

# Possible causes of problems on the way from the gas cylinder to the welding place

## General information

**Cause of problem:** Before welding starts, there is air in the pressure regulator and in the tubing to the welding process. This results in impurities in the welding gas as welding begins.

**Recommendation:** The equipment needs to be sufficiently flushed after long intervals between welding procedures and after welding equipment has been replaced.

**Cause of problem:** Additional equipment is suppressing the temporary increase in the flow of shielding gas. This flow of shielding gas helps to clean the air-filled hose package and prevents pores developing at the beginning of a weld.

**Recommendation:** Temporary increases in the flow of shielding gas should not be suppressed. The hose between the pressure regulator and the welding point should be as short as possible (no longer than three meters), to prevent too much faltering of pressure.

## 3 Hoses

**Cause of problem:** Use of unsuitable or used up hoses

**Recommendation:** Only use hoses for shielding gases which are compliant with ISO 3821 or EN 1327. Hose materials can absorb oxygen, nitrogen or moisture from the surrounding atmosphere in such a way that it can be transferred to the dry gas. If unsuitable hose materials are used, e.g., use of PVC hoses for compressed air, impurities of several hundred ppm may be expected, even if the hoses are new.

**In this case, the purity of the shielding gas is no longer assured**

Read DVS data sheet 0971 for more information.

## 4 Welding power source

**Cause of problem:** Hoses and pipes or their connections inside the power source may not be gas tight.

**Recommendation:** Regular checking is recommended, if necessary, to be done by the manufacturer.

## 5 Hose package

**Cause of problem:** Faulty or missing seal at the connection to the power source/wire feed unit

**Recommendation:** The seal should be checked at regular intervals.

**Cause of problem:** Use of unsuitable or used up gas hoses

**Recommendation:** PVC tubes are often used in the hose package. However, depending on the welding job to be done, it may be necessary to use higher quality hoses. The hoses used in the hose package are by definition part of the welding torch and are therefore subject to standard EN 60974-7. Contact the manufacturer of your torch when a replacement needs to be made.

Read DVS data sheet 0971 for more information

**Cause of problem:** If wire core liners are too large, this can allow air to reach the welding location via the wire feed.

**Recommendation:** Use suitable wire core liners and wire feed nozzles.

## 1 Pressure regulator

**Cause of problem:** Leaking or missing seal at the 200/300 bar pressure regulator connection

**Recommendation:** The seal should be checked at regular intervals

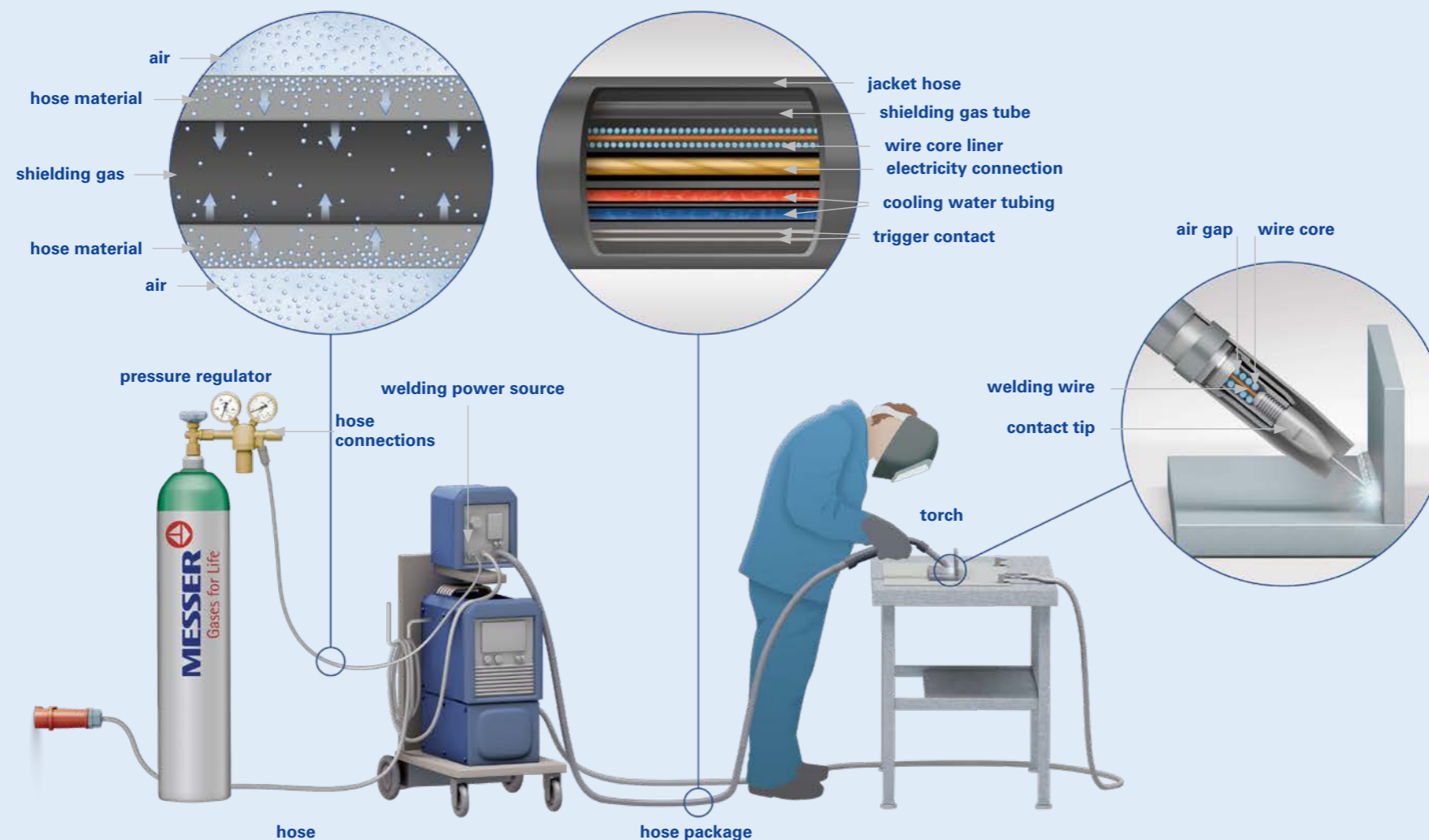
**Cause of problem:** Pressure surge on pressure regulator gauge

**Recommendation:** Slacken the diaphragm before opening the cylinder valve

## 2 Hose connections

**Cause of problem:** Use of unsuitable tubing connectors or incorrect assembly of connections

**Recommendation:** Tube connections should comply with the standards EN 560 and EN 561.



## 6 Torch

**Cause of problem:** A dirty shielding gas nozzle leads to insufficient shielding gas coverage.

**Recommendation:** The shielding gas nozzle needs to be regularly cleansed off spatters and welding smoke.

**In addition:** When using a gas diffuser, this too needs to be regularly replaced or cleansed off spatters and welding smoke.

**Cause of problem:** A contact tip that is too big can lead first and foremost to problems igniting the welding process and to off-center wire feeding. It can also lead to an injection affect, causing air to be drawn through the contact tip.

**Recommendation:** Use a suitable contact tip. This should be replaced at regular intervals.

**Cause of problem:** Worn seating of shielding gas nozzle on the welding torch is leading to leakage and off-center positioning of shielding gas nozzle (pore formation).

**Recommendation:** It is recommended that regular checks are made to ensure the shielding gas nozzle is gas tight.

