FOCUS

Made in **India**
Made for **World**

Introduction

Focus Servo Presses are suitable for all kinds of applications where is required a production quality with zero defects, an high level of flexibility and look also to energy cost saving. Our servo presses are used in several of industrial automated processes as: press fit, joining and forming.

P2224 is a must to control industrial processes thanks to the precise force sensor, integratet in the bearing box and capable to detect any force variation during the press fit operation.The brushless motor own a 12 bits EnDat absolute encoder to provide an high resolution of the ram position. Through this two measure system the software **FPM** (Focus Process Monitoring), installed in the servo drive, can controll your press fit operation in run.

The P2224 cylindrical design is studied for generic scopes and is developed to provide a ram repeatability less of <0.01 mm. The modules are tailored for working in a load range of 10kN to 300kN and can working in compression and in tension. The frame is a monolithic steel tube with the slide surfaces of anti twist ram machined inside and hardened by nitruring threatment to avoid a backlash by wear. The motor power is transmitted to the ball screw by a timing without backlash. All P2224 servo presses series, thanks the thru holes on the forntal flange, can be mounted in horizontal or vertical position.

Operation System

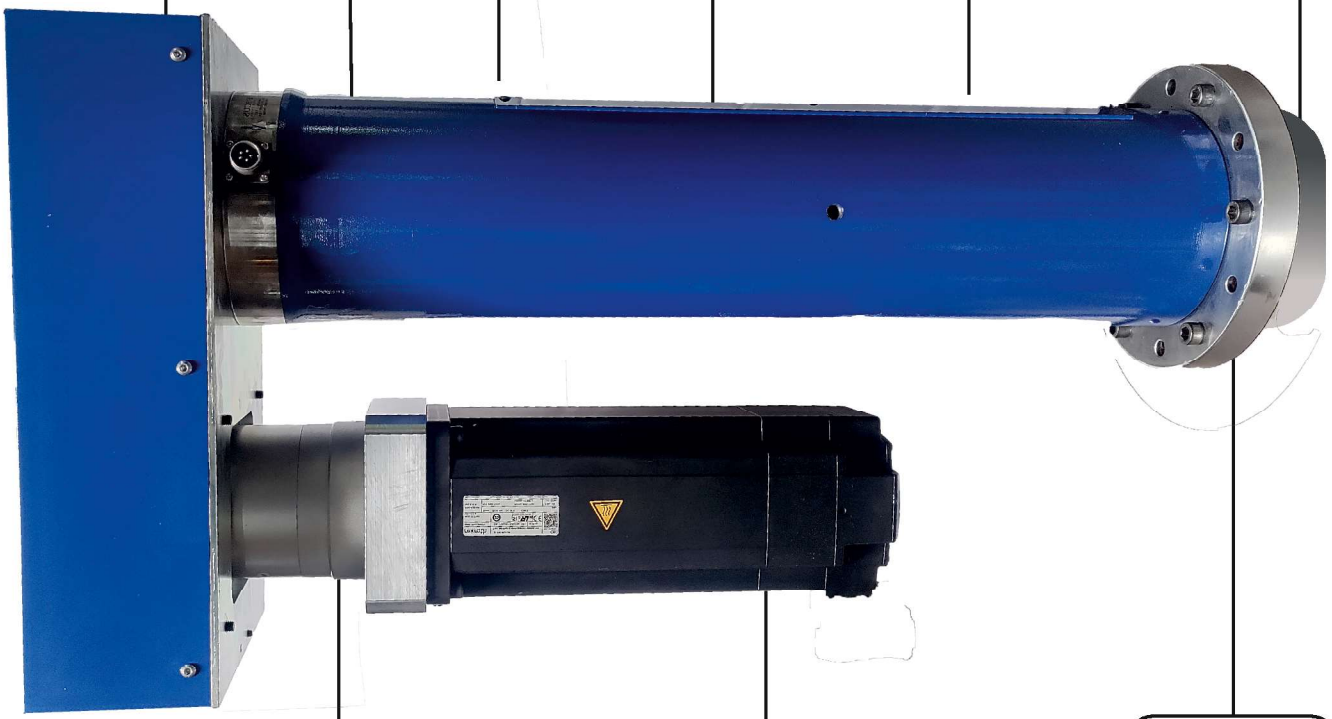
P2224 series consist in a range of precise presses where is possible analyse in run the press process through the sensors mounted in the device. A strain gauge force sensor integrated in the bearing box and an absolute encoder, transmit their output signal syncronised to the servo drive with Built-In PLC. The signals are analysed by the APM-BA here installed. The APM-BA software, further executing the process analysis, manage also the press cycle included the recipes with all working parameters that can be customised according the exigences of the workpiece. To program the working recipes it is necessary use the APM-PC toll kit, a software tool compatible with the MS 7 operative system or later version and through the Ethernet interface is possible program the press by three differents press fit operations: press to force, press to absolute position, press to relative position.

