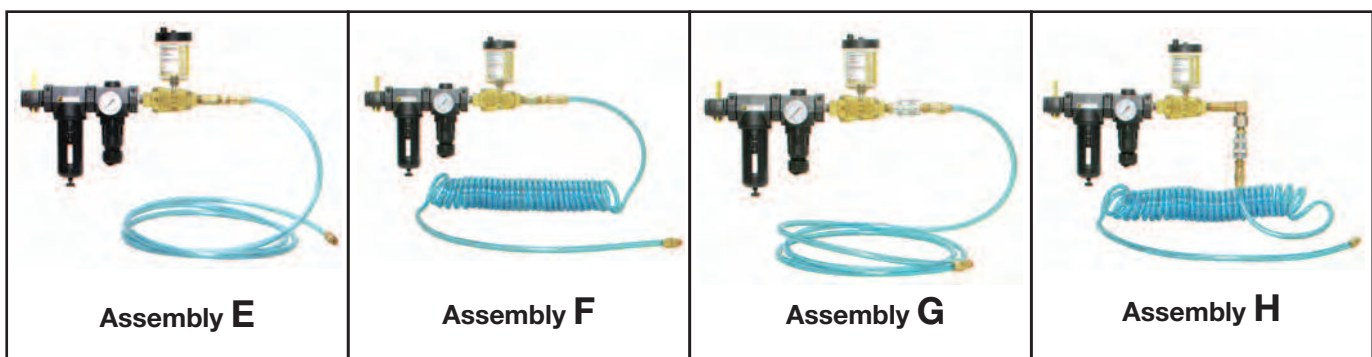
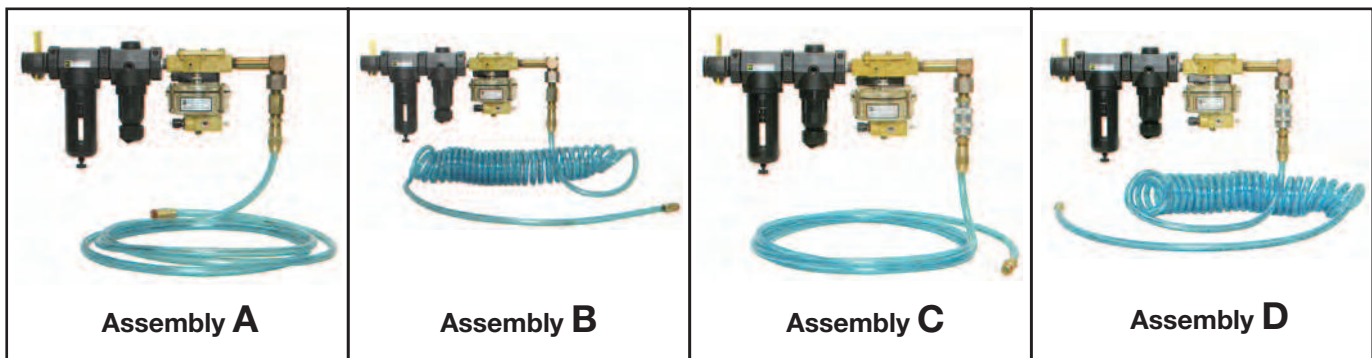


FILTER & REGULATOR with SPL and HOSE ASSEMBLIES



SERV-OIL single point lubricators (**SPLs**) have been used for decades to provide economical, precision lubrication to pneumatic devices. They lubricate just the points needing lubrication, not the hose or pipe supplying air to the device.

The illustrations above are but a small sample of the available **FRL** combinations using single point lubricators. All those shown are for lubricating **AIR TOOLS** only. The injection lubricators used here are not designed for bi-directional flow, and so are **NOT** to be used with air cylinders or air motors. Where bi-directional flow is involved the downstream **SPLs** on pages 206-207 would be used.

In the above assemblies the lubricators can be fitted with integral oil reservoirs (assemblies A-D), or can be supplied from external reservoirs (assemblies E-H).

