SCORPION

Liquid dispensers are used where precise control of the delivery of liquids such as water or coolant is required. Specially adapted positive-displacement Servo-Meters inject precisely controlled amounts of liquid at designated intervals.

The Scorpion is a compact, pneumatically controlled system for the delivery of coolant to cutting edges in precisely controlled amounts and frequency. It is a cost-effective solution to the waste management problems created by flood coolants.

When used in machining and grinding operations the Scorpion directs a precise amount of coolant and air directly onto the tool's cutting edges.

An optional blowoff feature programs compressed air to remove chips, cool the workpiece, and clean the area between applications of coolant. Injection of coolant and the air blowoff feature operate independently for flexible control.

On/off control is either pneumatic or electric, the latter allowing the Scorpion to be interfaced with external electronic controls.

SCORPION Features

Coolant Reservoir: 10-ounce capacity standard; optional capacities up to 2 quarts. Remote 5-gallon reservoir also available. See DasCool 2357 Coolant Concentrate (page 286). For use with other liquids, consult Master Pneumatic.

Air Filter: 5-Micron filter element assures essential clean air to the Scorpion unit.

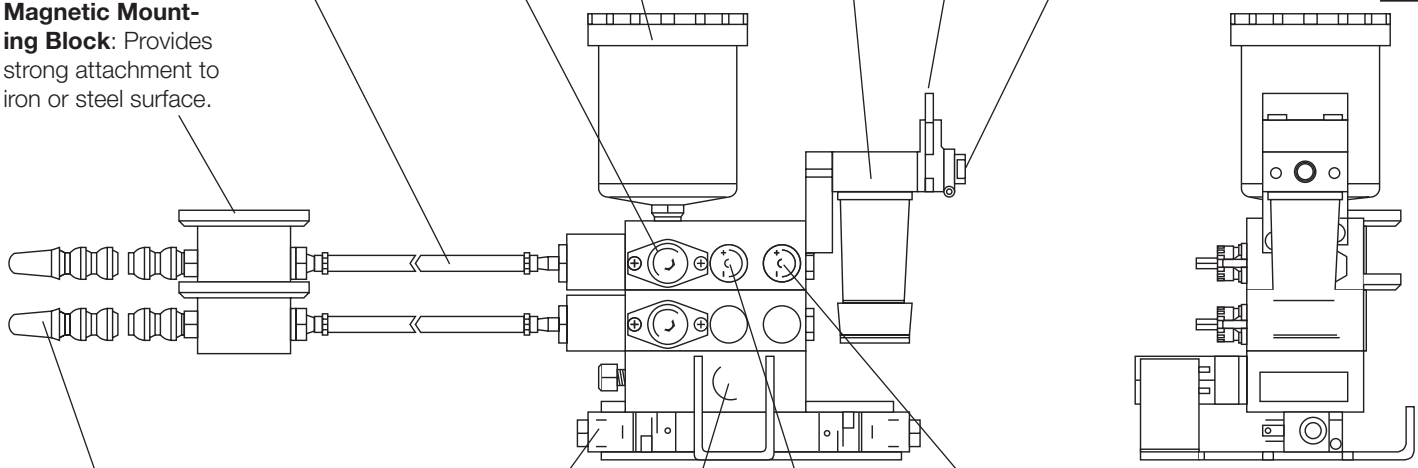
Fluid Adjustment: Sets the amount of coolant delivered at each output pulse.

Lockout Valve: Built in valve provides manual on/off control. During lockout of supply pressure, the valve allows exhausting of compressed air in the Scorpion.

Output Line: Coaxial flexible line conducts coolant and air from control assembly to magnetic transfer junction.

Air Inlet: For pressurized air from 60 to 120 psig (4 to 8 bar).

Magnetic Mounting Block: Provides strong attachment to iron or steel surface.



Output Delivery Line: Coaxial line delivers coolant and air to the cutting interface. Line is flexible for easy and accurate positioning. Available as segmented flexible plastic, or semi-rigid copper tubing. Scorpion units are available with one to four output lines.

Blowoff Adjustment: Optional blowoff feature allows compressed air to be programmed to remove chips, cool the workpiece, and clean the area between applications of coolant.

Pneumatic Valve: Used with Scorpion units with optional blowoff control. Provides on/off and blowoff control, and permits interfacing with external controls.

Frequency Control: Adjusts frequency of output pulses, i.e., coolant injection.

Air Assist Adjustment: Adjusts the amount of air in the coolant/air output mixture. Aids in directing the coolant flow, and helps to keep the work area clean.

