Ignition devices

Lighting up Innovation

TESI IGNITERS

Contents

Introduction 3

Applications & Products:

- Wall mounted Power Units 4
- Devices for Flares 7
- Ignition Spark Rods 9
- Portable Igniters 11
- Pilot Torches 13
- Ignition Cables 19
- Ignition Accessories 22

Notes 23

Proven leader in the industrial ignition industry, TESI manufactures a unique range of **HIGH ENERGY, HIGH VOLTAGE, PORTABLE IGNITION SYSTEMS** and **PILOT TORCHES** assuring ignition in any conditions, supplying major petrochemical players worldwide.

TESI is a globally renowned company and a **proven leader in the ignition industry**.
We design and manufacture best in class **ignition systems for gas, oil, coal and multi-fuel burners**, supplying major petrochemical, chemical and energy players at a worldwide level with state of the art devices.
Relying on **more than 30 years of expertise** and highly skilled technicians, TESI offers a unique range of new generation ignition systems, electrodes and spark plugs. Our mission is to provide our customers with the most suitable solutions, **specfically designed to satisfy their operational requirements and specifications**.

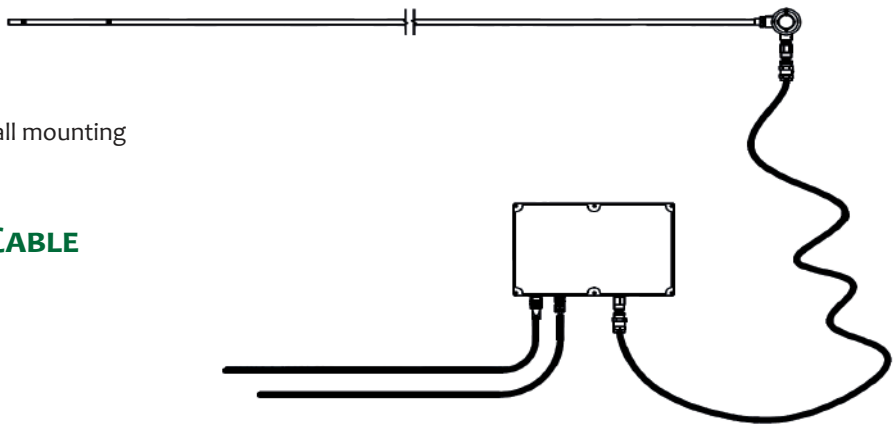
High Energy Ignition Systems

High Energy ignition systems assure **easy ignition in any conditions**, providing the following advantages:

- they **can replace traditional air/gas pilot torches**, providing the most reliable and cost-effective fuel ignition whether gas, light oil, diesel or heavy oil is used
- they are **not affected by humidity or liquids** (100% waterproof) or by dirty deposits left onto electrodes by burning processes
- they are **maintenance free**, offering **lower ignition costs** and high adaptability in all kind of burners, even replacing old traditional ignition devices
- they are safer for end users, with no risks of electric shocks.

The main components of the ignition system are:

- a **Power Pack Unit**
  installed in an enclosure box suitable for wall mounting
- a **High Energy Ignition Rod**
- a **High Voltage Connection Cable**



CE All TESI products are CE marked

High Energy Power Units and Enclosures

TESI ignition systems feature a high flexibility of applications, both in safe and hazardous areas.
According to the areas where ignition systems shall be installed, TESI can provide **POWER UNITS IN DIFFERENT TYPES OF ENCLOSURES,** suitable for **potentially explosive atmospheres** (**ATEX classified**):

XEC SYSTEM WITH EJB ENCLOSURE

Fixed and portable systems that can satisfy even the most critical applications for **hazardous areas II2G Ex d IIB+H2 IP66.**

XEC WITH GUB ENCLOSURE

Fixed and portable systems that can satisfy even the most critical applications for **hazardous areas II2G Ex d IIC IP66.**

XEC WITH SA ENCLOSURE

Fixed and portable systems that can satisfy even the most critical applications for **safe areas IP66.**

data subject to change without notice

TESI can provide **POWER UNITS** equipped with enclosure and fittings certified **IECEx , EAC - TR CU , CCOE - PESO, etc.**

Solid State High Energy Power Unit

TESI Solid State circuit is the most recent product in the ignition range.
It is **100% electrinic** and features an innovative technology which makes it the **MOST POWERFUL** ignition device available on the market.

Features

Extreme Power:
from 144 Watt (Joules per sec) to 250 Watt of delivered power

Maximized Operational Life:
sparks persist on the tip 20 times more (>600 µs).
Since a greater persistence of the spark usually causes faster wear for normal tips, the system comes with heavy-duty tips, which tests indicate to have an average life of 1.5 million sparks.

Ease of Lighting:
the solid state power unit can light all kind of Heavy Liquid Fuels in an extremely more effective way.

Constant Spark Frequency:
due to extremely customized power module designs.

Enhanced Durability:
no weare.

High Safety:
built-in red light flashing until capacitor holds residual charge.

Back up Spark Gap:
allows to never stop the unit even in case of failure.

Auto Protection:
in case of capacitor failure, spark tip damage/failure or ignition cable breaking, output shortcut, solid state module fault, transformer over-heating.

Space Saver:
The reduced overall dimension of the solid-state circuit enables to scale down the Power Unit by using a smaller enclosure.

Maintenance Friendly:
also thanks to an optional buit-in spark counter available

Standard High Energy Power Units

Standard High Energy Power Pack XEC 18-H

Standard high energy power units are suitable to light all gases and light oil in boilers, furnaces or gas turbines.
The output energy of up to 18 Joules provides powerful sparks ensuring ignition in any conditions and environments, with no risk of failure due to contaminants or humidity.

Input Voltage	115Vac 50Hz (60Hz on request)	230Vac 50Hz (60Hz on request)
Input Current	RMS 2,5 A / Max 9,5 A	RMS 3,6 A / Max 15,5 A
Input Power	160 W +/- 5%	320 W +/- 5%
Output Voltage	3000 V +/- 10%	
Output Energy	18 J each spark +/- 10%	
Duty Cycle (60°C)	20 sec ON - 40 sec OFF max 3 times 33%	
Mean Spark Frequency	2 sparks / second	
Operating Temperature	-5°C ÷ +60°C	-30°C* ÷ +60°C
Protection Grade	IP66	other options on request

* special execution

data subject to change without notice

High Energy Power Pack with Spark Check XEC 18-H SC

The latest innovation in TESI standard power units range is the development of a main board equipped with a **FEEDBACK SYSTEM** detecting the ongoing ignition process.

