

PM500XE SERIE

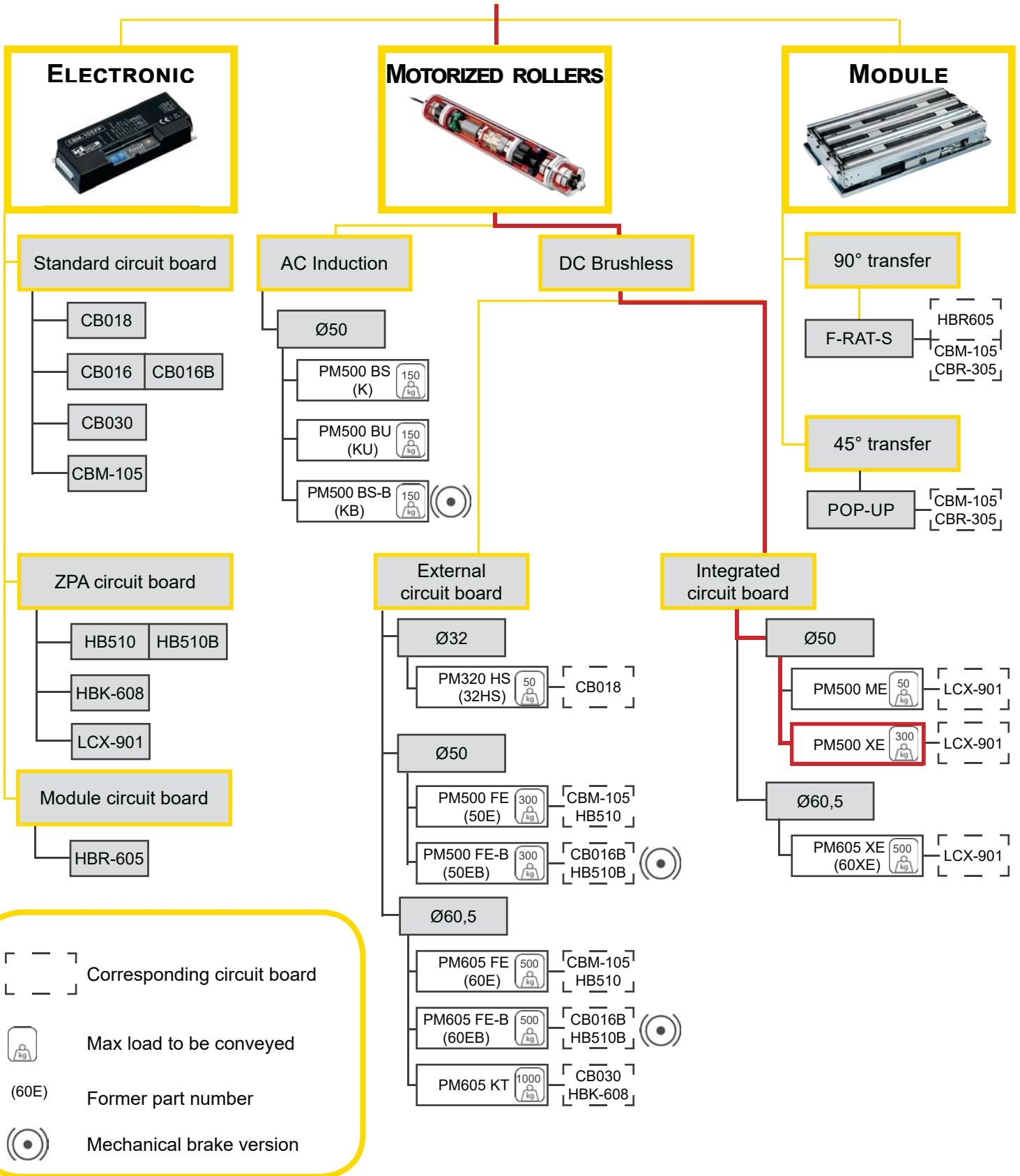
TECHNICAL DOCUMENTATION

SUMMARY

1 - Presentation of the PowerMoller product range	Page 3
2 - Presentation of the series	Page 4
General characteristics	
Structure and description	
Applications	
3 - Transfer capacity	Page 7
Ribbed belt drive	
Stopping distance according to the weight and type of load being conveyed	
4 - Technical datas according to speed code	Page 9
5 - Presentation of the different fixing options	Page 12
6 - Dimensional characteristics	Page 14
Grooved tube - Hexagonal spring loaded shaft on free end	
Grooved tube - M8 female threaded shaft with screw on free end	
Roller with pulley for ribbed belt - Hexagonal spring loaded shaft on free end	
Roller with pulley for ribbed belt- M8 female threaded shaft with screw on free end	
Roller with pulley for round belt - Hexagonal spring loaded shaft on free end	
Roller with pulley for round belt - M8 female threaded shaft with screw on free end	
Roller without drive - Hexagonal spring loaded shaft on free end	
Roller without drive - M8 female threaded shaft with screw on free end	
7 - Dimensional characteristics - curve	Page 22
Conical roller with grooved tube - Ri = 800mm	
Conical roller with pulley for ribbed belt - Ri = 800mm	
Conical roller with pulley for round belt - Ri = 800mm	
Conical roller with grooved tube - Ri = 850mm	
Conical roller with pulley for ribbed belt - Ri = 850mm	
Conical roller with pulley for round belt - Ri = 850mm	
8 - Dimensional characteristics - miscellaneous	Page 28
PVC sleeve	
Coated in natural rubber, nitrile rubber and polyurethane	
Cylindrical-conical machining	
9 - Mounted on the frames	Page 30
Mounting plate for smooth 11.1 mm hexagonal shaft - Flat on top	
Mounting plate for smooth 11.1 mm hexagonal shaft - Spike on top	
Mounting plate for threaded hexagonal shaft - Flat on top	
Mounting plate for threaded hexagonal shaft - Spike on top	
M8 female threaded fixed shaft	
10 - Wiring and commands	Page 32
Wiring	
Interface scheme	
Pin 1 and 3 - 24VDC power supply	
Pin 2 - Rotation direction	
Pin 4 - Start / Stop	
Pin 5 - Speed variation	
11 - Accessories	Page 34
<i>Ribbed belts</i>	
<i>Rounded belts</i>	
<i>Extension cables</i>	
Speed adaptator	
24VDC power supply	
12 - Product identification	Page 36
<i>Round label</i>	
<i>Square label</i>	
13 - Quotation/order	Page 37
Annexe 1	Page 39

1 - PRESENTATION OF THE POWER MOLLER® PRODUCT RANGE

POWER MOLLER®
















▶ 2 - PRESENTATION OF THE SERIES

The brushless motorized roller PM500XE has the circuit board and gear-motor integrated within the roller allowing a good tightness, easy wiring with M8-5pins connector and space saving. It can be easily controlled by: PLC, Asi-Bus via Bihl & Wiedemann module, or logic sensors with integrated ZPA from Wenglor, etc. It is designed for conveyor lines of light and medium loads (up to 300Kg max), in order preparation, in distribution, and for assembly lines. The motorized roller PM500XE is the ideal solution to answer to the difficulties coming from the working environment (liquid, dust, ...).

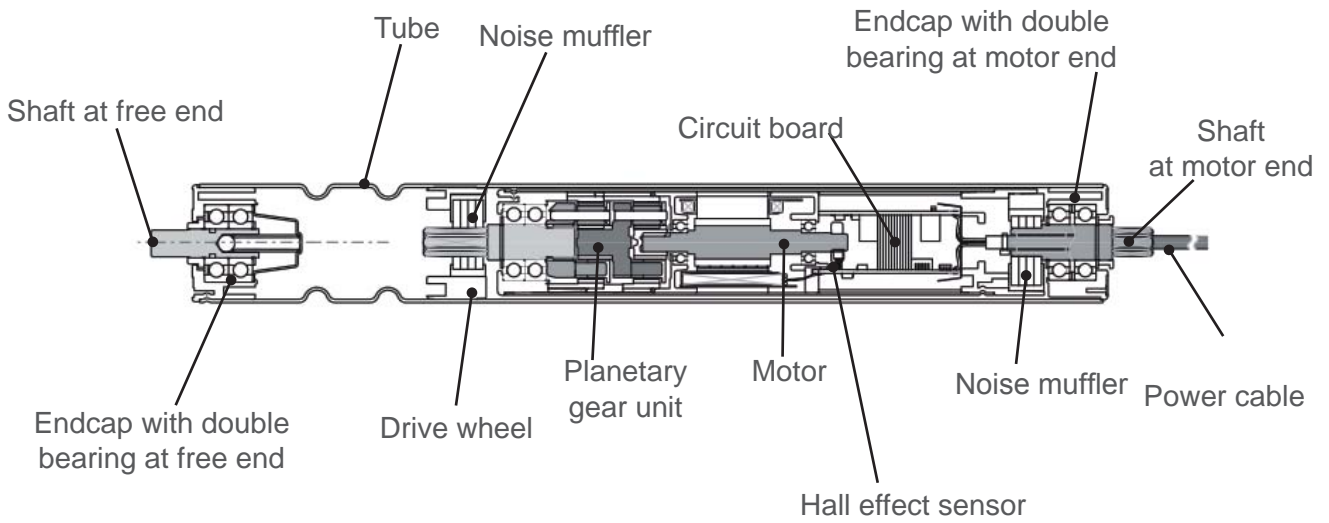


■ General characteristics

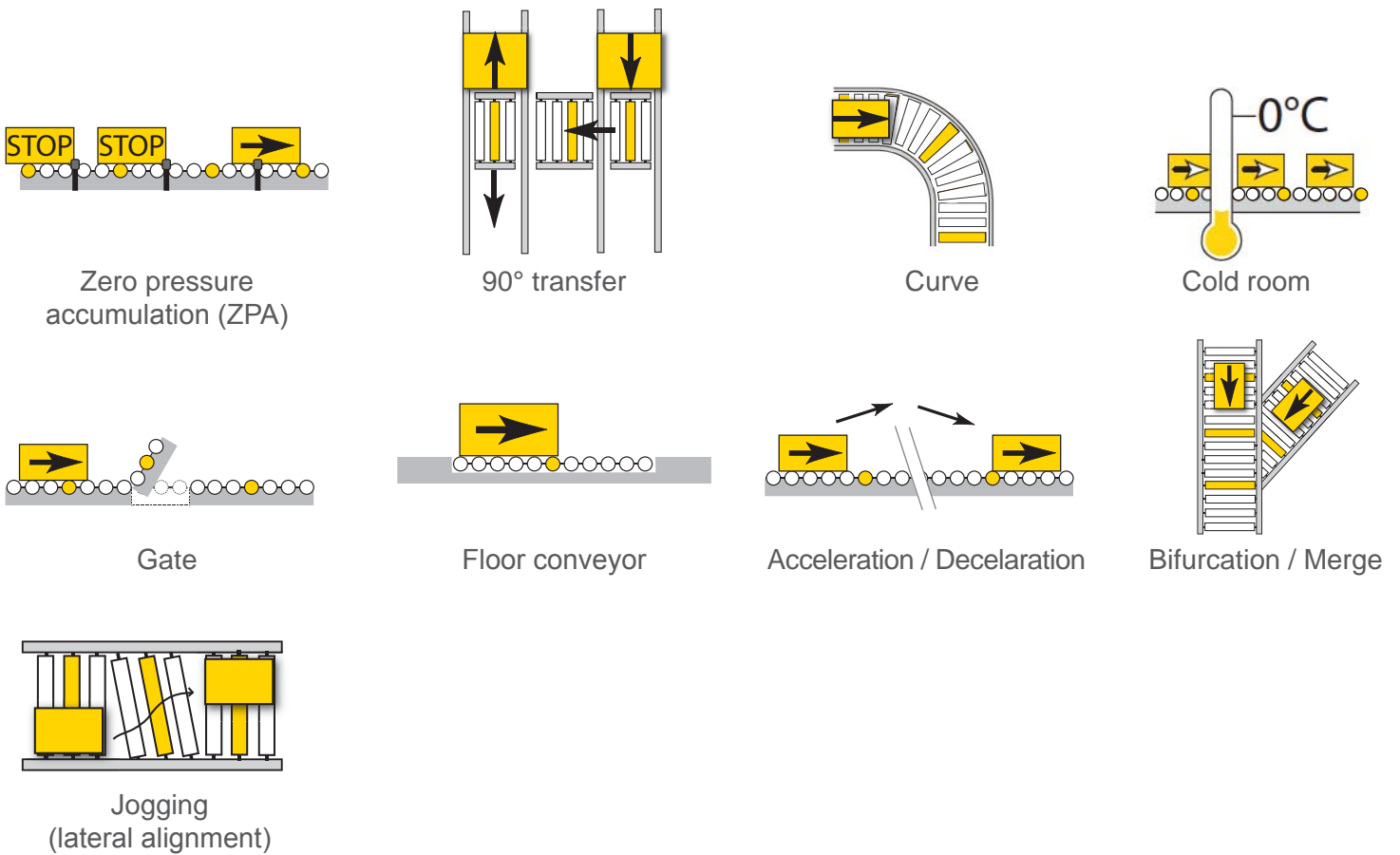
ELECTROMECHANICAL	Direct current and brushless 24 VDC		24 VDC (+ /- 10 %) – ripple ratio < 10 %		
	Isolation class		E		
	Operation at 40°C	Continuous	100%		
		Intermittent	1440 starts / hour maxi Minimum duty cycle = 1 s ON / 1,5 s OFF ED = ON / (ON+OFF) ≤ 40 %		
	Brake		Dynamic braking		
	Protection index		IP54 (IP65 or cold room, contact us)		
	Cable length		300 mm with M8 connector – 5 pins		
	Protection		Against overload by integrated thermistor Against polarity reversal 0-24VDC (integrated LED) Current limitation within the circuit board Integrated fuse 5A Thermal protection (>95°C for the circuit board) Protection against under supply Protection against induced voltage		
	Environment		0 / 40 °C - no condensation - or corrosive or explosive atmosphere Vibrations < 0,5 G		
	Sound level		≈ 54 dB nominal 1 metre away		
CONTROL	Speed code	17	30	60	
	Reduction ratio	1/44,9	1/26,67	1/12,64	
	Circuit board functions	Start / Stop (input current 7,3 mA to 24V) Inversion of transfer direction (input current 7,3 mA à 24V) Constant torque speed variation Speed variation by injection of external voltage 0-10VDC or by fixed resistor.			