Process Monitoring

The APM-BA process monitoring software allow to set up 8 zone of force off-set in part or on the entire press stroke. This force off-set wrapping the analysis waveform between a minimum and maximum force value that represent the admisible force limits of your process. The analysis is based on the capability of the process to be repeatable inside the force tolerance limits. In each case where the process won't be repeatable the Force VS Distance measured will be out the tolerance limits and a warning signal will be sent to the user's PLC.

Perfection in press fit operation

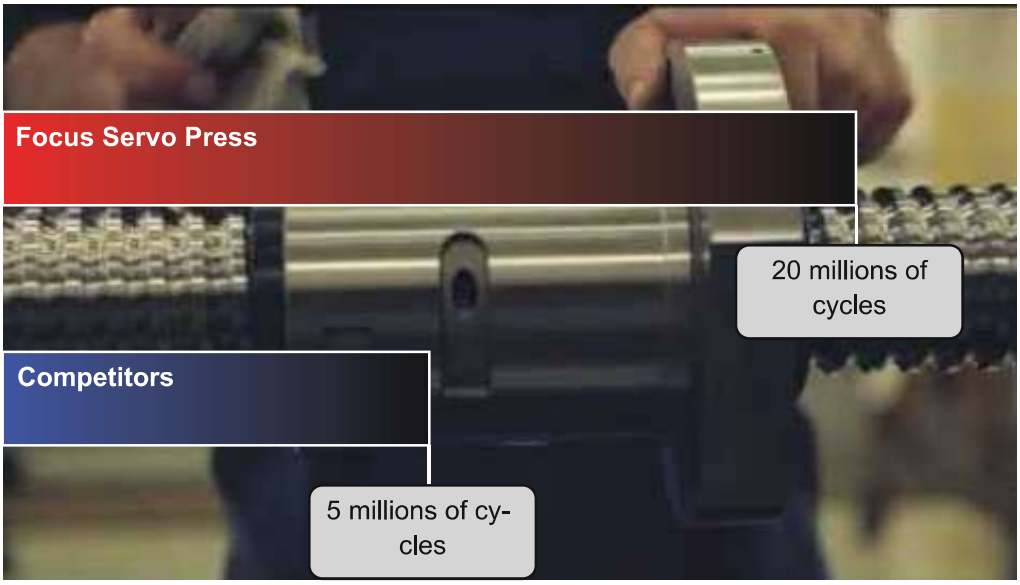
Our Design


TIMING PULLEY WITH ZERO BACKLASH
BALL SCREW WITH NUT PRELOADED AND SCREW IN IT3 OR IT3 PITCH DEFLECTION
BODY PRESS IN STEEL WITH NITROGEN THREATMEN
NEEDLE ROLLER/AXIAL CYLINDRICAL ROLLER BEARING
WIDE ANTI TWIST RAM KEY IN PHOSPHOUROS BRONZE
RAM HARDENED WITH TENIFER THREATMENT
SATELLITE GEARBOX WITH <3 ARCMIN OF BACKLASH
BRUSHLESS MOTOR WITH ABSOLUTE ENCODER 12 BITS
WIPERS AND SEAL FOR COMPLETE SEALING

Our Reliability

The Focus P2224 servo press is a very reliable device. Thanks to the high load ball screw with the nut preloaded, the servo press result very stiffness ans without axial backlash for realiable ram positioning. Our servo presses standard mount, a ball screw with a static load of 5.5 ÷ 6 fold the press thrust and a dynamic load of 2.5 ÷ 3 fold the press thrust. This parameters allow a minimum press endurance of 10 - 20 millions of cycles or more accordding our definite drive profile.