Input Voltage	115Vac 50Hz (60Hz on request)	230Vac 50Hz (60Hz on request)
Input Current	RMS 1,25 A / Max 7,5 A	RMS 1,95 A / Max 10,5 A
Input Power	250 W +/- 5%	395 W +/- 5%
Output Voltage	3000 V +/- 10%	
Output Energy	18 J each spark +/- 10%	
Duty Cycle (60°C)	20 sec ON - 40 sec OFF max 3 times 33%	
Mean Spark Frequency	3 sparks / second	
Operating Temperature	-20°C ÷ +60°C	-30°C* ÷ +60°C
Protection Grade	IP66	other options on request

* special execution

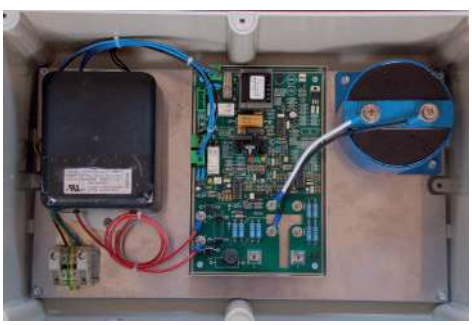
data subject to change without notice

Heavy Duty High Energy Power Units

Heavy duty high energy power units feature a considerably higher power compared to standard power units, and are able to **ignite diesel and heavy oil directly.**
They come in differentx configurations depending on **whether a higher power or spark frequency is required.**

Heavy Duty power unit in certified ATEX enclosure

Heavy Duty power unit in certified ATEX enclosure



Heavy Duty power unit in Safe Area enclosure

XEC - 10 Technical Data

Input Voltage	115 / 230 Vac 50 Hz (60 Hz on request)	
Input Current	max 10 A	RMS current ~ 4 A (at 24 sparks/sec)
Input Power	according to spark frequency	750 W (at 24 sparks/sec)
Output Voltage	1400 V +/- 10%	
Output Energy	10 J each spark +/- 10%	
Duty Cycle (60°C)	according to spark frequency	max 1 minute ON / min 2 minutes OFF max 3 subsequent sequences (at 24 sparks/sec)
Mean Spark frequency	24 sparks / second (adjustable on request)	
Operating temperature	-20°C ÷ +60°C	-30°C *÷ +60°C on request
Protection Grade	IP66	other options on request

data subject to change without notice

XEC - 15 Technical Data

Input Voltage	115 / 230 Vac 50 Hz (60 Hz on request)	
Input Current	max 5 A	RMS current ~ 3.5 A (at 4 sparks/sec)
Input Power	according to spark frequency	350 W (at 4 sparks/sec)
Output Voltage	1400 V +/- 10%	
Output Energy	15 J each spark +/- 10%	
Duty Cycle (60°C)	according to spark frequency	max 15 minutes ON / min 30 minutes OFF max 3 subsequent sequences (at 4 sparks/sec)
Mean Spark frequency	4 sparks / second (adjustable on request)	
Operating temperature	-20°C ÷ +60°C	-30°C *÷ +60°C on request
Protection Grade	IP66	other options on request

data subject to change without notice

XEC - 24 Technical Data

Input Voltage	115 / 230 Vac 50 Hz (60 Hz on request)	
Input Current	max 10 A	RMS current ~ 3.15 A (at 6 sparks/sec)
Input Power	according to spark frequency	550 W (at 6 sparks/sec)
Output Voltage	1400 V +/- 10%	
Output Energy	24.5 J each spark +/- 10%	
Duty Cycle (60°C)	according to spark frequency	max 8 minutes ON / min 16 minutes OFF max 3 subsequent sequences (at 6 sparks/sec)
Mean Spark frequency	6 sparks / second (adjustable on request)	
Operating temperature	-20°C ÷ +60°C	-30°C* ÷ +60°C on request
Protection Grade	IP66	other options on request

data subject to change without notice

* special execution

High Energy Ignition Modules XEC03H

TESI ignition modules are primarily intended for installation in electrical panels to ignite **ground and elevated flares**.
The positioning of the flares typically requires the ignition units power supply **to be installed far from the ignition rod.** This often makes it difficult to generate a powerful spark, because of the lenght of the power supply cable.
Also, since flares systems are responsible for the disposal of process gas in refineries and petrochemical plants, they need to be fitted with an **extremely reliable ignition system** that ensures **instant flare ignition on demand.**

Ignition Module XEC03H is specifically designed to provide a good spark at **very long distances**, with a power cable **up to 500 m long.** The new housing is filled with resin, in order to ensure **waterproof** performance under all conditions, which is particularly important in outdoor applications.

According to the areas where ignition systems shall be installed, TESI can provide Ignition Modules installed in different types of enclosures, fit to **potentially explosive atmospheres** (**ATEX classified**).

Technical Data

Power Supply Unit	
Input Voltage	115 - 230 Vac 50/60 Hz
Output Voltage	1000 VDC
Output Energy (per spark)	18 J +/- 10%
Mean Spark Frequency	2 sparks / second
Input Power	110 W
Duty CycLE	33% - max spark ON 1'

Enclosure	
Protection Class	IP65
Material	Powder Coated Steel
Dimensions	170 x 140 x 85 mm
Weight	5 kg

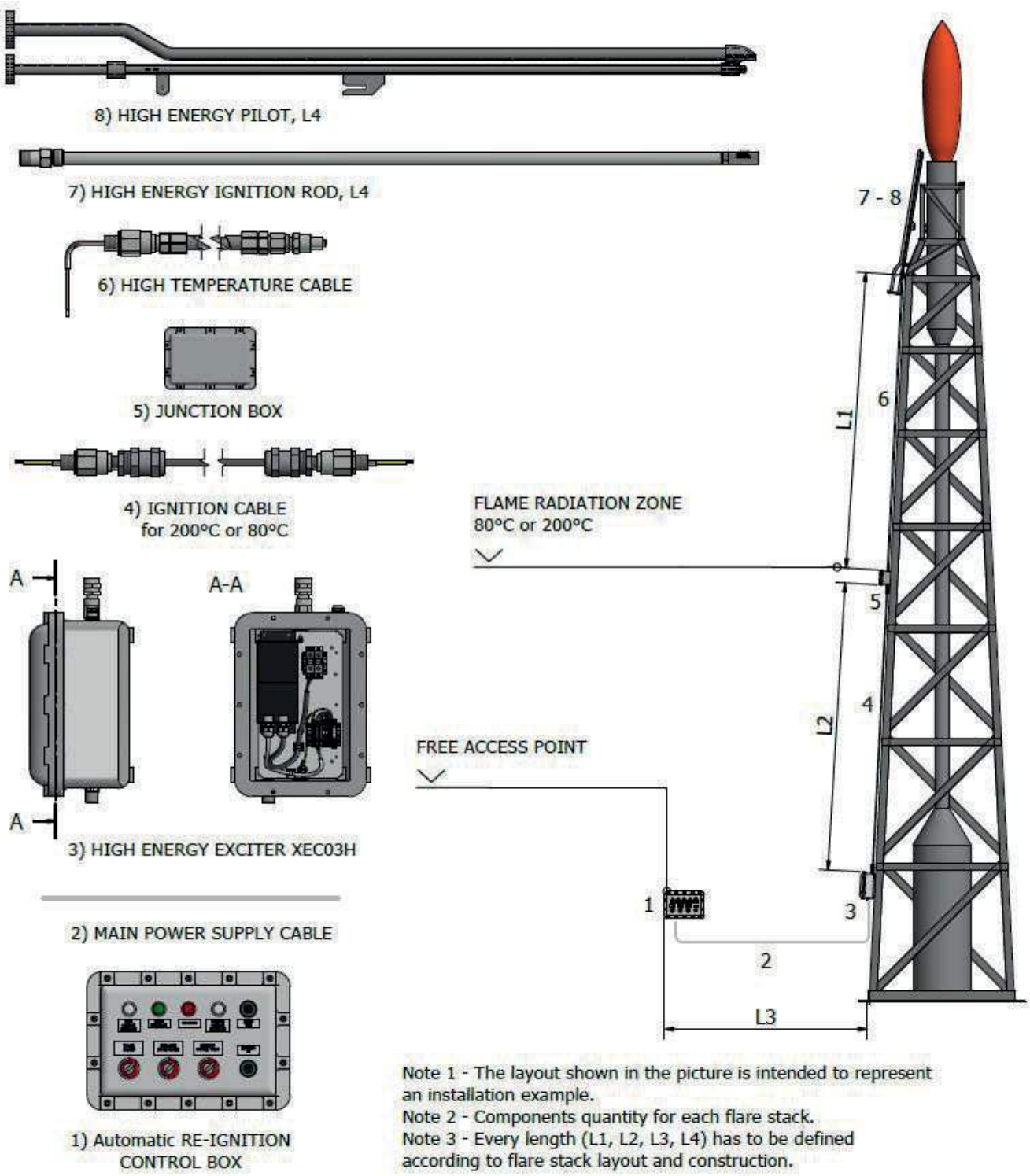
Additional Specifications	
In-Out Connections	2 cables 1 m long
Optional Input Voltage	12/24 Vdc on request

