

# Fast Linear Actuator FLA type 51 and 60

Datasheet



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**Application**

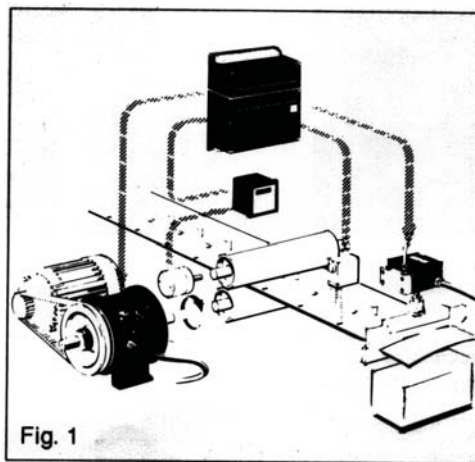


Fig. 1

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 two different lengths of stroke.

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 Laurence, Scott & Electromotors Ltd Precision Step Systems.

**Holding force**

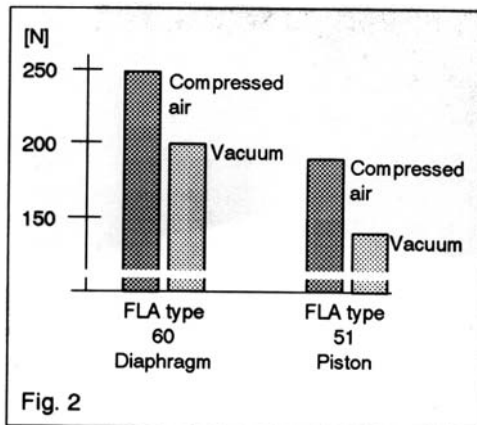


Fig. 2

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

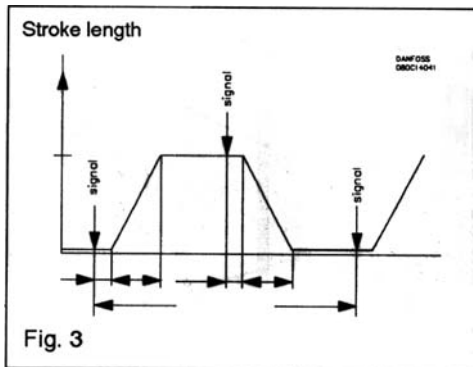
The static holding force depends on the medium chosen and the differential pressure.

