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## TECHNICAL SPECIFICATION

**Doc No: DSF-SPC-MEC-013**

Rev. 1

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# HIGH PRESSURE (HP) TRANSMISSION SYSTEMS

## BURNERS

JUNE 2021

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## 1. SCOPE

### 1.1 GENERAL

This Specification covers the minimum requirements for the design, fabrication and supply of natural gas draft burners. Burners are usually used for heating installations of natural gas combined with boiler systems, at Metering and Regulating Stations in the Greek Natural Gas Transmission System.

### 1.2 ADDITIONAL INFORMATION

Additional information may be given in the project's requirements, basic design documents and drawings, and should be read in conjunction with this Technical Specification.

Any conflict between requirements of this Technical Specification, basic design documents and drawings, Standards, Material Requisition and Datasheet shall be referred to Owner for clarification before proceeding with fabrication of the subject part.

The materials and elements of construction used shall be able to withstand the mechanical, chemical and thermal influences, which may occur during normal operation.

## 2. REFERENCES

Items/equipment to be supplied under this Specification shall comply with the requirements of the latest edition of the Codes, Standards, Specifications and Practices as applicable, except if specifically, modified hereafter:

### 2.1 REFERENCE DOCUMENTS

- Technical Specification DSF-SPC-MEC-014 [Boilers]
- Technical Specification DSF-SPC-QAC-003 [Noise control]

### 2.2 REFERENCE CODES AND STANDARDS

- ELOT EN 298 [Automatic gas burner control systems for Gas Burners and Gas Burning Appliances with or without fans]
- ELOT EN ISO 13850 [Safety of machinery - Emergency stop - Principles for design]



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- ELOT EN 746-1 [Industrial thermoprocessing equipment - Part 1: Common safety requirements for industrial thermoprocessing equipment]
- ELOT EN 746-2 [Industrial thermoprocessing equipment - Part 2: Safety requirements for combustion and fuel handling systems]
- ELOT EN 746-3 [Industrial thermoprocessing equipment - Part 3: Safety requirements for the generation and use of atmospheres gases]



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### **3. TECHNICAL REQUIREMENTS**

Burners shall be of natural or forced draft type and two stage type.


Burners shall be accessible without having to dismantle a major part of the boiler.

If burner is removable without using special tools, burner control device shall include a microswitch, which shuts off the gas supply if burner is dismantled.

Burners equipment shall as a minimum include:

- Block valve.
- Filter.
- Pressure regulator.
- Gas pressure failure shut-off device.
- Pressure gauge.
- Safety solenoid valve.
- Gas leak control device.
- 2 solenoid valves (fail-close in the event of power failure).
- Gas ignition device.
- Flame failure control device.

Burners shall be suitable for operation/installation under the following conditions:

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- Inlet pressure range at the block valve ahead of the pressure regulator: 100 – 35 mbar (gauge). Upset pressure is 200 mbar.
- Burner capacity shall be adjustable between 35% and 100% of full load.

The required heat capacity of burners will be nominal as shown in the relevant Process specifications, depending on the M/R station category in question.

Control device for burners shall include all equipment necessary for a safe and proper function. Control device shall at least include:

- Main switch.
- Controller.
- Control lamp.
- Push-button for reset.
- Auxiliary relays.
- Fuse element for the motor
- Motor starter with overload relay.
- Terminals for all cables.
- Potential free contacts for alarm purposes included contacts for flame failure and overload relay tripped.
- Controls for gas leak detecting device.
- Operation-time counter.
- Enclosure protection min IP 44.

The power supply will be 380V/220V + 10%/15%, 50 Hz +/- 2 Hz.

The noise level limit will be in accordance with **Technical Specification No. DSF-SPC-QAC-003**.

### 3.1 MINIMUM DERIVERABLE REQUIREMENTS

The following documentation / drawings are the minimum requirements for the deliverables by the Vendor, at three (3) copies, unless otherwise specified:



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- Detailed construction and assembly drawings including parts list detailing material standard and grade, item description, locations of outlets, etc.
- Design calculations, dimensions, etc. including completed material requisitions and datasheets.
- Burner control diagrams.
- Testing specification,
- Identification plate text (nameplate),
- Comprehensive operation, maintenance and reconditioning manuals in Greek and English,
- List of recommended tools, consumable spare parts, etc.,
- List of materials and certifying authorities.
- As-built drawings,
- Electronic files (word documents and/or AutoCAD documents as applicable and scanned PDF files) of all Documents, Drawings and Certificates.

The approved material shall also, if required, be approved by the relevant Greek authorities before construction is commenced. This approval shall be obtained by the Contractor and a copy of the approved material shall be forwarded to the Owner.