



# Linear Motion Systems with Belt Drive and Ball Guide

## Overview

### SpeedLine WH



#### Features

- Can be installed in any orientation
- Stroke up to 2 m
- Acceleration up to 40 m/s<sup>2</sup>
- 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

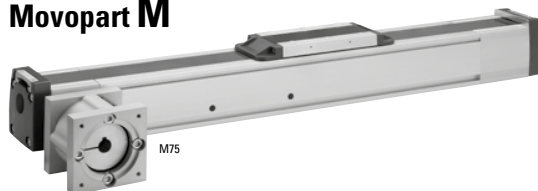


#### Features

- 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



#### 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

# Linear Motion Systems with Belt Drive and Ball Guide

## Overview

### ForceLine MLSM



#### Features

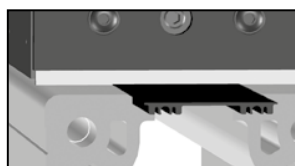
- Can be installed in any orientation
- Patented plastic cover band
- High load capabilities
- Low profile height

Parameter		MLSM80Z
Profile size (width × height)	[mm]	240 × 85
Stroke length (Smax), maximum	[mm]	5900
Linear speed, maximum	[m/s]	5,0
Dynamic carriage load (Fz), maximum	[N]	6400
Remarks		-
Page		92

## WMZ-Series Technical Presentation

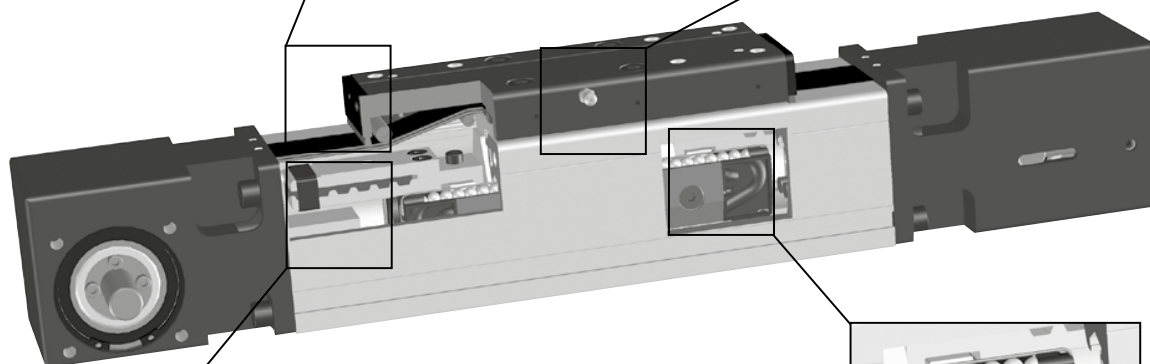
#### Cover band

The cover band protects the interior of the unit from the penetration of dirt, dust and liquids.



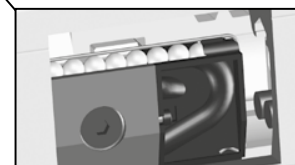
#### Central lubrication

One central lubrication point on the carriage services the entire unit resulting in a minimum maintenance requirement.



#### Belt drive

The belt is protected from the outside ensuring long, accurate and safe operation.



#### Ball guides

Integrated patented ball guides with hardened steel tracks for optimum performance.

**Note! the unit is pictured without a RediMount™ flange**



# WH40

## Belt Drive, Ball Guide

- » Ordering key - see page 202
- » Accessories - see page 131
- » Additional data - see page 179

### General Specifications

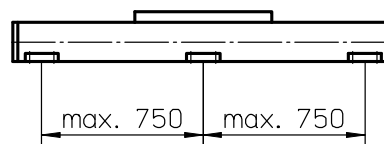
Parameter	WH40
Profile size (w × h) [mm]	40 × 40
Type of belt	10 AT 5
Carriage sealing system	none
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

### Carriage Idle Torque, (M idle) [Nm]

Input speed [rpm]	Idle torque [Nm]
150	0,1
900	0,3
1800	0,6

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

### Deflection of the Profile



A mounting clamp must be installed at least every 750 mm to be able to operate at maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

### Performance Specifications

for Units with Single Standard Carriage (N)<sup>1</sup>

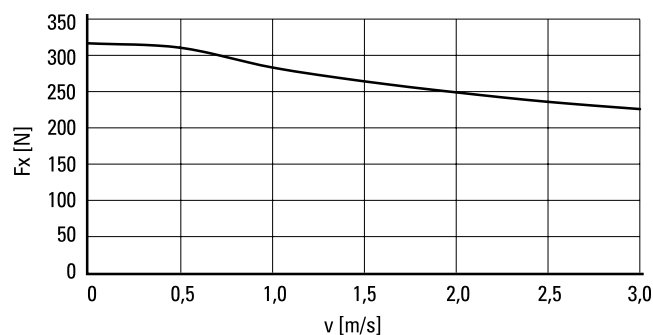
Parameter		WH40
Stroke length (Smax), maximum	[mm]	2000
Total length (L tot), maximum	[mm]	2265
Linear speed, maximum	[m/s]	3,0
Acceleration, maximum	[m/s <sup>2</sup> ]	40
Repeatability	[± mm]	0,05
Input speed, maximum	[rpm]	1800
Operation temperature limits	[°C]	0 – 80
Dynamic load (Fx), maximum	[N]	315 <sup>2</sup>
Dynamic load (Fy), maximum	[N]	450
Dynamic load (Fz), maximum	[N]	600
Dynamic load torque (Mx), maximum	[Nm]	10
Dynamic load torque (My), maximum	[Nm]	30
Dynamic load torque (Mz), maximum	[Nm]	30
Drive shaft force (Frd), maximum <sup>3</sup>	[N]	100
Input/drive shaft torque (Mta), maximum	[Nm]	6
Pulley diameter	[mm]	31,83
Stroke per shaft revolution	[mm]	100
Weight	[kg]	
of unit with zero stroke		1,19
of every 100 mm of stroke		0,15
of each carriage		0,28

<sup>1</sup> See next page for deviating values of units with other carriage types.

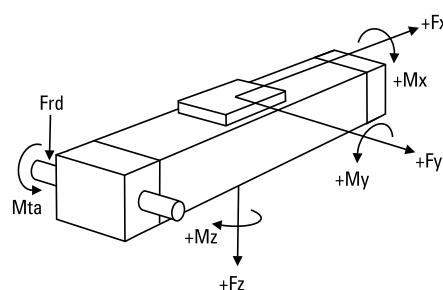
<sup>2</sup> See diagram Force Fx.

<sup>3</sup> Only relevant for units without RediMount flange.