data subject to change without notice

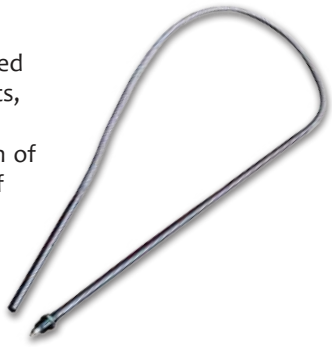
HIGH ENERGY IGNITION DEVICES FOR FLARE

Ignition modules are the core, but TESI designes **complete Flare Ignition Systems**, based on High Energy technology and suitable to ignite **all kind of flares**.

Our Flare Ignition Systems and devices are engineered for **precision** and **reliability**. From advanced **ignition controls** to high-performance flare tip pilot burners, our devices ensure safe and efficient flare operations in challenging environments both **in automatic or manual mode**.
Our offerings extend to **pilot torches** that feature **High Energy ignition rod**, integrated **flame detection** and **FFG outlets** (Flame Front Generator). These special pilot torches together with the **RE-IGNITION automation** inside the control box play a pivotal role in efficient gas flaring, providing sure, safe and eficient ignition while **minimizing emissions** and **ensuring compliance** with stringent environmental regulations.



High Energy Ignition Spark Rods

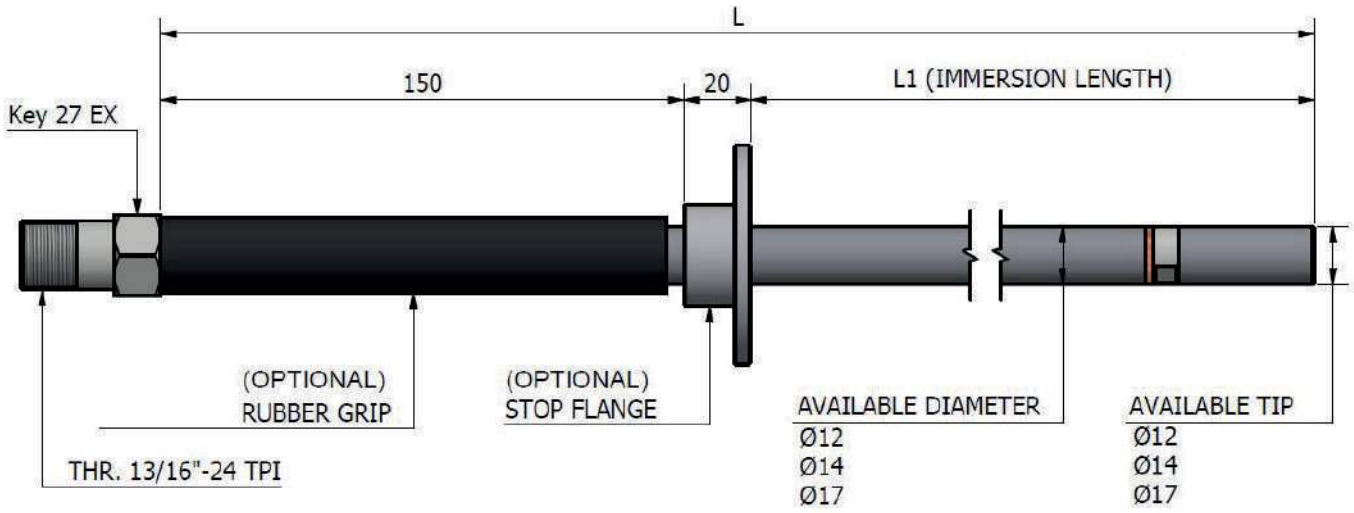


TESI product range includes a broad selection of ignition rods.
The recent and ever increasing demand for **direct ignition of main burners** led TESI to develop a dedicated range **specifically designed for overexposure to high temperatures**. This range, allowing to replace pilots, leads also to a considerable reduction in the plants manufacturing and operational costs.
In order to satisfy this operational need for direct ignition of main burners, TESI introduced a selection of special solutions alongside standard devices, that makes them suitable to ignite directly a wide range of fuels including natural gas, fuel gas, diesel, light fuel oil (LFO) and heavy fuel oil (HFO):

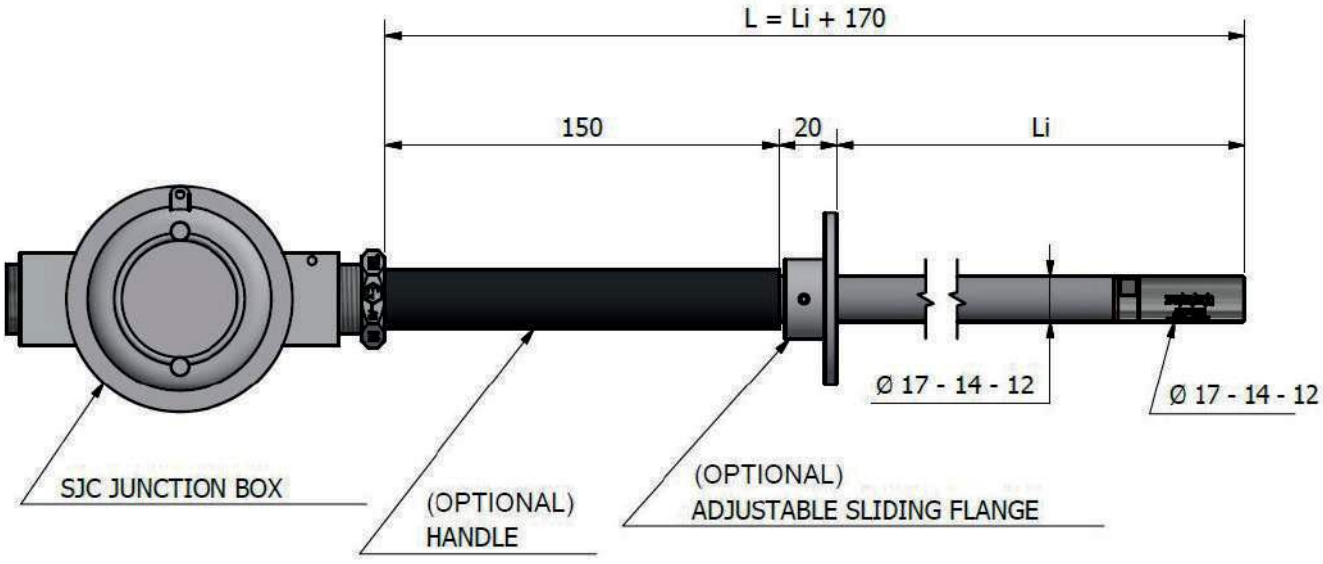
- **side or coaxial retractable prenumatic devices** protecting tips from dirt and flames once sparking is finished
- **tilting flexible rods** to follow the main burner's angle
- **guide pipes**

