

ALI4-P

ELECTRIC LINEAR ACTUATOR

A NEW VERSION FOR NEW SOLUTIONS

A NEW CONFIGURATION OF ELECTRIC LINEAR ACTUATOR TO MEET APPLICATIONS REQUESTS FOR NEW LINEAR HANDLING SOLUTIONS

ALI4-P is more than a simple product restyling, it is a new version born on the basis of market requests, developed to meet specific linear automation needs in a more effectively and efficiently way

Since 1987 the core business of the company is the design and the manufacture of linear actuators and screw jacks, electromechanical devices transforming the rotatory motion of a motor into a linear movement, pushing, pulling, lifting or positioning loads even higher of 20 tons.

An important customization service allows to configure any of these products to model it according to the application to which it is intended, offering a tailor-made solution for each project.

Through this customization service and a deep technical know-how, the ALI4-P development has been possible.

This linear actuator, in its DC motor version, is born to satisfy specific needs of customers operating in the photovoltaic field, looking for a product able to provide greater resistance to the static load (that increases accordingly to the photovoltaic panel or the solar concentrator dimension) and meet the very low speed required by these plants, to maximize the whole system efficiency.

The position of the panel or the concentrator, in fact, must be continually "adjusted" to maintain the sun-rays perpendicular to the surface, optimizing the conversion of solar energy into electricity.

The double reduction, given by the motor mounted parallel to the linear actuator body, allows to considerably reduce the speed, even up to 1 or 2 mm/s, meeting the standard values of the photovoltaic industry.

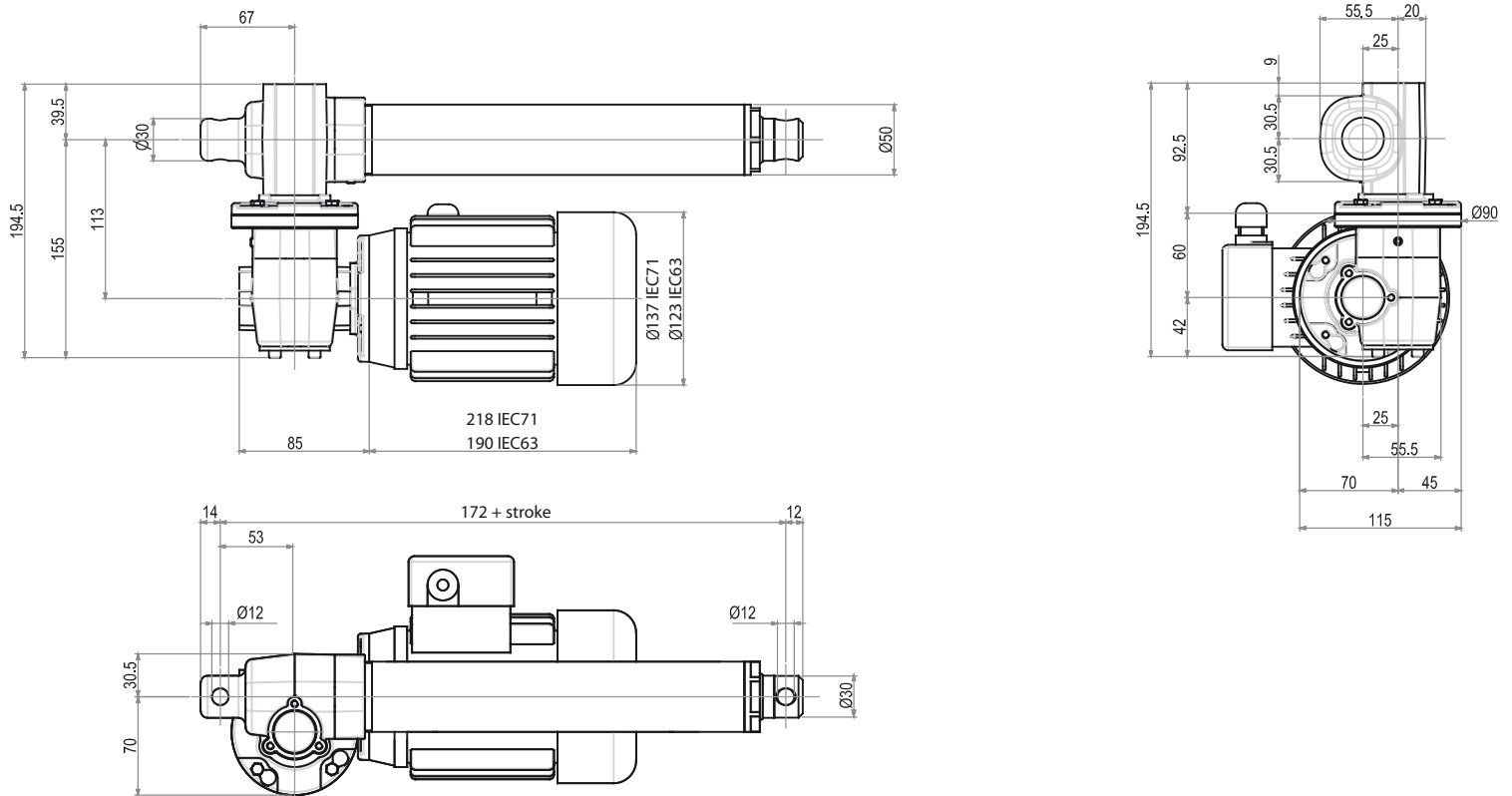
At the same time, the mechanics characterizing this model is able to support a high load, ensuring greater resistance also in case of difficult climatic conditions, first of all the presence of wind.

The match with an AC motor allows to have medium-high forces without renouncing to speed, providing an efficient and versatile solution suitable for different kinds of linear movements.

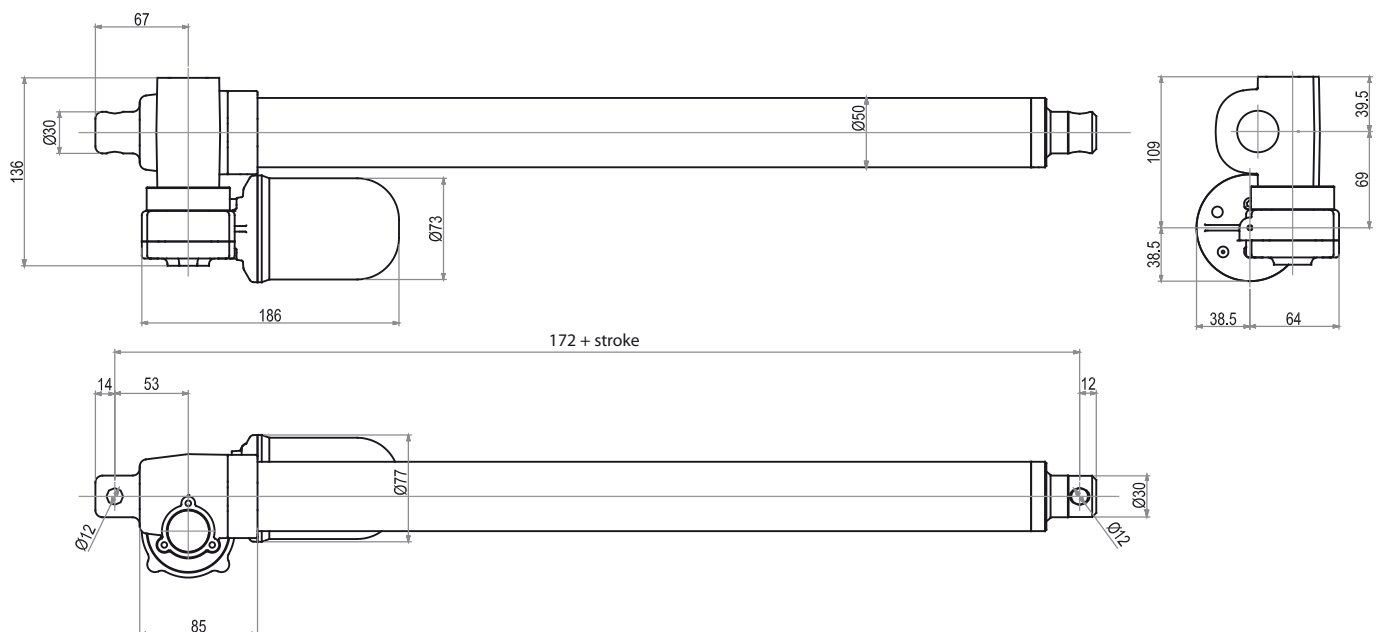
PERFORMANCES

AC MOTOR VERSION									
Fmax [N]	Max speed [mm/s]	Version	Motor size	Motor power [KW]	Motor speed [rpm]	Screw diameter [mm]	Screw pitch [mm]	Gear ratio	Efficiency
11.000	12	M15	IEC 71	0,55	3000	18	4	1:16	0,26
15.000	6	M16	IEC 63	0,37	1500	18	4	1:16	0,26
DC MOTOR VERSION - SUITABLE FOR THE PHOTOVOLTAIC FIELD									
Fmax [N]	Max speed [mm/s]	Version	Motor size	Motor speed [rpm]	Screw diameter [mm]	Screw pitch [mm]	Gear ratio	Efficiency	Max current for Fmax (A) 24 V
7.000	2,5	M14	59	4900	20	8	1:260	0,33	4
10.000	5	M10	59	4900	18	8	1:104	0,37	9
13.000	2,5	M08	59	4900	18	4	1:104	0,26	9
15.000	2	M13	59	4900	20	8	1:260	0,33	7

DIMENSIONS - AC MOTOR VERSION



DIMENSIONS - DC MOTOR VERSION



SIZE CHANGING ACCORDING TO OPTIONS

- ALI4-P-F = +30 mm
- ALI4-P-FCM = +47 mm
- ALI4-P with bellows boot B = +15 mm
- ALI4-P with antirotation L = +15 mm
- ALI4-P with safety nut G = +30 mm
- Special executions, customizations and VRS versions available on demand

ORDERING KEY

ALI4-P / 0500 / M10 / CC-24-59-4900 / M0 / E01 / POT10A / P1 / A1 / B / L

MODEL: _____

ALI4-P ALI4-P-F ALI4-P-FCM

STROKE (step of 50 mm): _____

500 mm = 0500

VERSION (mm/s): _____

M08 M10 M13 M14 M15 M16

M00 with not standard speed

MOTOR: _____

With AC motor indicate version, voltage, type, size, n. of poles, power

With DC motor indicate version, voltage, size, rpm

MOTOR POSITION: _____

M0 Without motor: leave blank

E-BOX POSITION: _____

1 Without motor or DC motor: leave blank

ENCODER: _____

E01 (only with DC motor)

