

Linear Units with Belt Drive and Wheel Guide

Overview

ForceLine **MLSH**



Features

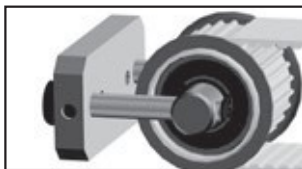
- Can be installed in any orientation
- Patented plastic cover band
- Speed up to 10 m/s
- Low profile height

Parameter		MLSH60Z
Profile size (width × height)	[mm]	160 × 65
Stroke length (Smax), maximum	[mm]	5500
Linear speed, maximum	[m/s]	10,0
Dynamic carriage load (Fz), maximum	[N]	3000
Remarks		internal wheel guides
Page		108

MLSH-Series Technical Presentation

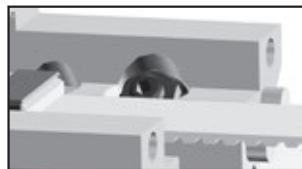
Belt tensioning

The belt can easily be re-tensioned from the outside of the unit without the load being removed from the carriage.



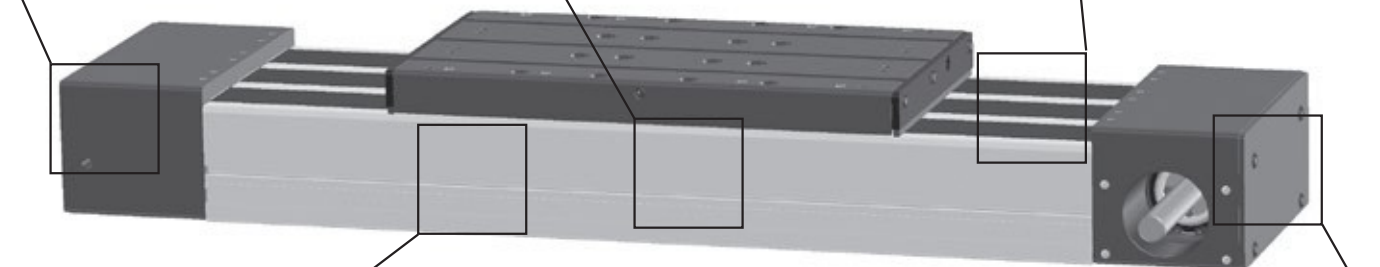
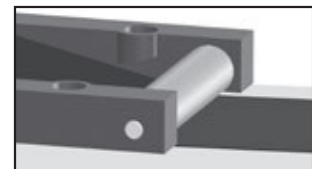
Belt drive

The highly dynamic and accurate belt is protected by the cover band ensuring long and trouble free operation.



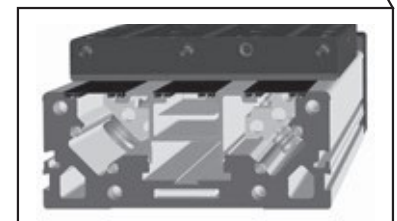
Cover band

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



Wheel guides

The robust wheel guides run inside of the profile providing superior motion dynamics.



Unique profile

The unique design of the profile guarantees the highest performance and protection of the guides and belt.

Note! the unit is pictured without a RediMount™ flange



MLSH60Z

Belt Drive, Wheel Guide

- » Ordering key - see page 190
- » Accessories - see page 117
- » Additional data - see page 174

General Specifications

Parameter	MLSH60Z
Profile size (w × h) [mm]	160 × 65
Type of belt	32ATL5
Carriage sealing system	plastic cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	no lubrication required
Included accessories	4 × mounting clamps

Performance Specifications

for Units with Single Standard Carriage (N)¹

Parameter		MLSH60Z
Stroke length (S _{max}), maximum	[mm]	5500
Total length (L _{tot}), maximum	[mm]	5980
Linear speed, maximum	[m/s]	6,5
Acceleration, maximum	[m/s ²]	40
Repeatability	[± mm]	0,05
Input speed, maximum	[rpm]	3000
Operation temperature limits	[°C]	0 – 80
Dynamic load (F _x), maximum	[N]	1480 ²
Dynamic load (F _y), maximum	[N]	3000
Dynamic load (F _z), maximum	[N]	3000
Dynamic load torque (M _x), maximum	[Nm]	165
Dynamic load torque (M _y), maximum	[Nm]	310
Dynamic load torque (M _z), maximum	[Nm]	310
Drive shaft force (F _{rd}), maximum ³	[N]	200
Input/drive shaft torque (M _{ta}), maximum	[Nm]	45
Pulley diameter	[mm]	42,97
Stroke per shaft revolution	[mm]	135
Weight	[kg]	
of unit with zero stroke		12,60
of every 100 mm of stroke		1,33
of each carriage		3,90

¹ See next page for deviating values of units with other carriage types.