Our key strength is the ability to provide **CUSTOM CONFIGURATIONS.**
TESI **utmost flexibility** is highly appreciated among our customers, since it allow us to **meet their real requirements**.
TESI ignition rods range comes in three main standard diameters: 12 / 14 / 17 mm; **length and diameter of the igniter are customizable**, and various accessories are available in order to satisfy any operational need.

Safe Area Ignition Rod



Ex-d Ignition Rod



Note: for igniter 12 mm diameter, spark tip will be welded and not detachable

Features

High reliability
The powerful sparks ensure reliable ignition in all conditions and environments, removing any risks of failure due to contaminants or humidity.

Low maintenance
TESI self-cleaning spark tips guarantee a successful ignition while reducing maintenance efforts. The high power of the sparks cleans the surface of the tip during every ignition.
Igniters and flame ionization electrodes can be easily disassembled, without pulling out the entire pilot.

Easy tip replacement
Being spark tips screwed onto the end of the rod, they can be replaced quite easily, reconditioning the system very quickly and reducing costly downtime.

Accessories & spare parts
A wide range of accessories and spare parts on stock can be quickly supplied and allows for customization of the systems according to customer specifications.

Compact design & flexibility
Dimension and shape can be fully customized to match customer requirements.

High Energy Standard Replaceable Spark Tips

HERC 17 TIPS - EXTERNAL DIAMETER 17MM		
Code	Operating Temperature	features
HERC17	760°C (max 1000°C) 1400°F (max 1832°F)	standard
HERC17 HT	1000°C 1832°F	high temperature
HERC17 HD	760°C (max 1000°C) 1400°F (max 1832°F)	increased durability
HERC17 HD HT	1000°C 1832°F	high temperature increased durability

HEM 17 TIPS - EXTERNAL DIAMETER 17MM REDUCED TO 12MM		
Code	Operating Temperature	features
HEM17	760°C (max 1000°C) 1400°F (max 1832°F)	standard
HEM17 HT	1000°C 1832°F	high temperature

HEM 14 TIPS - EXTERNAL DIAMETER 14MM REDUCED TO 12MM		
Code	Operating Temperature	features
HEM14	760°C (max 1000°C) 1400°F (max 1832°F)	standard
HEM14 HT	1000°C 1832°F	high temperature

data subject to change without notice

Ideal For:

Outdoor	Waterproof	Gas	Heavy Oil
√	√	√	√

High Energy Portable Igniters

TESI portable ignition devices are designed to ignite burners without an individual pilot torch or electrode assembly.
They are the best back up solution to solve existing igniters failures or in case of emergency.
Thanks to a solid design and low voltage input, the operator can handle the rod quite easily during maintenance, without any risk of breaking the insulators and avoiding dangerous electric shocks.

XE 18 PB 06

- No need to be linked to the main power supply
- Internal 12 V 7.2 Ah rechargeable battery
- Built-in automatic charger
- High Energy Spark generated
- High efficiency, low battery consumption
- Suitable to ignite all kinds of fuel even in tough applications

XE 18 PB 06 Technical Data

Power Supply Unit	
Input Voltage	12 Vdc
Output Energy (per spark)	18 J
Spark Frequency	~ 4 sparks/second
Duty Cycle	100% (suggested max continuous spark time 30')
Battery Runtime	up to 41900 sparks (@50°C, standard duty cycle)

Enclosure	
Protection Class	IP65
Material	aluminium alloy
Operating Temperature	-20°C ÷ +50°C
Dimensions	344 x 272 x 110 mm
Weight	5,7 kg

Battery Charger	
Input Voltage	115 / 230 Vac 50 Hz/60Hz
Recharge Output Voltage	13.5 VDC

Igniter	
Material	stainless steel
Operating Temperature	760°C (max 1000°C)
Weight	0.8 Kg per meter of length
Length	customizable, according to specifications
Tip	High Energy, easily replaceable 17 mm (12/14 mm on request)
Handle	rubber, 150 mm as standard, 90° on request
Optional	adjustable stopping flange

Connection Cable	
Material	flexible stainless armoured cable
Fittings	bend or straight
Operating Temperature	-60°C ÷ +180°C (200°C for short time)
Weight	0.4 Kg per meter of length
Length	customizable, according to specifications

data subject to change without notice

NOTE:
In case of frequent use, you can leave the charging circuit connected to the mains power supply (115 / 230VAC), in Not Classified Areas, provided you keep the ½ '' gas evacuation cap completely open. Once maximum charge is reached, the charger will provide an appropriate holding current.
After repositioning the cap and the charging cable, you have an ignition system always ready for use.
If you're leaving the device unused for an extended period of time or in case of storage, disconnect the battery from the electronic circuit.

XE 18 PBA 04 ATEX
CERTIFIED ATEX II2G Ex d IIC T5 IP66

ALSO AVAILABLE WITH CERTIFICATION:
- IECEx
- EAC - TC RU
- CCOE - PESO

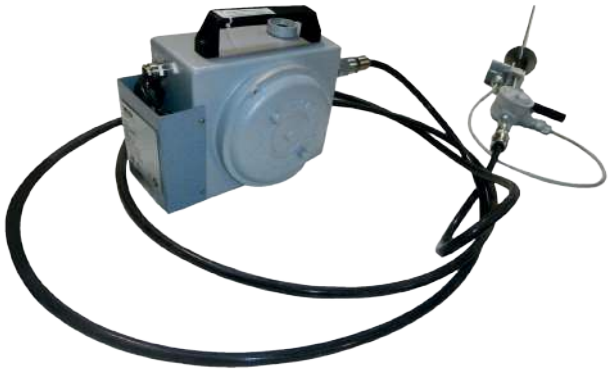
TESI portable ignition devices are designed to ignite burners without an individual pilot torch or electrode assembly. They are the best back up solution to solve existing igniters failures or in case of emergency. Thanks to a solid design and low voltage input, the operator can handle the rod quite easily during maintenance, without any risk of breaking the insulators and avoiding dangerous electric shocks. Energy consumption is very low, it can be used with a wide flexible service and doesn't require frequent charging.

