

# Linear Motor Systems

## Linear motor axis LMSSA

### 3. Linear motor axis LMSSA

#### 3.1 Properties of the LMSSA linear motor axes

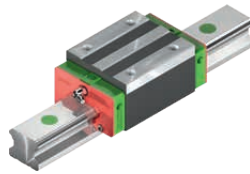
LMSSA linear motor axes are a cost-effective variant of this product group. The cost advantage is achieved by a consistent reduction to the essentials and a limitation of the options and variants available as standard. This allows manufacturing costs to be significantly reduced, while the LMSSA axes simultaneously offer all the advantages of a conventional linear motor axis.

- Short delivery time
- Max. acceleration 50 m/s<sup>2</sup>
- Max. velocity 5 m/s
- Up to 3,000 mm long



#### Linear guideway

A high quality HIWIN double guide transfers forces and torques reliably from the carriage into the axis profile. Each carriage comes with four blocks that are guided over two parallel high precision rails. The SynchMotion™ technology with ball chain also ensures a high level of synchronism and quiet running for all sizes.



#### Electrical interface

Motor and encoder cables are routed out directly on the traversing carriage in a cost-optimized manner and are supplied with open cable ends. The limit switch cables are also led out with open cable ends at the front of the axis.



#### Distance measuring systems

The distance measuring system, that is integrated into the interior of the axis in order to save space, determines the repeatability. Various measuring systems are available, depending on the requirements for measuring method, interface and resolution.



#### Colour

In addition to the standard grey version (anodized aluminium), the linear motor axis is also available in a black version.



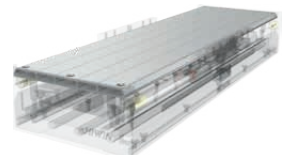
#### Linear motor

The integrated HIWIN linear motors ensure dynamic and precise positioning. The iron-core LMSA motors are the first choice when high feed forces are required, the ironless motors are the first choice for applications with the highest synchronization requirements.

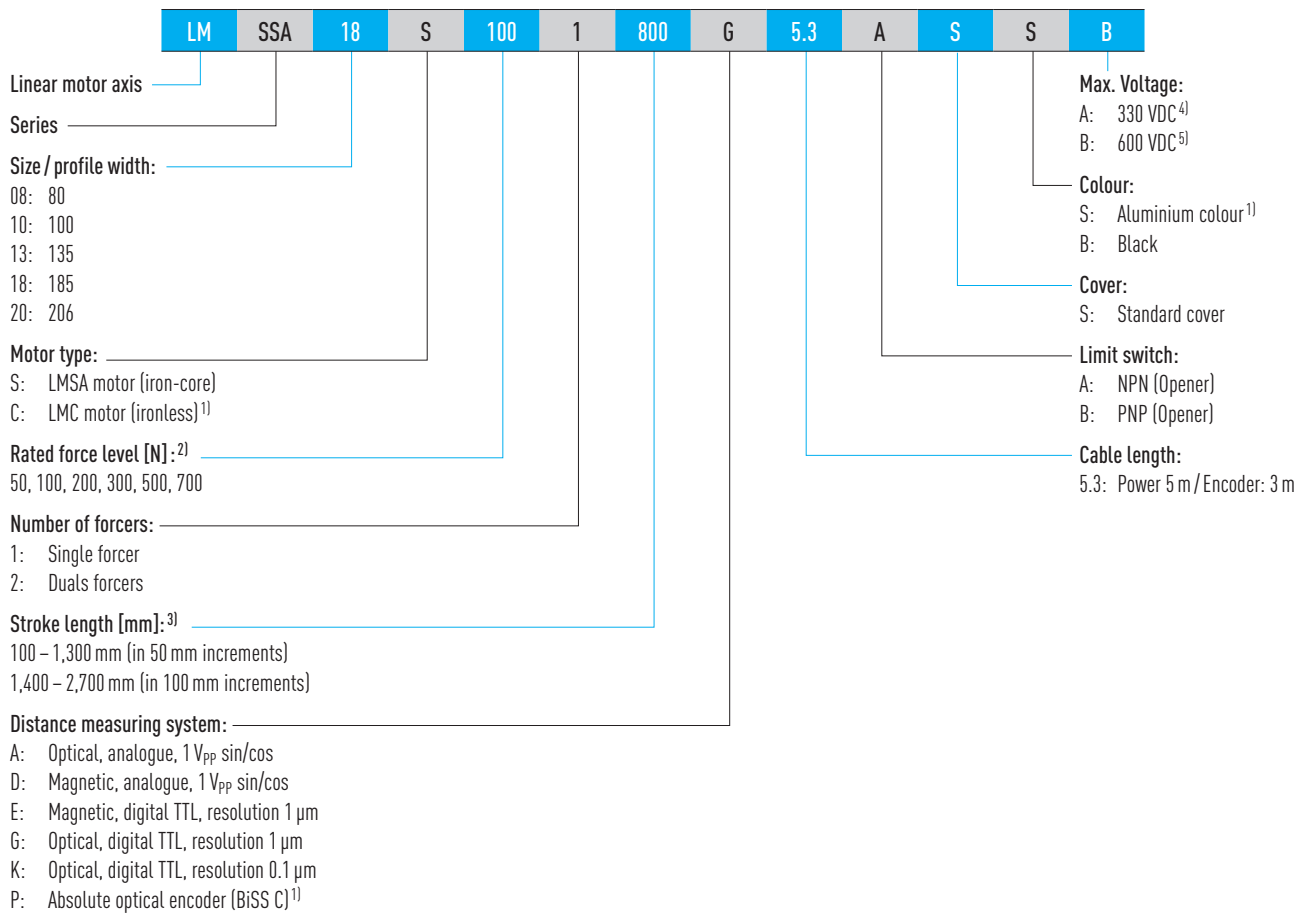


#### Cover

The steel cover strip protects the inside of the axis against dust and dirt.



## 3.2 Order code for LMSSA linear motor axes



<sup>1)</sup> Available for size (profile width) 18 and 20.

<sup>2)</sup> Rated force depends on motor type. Detailed information from Table 3.1 on page 19.

<sup>3)</sup> Max. stroke length depends on size (profile width). Detailed information from Table 3.4 on page 22.

<sup>4)</sup> Max. voltage depends on motor type. LMC (ironless) with max. voltage A: 330 VDC

<sup>5)</sup> Max. voltage depends on motor type. LMSA (iron-core) with max. voltage B: 600 VDC

# Linear Motor Systems

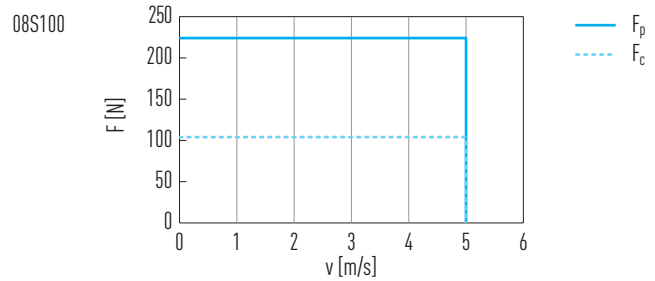
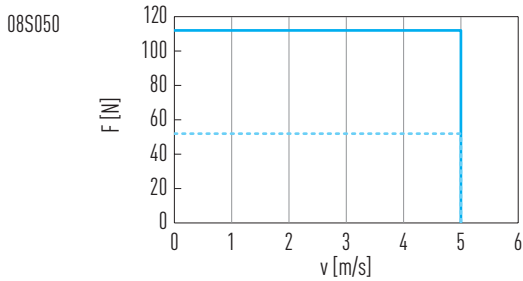
## Linear motor axis LMSSA

### 3.3 Linear motor axis LMSSA specifications

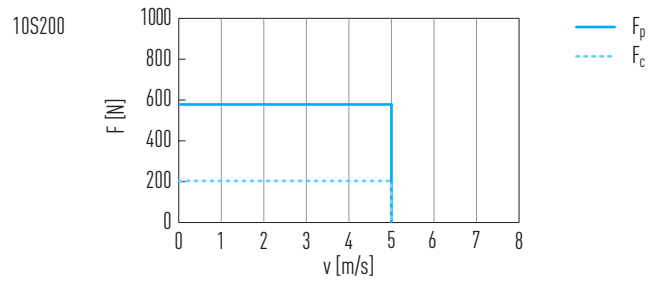
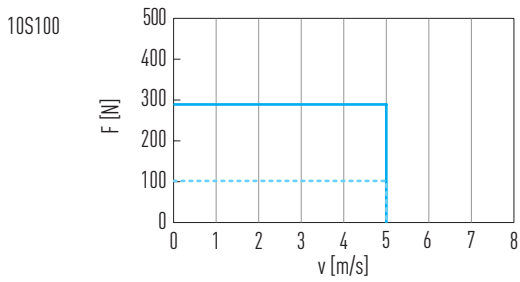
#### 3.3.1 Characteristic curves LMSSA-S (iron-core)

Force as a function of speed (DC bus voltage: 600 VDC)

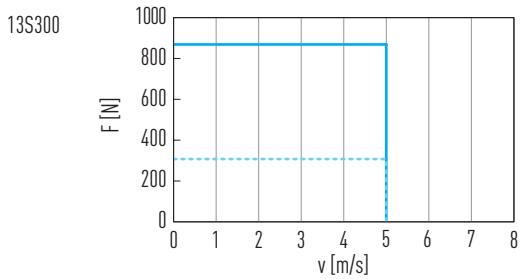
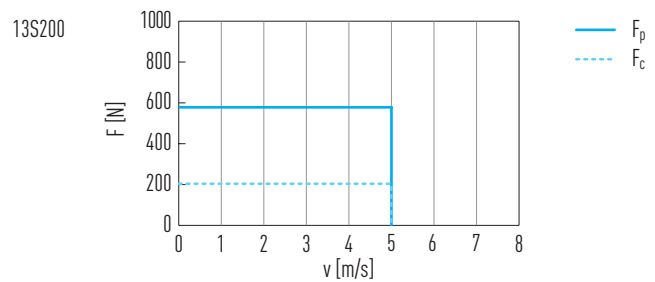
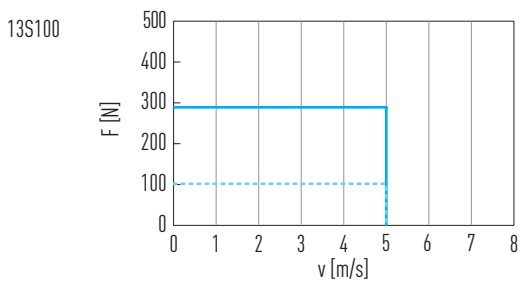
##### LMSSA-08



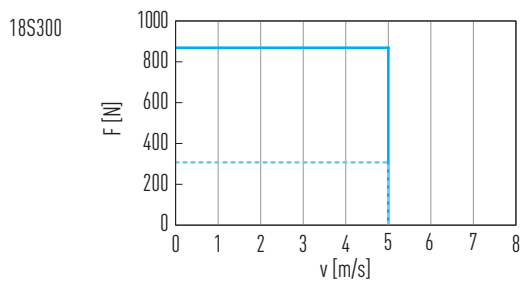
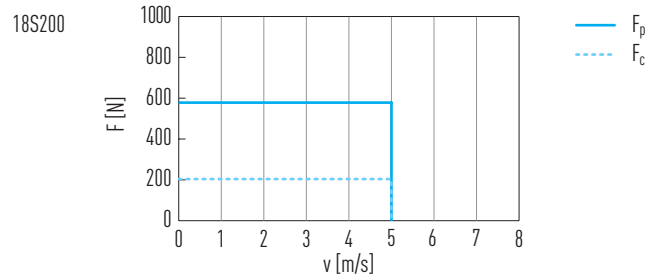
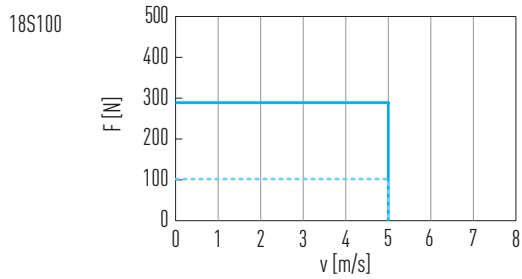
##### LMSSA-10



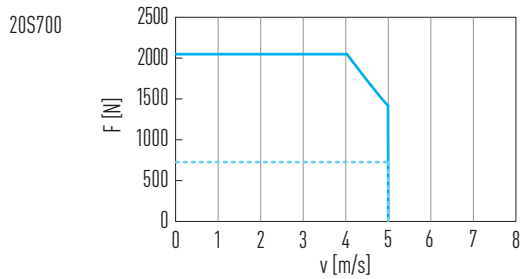
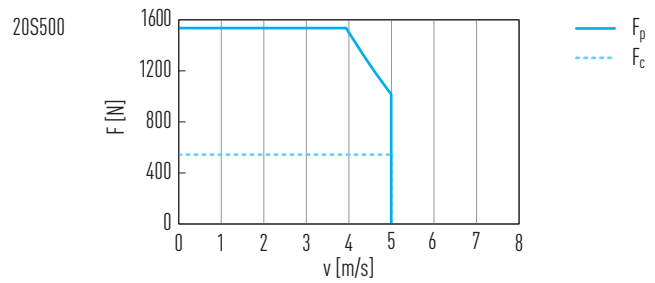
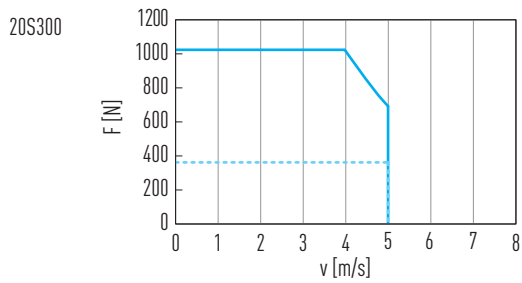
##### LMSSA-13



## LMSSA-18



## LMSSA-20



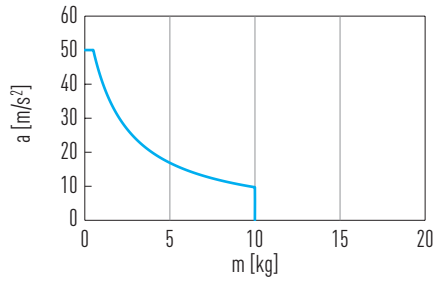
# Linear Motor Systems

Linear motor axis LMSSA

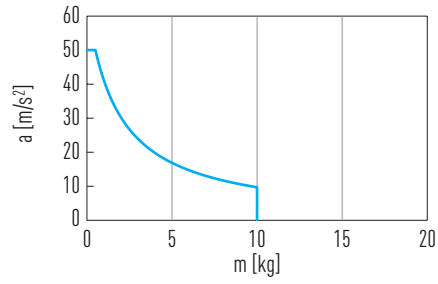
Acceleration as a function of speed (DC bus voltage: 600 VDC)

## LMSSA-08

08S050

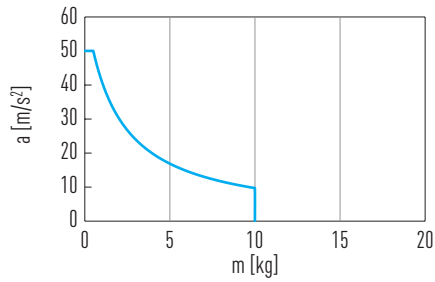


08S100

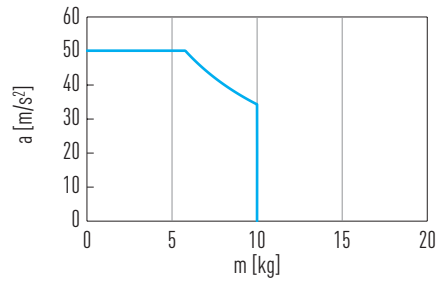


## LMSSA-10

10S100

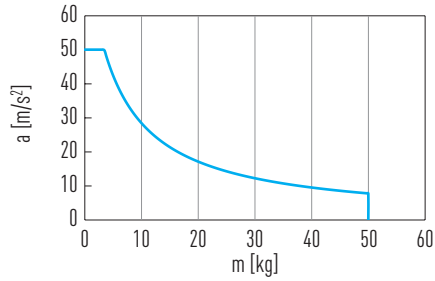


10S200

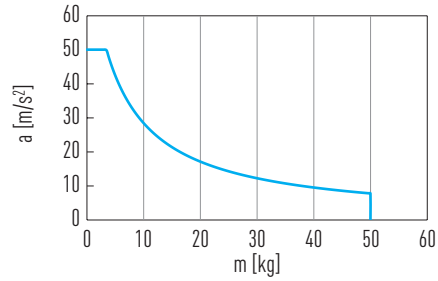


## LMSSA-13

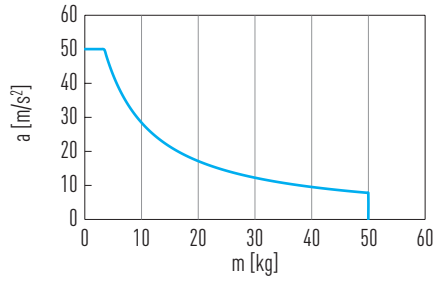
13S100



13S200

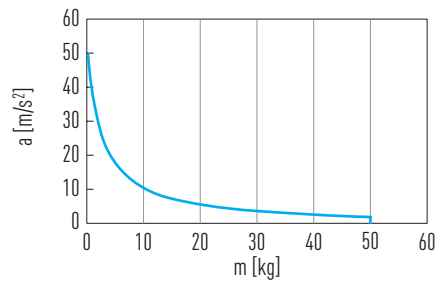


13S300

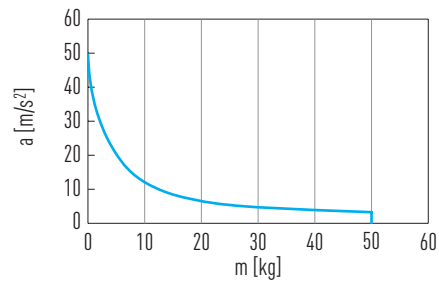


## LMSSA-18

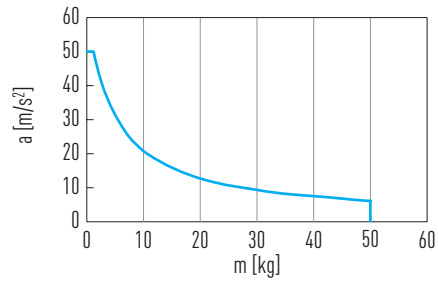
18S100



18S200

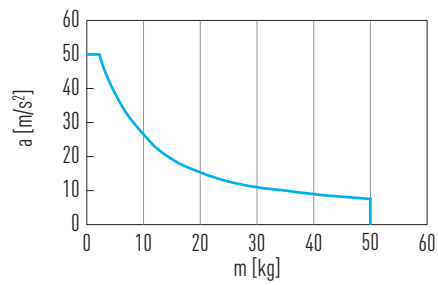


18S300

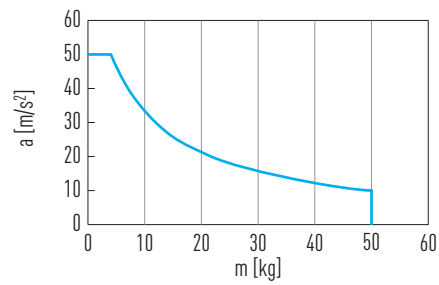


## LMSSA-20

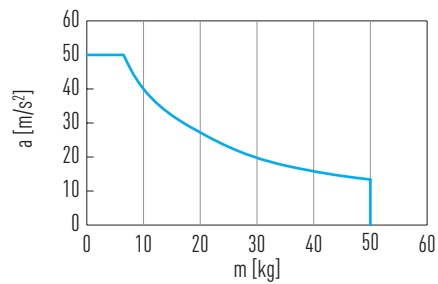
20S300



20S500



20S700

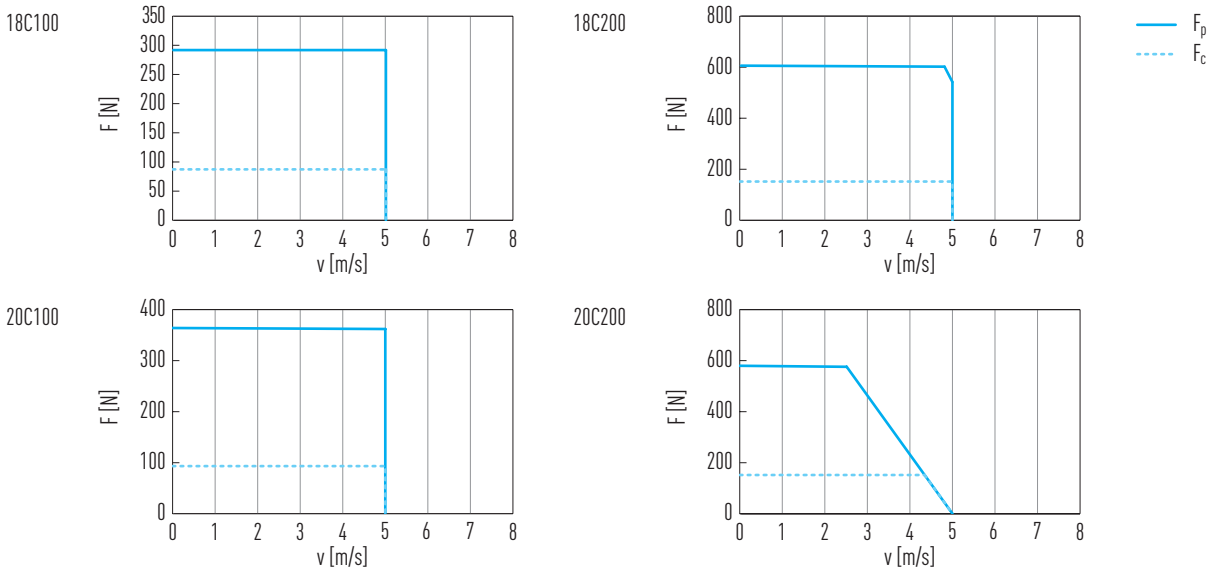


# Linear Motor Systems

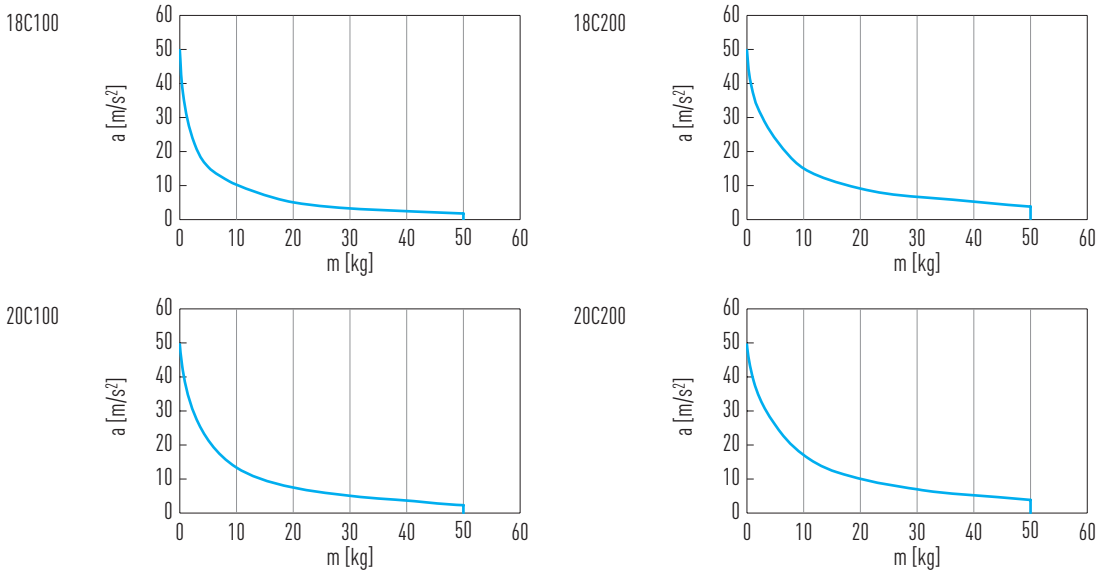
Linear motor axis LMSSA

## 3.3.2 Characteristic curves LMSSA-C (ironless)

Force as a function of speed (DC bus voltage: 325 VDC)



Acceleration as a function of load capacity (DC bus voltage: 325 VDC)



### 3.3.3 Technical data LMSSA-S (iron-core)

Table 3.1 Technical data LMSSA-S (iron-core) – sizes 08/10/13

	Symbol	Unit	08S050	08S100	10S100	10S200	13S100	13S200	13S300
<b>Linear motor</b>			LMSA01	LMSA02	LMSA11	LMSA12	LMSA11	LMSA12	LMSA13
<b>Continuous force at <math>T_{max}</math></b>	$F_c$	N	52	104	103	205	103	205	308
<b>Continuous current at <math>T_{max}</math></b>	$I_c$	$A_{eff}$	2.1	4.2	2.1	4.2	2.1	4.2	6.3
<b>Peak force (for 1 s)</b>	$F_p$	N	112	224	289	579	289	579	868
<b>Peak current (for 1 s)</b>	$I_p$	$A_{eff}$	6.3	12.6	6.3	12.7	6.3	12.7	19.0
<b>Ultimate force (for 0.5 s)</b>	$F_u$	N	192	384	379	759	379	759	1,138
<b>Ultimate current (for 0.5 s)</b>	$I_u$	$A_{eff}$	10.6	21.1	10.6	21.1	10.6	21.1	31.7
<b>Force constant</b>	$K_f$	$N/A_{eff}$	24.5		48.6				
<b>Electrical time constant</b>	$K_e$	ms	3.0	3.7	4.4	4.5	4.4	4.5	4.4
<b>Resistance<sup>1)</sup></b>	$R_{25}$	$\Omega$	6.2	3.1	8.4	4.1	8.4	4.1	2.8
<b>Inductance<sup>1)</sup></b>	L	mH	19.0	11.6	37.1	18.5	37.1	18.5	12.4
<b>Back EMF constant</b>	$K_u$	$V_{eff}/(m/s)$	14.2		28.1				
<b>Motor constant</b>	$K_m$	$N/\sqrt{W}$	8.1	11.5	13.7	19.6	13.7	19.6	23.7
<b>Thermal resistance</b>	$R_{th}$	$^{\circ}C/W$	1.69	0.83	1.23	0.63	1.23	0.63	0.41
<b>Thermal time constant</b>	$T_{th}$	s	431	431	610	890	610	890	2,290
<b>Thermal switch</b>			1 × (3 PTC SNM 120 in series)						
<b>Max. DC bus voltage</b>		V	600						
<b>Pole pair pitch</b>	$2\tau$	mm	30						
<b>Max. winding temperature</b>	$T_{max}$	$^{\circ}C$	120						
<b>Repeatability</b>		$\mu m$	Type A/K/P: $\pm 1$ ; Type G: $\pm 2$ ; Type D/E: $\pm 3$						
<b>Absolute accuracy</b>		$\mu m$	Type A/K/P: $\pm 2$ ; Type G: $\pm 4$ ; Type D/E: $\pm 6$						
<b>Horizontal straightness</b>		$\mu m$	$\pm 8/300$ mm						
<b>Vertical straightness</b>		$\mu m$	$\pm 8/300$ mm						
<b>Max. speed</b>		m/s	5						
<b>Max. acceleration</b>		$m/s^2$	50						
<b>Moved mass</b>		kg	1.8	3.0	2.1	3.4	3.4	5.2	7.5
<b>Stroke length</b>		mm	100 – 1,300 (in 50 mm increments), 1,400 – 2,700 (in 100 mm increments)						

