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OWNER'S MANUAL

Power Injection Gun (PIG)

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1. Scope of manual

This manual covers the set-up, operation and maintenance of the Power Injection Gun.

2. Applications and restrictions

The Power Injection Gun can be used for all types of abrasive blasting media < 1.5 mm in size.

The **maximum working pressure** is **12 bar**.

Good results can be achieved with a media hose length of up to 10 m, a suction height of 4 m at a pressure of 7 bar (tested with steel grit < 0.8 mm).

The Power Injector Gun is used for similar applications as a pressure blast system, although with lower efficiency. It should be used in situations where pressure blast systems are ineffective due to their high dead weight and constant change of location. It is suitable for performing the following jobs:

- Surface preparation of damaged spots on coated metal parts.
- Removal of coatings, dirt, rust and scale from areas to be welded prior to surface roughening for metallising, adhesive bonding or similar applications.
- Subsequent blasting work on equipment already assembled with dimensions too big to be transported and, as such, unable to be cleaned in a blast room.

Important! Open-air use of injection guns is prohibited in many countries, including Germany.

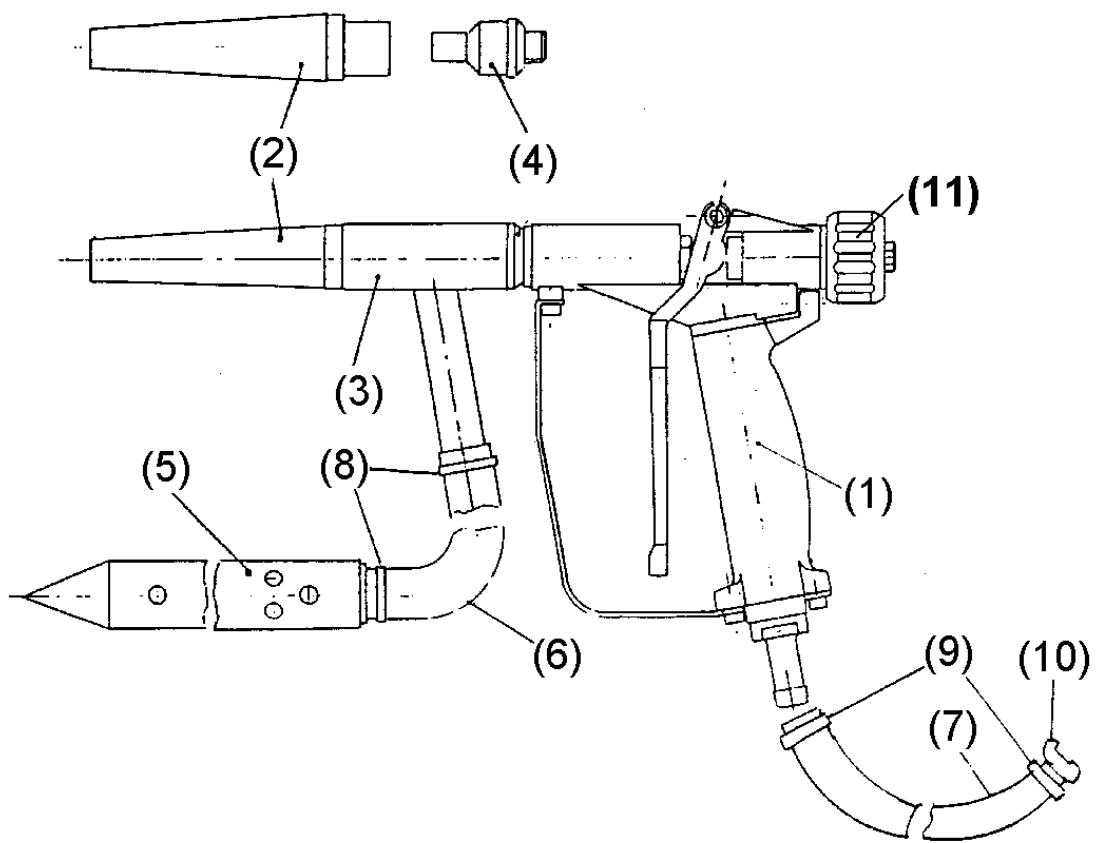
Suitable methods of enclosure (e.g. blasting tents) are required.