Ball Screw Life Diagram



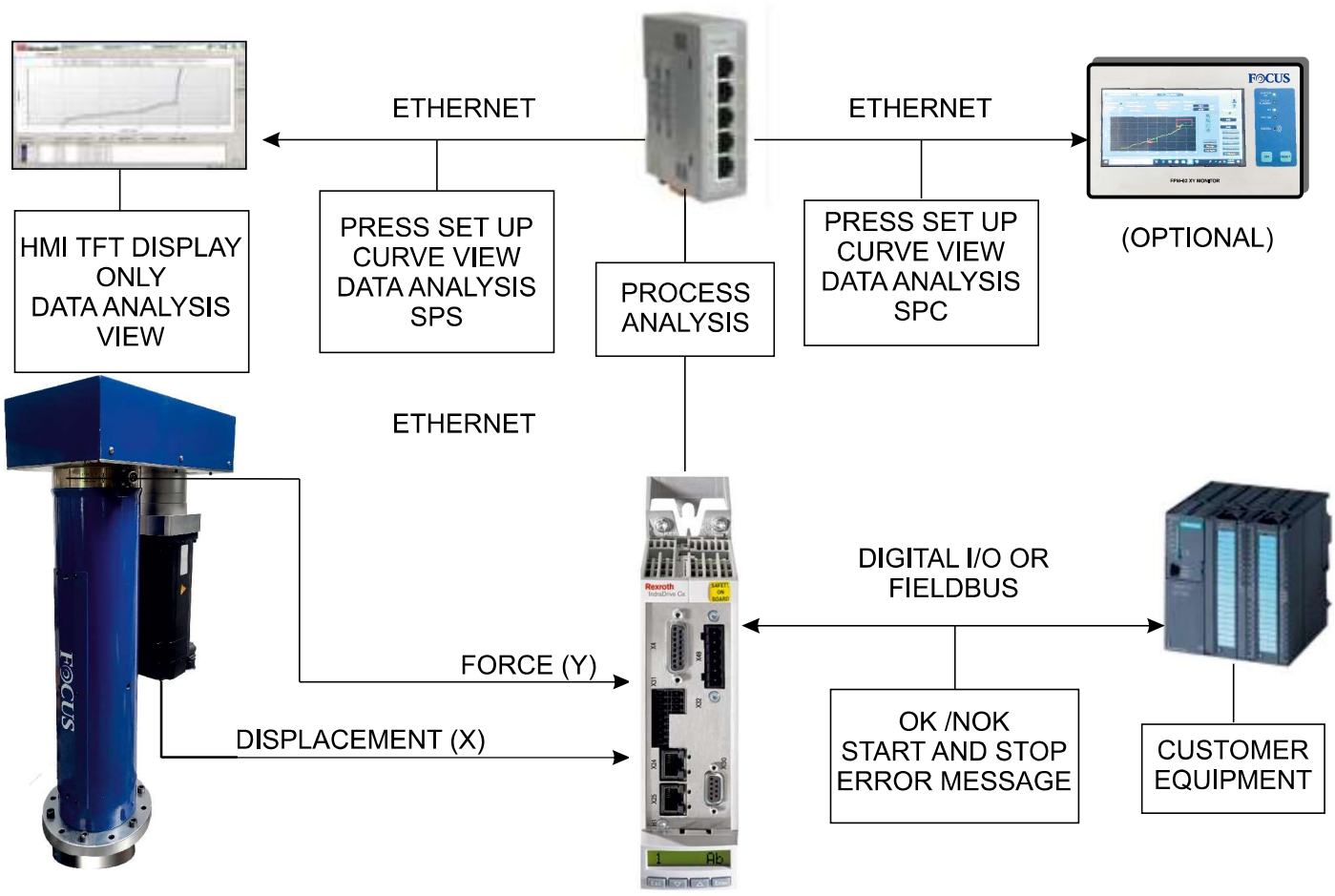
All ball screw are ground and the execution standard is made according the precision standards ISO IT3 with a pitch accuracy of 0.012mm on 300mm of stroke. On request the press is possible to equip the press with ball screw more precise executed according standard ISO IT1 with a pitch accuracy of 0.006mm on 300mm

Force Sensor

In P2224 is mounted a very sensible strain gauge force sensor capable to measure the minimum variation of the force applied on the press. The high stiffness of our spindle avoid force dispersion caused by elastic parts deformations. In this way we can transmit the minimum thrust reaction on the force sensor. Through our system the operations of calibration and force sensor substitution are very faster and easily.

The force sensor mounted in P2224 servo press has a combined error of 0.3% F.S.. The maximum overload without damages is 150% F.S.

SYSTEM DIAGRAM



CONCEPT/DESIGN FROM AULOMA HOLDING, ITALY

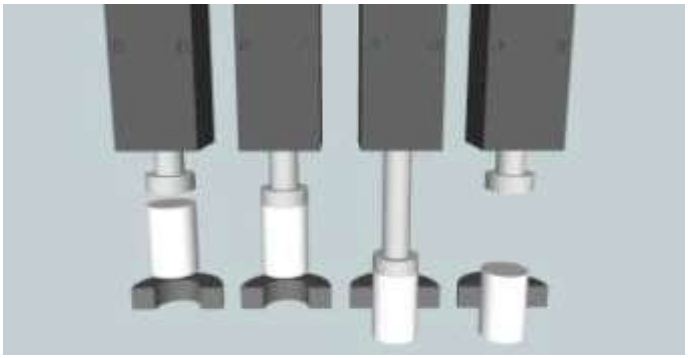
Process Monitoring APM-BA

How do you determine the quality of your parts? In contrast to conventional practices of inspecting the finished part for defects, our system can combine the encoder feedback with the analogue force signals. The system receives the necessary data to monitor the process and provides the capability to create a warning system. Our systems has the capability of measuring the process variation during production, thus detecting problems at the source before they become quality issues, thanks to the capability of combined control of the two parameters Force vs Displacement. Comparisons can now be made with the waveforms generated by a masterpiece saved in the systems memory. This information is very important because this waveform rappresent a mathematical model of your quality standards. In other words if an acceptable process is known, our system can be calibrated to repeat the known process and produce parts that conform and the process is verifiably consistent and repeatable. A constant control of Force vs Displacement indicates that the resulting part has been produced according to the previously verified acceptable part. By continuously monitoring the measurement parameters of the servo press, it is possible to detect variances that can mean the process is no longer quality capable. Catching defects at the source gives manufacturers the confidence that only good parts are shipped to their customers.

