Precision
Step Systems

FLA

The fast short stroke actuators

Application

Fig. 1

The fast linear pneumatic actuator FLA is specially made for use where very fast linear motion or a high cycling rate is required.

The two types, diaphragm and piston (type 60 and type 51), are each available with two different lengths of stroke.

In conjunction with SRB 3100 control electronics, FLA can be used in many applications. e.g. sorting, cutting, positioning.

FLA is one of the many products in the range from ATB Laurence Scott - Precision Step Systems.

Holding force

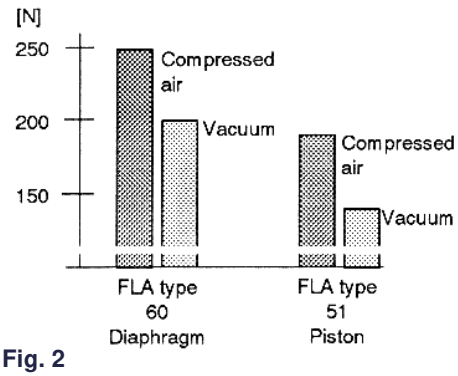


Fig. 2

FLA is driven by air and can be activated by compressed air or vacuum.

The static holding force depends on the medium chosen and the differential pressure.

Compressed air: Max. Δp = 1.0 bar
Vacuum: Max. Δp = 0.7 bar

Reaction time

t_1 / t_2 [ms]	6041	6081	0551	2551
Compressed air	7	8	6	10
Vacuum	7	8	6	10

Stroke time

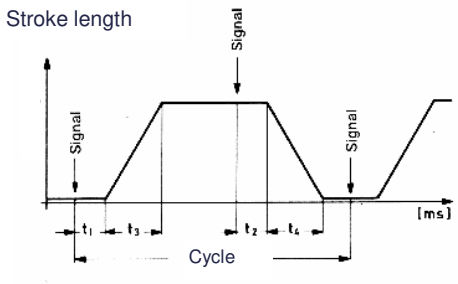


Fig. 3

The stroke time is the time taken for the piston rod to travel from one end position to the other and depends on the length of stroke and the load.

The stroke time is designated t_3 or t_4.

The stroke time shown applies to horizontal motion, without reduction of air discharge area.

The FLA lifetime also depends on the load.