E05 E06 E07 E08 Without encoder: leave blank

LIMIT SWITCHES: _____

2FC2 Without limit switches: leave blank

POTENTIOMETER: _____

POT10A (10 Kohm) Without potentiometer: leave blank

REAR END: _____

P1: eyelet P2: 90° eyelet

FRONT END: _____

A1: eyelet A3: yoke + clip A4: ball joint A7: male M12

OPTIONS: _____

A: stainless steel version (push rod and front end)

B: bellows boot

FX: anti-corrosion protective painting

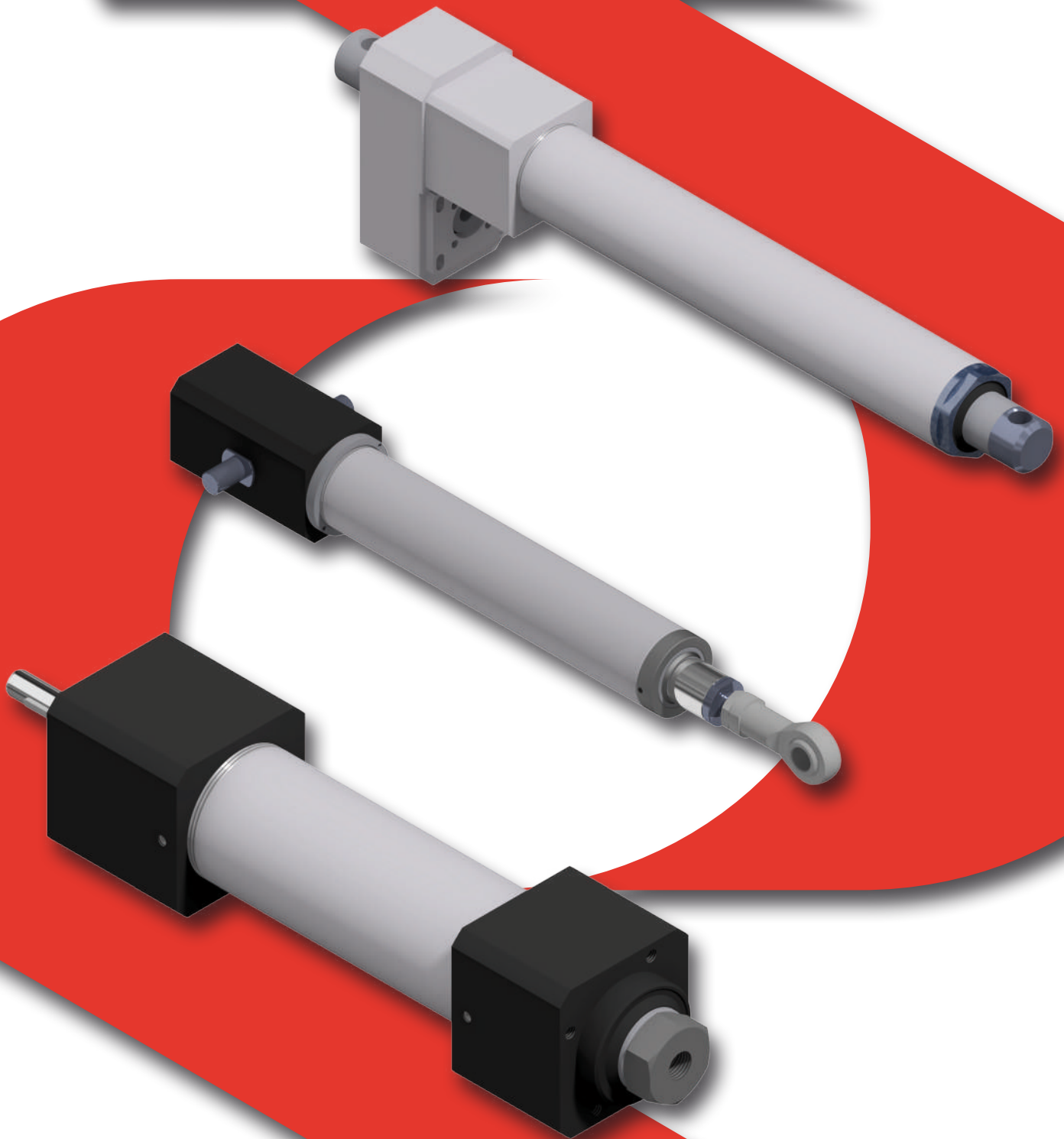
G: safety nut

L: anti-rotation device

Never allow the linear actuator to reach the mechanical stop in order to avoid damages of internal components.

MecVel reserves the right to modify without notice any information and/or feature related to its products.

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AM SERVO-ACTUATION SERIES

**MATCH ANY SERVO, STEPPER OR BRUSHLESS MOTOR
TO EXPERIENCE A NEW LINEAR MOTION**

AM2 AM4 AM5

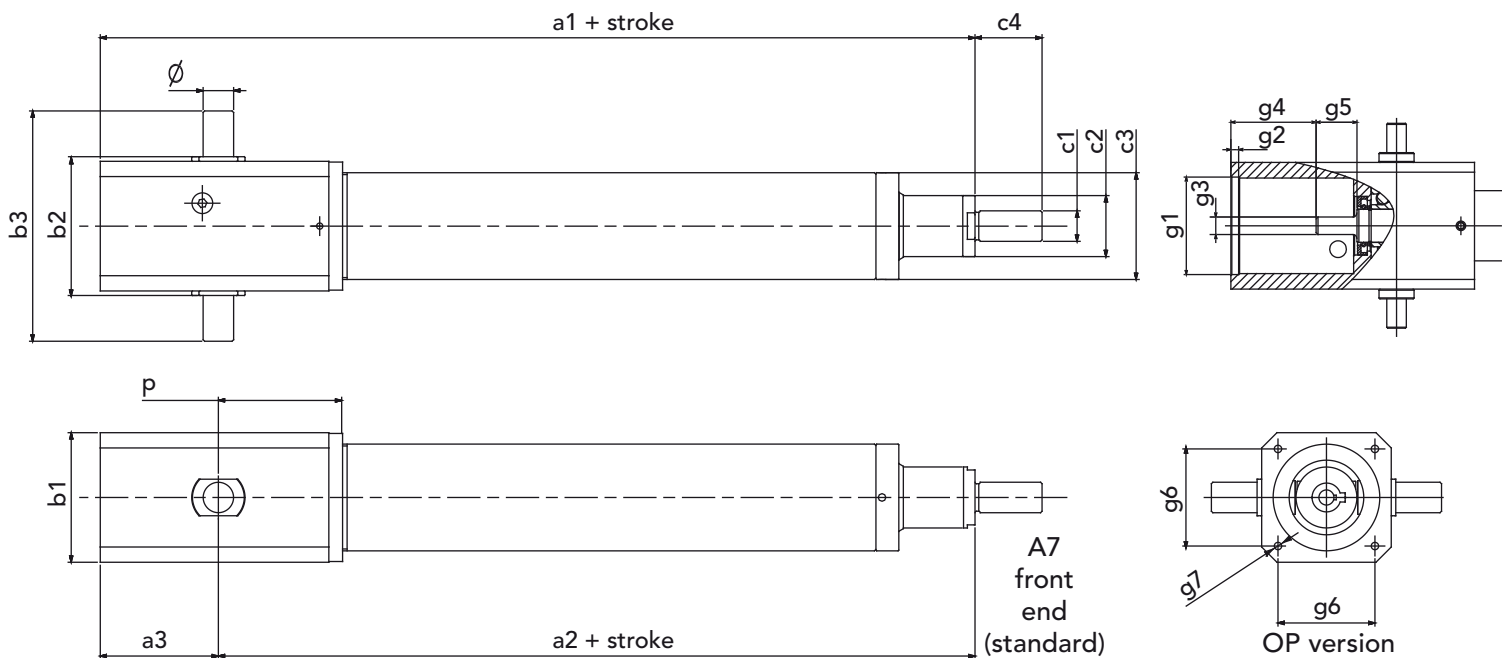
PERFORMANCES

Model	Ball screw (VRS)	Load with 150 mm/s and approx. 4000 hours	Max load
AM2	14x04	600 N	2500 N
AM4	16x05	1500 N	10000 N
AM5	25x10	3500 N	15000 N

These values must be intended as standard/typical references, further performance available depending on the motor mounted by the customer.

Contact MecVel to get the product data according to the kind of application to which it is intended and the related technical specifications.

DIMENSIONS



	a1	a2	a3	b1	b2	b3	c1	c2	c3	c4	g1	g2	g3	g4	g5	g6	g7	p	ϕ
	mm	mm	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
AM2	330	250	85	65	75	105	M10	ϕ 25	ϕ 36	35	ϕ 50	4	9	44	21	50	M5x0,8	40	10
AM4	335	250	85	65	71	131	M12	ϕ 30	ϕ 50	34	ϕ 50	4	11	38	27,5	50	M5x0,8	40	20
AM5	398	320	78	85	91	171	M20	ϕ 40	ϕ 70	44	ϕ 70	3	12	55,5	30,5	64	M6x1	81,5	30

NOTES:

