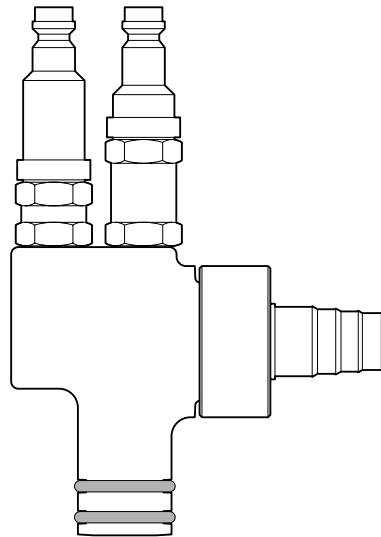


Operating Instructions and Spare parts list

# EasyFlow Powder injector





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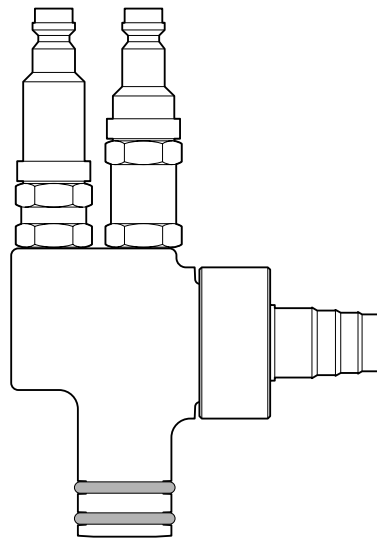


## EASYFLOW PLUG-IN INJECTOR FOR ORGANIC POWDER

### FIELD OF APPLICATION

The EasyFlow Injector is used to convey conventional organic powder from the powder hopper to the powder gun. The injector is supplied with a Teflon insert sleeve as standard. The patented wear-resistant insert sleeve, which can be ordered separately, is recommended for use with very abrasive powder types.

The EasyFlow Injector is the plug-in type, which permits simple handling, and quick cleaning. All connections are plug-in and are non-interchangeable. The injector can be dismantled without special tools.



EasyFlow Powder Injector with detachable, coded quick-release connections for the pneumatic hoses

Figure 1

**FUNCTION OF THE INJECTOR AND THE INFLUENCE OF THE SUPPLEMENTARY AIR**

Air flowing from a nozzle into a cavity with an outlet opening placed in the continuation of the air stream, causing under pressure to develop (see Figure 2 below). This effect is used to suck powder up into the suction tube, creating a powder/air mixture.

