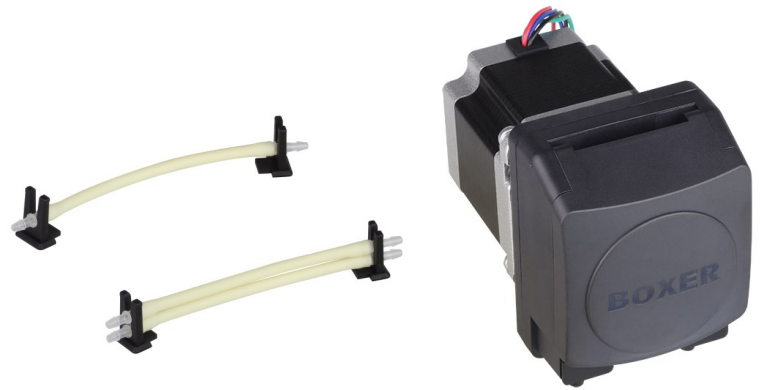


Boxer Pumps > Products > Peristaltic Pump

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)

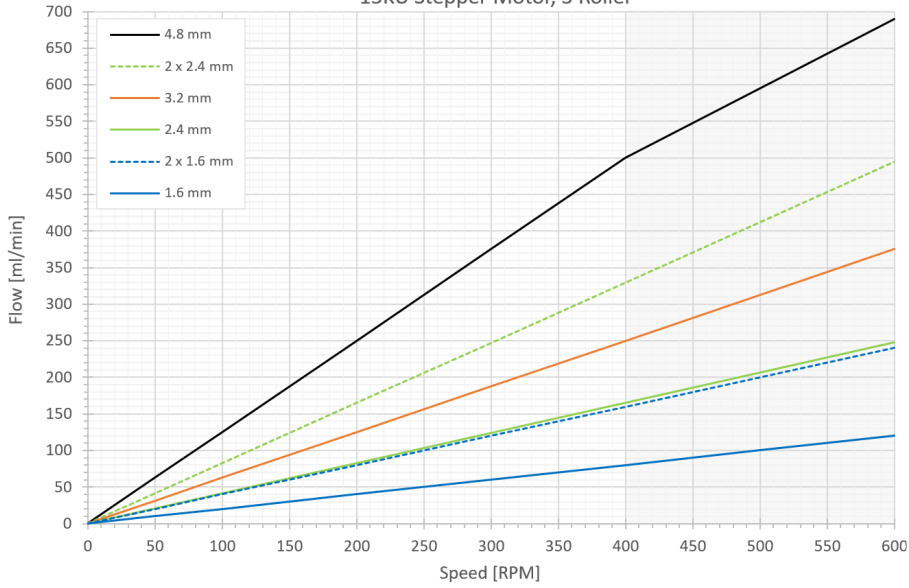
### General Data

Max pressure 2.0 bar  
 Max suction height (dry) 9 m H<sub>2</sub>O  
 Motor life >10000 hour  
 Weight (without driver) 885 g