A variety of coaxial fittings and hose assemblies are available. Coaxial fittings allow the air and oil supplies to be connected simultaneously. Both quick connect/disconnect

versions and **NPT** pipe models are offered. Some assemblies (A-D and H) include a 90-degree coaxial elbow for use where the lubricator is installed overhead.

The coaxial hose assemblies are available with the internal oil capillary tube, including check valve, installed in either straight or coiled blue urethane hose. The standard hose lengths are 12-, 25-, and 50-feet. Note that the coiled assemblies have a working length less than the overall length. Working lengths are shown with the Ordering Information on page 211, 213 and 215. Other hose lengths can be made to the user's exact specifications. Consult the Master Pneumatic Sales Department.

Coiled hose assemblies are typically used in applications where the **SPL** is overhead and the amount of hose on the floor needs to be minimized.

HOSE ASSEMBLIES

Straight Hose Assembly

Model H-0A0A3B-S12



Upstream Connection
(From SPL)

Downstream Connection
(To tool)

Coiled Hose Assembly

Model H-0A0A1B-C12



Upstream Connection
(From SPL)

Downstream Connection
(To tool)

Upstream Connector (Used without quick disconnect)



Upstream Connector

(Used with coaxial quick disconnect socket)



HOSE for SPLs ORDERING INFORMATION

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

H-0A0 A 1 C - C 12

HOSE MATERIAL

- Urethane 0
- Reinforced urethane 1

HOSE DIAMETER

- 5/16 ID (1/2 upstream connection only) A
- 3/8 ID (1/2 and 3/4 upstream connections) ... B
- 1/2 ID (1/2 and 3/4 upstream connections) ... C

UPSTREAM CONNECTION

- 1/2 coaxial plug (Used with quick disconnect) 1
- 3/4 coaxial plug (Used with quick disconnect) 2
- 1/2 coaxial adaptor (1/2 male threaded end) 3
- 3/4 coaxial adaptor (3/4 male threaded end) 4
- 1/2 NPT male (non-coax - barb installed in hose) ... 5
- 3/4 NPT male (non-coax - barb installed in hose) ... 6

HOSE LENGTH

- 12 ft (3.7 m); if coiled, 9 ft (2.7 m) working length 12
- 25 ft (7.6 m); if coiled, 18 ft (5.5 m) working length ... 25
- 50 ft (15 m); if coiled, 36 ft (11 m) working length 50

