/LN	11 /3 /380-400 /50 /2940	Siemens	10
TM-GL/S-605/LN	15 /3 /380-400 /50 /2920	Siemens	10





SECTIONAL CATALOGUE

TM-G/M & TM-GL/M Series | Mechanical Modulating Mono-block Burners

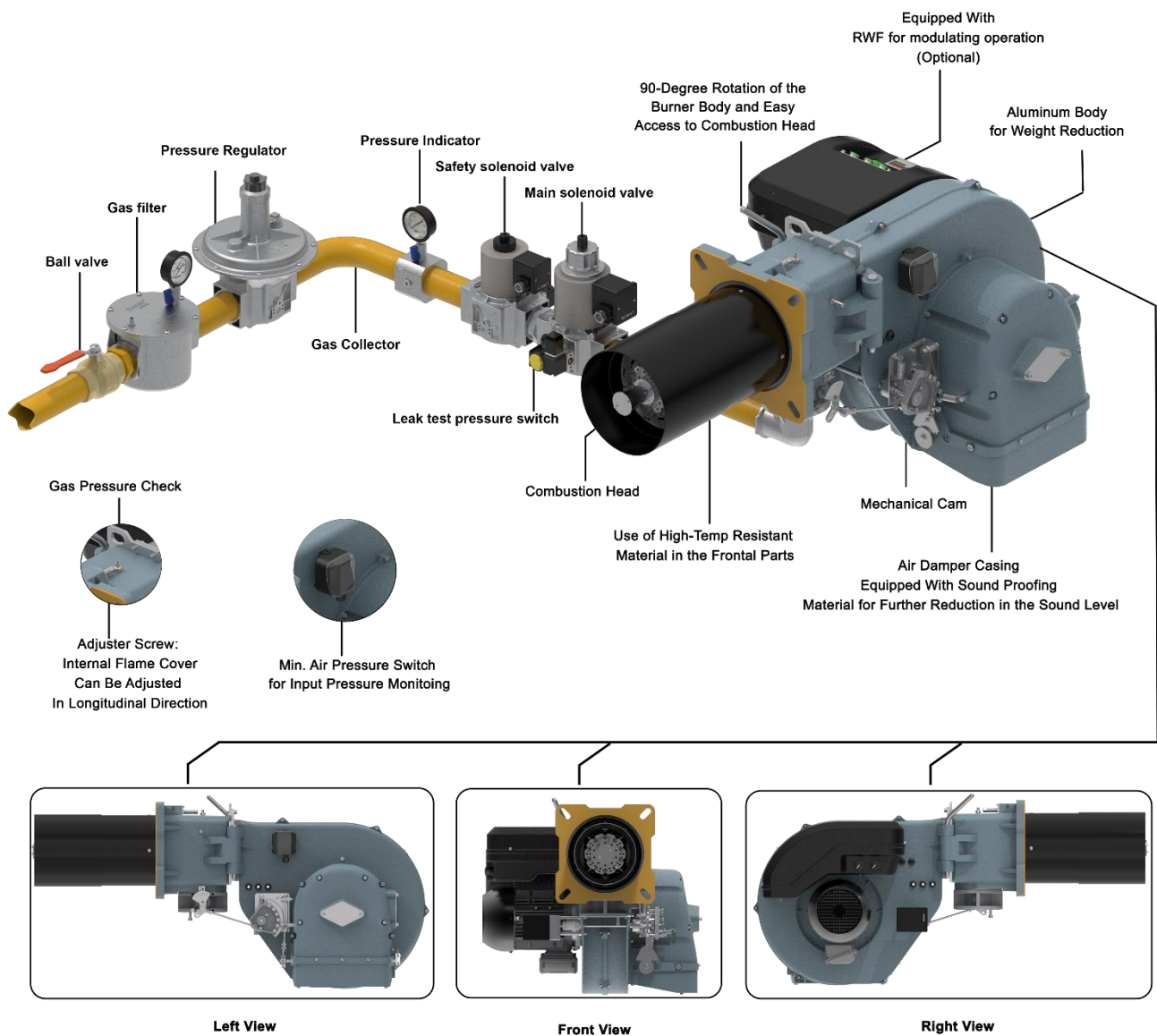


TERMODA Mechanical Modulating Burners

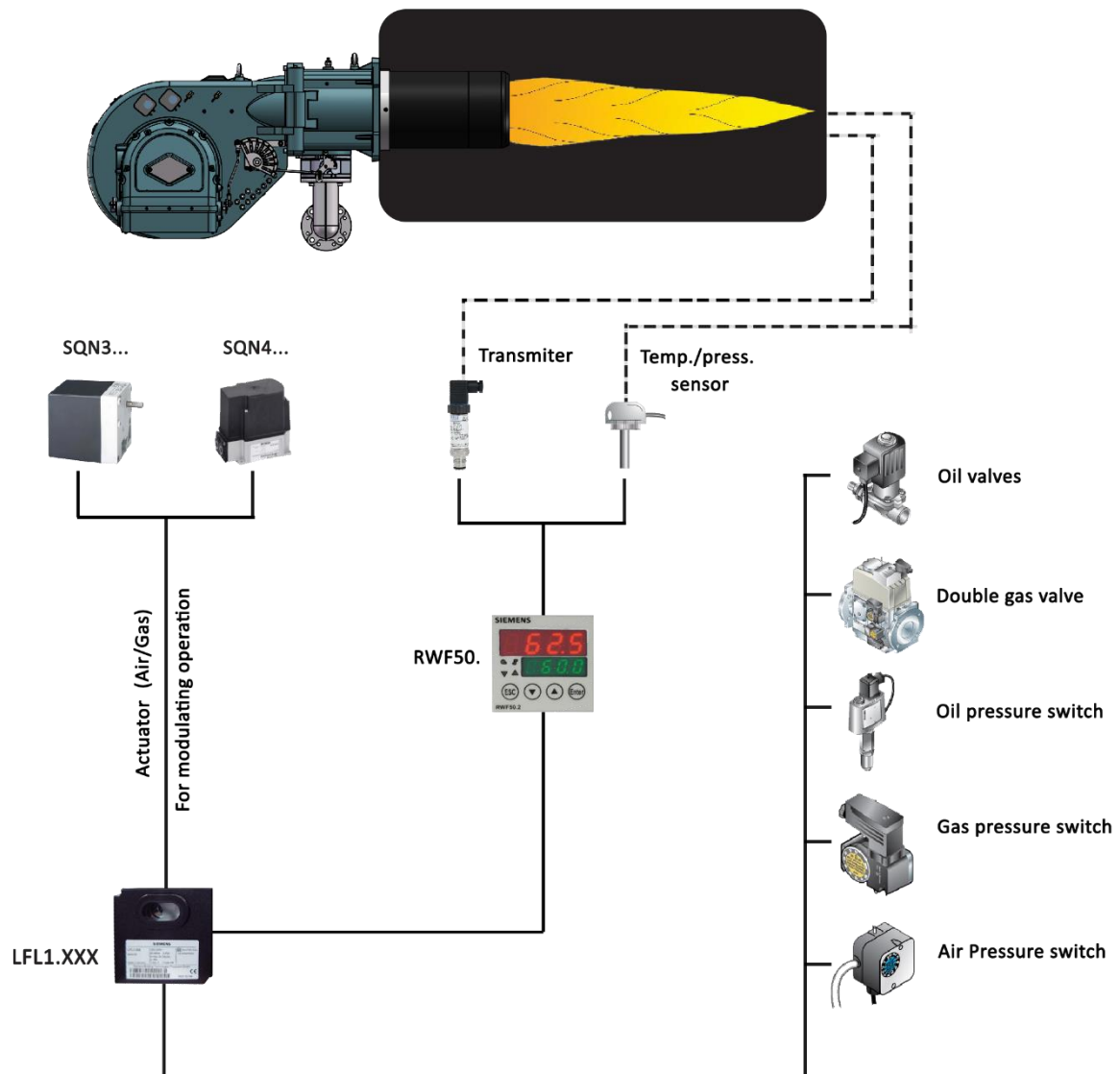
TM-G/M series of TERMODA burners cover a firing range of 1000 to 6200 kW, and are manufactured with high-quality electro-mechanical accessories that are easy to install and commission. They are mechanically resistant and economically designed for domestic or industrial applications such as three pass hot water boilers, steam boilers, hot air generators, and etc.

Their operation is “two-stage” at the oil side and “modulating” at the gas side by installing a PID logic regulator and respective probes. The customers should kindly note that the PID regulator is not included in the burners routine process and needs to be ordered separately.

TM-G/M series burners guarantee high-efficiency levels in various applications, resulting in reduced fuel consumption and operational costs. Optimization of sound emissions is guaranteed by special design of the air suction circuit and using of soundproofing material. The exclusive design ensures the reduced dimensions, ease of use and maintenance. Additionally, a wide range of accessories provides elevated working flexibility.



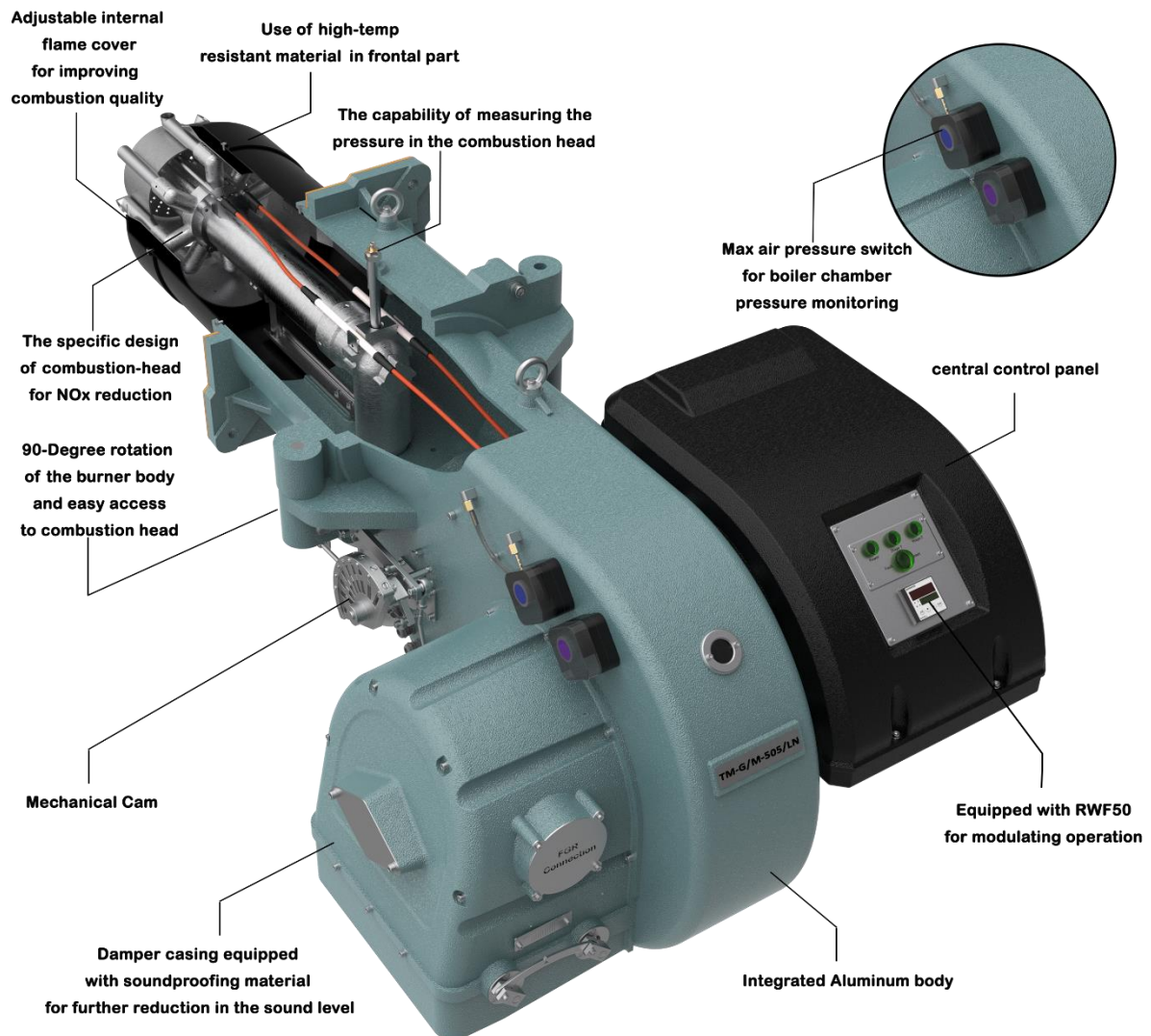
Burner Management System Overview



To achieve modulating operation, the TM-G/M series of burners require a regulator with three-point outlet controls. The following is a list of accessories required for mechanical modulating operation.

