Linear Motion Systems with Belt Drive and Ball Guide

Overview

SpeedLine WH

WH40

Features

- Can be installed in any orientation
- Stroke up to 2 m
- Acceleration up to 40 m/s²
- Compact

Parameter		WH40
Profile size (width × height)	[mm]	40 × 40
Stroke length (Smax), maximum	[mm]	2000
Linear speed, maximum	[m/s]	3,0
Dynamic carriage load (Fz), maximum	[N]	600
Remarks		no cover band
Page		78

PowerLine WMZ

WM80Z

Features

- Can be installed in any orientation
- Stroke up to 5,5 m
- Speed up to 5 m/s
- Patented plastic cover band

Parameter		WM60Z	WM80Z
Profile size (width × height)	[mm]	60 × 60	80 × 80
Stroke length (Smax), maximum	[mm]	4000	5500
Linear speed, maximum	[m/s]	2,5	5,0
Dynamic carriage load (Fz), maximum	[N]	1400	2100
Remarks		-	-
Page		80	82, 84

Movopart M

M75

Features

- Can be installed in any orientation
- Self-adjusting stainless steel cover band
- Stroke up to 12 m
- Wash down protected versions available.

Parameter		M55	M75	M100
Profile size (width × height)	[mm]	58 × 55	86 × 75	108 × 100
Stroke length (Smax), maximum	[mm]	7000	12000	11900
Linear speed, maximum	[m/s]	5,0	5,0	5,0
Dynamic carriage load (Fz), maximum	[N]	750	1750	4000
Remarks		-	-	-
Page		86	88	90

M55

Belt Drive, Ball Guide

» Ordering key - see page 204
» Accessories - see page 131
» Additional data - see page 179

General Specifications

Parameter	M55
Profile size (w × h) [mm]	58 × 55
Type of belt	22-STD SM5-HP
Carriage sealing system	self-adjusting steel cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	lubrication of ball guide carriages
Included accessories	none

Performance Specifications

for Units with Single Standard Carriage (A)[1]

Parameter		M55
Stroke length (Smax), maximum	[mm]	7000
Total length (L tot), maximum	[mm]	7373
Linear speed, maximum	[m/s]	5,0
Acceleration, maximum	[m/s²]	40
Repeatability	[± mm]	0,1
Input speed, maximum	[rpm]	2850
Operation temperature limits	[°C]	-20 – 70
Dynamic load (Fx), maximum < 2,5 m/s > 2,5 m/s	[N]	 400 200
Dynamic load (Fy), maximum	[N]	750
Dynamic load (Fz), maximum	[N]	750
Dynamic load torque (Mx), maximum	[Nm]	5
Dynamic load torque (My), maximum	[Nm]	29
Dynamic load torque (Mz), maximum	[Nm]	29
Drive shaft force (Frd), maximum [2]	[N]	200
Input/drive shaft torque (Mta), maximum	[Nm]	12
Pulley diameter	[mm]	33,42
Stroke per shaft revolution	[mm]	105
Weight of unit with zero stroke of every 100 mm of stroke of carriage	[kg]	 4,80 0,53 1,20

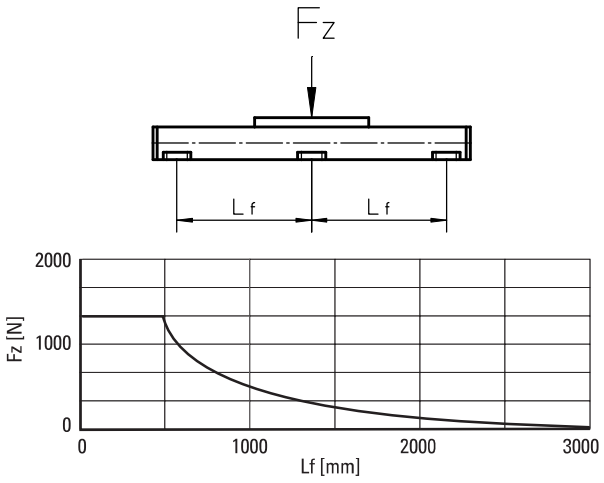
[1] See next page for deviating values of units with other carriage types.
[2] Only relevant for units without RediMount flange.