SCORPION
Solenoid or Pneumatic Actuation

Series 800, 830, 850

Model Shown: 8504

- Servo-Meter injector. 1-Drop capacity; optional 2-drop and 1/2-drop capacities.
- Up to four injectors and nozzles can be used.
- Patented blowoff feature.
- Snaplock® coolant dispensing nozzle. Optional copper nozzles.
- Braided PVC hose.
- Magnetic nozzle base.
- 10-Ounce capacity coolant reservoir.
- **NPTF** port threads; optional **BSPP** threads.

SPECIFICATIONS

Ambient/Media Temperature:
40° to 125°F (4° to 52°C).

Body Blocks: Anodized aluminum.

Hose: 6-Ft braided PVC; longer or shorter hose optional in 1-foot increments.

Injector: 1-Drop-rated Servo-Meter; 0 to 0.030 ml per pulse. Optional 2-drop-rated Servo-Meter; 0 to 0.060 ml per pulse. Injection frequency up to 100 pulses per minute.

Inlet Port:
1/4 **NPTF**; optional 1/8 **NPTF** and **BSPP** threads.

Inlet Pressure: 60 to 120 psig (4 to 8 bar).

Nozzle: Snaplock® with12-inch flexible segmented plastic. Optional 18-inch or 24-inch lengths. Optional copper nozzles.

On/Off Control: Manual. Optional solenoid control with or without blowoff feature.

Reservoir: Integral semi-clear polypropylene with 10-ounce (300 ml) capacity. Optional 1-quart and 2-quart capacities. Also no-reservoir option for use with remote reservoir.

Seals: Air, nitrile; oil, Viton.

Solenoid Voltages: (With optional solenoid)
110 or 220 volts, 50/60 Hz; 24 volts D.C.

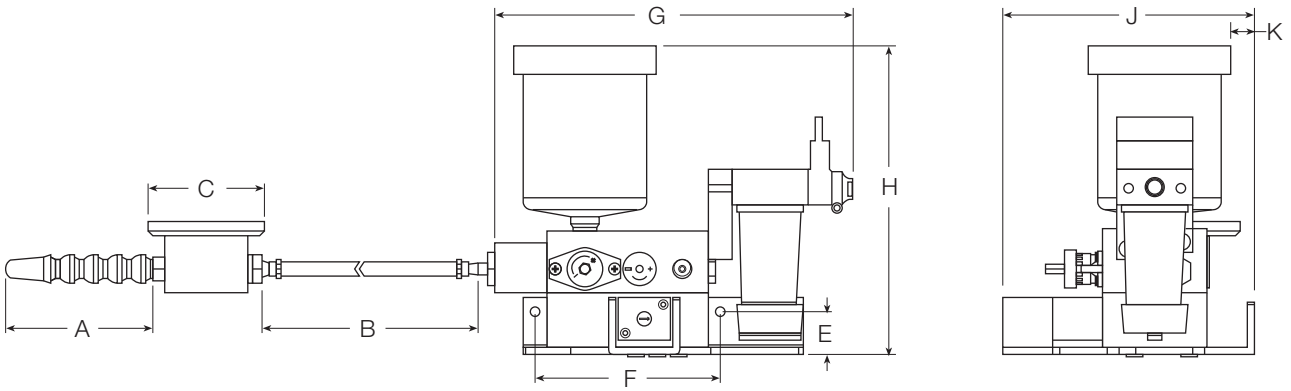
BASIC SYSTEMS

Three basic Scorpion systems are described below. They will satisfy the requirements of most coolant applications, and can be ordered by the 4-digit numbers given in the descriptions. However, to order a system with additional options see Ordering Information on the facing page.

System 8001: Single nozzle with manual on/off control. Can be ordered with 2, 3, or 4 nozzles by changing the last digit to the number of nozzles wanted. For example, a 3-nozzle system would be ordered by number 8003.

System 8301: Single nozzle with solenoid on/off control. 110 volts, 50/60 Hz. Can be ordered with 2, 3, or 4 nozzles by changing the last digit to the number of nozzles wanted. For example, a 4-nozzle system would be ordered by number 8304.

System 8501: Single nozzle with solenoid on/off control with blowoff feature. 110 volts, 50/60 Hz. Can be ordered with 2, 3, or 4 nozzles by changing the last digit to the number of nozzles wanted. For example, a 2-nozzle system would be ordered by number 8502.



DIMENSIONS inches (mm)

Dimension	Manual On/Off	Solenoid On/Off	Solenoid On/Off Plus Blowoff	Add for Each Additional Nozzle Assembly
A	12 (305) Std.	12 (305) Std.	12 (305) Std.	—
B	72 (1829) Std.	72 (1829) Std.	72 (1829) Std	—
C	2.62 (67)	2.62 (67)	2.62 (66.7)	—
E	0.9 (23)	0.9 (23)	0.9 (23)	—
F	4.4 (112)	4.4 (112)	4.4 (112)	—
G	8.3 (211)	8.3 (211)	8.3 (211)	—
H	7.4 (188)	9.1 (231)	9.1 (231)	1.3 (33)
J	5.9 (150)	5.9 (150)	5.9 (150)	—
K	0.5 (13)	0.5 (13)	0.5 (13)	—

ORDERING INFORMATION

Change the letters in the sample model number below to specify the Scorpion assembly you want.

