TOX®-Spray Equipment
Type SP

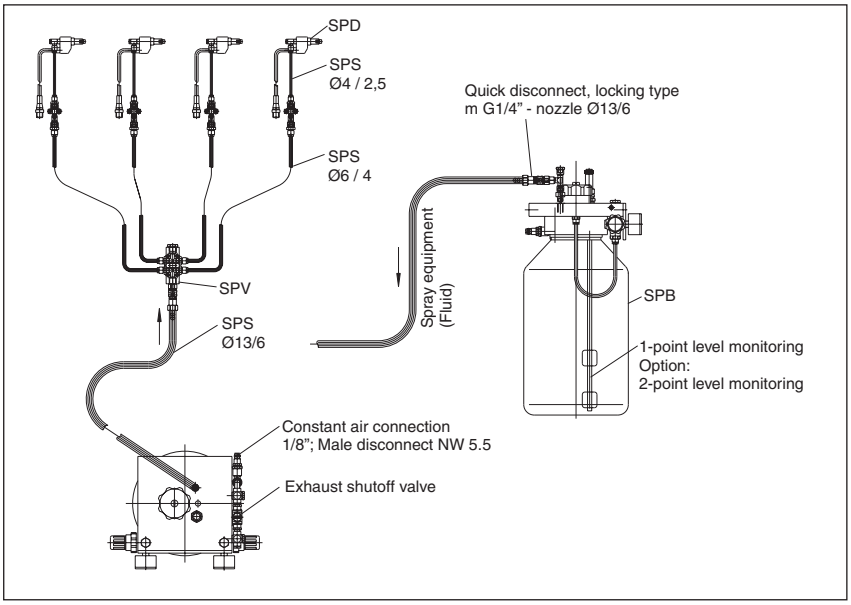
This **spray equipment** has been **specially developed** to lubricate the sheet metal surface or the TOX®-tools just before the joining process, in order **to reduce the pressing and stripping forces** for the TOX®-tools and by changing the lubrication condition **to increase the formability** of the materials by changing the lubricating conditions.

Several valves can be connected in parallel (series connection is not possible) to a central pressurized reservoir which dispenses spray media to the nozzles. Spray heads for various applications can be used with this system. The application flexibility is provided by the modular design of the TOX®-Spray equipment.

The system can be easily expanded depending on requirement changes in complex installations.

The acceptable spray media, with maximum viscosity of 22 mm²/sec, will be optimized with the TOX®-Test for the particular application.

Attention:
If non-volatile spray media is used, then media residues can remain on the sheet metal surface.



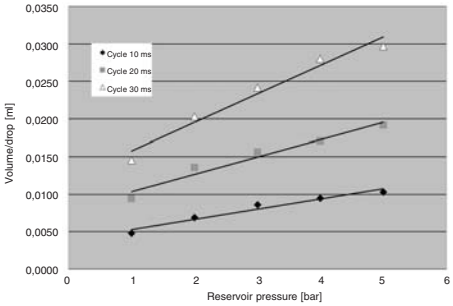
Function of complete system
The reservoir is charged with compressed air at approximately 2 bar pressure. By using as many manifolds as desired, an individual nozzle or groups of nozzles can be connected with hoses.

Minimum flow rates for the spray equipment at a reservoir pressure of 2 bar and 10 msec cycle time:

Viscosity e.g.	Flow Rate
1 mm²/sec	0,0075 ml
2,5 mm²/sec	0,008 ml
22 mm²/sec	0,009 ml

Each spray nozzle has an integrated valve, which can be controlled individually. The control impulse cycle is 10 msec. The complete system is compact and simple.