- RWF50
- Temperature sensor
- Actuator modulating operation

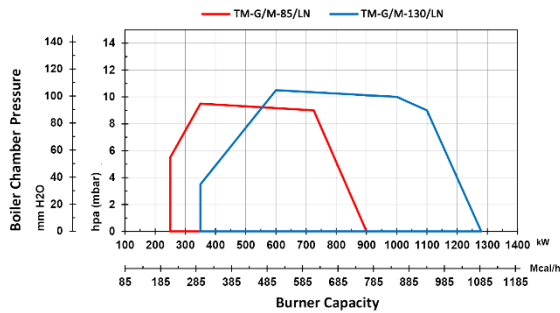
TERMODA TM-G/M Series Burner



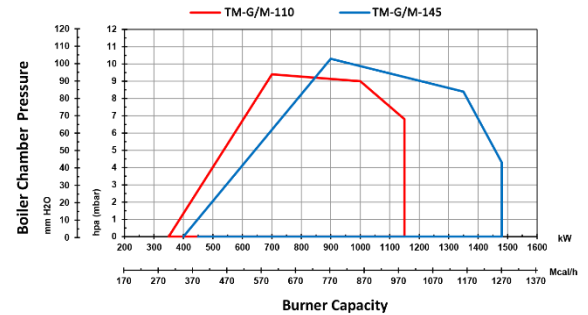
Burner Selection: Capacity And Working Diagram

Gas Burner

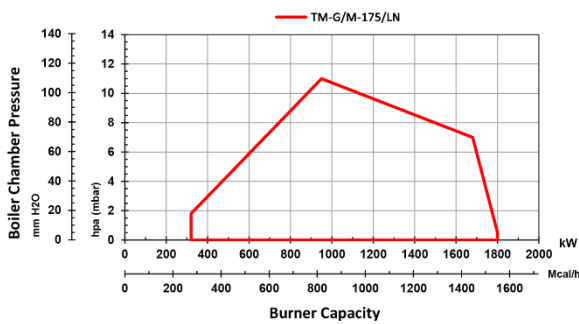
Burner	Capacity (kW)	Turn Down
TM-G/M-85/LN	NG: 250-900	1:3
TM-G/M-130/LN	NG: 350-1280	1:3



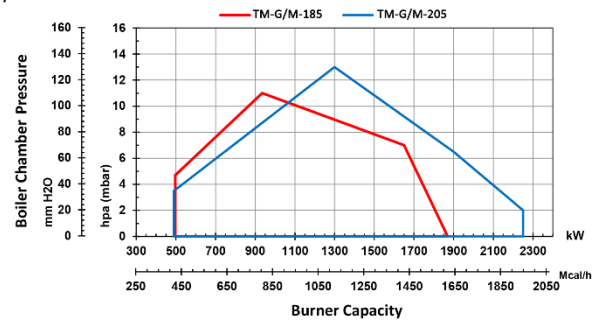
Burner	Capacity (kW)	Turn Down
TM-G/M-110	NG: 350-1150	1:3
TM-G/M-145	NG: 400-1480	1:4



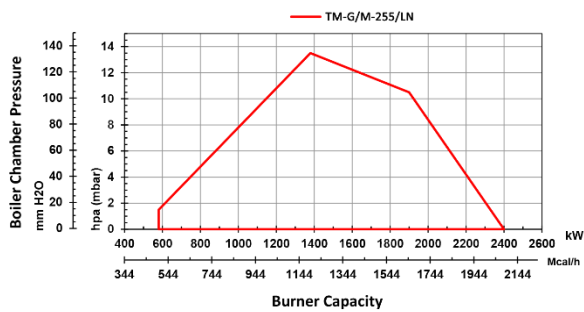
Burner	Capacity (kW)	Turn Down
TM-G/M-175/LN	NG: 320-1800	1:5



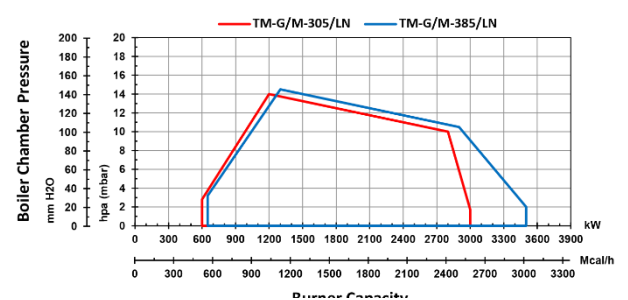
Burner	Capacity (kW)	Turn Down
TM-G/M-185	NG: 470-1870	1:4
TM-G/M-205	NG: 490-2250	1:4



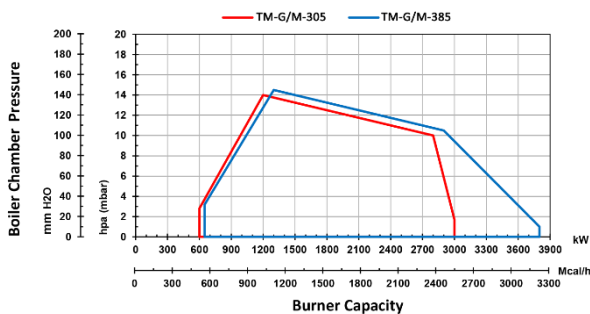
Burner	Capacity (kW)	Turn Down
TM-G/M-255/LN	NG: 580-2400	1:4



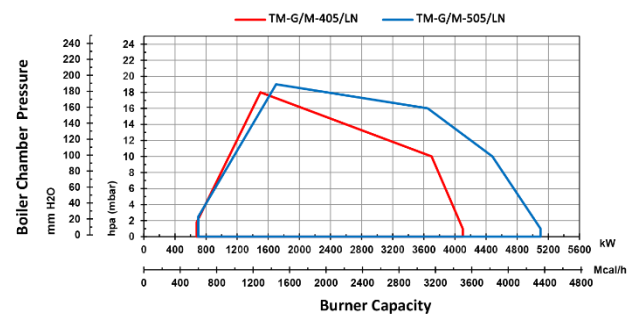
Burner	Capacity (kW)	Turn Down
TM-G/M-305/LN	NG: 600-3000	1:5
TM-G/M-385/LN	NG: 650-3800	1:5



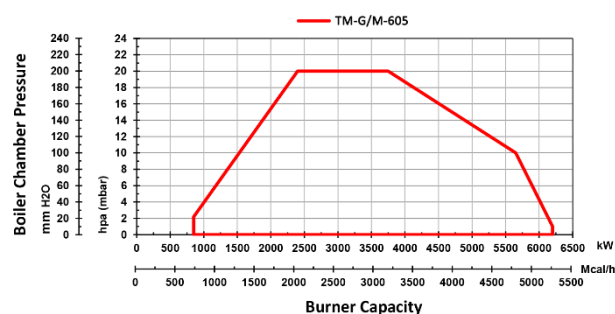
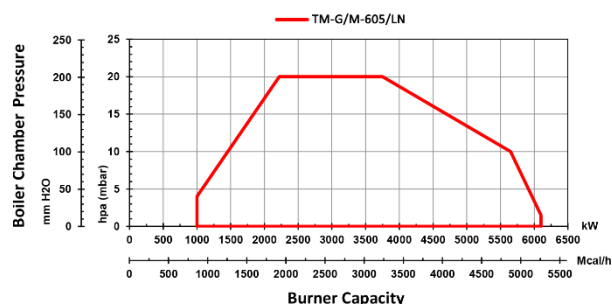
Burner	Capacity (kW)	Turn Down
TM-G/M-305	NG: 600-3000	1:5
TM-G/M-385	NG: 650-3800	1:5



Burner	Capacity (kW)	Turn Down
TM-G/M-405/LN	NG: 680-4100	1:6
TM-G/M-505/LN	NG: 700-5100	1:7

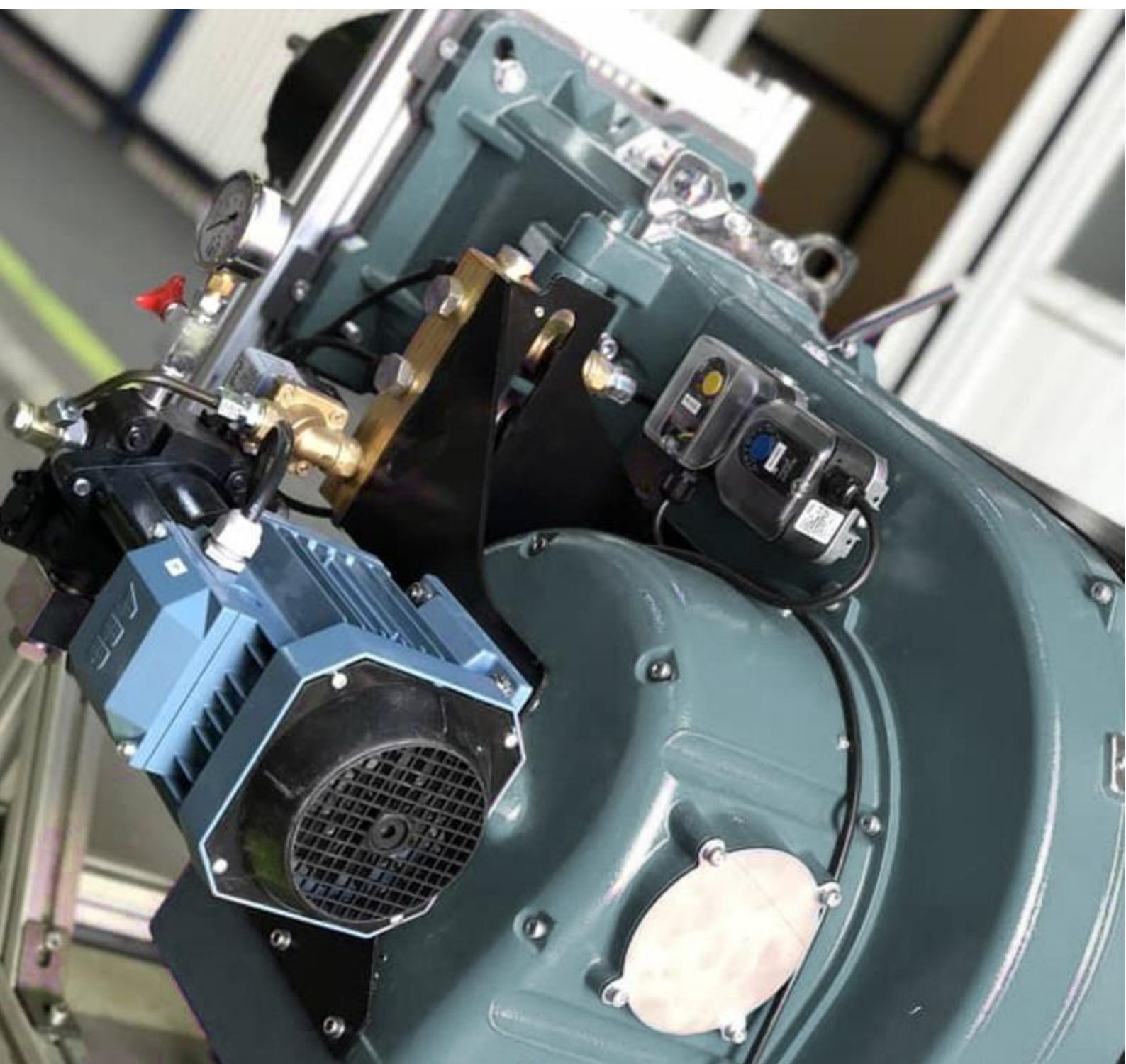


Burner	Capacity (kW)	Turn Down	Burner	Capacity (kW)	Turn Down
TM-G/M-605/LN	NG: 1000-6100	1:6	TM-G/M-605	NG: 850-6200	1:7



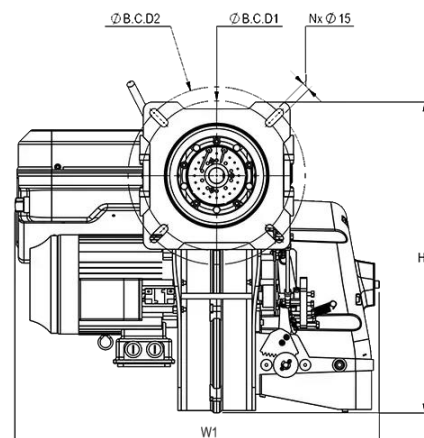
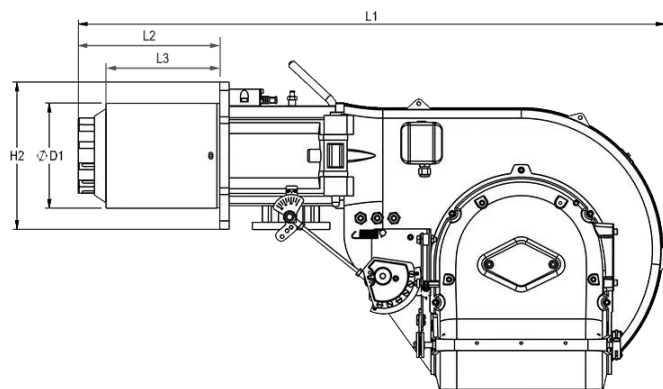
About the working diagram: Working diagram for gas burner is certified in accordance with EN 676.

The firing rate diagram has been obtained considering ambient temperature of 20°C and atmospheric pressure of 1013 mbar (Sea level condition). For installation at higher altitudes, a reduction in capacity of 1% per 100 m above sea level should be taken into account.



