

PM500XC SERIES

TECHNICAL DOCUMENTATION

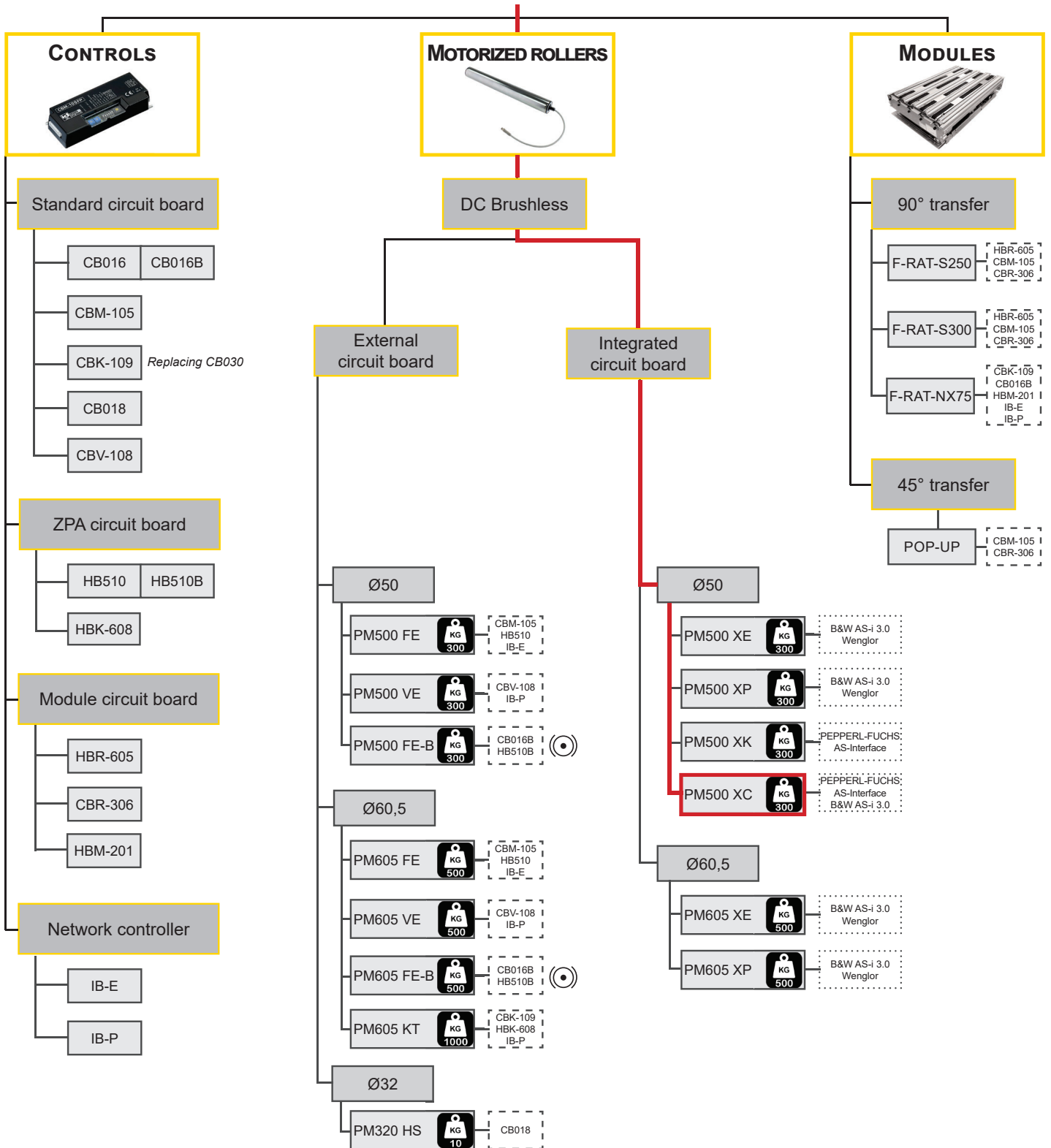
POWER MOLLER®

SUMMARY

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1 - PRESENTATION OF THE POWER MOLLER® PRODUCT RANGE

POWER MOLLER® solutions



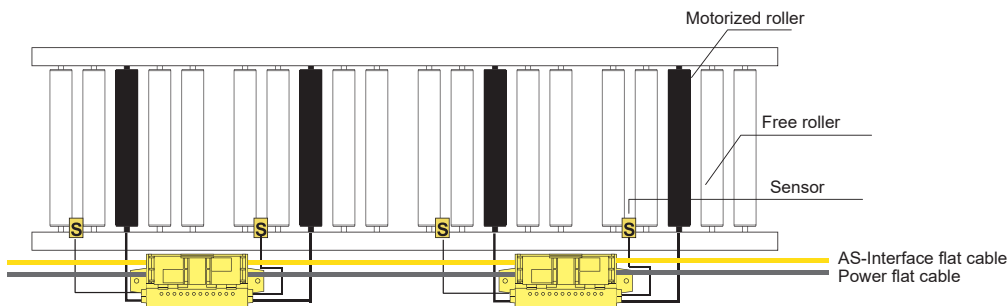
Corresponding circuit board
 Compatible module / sensor
 Max load to be conveyed
 Mechanical brake version

▶ 2 - PRESENTATION OF THE SERIES

The brushless motorized roller PM500XC 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 : PEPPERL+FUCHS motor control, or B&W AS-i module. 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 PM500XC is the ideal solution to answer to the difficulties coming from the working environment (liquid, dust, ...).

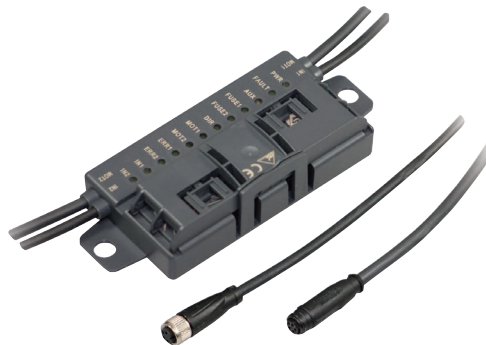


It is possible to achieve package management in «ZPA» involving the AS-Interface module PEPPERL + FUCHS. PEPPERL + FUCHS module can control 2 PM500XC motorized roller . Bilh & Wiedemann AS-i modules can easily control 2 PM500XC and 4 sensors.



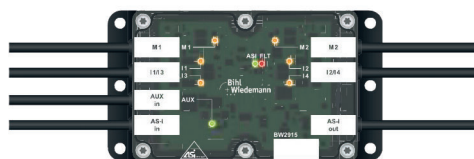
f PEPPERL+FUCHS
SENSING YOUR NEEDS

VBA-4E3A-G20-ZEL/M1L-P2
As-Interface
Motor Control Module



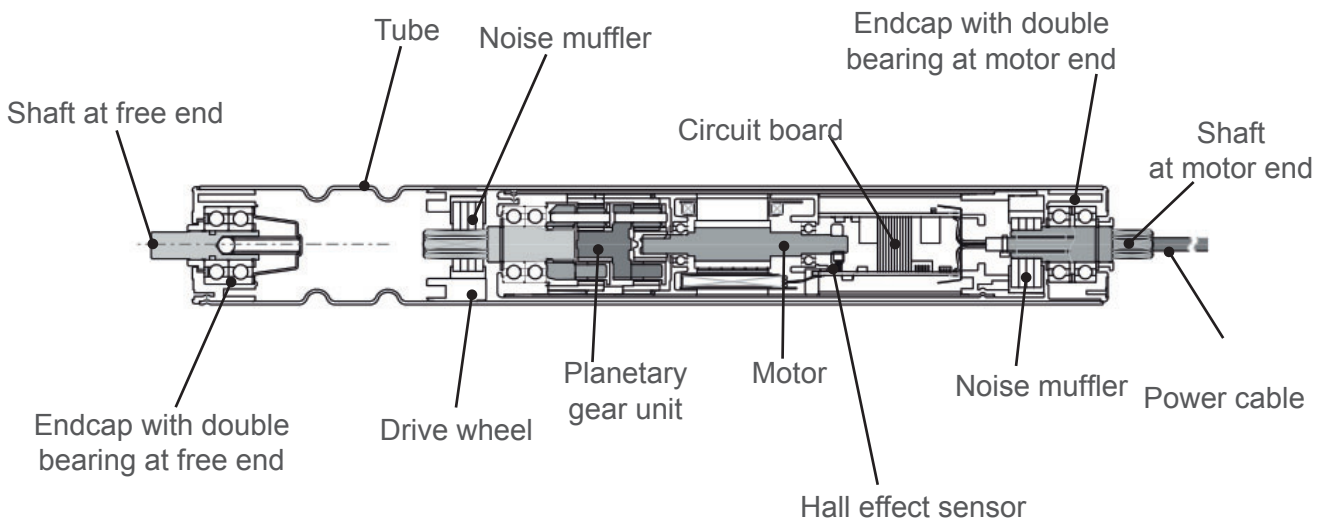
Bihl + Wiedemann

Octopus AS-i 3.0
Motor module

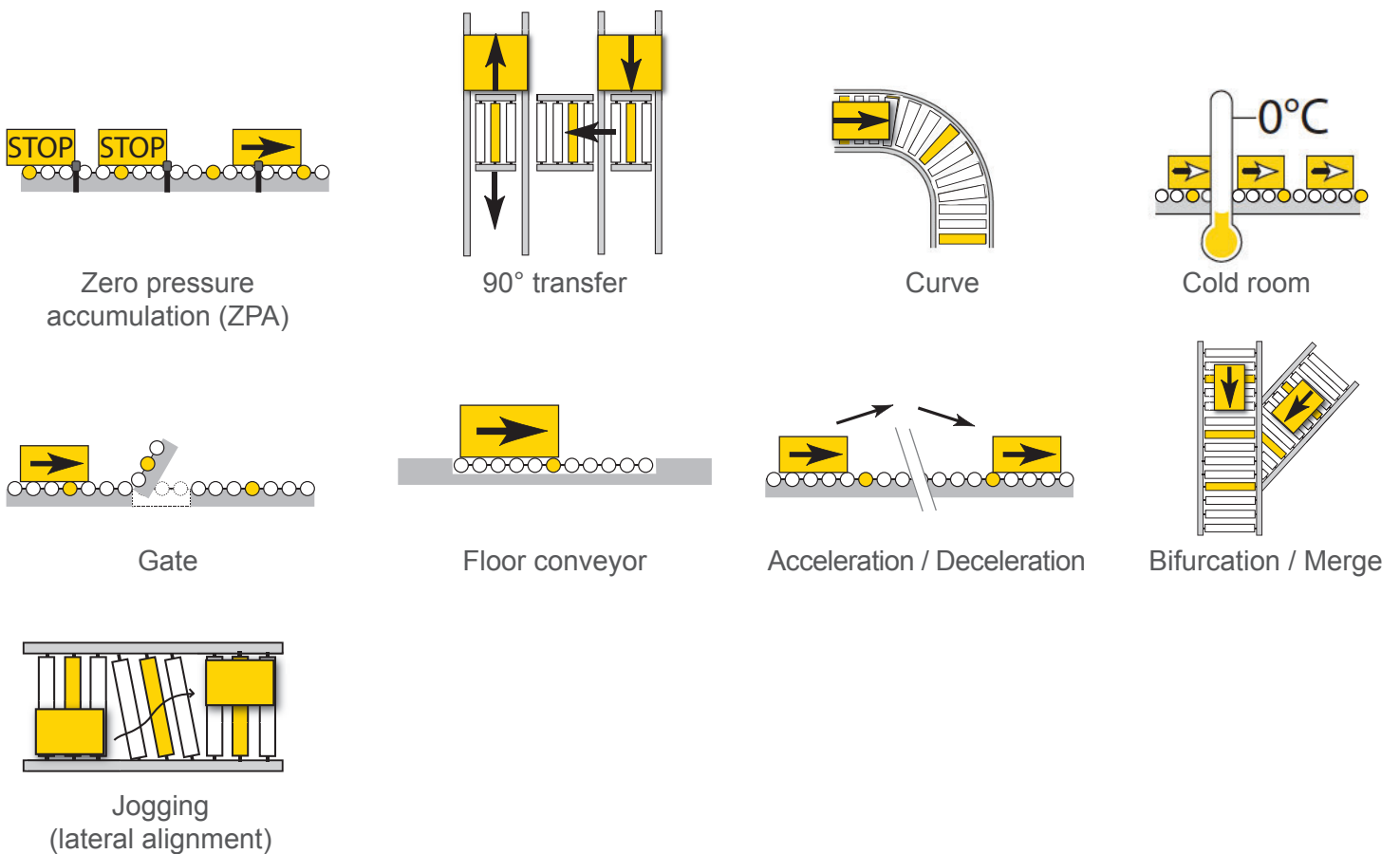


Please test these modules and motorized roller deeply with actual conveyor before starting conveyor project.

Structure and description
















Applications



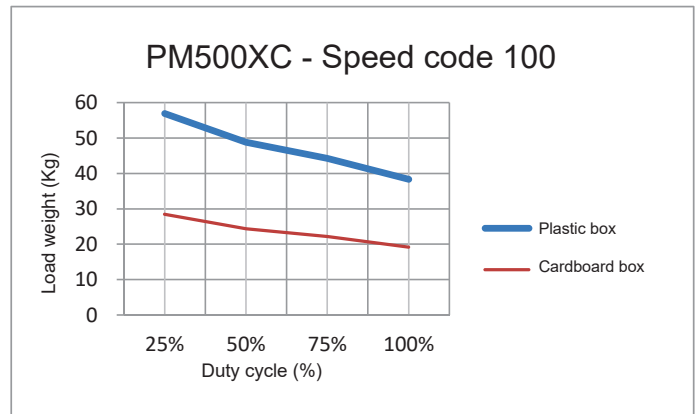
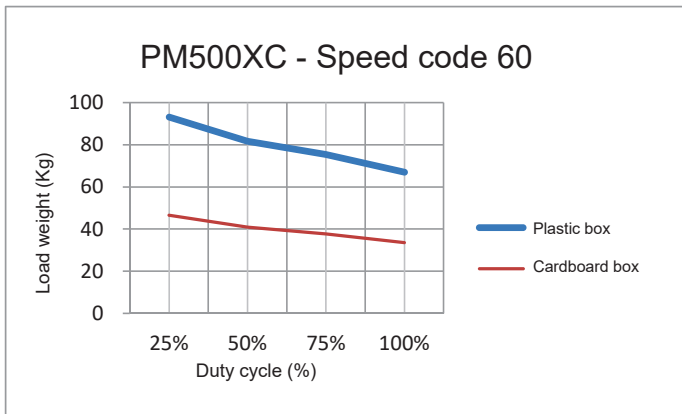
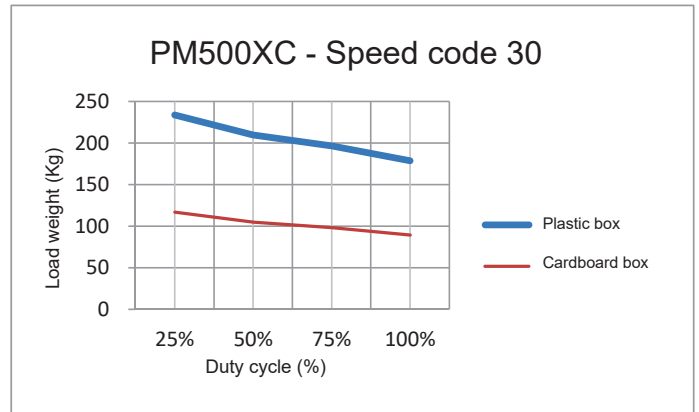
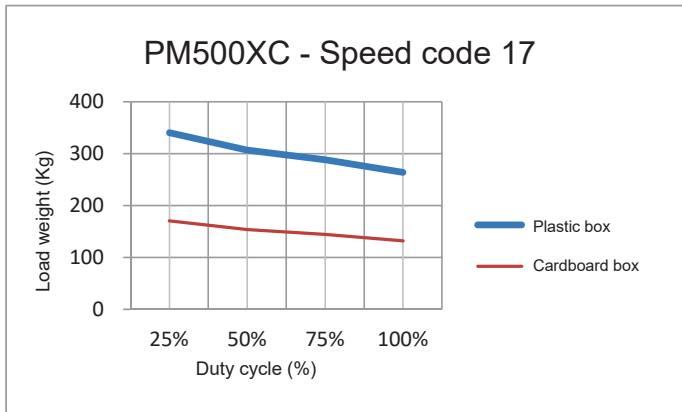
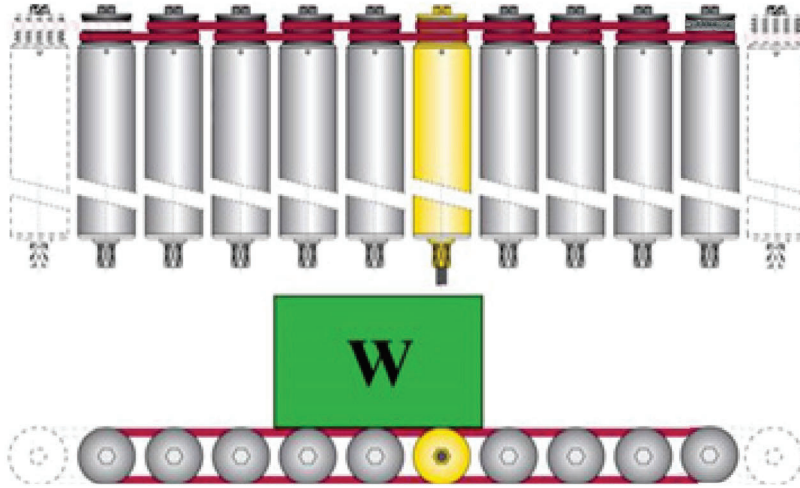
General characteristics

| | | | | | |
|-------------------|-------------------------------------|--|---|-------|-----|
| 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 | Servo-brake | | | |
| | Protection index | IP54 | | | |
| | Cable length | 500 mm with M8 connector – 5 pins snap-in type | | | |
| | Protection | Against overload by integrated thermistor Against polarity reversal 0-24VDC Current limitation within the circuit board Integrated fuse 8A Thermal protection (>95°C for the circuit board) Protection against under supply (over 1 second under 15VDC) Protection against induced voltage (>40VDC over 2 seconds) Protection against motor lock (> 0,5s) | | | |
| | Environment | 0 / 40 °C - no condensation or corrosive or explosive atmosphere Vibrations < 0,5 G | | | |
| | Sound level | ≈ 54 dB nominal 1 metre away | | | |
| | Speed code | 17 | 30 | 60 | 100 |
| Reduction ratio | 1/44,9 | 1/26,67 | 1/12,64 | 1/7,5 | |
| CONTROL | Start / Stop | Stop (servo-brake) : 0~1,9VDC / Start : ≥ 2,0VDC impedance ≥ 35kΩ | | | |
| | Direction of rotation | CCW : ≤ 0,8VDC / CW : ≥ 2,5VDC impedance ≥ 35kΩ | | | |
| | Speed variation | By external voltage, 10 speeds, impedance ≥ 35kΩ | | | |
| | Error signal | NPN open collector, thermal, low voltage, back EMF. Error signal is discharged when motor is lock condition for approx. 6 seconds. Error signal is discharged when there is a speed deviation of +/- 20% from set speed for 10 seconds. | | | |

| | | |
|--------------------------------------|--|--|
| 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 plastic sleeve (PP) for inner radius (Ri) 800 or 850 mm • Grey/black PVC sleeve thickness 2 or 3 mm (~68 ShA). Antistatic option. |
| 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 |

3 - TRANSFER CAPACITY

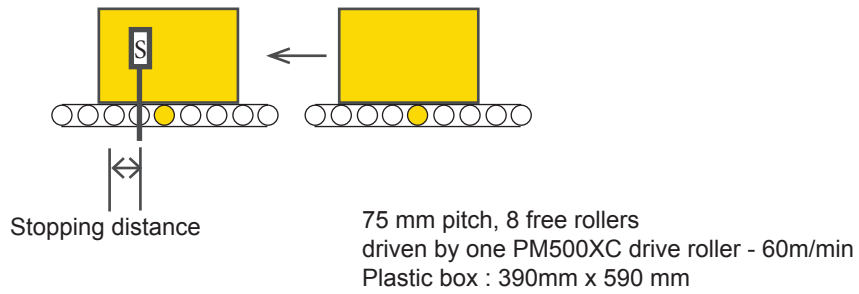
Driven by ribbed belts



- Load to transport
 - Plastic box ($\mu = 0,03$)
 - Cardboard box ($\mu = 0,06$)
- 9 slave rollers driven by 1 motorized roller
- Ambient temperature of 30 ° C

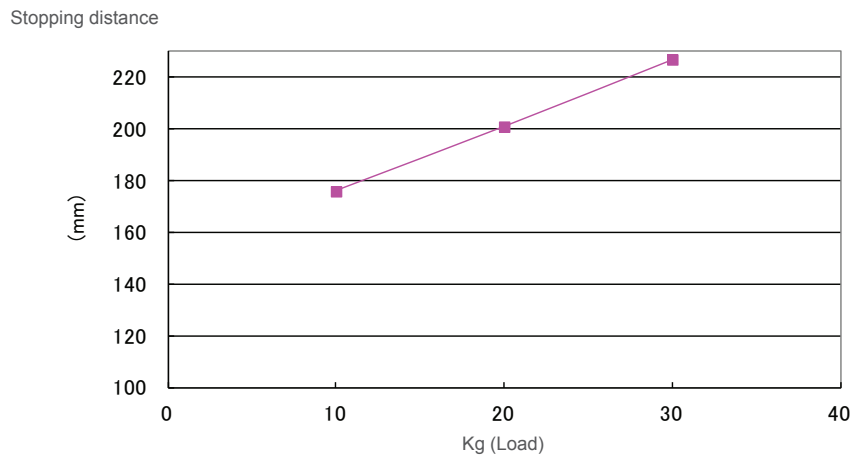
! These curves are given as a guide. Transfer capacity depends on the nature and quality of the transported load, the belt tension, the quality of the bearings, the nature of the sleeves, the ambient temperature...