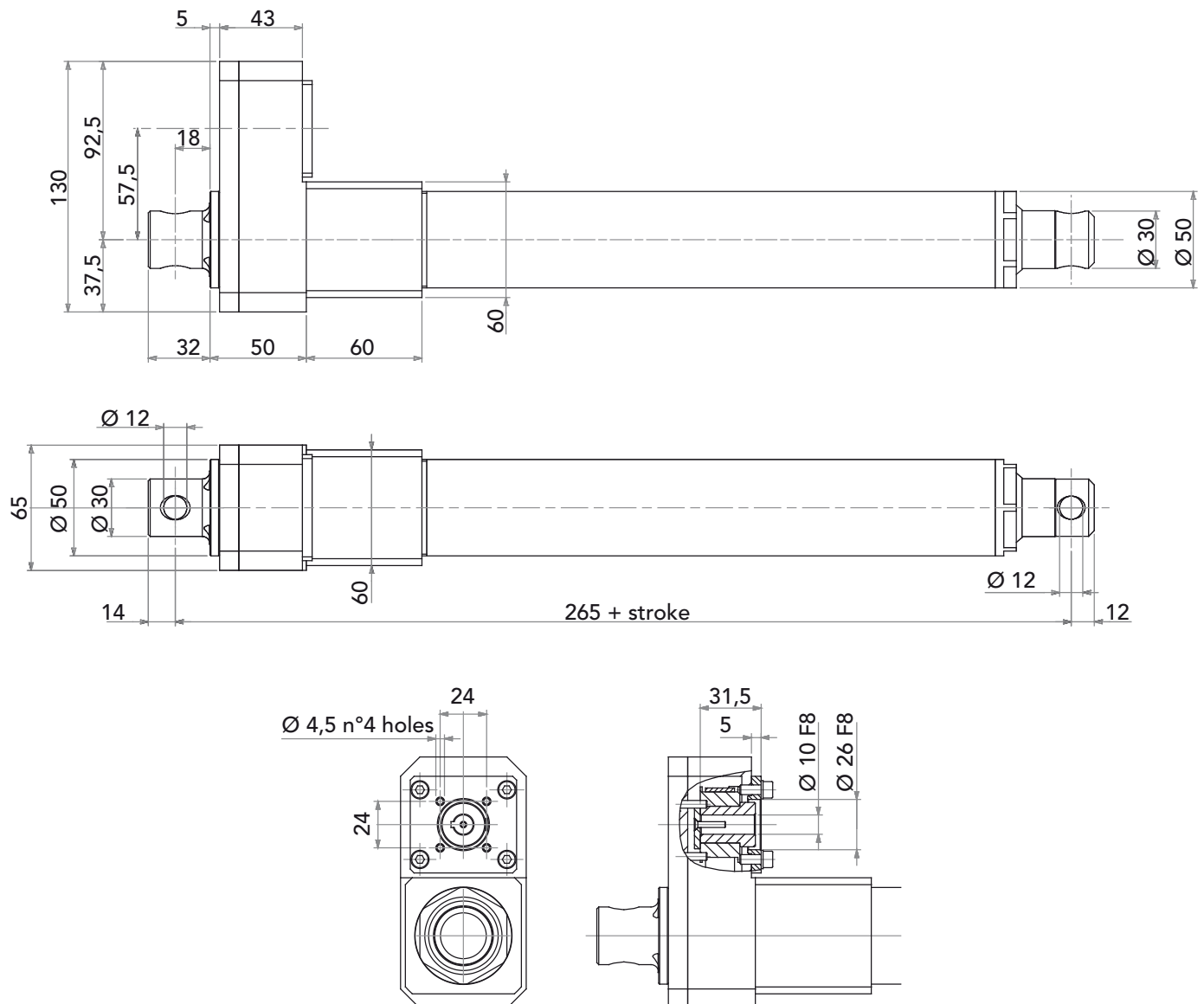
- In case of review/development of the product, values indicated may undergo modifications. Verify with MecVel the whole dimensions during the linear actuator choice/setup.
- Adaptation flanges are possible for the assembly of motors with different settings from those shown in the drawing. Contact MecVel for their design

PERFORMANCES

Model	Ball screw (VRS)	Load with 150 mm/s and approx. 4000 hours	Max load
AM4-P	16x05	1500 N	10000 N

Other versions with parallel motor available on request.

DIMENSIONS



NOTES:

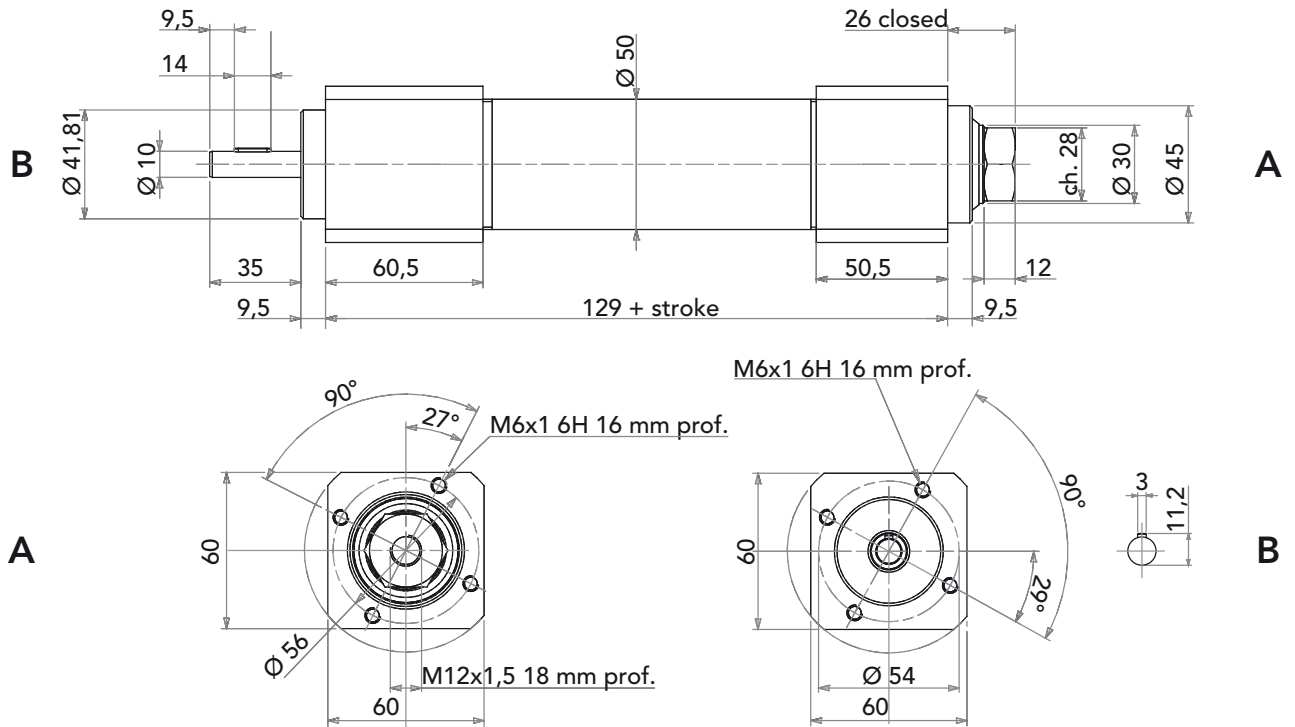
- Adaptation flanges are possible for the assembly of motors with different settings from those shown in the drawing. Contact MecVel for their design

AM4-X AM5-X

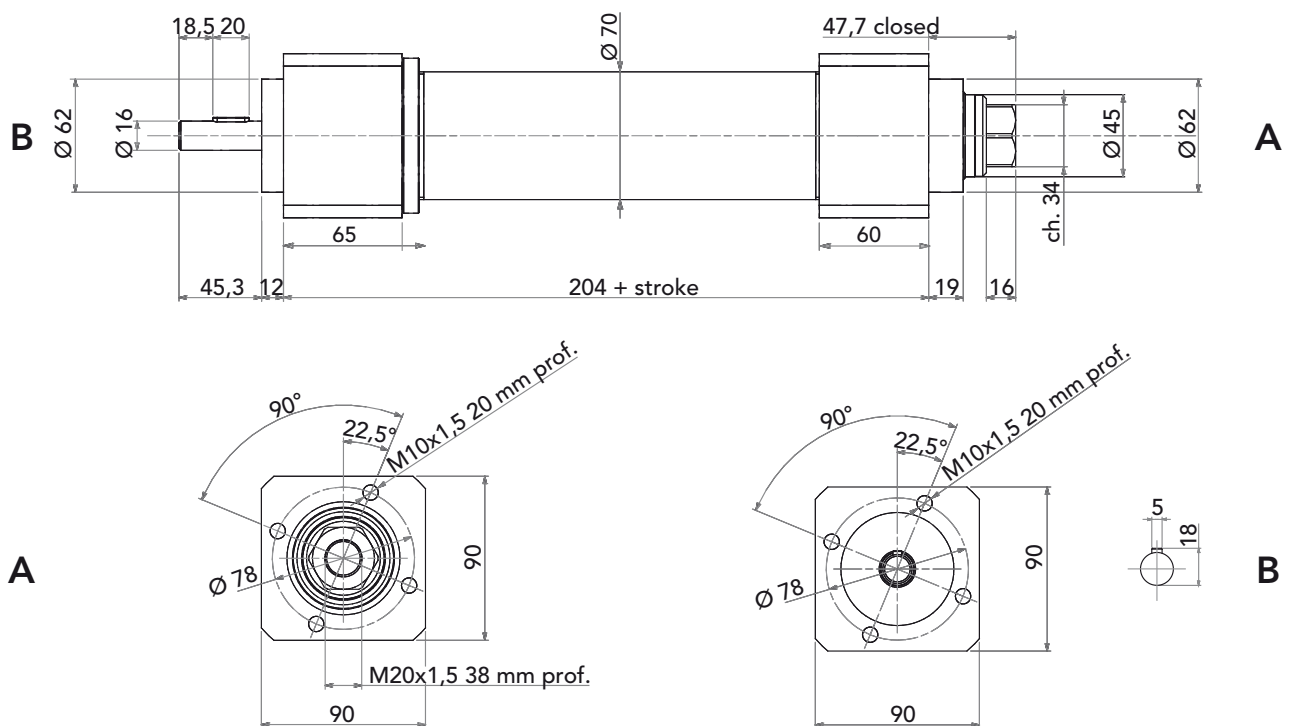
PERFORMANCES

Model	Ball screw (VRS)	Load with 150 mm/s and approx. 4000 hours	Max load
AM4-X	16x05	1500 N	10000 N
AM5-X	32x10	9000 N	15000 N

AM4-X DIMENSIONS



AM5-X DIMENSIONS



ORDERING KEY

AM4-VRS / 0300 / 10 / PD / OP / A4 / B

MODEL: _____

- AM2-VRS
- AM4-VRS
- AM5-VRS
- AM4-P-VRS
- AM4-X-VRS
- AM5-X-VRS
- Other versions with parallel motor available on request

STROKE (mm): _____

es. 300 mm = 0300

SCREW PITCH: _____

MOTOR FLANGE: _____

PD: special motor flange (provide drawing)

PLATE END: _____

- CF: flange
- OP: swivelling version

FRONT END: _____

- A7: standard end
- A3: yoke + clip end
- A4: rod end

OPTIONS: _____

- A: stainless steel version (push rod and front end)
- B: bellows boot
- FCM: magnetic limit switches
- FX: anti-corrosion protective painting
- FXC: cataphoresis
- L: anti-rotation device

NOTES:

- AM4-VRS + B = +25 mm (value valid also for AM4-P-VRS)
- AM4-VRS + FCM = +25 mm (value valid also for AM4-P-VRS)
- AM4-VRS + L = +15 mm (value valid also for AM4-P-VRS)
- AM5-VRS + B = +25 mm
- AM5-VRS + FCM = +30 mm
- AM5-VRS + L = +30 mm

For options B, FCM and L in combination with AM-X series contact MecVel.

