

Fast Linear Actuator FLA type 51 and 60

Datasheet



Contents

	Page
Application	2
Holding force	2
Reaction time	3
Stroke time	3
Mode of operation	4
Air connections	4
Electrical connections	4
Dimensions, diaphragm type	5
Dimensions, piston type	5
Code numbers	6
Technical data	6
Service parts	7
Control electronics	7

Application

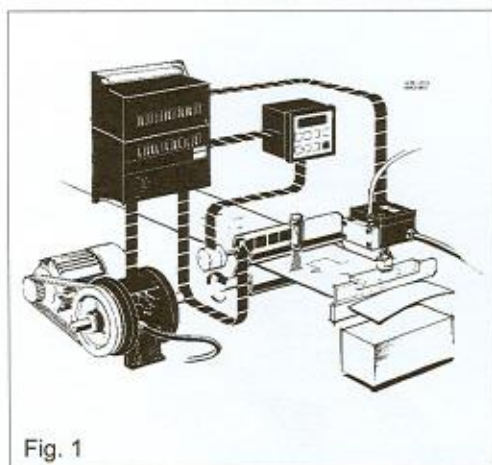


Fig. 1

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, are each available with different lengths of stroke. (see P.6)

In conjunction with SRB 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 Precision Step Systems.

Holding force

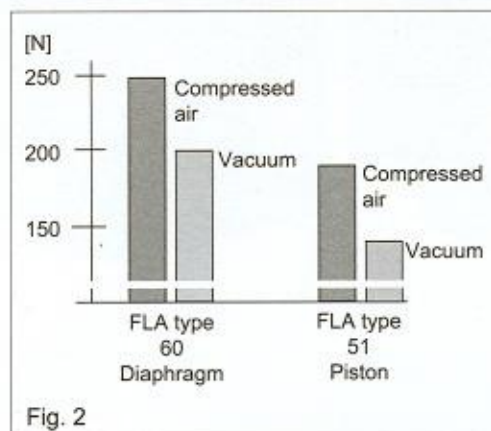


Fig. 2

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

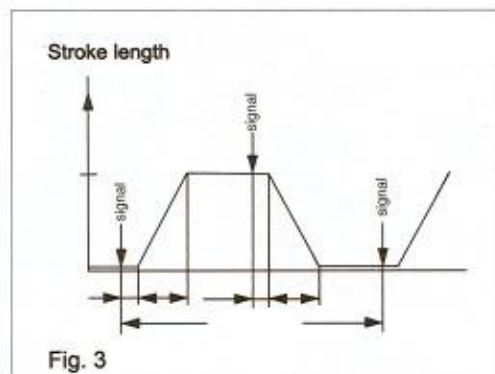
The static holding force depends on the medium chosen and the differential pressure.

Compressed air: Max. $\Delta p = 1.0$ bar
 Vacuum: Max. $\Delta p = 0.7$ bar

Reaction time

t_r/t_s [ms]	6041	6081	0551	1251	2051	2551
Compressed air	7	8	6	7	9	10
Vacuum	7	8	6	7	9	10

