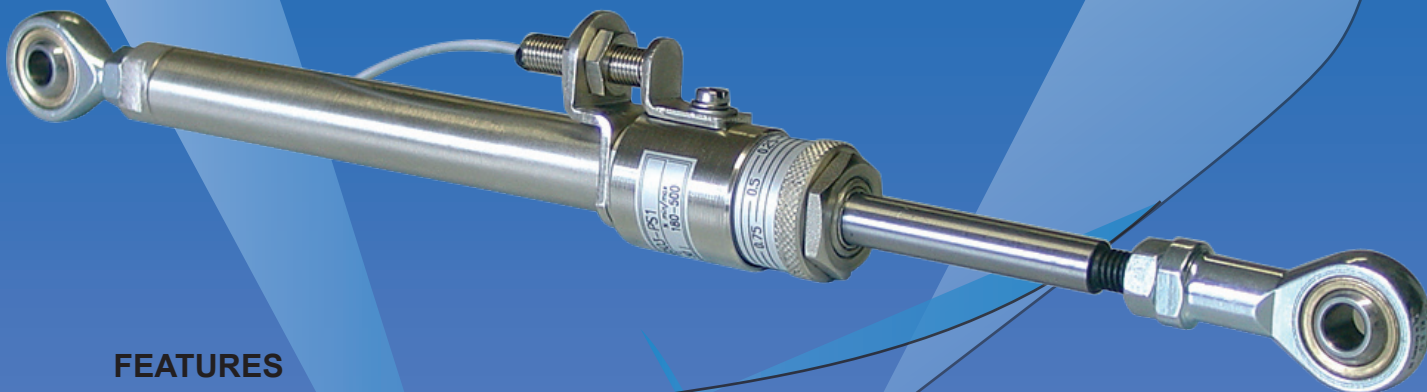# AXIAL FORCE LIMITER

Safety mechanical device for the protection of the transmission parts, with connecting element subjected to axial tractive effort and/or pressure.

FEATURES

- Immediate drive stop
- *Disengage signalled by microswitch or inductive sensor*
- Gradual adjustment of the disengaging force (from 50 to 3000 N)
- *Free-of-play transmission*
- Compressive and/or tractive operation
- *Maintenance free*
- Dimensions and weights extremely light
- *Customised strokes and lengths*

It is usually called "elastic tie-rod", and finds application in the mechanics of alternative movements (cams and levers).

It is fitted between the drive unit and the driven part, and in case of obstacles or movement faults, it protects the driven part by releasing the movement and signalling the stop by the inductive sensor.

The axial force limiter consists of a telescopic rod made up with two parts joined together by a main body containing the release device.

The connecting element of the two rod parts is made of balls balanced by a pushing mobile ring with suitable profile, kept in its position by an adjustable push spring.

On exceeding the preset spring pushing value, the balls move outwards and the two rod parts release. The drive unit keeps on moving, while the driven part stops.

The main feature of the limiter consists of the insertion of a protruding flap on the mobile ring, which allows controlling electrically the ring shift by an inductive sensor, and stopping the drive unit
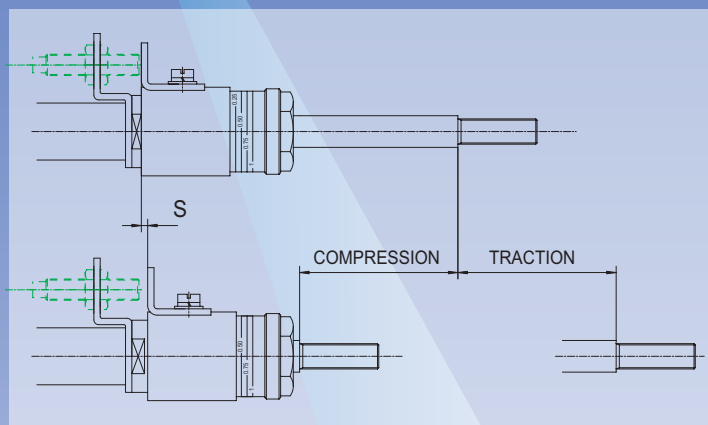
CHOOSING THE DISENGAGING STROKES

The type of axial force limiter depends on the disengaging force and on the distance from the kinematic mechanism (LT) (see Table of lengths and weights).
Three versions of axial force limiters are available:
Version B (basic), the fitting of which depends on the user.
Version P with rear hinged end
Version S with rear threaded end for joint fitting
Select model and length LT (interaxle)
Subtract length LT0 (interaxle with stroke 0) from value LT (see Table of lengths and weights).
The obtained value corresponds to the sum of strokes A, B, and C.