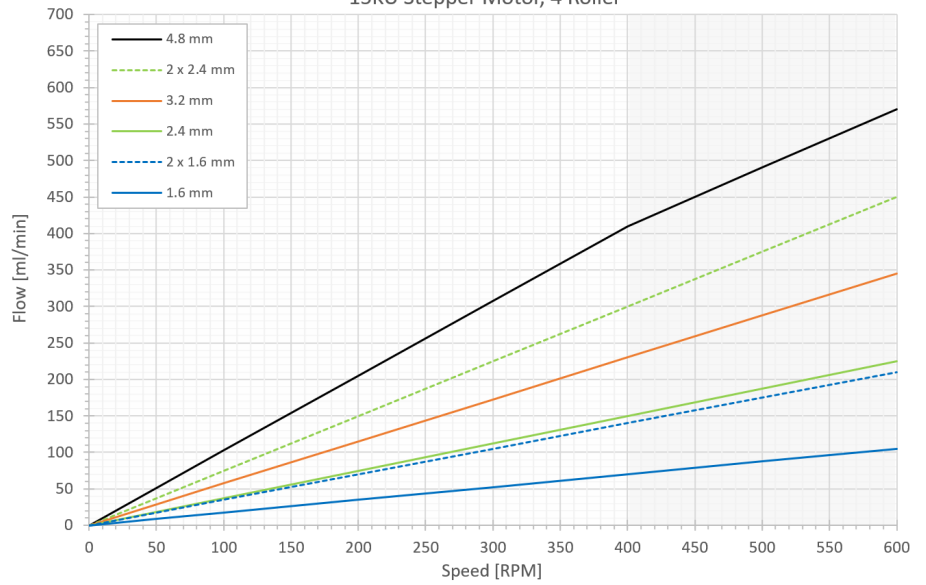
All data measured with 'run-in' Innovaprene tubing, H<sub>2</sub>O and 60 cm suction height