Never allow the linear actuator to reach the mechanical stop in order to avoid damages of internal components.

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MecVel has developed a range of electric linear actuators oriented towards the servo-actuation, as designed to mount the latest generations of servo, stepper and brushless motors. This match ensures a constant, optimal and repeated control of the linear motion performed, creating systems perfectly interchangeable with pneumatic cylinders.

Since 1987 MecVel designs and manufactures electric linear actuators constantly updated according to market requests, personalized by a customization service developed with the aim to offer tailored solutions and satisfy any customer need, thanks to years of experience and technical know-how.

AM series is intended for applications requiring high speed with medium/heavy loads, with small movements but repeated frequently.

These products, in fact, should be considered as a motorized arm that has to perform a really precise handling, where the power is supplied and adjusted according to the specific need.

This also through the use of ball screws, granting high efficiency, long life, corrosion and wear resistance, friction and energy consumption reduction.

Moreover the electric systems provides great versatility and excellent performance if compared to the pneumatic one, as it has easy and essential connections, avoids the use of pumps, valves, pipes and then the risk of contamination due to oil leaks, offers the possibility to stop along the stroke and work with high temperatures and dust together with low noise and almost no maintenance (the protection degree of this range is IP65).

MAIN FEATURES:

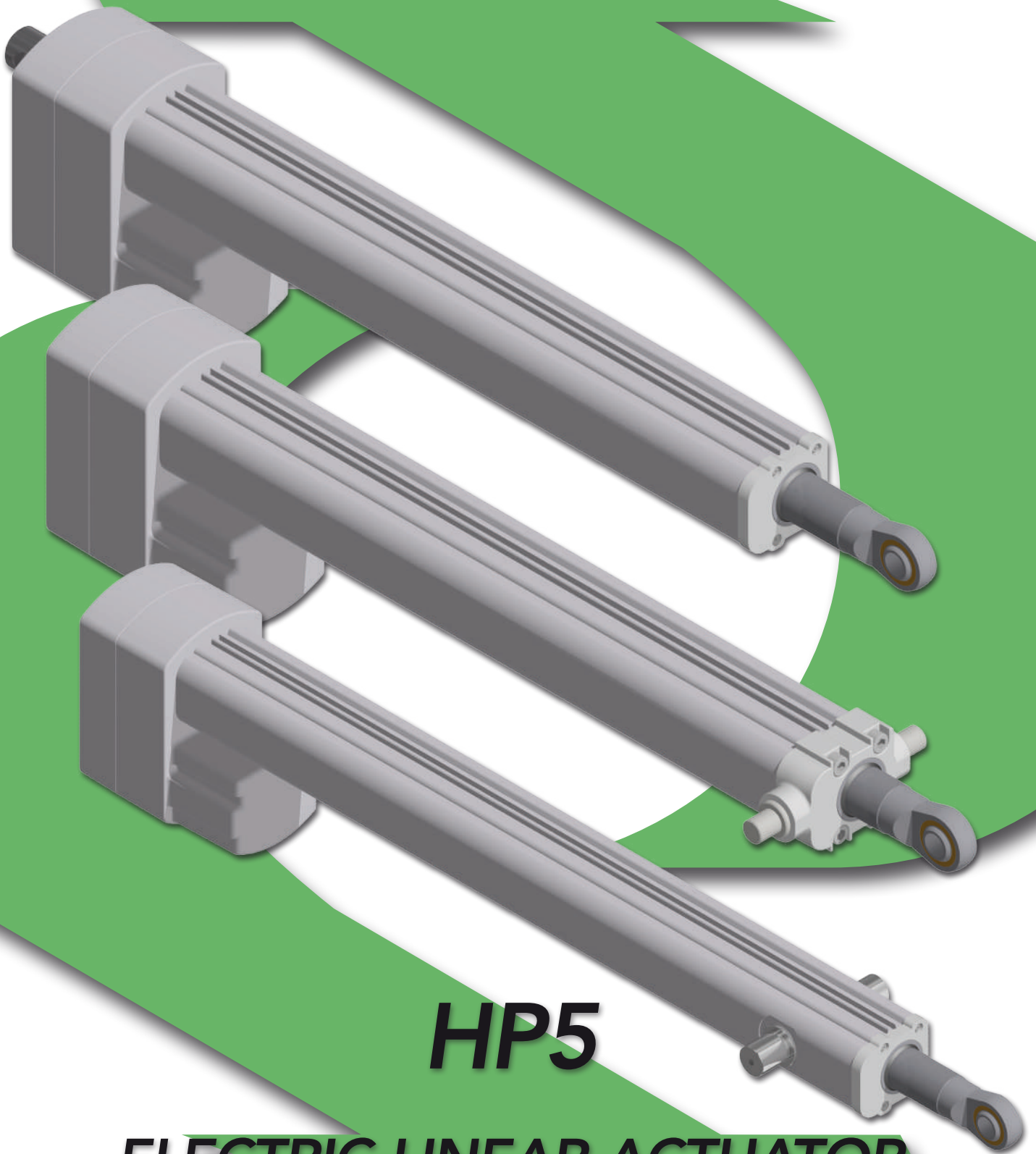
- AM2 – AM4 – AM5 series: more “standard” range, designed for brushless motors with square flange, but adaptation flanges are available on request
- AM4-P: version with parallel motor, 1:1 reduction allows for the direct transfer of the motion to the linear actuator shaft, without any loss in terms of efficiency
- AM4-X – AM5-X series: the design of this range has been developed to offer the best flexibility and be perfectly interchangeable with pneumatic cylinders. ISO standards of pneumatic cylinders, in fact, are exactly reproduced in flanges and female threaded holes in the front part of the linear actuators, allowing the mounting and matching of accessories typically used by pneumatic cylinders

MAIN MOTORS:

- Stepper motors: in case of low load and reduced speed (<2000-3000 rpm), to allow “step” movements (reach the established position, check of the reached position and maintain this position)
- Brushless/servo motors: in case of heavier load and higher speed, as they offer a lower mechanical resistance, being the best solution in case of high accelerations or fast movements
- Ball screws used by AM series are reversible. To ensure stability to the system and get static/self-locking conditions, include the use of a brake, mandatory in case of vertical mounting of the linear actuator

MAIN APPLICATIONS:

- Industrial automation
- Food industry (products lubricated with food-friendly grease)
- Plastic industry
- Textile industry
- Packaging
- Robotics
- Defence industry



HP5

ELECTRIC LINEAR ACTUATOR

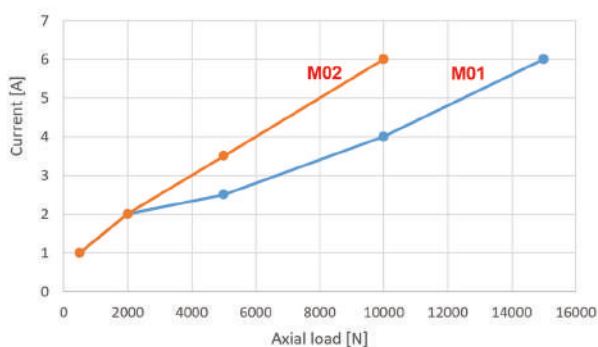
**UP TO 15000 N OF FORCE AT THE SERVICE
OF YOUR LINEAR MOTION**

PERFORMANCES

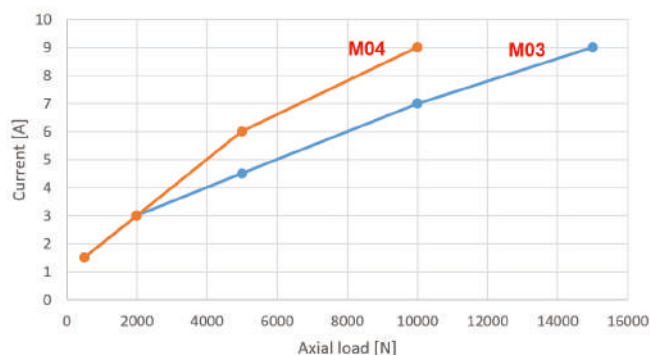
DC MOTOR D59 24V 3000 RPM						
Max. axial force [N]	Speed [mm/s]	Version	Consumption [A]	Screw type	Screw diameter [mm]	Screw pitch [mm]
15000	2	M01	6	ACME	25	5
10000	4	M02	6	ACME	25	10
DC MOTOR D59 24V 4900 RPM						
Max. axial force [N]	Speed [mm/s]	Version	Consumption [A]	Screw type	Screw diameter [mm]	Screw pitch [mm]
15000	3	M03	9	ACME	25	5
10000	5,5	M04	9	ACME	25	10

CURRENT DIAGRAMS

D59 24 Vdc 3000 [rpm]

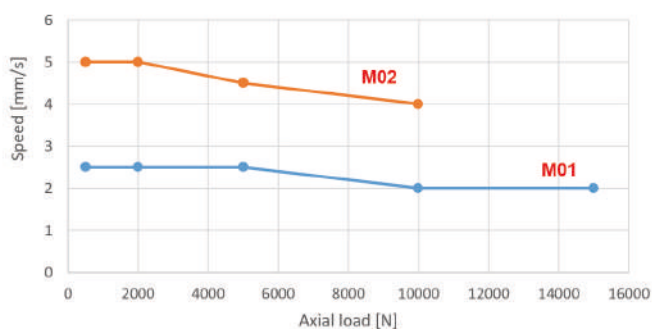


D59 24 Vdc 4900 [rpm]

