

LUCIFER®

Safety Shut-Off Valves for Oil Burners

**According to EN 264 Standards
121F, 121K, 121Z, 122F and
121F/Q, 321F/H Series**

Catalogue 8634/GB



Parker

Introduction

Solenoid valves fulfil important control and safety functions in modern oil firing plants. By increased requirements concerning security and economy substantial meaning is given to the selection of such control components. By the use of solenoid valves which correspond to the EN 264 standards safe operation of the plant is to be aimed at with long life expectancy and minimum maintenance. Parker Lucifer developed a specific program to launch conform valves, based again on the experience of many years in the heating-equipment. The valves are conceived according to a modular construction system. New techniques in connection with suitable material are paired meaningful with modern productions and testing methods and vouch for qualitative-high-quality products. All valves contained in this catalogue have the TUV - DIN CERTCO type certification.

Typical features and benefits

- No sensitivity to dirt with contaminated media by integrated filter
- Ruby/Viton (FKM) compound for valve disks as well as O-rings for an unusual thermal and chemical resistance.
- Compact valve dimensions, high flow rate
- Installation in any position and design adapted to an easy maintenance.
- Universal application for light -, medium- and heavy fuel oil.

Photo courtesy: Cuenod



Photo courtesy:
Oertli

Photo courtesy:
Elco Klöckner



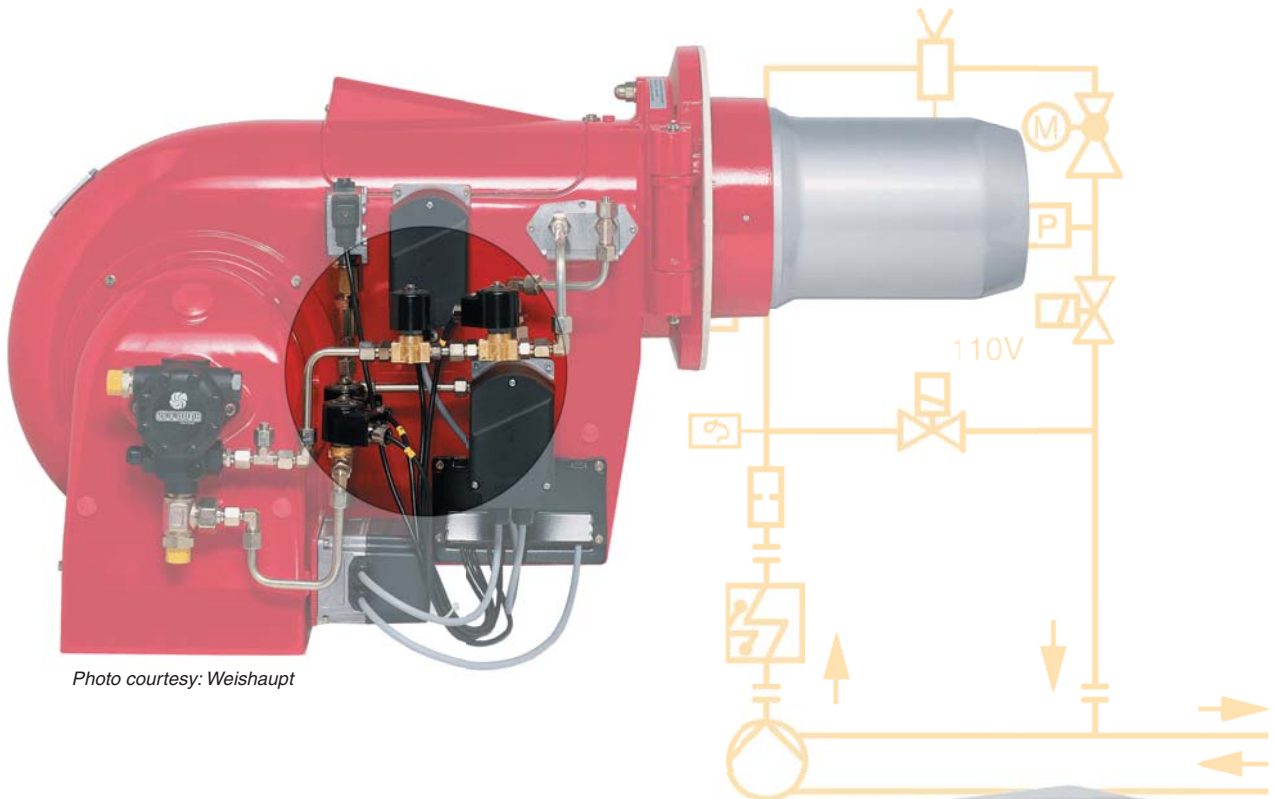


Photo courtesy: Oilon



Technical Data

| | | | |
|------------------------------|--|--|--|
| Application | As a 2/2 electromagnetically operated safety shut-off valve and quick cut-off device in oil burner systems according to EN 264 - Tested by the German TÜV (Technical Inspection Agency) EN 264 - safety shut-off devices for burner systems using liquid combustibles and liquefied petroleum gas in the liquid phase Responsibility of German FNRS = Standards Committee for Control and Safety Devices of Gas and Oil Furnace Systems Also in conjunction with atomizing oil burners according to EN 267 and oil burners of steam boilers according to EN 411 TRD | | |
| Nominal diameter | 2.5 to 15 mm | | |