- NO NEED TO BE LINKED TO THE MAIN POWER SUPPLY
- INTERNAL 12 V 3.6 Ah Ni-Cd RECHARGEABLE BATTERY
- BUILT-IN AUTOMATIC CHARGER
- HIGH ENERGY SPARK GENERATED
- HIGH EFFICIENCY, LOW BATTERY CONSUMPTION
- SUITABLE TO IGNITE ALL KINDS OF FUEL EVEN IN TOUGH APPLICATIONS

XE 18 PBA 04 II2G Ex d IIC T5 IP66 TECHNICAL DATA

POWER SUPPLY UNIT		
INPUT VOLTAGE	12 VDC	
OUTPUT ENERGY (PER SPARK)	18 J	
SPARK FREQUENCY	~ 4 sparks/second	
DUTY CYCLE	100% (suggested max continuous spark time 30')	
BATTERY RUNTIME	up to 12400 sparks (@60°C , standard duty cycle)	
OPERATING TEMPERATURE	-20°C ÷ +60°C	* -30°C ÷ +60°C
ENCLOSURE		
PROTECTION CLASS	II 2G Ex d IIC T5 IP66	
MATERIAL	aluminium alloy	
DIMENSIONS	355 x 270 x 165 mm	* 355 x 325 x 174 mm
WEIGHT	10 kg	* 15 kg
BATTERY CHARGER		
INPUT VOLTAGE	115 / 230 VAC 50 /60 Hz	
INPUT CURRENT	50 / 25 mA	
RECHARGE OUTPUT VOLTAGE	13.5 VDC	
IGNITER		
MATERIAL	stainless steel	
ELECTRICAL CONNECTION	Aluminium Junction Box Ex d IIC IP66 included	
OPERATING TEMPERATURE	760°C (max 1000°C)	
WEIGHT	0.8 Kg per meter of length	
LENGTH	customizable, according to specifications	
TIP	High Energy, easily replaceable 17 mm (12/14 mm on request)	
HANDLE	rubber, 150 mm as standard, 90° on request	
OPTIONAL	adjustable stopping flange	
CONNECTION CABLE		
MATERIAL	flexible stainless armoured cable	
INSULATION	external silicon rubber	
FITTINGS	1/2 NPT, metric on request	
OPERATING TEMPERATURE	silicon cable only: -40°C ÷ +180°C	
WEIGHT	0.4 Kg per meter of length	
LENGTH	customizable, according to specifications	

data subject to change without notice



NOTE:
In case of frequent use, you can leave the charging circuit connected to the mains power supply (115 / 230VAC), in Not Classified Areas, provided you keep the ½ '' gas evacuation cap completely open. Once maximum charge is reached, the charger will provide an appropriate holding current.
After repositioning the cap and the charging cable, you have an ignition system always ready for use.
If you're leaving the device unused for an extended period of time or in case of storage, disconnect the battery from the electronic circuit.

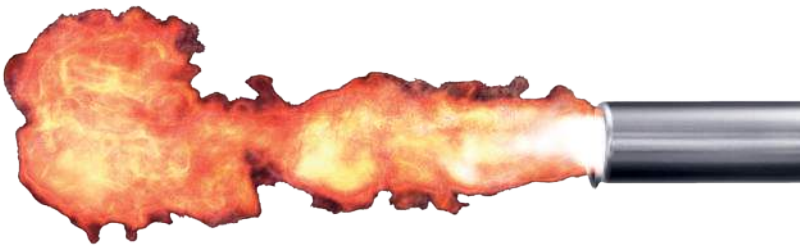
Pilot Torches and Gas Fired Igniters

TESI ignition devices include a wide range of pilot burners, available with:

- built-in **High Energy or High Voltage ignition rod**
- **flame monitor device** by optical or ionization rod
- thermocouples

Standard models can be personalized to match the Customer's technical specifications both for new installations and revampings. High reliability and low maintenance, compact design and flexibility, easy and fast maintenance are main points of our products, together with large range of performances and capacity allow to find the right solution for every applications.

- **Compact design and flexibility**: dimensions and shape can be customized to match Client's request
- **Easy and fast maintenance:** ignition and flame ionization devices can be easily disassembled without pulling ut the complete pilot
- **High Voltage Electrode or High Energy Igniter** offering most reliable and cost-effective ignition, not affected by humidity, water and dirt
- **Inflated or self aspirated air** configuration



Accessories

TESI pilots include a wide range of accessories available:

- **Venturi system** to inspirate air
- **Flanges** - All TESI pilot torches can come fitted with custom flange systems, choosen according to Customers' specifications, requirements and applications
- **Retraction devices** - TESI can provide side or coaxial retractable pneumatic devices protecting tips from dirt and flames once sparking is finished
- **Scanner amplifier** - Customers can choose to replace the ionization rods only with UV or IR scanner amplifiers available on the market

TESI pilot burners range includes: **GAS, OIL, DUAL FUEL PILOT BURNERS.**

Model TP15

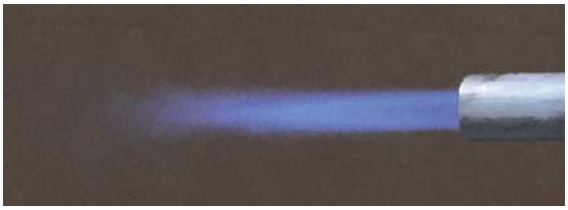
TP15 - Technical Data

CONFIGURATION	Self Aspirated air (venturi)		Inflated air	
INSTRUMENTATION	High Voltage monoelectrode		High Voltage monoelectrode	
FUNCTION	Ignition	Ignition + Ionization	Ignition	Ignition + Ionization
CODE REFERENCE	TP15/L*/V		TP15/L*	
DIAMETER	15 mm			
HEAT RELEASE	2 ÷ 7 kW	**GAS VOLUME FLOW**	0,21 ÷ 0,73 m³/h @ 20 mbar	
FLAME LENGTH	up to 100 mm			

* Length [mm] on demand

Data subject to changes without notice

Model TP25



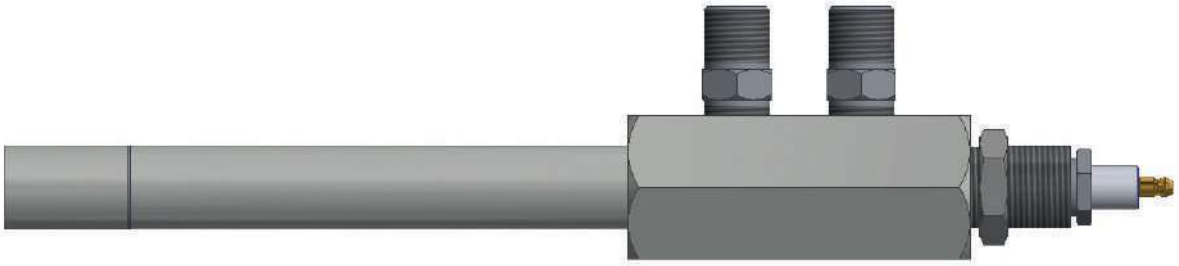
TP25 - Technical Data

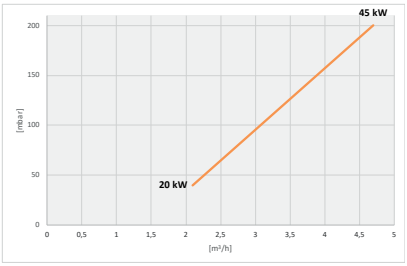
CONFIGURATION	Self Aspirated air (venturi)		Inflated air	
INSTRUMENTATION	High Voltage monoelectrode		High Voltage monoelectrode	
FUNCTION	Ignition	Ignition + Ionization	Ignition	Ignition + Ionization
CODE REFERENCE	TP25/L*/V		TP25/L*	
DIAMETER	25 mm			
HEAT RELEASE	4 ÷ 15 kW	**GAS VOLUME FLOW**	0,42 ÷ 1,56 m³/h @ 50 mbar	
FLAME LENGTH	up to 300 mm			