Shaft and flange motor side :	 Plain hexagonal  Threaded hexagonal	<ul style="list-style-type: none"> • Smooth hexagonal 11.1 mm shaft or M12 threaded • Heat-treated and phosphated steel shaft • Zamac (zinc, aluminium and magnesium alloy) flange
Shaft and flange free side :	 Hexagonal spring loaded  Set screw	<ul style="list-style-type: none"> • Smooth hexagonal 11.1mm shaft with spring, 12 mm M8 threaded flat metal strip • Heat-treated and phosphated steel shaft • Zamac (zinc, aluminium and magnesium alloy) flange
Tube :	 Zinc plated steel  Stainless steel	<ul style="list-style-type: none"> • Tube in precision cold drawn steel, ST37-2 quality, outer diam. 50 mm • Zinc-coated or stainless steel (304L)
Pulleys :	 Ribbed  Grooves	Pulleys for : <ul style="list-style-type: none"> • Ribbed belts, 8 teeth, Zamac (zinc, aluminium and magnesium alloy) • Round belts, diam. 4 or 5 mm with smooth • Hexagonal shaft with spring or M8 threaded shaft
Grooves :	 Grooves	<ul style="list-style-type: none"> • Grooves in different positions from 33 to 300 mm from the edge of the tube • Depth 5,8mm • Rounded belts Ø 4 or 5 mm
Sleeve :	 Tapered  PVC	<ul style="list-style-type: none"> • Conical PVC sleeve (PP) for inner radius (Ri) 800 or 850 mm • Grey/black PVC sleeve thickness 2 or 3 mm (58 ShA)
Lagging :	 Polyurethane  Natural rubber / nitrile	<ul style="list-style-type: none"> • Polymerized polyurethane coating, thickness 3 mm, 90 ShA, grey • Natural hot vulcanized rubber coating, thickness 3 mm, 60-65 ShA

Structure and description

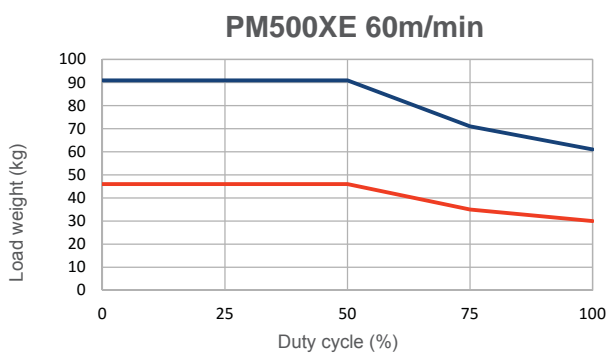
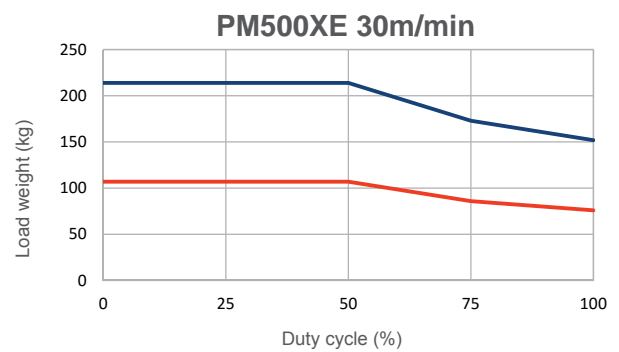
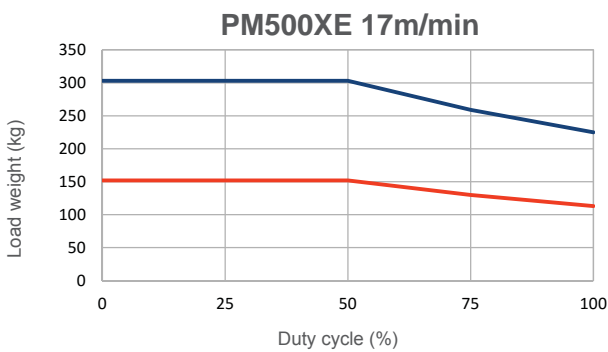
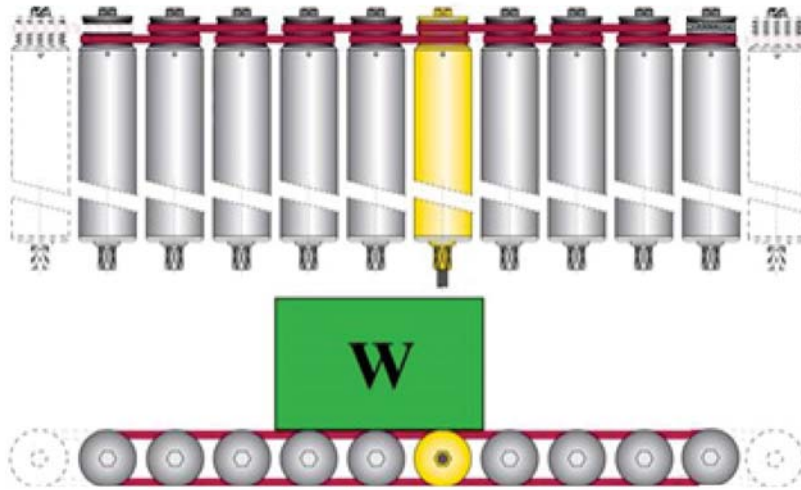


Applications



3 - TRANSFER CAPACITY

Driven by ribbed belts

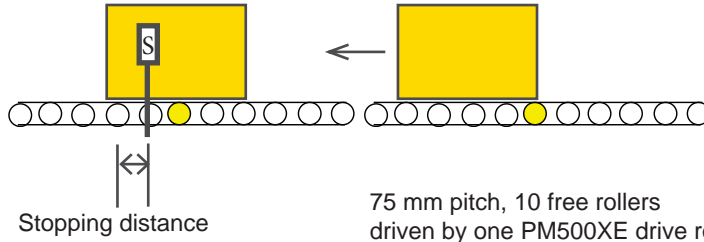


- Load to transport
 - Plastic box ($\mu = 0,03$)
 - Cardboard box ($\mu = 0,06$)
- 9 slave rollers driven by 1 motorized roller



These curves are given as a guide. Transfer capacity depends on the nature and quality of the transported load, the belt tension, the quality of the bearings, the nature of the sleeves, the ambient temperature...

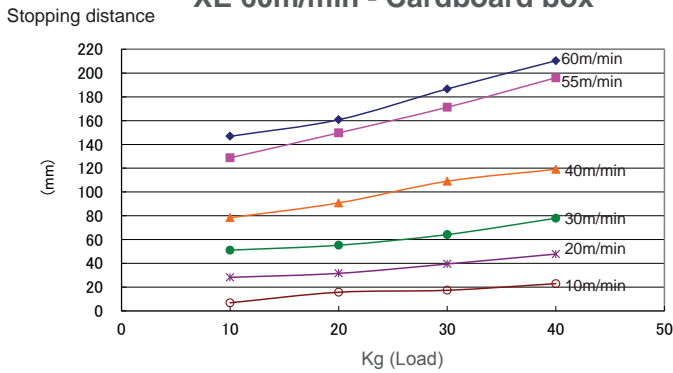
Stopping distance according to the weight and type of load being conveyed



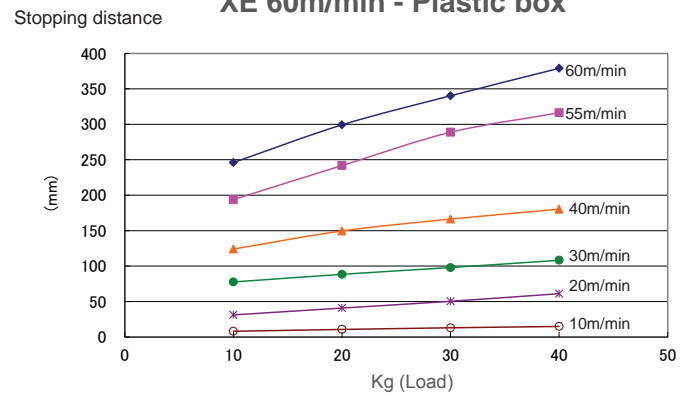
75 mm pitch, 10 free rollers
 driven by one PM500XE drive roller - 60m/min
 Cardboard box : 380mm x 560 mm
 Plastic box : 390mm x 590 mm

DRIVEN BY ROUND BELTS Ø5MM

XE 60m/min - Cardboard box

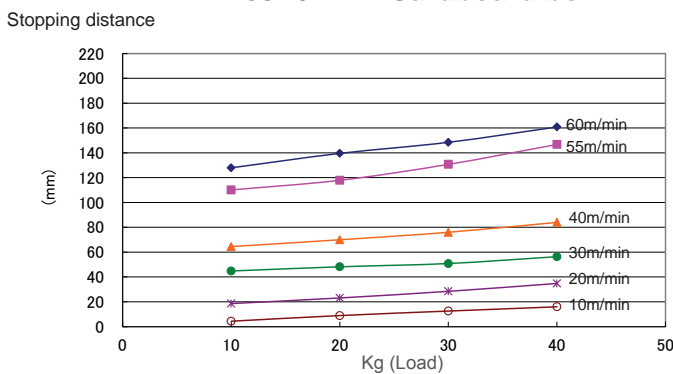


XE 60m/min - Plastic box

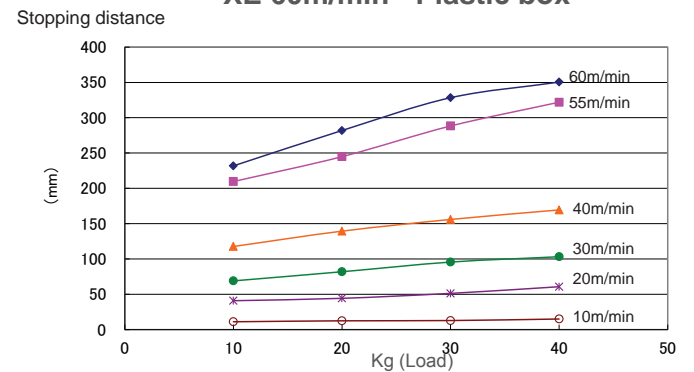


DRIVEN BY RIBBED BELTS

XE 60m/min - Cardboard box



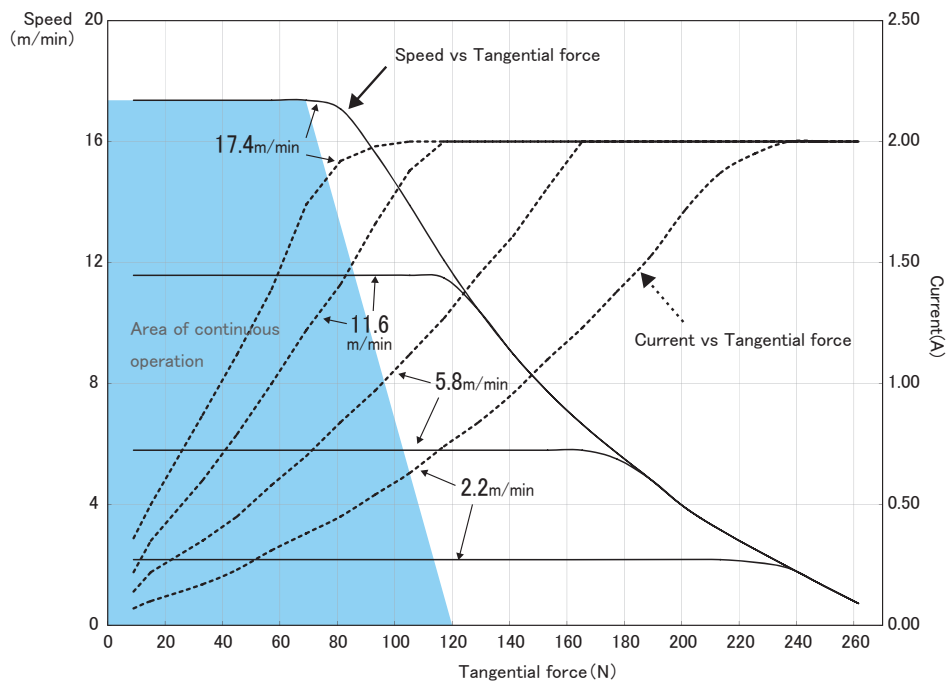
XE 60m/min - Plastic box



4 - TECHNICAL DATAS ACCORDING TO SPEED CODE

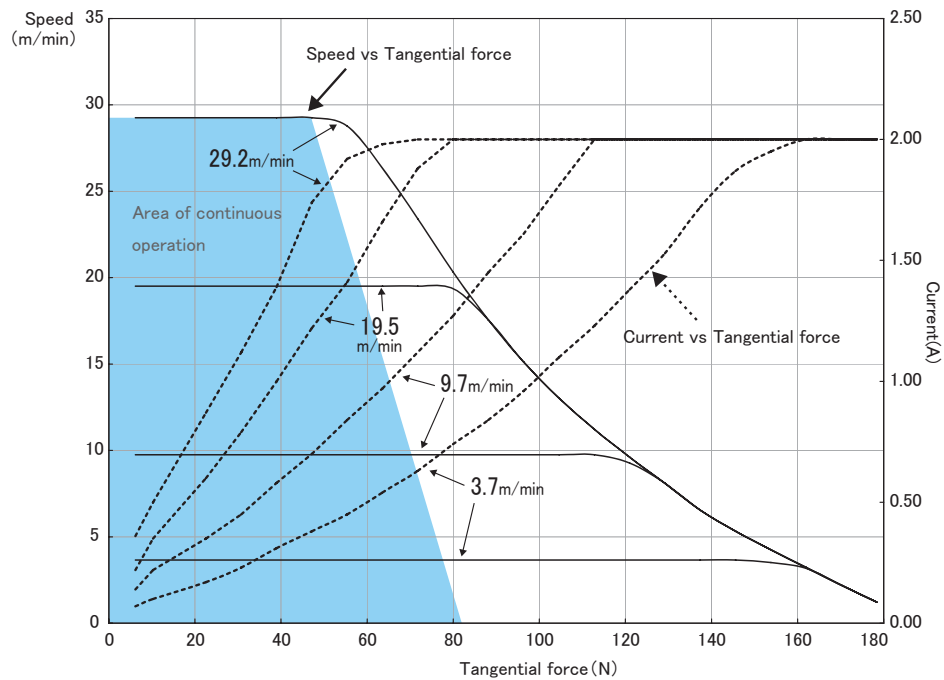
SPEED CODE 17

V (m/min)+/-3%		Speed selection		Tangential force (N)		Torque (Nm)		Current (A)		
No load	Nominal	By resistor (Ω)	Via external voltage (V)	Nominal	Starting	Nominal	Starting	No load	Nominal	Starting
17,4	17,4	$\geq 9,1K$	$9,65\pm 0,35$	70,0	260	1,74	6,5	0,5	1,7	2,0
15,9	15,9	6,2K	$8,5\pm 0,2$	76,0		1,89		0,5	1,7	
13,0	13,0	4,3K	$7,5\pm 0,2$	82,0		2,04		0,4	1,6	
11,6	11,6	3,3K	$6,5\pm 0,2$	85,0		2,13		0,4	1,5	
10,1	10,1	2,2K	$5,5\pm 0,2$	89,0		2,22		0,3	1,4	
8,7	8,7	1,8K	$4,5\pm 0,2$	95,0		2,37		0,3	1,3	
7,0	7,0	1,2K	$3,5\pm 0,2$	98,0		2,44		0,3	1,1	
5,8	5,8	0,75K	$2,5\pm 0,2$	101,0		2,51		0,2	1,0	
4,3	4,3	0,43K	$1,5\pm 0,2$	106,0		2,66		0,2	0,9	
2,9	2,9	$\leq 0,12K$	$0,45\pm 0,45$	112,0		2,81		0,2	0,8	



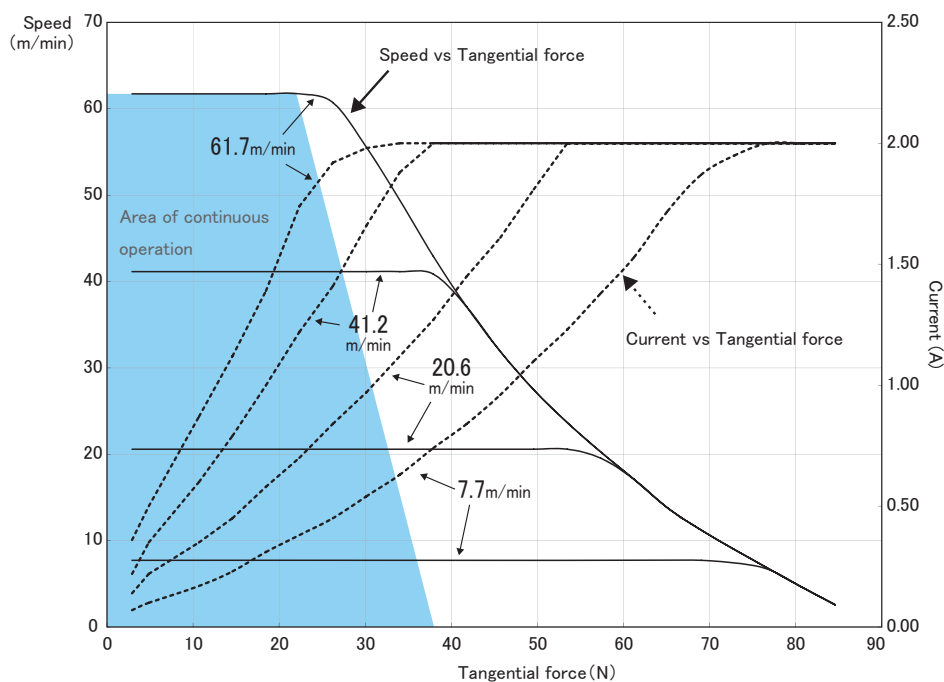
SPEED CODE 30

V (m/min)+/-3%		Speed selection		Tangential force (N)		Torque (Nm)		Current (A)		
No load	Nominal	By resistor (Ω)	Via external voltage (V)	Nominal	Starting	Nominal	Starting	No load	Nominal	Starting
29,2	29,2	$\geq 9,1K$	$9,65\pm 0,35$	48,0	178	1,19	4,45	0,5	1,7	2,0
26,8	26,8	6,2K	$8,5\pm 0,2$	52,0		1,29		0,5	1,7	
21,9	21,9	4,3K	$7,5\pm 0,2$	56,0		1,39		0,4	1,6	
19,5	19,5	3,3K	$6,5\pm 0,2$	58,0		1,46		0,4	1,5	
17,0	17,0	2,2K	$5,5\pm 0,2$	61,0		1,52		0,3	1,4	
14,6	14,6	1,8K	$4,5\pm 0,2$	65,0		1,62		0,3	1,3	
9,7	9,7	1,2K	$3,5\pm 0,2$	69,0		1,72		0,3	1,0	
7,3	7,3	0,75K	$2,5\pm 0,2$	73,0		1,82		0,2	0,9	
4,9	4,9	0,43K	$1,5\pm 0,2$	77,0		1,92		0,2	0,8	
3,7	3,7	$\leq 0,12K$	$0,45\pm 0,45$	77,0		1,92		0,2	0,7	

