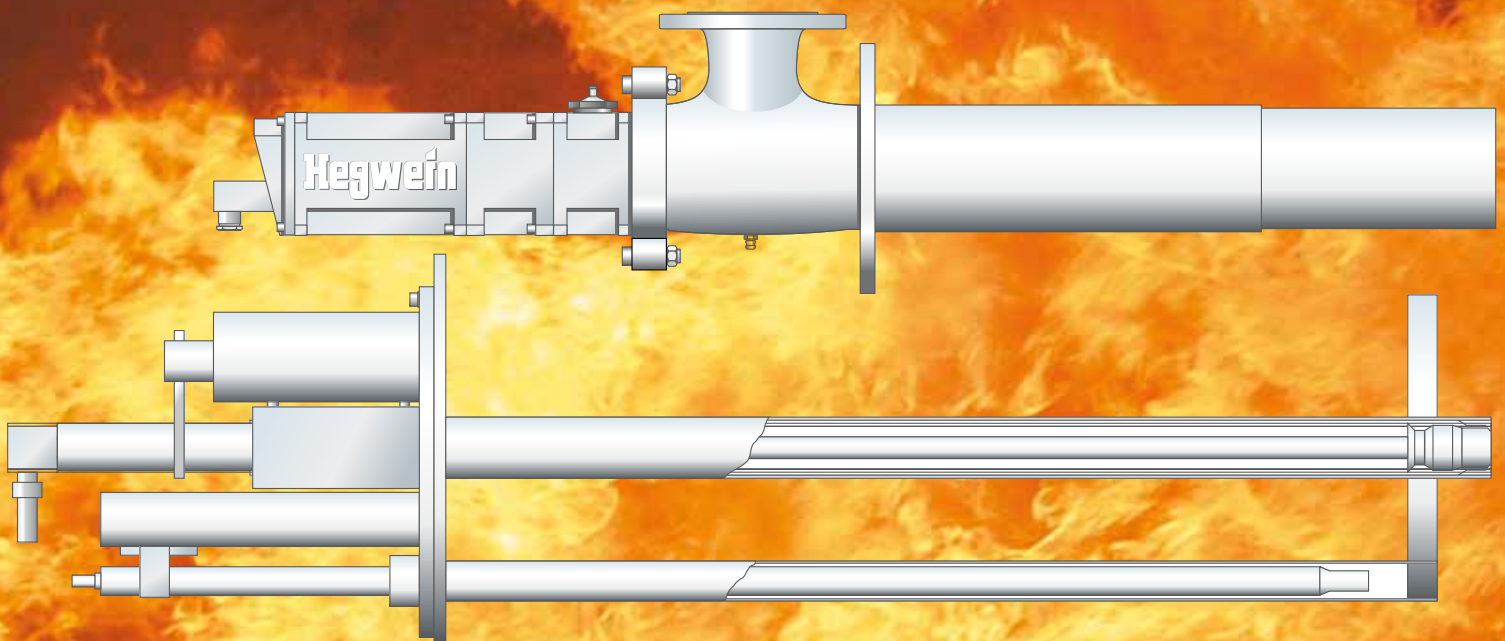


# Oil Fired Igniters, Pilots and Oil Guns for Power Plants and Utility Boilers



## Overview

Hegweïn Fuel Oil Igniters with Lower Heat Release  
 Hegweïn Dual Fuel Igniters  
 Hegweïn Fuel Oil Igniters for Hazardous Areas

- Compact design with integrated ignition transformer and flame monitor/burner control
- Built-in flame ionization electrode, ideally located
- No high-voltage cable required on site
- Guaranteed electromagnetic compatibility
- Rugged, low-maintenance design
- Sizes ranging from 100 kW to 3.6 MW (333,000 BTU/hr to 12,000,000 BTU/hr)
- Custom tube lengths available in 10-mm increments
- For extra light fuel oil (diesel). Dual fuel igniters can also handle either propane/butane or natural gas
- Extremely tight and long pilot flame - no automatic retraction system typically required
- Class 1, 2 or 3 igniters according to NFPA also available
- Smoke free flame
- Also available for marine diesel operation.