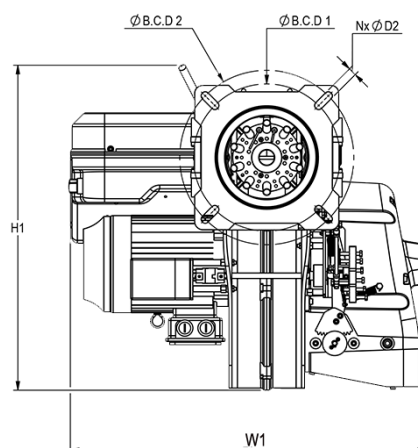
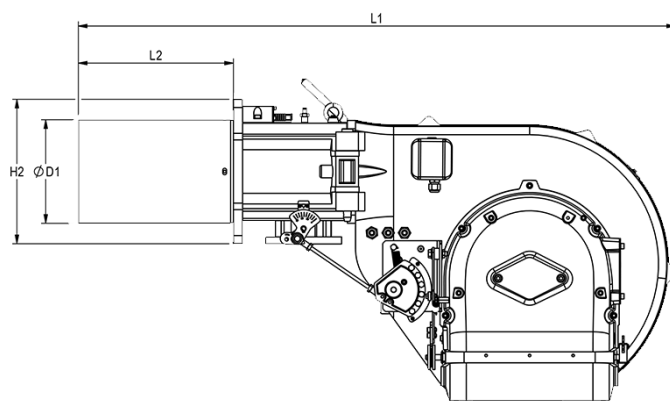
General Dimension: TM-G/M Series

TM-G/M-85/LN, TM-G/M-130/LN

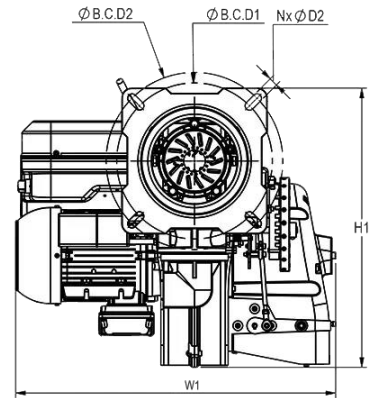
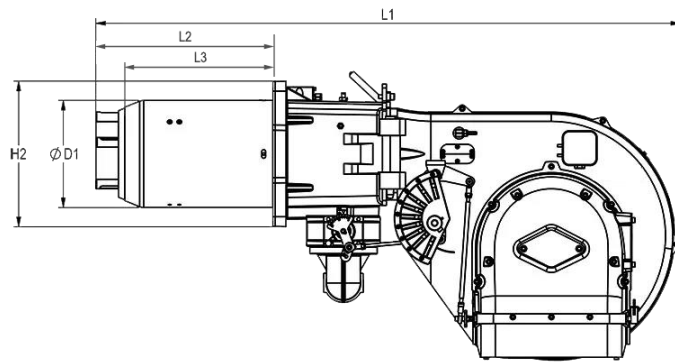


Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/M-85/LN	1068	255	205	641	600	265	193	15	4	270	320
TM-G/M-130/LN	1072	260	205	641	600	265	193	15	4	270	320

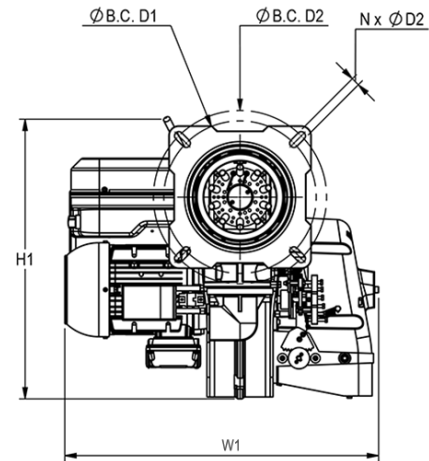
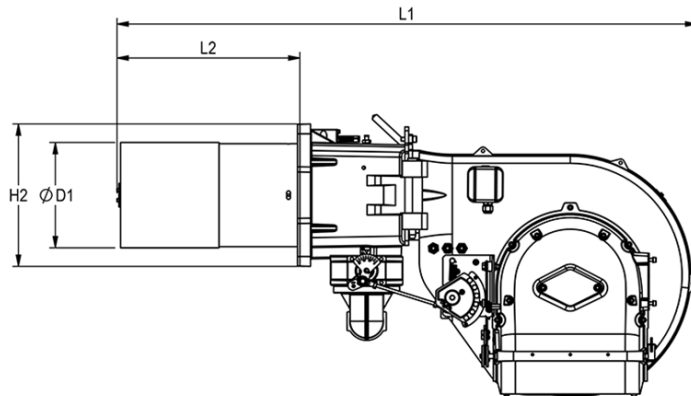
TM-G/M-110, TM-G/M-145



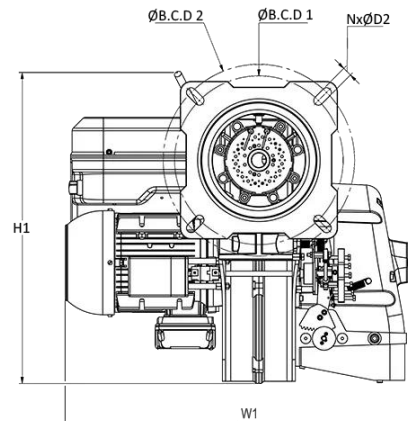
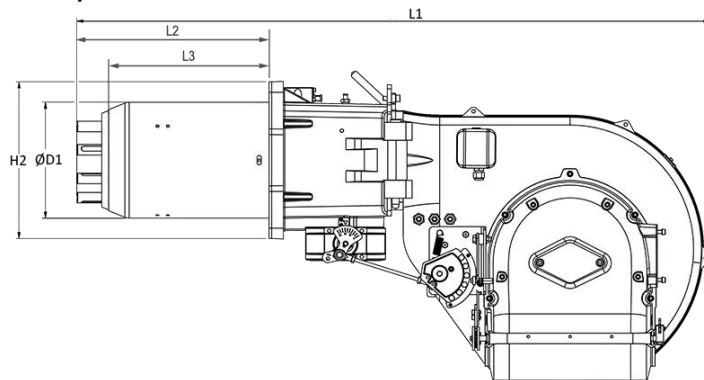
Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/M-110	1066	254	643	600	265	184	15	4	270	320
TM-G/M-145	1097	285	643	600	265	194	15	4	270	320

TM-G/M-175/LN


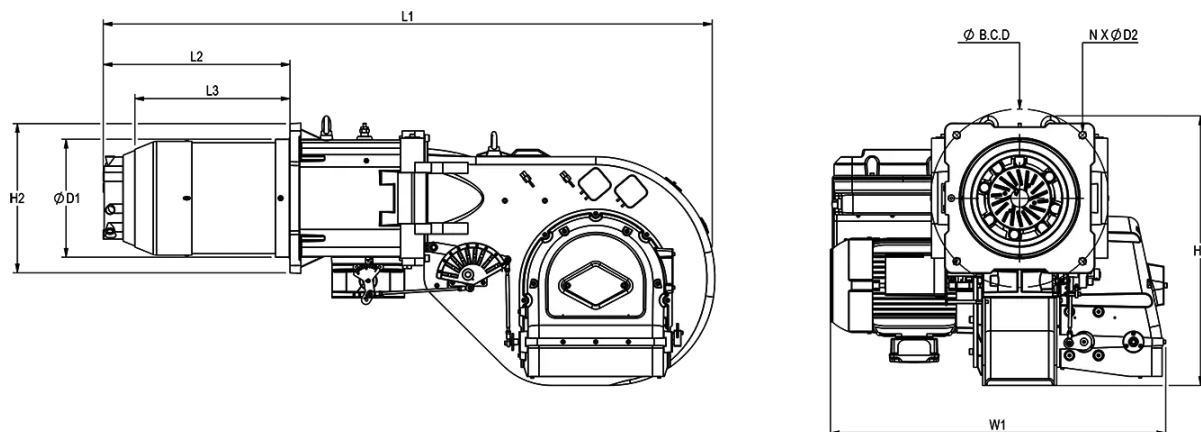
Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/M-175/LN	1213	373	312	665	598	302	226	18	4	323	367

TM-G/M-185, TM-G/M-205


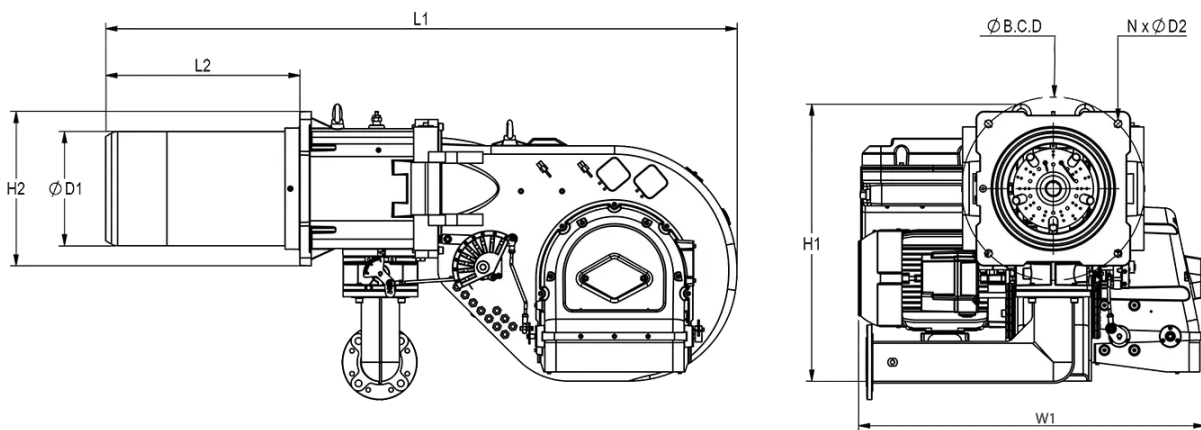
Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/M-185	1229	388	666	598	302	223	18	4	323	367
TM-G/M-205	1229	388	666	598	302	223	18	4	323	367

TM-G/M-255/LN


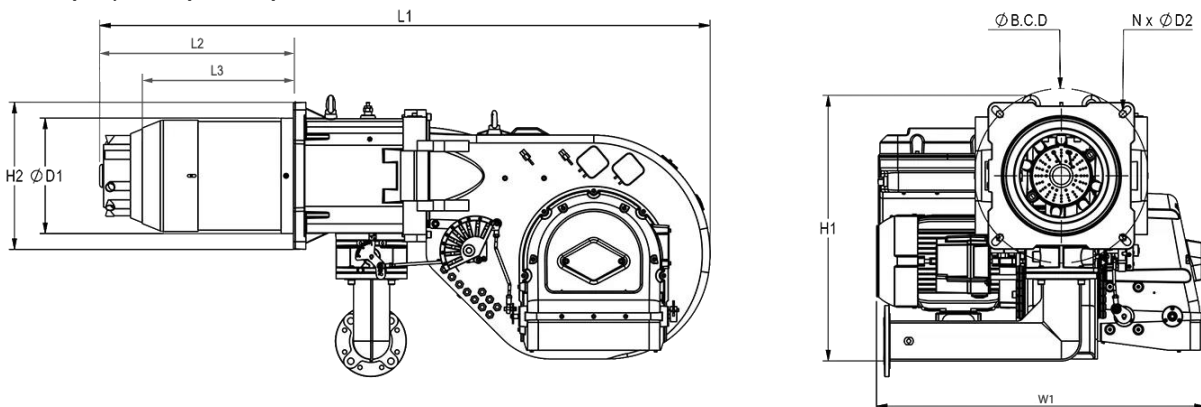
Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-G/M-255/LN	1214	374	312	762	598	302	226	18	4	323	368

TM-G/M-305/LN, TM-G/M-385/LN


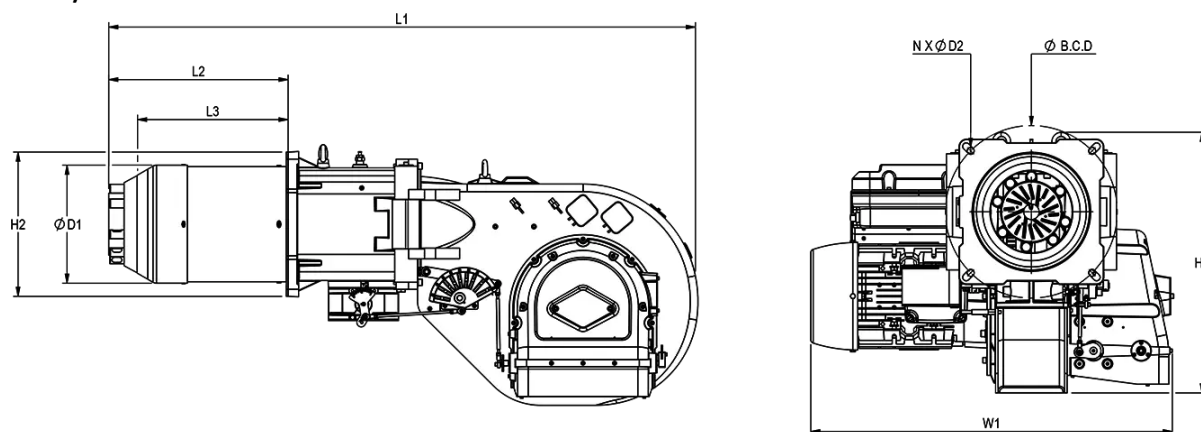
Burner Type	L1	L2	L3	W1	H1	H2	D1	D2	N	B.C.D
TM-G/M-305/LN	1675	514	427	930	798	413	328	20	4	490
TM-G/M-385/LN	1675	514	427	930	798	413	328	20	4	490

TM-G/M-305, TM-G/M-385


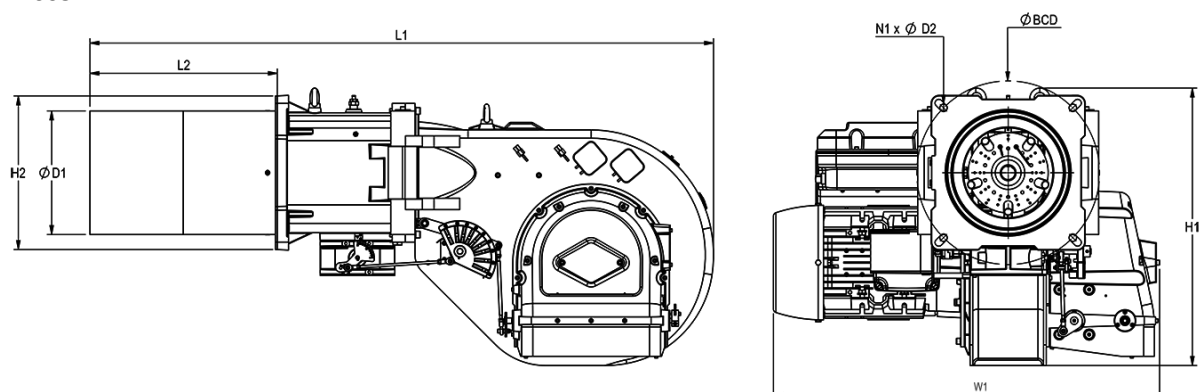
Burner Type	L1	L2	W1	H1	H2	D1	D2	N	B.C.D
TM-G/M-305	1689	520	927	741	413	328	20	4	490
TM-G/M-385	1689	520	927	741	413	328	20	4	490

TM-G/M-405/LN, TM-G/M-505/LN


Burner Type	L1	L2	L3	W1	H1	H2	D1	D2	N	B.C.D
TM-G/M-405/LN	1721	552	502	930	798	413	328	20	4	490
TM-G/M-505/LN	1721	552	502	930	798	413	328	20	4	490