Carriage Idle Torque (M idle) [Nm]

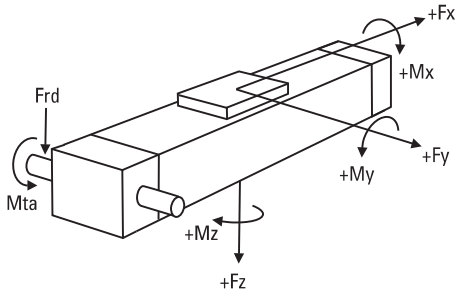
Input speed [rpm]	Single Carriage	Double Carriages
150	1,0	1,9

M idle = the input torque needed to move the carriage with no load on it.

Deflection of the Profile



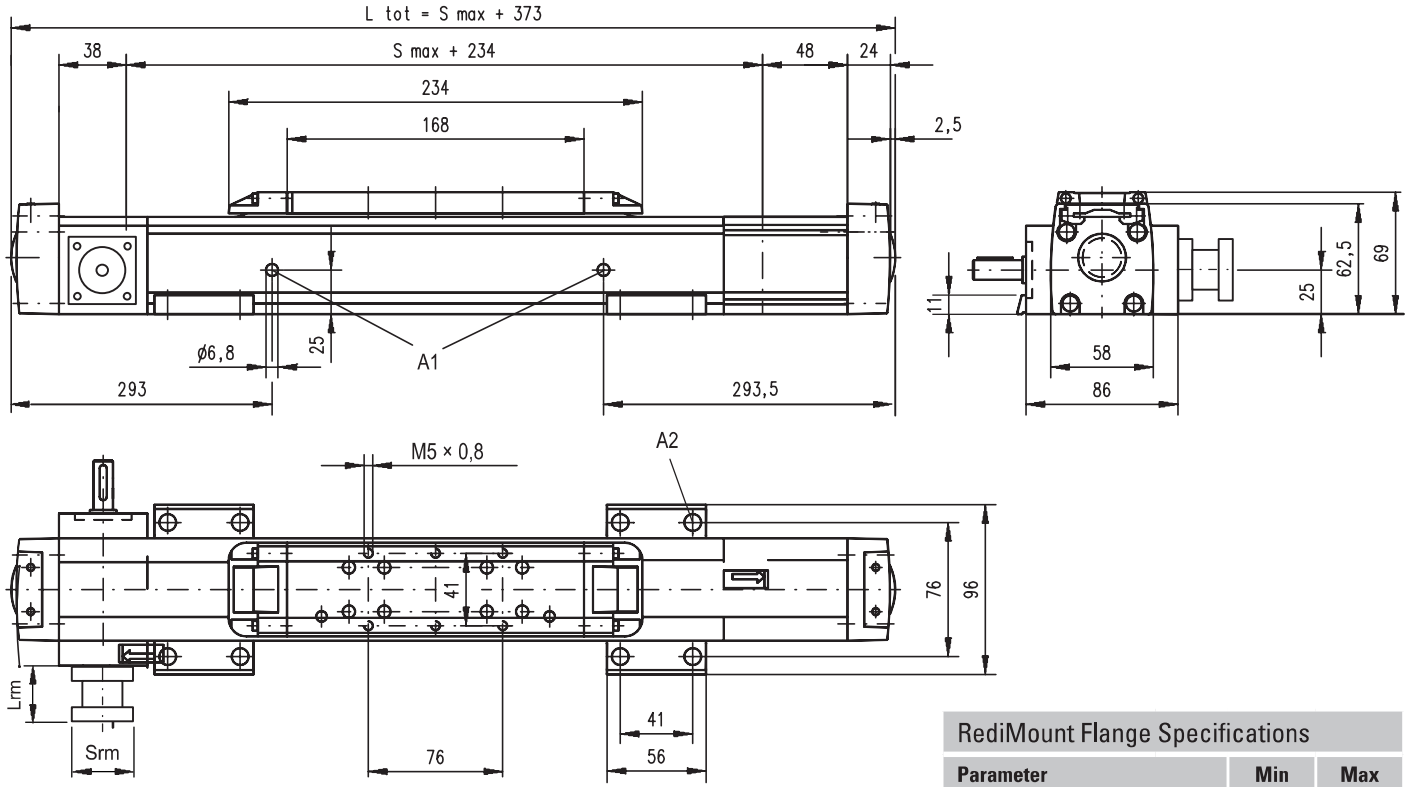
Definition of Forces



M55

Belt Drive, Ball Guide

Dimensions	Projection	Online Sizing & Selection!
METRIC		www.LinearMotioneering.com