Hegweïn Oil Guns

- Immediate light-up
- Even spray pattern due to a special nozzle design proved in various applications
- Optimized mixing of fuel oil and combustion air for complete burn-out
- Stable flame with almost smoke-free combustion and low emissions
- Taylor-made to clients requirements:
  - length
  - wirler diameter
  - mounting plate dimensions
- Reliable operation.

Please request our detailed brochure on oil and dual fuel fired igniters.

## Selection Table based on Heat Release, Flame Length, Tube Diameter and Mode of Operation

Heat release in oil mode	max. 100 kW	max. 300 kW	max. 1000 kW	max. 3600 kW	max. 1000 kW	max. 1000 kW
Heat release in gas mode	-	-	-	-	max. 400 kW	max. 1000 kW
Flame length in oil mode	max. 500 mm	max. 750 mm	max. 2200 mm	max. 3000 mm	max. 2000 mm	max. 2500 mm
Flame length in gas mode	-	-	-	-	max. 1500 mm	max. 2000 mm
Tube diameter	50 mm	70 mm	90 mm	160 mm	90 mm	135 mm
• in oil mode air atomization	●	●	●	●	●	●
• with integrated spark transformer and flame monitor • for intermittent operation (in oil mode) • for continuous operation (in gas mode)	ZAEL0...	ZAEL1...	ZAEL2...	ZAEL4...	ZAZL2...	ZAZL3...
• explosion proof igniter head für Zone 1 / for zone 1, IP65 standard	ZAVEX/EL0...	ZAVEX/EL1...				
• explosion proof igniter head in II 3G EEx nC IIC T5 for zone 2, IP65 standard	ZXAEL0...	ZXAEL1...	ZXAEL2...	ZXAEL4...		

### Questions regarding the proper selection of an igniter?

Request our **Basic Technical Information**. You will find valuable references to the selection of a suitable igniter and its integration into the main burner. Various plant photographs show the broad palette of the possible applications of our igniters and pilots in all fields of the industry.

## Check List for an Igniter Inquiry

### Plant Specification

Kind of boiler or furnace:	.....
Combustion system (e.g. fluidized bed, flue gas reheating/duct burners etc.)	.....
Kind of burner (single fuel or multi fuel):	.....
Furnace atmosphere:      corrosive	<input type="checkbox"/> yes <input type="checkbox"/> no
	temperature range      from..... to.....
Burner/igniter installed in Ex-zone	<input type="checkbox"/> yes <input type="checkbox"/> no
Applicable standards and codes of practice:	<input type="checkbox"/> EN 676 (forced draught burners) <input type="checkbox"/> EN 746/2 (ind. thermoproc. equipm.) <input type="checkbox"/> TRD 411/412 (steam boilers) <input type="checkbox"/> IEC 79-10 (Ex-zones) <input type="checkbox"/> EN 161 (shut-off valves), gas <input type="checkbox"/> EN 298 (burner controls for gas) <input type="checkbox"/> EN 230 (burner controls for oil) <input type="checkbox"/> NFPA

### Igniter Specification

Required heat release:	oil: ..... kW gas: ..... kW
Required flame length:	..... mm
Oil	<input type="checkbox"/> extra light fuel oil (diesel) <input type="checkbox"/> marine diesel
Gas type (for dual fuel igniters):	<input type="checkbox"/> natural gas <input type="checkbox"/> propane/butane
Available oil pressure:	..... bar
Available gas pressure:	..... mbar
Available combustion air pressure:	..... mbar
Available atomization air pressure:	..... bar
Furnace pressure, +/-	..... mbar
Tube length of igniter:	..... mm
Flame monitor for continuous operation required: (only ZAZL... in gas mode)	<input type="checkbox"/> yes <input type="checkbox"/> no
Supply voltage and frequency:	..... V 50/60Hz
IP65 protection required:	<input type="checkbox"/> yes <input type="checkbox"/> no
Transformer part with special painting:	<input type="checkbox"/> yes <input type="checkbox"/> no
Burner arrangement drawing available:	<input type="checkbox"/> yes <input type="checkbox"/> no
Hazardous area Installation	<input type="checkbox"/> Zone 1 (Div 1) <input type="checkbox"/> Zone 2 (Div 2)

