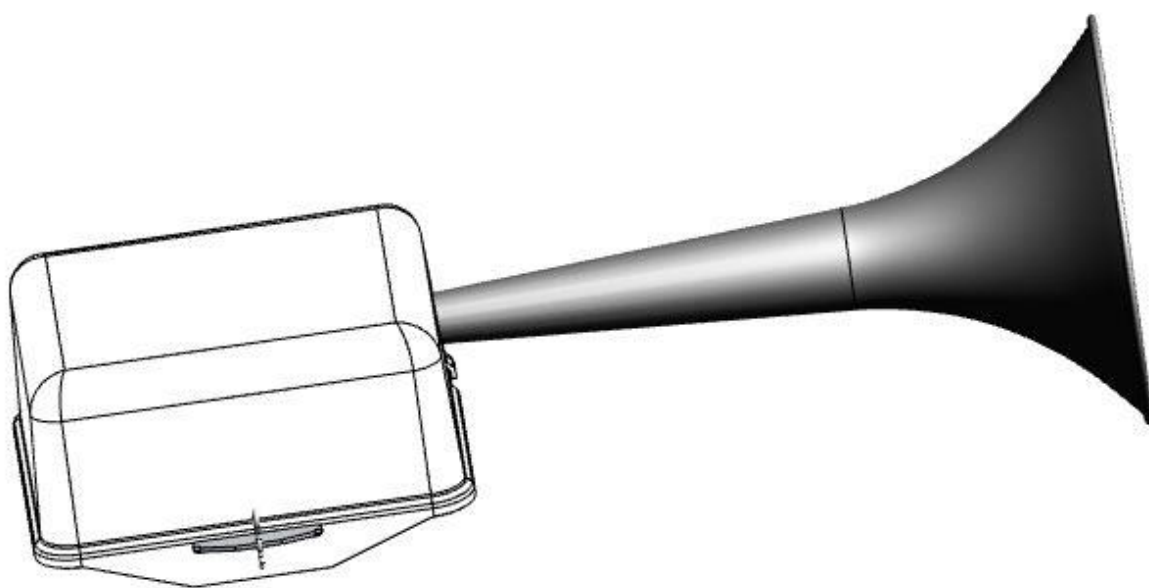


# Operating Instructions //

**ZÖLLNER**  
signal system technologies



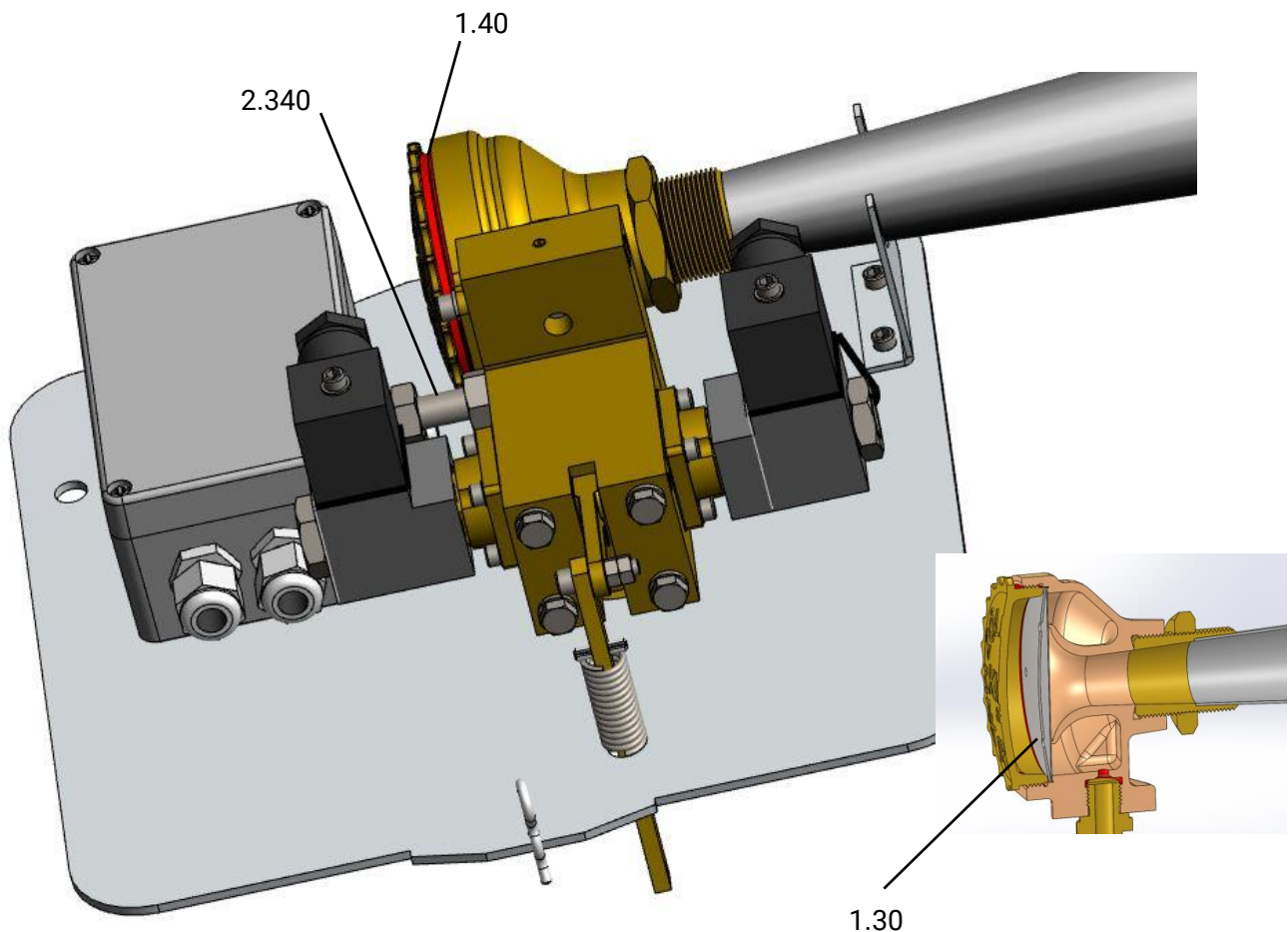
## Makrofon M75F/370 ZVE(E) H



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## 1 Construction



The Makrofon includes a membrane housing. The sound is produced by a diaphragm (1.30) which is placed in the housing, held by a cover screw and a pressure regulation disk.

The signal is released electrically by a magnet valve contained in the Makrofon's operating valve ZVE. A hand pull-rope and / or a second magnet valve serve as devices for emergency release.

## 2 Mounting

The Makrofon signal set shall be positioned as high as possible. It is fastened with two screws M 10 which have to be secured well. When laying the compressed air pipe for the ZÖLLNER Makrofon, a compressed air filter must be installed upstream of the Makrofon valve. The filter must be fixed easily accessible in a temperature protected room (maximum pipe length between Makrofon and filter is 2000 mm), making sure that the condensation water cannot freeze up and that the filter can be cleaned at any time. The pipe between filter and Makrofon valve should be made of stainless material, e.g. copper.

It is essential to vent the pipe thoroughly before connecting to the horn, in order to remove all foreign matter from the feeding main.