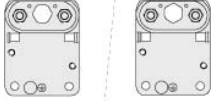
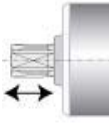




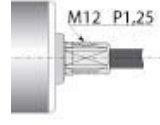

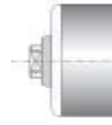

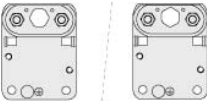
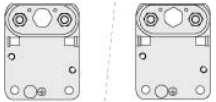
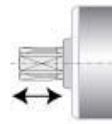

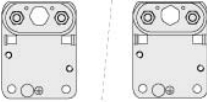
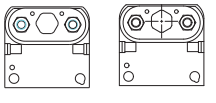
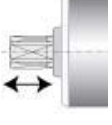
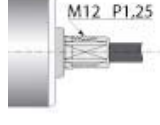


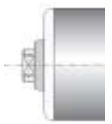


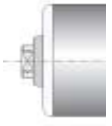

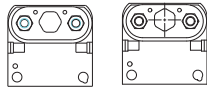
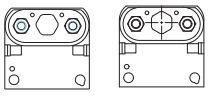
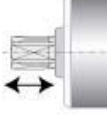

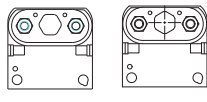


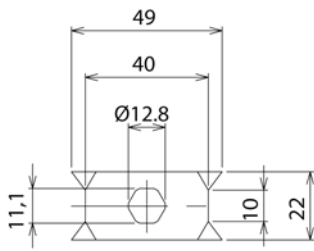
SPEED CODE 60

V (m/min)+/-3%		Speed selection		Tangential force (N)		Torque (Nm)		Current (A)		
No load	Nominal	By resistor (Ω)	Via external voltage (V)	Nominal	Starting	Nominal	Starting	No load	Nominal	Starting
61,7	61,7	$\geq 9,1K$	$9,65\pm 0,35$	23,0	84	0,57	2,1	0,5	1,7	2,0
56,6	56,6	6,2K	$8,5\pm 0,2$	24,0		0,6		0,5	1,7	
46,3	46,3	4,3K	$7,5\pm 0,2$	26,0		0,65		0,4	1,6	
41,2	41,2	3,3K	$6,5\pm 0,2$	28,0		0,7		0,4	1,5	
36,0	36,0	2,2K	$5,5\pm 0,2$	29,0		0,72		0,3	1,4	
30,9	30,9	1,8K	$4,5\pm 0,2$	31,0		0,77		0,3	1,3	
25,0	25,0	1,2K	$3,5\pm 0,2$	32,0		0,8		0,3	1,1	
20,6	20,6	0,75K	$2,5\pm 0,2$	33,0		0,82		0,2	1,0	
15,4	15,4	0,43K	$1,5\pm 0,2$	34,0		0,85		0,2	0,9	
10,3	10,3	$\leq 0,12K$	$0,45\pm 0,45$	36,0		0,9		0,2	0,8	

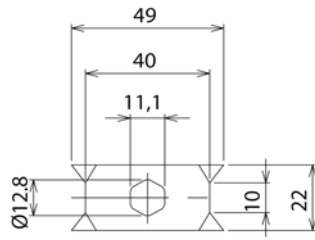
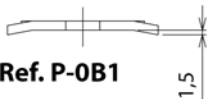
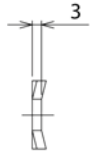


5 - PRESENTATION OF THE DIFFERENT FIXING OPTIONS

FREE SIDE FIXING		MOTOR SIDE FIXING	
 Ref : A-071-G / A-081-G <i>(optional)</i>			 Ref : P-0B1 / P-0C1 <i>(obligatory)</i>
 Vis M8 x 14 <i>(obligatory)</i>			 Ref : P-0B1 / P-0C1 <i>(obligatory)</i>
			 Ref : A-071-G / A-081-G <i>(obligatory)</i>
 Ref : A-071-G / A-081-G <i>(optional)</i>			 Ref : A-071-G / A-081-G <i>(obligatory)</i>
 Ref : C-071 / C-081 <i>(optional)</i>			 Ref : P-0B1 / P-0C1 <i>(obligatory)</i>
 Vis M8 x 14 <i>(obligatory)</i>			 Ref : P-0B1 / P-0C1 <i>(obligatory)</i>
			 Ref : C-071 / C-081 <i>(optional)</i>
 Ref : C-071 / C-081 <i>(optional)</i>			 Ref : C-071 / C-081 <i>(optional)</i>



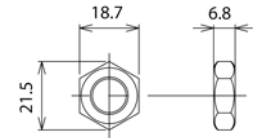
Ref. P-0B1



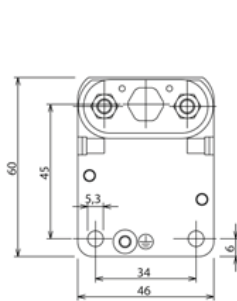
Ref. P-0C1



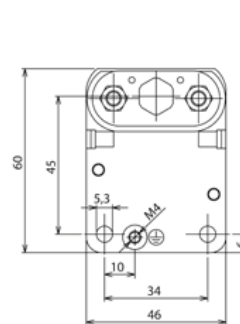
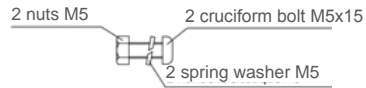
Ref. FEY01



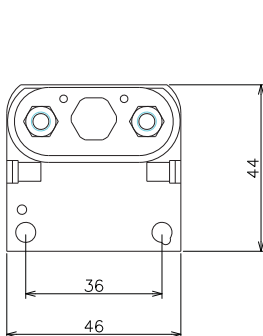
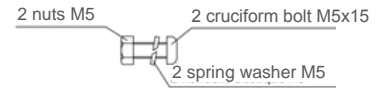
Note :
Nut ref. FEY01 should be used with the claw plate ref. P-0B1 or P-0C1.



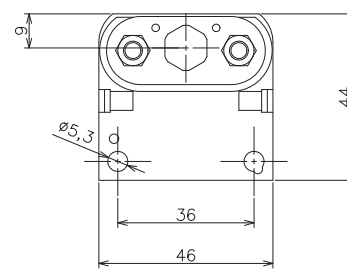
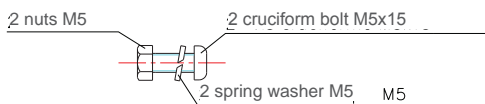
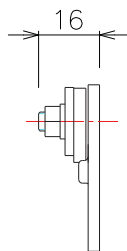
Ref. A-071-G



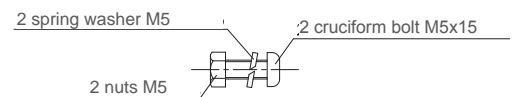
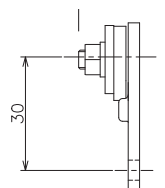
Ref. A-081-G



Ref. C-071



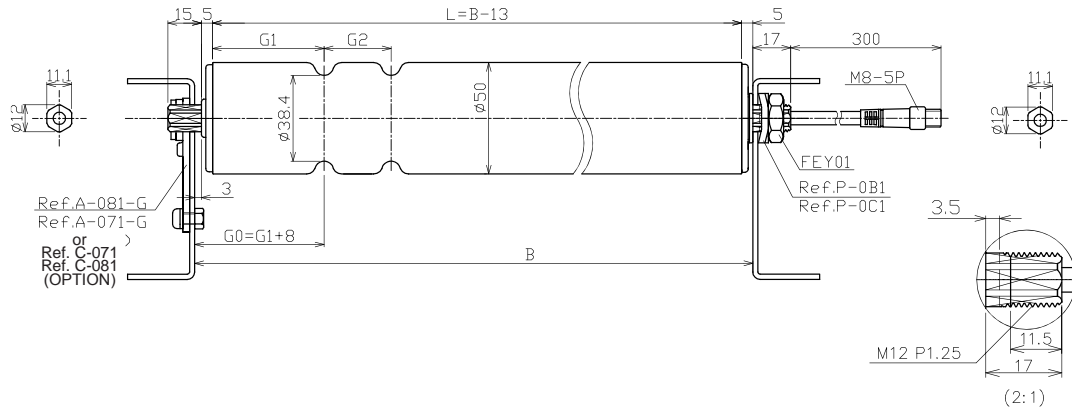
Ref. C-081



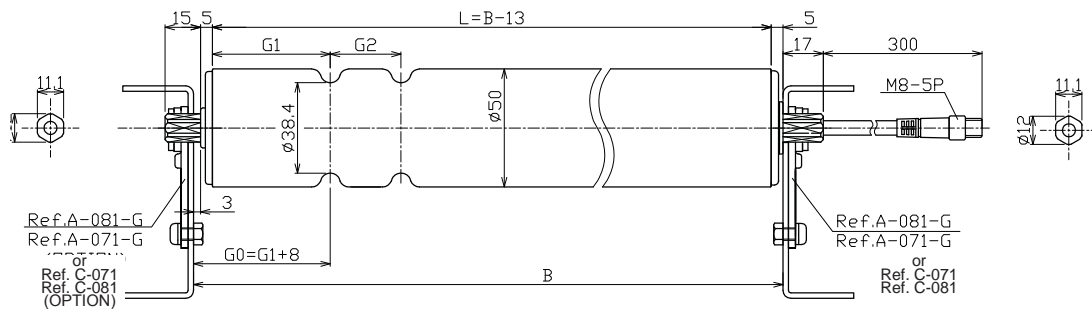
6 - DIMENSIONAL CHARACTERISTICS

Grooved tube - Hexagonal spring loaded shaft on free end

PM500XE (50XE) - Hexagonal threaded shaft motor side and hexagonal spring loaded shaft on free end



PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimension PM500XE (50XE)

STEEL TUBE

Speed code	Dimension (B)	Tube length (L)	Grooves for steel tube Depth = 5,8 mm			
	mini ≤ B ≤ max	mini ≤ L ≤ max	G0 mini	G1 mini	G2 mini	G1 + G2 max
17	318+G1+G2 ≤ B ≤ 1213	305+G1+G2 ≤ L ≤ 1200	≥ 41	≥ 33	≥ 22	≤ 300
30	293+G1+G2 ≤ B ≤ 1213	280+G1+G2 ≤ L ≤ 1200				
60	293+G1+G2 ≤ B ≤ 1213	280+G1+G2 ≤ L ≤ 1200				

STAINLESS STEEL TUBE

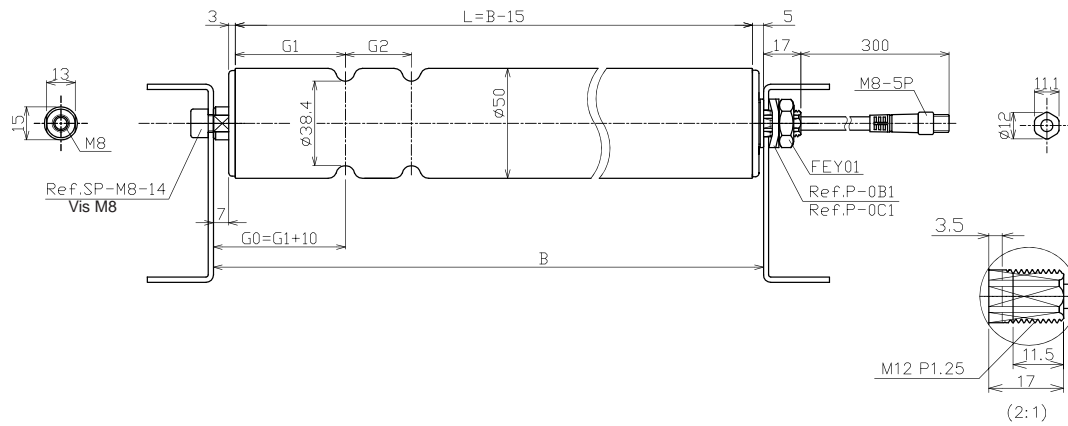
Speed code	Dimension (B)	Tube length (L)	Grooves for stainless steel tube Depth = 5,2 mm			
	mini ≤ B ≤ max	mini ≤ L ≤ max	G0 mini	G1 mini	G2 mini	G1 + G2 max
17	318+G1+G2 ≤ B ≤ 1213	305+G1+G2 ≤ L ≤ 1200	≥ 41	≥ 33	≥ 30	≤ 300
30	293+G1+G2 ≤ B ≤ 1213	280+G1+G2 ≤ L ≤ 1200				
60	293+G1+G2 ≤ B ≤ 1213	280+G1+G2 ≤ L ≤ 1200				

WEIGHT / STATIC LOAD / AXIAL FORCE

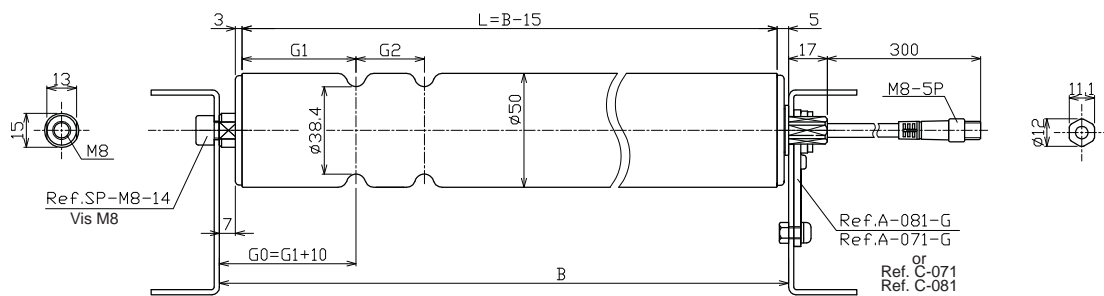
Tube length		300	400	500	600	700	800	900	1000	1100	1200
Weight (Kg)	17m/min	2,8	2,9	3,1	3,3	3,4	3,6	3,7	3,9	4,1	4,2
	30 m/min	2,5	2,7	2,9	3,0	3,2	3,4	3,5	3,7	3,9	4,0
	60 m/min	2,6	2,7	2,9	3,1	3,2	3,4	3,6	3,7	3,9	4,1
Static load		65	55	45	35	30	25	20	20	15	15
Axial force max (N)		290									

Grooved tube - M8 female threaded shaft with screw on free end

PM500XE (50XE) - Hexagonal threaded shaft motor side and M8 female threaded shaft with screw on free end



PM500XE (50XE) - Hexagonal plain shaft motor side and M8 threaded shaft with screw on free end



Dimensions PM500XE (50XE)

STEEL TUBE

Speed code	Dimension (B)	Tube length (L)	Grooves for steel tube Depth = 5,8 mm			
	mini ≤ B ≤ max	mini ≤ L ≤ max	G0 mini	G1 mini	G2 mini	G1 + G2 max
17	320+G1+G2 ≤ B ≤ 1215	305+G1+G2 ≤ L ≤ 1200	≥ 43	≥ 33	≥ 22	≤ 300
30	300+G1+G2 ≤ B ≤ 1215	280+G1+G2 ≤ L ≤ 1200				
60	300+G1+G2 ≤ B ≤ 1215	280+G1+G2 ≤ L ≤ 1200				

STAINLESS STEEL TUBE

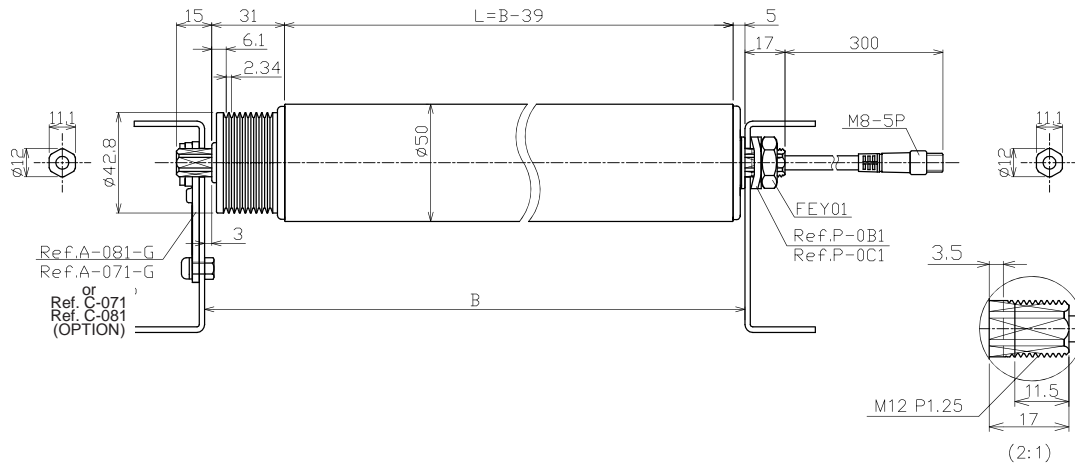
Speed code	Dimension (B)	Tube length (L)	Grooves for stainless steel tube Depth = 5,2 mm			
	mini ≤ B ≤ max	mini ≤ L ≤ max	G0 mini	G1 mini	G2 mini	G1 + G2 max
17	320+G1+G2 ≤ B ≤ 1215	305+G1+G2 ≤ L ≤ 1200	≥ 41	≥ 33	≥ 30	≤ 300
30	300+G1+G2 ≤ B ≤ 1215	280+G1+G2 ≤ L ≤ 1200				
60	300+G1+G2 ≤ B ≤ 1215	280+G1+G2 ≤ L ≤ 1200				