Stroke time

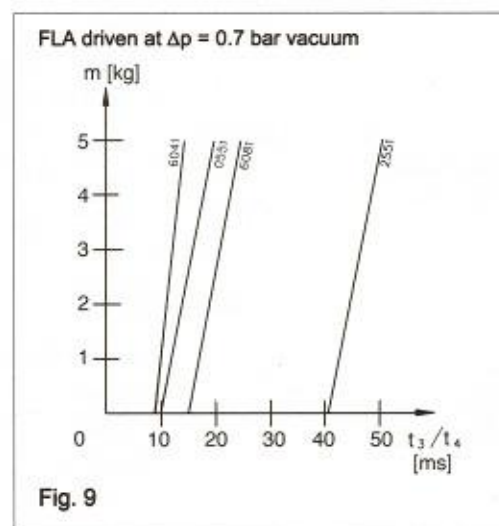
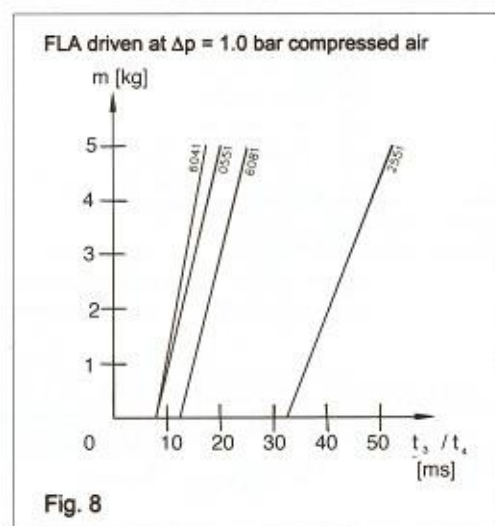
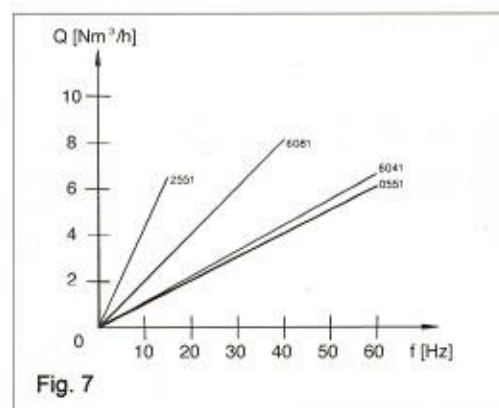
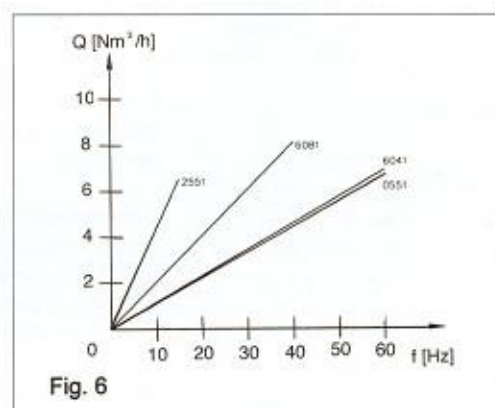
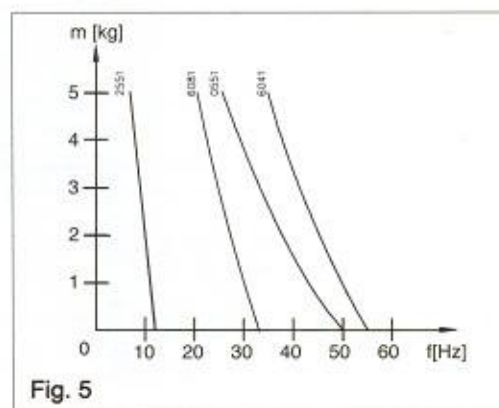
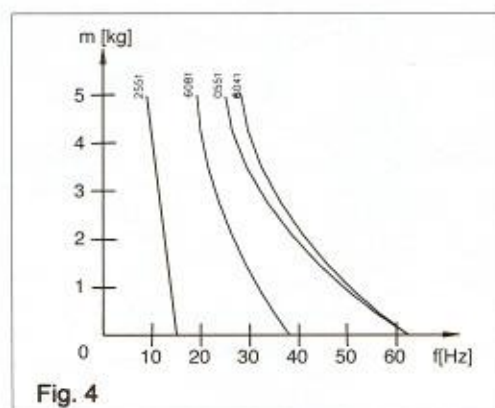


The stroke time is the time taken for the piston rod to travel from one end position to the other and depends on the length of stroke and the load.

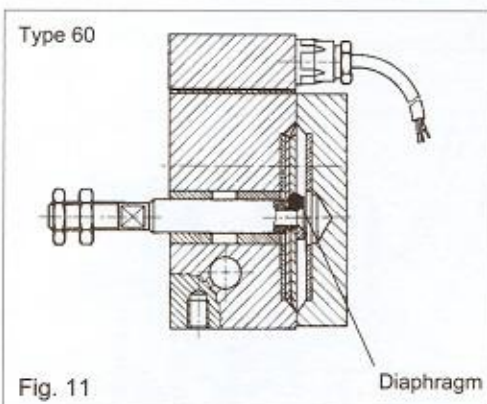
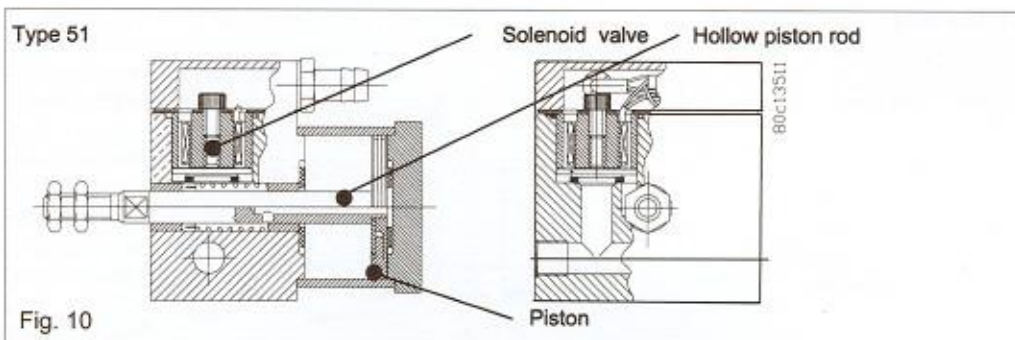
The stroke time is designated t_3 or t_4 .