## Flow Curves

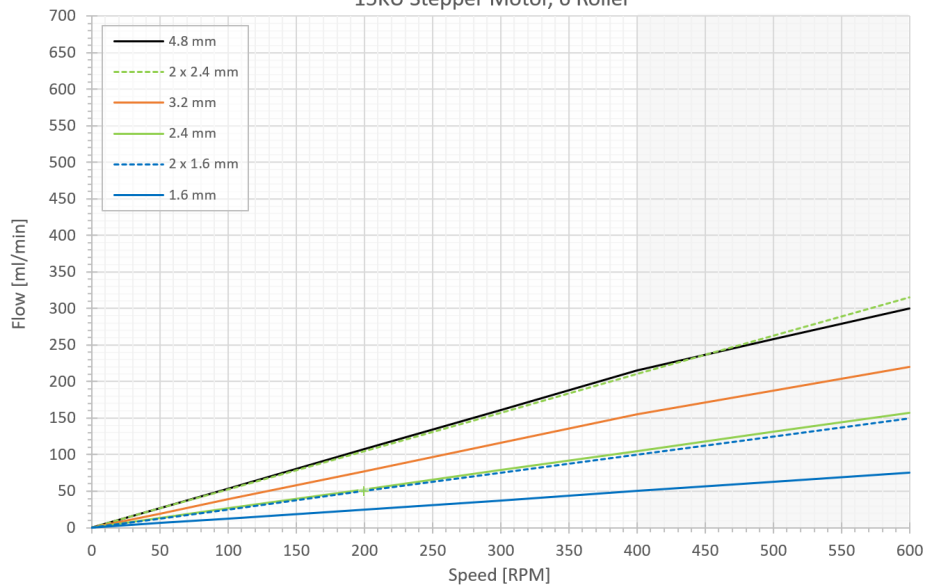
15KU Stepper Motor, 3 Roller



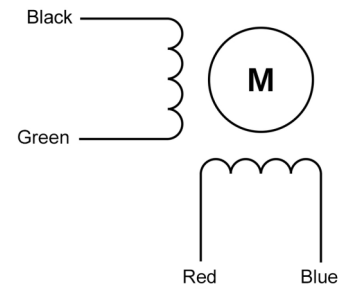
15KU Stepper Motor, 4 Roller



15KU Stepper Motor, 6 Roller



## Motor Details



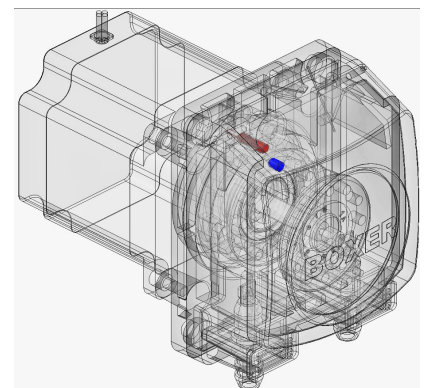
### Specification

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

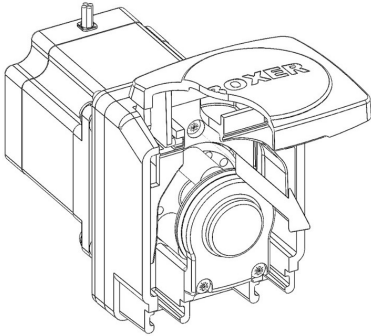


### Specification

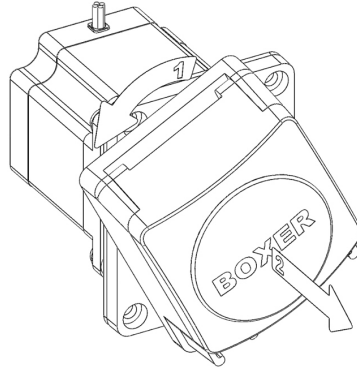
Reed sensor type	Normally open, single pole, single throw
Contact closure	Once per revolution
Max. switching current	0.5 A
Max. switching voltage	170 V
Lead cross section area	0.06 mm <sup>2</sup>