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

**Reaction time**

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

Stroke time

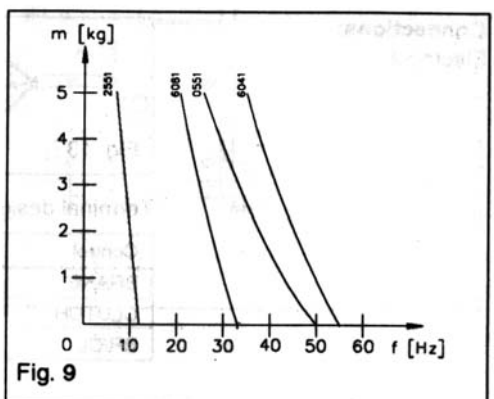
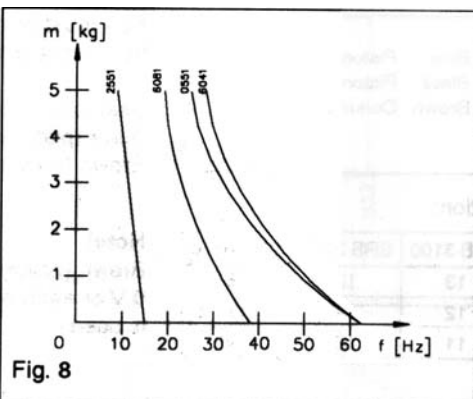
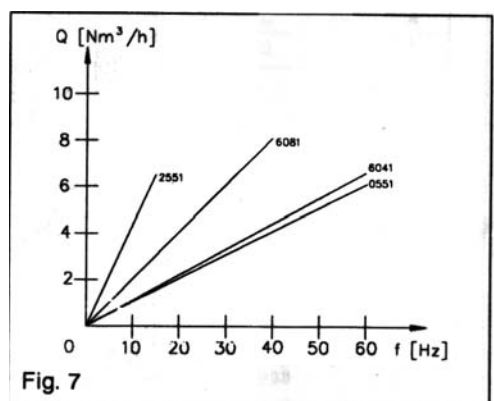
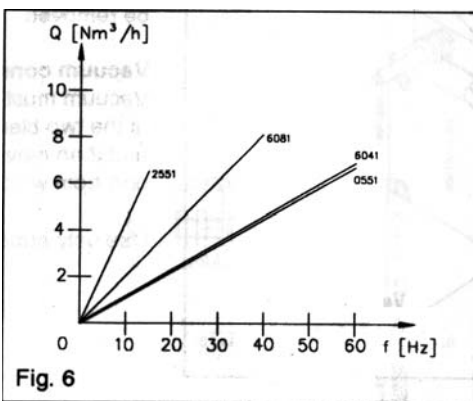
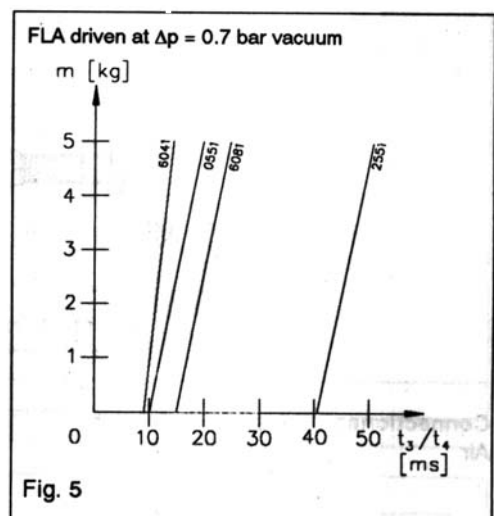
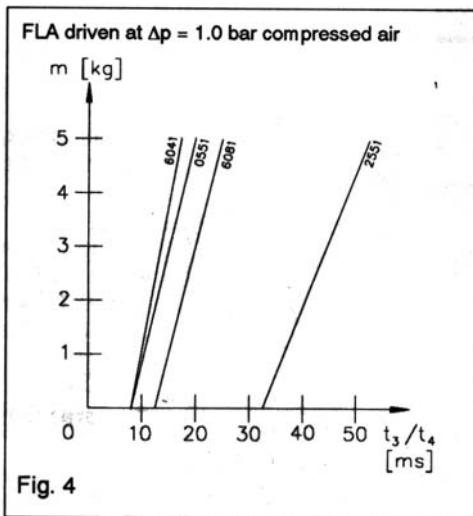


The stroke time is the time taken for the piston rod to travel from one end position to the other and depends on the length of stroke and the load.

