

Pilot burner ZKIH

Technical Information · GB

7 Edition 09.12



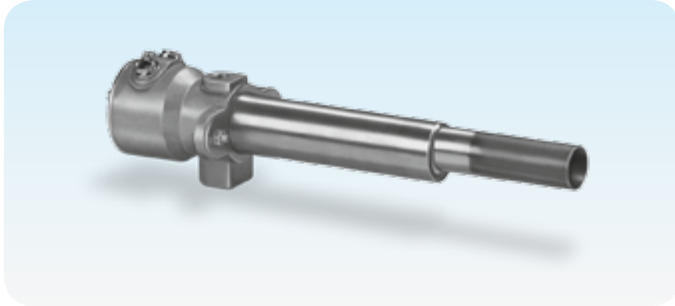
- Robust design for a long service life
- Diverse possible applications thanks to splash-proof connection housing
- Pilot burner with forced air supply
- Simple conversion of gas types from natural gas to LPG or town gas
- Reliable electrical ignition thanks to ignition electrode
- Safe flame control thanks to ionization electrode
- Saves space due to compact design
- Different lengths make it suitable for many installation situations



Contents

- Pilot burner ZKIH 1
- Contents 2
- 1 Application 3
 - 1.1 Examples of application 4
 - 1.1.1 On/Off control 4
 - 1.1.2 Igniting a main burner 4
- 2 Certification 5
 - 2.1 Approval for Russia 5
 - 2.2 Declaration of Incorporation pursuant to the Machinery Directive 5
- 3 Function 6
- 4 Selection 7
 - 4.1 Type code 7
- 5 Project planning information 8
 - 5.1 Installation 8
 - 5.2 Gas/air line connection 8
- 6 Technical data 9
 - 6.1 Dimensions 10
 - 6.1.1 ZKIH 10
 - 6.1.2 ZKIHB 11
 - 6.2 Converting units 12
- 7 Maintenance cycles 13
- 8 Accessories 14
 - 8.1 Ignition transformer 14
 - 8.2 Adapter set 14
 - 8.3 Pressure regulators 14
- Feedback 15
- Contact 15

1 Application



Pilot burner ZKIH with splash-proof connection housing

For use as a pilot burner for safe ignition of main burners in industrial furnaces and firing systems in the iron and steel industries in the precious, non-ferrous and light metal sector, as well as in the plastics, fibre and paper industries. Can also be used as an independently operated burner for applications requiring a burner capacity of 2 to 7 kW (for natural gas max. 5 kW).

The pilot burner is available in different lengths. It has a splash-proof housing. On delivery, the burner is equipped for operation with natural gas. It can easily be converted for operation with LPG or town gas.

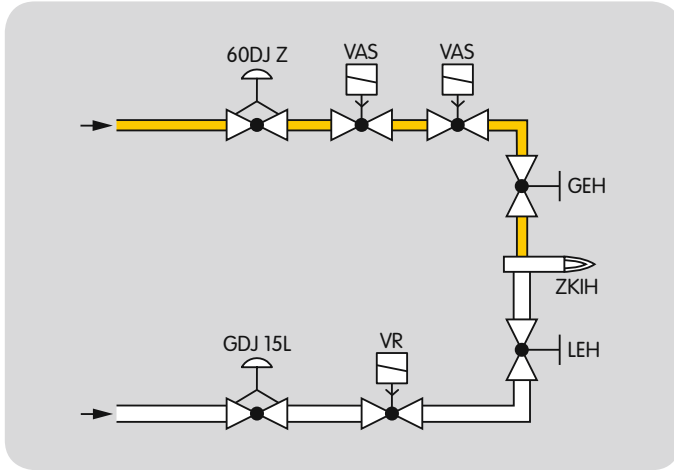
Burner ZKIHB is used for the ignition of high-speed burners.



Flame of the ZKIH during natural gas operation in the open air

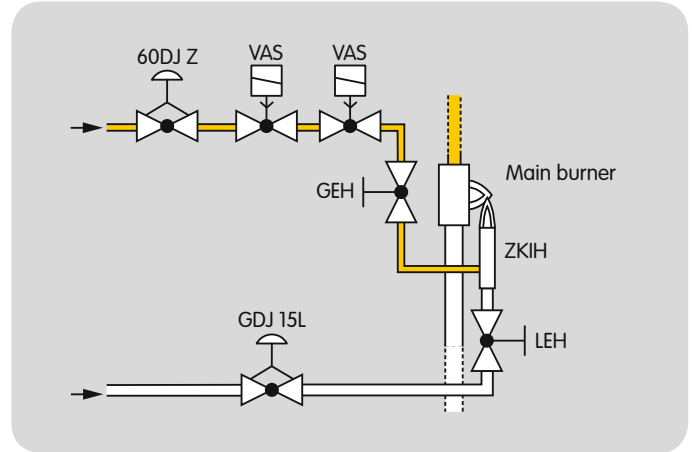
1.1 Examples of application

1.1.1 On/Off control



The gas/air mixture is set using the gas adjusting cock GEH and the air adjusting cock LEH. For a constant mixture of gas and air (λ), one pressure regulator per burner is used in the gas and air circuits.