Lead length	27 cm

## Assembly and Tube Loading

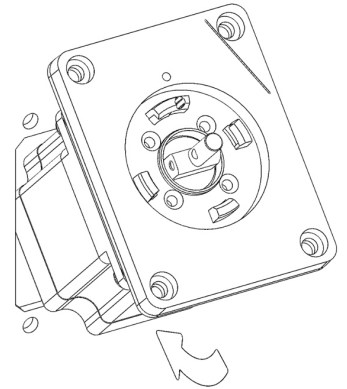
❶ Open the lid completely. Remove the M3x12mm securing screw.



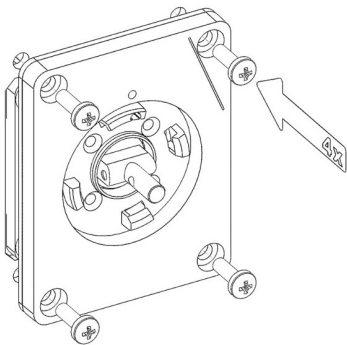
❷ Turn head counter clockwise. Pull head away from the motor.



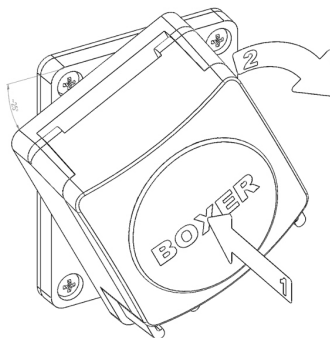
❸ Check the mounting gasket is in position. Insert motor through panel cut-out.



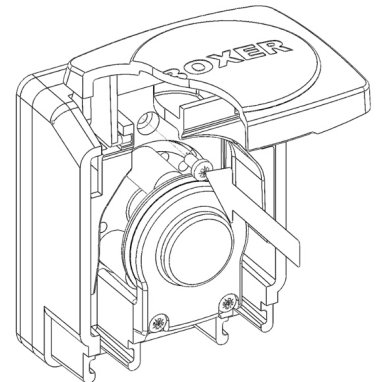
❹ Secure with 4 x M4 bolts



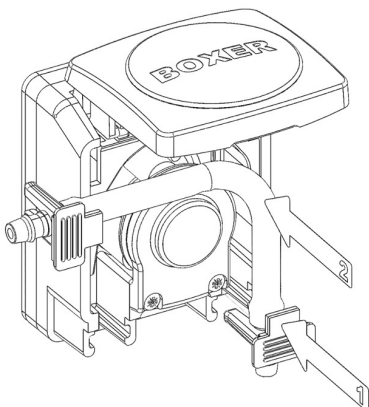
❺ Aligning head with marker, push head onto motor shaft. Turn head clockwise into position.



