ALI 1

- Permanent magnet motor 12 - 24 Vdc
- Worm gearbox
- ACME lead screw
- Aluminum push rod (Stainless steel on request)
- Permanent grease lubrication
- IP 65, tested according to rule CEI EN 60529
- Working temperature range -10°C +60°C
- Intermittent duty S3 30% (5 min) a 30°C
- Encoder on request
- Limit switches on request

ALI1 (Vdc)					
Fmax (N)	Speed (mm/s)	Version	Motor size	Motor speed (rpm)	Max Current for Fmax(A) 24Vdc**
190 *	90	M13	40	6000	2
270 *	60	M11	40	6000	2
400 *	45	M09	40	6000	2,5
580	30	M06	40	6000	2,5
1200	15	M03	40	6000	3

*   When speed is more than 30 mm/s and/or strokes longer than 200 mm, check STROKE SETUP section.

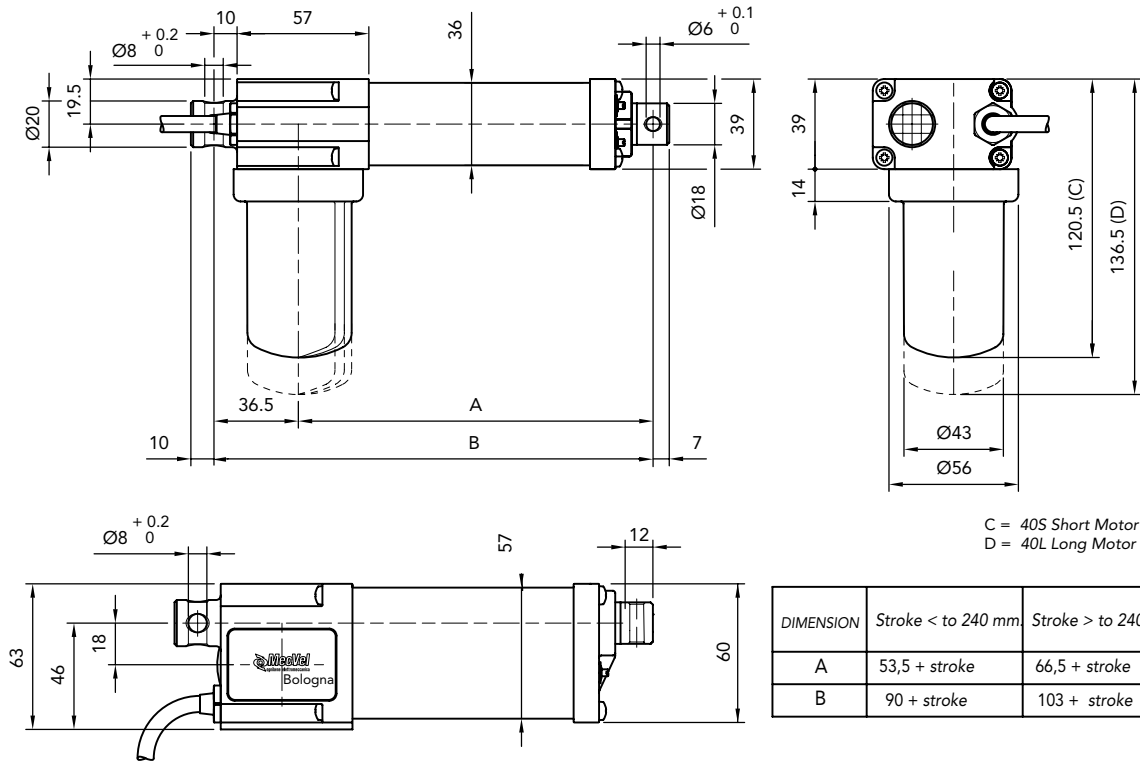** For 12 Vdc power supply currents are doubled and loads are 20% lower.

BEFORE OPERATING ACTUATOR MAKE SURE YOU READ AND UNDERSTOOD BASIC OPERATIONAL INSTRUCTIONS SHOWN ON USERMANUALS, AVAILABLE FROM WEBSITE.

THIS DOCUMENT DISPLAYS MOST TYPICAL STANDARD FEATURES AND SETUPS: CONTACT OUR OFFICES FOR MORE.

ACTUATOR SHALL NOT COME TO MECHANICAL STROKE-END, TO AVOID FAILURES.
CONSIDER MECVEL's LIMITSWITCHES (MODEL ALI1-F) OR PUT THEM ON MACHINE/FRAME.