WEIGHT / STATIC LOAD / AXIAL FORCE

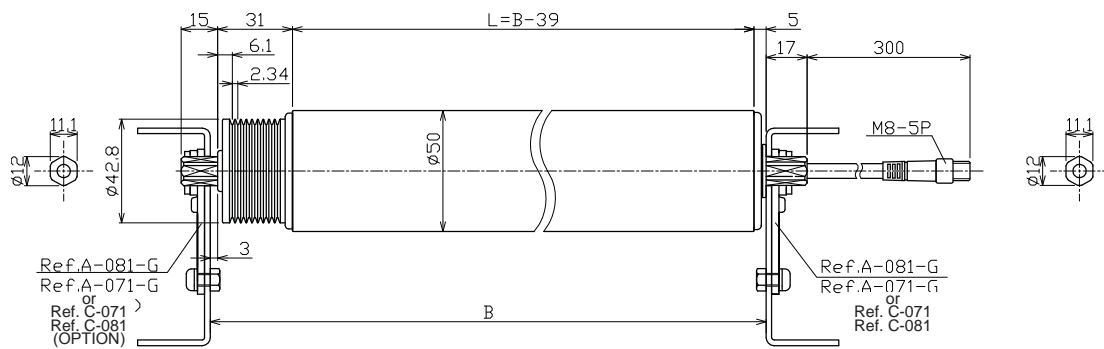
Tube length	300	400	500	600	700	800	900	1000	1100	1200	
Weight (Kg)	17m/min	2,8	2,9	3,1	3,2	3,4	3,6	3,7	3,9	4,1	4,2
	30 m/min	2,5	2,7	2,9	3,0	3,2	3,4	3,5	3,7	3,8	4,0
	60 m/min	2,6	2,7	2,9	3,1	3,2	3,4	3,6	3,7	3,9	4,0
Static load	65	55	45	35	30	25	20	20	15	15	
Axial force max (N)	290										

Roller with pulley for ribbed belt - Hexagonal spring loaded shaft on free end

PM500XE (50XE) - Hexagonal threaded shaft motor side and hexagonal spring loaded shaft on free end



PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XE (50XE)

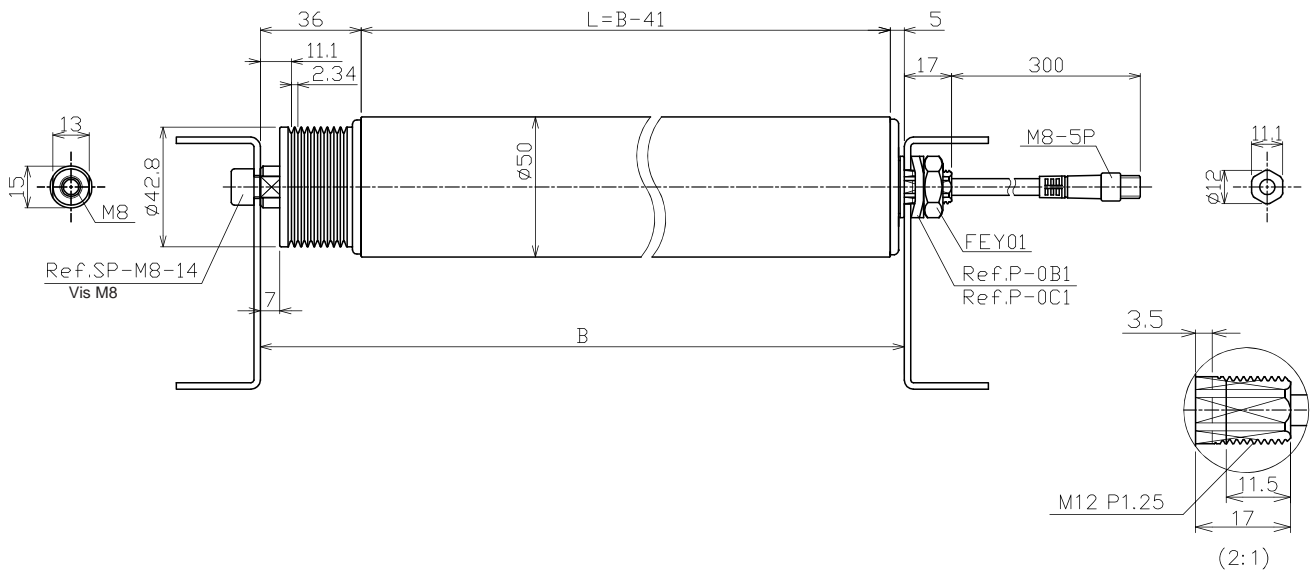
Speed code	Dimension (B)	Tube length (L)
	mini ≤ B ≤ max	mini ≤ L ≤ max
17	379 ≤ B ≤ 1239	340 ≤ L ≤ 1200
30	356 ≤ B ≤ 1239	315 ≤ L ≤ 1200
60	356 ≤ B ≤ 1239	315 ≤ L ≤ 1200

WEIGHT / STATIC LOAD / AXIAL FORCE

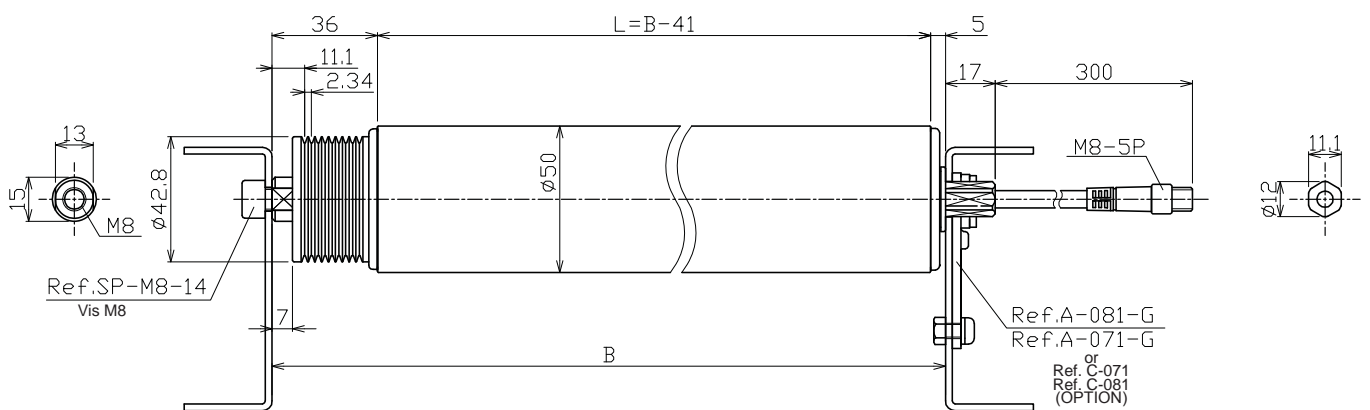
Tube length		300	400	500	600	700	800	900	1000	1100	1200
Weight (Kg)	17m/min	2,8	3,1	3,2	3,4	3,6	3,7	3,9	4,1	4,2	4,4
	30 m/min	2,5	2,9	3,0	3,2	3,4	3,5	3,7	3,8	4,0	4,2
	60 m/min	2,6	2,9	3,1	3,2	3,4	3,6	3,7	3,9	4,0	4,2
Static load		65	55	45	35	30	25	20	20	15	15
Axial force max (N)		290									

Roller with pulley for ribbed belt - M8 female threaded shaft with screw on free end

PM500XE (50XE) - Hexagonal threaded shaft motor side and M8 female threaded shaft with screw on free end



PM500XE (50XE) - Hexagonal plain shaft motor side and M8 female threaded shaft with screw on free end



Dimensions PM500XE (50XE)

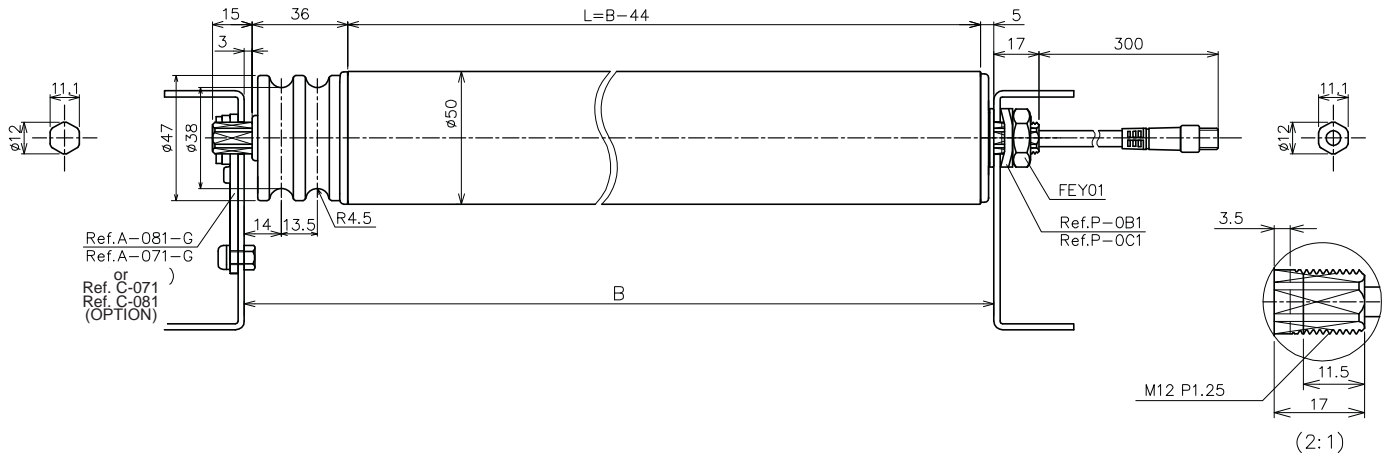
Speed code	Dimension (B)	Tube length (L)
	mini ≤ B ≤ max	mini ≤ L ≤ max
17	371 ≤ B ≤ 1241	330 ≤ L ≤ 1200
30	346 ≤ B ≤ 1241	305 ≤ L ≤ 1200
60	346 ≤ B ≤ 1241	305 ≤ L ≤ 1200

WEIGHT / STATIC LOAD / AXIAL FORCE

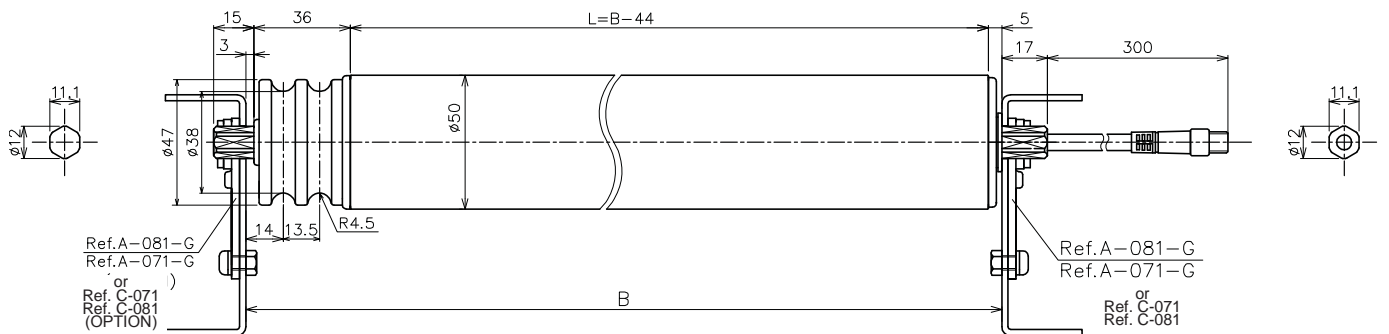
Tube length		300	400	500	600	700	800	900	1000	1100	1200
Weight (Kg)	17m/min	2,8	3,0	3,2	3,3	3,5	3,7	3,8	4,0	4,2	4,3
	30 m/min	2,6	2,8	3,0	3,1	3,3	3,4	3,6	3,8	3,9	4,1
	60 m/min	2,7	2,8	3,0	3,2	3,3	3,5	3,6	3,8	4,0	4,1
Static load		65	55	45	35	30	25	20	20	15	15
Axial force max (N)		290									

Roller with pulley for round belt - Hexagonal spring loaded shaft on free end

PM500XE (50XE) - Hexagonal threaded shaft motor side and hexagonal spring loaded shaft on free end



PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XE (50XE)

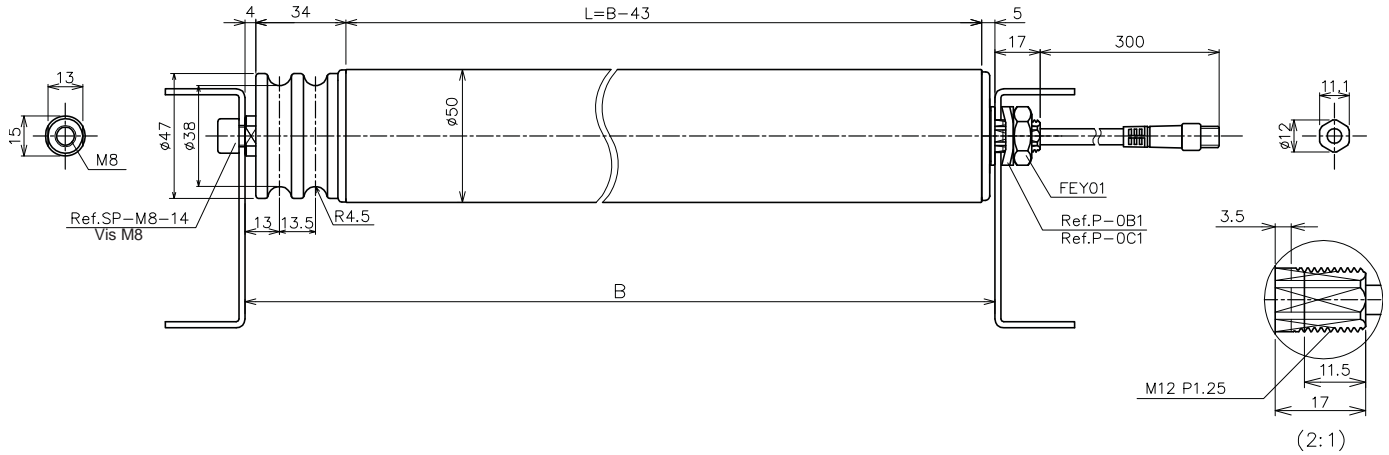
Speed code	Dimension (B)	Tube length (L)
	mini ≤ B ≤ max	mini ≤ L ≤ max
17	384 ≤ B ≤ 1244	340 ≤ L ≤ 1200
30	359 ≤ B ≤ 1244	315 ≤ L ≤ 1200
60	359 ≤ B ≤ 1244	315 ≤ L ≤ 1200