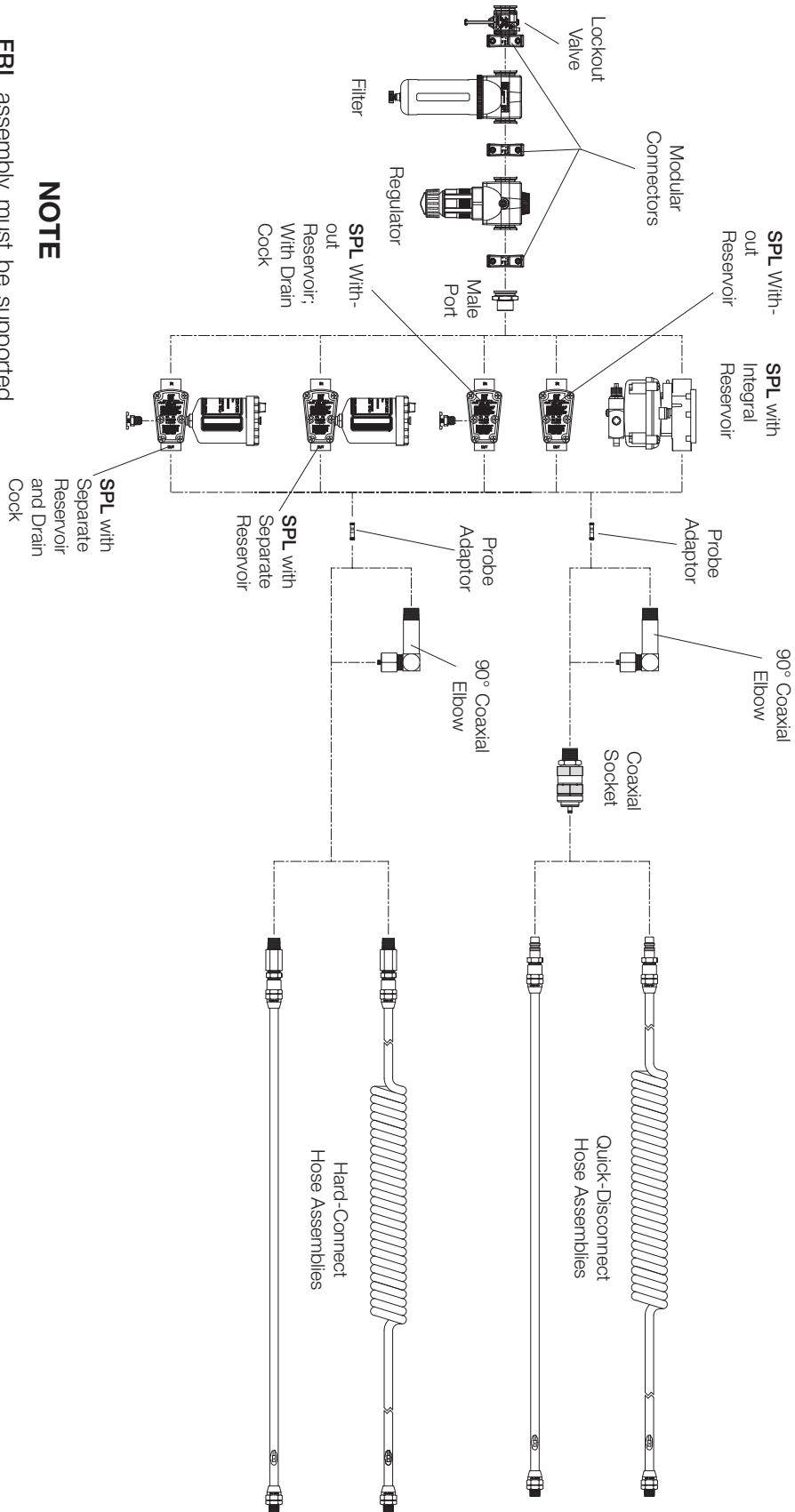
HOSE TYPE

- Coiled (standard 18" upstream tail, 36" downstream tail) C
- For other tail lengths, consult factory*
- Straight S

DOWNSTREAM CONNECTION

- 3/8 male swivel (Used with 3/8 ID or 5/16 hose) B
- 1/4 male swivel (Used with 3/8 ID or 5/16 ID hose) C
- 1/2 male swivel (Used with 1/2 ID hose) D
- 1/2 ID female ridged E

FILTER & REGULATOR ASSEMBLY WITH SPL and HOSE



NOTE
 FRL assembly must be supported at two points. Consult Master Pneumatic for assistance.

FRL (with SPL) ORDERING INFORMATION

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

HA-0 A 0 B 0 A 0 B-A00

MODULAR LOCKOUT VALVE

- None 0
- V380 1

MODULAR FILTER (See pg 48)

- None A
- FD380 B
- F380 C
- BFD380 D
- BF380 E

MODULAR REGULATOR (See pg 126)

- None 0
- R380-G, 0-200 psi gauge, and modular male port 1
- R380 and modular male port 2

† LUBRICATOR (See pp 204, 206)

SM designates Servo-Meter

- PA640, 1-drop SM B
- PA600, 1-drop SM C
- PA600, 1-drop SM, M476R reservoir D
- PA600, 1-drop SM, M476R reservoir, 1/4 drain cock E
- PA600, 1-drop SM, 1/4 drain cock F
- PA640, 2-drop SM G
- PA600, 2-drop SM H
- PA600, 2-drop SM, M476R reservoir J
- PA600, 2-drop SM, M476R reservoir, 1/4 drain cock K
- PA600, 2-drop SM, 1/4 drain cock L
- PA640, 1/2-drop SM M
- PA600, 1/2-drop SM N
- PA600, 1/2-drop SM, M476R reservoir P
- PA600, 1/2-drop SM, M476R reservoir, 1/4 drain cock Q
- PA600, 1/2-drop SM, 1/4 drain cock R
- PA640*1BB, 1 drop, double counter 7
- PA640*2BB, 2 drop, double counter 8
- PA640*5BB, 1/2-drop, double counter 9