TM-G/M-605/LN


Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D
TM-G/M-605/LN	1675	512	430	1035	798	413	340	20	4	490

TM-G/M-605


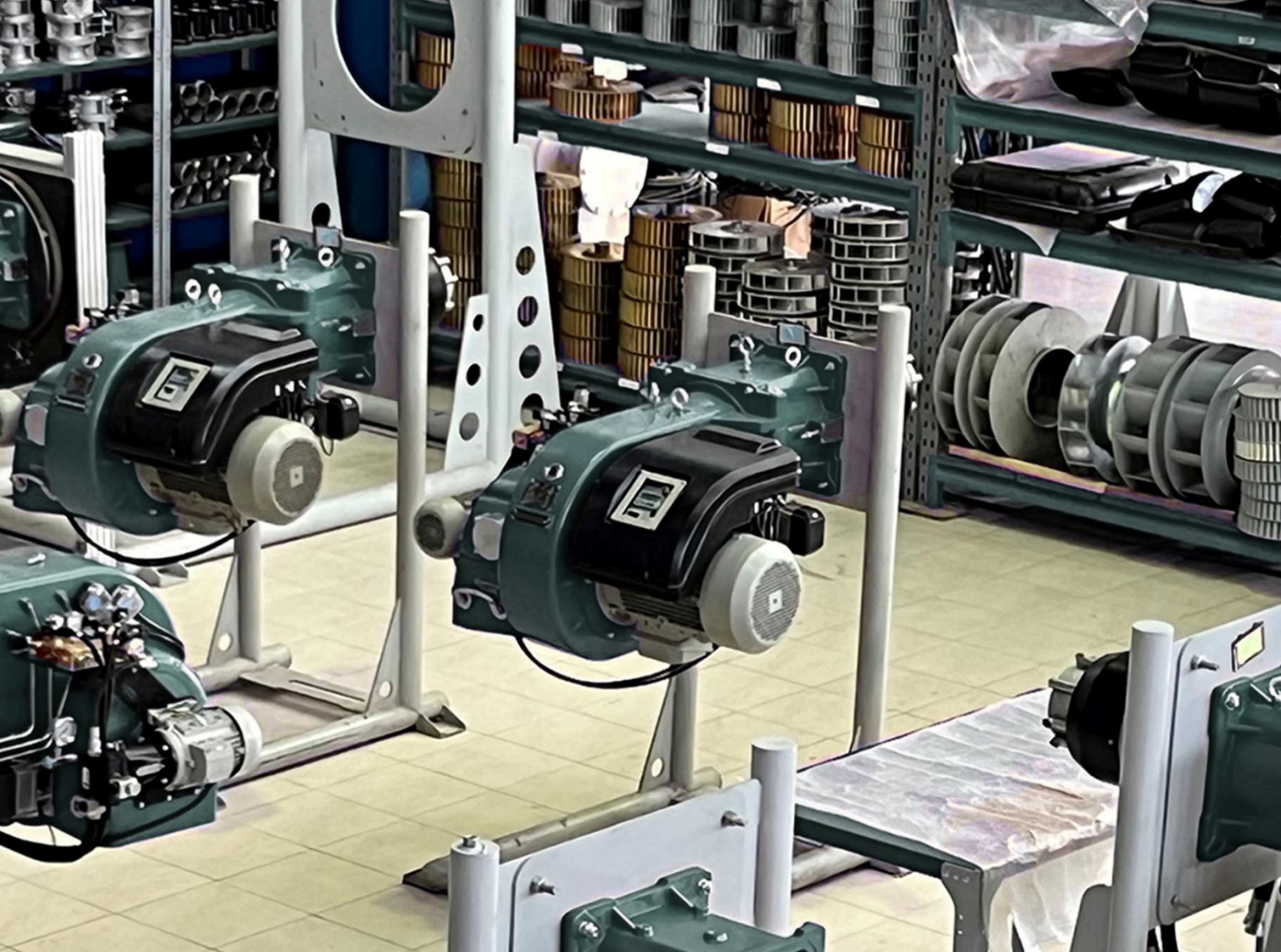
Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D
TM-G/M-605	1665	502	1035	741	410	336	20	4	490

Technical Data: TM-G/M Series

The TM-G/M series of TERMODA burners includes a ventilation system with an AC motor, ignition transformer, and electrodes. Additionally, it features an electrical panel equipped with power contactors, fuses, relays, a central controller, air pressure switches, soundproofing material, and lamp signals for operational supervision, and etc.

- N.G. operation: Mechanical Modulating

Power system		Power management system	
Burner	Motor(kW/PH/V/HZ/rpm)	Controller	Actuator (N.M)
TM-G/M-85/LN	1.5 /3 /380-400 /50 /2840	Siemens	3
TM-G/M-110	1.5 /3 /380-400 /50 /2840	Siemens	3
TM-G/M-130/LN	2.2 /3 /380-400 /50 /2840	Siemens	3
TM-G/M-145	2.2 /3 /380-400 /50 /2840	Siemens	3
TM-G/M-175/LN	4 /3 /380-400 /50 /2840	Siemens	3
TM-G/M-185	5.5 /3 /380-400 /50 /2840	Siemens	3
TM-G/M-205	5.5 /3 /380-400 /50 /2840	Siemens	3
TM-G/M-255/LN	5.5 /3 /380-400 /50 /2840	Siemens	3
TM-G/M-305/LN TM-G/M-305	7.5 /3 /380-400 /50 /2900	Siemens	10
TM-G/M-385/LN TM-G/M-385	7.5 /3 /380-400 /50 /2900	Siemens	10
TM-G/M-405/LN	11 /3 /380-400 /50 /2900	Siemens	10
TM-G/M-505/LN	11 /3 /380-400 /50 /2900	Siemens	10
TM-G/M-605/LN TM-G/M-605	15 /3 /380-400 /50 /2900	Siemens	10



TERMODA Wokshop



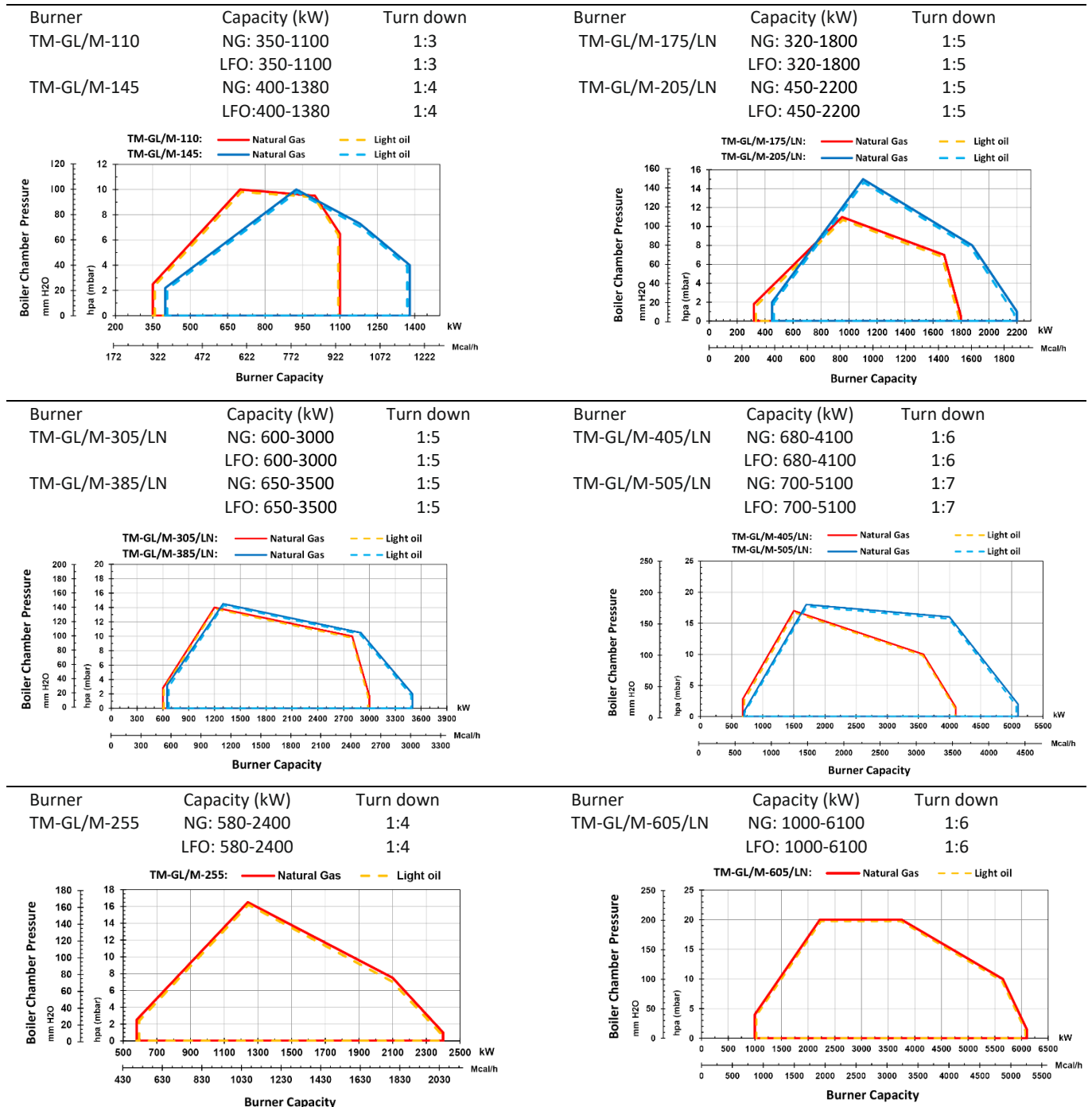
TERMODA TM-GL/M Series Burner



Equipped with RWF 50 And Cam
Mechanism for Modulating Operation

Burner Selection: Capacity and Working Diagram

Dual-fuel Burner

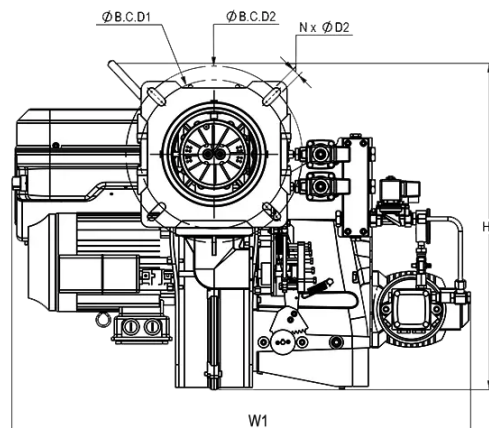
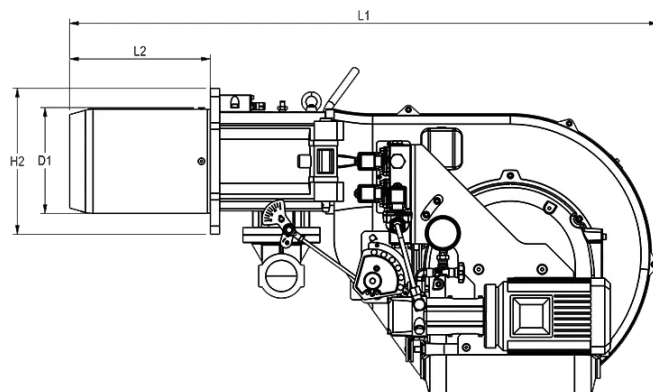


About the working diagram:

The working diagrams for natural gas and light fuel oil are certified in accordance with BS-EN 676 and BS-EN 267, respectively. The firing rate diagram has been obtained considering the ambient temperature of 20°C and atmospheric pressure of 1013 mbar (Sea level condition).

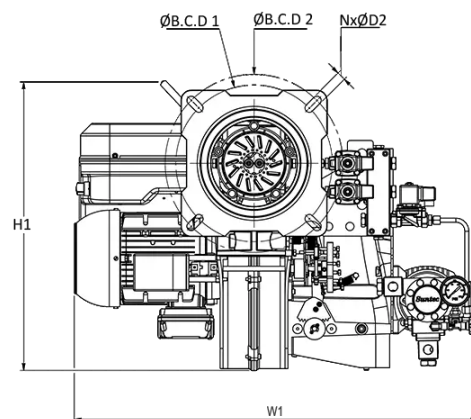
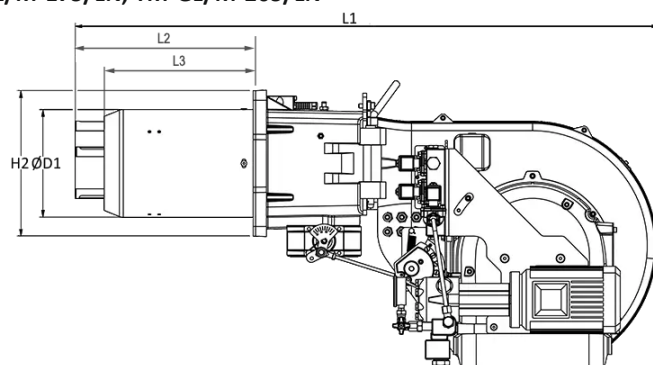
General Dimension: TM-GL/M Series

TM-GL/M-110, TM-GL/M-145

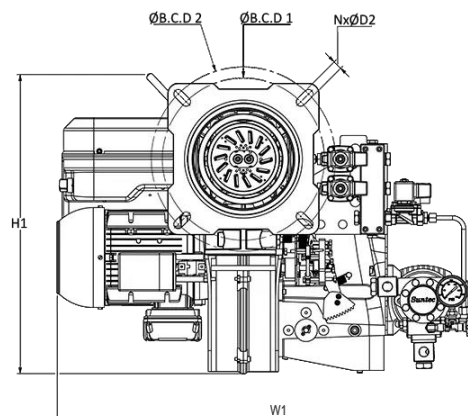
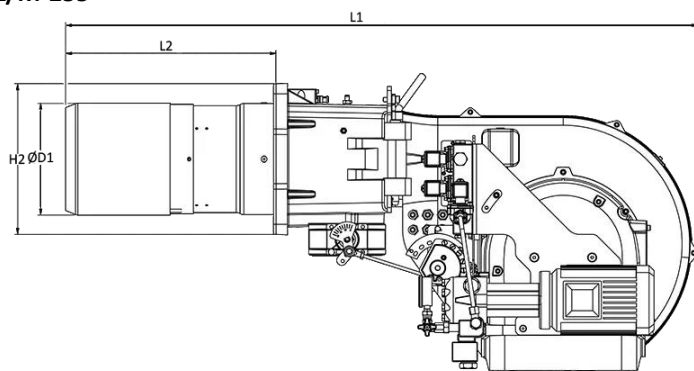


Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-GL/M-110	1068	255	830	598	265	184	15	4	270	320
TM-GL/M-145	1068	255	830	598	265	194	15	4	270	320

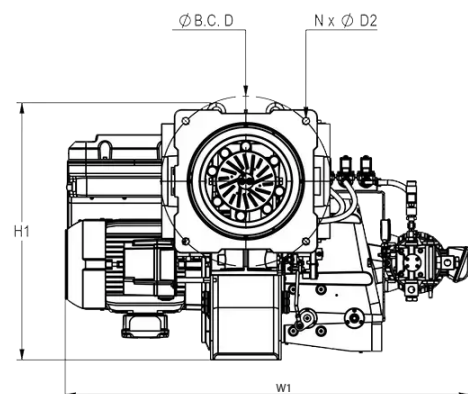
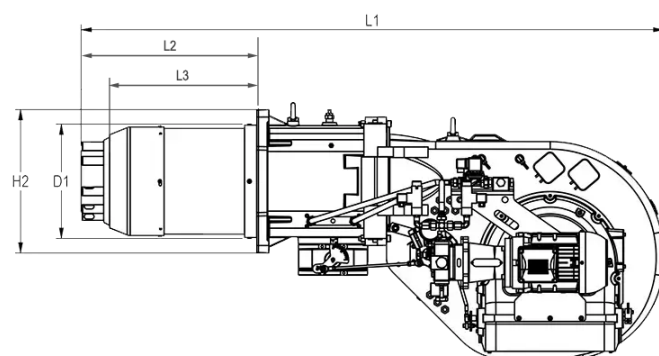
TM-GL/M-175/LN, TM-GL/M-205/LN



Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D1	B.C.D2
TM-GL/M-175/LN	1213	373	312	875	598	300	226	18	4	323	367
TM-GL/M-205/LN	1213	373	312	875	598	300	226	18	4	323	367

TM-GL/M-255


Burner Type	L ₁	L ₂	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D.1	B.C.D.2
TM-GL/M-255	1260	419	833	598	300	223	18	4	323	367

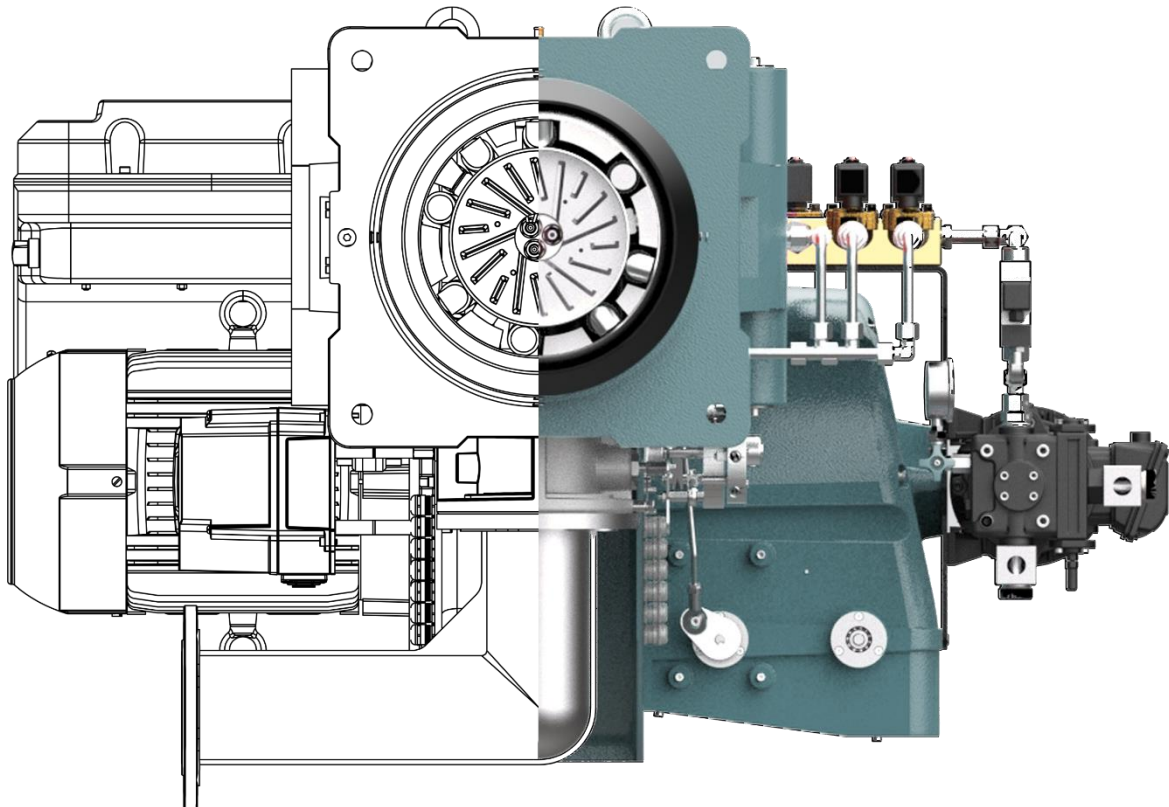
TM-GL/M-305/LN, TM-GL/M-385/LN, TM-GL/M-405/LN, TM-GL/M-505/LN, TM-GL/M-605/LN


Burner Type	L ₁	L ₂	L ₃	W ₁	H ₁	H ₂	D ₁	D ₂	N	B.C.D
TM-GL/M-305/LN	1683	514	427	1137	741	410	328	20	4	490
TM-GL/M-385/LN	1683	514	427	1137	741	410	328	20	4	490
TM-GL/M-405/LN	1683	514	431	1249	741	410	328	20	4	490
TM-GL/M-505/LN	1683	514	431	1249	741	410	328	20	4	490
TM-GL/M-605/LN	1680	512	430	1245	741	410	340	20	4	490

Technical Data: TM-GL/M Series

- N.G operation: Mechanical Modulating
- LFO operation: II or III Stages

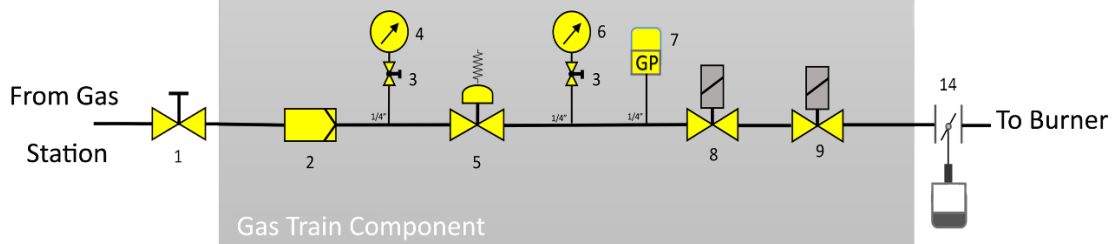
Power system		Power management system	
Burner	Motor(kW/PH/V/HZ/rpm)	Controller	Actuator (N.M)
TM-GL/M-110	1.5 /3 /380-400 /50 /2840	Siemens	3
TM-GL/M-145	2.2 /3 /380-400 /50 /2840	Siemens	3
TM-GL/M-175/LN	4 /3 /380-400 /50 /2840	Siemens	3
TM-GL/M-205/LN	5.5 /3 /380-400 /50 /2840	Siemens	3
TM-GL/M-255	5.5 /3 /380-400 /50 /2840	Siemens	3
TM-GL/M-305/LN	7.5 /3 /380-400 /50 /2940	Siemens	10
TM-GL/M-385/LN	7.5 /3 /380-400 /50 /2940	Siemens	10
TM-GL/M-405/LN	11 /3 /380-400 /50 /2940	Siemens	10
TM-GL/M-505/LN	11 /3 /380-400 /50 /2940	Siemens	10
TM-GL/M-605/LN	15 /3 /380-400 /50 /2940	Siemens	10



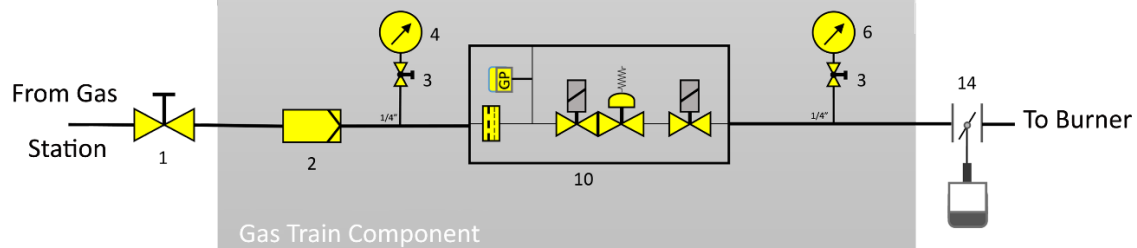


Gas Train Diagram

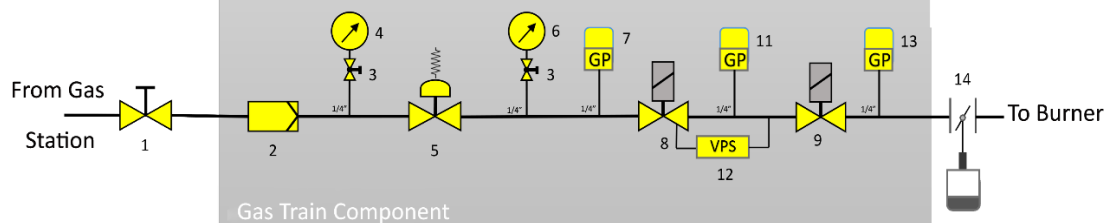
GT1 (Pressure input<360 mbar, separated items)



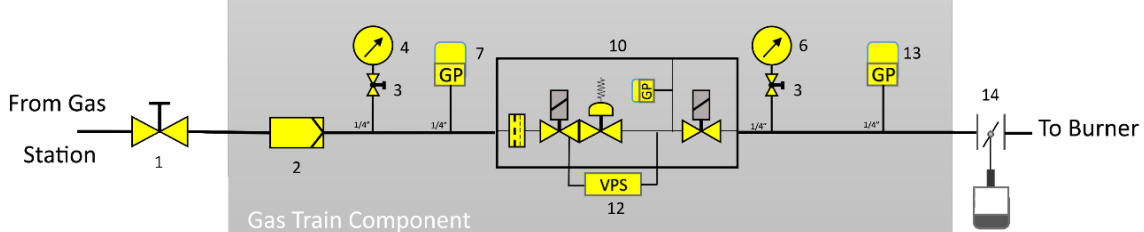
GT2 (Pressure input<360 mbar, multi bloc gas train)



GT3 (Pressure input<360 mbar, separated items, with valve proving system)



GT4 (Pressure input<360 mbar, multi bloc gas train, with valve proving system)



- | | | |
|--------------------------------------|--------------------------------|-----------------------------------|
| 1: Ball valve | 6: Pressure Gauge | 11: Leak Test gas pressure switch |
| 2: Gas filter | 7: Min. gas pressure switch | 12: Valve proving system |
| 3: Ball valve | 8: Safety gas valve | 13: Max. gas pressure switch |
| 4: Pressure Gauge | 9: Main gas valve | 14: Butterfly valve |
| 5: Pressure regulator (Low pressure) | 10: Multi-Block Solenoid Valve | |

Note:

According to the BS-EN 676, valve proving system shall be used in burners with capacity above 1.2 MW. Consequently, MADAS-MTC10 or DungsVDK200 valve proving systems are highly recommended.

Layout of the valve train

On boilers with hinged doors, the valve train must be mounted on the opposite side to the boiler door hinges.

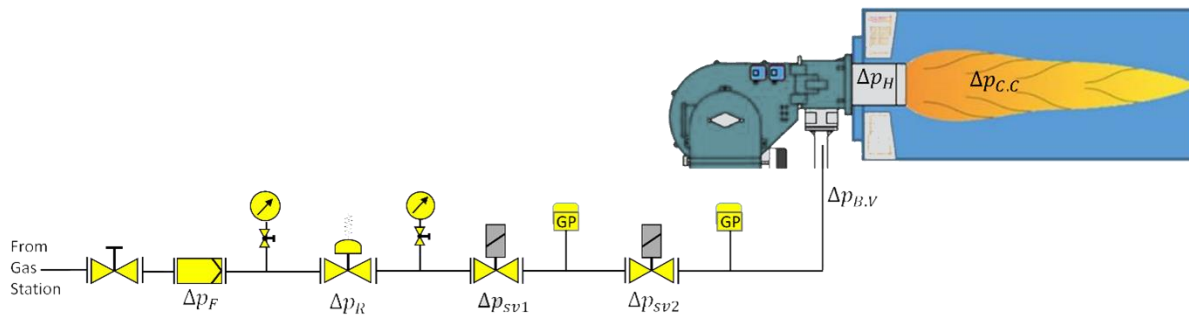
Break points in the valve train

Break points in the valve train should be provided to enable the door of the heat generator to be swung open. The main gas line is best separated at the compensator.

Support of the valve train

The valve train should be properly supported in accordance with the site conditions. See the TERMODA accessories list for various valve train support components.