WEIGHT / STATIC LOAD / AXIAL FORCE

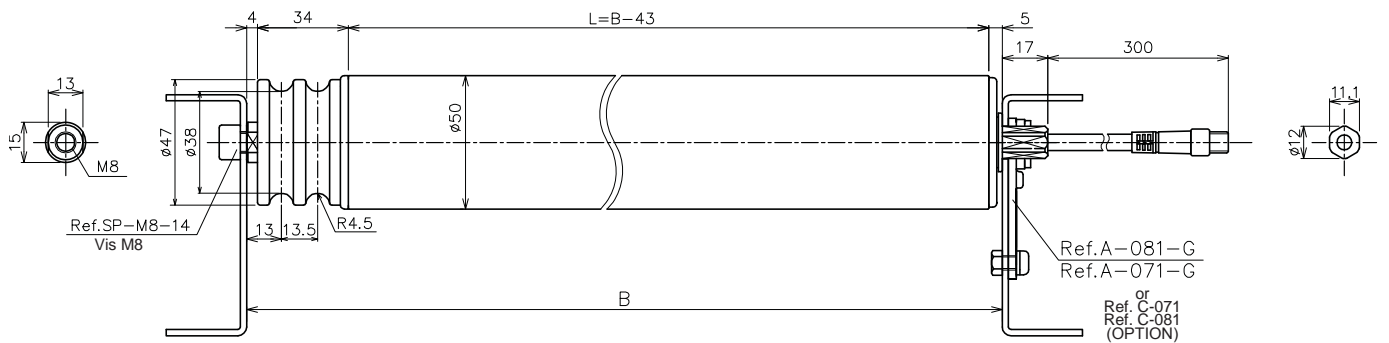
Tube length		300	400	500	600	700	800	900	1000	1100	1200
Weight (Kg)	17m/min	2,8	3,1	3,2	3,4	3,6	3,7	3,9	4,1	4,2	4,4
	30 m/min	2,5	2,9	3,0	3,2	3,4	3,5	3,7	3,8	4,0	4,2
	60 m/min	2,6	2,9	3,1	3,2	3,4	3,6	3,7	3,9	4,0	4,2
Static load		65	55	45	35	30	25	20	20	15	15
Axial force max (N)		290									

Roller with pulley for round belt - M8 female threaded shaft with screw on free end

PM500XE (50XE) - Hexagonal threaded shaft motor side and M8 female threaded shaft with screw on free end



PM500XE (50XE) - Hexagonal plain shaft motor side and M8 female threaded shaft with screw on free end



Dimensions PM500XE (50XE)

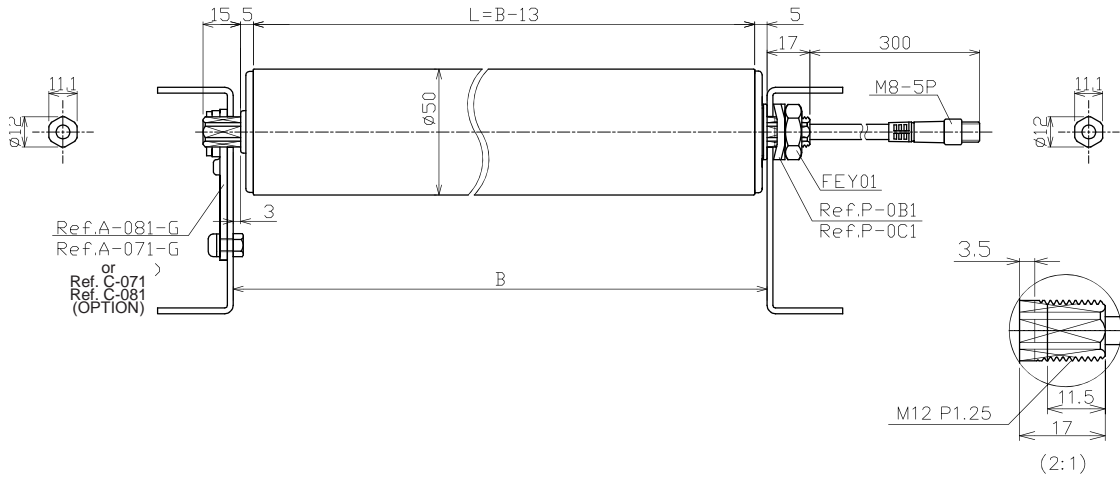
Speed code	Dimension (B)	Tube length (L)
	mini ≤ B ≤ max	mini ≤ L ≤ max
17	373 ≤ B ≤ 1243	330 ≤ L ≤ 1200
30	348 ≤ B ≤ 1243	305 ≤ L ≤ 1200
60	348 ≤ B ≤ 1243	305 ≤ L ≤ 1200

WEIGHT / STATIC LOAD / AXIAL FORCE

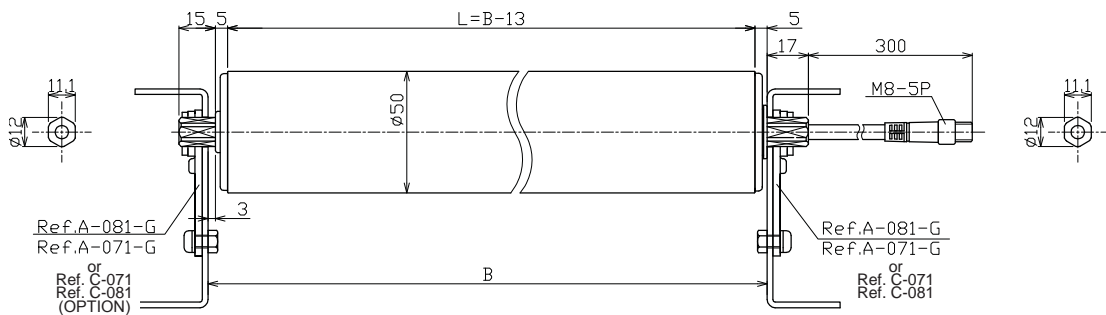
Tube length		300	400	500	600	700	800	900	1000	1100	1200
Weight (Kg)	17m/min	2,8	3,0	3,2	3,3	3,5	3,7	3,8	4,0	4,2	4,3
	30 m/min	2,6	2,8	3,0	3,1	3,3	3,4	3,6	3,8	3,9	4,1
	60 m/min	2,7	2,8	3,0	3,2	3,3	3,5	3,6	3,8	4,0	4,1
Static load		65	55	45	35	30	25	20	20	15	15
Axial force max (N)		290									

Roller without drive - Hexagonal spring loaded shaft on free end

PM500XE (50XE) - Hexagonal threaded shaft motor side and hexagonal spring loaded shaft on free end



PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XE (50XE)

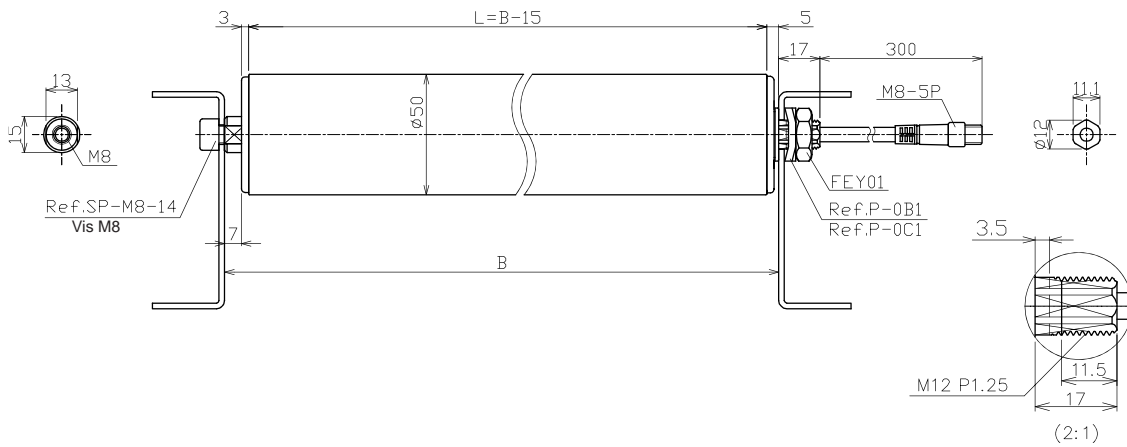
Speed code	Dimension (B)	Tube length (L)
	mini ≤ B ≤ max	mini ≤ L ≤ max
17	353 ≤ B ≤ 1215	340 ≤ L ≤ 1200
30	328 ≤ B ≤ 1215	315 ≤ L ≤ 1200
60	328 ≤ B ≤ 1215	315 ≤ L ≤ 1200

WEIGHT / STATIC LOAD / AXIAL FORCE

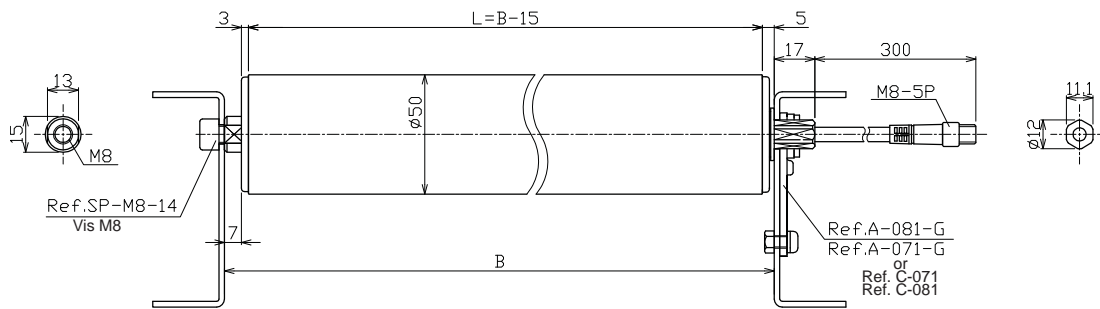
Tube length		300	400	500	600	700	800	900	1000	1100	1200
Weight (Kg)	17m/min	2,8	2,9	3,1	3,3	3,4	3,6	3,7	3,9	4,1	4,2
	30 m/min	2,5	2,7	2,9	3,0	3,2	3,4	3,5	3,7	3,9	4,0
	60 m/min	2,6	2,7	2,9	3,1	3,2	3,4	3,6	3,7	3,9	4,1
Static load		65	55	45	35	30	25	20	20	15	15
Axial force max (N)		290									

Roller without drive - M8 female threaded shaft with screw on free end

PM500XE (50XE) - Hexagonal threaded shaft motor side and M8 female threaded shaft with screw on free end



PM500XE (50XE) - Hexagonal plain shaft motor side and M8 female threaded shaft with screw on free end



Dimensions PM500XE (50XE)

Speed code	Dimension (B)	Tube length (L)
	mini ≤ B ≤ max	mini ≤ L ≤ max
17	345 ≤ B ≤ 1213	330 ≤ L ≤ 1200
30	320 ≤ B ≤ 1213	305 ≤ L ≤ 1200
60	320 ≤ B ≤ 1213	305 ≤ L ≤ 1200

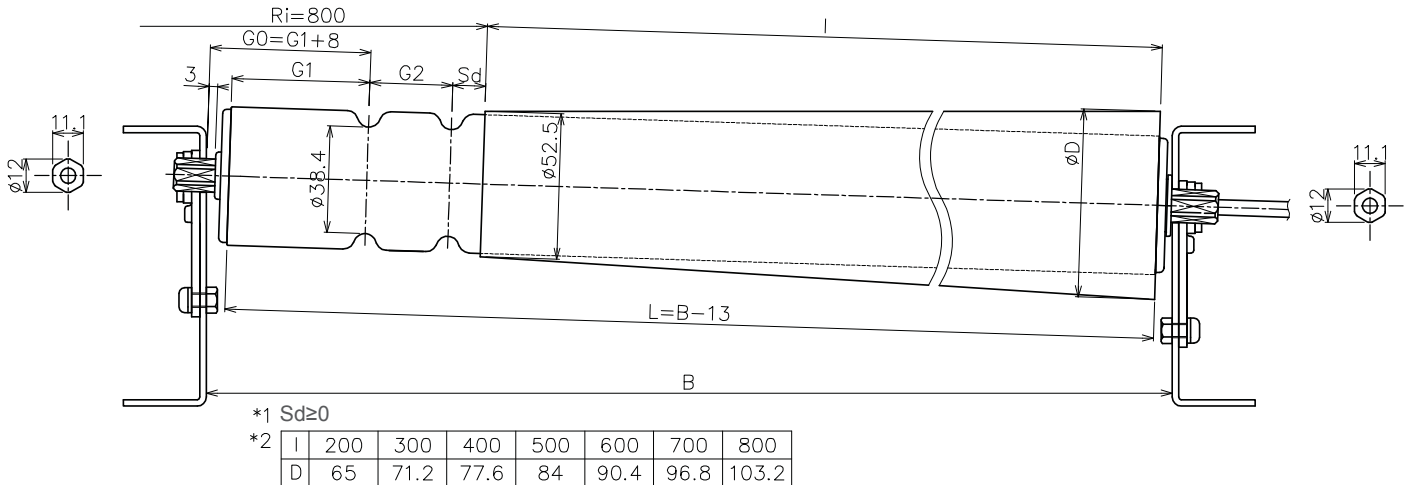
WEIGHT / STATIC LOAD / AXIAL FORCE

Tube length		300	400	500	600	700	800	900	1000	1100	1200
Weight (Kg)	17m/min	2,8	2,9	3,1	3,2	3,4	3,6	3,7	3,9	4,1	4,2
	30 m/min	2,5	2,7	2,9	3,0	3,2	3,4	3,5	3,7	3,8	4,0
	60 m/min	2,6	2,7	2,9	3,1	3,2	3,4	3,6	3,7	3,9	4,0
Static load		65	55	45	35	30	25	20	20	15	15
Axial force max (N)		290									

7 - DIMENSIONAL CHARACTERISTICS - CURVE

Conical roller with grooved tube - Ri = 800mm

PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XE (50XE) - Inner radius of curvature (Ri) : 800mm

STEEL TUBE

Speed code	Dimension (B)	Tube length (L)	Grooves for steel tube Depth = 5,8mm				Tapered sleeve length (l)
	mini ≤ B ≤ max	mini ≤ L ≤ max	G0 mini	G1 mini	G2 mini	G1 + G2 max	
17	323+G1+G2 ≤ B ≤ 1200	310+G1+G2 ≤ L ≤ 1200	≥ 41	≥ 33	≥ 22	≤ 300	200, 300, 400, 500, 600, 700, 800
30	298+G1+G2 ≤ B ≤ 1200	285+G1+G2 ≤ L ≤ 1200					
60	298+G1+G2 ≤ B ≤ 1200	285+G1+G2 ≤ L ≤ 1200					

STAINLESS STEEL TUBE

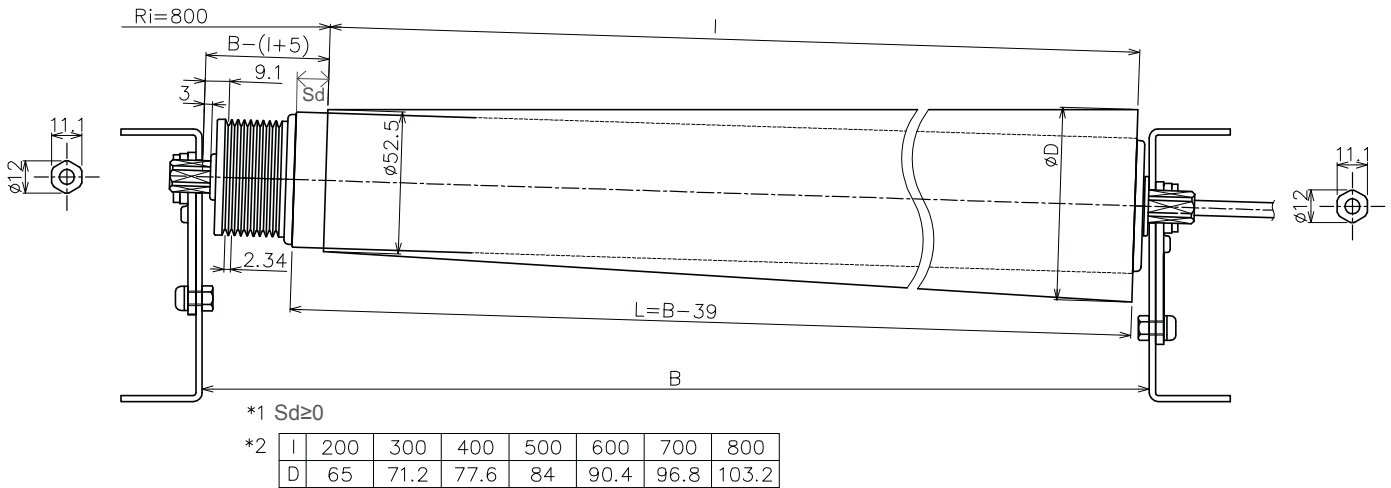
Speed code	Dimension (B)	Tube length (L)	Grooves for stainless steel tube Depth = 5,8mm				Tapered sleeve length (l)
	mini ≤ B ≤ max	mini ≤ L ≤ max	G0 mini	G1 mini	G2 mini	G1 + G2 max	
17	323+G1+G2 ≤ B ≤ 1200	310+G1+G2 ≤ L ≤ 1200	≥ 41	≥ 33	≥ 30	≤ 300	200, 300, 400, 500, 600, 700, 800
30	298+G1+G2 ≤ B ≤ 1200	285+G1+G2 ≤ L ≤ 1200					
60	298+G1+G2 ≤ B ≤ 1200	285+G1+G2 ≤ L ≤ 1200					