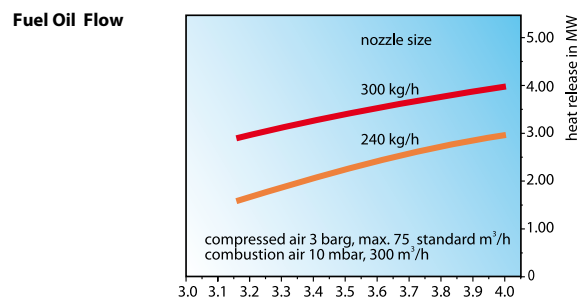
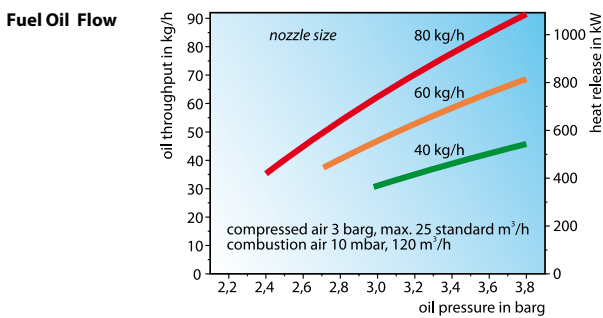
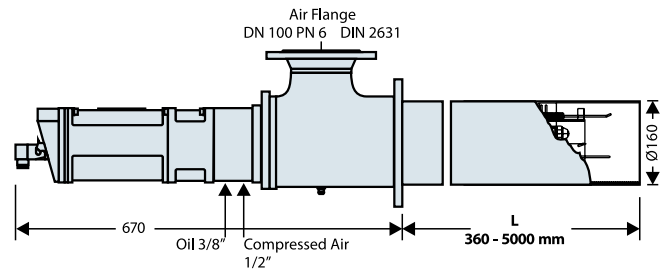
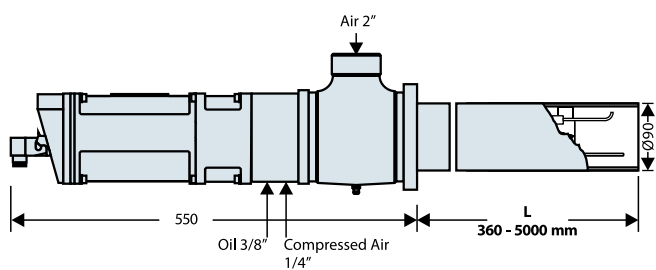
# Oil Fired Igniters for Extra Light Fuel Oil (Diesel)



For ignition of large coal or heavy fuel oil fired burners in utility boilers

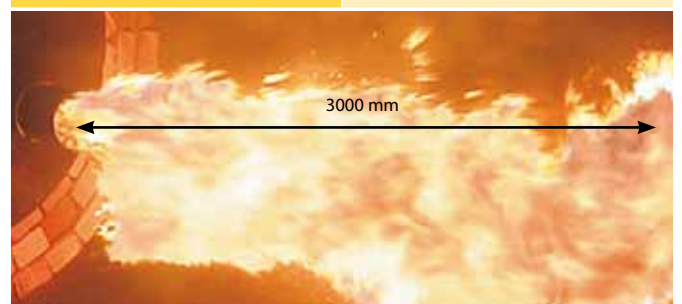
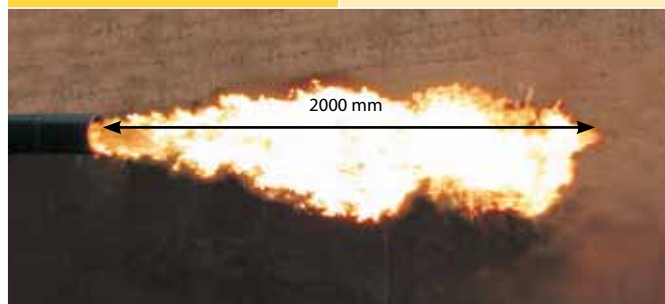
Heat Release max.	<b>1000 kW</b>
Model	<b>ZAEL2...</b>
Nozzle sizes	40 - 80 kg/h
Tube Ø	90 mm
Flame length	600 - 2200 mm
Igniter tube length L	360 - 5000 mm
Fuel oil inlet	3/8"
Fuel oil pressure	5 bar
Compressed air inlet	1/4"
Compressed air	5 bar
Air inlet	2", may be rotated 4 times in steps of 90°
Air pressure	≥5 mbar, depending on tube length
Features	with integrated spark transformer and flame monitor for intermittent operation
<b>Transformer part</b>	
Ignition	2x 5 kV, electrode to electrode
Ambient temperature	-20°C up to +60°C
Protection	IP 54