3. General description

The image below shows the composition of the Power Injector Gun.

Squeezing the trigger on the gun's grip (1) causes air to flow through the air jet (4). When expansion occurs in the mixer (3), a vacuum is created and used to draw in abrasive blasting material from an open hopper through the media hose (8) and the suction pipe (5). This flow of abrasive blasting material is collected by the compressed air propulsion jet and propelled out of the blast nozzle (2) at working speed.

The suction pipe (5) is designed to facilitate even suction of the abrasive blasting material.



- | | |
|--------------------------------|----------------------------------|
| (1) Handle with air valve | (8) Clamp for media hose |
| (2) Nozzle | (9) Clamp for air hose |
| (3) Mixer | (10) Hose coupling SKG 19 |
| (4) Air jet / orifice assembly | (11) Screws |
| (5) Suction pipe | (12) Hopper (not shown) |
| (6) Media hose | (13) Cart for hopper (not shown) |
| (7) Air hose | |

4. Set-up and operation

4.1 Air requirements

Pressure [bar]	3	4	5	6	7	8	9	10	11	12
Air consumption [m³/min]	2.4	3.0	3.6	4.2	4.8	5.4	6.1	6.7	7.3	8.0

4.2 Set-up for initial installation or reinstallation

When shipped, the Power Injection Gun is ready-installed. Simply check that the clamps for the hoses are tight.

4.3 Daily set-up

- (1) Prior to blasting, check that
 - All connections and hose clamps are tight
 - The media and air hoses are not excessively worn
 - The space is well-lit with good visibility
 - There is enough room
- (3) Connect the air hose.
- (4) Install the suction pipe on the hopper. **Make sure that the air holes of the suction pipe are outside the hopper.**
- (5) Put on the protective equipment
 - Blast suit.
 - Leather gloves.
 - Airfed helmet with breathing air filter.

4.4 Operation

- (1) Fill the hopper with abrasive blasting media.
- (2) Squeeze the trigger to start the blast process, ensuring that the gun is only pointed at the surface being blasted.

4.5 Shut down at end of work

- (1) Remove the suction pipe from the abrasive blasting media and remove the rest of the media still present in the media hose.
- (2) Close the external air supply.

4.6 Shut down when moving the equipment

No special measures necessary.

5. Maintenance

During operation, the equipment is exposed to wear. In order to ensure safe operation and high efficiency, it must be regularly maintained according to the following checklists.

Prior to maintenance, ensure that the air valve of the compressor is closed and the whole system is depressurised!

5.1 Daily check list

- (1) Check for loose connections (hose clamps).

5.2 Weekly check list

- (1) Check the media hose for wear.
- (2) Check the compressed air hose for wear.
- (3) Check the nozzle for wear. A diameter increase of 10% reduces the performance to 80%.