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



DRIVEN BY RIBBED BELTS

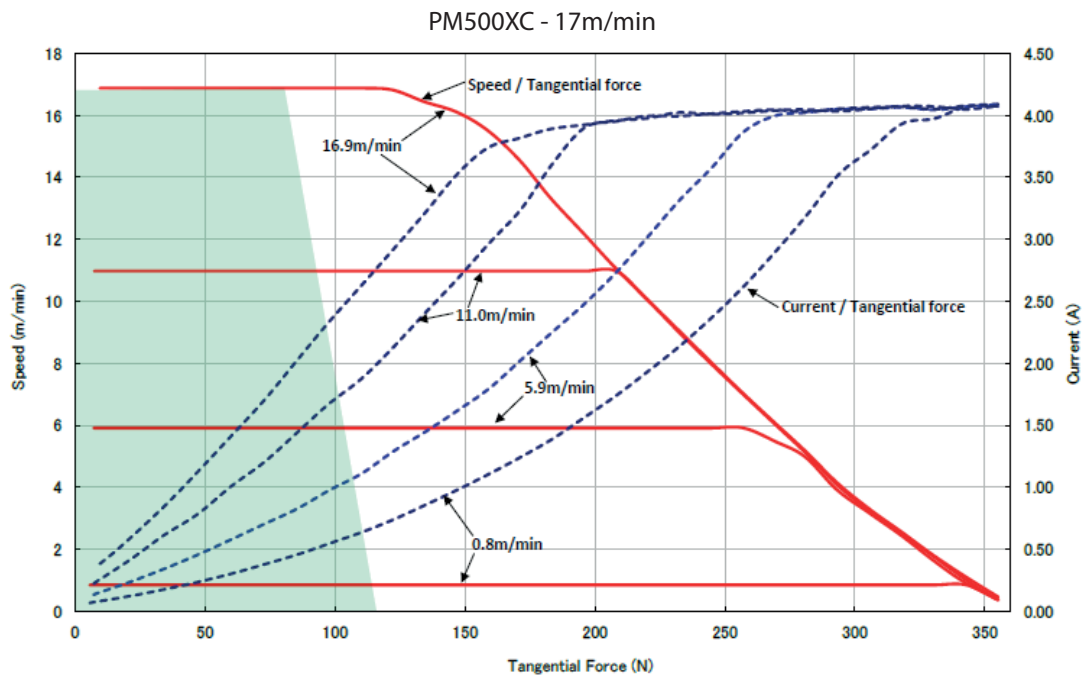
PM500XC 60m/min - Plastic box



4 - TECHNICAL DATAS ACCORDING TO SPEED CODE

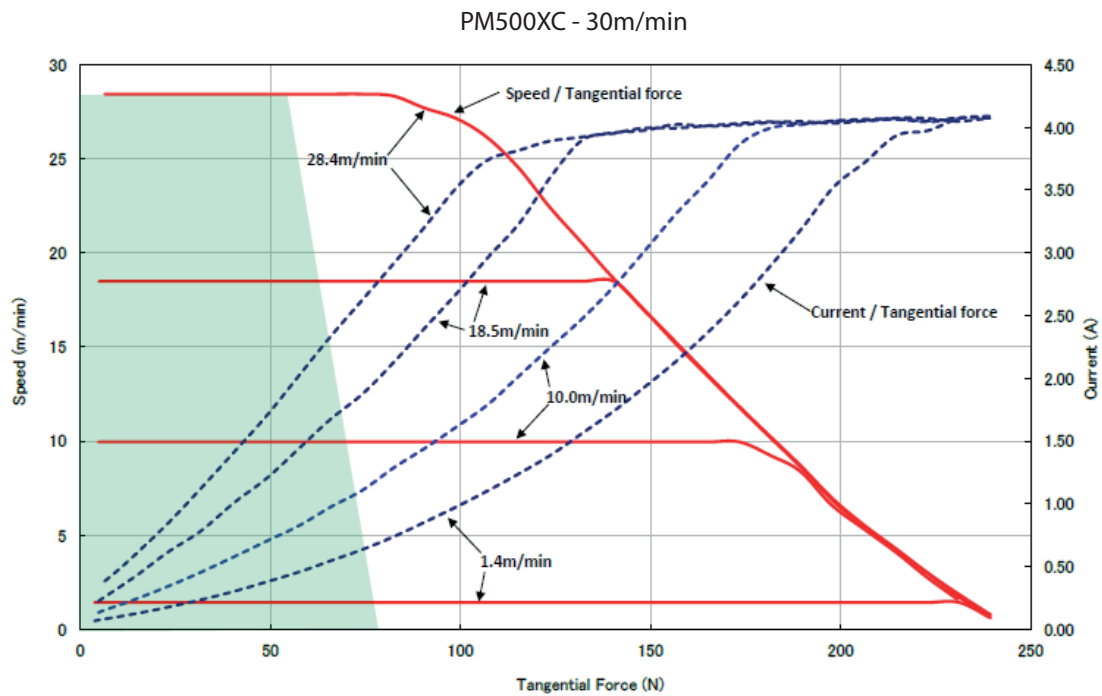
SPEED CODE 17

| Speed (m/min) +/-3% | Speed selection | Tangential force (N) | | Torque (Nm) | | Current (A) | | |
|------------------------|--------------------------|----------------------|----------|-------------|----------|-------------|---------|----------|
| | | Nominal | Starting | Nominal | Starting | No load | Nominal | Starting |
| Nominal | Via external voltage (V) | Nominal | Starting | Nominal | Starting | No load | Nominal | Starting |
| 16,9 | 9,9-24,0 | 81 | 341 | 2,0 | 8,5 | 0,5 | 2,0 | 4,0 |
| 15,9 | 9,0-9,8 | 84 | | 2,1 | | 0,5 | 2,0 | |
| 13,5 | 7,9-8,9 | 91 | | 2,3 | | 0,4 | 1,8 | |
| 11,0 | 6,9-7,8 | 97 | | 2,4 | | 0,4 | 1,5 | |
| 9,3 | 6,0-6,8 | 100 | | 2,5 | | 0,3 | 1,4 | |
| 7,6 | 5,2-5,9 | 103 | | 2,6 | | 0,3 | 1,2 | |
| 5,9 | 4,4-5,1 | 106 | | 2,7 | | 0,3 | 1,1 | |
| 4,2 | 3,6-4,3 | 109 | | 2,7 | | 0,2 | 0,9 | |
| 2,5 | 2,7-3,5 | 113 | | 2,8 | | 0,2 | 0,8 | |
| 0,8 | 2,0-2,6 | 116 | | 2,9 | | 0,2 | 0,6 | |
| 0 (servo lock) | 0-1,9 | 404 max | | 10,1 max | | 1,0 max | | |



SPEED CODE 30

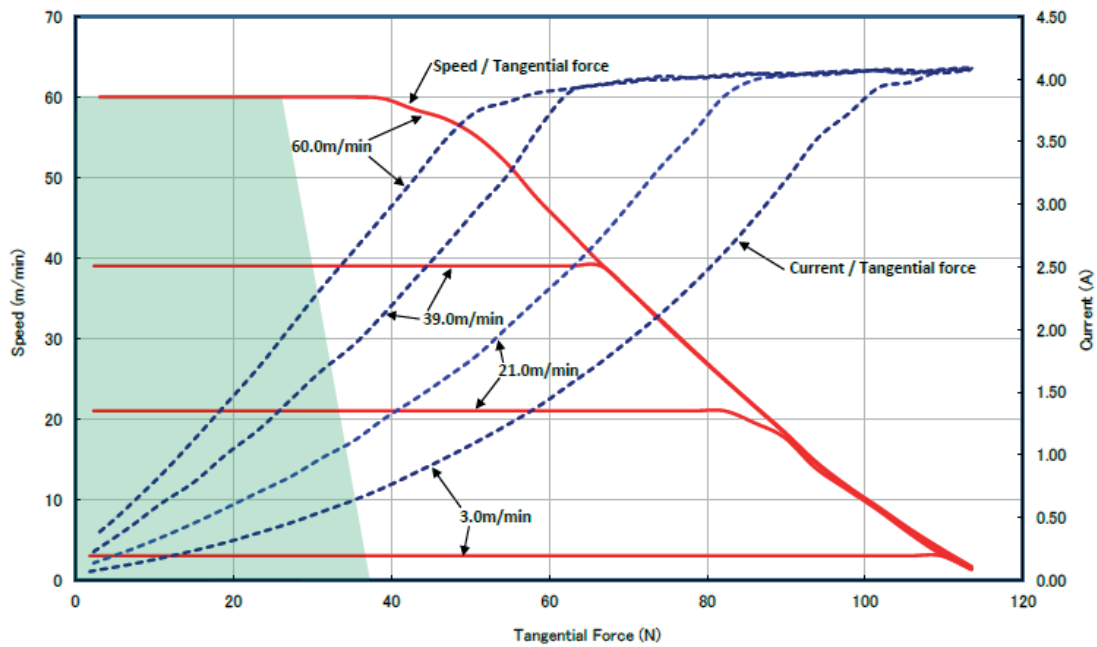
| Speed (m/min) +/-3% | Speed selection | Tangential force (N) | | Torque (Nm) | | Current (A) | | |
|------------------------|--------------------------|----------------------|----------|-------------|----------|-------------|---------|----------|
| | | Nominal | Starting | Nominal | Starting | No load | Nominal | Starting |
| Nominal | Via external voltage (V) | Nominal | Starting | Nominal | Starting | No load | Nominal | Starting |
| 28,4 | 9,9-24,0 | 55 | 230 | 1,4 | 5,7 | 0,5 | 2,0 | 4,0 |
| 26,7 | 9,0-9,8 | 57 | | 1,4 | | 0,5 | 2,0 | |
| 22,7 | 7,9-8,9 | 61 | | 1,5 | | 0,4 | 1,8 | |
| 18,5 | 6,9-7,8 | 65 | | 1,6 | | 0,4 | 1,5 | |
| 15,6 | 6,0-6,8 | 68 | | 1,7 | | 0,3 | 1,4 | |
| 12,8 | 5,2-5,9 | 70 | | 1,7 | | 0,3 | 1,2 | |
| 10,0 | 4,4-5,1 | 72 | | 1,8 | | 0,3 | 1,1 | |
| 7,1 | 3,6-4,3 | 74 | | 1,8 | | 0,2 | 0,9 | |
| 4,3 | 2,7-3,5 | 76 | | 1,9 | | 0,2 | 0,8 | |
| 1,4 | 2,0-2,6 | 78 | | 2,0 | | 0,2 | 0,6 | |
| 0 (servo lock) | 0-1,9 | 211 max | | 5,3 max | | 1,0 max | | |



SPEED CODE 60

| Speed (m/min) +/-3% | Speed selection | Tangential force (N) | | Torque (Nm) | | Current (A) | | |
|---------------------|--------------------------|----------------------|----------|-------------|----------|-------------|---------|----------|
| | | Nominal | Starting | Nominal | Starting | No load | Nominal | Starting |
| Nominal | Via external voltage (V) | Nominal | Starting | Nominal | Starting | No load | Nominal | Starting |
| 60,0 | 9,9-24,0 | 26 | 109 | 0,7 | 2,7 | 0,5 | 2,0 | 4,0 |
| 56,4 | 9,0-9,8 | 27 | | 0,7 | | 0,5 | 2,0 | |
| 48,0 | 7,9-8,9 | 29 | | 0,7 | | 0,4 | 1,8 | |
| 39,0 | 6,9-7,8 | 31 | | 0,8 | | 0,4 | 1,5 | |
| 33,0 | 6,0-6,8 | 32 | | 0,8 | | 0,3 | 1,4 | |
| 27,0 | 5,2-5,9 | 33 | | 0,8 | | 0,3 | 1,2 | |
| 21,0 | 4,4-5,1 | 34 | | 0,9 | | 0,3 | 1,1 | |
| 15,0 | 3,6-4,3 | 35 | | 0,9 | | 0,2 | 0,9 | |
| 9,0 | 2,7-3,5 | 36 | | 0,9 | | 0,2 | 0,8 | |
| 3,0 | 2,0-2,6 | 37 | | 0,9 | | 0,2 | 0,6 | |
| 0 (servo lock) | 0-1,9 | 100 max | | 2,5 max | | 1,0 max | | |

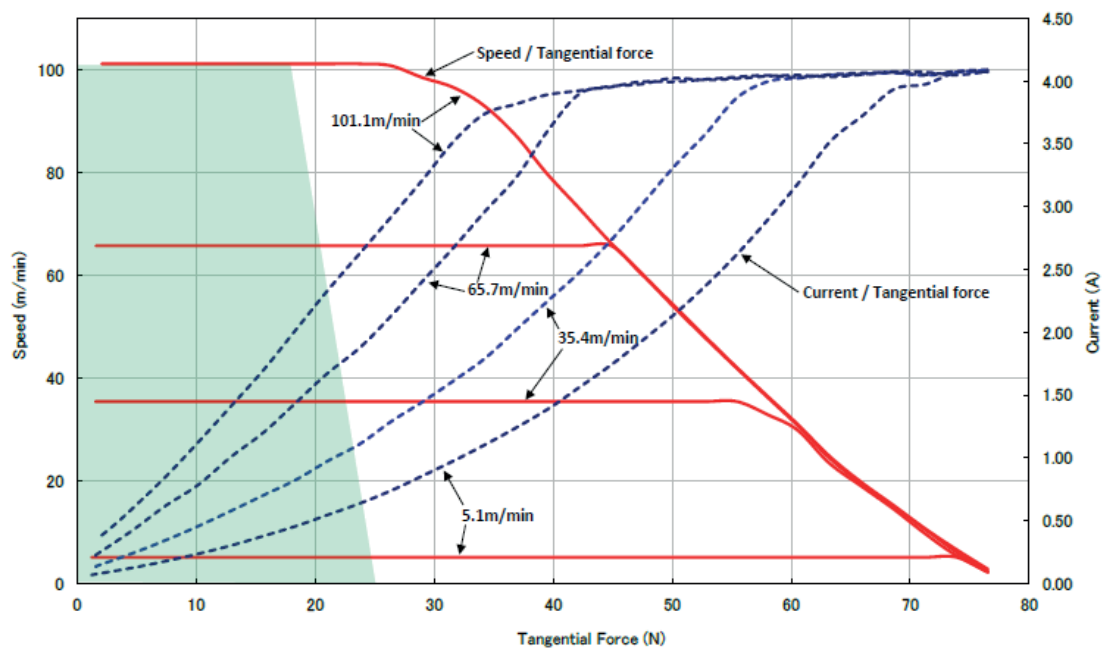
PM500XC - 60m/min



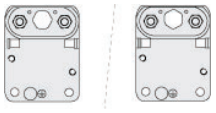
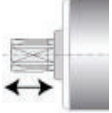
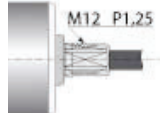




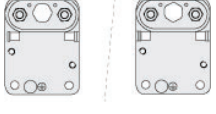
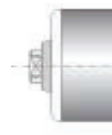

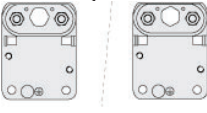



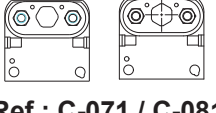
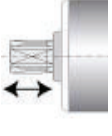
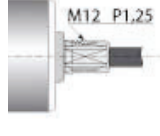


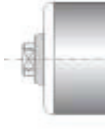

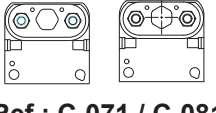
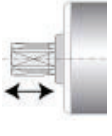

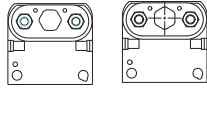

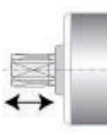
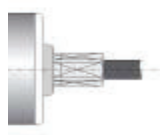
SPEED CODE 100

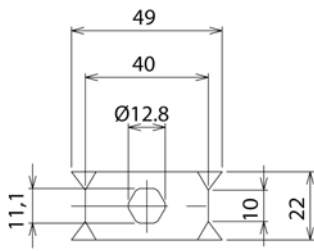
| Speed (m/min) +/-3% | Speed selection | Tangential force (N) | | Torque (Nm) | | Current (A) | | |
|---------------------|-----------------|----------------------|----------|-------------|----------|-------------|---------|----------|
| | | Nominal | Starting | Nominal | Starting | No load | Nominal | Starting |
| 101,1 | 9,9-24,0 | 18 | 73 | 0,4 | 1,8 | 0,5 | 2,0 | 4,0 |
| 95,1 | 9,0-9,8 | 18 | | 0,5 | | 0,5 | 2,0 | |
| 80,9 | 7,9-8,9 | 20 | | 0,5 | | 0,4 | 1,8 | |
| 65,7 | 6,9-7,8 | 21 | | 0,5 | | 0,4 | 1,5 | |
| 55,6 | 6,0-6,8 | 22 | | 0,5 | | 0,3 | 1,4 | |
| 45,5 | 5,2-5,9 | 22 | | 0,6 | | 0,3 | 1,2 | |
| 35,4 | 4,4-5,1 | 22 | | 0,6 | | 0,3 | 1,1 | |
| 25,3 | 3,6-4,3 | 23 | | 0,6 | | 0,2 | 0,9 | |
| 15,2 | 2,7-3,5 | 24 | | 0,6 | | 0,2 | 0,8 | |
| 5,1 | 2,0-2,6 | 25 | | 0,6 | | 0,2 | 0,6 | |
| 0 (servo lock) | 0-1,9 | 52 max | | 1,3 max | | 1,0 max | | |

