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PG 1-R2 Robot Powder Gun

About these assembly and operating instructions

These assembly and operating instructions contain important information which is required to operate the PG 1-R2 Robot Powder Gun.
In order to be able to exploit all the advantages of the PG 1-R2 Robot Powder Gun the user should already be familiar with the working techniques and functioning of the powder coating equipment. It is not the purpose of this manual to give instruction on how to use powder coating equipment. If, however, problems do arise which are connected with the PG 1-A automatic powder gun or with the PGC 1 Powder Gun Control while working with the PG 1-R2 Robot Powder Gun, then the corresponding operating instruction manual should be consulted.

Field of application

The PG 1-R2 Robot Powder Gun is a double/twin powder gun for assembly on an industrial robot, so that automatic powder coating can achieve a still higher coating performance. The performance and the characteristics are similar to those of the PG 1-A Automatic Powder Gun, that is to say, use with the flat jet nozzle, round jet nozzle, and the angled nozzle is also possible.
The individual guns are separately controlled, so that one or the other gun can be switched on or off independantly when required.
The double gun can be quickly and easily removed from the robot by unscrewing the four wing nuts from the flange.
Due to the modular construction of the PG 1-R2 Robot Powder Gun (without angled nozzle) the light-weight SuperCorona® (approx. 60 g each) can be fitted very quickly and easily. Even after retrofitting the PG 1-R2 Robot Powder Gun remains maintenance and repair-friendly.
The flash and contact safety of the PG 1-R2 Robot Powder Gun is identical to the proven PG 1 Manual Powder Gun.

Attention! : When operating the PG 1-R2 Robot Powder Gun observe completely the respective safety instructions, as well as the safety instructions of the Robot manufacturer!

Scope of delivery

- PG 1-R2 Robot Powder Gun
- Powder hoses
- Rinsing air hoses
- Gun cables with a junction box
- Angled nozzle with flat jet nozzle
- Velcro straps
- Spiral cleaning brush
- Spare parts case

Technical data of the the PG 1-R2 Robot Powder Gun

- Rated input voltage : 10 V eff
- Frequency : 17000 Hz
- Rated output voltage : 98 kV
- Maximum output current : 140 µA
- Polarity : Negative
Preparatory steps for initial start-up

a) Connecting the PG 1-R2 Robot powder gun

1. Connect the cables (1) and (5) with the 7-pin connector from the junction box (4) to the socket labelled „A Gun“ at the rear of the corresponding PGC 1 control module (See Figure 1 below).

2. Connect the cable (3) from the junction box to the PG 1-R2 Robot Gun

3. Connect the hose for rinsing air (2) to rinsing air outlet 1.4 and to the gun.

4. Connect the powder hose (10) to the gun and to the injector (11).

Figure 1
Cleaning and repairs

Conscientious maintenance at regular intervals increases the service life of the coating equipment and will result in uniform coating quality over a longer period!

a) Cleaning

**Important**
- Before cleaning the gun, switch off the control module and detach the gun connector at the gun socket (A Gun).
- The compressed air used for cleaning should be free of oil and water.

**Daily:**
1. Clean the outside of the gun

**Weekly:**
2. Detach the powder hose at the connector
3. Detach the nozzle from the gun and clean it
4. Blow out the gun through the powder inlet in the direction of flow
5. Clean the gun tube with the spiral brush supplied
6. Blow out the gun with compressed air again
7. Clean the powder hose
8. Reassemble and reconnect the gun
b) Gun disassembly

Important:
- The gun should only be disassembled if this becomes necessary due to a defect or contamination.
- Disassemble only to the point where access to the corresponding part is achieved.
- Before cleaning the gun, switch off the control module and detach the gun connector.
- The cascade must not be removed because it has been installed by a special process. If the cascade is defective, send the entire shaft to an authorized Gema-Volstatic service centre.

Figure 2

Figure 3
Gun disassembly (continued):

1. Remove the nozzle
2. Unscrew the 4 (four) wing nuts (4) (these can also be hexagonal nuts) and remove the gun. The black flange (1) remains fitted to the robot arm.
3. Pull off both powder hoses together with the powder hose connection tubes (3).

**Important**: The powder hose can only be removed with a knife, because the fit is very tight. This is necessary prevent the powder hose from being pulled off the hose connection tube during operation and blowing powder into the interior of the robot arm and thereby causing damage.

4. Remove the electric cable of the powder gun connection (5) by turning the plug sleeve to the left.
5. Pull out both rinsing air hoses from the corresponding hose connections (2) - see Figure 4.
6. Blow out the powder tube in the gun (alternatively, clean it from the front with the spiral brush).
7. Remove the double powder tubes (6) from the PG 1-R2 (which is hardly ever necessary).
   - Unscrew both M 6x10 plastic screws (7)
   - Place the two powder hose ejectors on the front of the gun shaft.
   - Push the double powder tubes slowly, but firmly out of the gun.
   - For normal cleaning it is only necessary to blow the double powder tubes through in the assembled condition.
   - The gun shaft remains fitted to the support; it should only be taken off, in the case of repair, by unscrewing the plastic screws (8).

**ATTENTION !**: Do not bend the grounding spring (9). Care should be taken to see that the grounding spring is fitted when assembling the gun. If the grounding spring is missing the gun must not be operated under any circumstances.

8. Check the O-ring gaskets and replace, if necessary.
9. Blow out the gun support, and the shaft with compressed air.

**c) Gun assembly**

- The gun is reassembled by performing the previously described disassembling steps in the reverse order.
- Careful handling is recommended!
- So that the gun shaft sits correctly on the support the plastic screws (8) should only be tightened lightly.
- If the double powder tubes cannot be inserted properly without applying force, disassemble the gun again and reassemble it.

After the gun has been reassembled check that:

- the grounding spring is present, that is not broken off
- the double powder tubes are properly seated, and the powder hose connections are pressed against the gun support shoulder
- the O-ring gaskets are correctly in place.
- there are no large gaps between joints.