### Force Fx as a Function of the Speed



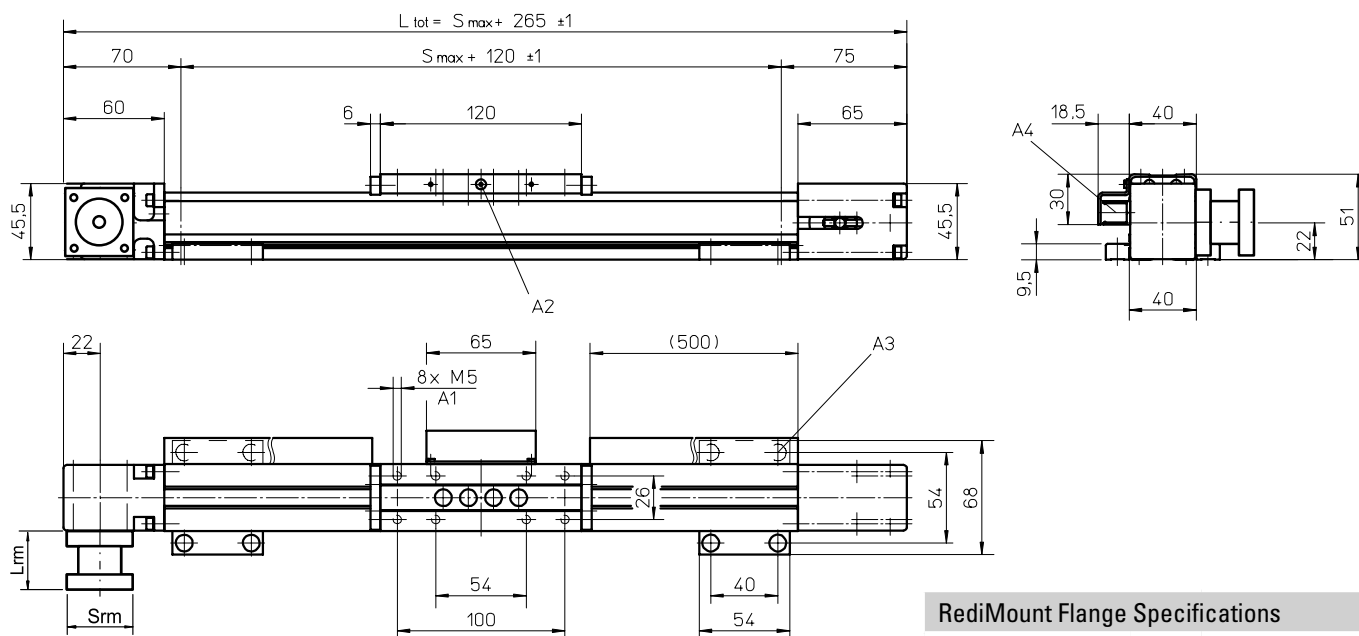
### Definition of Forces



# WH40

## Belt Drive, Ball Guide

<b>Dimensions</b>	<b>Projection</b>	<b>Online Sizing &amp; Selection!</b>
METRIC		www.LinearMotioneering.com



- A1: depth 10
- A2: lubricating nipple on both sides
- A3: socket cap screw ISO4762-M5x12 8.8
- A4: ENF inductive sensor rail kit (optional - see page 166)

Parameter	Min	Max
Flange length (Lrm) [mm]	56	91
Flange square (Srm) [mm]	60	139
Flange weight * [kg]	1,81	

\* Max. weight including coupling and fastening screws

### Performance Specifications

for Units with Single Long Carriage (L)

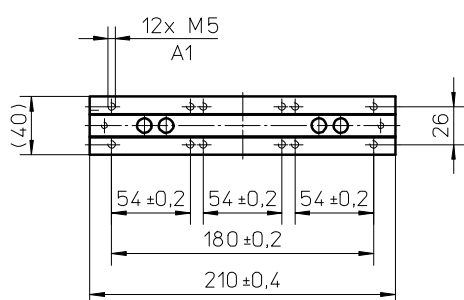
Parameter	WH40
Stroke length (Smax), maximum [mm]	2000
Total length (L tot), maximum [mm]	2355
Carriage length [mm]	210
Dynamic load torque (My), maximum [Nm]	50
Dynamic load torque (Mz), maximum [Nm]	50
Weight [kg]	0,43

### Performance Specifications

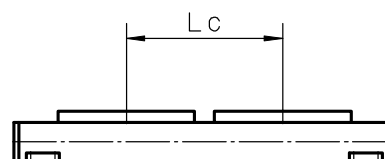
for Units with Double Standard Carriage (Z)

Parameter	WH40
Stroke length (Smax), maximum [mm]	1955
Total length (L tot), maximum [mm]	2355
Minimum distance between carriages (Lc) [mm]	135
Dynamic load (Fy), maximum [N]	900
Dynamic load (Fz), maximum [N]	1200
Dynamic load torque (My), maximum [Nm]	Lc <sup>1</sup> × 0,45
Dynamic load torque (Mz), maximum [Nm]	Lc <sup>1</sup> × 0,60
Force required to move second carriage [N]	2
Total length (L tot) [mm]	Smax + 265 + Lc

<sup>1</sup> Value in mm



A1: depth 10



## WM60Z

### Belt Drive, Ball Guide, Short Carriage

- » Ordering key - see page 202
- » Accessories - see page 131
- » Additional data - see page 179

#### General Specifications

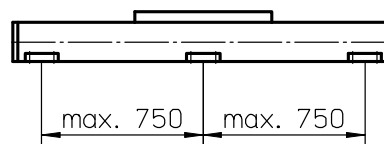
Parameter	WM60Z
Profile size (w × h) [mm]	60 × 60
Type of belt	20 ATL 5
Carriage sealing system	plastic cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

#### Carriage Idle Torque, (M<sub>idle</sub>) [Nm]

Input speed [rpm]	Idle torque [Nm]
150	1,6
600	2,5
1250	3,0

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

#### Deflection of the Profile



A mounting clamp must be installed at least every 750 mm to be able to operate at maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

#### Performance Specifications

for Units with Single Short Carriage (S)<sup>1</sup>

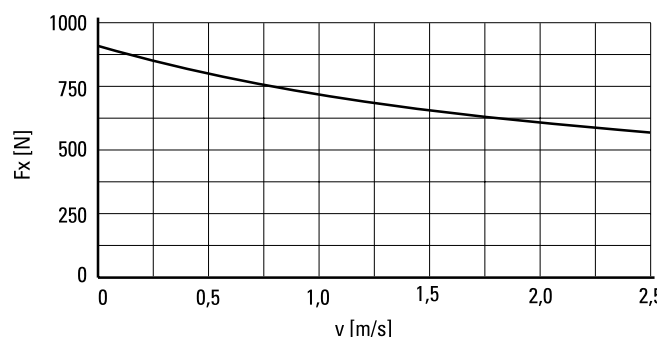
Parameter		WM60Z
Stroke length (S <sub>max</sub> ), maximum	[mm]	4000
Total length (L <sub>tot</sub> ), maximum	[mm]	4420
Linear speed, maximum	[m/s]	2,5
Acceleration, maximum	[m/s <sup>2</sup> ]	20
Repeatability	[± mm]	0,05
Input speed, maximum	[rpm]	1250
Operation temperature limits	[°C]	0 – 80
Dynamic load (F <sub>x</sub> ), maximum	[N]	850
Dynamic load (F <sub>y</sub> ), maximum	[N]	1400 <sup>2</sup>
Dynamic load (F <sub>z</sub> ), maximum	[N]	1400
Dynamic load torque (M <sub>x</sub> ), maximum	[Nm]	25
Dynamic load torque (M <sub>y</sub> ), maximum	[Nm]	50
Dynamic load torque (M <sub>z</sub> ), maximum	[Nm]	50
Drive shaft force (F <sub>rd</sub> ), maximum <sup>3</sup>	[N]	150
Input/drive shaft torque (M <sub>ta</sub> ), maximum	[Nm]	17
Pulley diameter	[mm]	38,20
Stroke per shaft revolution	[mm]	120
Weight	[kg]	
of unit with zero stroke		4,30
of every 100 mm of stroke		0,45
of each carriage		1,25

<sup>1</sup> See next page for deviating values of units with other carriage types.

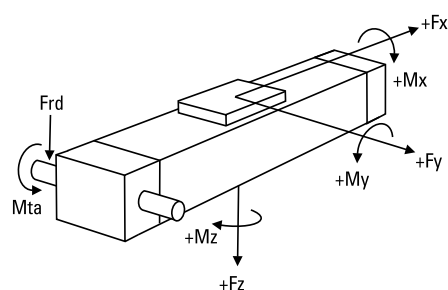
<sup>2</sup> See diagram Force F<sub>x</sub>.

<sup>3</sup> Only relevant for units without RediMount flange.