| Port size | G 1/8, G 1/4, G 3/8, G 1/2 and sub-base mounting | | |
| Mounting | Direct pipe mounting or using the 2 threaded holes at the bottom mounting surface (see dimensional drawing) | | |
| Mounting position | Unrestricted | | |
| Material specifications | Brass body, internal parts from stainless steel, seat plate from ruby (in armature) and elastomers from oil resisting Viton (FKM) | | |
| Pressure range | See tables p. 6 and 8 | | |
| Response time | For fuel oil EL and AC solenoids: Type 121 and 122: Switching ON ca. 15 ms Switching OFF ca. 10 ms Type 321 H: Switching ON ca. 300 ms Switching OFF ca. 50 ms Type 121 G: Switching ON ca. 50 ms Switching OFF ca. 20 ms | | |
| Media | Fuel oils EL, L, M, S (DIN 51603) as shown in tables p. 6 and 8 | | |
| Filters | Valves 321 F/H must have upstream filters according to DIN 32727 | | |
| Admissible media temperature | See tables p. 6 and 8 | | |
| Ambient temperature | 0 to 60 °C | | |
| Flow factors | Kv = 2 to 60 (see tables p. 6 and 8) Values of flow rates and flow factors are subject to ± 15% tolerance | | |
| Electrical parts | For type 121Z, 121F, 122F: Miniature coil with connector plug 2 P + E acc. to DIN 43650 type A, sealing according to DIN 40050 and IEC 529: IP 65 Ref. n°: 483764 -9W, 492425 - 14W For type 121K, 122F and 122K: High temperature coil with screw terminals Ref. n°: 483824 - 19W, 492425 - 14W For types 121F/G and 321F/H: High temperature and heavy duty coil with screw terminals Ref. n°: 483824 - 19W or 483541 - 20W | | |
| Coil housing | Epoxy coated metal housing, rotatable up to 360°, equipped with M16x1.5 cable gland, sealing to IP 44 Ref. n°: 8760.24 Zinc coated metal housing, rotatable up to 360°, equipped with M20x1.5 cable gland, sealing to IP 67 Ref. n°: 8520.23 | | |
| Supply voltage | 110 V/50 Hz - 115 V/60 Hz (Q9), 220 V/50 Hz - 230 V/60 Hz (2P) 230 V/50 Hz / 240 V/60 Hz (T1), 115 V/50 Hz - 120 V/60 Hz (P8) | | |
| Voltage tolerance | +10%/-15% of nominal voltage | | |
| Class of insulation material | Class F: 155 °C for coil 483764 Class H: 180 °C for coils 483824, 483541 and 492425 | | |
| Solenoid duty | Continuous duty solenoid (100% ED) | | |
| Power consumption | 9 to 20 Watts (see tables p. 6 and 8) | | |

321H Type

Application:

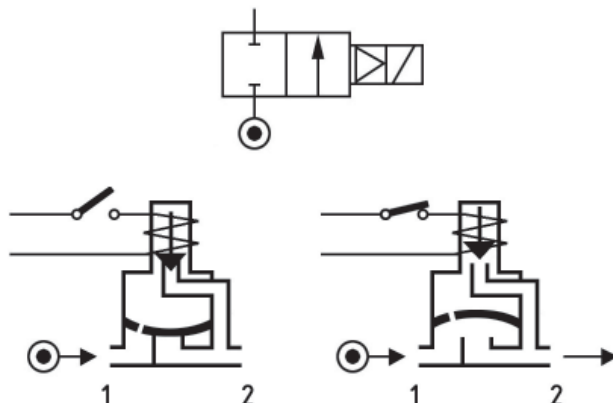
Safety shut-off valve used as a quick cut-off devices.

Also in conjunction with atomizing oil burners according to EN 267 and oil furnaces of steam boilers according to EN TRD 411.

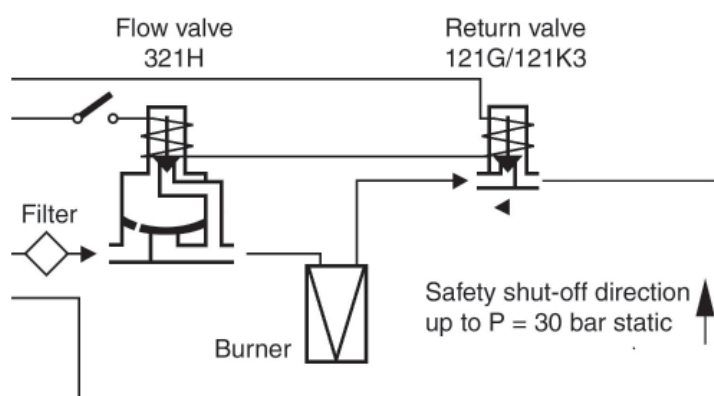
An upstream filter must be used.

Construction:

2/2 pilot operated,
closed when de-energized.



Valve de-energized



121G/121K Type

Application:

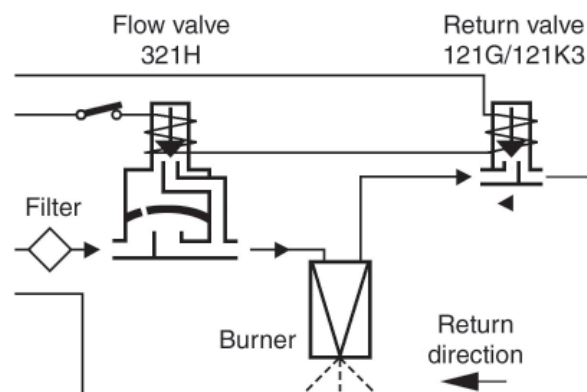
Safety shut-off valve to use as a quick cut off device in return pipes of atomizing oil burners according to EN 267 and EN TRD 411.

According to standards, this valve must be connected in series with the flow valve (see diagrams).

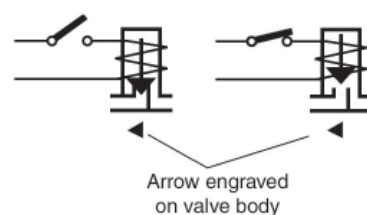
Construction:

2/2 direct operated, closed by the spring's elastic force when de-energized. When the solenoid is de-energized, the liquid pressure of the return (opposite direction of arrow) will still be able to open the valve seat at 0,15 bar (1 bar for 121K3321).

Valve energized



Markings

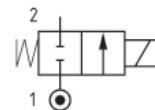


| Port Size G | Nom. diameter [mm] | Kv [l/min] | Pressure range [bar] | Media temperature [°C] | For fuel oils (DIN 51603) | | | | Tested by TÜV | | Reference numbers | | | Power consumptions hot | Degree of protection IEC/EN 60529 |
|-------------|--------------------|------------|----------------------|------------------------|---------------------------|---|---|---|---------------|--------|-------------------|---------|------|------------------------|-----------------------------------|
| | | | | | EL | L | M | S | DIN Reg. No. | CERTCO | Valve | Housing | Coil | | |

