

- Glandless spool and sleeve design for very long, reliable life
- Available with either 4 mm o.d. push-in fittings or G $\frac{1}{8}$  ports
- Compact, low power solenoids with manual override as standard
- Single station sub-base provides 'in-line' styling
- Multi-station sub-bases for up to 8 stations with common inlet and exhaust ports

**5/2 and 5/3 Glandless Spool Valves  
Solenoid Actuated  
Sub-base Mounted  
4 mm o.d. Push-in Fittings and G $\frac{1}{8}$**


**Technical Data**

Medium:

Compressed air, filtered, lubricated and non-lubricated

Operation:

Spool valve, indirectly actuated

Mounting:

Through-holes in sub-bases

Sizes:

4 mm o.d. tube

G $\frac{1}{8}$

Operating Pressure:

-0,9 to +10 bar with independent pilot supply

2 to 8 bar with integral pilot supply

Flow:

Cv for 4 mm o.d. models 0,2

Cv for G $\frac{1}{8}$  models 0,27

Operating Temperature:

-5°C\* to +50°C

\*Consult our Technical Service for use below +2°C

Response Times:

On + off 29 ms at 6 bar

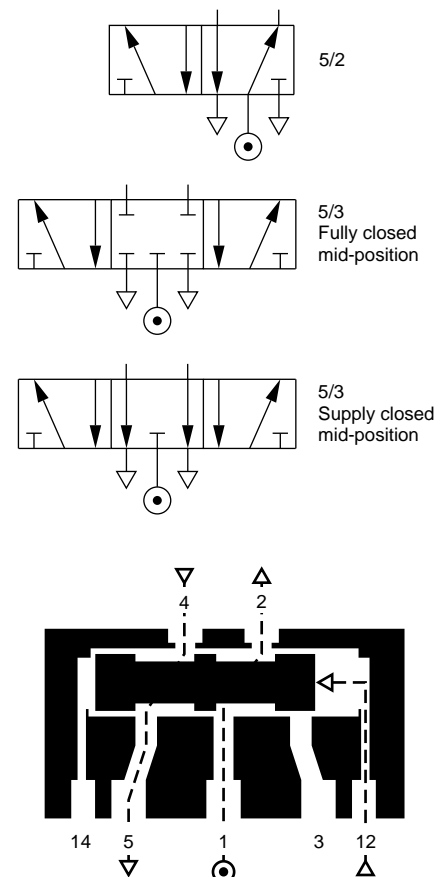
On + off 34 ms at 6 bar with VDR

**Materials**

Anodised aluminium body, anodised aluminium spool and sleeve with special Teflon coating, nitrile rubber seals.

**Ordering Information**

To order, quote model reference from tables overleaf adding the voltage code to the end of the model reference, e.g. SE 1560-6001102 for a Solenoid Pilot Actuated, Spring and Air Return integral pilot supply model suitable for 4 mm o.d. tube and fitted with a 1 watt 24 V d.c. coil.





## General Information

Model	Port Size	Solenoid Pilot	Operator	Mid-position	Operator	Weight (kg)
SE 1560-600*	4 mm	Integral	Solenoid	–	Spring and air	0,072
SE 1560-610*	4 mm	Independent	Solenoid	–	Spring and air	0,072
SE 1560-500*	G <sup>1</sup> / <sub>8</sub>	Integral	Solenoid	–	Spring and air	0,081
SE 1560-510*	G <sup>1</sup> / <sub>8</sub>	Independent	Solenoid	–	Spring and air	0,081
SE 3560-600*	4 mm	Integral	Solenoid	–	Solenoid	0,096
SE 3560-610*	4 mm	Independent	Solenoid	–	Solenoid	0,096
SE 3560-500*	G <sup>1</sup> / <sub>8</sub>	Integral	Solenoid	–	Solenoid	0,087
SE 3560-510*	G <sup>1</sup> / <sub>8</sub>	Independent	Solenoid	–	Solenoid	0,087
SE 1660-600*	4 mm	Integral	Solenoid	Fully Closed	Solenoid	0,096
SE 1660-610*	4 mm	Independent	Solenoid	Fully Closed	Solenoid	0,096
SE 1660-500*	G <sup>1</sup> / <sub>8</sub>	Integral	Solenoid	Fully Closed	Solenoid	0,087
SE 1660-510*	G <sup>1</sup> / <sub>8</sub>	Independent	Solenoid	Fully Closed	Solenoid	0,087
SE 1760-600*	4 mm	Integral	Solenoid	Supply Closed	Solenoid	0,096
SE 1760-610*	4 mm	Independent	Solenoid	Supply Closed	Solenoid	0,096
SE 1760-500*	G <sup>1</sup> / <sub>8</sub>	Integral	Solenoid	Supply Closed	Solenoid	0,087
SE 1760-510*	G <sup>1</sup> / <sub>8</sub>	Independent	Solenoid	Supply Closed	Solenoid	0,087