Calculation Of Minimum Inlet Pressure And Minimum Output Pressure Of Regulator



Min Input Pressure= $\Delta P_{\text{Filter(F)}} + \Delta P_{\text{Regulator(R)}} + \Delta P_{\text{Safety solenoid valve(sv1)}} + \Delta P_{\text{main solenoid valve(sv2)}} + \Delta P_{\text{butterfly valve(B.V)}} + \Delta P_{\text{Combustion Head(H)}} + \Delta P_{\text{Combustion chamber(C.C)}}$

Min output pressure of regulator= $\Delta P_{\text{Safety solenoid valve(sv1)}} + \Delta P_{\text{main solenoid valve(sv2)}} + \Delta P_{\text{butterfly valve(B.V)}} + \Delta P_{\text{Combustion Head(H)}} + \Delta P_{\text{Combustion chamber(C.C)}}$

Gas Train Sizing

TM-G/S-Series...				
Burner	Gas Model	Gas Train Size	$\Delta P_{B.V}$ (mbar)	$\Delta P_{C.H^{**}}$ (mbar)
TM-G/S-85/LN	GT1/GT2	Rp 1 ½	2	11.7
TM-G/S-110	GT1/GT2	Rp 1 ½	2	9
TM-G/S-130/LN*	GT3/GT4	Rp 1 ½	2	22.5
TM-G/S-145*	GT3/GT4	Rp 2	2	8.6
TM-G/S-175/LN	GT3/GT4	Rp 2	3	17
TM-G/S-185	GT3/GT4	Rp 2	3	14.5
TM-G/S-205	GT3/GT4	Rp 2	3	14.5
TM-G/S-255/LN	GT3/GT4	Rp 2	3	24.9
TM-G/S-305/LN	GT3/GT4	DN65	4	23
TM-G/S-305	GT3/GT4	DN 65	4	20.6
TM-G/S-385/LN	GT3/GT4	DN 65	4	31.7
TM-G/S-385	GT3/GT4	DN 65	4	27.3
TM-G/S-405/LN	GT3/GT4	DN 65	4	47
TM-G/S-505/LN	GT3/GT4	DN 65	4	56
TM-G/S-605/LN	GT3/GT4	DN80/DN 65	4	68
TM-G/S-605	GT3/GT4	DN80/DN 65	4	62.8

TM-GL/S-Series				
Burner	Gas Model	Gas Train Size	$\Delta P_{B.V}$ (mbar)	$\Delta P_{C.H^{**}}$ (mbar)
TM-GL/S-110	GT1/GT2	Rp 1 ½	2	10
TM-GL/S-145*	GT3/GT4	Rp 2	2	13
TM-GL/S-175/LN*	GT3/GT4	Rp 2	3	17
TM-GL/S-205/LN	GT3/GT4	Rp 2	3	21.5
TM-GL/S-255	GT3/GT4	Rp 2	4	27.8
TM-GL/S-305/LN	GT3/GT4	DN 65	4	23
TM-GL/S-385/LN	GT3/GT4	DN 65	4	27.3
TM-GL/S-405/LN	GT3/GT4	DN 65	4	44
TM-GL/S-505/LN	GT3/GT4	DN 65	4	47
TM-GL/S-605/LN	GT3/GT4	DN80/DN 65	4	68

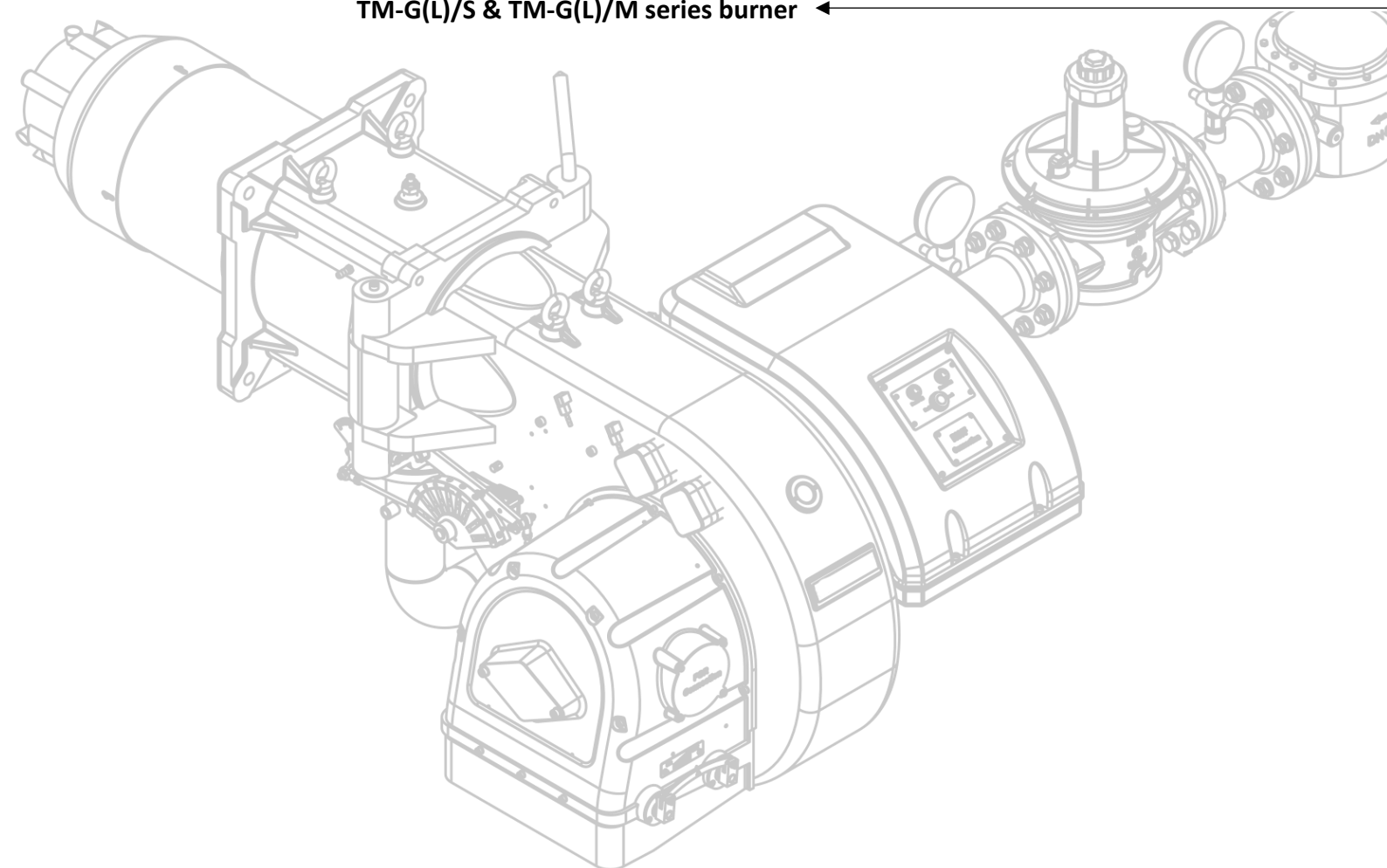
TM-G/M-Series...				
Burner	Gas Model	Gas Train Size	$\Delta P_{B.V}$ (mbar)	$\Delta P_{C.H^{**}}$ (mbar)
TM-G/M-85/LN	GT1/GT2	Rp 1 ½	2	11.7
TM-G/M-110	GT1/GT2	Rp 1 ½	2	9
TM-G/M-130/LN*	GT3/GT4	Rp 1 ½	2	22.5
TM-G/M-145*	GT3/GT4	Rp 2	2	8.6
TM-G/M-175/LN	GT3/GT4	Rp 2	3	17
TM-G/M-185	GT3/GT4	Rp 2	3	14.5
TM-G/M-205	GT3/GT4	Rp 2	3	14.5
TM-G/M-255/LN	GT3/GT4	Rp 2	3	24.9
TM-G/M-305/LN	GT3/GT4	DN 65	4	23
TM-G/M-305	GT3/GT4	DN 65	4	20.6
TM-G/M-385/LN	GT3/GT4	DN 65	4	27.3
TM-G/M-385	GT3/GT4	DN 65	4	31.7
TM-G/M-405/LN	GT3/GT4	DN 65	4	47
TM-G/M-505/LN	GT3/GT4	DN 65	4	56
TM-G/M-605/LN	GT3/GT4	DN80/DN 65	4	68
TM-G/M-605	GT3/GT4	DN80/DN 65	4	62.8

TM-GL/M-Series				
Burner	Gas Model	Gas Train Size	ΔP B.V (mbar)	ΔP C.H** (mbar)
TM-GL/M-110	GT1/GT2	Rp 1 ½	2	10
TM-GL/M-145*	GT3/GT4	Rp 2	2	13
TM-GL/M-175/LN*	GT3/GT4	Rp 2	3	17
TM-GL/M-205/LN	GT3/GT4	Rp 2	3	21.5
TM-GL/M-255	GT3/GT4	Rp 2	4	27.8
TM-GL/M-305/LN	GT3/GT4	DN 65	4	23
TM-GL/M-385/LN	GT3/GT4	DN 65	4	27.3
TM-GL/M-405/LN	GT3/GT4	DN 65	4	44
TM-GL/M-505/LN	GT3/GT4	DN 65	4	47
TM-GL/M-605/LN	GT3/GT4	DN80/DN 65	4	68

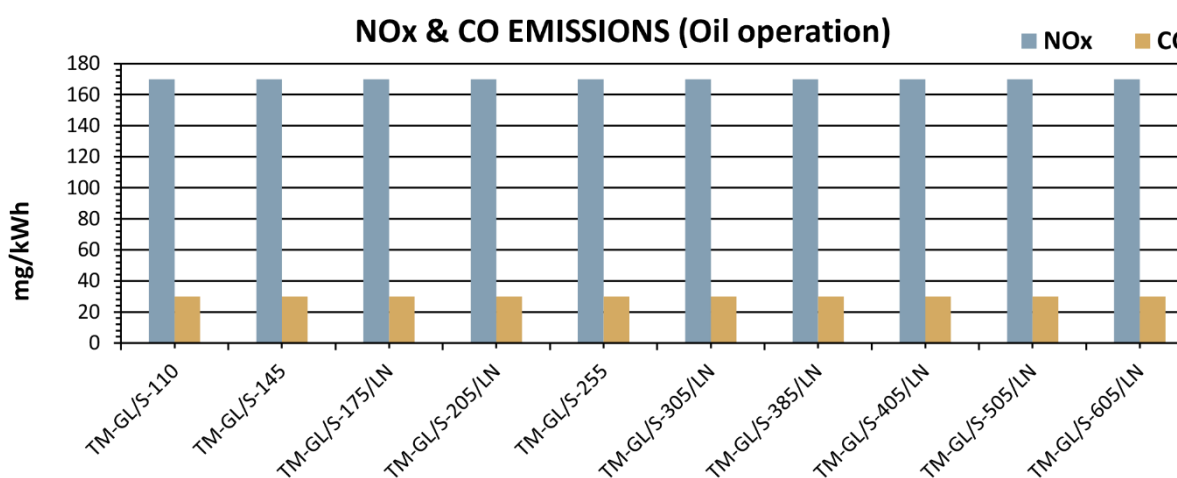
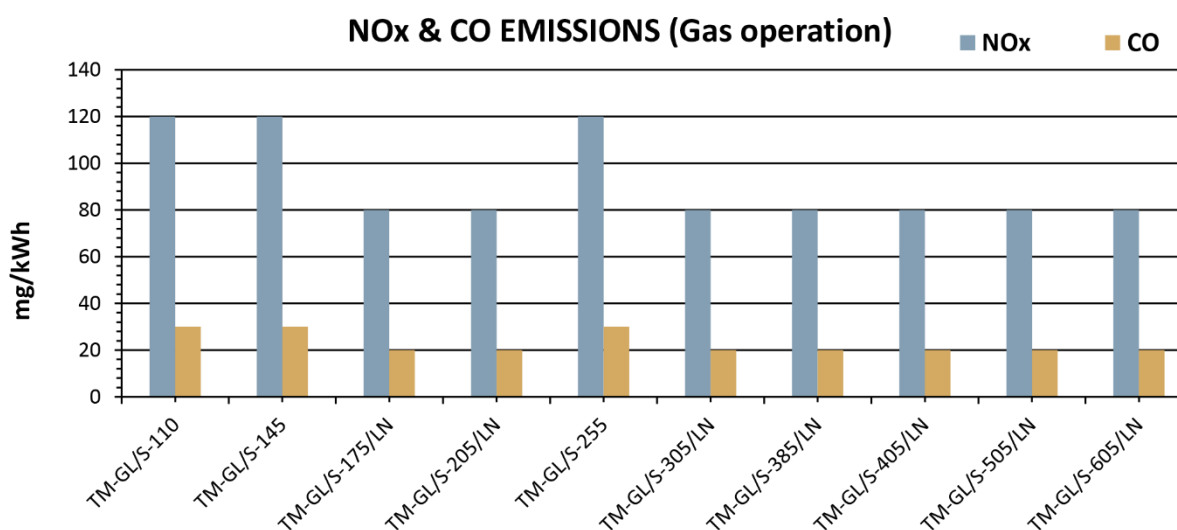
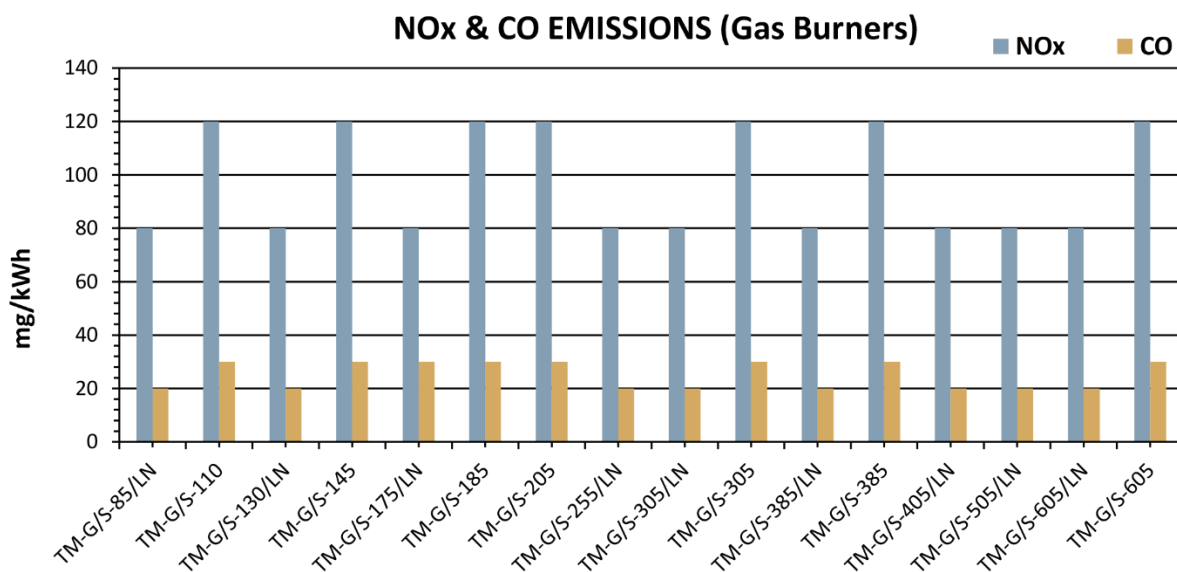
*Max. gas pressure switch is optional