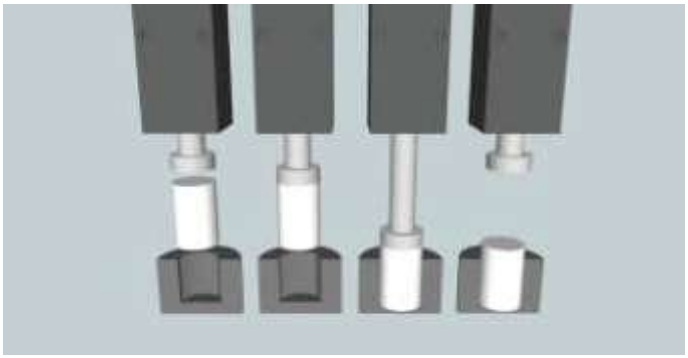
The Software

The APM software is developed to monitoring industrial applications as pressing or joining. This application is very common in several industries. Press fit monitors, measure two magnitudes, Force versus distance to cheek if the processed parts has made according the quality standard. APM is a basically process monitoring developed for all users that want reduce the scrap cost, seek the defects and individuate the process abnormalities. Focus APM process monitoring is particularly useful for which users that want operate according standards ISO/TS 16949. The software is very flexible and can be set without efforts in both environments, press motion set-up and process monitoring force off-set management. The process monitoring analyse in real time the cycle execute by the press ram. The press ram can be moved by a specific program, developed according the user exigences . In each cycle, the waveform obtained by the process analysis could be checked by an force off-set envelope. The APM - Tool kit allow a complete management of the data analysis. The toll kit can be installed on a notebook or on an industrial PC.

Press Fit Control Available



Press to abslolute position
Press to relative position

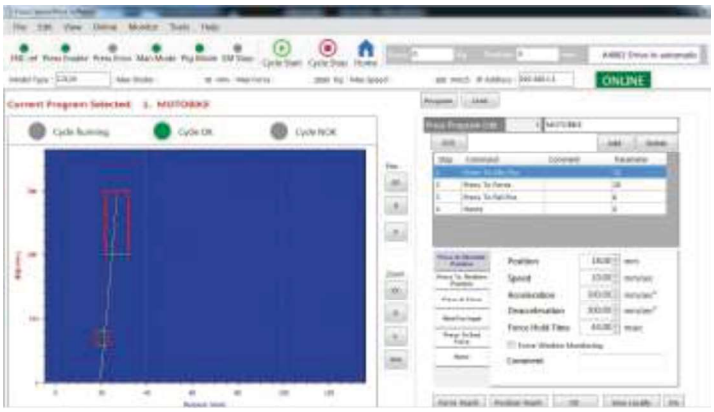


Press to force

Software Features

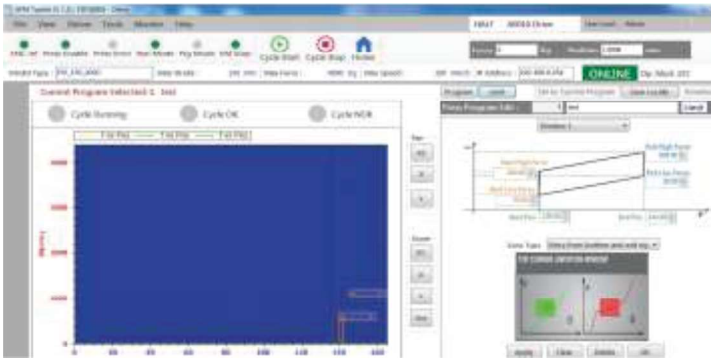
Press Programs

Throug the PC tool kit it is possible set up the press program APM installed in the servo drive. In this way you can create the press drive profile to solve your needs. The recipe created can have 10 break points and multiple control as press to force or press to position. The same tool allow an easy set up also of the process monitoring. In the servo drive memory is possible save press programs with associates force limits templates. The servo drive has the capability to store 16 working recipes.



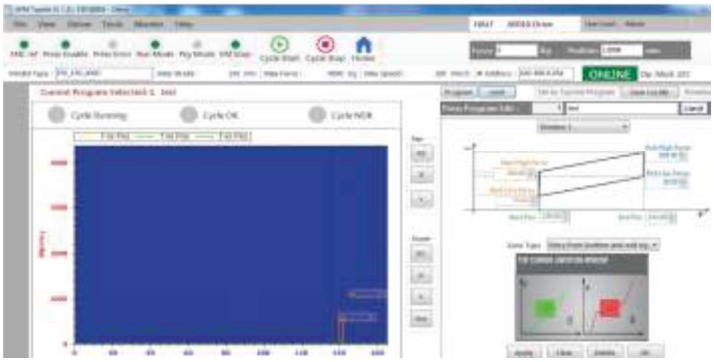
Limit Force Set Up

In APM it is possible assign eight off-set force value in each part stroke of the curve. The eight off-set force limits could be set continuosly to create an envelop, separated to have eight different boxes or a mixing of boxes and envelope.
This capability allows to draw some maximum and minimum force limits to monitor the force behaviour during the press fit operations.