<sup>1)</sup> Line to line

All specifications are in  $\pm 10\%$  of tolerance at  $25^{\circ}C$  ambient temperature



# Linear Motor Systems

## Linear motor axis LMSSA

### 3.3.4 Technical data LMSSA-S (iron-core)

	Symbol	Unit	18S100	18S200	18S300	20S300	20S500	20S700
<b>Linear motor</b>			LMSA11	LMSA12	LMSA13	LMSA22	LMSA23	LMSA24
<b>Continuous force at <math>T_{max}</math></b>	$F_c$	N	103	205	308	362	544	725
<b>Continuous current at <math>T_{max}</math></b>	$I_c$	$A_{eff}$	2.1	4.2	6.3	3.9	5.9	7.8
<b>Peak force (for 1 s)</b>	$F_p$	N	289	579	868	1,023	1,535	2,048
<b>Peak current (for 1 s)</b>	$I_p$	$A_{eff}$	6.3	12.7	19.0	11.8	17.6	23.5
<b>Ultimate force (for 0.5 s)</b>	$F_u$	N	379	759	1,138	1,341	2,011	2,682
<b>Ultimate current (for 0.5 s)</b>	$I_u$	$A_{eff}$	10.6	21.1	31.7	19.6	29.4	39.2
<b>Force constant</b>	$K_f$	$N/A_{eff}$	48.6			92.5		
<b>Electrical time constant</b>	$K_e$	ms	4.4	4.5	4.4	4.9	4.9	4.6
<b>Resistance<sup>1)</sup></b>	$R_{25}$	$\Omega$	8.4	4.1	2.8	6.8	4.6	3.5
<b>Inductance<sup>1)</sup></b>	L	mH	37.1	18.5	12.4	33.0	22.4	16.0
<b>Back EMF constant</b>	$K_u$	$V_{eff}/(m/s)$	28.1			53.4		
<b>Motor constant</b>	$K_m$	$N/\sqrt{W}$	13.7	19.6	23.7	28.9	35.2	40.6
<b>Thermal resistance</b>	$R_{th}$	$^{\circ}C/W$	1.23	0.63	0.41	0.44	0.29	0.22
<b>Thermal time constant</b>	$T_{th}$	s	610	890	2,290	2,540	2,670	3,270
<b>Thermal switch</b>			1× (3 PTC SNM 120 in series)					
<b>Max. DC bus voltage</b>		V	600					
<b>Pole pair pitch</b>	$2\tau$	mm	30					
<b>Max. winding temperature</b>	$T_{max}$	$^{\circ}C$	120					
<b>Repeatability</b>		$\mu m$	Type A/K: $\pm 1$ ; Type D/E/G/P: $\pm 3$					
<b>Absolute accuracy</b>		$\mu m$	Type A/K: $\pm 2$ ; Type D/E/G/P: $\pm 6$					
<b>Horizontal straightness</b>		$\mu m$	$\pm 8/300$ mm					
<b>Vertical straightness</b>		$\mu m$	$\pm 8/300$ mm					
<b>Max. speed</b>		m/s	5.0					
<b>Max. acceleration</b>		$m/s^2$	50					
<b>Moved mass</b>		kg	3.1	4.4	6.2	6.4	8.3	11.0
<b>Stroke length</b>		mm	200 – 1,300 (in 50 mm increments), 1,400 – 2,700 (in 100 mm increments)					

<sup>1)</sup> Line to line

All specifications are in  $\pm 10\%$  of tolerance at 25  $^{\circ}C$  ambient temperature

### 3.3.5 Technical data LMSSA-C (coreless)

Table 3.3 Technical data LMSSA-C (coreless)

	Symbol	Unit	18C100	18C200	20C100	20C200
<b>Linear motor</b>			LMC-EFC2	LMC-EFC4	LMC-B5	LMC-B8
<b>Continuous force at <math>T_{max}</math></b>	$F_c$	N	75	150	91	145
<b>Continuous current at <math>T_{max}</math></b>	$I_c$	$A_{eff}$	3.4	3.4	2.0	2.0
<b>Peak force (for 1 s)</b>	$F_p$	N	300	600	364	580
<b>Peak current (for 1 s)</b>	$I_p$	$A_{eff}$	13.6	13.6	8.0	8.0
<b>Force constant</b>	$K_f$	$N/A_{eff}$	22.3	44.6	45.4	72.5
<b>Electrical time constant</b>	$K_e$	ms	0.7	0.7	0.4	0.3
<b>Resistance<sup>1)</sup></b>	$R_{25}$	$\Omega$	3.3	6.3	9.0	14.6
<b>Inductance<sup>1)</sup></b>	L	mH	2.3	4.5	3.17	4.95
<b>Back EMF constant</b>	$K_u$	$V_{eff}/(m/s)$	12.9	25.8	24.8	40.0
<b>Motor constant</b>	$K_m$	$N/\sqrt{W}$	9.9	14.4	12.4	15.5
<b>Thermal resistance</b>	$R_{th}$	$^{\circ}C/W$	1.26	0.66	1.11	0.68
<b>Thermal switch</b>			3 PTC 120 $^{\circ}C$		3 PTC 100 $^{\circ}C$	
<b>Max. DC bus voltage</b>		VDC	330			
<b>Pole pair pitch</b>	$2\tau$	mm	60		32	
<b>Max. winding temperature</b>	$T_{max}$	$^{\circ}C$	120		100	
<b>Repeatability</b>		$\mu m$	Type A/K: $\pm 1$ ; Type D/E/G/P: $\pm 3$			
<b>Absolute accuracy</b>		$\mu m$	Type A/K: $\pm 2$ ; Type D/E/G/P: $\pm 6$			
<b>Horizontal straightness</b>		$\mu m$	$\pm 8 / 300$ mm			
<b>Vertical straightness</b>		$\mu m$	$\pm 8 / 300$ mm			
<b>Max. speed</b>		m/s	5.0			
<b>Max. acceleration</b>		$m/s^2$	50			
<b>Moved mass</b>		kg	3.0	5.0	4.2	6.0
<b>Stroke length</b>		mm	200 – 1,300 (in 50 mm increments), 1,300 – 2,700 (in 100 increments)			

<sup>1)</sup> Line to line

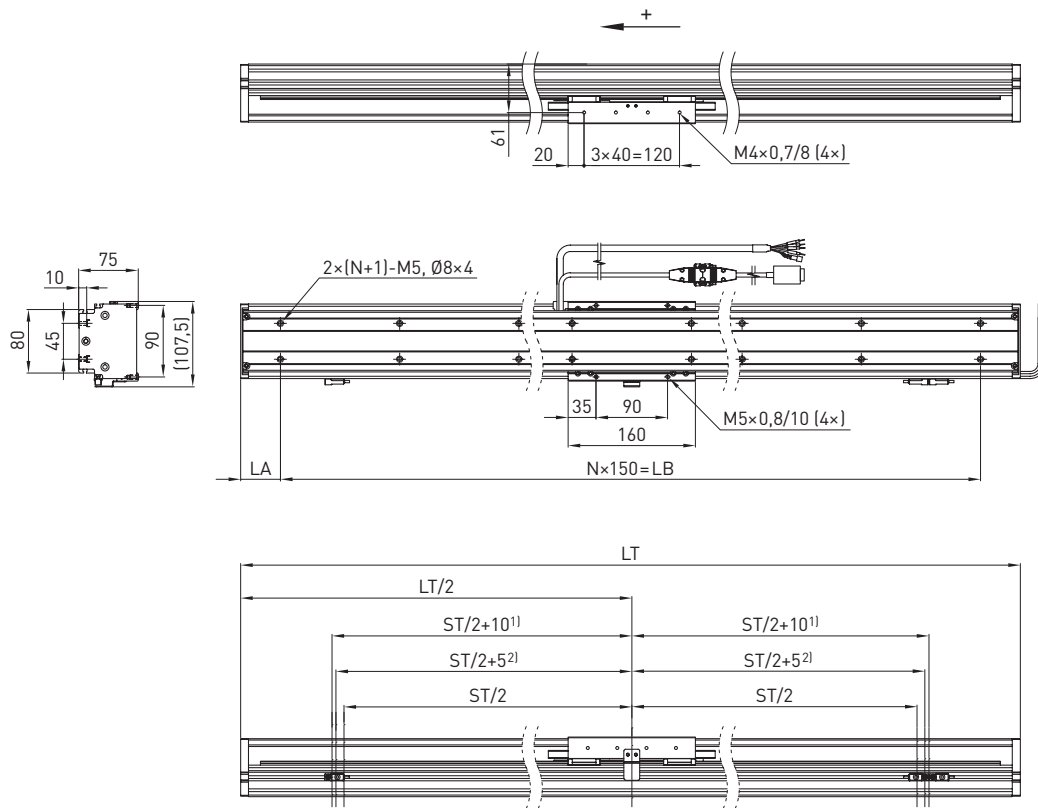
All specifications are in  $\pm 10\%$  of tolerance at 25  $^{\circ}C$  ambient temperature

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-08 dimensions, single forcer

#### LMSSA-08S050, stroke length 100 – 1,400 mm



- 1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.4 LMSSA-08S050 dimensions, single forcer, stroke length 100 – 700 mm

Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700
Total length LT	350	400	450	500	550	600	650	700	750	800	850	900	950
N	2	2	2	3	3	3	4	4	4	5	5	5	6
LA	25	50	75	25	50	75	25	50	75	25	50	75	25
LB	300	300	300	450	450	450	600	600	600	750	750	750	900
Stage weight [kg]	6.3	6.8	7.2	7.6	8.0	8.5	8.8	9.2	9.6	10.0	10.5	10.9	11.2

Table 3.5 LMSSA-08S050 dimensions, single forcer, stroke length 750 – 1,400 mm

Stroke length ST	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400
Total length LT	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,650
N	6	6	7	7	7	8	8	8	9	9	9	10	10
LA	50	75	25	50	75	25	50	75	25	50	75	25	75
LB	900	900	1,050	1,050	1,050	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500
Stage weight [kg]	11.6	12.1	12.5	12.9	13.3	13.6	14.1	14.5	14.9	15.3	15.8	16.1	16.9

## LMSSA-08 dimensions, dual forcers

### LMSSA-08S050, stroke length 100 – 1,200 mm

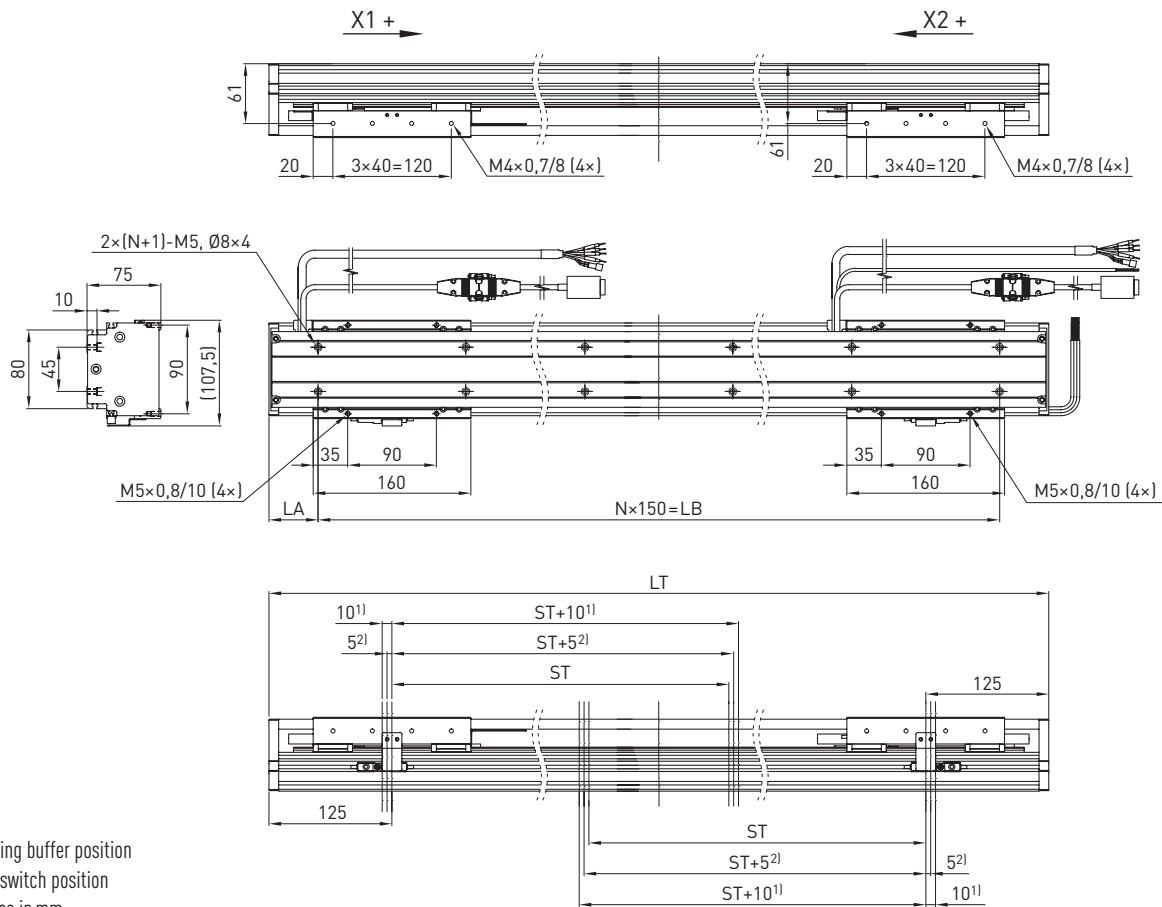


Table 3.6 LMSSA-08S050 dimensions, dual forcers, stroke length 100 – 700 mm

Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700
Total length LT	550	600	650	700	750	800	850	900	950	1,000	1,050	1,100	1,150
N	3	3	4	4	4	5	5	5	6	6	6	7	7
LA	50	75	25	50	75	25	50	75	25	50	75	25	50
LB	450	450	600	600	600	750	750	750	900	900	900	1,050	1,050
Stage weight [kg]	9.2	9.6	10.0	10.5	10.9	11.3	11.6	12.1	12.5	12.9	13.3	13.8	14.1

Table 3.7 LMSSA-08S050 dimensions, dual forcers, stroke length 750 – 1,200 mm

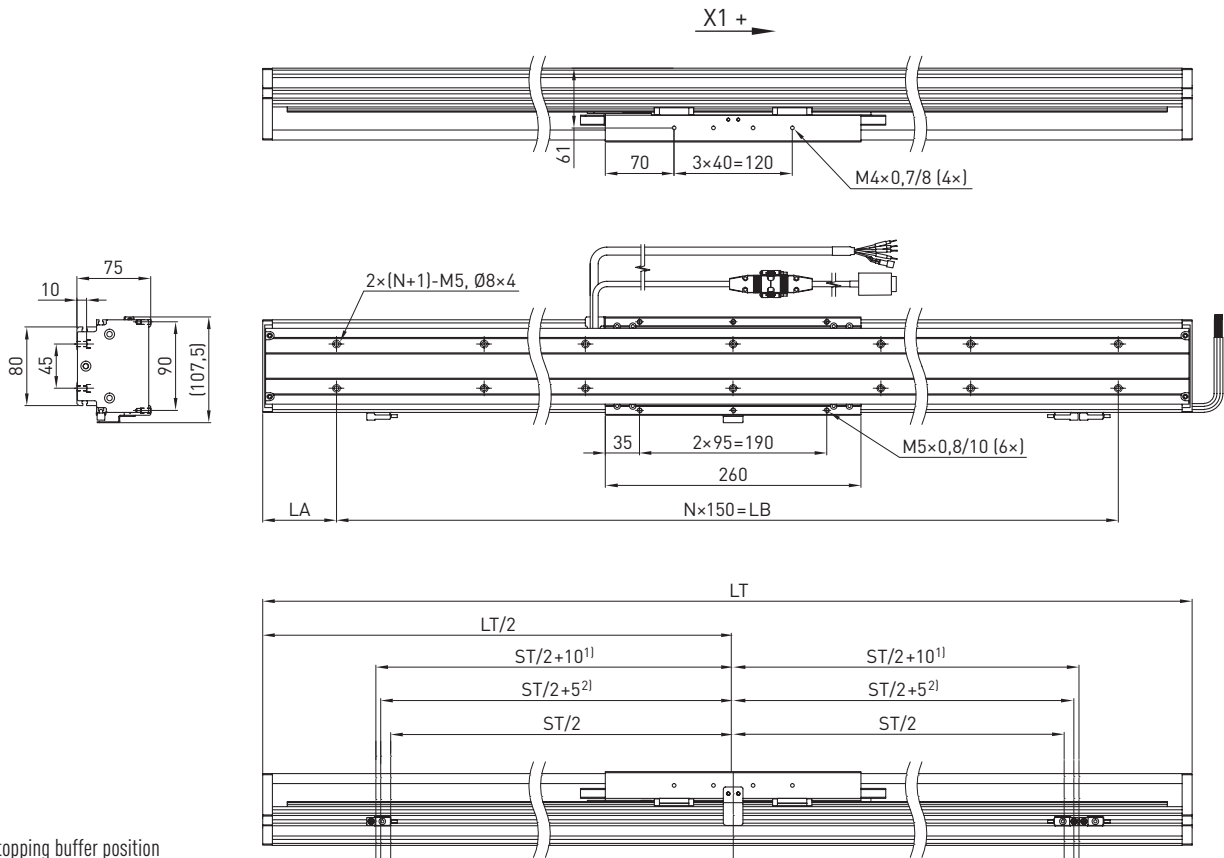
Stroke length ST	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200
Total length LT	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600	1,650
N	7	8	8	8	9	9	9	10	10	10
LA	75	25	50	75	25	50	75	25	50	75
LB	1,050	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500	1,500
Stage weight [kg]	14.5	14.9	15.3	15.8	16.2	16.5	16.9	17.4	17.8	18.2

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-08 dimensions, single forcer

#### LMSSA-08S100, stroke length 100 – 1,300 mm



<sup>1)</sup> Stopping buffer position  
<sup>2)</sup> Limit switch position  
 All values in mm

Table 3.8 LMSSA-08S100 dimensions, single forcer, stroke length 100 – 700 mm

Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700
Total length LT	450	500	550	600	650	700	750	800	850	900	950	1,000	1,050
N	2	3	3	3	4	4	4	5	5	5	6	6	6
LA	75	25	50	75	25	50	75	25	50	75	25	50	75
LB	300	450	450	450	600	600	600	750	750	750	900	900	900
Stage weight [kg]	8.1	8.5	8.9	9.4	9.8	10.1	10.5	10.9	11.4	11.8	12.2	12.5	13.0

Table 3.9 LMSSA-08S100 dimensions, single forcer, stroke length 750 – 1,300 mm

Stroke length ST	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300
Total length LT	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600	1,650
N	7	7	7	8	8	8	9	9	9	10	10	10
LA	25	50	75	25	50	75	25	50	75	25	50	75
LB	1,050	1,050	1,050	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500	1,500
Stage weight [kg]	13.4	13.8	14.2	14.7	15.0	15.4	15.8	16.2	16.7	17.1	17.4	17.8

## LMSSA-08 dimensions, dual forcers

### LMSSA-08S100, stroke length 100 – 1,000 mm

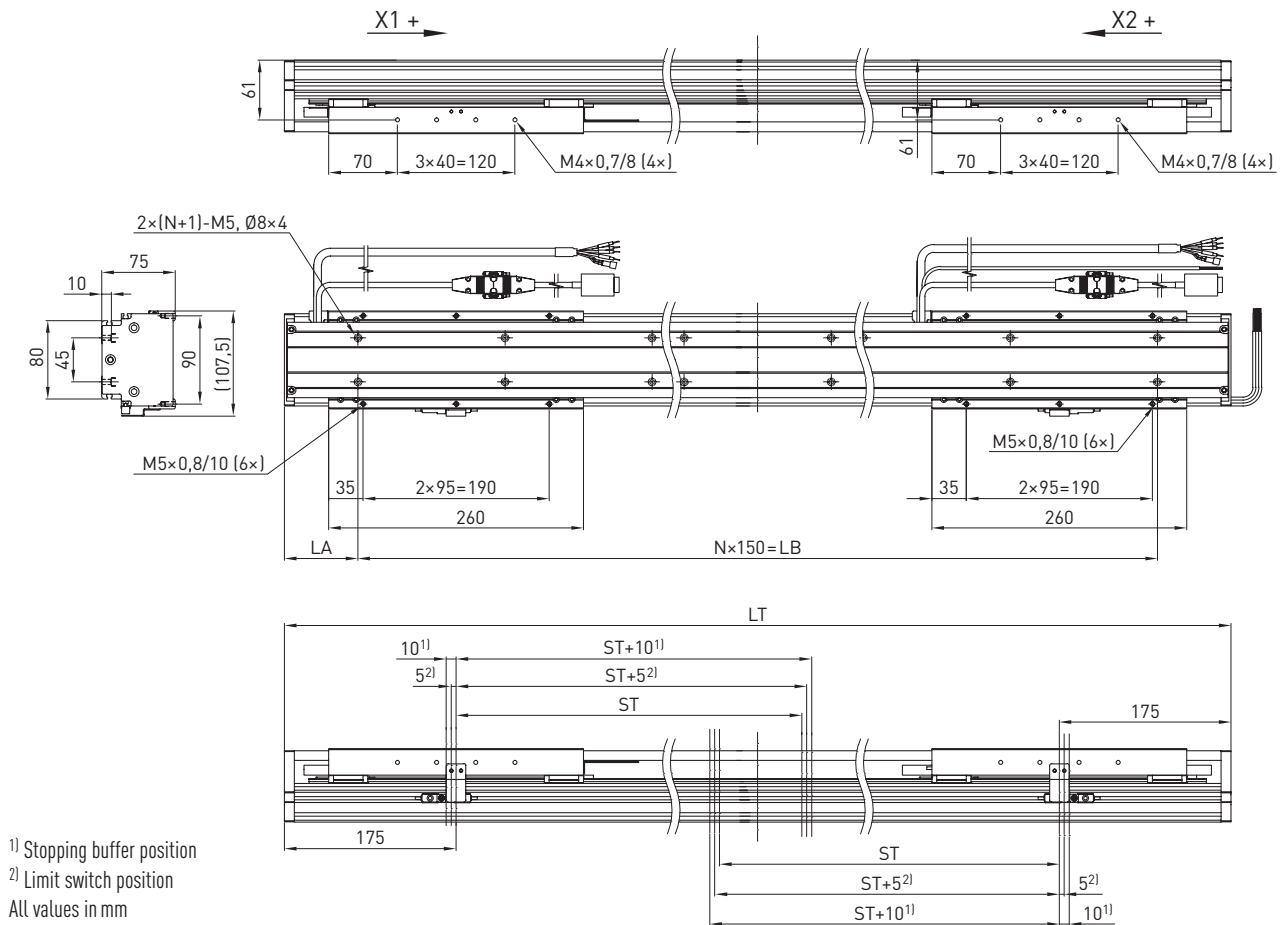


Table 3.10 LMSSA-08S100 dimensions, dual forcers, stroke length 100 – 550 mm

Stroke length ST	100	150	200	250	300	350	400	450	500	550
Total length LT	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200
N	4	5	5	5	6	6	6	7	7	7
LA	75	25	50	75	25	50	75	25	50	75
LB	600	750	750	750	900	900	900	1,050	1,050	1,050
Stage weight [kg]	12.5	12.9	13.3	13.7	14.0	14.5	14.9	15.3	15.8	16.2

Table 3.11 LMSSA-08S100 dimensions, dual forcers, stroke length 600 – 1,000 mm

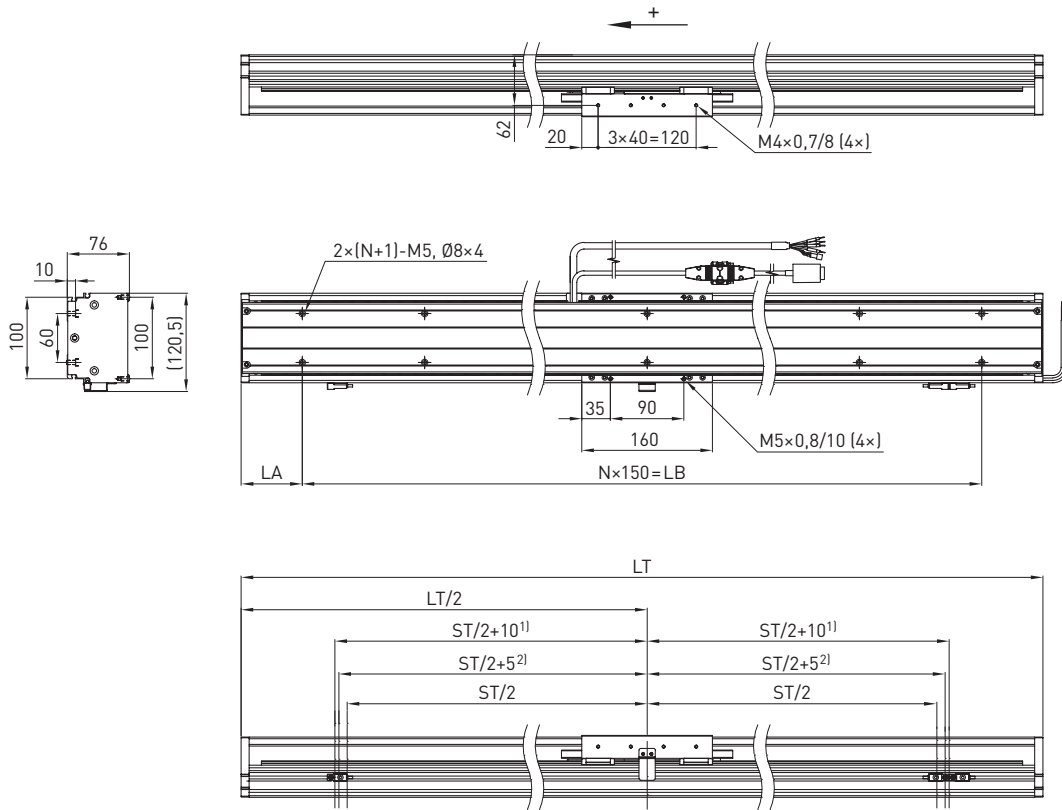
Stroke length ST	600	650	700	750	800	850	900	950	1,000
Total length LT	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600	1,650
N	8	8	8	9	9	9	10	10	10
LA	25	50	75	25	50	75	25	50	75
LB	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500	1,500
Stage weight [kg]	16.5	16.9	17.3	17.8	18.2	18.6	18.9	19.3	19.8

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-10 dimensions, single forcer

#### LMSSA-10S100, stroke length 100 – 1,400 mm



<sup>1)</sup> Stopping buffer position  
<sup>2)</sup> Limit switch position  
 All values in mm