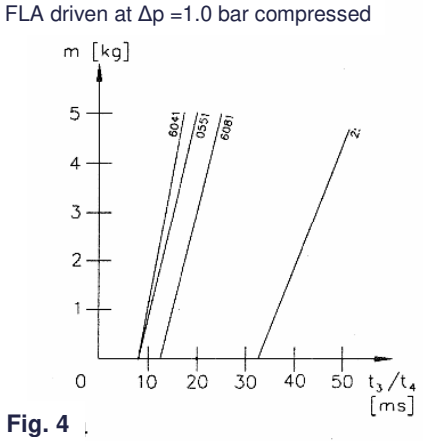


Fig. 4

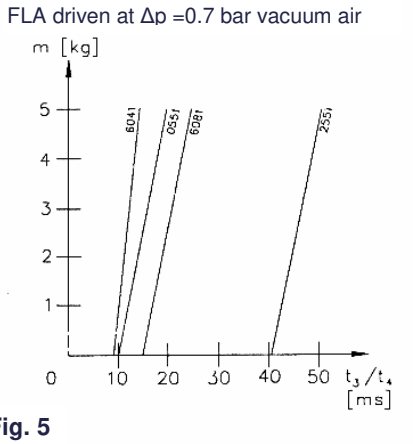


Fig. 5

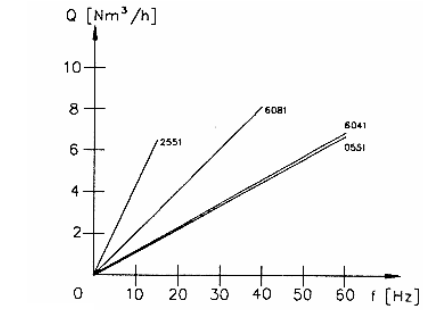


Fig. 6

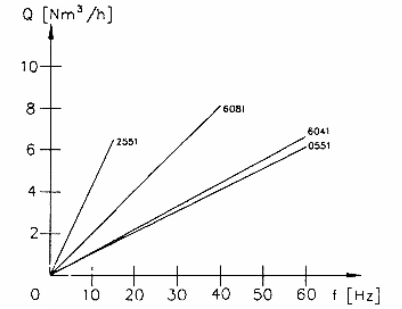


Fig. 7

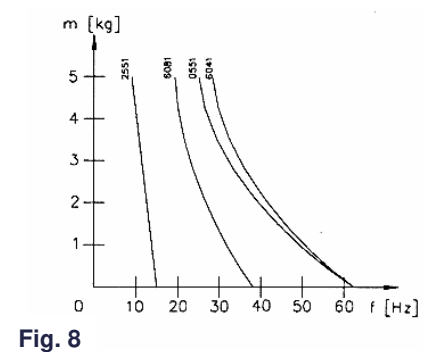


Fig. 8

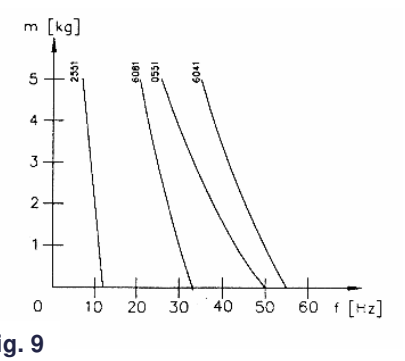


Fig. 9

Data sheet FLA – The fast short stroke actuators

Precision Step Systems

Mode of Operation

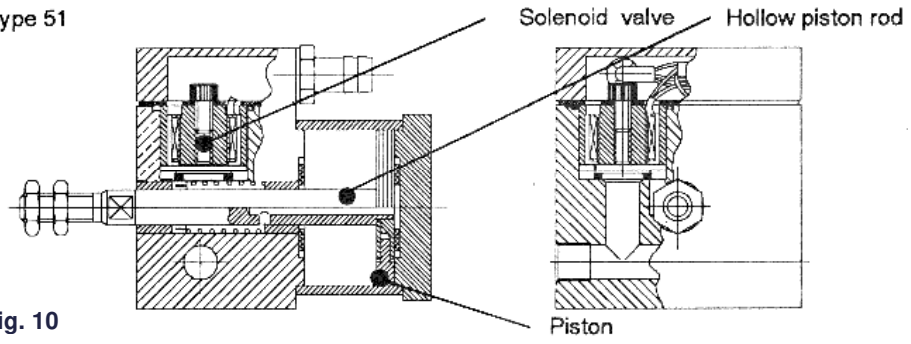


Fig. 10

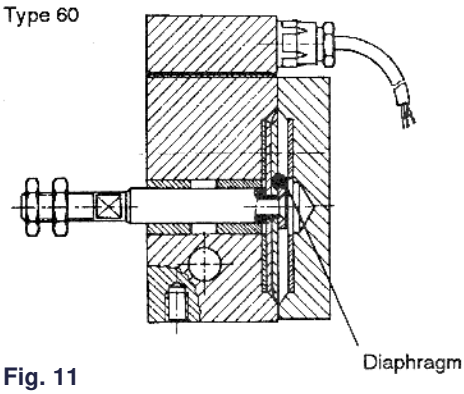


Fig. 11

The two types, Diaphragm Fig. 11 and Piston Fig. 10, use the same principle where two solenoid valves lead compressed air or vacuum to one side or the other of the piston / diaphragm.

In the piston type the hollow piston rod is used to lead air to or from the rear of the piston.

The electromagnetic valves are best controlled by the SRB 3100 electronic controls described below.

Note: They must not be driven continuously by, for example 24 Vdc.

Connections: Air

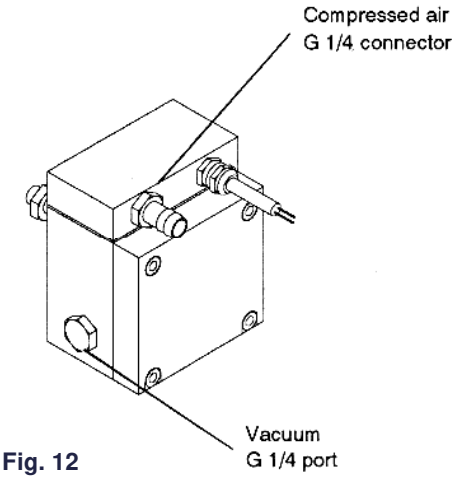


Fig. 12

Compressed air connection:
Compressed air must be connected to the G ¼ connector shown in Fig. 12.
One of the two blanking plugs on the side of FLA must be removed.

Overpressure max. 1 bar, oil-free air

Vacuum connection:
Vacuum must be connected by removing one of the two blanking plugs on the side of FLA and then moving the G 1/4 connector to the port from which the blanking plug was taken.

ATTENTION: To avoid contraction of the hose, a reinforced hose must be used.