\*Add voltage code.

## Electrical Details for Solenoid Operators

Voltage	Features	Codes
24 V d.c.	–	1102
24 V d.c.	VDR, LED	1402
24 V 50/60 Hz	–	1142
24 V 50/60 Hz	VDR, LED	1442
110 V 50/60 Hz	–	1147
220 V 50/60 Hz	–	1148

<b>Voltage Tolerance:</b>	±10%
<b>Inrush/Hold:</b>	d.c.: 1 W 1102 1,2 W 1402 a.c.: 1,3 VA 1142, 1147, 1148 1,5 VA 1442 100% E.D.
<b>Terminal Box:</b>	2 pin connection with cable grip May be rotated through 360° at 90° intervals
<b>Cable Entry:</b>	Pg7
<b>Manual Override:</b>	Standard, non-detented
<b>Protection Class:</b>	IP51

## Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where *pressures* and *temperatures* can exceed those listed under 'Technical Data'.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN MARTONAIR.

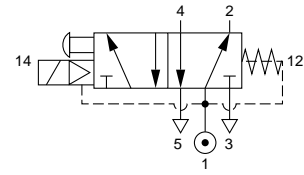
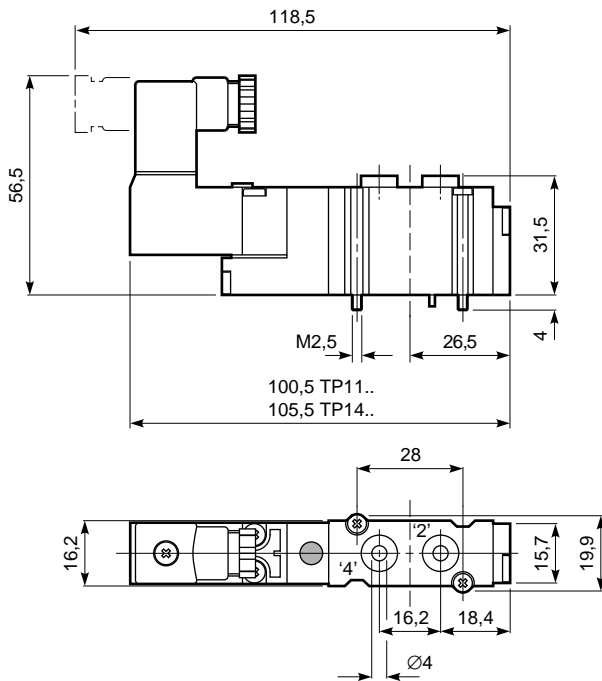
Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

**System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.**

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.



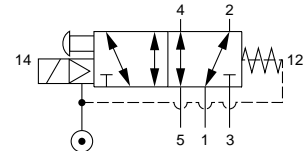
### Solenoid Pilot Actuated, Spring Return