A1: lubrication holes
A2: ø9,5/ø5,5 for socket head cap screw M5

RediMount Flange Specifications			
Parameter		**Min**	**Max**
Flange length (Lrm)	[mm]	57	92
Flange square (Srm)	[mm]	60	139
Flange weight *	[kg]	1,84	

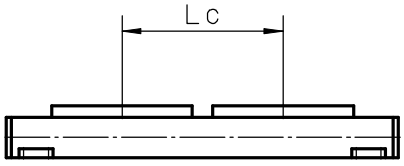
* Max. weight including coupling and fastening screws

Performance Specifications

for Units with Double Standard Carriage (C)

Parameter		**M55**
Stroke length (Smax), maximum	[mm]	6750
Total length (L tot), maximum	[mm]	7373
Minimum distance between carriages (Lc)	[mm]	250
Dynamic load (Fy), maximum	[N]	1125
Dynamic load (Fz), maximum	[N]	1125
Dynamic load torque (My), maximum	[Nm]	Lc[1] × 0,56
Dynamic load torque (Mz), maximum	[Nm]	Lc[1] × 0,56
Force required to move second carriage	[N]	2
Total length (L tot]	[mm]	Smax + Lc + 373
Weight of unit with zero stroke of carriages	[kg]	 7,06 2,40

[1] Value in mm



M75

Belt Drive, Ball Guide

» Ordering key - see page 204
» Accessories - see page 131
» Additional data - see page 179

General Specifications

Parameter	M75 / T75
Profile size (w × h) [mm]	86 × 75
Type of belt	STD5-40
Carriage sealing system	self-adjusting steel cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	lubrication of ball guide carriages
Included accessories	none

Performance Specifications

for Units with Single Standard Carriage (A)[1]

Parameter		M75
Stroke length (Smax), maximum	[mm]	12000
Total length (L tot), maximum	[mm]	12368
Linear speed, maximum	[m/s]	5,0
Acceleration, maximum	[m/s²]	40
Repeatability	[± mm]	0,1
Input speed, maximum	[rpm]	2300
Operation temperature limits	[°C]	-20 – 70
Dynamic load (Fx), maximum < 2,5 m/s > 2,5 m/s	[N]	 900 450
Dynamic load (Fy), maximum	[N]	1750
Dynamic load (Fz), maximum	[N]	1750
Dynamic load torque (Mx), maximum	[Nm]	16
Dynamic load torque (My), maximum	[Nm]	84
Dynamic load torque (Mz), maximum	[Nm]	84
Drive shaft force (Frd), maximum [2]	[N]	600
Input/drive shaft torque (Mta), maximum	[Nm]	30
Pulley diameter	[mm]	41,38
Stroke per shaft revolution	[mm]	130
Weight of unit with zero stroke of every 100 mm of stroke of carriage	[kg]	 7,50 0,88 2,00

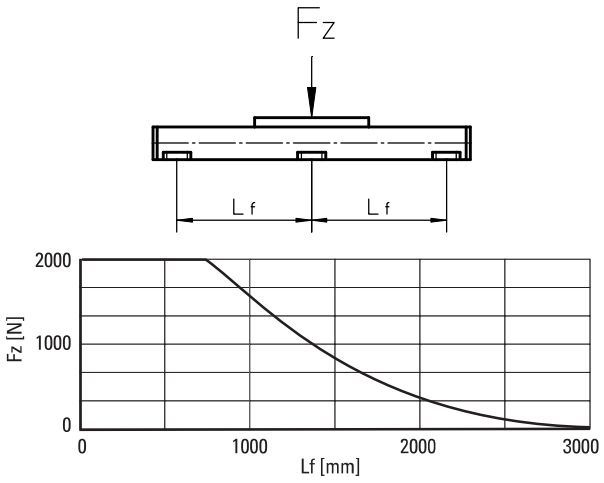
[1] See next page for deviating values of units with other carriage types.
[2] Only relevant for units without RediMount flange.