PORT SIZE

- 1/2 NPTF 4
- 3/4 NPTF 6

HOSE ASSEMBLIES

No hose assembly. B-A00

Assembly Number	Hose Type	Length ft (m)		Code
		Overall	Working	

URETHANE HOSE

Includes 3/8 male swivel downstream connection:

H-0A0B*B-C12	3/8 ID coiled	12 (3.7)	9 (2.7)	... B-C12
H-0A0B*B-C25	3/8 ID coiled	25 (7.6)	18 (5.5)	... B-C25
H-0A0B*B-C50	3/8 ID coiled	50 (15)	36 (11)	... B-C50
H-0A0B*B-S12	3/8 ID straight	12 (3.7)	12 (3.7)	... B-S12
H-0A0B*B-S25	3/8 ID straight	25 (7.6)	25 (7.6)	... B-S25
H-0A0B*B-S50	3/8 ID straight	50 (15)	50 (15)	... B-S50

Includes 1/4 male swivel downstream connection (for use with 1/2 ports only):

H-0A0A*C-C12	5/16 ID coiled	12 (3.7)	9 (2.7)	... C-C12
H-0A0A*C-C25	5/16 ID coiled	25 (7.6)	18 (5.5)	... C-C25
H-0A0A*C-C50	5/16 ID coiled	50 (15)	36 (11)	... C-C50
H-0A0A*C-S12	5/16 ID straight	12 (3.7)	12 (3.7)	... C-S12
H-0A0A*C-S25	5/16 ID straight	25 (7.6)	25 (7.6)	... C-S25
H-0A0A*C-S50	5/16 ID straight	50 (15)	50 (15)	... C-S50

REINFORCED URETHANE HOSE

Includes 3/8 male swivel downstream connection:

H-0A1B*B-C12	3/8 ID coiled	12 (3.7)	9 (2.7)	... E-C12
H-0A1B*B-C25	3/8 ID coiled	25 (7.6)	18 (5.5)	... E-C25
H-0A1B*B-C50	3/8 ID coiled	50 (15)	36 (11)	... E-C50
H-0A1B*B-S12	3/8 ID straight	12 (3.7)	12 (3.7)	... E-S12
H-0A1B*B-S25	3/8 ID straight	25 (7.6)	25 (7.6)	... E-S25
H-0A1B*B-S50	3/8 ID straight	50 (15)	50 (15)	... E-S50

Includes 1/4 male swivel downstream connection (for use with 1/2 ports only):

H-0A1A*C-C12	5/16 ID coiled	12 (3.7)	9 (2.7)	... F-C12
H-0A1A*C-C25	5/16 ID coiled	25 (7.6)	18 (5.5)	... F-C25
H-0A1A*C-C50	5/16 ID coiled	50 (15)	36 (11)	... F-C50
H-0A1A*C-S12	5/16 ID straight	12 (3.7)	12 (3.7)	... F-S12
H-0A1A*C-S25	5/16 ID straight	25 (7.6)	25 (7.6)	... F-S25
H-0A1A*C-S50	5/16 ID straight	50 (15)	50 (15)	... F-S50

*Upstream connection.

UPSTREAM CONNECTION

- Direct connect coaxial adaptor threaded male 0
- Coaxial plug (used with quick disconnect socket) 1
- Manual connect non-coaxial male (not Q.D.) 2
(Elbow connection must be "A")
- No hose assembly attached 3