Model Number: **SE 1560-600**

Type: 5/2, 4 mm push-in tube

Solenoid Type: 16 mm, terminal box above  
Integral Pilot Supply

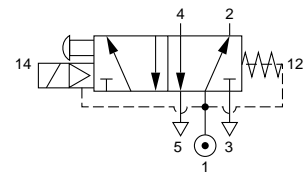
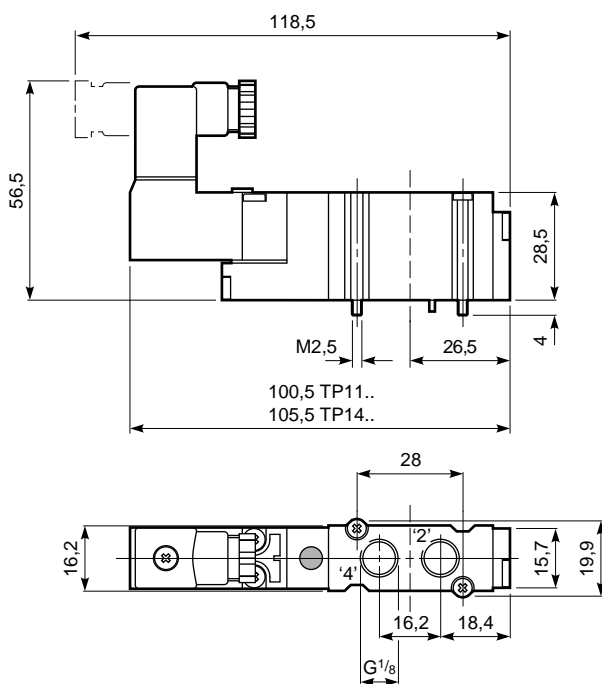


Model Number: **SE 1560-610**

Type: 5/2, 4 mm push-in tube

Solenoid Type: 16 mm, terminal box above  
Independent Pilot Supply

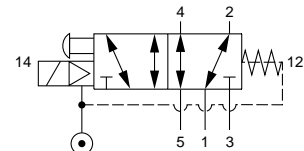
### Solenoid Pilot Actuated, Spring Return



Model Number: **SE 1560-500**

Type: 5/2, G<sup>1</sup>/<sub>8</sub>

Solenoid Type: 16 mm, terminal box above  
Integral Pilot Supply



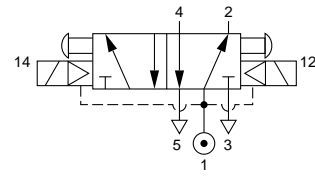
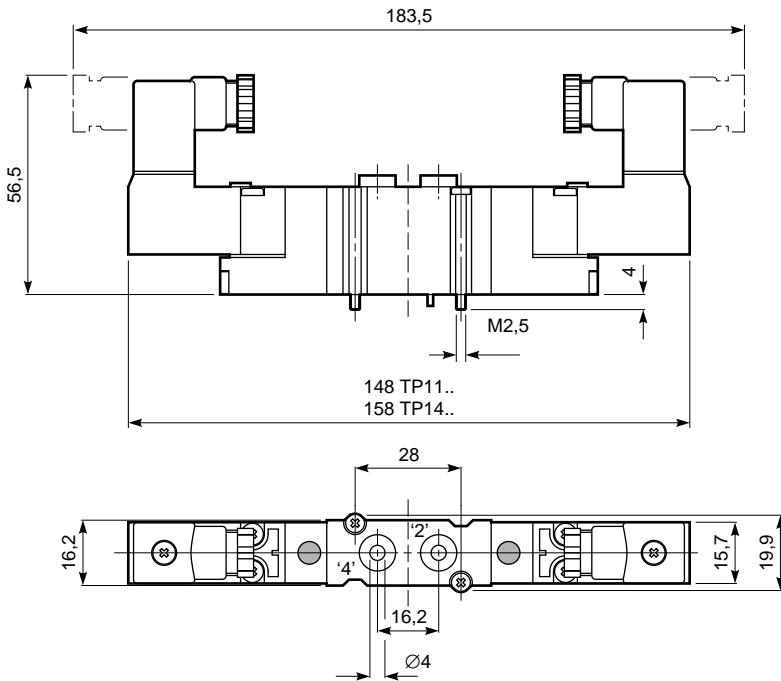
Model Number: **SE 1560-510**