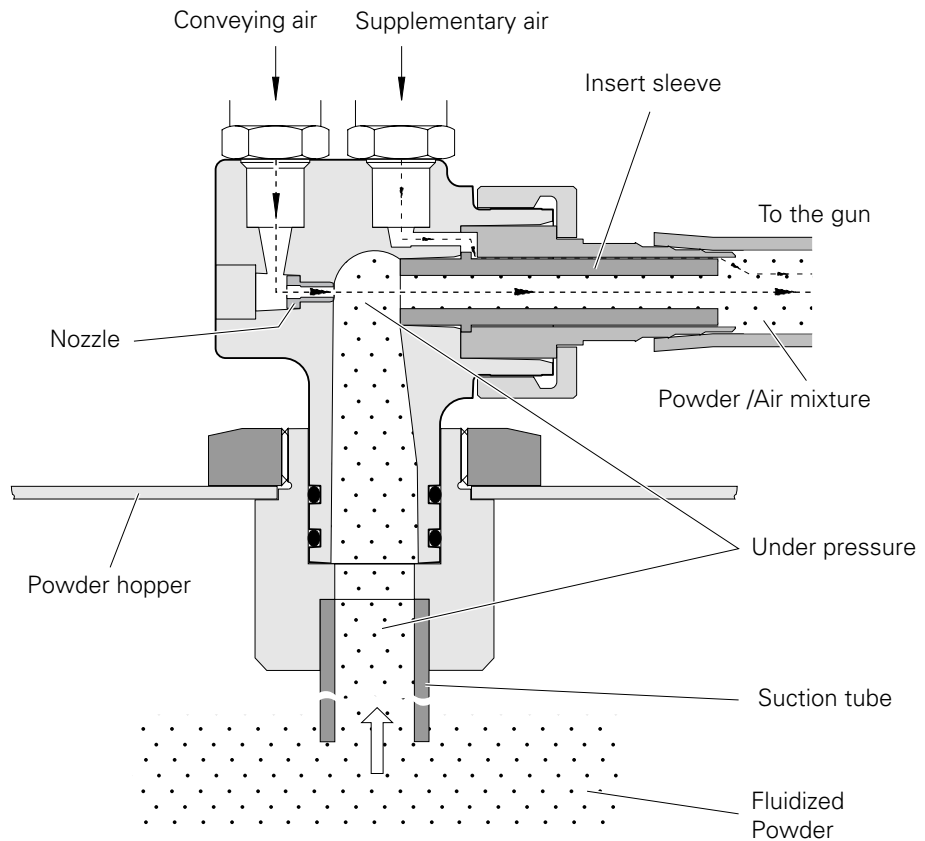


Figure 2

This passes through the powder hose to the gun. The concentration of the powder/air mixture and with this the strength of the powder output is dependent on the conveying, and supplementary air volume, the nature of the powder, the powder hose length, the powder hose diameter, the number of powder hose turns, the height difference between the gun and injector, and also the type of nozzle. The condition of the insert sleeve is of great importance because when it starts to show signs of wear the powder output is drastically reduced.

Experience with the pneumatic conveying technology shows, that for the pneumatic transport of fine solid matter like powder in a tubular construction, for example, a hose, a certain air volume per time unit is necessary. With an  $\varnothing$  11 mm hose this value is approximately 4 m<sup>3</sup>/h. In order to decrease the powder output, the under pressure in the injector cavity must be reduced, in that the conveying air pressure is reduced. With the reduction of the conveying air pressure the air volume in the powder hose also sinks below the optimum value of 4 m<sup>3</sup>/h, the powder transport becomes irregular, the so-called "pumping" commences. In order to prevent this, supplementary air is added, until the total air volume in the powder hose is 4-5 m<sup>3</sup>/h again. This takes place fully-automatically in the EasyTronic control unit

## POWDER VOLUME SETTING TABLE FOR EASYFLOW INJECTOR

In order to set ideal powder volume on the EasyTronic it is recommended, to first to choose the "hardness" of the powder cloud or the **Total air** volume.


The following guide values can be used for the different powder hose diameters:



- Powder hose - 1004 ID 11 mm **4-5 m<sup>3</sup>/h**  
(Order number 103 128)
- Powder hose - 1005 ID 12 mm **5-6 m<sup>3</sup>/h**  
(Order number 100 080)

Depending on the conditions (powder, powder hose layout, workpieces to be coated) low to the lowest Total air volumes can also be set with the 1004 - ID 11 mm standard powder hose.

If a very large powder output is required it is recommended to select the larger powder hose inside diameter (ID) - (ø 12 mm). Shortening the powder hose length from 6 to 3 m also achieves the desired result (see the table below)

 **NOTICE** It is to be noted that with irregular or "pumping" powder transport, as a rule the Total air volume is set too low

All values in this table are guide values only. Different environmental conditions, wear and different types of powder can cause the values to differ from those below.

Powder hose length [m]		6			6		3
Powder hose ø [mm]		11			12		12
Powder hose No.		1004			1005		1005
Total air volume [Nm <sup>3</sup> /h]		4	5	6	5	6	6
		Powder output [g/min]					
Powder volume [%]	<b>10</b>		24	37	48	56	102
	<b>20</b>		60	80	81	101	150
	<b>30</b>	65	90	130	116	165	224
	<b>40</b>	98	140	185	162	231	290
	<b>50</b>	131	188	230	217	282	356
	<b>60</b>	169	240	282	274	346	420
	<b>70</b>	208	287	333	330	400	486
	<b>80</b>	250	334	382	385	458	542
	<b>90</b>	297	385	427	440	504	584
	<b>100</b>	330	433	477	490	544	610