C = 40S Short Motor
D = 40L Long Motor

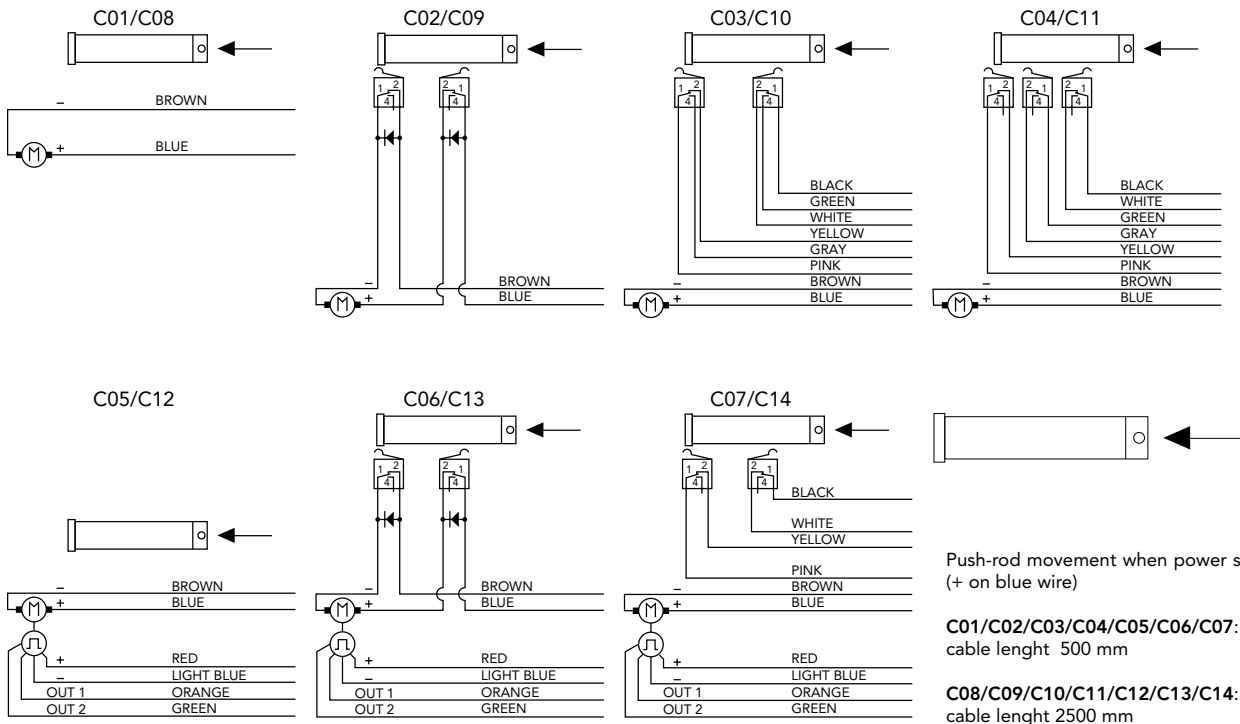| DIMENSION	Stroke < to 240 mm.	Stroke > to 240 mm.
A	53,5 + stroke	66,5 + stroke
B	90 + stroke	103 + stroke

ELECTRICAL WIRINGS

Options available:

- C01/C08   motor
- C02/C09   N° 2 microswitches,diode-wired
- C03/C10   motor + N° 2 micro
- C04/C11   motor + N° 3 micro
- C05/C12   motor + encoder
- C06/C13   N° 2 micro diode wired + encoder
- C07/C14   motor + N° 2 micro + encoder
- C00   special wiring (not standard options)

WARNING:

Micros are actuated by a cam lying on push-rod itself. Micro signal, for speeds higher than 30 mm/s, needs to be handled in its very impulse (I.E.when actuated) and not in its state.
Alternatively, MecVel can add a bush to keep the microswitch lever pressed for a longer time avoiding switch signal mistakes, but cause loss of 10 mm of stroke.
Connections C02 and C06 make a circuit which stops motor supply, so that the push rod won't overstep the area of the two micros.
This system can work only if inertia generated by the actuator and load connected to it does not allow to over-step the micro when stroke is over.
So, this works just with low speeds (M01 - M03), with a load opposing the ongoing direction of the push rod. If not, relay or PLC solutions, using C03 and C07 connections, are needed..
Wiring diagrams of connections above are following:

Push-rod movement when power supply is as shown
(+ on blue wire)

C01/C02/C03/C04/C05/C06/C07:
cable lenght 500 mm

**C08/C09/C10/C11/C12/C13/C14**:
cable lenght 2500 mm

ALI 1

MOTOR POSITION

Motor can be installed on both sides of the actuator, thus achieving two versions, as show below.
The actuator is seen from backwards.

cable exit

M0 = right
(Standard)