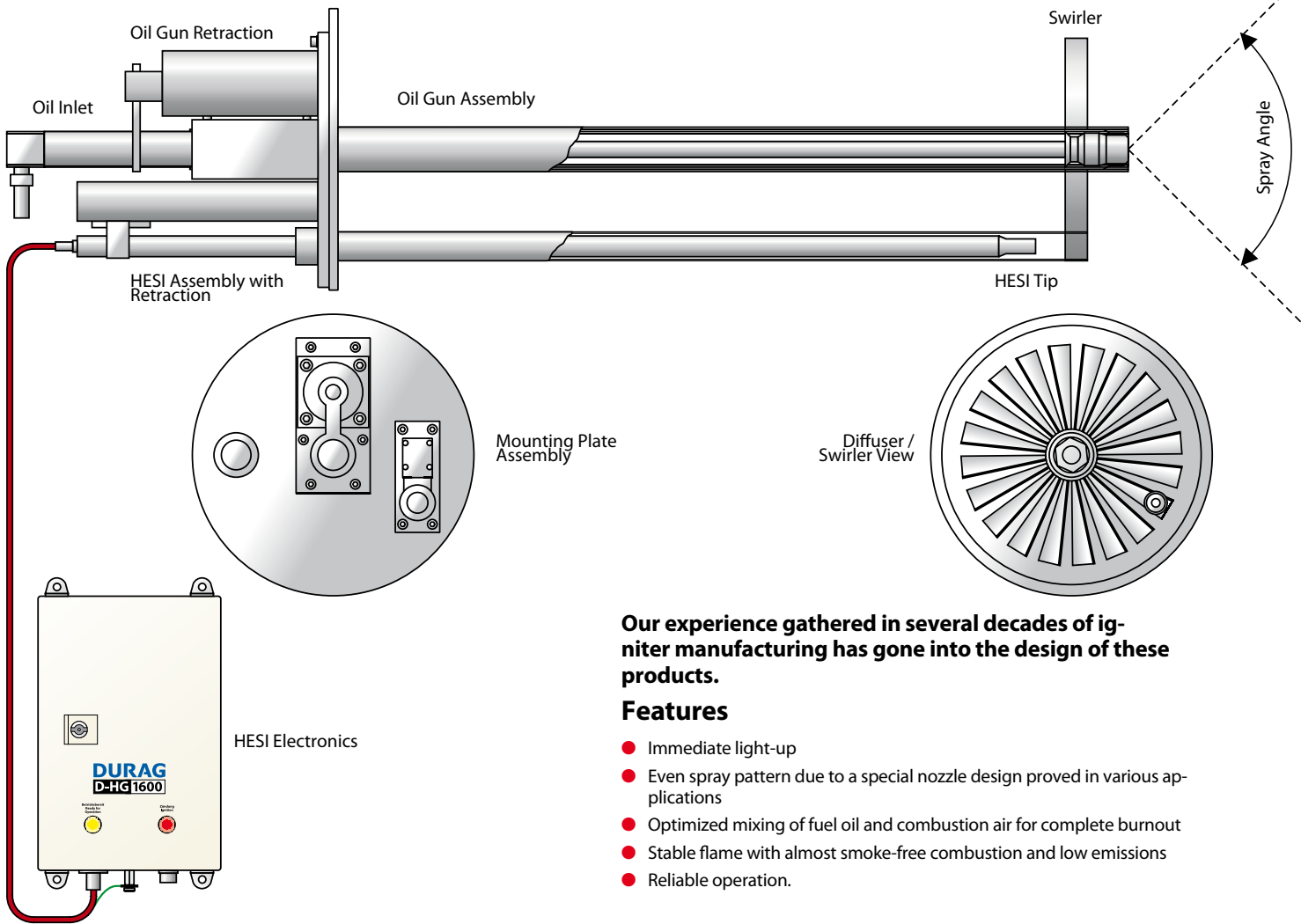
Heat Release max.	<b>3600 kW</b>
Model	<b>ZAEL4...</b>
Fuel oil flow	max. 300 kg/h
Tube Ø	160 mm
Flame length	max. 3000 mm
Igniter tube length L	360 - 5000 mm
Oil inlet	3/8"
Fuel oil pressure	5 bar
Compressed air inlet	1/2"
Compressed air	5 bar
Air inlet	DN 100, may be rotated 4 times in steps of 90°
Air pressure	≥5 mbar, depending on tube length
Features	with integrated spark transformer and flame monitor for intermittent operation
<b>Transformer part</b>	
Ignition	2x 5 kV, electrode to electrode
Ambient temperature	-20°C up to +60°C
Protection	IP 54