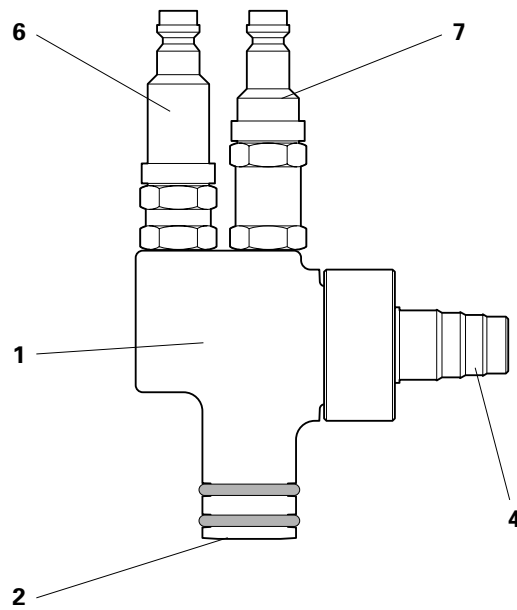


Figure 3

**INJECTOR CLEANING****A) AT THE START EVERY WORKING DAY/SHIFT OR AT A COLOUR CHANGE**

1. Remove the injector from the powder hopper
2. Remove the powder hose from hose connection (4)
3. Clean the hose connection (4) with compressed air, free from oil and water, and check for wear
4. Clean the injector housing (1) with compressed air, free from oil and water. Contamination is visible through the opening of the powder hopper connection (2).
5. Replace the injector

**Attention: Dismantle the injector when extremely dirty:**  
Unscrew the check valves (6 and 7) with the correct size spanners.  
Clean individual parts with compressed air, when necessary dissolve possible sintering in Nitro thinners. Do not use Acetone.  
Never scrape off!

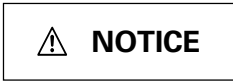


- |   |                          |   |                                 |
|---|--------------------------|---|---------------------------------|
| 1 | Injector housing         | 6 | Check valve (Conveying air)     |
| 2 | Powder hopper connection | 7 | Check valve (Supplementary air) |
| 4 | Powder hose connection   |   |                                 |

Figure 4



**B) CLEANING THE CHECK VALVE**



Take care when dismantling the check valve, because the ball and/or spring can easily be lost.  
Do not submerge the ball in solvents.

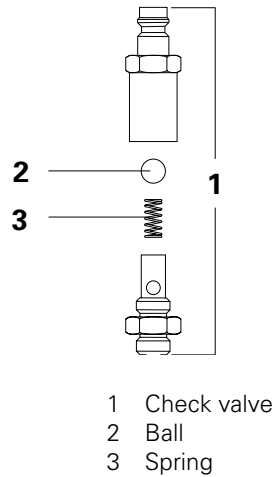


Figure 5

**The EasyFlow Injector should be cleaned at least once daily!**

Normally, cleaning, as described on the previous page is sufficient.

**Once a week, or when extremely contaminated**, the injector should be completely dismantled. See also Figure 6 in the Spare parts list.

**TROUBLESHOOTING GUIDE**

If the powder gun does not spray powder, in spite of the control unit being switched on, the injector could be dirty or clogged.

- Injector nozzle, check valve, powder hose or powder gun are clogged.	Clean corresponding parts, when necessary, replace
- Transport vacuum too low	Increase the powder volume and/or Total air volume on the control unit
- Insert sleeve worn or not fitted	Replace or fit the insert sleeve

**SPARE PARTS LIST EASYFLOW INJECTOR**

	EasyFlow Injector (complete, without Items 3.1, 8 - 11)	377 740
1	Injector housing (without Item 2)	377 732
2	O-Ring - $\varnothing$ 16 x 2 mm	231 517
3	Insert sleeve - Teflon	377 724#
3.1	Insert sleeve - Glass	377 767#
4	Hose connection	377 716#
5	Threaded sleeve	377 708
6	Check valve - Conveying air (red marking) (complete - incl. Items <b>6.1</b> and <b>6.2</b> )	261 211
6.1	Ball	240 168
6.2	Spring	240 176
7	Check valve - Supplementary air (black marking) (complete - incl. Items <b>6.1</b> and <b>6.2</b> )	261 203
8	Quick-release connector (red) for Conveying air hose - $\varnothing$ 8 / 6 mm	261 645
9	Quick-release connector for Supplementary air hose - $\varnothing$ 8 / 6 mm	261 637
10	Plastic hose - $\varnothing$ 8 / 6 mm (red)	103 500*
11	Plastic hose - $\varnothing$ 8 / 6 mm (black)	103 756*
	Powder hose - 1104 - $\varnothing$ 16 / 11 mm (standard)	103 128*#
	Powder hose - 1005 - $\varnothing$ 20 / 12 mm	100 080*#