Table 3.12 LMSSA-10S100 dimensions, single forcer, stroke length 100 – 700 mm

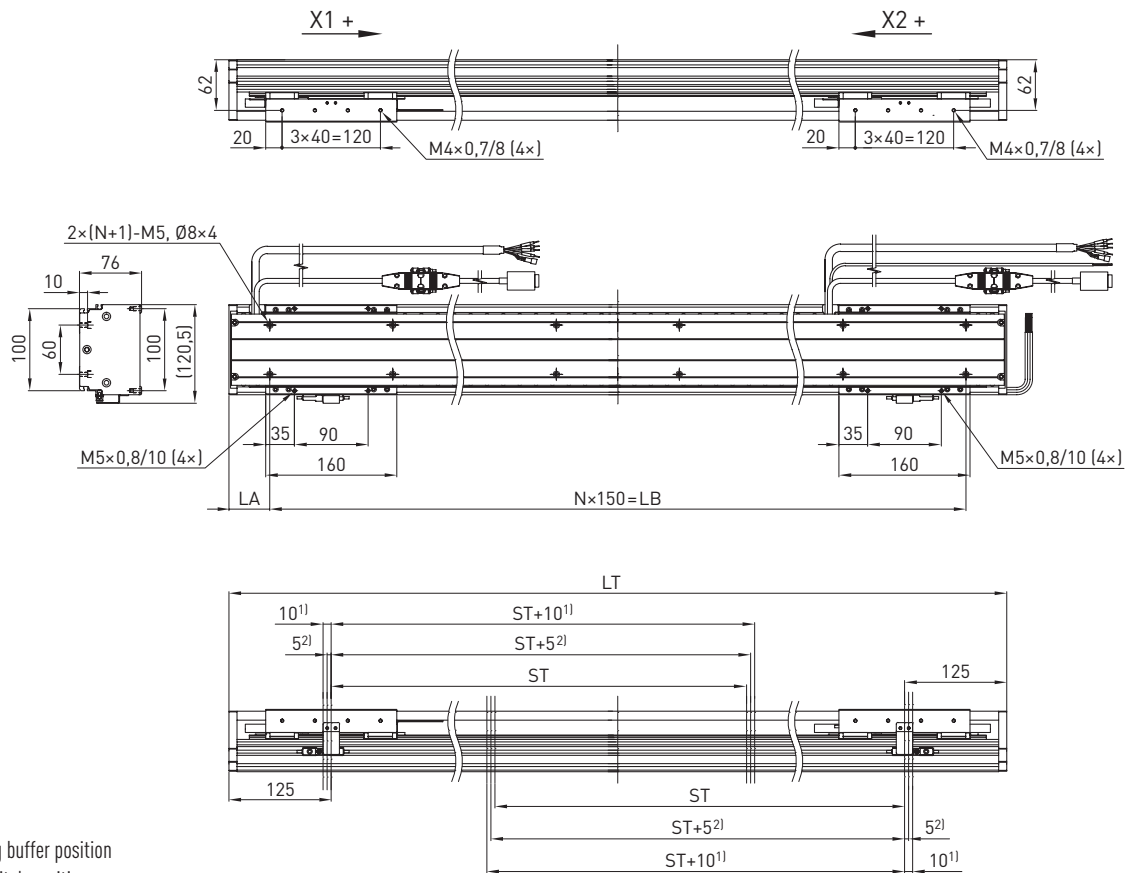
Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700
Total length LT	350	400	450	500	550	600	650	700	750	800	850	900	950
N	2	2	2	3	3	3	4	4	4	5	5	5	6
LA	25	50	75	25	50	75	25	50	75	25	50	75	25
LB	300	300	300	450	450	450	600	600	600	750	750	750	900
Stage weight [kg]	7.4	7.9	8.5	8.8	9.3	9.9	10.4	10.9	11.5	11.8	12.3	12.9	13.4

Table 3.13 LMSSA-10S100 dimensions, single forcer, stroke length 750 – 1.400 mm

Stroke length ST	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400
Total length LT	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,650
N	6	6	7	7	7	8	8	8	9	9	9	10	10
LA	50	75	25	50	75	25	50	75	25	50	75	25	75
LB	900	900	1,050	1,050	1,050	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500
Stage weight [kg]	13.9	14.5	14.8	15.3	15.9	16.4	16.9	17.5	17.8	18.3	18.9	19.4	20.5

## LMSSA-10 dimensions, dual forcers

### LMSSA-10S100, stroke length 100 – 1,200 mm



- <sup>1)</sup> Stopping buffer position
  - <sup>2)</sup> Limit switch position
- All values in mm

Table 3.14 LMSSA-10S100 dimensions, dual forcers, stroke length 100 – 700 mm

Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700
Total length LT	350	400	450	500	550	600	650	700	750	800	850	900	950
N	2	2	2	3	3	3	4	4	4	5	5	5	6
LA	25	50	75	25	50	75	25	50	75	25	50	75	25
LB	300	300	300	450	450	450	600	600	600	750	750	750	900
Stage weight [kg]	7.4	7.9	8.5	8.8	9.3	9.9	10.4	10.9	11.5	11.8	12.3	12.9	13.4

Table 3.15 LMSSA-10S100 dimensions, dual forcers, stroke length 750 – 1,400 mm

Stroke length ST	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400
Total length LT	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,650
N	6	6	7	7	7	8	8	8	9	9	9	10	10
LA	50	75	25	50	75	25	50	75	25	50	75	25	75
LB	900	900	1,050	1,050	1,050	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500
Stage weight [kg]	13.9	14.5	14.8	15.3	15.9	16.4	16.9	17.5	17.8	18.3	18.9	19.4	20.5

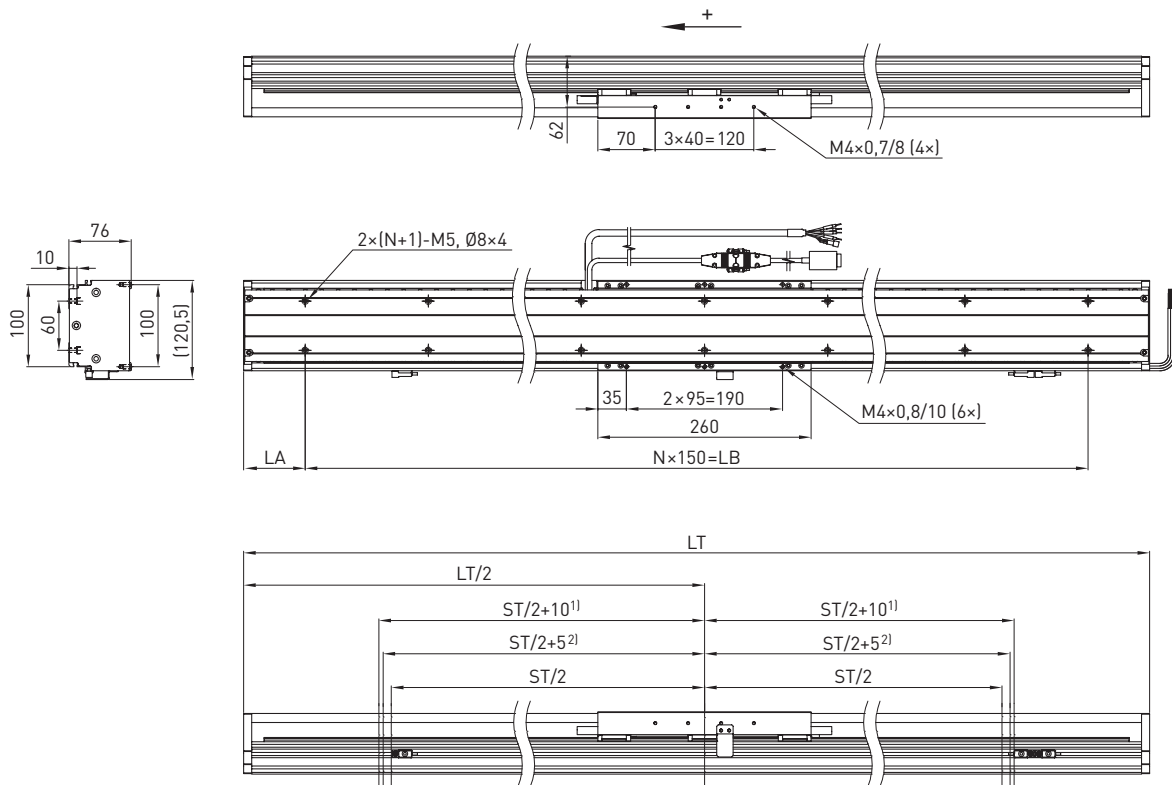


# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-10 dimensions, single forcer

### LMSSA-10S200, stroke length 100 – 1,300 mm



- 1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.16 LMSSA-10S200 dimensions, single forcer, stroke length 100 – 700 mm

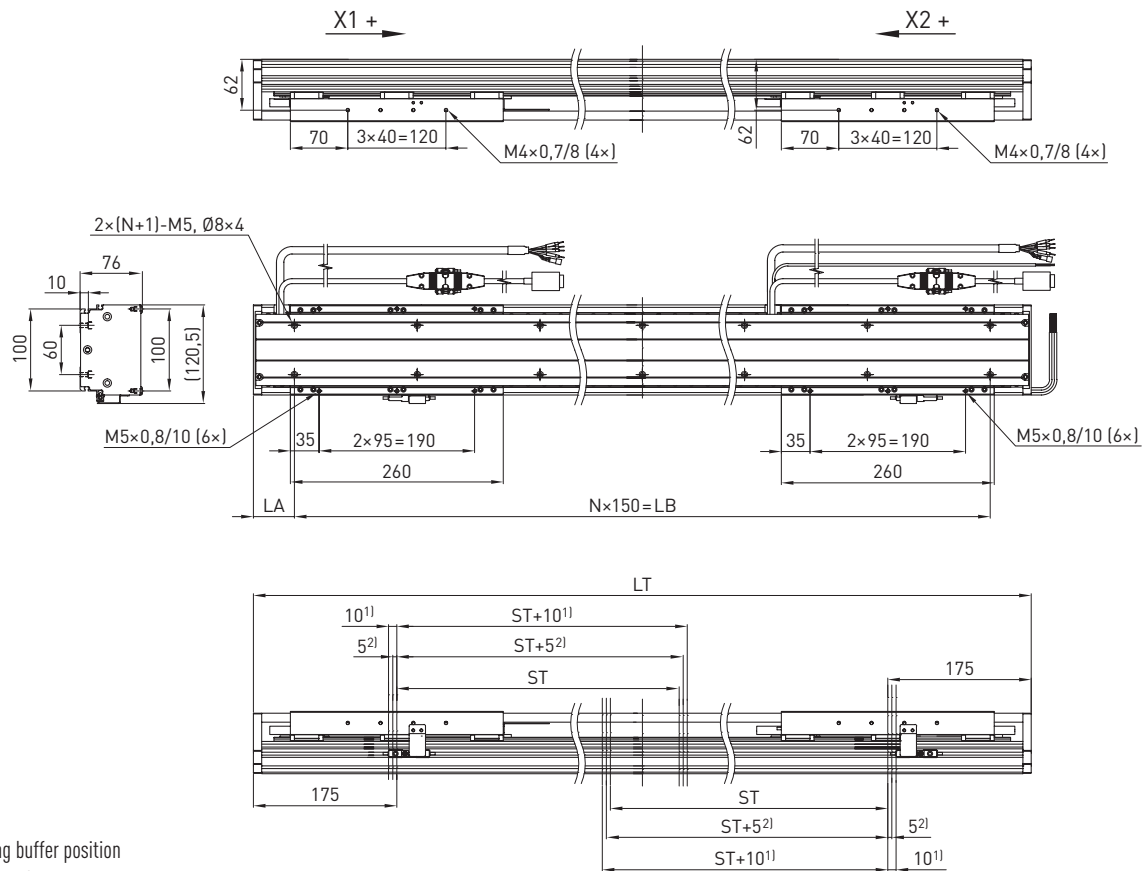
Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700
Total length LT	450	500	550	600	650	700	750	800	850	900	950	1,000	1,050
N	2	3	3	3	4	4	4	5	5	5	6	6	6
LA	75	25	50	75	25	50	75	25	50	75	25	50	75
LB	300	450	450	450	600	600	600	750	750	750	900	900	900
Stage weight [kg]	9.6	10.1	10.5	11.0	11.5	12.0	12.6	13.1	13.4	14.0	14.5	15.0	15.6

Table 3.17 LMSSA-10S200 dimensions, single forcer, stroke length 750 – 1.300 mm

Stroke length ST	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300
Total length LT	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600	1,650
N	7	7	7	8	8	8	9	9	9	10	10	10
LA	25	50	75	25	50	75	25	50	75	25	50	75
LB	1,050	1,050	1,050	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500	1,500
Stage weight [kg]	16.1	16.4	17.0	17.5	18.0	18.6	19.1	19.4	20.0	20.5	21.0	21.6

### LMSSA-10 dimensions, dual forcers

#### LMSSA-10S200, stroke length 100 – 1,000 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.18 LMSSA-10S200 dimensions, dual forcers, stroke length 100 – 550 mm

Stroke length ST	100	150	200	250	300	350	400	450	500	550
Total length LT	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200
N	4	5	5	5	6	6	6	7	7	7
LA	75	25	50	75	25	50	75	25	50	75
LB	600	750	750	750	900	900	900	1,050	1,050	1,050
Stage weight [kg]	14.9	15.5	16.0	16.5	17.0	17.4	17.9	18.5	19.0	19.5

Table 3.19 LMSSA-10S200 dimensions, dual forcers, stroke length 600 – 1.000 mm

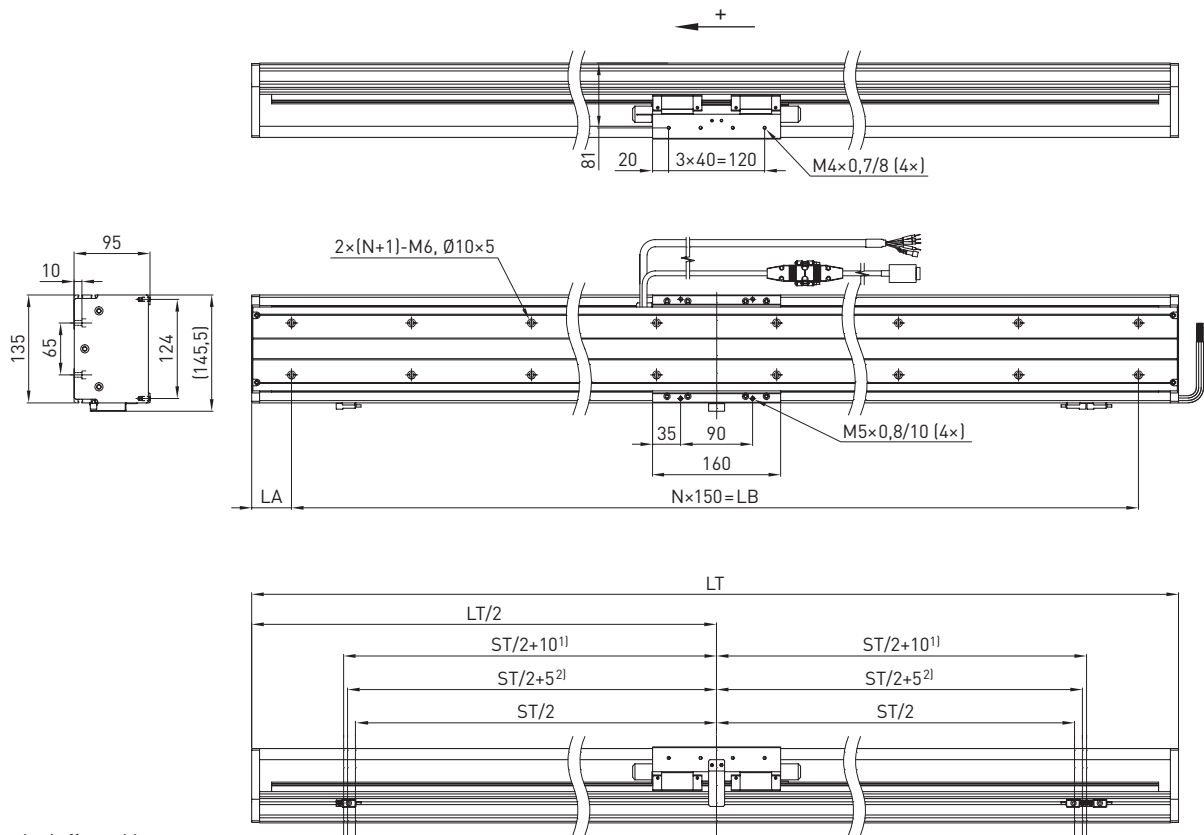
Stroke length ST	600	650	700	750	800	850	900	950	1,000
Total length LT	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600	1,650
N	8	8	8	9	9	9	10	10	10
LA	25	50	75	25	50	75	25	50	75
LB	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500	1,500
Stage weight [kg]	20.0	20.4	20.9	21.5	22.0	22.5	23.0	23.4	23.9

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-13 dimensions, single forcer

#### LMSSA-13S100, stroke length 100 – 2,700 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.20 LMSSA-13S100 dimensions, single forcer, stroke length 100 – 1,100 mm

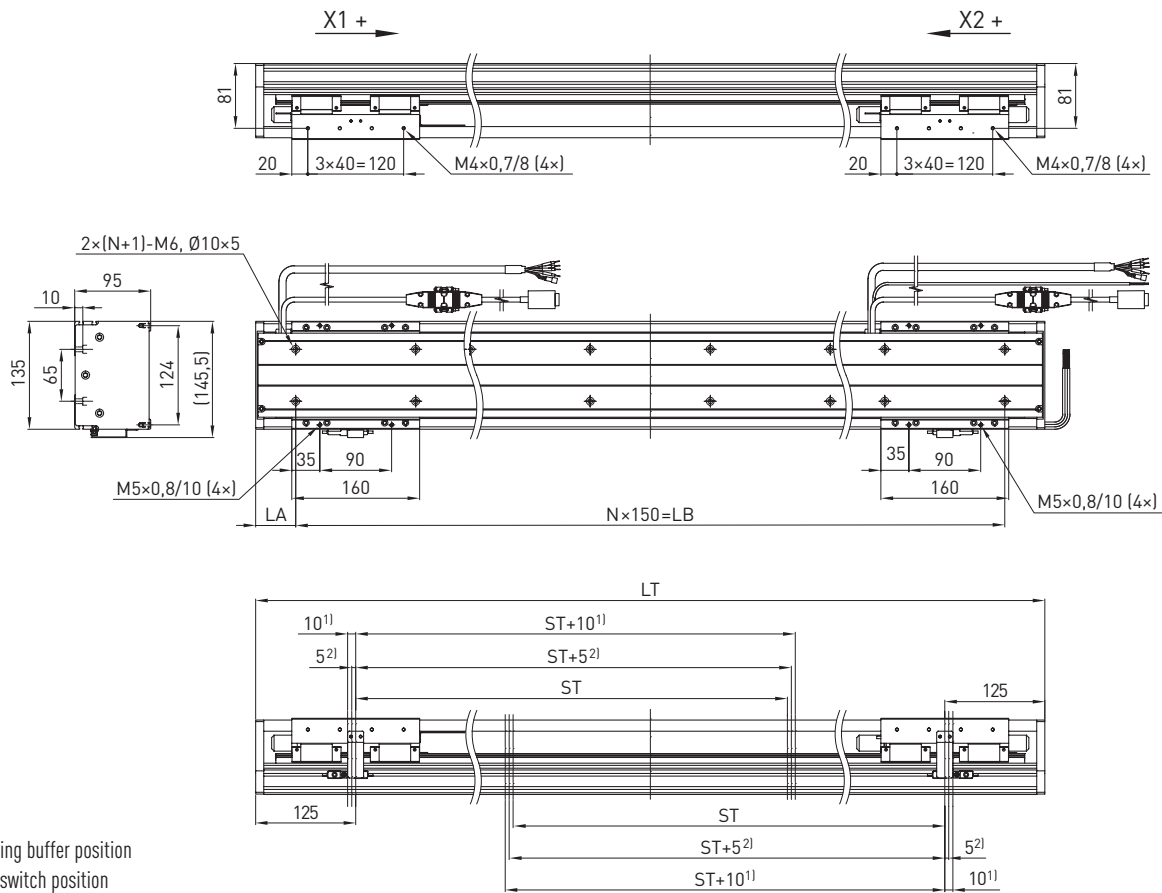
Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1,050	1,100
Total length LT	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350
N	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8
LA	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75
LB	300	300	300	450	450	450	600	600	600	750	750	750	900	900	900	1,050	1,050	1,050	1,200	1,200	1,200
Stage weight [kg]	10.6	11.4	12.2	12.9	13.7	14.5	15.3	16.1	16.9	17.6	18.4	19.2	20.0	20.9	21.7	22.3	23.1	24.0	24.8	25.6	26.4

Table 3.21 LMSSA-13S100 dimensions, single forcer, stroke length 1,150 – 2,700 mm

Stroke length ST	1,150	1,200	1,250	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700
Total length LT	1,400	1,450	1,500	1,550	1,650	1,750	1,850	1,950	2,050	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950
N	9	9	9	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19
LA	25	50	75	25	50	75	25	50	75	25	75	25	75	25	50	75	25	50
LB	1,350	1,350	1,350	1,500	1,500	1,650	1,800	1,800	1,950	2,100	2,100	2,250	2,400	2,400	2,550	2,700	2,700	2,850
Stage weight [kg]	27.1	27.9	28.7	29.5	31.3	32.6	34.2	35.9	37.3	39.0	40.6	42.1	43.7	45.3	46.8	48.4	50.1	51.5

## LMSSA-13 dimensions, dual forcers

### LMSSA-13S100, stroke length 100 – 2,500 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.22 LMSSA-13S100 dimensions, dual forcers, stroke length 100 – 1,050 mm

Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1,050
Total length LT	550	600	650	700	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450	1,500
N	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8	9	9	9
LA	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75
LB	450	450	600	600	600	750	750	750	900	900	900	1,050	1,050	1,050	1,200	1,200	1,200	1,350	1,350	1,350
Stage weight [kg]	16.1	16.9	17.8	18.4	19.2	20.0	20.9	21.7	22.5	23.1	24.0	24.8	25.6	26.4	27.2	27.9	28.7	29.5	30.3	31.1

Table 3.23 LMSSA-13S100 dimensions, dual forcers, stroke length 1,100 – 2,500 mm

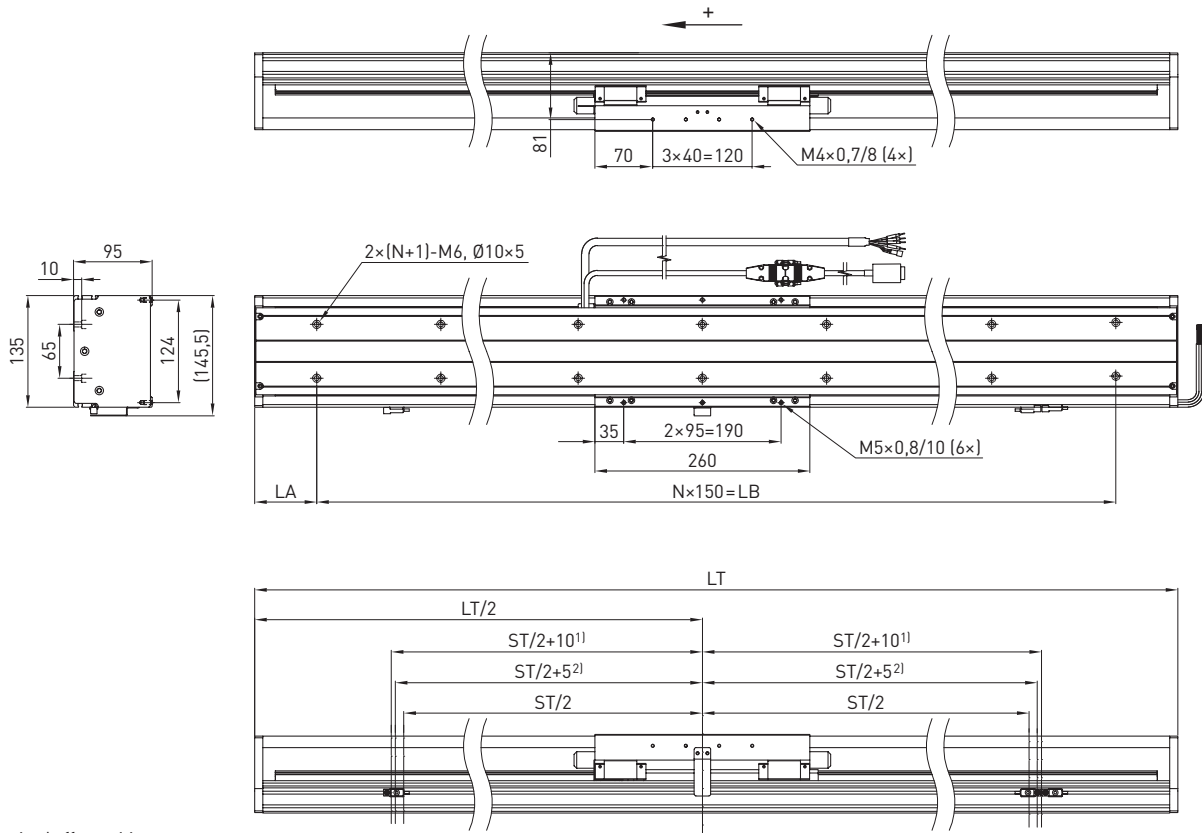
Stroke length ST	1,100	1,150	1,200	1,250	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500
Total length LT	1,550	1,600	1,650	1,700	1,750	1,850	1,950	2,050	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950
N	10	10	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19
LA	25	50	75	25	50	75	25	50	75	25	75	25	75	25	50	75	50
LB	1,500	1,500	1,500	1,650	1,650	1,800	1,800	1,950	2,100	2,100	2,250	2,400	2,400	2,550	2,700	2,700	2,850
Stage weight [kg]	32.0	32.6	33.4	34.2	35.1	36.7	38.2	39.8	41.4	42.9	44.5	46.2	47.6	49.3	50.9	52.4	54.0

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-13 dimensions, single forcer

#### LMSSA-13S200, stroke length 100 – 2,600 mm



<sup>1)</sup> Stopping buffer position  
<sup>2)</sup> Limit switch position  
 All values in mm

Table 3.24 LMSSA-13S200 dimensions, single forcer, stroke length 100 – 1,050 mm

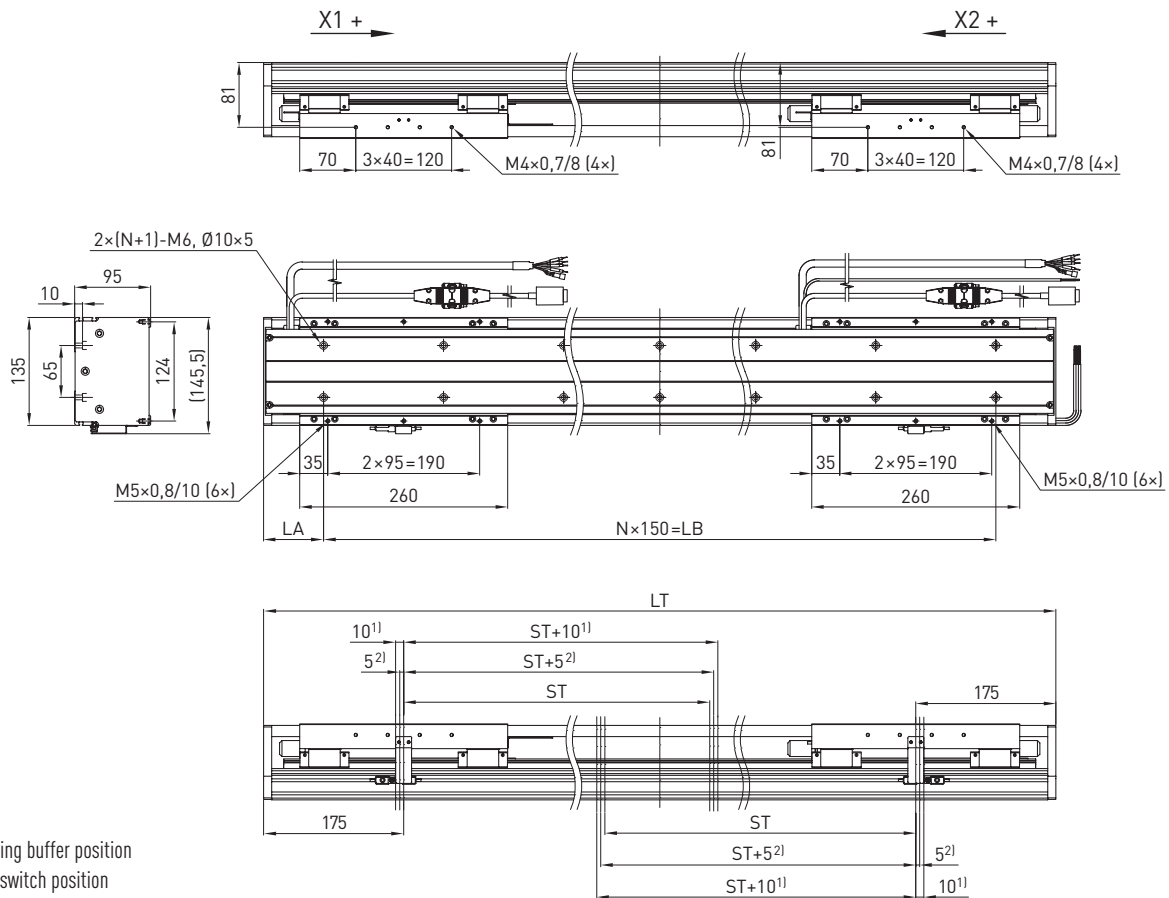
Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000	1,050
Total length LT	450	500	550	600	650	700	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400
N	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8	9
LA	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25
LB	300	450	450	450	600	600	600	750	750	750	900	900	900	1,050	1,050	1,050	1,200	1,200	1,200	1,350
Stage weight [kg]	13.5	14.3	15.0	15.8	16.6	17.4	18.3	19.1	19.7	20.5	21.4	22.2	23.0	23.8	24.5	25.3	26.1	26.9	27.7	28.5