**Combustion Head

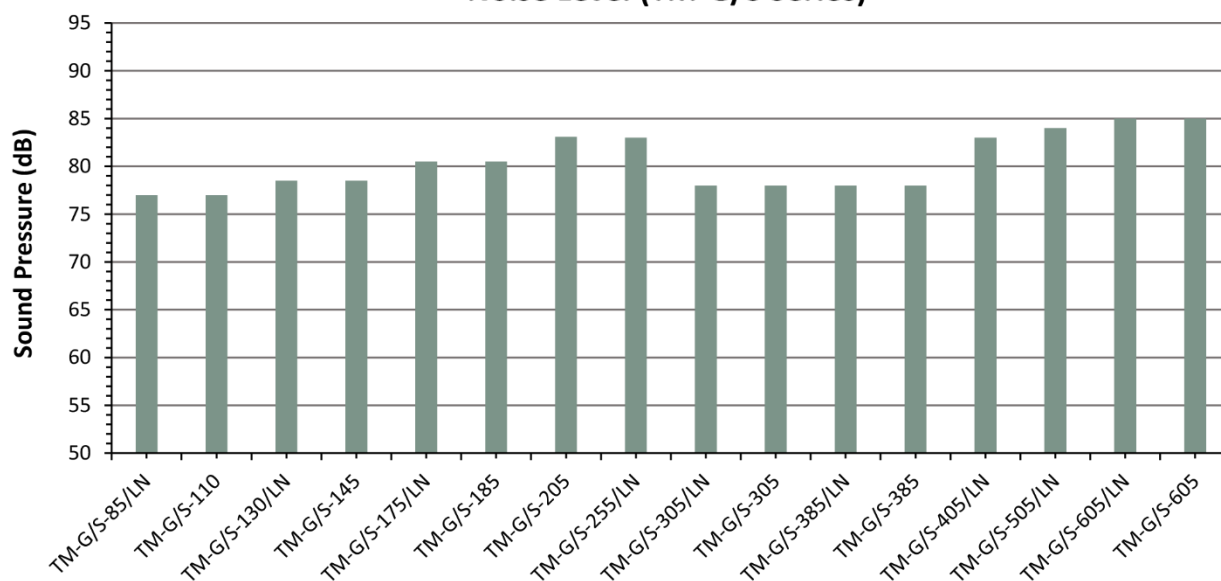
TM-G(L)/S & TM-G(L)/M series burner ←



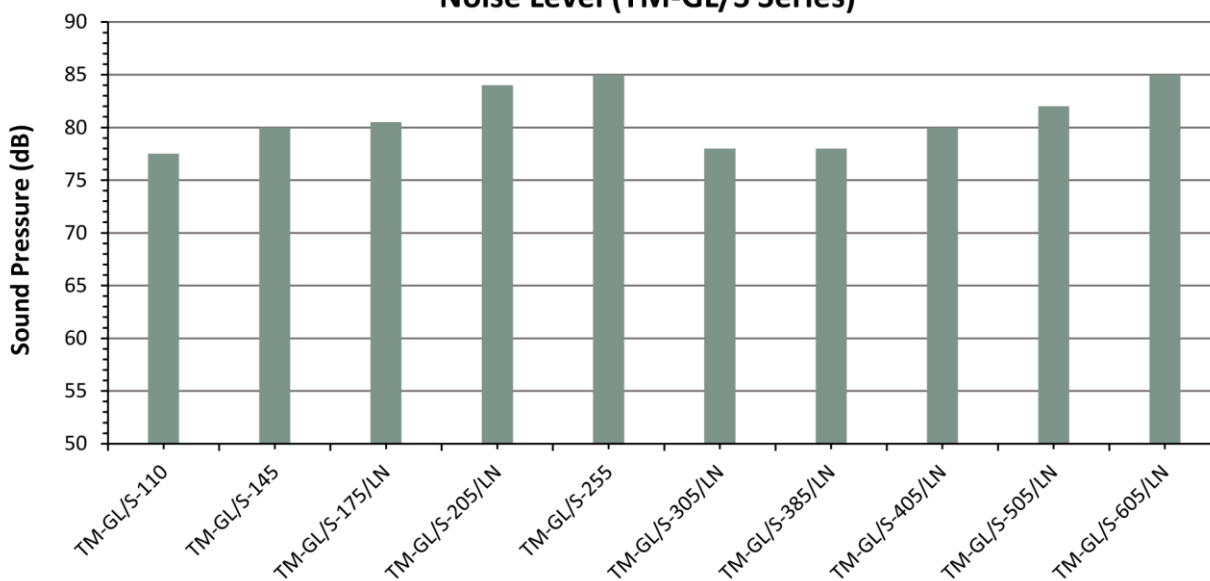
Emissions

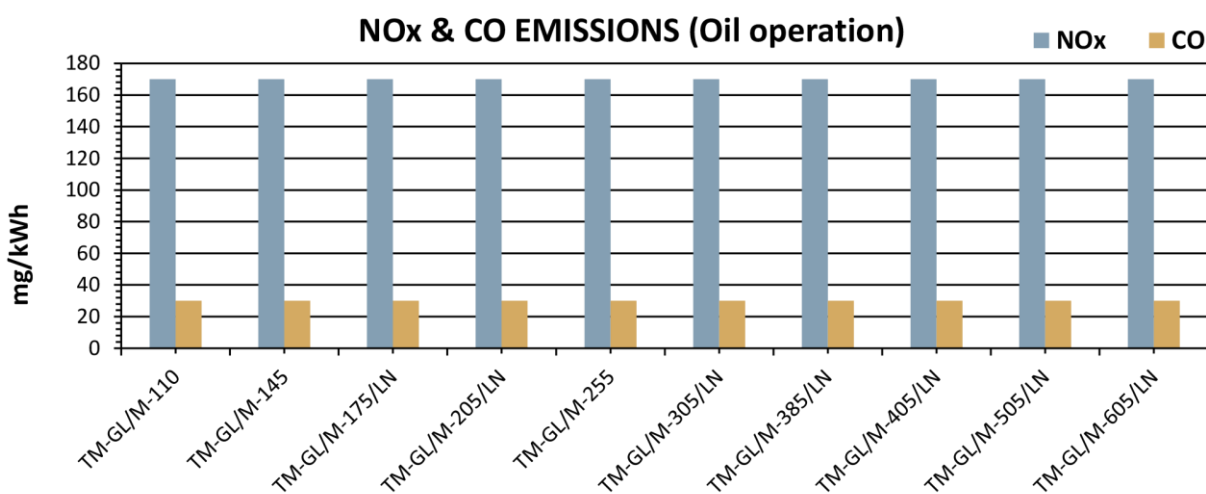
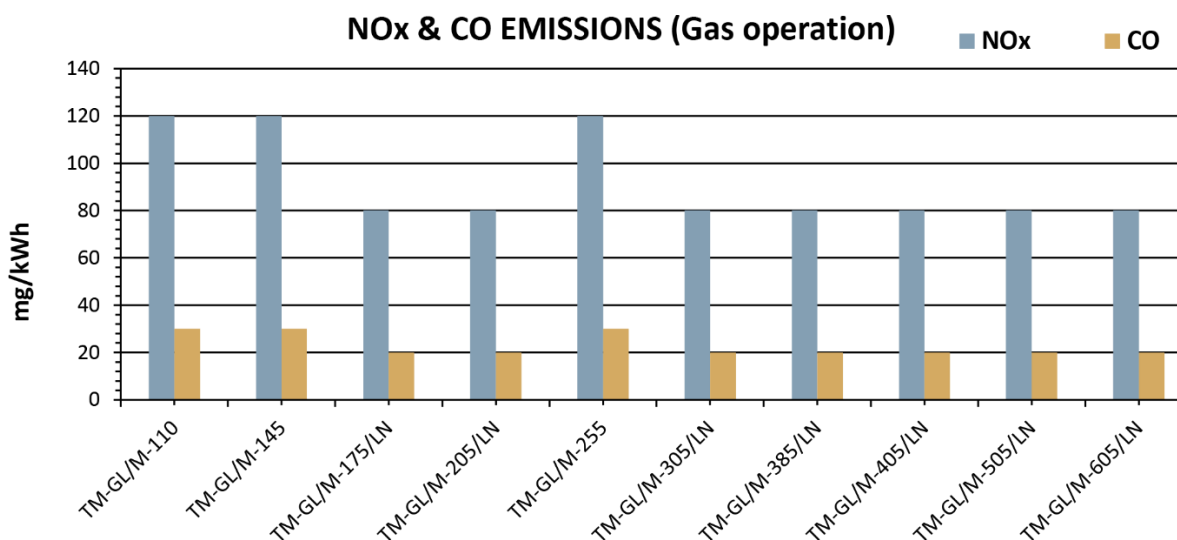
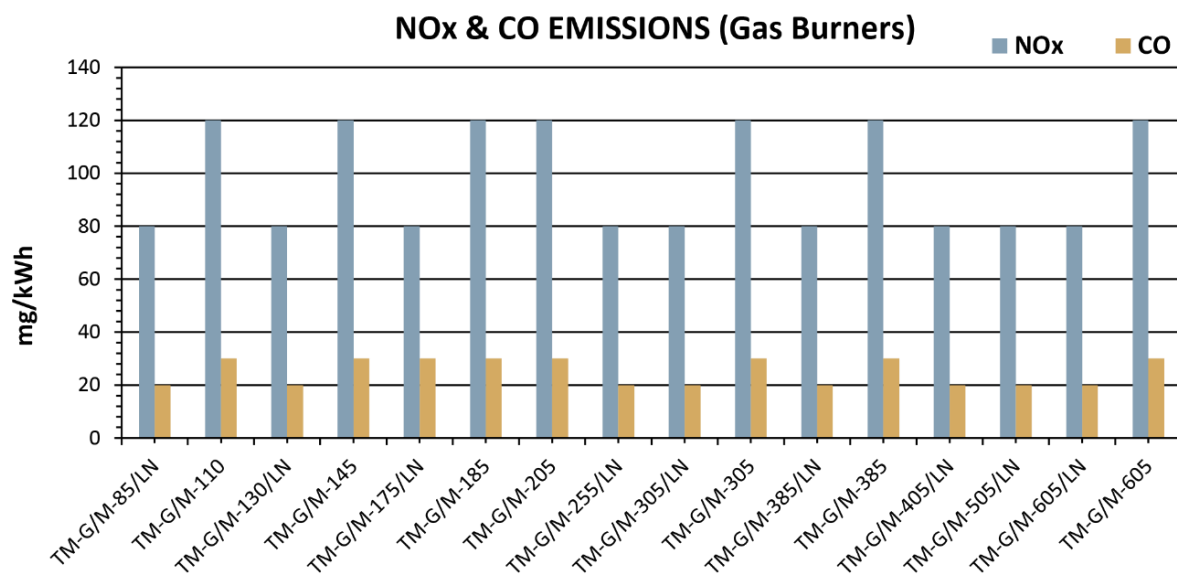


Noise Level (TM-G/S Series)

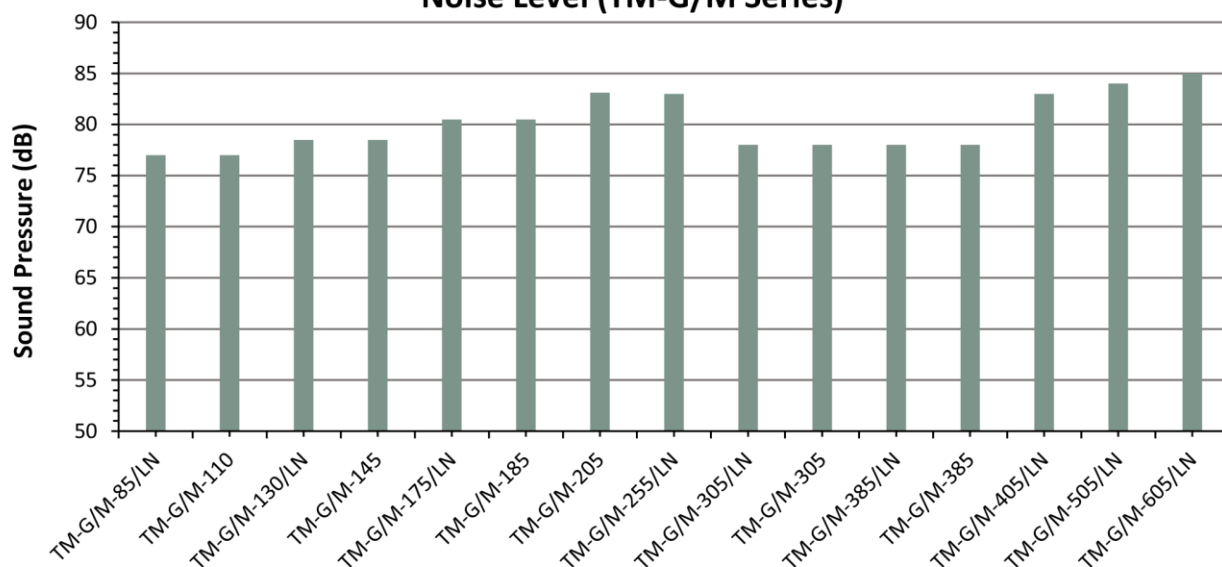


Noise Level (TM-GL/S Series)