Connections: Electrical

Blue	Piston in (Brake)
Black	Piston out (Clutch)
Brown	Common (BR / CL)

FLA must be connected to the SRB 3100 electronic control as follows:

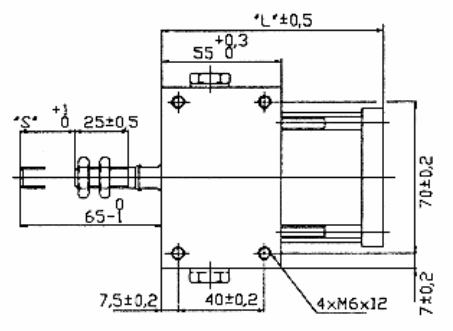
Blue (piston in) to BRAKE output
Black (piston out) to CLUTCH output
Brown (common) to output BR/CL.

ATTENTION: Brown (common) must not be connected to 0 V or earth when the SRB 3100 electronic control is used.

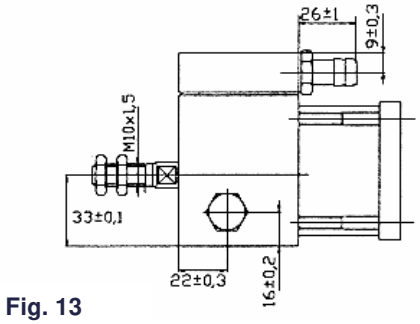
Terminal designation:

Control	SRB3100
Brake	13
Clutch	12
BR / CL	11

Dimensions Type 51 Piston rod



Type	Code no.	L [mm]	S [mm]
FLA 0551	080F0057	82.5	5
FLA 2551	080F0058	102.5	25



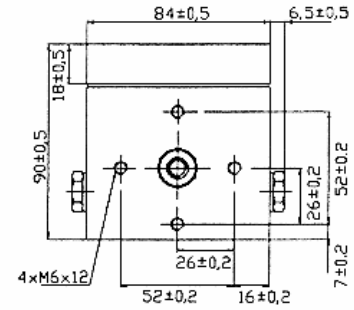
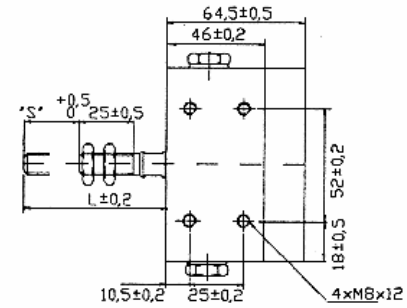
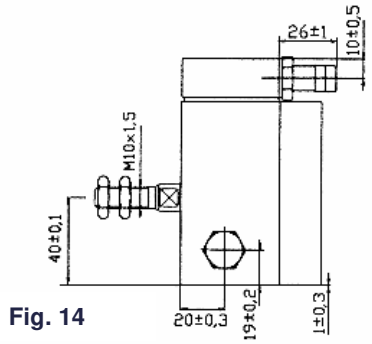


Fig. 13

Dimensions Type 60 diaphragm



Type	Order no.	L [mm]	S [mm]
FLA 6041	080F0110	44	4
FLA 6081	080F0112	46	8



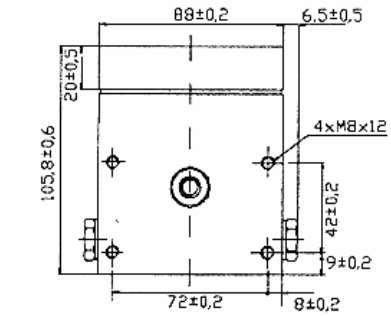


Fig. 14

Data sheet FLA – The fast short stroke actuators

Technical Data

FLA - Type	Diaphragm		Piston rod	
	6041	**6081**	**0551**	**2551**
Stroke [mm]	4	8	5	25
Max. operating pressure [Δp bar] Compressed air Vacuum	 1 0.7	 1 0.7	 1 0.7	 1 0.7
Max. holding force [N] with Δp = 1.0 bar compressed air Δp = 0.7 bar Vacuum	 250 200	 250 200	 190 140	 190 140
Reaction time [ms]	7	8	6	10
Repeat accuracy [± ms]	0.5	0.5	0.5	0.5
Ambient temperature [°C] Operating Storage	 0 - 40 -20 - +70	 0 - 40 -20 - +70	 0 - 40 -20 - +70	 0 - 40 -20 - +70
Air consumption / cycies Compressed air [Nm^3] Vacuum [Nm^3]	 61×10^{-6} 32×10^{-6}	 109×10^{-6} 56×10^{-6}	 58×10^{-6} 31×10^{-6}	 237×10^{-6} 121×10^{-6}
IP code [IP] Comressed air Vacuum	 66 54	 66 54	 66 54	 66 54
Weight [kg]	1.6	1.6	1.5	1.7