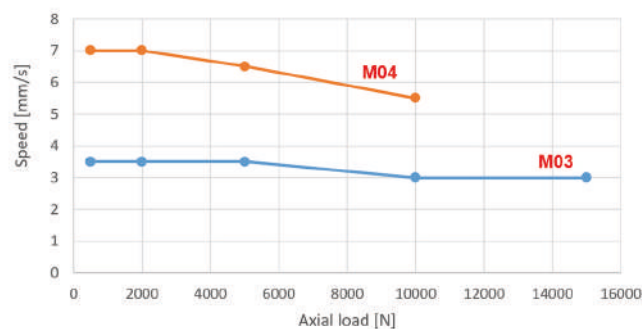


SPEED DIAGRAMS

D59 24 Vdc 3000 [rpm]



D59 24 Vdc 4900 [rpm]



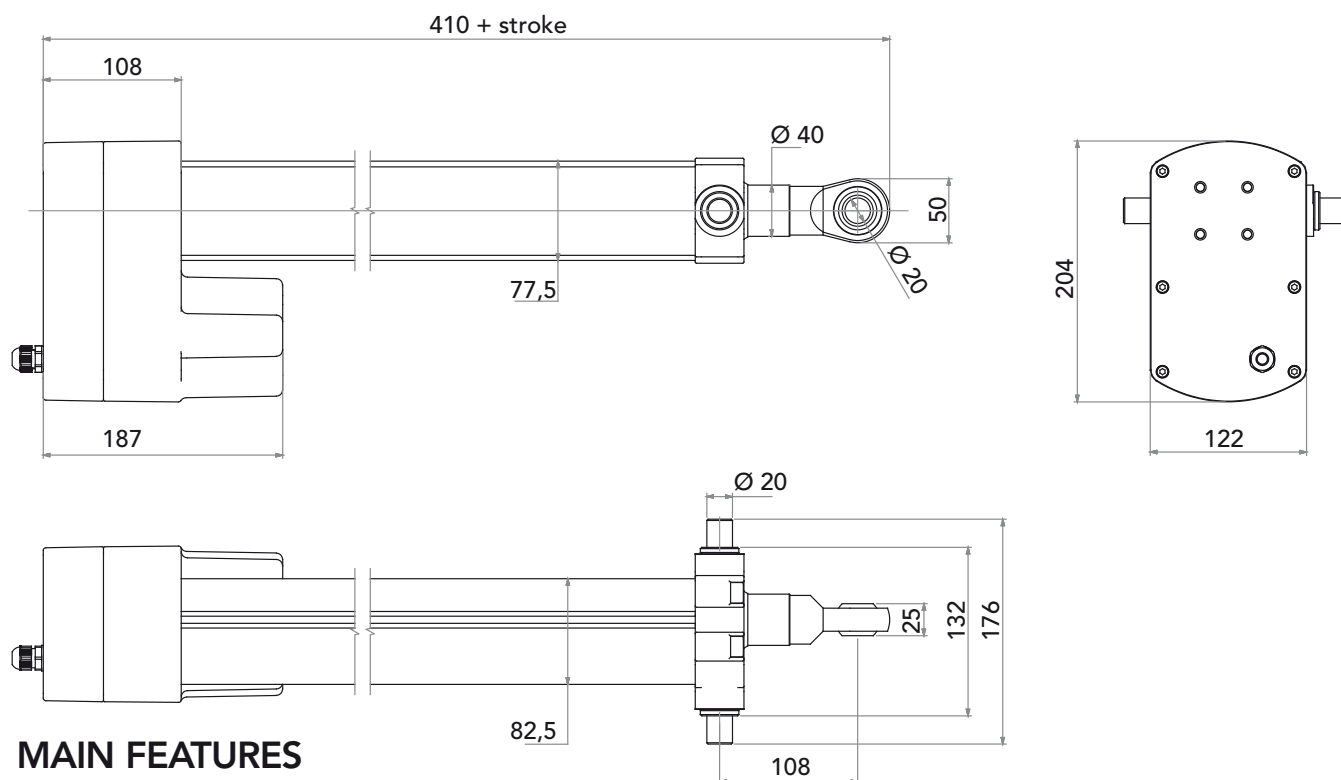
3000/4900 rpm are referred to the motor speed, with no-load.

Mechanical resistance features:

- Max static axial force: 45000 N up to 450 mm stroke, both in push and pull
- For longer strokes max static axial force in push decreases to a minimum of 11500 N with 1000 mm stroke

Never allow the linear actuator to reach the mechanical stop in order to avoid damages of internal components.

DIMENSIONS



MAIN FEATURES

- Permanent magnet motor
- Steel cross gearbox
- Steel ACME lead screw
- Stainless steel or chrome plated steel push rod
- Aluminum housing and cover tube
- Grease lubrication
- IP65 protection degree
- Working temperature range $-10/+60^{\circ}\text{C}$
- Intermittent duty



Since 1987 MecVel designs and manufactures electric linear actuators, tailored by a customization service developed with the aim to offer reliable solutions for the industrial automation field.

The high performances supplied by HP5 are ensured by the use of top quality components and a great attention for dimensions and fixing systems, making it versatile and easy to install in any system:

- The motor parallel to the body of the linear actuator allows to reduce product dimensions, transferring directly the motion to the input shaft in order to avoid losses in terms of efficiency
- The linear actuator is self-locking in static conditions and the electric system used do not have valves, pipes and compressors as in hydraulic systems, excluding the risk of oil leaks and making the product suitable to work in sterile environments (as medical and food industry)
- The installation is fast and clean, maintenance operations are minimal also in case of outdoor applications, thanks to the resistance against atmospheric agents as wind, salinity, dust, rain or high temperatures

Due to the importance that renewable energies have for the company, HP5 performances have been specifically developed to meet photovoltaic industry needs, with a product able to keep a very high static load also in case of long strokes ($> 500\text{ mm}$), maintaining extremely low both speed and consumption (15000 N with 2 mm/s and 6 A).

HP5 states itself as a new configuration characterized by structural strength and flexibility, to model itself in compliance with applications requiring high load capacity and moderate speed, to get precise movements controlled by a limit switches system and a constant feedback on the position reached.

ORDERING KEY

HP5 / 0800 / M01 / CC-24-59-3000 / FECC / E01 / P1 / A1 / A / L /

MODEL: _____

HP5

STROKE (mm): _____

800 mm = 0800

VERSION: _____

M01/M02/M03/M04

M00 in case of not standard speed

MOTOR: _____

Indicate version, voltage, size and speed

BRAKE: _____

FECC AS-24 Vdc: brake with separated power supply

Without brake: leave blank

ENCODER: _____

E01: encoder 2 channels 1 ppr NPN

Without encoder: leave blank

REAR END: _____

P0: without end (available only with OP option)

P1: eyelet

P2: 90° eyelet

P3: special rear end (technical drawing needed)

FRONT END: _____

A0: without end

A1: eyelet

A3: yoke + clip

A4: ball joint

A7: male M20x1,5

A9: special front end (technical drawing needed)

OPTIONS: _____

A: stainless steel version (push rod and front end)