PM500XC - 100m/min

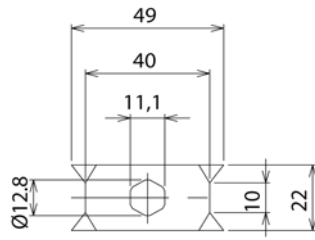


5 - PRESENTATION OF THE DIFFERENT FIXING OPTIONS

| FREE SIDE FIXING | | MOTOR SIDE FIXING | |
|---|---|--|--|
|  Ref : A-071-G / A-081-G <i>(optional)</i> |  |  | Threaded hexagonal shaft M12  |
|  Screw M8 x 14 <i>(obligatory)</i> |  |  | |
|  Ref : A-071-G / A-081-G <i>(optional)</i> |  |  | Hexagonal plain shaft 11,1mm  |
|  Screw M8 x 14 <i>(obligatory)</i> |  |  | |
|  Ref : C-071 / C-081 <i>(optional)</i> |  |  | Threaded hexagonal shaft  |
|  Screw M8 x 14 <i>(obligatory)</i> |  |  | |
|  Ref : C-071 / C-081 <i>(optional)</i> |  |  | Hexagonal plain shaft 11,1mm  |
|  Screw M8 x 14 <i>(obligatory)</i> |  |  | |

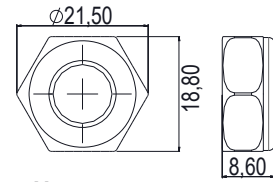


Ref. P-0B1



Ref. P-0C1

Ref. FEY02

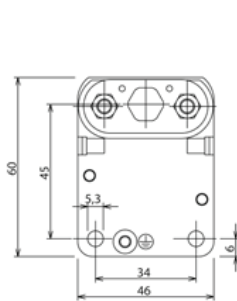


Note :

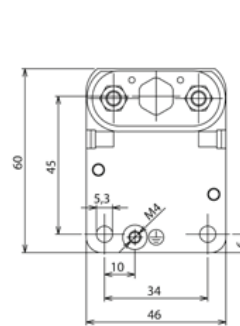
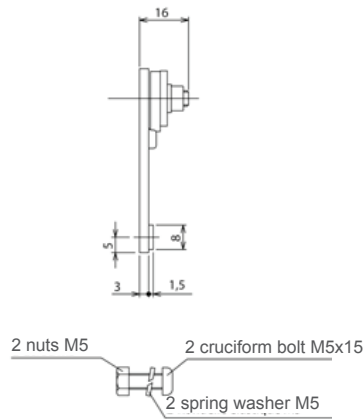
Nut ref. FEY02 should be used with the claw plate ref. P-0B1 or P-0C1.

P-0B1 + FEY02

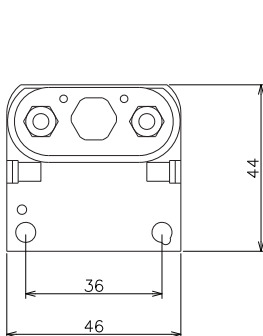
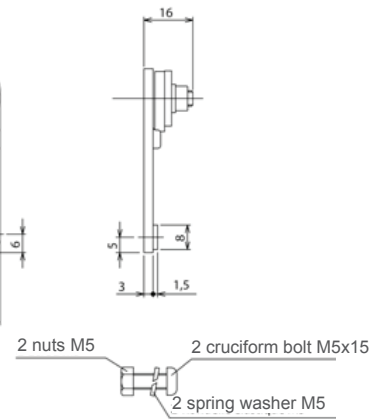
P-0C1 + FEY02



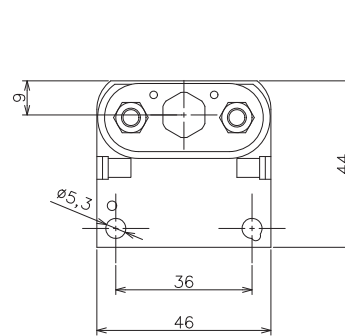
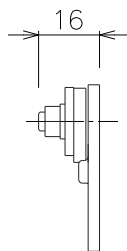
Ref. A-071-G



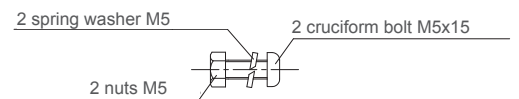
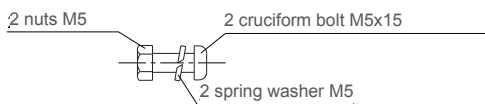
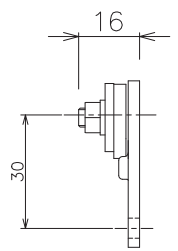
Ref. A-081-G



Ref. C-071



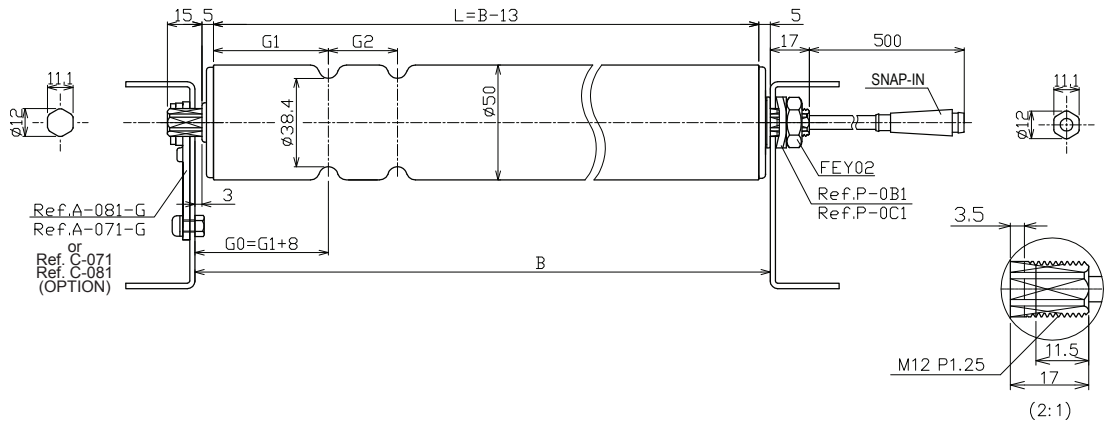
Ref. C-081



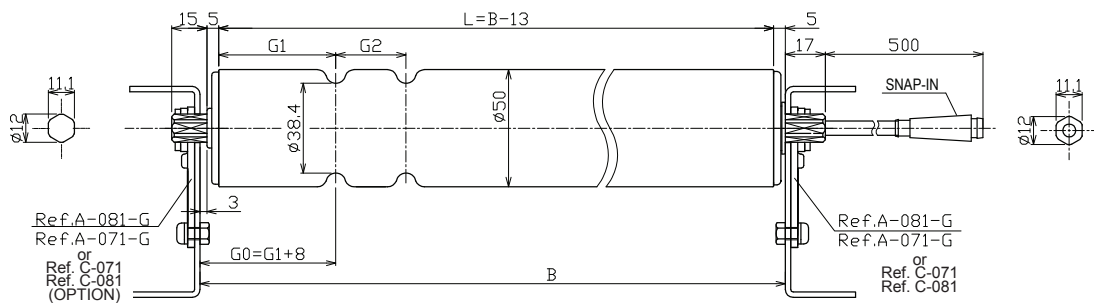
6 - DIMENSIONAL CHARACTERISTICS

Grooved tube - Hexagonal spring loaded shaft on free end

PM500XC - Hexagonal threaded shaft motor side and hexagonal spring loaded shaft on free end



PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimension PM500XC

TUBE WITH SEVERAL GROOVES

| Speed code | Dimension (B) mini ≤ B ≤ max | Tube length (L) mini ≤ L ≤ max | Grooves | | | |
|------------|---------------------------------|-----------------------------------|-------------------------------------|---------|---------|-------------|
| | | | G0 mini | G1 mini | G2 mini | G1 + G2 max |
| 17 | 317+G1+G2 ≤ B ≤ 1213 | 304+G1+G2 ≤ L ≤ 1200 | Steel tube : Depth 5,8mm | | | |
| 30 | 290+G1+G2 ≤ B ≤ 1213 | 277+G1+G2 ≤ L ≤ 1200 | ≥ 41 | ≥ 33 | ≥ 22 | ≤ 300 |
| 60 | 294+G1+G2 ≤ B ≤ 1213 | 281+G1+G2 ≤ L ≤ 1200 | Stainless steel tube* : Depth 5,2mm | | | |
| 100 | 267+G1+G2 ≤ B ≤ 1213 | 254+G1+G2 ≤ L ≤ 1200 | ≥ 41 | ≥ 33 | ≥ 30 | ≤ 300 |

⚠ For a single groove G2=0.

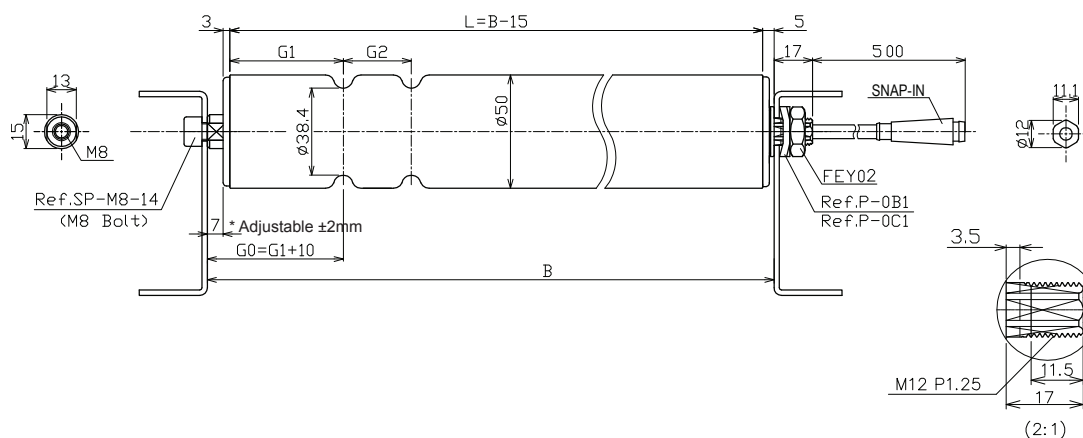
⚠ *Stainless steel tube : For IP54 version

WEIGHT / STATIC LOAD / AXIAL FORCE

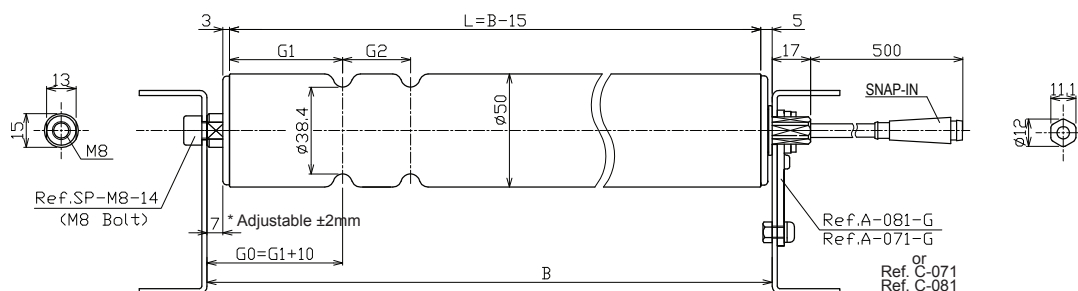
| Tube length | | 350 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
|---------------------|--------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Weight (Kg) | 17 m/min | 2,8 | 2,9 | 3,1 | 3,3 | 3,4 | 3,6 | 3,7 | 3,9 | 4,1 | 4,2 |
| | 30 / 60m/min | 2,6 | 2,7 | 2,9 | 3,0 | 3,2 | 3,4 | 3,5 | 3,7 | 3,9 | 4,0 |
| | 100 m/min | 2,2 | 2,3 | 2,4 | 2,6 | 2,8 | 2,9 | 3,1 | 3,3 | 3,4 | 3,6 |
| Static load (Kg) | | 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

PM500XC - Hexagonal threaded shaft motor side and M8 female threaded shaft with screw on free end



PM500XC - Hexagonal plain shaft motor side and M8 threaded shaft with screw on free end



Dimensions PM500XC

TUBE WITH GROOVES

| Speed code | Dimension (B) mini ≤ B ≤ max | Tube length (L) mini ≤ L ≤ max | Grooves | | | |
|------------|---------------------------------|-----------------------------------|--|---------|---------|-------------|
| | | | G0 mini | G1 mini | G2 mini | G1 + G2 max |
| 17 | 319+G1+G2 ≤ B ≤ 1215 | 304+G1+G2 ≤ L ≤ 1200 | Steel tube : Depth 5,8mm | | | |
| 30 | 292+G1+G2 ≤ B ≤ 1215 | 277+G1+G2 ≤ L ≤ 1200 | ≥ 43 | ≥ 33 | ≥ 22 | ≤ 300 |
| 60 | 296+G1+G2 ≤ B ≤ 1215 | 281+G1+G2 ≤ L ≤ 1200 | Stainless steel tube* : Depth 5,2mm | | | |
| 100 | 269+G1+G2 ≤ B ≤ 1215 | 254+G1+G2 ≤ L ≤ 1200 | ≥ 43 | ≥ 33 | ≥ 30 | ≤ 300 |

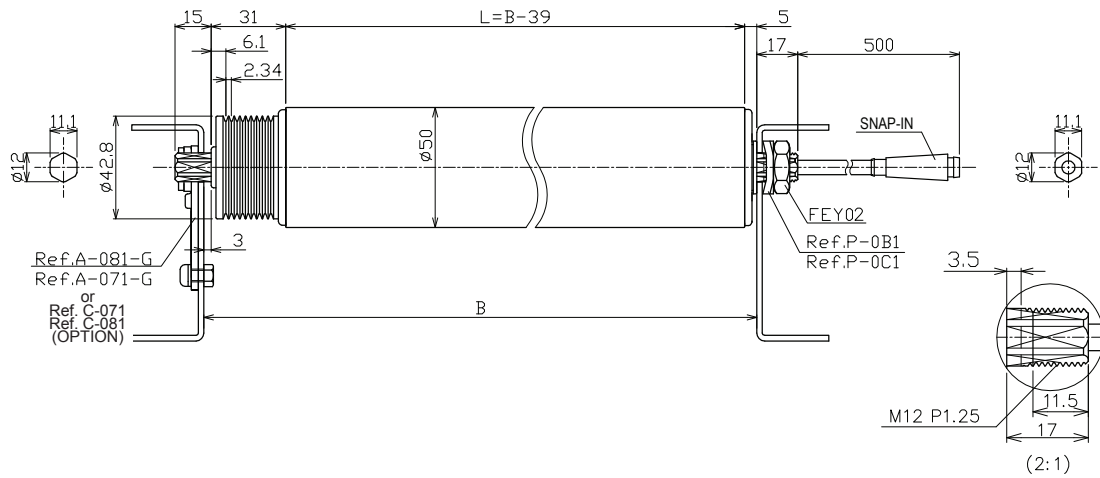
- ⚠ For a single groove G2=0.
- ⚠ *Stainless steel tube : For IP54 version

WEIGHT / STATIC LOAD / AXIAL FORCE

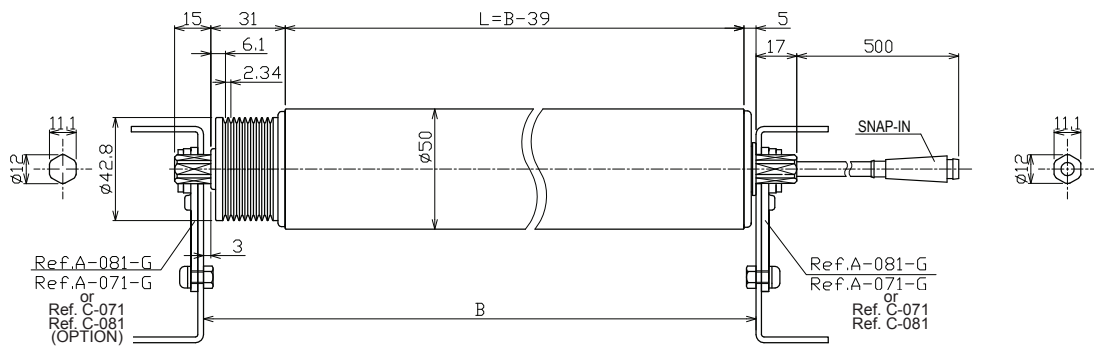
| Tube length | | 350 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
|---------------------|--------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Weight (Kg) | 17 m/min | 2,8 | 2,9 | 3,1 | 3,2 | 3,4 | 3,6 | 3,7 | 3,9 | 4,1 | 4,2 |
| | 30 / 60m/min | 2,6 | 2,7 | 2,9 | 3,0 | 3,2 | 3,4 | 3,5 | 3,7 | 3,8 | 4,0 |
| | 100 m/min | 2,2 | 2,3 | 2,4 | 2,6 | 2,8 | 2,9 | 3,1 | 3,3 | 3,4 | 3,6 |
| Static load (Kg) | | 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

PM500XC - Hexagonal threaded shaft motor side and hexagonal spring loaded shaft on free end



PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XC

STEEL AND STAINLESS STEEL TUBE

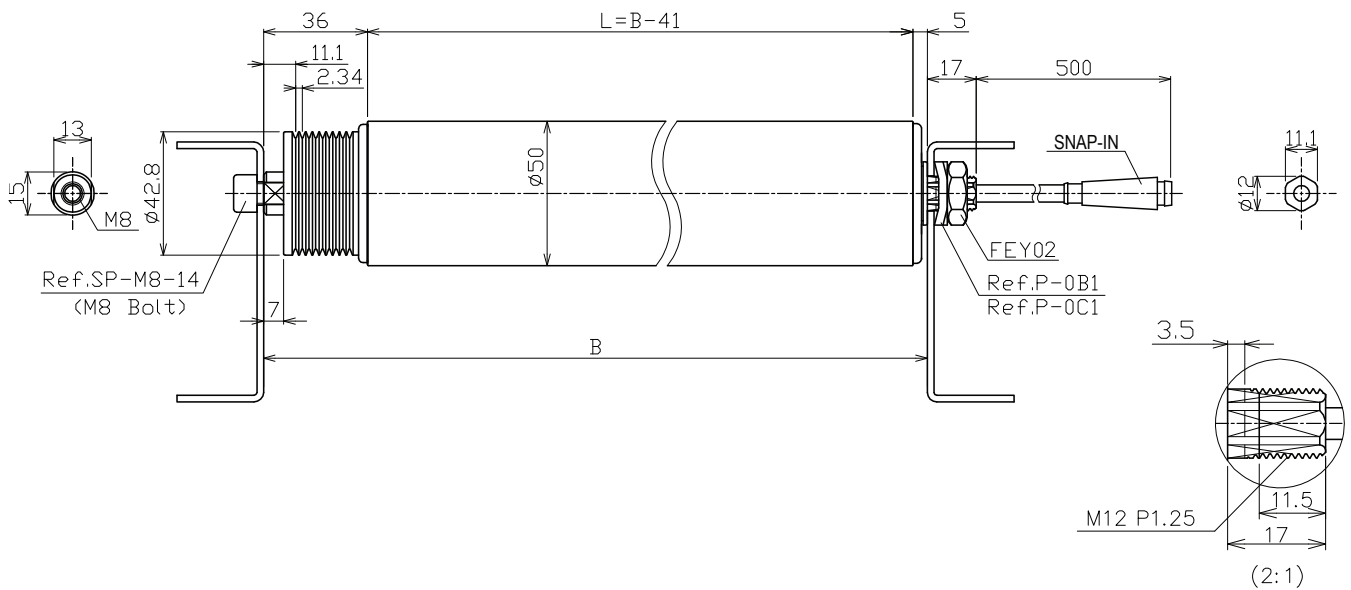
| Speed code | Dimension (B) | Tube length (L) |
|------------|----------------|-----------------|
| | mini ≤ B ≤ max | mini ≤ L ≤ max |
| 17 | 379 ≤ B ≤ 1239 | 340 ≤ L ≤ 1200 |
| 30 | 352 ≤ B ≤ 1239 | 313 ≤ L ≤ 1200 |
| 60 | 355 ≤ B ≤ 1239 | 316 ≤ L ≤ 1200 |
| 100 | 329 ≤ B ≤ 1239 | 290 ≤ L ≤ 1200 |

WEIGHT / STATIC LOAD / AXIAL FORCE

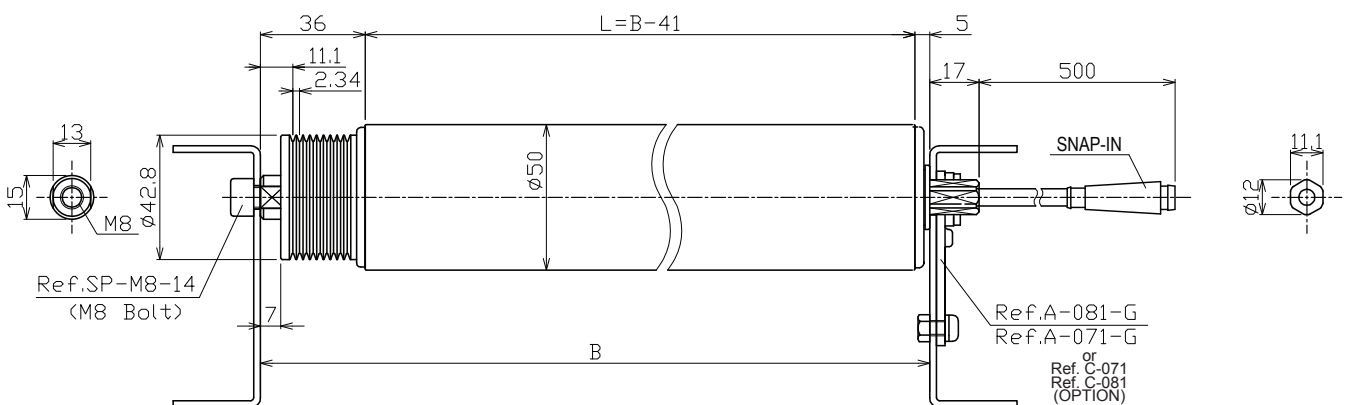
| Tube length | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
|---------------------|--------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Weight (Kg) | 17 m/min | 2,9 | 3,1 | 3,2 | 3,4 | 3,6 | 3,7 | 3,9 | 4,1 | 4,2 | 4,4 |
| | 30 / 60m/min | 2,7 | 2,9 | 3,0 | 3,2 | 3,4 | 3,5 | 3,7 | 3,9 | 4,0 | 4,2 |
| | 100 m/min | 2,3 | 2,4 | 2,6 | 2,8 | 2,9 | 3,1 | 3,3 | 3,4 | 3,6 | 3,7 |
| Static load (Kg) | | 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

PM500XC - Hexagonal threaded shaft motor side and M8 female threaded shaft with screw on free end



PM500XC - Hexagonal plain shaft motor side and M8 female threaded shaft with screw on free end



Dimensions PM500XC

STEEL AND STAINLESS STEEL TUBE

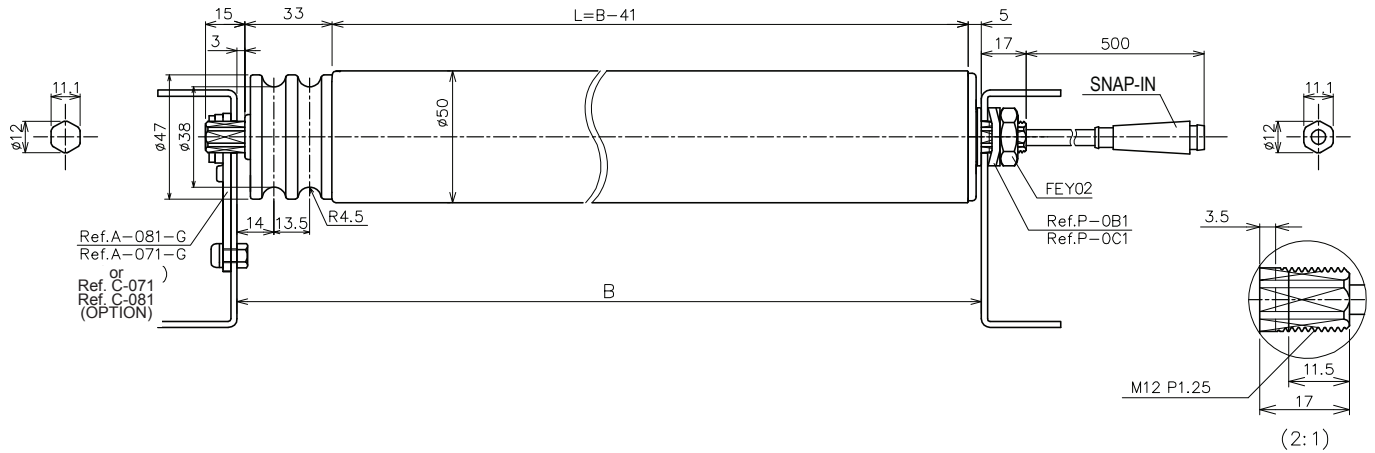
| Speed code | Dimension (B) | Tube length (L) |
|------------|----------------|-----------------|
| | mini ≤ B ≤ max | mini ≤ L ≤ max |
| 17 | 370 ≤ B ≤ 1241 | 329 ≤ L ≤ 1200 |
| 30 | 343 ≤ B ≤ 1241 | 302 ≤ L ≤ 1200 |
| 60 | 346 ≤ B ≤ 1241 | 305 ≤ L ≤ 1200 |
| 100 | 319 ≤ B ≤ 1241 | 278 ≤ L ≤ 1200 |

WEIGHT / STATIC LOAD / AXIAL FORCE

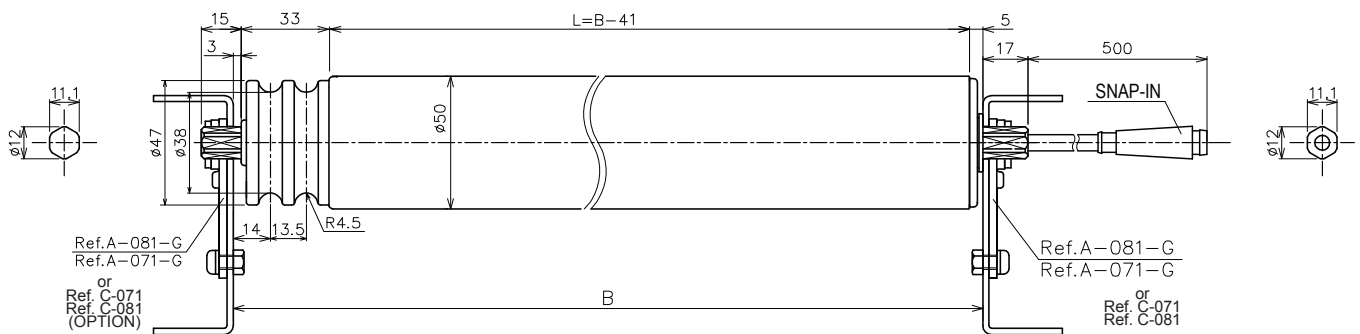
| Tube length | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
|---------------------|--------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Weight (Kg) | 17 m/min | 2,9 | 3,0 | 3,2 | 3,3 | 3,5 | 3,7 | 3,8 | 4,0 | 4,2 | 4,3 |
| | 30 / 60m/min | 2,7 | 2,8 | 3,0 | 3,1 | 3,3 | 3,5 | 3,6 | 3,8 | 4,0 | 4,1 |
| | 100 m/min | 2,2 | 2,4 | 2,5 | 2,7 | 2,9 | 3,0 | 3,2 | 3,4 | 3,5 | 3,7 |
| Static load (Kg) | | 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

PM500XC - Hexagonal threaded shaft motor side and hexagonal spring loaded shaft on free end



PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XC

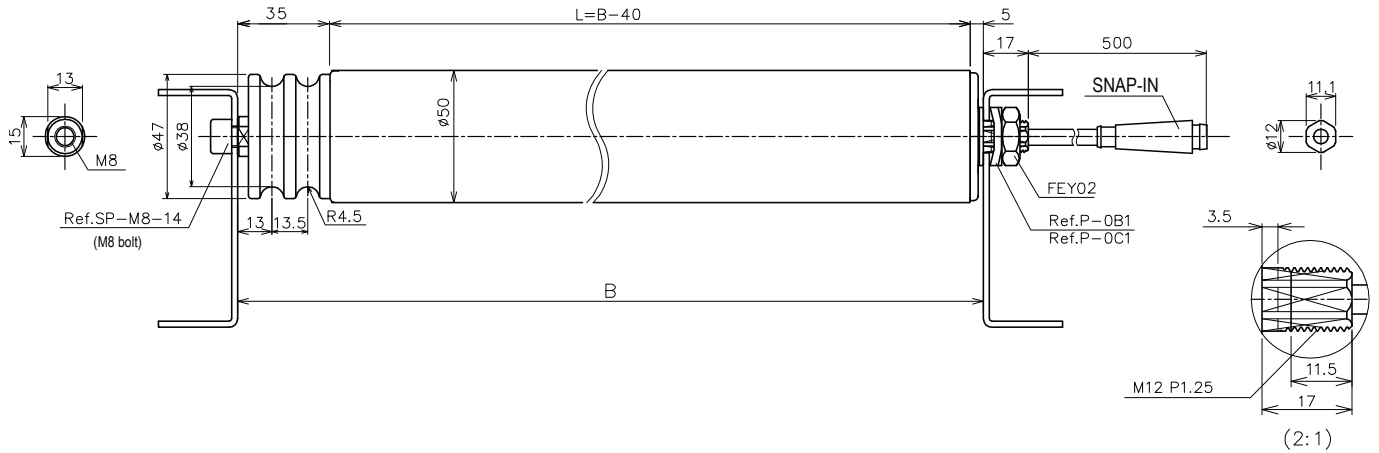
| Speed code | Dimension (B) | Tube length (L) |
|------------|----------------|-----------------|
| | mini ≤ B ≤ max | mini ≤ L ≤ max |
| 17 | 401 ≤ B ≤ 1241 | 360 ≤ L ≤ 1200 |
| 30 | 381 ≤ B ≤ 1241 | 340 ≤ L ≤ 1200 |
| 60 | 381 ≤ B ≤ 1241 | 340 ≤ L ≤ 1200 |
| 100 | 348 ≤ B ≤ 1241 | 307 ≤ L ≤ 1200 |

WEIGHT / STATIC LOAD / AXIAL FORCE

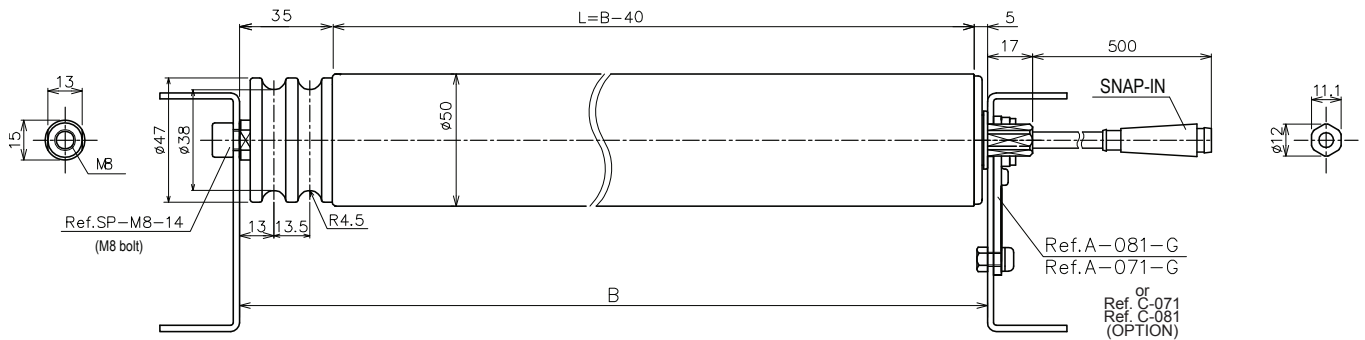
| Tube length | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
|---------------------|----------|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Weight (Kg) | 17m/min | 2,8 | 3,1 | 3,2 | 3,4 | 3,6 | 3,7 | 3,9 | 4,1 | 4,2 | 4,4 |
| | 30m/min | 2,5 | 2,9 | 3,0 | 3,2 | 3,4 | 3,5 | 3,7 | 3,8 | 4,0 | 4,2 |
| | 60m/min | 2,6 | 2,9 | 3,1 | 3,2 | 3,4 | 3,6 | 3,7 | 3,9 | 4,0 | 4,2 |
| | 100m/min | 2,4 | 2,7 | 2,8 | 3,0 | 3,2 | 3,3 | 3,5 | 3,7 | 3,8 | 4,0 |
| 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

PM500XC - Hexagonal threaded shaft motor side and M8 female threaded shaft with screw on free end



PM500XC - Hexagonal plain shaft motor side and M8 female threaded shaft with screw on free end



Dimensions PM500XC

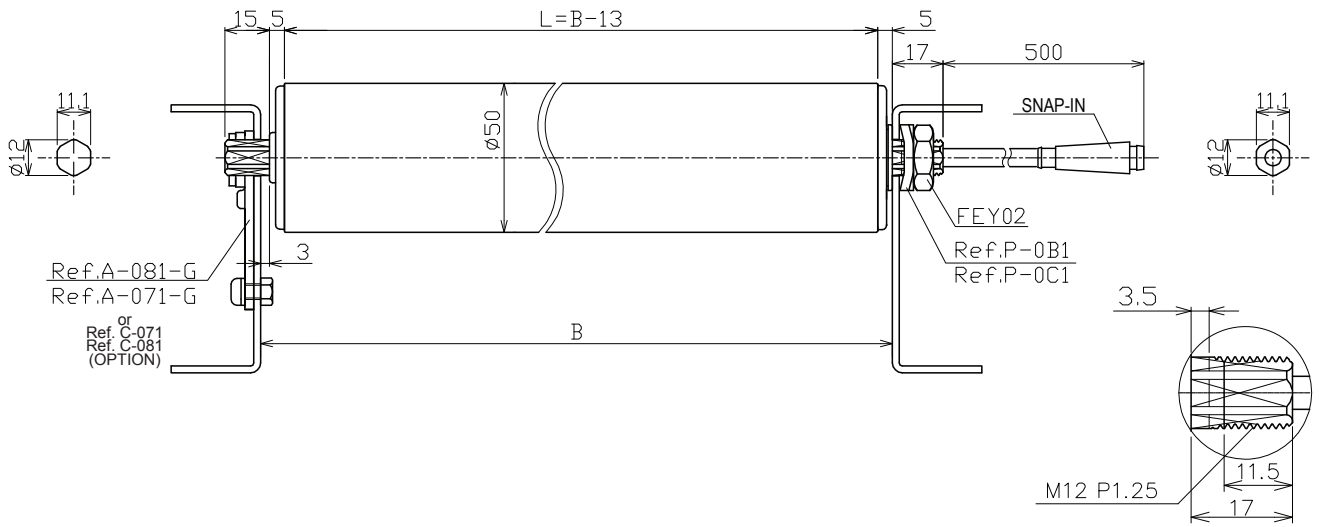
| Speed code | Dimension (B) | Tube length (L) |
|------------|----------------|-----------------|
| | mini ≤ B ≤ max | mini ≤ L ≤ max |
| 17 | 390 ≤ B ≤ 1240 | 350 ≤ L ≤ 1200 |
| 30 | 370 ≤ B ≤ 1240 | 330 ≤ L ≤ 1200 |
| 60 | 370 ≤ B ≤ 1240 | 330 ≤ L ≤ 1200 |
| 100 | 336 ≤ B ≤ 1240 | 296 ≤ L ≤ 1200 |

WEIGHT / STATIC LOAD / AXIAL FORCE

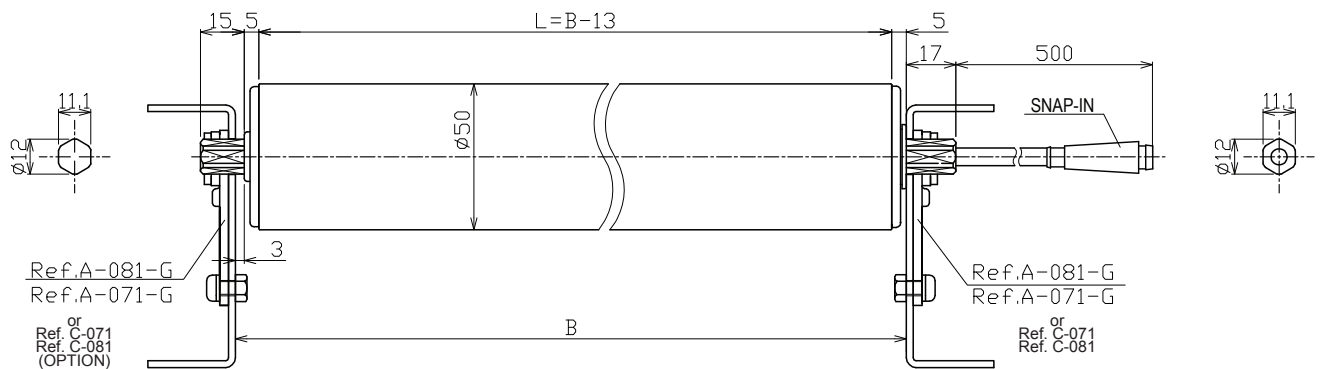
| Tube length | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
|---------------------|----------|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Weight (Kg) | 17m/min | 2,8 | 3,0 | 3,2 | 3,3 | 3,5 | 3,7 | 3,8 | 4,0 | 4,2 | 4,3 |
| | 30m/min | 2,6 | 2,8 | 3,0 | 3,1 | 3,3 | 3,4 | 3,6 | 3,8 | 3,9 | 4,1 |
| | 60m/min | 2,7 | 2,8 | 3,0 | 3,2 | 3,3 | 3,5 | 3,6 | 3,8 | 4,0 | 4,1 |
| | 100m/min | 2,4 | 2,7 | 2,8 | 3,0 | 3,2 | 3,3 | 3,5 | 3,7 | 3,8 | 4,0 |
| 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