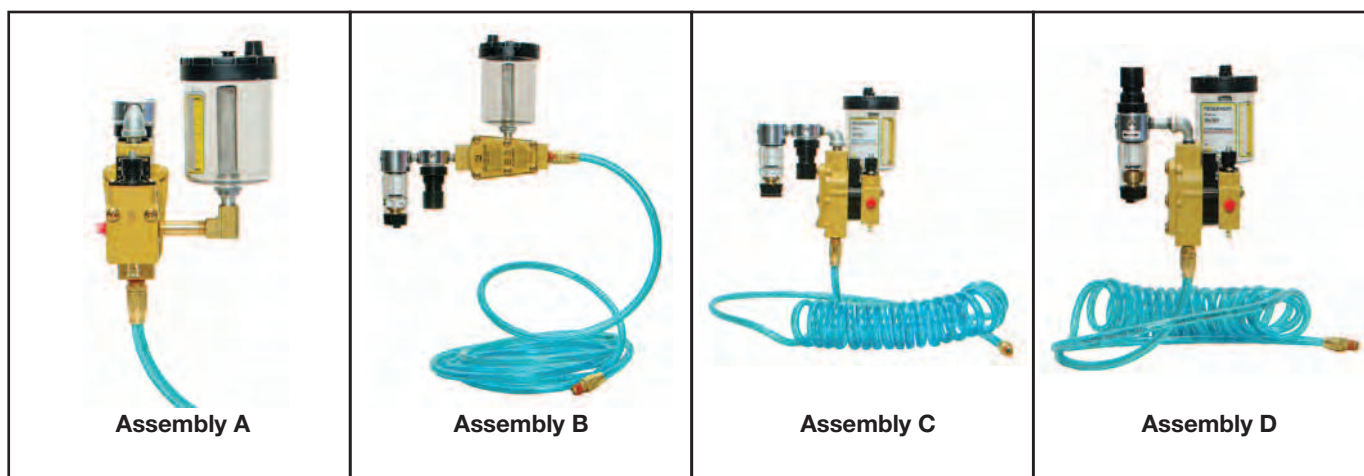
ELBOW

- None A
- 90° coaxial elbow B
- Direct connect coaxial Quick Disconnect C
- Socket
- Direct connect coaxial Quick Disconnect D
- socket and 90 degree coaxial elbow
(Pipe size reflected in port size option)

† NOTE: "P" prefix on lubricator part number indicates that it is supplied without capillary tubing. Instead a probe adapter will be supplied within this assembly.

FRL assembly with SPL and Hose, HA- Series

LOW FLOW SPL HOSE ASSEMBLIES



SERV-OIL single point lubricators (**SPLs**) have been used for decades to provide economical, precision lubrication to pneumatic devices. They lubricate just the points needing lubrication, not the hose or pipe supplying air to the device.

The low flow **FR-SPL** assembly has been designed to offer a more economical, lower flow **FR-SPL** assembly at the same time supplying the accuracy and reliability that customers have come to rely on with our standard **FR-SPL** assemblies.

The illustrations above are but a small sampling of the available **FR-SPL** combinations using single point lubricators. All those shown are for lubricating **AIRTOOLS** requiring low flow operation only. The injection lubricators used here are not designed for bi-directional flow, and are **NOT** to be used with air cylinders or air motors. Where bi-directional flow is involved the downstream **SPLs** on pages 206-207 would be used.

In the above assemblies the lubricators can be fitted with external oil reservoirs (assemblies A-D) or without the external oil reservoir for applications using central fill oil delivery systems.

The low flow **FR-SPL** assemblies are supplied with a 1/4" NPT inlet port. The outlet port is 1/2" NPT. The downstream hose fitting is supplied with a 1/4" NPT male swivel. Depending on the installation, these

FR-SPL low flow assemblies can be ordered in a straight inline design or a 90 degree version allowing these assemblies to be mounted overhead in a workstation.

The coaxial hose assemblies are available with the internal oil capillary tube, including check valve, installed in either straight or coiled blue urethane hose. The standard hose lengths are 12- or 25-feet. Note that the coiled assemblies have a working length less than the overall length. Other hose lengths can be made to the user's exact specifications. Consult the Master Pneumatic Sales Department.

Coiled hose assemblies are typically used in applications where the **SPL** is overhead and hose on the floor needs to be eliminated, or at least minimized. A 90 Degree **FR-SPL** design is recommended to prevent the hose from crimping during operations when the design is called out to be mounted overhead.