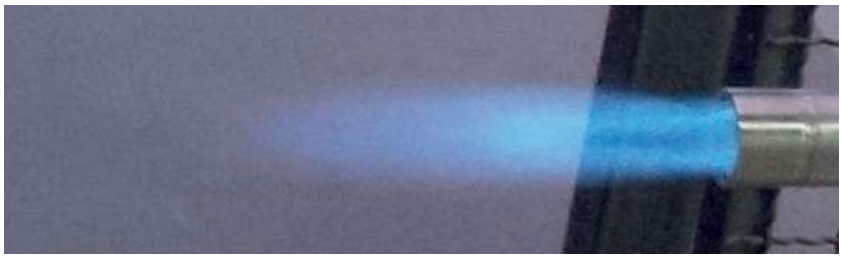
* Length [mm] on demand

Data subject to changes without notice

Model TP32







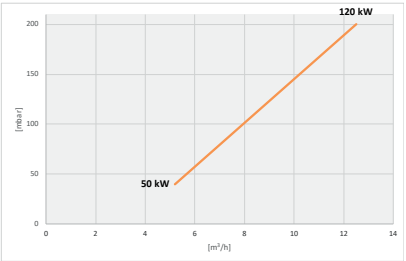
TP32 - Technical Data

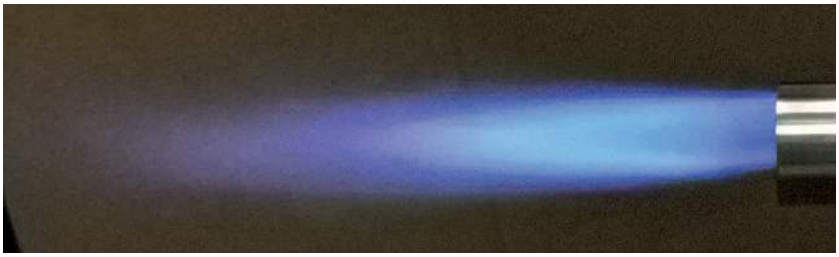
CONFIGURATION	Self Aspirated air (venturi)		Inflated air	
INSTRUMENTATION	High Voltage monoelectrode		High Voltage monoelectrode	
FUNCTION	Ignition	Ignition + Ionization	Ignition	Ignition + Ionization
INSTRUMENTATION	High Energy igniter Ø12 - Ø14 mm		High Energy igniter Ø12 - Ø14 mm	
FUNCTION	Ignition		Ignition	
CODE REFERENCE	TP32/L*/V		TP32/L*	
DIAMETER	26,7 ÷ 33,4 mm			
HEAT RELEASE	20 ÷ 45 kW			
FLAME LENGTH	up to 500 mm			

* Length [mm] on demand

Data subject to changes without notice

Model TP38





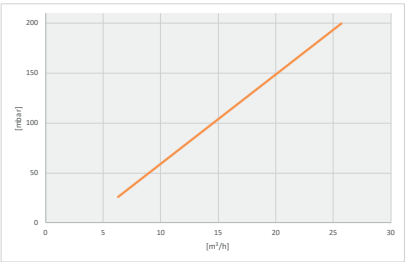
TP38 - Technical Data

CONFIGURATION	Self Aspirated air (venturi)		Inflated air	
INSTRUMENTATION	High Voltage monoelectrode		High Voltage monoelectrode	
FUNCTION	Ignition	Ignition + Ionization	Ignition	Ignition + Ionization
INSTRUMENTATION	High Energy igniter Ø12 - Ø14 mm		High Energy igniter Ø12 - Ø14 mm	
FUNCTION	Ignition		Ignition	
CODE REFERENCE	TP38/L*/V		TP38/L*	
DIAMETER	33,4 ÷ 48,3 mm			
HEAT RELEASE	50 ÷ 120 kW			
FLAME LENGTH	up to 600 mm			

* Length [mm] on demand

Data subject to changes without notice

Model TP60



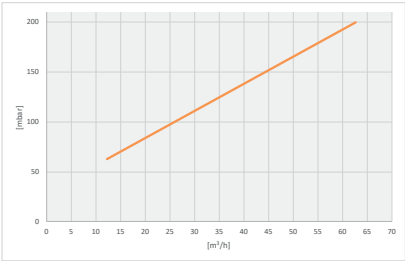
TP60 - Technical Data

CONFIGURATION	Inflated air		
INSTRUMENTATION	High Voltage monoelectrode		High Voltage electrode + Ionization rod
FUNCTION	Ignition	Ignition + Ionization	Ignition + Ionization
INSTRUMENTATION	High Energy igniter up to Ø17 mm		High Energy igniter up to Ø17 mm + Ionization rod
FUNCTION	Ignition		Ignition + Ionization
CODE REFERENCE	TP60/L*		
DIAMETER	60 mm		
HEAT RELEASE	up to 250 kW		
FLAME LENGTH	up to 1200 mm		

* Length [mm] on demand

Data subject to changes without notice

Model TP76



TP76 - Technical Data

CONFIGURATION	Inflated air		
INSTRUMENTATION	High Voltage monoelectrode		High Voltage electrode + Ionization rod
FUNCTION	Ignition	Ignition + Ionization	Ignition + Ionization
INSTRUMENTATION	High Energy igniter up to Ø17 mm		High Energy igniter up to Ø17 mm + Ionization rod
FUNCTION	Ignition		Ignition + Ionization
CODE REFERENCE	TP76/L*		
DIAMETER	up to 76 mm		
HEAT RELEASE	up to 600 kW		
FLAME LENGTH	up to 2000 mm		

* Length [mm] on demand

Data subject to changes without notice

Ignition Cables

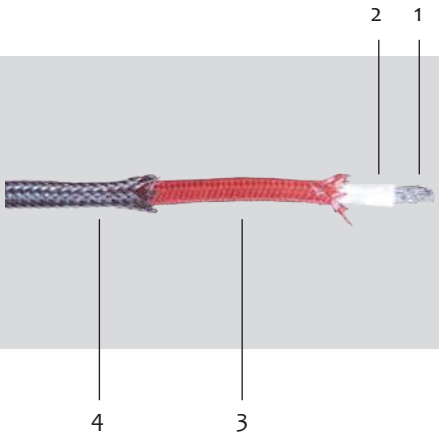
TESI connection cables range includes:

Armoured High Temperature Cable
This high voltage armoured cable has a single core copper wire and flat stainless steel braid (AISI 304). It is high temperature resistant, non combustible, oil resistant, alogen free and higly flexible.

Armoured High Energy Cable
This high voltage double core armoured cable has a flat stainless steel braid (AISI 304). It is non combustible, oil resistant, alogen free, higly flexible and suitable also for ATEX areas.

Safe Area Armoured High Voltage Cable
This cable is specifically designed according to the requirements of each ignition box and ignition rod, in order to meet in the best possible way customers operational needs.It is also available in High Temperature configuration.