$$LT - LT0 = A + B + C$$

Notes:
When A=0	Axial force limiter for TRACTION only
When B=0	Axial force limiter for COMPRESSION only
When C=0	Axial force limiter for TRACTION only
When (A, B, C)>0	Axial force limiter for TRACTION and COMPRESSION

After choosing the type of operation, so as to cut delivery times, choose values B=C from standard measures as they define the rod length, while value A is the sleeve length.

corsa A   corsa B   corsa C
LT=LT0+A+B+C
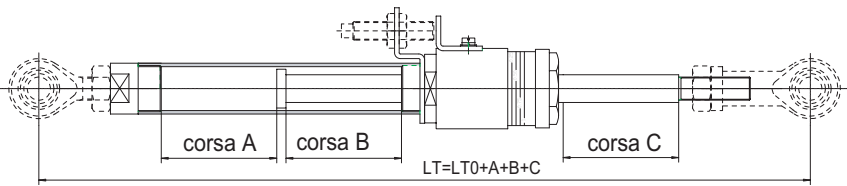
NOTE: In order to avoid damaging the device, the limiter stroke shall be higher than the kinematic mechanism working stroke.

## DISENGAGING FORCE Min ÷ Max (N) ± 10% AND STANDARD STROKES

MODEL	SPRING 1	SPRING 2	SPRING 3	SPRING 4
LA06	50÷90	90÷200		
LA08	90÷180	150÷350	180÷500	
LA10	100÷350	200÷600	350÷1000	500÷1500
LA12		500÷2000	800÷3000	

Mod.	Strokes A,B,C standard
LA06	10-25-50-75-100
LA08	25-50-75-100-125-150
LA10	25-50-75-100-125-150
LA12	ON DEMAND

ELECTRICAL DEVICE FOR DISENGAGING FORCE

Disengaging force adjustment is performed by turning the ring nut. The ring nut is marked with four marks indicating the disengaging force in %, according to the type of spring fitted. Min/max values are listed in the table above. After the adjustment, lock the ring nut with counter-nut.
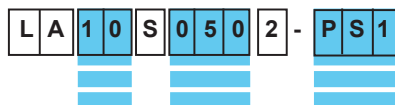

S   50% 75%   ring nut
25% 100%   counter-nut
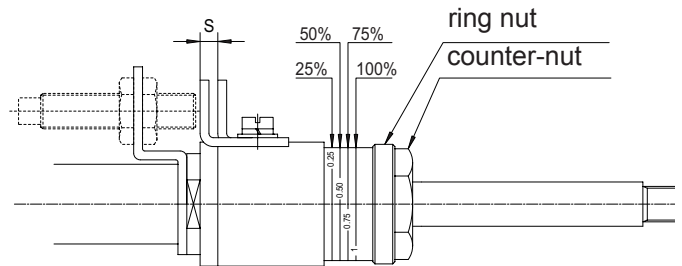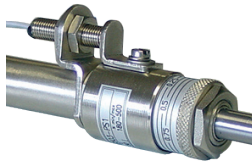
	LA06	LA08	LA10	LA12
S mm	1	1.3	1.5	1.8

The force limiter is supplied with the support for electrical device assembly.
When fitting the inductive sensor, not included in the supply, follow the corresponding instructions of the manufacturers. The table shows the mobile ring (**S**) shift according to the limiter model.

PRODUCT IDENTIFICATION CODE WHEN ORDERING

Standard strokes and ends

L A 1 0 S 0 5 0 2 - P S 1

Customised strokes and ends

L A 1 0 S ☐ - ☐ 2 - P S 1 - ☐☐☐ - A x B x C

Size 06-08-10-12
Version B-P-S
Standard strokes 25-50-75-100-125-150
Spring 1-2-3-4
Inductive sensor PS1-PS2
Threaded ends on demand M8-M10-M12-M14-M16
Customised strokes