Type: 5/2, G<sup>1</sup>/<sub>8</sub>

Solenoid Type: 16 mm, terminal box above  
Independent Pilot Supply



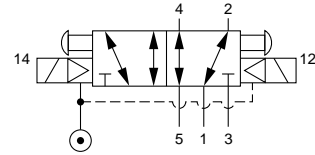
### Solenoid Pilot Set-reset



Model Number: **SE 3560-600**

Type: 5/2, 4 mm push-in tube

Solenoid Type: 16 mm, terminal box above  
Integral Pilot Supply

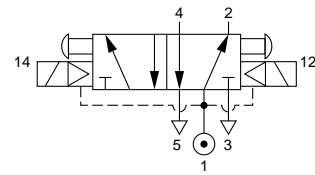
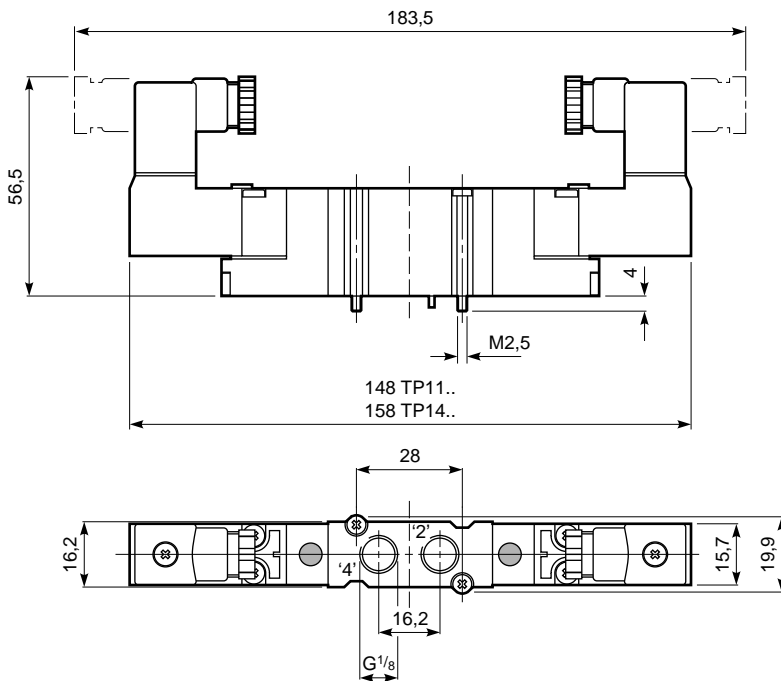


Model Number: **SE 3560-610**

Type: 5/2, 4 mm push-in tube

Solenoid Type: 16 mm, terminal box above  
Independent Pilot Supply

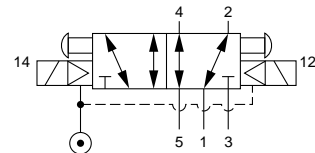
### Solenoid Pilot Set-reset



Model Number: **SE 3560-500**

Type: 5/2, G<sup>1</sup>/<sub>8</sub>

Solenoid Type: 16 mm, terminal box above  
Integral Pilot Supply



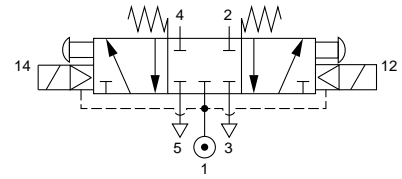
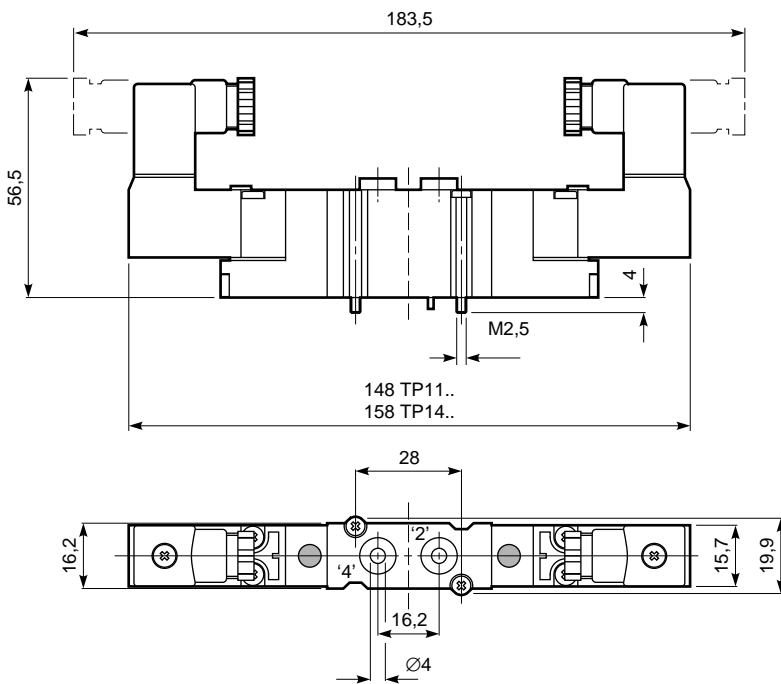
Model Number: **SE 3560-510**