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

The FLA lifetime also depends on the load.



Mode of Operation



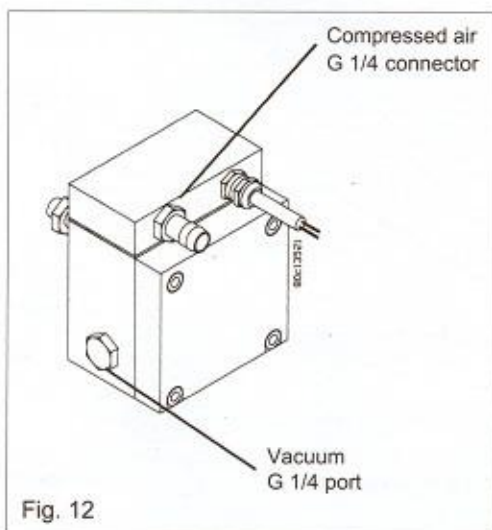
The two types, Diaphragm Fig. 11 and Piston Fig. 10 use the same principle where two solenoid valves lead compressed air or vacuum to one side or the other of the piston/diaphragm.

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 electronic controls, described below. They **must not** be driven continuously by, for example, 24 V d.c.

Connections:

Air



Compressed air connection:

Compressed air must be connected to the G 1/4 connector shown in Fig. 12. One of the two blanking plugs on the side of FLA must be removed.

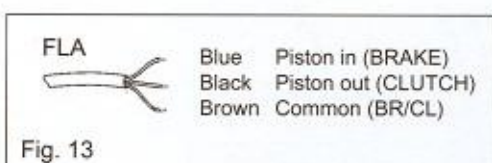
Vacuum connection:

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.

Use only armoured hose.

Connections:

Electrical



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

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

Terminal designation:

Control	SRB 3100	SRB 3102	SRB 3110
BRAKE	13	13	16
CLUTCH	12	14	17
BR/CL	11	15	19

Note!