PM500XC - Hexagonal threaded shaft motor side and hexagonal spring loaded shaft on free end



PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XC

STEEL AND STAINLESS STEEL TUBE

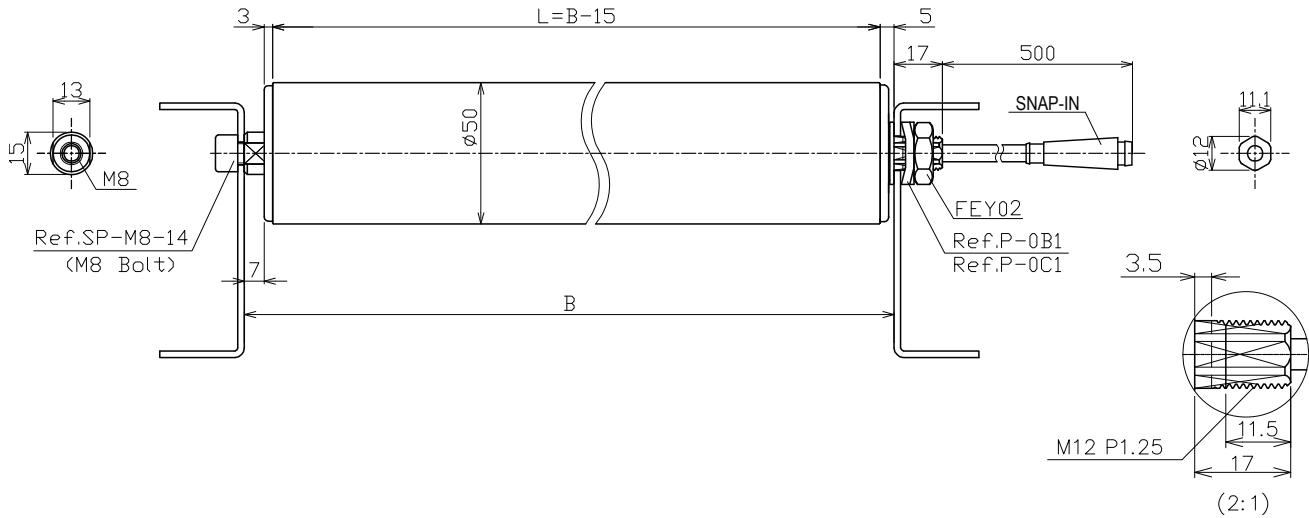
| Speed code | Dimension (B) | Tube length (L) |
|------------|----------------|-----------------|
| | mini ≤ B ≤ max | mini ≤ L ≤ max |
| 17 | 353 ≤ B ≤ 1213 | 340 ≤ L ≤ 1200 |
| 30 | 326 ≤ B ≤ 1213 | 313 ≤ L ≤ 1200 |
| 60 | 329 ≤ B ≤ 1213 | 316 ≤ L ≤ 1200 |
| 100 | 303 ≤ B ≤ 1213 | 290 ≤ L ≤ 1200 |

WEIGHT / STATIC LOAD / AXIAL FORCE

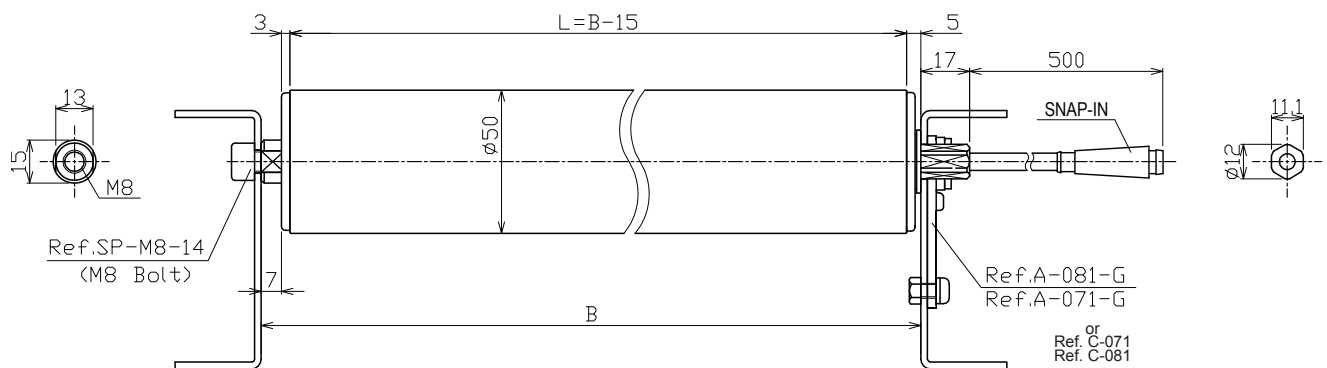
| Tube length | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
|---------------------|--------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Weight (Kg) | 17 m/min | 2,8 | 2,9 | 3,1 | 3,3 | 3,4 | 3,6 | 3,7 | 3,9 | 4,1 | 4,2 |
| | 30 / 60m/min | 2,6 | 2,7 | 2,9 | 3,0 | 3,2 | 3,4 | 3,5 | 3,7 | 3,9 | 4,0 |
| | 100 m/min | 2,1 | 2,3 | 2,4 | 2,6 | 2,8 | 2,9 | 3,1 | 3,3 | 3,4 | 3,6 |
| Static load (Kg) | | 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

PM500XC - Hexagonal threaded shaft motor side and M8 female threaded shaft with screw on free end



PM500XC - Hexagonal plain shaft motor side and M8 female threaded shaft with screw on free end



Dimensions PM500XC

STEEL AND STAINLESS STEEL TUBE

| Speed code | Dimension (B) | Tube length (L) |
|------------|----------------|-----------------|
| | mini ≤ B ≤ max | mini ≤ L ≤ max |
| 17 | 344 ≤ B ≤ 1215 | 329 ≤ L ≤ 1200 |
| 30 | 317 ≤ B ≤ 1215 | 302 ≤ L ≤ 1200 |
| 60 | 320 ≤ B ≤ 1215 | 305 ≤ L ≤ 1200 |
| 100 | 293 ≤ B ≤ 1215 | 278 ≤ L ≤ 1200 |

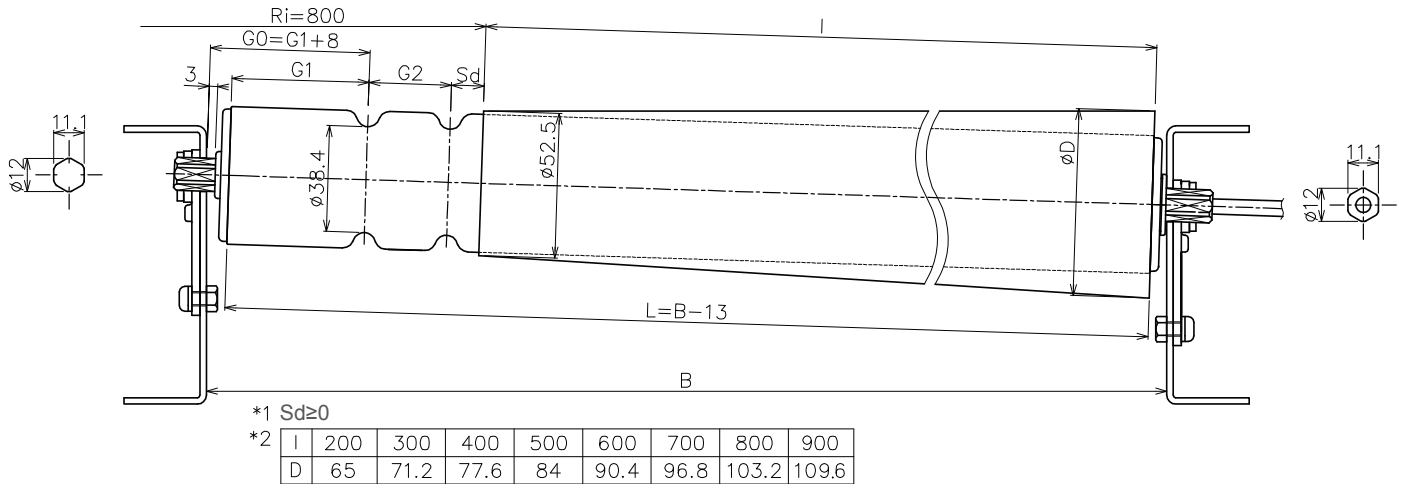
WEIGHT / STATIC LOAD / AXIAL FORCE

| Tube length | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
|---------------------|--------------|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Weight (Kg) | 17 m/min | 2,8 | 2,9 | 3,1 | 3,2 | 3,4 | 3,6 | 3,7 | 3,9 | 4,1 | 4,2 |
| | 30 / 60m/min | 2,6 | 2,7 | 2,9 | 3,0 | 3,2 | 3,4 | 3,5 | 3,7 | 3,8 | 4,0 |
| | 100 m/min | 2,1 | 2,3 | 2,4 | 2,6 | 2,8 | 2,9 | 3,1 | 3,3 | 3,4 | 3,6 |
| Static load (Kg) | | 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

PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XC - 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 |
|------------|----------------------|----------------------|---|---------|---------|-------------|--|
| | mini ≤ B ≤ max | mini ≤ L ≤ max | G0 mini | G1 mini | G2 mini | G1 + G2 max | |
| 17 | 317+G1+G2 ≤ B ≤ 1200 | 304+G1+G2 ≤ L ≤ 1200 | ≥ 41 | ≥ 33 | ≥ 22 | ≤ 300 | 200, 300, 400, 500, 600, 700, 800, 900 |
| 30 | 290+G1+G2 ≤ B ≤ 1200 | 277+G1+G2 ≤ L ≤ 1200 | | | | | |
| 60 | 294+G1+G2 ≤ B ≤ 1200 | 281+G1+G2 ≤ L ≤ 1200 | | | | | |
| 100 | 267+G1+G2 ≤ B ≤ 1200 | 254+G1+G2 ≤ L ≤ 1200 | | | | | |

STAINLESS STEEL TUBE

| Speed code | Dimension (B) | Tube length (L) | Grooves for stainless steel tube* Depth = 5,2mm | | | | Tapered sleeve length |
|------------|----------------------|----------------------|--|---------|---------|-------------|--|
| | mini ≤ B ≤ max | mini ≤ L ≤ max | G0 mini | G1 mini | G2 mini | G1 + G2 max | |
| 17 | 317+G1+G2 ≤ B ≤ 1200 | 304+G1+G2 ≤ L ≤ 1200 | ≥ 41 | ≥ 33 | ≥ 30 | ≤ 300 | 200, 300, 400, 500, 600, 700, 800, 900 |
| 30 | 290+G1+G2 ≤ B ≤ 1200 | 277+G1+G2 ≤ L ≤ 1200 | | | | | |
| 60 | 294+G1+G2 ≤ B ≤ 1200 | 281+G1+G2 ≤ L ≤ 1200 | | | | | |
| 100 | 267+G1+G2 ≤ B ≤ 1200 | 254+G1+G2 ≤ L ≤ 1200 | | | | | |

⚠ For a single groove G2=0.

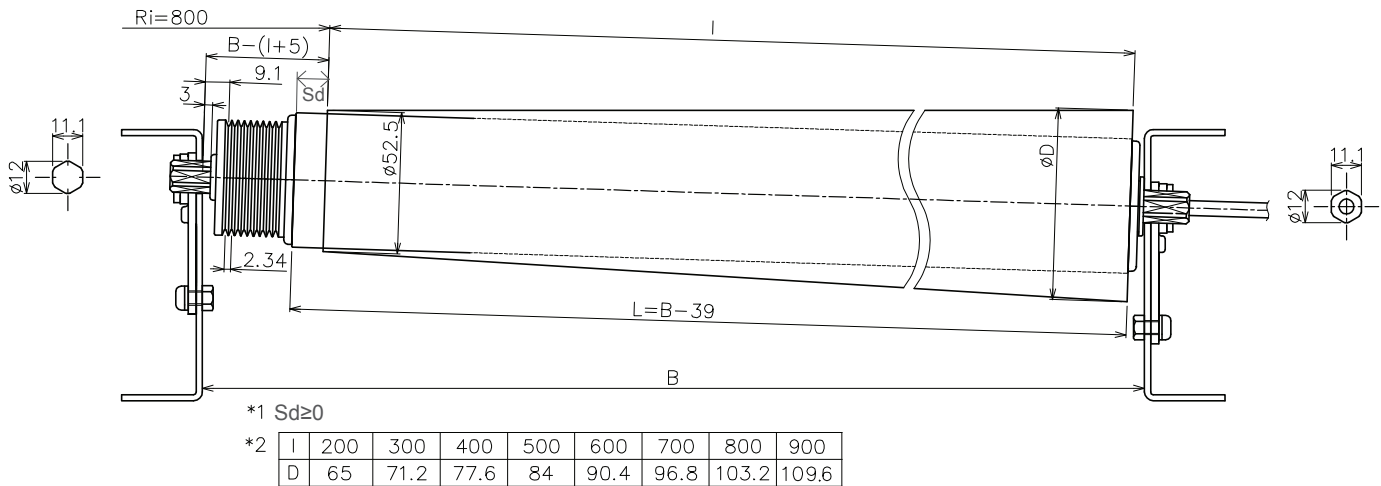
⚠ *Stainless steel tube : For IP54 version

ADDITIONAL WEIGHT

| | | | | | | | | |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Sleeve length | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 |
| Additional weight (kg) | 0,1 | 0,2 | 0,3 | 0,4 | 0,5 | 0,6 | 0,8 | 0,9 |
| Max load to be conveyed (Kg) | 50 | | | | | | | |

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

PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XC - Inner radius of curvature (Ri) : 800mm

STEEL AND STAINLESS STEEL TUBE

| Speed code | Dimension (B) | Tube length (L) | Tapered sleeve length |
|------------|----------------|-----------------|--|
| | mini ≤ B ≤ max | | |
| 17 | 379 ≤ B ≤ 839 | 340 ≤ L ≤ 800 | 200, 300, 400, 500, 600, 700, 800, 900 |
| 30 | 352 ≤ B ≤ 839 | 313 ≤ L ≤ 800 | |
| 60 | 355 ≤ B ≤ 839 | 316 ≤ L ≤ 800 | |
| 100 | 329 ≤ B ≤ 839 | 290 ≤ L ≤ 800 | |

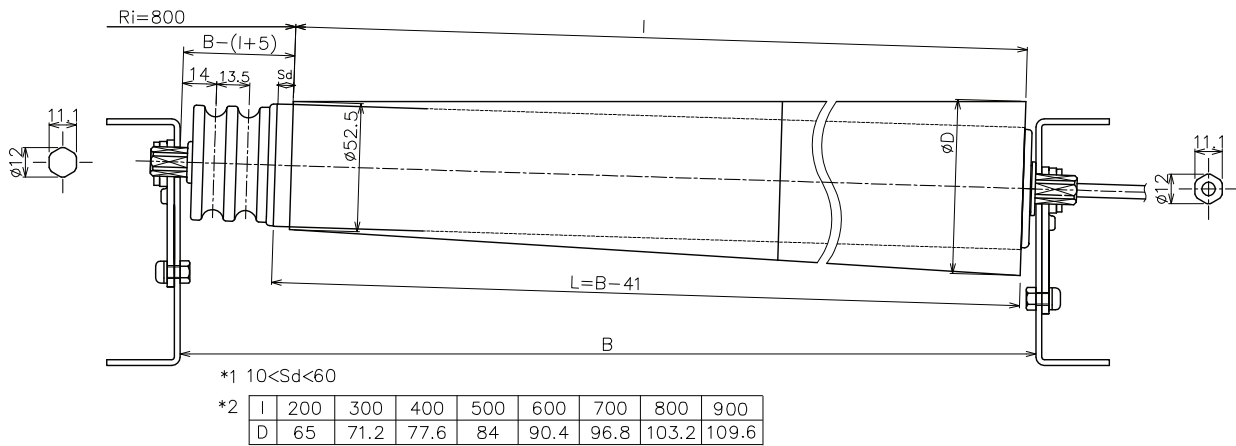
ADDITIONAL WEIGHT

| Sleeve length | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Additional weight (kg) | 0,1 | 0,2 | 0,3 | 0,4 | 0,5 | 0,6 | 0,8 | 0,9 |
| Max load to be conveyed (Kg) | 50 | | | | | | | |

- ⚠** For the curve, it is advisable to:
- do not exceed 5 ° between the rollers
 - use a 3 rib belt to ensure stability on the pulley

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

PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XC - Inner radius of curvature (Ri): 800 mm

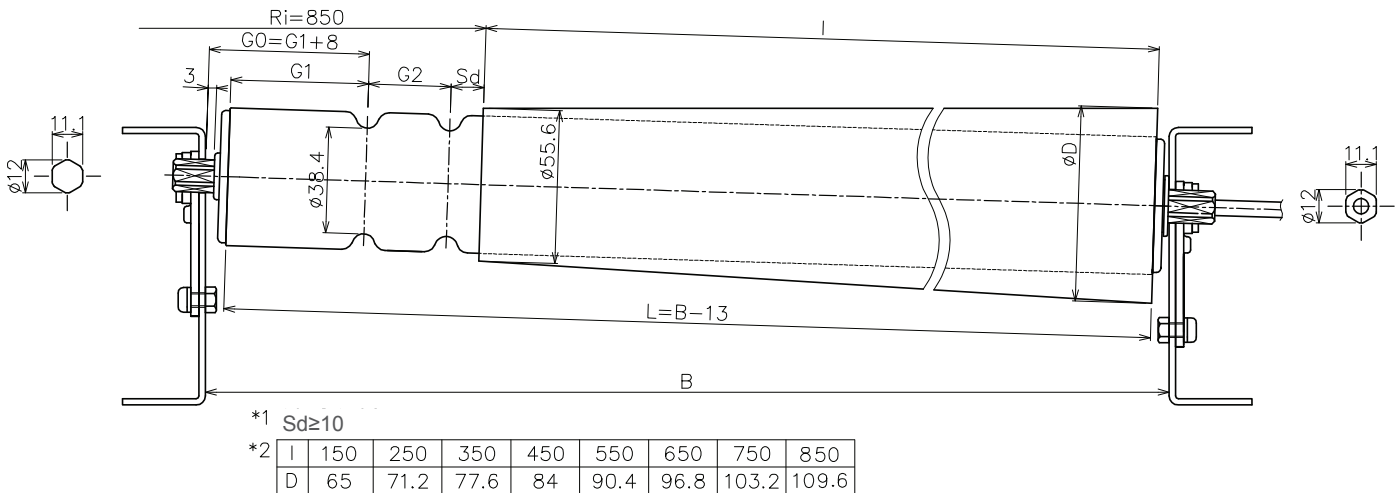
| Speed code | Dimension (B) | Tube length (L) | Tapered sleeve length (l) |
|------------|----------------|-----------------|--|
| | mini ≤ B ≤ max | mini ≤ L ≤ max | |
| 17 | 401 ≤ B ≤ 1241 | 360 ≤ L ≤ 1200 | 200, 300, 400, 500, 600, 700, 800, 900 |
| 30 | 381 ≤ B ≤ 1241 | 340 ≤ L ≤ 1200 | |
| 60 | 381 ≤ B ≤ 1241 | 340 ≤ L ≤ 1200 | |
| 100 | 348 ≤ B ≤ 1241 | 307 ≤ L ≤ 1200 | |