Data Analysis and Curves Wiev

The APM analyse each cycle and through the digital output provide to the user's PLC the analysis result OK or NOK,
All data of each analysis in CSV format can be saved through the Ethernet connection by an hosted PC. Here the data analysis could be managed by ERP or others tools as SPC (Static Process Control). In the servo drive are saved the last 100 curves.



FOCUS

Defects Detected

Industries

Automotive powertrain
Automotive components
Appliances
Electronics
Electromechanic
OEM
Whire
Whatches
Defence
Areonautics
Medical
Weapons
Hydraulic
Heart Mover
Energy

Process Monitoring Benefit

Monitor every machine production cycle for process variance, and detect changes in the process before they become quality issues

Advanced signature analysis algorithms combined with the force versus position ensures the highest level of discrimination between good and defective products

Graphically display the process signature profile

Network Interface

Simple installation

Scrap cost reduction

Process Monitoring Features

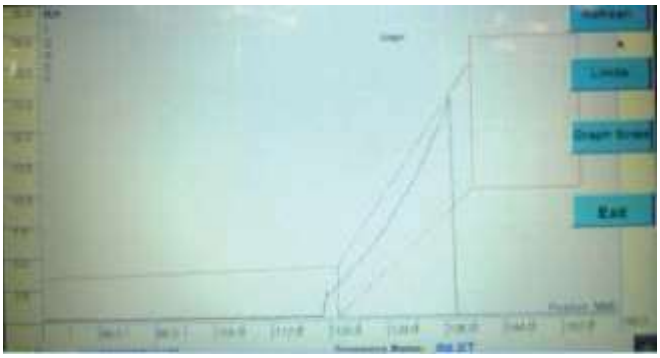
Modular press programs with 10 break points available to configure pressing control as: press to force, press to position and press to relative position

Infinite recipes stored in your PC thanks to the APM-PC tool

Data analysis can be downloaded by Ethernet network to an hosted PC in CSV format

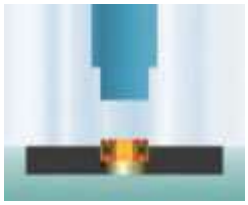
Graph points (force and position values) visible by APM-PC tool on hosted PC or in the HMI panel

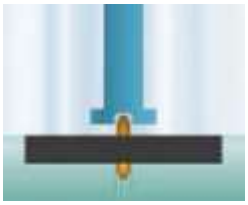
Eight off-set force value for control the Forve VS Displacement waveform



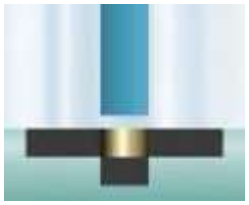
Example of rusted part detection. The rust increase the contact friction and the insertion force increase and goes out the right values

Applications


Assembly / Press fit


Inserting / Fasteners


Rivetting / Flaring


Punching / Piercing


Coining / Marking


Clamping / Tensioning


Pressing / Compressing


Bending


Spring Testing


Crimping


Straightening

Nowadays in many industries it is very important improve the quality. Standard quality as ISO 9000 influence all process level in the productive plant and forcing the industry in a continue improvement. Industries as Automotive have developed a certification such as ISO/TS 16949 with standards more restrictive than the ISO 9000 and this to obtain a supply chain, Tier 1 and Tier 2, capable of provide goods with a low percentage of defects. The goal is one in which 99.99966% of the products manufactured are statistically expected to be free of defects (3.4 defects per million). The benchmark to obtain these performances needs of a system capable to provide all data necessary to produce an assessment of the process. Focus Process Monitoring APM for servo press is an instrument of measure and control developed to monitoring the production in run and seeking defects and abnormalities of produced parts. The mathematical model (Force vs Displacement) obtained thanks to APM can monitoring continuously the production an register each variation. This capability further at seeking the defected parts can provide the variation of efficiency in the productive line and also in the servo press.

For Industries get informations in short time about productive processes is a fundamental resources in cost saving. As SIX-Sigma tools teach the best way to enhance the quality process is a reduction of defects and of waste. The use of our device APM is a valid instrument to obtain the SIX-Sigma target in all applications that need of a continuos feedback values of Force and Position.

