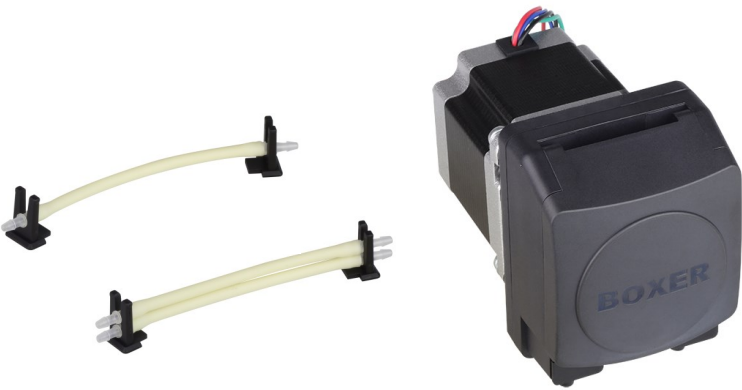


Boxer Pumps > Products > Peristaltic Pump

15KU peristaltic pump with 24 V Nema 23 stepper motor.

Single or double channel tube sets (for Ø 1.6 and 2.4 mm tube).



Technical Data

Tube Size, ID (mm)	Flow per Revolution (ml)	Flow at 200 rpm (ml/min)	Flow at 400 rpm (ml/min)	Flow at 600 rpm (m/imin)
	3 / 4 / 6 roller	3 / 4 / 6 roller	3 / 4 / 6 roller	3 / 4 / 6 Roller
Ø 1.6 - single tube	0.20 / 0.17 / 0.12	40 / 35 / 25	80 / 70 / 50	120 / 105 / 75
Ø 1.6 - double tube	0.40 / 0.35 / 0.25	80 / 70 / 50	160 / 140 / 100	240 / 210 / 150
Ø 2.4 - single tube	0.41 / 0.37 / 0.26	82 / 75 / 53	165 / 150 / 105	248 / 225 / 157
Ø 2.4 - double tube	0.82 / 0.75 / 0.52	165 / 150 / 105	330 / 300 / 210	495 / 450 / 315
Ø 3.2 - single tube	0.62 / 0.57 / 0.39	125 / 115 / 77	250 / 230 / 155	375 / 345 / 220
Ø 4.8 - single tube	1.25 / 1.02 / 0.54	250 / 205 / 107	500 / 410 / 215	690 / 570 / 300