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

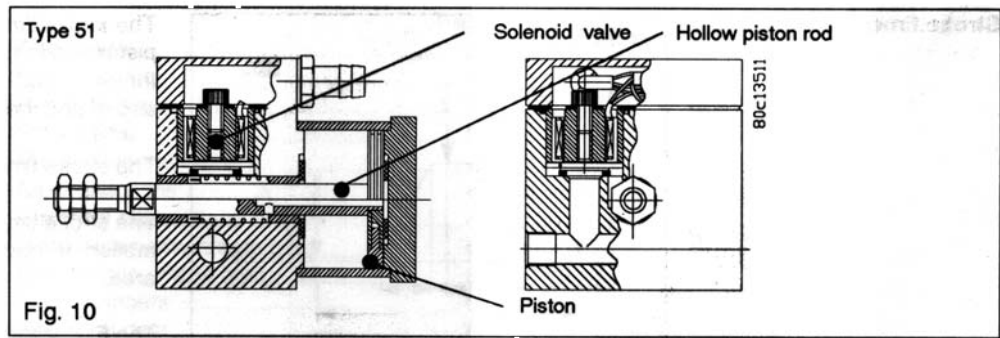


Fig. 10

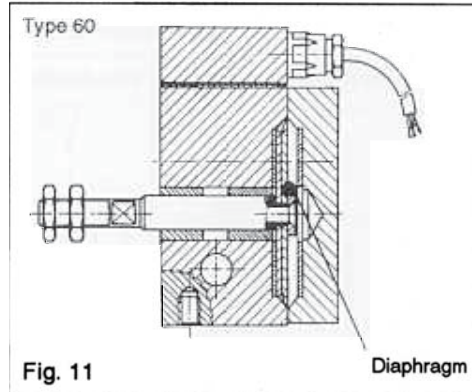


Fig. 11

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

Connections:  
Air

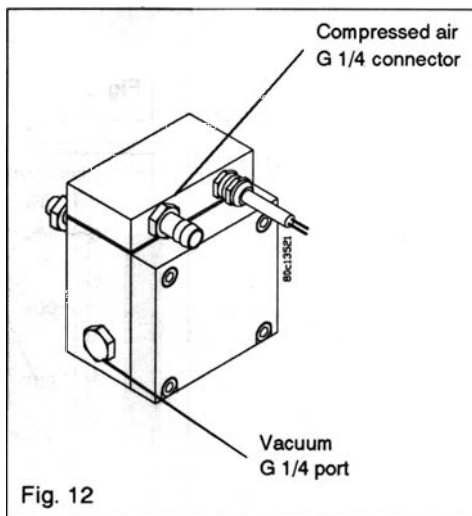


Fig. 12

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

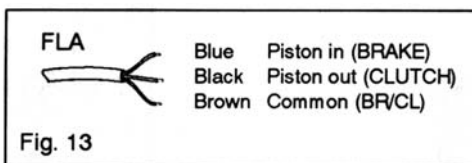


Fig. 13

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.

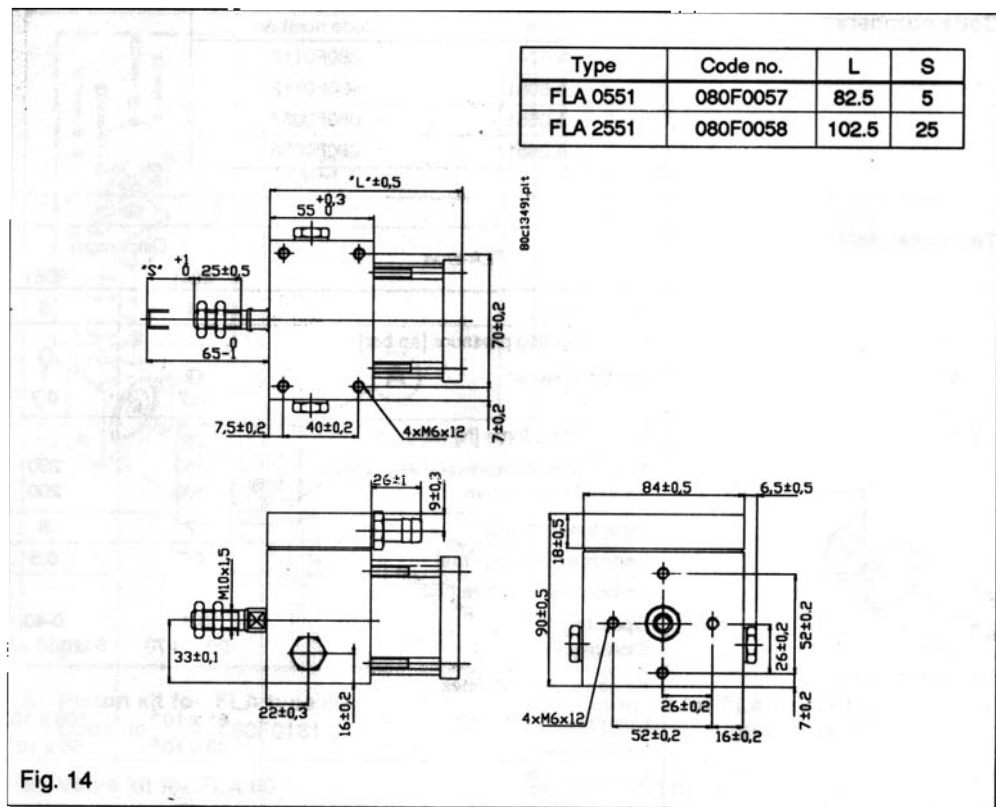
Terminal designation:

Control	SRB 3100	SRB 3101	SRB 3110
BRAKE	13	13	16
CLUTCH	12	14	17
BR/CL	11	15	19

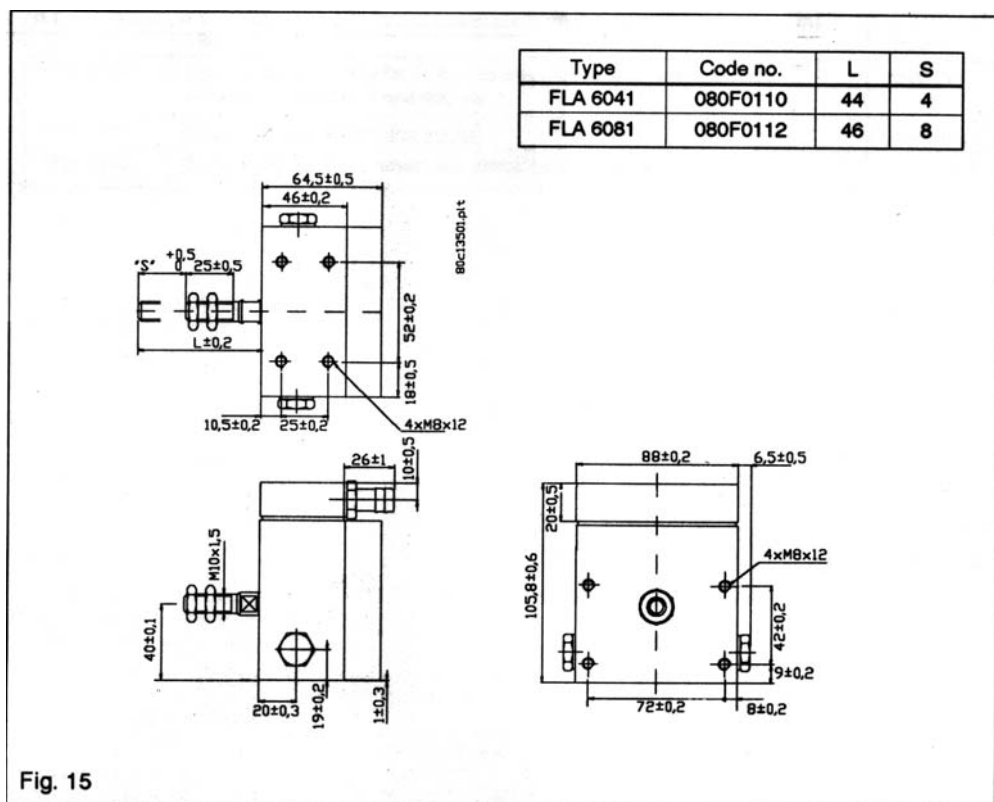
Note!

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

Dimensions,  
piston type 51



Dimensions  
diaphragm type 60



**Datasheet** **Fast Linear Actuator type FLA**

Code numbers

Type	Code number.
FLA 6041	080F0110
FLA 6081	080F0112
FLA 0551	080F0057
FLA 2551	080F0058

Technical data

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

Service parts

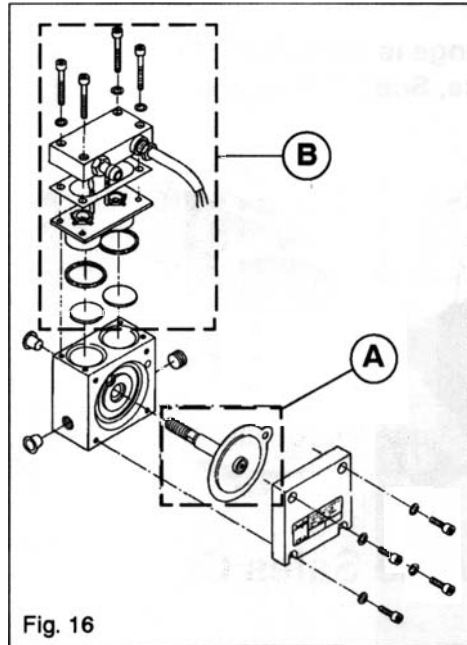


Fig. 16

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

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

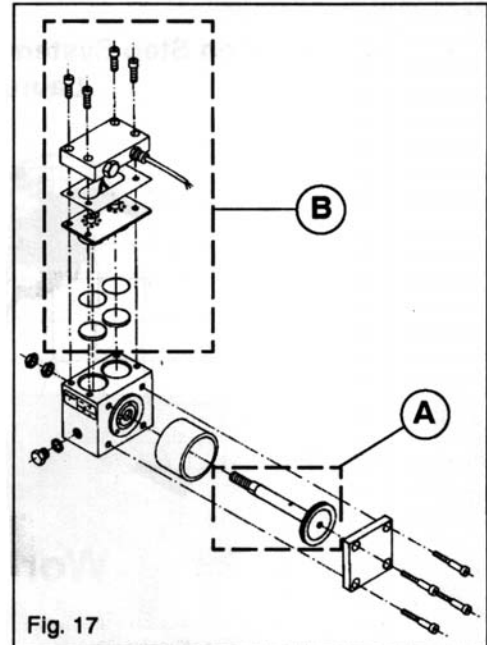


Fig. 17

**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 3101	Driver with several control inputs	080B1052
SRB 3110	Control unit for more advanced control tasks. Many options	080B1049