INJECTION LUBRICATION vs. MIST LUBRICATION

- ◆ Increased tool life 2-1/2 – 3x
- ◆ Reduce tool repair cost by 50 – 90%
- ◆ Provide constant lubrication for constant torque
- ◆ Use less oil AND minimize oil discharge in tool exhaust

HOSE ASSEMBLIES

Straight Hose Assembly



Coiled Hose Assembly



Upstream Connectors



Downstream Connectors



HOSE for LOW FLOW FR-SPLs ORDERING INFORMATION

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

H-0A 0 A5C - C 12

HOSE MATERIAL

- Urethane 0
- Reinforced Urethane..... 1

HOSE DIAMETER:

5/16 ID (1/2 upstream connection only)

UPSTREAM CONNECTION:

1/2-NPT male (non-coax – upstream barb on capillary tube installed in hose)

DOWNSTREAM CONNECTION:

1/4 male swivel (used with 3/8 ID or 5/16 ID hose)

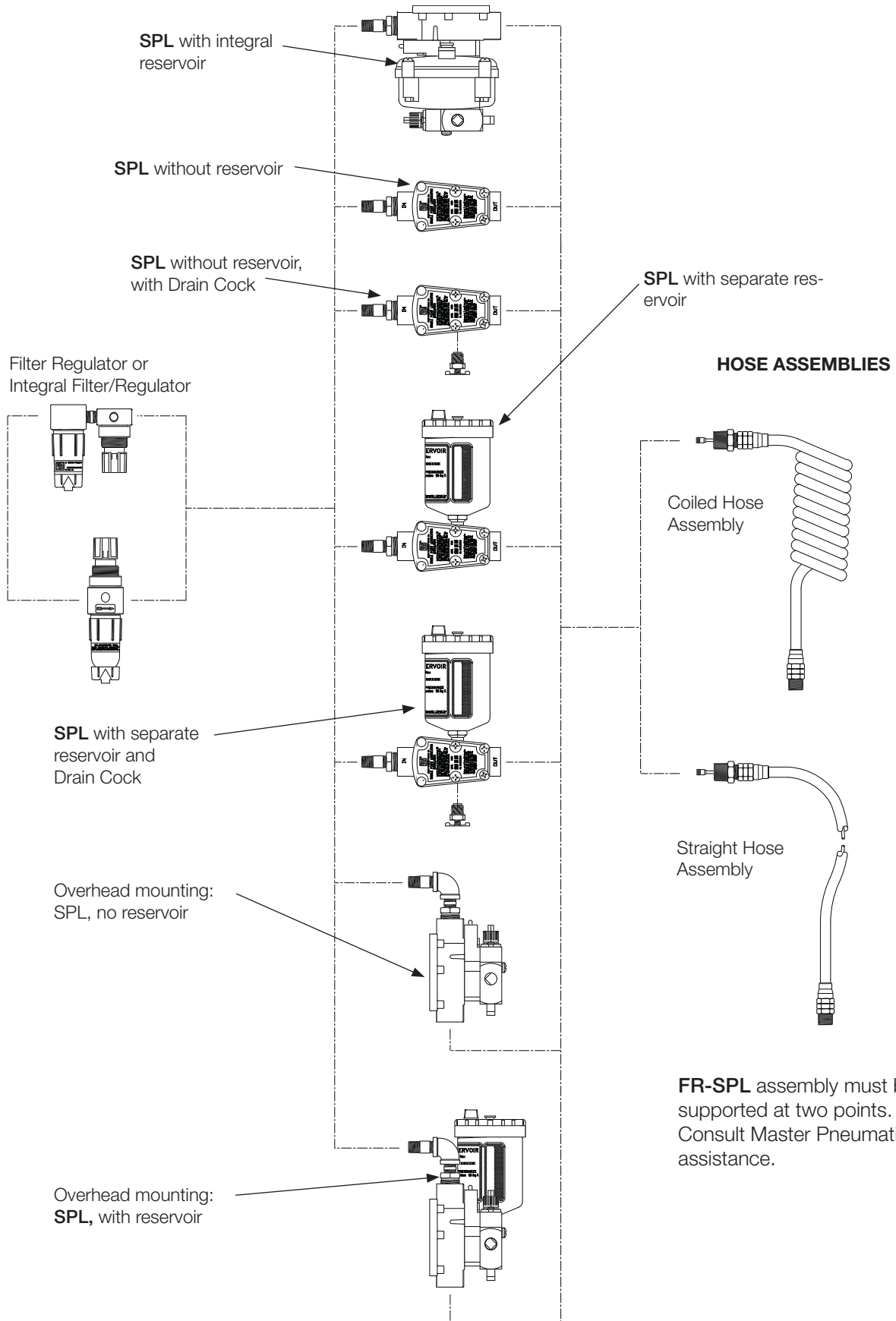
HOSE LENGTH

- 12 ft (3.7 m); if coiled, 9 ft (2.7 m) working length..... 12
- 25 ft (7.6 m); if coiled, 18 ft (5.5 m) working length..... 25

HOSE TYPE

- Coiled (standard 18" upstream straight tail, 36" downstream straight tail).....C
- For other tail lengths, consult factory*
- Straight.....S

LOW FLOW SPL HOSE ASSEMBLIES



FR-SPL assembly must be supported at two points. Consult Master Pneumatic for assistance.

LOW FLOW AIR TOOL LUBRICATION SYSTEM ORDERING INFORMATION

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

HB-0 A 0 A 4 A 2 A-C12

FILTER AND FILTER/REGULATOR OPTIONS

- FD50-2 B
- F50-2 C
- BFD50-2 D
- BF50-2 E
- CFDR55M-2NG F
- CFDR55M-2 G
- CFR55M-2NG H
- CFR55M-2 J
- CFDR56M-2NG K
- CFDR56M-2 L
- CFR56M-2NG M
- CFR56M-2 N
- BCFDR55M-2NG P
- BCFDR55M-2 Q
- BCFR55M-2NG R