#### Force F<sub>x</sub> as a Function of the Speed



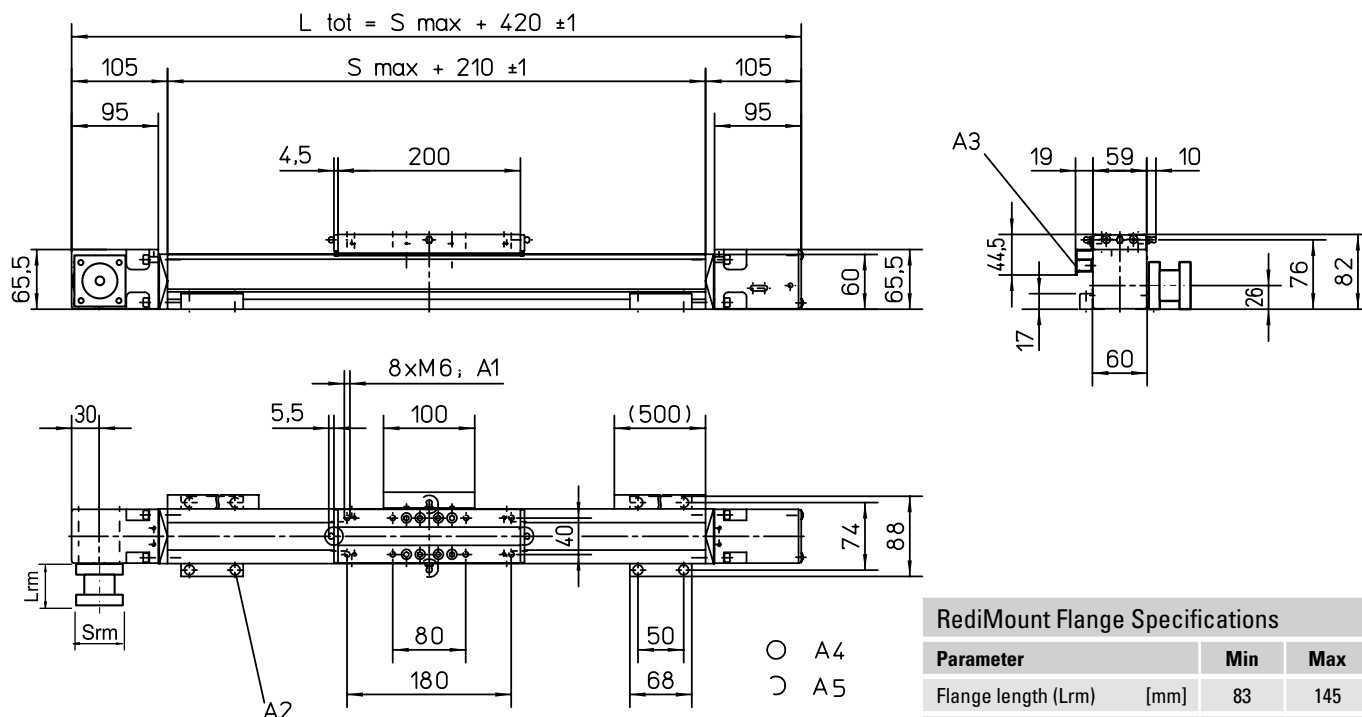
#### Definition of Forces



# WM60Z

## Belt Drive, Ball Guide, Short Carriage

<b>Dimensions</b>	<b>Projection</b>	<b>Online Sizing &amp; Selection!</b>
METRIC		www.LinearMotioneering.com



- A1: depth 11
- A2: socket cap screw ISO4762-M6x20 8.8
- A3: ENF inductive sensor rail kit (optional - see page 166)
- A4: tapered lubricating nipple to DIN71412 AM6 on fixed-bearing side as standard feature
- A5: can be changed over to one of three alternative lubrications points by the customer

Parameter	Min	Max
Flange length (Lrm)	83	145
Flange square (Srm)	90	200
Flange weight *	5,64	

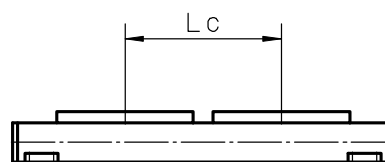
\* Max. weight including coupling and fastening screws

### Performance Specifications

for Units with Double Short Carriage (Y)

Parameter	WM60Z
Stroke length (Smax), maximum	[mm] 3745
Total length (L tot), maximum	[mm] 4420
Minimum distance between carriages (Lc)	[mm] 255
Dynamic load (Fy), maximum	[N] 2800
Dynamic load (Fz), maximum	[N] 2800
Dynamic load torque (My), maximum	[Nm] L C <sup>1</sup> × 1,4
Dynamic load torque (Mz), maximum	[Nm] L C <sup>1</sup> × 1,4
Force required to move second carriage	[N] 18
Total length (L tot)	[mm] Smax + 420 + Lc

<sup>1</sup> Value in mm





# WM80Z

## Belt Drive, Ball Guide, Standard Carriage

- » Ordering key - see page 203
- » Accessories - see page 131
- » Additional data - see page 179

### General Specifications

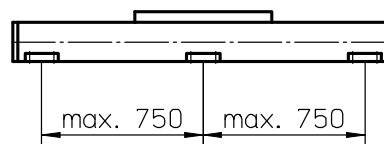
Parameter	WM80Z
Profile size (w × h) [mm]	80 × 80
Type of belt	25 AT 10
Carriage sealing system	plastic cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

### Carriage Idle Torque, (M idle) [Nm]

Input speed [rpm]	Idle torque [Nm]
150	6,5
450	7,7
885	9,3

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

### Deflection of the Profile



A mounting clamp must be installed at least every 750 mm to be able to operate at maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

### Performance Specifications

for Units with Single Standard Carriage (N)<sup>1</sup>

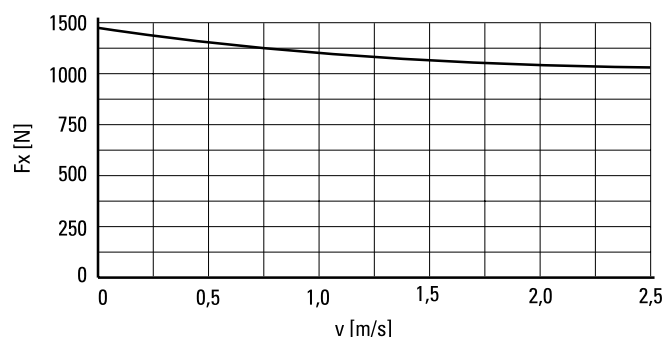
Parameter		WM80Z
Stroke length (Smax), maximum	[mm]	5400
Total length (L tot), maximum	[mm]	5990
Linear speed, maximum	[m/s]	2,5
Acceleration, maximum	[m/s <sup>2</sup> ]	20
Repeatability	[± mm]	0,05
Input speed, maximum	[rpm]	885
Operation temperature limits	[°C]	0 – 80
Dynamic load (Fx), maximum	[N]	1470
Dynamic load (Fy), maximum	[N]	3000 <sup>2</sup>
Dynamic load (Fz), maximum	[N]	3000
Dynamic load torque (Mx), maximum	[Nm]	150
Dynamic load torque (My), maximum	[Nm]	300
Dynamic load torque (Mz), maximum	[Nm]	300
Drive shaft force (Frd), maximum <sup>3</sup>	[N]	600
Input/drive shaft torque (Mta), maximum	[Nm]	40
Pulley diameter	[mm]	54,11
Stroke per shaft revolution	[mm]	170
Weight	[kg]	
of unit with zero stroke		11,2
of every 100 mm of stroke		0,8
of each carriage		3,4

<sup>1</sup> See next page for deviating values of units with other carriage types.

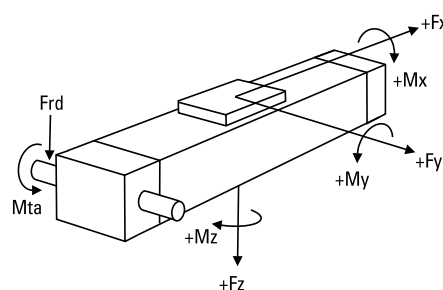
<sup>2</sup> See diagram Force Fx.

<sup>3</sup> Only relevant for units without RediMount flange.