ADDITIONAL WEIGHT

| Sleeve length | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Additional weight(kg) | 0,1 | 0,2 | 0,3 | 0,4 | 0,5 | 0,6 | 0,8 | 0,9 |
| Max load to be conveyed (kg) | 50 | | | | | | | |

Conical roller with grooved tube - Ri = 850mm

PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XC - 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 |
|------------|----------------------|----------------------|---|------------|------------|----------------|--|
| | mini ≤ B ≤ max | mini ≤ L ≤ max | G0 mini | G1 mini | G2 mini | G1 + G2 max | |
| 17 | 317+G1+G2 ≤ B ≤ 1200 | 304+G1+G2 ≤ L ≤ 1200 | ≥ 41 | ≥ 33 | ≥ 22 | ≤ 300 | 150, 250, 350, 450, 550, 650, 750, 850 |
| 30 | 290+G1+G2 ≤ B ≤ 1200 | 277+G1+G2 ≤ L ≤ 1200 | | | | | |
| 60 | 294+G1+G2 ≤ B ≤ 1200 | 281+G1+G2 ≤ L ≤ 1200 | | | | | |
| 100 | 267+G1+G2 ≤ B ≤ 1200 | 254+G1+G2 ≤ L ≤ 1200 | | | | | |

STAINLESS STEEL TUBE

| Speed code | Dimension (B) | Tube length (L) | Grooves for stainless steel tube* Depth = 5,2mm | | | | Tapered sleeve length |
|------------|----------------------|----------------------|--|------------|------------|----------------|--|
| | mini ≤ B ≤ max | mini ≤ L ≤ max | G0 mini | G1 mini | G2 mini | G1 + G2 max | |
| 17 | 317+G1+G2 ≤ B ≤ 1200 | 304+G1+G2 ≤ L ≤ 1200 | ≥ 41 | ≥ 33 | ≥ 30 | ≤ 300 | 150, 250, 350, 450, 550, 650, 750, 850 |
| 30 | 290+G1+G2 ≤ B ≤ 1200 | 277+G1+G2 ≤ L ≤ 1200 | | | | | |
| 60 | 294+G1+G2 ≤ B ≤ 1200 | 281+G1+G2 ≤ L ≤ 1200 | | | | | |
| 100 | 267+G1+G2 ≤ B ≤ 1200 | 254+G1+G2 ≤ L ≤ 1200 | | | | | |

⚠ *Stainless steel tube : For IP54 version

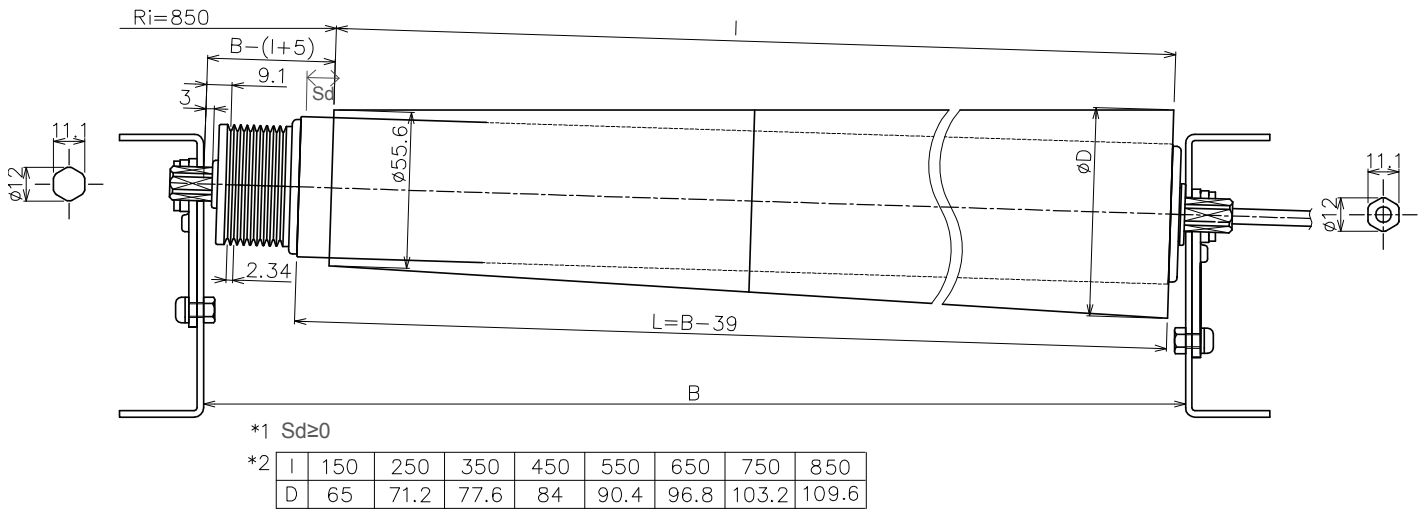
ADDITIONAL WEIGHT

| Sleeve length | 150 | 250 | 350 | 450 | 550 | 650 | 750 | 850 |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Additional weight (kg) | 0,1 | 0,2 | 0,2 | 0,3 | 0,5 | 0,6 | 0,7 | 0,9 |
| Max load to be conveyed (Kg) | 50 | | | | | | | |

⚠ For a single groove G2=0.

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

PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XC - Inner radius of curvature (Ri) : 850mm

STEEL AND STAINLESS STEEL TUBE

| Speed code | Dimension (B) | Tube length (L) | Tapered sleeve length |
|------------|----------------|-----------------|--|
| | mini ≤ B ≤ max | mini ≤ L ≤ max | |
| 17 | 379 ≤ B ≤ 789 | 340 ≤ L ≤ 750 | 150, 250, 350, 450, 550, 650, 750, 850 |
| 30 | 352 ≤ B ≤ 789 | 313 ≤ L ≤ 750 | |
| 60 | 355 ≤ B ≤ 789 | 316 ≤ L ≤ 750 | |
| 100 | 329 ≤ B ≤ 789 | 290 ≤ L ≤ 750 | |

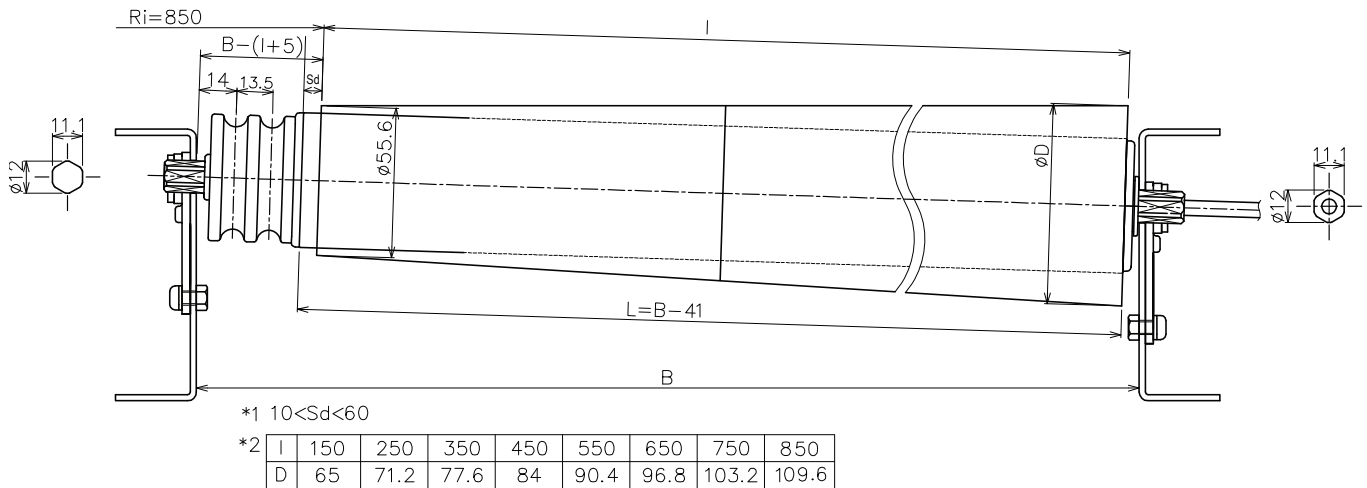
ADDITIONAL WEIGHT

| Sleeve length | 150 | 250 | 350 | 450 | 550 | 650 | 750 | 850 |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Additional weight (kg) | 0,1 | 0,2 | 0,2 | 0,3 | 0,5 | 0,6 | 0,7 | 0,9 |
| Max load to be conveyed (Kg) | 50 | | | | | | | |

- !** For the curve, it is advisable to:
- do not exceed 5 ° between the rollers
 - use a 3 rib belt to ensure stability on the pulley

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

PM500XC - Hexagonal plain shaft motor side and hexagonal spring loaded shaft on free end



Dimensions PM500XC - 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 | 401 ≤ B ≤ 1241 | 360 ≤ L ≤ 1200 | 150, 250, 350, 450, 550, 650, 750, 850 |
| 30 | 381 ≤ B ≤ 1241 | 340 ≤ L ≤ 1200 | |
| 60 | 381 ≤ B ≤ 1241 | 340 ≤ L ≤ 1200 | |
| 100 | 348 ≤ B ≤ 1241 | 307 ≤ L ≤ 1200 | |

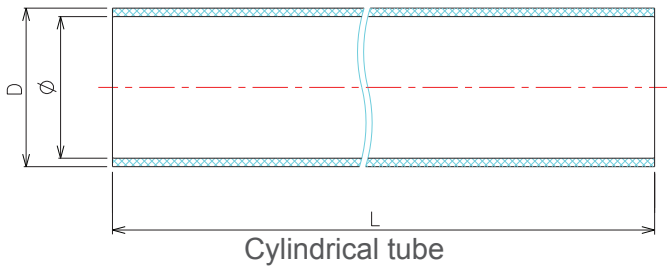
ADDITIONAL WEIGHT

| Sleeve length | 150 | 250 | 350 | 450 | 550 | 650 | 750 | 850 |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Additional weight(kg) | 0,1 | 0,2 | 0,2 | 0,3 | 0,5 | 0,6 | 0,7 | 0,9 |
| Max load to be conveyed (kg) | 50 | | | | | | | |

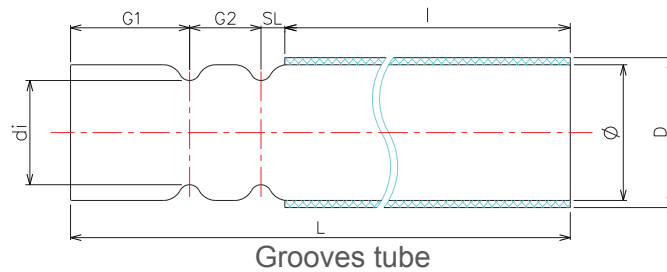
8 - DIMENSIONAL CHARACTERISTICS - MISCELLANEOUS

PVC sleeve

For conveying a fragile load or to lower the sound level
 Sleeved by compressed air
 Anti-static option



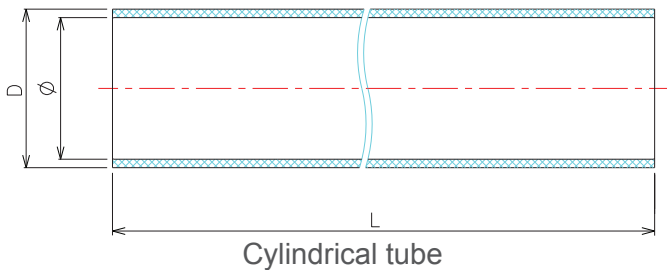
| Thickness (mm) | L (mm) | Ø (mm) | D (mm) (±1mm) | Hardness |
|----------------|--------|--------|---------------|-------------|
| 2 | ≤1200 | 50 | 54 | ~68 shore A |
| 3 | | | 56 | |



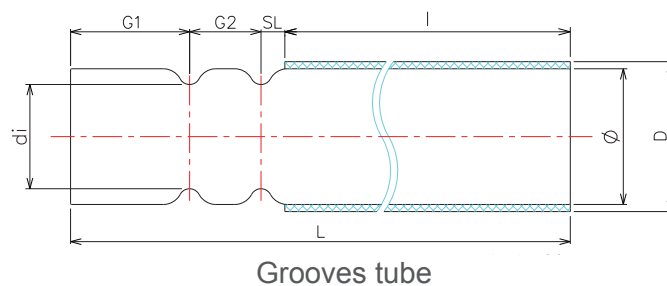
| Thickness (mm) | L (mm) | Ø (mm) | D (mm) (±1mm) | SL (mm) |
|----------------|--------|--------|---------------|---------|
| 2 | ≤1200 | 50 | 54 | 10 |
| 3 | | | 56 | |

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 | |

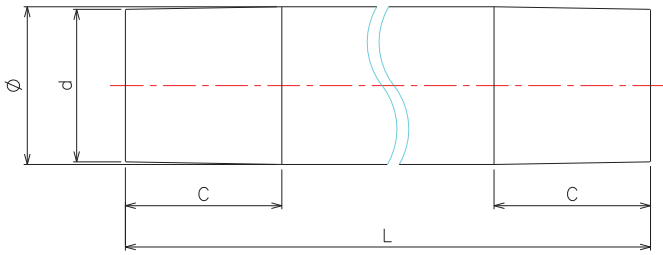


| L (mm) | Ø (mm) | D (mm) |
|--------|--------|--------|
| ≤1000 | 50 | 56 |



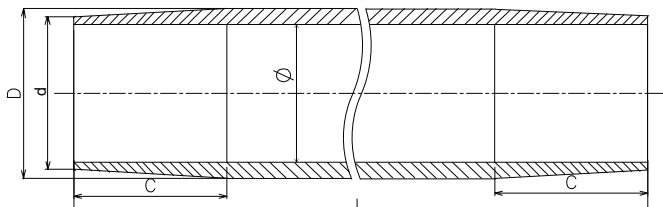
| L (mm) | Ø (mm) | D (mm) | SL (mm) |
|--------|--------|--------|---------|
| ≤1000 | 50 | 56 | 10 |

Crowned machining



Tube in zinc-coated or stainless steel

| L (mm) | C (mm) | Ø (mm) | d (mm) |
|---------|--------|--------|--------|
| <600 | 60 | 50 | 49 |
| 600≤800 | 120 | | |



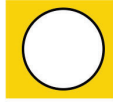
Tube with natural rubber/polyurethane coating - thickness 3 mm

| L (mm) | C (mm) | Ø (mm) | d (mm) | D (mm) |
|---------|--------|--------|--------|--------|
| <600 | 60 | 50 | 55 | 56 |
| 600≤800 | 120 | | | |

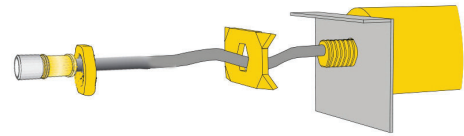
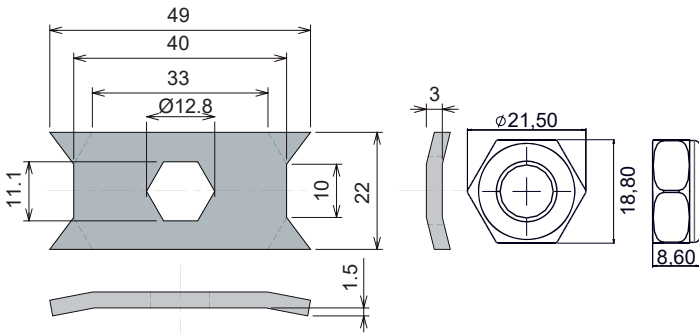
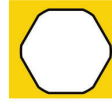
9 - MOUNTING ON THE FRAMES

Mouting plate for threaded hexagonal shaft - FLAT ON TOP

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



or hexagonal 11,2mm



! Tightening torque : 30 Nm $\pm 10\%$

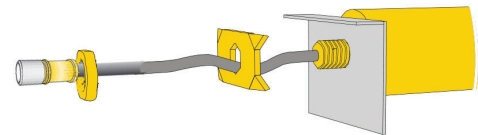
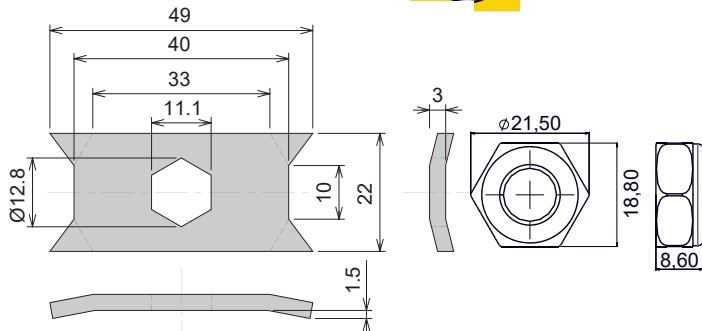
| | Claw plate | Nut |
|-----------|------------|--------|
| Reference | P-0B1 | FEY-02 |

Mouting plate for threaded hexagonal shaft - ANGLE ON TOP

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



or hexagonal 11,2mm



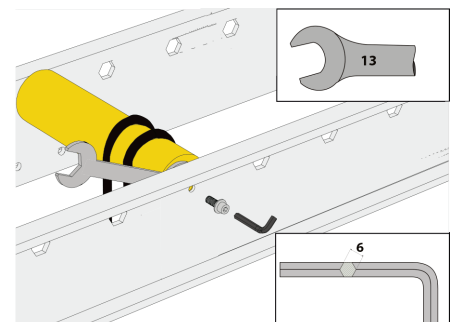
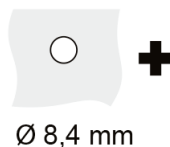
! Tightening torque : 30 Nm $\pm 10\%$

| | Claw plate | Nut |
|-----------|------------|--------|
| Reference | P-0C1 | FEY-02 |

M8 threaded fixed shaft

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

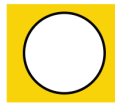
! Tightening torque : 30 Nm $\pm 10\%$



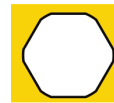
| | Bolt |
|-----------|----------|
| Reference | SP-M8-14 |