Direct operated solenoid valves

Pipe mounting

Normally closed



| | | | | | | | | | | | | | | |
|-----|-----|-----|---------|-------------|---|---|---|---|-----------|-------------------|--------------------|--------|----|----------------|
| 1/8 | 2.2 | 2.8 | 0 to 25 | -10 to +120 | x | x | x | - | 5S 248/.. | 121 Z 2323 | 2995.22 | 483764 | 9 | IP 65 |
| | 2.2 | 2.8 | 0 to 33 | -10 to +120 | x | x | x | - | 5S 248/.. | 121 Z 2323 | 2995.22 | 492425 | 14 | IP 65 |
| | 3 | 4 | 0 to 30 | -30 to +160 | x | x | x | x | 5S 181/.. | 121 K 2423 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |
| 1/4 | 3 | 4.5 | 0 to 30 | -30 to +160 | x | x | x | x | 5S 190/.. | 121 K 6423 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |
| | 4 | 6.5 | 0 to 30 | 0 to +160 | x | x | x | x | 5S 105/.. | 121 K 6220 | 8520.23 8760.24 | 483541 | 20 | IP 67 IP 44 |

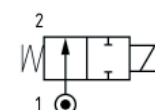
Sub-base mounting

| | | | | | | | | | | | | | | |
|----|---|-----|---------|-------------|---|---|---|---|-----------|-------------------|--------------------|--------|----|----------------|
| SB | 3 | 4.5 | 0 to 30 | -30 to +160 | x | x | x | x | 5S 233/.. | 121 F 6321 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |
| | 3 | 4.5 | 0 to 18 | -30 to +120 | x | x | x | x | 5S 233/.. | 121 F 6321 | 2995.22 | 483764 | 9 | IP 65 |
| | 3 | 4.5 | 0 to 30 | -30 to +140 | x | x | x | x | 5S 233/.. | 121 F 6321 | 2995.21 | 492425 | 14 | IP 65 |