**Attention!** According to annex III, paragraph 1(e) the sound pressure level of the vessel's own signal at listening posts shall not exceed 110 dB(A). This means that persons staying at short distance from the sound transmitter must wear ear protection. Before a signal is released it must be assured that no person is right in front of the sound transmitter.

As a rule, grade 8.8 (stainless) or A2-70 (stainless steel) screws should be used. BOTH types of screws must be protected against corrosion after screwing (paint). If the screw head is resting on an aluminium structure, washers with a grade of 300 HV must be used and these must also be protected against corrosion. There must be no paint between the screw surfaces themselves. Use a screw locking device. The screw locking device must correspond to the appropriate screw grade (liquid or mechanical). The tightening torques are based on those according to DIN EN 1090. The design on the connection side must be based on a dynamically stressed bolted connection.

### 3 Operation

The Makrofon signal set is suitable for air pressure between 6 bar and 40 bar.

### 4 Maintenance

#### 4.1 Preventive Maintenance

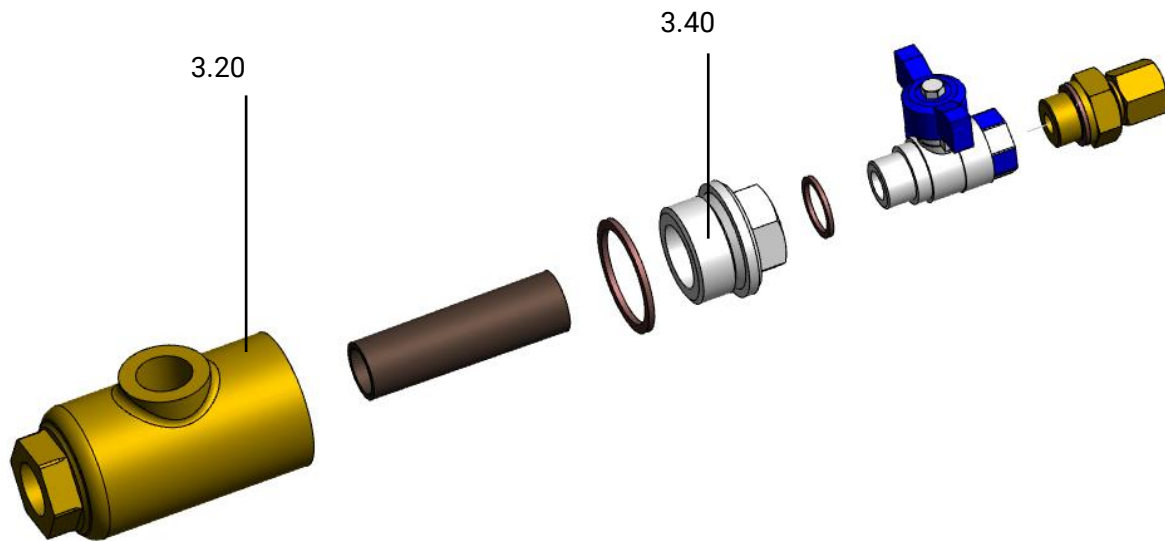
The Makrofon is maintenance-free. Preventive maintenance is not required.