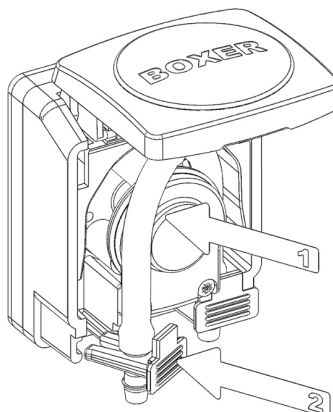
❻ Secure head with M3x12mm screw.



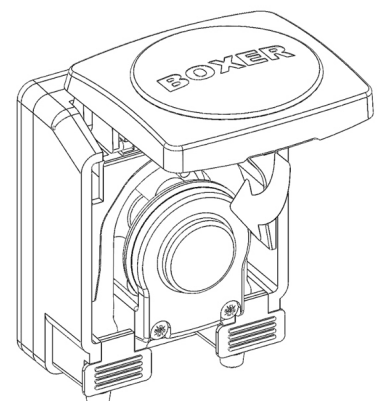
❼ Push tube clip into the mating recess of pump head (left or right side). Push tube around rotor assembly.



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

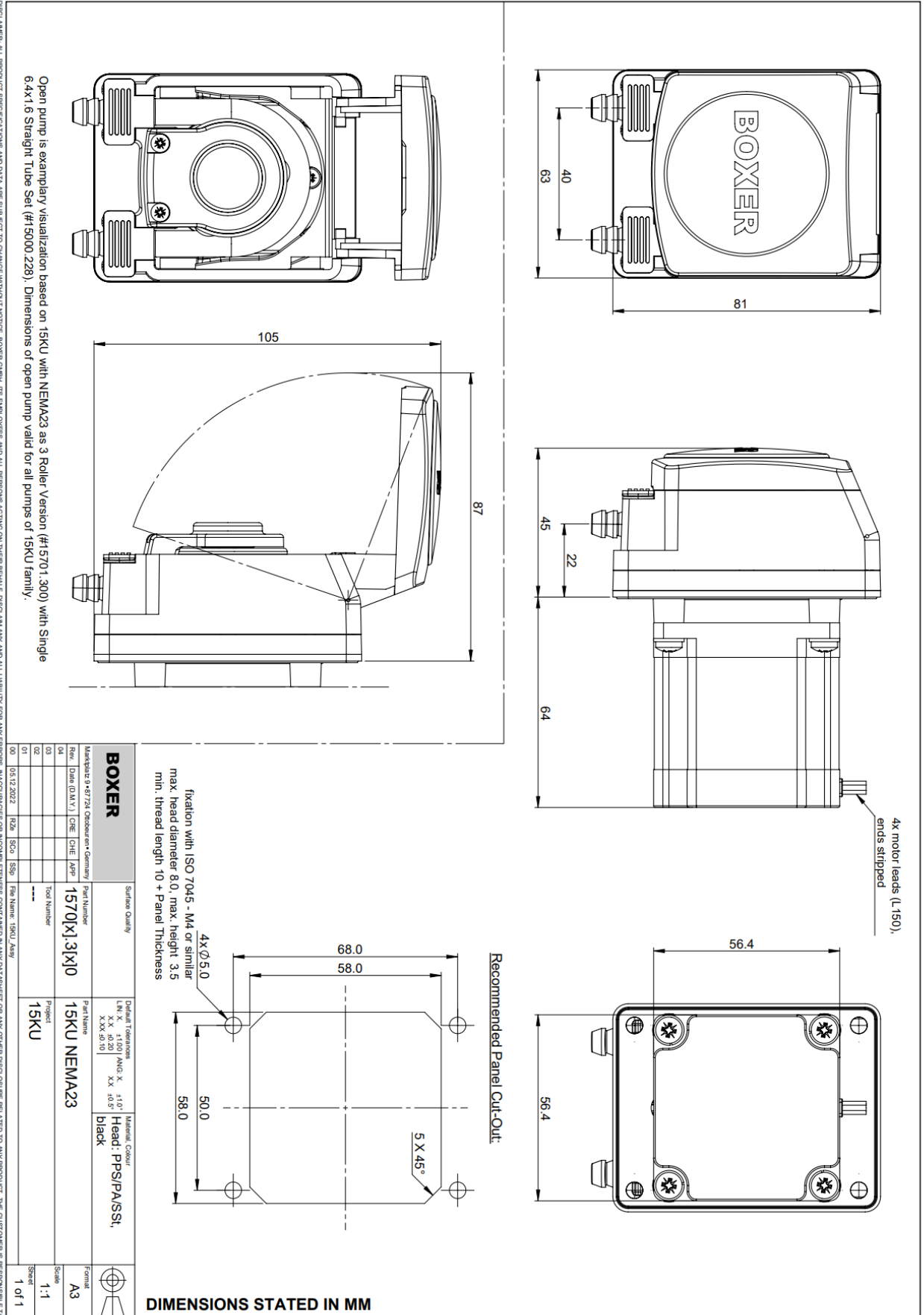


❾ Close pump lid.



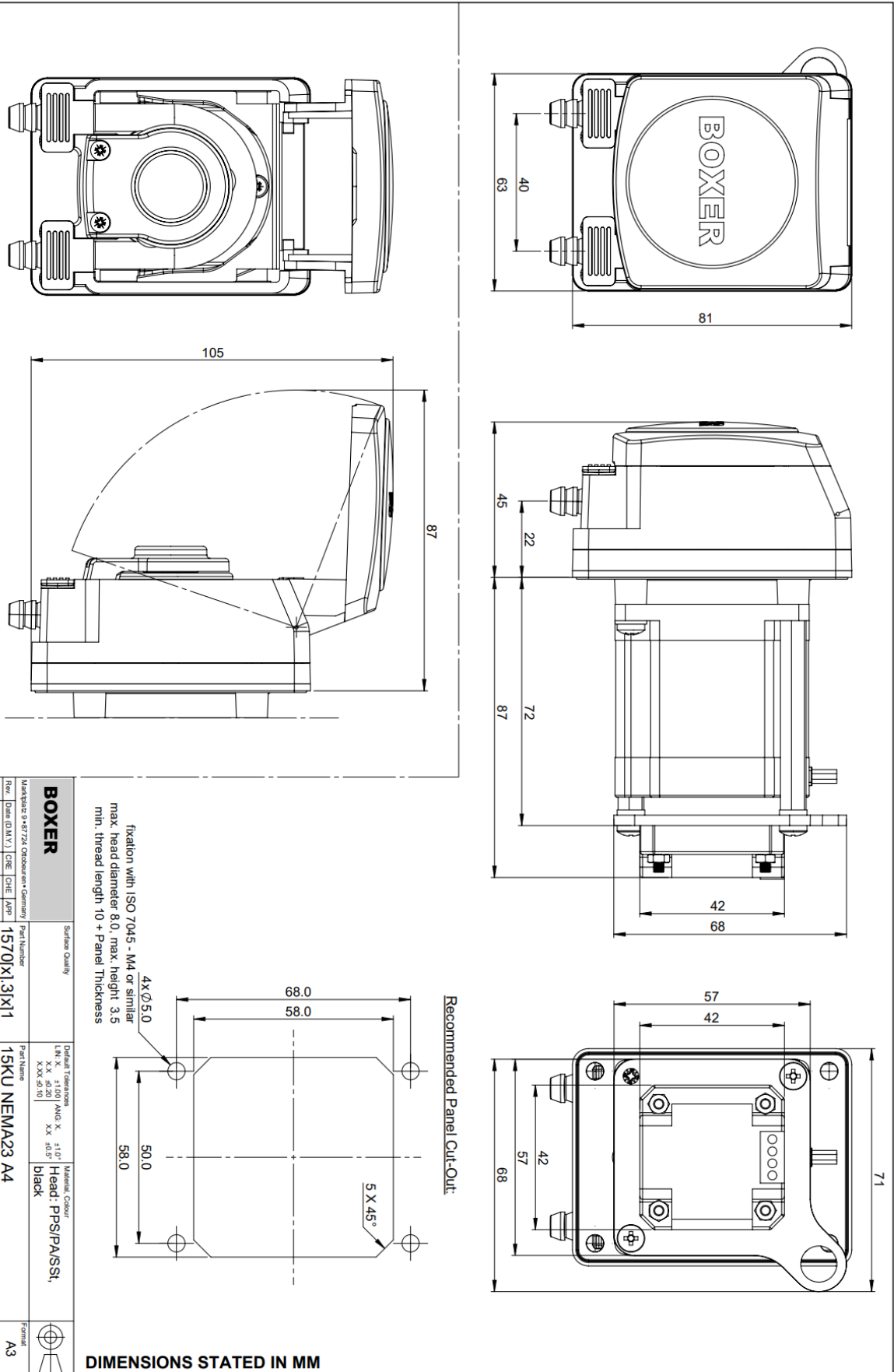
## 15KU Stepper Motor (without driver)