Direct operated solenoid valves

Pipe mounting

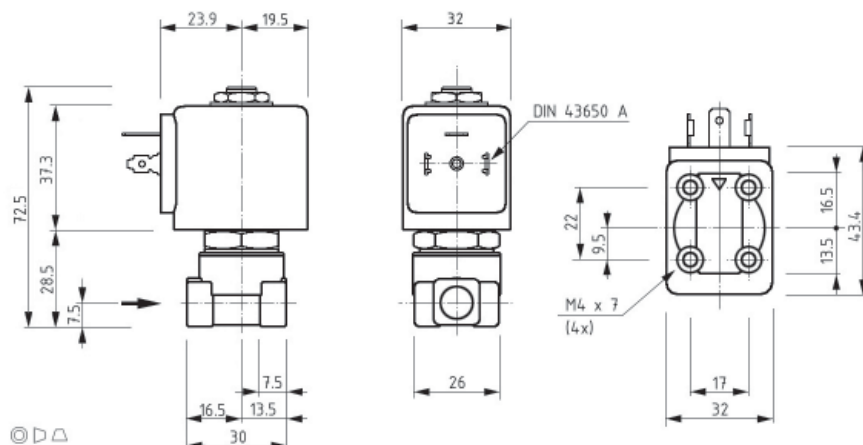
Normally open



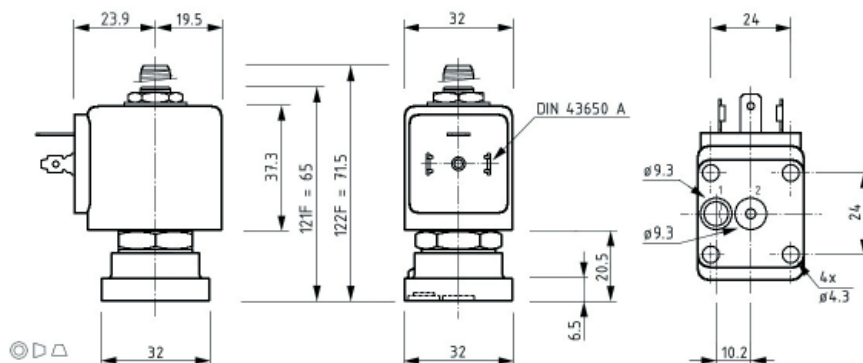
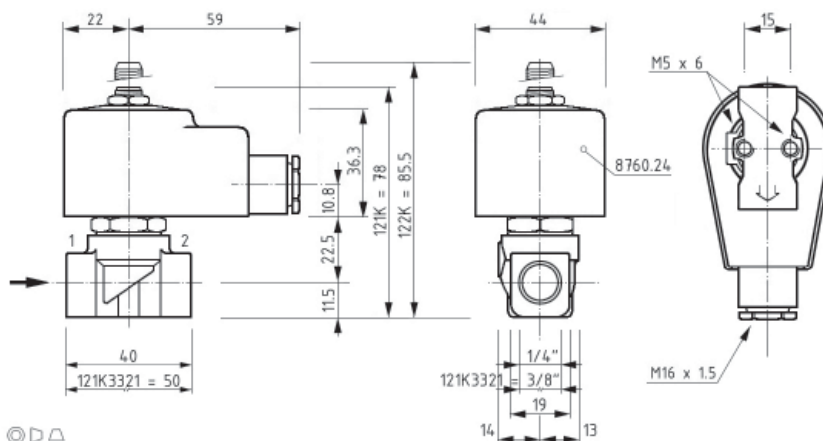
| | | | | | | | | | | | | | | |
|-----|-----|-----|---------|-------------|---|---|---|---|-----------|-------------------|--------------------|--------|----|----------------|
| 1/8 | 2.5 | 3.5 | 0 to 30 | -30 to +160 | x | x | x | x | 5S 106/.. | 122 K 9321 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |
| 1/4 | 2.5 | 3.5 | 0 to 30 | -30 to +160 | x | x | x | x | 5S 107/.. | 122 K 8321 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |

Sub-base mounting

| | | | | | | | | | | | | | | |
|----|-----|-----|---------|-------------|---|---|---|---|-----------|-------------------|--------------------|--------|----|----------------|
| SB | 2.5 | 3.5 | 0 to 30 | -30 to +160 | x | x | x | x | 5S 234/.. | 122 F 4321 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |
| | 2.5 | 3.5 | 0 to 30 | -30 to +140 | x | x | x | x | 5S 234/.. | 122 F 4321 | 2995.21 | 483764 | 14 | IP 65 |



Housing
8520.23 or
8760.24

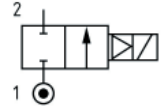


| Port Size G | Nom. diameter [mm] | Kv [l/min] | Pressure range [bar] | Media temperature [°C] | For fuel oils (DIN 51603) | | | | Tested by TÜV DIN CERTCO Reg. No. | Reference numbers | | | Power consumptions hot | Degree of protection IEC/EN 60529 |
|-------------|--------------------|------------|----------------------|------------------------|---------------------------|---|---|---|---|-------------------|---------|------|---------------------------|--------------------------------------|
| | | | | | EL | L | M | S | | Valve | Housing | Coil | | |

Pilot operated solenoid valves

Pipe mounting

Normally closed



| | | | | | | | | | | | | | | |
|-----|----|----|-------------|-----------|---|---|---|---|-----------|------------|--------------------|--------|----|----------------|
| 1/2 | 15 | 60 | 0.3 to 30 * | 0 to +160 | x | x | x | x | 5S 192/.. | 321 H 2523 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |
|-----|----|----|-------------|-----------|---|---|---|---|-----------|------------|--------------------|--------|----|----------------|

* Minimum pressure differential = 0.3 bar for opening and 0 bar for closing

Sub-base mounting

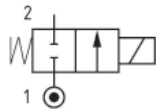
| | | | | | | | | | | | | | | |
|----|----|----|-------------|-----------|---|---|---|---|-----------|------------|--------------------|--------|----|----------------|
| SB | 14 | 45 | 0.3 to 30 * | 0 to +160 | x | x | x | x | 5S 192/.. | 321 F 2523 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |
|----|----|----|-------------|-----------|---|---|---|---|-----------|------------|--------------------|--------|----|----------------|