ADDITIONAL WEIGHT

Sleeve length	200	300	400	500	600	700	800
Additional weight(kg)	0,1	0,2	0,3	0,4	0,5	0,6	0,8
Max load to be conveyed (kg)	50						

Conical roller with pulley for ribbed belt - Ri = 800mm

PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XE (50XE) - Inner radius of curvature (Ri) : 800mm

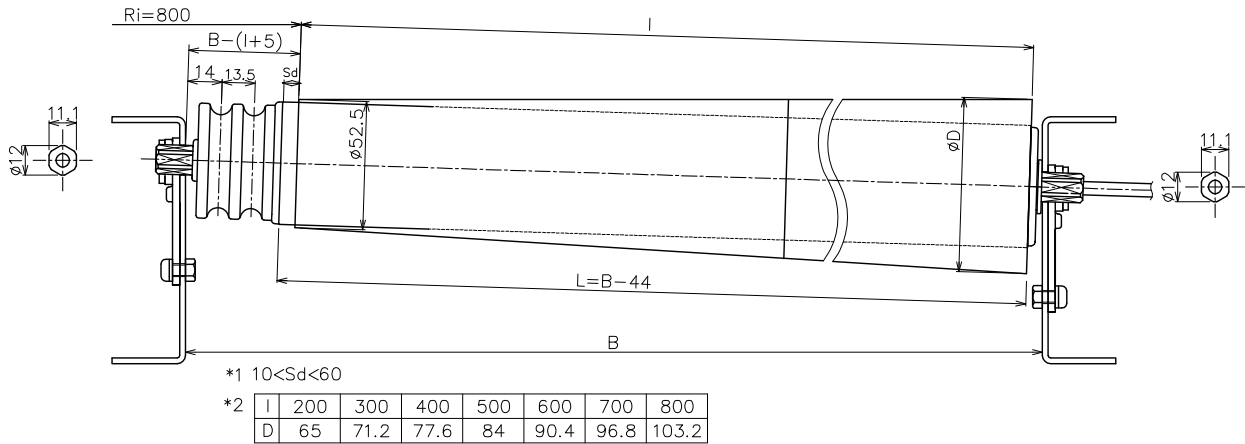
Speed code	Dimension (B)	Tube length (L)	Tapered sleeve length (l)
	mini ≤ B ≤ max		
17	379 ≤ B ≤ 839	340 ≤ L ≤ 800	200, 300, 400, 500, 600, 700, 800
30	354 ≤ B ≤ 839	315 ≤ L ≤ 800	
60	356 ≤ B ≤ 839	315 ≤ L ≤ 800	

ADDITIONAL WEIGHT

Sleeve length	200	300	400	500	600	700	800
Additional weight(kg)	0,1	0,2	0,3	0,4	0,5	0,6	0,8
Max load to be conveyed (kg)	50						

■ Conical roller with pulley for round belt - Ri = 800mm

PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XE (50XE) - Inner radius of curvature (Ri): 800 mm

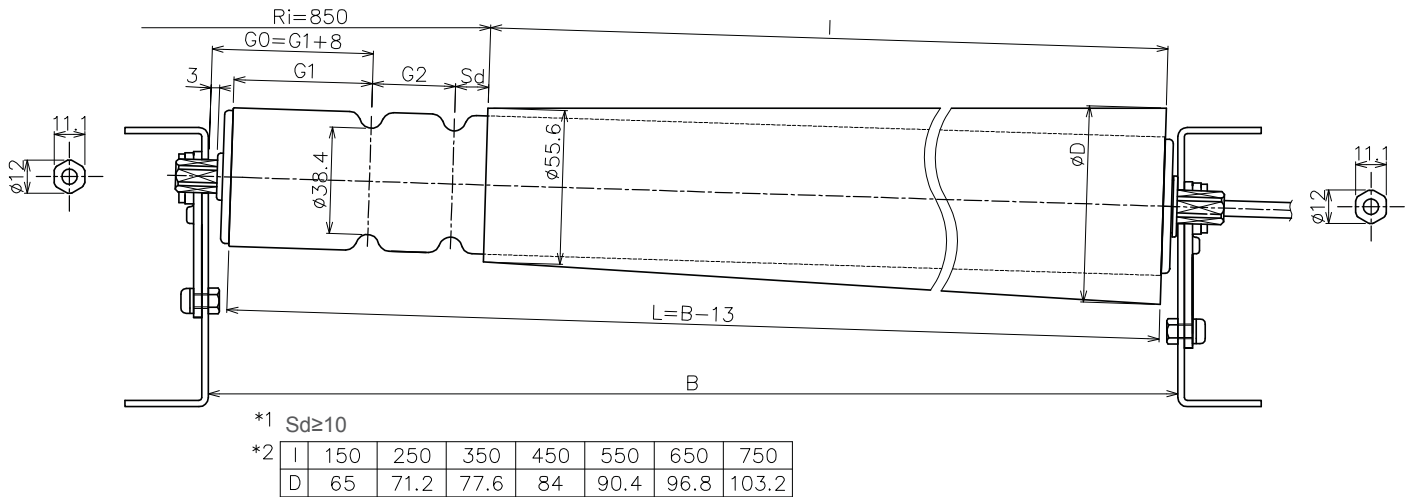
Speed code	Dimension (B)	Tube length (L)	Tapered sleeve length (l)
	mini ≤ B ≤ max	mini ≤ L ≤ max	
17	384 ≤ B ≤ 1244	340 ≤ L ≤ 1200	200, 300, 400, 500, 600, 700, 800
30	359 ≤ B ≤ 1244	315 ≤ L ≤ 1200	
60	359 ≤ B ≤ 1244	315 ≤ L ≤ 1200	

ADDITIONAL WEIGHT

Sleeve length	200	300	400	500	600	700	800
Additional weight(kg)	0,1	0,2	0,3	0,4	0,5	0,6	0,8
Max load to be conveyed (kg)	50						

Conical roller with grooved tube - Ri = 850mm

PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XE (50XE) - Inner radius of curvature (Ri) : 850mm

STEEL TUBE

Speed code	Dimension (B)	Tube length (L)	Grooves for steel tube Depth = 5,8mm				Tapered sleeve length (l)
	mini ≤ B ≤ max	mini ≤ L ≤ max	G0 mini	G1 mini	G2 mini	G1 + G2 max	
17	323+G1+G2 ≤ B ≤ 1200	310+G1+G2 ≤ L ≤ 1200					150, 250, 350, 450, 550, 650, 750
30	298+G1+G2 ≤ B ≤ 1200	285+G1+G2 ≤ L ≤ 1200	≥ 41	≥ 33	≥ 22	≤ 300	
60	298+G1+G2 ≤ B ≤ 1200	285+G1+G2 ≤ L ≤ 1200					

STAINLESS STEEL TUBE

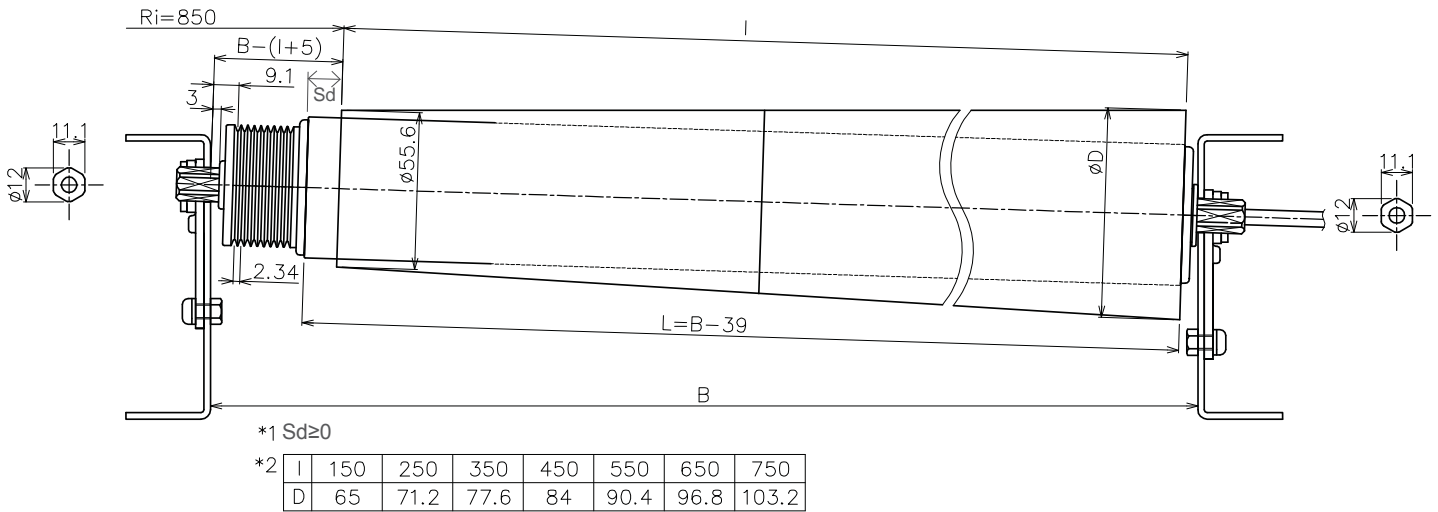
Speed code	Dimension (B)	Tube length (L)	Grooves for stainless steel tube Depth = 5,8mm				Tapered sleeve length (l)
	mini ≤ B ≤ max	mini ≤ L ≤ max	G0 mini	G1 mini	G2 mini	G1 + G2 max	
17	323+G1+G2 ≤ B ≤ 1200	310+G1+G2 ≤ L ≤ 1200					150, 250, 350, 450, 550, 650, 750
30	298+G1+G2 ≤ B ≤ 1200	285+G1+G2 ≤ L ≤ 1200	≥ 41	≥ 33	≥ 30	≤ 300	
60	298+G1+G2 ≤ B ≤ 1200	285+G1+G2 ≤ L ≤ 1200					

ADDITIONAL WEIGHT

Sleeve length	150	250	350	450	550	650	750
Additional weight(kg)	0,1	0,2	0,2	0,3	0,5	0,6	0,7
Max load to be conveyed (kg)	50						

Conical roller with pulley for ribbed belt - Ri = 850mm

PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XE (50XE) - Inner radius of curvature (Ri) : 850mm

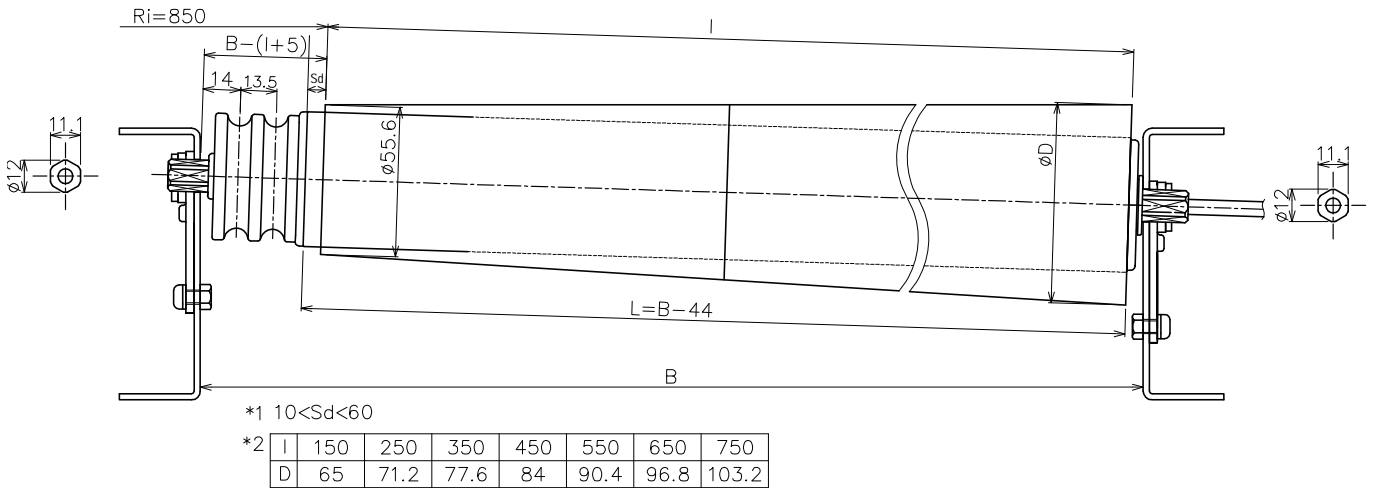
Speed code	Dimension (B)	Tube length (L)	Tapered sleeve length (l)
	mini ≤ B ≤ max		
17	379 ≤ B ≤ 789	340 ≤ L ≤ 750	150, 250, 350, 450, 550, 650, 750
30	354 ≤ B ≤ 789	315 ≤ L ≤ 750	
60	356 ≤ B ≤ 789	315 ≤ L ≤ 750	

ADDITIONAL WEIGHT

Sleeve length	150	250	350	450	550	650	750
Additional weight(kg)	0,1	0,2	0,2	0,3	0,5	0,6	0,7
Max load to be conveyed (kg)	50						

Conical roller with pulley for round belt - Ri = 850mm

PM500XE (50XE) - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XE (50XE) - Inner radius of curvature (Ri): 850 mm

Speed code	Dimension (B)	Tube length (L)	Tapered sleeve length (l)
	mini ≤ B ≤ max	mini ≤ L ≤ max	
17	384 ≤ B ≤ 1244	340 ≤ L ≤ 1200	150, 250, 350, 450, 550, 650, 750
30	359 ≤ B ≤ 1244	315 ≤ L ≤ 1200	
60	359 ≤ B ≤ 1244	315 ≤ L ≤ 1200	

ADDITIONAL WEIGHT

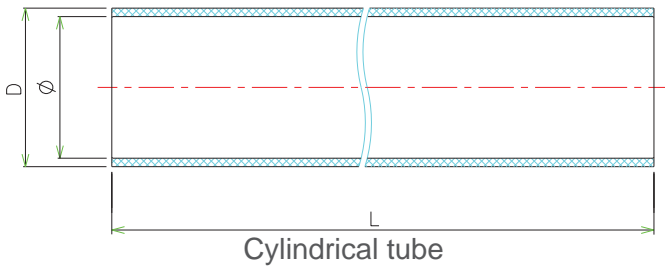
Sleeve length	150	250	350	450	550	650	750
Additional weight(kg)	0,1	0,2	0,2	0,3	0,5	0,6	0,7
Max load to be conveyed (kg)	50						

8 - DIMENSIONAL CHARACTERISTICS - MISCELLANEOUS

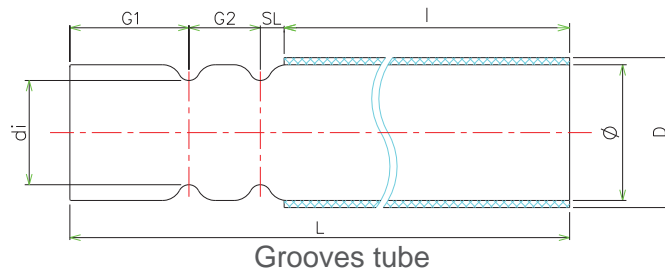
PVC sleeve

For conveying a fragile load or to lower the sound level

Sleeved by compressed air



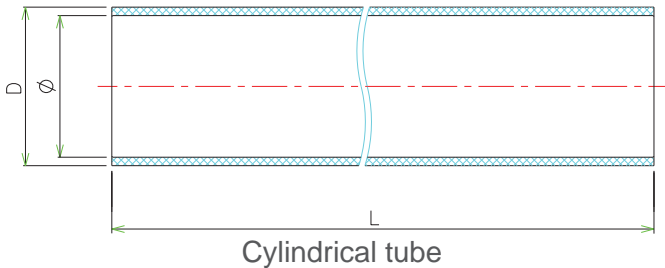
Thickness (mm)	L (mm)	Ø (mm)	D (mm)	Hardness
2	≤1200	50	54	~58 shore A
3			56	



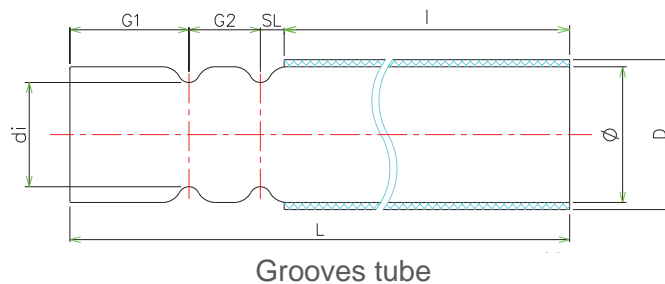
Thickness (mm)	L (mm)	Ø (mm)	D (mm)	SL (mm)
2	≤1200	50	54	10
3			56	