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

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

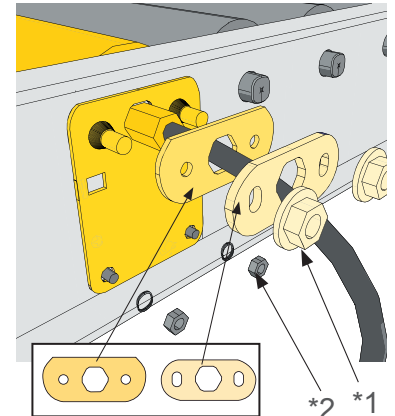


or hexagonal 11,2mm

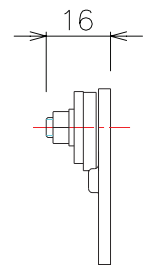
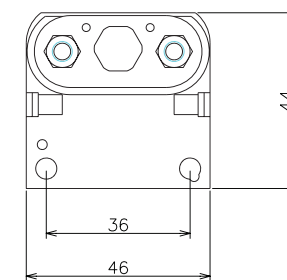
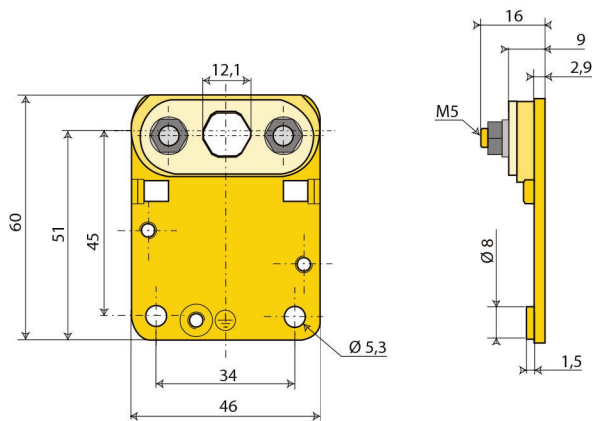


| Reference | Plate |
|-----------|-------|
| A-071-G | |

! Tightening torque
*1 - 6-10 Nm
*2 - 3.5 Nm



| Reference | Plate |
|-----------|-------|
| C-071 | |



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

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

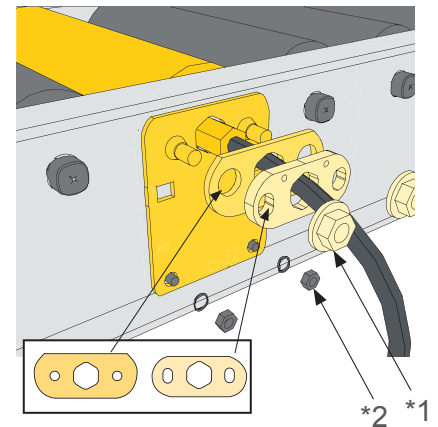


or hexagonal 11,2mm

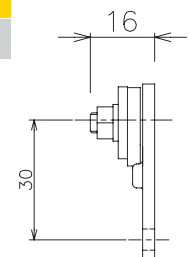
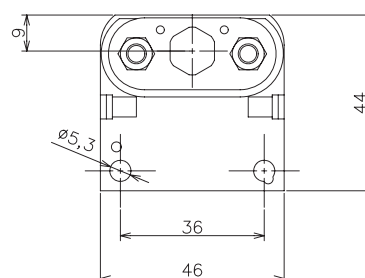
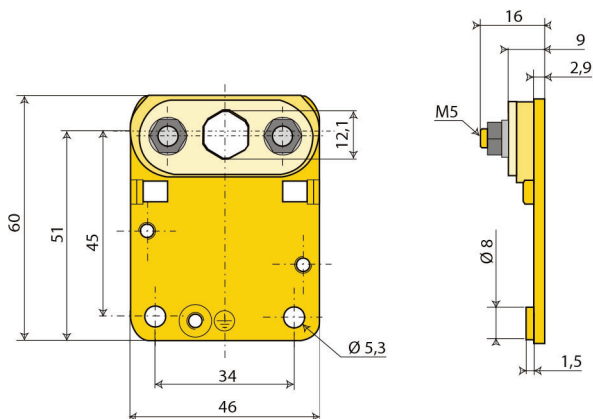


| Reference | Plate |
|-----------|-------|
| A-081-G | |

! Tightening torque
*1 - 6-10 Nm
*2 - 3.5 Nm



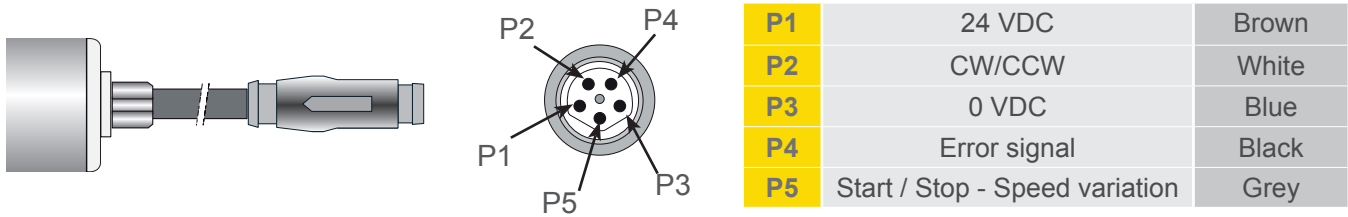
| Reference | Plate |
|-----------|-------|
| C-081 | |



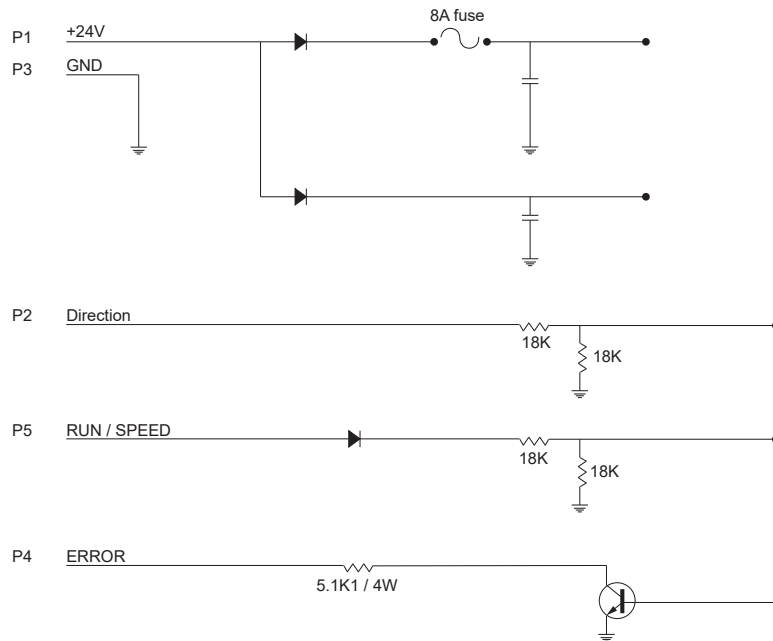
▶ 10 - WIRING AND COMMANDS

■ Wiring

To connect a motorized roller serie PM500XC, it should be used a female connector M8 – 5 pins :

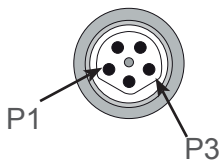


■ Interface scheme



■ Pin 1 and 3 - 24VDC power supply

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

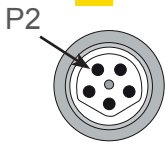


Pin P1 - Brown wire - 24VDC
Pin P3 - Blue wire - 0V

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

- Maximum input current (starting current) : 4A

Pin 2 - Direction of rotation



Pin P2 - White wire - Direction of rotation

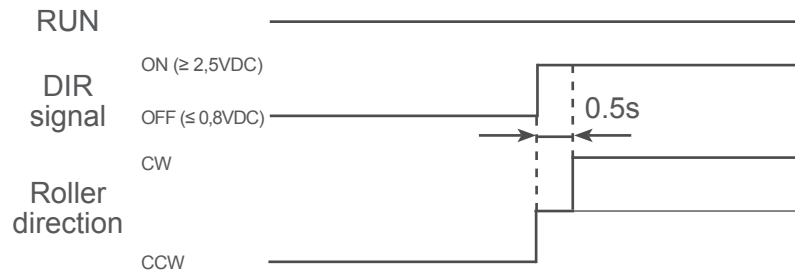
CCW $\leq 0,8\text{VDC}$



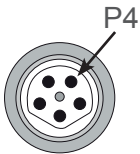
CW $\geq 2,5\text{VDC}$



- Input impedance : $\geq 35\text{k}\Omega$
- Maximum input current at 24VDC : 0,67mA
- DIR signal can be permitted while motor is running
- Delay time for switching between CW and CCW is 0.5s.

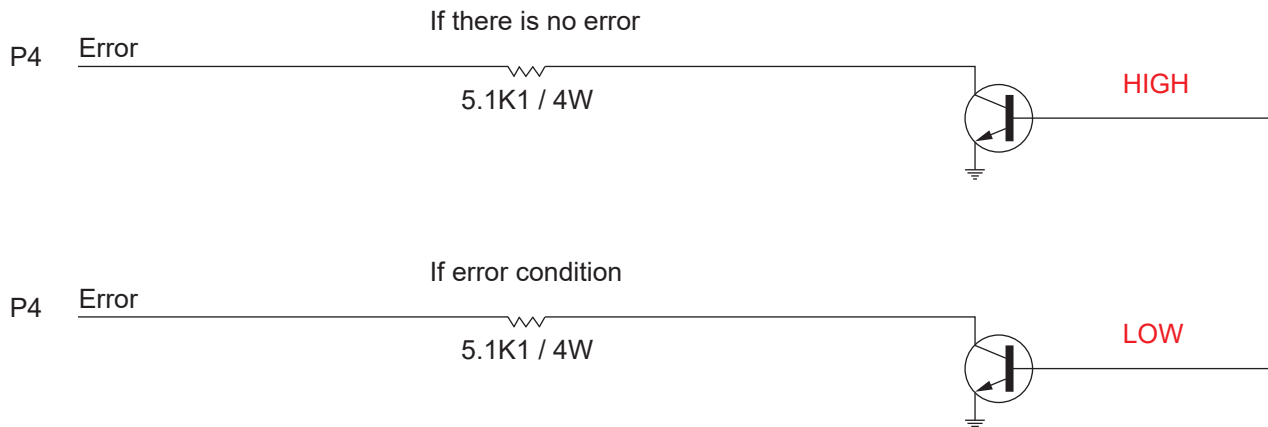


Pin 4 - Error signal



Pin P4 - Black wire

- Error type :
 - Thermal
 - Low voltage
 - Back EMF
 - Lock error
 - Speed difference
- Error reset automatically when error condition is cleared
- Maximum output current : 25mA
- NPN open collector
- Signal is discharged when error condition



Pin 5 - Start / Stop - Speed variation



Pin P5 - Grey wire

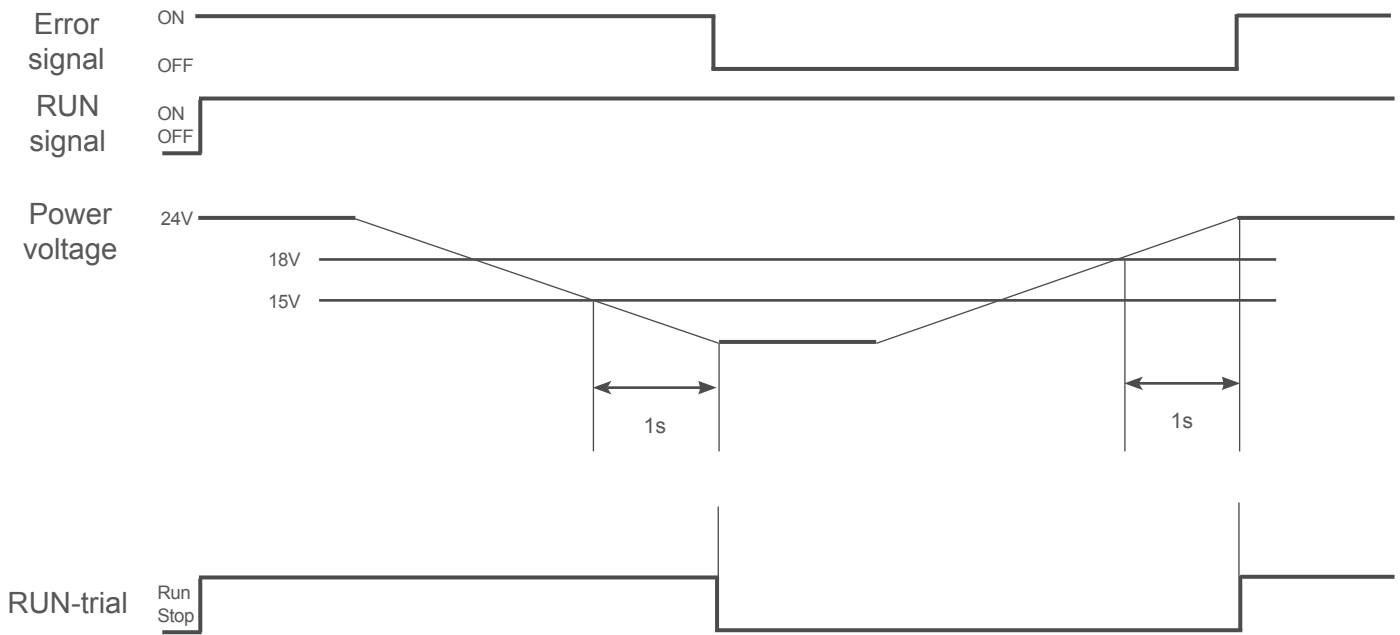
- Input impedance : $\geq 35k\Omega$
- Maximum input current at 24VDC : 0,67mA
- Stop : 0-1,9VDC
- Start : $> 2,0VDC$

| External voltage (V) | Speed | | | |
|----------------------|----------------|------|------|-------|
| | 17 | 30 | 60 | 100 |
| 9,9-24,0 | 16,9 | 28,4 | 60,0 | 101,1 |
| 9,0-9,8 | 15,9 | 26,7 | 56,4 | 95,1 |
| 7,9-8,9 | 13,5 | 22,7 | 48,0 | 80,9 |
| 6,9-7,8 | 11,0 | 18,5 | 39,0 | 65,7 |
| 6,0-6,8 | 9,3 | 15,6 | 33,0 | 55,6 |
| 5,2-5,9 | 7,6 | 12,8 | 27,0 | 45,5 |
| 4,4-5,1 | 5,9 | 10,0 | 21,0 | 35,4 |
| 3,6-4,3 | 4,2 | 7,1 | 15,0 | 25,3 |
| 2,7-3,5 | 2,5 | 4,3 | 9,0 | 15,2 |
| 2,0-2,6 | 0,8 | 1,4 | 3,0 | 5,1 |
| 0-1,9 | 0 (servo lock) | | | |

11 - PROTECTIONS

Low voltage error

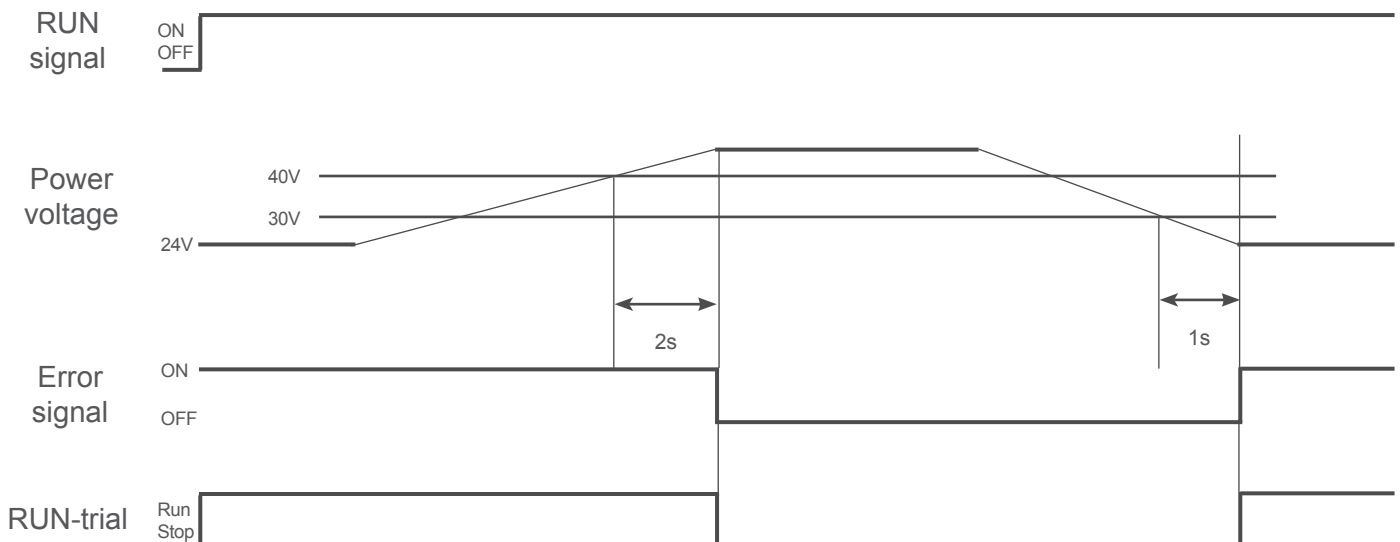
If the power supply voltage drops $\leq 15\text{VDC}$ for $\geq 1\text{s}$, the motorized roller is stopped. It restarts automatically when the supply voltage returns to $\geq 18\text{VDC}$ for $\geq 1\text{s}$.



EMF error

Error signal is discharged and Power Moller stops when motor voltage on a circuit board reaches 40V due to generated EMF continuously for 2 seconds.

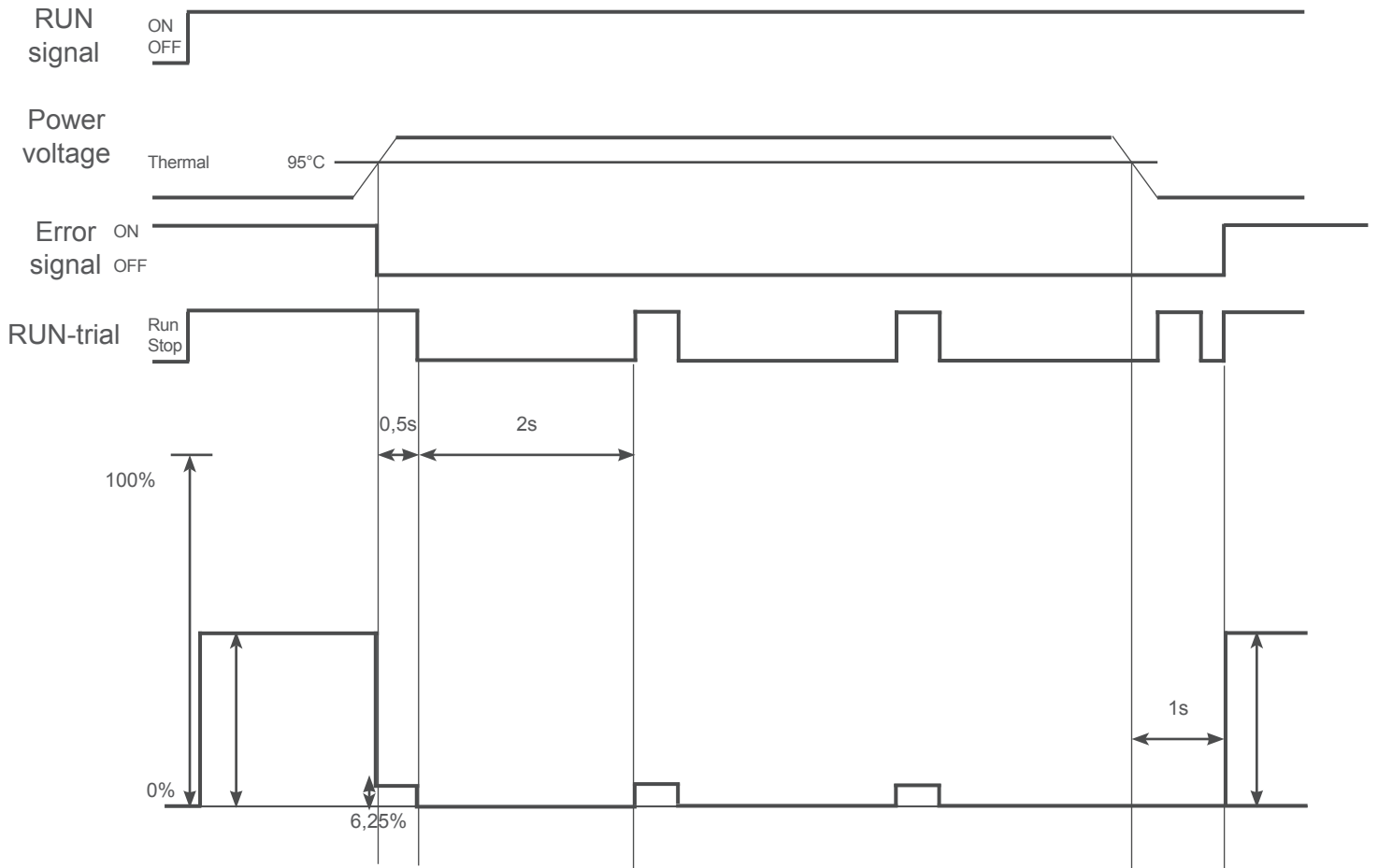
EMF error is automatically reset when motor voltage becomes under 30V continuously for 1 second.