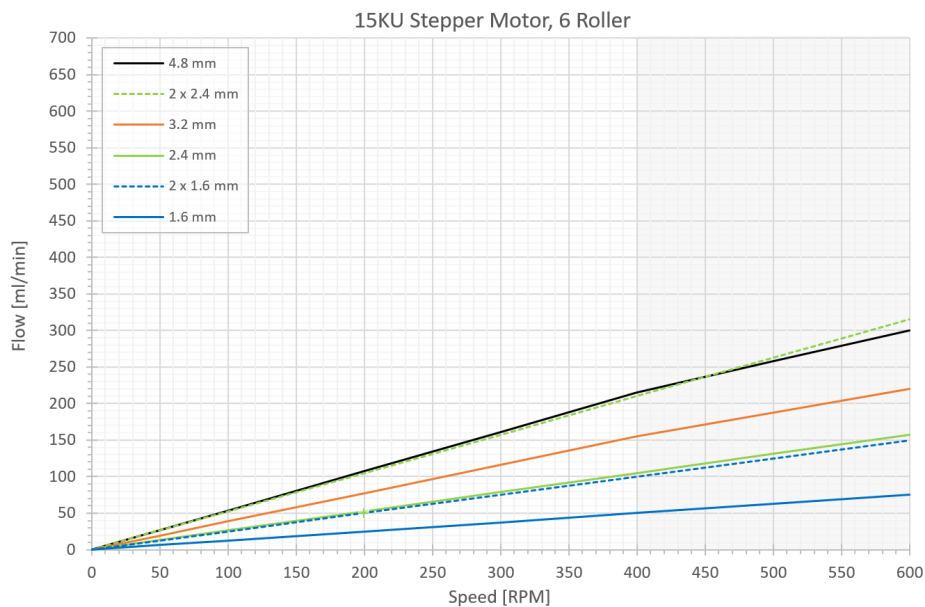
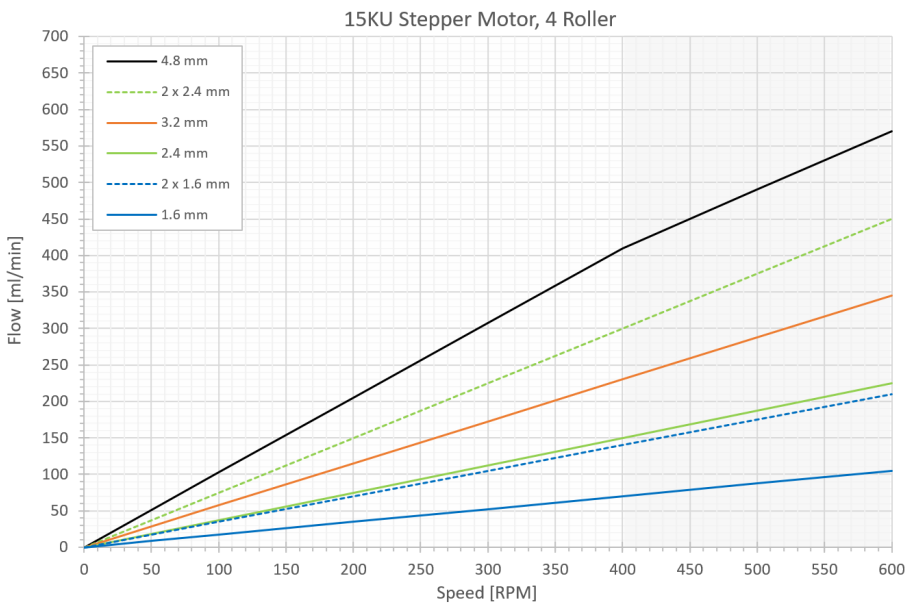
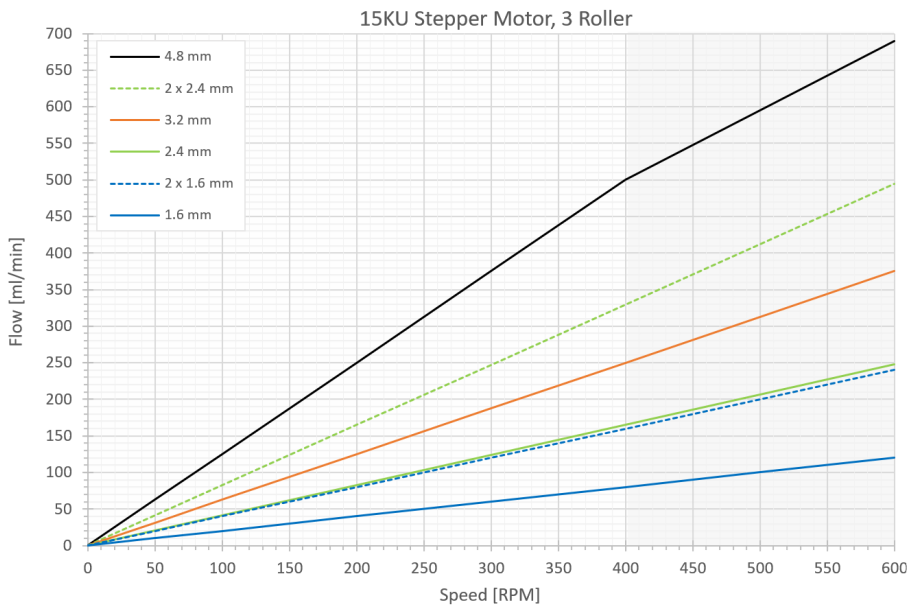
Flow versus speed curves on page 2

Above 400 rpm, only intermittent operation recommended

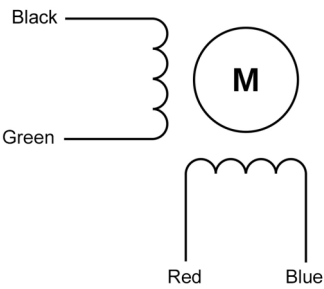
Motor Type	2 phase, hybrid, bipolar, Nema 23 (page 3 for full details)
Power Consumption	12 to 25 W
Tube Materials	Innovaprene / Silicone / Lagoprene / ED-Plex
Driver Options	
A4	Analogue driver: 0 to 5 V DC speed input, direction and enable inputs
A4p	Analogue driver: speed potentiometer, direction and enable inputs
iD	Digital driver: programmable, LCD display, dose / dispense / analogue mode
Optional Sensor	
Speed sensor	Contacts close once per revolution (page 3 for full details)
General Data	
Max pressure	2.0 bar
Max suction height (dry)	9 m H ₂ O
Motor life	>10000 hour
Weight (without driver)	885 g