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

Dimensions, piston type 51

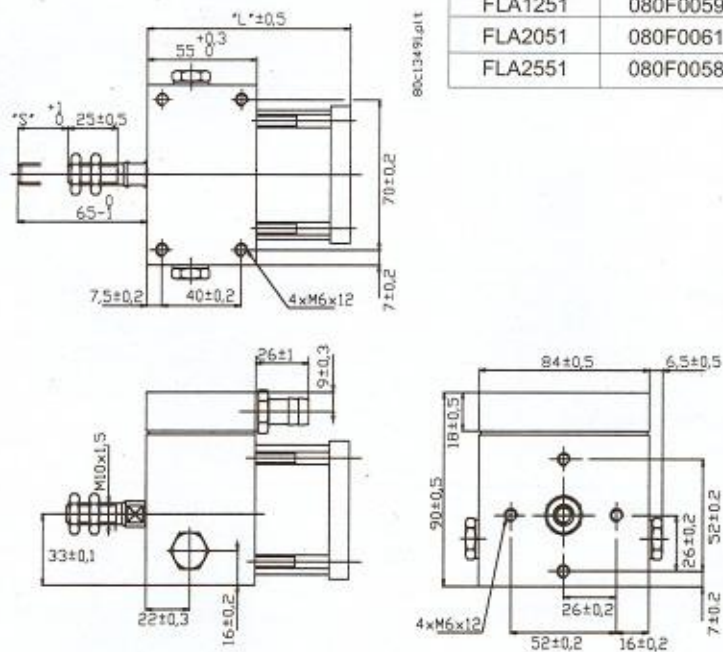


Fig. 14

Dimensions diaphragm type 60

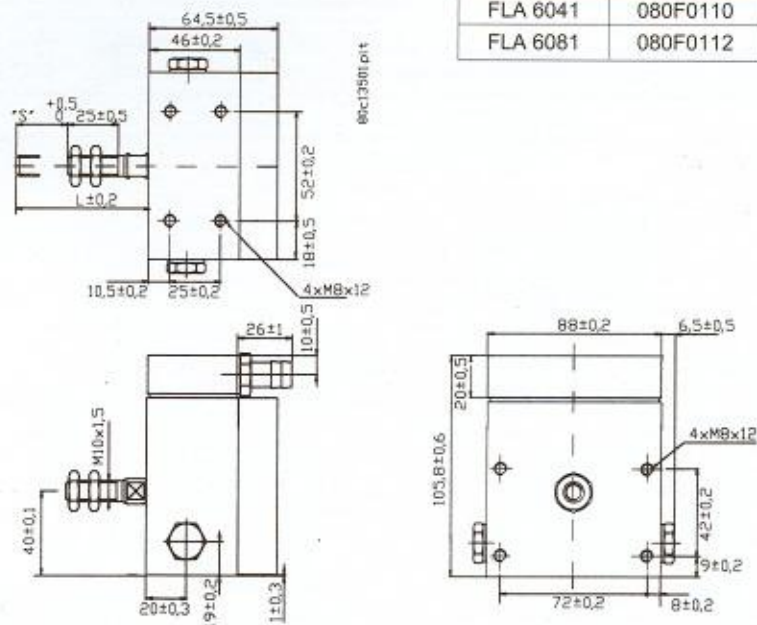


Fig. 15

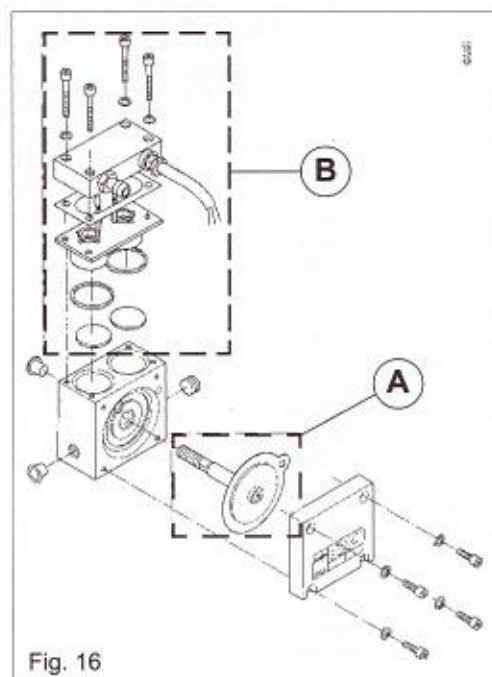
Code numbers

Type	Code number.
FLA 6041	080F0110
FLA 6081	080F0112
FLA 0551	080F0057
FLA 1251	080F0059
FLA2051	080F0061
FLA2551	080F0058

Technical data

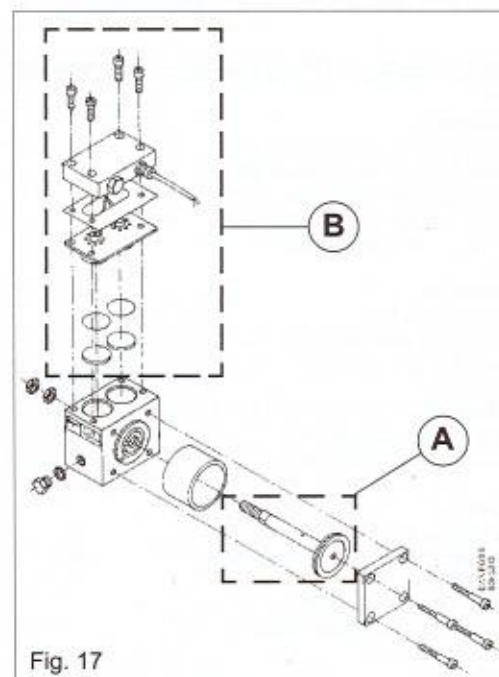
FLA-type	Diaphragm		Piston			
	6041	6081	0551	1251	2051	2551
Stroke [mm]	4	8	5	12	20	25
Max. operating pressure [Δp bar]						
Compressed air	1	1	1	1	1	1
Vacuum	0.7	0.7	0.7	0.7	0.7	0.7
Max. holding force [N] with: $\Delta p = 1,0$ bar compressed air $\Delta p = 0,7$ bar vacuum	250 200	250 200	190 140	190 140	190 140	190 140
Reaction time [ms]	7	8	6	8	9	10
Repeat accuracy [$\pm$ ms]	0.5	0.5	0.5	0.5	0.5	0.5
Ambient temperature [°C]						
Operating	0-40	0-40	0-40	0-40	0-40	0-40
Storage	-20 - +70	-20 - +70	-20 - +70	-20 - +70	-20 - +70	-20 - +70
Air consumption/cycles						
Compressed air [Nm ³]	61×10^{-6}	109×10^{-6}	58×10^{-6}	131×10^{-6}	199×10^{-6}	237×10^{-6}
Vacuum [Nm ³]	32×10^{-6}	56×10^{-6}	31×10^{-6}	59×10^{-6}	98×10^{-6}	121×10^{-6}
Enclosure [IP]						
With compressed air	66	66	66	66	66	66
With vacuum	54	54	54	54	54	54
Weight [kg]	1.6	1.6	1.5	1.6	1.65	1.7