Carriage Idle Torque (M idle) [Nm]

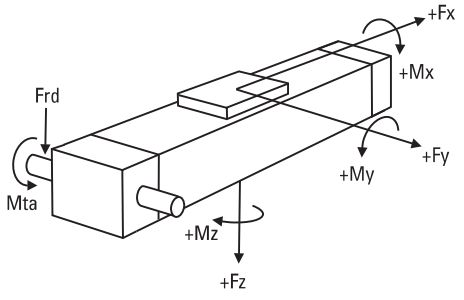
Input speed [rpm]	Single Carriage	Double Carriages
150	1,0	1,9

M idle = the input torque needed to move the carriage with no load on it.

Deflection of the Profile



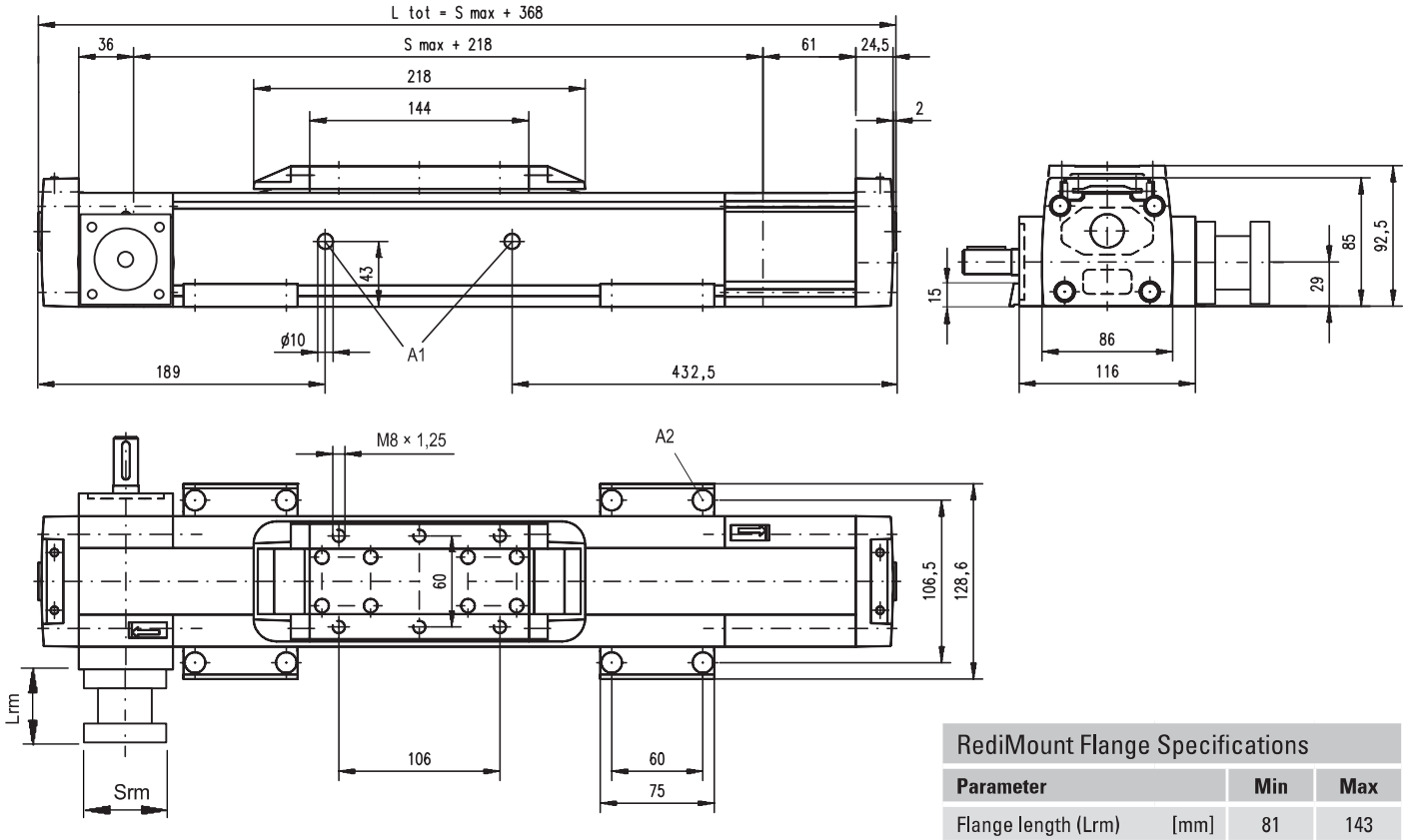
Definition of Forces



Dimensions	Projection	Online Sizing & Selection!
METRIC		www.LinearMotioneering.com

M75

Belt Drive, Ball Guide



A1: lubrication holes
A2: ø13,5/ø8,5 for socket head cap screw M8

RediMount Flange Specifications

Parameter		Min	Max
Flange length (Lrm)	[mm]	81	143
Flange square (Srm)	[mm]	90	200
Flange weight *	[kg]	6,00	

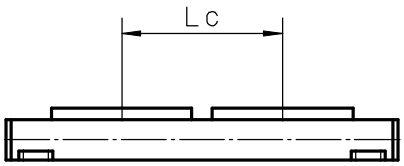
* Max. weight including coupling and fastening screws

Performance Specifications

for Units with Double Standard Carriage (C)

Parameter		M75
Stroke length (Smax), maximum	[mm]	11750
Total length (L tot), maximum	[mm]	12368
Minimum distance between carriages (Lc)	[mm]	250
Dynamic load (Fy), maximum	[N]	2625
Dynamic load (Fz), maximum	[N]	2625
Dynamic load torque (My), maximum	[Nm]	Lc[1] × 1,313
Dynamic load torque (Mz), maximum	[Nm]	Lc[1] × 1,313
Force required to move second carriage	[N]	2
Total length (L tot]	[mm]	Smax + Lc + 368
Weight of unit with zero stroke of carriages	[kg]	 11,67 4,00

[1] Value in mm



M100

Belt Drive, Ball Guide

» Ordering key - see page 204