Type: 5/2, G<sup>1</sup>/<sub>8</sub>

Solenoid Type: 16 mm, terminal box above  
Independent Pilot Supply



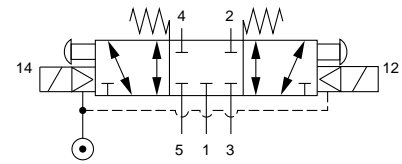
**Spring Centralised, Solenoid Pilot Actuated**



**Model Number: SE 1660-600**

Type: 5/3, 4 mm push-in tube. All ports closed mid-position

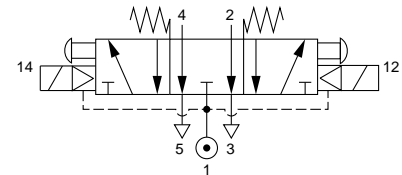
Solenoid Type: 16 mm, terminal box above  
Integral Pilot Supply



**Model Number: SE 1660-610**

Type: 5/3, 4 mm push-in tube. All ports closed mid-position

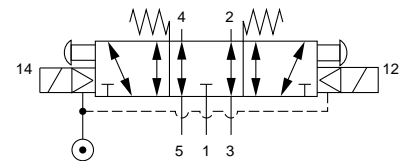
Solenoid Type: 16 mm, terminal box above  
Independent Pilot Supply



**Model Number: SE 1760-600**

Type: 5/3, 4 mm push-in tube. Supply closed mid-position

Solenoid Type: 16 mm, terminal box above  
Integral Pilot Supply



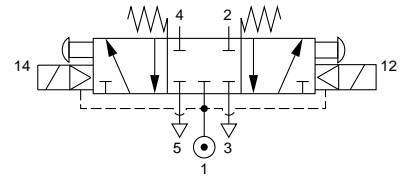
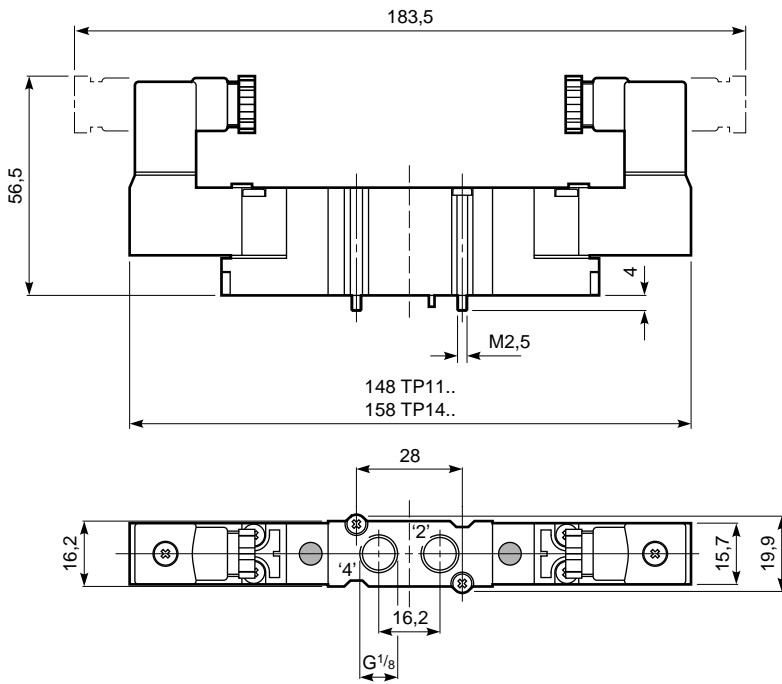
**Model Number: SE 1760-610**