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



## 15KU Stepper Motor with A4 Driver

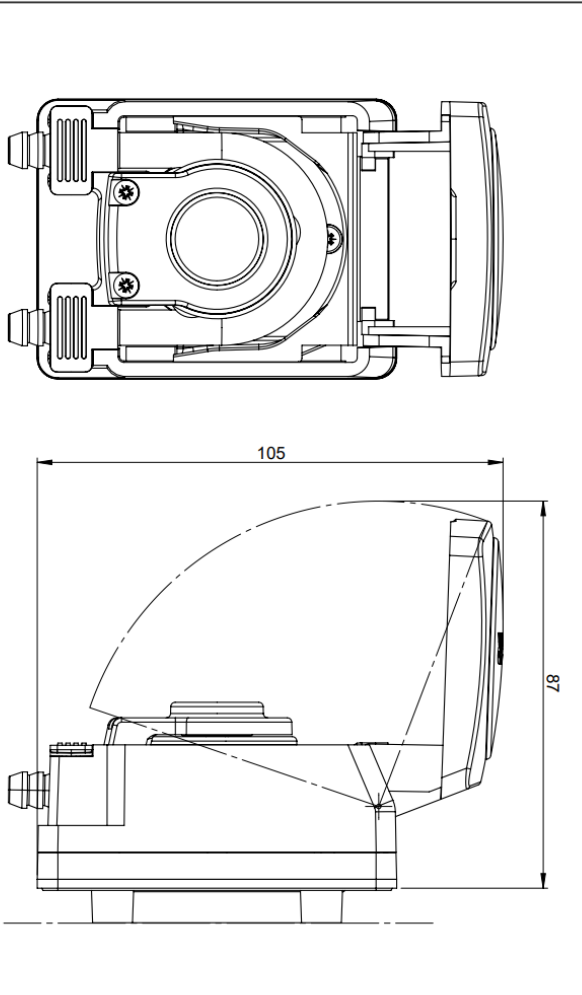
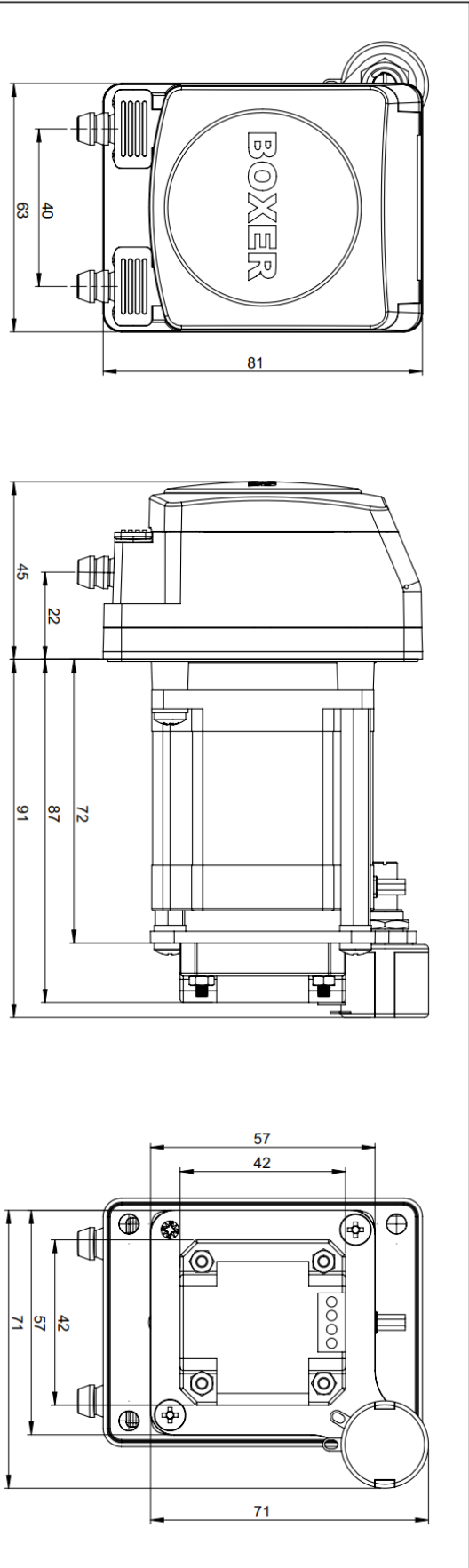
Links to Drawing and STEP file:  
 → [Drawing \(.pdf\)](#)  
 → [STEP \(.zip\)](#)