#### 4.2 Corrective Maintenance

In case of sound disturbances, first of all it must be checked out if enough compressed air flows to the Makrofon with the valve opened. Compressed air filter, operating valve and pipes have to be cleaned. After detaching the cover screw - part 1.40 - the diaphragm can be taken out. When re-assembling, it is important to insert first the diaphragm and after that the pressure regulation disk with its convex side showing to the cover screw. In order to achieve the correct restraint for the diaphragm, the cover screw must be tightened well by hand (without tool). Then it has to be turned back slightly while testing the signal until the sound is loud and pure. After adjustment, the cover screw must be secured so that it cannot be twisted again.

The correct amount of compressed air is adjusted by means of the throttle screw - part 2.340 - depending on the air pressure.

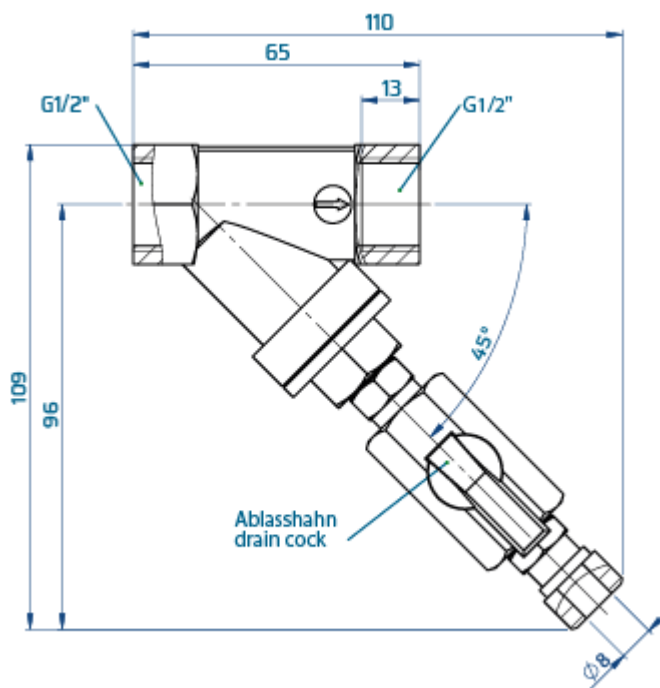
## 5 Filter F3



For cleaning the filter F 3, the cover screw - part 3.40 - must be unscrewed. Afterwards the filter insert - part 3.20 - can be extracted with flat pliers. The filter insert is rinsed in petrol and vented with compressed air.

Damaged filter inserts must be exchanged.

## 6 Filter F3.1



**Filter F3.1 is maintenance free.**

## 7 Transport, Storage and disposal

### 7.1 Transport

To avoid damage to the devices and components, follow these points during transport:

- » Load the device and components carefully.
- » Secure the devices and components to prevent damage during transport.

### 7.2 Storage

Follow these points for storage:

- » Store the devices and components in a safe and dry place.
- » The storage temperature must be between -30°C and 70 °C.

### 7.3 Disposal

Comply with country-specific legal regulations for disposal. We supply the latest version of SUPPLIERS DECLARATION OF CONFORMITY for Material Declaration Management (according to IMO Resolution MEPC.379(80), The Hong Kong Convention and EU Ship Recycling Regulation) on request.

|                                                   |                                 |
|---------------------------------------------------|---------------------------------|
| Product:                                          | M75F/370                        |
| Voltage:                                          | 230 V AC or 115 V AC or 24 V DC |
| Air pressure:                                     | 6-40 bar                        |
| Sound pressure level in<br>1/3-octave band at 1m: | 138 dB                          |
| Protection Class:                                 | IP56                            |
| Weight:                                           | 10 kg                           |



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