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

MESSER Gases for Life

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 metres), to prevent too much faltering of pressure.

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.

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 ISO 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

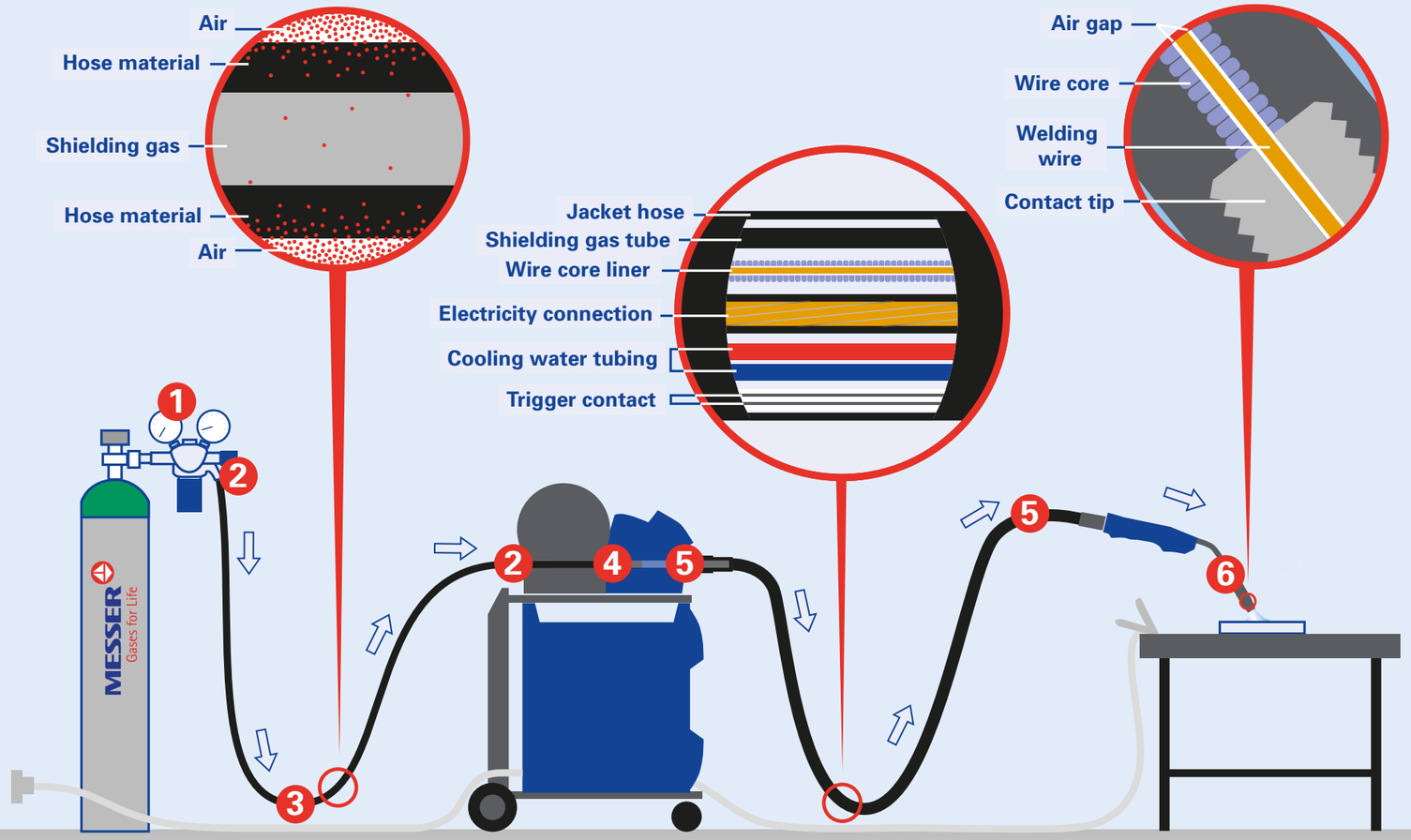
Cause of problem: Hoses and pipes or their connections inside the power source may not be gas-tight.

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.

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 of spatters and welding smoke.

In addition: When using a gas diffuser, this too needs to be regularly replaced or cleansed of 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-centre 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-centre 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.

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