FCD: diode-wired mechanical limit switches

FCM: magnetic limit switches

FX: anti-corrosion protective painting

L: anti-rotation device

OP: swiveling version

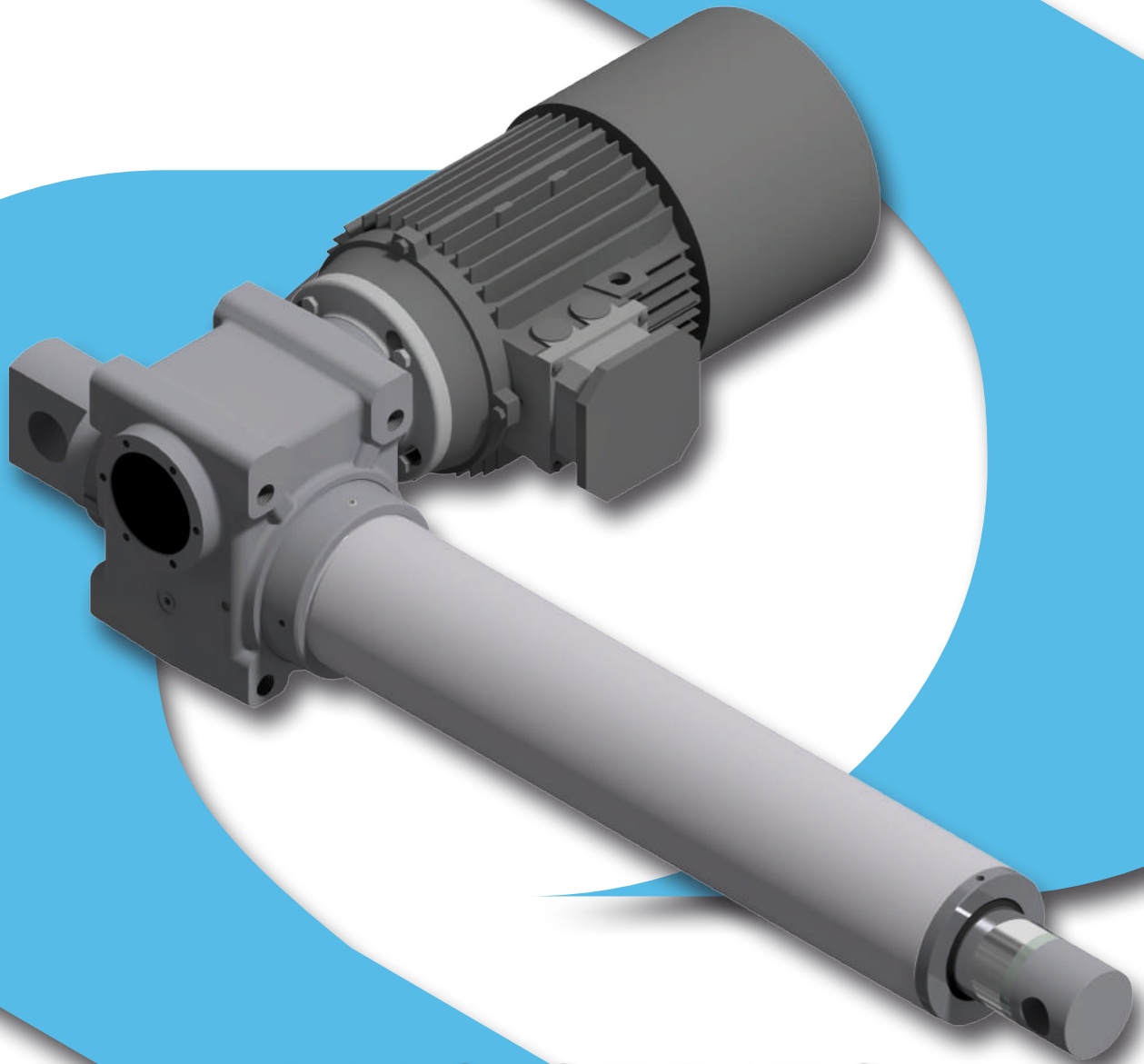
VARIANTS: _____

Drawing number

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HRS SERIES

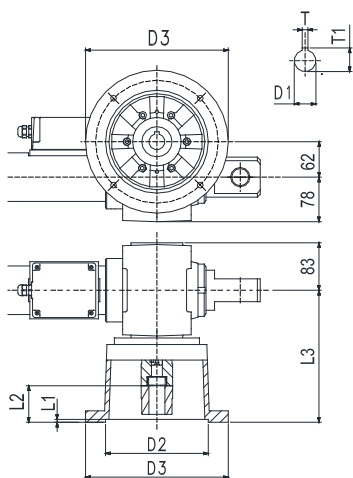
ELECTRIC LINEAR ACTUATORS

**HYBRIDS DEVELOPED MATCHING PLUS OF LINEAR ACTUATORS
AND SCREW JACKS TO GET THE BEST PERFORMANCES**

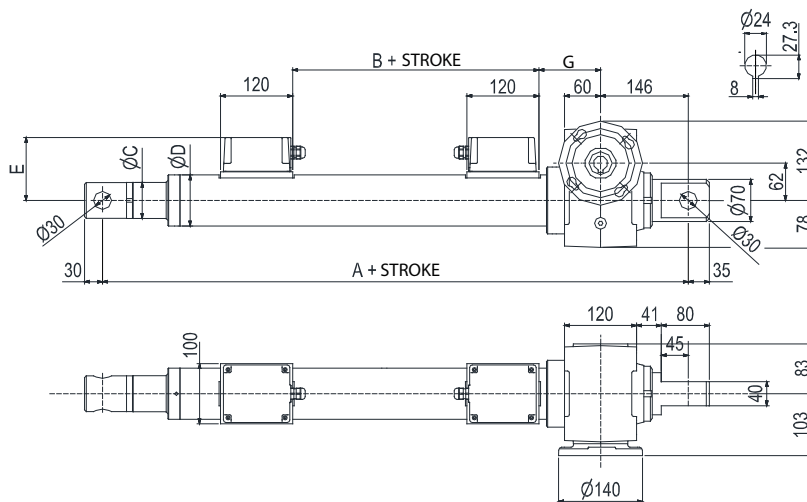
HRS50 PERFORMANCES

HRS50 TPN									
Fmax [N]	Speed [mm/sec]	Version	Motor size - IEC	Power [kW]	rpm	Ratio [i]	Screw d. [mm]	Pitch [mm]	Efficiency
18000	65	M01	IEC112 (bell flange+coupling)	4	1400	5	40	14	0,30 (reversible version)
29000	33	M02	IEC112 (bell flange+coupling)	4	1400	5	40	7	0,24
36500	11	M03	IEC90 (PAM)	2,2	2800	30	40	7	0,18
50000	5	M04	IEC90 (PAM)	1,5	1400	30	40	7	0,18
HRS50 VRS									
30000	47	M01	IEC90 (PAM)	1,8	1400	5	50	10	0,81
45000	23	M02	IEC90 (PAM)	1,5	1400	10	50	10	0,77
50000	7	M04	IEC71 (gear motor)	0,55	2800	10 + 7	50	10	0,64
50000	3	M05	IEC71 (gear motor)	0,25	1400	10 + 7	50	10	0,64

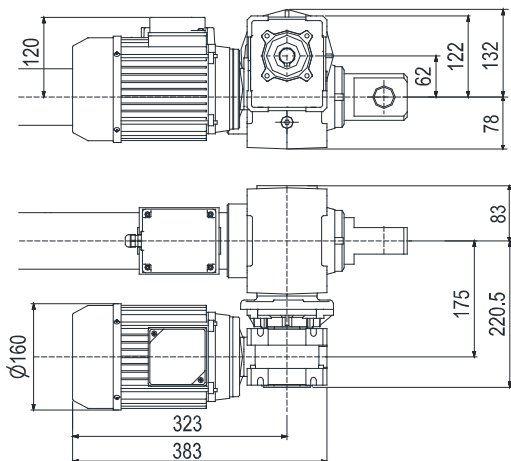
BELL FLANGE+COUPLING VERSION



PAM VERSION



GEAR MOTOR VERSION

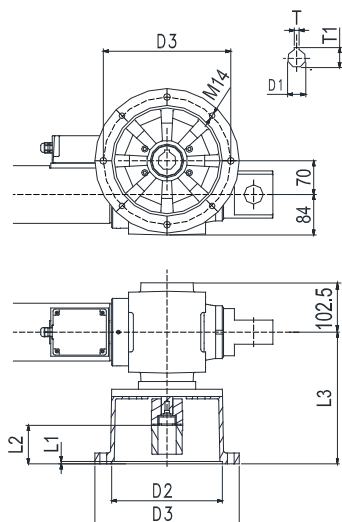


DIM.	TPN/VRS		DIM.	BELL FLANGE+COUPLING	
	HRS50 TPN	HRS50 VRS		IEC 90 B5	IEC 100/112 B5
A	575	715	D1	f24	f28
B	10	112	D2	f130	f180
C	60	70	D3	f165	f215
D	85	140	D4	f200	f250
E	105	132	F	M10	f14.5
G	103	121	L1	4.5	5
			L2	52	68
			L3	183	231
			T	8	8
			T1	27.3	31.3

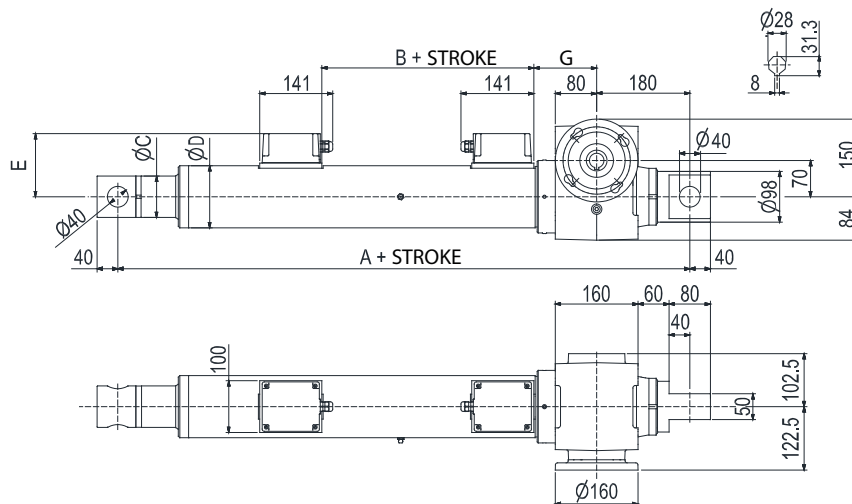
HRS100 PERFORMANCES

HRS100 TPN									
Fmax [N]	Speed [mm/sec]	Version	Motor size - IEC	Power [kW]	rpm	Ratio [i]	Screw d. [mm]	Pitch [mm]	Efficiency
38000	42	M01	IEC132 (bell flange+coupling)	7,5	1400	5	55	9	0,21
58000	14	M02	IEC112 (PAM)	5,5	2800	30	55	9	0,16
87000	7	M03	IEC112 (PAM)	4	1400	30	55	9	0,16
100000	2	M04	IEC80 (gear motor P63 ratio 1:7)	1,8	2800	210 (7*30)	55	9	0,16
HRS100 VRS									
51000	47	M01	IEC100 (bell flange+coupling)	3	1400	5	63	10	0,81
70000	23	M02	IEC100 (bell flange+coupling)	2,2	1400	10	63	10	0,77
92000	8	M03	IEC90 (PAM B5)	1,1	1400	30	63	10	0,67
100000	5	M04	IEC71 (gear motor)	0,75	2800	10 + 10	63	10	0,62
100000	2	M05	IEC71 (gear motor)	0,55	2800	30 + 7	63	10	0,55

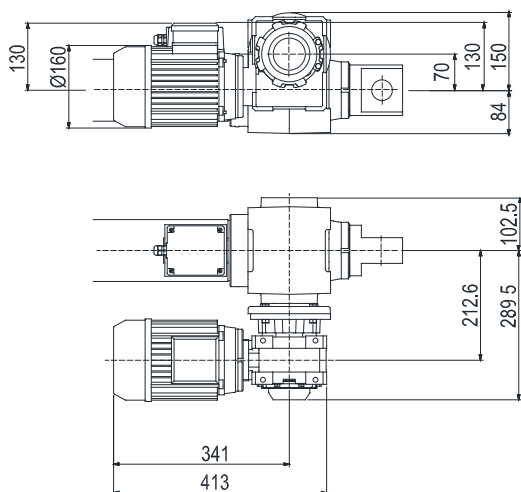
BELL FLANGE+COUPLING VERSION



PAM VERSION



GEAR MOTOR VERSION



DIM.	TPN/VRS		DIM.	BELL FLANGE+COUPLING	
	HRS100 TPN	HRS100 VRS		IEC 100/112 B5	IEC 132 B5
A	706	780	D1	f28	f30
B	10	133	D2	f180	f230
C	80	80	D3	f215	f265
D	120	150	D4	f250	f300
E	122	137	F	f14.5	f14.5
G	121	141	L1	5	5
			L2	68	91
			L3	239	274
			T	8	10
			T1	31.3	41.3