* Minimum pressure differential = 0.3 bar for opening and 0 bar for closing

Direct operated solenoid valves for the return line pipe

Pipe mounting

Normally closed



| | | | | | | | | | | | | | | |
|-----|----|----|-----------------------|-----------|---|---|---|---|-----------|------------|--------------------|--------|----|----------------|
| 3/8 | 6 | 12 | A up to 30 B 0-5 | 0 to +120 | x | x | x | - | 5S 250/.. | 121 K 3321 | 8520.23 | 483824 | 19 | IP 67 |
| | | | | | | | | | | | 8760.24 | 483824 | 19 | IP 44 |
| | | | | | | | | | | | 2995.21 | 492425 | 14 | IP 65 |
| 1/2 | 14 | 25 | A up to 30 B 0-0.2 | 0 to +160 | x | x | x | x | 5S 189/.. | 121 G 2523 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |

Sub-base mounting

| | | | | | | | | | | | | | | |
|----|----|----|-----------------------|-----------|---|---|---|---|-----------|------------|--------------------|--------|----|----------------|
| SB | 14 | 25 | A up to 30 B 0-0.2 | 0 to +160 | x | x | x | x | 5S 189/.. | 121 F 2523 | 8520.23 8760.24 | 483824 | 19 | IP 67 IP 44 |
|----|----|----|-----------------------|-----------|---|---|---|---|-----------|------------|--------------------|--------|----|----------------|

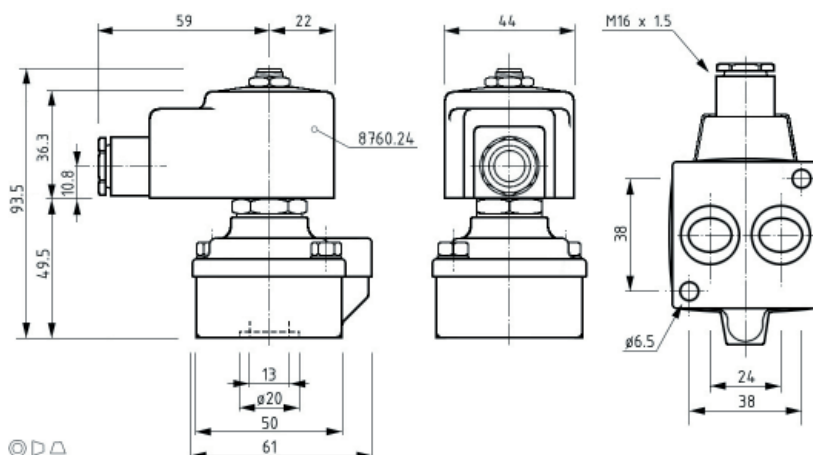
^A Pmax. in safety shut-off direction

^B If flow direction corresponds to stamped arrow (does not apply for applications described here)