Table 3.25 LMSSA-13S200 dimensions, single forcer, stroke length 1,100 – 2,600 mm

Stroke length ST	1,100	1,150	1,200	1,250	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600
Total length LT	1,450	1,500	1,550	1,600	1,650	1,750	1,850	1,950	2,050	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950
N	9	9	10	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19
LA	50	75	25	50	75	50	25	75	50	25	75	50	25	75	50	25	75	50
LB	1,350	1,350	1,500	1,500	1,500	1,650	1,800	1,800	1,950	2,100	2,100	2,250	2,400	2,400	2,550	2,700	2,700	2,850
Stage weight [kg]	29.2	30.0	30.8	31.6	32.4	33.9	35.5	37.2	38.6	40.3	41.9	43.4	45.0	46.6	48.1	49.7	51.4	52.8

## LMSSA-13 dimensions, dual forcers

### LMSSA-13S200, stroke length 100 – 2,300 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.26 LMSSA-13S200 dimensions, dual forcers, stroke length 100 – 950 mm

Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950
Total length LT	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600
N	4	5	5	5	6	6	6	7	7	7	8	8	8	9	9	9	10	10
LA	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50
LB	600	750	750	750	900	900	900	1,050	1,050	1,050	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500
Stage weight [kg]	21.8	22.6	23.5	24.3	25.1	25.7	26.6	27.4	28.2	29.0	29.8	30.5	31.3	32.1	32.9	33.7	34.6	35.2

Table 3.27 LMSSA-13S200 dimensions, dual forcers, stroke length 1,000 – 2,300 mm

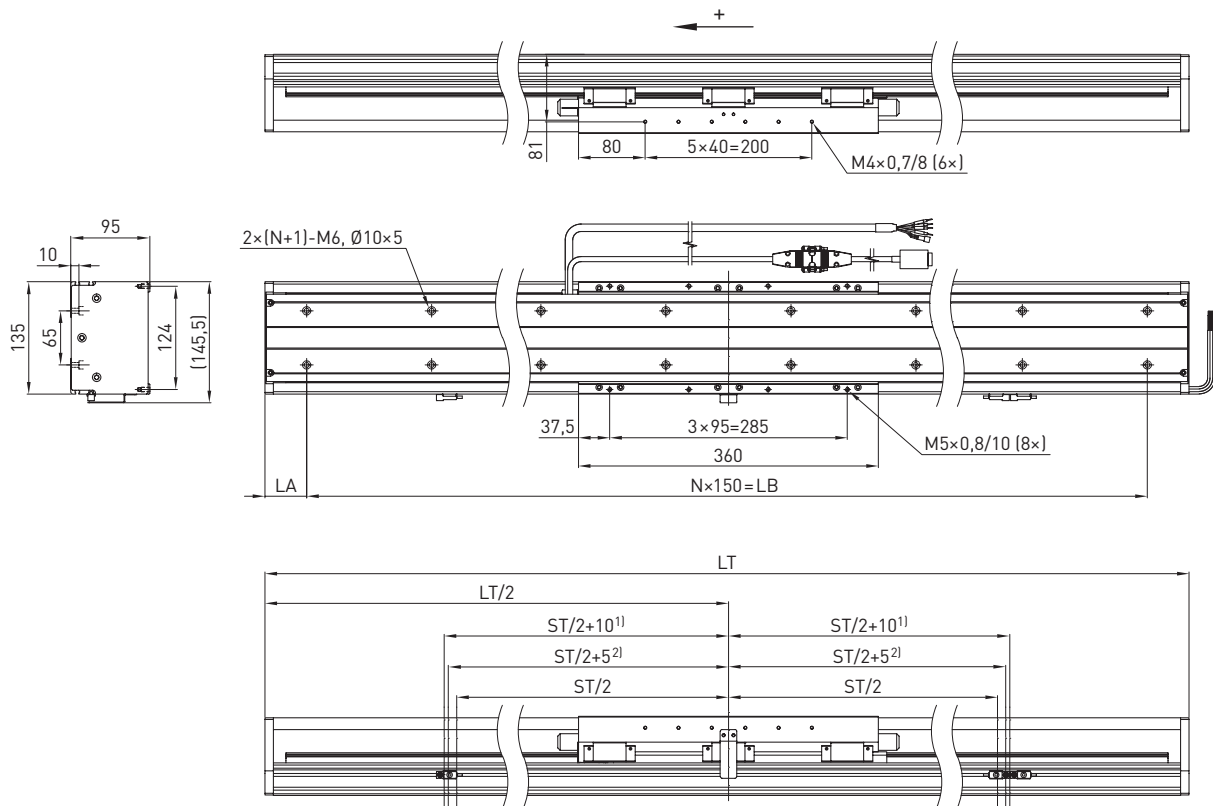
Stroke length ST	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300
Total length LT	1,650	1,700	1,750	1,800	1,850	1,900	1,950	2,050	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950
N	10	11	11	11	12	12	12	13	14	14	15	16	16	17	18	18	19
LA	75	25	50	75	25	50	75	50	25	75	50	25	75	50	25	75	50
LB	1,500	1,650	1,650	1,650	1,800	1,800	1,800	1,950	2,100	2,100	2,250	2,400	2,400	2,550	2,700	2,700	2,850
Stage weight [kg]	36.0	36.8	37.7	38.5	39.3	40.1	41.1	42.7	44.2	45.8	47.4	48.9	50.6	52.2	53.7	55.3	56.9

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-13 dimensions, single forcer

#### LMSSA-13S300, stroke length 100 – 2,500 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

All values in mm

Table 3.28 LMSSA-13S300 dimensions, single forcer, stroke length 100 – 1,000 mm

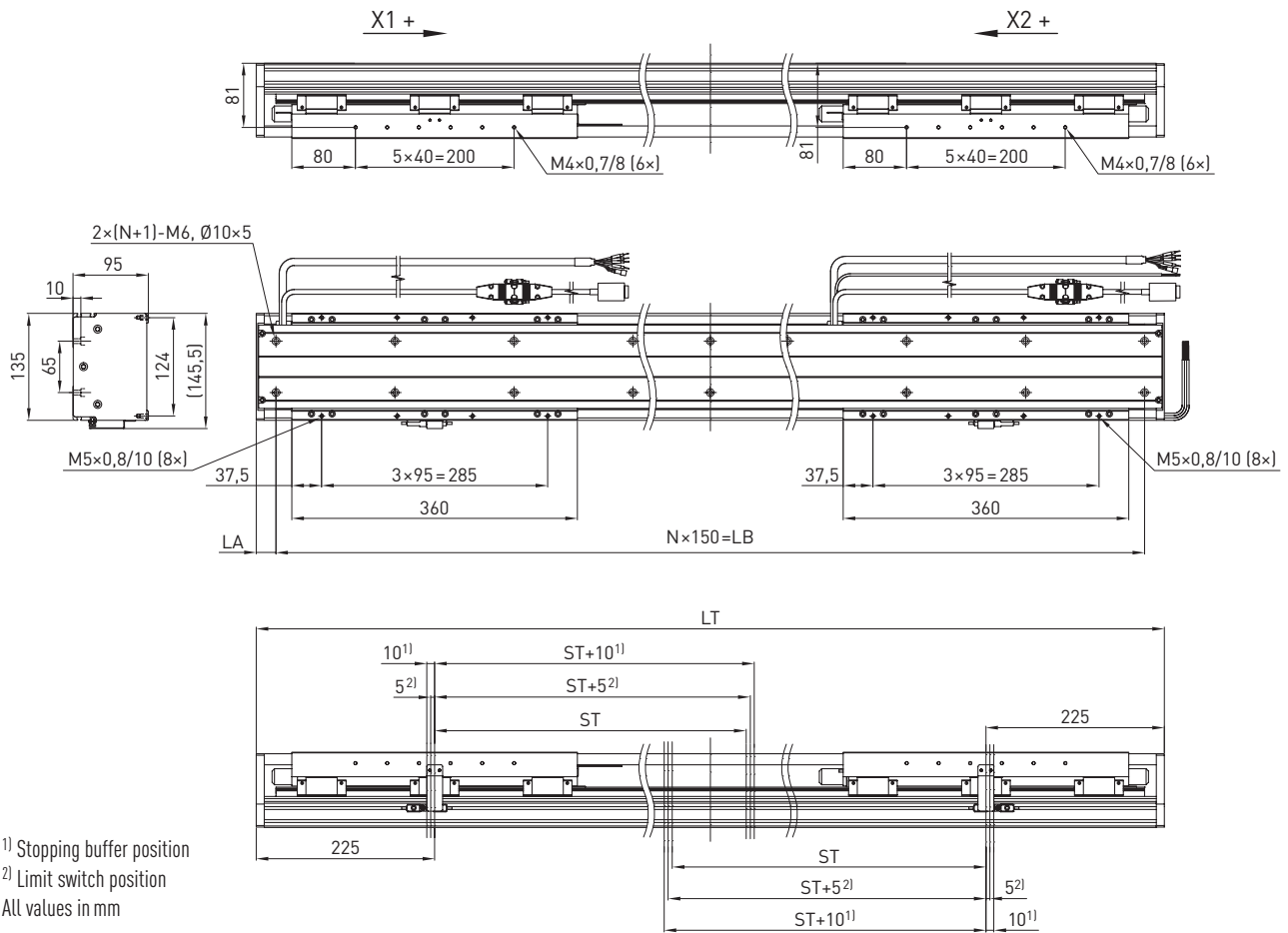
Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1,000
Total length LT	550	600	650	700	750	800	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450
N	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8	9	9
LA	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50
LB	450	450	600	600	600	750	750	750	900	900	900	1,050	1,050	1,050	1,200	1,200	1,200	1,350	1,350
Stage weight [kg]	16.7	17.5	18.3	19.1	20.0	20.8	21.4	22.2	23.1	23.9	24.7	25.5	26.2	27.0	27.8	28.6	29.4	30.2	30.9

Table 3.29 LMSSA-13S300 dimensions, single forcer, stroke length 1,050 – 2,500 mm

Stroke length ST	1,050	1,100	1,150	1,200	1,250	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500
Total length LT	1,500	1,550	1,600	1,650	1,700	1,750	1,850	1,950	2,050	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950
N	9	10	10	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19
LA	75	25	50	75	25	50	25	75	50	25	75	50	25	75	50	25	75	50
LB	1,350	1,500	1,500	1,500	1,650	1,650	1,800	1,800	1,950	2,100	2,100	2,250	2,400	2,400	2,550	2,700	2,700	2,850
Stage weight [kg]	31.7	32.5	33.3	34.1	35.0	35.6	37.2	38.9	40.3	42.0	43.6	45.1	46.7	48.3	49.8	51.4	53.1	54.5

### LMSSA-13 dimensions, dual forcers

#### LMSSA-13S300, stroke length 100 – 2,100 mm



1) Stopping buffer position  
2) Limit switch position  
All values in mm

Table 3.30 LMSSA-13S300 dimensions, dual forcers, stroke length 100 – 900 mm

Stroke length ST	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Total length LT	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600	1,650	1,700	1,750
N	6	6	6	7	7	7	8	8	8	9	9	9	10	10	10	11	11
LA	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75	25	50
LB	900	900	900	1,050	1,050	1,050	1,200	1,200	1,200	1,350	1,350	1,350	1,500	1,500	1,500	1,650	1,650
Stage weight [kg]	31.7	32.5	33.3	34.2	35.0	35.9	36.5	37.4	38.2	39.1	39.9	40.7	41.4	42.2	43.1	43.9	44.8

Table 3.31 LMSSA-13S300 dimensions, dual forcers, stroke length 950 – 2,100 mm

Stroke length ST	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100
Total length LT	1,800	1,850	1,900	1,950	2,000	2,050	2,100	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950
N	11	12	12	12	13	13	13	14	14	15	16	16	17	18	18	19
LA	75	25	50	75	25	50	75	25	75	50	25	75	50	25	75	50
LB	1,650	1,800	1,800	1,800	1,950	1,950	1,950	2,100	2,100	2,250	2,400	2,550	2,700	2,700	2,700	2,850
Stage weight [kg]	45.6	46.3	47.1	48.0	48.8	49.6	50.5	51.2	52.8	54.5	56.0	57.7	59.4	60.9	62.6	64.3

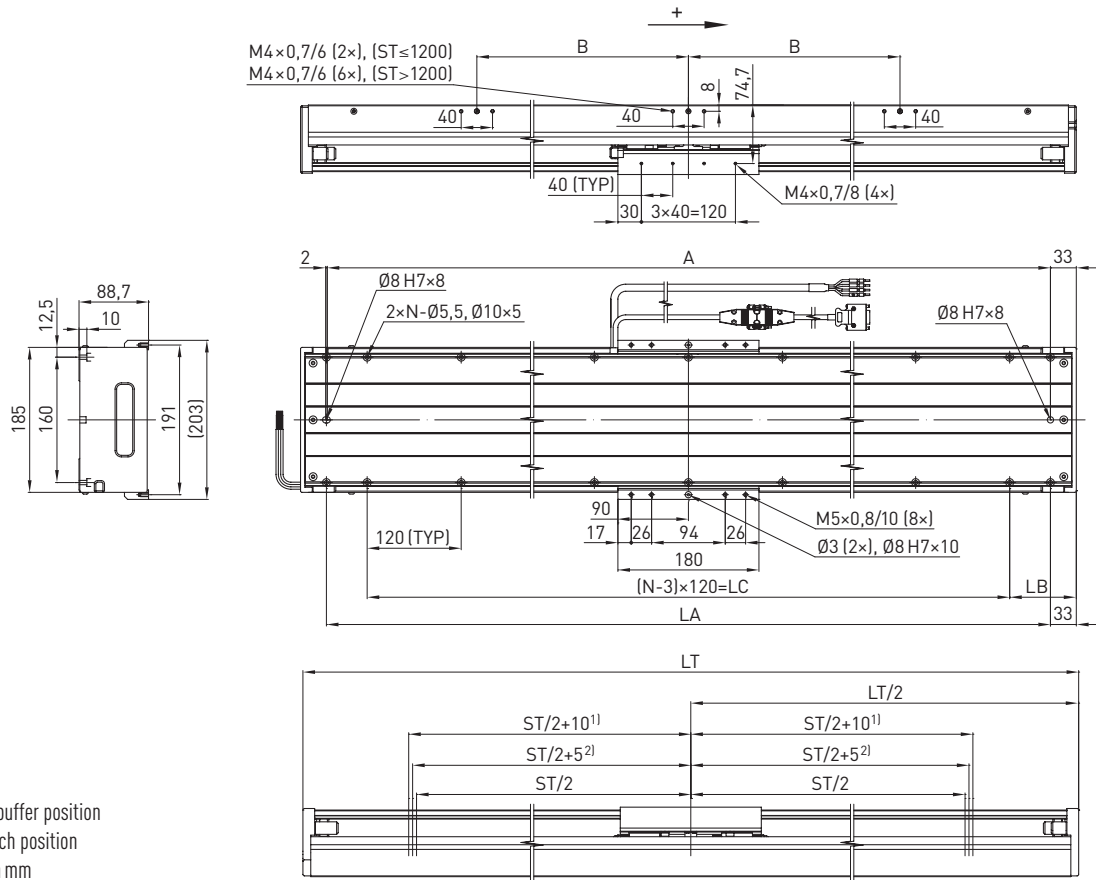


# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-18 dimensions, single forcer

### LMSSA-18S100, LMSSA-18C100, stroke length 200 – 1,500 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.32 LMSSA-18S100, -18C100 dimensions, single forcer, stroke length 200 – 800 mm

Stroke length ST [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800	
Total length LT [mm]	490	540	590	640	690	740	790	840	890	940	990	1,040	1,090	
N [mm]	5	5	7	7	7	7	7	9	9	9	9	9	11	
LA [mm]	424	474	524	574	624	674	724	774	824	874	924	974	1,024	
LB [mm]	125	150	55	80	105	130	155	60	85	110	135	160	65	
LC [mm]	240	240	480	480	480	480	480	720	720	720	720	720	960	
A [mm]	423	473	523	573	623	673	723	773	823	873	923	973	1,023	
B [mm]	—	—	—	—	—	—	—	—	—	—	—	—	—	
Stage weight [kg]	18S100	12.0	12.9	13.8	14.7	15.6	16.5	17.4	18.3	19.2	20.1	21.0	21.9	22.8
	18C100	15.9	17.0	18.1	19.2	20.3	21.4	22.5	23.7	24.8	25.9	27.0	28.1	29.2

Table 3.33 LMSSA-18S100, -18C100 dimensions, single forcer, stroke length 850 – 1,500 mm

Stroke length ST [mm]	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400	1,500	
Total length LT [mm]	1,140	1,190	1,240	1,290	1,340	1,390	1,440	1,490	1,540	1,590	1,690	1,790	
N [mm]	11	11	13	13	13	13	13	13	15	15	15	17	
LA [mm]	1,074	1,124	1,174	1,224	1,274	1,324	1,374	1,424	1,474	1,524	1,624	1,723	
LB [mm]	90	115	20	45	70	95	120	145	50	75	125	55	
LC [mm]	960	960	1,200	1,200	1,200	1,200	1,200	1,200	1,440	1,440	1,440	1,680	
A [mm]	1,073	1,123	1,173	1,223	1,273	1,323	1,373	1,423	1,473	1,523	1,623	1,723	
B [mm]	—	—	—	—	—	—	—	—	360	360	360	600	
Stage weight [kg]	18S100	23.7	24.6	25.5	26.4	27.3	28.2	29.1	30.0	30.9	31.8	33.6	35.4
	18C100	30.3	31.4	32.6	33.7	34.8	35.9	37.0	38.1	39.2	40.3	42.6	44.8

### LMSSA-18 dimensions, dual forcers

#### LMSSA-18S100, LMSSA-18C100, stroke length 200 – 1,280 mm

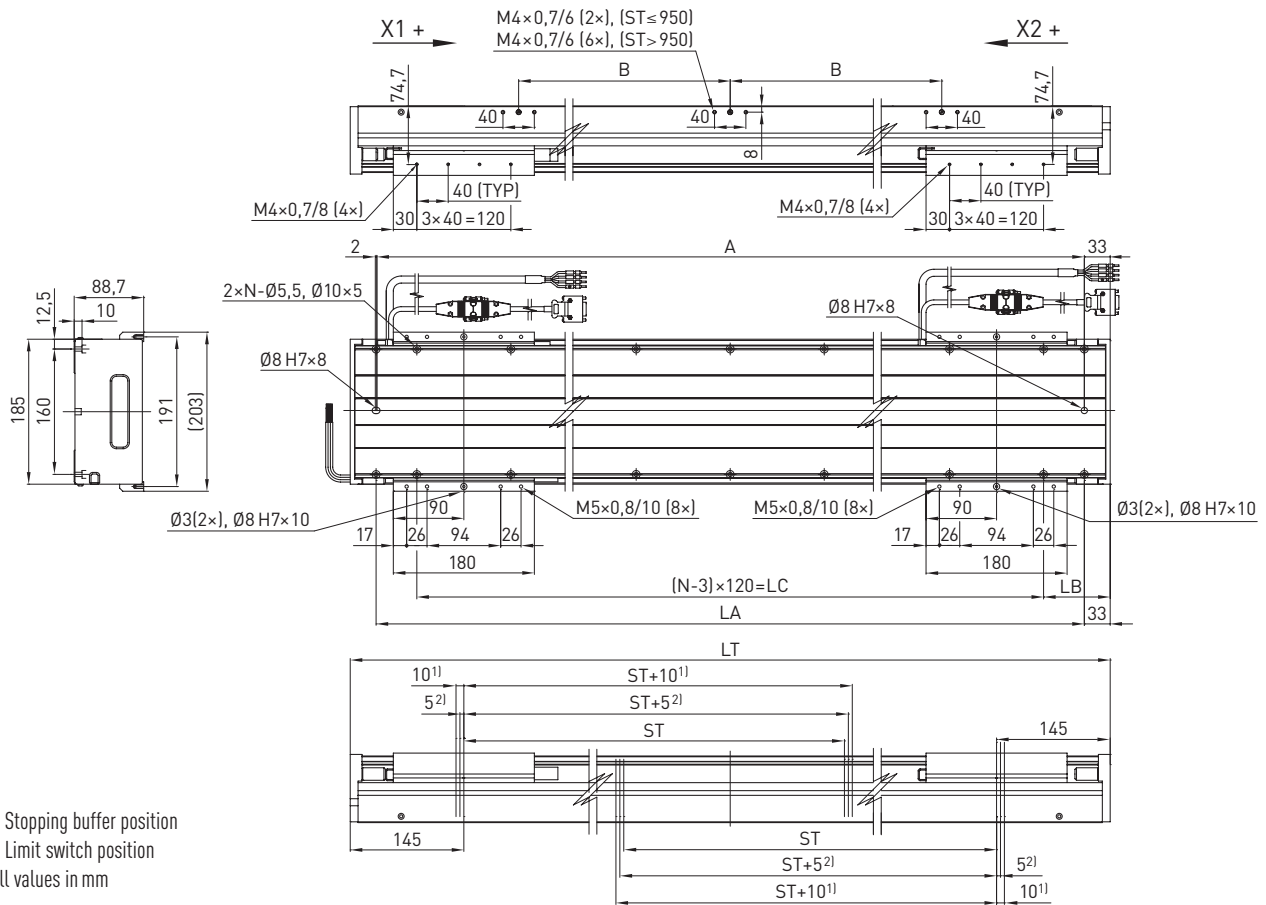


Table 3.34 LMSSA-18S100, -18C100 dimensions, dual forcers, stroke length 200 – 730 mm

Stroke length ST [mm]	230	280	330	380	430	480	530	580	630	680	730	
Total length LT [mm]	740	790	840	890	940	990	1,040	1,090	1,140	1,190	1,240	
N [mm]	7	7	9	9	9	9	9	11	11	11	13	
LA [mm]	674	724	774	824	874	924	974	1,024	1,074	1,124	1,174	
LB [mm]	130	155	60	85	110	135	160	65	90	115	20	
LC [mm]	480	480	720	720	720	720	720	960	960	960	1,200	
A [mm]	673	723	773	823	873	923	973	1,023	1,073	1,123	1,173	
B [mm]	—	—	—	—	—	—	—	—	—	—	—	
Stage weight [kg]	18S100	19.4	20.3	21.2	22.1	23.0	23.9	24.8	25.7	26.6	27.5	28.4
	18C100	24.1	25.2	26.3	27.5	28.6	29.7	30.8	31.9	33.0	34.1	35.2

Table 3.35 LMSSA-18S100, -18C100 dimensions, dual forcers, stroke length 780 – 1,280 mm

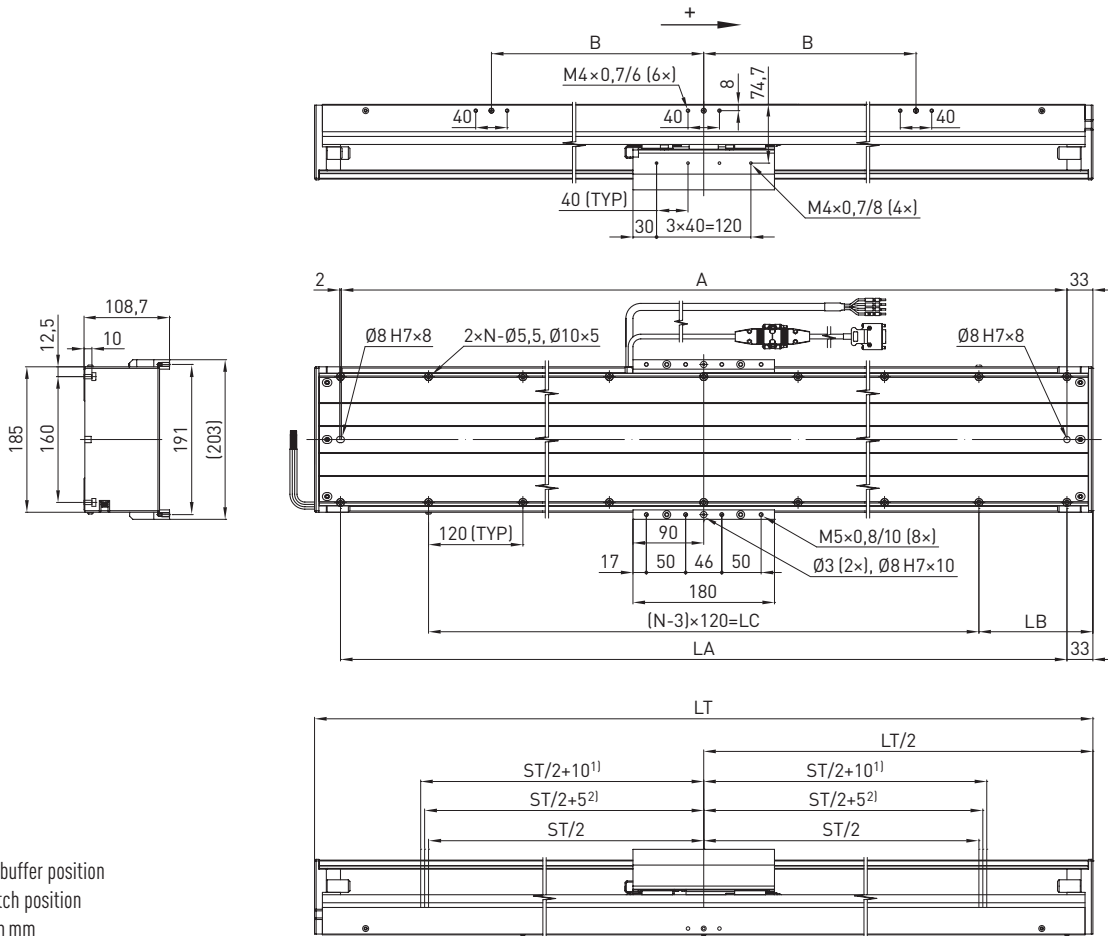
Stroke length ST [mm]	780	830	880	930	980	1,030	1,080	1,130	1,180	1,230	1,280	
Total length LT [mm]	1,290	1,340	1,390	1,440	1,490	1,540	1,590	1,640	1,690	1,740	1,790	
N [mm]	13	13	13	13	13	15	15	15	15	15	17	
LA [mm]	1,224	1,274	1,324	1,374	1,424	1,474	1,524	1,574	1,624	1,674	1,724	
LB [mm]	45	70	95	120	145	50	75	100	125	150	55	
LC [mm]	1,200	1,200	1,200	1,200	1,200	1,440	1,440	1,440	1,440	1,440	1,680	
A [mm]	1,223	1,273	1,323	1,373	1,423	1,473	1,523	1,573	1,623	1,673	1,723	
B [mm]	—	—	—	—	—	—	360	360	360	600	600	
Stage weight [kg]	18S100	29.3	30.2	31.1	32.0	32.9	33.8	34.7	35.6	36.5	37.4	38.3
	18C100	36.3	37.5	38.6	39.7	40.8	41.9	43.0	44.1	45.2	46.3	47.5