80 0 A 1 1 0 0 1 T 06 K A 1

ON/OFF ACTUATION
Manual 80
Solenoid 83
Solenoid with blowoff..... 85

SOLENOID VOLTAGE
No solenoid (Series 80 only)..... 0
110 volts, 50/60 Hz (Series 83, 85)..... C
220 volts, 50/60 Hz (Series 83, 85)..... F
24 volts, D.C. (Series 83, 85) ..... E

BRACKETS
With standard bottom bracket only..... A
With standard bottom bracket plus extended back bracket ..... D

NUMBER OF NOZZLES
Specify number from 1 to 4.

INJECTOR RATING
1 Drop (Standard) 1
2 Drops 2
1/2 drop 5

RESERVOIR:
10-Ounce capacity 0
No reservoir 1
1 Qt with mounting plate 2
2 Qt with mounting plate 3

NOZZLE BASE ("C" in drawing above)
Magnetic 0
No base 1

INLET PORT with SENTRY FILTER
1/8 NPTF 1
1/4 NPTF 2
1/8 BSPP ..... A
1/4 BSPP ..... B

HOSE LENGTH
Standard PVC (6 feet) 06
Specify desired length (in feet) with two digits. For example, 08 for 8 feet, 12 for 12 feet ..... **

NOZZLE TYPE
Copper ..... H
Snaplock® ..... K

PLASTIC NOZZLE LENGTH
12 inches (305 mm) ..... A
18 inches (457 mm) ..... B
24 inches (610 mm) C

NOZZLE TIP
Standard conical nozzle 1
Fantip nozzle 2

SCORPION Jr.
Pneumatic Actuation

Series 890

Model Shown: 8901

- Operated by pneumatic pulse.
- Up to four injectors and nozzles can be used.
- Servo-Meter injector. 1-Drop capacity; optional 2-drop and 1/2-drop capacities.
- Snaplock® coolant dispensing nozzle. Optional copper nozzles.
- Optional magnetic nozzle base.
- Optional 10-ounce capacity coolant reservoir.
- **NPTF** port threads; optional **BSPP** threads.

SPECIFICATIONS

Ambient/Media Temperature:
40° to 125°F (4° to 52°C).

Body Blocks: Anodized aluminum.

Hose: Optional 6 feet long braided PVC. Longer or shorter hose in 1-foot increments.

Injector: 1-Drop-rated Servo-Meter; 0 to 0.030 ml per pulse. Optional 2-drop-rated Servo-Meter; 0 to 0.060 ml per pulse. Up to four injectors can be used. Injection frequency up to 100 pulses per minute.

Inlet Port:
1/8 NPTF; optional 1/4 NPTF. Optional BSPP threads.

Inlet Pressure: 60 to 120 psig (4 to 8 bar).

Nozzle: Snaplock® with12-inch flexible segmented plastic. Optional 18-inch or 24-inch lengths. Optional copper nozzles and fan tips.

On/Off Control: Manual.

Reservoir: Optional integral clear plastic with 10-ounce (300 ml) capacity.

Seals: Air, nitrile; oil, Viton.

BASIC SYSTEMS

Four basic Scorpion Jr. systems are described below. They will satisfy the requirements of many coolant applications, and can simply be ordered by the 4-digit model numbers given in the descriptions. However, to order a system with additional options see Ordering Information on the facing page.

Model 8901: One-injector system.

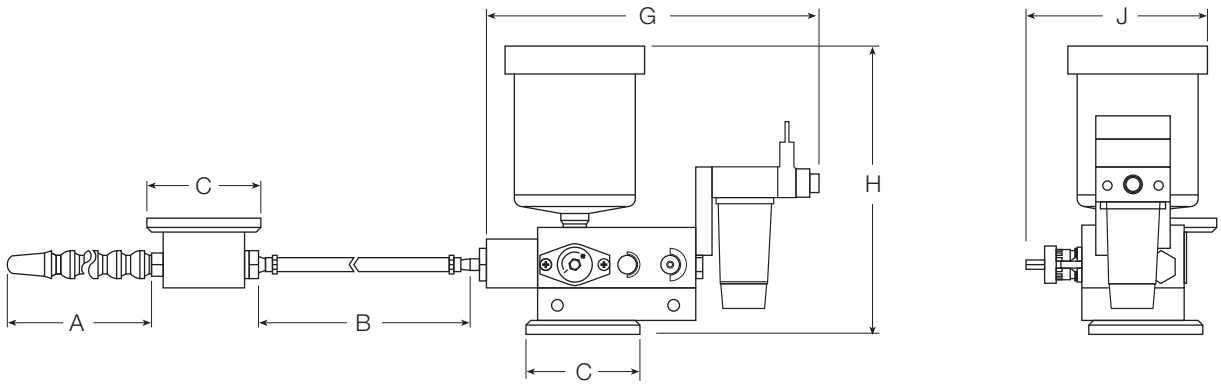
Model 8902: Two-injector system.