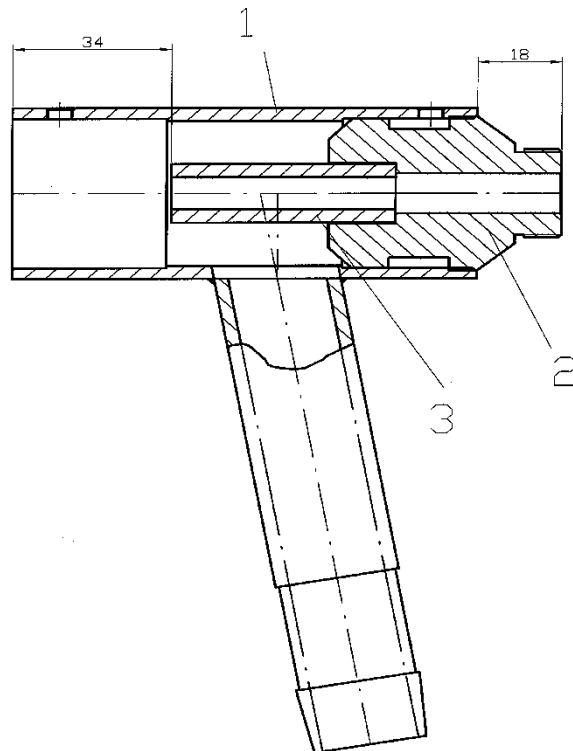
5.3 Monthly check list

- (1) Check for loose connections.
- (2) Check the hoses for wear and replace them if necessary.
- (3) Check the nozzle for wear. A diameter increase of 10% reduces the performance to 80%.
- (4) Check the mixer for wear. It is absolutely essential to replace it if major wear is found.
- (5) Check the air jet / orifice for wear, detaching the mixer. Even a small change to the length of the orifice tremendously reduces performance.

5.4 Air jet / orifice installation

To achieve optimum performance with the power-blasting gun, carry out installation according to the following drawing:

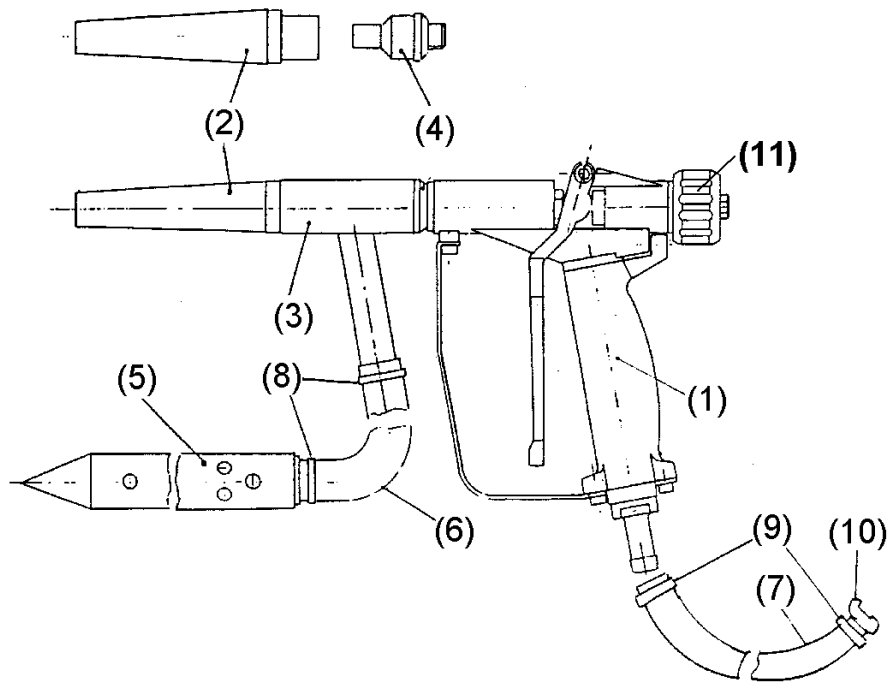
- 1 = Mixer
- 2 = Air jet collar
- 3 = Air jet