### Force Fx as a Function of the Speed



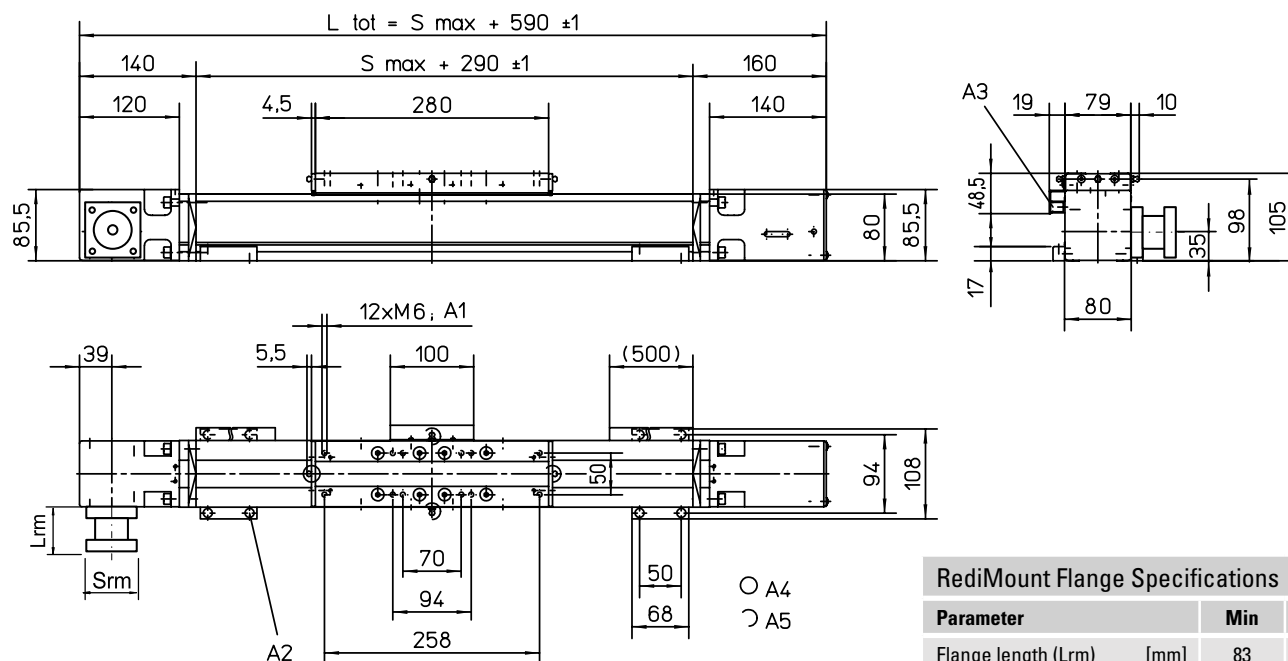
### Definition of Forces



# WM80Z

## Belt Drive, Ball Guide, Standard Carriage

<b>Dimensions</b>	<b>Projection</b>	<b>Online Sizing &amp; Selection!</b>
METRIC		www.LinearMotioneering.com



- A1: depth 12
- A2: socket cap screw ISO4762-M6x20 8.8
- A3: ENF inductive sensor rail kit (optional - see page 166)
- A4: tapered lubricating nipple to DIN71412 AM6 on fixed-bearing side as standard feature
- A5: can be changed over to one of three alternative lubrications points by the customer

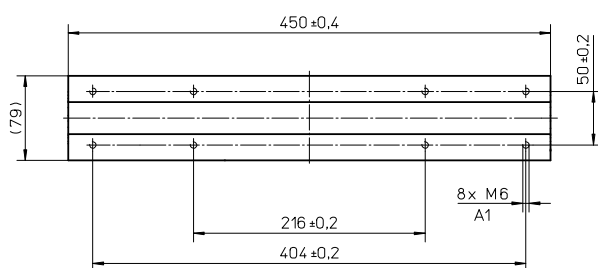
Parameter	Min	Max
Flange length (L_fm) [mm]	83	145
Flange square (S_fm) [mm]	90	200
Flange weight * [kg]	5,64	

\* Max. weight including coupling and fastening screws

### Performance Specifications

for Units with Single Long Carriage (L)

Parameter	WM80Z
Stroke length (S_max), maximum [mm]	5400
Total length (L_tot), maximum [mm]	6160
Carriage length [mm]	450
Dynamic load torque (M_y), maximum [Nm]	750
Dynamic load torque (M_z), maximum [Nm]	750
Weight [kg]	5,1



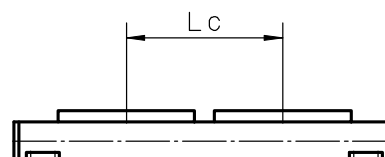
A1: depth 12 mm

### Performance Specifications

for Units with Double Standard Carriage (Z)

Parameter	WM80Z
Stroke length (S_max), maximum [mm]	5040
Total length (L_tot), maximum [mm]	5990
Minimum distance between carriages (L_c) [mm]	360
Dynamic load (F_y), maximum [N]	6000
Dynamic load (F_z), maximum [N]	6000
Dynamic load torque (M_y), maximum [Nm]	L_c <sup>1</sup> × 3
Dynamic load torque (M_z), maximum [Nm]	L_c <sup>1</sup> × 3
Force required to move second carriage [N]	25
Total length (L_tot) [mm]	S_max + 590 + L_c

<sup>1</sup> Value in mm







# WM80Z

## Belt Drive, Ball Guide, Short Carriage

- » Ordering key - see page 203
- » Accessories - see page 131
- » Additional data - see page 179

### General Specifications

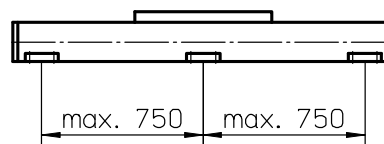
Parameter	WM80Z
Profile size (w × h) [mm]	80 × 80
Type of belt	25 AT 10
Carriage sealing system	plastic cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

### Carriage Idle Torque, (M idle) [Nm]

Input speed [rpm]	Idle torque [Nm]
150	4,0
450	5,4
885	6,2

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

### Deflection of the Profile



A mounting clamp must be installed at least every 750 mm to be able to operate at maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

### Performance Specifications

for Units with Single Short Carriage (S)<sup>1</sup>

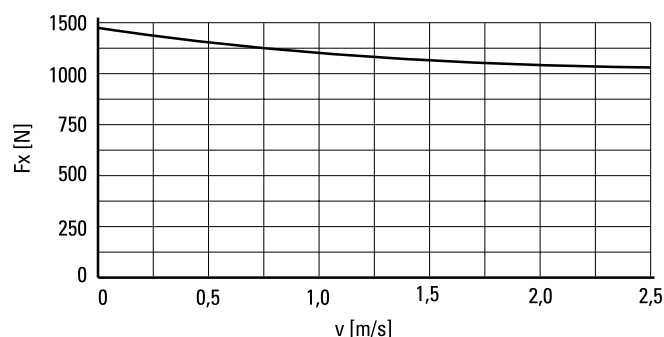
Parameter		WM80Z
Stroke length (Smax), maximum	[mm]	5500
Total length (L tot), maximum	[mm]	5990
Linear speed, maximum	[m/s]	2,5
Acceleration, maximum	[m/s <sup>2</sup> ]	20
Repeatability	[± mm]	0,05
Input speed, maximum	[rpm]	885
Operation temperature limits	[°C]	0 – 80
Dynamic load (Fx), maximum	[N]	1470
Dynamic load (Fy), maximum	[N]	2100 <sup>2</sup>
Dynamic load (Fz), maximum	[N]	2100
Dynamic load torque (Mx), maximum	[Nm]	68
Dynamic load torque (My), maximum	[Nm]	135
Dynamic load torque (Mz), maximum	[Nm]	135
Drive shaft force (Frd), maximum <sup>3</sup>	[N]	600
Input/drive shaft torque (Mta), maximum	[Nm]	40
Pulley diameter	[mm]	54,11
Stroke per shaft revolution	[mm]	170
Weight	[kg]	
of unit with zero stroke		9,2
of every 100 mm of stroke		0,8
of each carriage		2,1

<sup>1</sup> See next page for deviating values of units with other carriage types.

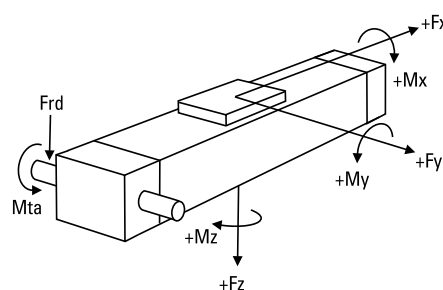
<sup>2</sup> See diagram Force Fx.

<sup>3</sup> Only relevant for units without RediMount flange.