All data measured with 'run-in' Innovaprene tubing,H₂O and 60 cm suction height

Flow Curves



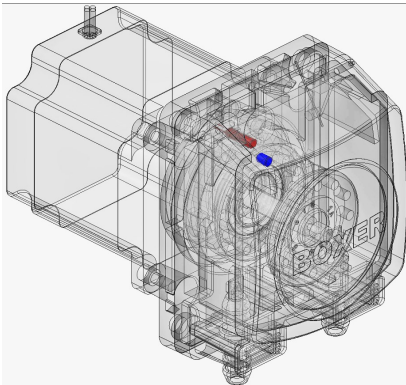
Motor Details



Specification	
Type	2 phase, hybrid, bipolar
Size	Nema 23 (57 mm)
Step Angle	1.8 ° (200 steps per revolution)
Voltage	24 V
Phase 1 / Phase 2	Black - Green / Red - Blue (see diagram above)
Ambient temperature range	-20 to +50 °C
Max temperature rise	80 °C
Insulation resistance	100 MΩ
Insulation class	B
Rated current	2.8 A
Resistance per phase	0.9 Ω ±10%
Inductance per phase	2.5 mH ±20%
Wire gauge	22 AWG
Lead length	300 mm
Recommended driver rating	4.0 A (with current limiter set at 2.8 A)
A current limiter should be used for low speed operation to avoid excessive motor temperatures	

Optional Speed Sensor

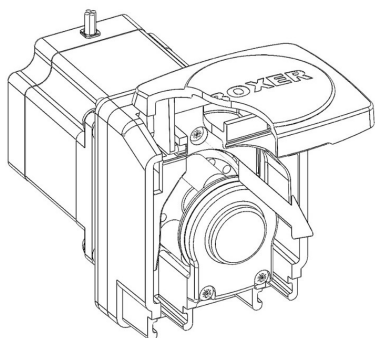
A micro reed sensor (shown in red) is mounted inside the pump body. A permanent magnet (shown in blue) is located on the rotor. The contacts of the micro reed sensor close when the magnet moves through the upper portion of the rotation., once per revolution. A speed sensor can also operate as a stall sensor



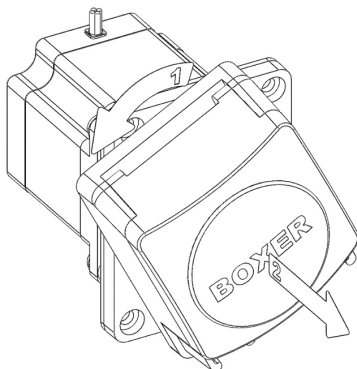
Specification	
Reed sensor type	Normally open, single pole, single throw
Contact closure	Once per revolution
Max. switching current	0.5 A
Max. switching voltage	170 V
Lead cross section area	0.06 mm ²
Lead length	27 cm

Assembly and Tube Loading

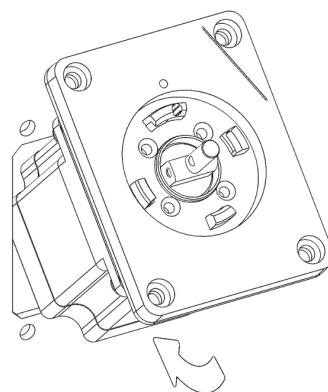
❶ Open the lid completely. Remove the M3x12mm securing screw.



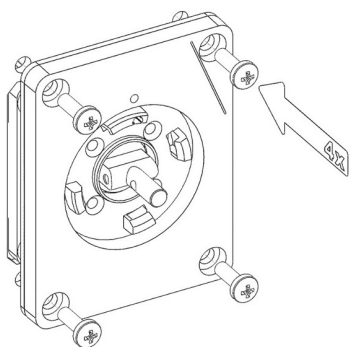
❷ Turn head counter clockwise. Pull head away from the motor.