Flow rate diagram:
Spray medium: water, T = 18°C



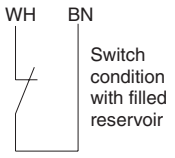
Reservoir type SPB:
Reservoir volume 4, 6, 10, 20 l
max. air pressure 6 bar
- Pressure regulator
- Pressure gauge
- Safety relief valve
- Dirt filter
- Quick exhaust
- Pressure relief valve
- Filling sieve
- Level monitor
- Version 01 1-point
- Version 02 2-point

Ordering example
SPB 04.01.00
- Variant
- Version
- Reservoir volume
- Type: pressurized reservoir

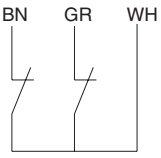
Technical data
Level monitor:
1 or 2 potential free contacts
Operating voltage 230 V
Operating current 1A
Power consumption 50 W/VA
Protection class IP 67

The switches must be grounded if used with voltage > 48 V.
blue = minimum
black = warning

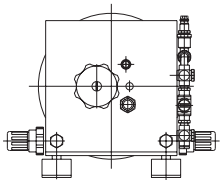
Version 01

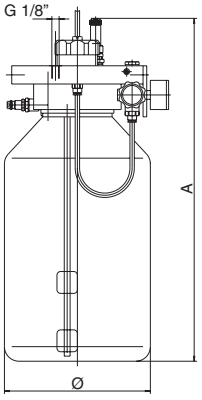


Version 02



Reservoir-volume (l)	Ø mm	A mm
04	125	510
06	155	520
10	200	520
20	300	550





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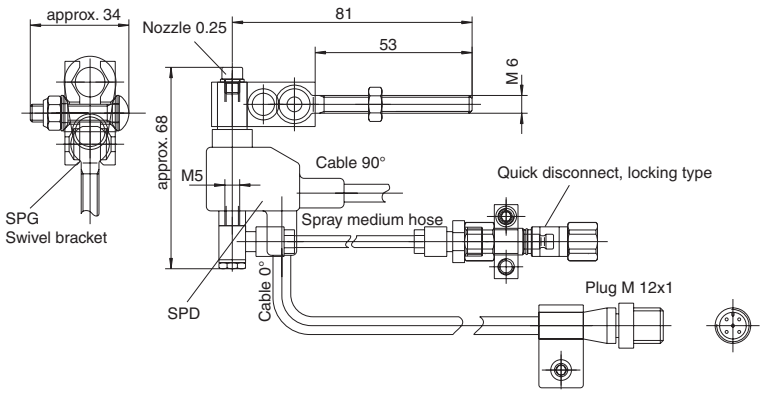
Spray head type SPD, complete:
- main body with integrated valve
- spraying distance of up to 300 mm
- includes 1000 mm cable with M12x1 plug
- includes 1000 mm spray medium hose

- Version 00 and 01 cable connection 0°
- 00 includes quick disconnect and fittings
- 01 without quick disconnect

- Version 03 and 04 cable connection 90°
- 03 includes quick disconnect and fittings
- 04 without quick disconnect



Ordering example
SPD 02.00
- Version
- Electric execution M12x1 plug
- Type: spray head

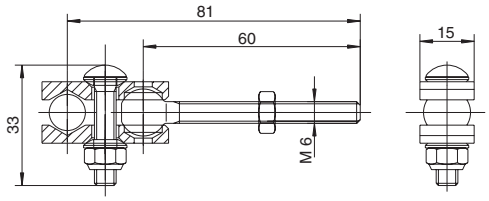
Technical data spray valve:

Voltage:	24 V DC
Power:	5 Watt
Connection:	M12 plug 5-pole
	+ 24 V PIN 4
	0 V PIN 3

Swivel bracket type SPG:
- clamp spray head
- connecting threads M6

Flexible mounting for the spray head. Allows for accurate positioning of spray equipment.

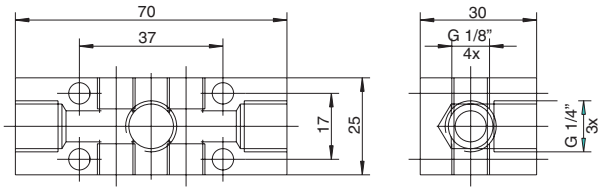
Order number:
SPG 01.00



Spray manifold type SPV:
- manifold for spray heads

Depending on number of spray heads and application.

Order number:
SPV 04.00



The hoses and fittings for the spray system installation are individually defined in the bill of materials for the schematic diagram.

SPS hose types in use:

SPS Ø 13/6	spray media compatible and abrasion resistant
SPS Ø 6/4	spray media compatible
SPS Ø 4/2,5	spray media compatible