### Force Fx as a Function of the Speed



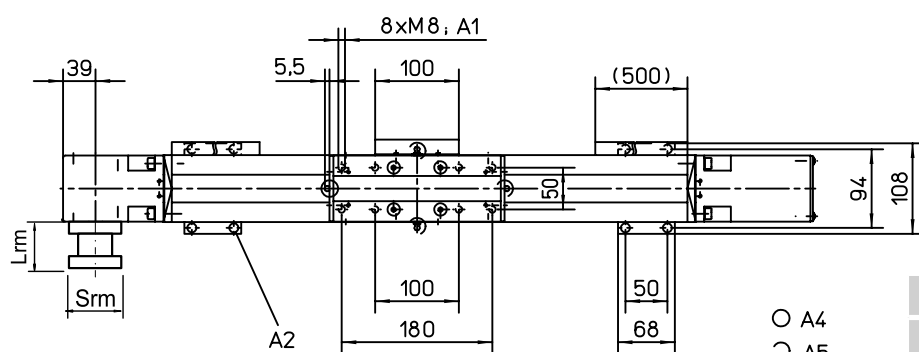
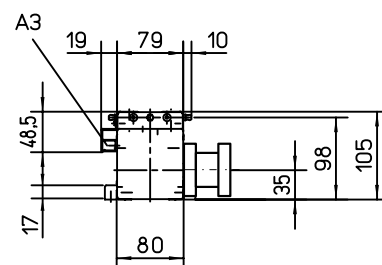
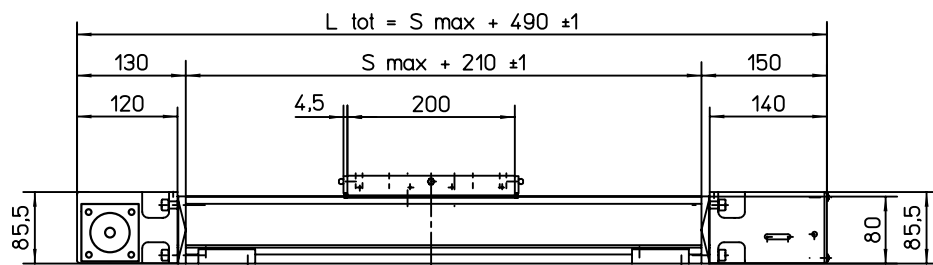
### Definition of Forces



# WM80Z

## Belt Drive, Ball Guide, Short Carriage

<b>Dimensions</b>	<b>Projection</b>	<b>Online Sizing &amp; Selection!</b>
METRIC		www.LinearMotioneering.com



- A4
- A5

- A1: depth 12
- A2: socket cap screw ISO4762-M6x20 8.8
- A3: ENF inductive sensor rail kit (optional - see page 166)
- A4: tapered lubricating nipple to DIN71412 AM6 on fixed-bearing side as standard feature
- A5: can be changed over to one of three alternative lubrications points by the customer

### RediMount Flange Specifications

Parameter		Min	Max
Flange length (Lrm)	[mm]	83	145
Flange square (Srm)	[mm]	90	200
Flange weight *	[kg]	5,64	

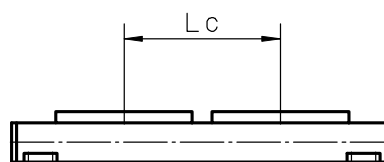
\* Max. weight including coupling and fastening screws

### Performance Specifications

for Units with Double Short Carriage (Y)<sup>1</sup>

Parameter		WM80Z
Stroke length (Smax), maximum	[mm]	5220
Total length (L tot), maximum	[mm]	5990
Minimum distance between carriages (Lc)	[mm]	280
Dynamic load (Fy), maximum	[N]	4200
Dynamic load (Fz), maximum	[N]	4200
Dynamic load torque (My), maximum	[Nm]	Lc <sup>1</sup> × 2,1
Dynamic load torque (Mz), maximum	[Nm]	Lc <sup>1</sup> × 2,1
Force required to move second carriage	[N]	22,5
Total length (L tot)	[mm]	Smax + 490 + Lc

<sup>1</sup> Value in mm





# M55

## Belt Drive, Ball Guide

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

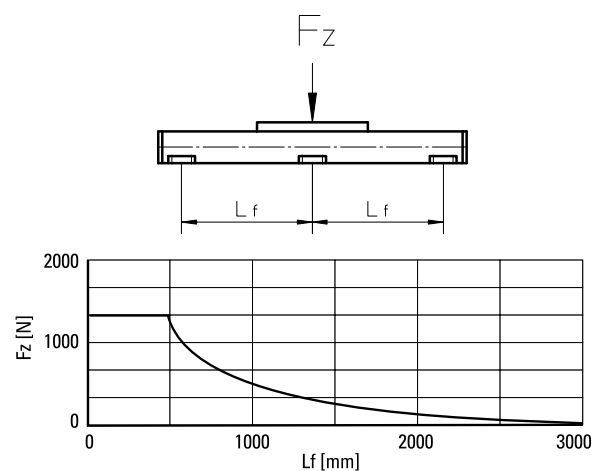
General Specifications	
Parameter	M55
Profile size (w × h) [mm]	58 × 55
Type of belt	22-STD SM5-HP
Carriage sealing system	self-adjusting steel cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	lubrication of ball guide carriages
Included accessories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

## 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



## Performance Specifications

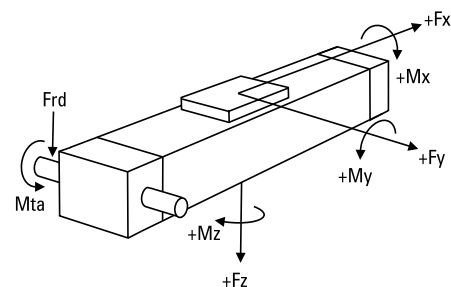
for Units with Single Standard Carriage (A)<sup>1</sup>

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/s <sup>2</sup> ]	40
Repeatability	[± mm]	0,1
Input speed, maximum	[rpm]	2850
Operation temperature limits	[°C]	-20 – 70
Dynamic load (Fx), maximum	[N]	400
< 2,5 m/s		200
> 2,5 m/s		
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 <sup>2</sup>	[N]	200
Input/drive shaft torque (Mta), maximum	[Nm]	12
Pulley diameter	[mm]	33,42
Stroke per shaft revolution	[mm]	105
Weight	[kg]	
of unit with zero stroke		4,80
of every 100 mm of stroke		0,53
of carriage		1,20

<sup>1</sup> See next page for deviating values of units with other carriage types.

<sup>2</sup> Only relevant for units without RediMount flange.