² See diagram Force F_x.

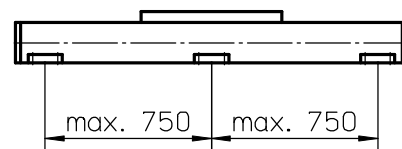
³ Only relevant for units without RediMount flange.

Carriage Idle Torque, (M_{idle}) [Nm]

Input speed [rpm]	Idle torque [Nm]
150	4,6
1500	9,0
3000	12,0

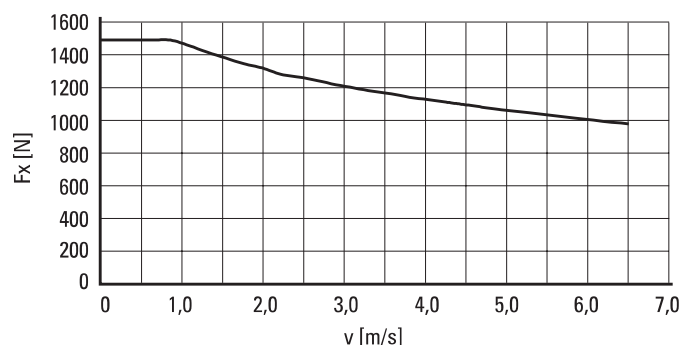
M_{idle} = the input torque needed to move the carriage with no load on it.

Deflection of the Profile

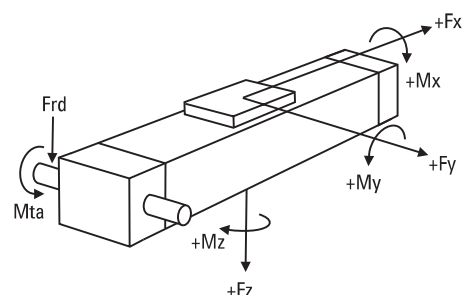


A mounting clamp must be installed at least every 750 mm to be able to operate at maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