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-18 dimensions, single forcer

### LMSSA-18S100, LMSSA-18C100, stroke length 1,600 – 2,700 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

All values in mm

Table 3.36 LMSSA-18S100, -18C100 dimensions, single forcer, stroke length 1,600 – 2,700 mm

Stroke length ST [mm]	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	
Total length LT [mm]	1,890	1,990	2,090	2,190	2,290	2,390	2,490	2,590	2,690	2,790	2,890	2,990	
N [mm]	17	17	19	19	21	21	23	23	23	25	25	27	
LA [mm]	1,824	1,924	2,024	2,124	2,224	2,324	2,424	2,524	2,624	2,724	2,824	2,924	
LB [mm]	105	155	85	135	65	115	45	95	145	75	125	55	
LC [mm]	1,680	1,680	1,920	1,920	2,160	2,160	2,400	2,400	2,400	2,640	2,640	2,880	
A [mm]	1,823	1,923	2,023	2,123	2,223	2,323	2,423	2,523	2,623	2,723	2,823	2,923	
B [mm]	600	600	600	840	840	840	840	840	1,080	1,080	1,080	1,080	
Stage weight [kg]	18S100	38.4	40.2	42.0	43.8	45.6	47.4	49.2	51.0	52.7	54.5	56.3	58.1
	18C100	48.2	50.4	52.7	54.9	57.1	59.3	61.5	63.8	66.0	68.2	70.4	72.7

LMSSA-18 dimensions, dual forcers

LMSSA-18S100, LMSSA-18C100, stroke length 1,330 – 2,430 mm

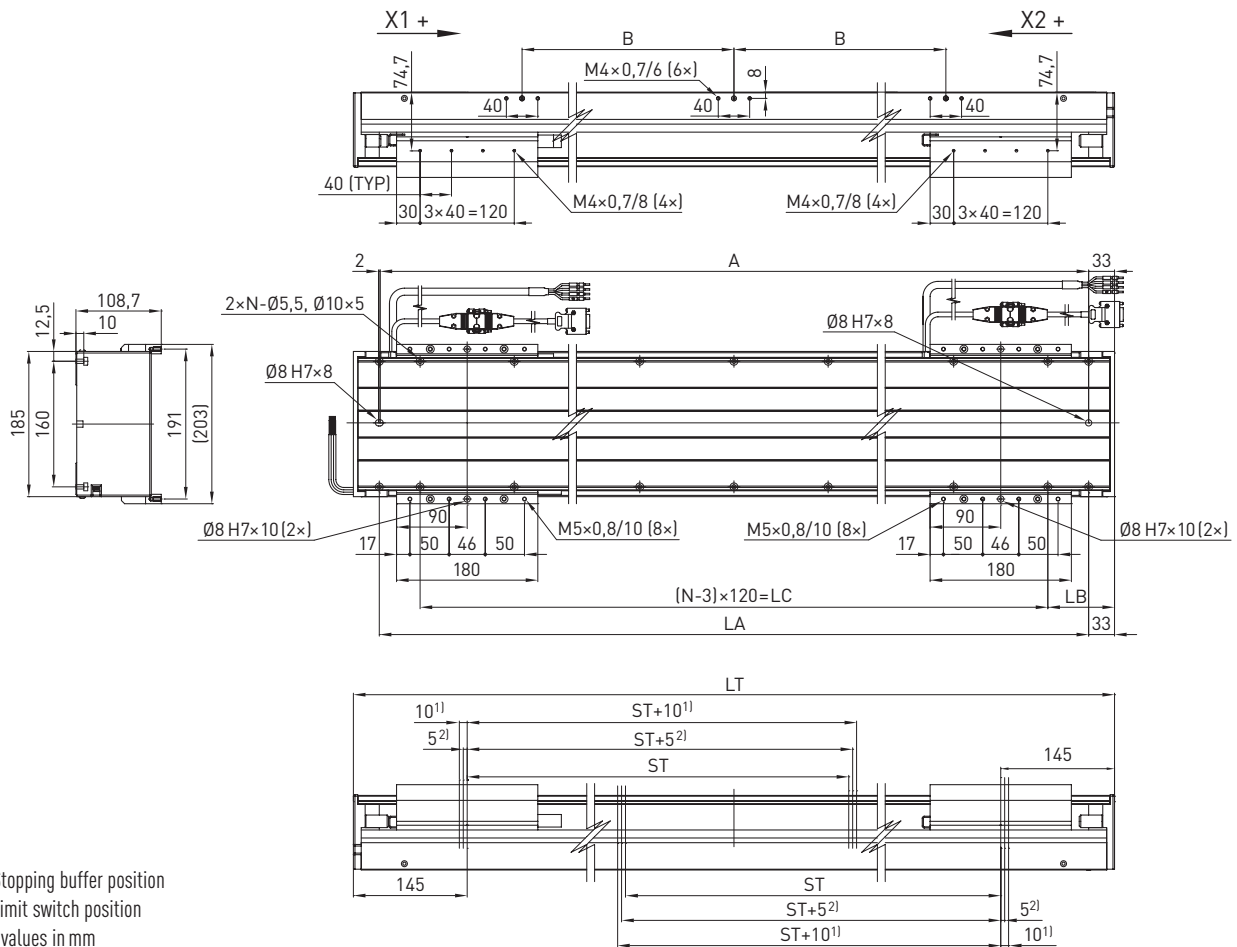


Table 3.37 LMSSA-18S100, -18C100 dimensions, dual forcers, stroke length 1,330 – 2,430 mm

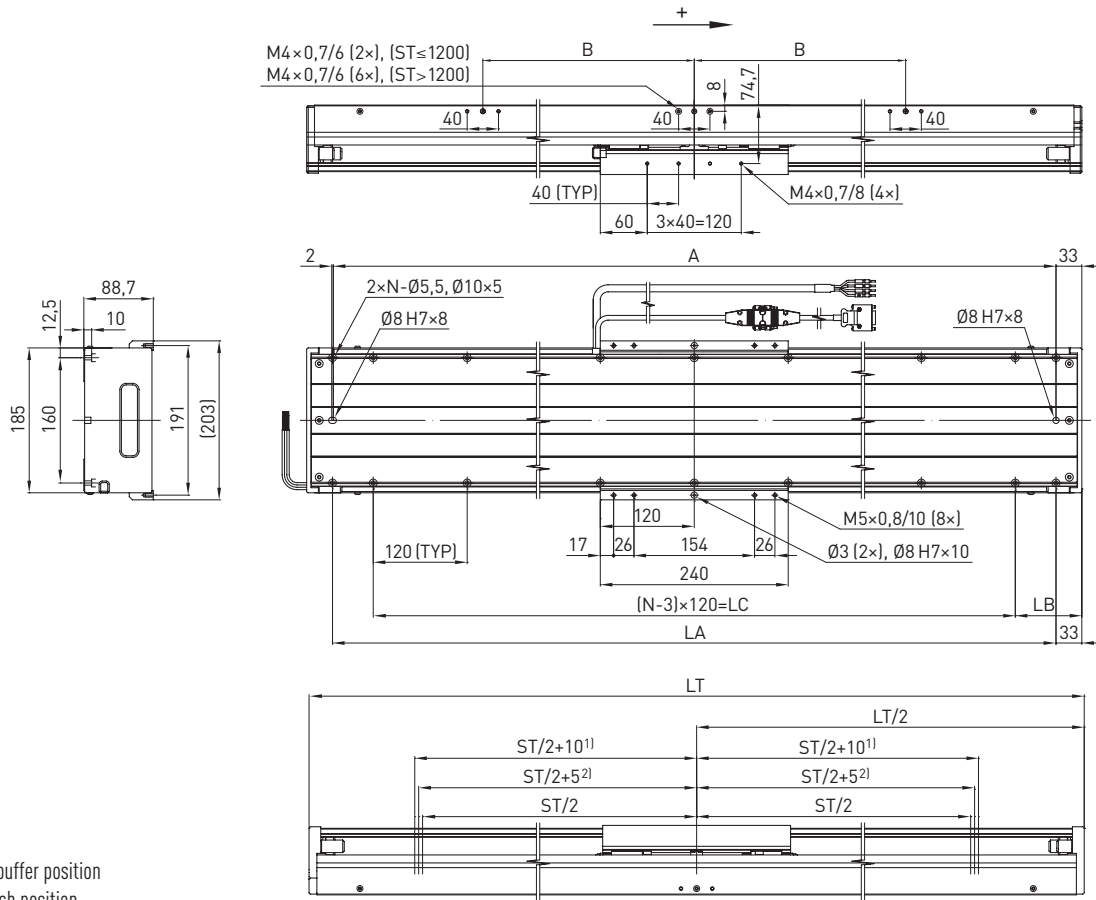
Stroke length ST [mm]	1,330	1,430	1,530	1,630	1,730	1,830	1,930	2,030	2,130	2,230	2,330	2,430
Total length LT [mm]	1,840	1,940	2,040	2,140	2,240	2,340	2,440	2,540	2,640	2,740	2,840	2,940
N [mm]	17	17	19	19	19	21	23	23	23	25	25	25
LA [mm]	1,774	1,874	1,974	2,074	2,174	2,274	2,374	2,474	2,574	2,674	2,774	2,874
LB [mm]	80	130	60	110	160	90	20	70	120	50	100	150
LC [mm]	1,680	1,680	1,920	1,920	1,920	2,160	2,400	2,400	2,400	2,640	2,640	2,640
A [mm]	1,773	1,873	1,973	2,073	2,173	2,273	2,373	2,473	2,573	2,673	2,773	2,873
B [mm]	600	600	600	600	840	840	840	840	840	1,080	1,080	1,080
Stage weight [kg]	18S100	41.6	43.4	45.2	47.0	48.8	50.6	52.4	54.2	55.9	57.7	59.5
	18C100	51.0	53.2	55.4	57.6	59.9	62.1	64.3	66.5	68.8	71.0	73.2

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-18 dimensions, single forcer

### LMSSA-18S200, stroke length 200 – 1,500 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

All values in mm

Table 3.38 LMSSA-18S200 dimensions, single forcer, stroke length 200 – 800 mm

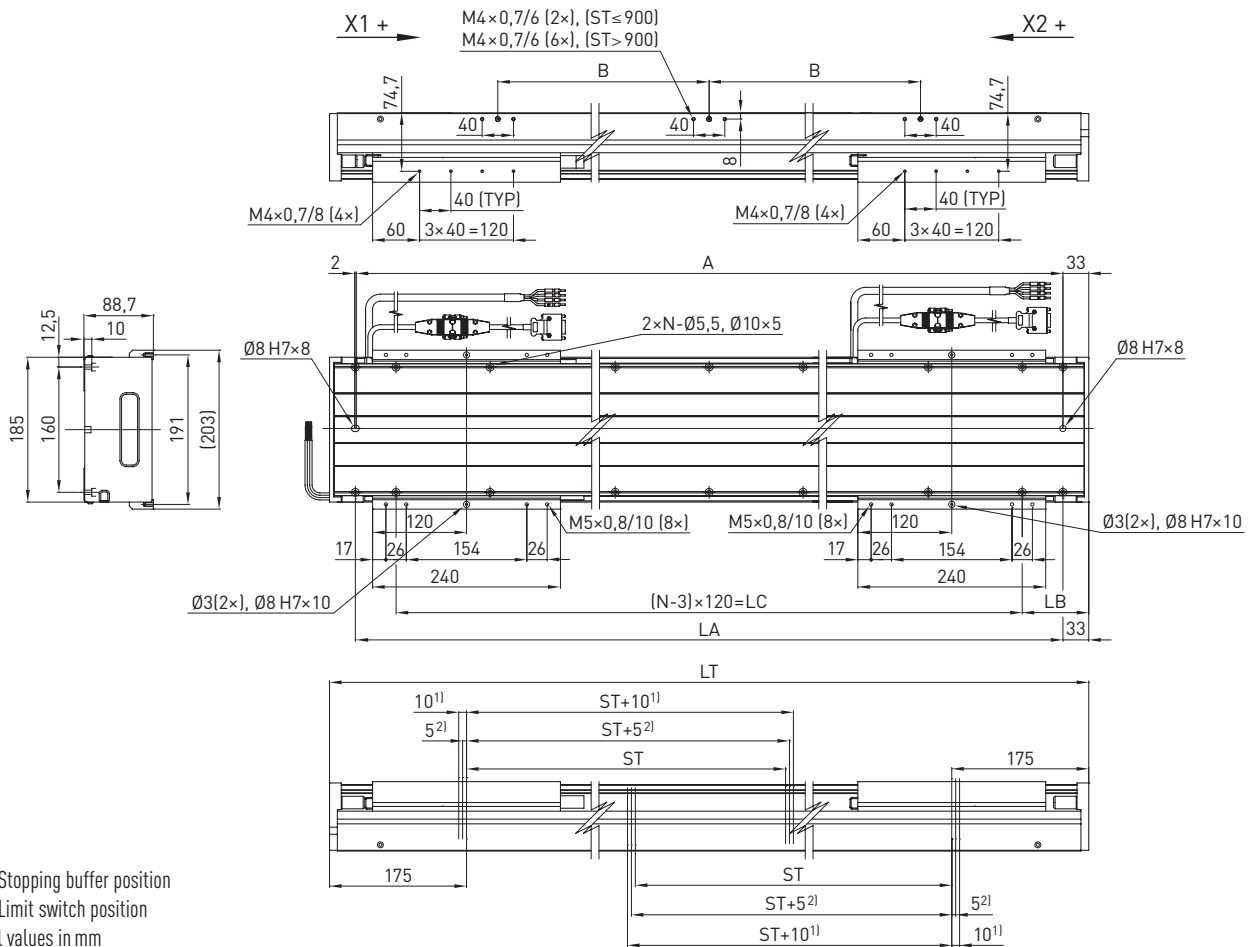
Stroke length ST [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800
Total length LT [mm]	550	600	650	700	750	800	850	900	950	1,000	1,050	1,100	1,150
N [mm]	5	7	7	7	7	7	9	9	9	11	11	11	11
LA [mm]	484	534	584	634	684	734	784	834	884	934	984	1,034	1,084
LB [mm]	155	60	85	110	135	160	65	90	115	20	45	70	95
LC [mm]	240	480	480	480	480	480	720	720	720	960	960	960	960
A [mm]	483	533	583	633	683	733	783	783	883	933	983	1,033	1,083
B [mm]	—	—	—	—	—	—	—	—	—	—	—	—	—
Stage weight [kg]	14.2	15.1	16.0	17.0	17.9	18.8	19.7	20.6	21.5	22.4	23.3	24.3	25.2

Table 3.39 LMSSA-18S200 dimensions, single forcer, stroke length 850 – 1,500 mm

Stroke length ST [mm]	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400	1,500
Total length LT [mm]	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600	1,650	1,750	1,850
N [mm]	11	11	13	13	13	13	13	15	15	15	15	17
LA [mm]	1,134	1,184	1,234	1,284	1,334	1,384	1,434	1,484	1,534	1,584	1,684	1,784
LB [mm]	120	145	50	75	100	125	150	55	80	105	155	85
LC [mm]	960	960	1,200	1,200	1,200	1,200	1,200	1,440	1,440	1,440	1,440	1,680
A [mm]	1,133	1,183	1,233	1,283	1,333	1,383	1,433	1,483	1,533	1,583	1,683	1,783
B [mm]	—	—	—	—	—	—	—	—	360	360	600	600
Stage weight [kg]	26.1	27.0	27.9	28.8	29.7	30.6	31.6	32.5	33.4	34.3	36.1	37.9

### LMSSA-18 dimensions, dual forcers

#### LMSSA-18S200, stroke length 220 – 1,220 mm



<sup>1)</sup> Stopping buffer position  
<sup>2)</sup> Limit switch position  
 All values in mm

Table 3.40 LMSSA-18S200 dimensions, dual forcers, stroke length 220 – 720 mm

Stroke length ST [mm]	220	270	320	370	420	470	520	570	620	670	720
Total length LT [mm]	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350
N [mm]	9	9	9	11	11	11	11	11	11	13	13
LA [mm]	784	834	884	934	984	1,034	1,084	1,134	1,184	1,234	1,284
LB [mm]	65	90	115	20	45	70	95	120	145	50	75
LC [mm]	720	720	720	960	960	960	960	960	960	1,200	1,200
A [mm]	783	833	883	933	983	1,033	1,083	1,133	1,183	1,233	1,283
B [mm]	—	—	—	—	—	—	—	—	—	—	—
Stage weight [kg]	23.8	24.7	25.6	26.5	27.4	28.3	29.2	30.1	31.1	32.0	32.9

Table 3.41 LMSSA-18S200 dimensions, dual forcers, stroke length 770 – 1.220 mm

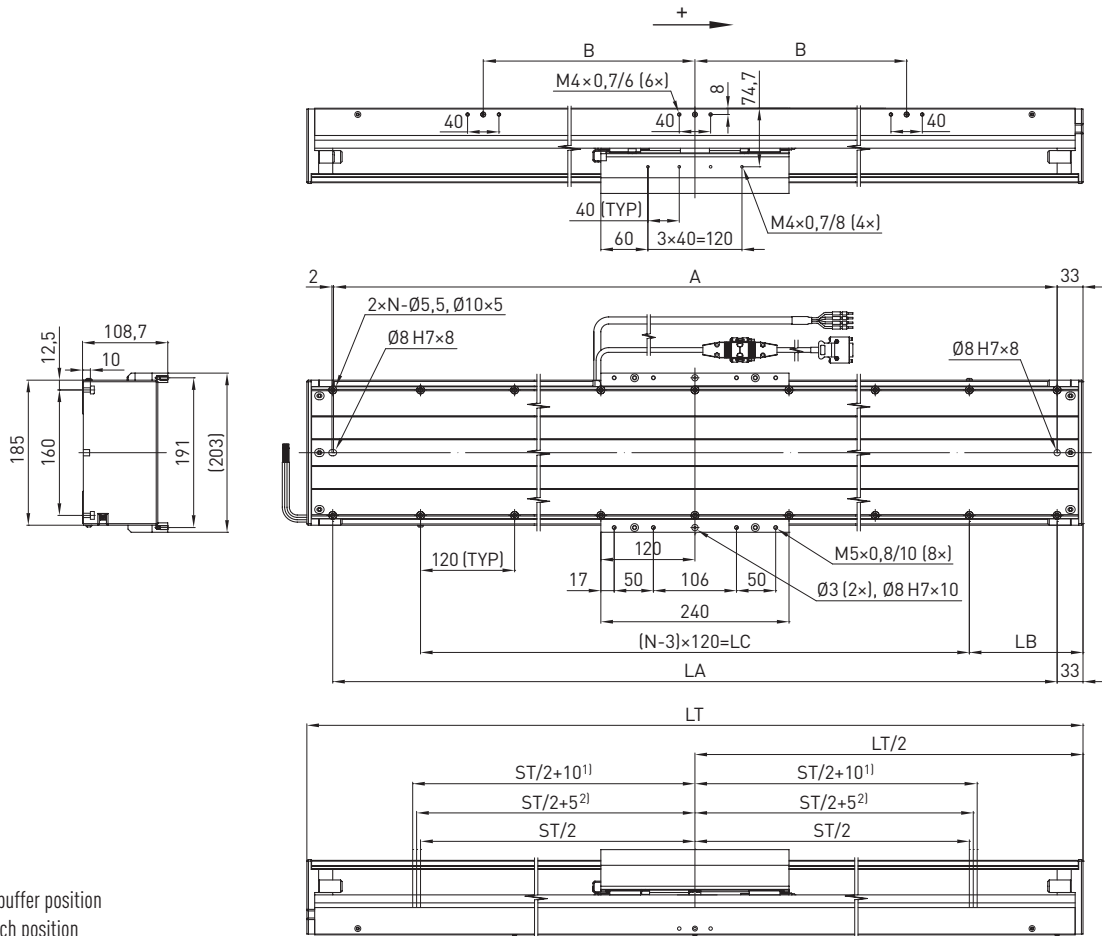
Stroke length ST [mm]	770	820	870	920	970	1,020	1,070	1,120	1,170	1,220
Total length LT [mm]	1,400	1,450	1,500	1,550	1,600	1,650	1,700	1,750	1,800	1,850
N [mm]	13	13	13	15	15	15	15	15	15	17
LA [mm]	1,334	1,384	1,434	1,484	1,534	1,584	1,634	1,684	1,734	1,784
LB [mm]	100	125	150	55	80	105	130	155	60	85
LC [mm]	1,200	1,200	1,200	1,440	1,440	1,440	1,440	1,440	1,680	1,680
A [mm]	1,333	1,383	1,433	1,483	1,533	1,583	1,633	1,683	1,733	1,783
B [mm]	—	—	—	—	360	360	600	600	600	600
Stage weight [kg]	33.8	34.7	35.6	36.5	37.4	38.3	39.3	40.2	41.1	42.0

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-18 dimensions, single forcer

### LMSSA-18S200, stroke length 1,600 – 2,600 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

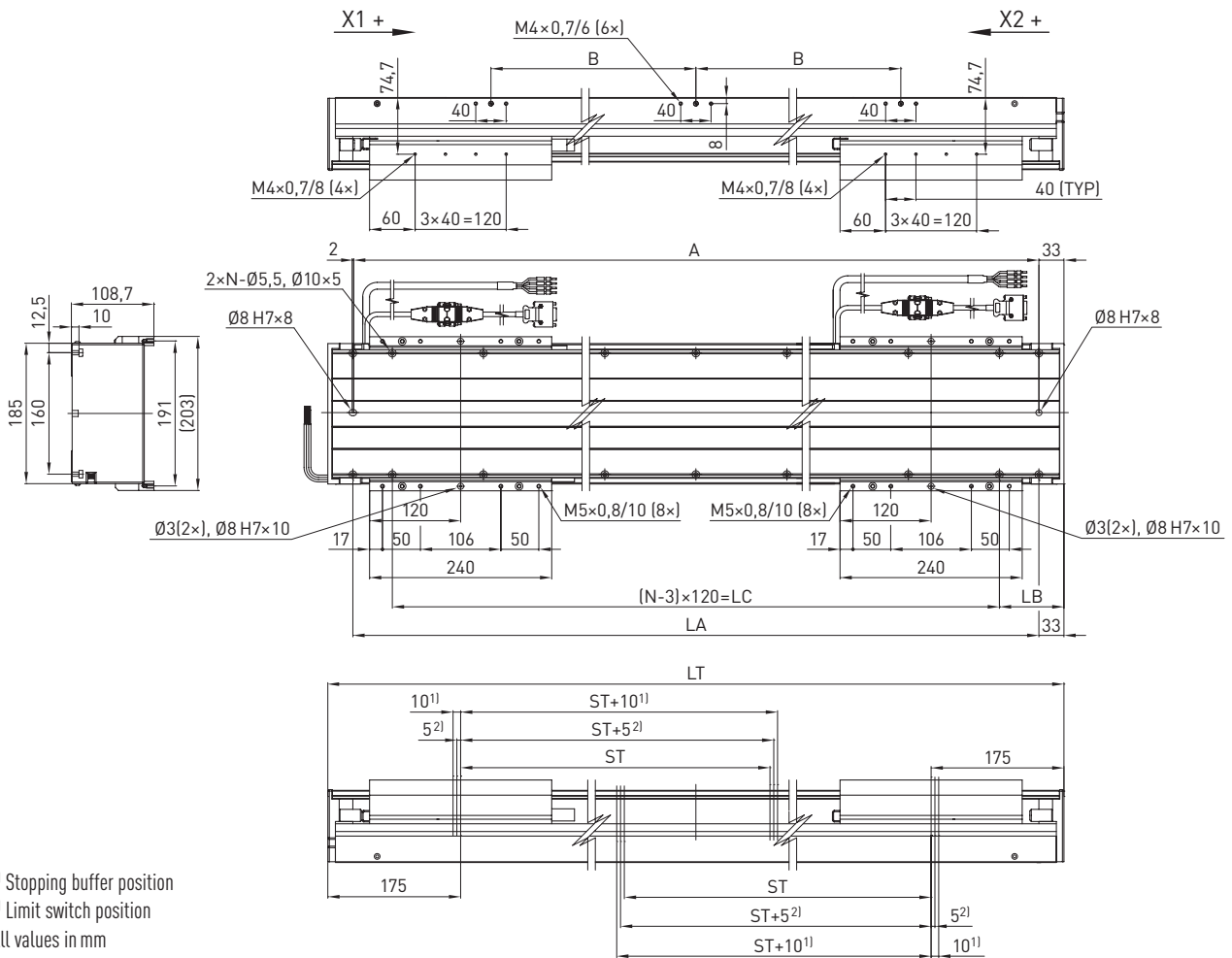
All values in mm

Table 3.42 LMSSA-18S200 dimensions, single forcer, stroke length 1,600 – 2,600 mm

Stroke length ST [mm]	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600
Total length LT [mm]	1,950	2,050	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950
N [mm]	17	19	19	21	21	21	23	23	25	25	25
LA [mm]	1,884	1,984	2,084	2,184	2,284	2,384	2,484	2,584	2,684	2,784	2,884
LB [mm]	135	65	115	45	95	145	75	125	55	105	155
LC [mm]	1,680	1,920	1,920	2,160	2,160	2,160	2,400	2,400	2,640	2,640	2,640
A [mm]	1,883	1,983	2,083	2,183	2,283	2,383	2,483	2,583	2,683	2,783	2,883
B [mm]	600	600	600	840	840	840	840	840	1,080	1,080	1,080
Stage weight [kg]	41.8	43.6	45.4	47.2	49.1	50.9	52.7	54.5	56.4	58.2	60.0

### LMSSA-18 dimensions, dual forcers

#### LMSSA-18S200, stroke length 1,270 – 2,320 mm



<sup>11</sup> Stopping buffer position

<sup>21</sup> Limit switch position

All values in mm

Table 3.43 LMSSA-18S200 dimensions, dual forcers, stroke length 1,270 – 2,320 mm

Stroke length ST [mm]	1,270	1,320	1,420	1,520	1,620	1,720	1,820	1,920	2,020	2,120	2,220	2,320
Total length LT [mm]	1,900	1,950	2,050	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950
N [mm]	17	17	19	19	21	21	21	23	23	25	25	25
LA [mm]	1,834	1,884	1,984	2,084	2,184	2,284	2,384	2,484	2,584	2,684	2,784	2,884
LB [mm]	110	135	65	115	45	95	145	75	125	55	105	155
LC [mm]	1,680	1,680	1,920	1,920	2,160	2,160	2,160	2,400	2,400	2,640	2,640	2,640
A [mm]	1,833	1,883	1,983	2,083	2,183	2,283	2,383	2,483	2,583	2,683	2,783	2,883
B [mm]	600	600	600	600	840	840	840	840	840	1,080	1,080	1,080
Stage weight [kg]	47.0	47.9	49.7	51.5	53.3	55.2	57.0	58.8	60.6	62.5	64.3	66.1