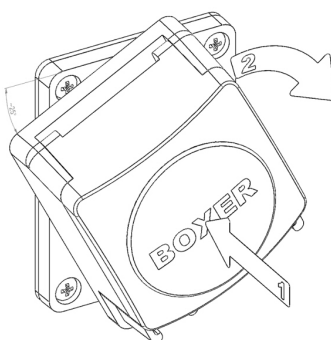
❸ Check the mounting gasket is in position. Insert motor through panel cut-out.



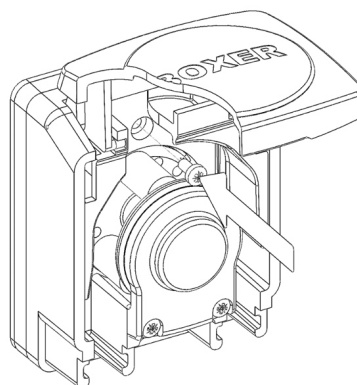
❹ Secure with 4 x M4 bolts



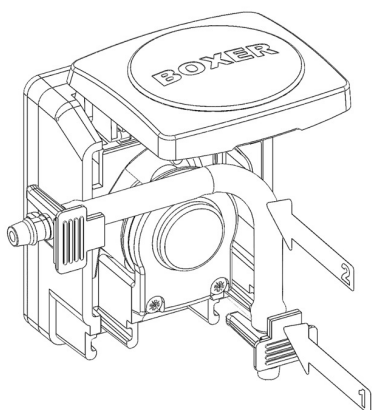
❺ Aligning head with marker, push head onto motor shaft. Turn head clockwise into position.



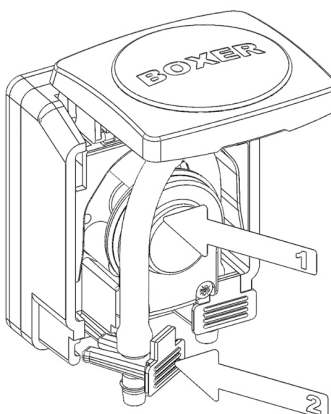
❻ Secure head with M3x12mm screw.



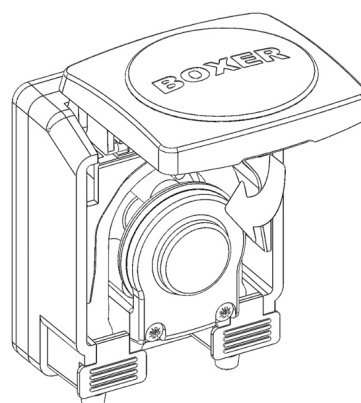
❼ Push tube clip into the mating recess of pump head (left or right side). Push tube around rotor assembly.



❽ Continue placing tube around rotor assembly. Push tube clip into place.