» Accessories - see page 131
» Additional data - see page 179

General Specifications

Parameter	M100
Profile size (w × h) [mm]	108 × 100
Type of belt	STD8-50
Carriage sealing system	self-adjusting steel cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	lubrication of ball guide carriages
Included accessories	none

Performance Specifications

for Units with Single Standard Carriage (A)[1]

Parameter		M100
Stroke length (Smax), maximum	[mm]	11900
Total length (L tot), maximum	[mm]	12361
Linear speed, maximum	[m/s]	5,0
Acceleration, maximum	[m/s²]	40
Repeatability	[± mm]	0,1
Input speed, maximum	[rpm]	1700
Operation temperature limits	[°C]	-20 – 70
Dynamic load (Fx), maximum < 2,5 m/s > 2,5 m/s	[N]	 1250 625
Dynamic load (Fy), maximum	[N]	4000
Dynamic load (Fz), maximum	[N]	4000
Dynamic load torque (Mx), maximum	[Nm]	43
Dynamic load torque (My), maximum	[Nm]	280
Dynamic load torque (Mz), maximum	[Nm]	280
Drive shaft force (Frd), maximum [2]	[N]	1000
Input/drive shaft torque (Mta), maximum	[Nm]	45
Pulley diameter	[mm]	56,02
Stroke per shaft revolution	[mm]	176
Weight of unit with zero stroke of every 100 mm of stroke of carriage	[kg]	 11,61 1,43 2,20

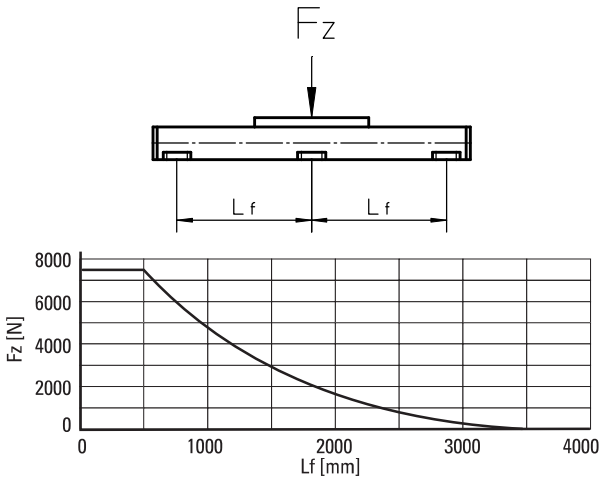
[1] See next page for deviating values of units with other carriage types.
[2] Only relevant for units without RediMount flange.