Service parts



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

B: Valve kit for FLA 60
Code no.: 080F0183



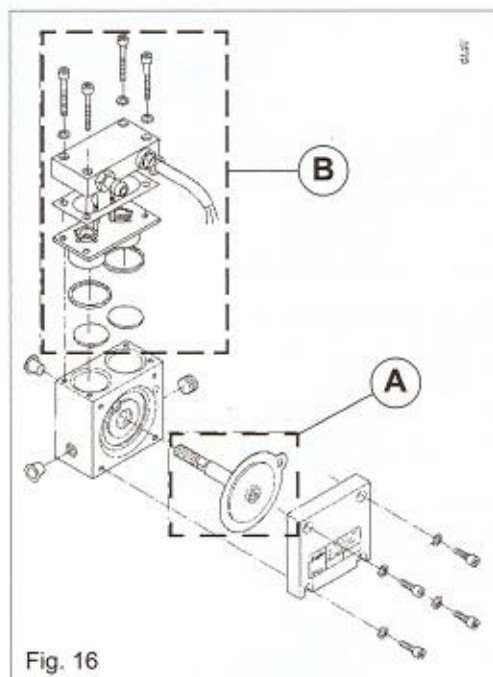
A: Piston kit for FLA type 51
Code no.: 080F0184

B: Valve kit for FLA 51
Code no.: 080F0185

Control electronics

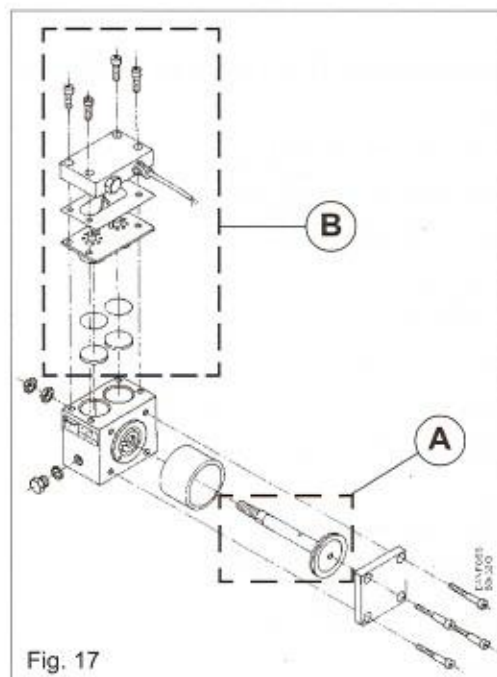
Type	Description	Code no.
SRB 3100	Driver specially made for FLA, with timer function for piston return. Adjustable between 7 and 400 ms	080B1047
SRB 3102	Driver with several control inputs	080B1054
SRB 3110	Control unit for more advanced control tasks. Many options	080B1049

Service parts



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

B: Valve kit for FLA 60
Code no.: 080F0183



A: Piston kit for FLA type 51
Code no.: 080F0184

B: Valve kit for FLA 51
Code no.: 080F0185

Control electronics

Type	Description	Code no.
SRB 3100	Driver specially made for FLA, with timer function for piston return. Adjustable between 7 and 400 ms	080B1047
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