HRS200 PERFORMANCES

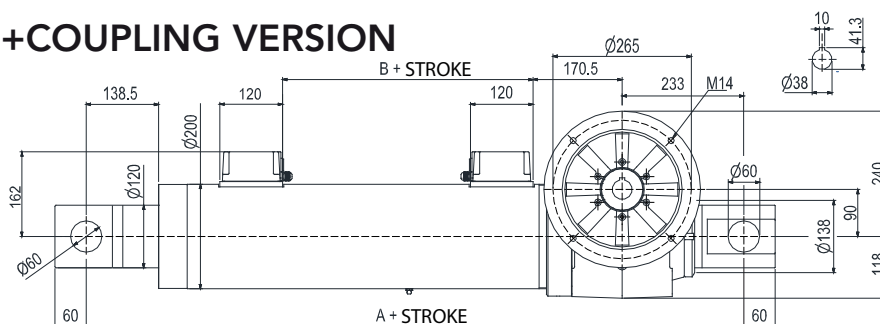
HRS200 TPN

Fmax [N]	Speed [mm/sec]	Version	Motor size - IEC	Power [kW]	rpm	Ratio [i]	Screw d. [mm]	Pitch [mm]	Efficiency
44000	47	M01	IEC132 (bell flange+coupling)	9,2	1400	5	70	10	0,234
90000	16	M02	IEC132 (bell flange+coupling)	7,5	2800	30	70	10	0,1924
130000	8	M03	IEC132 (bell flange+coupling)	5,5	1400	30	70	10	0,1924
200000	2	M04	IEC90 (gear motor P75 ratio 1:7)	2,2	2800	210 (7*30)	70	10	0,1924

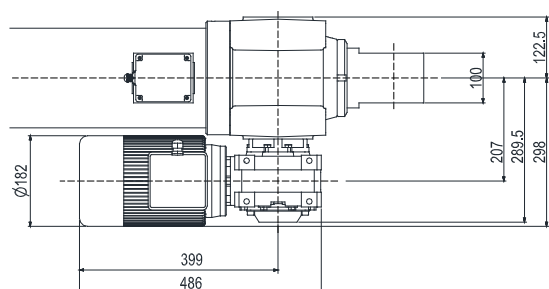
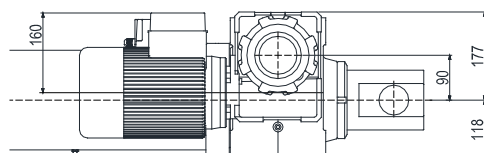
HRS200 VRS

125000	47	M01	IEC132 (bell flange+coupling)	9,2	1400	5	80	10	0,81
174000	23	M02	IEC132 (bell flange+coupling)	5,5	1400	10	80	10	0,77
200000	7	M03	IEC90 (gear motor)	2,2	2800	10 + 7	80	10	0,64
200000	3	M04	IEC90 (gear motor)	2,2	2800	10 + 15	80	10	0,60

BELL FLANGE+COUPLING VERSION



GEAR MOTOR VERSION



DIM.	TPN/VRS	
	HRS200 TPN	HRS200 VRS
A	860	996
B	80	142

For motors' sizes it is possible to refer to IEC standard motors.
Never allow the linear actuator to reach the mechanical stop
in order to avoid damages of internal components.

ORDERING KEY

HRMS50/0250/M01/CA-400-50-T-90-4-1,5/AB/1/M0/E05/2FCI/P1/A1/L

MODEL:

HRS50 HRS50-P HRS100 HRS100-P HRS200 HRS200-P

STROKE (mm):

250 mm = 0250

VERSION:

M01/M02/M03/M04/M00 with not standard speed
With flat input motor flange (PAM version) indicate ratio and pitch

MOTOR:

Indicate version, voltage, type, size, n. of poles, power
With flat input motor flange (PAM version) indicate 0
With special flat input motor flange (PAM version) indicate PD

AC MOTOR OPTIONS:

Without motor: leave blank the following parameters
Only for flat input motor flange (PAM version): indicate the size (as 90B14 for IEC 90B14 version)
Protection: indicate only if different from IP65 (standard)
Brake: indicate only if brake motor (as FECA)
Further options: indicate if needed (as AB for 2° shaft)

E-BOX POSITION:

1 Without motor: leave blank

MOTOR POSITION:

M0 (standard) M1 (sx)

ENCODER (without encoder: leave blank):

LIMIT SWITCHES (without limit switches: leave blank):

REAR END:

P1: eyelet (standard) P2: eyelet 90°

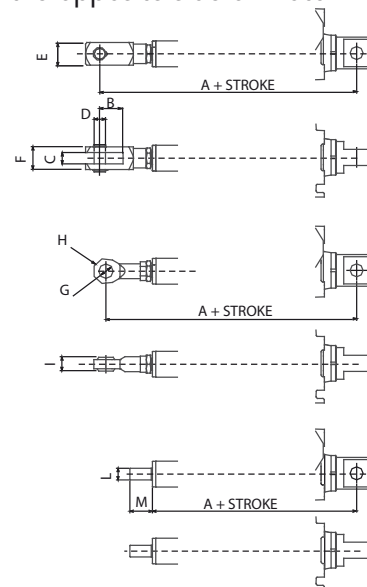
FRONT END:

A1: eyelet (standard) A3: yoke+clip A4: ball joint A7: male

OPTIONS:

B: bellows boot L: anti-rotation device T: additional shaft on the opposite side of motor

FRONT END	DIM.	HRS50		HRS100		HRS200	
		TPN	VRS	TPN	VRS	TPN	VRS
A3	A	660	815	834	908	1053	1189
	B	54		72		104	
	C	30		35		60	
	D	f30		f35		f60	
	E	55		70		120	
	F	55		70		120	
A4	A	667	822	815	889	1020	1156
	G	f30		f35		f60	
	H	R. 35		R. 40		R. 68.5	
	I	37.5		43		44	
A7	A	532	687	671	745	820	956
	L	M 30x2		M 36x2		M 52x3	
	M	55		70		80	



EFFICIENCY AND RESISTANCE MEET THE HIGHEST LOAD CAPACITY

*How to match the typical power of screw jacks with the high standards in terms of linear actuators performances?
MecVel R&D team has designed a range of products to answer to this market request: the HRS series*

Since 1987 the core business of the company is the design and the manufacture of linear actuators and screw jacks, electromechanical devices transforming the rotatory motion of a motor into a linear movement, pushing, pulling, lifting or positioning loads even higher of 20 tons. These products are characterized by great strength, able to provide low friction and minimum wear with long life to the whole handling system. This range, in fact, has been developed in particular for the heavy industry, harsh applications and outdoor operations, where it is required to face critical climatic conditions. This is possible also thanks to the customization service offered by the company, that allows to develop each product according to customer requests, to tailor it in compliance with the technical specifications of the application for which it is intended. In the HRS series the standard structure of a screw jack is matched with typical linear actuator components, from internal guides up to the external cover tube, able to better withstand buckling loads. This, together with the high quality of materials used and the choice of really efficient gear boxes, allows to reach the best performances for MecVel linear motion.

TECHNICAL DATA

This series is splitted between the version using TPN (acme screw) and the one using VRS (ball screw), able to provide a relevant increase in terms of performances and also higher speed with the same load. Both versions are divided in three different "sizes", in order to supply the entire spectrum of possible handlings:

- HRS50 for loads up to 50000 N (5 tons)
- HRS100 for loads up to 100000 N (10 tons)
- HRS200 for loads up to 200000 N (20 tons)

These products can reach a speed of 65 mm/s but in this case, in order to avoid the reversibility, a brake must be considered to keep the load in static conditions or when it is required precision and repeatability.

HOW TO CHOOSE THE PRODUCT ACCORDING TO THE APPLICATION

The duty cycle required by the application is given by the ratio between the working time under load in the stated period, and the stated period itself (10 minutes), expressed in percentage:

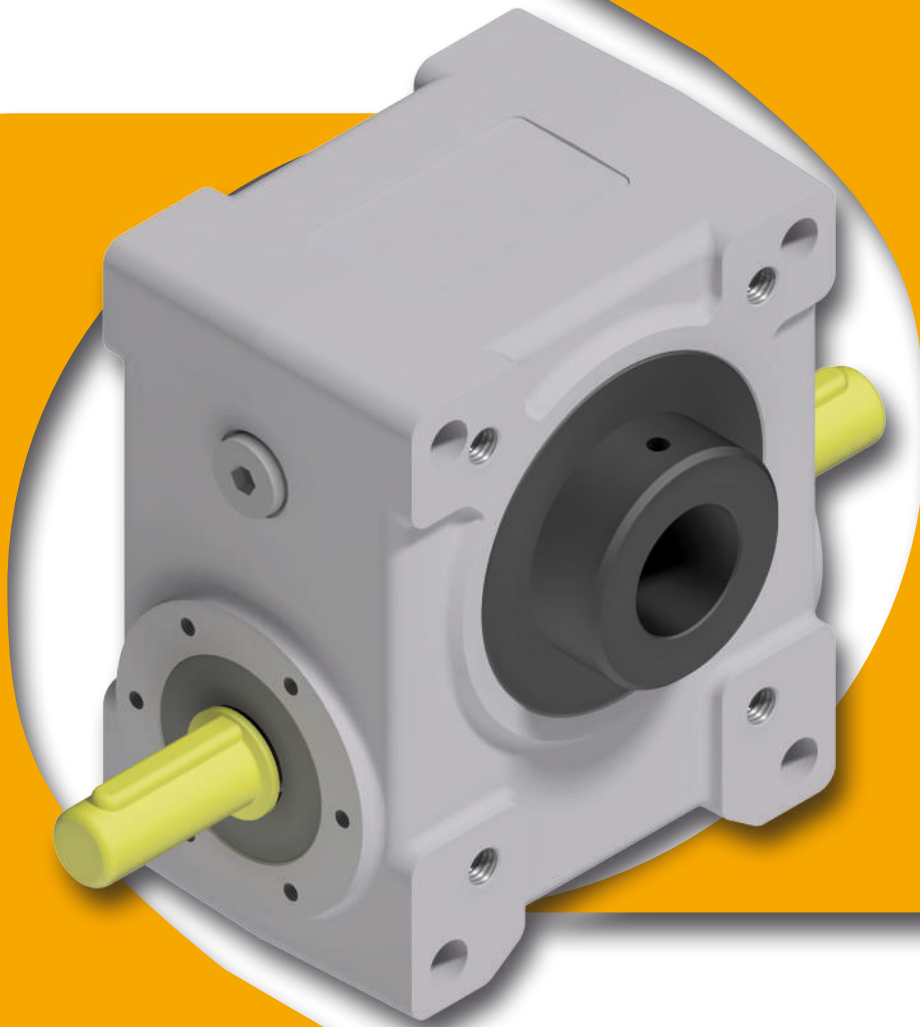
- With $F_s \leq 30\%$, a linear actuator with TPN is recommended
- With $F_s \geq 30\%$ a linear actuator with VRS is recommended

One of the main elements together with the internal components, is the external cover tube, made of steel to protect the screw and the whole device from damages due to dust, water and other contaminant agents, and furthermore allows the mounting of limit switches and anti-rotation devices (on request). To increase the safety level it is possible to add a bellows boot to protect the screw (on request), while flanges, bells and couplings, customized on the basis of technical drawings, are required for the matching with electric motors and servo motors (placed orthogonally or parallel to the linear actuator body, in case a reduction of the whole dimension is needed), allowing the customer to choose the preferred kind of motorization. The gear motor supplies a reduced torque and consequently the time to complete the stroke decreases up to 2 mm/s, in compliance with the speed required in the photovoltaic field for example, and reducing also the energy consumption. The electric system provided by MecVel, in fact, offers a series of benefits if compared to hydraulic and pneumatic ones, as:

- The installation is fast and clean
- Maintenance operations are minimal also in case of outdoor applications
- It does not need valves, pipes and compressors, excluding the risk of oil leaks and making the product suitable to work in sterile environments (as medical and food industry)
- It is self-locking in static conditions

MecVel reserves the right to modify without notice any information and/or feature related to its products.