Carriage Idle Torque (M idle) [Nm]

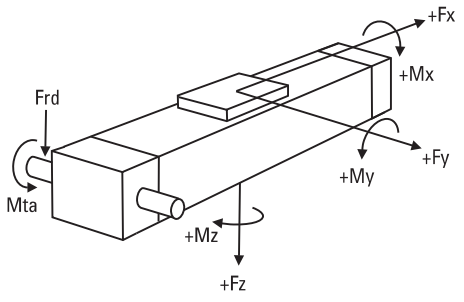
Input speed [rpm]	Single Carriage	Double Carriages
150	1,6	3,1

M idle = the input torque needed to move the carriage with no load on it.

Deflection of the Profile



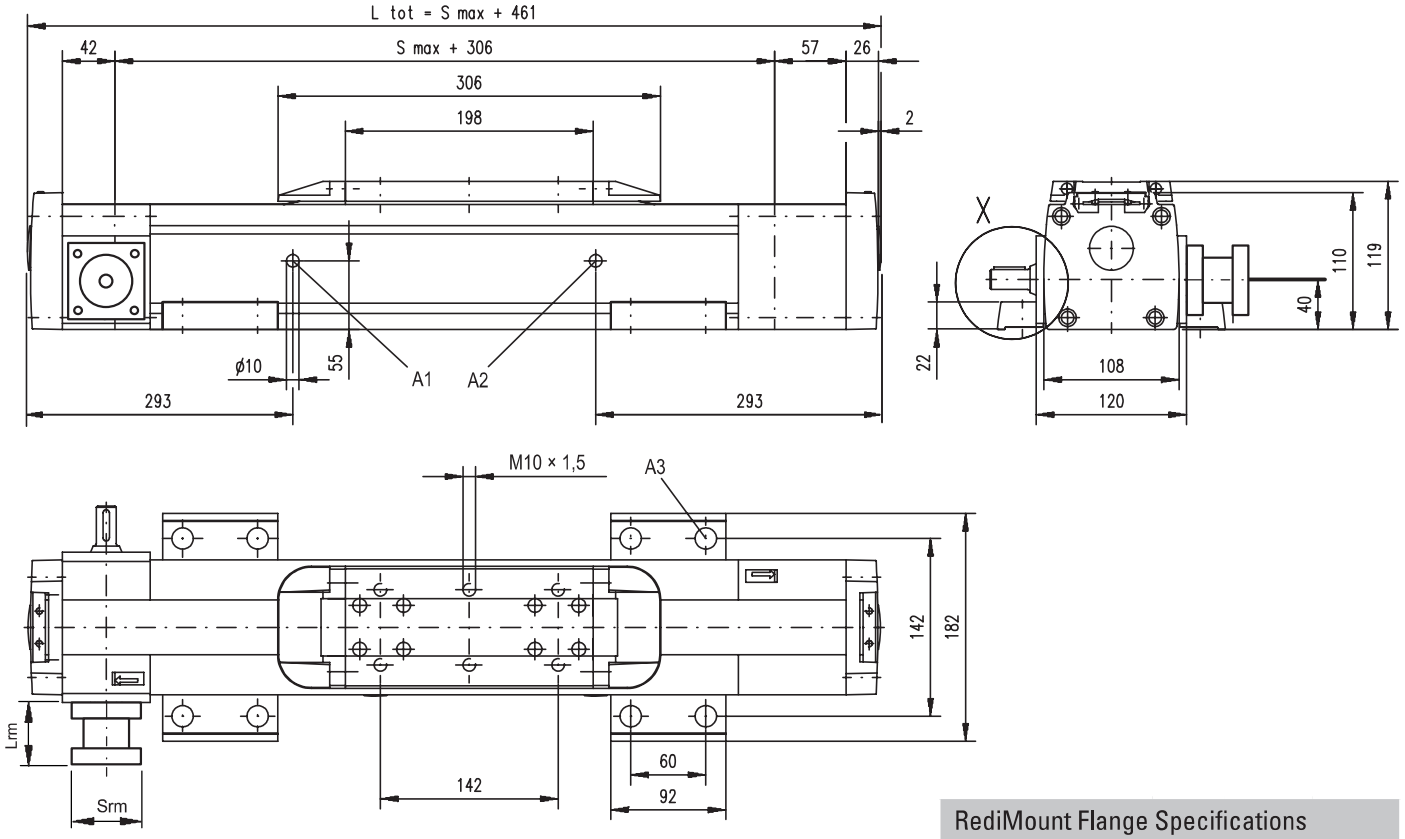
Definition of Forces



M100

Belt Drive, Ball Guide

Dimensions	Projection	Online Sizing & Selection!
METRIC		www.LinearMotioneering.com



A1: lubrication hole
A2: lubrication hole (no hole if L order is < 856 mm)
A3: ø17/ø10,5 for socket head cap screw M10

Performance Specifications
for Units with Double Standard Carriage (C)

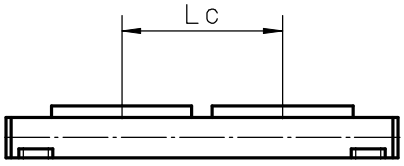
Parameter		M100
Stroke length (Smax), maximum	[mm]	11550
Total length (L tot), maximum	[mm]	12361
Minimum distance between carriages (Lc)	[mm]	350
Dynamic load (Fy), maximum	[N]	6000
Dynamic load (Fz), maximum	[N]	6000
Dynamic load torque (My), maximum	[Nm]	Lc[1] × 3
Dynamic load torque (Mz), maximum	[Nm]	Lc[1] × 3
Force required to move second carriage	[N]	2
Total length (L tot)	[mm]	Smax + Lc + 461
Weight of unit with zero stroke of carriages	[kg]	 18,92 4,40

[1] Value in mm

RediMount Flange Specifications

Parameter		Min	Max
Flange length (Lrm)	[mm]	81	143
Flange square (Srm)	[mm]	90	200
Flange weight *	[kg]	6,00	

* Max. weight including coupling and fastening screws



Ordering Keys

Linear Motion Systems with Belt Drive and Ball Guides

M55, M75, M100

1	2	3	4	5	6	7	8	9
MF10B	LX	999	-01000	-01500	D	N	0000	S1