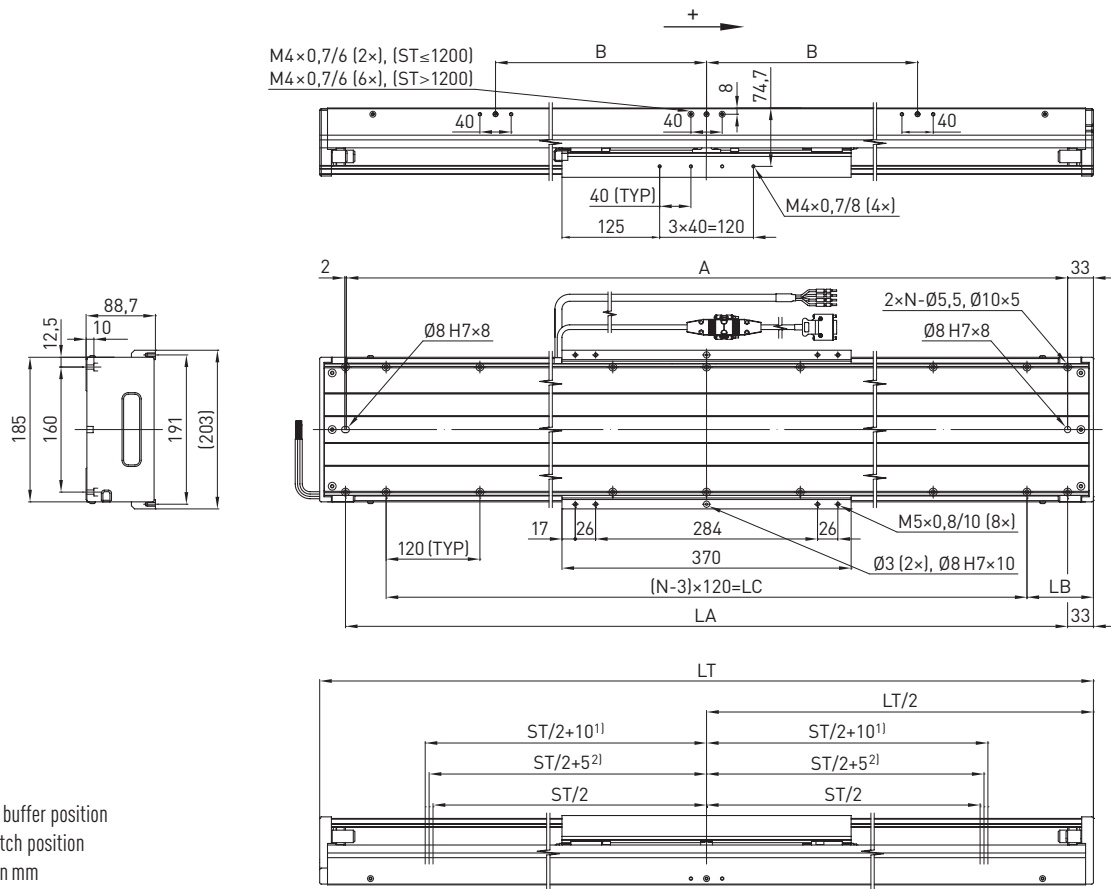


# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-18 dimensions, single forcer

### LMSSA-18S300, LMSSA-18C200, stroke length 200 – 1,500 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.44 LMSSA-18S300, -18C200 dimensions, single forcer, stroke length 200 – 800 mm

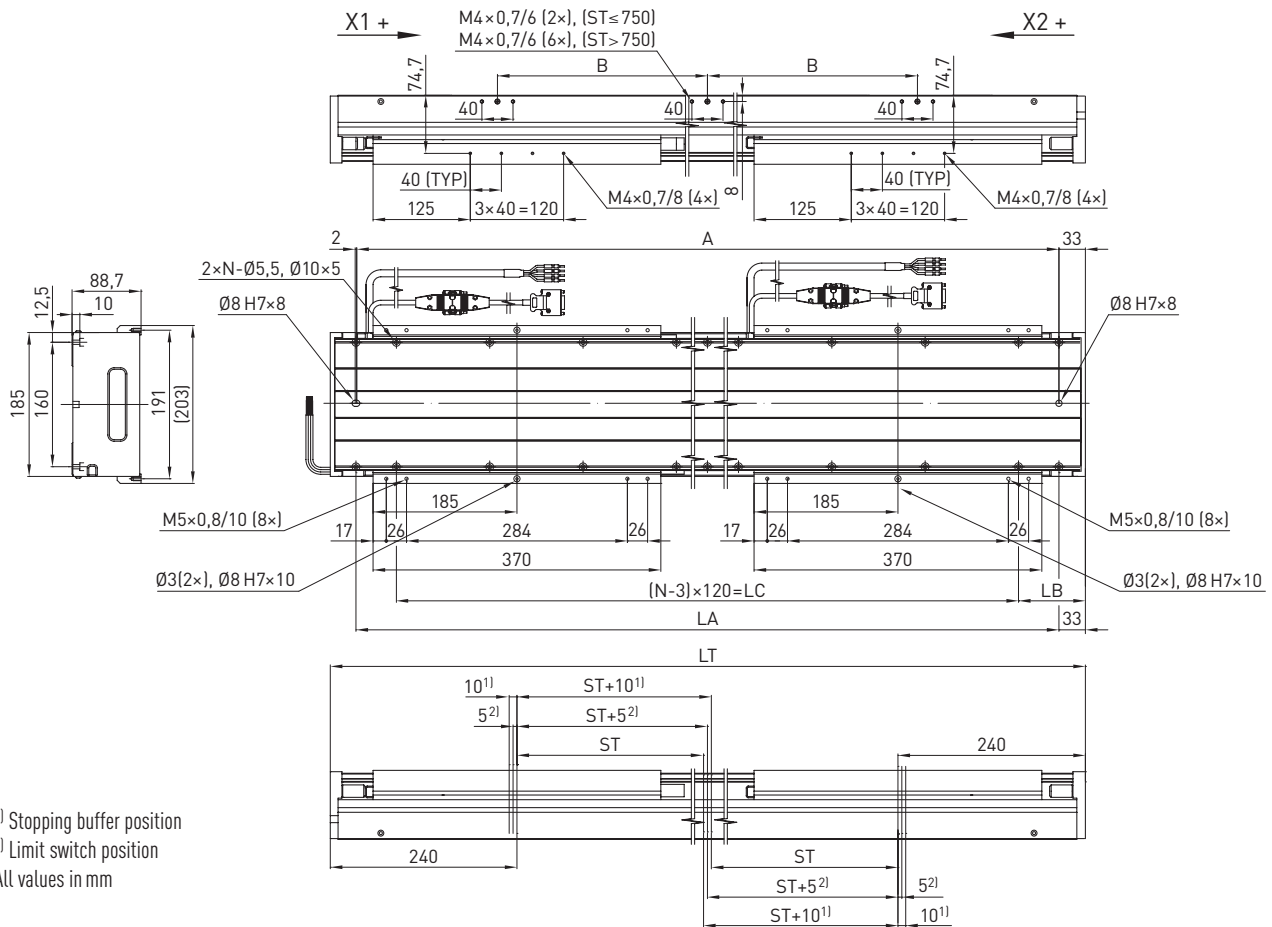
Stroke length ST [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800	
Total length LT [mm]	680	730	780	830	880	930	980	1,030	1,080	1,130	1,180	1,230	1,280	
N [mm]	7	7	7	9	9	9	9	9	11	11	11	11	11	
LA [mm]	614	664	714	764	814	864	914	964	1,014	1,064	1,114	1,164	1,214	
LB [mm]	100	125	150	55	80	105	130	155	60	85	110	135	160	
LC [mm]	480	480	480	720	720	720	720	720	960	960	960	960	960	
A [mm]	613	663	713	763	813	863	913	963	1,013	1,063	1,113	1,163	1,213	
B [mm]	—	—	—	—	—	—	—	—	—	—	—	—	—	
Stage weight [kg]	18S300	18.4	19.5	20.7	21.8	23.0	24.2	25.3	26.5	27.6	28.8	30.0	31.1	32.3
	18C200	21.7	22.9	24.1	25.2	26.4	27.5	28.7	29.9	31.0	32.2	33.3	34.5	35.7

Table 3.45 LMSSA-18S300, -18C200 dimensions, single forcer, stroke length 850 – 1,500 mm

Stroke length ST [mm]	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400	1,500	
Total length LT [mm]	1,330	1,380	1,430	1,480	1,530	1,580	1,630	1,680	1,730	1,780	1,880	1,980	
N [mm]	13	13	13	15	15	15	15	15	15	17	17	17	
LA [mm]	1,264	1,314	1,364	1,414	1,464	1,514	1,564	1,614	1,664	1,714	1,814	1,914	
LB [mm]	65	90	115	20	45	70	95	120	145	50	100	150	
LC [mm]	1,200	1,200	1,200	1,440	1,440	1,440	1,440	1,440	1,440	1,680	1,680	1,680	
A [mm]	1,263	1,313	1,363	1,413	1,463	1,513	1,563	1,613	1,663	1,713	1,813	1,913	
B [mm]	—	—	—	—	—	—	—	—	600	600	600	600	
Stage weight [kg]	18S300	33.4	34.6	35.8	36.9	38.1	39.2	40.4	41.6	42.7	43.9	46.2	48.5
	18C200	36.8	38.0	39.1	40.3	41.5	42.6	43.8	44.9	46.1	47.3	49.6	51.9

### LMSSA-18 dimensions, dual forcers

#### LMSSA-18S300, LMSSA-18C200, stroke length 240 – 1,090 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.46 LMSSA-18S300, -18C200 dimensions, dual forcers, stroke length 240 – 640 mm

Stroke length ST [mm]	240	290	340	390	440	490	540	590	640	
Total length LT [mm]	1,130	1,180	1,230	1,280	1,330	1,380	1,430	1,480	1,530	
N [mm]	11	11	11	11	13	13	13	15	15	
LA [mm]	1,064	1,114	1,164	1,214	1,264	1,314	1,364	1,414	1,464	
LB [mm]	85	110	135	160	65	90	115	20	45	
LC [mm]	960	960	960	960	1,200	1,200	1,200	1,440	1,440	
A [mm]	1,063	1,113	1,163	1,213	1,263	1,313	1,363	1,413	1,463	
B [mm]	—	—	—	—	—	—	—	—	—	
Stage weight [kg]	18S300	34.5	35.6	36.8	38.0	39.1	40.3	41.4	42.6	43.8
	18C200	36.7	37.9	39.0	40.2	41.4	42.5	43.7	44.8	46.0

Table 3.47 LMSSA-18S300, -18C200 dimensions, dual forcers, stroke length 690 – 1,090 mm

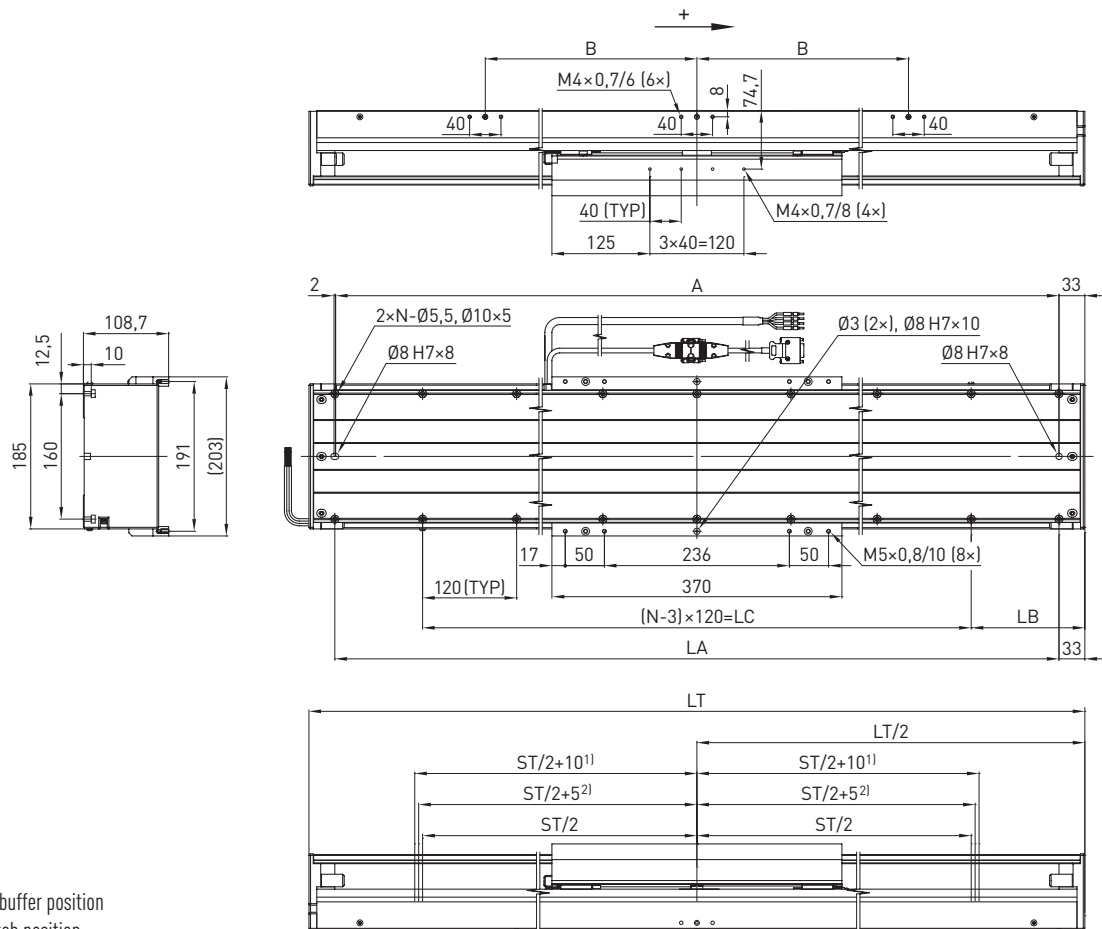
Stroke length ST [mm]	690	740	790	840	890	940	990	1,040	1,090	
Total length LT [mm]	1,580	1,630	1,680	1,730	1,780	1,830	1,880	1,930	1,980	
N [mm]	15	15	15	15	17	17	17	17	17	
LA [mm]	1,514	1,564	1,614	1,664	1,714	1,764	1,814	1,864	1,914	
LB [mm]	70	95	120	145	50	75	100	125	150	
LC [mm]	1,440	1,440	1,440	1,440	1,680	1,680	1,680	1,680	1,680	
A [mm]	1,513	1,563	1,613	1,663	1,713	1,763	1,813	1,863	1,913	
B [mm]	—	—	—	600	600	600	600	600	600	
Stage weight [kg]	18S300	44.9	46.1	47.2	48.4	49.6	50.7	51.9	53.0	54.2
	18C200	47.2	48.3	49.5	50.6	51.8	53.0	54.1	55.3	56.4

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-18 dimensions, single forcer

### LMSSA-18S300, LMSSA-18C200, stroke length 1,600 – 2,500 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

All values in mm

Table 3.48 LMSSA-18S300, -18C200 dimensions, single forcer, stroke length 1,600 – 2,500 mm

Stroke length ST [mm]	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	
Total length LT [mm]	2,080	2,180	2,280	2,380	2,480	2,580	2,680	2,780	2,880	2,980	
N [mm]	19	19	21	21	21	23	25	25	25	27	
LA [mm]	2,014	2,114	2,214	2,314	2,414	2,514	2,614	2,714	2,814	2,914	
LB [mm]	80	130	60	110	160	90	20	70	120	50	
LC [mm]	1,920	1,920	2,160	2,160	2,160	2,400	2,640	2,640	2,640	2,880	
A [mm]	2,013	2,113	2,213	2,313	2,413	2,513	2,613	2,713	2,813	2,913	
B [mm]	600	840	840	840	840	840	1,080	1,080	1,080	1,080	
Stage weight [kg]	18S300	53.8	56.2	58.5	60.8	63.1	65.4	67.8	70.1	72.4	74.7
	18C200	57.2	59.5	61.9	64.2	66.5	68.8	71.1	73.5	75.8	78.1

LMSSA-18 dimensions, dual forcers

LMSSA-18S300, LMSSA-18C200, stroke length 1,140 – 2,040 mm

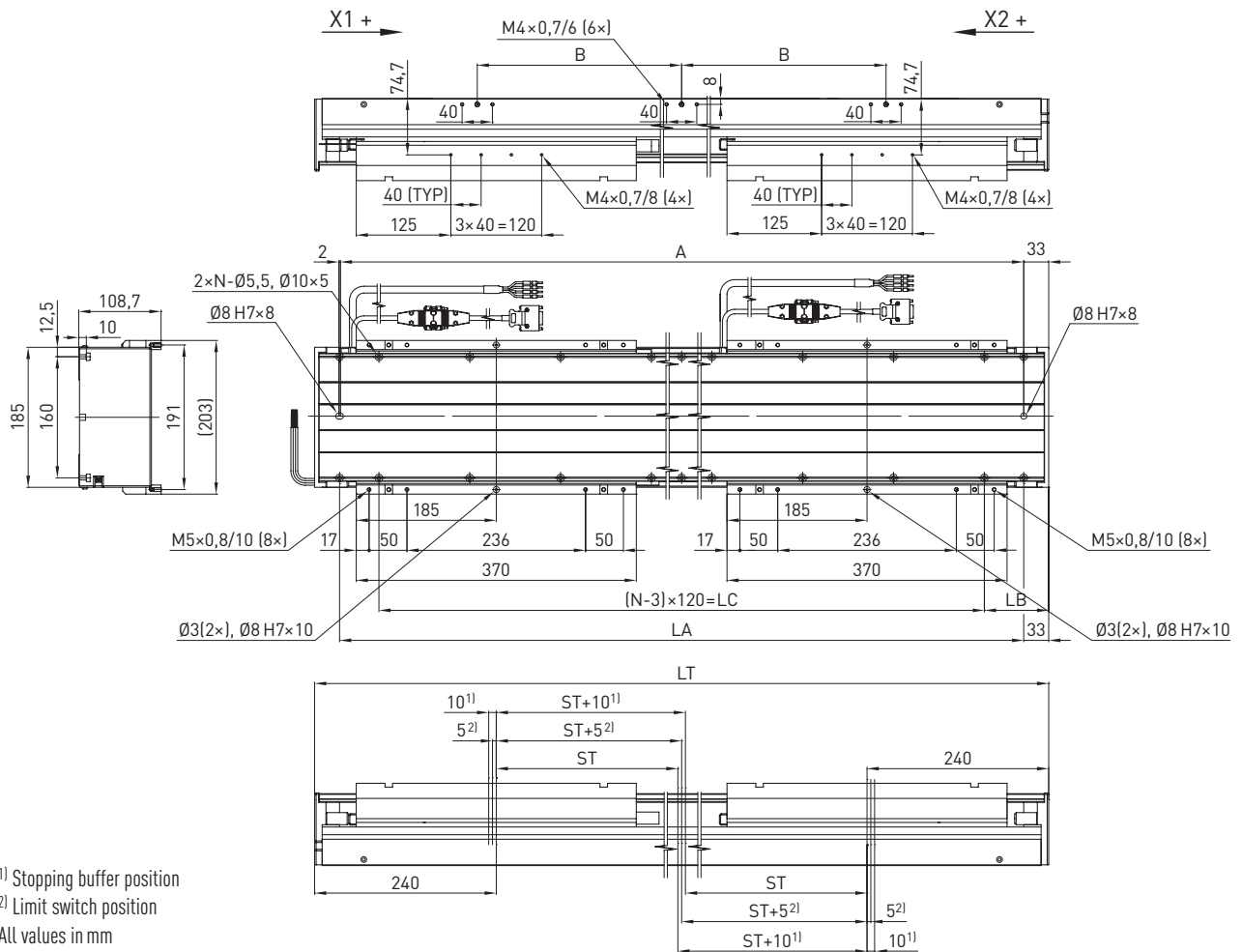


Table 3.49 LMSSA-18S300, -18C200 dimensions, dual forcers, stroke length 1,140 – 2,040 mm

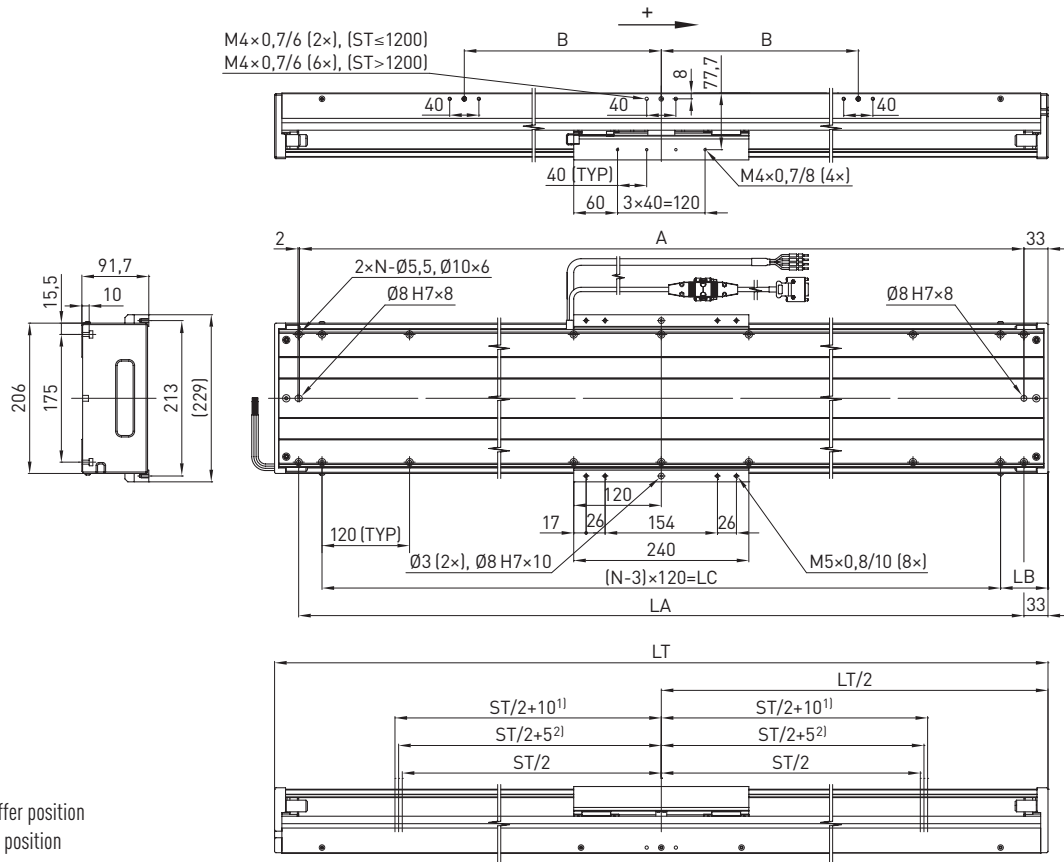
Stroke length ST [mm]	1,140	1,190	1,240	1,290	1,340	1,440	1,540	1,640	1,740	1,840	1,940	2,040
Total length LT [mm]	2,030	2,080	2,130	2,180	2,230	2,330	2,430	2,530	2,630	2,730	2,830	2,930
N [mm]	19	19	19	19	19	21	21	23	23	25	25	25
LA [mm]	1,964	2,014	2,064	2,114	2,164	2,264	2,364	2,464	2,564	2,664	2,764	2,864
LB [mm]	55	80	105	130	155	85	135	65	115	45	95	145
LC [mm]	1,920	1,920	1,920	1,920	1,920	2,160	2,160	2,400	2,400	2,640	2,640	2,640
A [mm]	1,963	2,013	2,063	2,113	2,163	2,263	2,363	2,463	2,563	2,663	2,763	2,863
B [mm]	600	600	600	840	840	840	840	840	840	1,080	1,080	1,080
Stage weight [kg]	18S300	61.4	62.5	63.7	64.8	66.0	68.3	70.6	73.0	75.3	77.6	79.9
	18C200	63.6	64.8	65.9	67.1	68.2	70.6	72.9	75.2	77.5	79.8	82.5

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-20 dimensions, single forcer

### LMSSA-20S300, LMSSA-20C100, stroke length 200 – 1,500 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.50 LMSSA-20S300, -20C100 dimensions, single forcer, stroke length 200 – 800 mm

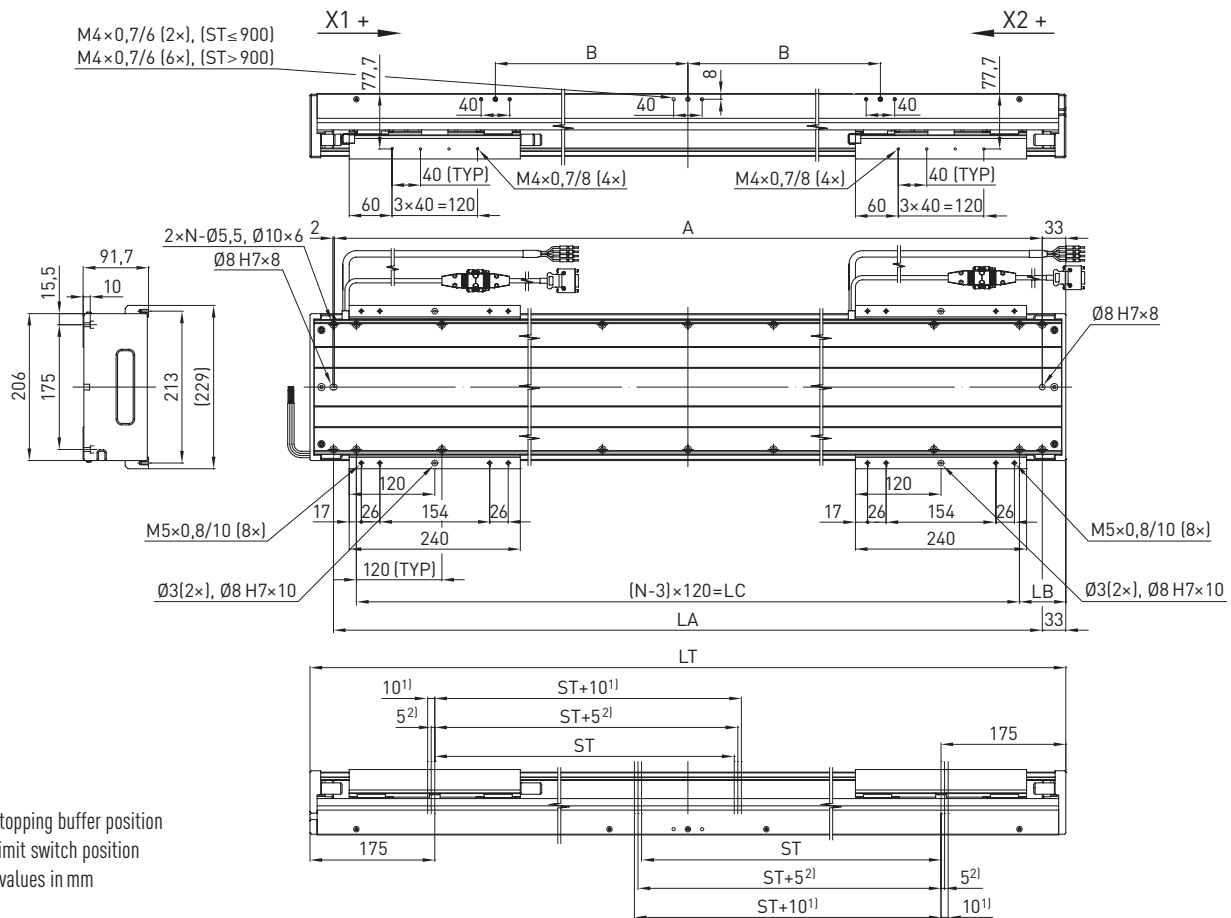
Stroke length ST [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800	
Total length LT [mm]	550	600	650	700	750	800	850	900	950	1,000	1,050	1,100	1,150	
N [mm]	5	7	7	7	7	7	9	9	9	11	11	11	11	
LA [mm]	484	534	584	634	684	734	784	834	884	934	984	1,034	1,084	
LB [mm]	155	60	85	110	135	160	65	90	115	20	45	70	95	
LC [mm]	240	480	480	480	480	480	720	720	720	960	960	960	960	
A [mm]	483	533	583	633	683	733	783	833	883	933	983	1,033	1,083	
B [mm]	—	—	—	—	—	—	—	—	—	—	—	—	—	
Stage weight [kg]	20S300	18.0	19.1	20.2	21.3	22.4	23.5	24.6	25.7	26.8	27.9	29.0	30.1	31.2
	20C100	19.4	20.9	22.4	23.9	25.4	26.9	28.4	29.9	31.4	32.9	34.4	36.0	37.5