FOCUS

Servo Press Features and Benefits

Features

- Grund ball screw stantard ISO IT3 or IT1
- Ball screw nut pleloaded without axial backlash
- Ball screw dimensioned to support the peak load
- Ram repeatability <0.01 mm (A)
- Strain gauge force sensor embedded in the bearing box
- Force measure accuracy ±0.3% the Full Scale
- Axial and radial combined roller bearing
- High stiffness spindle to reduce the compressive deformations
- Process monitoring integrated in the servo drive
- PC- Software tool for friendly press set-up
- Data analysis available in CSV format for SPC

(A) At the same working load and at the same thermal steady state

Benefits

- Very precise mesuring system
- Real time process monitoring
- Products defect and process abnormalities detected in run
- Scrap cost reduction
- Communication with all kind of PLC through discrete I/O
- Communication with all kind of PC through Ethernet TCP/IP
- Servo press and process monitoring set-up don't need any experince in PLC programming
- Maintenance cost lesser than an hydraulic unit
- Energy cost per year lesser than an hydraulic unit

Perfection in press fit operation

Scope of Delivery






Servo Press Module
Strain gauge force sensor embedded in bearing box
Brushless motor without holding brake
Absolute encoder multiturn 24/12 bits EnDat integrated in the brushless motor

Servo Drive
Bosch Rexroth IndraDrive converter
Bosch Rexroth IndraDrive control unit
Software APM-BA installed in the PLC memory
Memory card

Signal Conditioner (force sensor amplifier)
Output ±10V
Zero Adjustemt
Gain

Shilded Cable Set
Force sensor cable 5 mt
Motor power cable ready made 5mt
Motor encoder cable ready made 5mt

APM PC Tool CD-Room
APM PC tool kit for MS Windows compatible from windows7 and later versions
Tool for the press program
Tool for process monitoring program
Force vs Displacement Graph viewer

HMI TFT Display (Optional)
7" 800x480 TFT " LCDLCD , LED Backlight
Color 16M
Ethernet Modbus interface
APM tool installed