Thermal protection

If the motorized roller overheats due to overloading, load blocking, etc., the thermal protection is triggered at 95°C and the power of the motorized roller is reduced to 6.25% of its power at the time of stops and switches into intermittent operation (0.5s of running and 2.0s off), until the thermal capsule is reset.

The motorized roller automatically restarts 1s after the thermal reset, and regains its power when stopped.

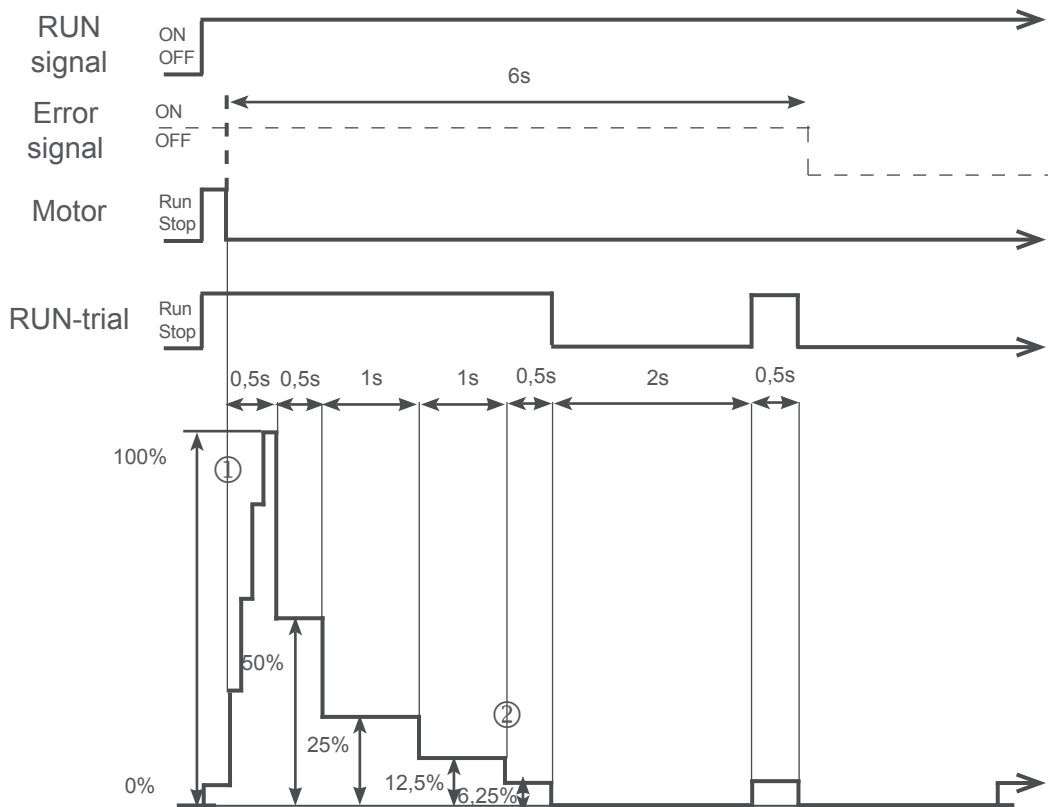


Speed difference error

Error signal is discharged when there is a speed deviation of +/- 20% from set speed for 10 seconds. Error signal is automatically reset when motor speed becomes within +/-20% of set speed for 0.5 second.

Against blocking

If the motorized roller is blocked, its power increases gradually to 100% for 0.5s ①. Then its power will be reduced to 50%, but if the blocking persists for 0.5s, it will still be reduced to 25% after 1s of blocking and to 12.5%, then 6.25% ②. If the motor roller is still blocked after 3s, it is switched on into intermittent operation (2 s stop and 0.5s running at 6.25% of its power) for 3 cycles ③.



At the end of the cycle, the motorized roller restarts at 50% of its power ④.

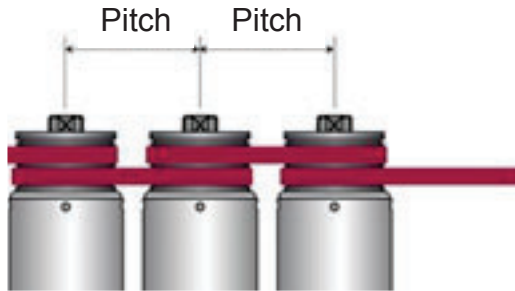
If the blocking still persists, the power will be gradually reduced to 50%, 25% and 12,5% ⑤ and repeats the same cycle until the motor roller turns 6 turns.

It is also possible to unlock the motorized roller by sending a «Stop» signal and then «Start» during intermittent operation.

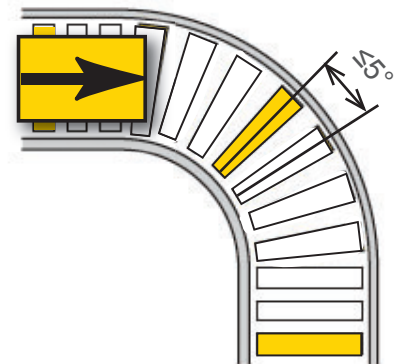


12 - ACCESSORIES

Ribbed belt



| Pitch between the rollers (mm) For pulley Ø43mm | Number of teeth | |
|--|-----------------|----------------|
| | 2 | 3 |
| 53-56 | Ref. 2PJ246-43 | Ref. 3PJ246-43 |
| 60-63 | Ref. 2PJ256-43 | Ref. 3PJ256-43 |
| 64-65 | Ref. 2PJ265-43 | Ref. 3PJ265-43 |
| 66-67 | Ref. 2PJ270-43 | Ref. 3PJ270-43 |
| 71-72 | Ref. 2PJ282-43 | Ref. 3PJ282-43 |
| 73-75 | Ref. 2PJ286-43 | Ref. 3PJ286-43 |
| 76-78 | Ref. 2PJ290-43 | Ref. 3PJ290-43 |
| 80-84 | Ref. 2PJ302-43 | Ref. 3PJ302-43 |
| 87-91 | Ref. 2PJ314-43 | Ref. 3PJ314-43 |
| 92-95 | Ref. 2PJ316-43 | Ref. 3PJ316-43 |
| 97-101 | Ref. 2PJ336-43 | Ref. 3PJ336-43 |
| 103-107 | Ref. 2PJ346-43 | Ref. 3PJ346-43 |
| 115-118 | Ref. 2PJ372-43 | Ref. 3PJ372-43 |
| 119-121 | Ref. 2PJ376-43 | Ref. 3PJ376-43 |
| 123-128 | Ref. 2PJ388-43 | Ref. 3PJ388-43 |
| 129-134 | Ref. 2PJ416-43 | Ref. 3PJ416-43 |
| 142-147 | Ref. 2PJ436-43 | Ref. 3PJ436-43 |
| 150-156 | Ref. 2PJ442-43 | Ref. 3PJ442-43 |
| 157-161 | Ref. 2PJ456-43 | Ref. 3PJ456-43 |
| 170-176 | Ref. 2PJ486-43 | Ref. 3PJ486-43 |
| 196-202 | Ref. 2PJ536-43 | Ref. 3PJ536-43 |
| 208-215 | Ref. 2PJ570-43 | Ref. 3PJ570-43 |
| 254-258 | Ref. 2PJ636-43 | Ref. 3PJ636-43 |
| 305-310 | Ref. 2PJ746-43 | Ref. 3PJ746-43 |



! For the curve, it is advisable to:
 - do not exceed 5 ° between the rollers
 - use a 3 rib belt to ensure stability on the pulley

! Do not use in the presence of:
 - Projection, oil mist
 - Projection, fog, water vapor at all times
 - Abrasive dust such as sand, etc...

Extension cables

Extension cable with connector M8x5 pins



- Male - Female

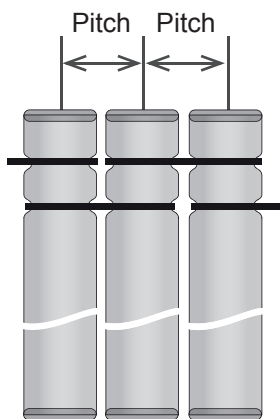
| Length | Reference |
|--------|------------------|
| 1m | ECMF-CNC-5P-1000 |



- Female

| Length | Reference |
|--------|-----------------|
| 2m | ECF-CNC-5P-2000 |

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



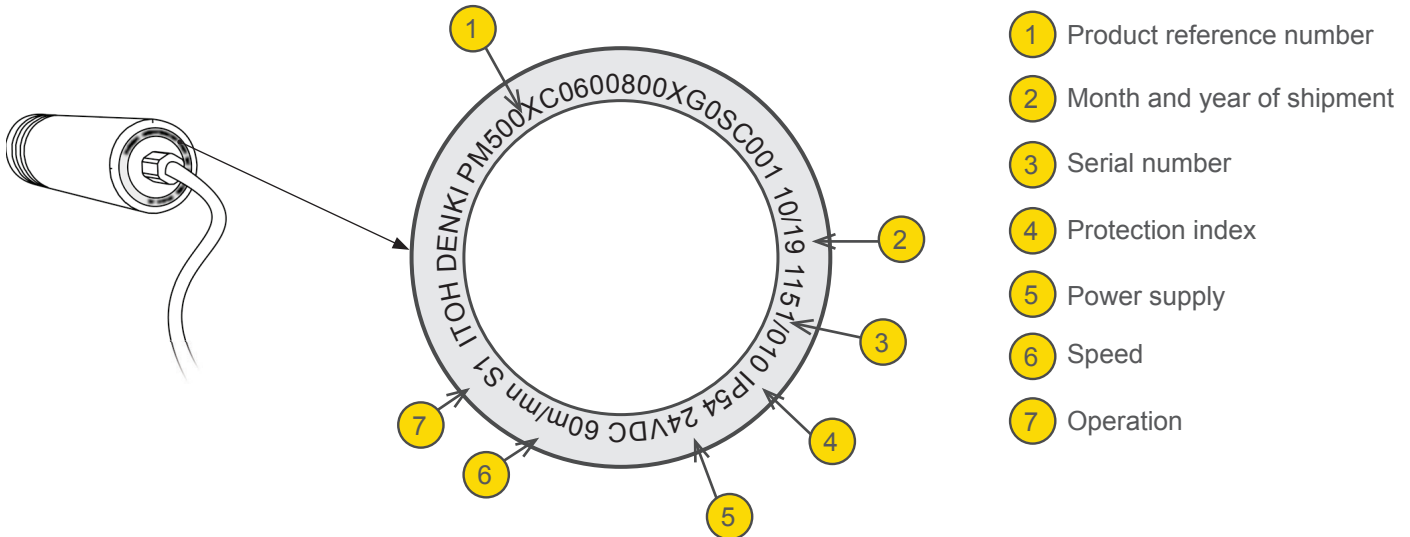
| Reference | Input | Output | Power | Start-up boost |
|-----------|------------------|---------|-------|----------------|
| CT-10-241 | 380~480V 3 ph | 24V-10A | 240W | 120% |
| QT-20-241 | | 24V-20A | 480W | 150% |
| QT-40-241 | | 24V-40A | 960W | 150% |

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

▶ 13 - PRODUCT IDENTIFICATION

■ Round label

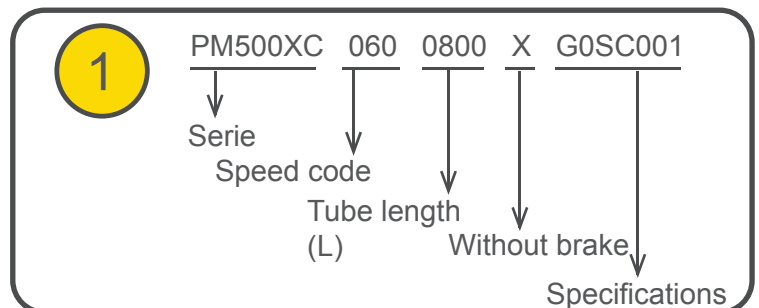
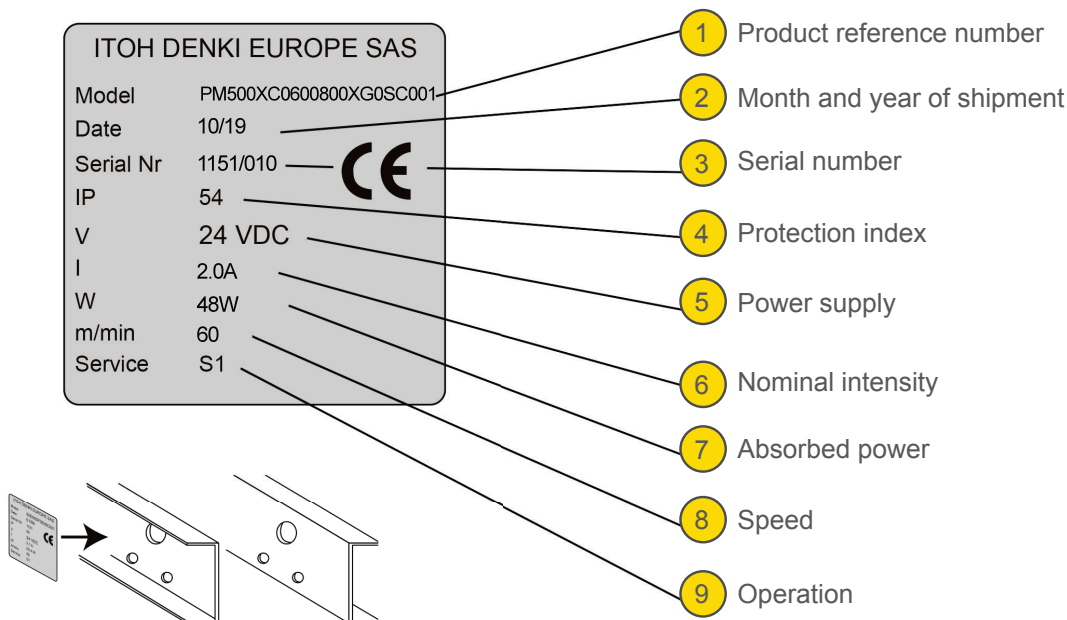
Power Moller® rollers come with a round label affixed to the endcaps at the motor end. The following information are shown on the label :



- ① Product reference number
- ② Month and year of shipment
- ③ Serial number
- ④ Protection index
- ⑤ Power supply
- ⑥ Speed
- ⑦ Operation

■ 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 :



▶ 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 679-0105 Japan

Distributed in Europe by :

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

hereby declares that the product series :

PM500XC 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 679-0105 Japan

ITOH DENKI EUROPE SAS
Makoto MITSUYOSHI
490 Avenue des Jourdiés, 74800 St Pierre en Faucigny - France

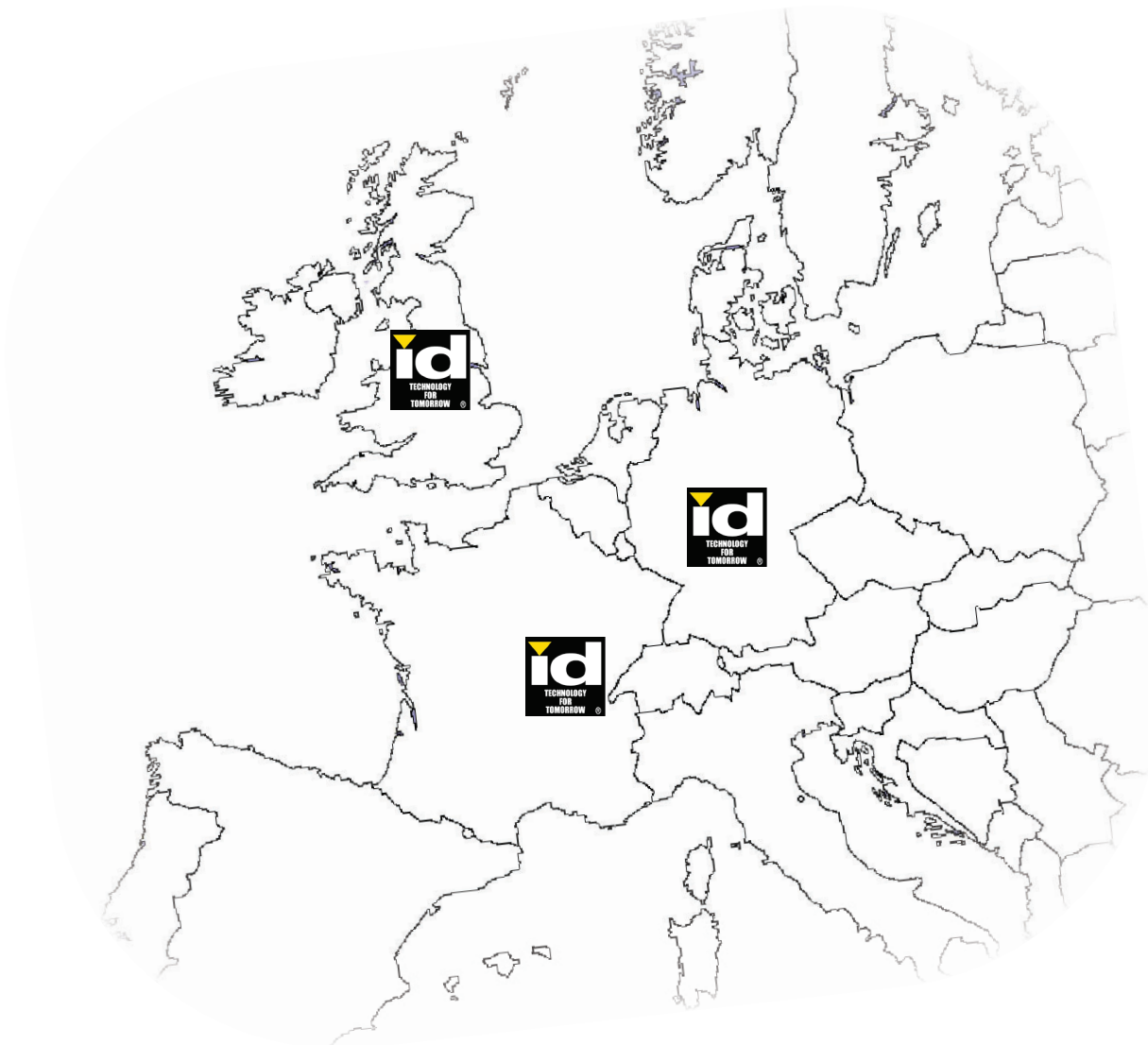
EC Directives applied :

- Machinery Directive 2006/42/EC
- European EMC Directive 2014/30/EC
- European RoHS Directive 2011/65/EU

ITOH DENKI EUROPE SAS, undertakes to forward, following a duly motivated request from the national authorities, the relevant information concerning the quasi-machine.

Saint Pierre en Faucigny, 6 March 2020
T. AKASHI, General Director





ITOH DENKI EUROPE S.A.S.

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