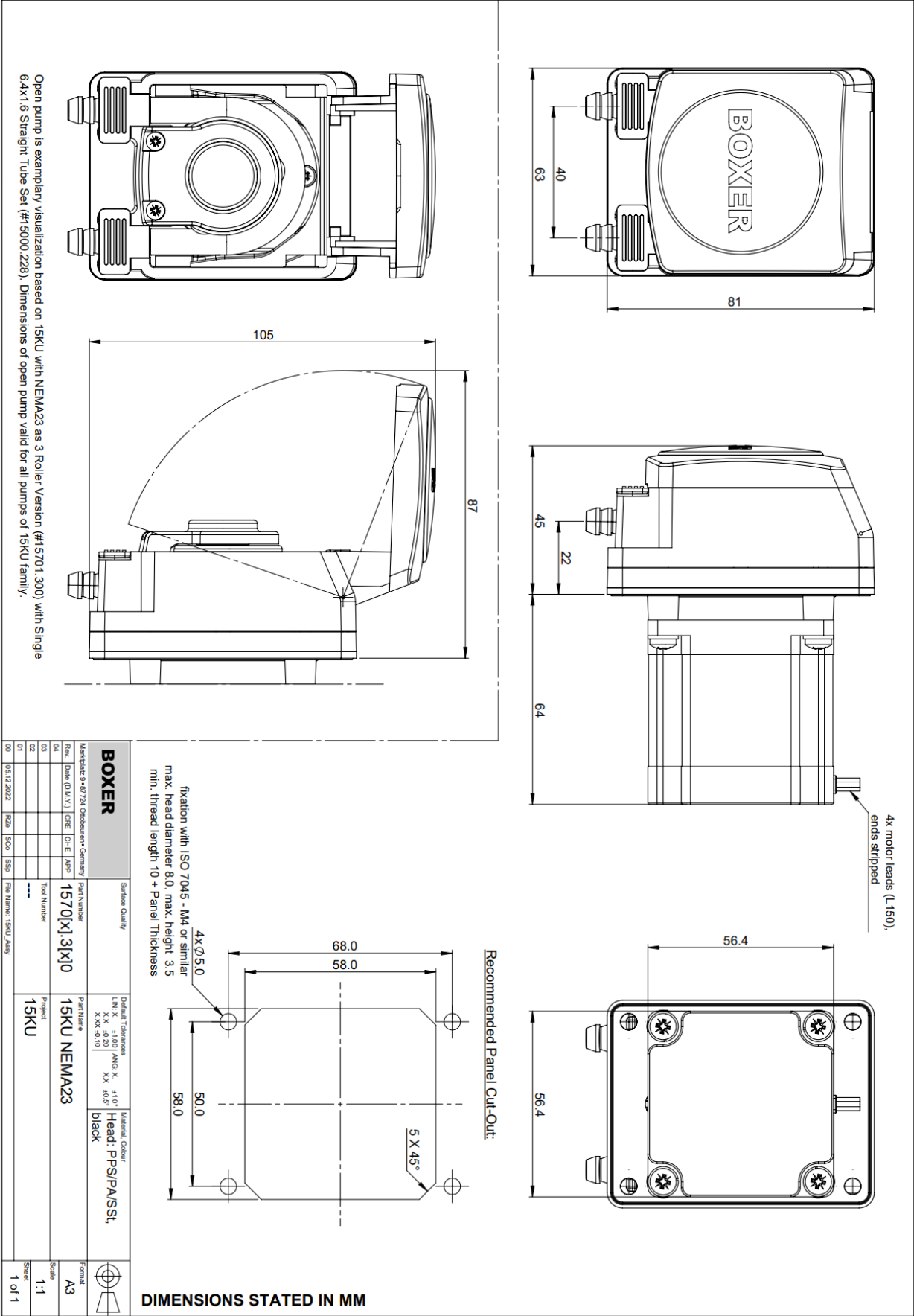


❾ Close pump lid.



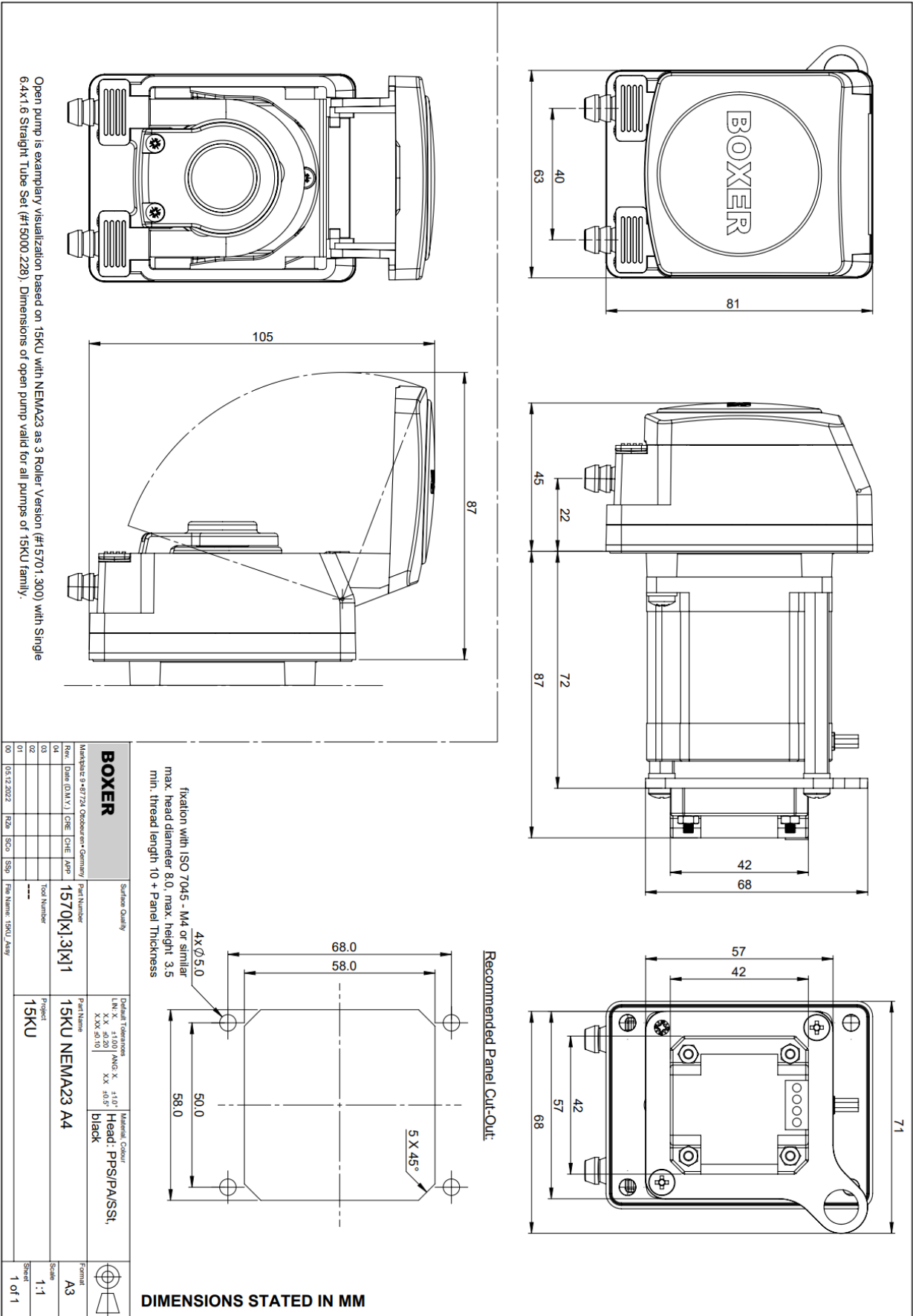
15KU Stepper Motor (without driver)