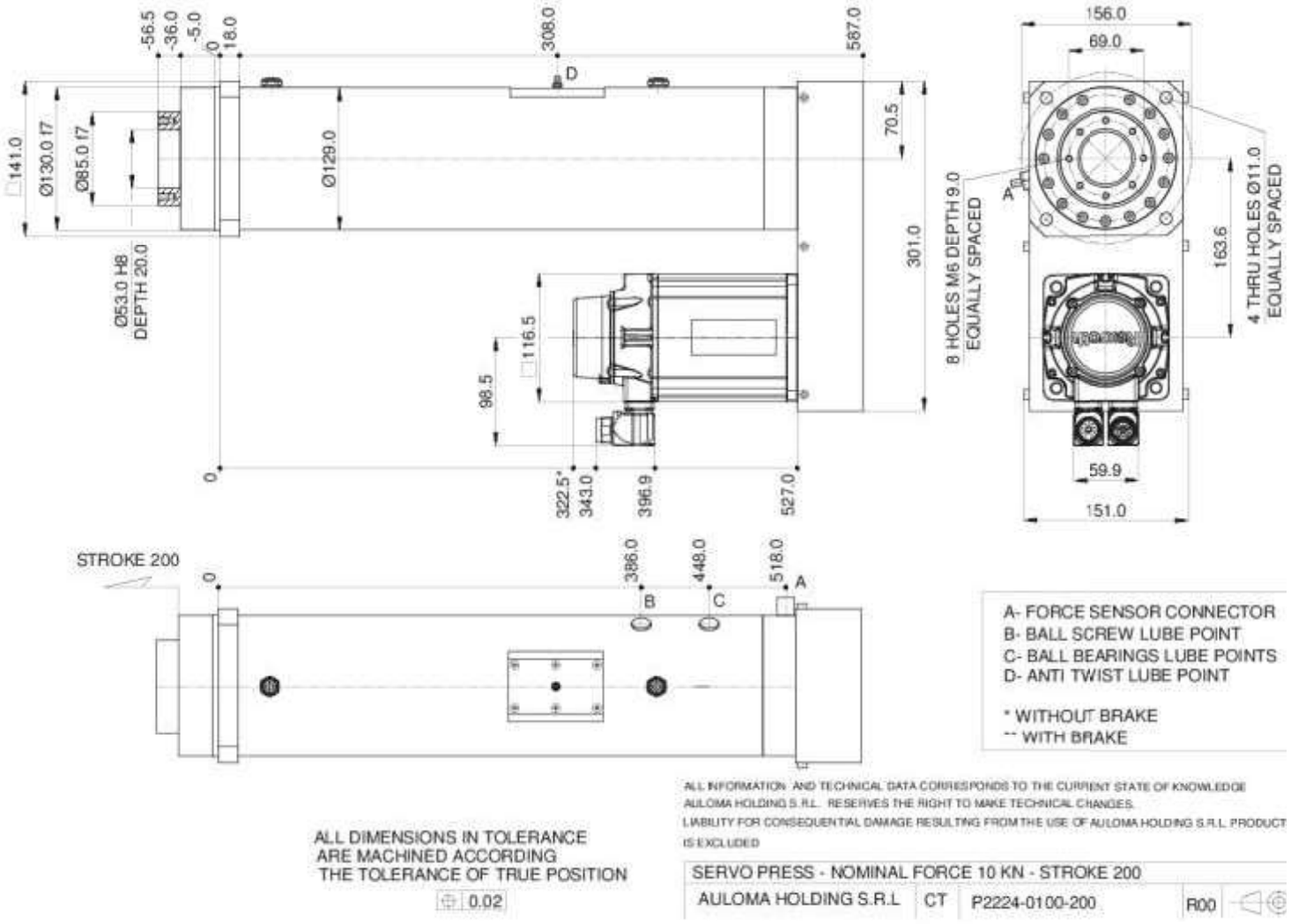
Servo press P2224-0100-200

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	10
Tensile Force		kN	10
Stroke		mm	200
Max Ram Speed		mm/s	260
Max Ram Acceleration		m/s^2	1.3
Dwell Time at Nominal Thrust		s	4
Resolution		µm	2.44
Ram Repeatability	<	mm	0.01
Weight		Kg	53
Admissible Tool Weight		Kg	10
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	10
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	4.5
Peak Output Current	A	11.5
Max output power	Kw	5
Dimensions WxH	mm	65x290
Dimension Depth	mm	252
Weight	Kg	2.9
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



SERVO PRESS - NOMINAL FORCE 10 KN - STROKE 200

AULOMA HOLDING S.R.L | CT | P2224-0100-200 | R00

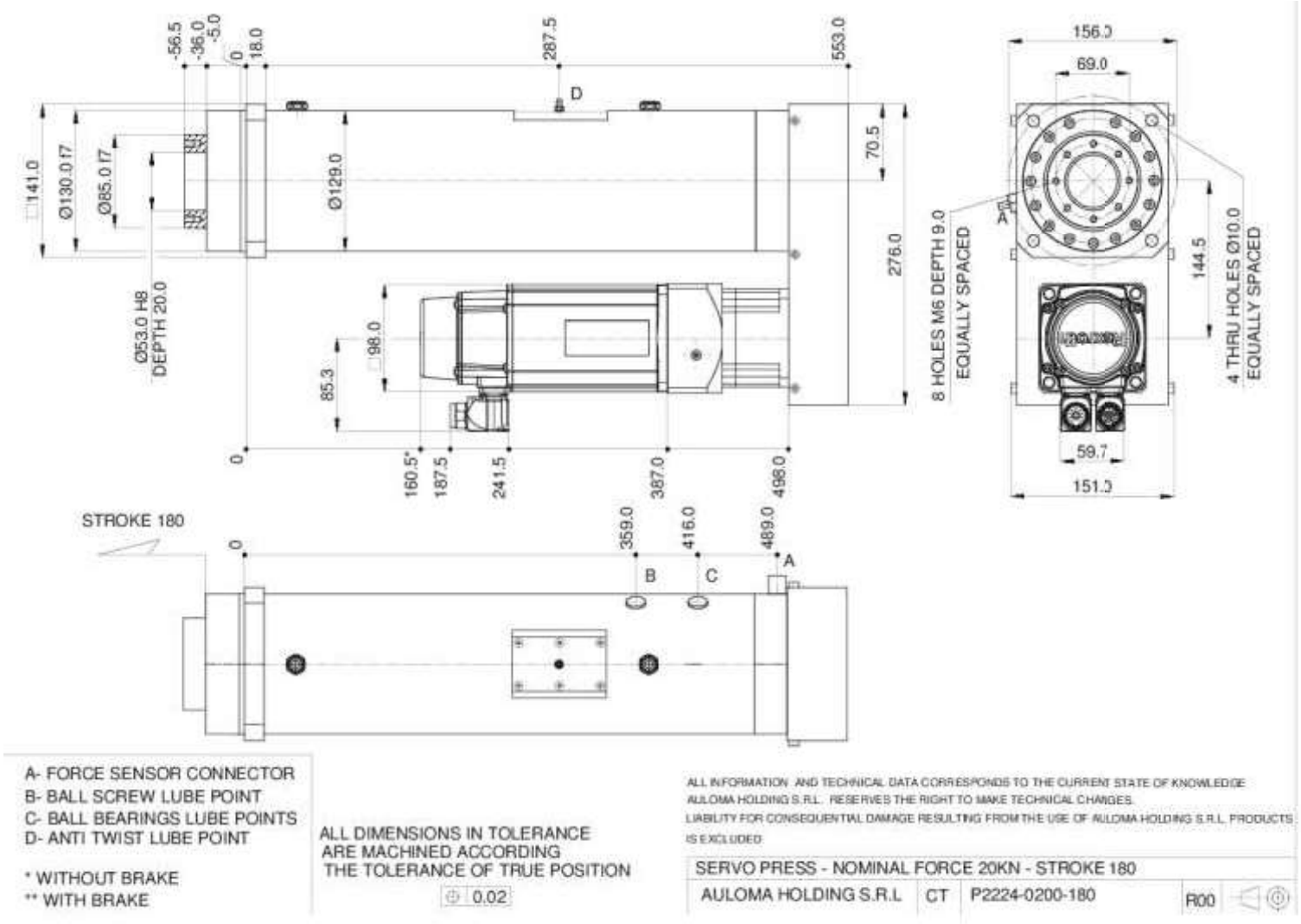
Servo press P2224-0200-180

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	20
Tensile Force		kN	20
Stroke		mm	180
Max Ram Speed		mm/s	177
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	0.98
Ram Repeatability	<	mm	0.01
Weight		Kg	54
Admissible Tool Weight		Kg	10
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	20
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	11.3
Peak Output Current	A	28.3
Max output power	Kw	8
Dimensions WxH	mm	65x352
Dimension Depth	mm	252
Weight	Kg	3.8
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