Service parts

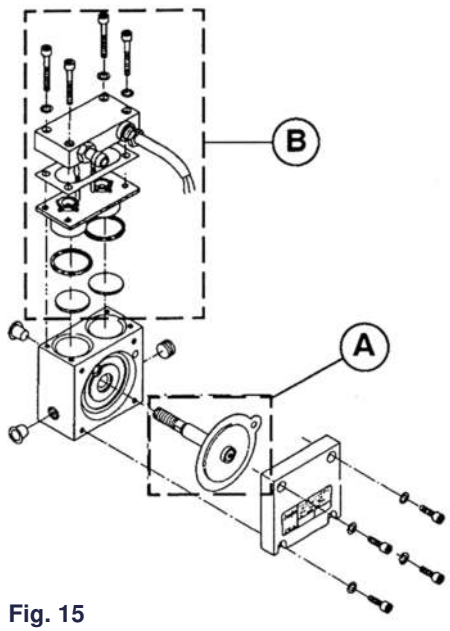


Fig. 15

A: Piston kit for FLA type 60
Order no.: 080F0181

B: Valve kit for FLA type 60
Order no.: 080F0183

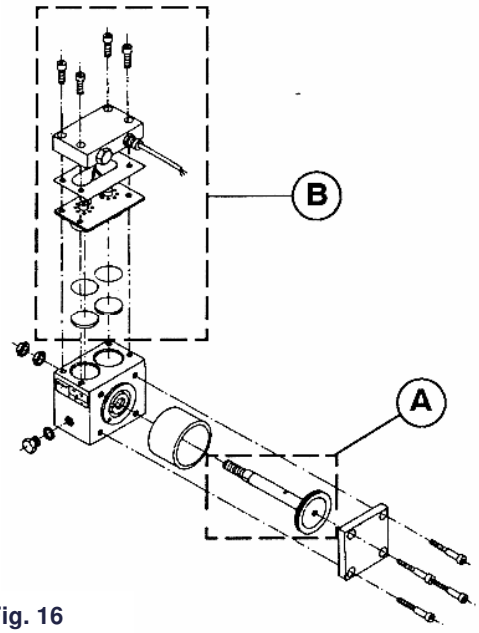


Fig. 16

A: Piston kit for FLA type 51
Order no: 080F0184

B: Valve kit for FLA type 51
Order no.: 080F0185

Control electronic SRB 3100

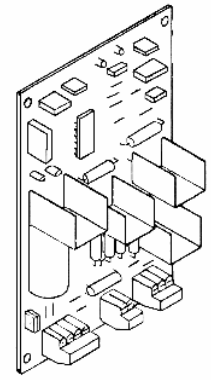


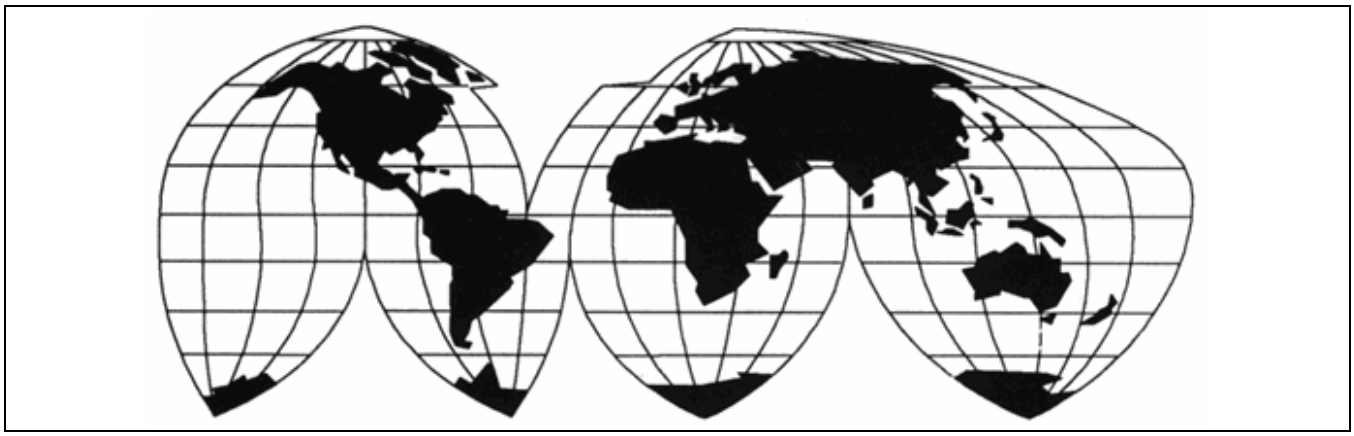
Fig. 17

Especially suitable for the control of the FLA short stroke cylinders is the SRB 3100 control.

Features:

- Forward / Reverse
  Signal from the same transducer
- Timed automatic return stroke
- Operating status signaling

„Precision Step Systems“ is a line of products from ATB Laurence Scott



Worldwide Sale Organisation

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