Coated in natural rubber, nitrile rubber and polyurethane

Material	Characteritics	Hardness (ShA)	Thickness (mm)
Natural rubber	It improves the adherence of the products conveyed and reduces noise. Do not use in contact with hydrocarbon, oil or grease.	60~65	3
Nitrile rubber			
Polyurethane	High resistance to abrasion, tearing and oil.	90	

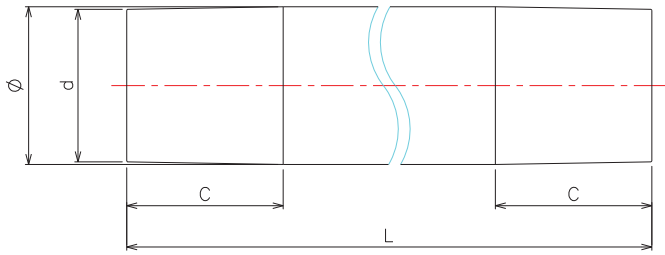


L (mm)	Ø (mm)	D (mm)
≤1000	50	56



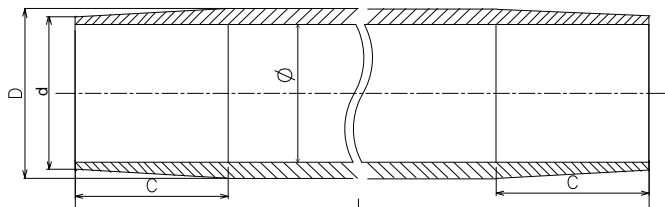
L (mm)	Ø (mm)	D (mm)	SL (mm)
≤1000	50	56	10

Crowned machining



Tube in zinc-coated or stainless steel

L (mm)	C (mm)	Ø (mm)	d (mm)
≤600	60	50	49
601≤800	100		



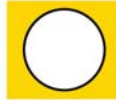
Tube with natural rubber/polyurethane coating - thickness 3 mm

L (mm)	C (mm)	Ø (mm)	d (mm)	D (mm)
≤600	60	50	55	56
601≤800	100			

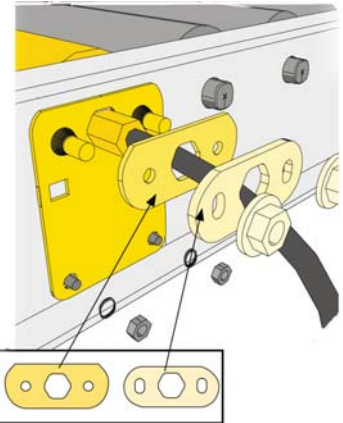
9 - MOUNTING ON THE FRAMES

Mounting plate for plain 11.1 mm hexagonal shaft - FLAT ON TOP

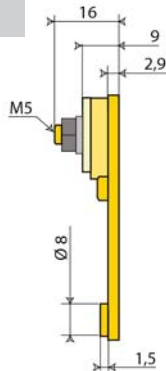
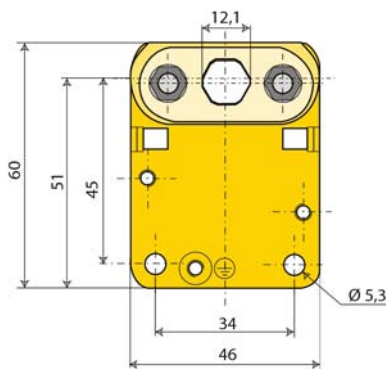
Conveyor with hole $\varnothing 12,1\text{mm}$



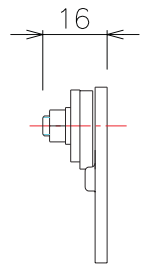
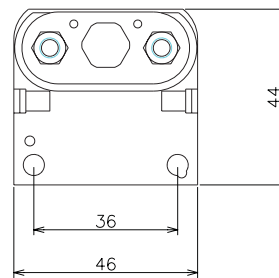
or hexagonal 11,2mm



Reference	Plate
	A-071-G

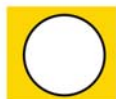


Reference	Plate
	C-071

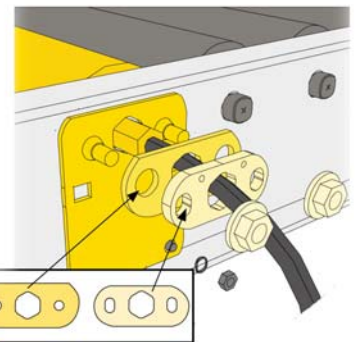


Mounting plate for plain 11.1 mm hexagonal shaft - ANGLE ON TOP

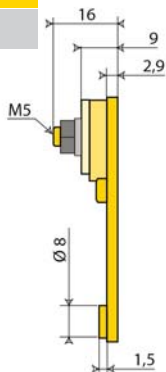
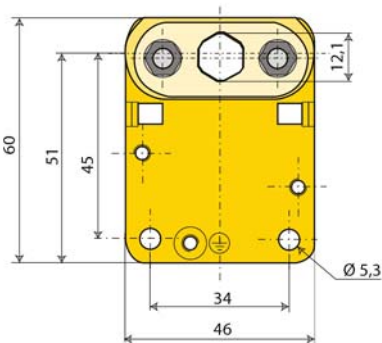
Conveyor with hole $\varnothing 12,1\text{mm}$



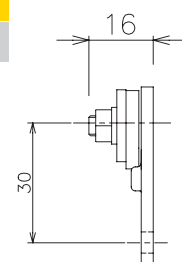
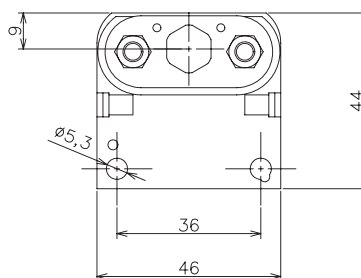
or hexagonal 11,2mm



Reference	Plate
	A-081-G



Reference	Plate
	C-081

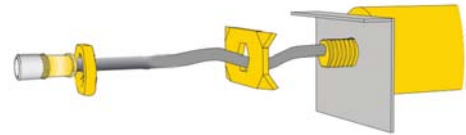
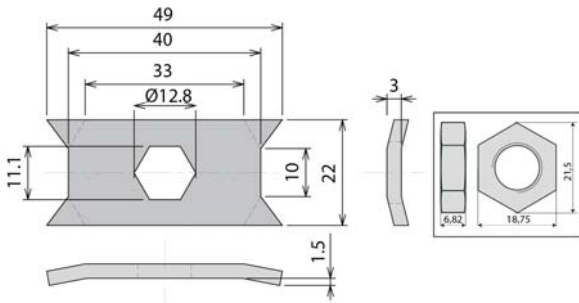


Mouting plate for threaded hexagonal shaft - FLAT ON TOP

Conveyor with hole $\varnothing 12,1\text{mm}$



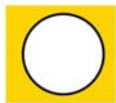
or hexagonal 11,2mm



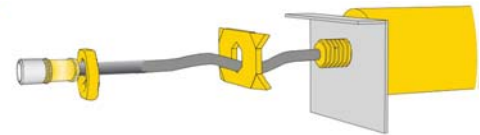
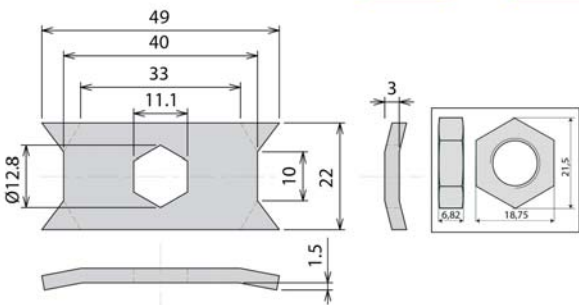
	Claw plate	Nut
Reference	P-0B1	FEY-01

Mouting plate for threaded hexagonal shaft - ANGLE ON TOP

Conveyor with hole $\varnothing 12,1\text{mm}$



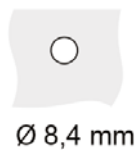
or hexagonal 11,2mm



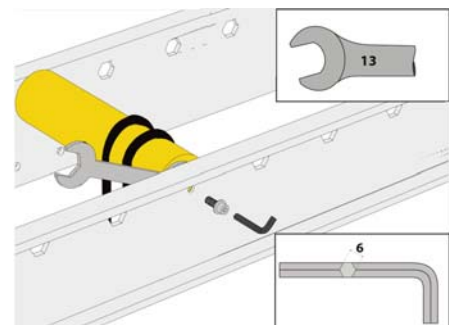
	Claw plate	Nut
Reference	P-0C1	FEY-01

M8 threaded fixed shaft

Conveyor with holes $\varnothing 8,4\text{mm}$



$\varnothing 8,4\text{ mm}$

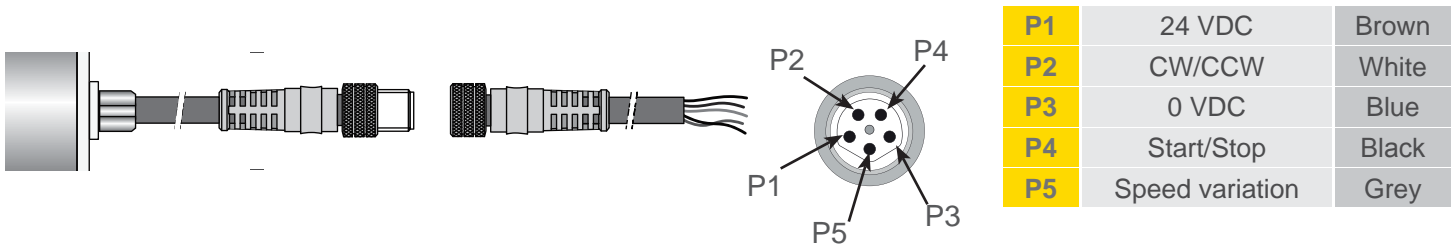


	Bolt
Reference	SP-M8-14

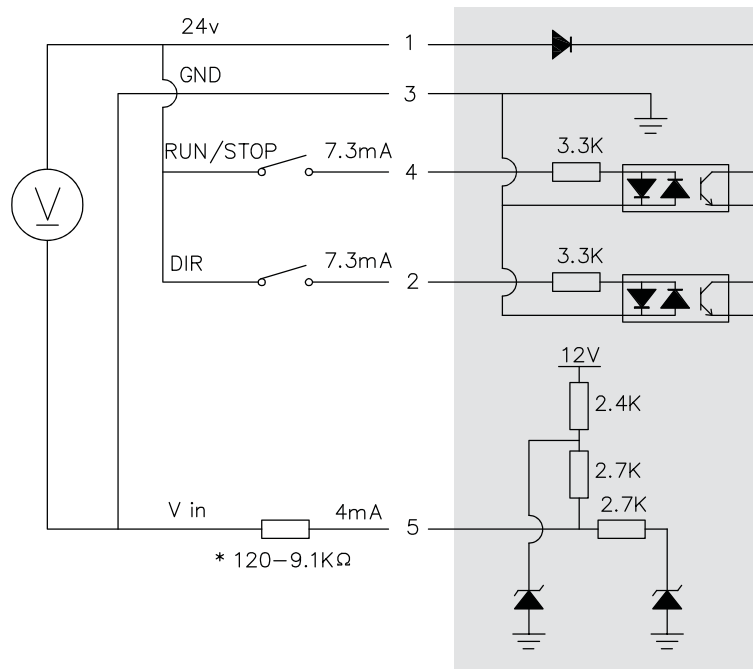
10 - WIRING AND COMMANDS

Wiring

To connect a motorized roller serie PM500XE (50XE), it should be used a female connector M8 – 5 pins :

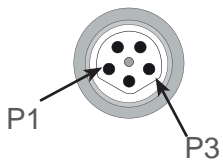


Interface scheme



Pin 1 and 3 - 24VDC power supply

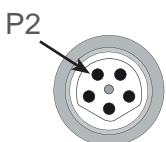
The motorized roller is protected against reverse polarity 0 to 24 VDC.



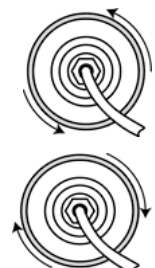
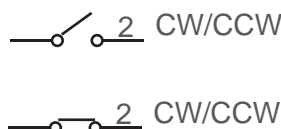
Pin P1 - Brown wire - 24VDC
Pin P3 - Blue wire - 0V

! It is recommended that a 24VDC switching power supply that can accept a 150% overcurrent for few milliseconds.

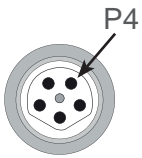
Pin 2 - Direction of rotation



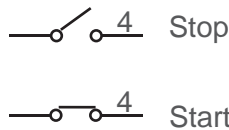
Pin P2 - White wire - Direction of rotation



Pin 4 - Start / Stop



Pin P4 - Black wire



Pin 5 - Speed variation

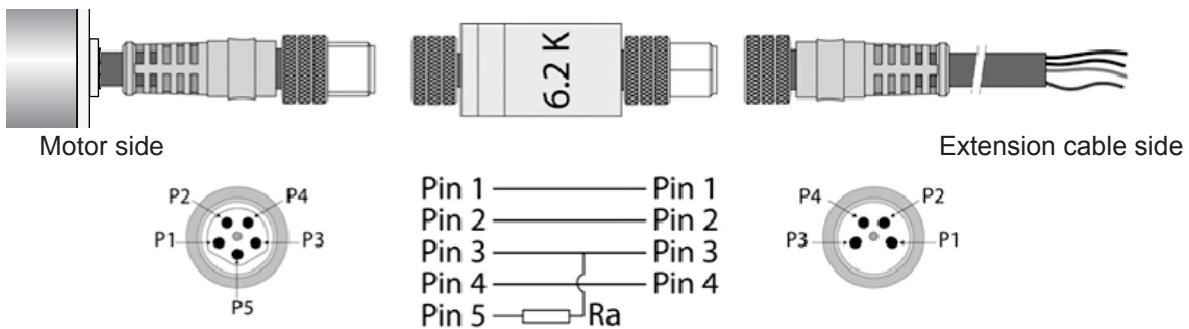
Speed variation by injection of analogic external voltage 0-10VDC



Pin P5 - Grey wire - Speed variation 0~10VDC → 5

! Imperatively connect the 0V power of the motorized roller with 0V of 0-10V supply for speed variation.