<b>Operation Example</b>	
Heat release	800 kW
Oil pressure	3.5 barg
Compressed air	3 barg
Ignition air	120 m³/h @ 10 mbar

<b>Operation Example</b>	
Heat release	3600 kW
Oil pressure	3.5 barg
Compressed air	3 barg
Ignition air	300 m³/h @ 10 mbar





Our experience gathered in several decades of igniter manufacturing has gone into the design of these products.

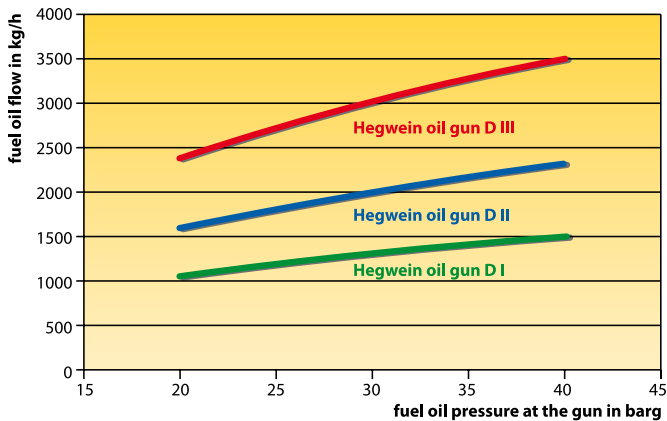
### Features

- Immediate light-up
- Even spray pattern due to a special nozzle design proved in various applications
- Optimized mixing of fuel oil and combustion air for complete burnout
- Stable flame with almost smoke-free combustion and low emissions
- Reliable operation.

### Oil Gun Series D with Mechanical Atomization

Oil gun model	D I	D II	D III
Fuel oil flow in kg/h	1300	2000	3000
Heat release MW	15	24	36

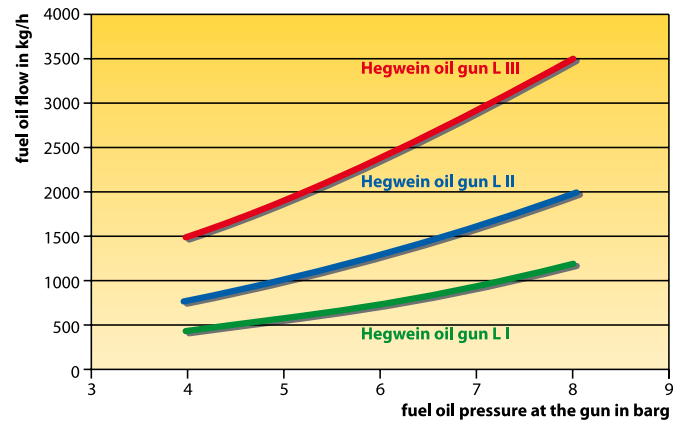
Fuel Oil Flow



### Oil Gun Series L with Air or Steam Assisted Atomization

Oil gun model	L I	L II	L III
Fuel oil flow in kg/h	1200	2000	3500
Heat release MW	14	24	42

Fuel Oil Flow



## Check List for an Oil Gun Inquiry

### Oil Gun Specification

Required heat release	..... kW
or capacity	..... kg/h
Atomization by	<input type="checkbox"/> mechanical, oil pressure ..... bar <input type="checkbox"/> air and oil pressure ..... bar/bar <input type="checkbox"/> steam and oil pressure ..... bar/bar steam temperature ..... °C <input type="checkbox"/> other
Oil type	<input type="checkbox"/> extra light fuel oil <input type="checkbox"/> light fuel oil, viscosity ..... cSt <input type="checkbox"/> heavy fuel oil
Spray angle	<input type="checkbox"/> standard 80° <input type="checkbox"/> other ..... °
Length of oil gun from mounting plate	..... mm
Swirler (diffuser) diameter	..... mm
Flexible version required (tilting)	<input type="checkbox"/> yes <input type="checkbox"/> no