1.1.2 Igniting a main burner



Install the pilot burner so that reliable ignition of the main burner is guaranteed.

2 Certification

2.1 Approval for Russia



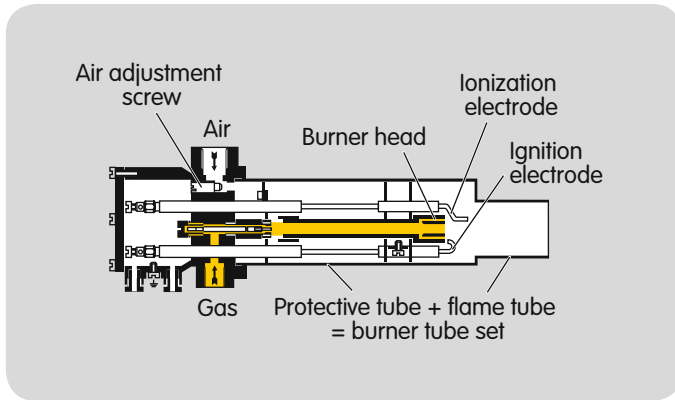
Certified by Gosstandart pursuant to GOST-TR.
Approved by Rostekhnadzor (RTN).

Scan of the approval for Russia (RUS) – see www.docuthek.com → Elster Kromschroder → Kromschroder, LBE → Products → 07 Pilot burners and burners → Pilot burner ZKIH → Kind of document: Certificate → ZKIH B00050 (nationales Zertifikat Russland) (RUS)

2.2 Declaration of Incorporation pursuant to the Machinery Directive

The ZKIH complies with the requirements of EN 746-2 and the Machinery Directive 2006/42/EC. This is confirmed by the manufacturer's Declaration of Incorporation.

3 Function



The burner control unit opens the gas and air control valves. Gas flows through the gas connection and air flows through the air connection in the burner housing as far as the burner head. The combustible gas/air mixture is produced downstream of the burner head. The gas/air mixture is electrically ignited directly by an ignition electrode. A flame forms which is monitored using an ionization electrode. The air volume required can be adjusted using the air adjustment screw.

4 Selection

| | 150 | 180 | 200 | 230 | 300 | 330 | 400 | 430 | 500 | 530 | 600 | 630 | 700 | 730 | 800 | 830 | 900 | 930 | /100 | R | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---|---|
| ZKIH | ● | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● | ● | ● |
| ZKIHB | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● | - | ● | ● |

Order example

ZKIHB 180/100R

4.1 Type code

| Code | Description |
|-----------|---|
| ZKIH | Pilot burner with forced air supply |
| ZKIHB | For ignition of high-speed burners |
| 150 – 930 | Protective tube length ¹⁾ [mm] 150 to 930 |
| /100 | Flame tube length [mm] 100 |
| R | Rp internal thread |

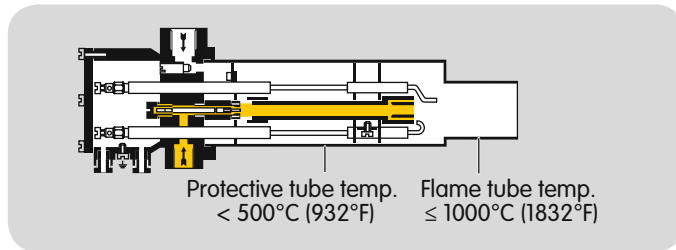
¹⁾ Longer lengths on request.

5 Project planning information

5.1 Installation

Install and insulate the pilot burner in order to avoid any overheating of the components during operation. Where applicable, purging air must be used to prevent ingress of aggressive gases and thermal overload of components.

When a pilot burner is installed in a burner quarl, the burner tube set can be subjected to very high thermal stress. A means of cooling the pilot burner must always be provided. Air must constantly be passed through a 3 mm gap on the outside of the protective tube. As a result of this measure, the service life of the pilot burner can be significantly increased.



The tip of the pilot burner flame tube must not come into contact with the main burner flame. Safe ignition of the main burner must be ensured.