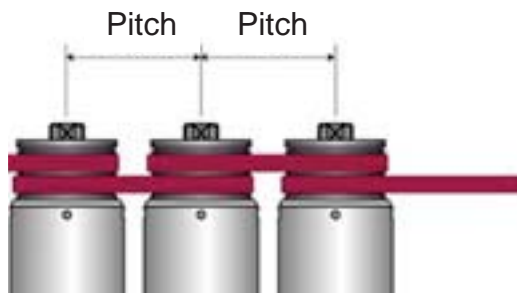
Speed variation with speed adaptor



Speed adaptor		PM500XE (50XE)		
Ref.	Ra (KΩ)	Speed code 60	Speed code 30	Speed code 17
NA	Open	61,7	29,2	17,4
BG20342-6K2	6,2	56,6	26,8	15,9
BG20342-4K3	4,3	46,3	21,9	13,0
BG20342-3K3	3,3	41,2	19,5	11,6
BG20342-2K2	2,2	36,0	17,0	10,1
BG20342-1K8	1,8	30,9	14,6	8,7
BG20342-1K2	1,2	25,0	9,7	7,0
BG20342-750	0,75	20,6	7,3	5,8
BG20342-430	0,43	15,4	4,9	4,3
NA	Shuntée	10,3	3,7	2,9

11 - ACCESSORIES

Ribbed belt

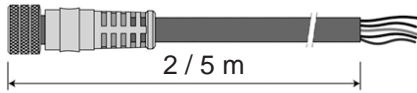


HUTCHINSON

Pitch between the rollers (mm) For pulley Ø43mm	Number of teeth		
	2	3	4
	Load to be conveyed ≤50 Kg	Load to be conveyed ≤300 Kg	Load to be conveyed ≤400 Kg
53-56	Ref. 2PJ246-43	Ref. 3PJ246-43	Ref. 4PJ246-43
60-63	Ref. 2PJ256-43	Ref. 3PJ256-43	Ref. 4PJ256-43
64-65	Ref. 2PJ265-43	Ref. 3PJ265-43	Ref. 4PJ265-43
66-67	Ref. 2PJ270-43	Ref. 3PJ270-43	Ref. 4PJ270-43
71-72	Ref. 2PJ282-43	Ref. 3PJ282-43	Ref. 4PJ282-43
73-75	Ref. 2PJ286-43	Ref. 3PJ286-43	Ref. 4PJ286-43
76-77	Ref. 2PJ290-43	Ref. 3PJ290-43	Ref. 4PJ290-43
78-79	Ref. 2PJ288-43	Ref. 3PJ288-43	Ref. 4PJ288-43
80-84	Ref. 2PJ302-43	Ref. 3PJ302-43	Ref. 4PJ302-43
87-91	Ref. 2PJ314-43	Ref. 3PJ314-43	Ref. 4PJ314-43
92-95	Ref. 2PJ316-43	Ref. 3PJ316-43	Ref. 4PJ316-43
97-101	Ref. 2PJ336-43	Ref. 3PJ336-43	Ref. 4PJ336-43
103-107	Ref. 2PJ346-43	Ref. 3PJ346-43	Ref. 4PJ346-43
115-118	Ref. 2PJ372-43	Ref. 3PJ372-43	Ref. 4PJ372-43
119-121	Ref. 2PJ376-43	Ref. 3PJ376-43	Ref. 4PJ376-43
123-128	Ref. 2PJ388-43	Ref. 3PJ388-43	Ref. 4PJ388-43
129-134	Ref. 2PJ416-43	Ref. 3PJ416-43	Ref. 4PJ416-43
142-147	Ref. 2PJ435-43	Ref. 3PJ435-43	Ref. 4PJ435-43
150-156	Ref. 2PJ442-43	Ref. 3PJ442-43	Ref. 4PJ442-43
157-161	Ref. 2PJ456-43	Ref. 3PJ456-43	Ref. 4PJ456-43
170-176	Ref. 2PJ486-43	Ref. 3PJ486-43	Ref. 4PJ486-43
196-202	Ref. 2PJ536-43	Ref. 3PJ536-43	Ref. 4PJ536-43
208-215	Ref. 2PJ570-43	Ref. 3PJ570-43	Ref. 4PJ570-43
254-258	Ref. 2PJ636-43	Ref. 3PJ636-43	Ref. 4PJ636-43
305-310	Ref. 2PJ746-43	Ref. 3PJ746-43	Ref. 4PJ746-43

Extension cables

Extension cable with connector M8x5 pins – 2 or 5 meters



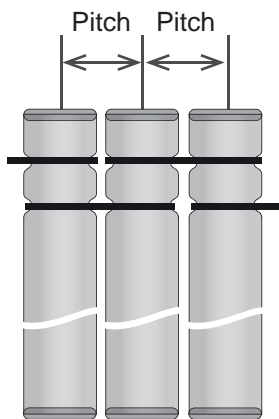
Length	Extension cable reference
2m	405000P02M020
5m	405000P02M050

Speed adaptator



Ref	Ra (KΩ)
BG20342-6k2	6,2
BG20342-4k3	4,3
BG20342-3k3	3,3
BG20342-2k2	2,2
BG20342-1k8	1,8
BG20342-1k2	1,2
BG20342-750	0,75
BG20342-430	0,43

Round belt



Pitch between the rollers	Belt reference
75mm	POLYCORD-R5-256
100mm	POLYCORD-R5-302

- Belt diameter : 5mm
- Belt tension : 8%
- Material : Thermoplastic polyurethane (TPU)

⚠ For grooves with an inner diameter of 38.4mm

24VDC power supply



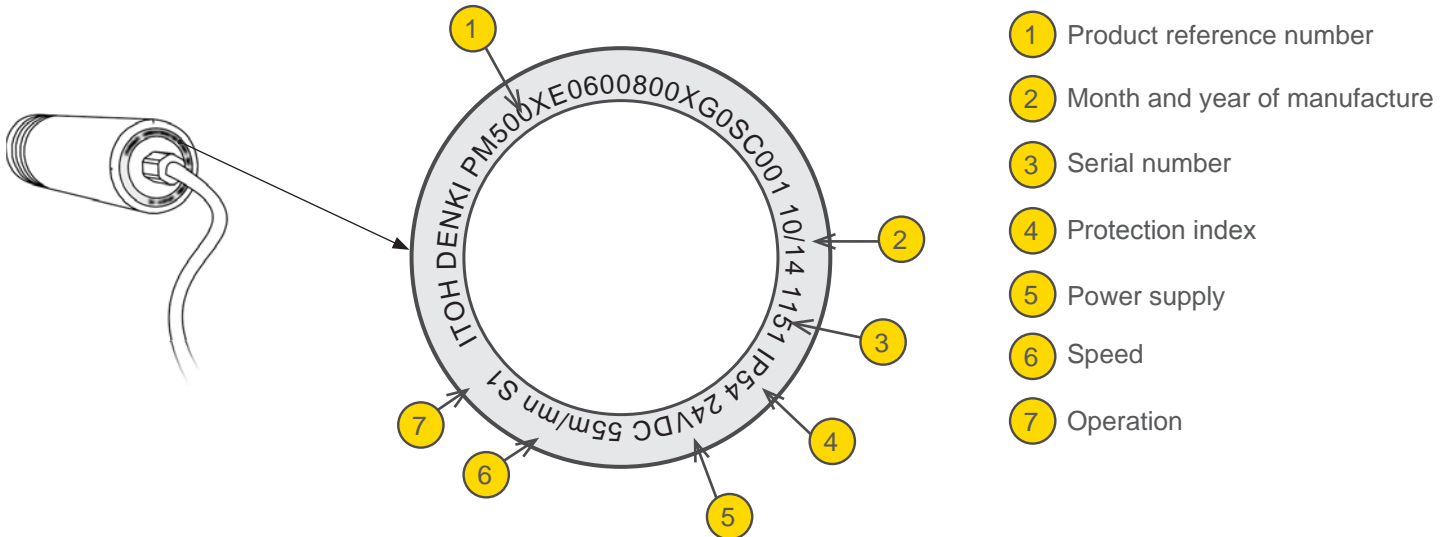
Reference	Input	Output	Power	Start-up boost
CT-10-241	380~480V 3 ph	24V-10A	240W	120%
QT-20-241		24V-20A	480W	150%
QT-40-241		24V-40A	960W	150%

- Very weak inrush current.
- Accepts excess current of 120 to 150% at start-up (according to model)

12 - PRODUCT IDENTIFICATION

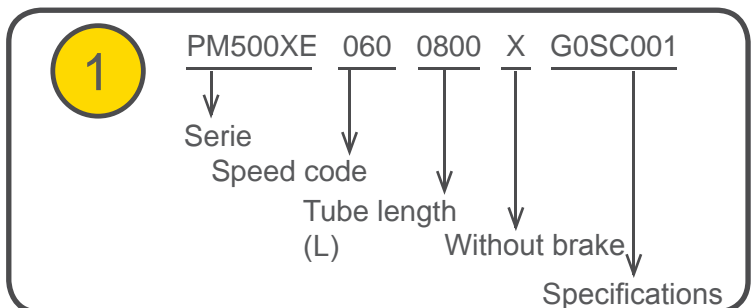
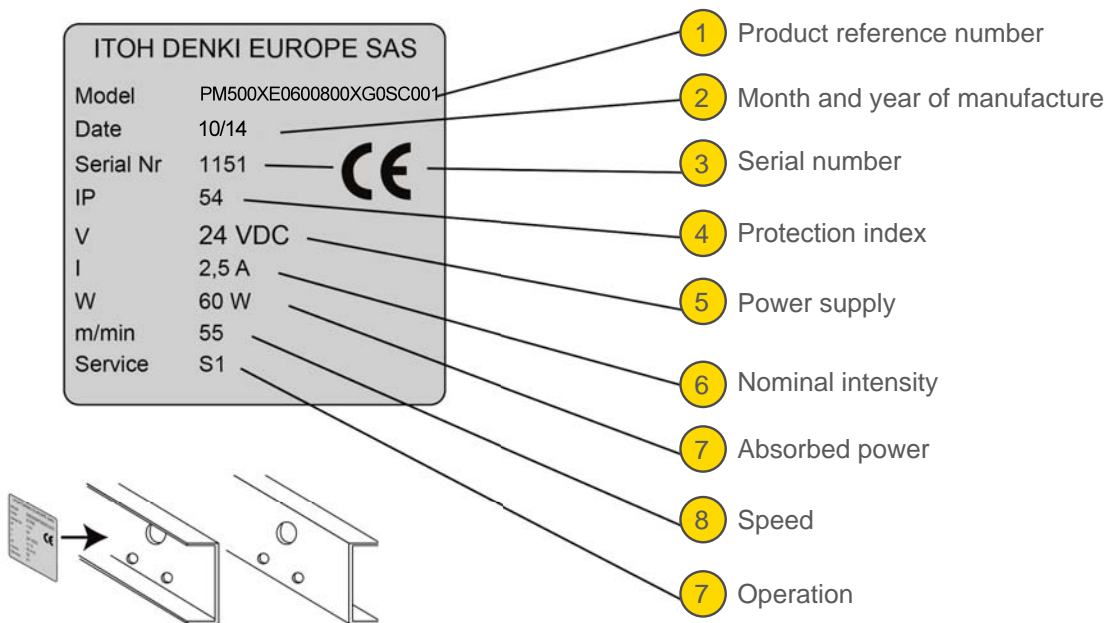
Round label

Power Moller® rollers come with a round label affixed to the endcaps at the motor end. The following information are shown on the label :



Square label

Power Moller® rollers come with a square self-adhesive label that must be affixed to the conveyor, to facilitate any future maintenance. The following information are shown on the label :



Operation

- Standard (controlled by a PLC, no accumulation with pressure)
 Accumulation without pressure (ZPA)
 Accumulation with pressure (Warning: contact our technical service department for approval)
 Other.....

Environment

- Humidity Yes ($\geq 90\%$) No (standard case, $< 90\%$)
 Projection of liquid Yes. What liquid :..... No
 Dust Yes No (standard case)
 Temperature Between 0°C and 40°C Cold room. $T^{\circ} = \dots\dots\dots$ Other $T^{\circ} : \dots\dots\dots$
 Other.....

Motorized roller

- Serie : Standard without mechanical brake With mechanical brake
 Protection : IP54 IP65 Other.....
 Speed code : 17 30 60 Other:.....
 Tube : Zinc-coated steel Stainless steel Other.....
 Coating : Without PVC sleeve 3mm PVC sleeve 2mm
 PU Natural rubber Other :.....
 Tapered sleeve
 Ri 800mm
 Ri 850mm
 Other :.....
 Drive : Direct (no transmission)
 By ribbed belt
 By rounded belt
 Grooves on tube : G0.....mm G1.....mm G2.....mm
 Pulley for round belt
 Cable : Standard length (300mm) Other.....

▶ ANNEX 1

**INCORPORATION DECLARATION
in accordance with the EC Machinery Directive 2006/42/EC, Annex II B**

The manufacturer:

ITOH DENKI CO., Ltd
1146-2 Asazuma-Cho, Kasai, Hyogo 679-0180 Japan

Distributed in Europe by :

ITOH DENKI Europe SAS
490 avenue des Jourdiés - ZAE les Jourdiés - BP 323
74807 St Pierre en Faucigny Cedex - France

hereby declares that the product series :

PM500XE MOTORIZED ROLLER

is an incomplete machine as defined in the EC Machinery Directive and therefore does not fully meet the requirements of this Directive. Commissioning is prohibited until the whole machine/system in which it is incorporated is declared to be in compliance with the EC Machinery Directive

The health and safety requirements of Annex I have been applied. The special technical documents in accordance with Annex VII have been drawn up (and, if appropriate, submitted to the competent authorities).

Person authorized to compile the technical documentation :

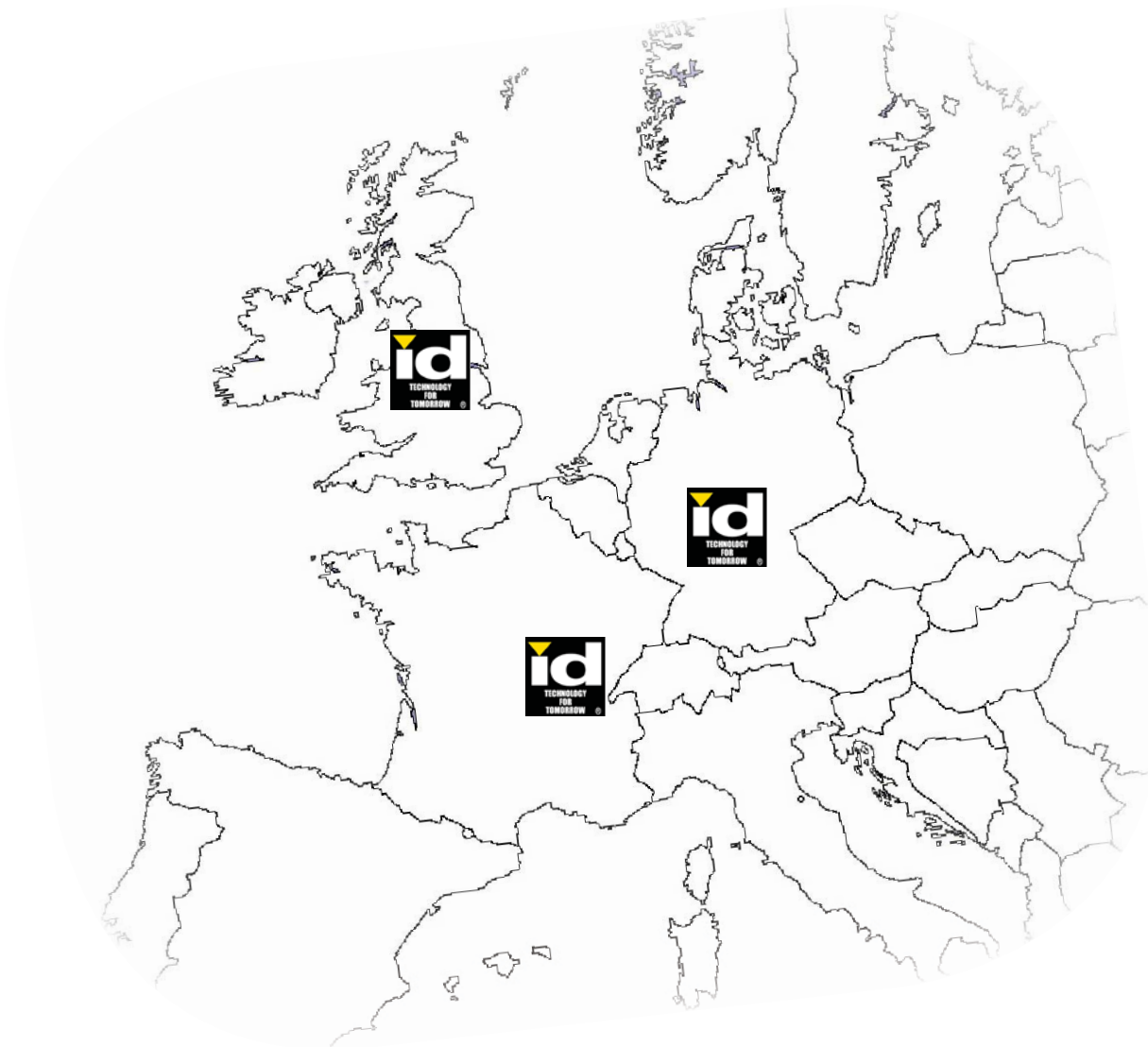
ITOH DENKI CO., Ltd
Toshiyuki TACHIBANA
1146-2 Asazuma-Cho, Kasai, Hyogo 679-0180 Japan

EC Directives applied :

- Machinery Directive 2006/42/EC
- European EMC Directive 2004/108/EC
- European RoHS Directive 2011/65/EU

Saint Pierre en Faucigny, 20 November 2013

K. TAMURA, Managing Director



ITOH DENKI EUROPE S.A.S.

490 Av. des Jourdiés
Z.A.E. les Jourdiés
74800 St Pierre en Faucigny - France
Tél. : +33 (0)4 50 03 09 99
Fax : +33 (0)4 50 03 07 60
E-mail : info@itoh-denki.com

SUCCURSALE ITOH DENKI ANGLETERRE

Suite 1 Trinity Space Centre
Waldorf Way
Wakefield WF2 8DH - UK
Tel : +44 (0)1924 366 539
Fax : +33 (0)4 50 03 07 60
E-mail : info@itoh-denki.com

SUCCURSALE ITOH DENKI ALLEMAGNE

Neumeyerstrabe 48
90411 NÜRNBERG - Deutschland
Tel : +49 911 25 26 - 200
Fax : +49 911 25 26 - 201
E-mail : info@itoh-denki.de