6. Trouble-shooting

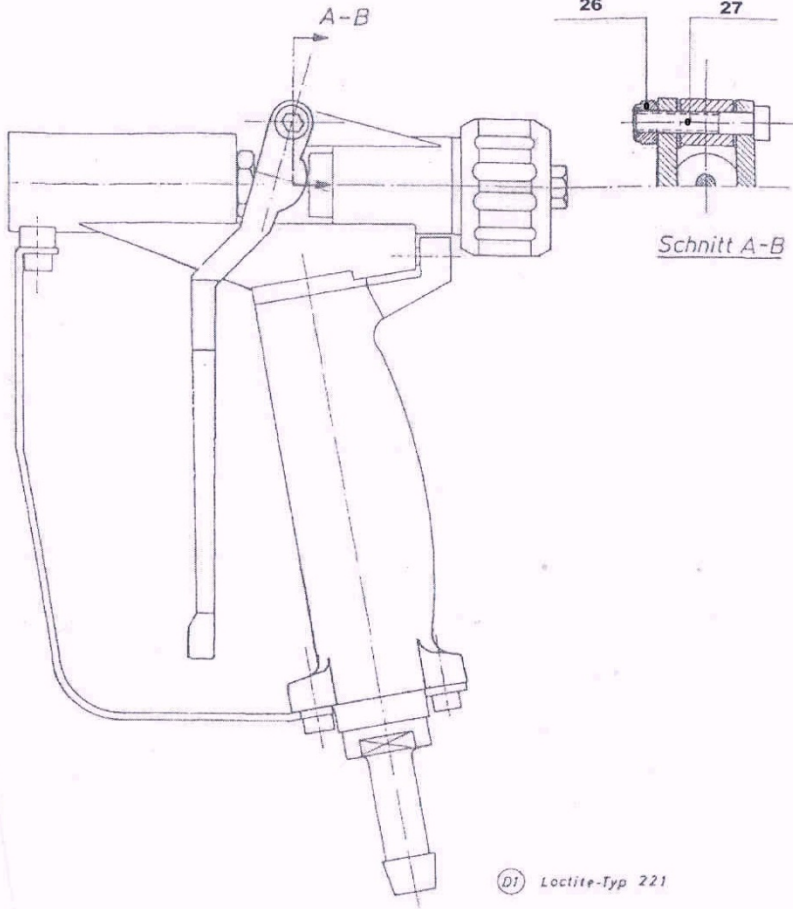
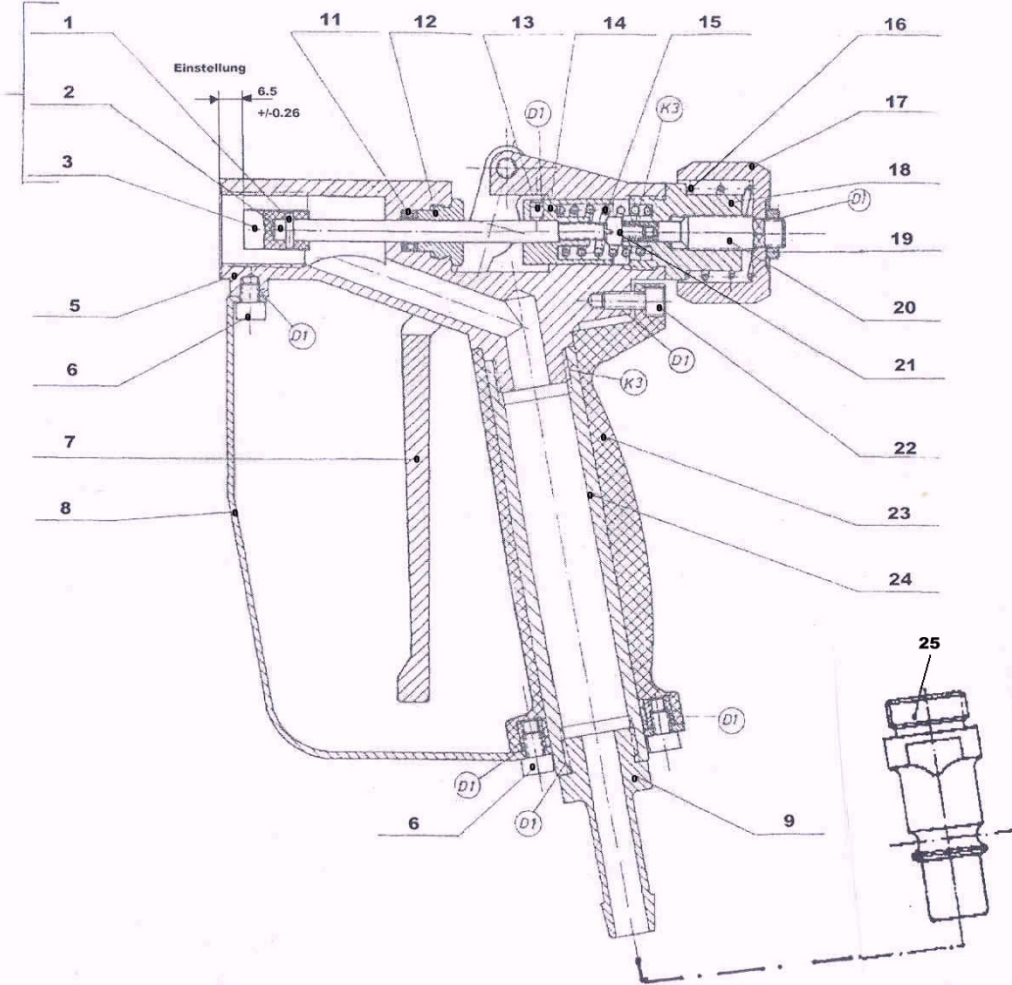
<i>Problem</i>	<i>Possible cause</i>	<i>Remedy</i>
<p>(1) <i>Air but no blast media comes out the nozzle.</i></p>	<p>Moist abrasive or obstruction.</p>	<ul style="list-style-type: none"> – Seal the nozzle outlet by pressing strongly onto an elastic base, e.g. leather glove. Squeeze the trigger. This causes the air to reverse its direction and cleans the affected parts. – Only in the event that this does not help: clean the suction pipe, the media hose and the mixer. – Change the abrasive.
	<p>External air has entered.</p>	<ul style="list-style-type: none"> – Tighten the clamps of the media hose. – Replace worn media hose and/or replace mixer.