When the pilot burner is switched off, the pilot burner air should continue to flow to ensure that the pilot burner is cooled.

5.2 Gas/air line connection

A gas test point and an air test point must be provided by the customer upstream of the ZKIH to measure the gas and air pressure respectively.

6 Technical data

| Burner | Capacity | |
|------------------|----------|------------|
| | kW | 1000 BTU/h |
| ZKIH | 2–7 | 7.6–26 |
| with natural gas | max. 5 | max. 17 |

Gas types: natural gas, LPG (gaseous) and coke oven gas.

Gas inlet pressure: 5 to approx. 50 mbar (2 to approx. 20 "WC),

air inlet pressure: 5 to approx. 30 mbar (2 to approx. 12 "WC),

each depending on the gas type

(burner pressures – see www.docuthek.com,

Kind of document: Operating characteristic diagram).

On delivery: natural gas setting (gas and air pressures: 20 mbar (8 "WC)).

For cold air only.

Flame control: with ionization electrode.

Ignition: direct spark ignition (5 kV ignition transformer).

Housing: aluminium.

Protective tube: stainless steel.

Flame tube: heat-resistant steel.

Max. temperature at the tip of the flame tube:

< 1000°C (< 1832°F),

< 900°C (< 1652°F) for $\lambda < 1$.

Max. temperature of the protective tube: 500°C (932°F).

Gas and air pressures:

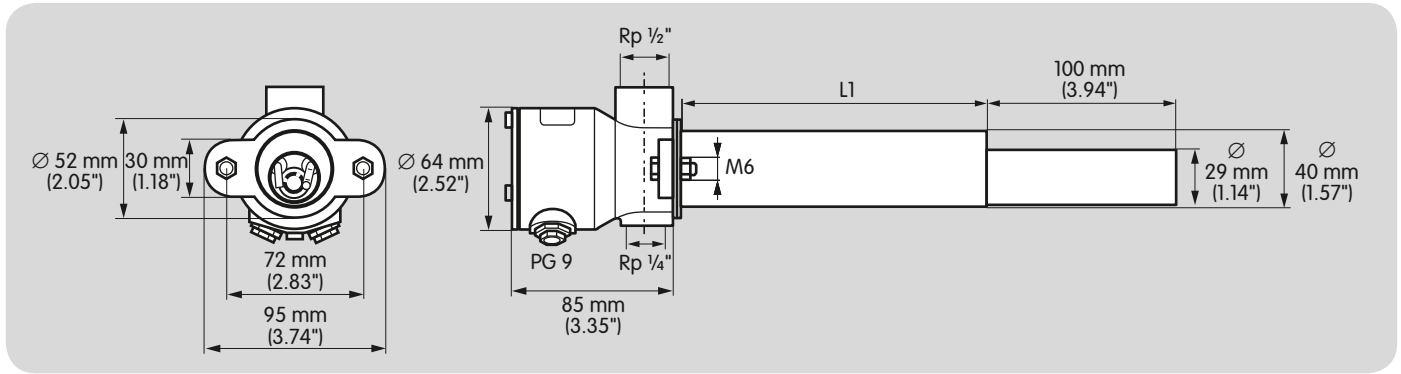
see burner diagram at www.docuthek.com,

Kind of document: Operating characteristic diagram.

Flame length at rated capacity: approx. 25 cm (9.8").

Control: On/Off.