### Oil Gun Retraction Unit

Force	<input type="checkbox"/> 2800 N <input type="checkbox"/> other ..... N
Stroke	<input type="checkbox"/> 300 mm <input type="checkbox"/> other ..... mm
Limit switches	<input type="checkbox"/> 1 x SPDT <input type="checkbox"/> 1 x DPDT <input type="checkbox"/> 2 x DPDT (option)

### HESI Electronics

Supply voltage	..... V, 50/60 Hz <input type="checkbox"/> 12 J/spark <input type="checkbox"/> 16 J/spark <input type="checkbox"/> 20 J/spark
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### HESI Retraction Unit

Force	<input type="checkbox"/> 600 N <input type="checkbox"/> other ..... N
Stroke	<input type="checkbox"/> 300 mm <input type="checkbox"/> other ..... mm
Limit switches	<input type="checkbox"/> 1 x SPDT <input type="checkbox"/> 1 x DPDT <input type="checkbox"/> 2 x DPDT (option)

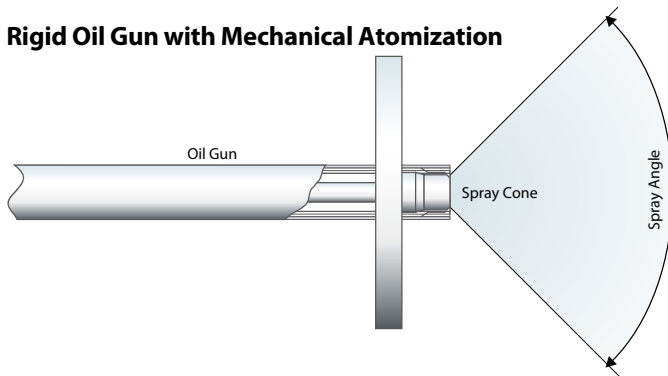
### Optical Flame Monitor

Mounted on back plate	
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## Basic Components

### Rigid Oil Gun with Mechanical Atomization



Operation	with fuel oil #0, #1 or #2 (diesel)
Pressure atomization	at 30 bar nominal
Turn down	1:1.5 (with oil pressure)
Spray angle	82°
Diffuser or swirler diameter	according to specification 200 to 300 mm

### Pneumatic Retraction Unit for Oil Gun



Cylinder Ø	21 / 40 / 80 mm
Force	300 up to 3000 N
Stroke	200 / 300 / 500 mm (8" / 12" / 20")
Air pressure	5 to 7 barg (70-100 psig)
Limit switches	2 limit switches SPDT, dual air solenoid coils

### High Energy Spark Igniter D-HG 1600



Voltage	115 or 230 VAC, 50 / 60 Hz
Output energy	16 J/spark at 4 sparks/s
Output voltage	1800 V
Duty cycle	300 s / 50%
Transformer housing protection class	IP 65
Flexible cable operating voltage	5000 V

### Pneumatic Retraction Unit for HESI



Cylinder Ø	21 / 40 mm
Force	300 up to 1000 N
Stroke	200 / 300 mm (8"/12")
Air pressure	5 to 7 barg (70-100psig)
Limit switches	2 limit switches SPDT, single air solenoid coil

### Optical Flame Monitor



D-LX 100

Design	compact design, flame sensor and control unit built as one unit
Spectral ranges	UV, VIS, IR
Operation	intermittent operation, permanent operation and 72-hour operation without continuous supervision
Outputs	flame relay, status relay, flame intensity 0/4...20 mA
Threshold	10-stage adjustable

# Oil Fired Igniters, Pilots and Oil Guns for Power Plants and Utility Boilers

# Hegwein

Für jede unserer Produktgruppen ist eine spezielle Broschüre verfügbar:

An individual brochure is available for each of our product groups:

- Gaszündbrenner
- Öl- und Zweistoffzündbrenner
- Gasbrenner
- Zubehör für Brenner und Zündbrenner
- Nachverbrennungseinrichtungen
- Gas Fired Igniters
- Diesel and Dual Fuel Igniters
- Gas Burners
- Accessories for Burners and Igniters
- Thermal Oxidizers



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