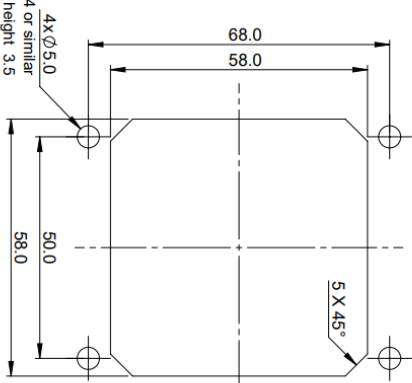
## 15KU Stepper Motor with A4p Driver

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



Open pump is exemplary visualization based on 15KU with NEMA23 as 3 Roller-Version (#15701.300) with Single 6.4x1.6 Straight Tube Set (#15000.228). Dimensions of open pump valid for all pumps of 15KU family.

fixation with ISO 7045 - M4 or similar  
 max. head diameter 8.0, max. height 3.5  
 min. thread length 10 + Panel Thickness



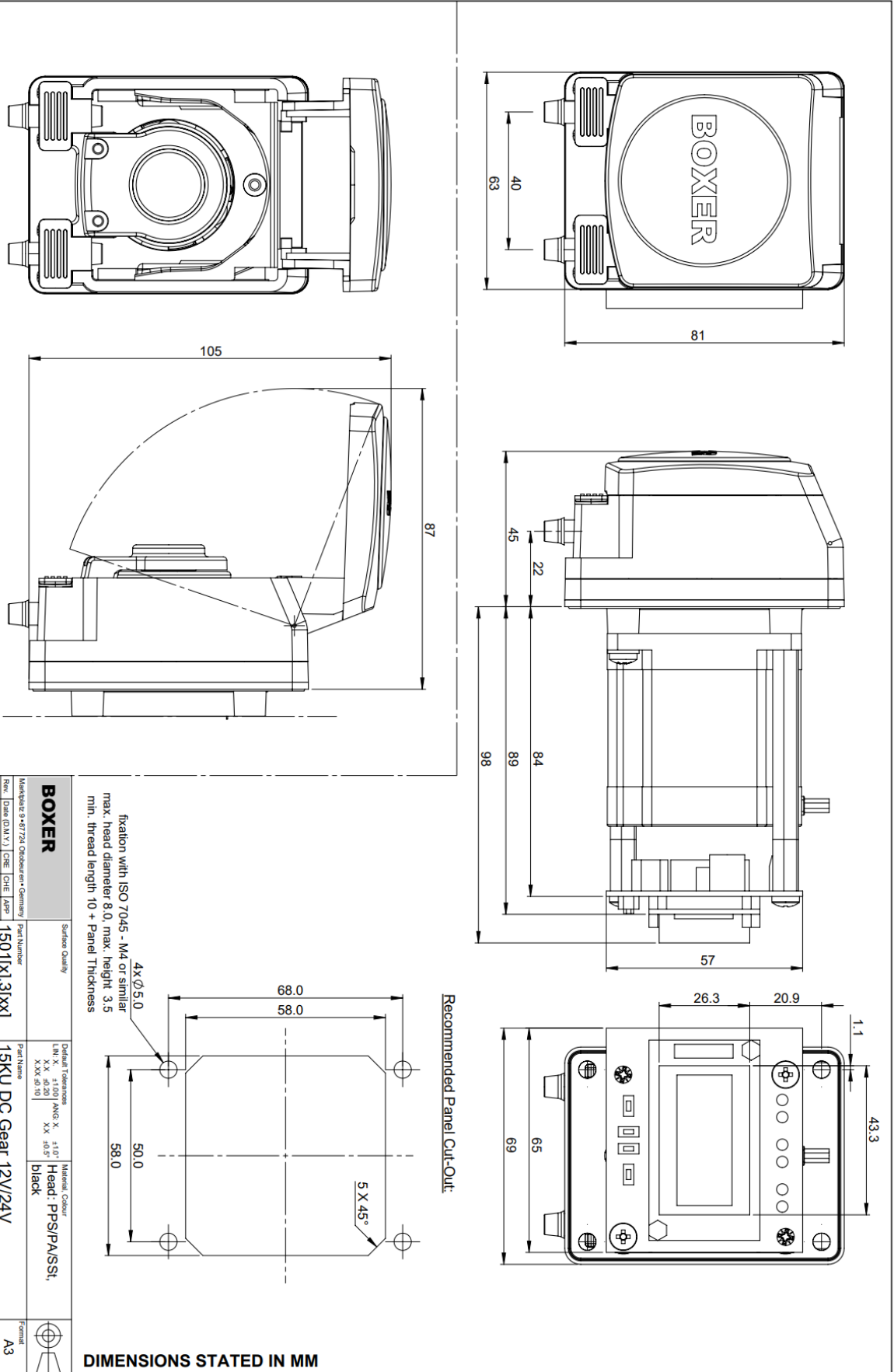
Recommended Panel Cut-Out:

<b>BOXER</b>		Surface Quality	
Material	9-ET24, Oelbrenner + Germany	Part Number	1575[X] 3[X]1
Year	(Date (D.M.Y.))	ENG	CHE, AP*
04			
03			
02			
01			
00	05.12.2022	12A	Seco (Ssp) Fin Name: 15KU Assy
Detailed Tolerances		Material Colour	
mm	h6/k6 X +1/10	Head: PPS/PA/SSI,	
XX	h6/k6 X +0.2	black	
XXX	h6/k6 X +0.3		
XXXX	h6/k6 X +0.4		
Part Name	15KU NEMA23 A4p	Format	A3
Project	15KU	Scale	1:1
Sheet		1 of 1	

DIMENSIONS STATED IN MM

## 15KU Stepper Motor with iD Driver

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





Boxer Pumps > Products > Peristaltic Pump

## 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	15000.225
Innovaprene P60	PP (black)	4.8	Single	Elbow	4.0 to 5.0	15000.226

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



## BOX-it (Webshop)

Sample quantities are available for direct online purchase:



→ [BOX-it](#)