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KP SERIES

SCREW JACKS

**IN STOCK PRE-ASSEMBLED KIT
FOR "ON DEMAND" LIFTING SYSTEMS**

HIGH LOAD CAPACITY READY AT YOUR DISPOSAL

To be more and more a reliable partner for customers, MecVel has developed a series of pre-assembled kits for lifting systems up to 50 kN (5 tons) with an excellent delivery time.

Since 1987 MecVel designs and manufactures linear actuators and screw jacks, devices using electric motors, gearboxes and push tubes to handle loads even more than 200 kN (20 tons).

With a customization service able to configure each product to tailor it according to application technical specifications, MecVel purpose is to always provide the most suitable and performing linear motion solution.

Moreover, according to market requests for a constant reduction of costs and delivery time, the company has developed the KP series, created starting from HT and HR screw jacks.

This new series is dedicated to the easiest lifting systems, both vertical and horizontal, where to perform the movement is just required a hand wheel for the manual driving or an electric motor, components that can be usually found in the market, as well as belts and pulleys needed to complete the connection, while MecVel provides the "heart" of the motion.

The company, in fact, offers four different sizes of gearboxes already mounted and grease lubricated, up to 5 kN (500 kg), from 5 to 10 kN (1 ton), from 10 to 25 kN (2,5 tons) and from 25 to 50 kN (5 tons), with two gear ratios ready for delivery: 1:10 and 1:30.

KP series is subdivided in two kits:

- The one that takes shape from HT models, where the acme screw runs through the gearbox - KT version
- The one that takes shape from HR models, where the acme screw rotates integrally with the gearbox. In this case the linear motion is performed by a nut travelling along the acme screw (nut included in the kit provided by the company) - KR version

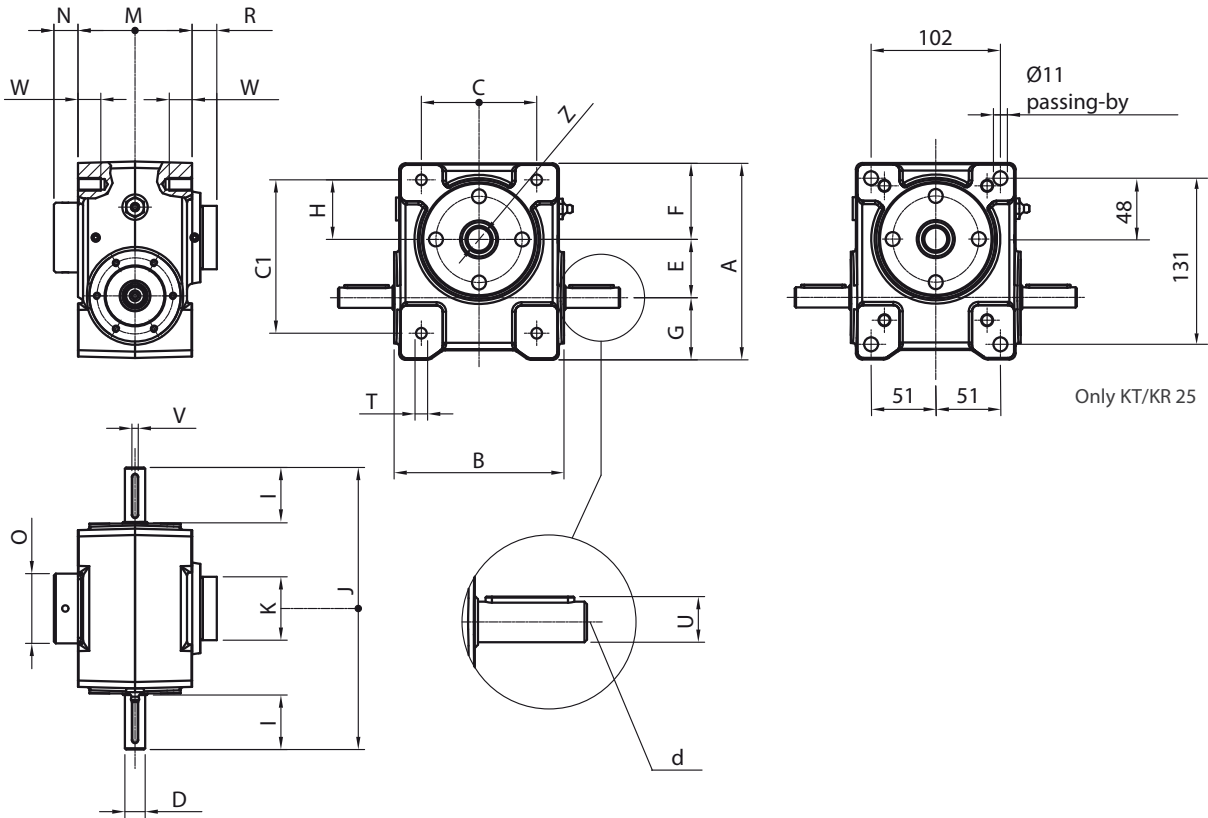
According to the kit, MecVel supplies the acme screw:

- With KT, it is supplied in one meter steps, which the customer can cut depending on the stroke length needed
- With KR, it is supplied with a working stroke of 500 mm, and the rear end modified for the correct join with the gearbox. The front end is "at customer disposal", to adjust the acme screw length according to application requests

Coupling and guide bushing are already fitted in HT version gearboxes, while for those in HR version coupling and closing cap are supplied separately together with nut and mounting instructions.

Never allow the product to reach the mechanical stop in order to avoid damages of internal components.

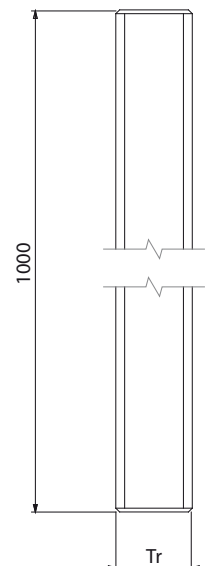
DIMENSIONS



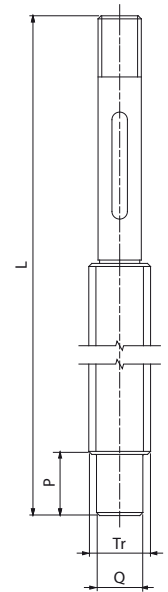
	A	B	C	C1	D	E	F	G	H	I	J	K	M	N	O	R	T	U	V	W	d	Z	
																						KT	KR
KT/KR 05	96	79	52	60	10	25	36	35	21	26	132	36	70	11	35	20	M8	11,2	3	15	M3	Tr 18x4	∅ 12
KT/KR 10	105	104	62	78	14	32	40	33	29	28	162	36	80	15	40	17	M8	16	5	16	M5	Tr 20x4	∅ 14
KT/KR 25	155	134	81	106	16	46	60	49	42	43	222	50	90	19	55	19	M10	18	5	18	M5	Tr 30x6	∅ 20
KT/KR 50	198	166	115	150	19	62	78	58	63	46	262	70	120	29	70	29	M14	21,5	6	25	M6	Tr 40x7	∅ 28

FEATURES OF SCREW SUPPLIED WITH KT

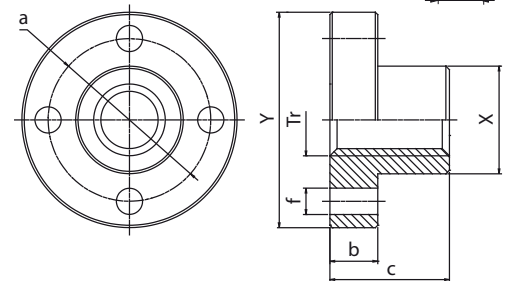
Model	Fmax	Max. working stroke for 1 meter screw (mm)	Tr	Accuracy class
KT05	5 kN	875	18x4	0,20 mm over 300 mm
KT10	10 kN	865	20x4	0,20 mm over 300 mm
KT25	25 kN	830	30x6	0,30 mm over 300 mm
KT50	50 kN	775	40x7	0,20 mm over 300 mm



FEATURES OF SCREW SUPPLIED WITH KR					
Model	Fmax	Screw lenght for 500 mm working stroke (L)	Tr	P	Q
KR05	5 kN	663	18x4	16	∅ 12
KR10	10 kN	690	20x4	20	∅ 15
KR25	25 kN	736	30x6	25	∅ 20
KR50	50 kN	815	40x7	30	∅ 25



FEATURES OF NUT SUPPLIED WITH KR						
Model	X	Y	f	a	b	c
KR05	∅ 30	55	7	∅ 43	12	35
KR10	∅ 35	65	9	∅ 50	15	40
KR25	∅ 45	90	11	∅ 68	20	50
KR50	∅ 57	99	11	∅ 78	25	70



ORDERING KEY

KT25 / 1000 / 1:30 / 01

MODEL: _____

- KT05
- KT10
- KT25
- KT50
- KR05
- KR10
- KR25
- KR50

SCREW LENGTH (mm): _____

with KT in 1 meter step, es. 1000 mm = 1000 (this value indicates the screw length and not the working stroke. To calculate correctly the screw length according to the working stroke, refer to the table in the previous page)

with KR 500 mm = 0500

REDUCTION RATIO: _____

- 1:10
- 1:30

2' INPUTSHAFT: _____

01

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