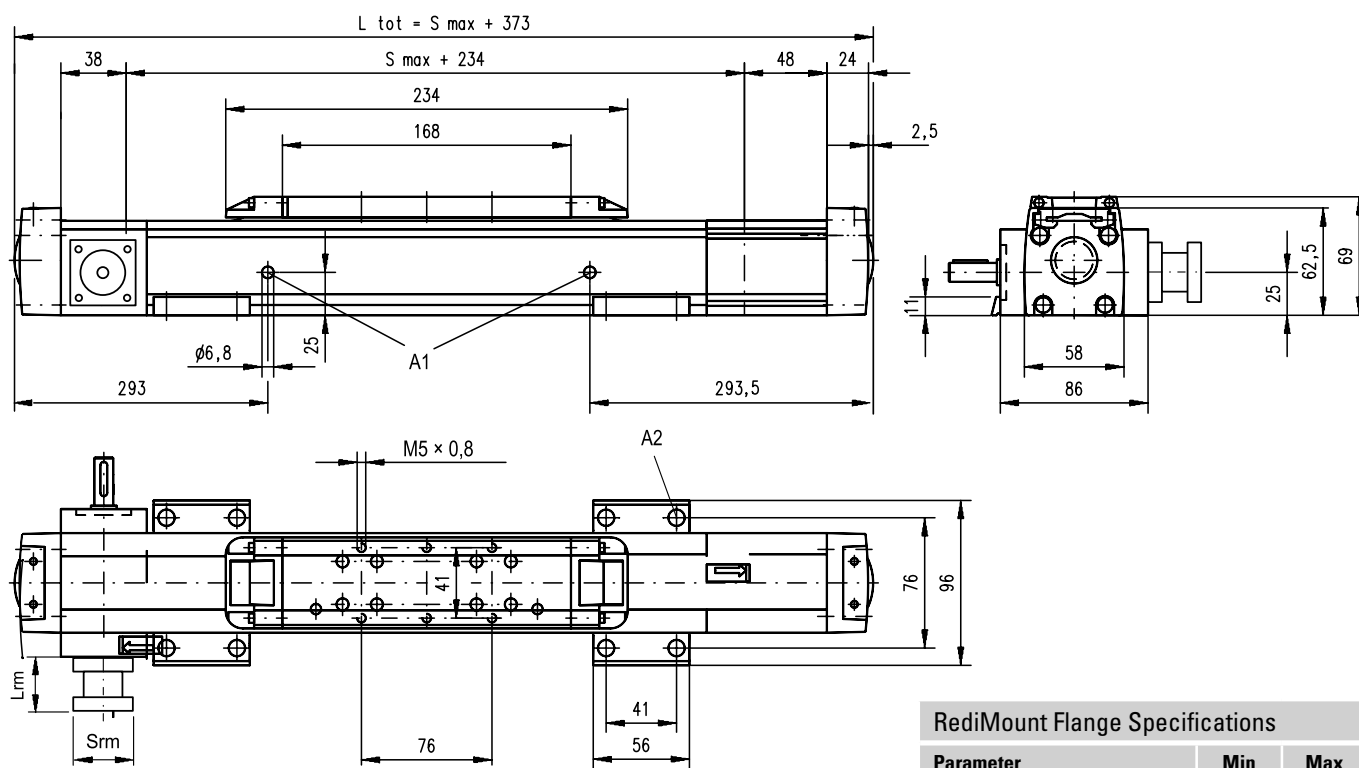
## Definition of Forces



# M55

## Belt Drive, Ball Guide

<b>Dimensions</b>	<b>Projection</b>	<b>Online Sizing &amp; Selection!</b>
METRIC		www.LinearMotioneering.com



A1: lubrication holes  
 A2:  $\varnothing 9,5/\varnothing 5,5$  for socket head cap screw M5

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

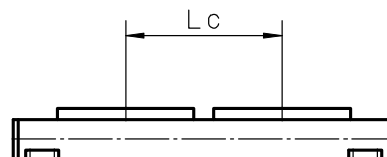
\* Max. weight including coupling and fastening screws

### 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]	$Lc^1 \times 0,56$
Dynamic load torque (Mz), maximum [Nm]	$Lc^1 \times 0,56$
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

<sup>1</sup> Value in mm





# M75

## Belt Drive, Ball Guide

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

### General Specifications

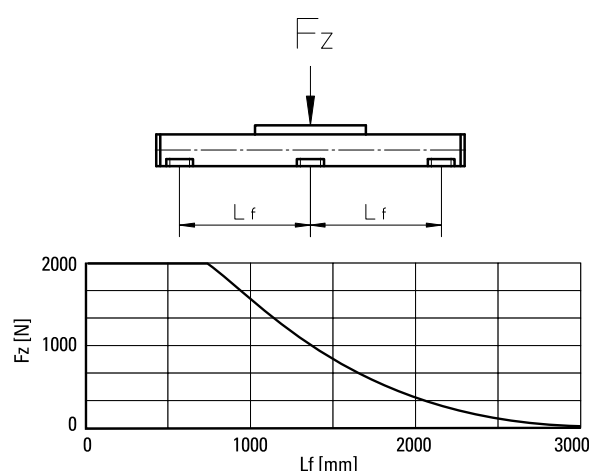
Parameter	M75 / T75
Profile size (w × h) [mm]	86 × 75
Type of belt	STD5-40
Carriage sealing system	self-adjusting steel cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	lubrication of ball guide carriages
Included accessories	none

### 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



### Performance Specifications

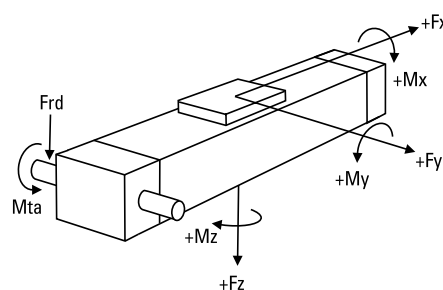
for Units with Single Standard Carriage (A)<sup>1</sup>

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/s <sup>2</sup> ]	40
Repeatability	[± mm]	0,1
Input speed, maximum	[rpm]	2300
Operation temperature limits	[°C]	-20 – 70
Dynamic load (Fx), maximum	[N]	
< 2,5 m/s		900
> 2,5 m/s		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 <sup>2</sup>	[N]	600
Input/drive shaft torque (Mta), maximum	[Nm]	30
Pulley diameter	[mm]	41,38
Stroke per shaft revolution	[mm]	130
Weight	[kg]	
of unit with zero stroke		7,50
of every 100 mm of stroke		0,88
of carriage		2,00

<sup>1</sup> See next page for deviating values of units with other carriage types.

<sup>2</sup> Only relevant for units without RediMount flange.

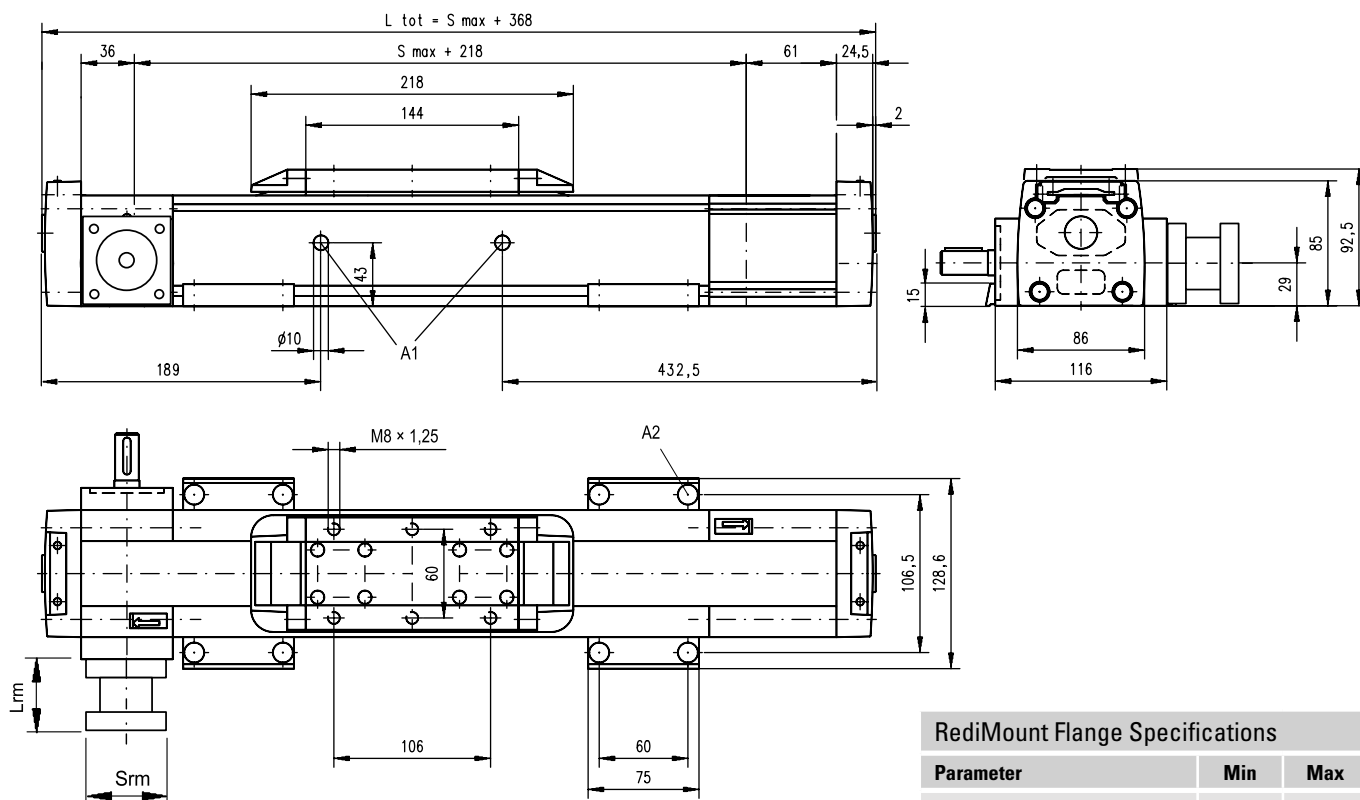
### Definition of Forces



# M75

## Belt Drive, Ball Guide

<b>Dimensions</b>	<b>Projection</b>	<b>Online Sizing &amp; Selection!</b>
METRIC		www.LinearMotioneering.com