Model 8903: Three-injector system.

Model 8904: Four-injector system

Each of the above includes:

1/8 NPTF inlet port
One-drop injectors
12-Inch Snaplock® nozzle
No filter



DIMENSIONS inches (mm)

Dimension		Add for Each Additional Nozzle Assembly
A	12 (305) Std.	—
B	72 (1830) Std.	—
C	2.6 (66)	—
G	5.3 (135)	—
H	7.2 (183)	1.3 (33)
J	4.3 (109)	—

ORDERING INFORMATION

Change the letters in the sample model number below to specify the Scorpion Jr. assembly you want.

8900 1 1 0 0 1 A 00 K B 1

NUMBER OF INJECTORS/NOZZLES
Specify number from 1 to 4.

INJECTOR RATING
1 Drop (standard) 1
2 Drops 2
1/2 Drop 5

RESERVOIR
10-Ounce capacity 0
None 1
10-Ounce capacity (no coolant) 4

MOUNTING BLOCK BASE (See C in dimensional drawing above.)
Magnetic 0
No base 1

INLET PORT and FILTER
1/8 NPTF (with Sentry filter) 1
1/4 NPTF (with Sentry filter) 2
1/8 NPTF (without filter) 0
1/8 BSPP (with Sentry filter) ..... A
1/4 BSPP (with Sentry filter) ..... B
1/8 BSPP (without filter) C
1/4 BSPP (without filter) ..... D

HOSE TYPE
None ..... A
Braided PVC hose ..... T

HOSE LENGTH
None 00
6 Feet (1.8 m) with base C in dimensional drawing above 06
Specify desired length (in feet) with two digits. For example, 08 for 8 feet, 12 for 12 feet ..... **

NOZZLE TYPE
Copper ..... H
Snaplock® ..... K

NOZZLE LENGTH
12 inches (305 mm) ..... A
18 inches (457 mm) ..... B
24 inches (610 mm) C
36 inches (914 mm) ..... D

NOZZLE
Standard conical tip 1
Fan tip 2

SERV-OIL Reservoirs
Transparent container

M570R Models
Port Sizes: 1/4

Model Shown: M570-6R **Model Shown:** M570-12R

Sight domes are available to vent air from the system, and to confirm visually the presence of oil. Pressure-fill systems should be vented, or use low velocity recirculation of the oil supply.

M570R transparent reservoirs are available in, 1-quart (960-ml), and 2-quart (1920-ml) capacities.

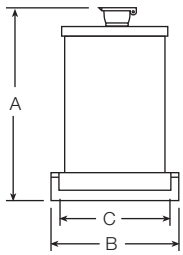
Level Switches. When the reservoir is located where the oil level cannot easily be determined visually, electrical oil level switches can be used. Both low-level and high-level switches are available. The switches can be connected to a remote electrical control for automatic filling.

Servo-Meters can be supplied with oil by pressure systems **(up to 30 psig)** or gravity systems, although gravity systems are generally preferred. Remote reservoirs should be connected to the bottom port of the **SERV-OIL** equipment with a minimum 5/16" I.D. line.

Stand-pipes should be installed from the top of the equipment and extend above the reservoir for gravity systems to prevent airlock of the Servo-Meters.

NOTE

For most applications Master Pneumatic recommends a light spindle oil that is not chemically aggressive. (150-1200 ssu viscosity).



RESERVOIR DIMENSIONS

		Dimensions inches (mm)			
Part No.	**Capacity**	**A**	**B**	**C**	**Depth**
M570-6R	1 quart	7.6 (193)	5.4 (137)	4.6 (117)	4.8 (122)
M570-12R	2 quarts	13.6 (345)	5.4 (137)	4.6 (117)	4.8 (122)

ORDERING INFORMATION

Change the letters in the sample model number below to specify the reservoir you want.

M570 - 6 R GG W

RESERVOIR SIZE
1quart (960-ml), 25,400 drops 6
2 quart (1920-ml), 50,800 drops 12

† One drop = 1/30 cc. Capacity in drops is at 90% of full capacity.

PORT TYPE
1/4 NPTF ..... Leave Blank
1/4 BSPP ..... W

OPTIONS
None ..... Leave blank
Low level switch ..... G
High and low level switch ..... GG