Type: 5/3, 4 mm push-in tube. Supply closed mid-position

Solenoid Type: 16 mm, terminal box above  
Independent Pilot Supply

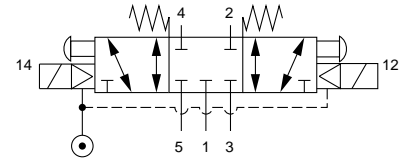


### Spring Centralised, Solenoid Pilot Actuated



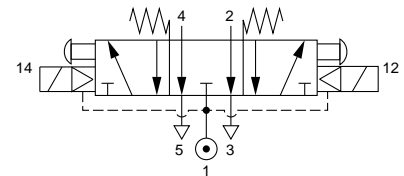
Model Number: **SE 1660-500**

Type: 5/3, G<sup>1</sup>/<sub>8</sub>. All ports closed mid-position  
Solenoid Type: 16 mm, terminal box above  
Integral Pilot Supply



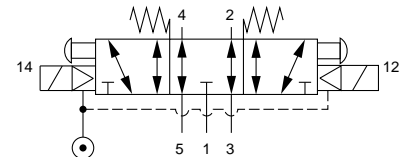
Model Number: **SE 1660-510**

Type: 5/3, G<sup>1</sup>/<sub>8</sub>. All ports closed mid-position  
Solenoid Type: 16 mm, terminal box above  
Independent Pilot Supply



Model Number: **SE 1760-500**

Type: 5/3, G<sup>1</sup>/<sub>8</sub>. Supply closed mid-position  
Solenoid Type: 16 mm, terminal box above  
Integral Pilot Supply

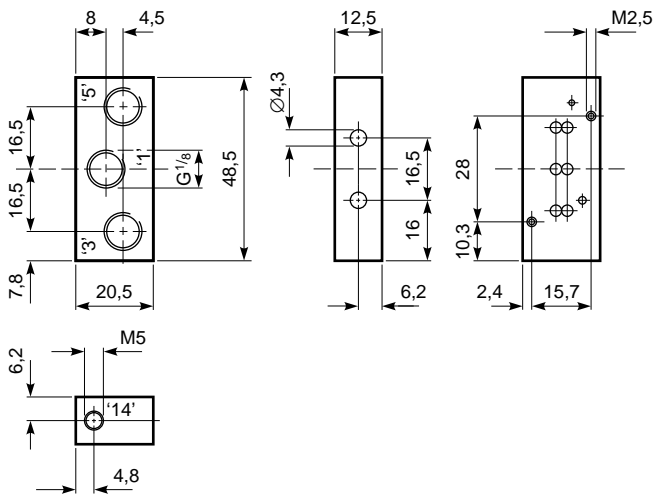


Model Number: **SE 1760-510**

Type: 5/3, G<sup>1</sup>/<sub>8</sub>. Supply closed mid-position  
Solenoid Type: 16 mm, terminal box above  
Independent Pilot Supply



**Sub-bases for Mini\*Star valves**



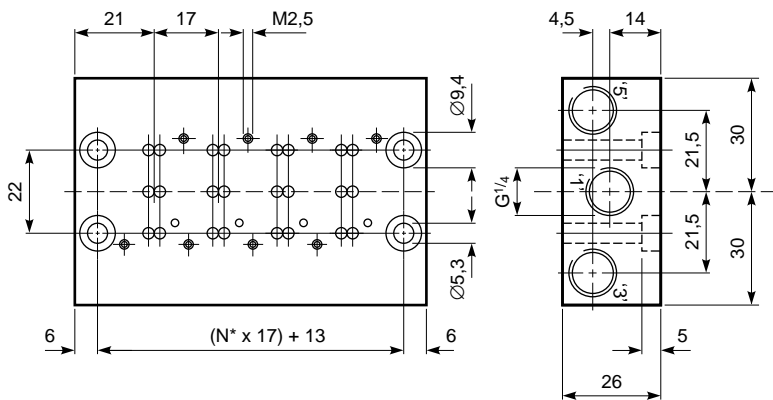
Model Number: **FP 2020-20**

Type: G $\frac{1}{8}$  single station bottom ported sub-base with pilot ports

Model Number: **FP 2020**

Type: G $\frac{1}{8}$  single station bottom ported sub-base without pilot ports

**Multi-station Sub-bases**



Model	Stations
BL 3002	2
BL 3003	3
BL 3004	4
BL 3005	5
BL 3006	6
BL 3007	7
BL 3008	8

\*N = Number of stations in manifold

**Accessories**

Blanking Plate for blocking of unwanted stations, reference **FP 3000**

Isolating Plug for supply and exhaust ports, reference **FP 2083**

Terminal Box for TP series solenoids, reference **TS 0111**