Table 3.51 LMSSA-20S300, -20C100 dimensions, single forcer, stroke length 850 – 1,500 mm

Stroke length ST [mm]	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400	1,500	
Total length LT [mm]	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550	1,600	1,650	1,750	1,850	
N [mm]	11	11	13	13	13	13	13	15	15	15	15	17	
LA [mm]	1,134	1,184	1,234	1,284	1,334	1,384	1,434	1,484	1,534	1,584	1,684	1,784	
LB [mm]	120	145	50	75	100	125	150	55	80	105	155	85	
LC [mm]	960	960	1,200	1,200	1,200	1,200	1,200	1,440	1,440	1,440	1,440	1,680	
A [mm]	1,133	1,183	1,233	1,283	1,333	1,383	1,433	1,483	1,533	1,583	1,683	1,783	
B [mm]	—	—	—	—	—	—	—	—	360	360	600	600	
Stage weight [kg]	20S300	32.3	33.4	34.5	35.6	36.7	37.8	38.9	40.0	41.1	42.2	44.4	46.6
	20C100	39.0	40.5	42.0	43.5	45.0	46.5	48.0	49.5	51.0	52.6	55.6	58.6

### LMSSA-20 dimensions, dual forcers

#### LMSSA-20S300, LMSSA-20C100, stroke length 220 – 1,220 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.52 LMSSA-20S300, -20C100 dimensions, dual forcers, stroke length 220 – 720 mm

Stroke length ST [mm]	220	270	320	370	420	470	520	570	620	670	720	
Total length LT [mm]	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	
N [mm]	9	9	9	11	11	11	11	11	11	13	13	
LA [mm]	784	834	884	934	984	1,034	1,084	1,134	1,184	1,234	1,284	
LB [mm]	65	90	115	20	45	70	95	120	145	50	75	
LC [mm]	720	720	720	960	960	960	960	960	960	1,200	1,200	
A [mm]	783	833	883	933	983	1,033	1,083	1,133	1,183	1,233	1,283	
B [mm]	—	—	—	—	—	—	—	—	—	—	—	
Stage weight [kg]	20S300	30.2	31.3	32.4	33.5	34.6	35.7	36.8	37.9	39.0	40.1	41.2
	20C100	32.3	33.8	35.3	36.8	38.3	39.9	41.4	42.9	44.4	45.9	47.4

Table 3.53 LMSSA-20S300, -20C100 dimensions, dual forcers, stroke length 770 – 1,220 mm

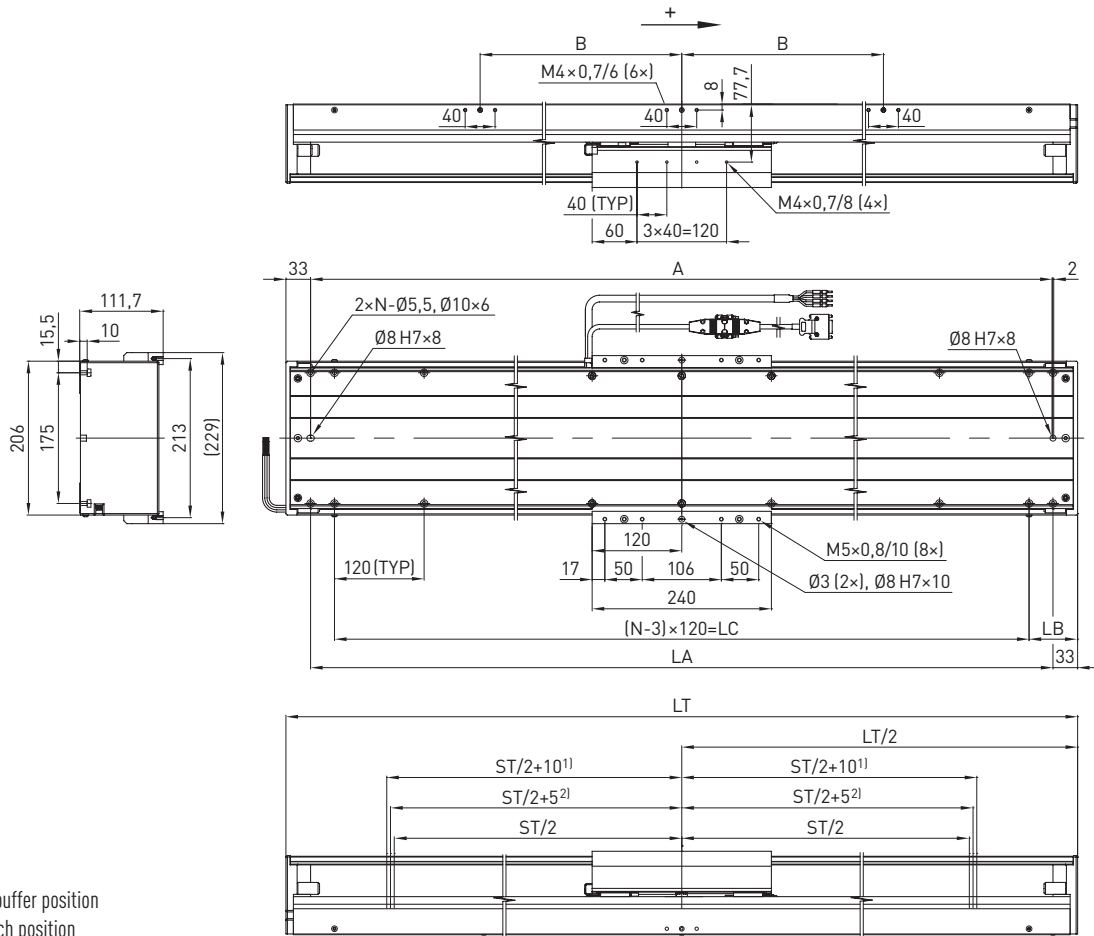
Stroke length ST [mm]	770	820	870	920	970	1,020	1,070	1,120	1,170	1,220	
Total length LT [mm]	1,400	1,450	1,500	1,550	1,600	1,650	1,700	1,750	1,800	1,850	
N [mm]	13	13	13	15	15	15	15	15	15	17	
LA [mm]	1,334	1,384	1,434	1,484	1,534	1,584	1,634	1,684	1,734	1,784	
LB [mm]	100	125	150	55	80	105	130	155	60	85	
LC [mm]	1,200	1,200	1,200	1,440	1,440	1,440	1,440	1,440	1,680	1,680	
A [mm]	1,333	1,383	1,433	1,483	1,533	1,583	1,633	1,683	1,733	1,783	
B [mm]	—	—	—	—	360	360	600	600	600	600	
Stage weight [kg]	20S300	42.3	43.4	44.5	45.6	46.7	47.8	48.9	50.0	51.1	52.2
	20C100	48.9	50.4	51.9	53.4	54.9	56.5	58.0	59.5	61.0	62.5

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-20 dimensions, single forcer

### LMSSA-20S300, LMSSA-20C100, stroke length 1,600 – 2,600 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

All values in mm

Table 3.54 LMSSA-20S300, -20C100 dimensions, single forcer, stroke length 1,600 – 2,600 mm

Stroke length ST [mm]	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600	
Total length LT [mm]	1,950	2,050	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950	
N [mm]	17	19	19	21	21	21	23	23	25	25	25	
LA [mm]	1,884	1,984	2,084	2,184	2,284	2,384	2,484	2,584	2,684	2,784	2,884	
LB [mm]	135	65	115	45	95	145	75	125	55	105	155	
LC [mm]	1,680	1,920	1,920	2,160	2,160	2,160	2,400	2,400	2,640	2,640	2,640	
A [mm]	1,883	1,983	2,083	2,183	2,283	2,383	2,483	2,583	2,683	2,783	2,883	
B [mm]	600	600	600	840	840	840	840	840	1,080	1,080	1,080	
Stage weight [kg]	20S300	50.8	53.0	55.2	57.4	59.6	61.8	64.0	66.2	68.4	70.6	72.8
	20C100	63.6	66.6	69.6	72.7	75.7	78.7	81.7	84.7	87.8	90.8	93.8

LMSSA-20 dimensions, dual forcers

LMSSA-20S300, LMSSA-20C100, stroke length 1,270 – 2,320 mm

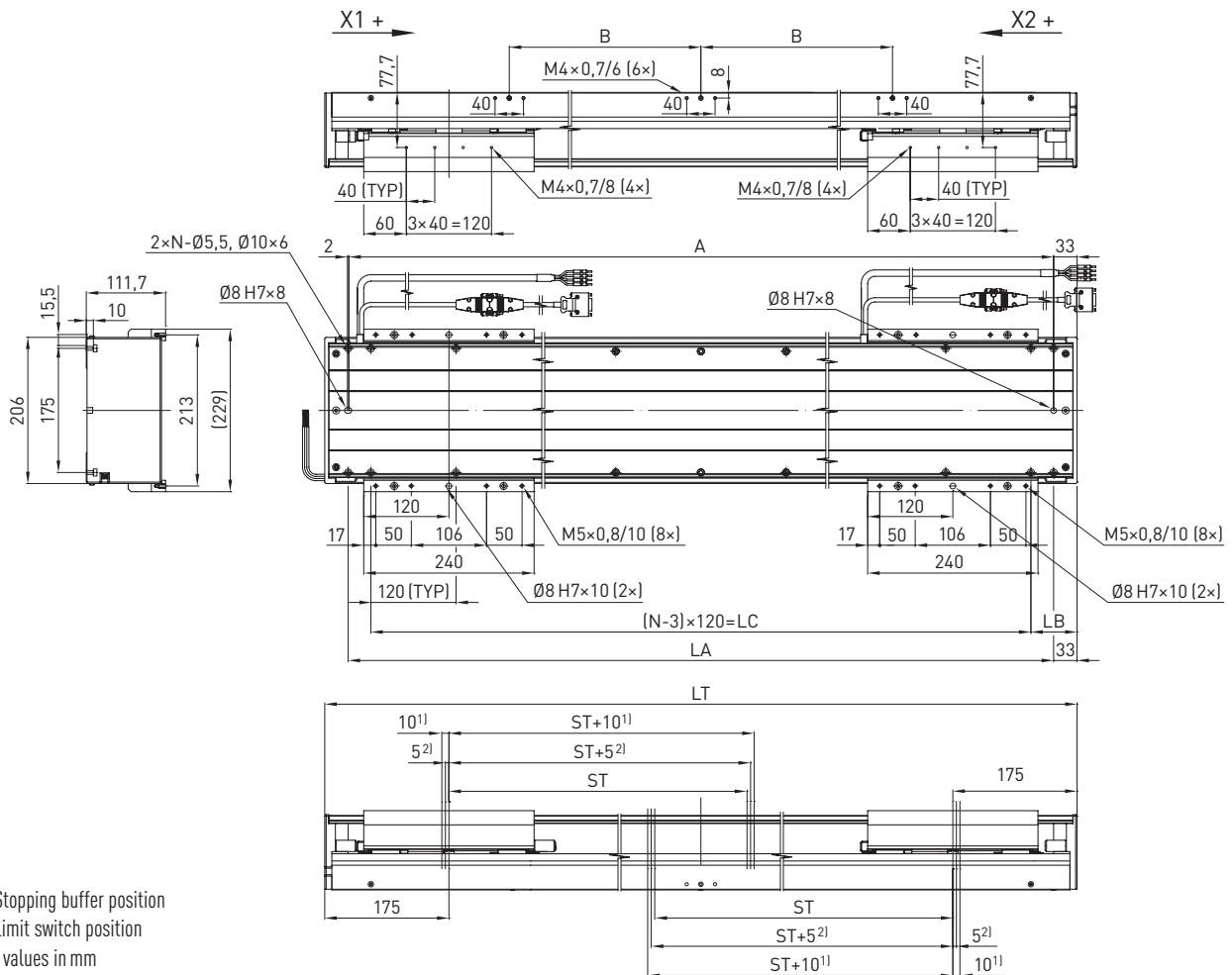


Table 3.55 LMSSA-20S300, -20C100 dimensions, dual forcers, stroke length 1,270 – 2,320 mm

Stroke length ST [mm]	1,270	1,320	1,420	1,520	1,620	1,720	1,820	1,920	2,020	2,120	2,220	2,320
Total length LT [mm]	1,900	1,950	2,050	2,150	2,250	2,350	2,450	2,550	2,650	2,750	2,850	2,950
N [mm]	17	17	19	19	21	21	21	23	23	25	25	25
LA [mm]	1,834	1,884	1,984	2,084	2,184	2,284	2,384	2,484	2,584	2,684	2,784	2,884
LB [mm]	110	135	65	115	45	95	145	75	125	55	105	155
LC [mm]	1,680	1,680	1,920	1,920	2,160	2,160	2,160	2,400	2,400	2,640	2,640	2,640
A [mm]	1,833	1,883	1,983	2,083	2,183	2,283	2,383	2,483	2,583	2,683	2,783	2,883
B [mm]	600	600	600	600	840	840	840	840	840	1,080	1,080	1,080
Stage weight [kg]	20S300	55.3	56.4	58.6	60.8	66.0	67.2	69.4	71.6	73.8	76.0	80.4
	20C100	68.0	69.5	72.5	75.5	78.6	81.6	84.6	87.6	90.6	93.7	96.7

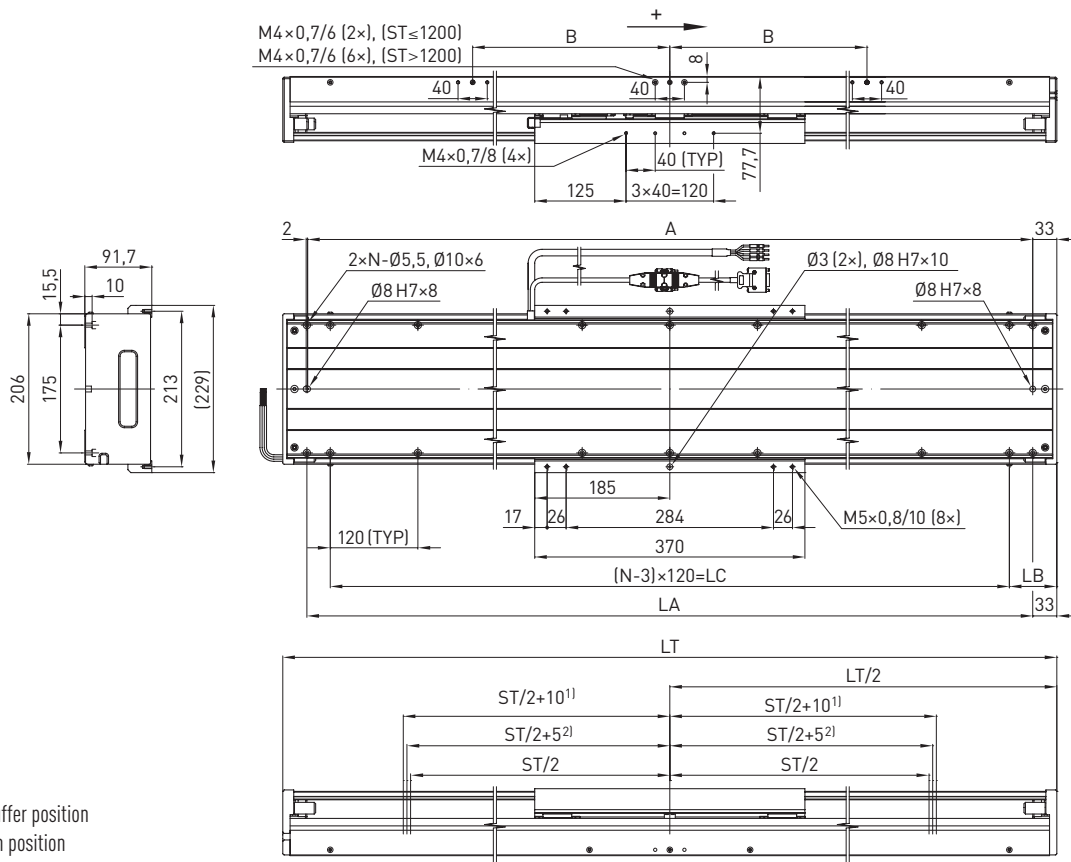


# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-20 dimensions, single forcer

#### LMSSA-20S500, LMSSA-20C200, stroke length 200 – 1,500 mm



<sup>1)</sup> Stopping buffer position  
<sup>2)</sup> Limit switch position  
 All values in mm

Table 3.56 LMSSA-20S500, -20C200 dimensions, single forcer, stroke length 200 – 800 mm

Stroke length ST [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800	
Total length LT [mm]	680	730	780	830	880	930	980	1,030	1,080	1,130	1,180	1,230	1,280	
N [mm]	7	7	7	9	9	9	9	9	11	11	11	11	11	
LA [mm]	614	664	714	764	814	864	914	964	1,014	1,064	1,114	1,164	1,214	
LB [mm]	100	125	150	55	80	105	130	155	60	85	110	135	160	
LC [mm]	480	480	480	720	720	720	720	720	960	960	960	960	960	
A [mm]	613	663	713	763	813	863	913	963	1,013	1,063	1,113	1,163	1,213	
B [mm]	—	—	—	—	—	—	—	—	—	—	—	—	—	
Stage weight [kg]	20S500	23.1	24.2	25.4	26.5	27.7	28.8	30.0	31.1	32.3	33.4	34.6	35.7	36.9
	20C200	23.8	25.4	26.9	28.5	30.0	31.6	33.2	34.7	36.3	37.9	39.4	41.0	42.5

Table 3.57 LMSSA-20S500, -20C200 dimensions, single forcer, stroke length 850 – 1,500 mm

Stroke length ST [mm]	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400	1,500	
Total length LT [mm]	1,330	1,380	1,430	1,480	1,530	1,580	1,630	1,680	1,730	1,780	1,880	1,980	
N [mm]	13	13	13	15	15	15	15	15	15	17	17	17	
LA [mm]	1,264	1,314	1,364	1,414	1,464	1,514	1,564	1,614	1,664	1,714	1,814	1,914	
LB [mm]	65	90	115	20	45	70	95	120	145	50	100	150	
LC [mm]	1,200	1,200	1,200	1,440	1,440	1,440	1,440	1,440	1,440	1,680	1,680	1,680	
A [mm]	1,263	1,313	1,363	1,413	1,463	1,513	1,563	1,613	1,663	1,713	1,813	1,913	
B [mm]	—	—	—	—	—	—	—	—	600	600	600	600	
Stage weight [kg]	20S500	38.0	39.2	40.3	41.5	42.6	43.8	44.9	46.1	47.2	48.4	50.7	53.0
	20C200	44.1	45.7	47.2	48.8	50.4	51.9	53.5	55.1	56.6	58.2	61.3	64.4

### LMSSA-20 dimensions, dual forcers

#### LMSSA-20S500, LMSSA-20C200, stroke length 240 – 1,090 mm

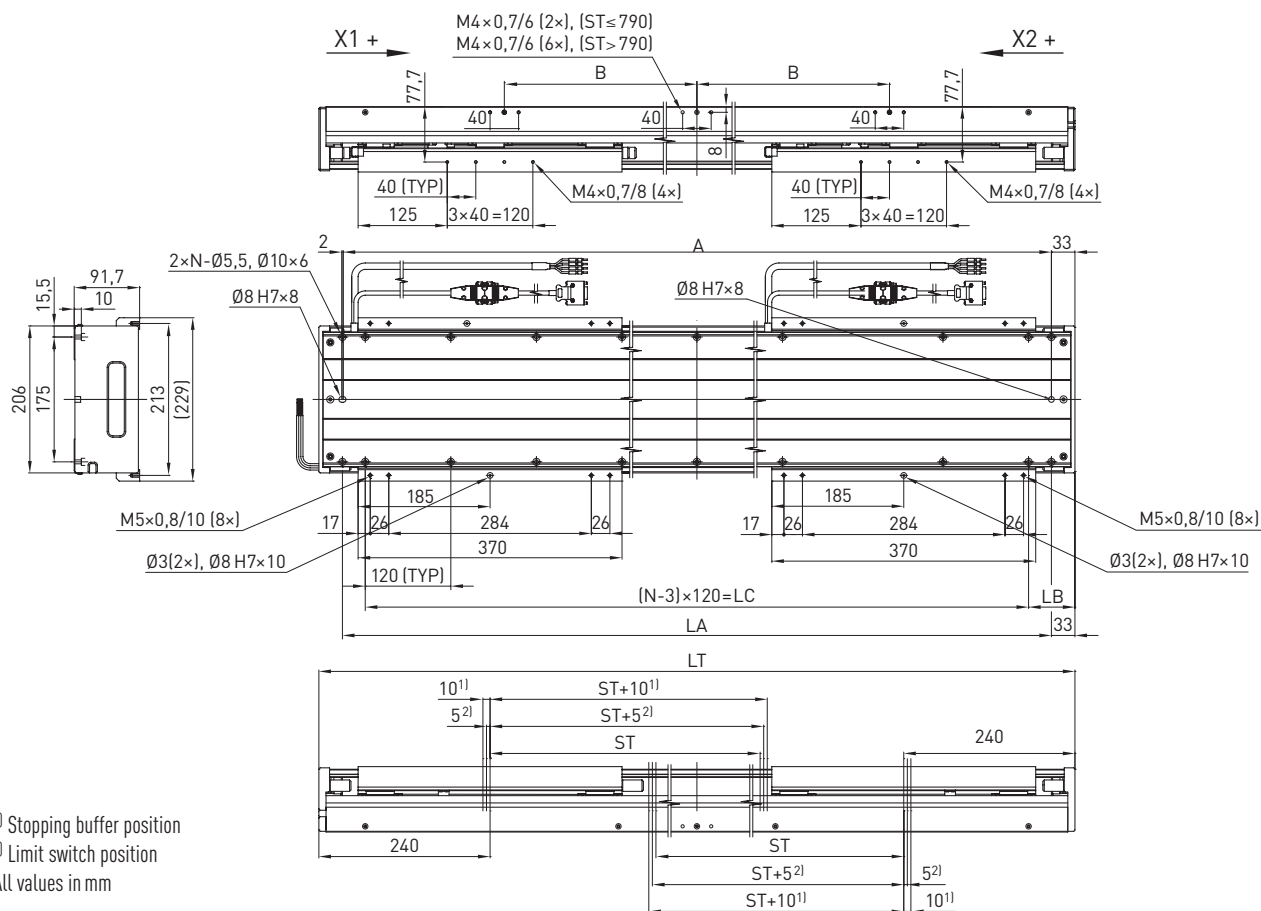


Table 3.58 LMSSA-20S500, -20C200 dimensions, dual forcers, stroke length 240 – 640 mm

Stroke length ST [mm]	240	290	340	390	440	490	540	590	640	
Total length LT [mm]	1,130	1,180	1,230	1,280	1,330	1,380	1,430	1,480	1,530	
N [mm]	11	11	11	11	13	13	13	15	15	
LA [mm]	1,064	1,114	1,164	1,214	1,264	1,314	1,364	1,414	1,464	
LB [mm]	85	110	135	160	65	90	115	20	45	
LC [mm]	960	960	960	960	1,200	1,200	1,200	1,440	1,440	
A [mm]	1,063	1,113	1,163	1,213	1,263	1,313	1,363	1,413	1,463	
B [mm]	—	—	—	—	—	—	—	—	—	
Stage weight [kg]	20S500	41.6	42.7	43.8	45.0	46.2	47.3	48.5	49.6	50.8
	20C200	43.4	45.0	46.5	48.1	49.7	51.2	52.8	54.4	55.9

Table 3.59 LMSSA-20S500, -20C200 dimensions, dual forcers, stroke length 690 – 1,090 mm

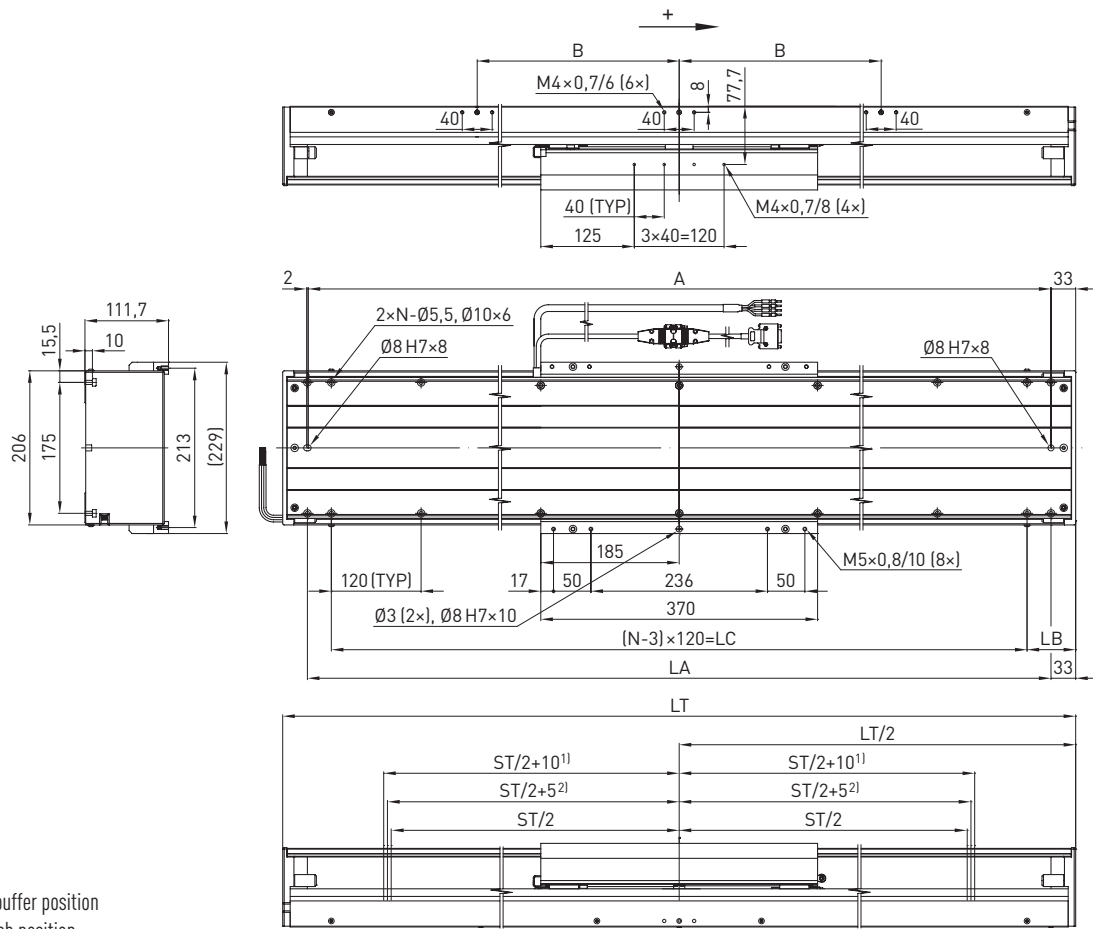
Stroke length [mm]	690	740	790	840	890	940	990	1,040	1,090	
Total length LT [mm]	1,580	1,630	1,680	1,730	1,780	1,830	1,880	1,930	1,980	
N [mm]	15	15	15	15	17	17	17	17	17	
LA [mm]	1,514	1,564	1,614	1,664	1,714	1,764	1,814	1,864	1,914	
LB [mm]	70	95	120	145	50	75	100	125	150	
LC [mm]	1,440	1,440	1,440	1,440	1,680	1,680	1,680	1,680	1,680	
A [mm]	1,513	1,563	1,613	1,663	1,713	1,763	1,813	1,863	1,913	
B [mm]	—	—	—	600	600	600	600	600	600	
Stage weight [kg]	20S500	51.9	53.1	54.2	55.4	56.5	57.7	58.8	60.0	61.1
	20C200	57.5	59.0	60.6	62.2	63.7	65.3	66.9	68.4	70.0