Force F_x as a Function of the Speed



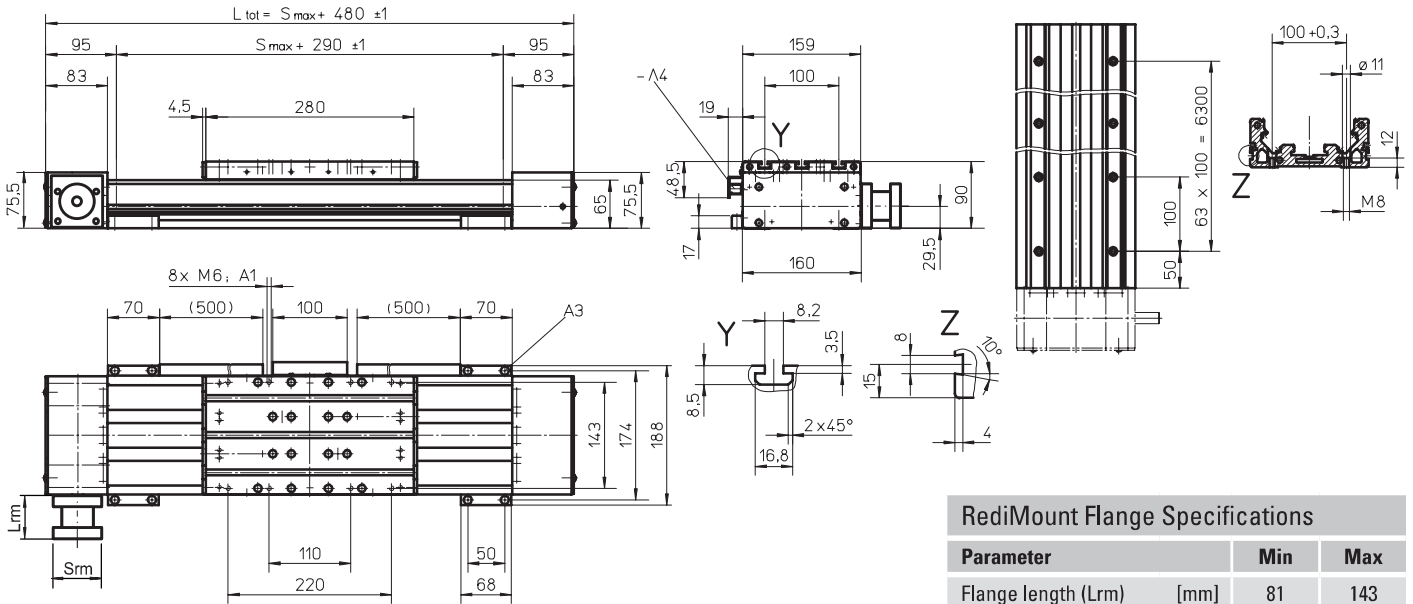
Definition of Forces



MLSH60Z

Belt Drive, Wheel Guide

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



- A1: depth 10
- A2: depth 4
- A3: socket cap screw ISO4762-M6x20 8.8
- A4: ENF inductive sensor rail kit (optional - see page 150)

Parameter	Min	Max	
Flange length (Lrm)	[mm]	81	143
Flange square (Srm)	[mm]	90	200
Flange weight *	[kg]	5,58	

* Max. weight including coupling and fastening screws

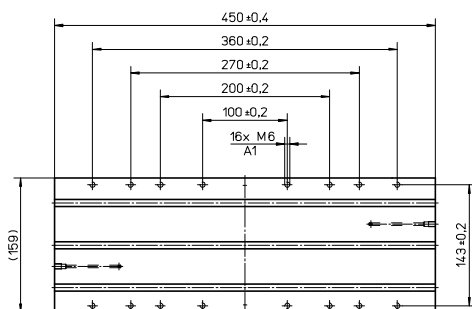
Performance Specifications for Units with Single Long Carriage (L)

Parameter	MLSH60Z
Stroke length (Smax), maximum	[mm] 5500
Total length (L tot), maximum	[mm] 6150
Carriage length	[mm] 450
Dynamic load torque (My), maximum	[Nm] 585
Dynamic load torque (Mz), maximum	[Nm] 585
Weight	[kg] 6

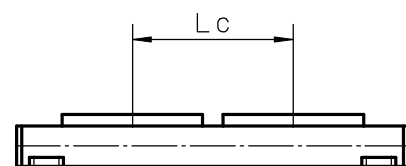
Performance Specifications for Units with Double Standard Carriage (Z)

Parameter	MLSH60Z
Stroke length (Smax), maximum	[mm] 5380
Total length (L tot), maximum	[mm] 6150
Minimum distance between carriages (Lc)	[mm] 290
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] 10
Total length (L tot)	[mm] Smax + 480 + Lc

¹ Value in mm



A1: depth 10





Ordering Keys

Linear Motion Systems with Belt Drive and Wheel Guides

MLSH60Z

1	2	3	4	5	6	7	8
MLSH06Z	SX	XXX	-04500	-05580	D	D	0600

1. Type of unit

MLSH06Z = MSLH60 unit

2. Transmission type

LX = inline style, directly coupled, RediMount flange

SX = inline style, directly coupled, no RediMount flange

3. RediMount motor ID code

vww = 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 configuration¹

A = shaft on left side without key way

B = shaft on right side without key way

C = shaft on left side with key way or RediMount

D = shaft on right side with key way or RediMount

E = shaft on left side without key way,
shaft on right side with key way or RediMount

F = shaft on left side with key way or RediMount,
shaft on right side without key way

G = shaft on left side without key way,
shaft on right side for encoder

H = shaft on left side for encoder,
shaft on right side without key way

I = shaft on left side with key way or RediMount,
shaft on right side for encoder

J = shaft on left side for encoder,
shaft on right side with key way or RediMount

L = shaft on left and right side without key way

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

L = single long carriage

Z = double standard carriages

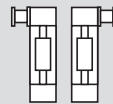
8. Distance between double carriages

0000 = always for single carriages

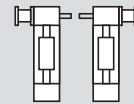
zzzz = distance in mm

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