Links to Drawing and STEP file:
→ [Drawing \(.pdf\)](#)
→ [STEP \(.zip\)](#)



15KU Stepper Motor with A4 Driver

Links to Drawing and STEP file:
→ [Drawing \(.pdf\)](#)
→ [STEP \(.zip\)](#)

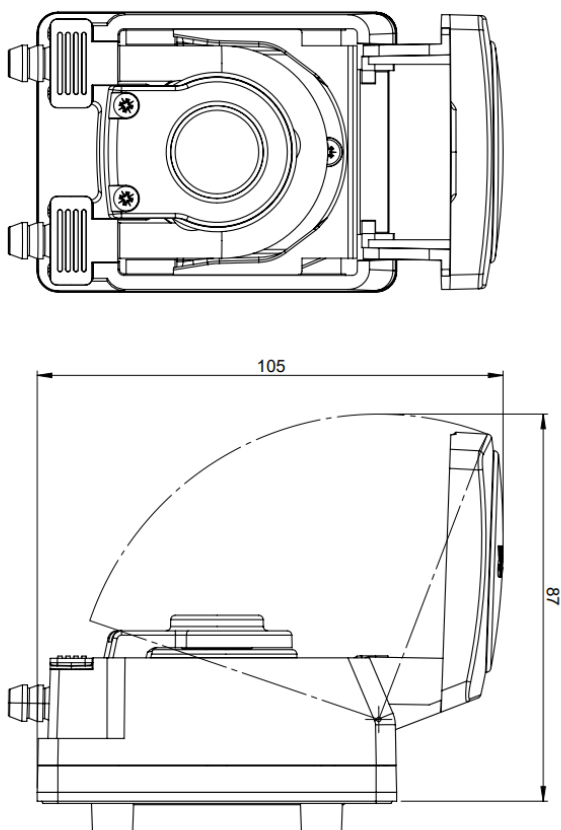
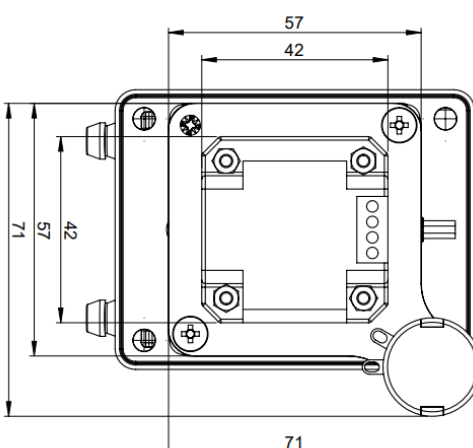
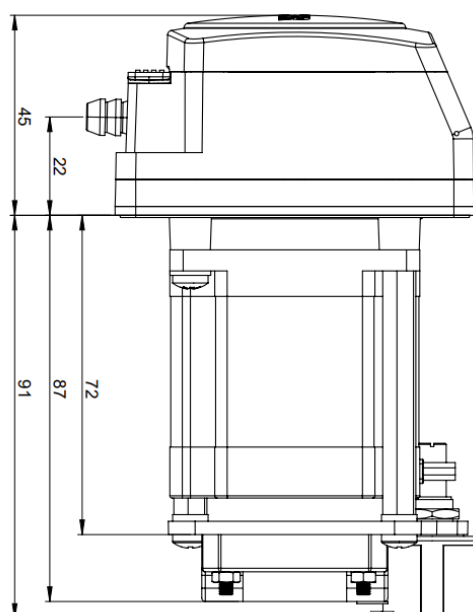
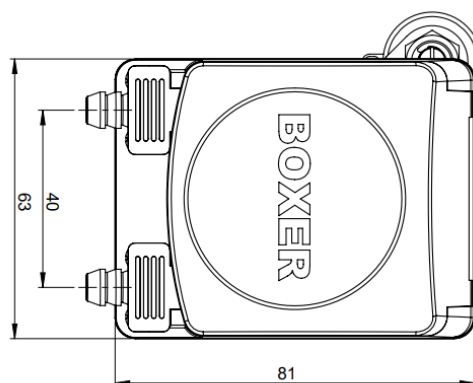