321F



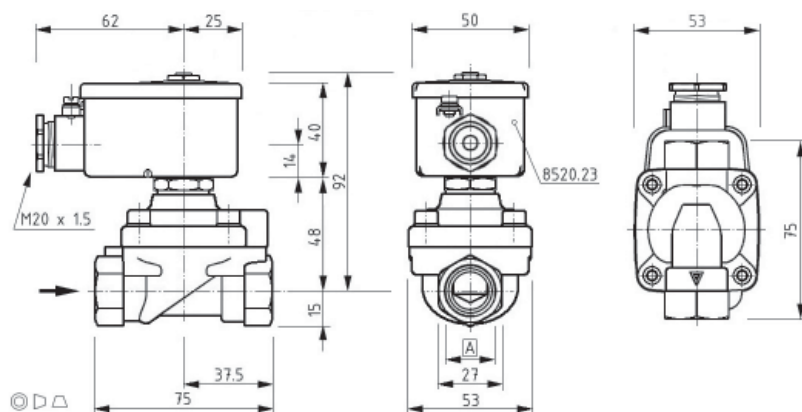
Housing
8520.23 or
8760.24



321H



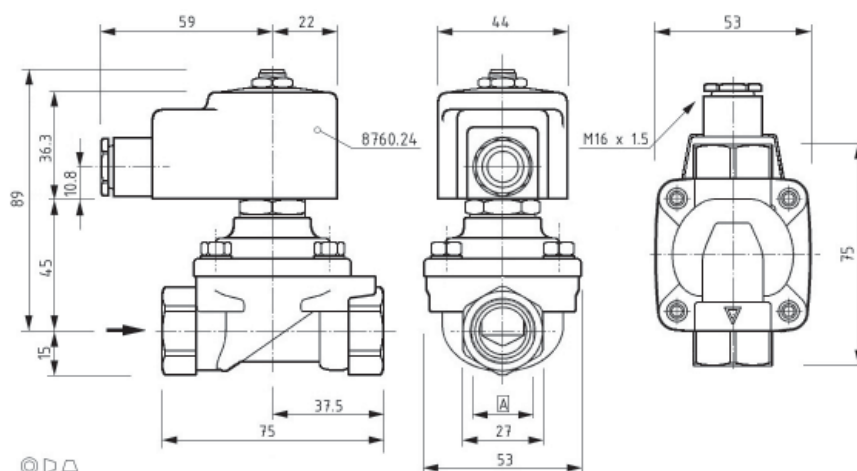
Housing
8520.23 or
8760.24



121G



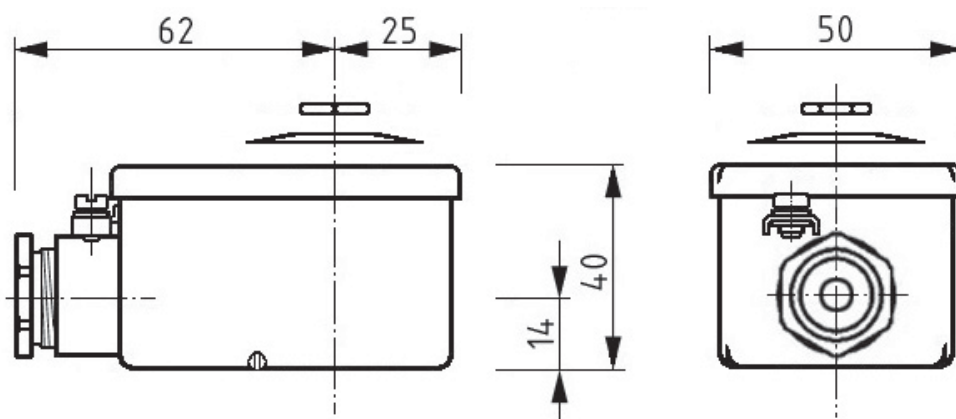
Housing
8520.23 or
8760.24



Optional Coil Housing

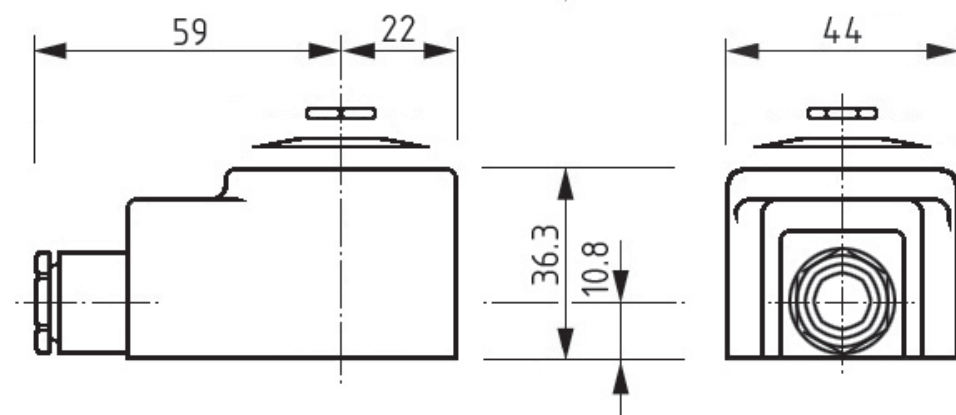
8520.23

IP 67
M20x1.5



8760.24

IP 44
M16x1.5



Notes

Notes



Parker Lucifer SA
Fluid Control Division Europe
16, Faubourg de Cruseilles
CH-1227 Carouge/Geneva
Tel: +41 22 30 77 111
Fax: +41 22 30 77 110
www.parker.com/lucifer

8634/GB
October 2006