# Wear parts

\* Indicate length required

**Spare parts list EasyFlow Injector**

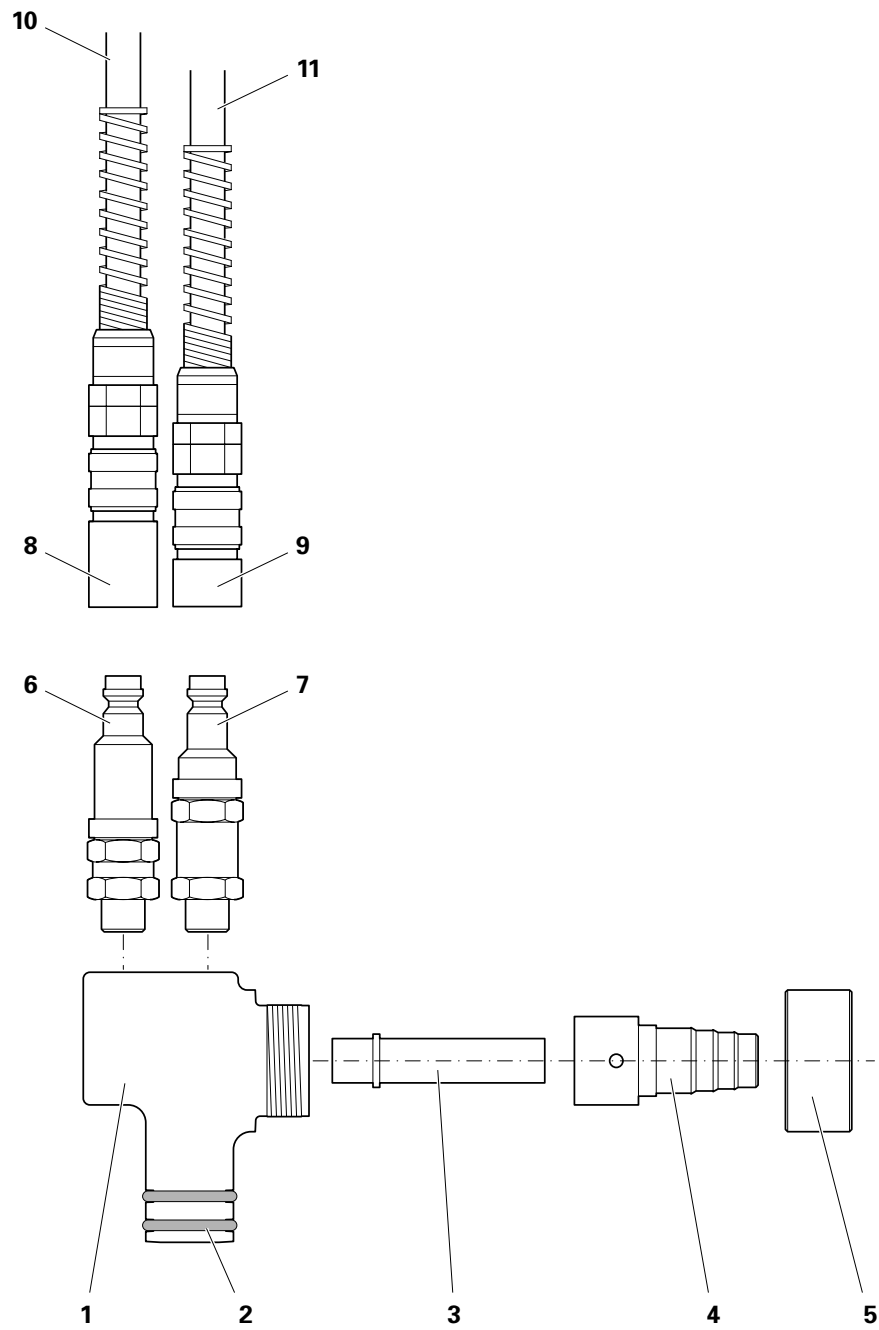


Figure 6

Documentation EasyFlow

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Printed in Switzerland