15KU Stepper Motor with A4p Driver

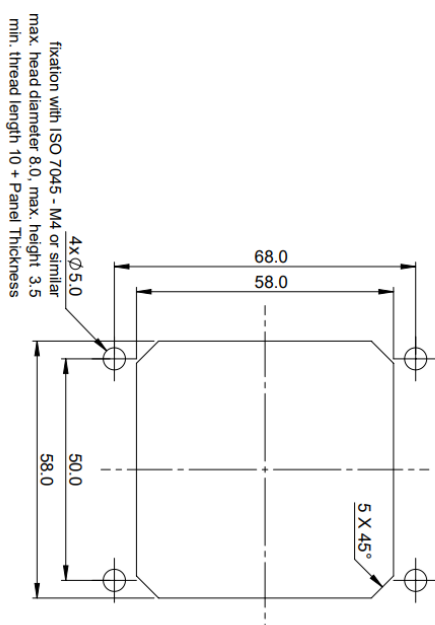
Links to Drawing and STEP file:

→ Drawing (.pdf)

→ STEP (.zip)



Open pump is exemplary visualization based on 15KU with NEM23 as 3 Roller Version (#15701.300) with Single Tube Set (#15000.228). Dimensions of open pump valid for all pumps of 15KU family.

[illegible]