1. Type of unit
MF06B = M55 unit, ball guides, belt drive
MF07B = M75 unit, ball guides, belt drive
MF10B = M100 unit, ball guides, belt drive

2. Transmission type
LX = inline style, directly coupled, RediMount flange
SX = inline style, directly coupled, no RediMount flange

3. RediMount motor ID code
vvw = alphanumeric motor code for suitable RediMount flange when motor is known
999 = RediMount code used when motor is unknown
XXX = for units without RediMount flange

4. Maximum stroke (Smax)
- xxxxx = distance in mm

5. Total length of unit (L tot)
- yyyyy = distance in mm

6. Drive shaft / RediMount flange configuration[1]
C = shaft on left side with key way or RediMount
D = shaft on right side with key way or RediMount
M = shaft on left side with key way or RediMount, shaft on right side with key way
N = shaft on left side with key way, shaft on right side with key way or RediMount

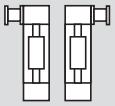
7. Carriage configuration
N = single standard carriage
Z = double standard carriages

8. Distance between carriages (Lc)
0000 = for all single standard carriage units
zzzz = distance in mm between carriages

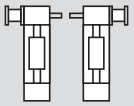
9. Protection option
S1 = wash down protection (blank if no protection option required).

[1] See below for the definition of shafts.

Left, right or both sides with shafts with RediMount



Left or right with RediMount and other side a shaft without RediMount



Left or right without RediMount