Armoured High Temperature Cable



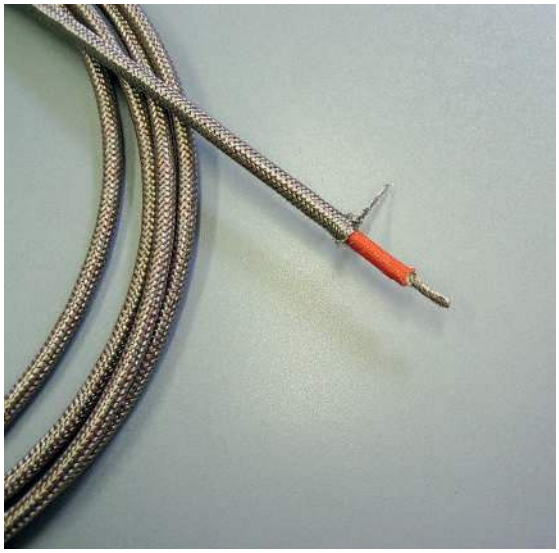
Design

1) Conductor (Nickel plated copper)
2) Insulation (Mica tape, double layer)
3) Insulation (PTFE impregnated with glass fibre braiding 3.9 ± 0.10 mm)
4) Insulation (Stainless steel braid armour)

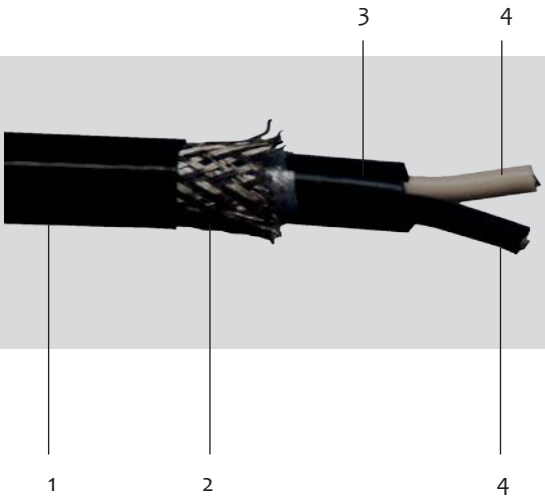
Technical Data

Product reference	RV 2.5 mmq + ARMOUR
Section	2.5 mmq
Stranding	50 x 0.25 mm
External Diameter	4.40 mm ± 0.10 mm
Voltage Rating	600 Vac / 1000 Vdc
Dielectric Strength	4000 Vdc - 100%
Resistance at 20°C	8.21 Ohm / Km
Temperature Range	Continuosly -60°C +400°C, intermittent +750°C, peak +1565°C

data subject to change without notice



Armoured High Energy Cable



Design

1) Silicon Rubber Jacket (black color)
2) Armour AISI 304 strands braid
3)Silicon Rubber Filling Jacket
4) Conductors HE (white) - R (black)

This high voltage double core armoured cable has a flat stainless steel braid (AISI 304).
It is non combustible, oil resistant, alogen free, higly flexible and suitable also for ATEX areas.

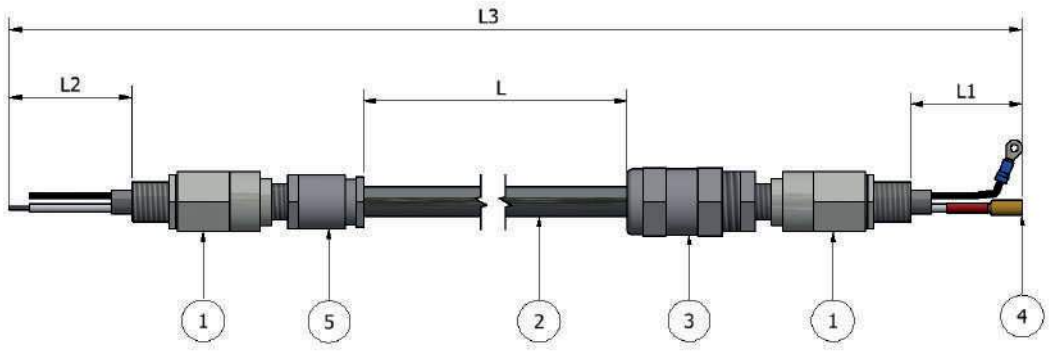
Technical Data

Product reference	CAR 2/560
External Diameter	15.00 mm ± 0.5 mm
Voltage Rating	4500 Vdc / 3200 Vac
Conductors	2 x 2.5 mmq stranded tin coated copper 50 x 0.25 mm, silicon rubber insulation 4.9 ± 0.1 mm, white and black colour
Temperature Range	-50°C / + 180°C for short period MAX +200°C
Flammability	according to IEC 60332-1-2
Resistance at 20°C	8.21 Ohm / Km
Reference Documents	according to EN 50363, IEC 60502, IEC 60092, EN 50525, EN 50395, EN 50396, IEC 60332-1-2, EN 50143, ASTM D624, IEC 60228, IEC 60754

\data subject to change without notice

L	L1	L2	L3
+/- 50 mm	+/- 10 mm	+/- 10 mm	+/- 70 mm
on request	200 mm	400 mm	L +850 mm

PART	QUANTITY	DESCRIPTION
1	2	3 pieces union fitting 1/2" NPT (others on request)
2	1	Armoured cable CAR 2/560
3	1	PAP cable gland 1/2"
4	1	Connector TMGS
5	1	Cable gland 1/2"



Safe Area Armoured high voltage Cable

DN 10 (3/8") High Voltage Cable

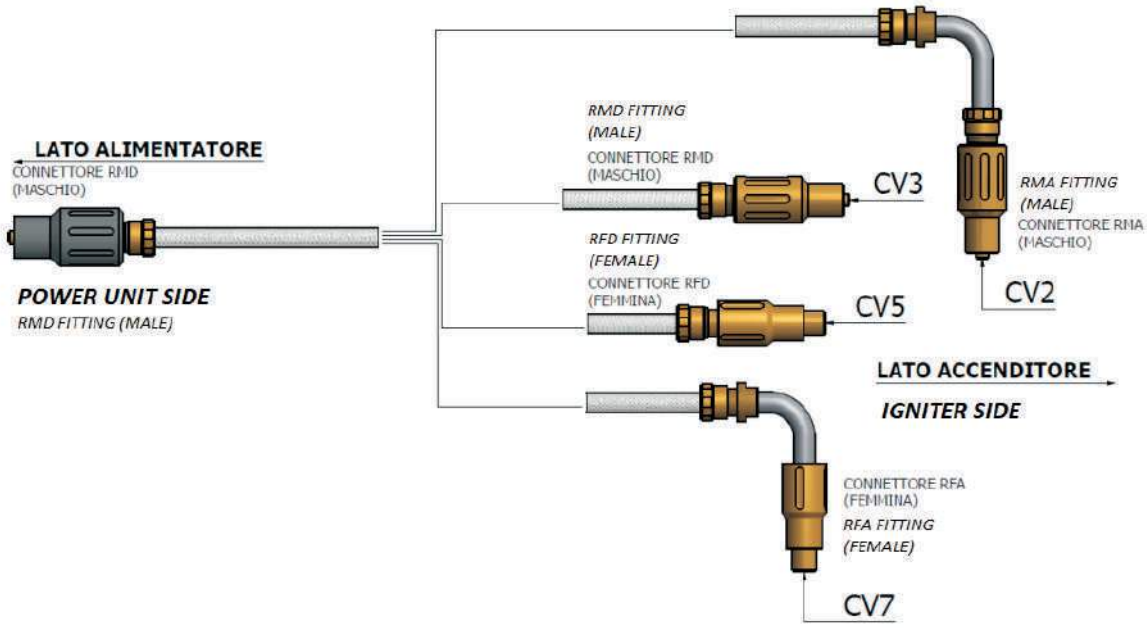
The connection cable between the high energy exciter and the ignition electrode consists of a conductor for high voltage inserted in a PTFE conduit, reinforced with a stainless steel braid.
It is suitable for outdoor use at operating temperatures between -60°C and +180°C (200°C maximum working temperature for short periods).