A1: lubrication holes  
 A2:  $\phi 13,5/\phi 8,5$  for socket head cap screw M8

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

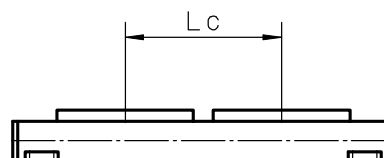
\* Max. weight including coupling and fastening screws

### 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]	$Lc^1 \times 1,313$
Dynamic load torque (Mz), maximum [Nm]	$Lc^1 \times 1,313$
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

<sup>1</sup> Value in mm





# M100

## Belt Drive, Ball Guide

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

### General Specifications

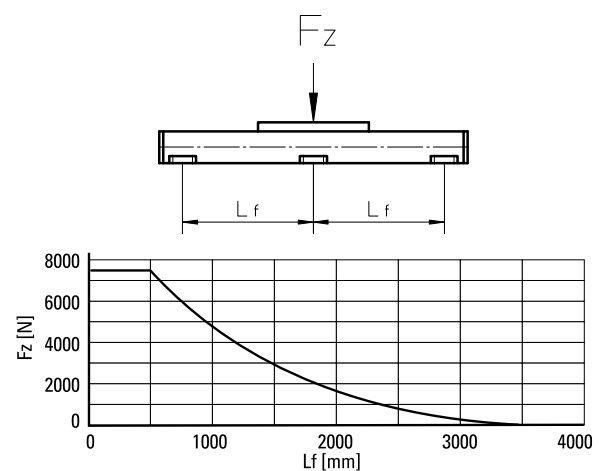
Parameter	M100
Profile size (w × h) [mm]	108 × 100
Type of belt	STD8-50
Carriage sealing system	self-adjusting steel cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	lubrication of ball guide carriages
Included accessories	none

### 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



### Performance Specifications

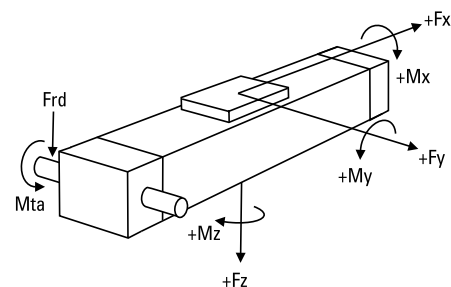
for Units with Single Standard Carriage (A)<sup>1</sup>

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/s <sup>2</sup> ]	40
Repeatability	[± mm]	0,1
Input speed, maximum	[rpm]	1700
Operation temperature limits	[°C]	-20 – 70
Dynamic load (Fx), maximum	[N]	
< 2,5 m/s		1250
> 2,5 m/s		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 <sup>2</sup>	[N]	1000
Input/drive shaft torque (Mta), maximum	[Nm]	45
Pulley diameter	[mm]	56,02
Stroke per shaft revolution	[mm]	176
Weight	[kg]	
of unit with zero stroke		11,61
of every 100 mm of stroke		1,43
of carriage		2,20

<sup>1</sup> See next page for deviating values of units with other carriage types.

<sup>2</sup> Only relevant for units without RediMount flange.

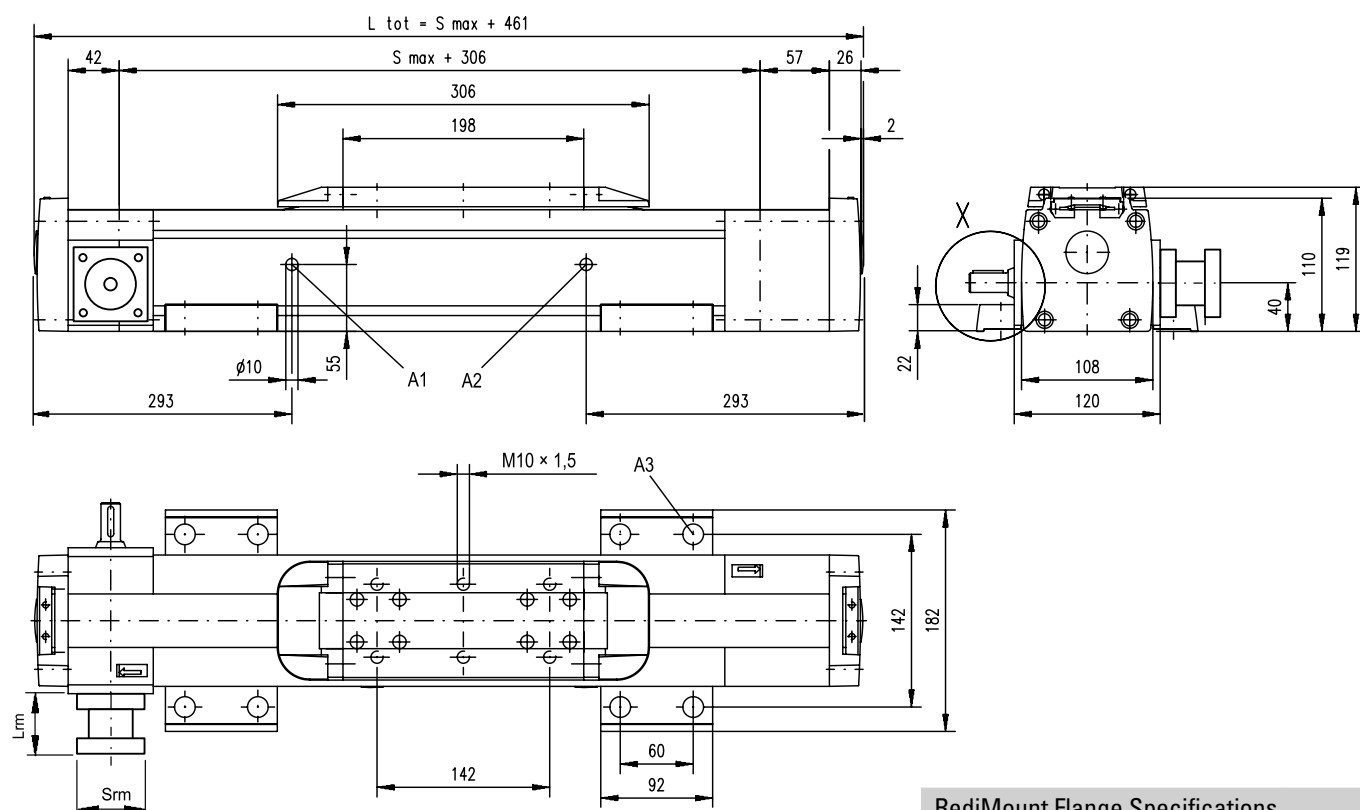
### Definition of Forces



# M100

## Belt Drive, Ball Guide

<b>Dimensions</b>	<b>Projection</b>	<b>Online Sizing &amp; Selection!</b>
METRIC		www.LinearMotioneering.com



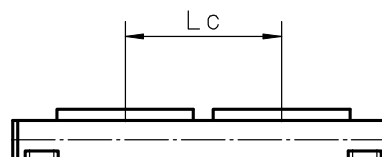
A1: lubrication hole  
 A2: lubrication hole (no hole if L order is < 856 mm)  
 A3:  $\phi 17/\phi 10,5$  for socket head cap screw M10

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]	$Lc^1 \times 3$
Dynamic load torque (Mz), maximum	[Nm]	$Lc^1 \times 3$
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

<sup>1</sup> 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







# MLSM80Z

## Belt Drive, Ball Guide

- » Ordering key - see page 205
- » Accessories - see page 131
- » Additional data - see page 179