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-20 dimensions, single forcer

### LMSSA-20S500, LMSSA-20C200, stroke length 1,600 – 2,500 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

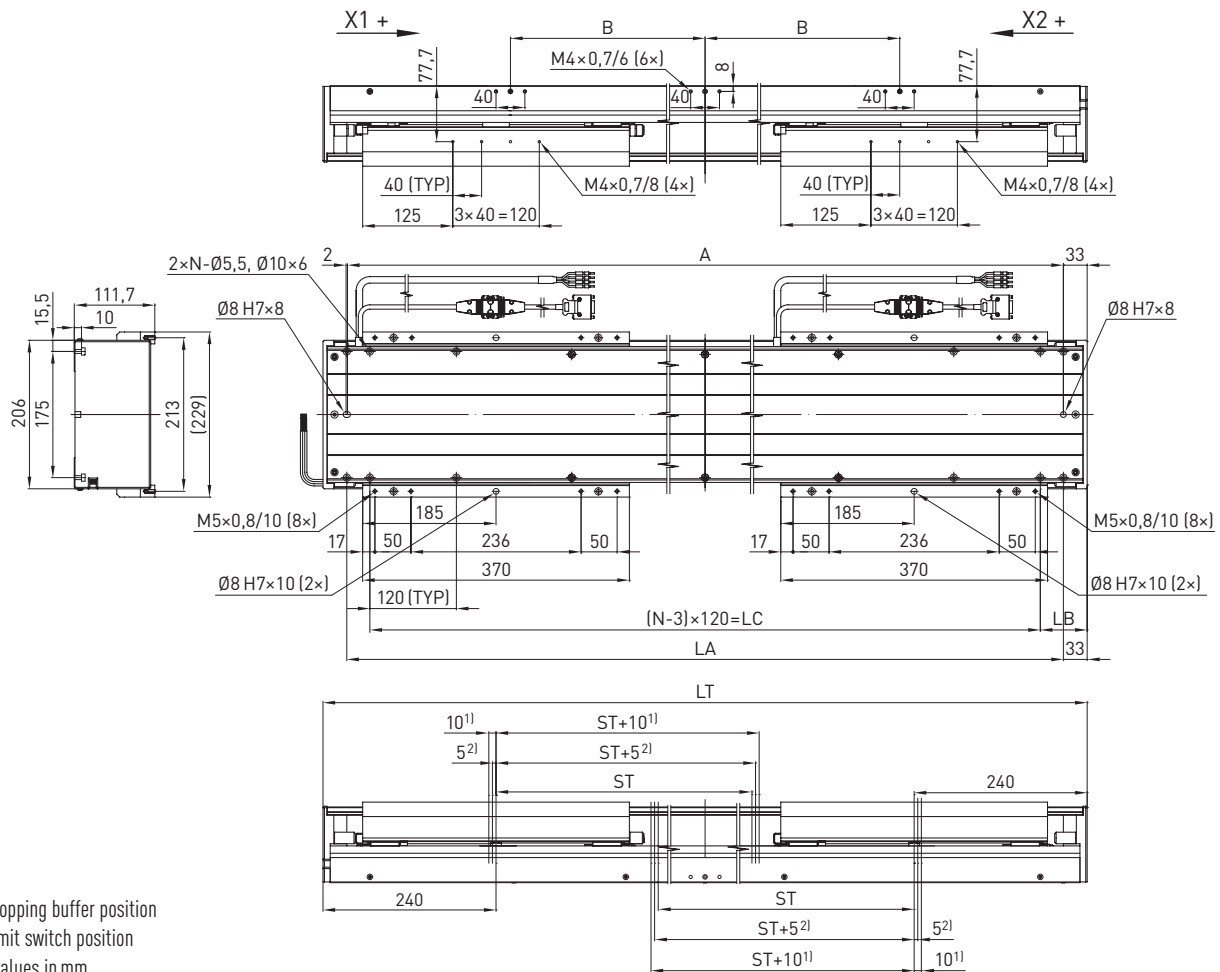
All values in mm

Table 3.60 LMSSA-20S500, -20C200 dimensions, single forcer, stroke length 1,600 – 2,500 mm

Stroke length ST [mm]	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	
Total length LT [mm]	2,080	2,180	2,280	2,380	2,480	2,580	2,680	2,780	2,880	2,980	
N [mm]	19	19	21	21	21	23	25	25	25	27	
LA [mm]	2,014	2,114	2,214	2,314	2,414	2,514	2,614	2,714	2,814	2,914	
LB [mm]	80	130	60	110	160	90	20	70	120	50	
LC [mm]	1,920	1,920	2,160	2,160	2,160	2,400	2,640	2,640	2,640	2,880	
A [mm]	2,013	2,113	2,213	2,313	2,413	2,513	2,613	2,713	2,813	2,913	
B [mm]	600	840	840	840	840	840	1,080	1,080	1,080	1,080	
Stage weight [kg]	20S500	58.3	60.6	62.9	65.2	67.5	69.8	72.1	74.4	76.7	79.0
	20C200	70.6	73.7	76.8	79.9	83.1	86.2	89.3	92.4	95.6	98.7

LMSSA-20 dimensions, dual forcers

LMSSA-20S500, LMSSA-20C200, stroke length 1,140 – 2,040 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

All values in mm

Table 3.61 LMSSA-20S500, -20C200 dimensions, dual forcers, stroke length 1,140 – 2,040 mm

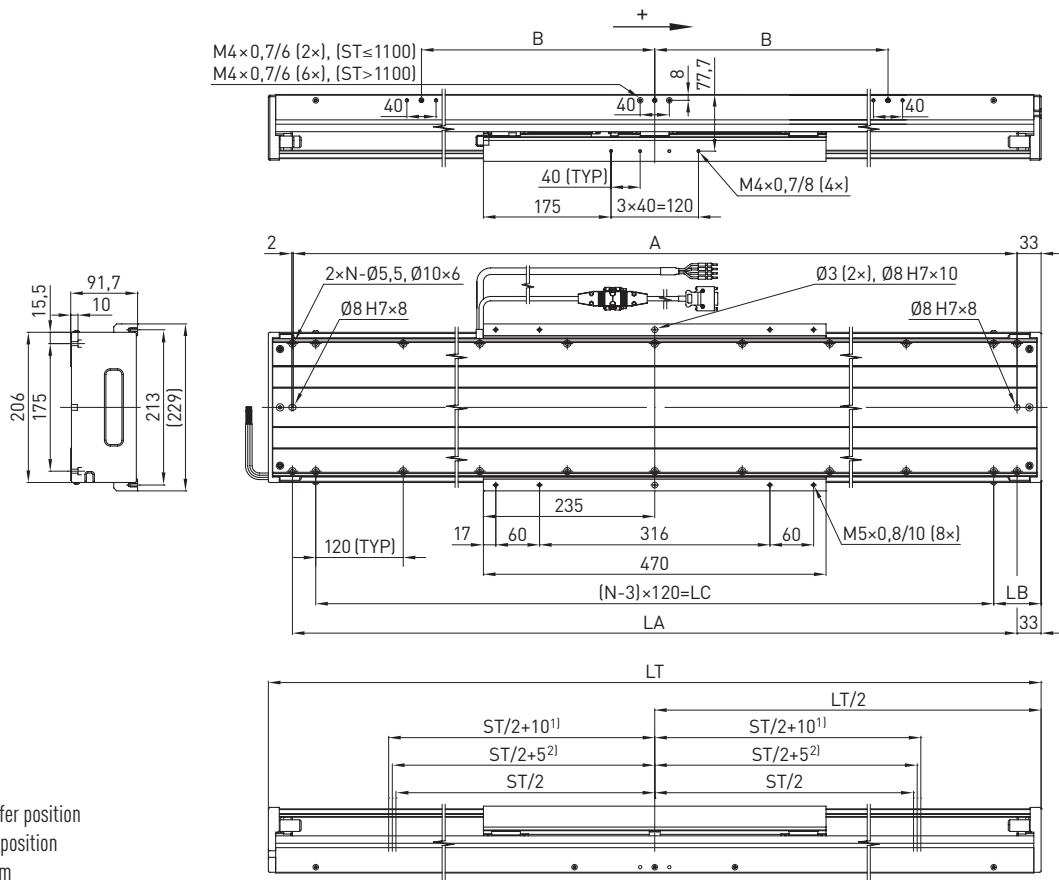
Stroke length ST [mm]	1,140	1,190	1,240	1,290	1,340	1,440	1,540	1,640	1,740	1,840	1,940	2,040	
Total length LT [mm]	2,030	2,080	2,130	2,180	2,230	2,330	2,430	2,530	2,630	2,730	2,830	2,930	
N [mm]	19	19	19	19	19	21	21	23	23	25	25	25	
LA [mm]	1,964	2,014	2,064	2,114	2,164	2,264	2,364	2,464	2,564	2,664	2,764	2,864	
LB [mm]	55	80	105	130	155	85	135	65	115	45	95	145	
LC [mm]	1,920	1,920	1,920	1,920	1,920	2,160	2,160	2,400	2,400	2,640	2,640	2,640	
A [mm]	1,963	2,013	2,063	2,113	2,163	2,263	2,363	2,463	2,563	2,663	2,763	2,863	
B [mm]	600	600	600	840	840	840	840	840	840	1,080	1,080	1,080	
Stage weight [kg]	20S500	68.3	69.4	70.6	71.7	72.8	75.1	77.4	79.7	82.0	84.3	86.6	88.9
	20C200	77.5	79.1	80.7	82.2	83.8	86.9	90.1	93.2	96.3	99.4	102.6	105.7

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-20 dimensions, single forcer

#### LMSSA-20S700, stroke length 200 – 1,500 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.62 LMSSA-20S700 dimensions, single forcer, stroke length 200 – 800 mm

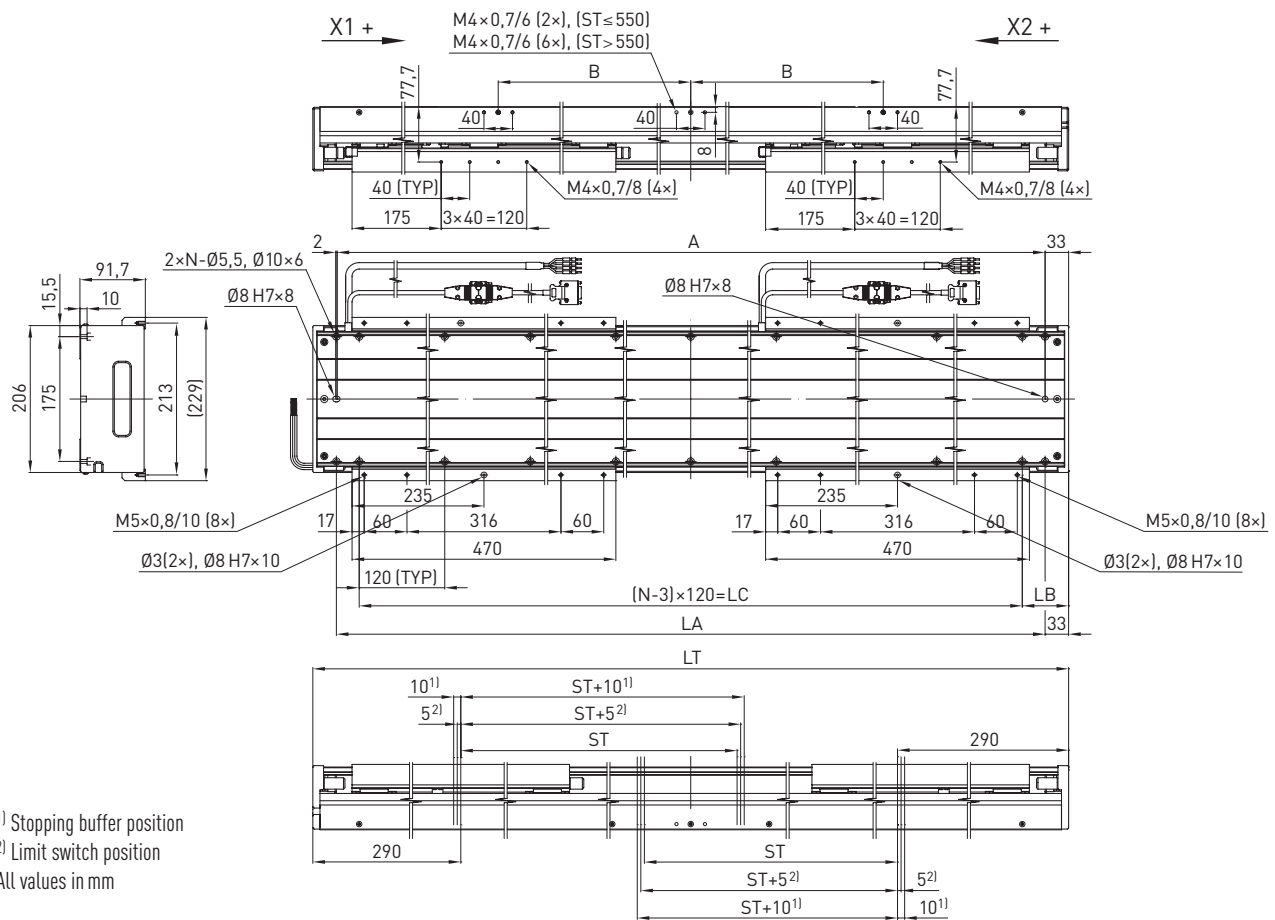
Stroke length ST [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800
Total length LT [mm]	780	830	880	930	980	1,030	1,080	1,130	1,180	1,230	1,280	1,330	1,380
N [mm]	7	9	9	9	9	9	11	11	11	11	11	13	13
LA [mm]	714	764	814	864	914	964	1,014	1,064	1,114	1,164	1,214	1,264	1,314
LB [mm]	150	55	80	105	130	155	60	85	110	135	160	65	90
LC [mm]	480	720	720	720	720	720	960	960	960	960	960	1,200	1,200
A [mm]	713	763	813	863	913	963	1,013	1,063	1,113	1,163	1,213	1,263	1,313
B [mm]	—	—	—	—	—	—	—	—	—	—	—	—	—
Stage weight [kg]	27.4	28.5	29.7	30.8	32.0	33.1	34.3	35.4	36.6	37.7	38.9	40.0	41.2

Table 3.63 LMSSA-20S700 dimensions, single forcer, stroke length 850 – 1,500 mm

Stroke length ST [mm]	850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,400	1,500
Total length LT [mm]	1,430	1,480	1,530	1,580	1,630	1,680	1,730	1,780	1,830	1,880	1,980	2,080
N [mm]	13	15	15	15	15	15	15	17	17	17	17	19
LA [mm]	1,364	1,414	1,464	1,514	1,564	1,614	1,664	1,714	1,764	1,814	1,914	2,014
LB [mm]	115	20	45	70	95	120	145	50	75	100	150	80
LC [mm]	1,200	1,440	1,440	1,440	1,440	1,440	1,440	1,680	1,680	1,680	1,680	1,920
A [mm]	1,363	1,413	1,463	1,513	1,563	1,613	1,663	1,713	1,763	1,813	1,913	2,013
B [mm]	—	—	—	—	—	—	600	600	600	600	600	600
Stage weight [kg]	42.3	43.5	44.6	45.8	46.9	48.1	49.2	50.4	51.5	52.7	55.0	60.3

### LMSSA-20 dimensions, dual forcers

#### LMSSA-20S700, stroke length 240 – 890 mm



1) Stopping buffer position  
 2) Limit switch position  
 All values in mm

Table 3.64 LMSSA-20S700 dimensions, Dual Forcer, stroke length 240 – 890 mm

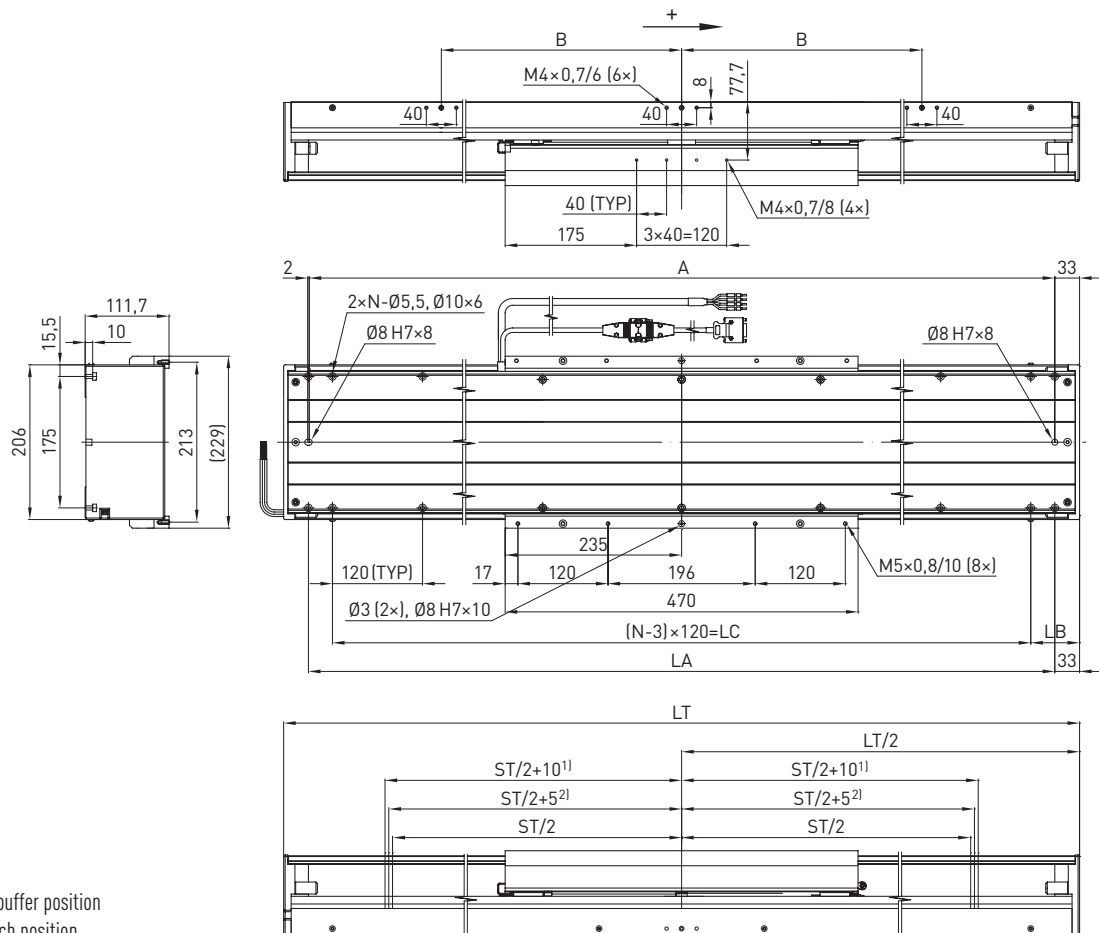
Stroke length ST [mm]	240	290	340	390	440	490	540	590	640	690	740	790	840	890
Total length LT [mm]	1,330	1,380	1,430	1,480	1,530	1,580	1,630	1,680	1,730	1,780	1,830	1,880	1,930	1,980
N [mm]	13	13	13	15	15	15	15	15	15	17	17	17	17	17
LA [mm]	1,264	1,314	1,364	1,414	1,464	1,514	1,564	1,614	1,664	1,714	1,764	1,814	1,864	1,914
LB [mm]	65	90	115	20	45	70	95	120	145	50	75	100	125	150
LC [mm]	1,200	1,200	1,200	1,440	1,440	1,440	1,440	1,440	1,440	1,680	1,680	1,680	1,680	1,680
A [mm]	1,263	1,313	1,363	1,413	1,463	1,513	1,563	1,613	1,663	1,713	1,763	1,813	1,863	1,913
B [mm]	—	—	—	—	—	—	—	—	600	600	600	600	600	600
Stage weight [kg]	50.5	51.7	52.8	54.0	55.1	56.3	57.4	58.6	59.7	60.9	62.0	63.2	64.3	65.5

# Linear Motor Systems

## Linear motor axis LMSSA

### LMSSA-20 dimensions, single forcer

### LMSSA-20S700, stroke length 1,600 – 2,400 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

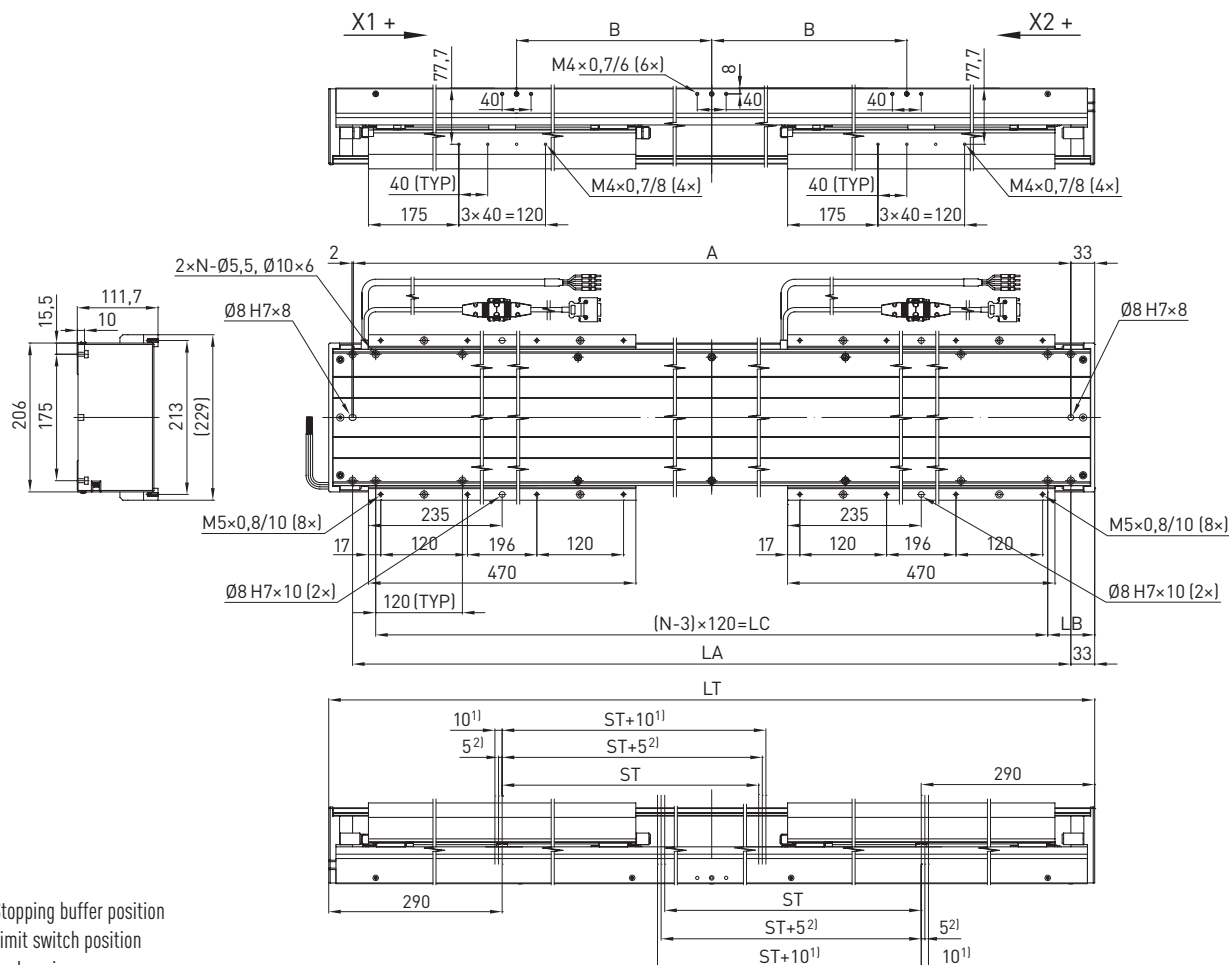
All values in mm

Table 3.65 LMSSA-20S700 dimensions, single forcer, stroke length 1,600 – 2,400 mm

Stroke length ST [mm]	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400
Total length LT [mm]	2,180	2,280	2,380	2,480	2,580	2,680	2,780	2,880	2,980
N [mm]	19	21	21	21	23	25	25	25	27
LA [mm]	2,114	2,214	2,314	2,414	2,514	2,614	2,714	2,814	2,914
LB [mm]	130	60	110	160	90	20	70	120	50
LC [mm]	1,920	2,160	2,160	2,160	2,400	2,640	2,640	2,640	2,880
A [mm]	2,113	2,213	2,313	2,413	2,513	2,613	2,713	2,813	2,913
B [mm]	840	840	840	840	840	1,080	1,080	1,080	1,080
Stage weight [kg]	62.6	64.9	67.2	69.5	71.8	74.1	76.4	78.7	81.0

### LMSSA-20 dimensions, dual forcers

#### LMSSA-20S700, stroke length 940 – 1,840 mm



<sup>1)</sup> Stopping buffer position

<sup>2)</sup> Limit switch position

All values in mm

Table 3.66 LMSSA-20S700 dimensions, dual forcers, stroke length 940 – 1,840 mm

Stroke length ST [mm]	940	990	1,040	1,090	1,140	1,190	1,240	1,290	1,340	1,440	1,540	1,640	1,740	1,840
Total length LT [mm]	2,030	2,080	2,130	2,180	2,230	2,280	2,330	2,380	2,430	2,530	2,630	2,730	2,830	2,930
N [mm]	19	19	19	19	19	21	21	21	21	23	23	25	25	25
LA [mm]	1,964	2,014	2,064	2,114	2,164	2,214	2,264	2,314	2,364	2,464	2,564	2,664	2,764	2,864
LB [mm]	55	80	105	130	155	60	85	110	135	65	115	45	95	145
LC [mm]	1,920	1,920	1,920	1,920	1,920	2,160	2,160	2,160	2,160	2,400	2,400	2,640	2,640	2,640
A [mm]	1,963	2,013	2,063	2,113	2,163	2,213	2,263	2,313	2,363	2,463	2,563	2,663	2,763	2,863
B [mm]	600	600	600	840	840	840	840	840	840	840	840	1,080	1,080	1,080
Stage weight [kg]	69.6	71.8	72.9	74.1	75.2	76.4	77.5	78.6	79.8	82.1	84.4	86.7	89.0	91.3