- BCFR55M-2 S
- BCFDR56M-2NG T
- BCFDR56M-2 U
- BCFR56M-2NG V
- BCFR56M-2 W

REGULATOR

- None 0
- R55M-2 1
- R55M-2G 2
- R56M-2 3
- R56M-2G 4

HOSE ASSEMBLIES

No hose assembly. B-A00

Assembly Number	Hose Type	Length ft (m)		Code
		Overall	Working	

URETHANE HOSE

Includes 1/4 male swivel downstream connection:

H-0A0A5C-C12	5/16 ID coiled	12 (3.7)	9 (2.7).....	C-C12
H-0A0A5C-C25	5/16 ID coiled	25 (7.6)	18 (5.5)....	C-C25
H-0A0A5C-S12	5/16 ID straight	12 (3.7)	12 (3.7)....	C-S12
H-0A0A5C-S25	5/16 ID straight	25 (7.6)	25 (7.6)....	C-S25

REINFORCED URETHANE HOSE

Includes 1/4 male swivel downstream connection:

H-0A1A5C-C12	5/16 ID coiled	12 (3.7)	9 (2.7).....	F-C12
H-0A1A5C-C25	5/16 ID coiled	25 (7.6)	18 (5.5)....	F-C25
H-0A1A5C-S12	5/16 ID straight	12 (3.7)	12 (3.7)....	F-S12
H-0A1A5C-S25	5/16 ID straight	25 (7.6)	25 (7.6)....	F-S25

† LUBRICATOR (See pp 204, 206)

(1/2" port size and 1/2" drop only)

PA60045	.....	C
PA60045, M476R reservoir	.....	D
PA60045, M476R reservoir, 1/4" drain cock	.....	E
PA60045, 1/4" drain cock	.....	F
PA60045, 90° assembly	.....	G
PA60045, 90° assembly, M476R reservoir	.....	H
PA60045BB, double counter	.....	S
PA60045BB, M476R reservoir, double counter	.....	T
PA60045BB, M476R reservoir, 1/4" drain cock, double counter	.....	W
PA60045BB, 1/4" drain cock, double counter	.....	X
PA60045BB, 90° assembly, double counter	.....	Y
PA60045, 90° assembly, M476R reservoir, double counter	.....	Z

† **NOTE:** "P" prefix on lubricator part number indicates that it is supplied without capillary tubing. Instead a probe adapter will be supplied within this assembly.