Outer Tube

Material	PTFE hose core reinforced by a braid of stainless steel high tensile strength AISI 304 wire
Minimum Bending Radius	40 mm
Type of Protection	Weather events, liquids and powders. Resistant to acids, oils and gases.

The electrical condutor is composed of a 1.5 mmq stranded tin coated copper insulated with Fluorinated Ethylene Propylene (or FEP), a 1.5 mmq tinned copper flat braided and an external tin coated copper strands braid (coverage 90%) min).
It is suitable for 4 KVdc high voltage.

Fittings can be straight or elbow type, male or female (11/16" or 13/16" UNEF-24tpi). Fittings for the CP1/CP2 connector mounted on exciter's enclosure is always a male type.



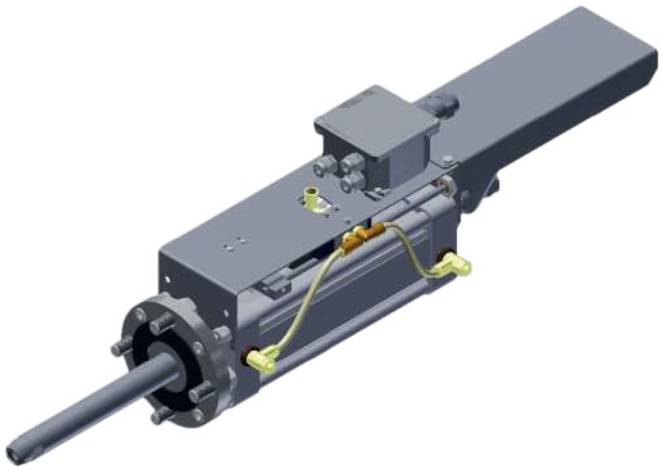
Cables can be ordered with the above references and with indication of the length.
DN10 is also available in High Temperature configuration, upon request.

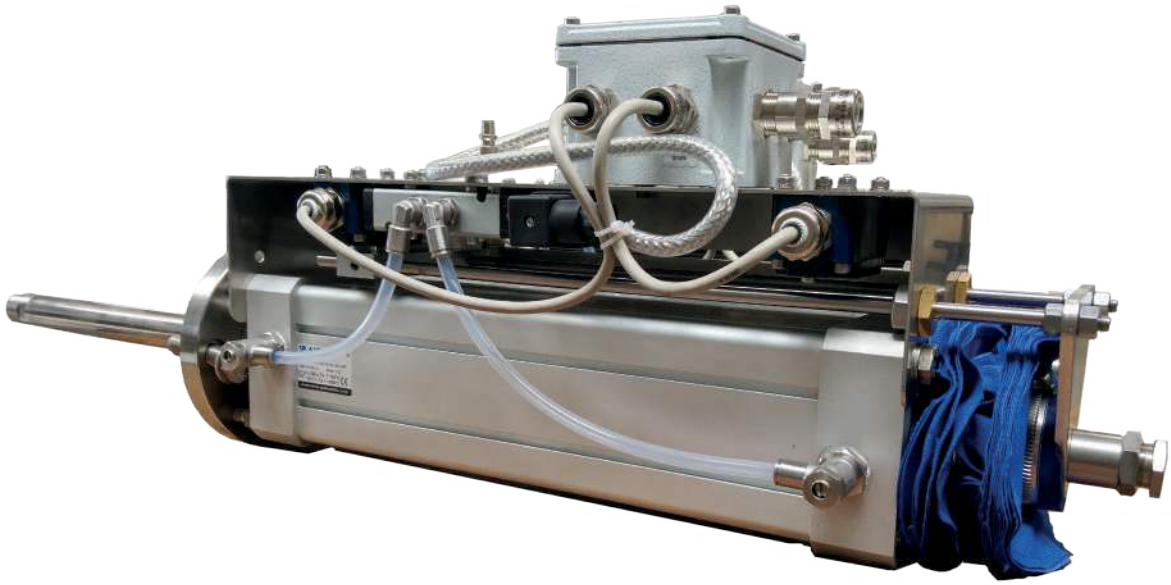
PNEUMATIC COAXIAL RETRACTION UNIT

In order to prevent tips from flames and corrosive atmospheres (for example in sulfur burners) TESI developed a **smart and compact retractable device** that can be easily mounted on standard ignition rods. This device allows retraction of the spark tip in a protected area of the combustion chamber, once sparking is finished. On request, **ATEX executions are available.**

ACTUATOR TYPE	Pneumatic
ACTUATOR MATERIAL	Aluminium Cylinder, SS Rod, Viton Seals (SS cylinder on request)
ACTUATOR STROKE	100 ÷ 500 mm
VALVE TYPE	5-way / Single Coil (or as required)
SOLENOID VOLTAGE	115 VAC, 230 VAC, 24 VDC, 48 VDC
SOLENOID CASING	IP66 - II2GD Ex d IIC for ATEX execution
JUNCTION BOX	Plastic or Aluminium, Factory Wired
JB PROTECTION CLASS	IP 66 / NEMA 4
TEMPERATURE RATING	-5 to 70°C (or as required)
SPEED CONTROL	2 Needle valves
LIMIT SWITCHES	2 Total, inserted / retracted
LIMIT SWITCH CASING	IP66 - II2GD Ex i IIC for ATEX execution

data subject to change without notice





MORE ACCESSORIES

With the aim to meet even the most demanding operational requirements, TESI developed a **wide range of accessories and configurations**, including:

- insertion switches
- mounting flanges
- 90° handles
- rubber handles and stopping flanges
- ball joints
- positioning sensors
- manual retraction devices
- remote push bottons

NOTE:

ITALY
TESI IGNITERS S.r.l.
Headquarters
Via Piave, 20/13
20071 Vermezzo con Zelo (MI) - ITALY
T +39 02 9440501

CHINA
DAEMAR Heating Technology Co. Ltd
Unit 501, Building 1
Jia 12 Jiuxianqiao Road
Chaoyang District, Beijing - CHINA
M +86 13 911197263
M +86 13 426335768

USA
TESI Group, LLC
10617 Jefferson Chemical Rd
Conroe, TX 77031 - USA
T +1 936 441 5678
F +1 936 756 5566

UAE
TESI Middle East
Plot 1K-20#W-1 | PO Box 50865
Al Hamriyah Free Zone, Sharjah - UAE
T +971 6 5667114
F +971 6 5668115
M +971 543 733958

info@tesigniters.com
www.tesigroup.com

TESI
IGNITERS