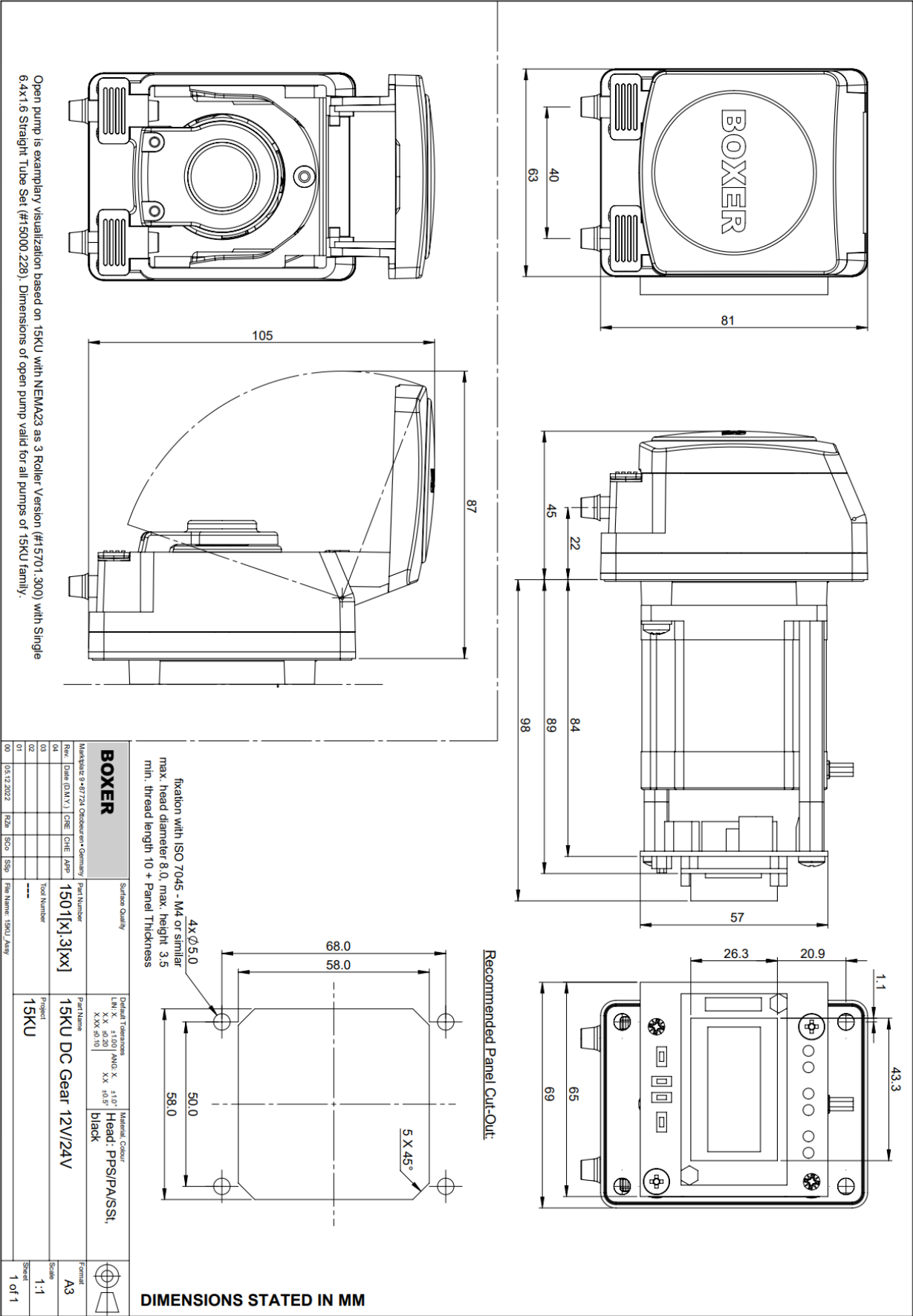
Recommended Panel Cut-Out:

DIMENSIONS STATED IN MM

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15KU Stepper Motor with iD Driver

Links to Drawing and STEP file:
→ [Drawing \(.pdf\)](#)
→ [STEP \(.zip\)](#)



Order Information

Pump and tubing should always be ordered separately.

Pump Configuration	Without Driver	+ A4 Driver	+ A4p Driver	+ iD Driver
15KU 24 V Stepper / 3 Roller	15701.300	15701.301	15751.301	15701.305
15KU 24 V Stepper / 3 Roller / Speed Sensor	15701.310	15701.311	15751.311	15701.315
15KU 24 V Stepper / 4 Roller	15702.300	15702.301	15752.301	15702.305
15KU 24 V Stepper / 4 Roller / Speed Sensor	15702.310	15702.311	15752.311	15702.315
15KU 24 V Stepper / 6 Roller	15703.300	15703.301	15753.301	15703.305
15KU 24 V Stepper / 6 Roller / Speed Sensor	15703.310	15703.311	15753.311	15703.315

Tube Sets

Tube Material	Connector Material	ID (mm)	Single / Double	Straight / Elbow	External Connector (mm)	Part Number
Innovaprene P60	PP (clear)	1.6	Single	Straight	2.4 to 3.5	15000.220
Innovaprene P60	PP (clear)	1.6	Double	Straight	2.4 to 3.5	15000.221
Innovaprene P60	PP (clear)	2.4	Single	Straight	2.4 to 3.5	15000.222
Innovaprene P60	PP (clear)	2.4	Double	Straight	2.4 to 3.5	15000.223
Innovaprene P60	PP (clear)	3.2	Single	Straight	2.4 to 3.5	15000.224
Innovaprene P60	PP (black)	4.8	Single	Straight	4.0 to 5.0	15000.226
Innovaprene P60	PP (black)	4.8	Single	Elbow	4.0 to 5.0	15000.227

Technical information including chemical compatibility → [Innovaprene P60](#)



BOX-it (Webshop)

Sample quantities are available for direct online purchase:



→ [BOX-it](#)