DZ
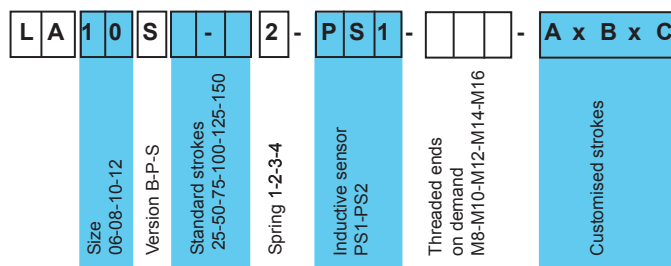
TABLE OF LENGTHS AND WEIGHTS

| MODEL	THREADED ENDS		LENGTH LT0 (mm) STROKES A,B,C=0 VERSION						WEIGHT (kg) STROKES A,B,C=0 VERSION		
	STANDARD	ON DEMAND	B	±	P	±	S	±	B	P	S
LA06	M6		87	3.5	110.5	3.5	137	8	0.130	0.150	0.180
LA08	M8		100	4	135,5	4	160,5	9	0.235	0.290	0.325
LA08		M10	110	5	145.5	5	174.5	10	0280	0.335	0.395
LA10		M8	107	4	145	4	170	9	0.465	0.555	0.600
LA10	M10		117	5	155	5	184	10	0.510	0.600	0.665
LA10		M12	125	5	164	5	203	10	0.550	0.640	0.750
LA12	M12		140	5	187	5	219	10	0.830	1.040	1.090
LA12		M14	148	5	195	5	231	10	0.880	1.090	1.170
LA12		M16	159	7	206	7	247	12	0.980	1.170	1.300

Accentuated lines refer to standard models
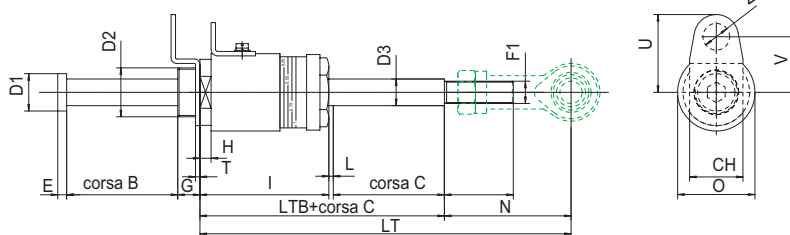
DIMENSIONS

Version S - Hinged joint
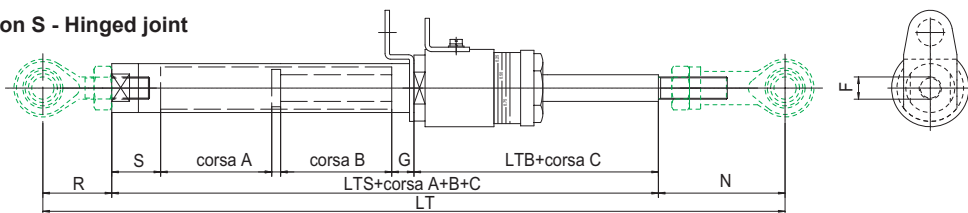
Version P - Rear hinged
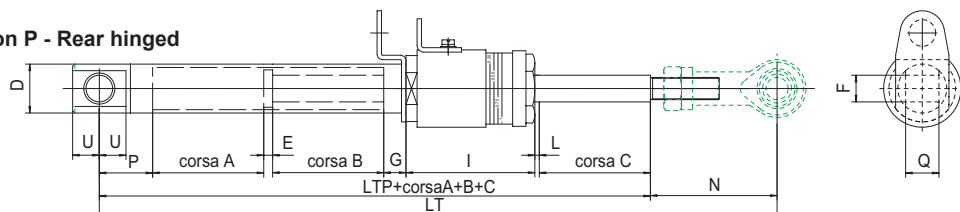
Version B-Basic

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TABLE OF DIMENSIONS (MM)

MODEL		LA06	LA08		LA10			LA12		
THREADED ENDS		M6	M8	M10	M8	M10	M12	M12	M14	M16
CH		15	19		24			30		
D1		10	13.5		17			21		
D2		M12x1	M16x1		M20x1.5			M25x1.5		
D3		7	10		12			16		
D4		14	18		22			28		
E		3.5	3.5		4			5		
F1		M6	M8	M10	M8	M10	M12	M12	M14	M16
F2		6G7	10G7		12G7			-		
F3		M6	M8	M10	M8	M10	M12	M12	M14	M16
G		6	10		10			12		
H		3	4		5			5		
I		47	51		58			71		
L		1.5	2		2			2		
LTB		48.5	53		60			73		
LTP		72	88.5		98			-		
LTS		76	86.5	86.5	96	96	98	115		
M		19	25	31	25	31	34	34	37	45
N		38.5±3.5	47±4	57±5	47±4	57±5	65±5	67±5	75±5	86±7
O		22	28		35			45		
P		14	22		24			-		
Q		10	12		15			-		
R		22.5x4.5	27±5	31±5	27±5	31±5	36±5	37±5	41±5	46±5
S		18	20		22	22	25	25		
T		1.5	2		2			2		
PS1	U	25	31		35			39		
	V	17	21		25			29		
	Z	8								
PS2	U	-	31		35			39		
	V	-	21		25			29		
	Z	12								

Accentuated columns refer to standard models