### General Specifications

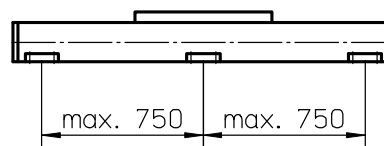
Parameter	MLSM80Z
Profile size (w × h) [mm]	240 × 85
Type of belt	75 ATL 10
Carriage sealing system	plastic cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

### Carriage Idle Torque, (M idle) [Nm]

Input speed [rpm]	Idle torque [Nm]
150	8,5
750	12
1500	14,5

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

### Deflection of the Profile



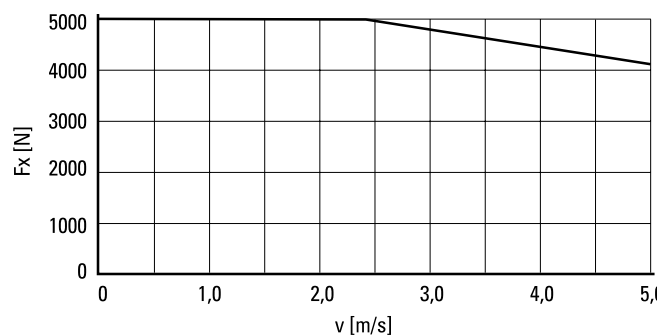
A mounting clamp must be installed at least every 750 mm to be able to operate at maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

### Performance Specifications

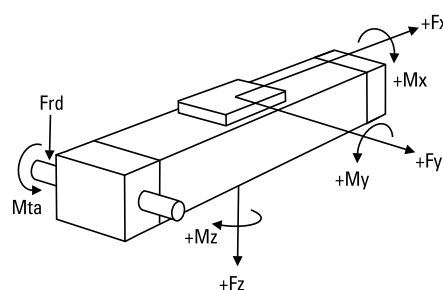
for Units with Single Standard Carriage (N)<sup>1</sup>

Parameter		MLSM80Z
Stroke length (Smax), maximum	[mm]	5900
Total length (L tot), maximum	[mm]	6500
Linear speed, maximum	[m/s]	5,0
Acceleration, maximum	[m/s <sup>2</sup> ]	20
Repeatability	[± mm]	0,05
Input speed, maximum	[rpm]	1500
Operation temperature limits	[°C]	0 – 80
Dynamic load (Fx), maximum	[N]	5000 <sup>2</sup>
Dynamic load (Fy), maximum	[N]	6400
Dynamic load (Fz), maximum	[N]	6400
Dynamic load torque (Mx), maximum	[Nm]	600
Dynamic load torque (My), maximum	[Nm]	720
Dynamic load torque (Mz), maximum	[Nm]	720
Drive shaft force (Frd), maximum <sup>3</sup>	[N]	700
Input/drive shaft torque (Mta), maximum	[Nm]	150
Pulley diameter	[mm]	63,66
Stroke per shaft revolution	[mm]	200
Weight	[kg]	
of unit with zero stroke		30,8
of every 100 mm of stroke		2,2
of each carriage		9,6

### Force Fx as a Function of the Speed



### Definition of Forces



<sup>1</sup> See next page for deviating values of units with other carriage types.

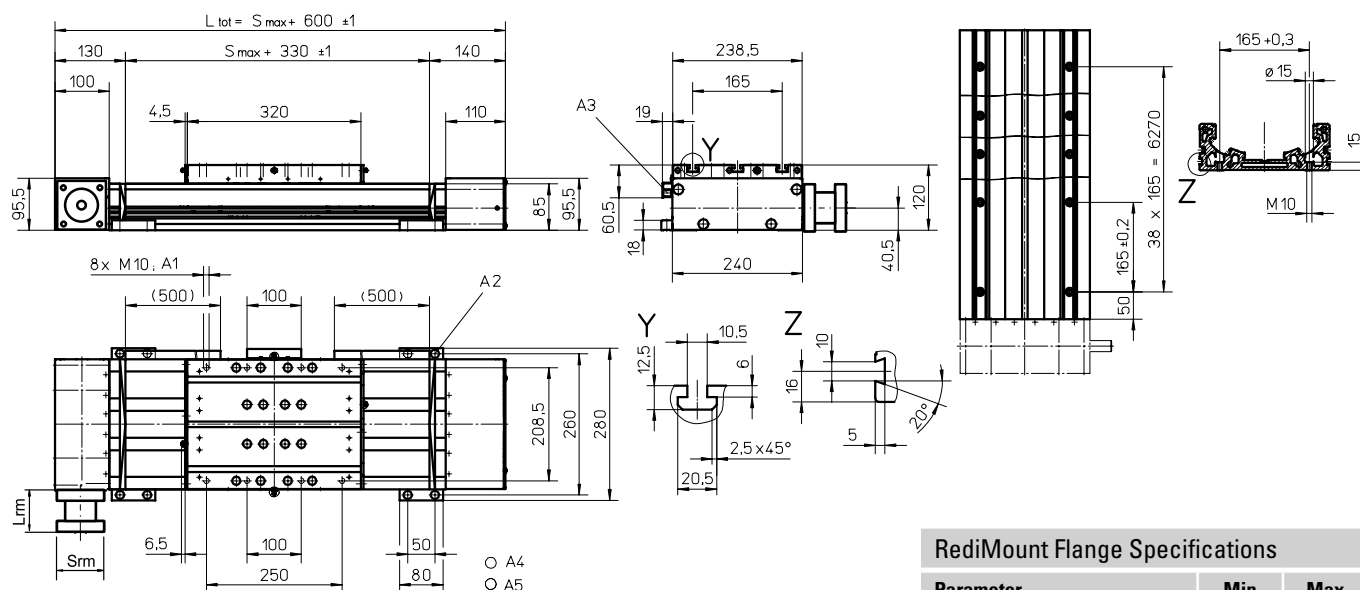
<sup>2</sup> See diagram Force Fx.

<sup>3</sup> Only relevant for units without RediMount flange.

# MLSM80Z

## Belt Drive, Ball Guide

<b>Dimensions</b>	<b>Projection</b>	<b>Online Sizing &amp; Selection!</b>
METRIC		www.LinearMotioneering.com



- A1: depth 15
- A2: socket cap screw ISO4762-M8x20 8.8
- A3: ENF inductive sensor rail kit (optional - see page 166)
- A4: tapered lubricating nipple to DIN71412 M8x1 on fixed-bearing side as standard feature
- A5: can be changed over to one of the three alternative lubricating points by the customer

Parameter	Min	Max
Flange length (Lrm) [mm]	81	143
Flange square (Srm) [mm]	90	200
Flange weight * [kg]	5,67	

\* Max. weight including coupling and fastening screws

### Performance Specifications

for Units with Single Long Carriage (L)

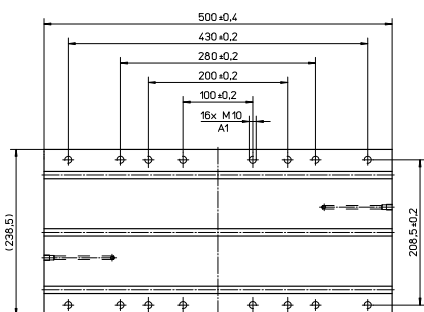
Parameter	MLSM80Z
Stroke length (Smax), maximum [mm]	5900
Total length (L tot), maximum [mm]	6680
Carriage length [mm]	500
Dynamic load torque (My), maximum [Nm]	1400
Dynamic load torque (Mz), maximum [Nm]	1400
Weight [kg]	14

### Performance Specifications

for Units with Double Standard Carriage (Z)

Parameter	MLSM80Z
Stroke length (Smax), maximum [mm]	5680
Total length (L tot), maximum [mm]	6680
Minimum distance between carriages (Lc) [mm]	400
Dynamic load (Fy), maximum [N]	12800
Dynamic load (Fz), maximum [N]	12800
Dynamic load torque (My), maximum [Nm]	Lc' × 6,4
Dynamic load torque (Mz), maximum [Nm]	Lc' × 6,4
Force required to move second carriage [N]	35
Total length (L tot) [mm]	Smax + 600 + Lc

<sup>1</sup> Value in mm



A1: depth 15