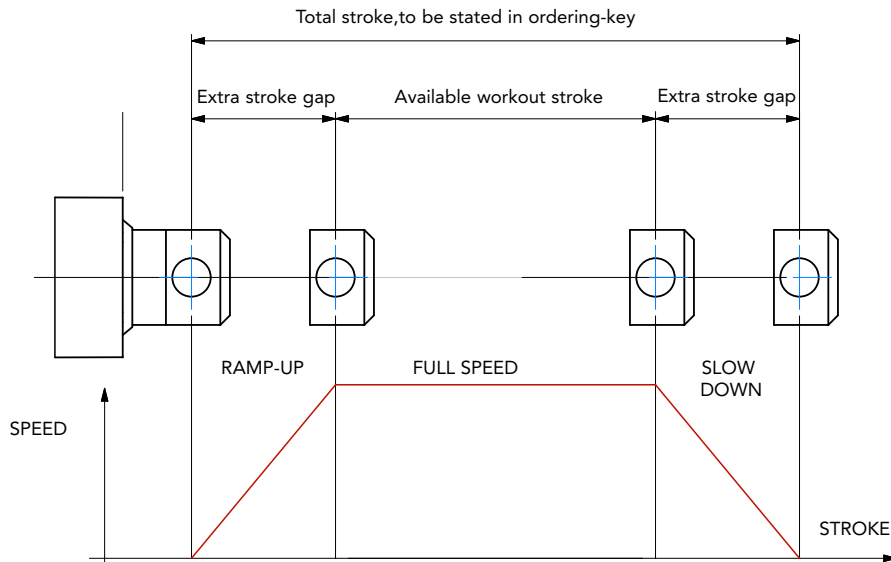M1 = left
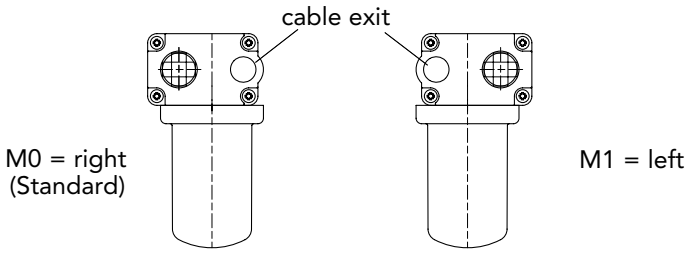
ANTIROTATION DEVICE

Model ALI1-F can host an antirotation device, allowing push rod not to spin when travelling. Front ends A1 and A2 allow for two antirotation settings, AR0 and AR1. When using A3, A4, A5 and A7 front ends antirotation facility must always be mounted.

AR0 (Standard)
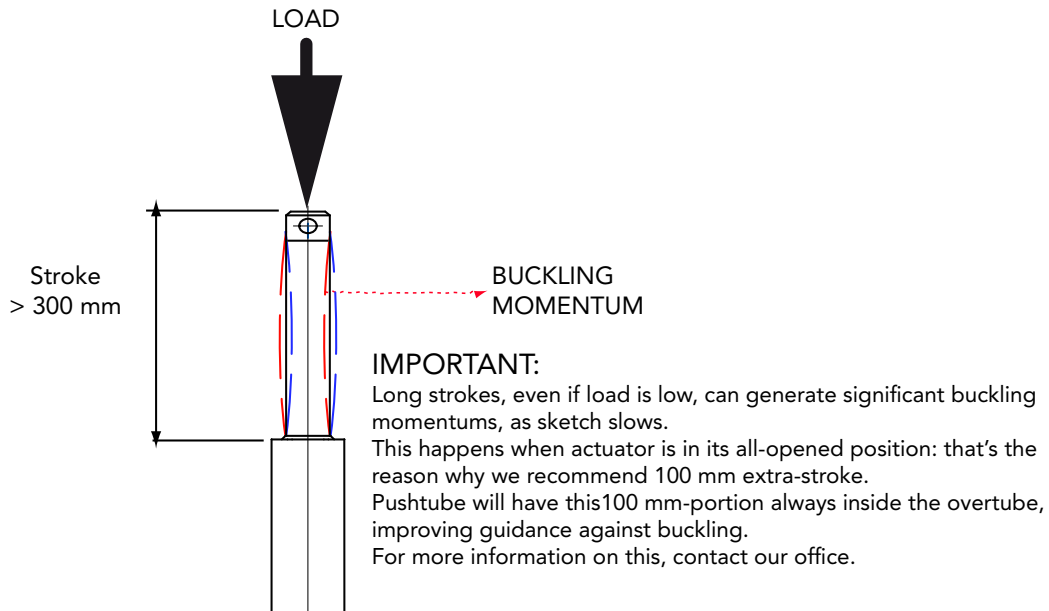
AR1
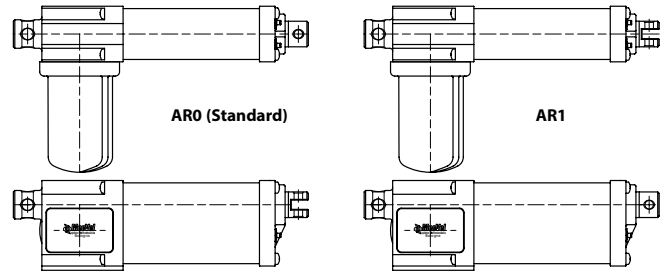
STROKE SETUP