7. Replacement parts



NO.	STOCK NO.	DESCRIPTION
(-)	99860D	Power Injector Gun complete with cart and hopper, 5 m hoses
(-)	90253D	Power Injector Gun complete, without cart and hopper, 5 m hoses
(1)	90208D	Power Injector Gun (body)
(2)	90209D	Nozzle
(3)	90366D	Mixer
(4)	90213D	Air jet / orifice
(5)	90214D	Suction pipe
(6)	90042D	Suction hose 1" (per m)
(7)	90045D	Air hose (per m)
(8)	90090D	Clamp 20-32 for suction hose
(9)	90077D	Clamp 25-40 for air supply hose
(10)	93245D	Coupling SKG-19
(11)	90584D	Handwheel
(-)	90368D	Hopper (not shown)
(-)	90367D	Cart (not shown)
(-)	99899D	Cart with hopper and cover

7.1 Replacement parts list for 90208D Power Injection Gun main body



- $D1$ Loctite-Typ 221
- $D3$ Loctite-Typ 566
- $K3$ UHU-Plus 300

Pos. no:	Part no.:	Description
1-3	90594D	Power Injector Gun sealing cone
4		N/A
5	N/A – no replacement part	Insert piece
6	N/A – no replacement part	Socket head screw
7	N/A – no replacement part	Handle
8	N/A – no replacement part	Frame
9	N/A – no replacement part	Hose connector LW (13 or 19)
10	N/A – no replacement part	Housing
11	90595D	Gasket
12	90593D	Plug
13	90592D	Pin
14	90591D	Guide
15	90590D	Pressure spring
16	90589D	Pressure spring
17	90584D	Handwheel
18	90585D	Nipple
19	90586D	Nut
20	90587D	Needle
21	90588D	Socket head screw
22	N/A – no replacement part	Socket head screw
23	N/A – no replacement part	Handgriff
24	N/A – no replacement part	Pipe
25	N/A – no replacement part	Nipple
26	N/A – no replacement part	Nut
27	N/A – no replacement part	Cylinderscrew