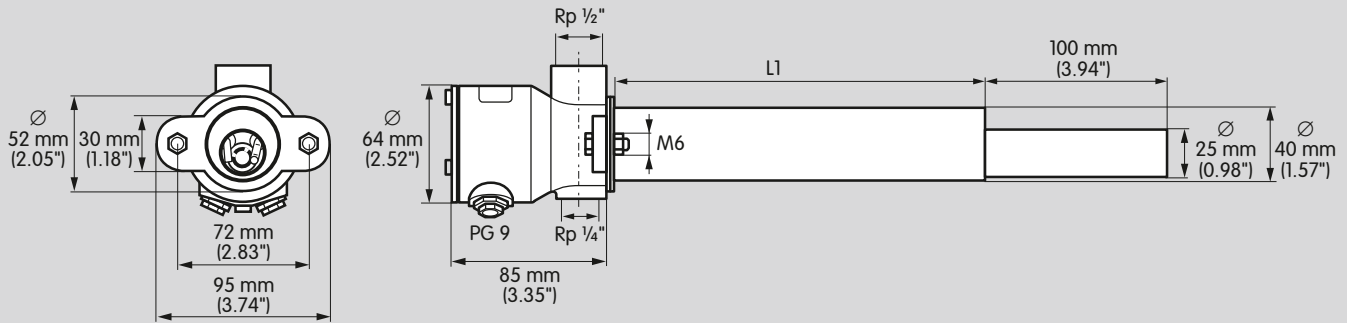
6.1 Dimensions



6.1.1 ZKIH

| Type | Dimensions L1 | |
|---------------|---------------|--------|
| | [mm] | [inch] |
| ZKIH 150/100R | 150 | 5.91 |
| ZKIH 200/100R | 200 | 7.87 |
| ZKIH 300/100R | 300 | 11.8 |
| ZKIH 400/100R | 400 | 15.7 |
| ZKIH 500/100R | 500 | 19.7 |
| ZKIH 600/100R | 600 | 23.6 |
| ZKIH 700/100R | 700 | 27.6 |
| ZKIH 800/100R | 800 | 31.5 |
| ZKIH 900/100R | 900 | 35.4 |

6.1.2 ZKIHB



| Type | Dimensions L1 | |
|----------------|---------------|--------|
| | [mm] | [inch] |
| ZKIHB 180/100R | 180 | 7.09 |
| ZKIHB 230/100R | 230 | 9.06 |
| ZKIHB 330/100R | 330 | 13.0 |
| ZKIHB 430/100R | 430 | 16.9 |
| ZKIHB 530/100R | 530 | 20.9 |
| ZKIHB 630/100R | 630 | 24.8 |
| ZKIHB 730/100R | 730 | 28.7 |
| ZKIHB 830/100R | 830 | 32.7 |
| ZKIHB 930/100R | 930 | 36.6 |

6.2 Converting units

| SI unit × | multiplier = | US unit |
|-------------------|--------------|---------|
| m ³ /h | 35.31 | CFH |
| mbar | 0.0145 | psi |
| mbar | 0.39 | "WC |
| mm | 0.039 | inch |
| kg | 2.2 | lbs |
| litres | 0.26 | gal |
| m/s | 3.28 | ft/s |

| US unit × | multiplier = | SI unit |
|-----------|--------------|-------------------|
| CFH | 0.0283 | m ³ /h |
| psi | 68.89 | mbar |
| "WC | 2.54 | mbar |
| inch | 25.4 | mm |
| lbs | 0.45 | kg |
| gal | 3.79 | litres |
| ft/s | 0.3048 | m/s |

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times \frac{5}{9}$$

$$^{\circ}\text{F} = (^{\circ}\text{C} \times \frac{9}{5}) + 32$$

7 Maintenance cycles

Twice per year, but if the media are highly contaminated, this interval should be reduced.

8 Accessories

8.1 Ignition transformer

To ensure safe ignition, we recommend using ignition transformer TGI 5-15/100W or TZI 5-15/100W.



TGI 5-15/100W



TZI 5-15/100W

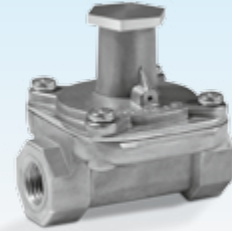
8.2 Adapter set

For connecting the pilot burner ZKIH to pilot gas and air lines. Comprising one adapter with 1/4-18 NPT internal thread and one adapter with 1/2-14 NPT internal thread.

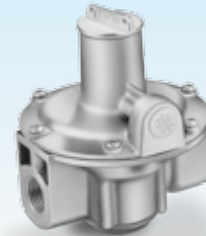
Order No. 74923430

8.3 Pressure regulators

For a constant mixture of gas and air (λ), we recommend using one pressure regulator 60DJ Z in the gas circuit and one pressure regulator GDJ 15L in the air circuit per burner.



60DJ Z, DN 8



GDJ 15L, DN 15

Feedback

Finally, we are offering you the opportunity to assess this "Technical Information (TI)" and to give us your opinion, so that we can improve our documents further and suit them to your needs.

Clarity

Found information quickly
Searched for a long time
Didn't find information
What is missing?
No answer

Comprehension

Coherent
Too complicated
No answer

Scope

Too little
Sufficient
Too wide
No answer



Use

To get to know the product
To choose a product
Planning
To look for information

Navigation

I can find my way around
I got "lost"
No answer

My scope of functions

Technical department
Sales
No answer

Remarks

(Adobe Reader 7 or higher required)
www.adobe.com



Contact

Elster GmbH
Postfach 2809 · 49018 Osnabrück
Strothweg 1 · 49504 Lotte (Büren)
Germany
T +49 541 1214-0
F +49 541 1214-370
info@kromschroeder.com
www.kromschroeder.com

The current addresses of our international agents are available on the Internet:
www.kromschroeder.de/index.php?id=718&L=1

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