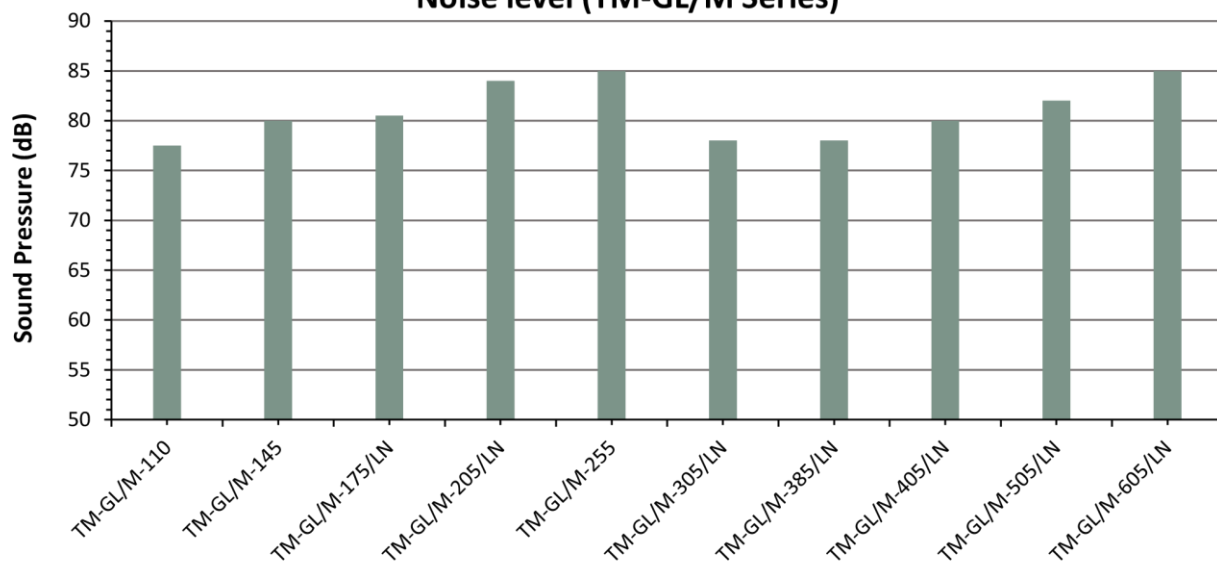




Noise Level (TM-G/M Series)



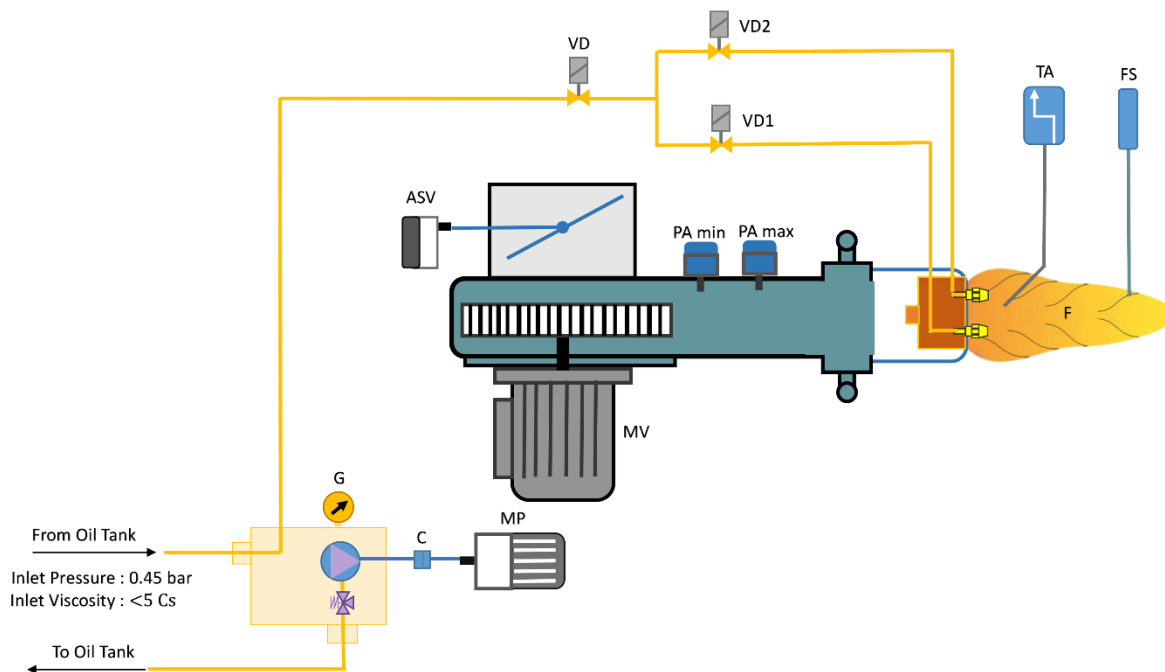
Noise level (TM-GL/M Series)



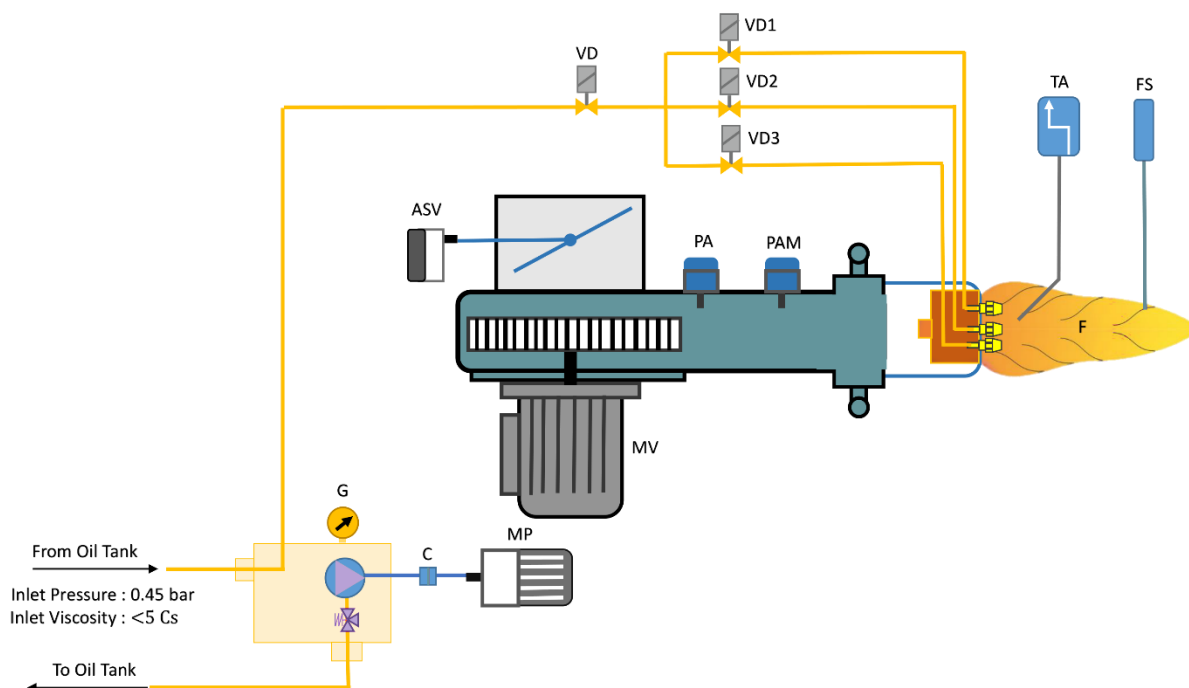


Oil Delivery System

Type OL-III: (Two Stages dual-fuel burner)



Type OL-III: (Three Stages dual-fuel burner)

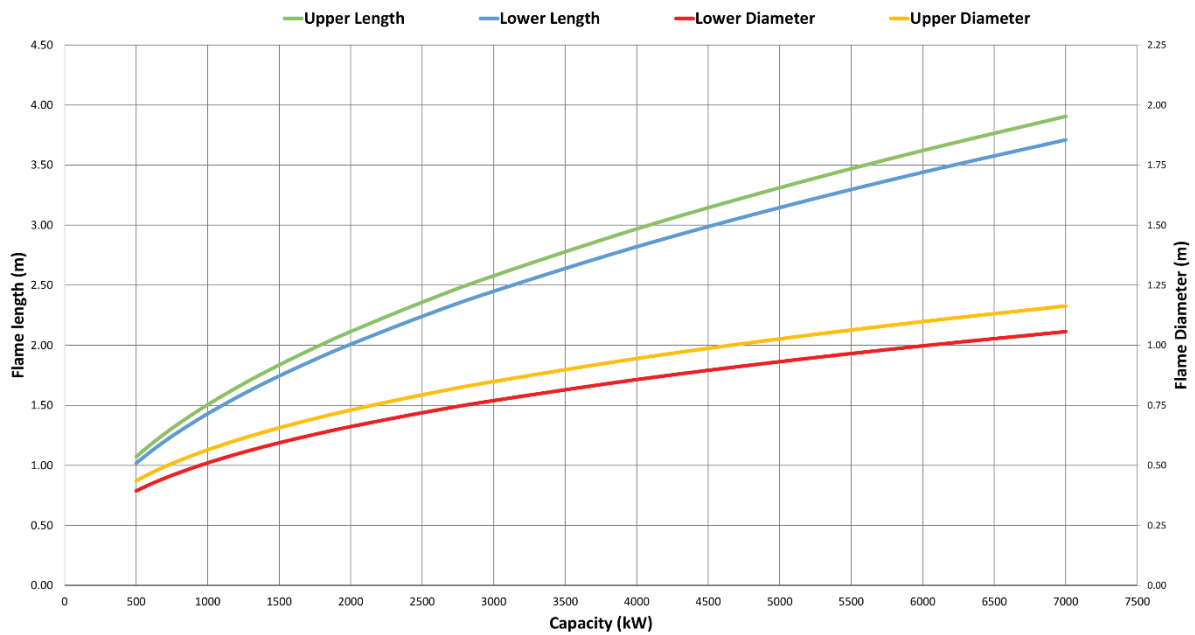


MV: Fan motor
MP: Pump motor
FS: Flame sensor
VD: Light oil safety valve

VD1: Light oil delivery valve Stage 1
VD2: Light oil delivery valve Stage 2
VD3: Light oil delivery valve Stage 3
TA: ignition transformer

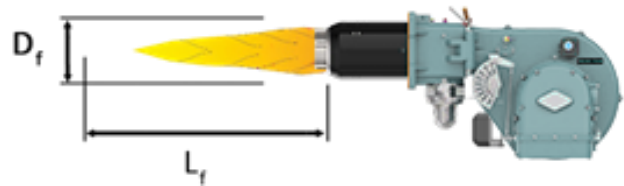
C: Coupling
G: Gauge
F: Gas or oil flame
ASV: Air damper servomotor
PA: Air pressure switch

Flame Dimension



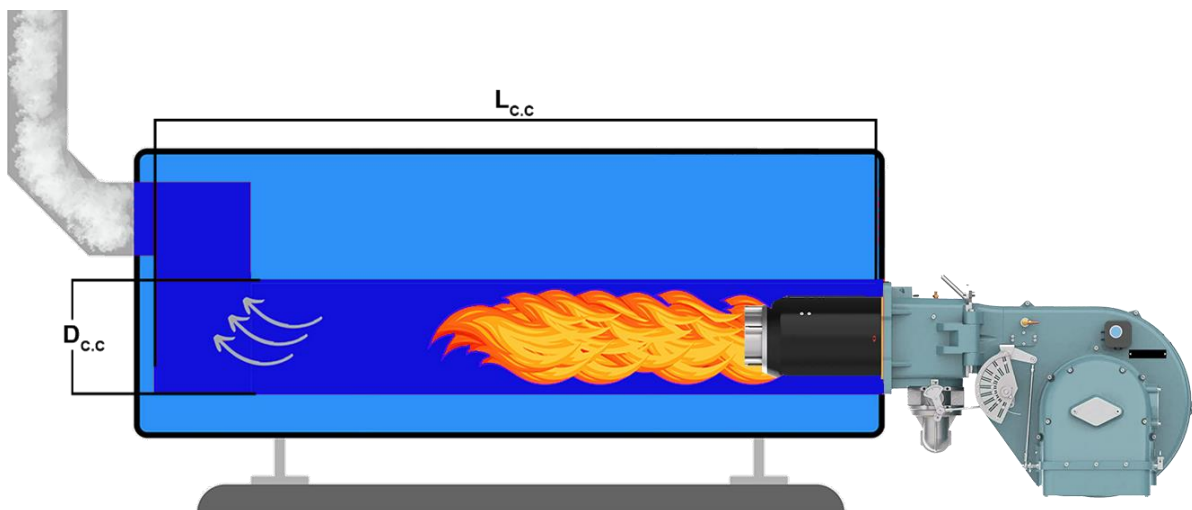
Note: Due to the possibility of changes in the flame dimensions because of variable geometry of combustion heads in the burners, the length and diameter of the burner flame are considered within a range of $\pm 5\%$.

The flame dimensions, which play an effective role in burner efficiency and influence their compatibility with the boiler combustion chamber geometry, are presented in the diagram above.



SUGGESTED COMBUSTION CHAMBER DIMENSIONS:

The TERMODA burners can be appropriately selected for all boilers designed according to the BS-2790, BS-855, EN-303, BS-EN 12953-3. It is recommended that a flame fill 90% of combustion chambers at its maximum output.



[illegible]



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