Useful tips for handling stroke and avoid run-on-block collision

- When stroke is more than 350 mm, add 50 mm extra-stroke as guidance, and put corresponding value in ordering-key
- **WARNING SPEED-TIMING ALONG STROKELENGHT**: ramps are extremely important when speed is >30 mm/s!!! Inverter or PWM drive recommended!
- The more speed raises the more extra stroke has to raise too.

Total stroke,to be stated in ordering-key

Extra stroke gap | Available workout stroke | Extra stroke gap

RAMP-UP | FULL SPEED | SLOW DOWN

SPEED

STROKE

BUCKLING

When stroke is longer than 300mm, BUCKLING can be a risk: please check mounting with our offices and/or see usermanuals.

LOAD

Stroke
> 300 mm

BUCKLING
MOMENTUM

IMPORTANT:
Long strokes, even if load is low, can generate significant buckling momentums, as sketch slows.
This happens when actuator is in its all-opened position: that's the reason why we recommend 100 mm extra-stroke.
Pushtube will have this100 mm-portion always inside the overtube, improving guidance against buckling.
For more information on this, contact our office.

![MecVel logo]

MODEL
ALI1   ALI1-F

STROKE (mm)
es. 250 mm = 0250

VERSION
M03 / M06 / M09 / M11 / M13
M00 = not standard speed

MOTOR
12 = 12 Vdc   24 = 24 Vdc

MOTOR POSITION
M0   M1

MOTOR OPTIONS
C01 / C08   Motor
C02 / C09   2LS Diode wired
C03 / C10   Motor + 2LS
C04 / C11   Motor + 3LS
C05 / C12   Motor + encoder
C06 / C13   2LS diode wired + encoder
C07 / C14   Motor + encoder + 2LS
C00   Special wiring (not standard option)
Note: LS (limit switches)

REAR END
P0 = None   P1/P2 = standard

FRONT END
A2 = Yoke   A3 = Yoke + Clip   A4 = Rod end   A7 = M8x20 male

NOTE: COMPLETE THE ORDERING KEY ADDING THE OPTIONS YOU CAN FIND IN THE "ACCESSORIES AND OPTIONS" SECTION

P1 / P2

A2   A7   A3   A4
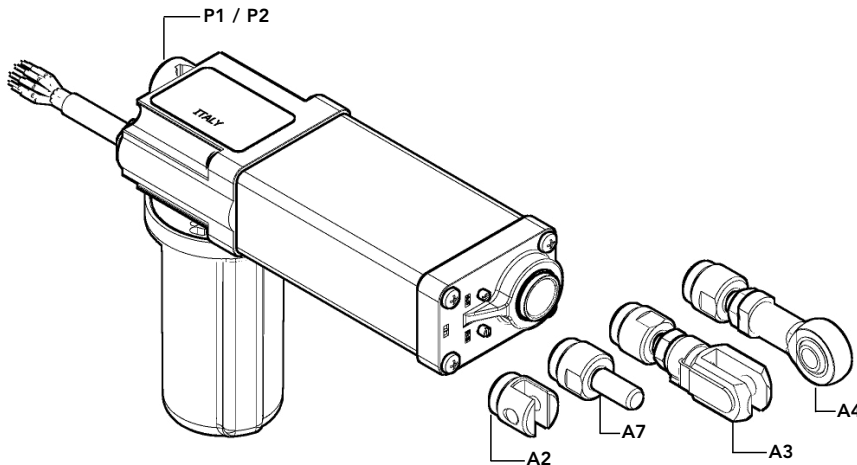
Note: "B" dimension changes according to model

ALI1-F = See pictures
ALI1-F stroke > 240 mm = + 13 mm

A3 = YOKE WITH CLIP DIN 71752 / UNI 1676

B = 137 + *stroke*

A4 = ROD END DIN 648 serie K / UNI 6126

B = 141 + *stroke*

A7 = M8x20 MALE

B = 95 + *stroke*