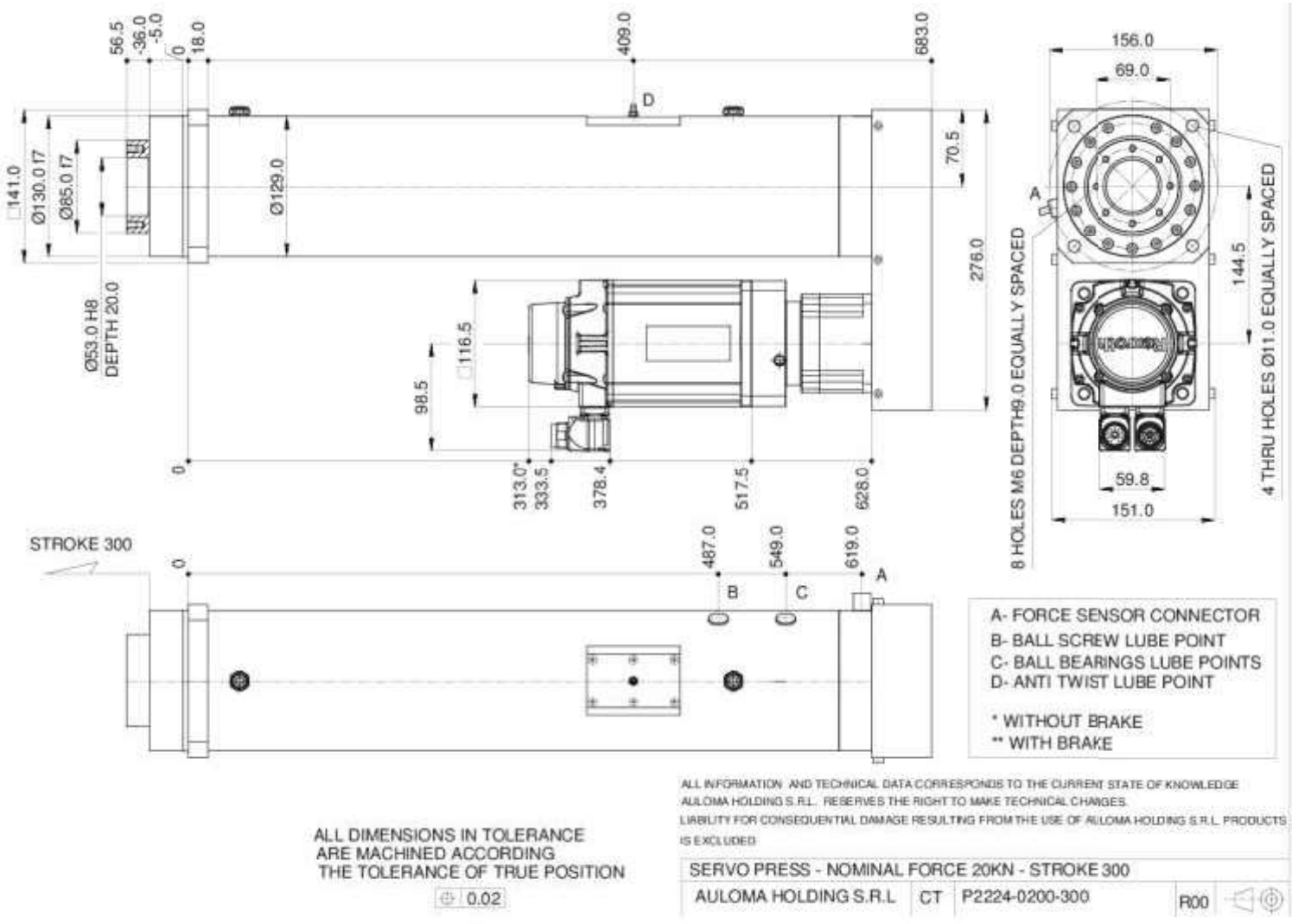
Servo press P2224-0200-300

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	20
Tensile Force		kN	20
Stroke		mm	300
Max Ram Speed		mm/s	222
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.22
Ram Repeatability	<	mm	0.01
Weight		Kg	62
Admissible Tool Weight		Kg	17
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	20
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	11.3
Peak Output Current	A	28.3
Max output power	Kw	8
Dimensions WxH	mm	65x352
Dimension Depth	mm	252
Weight	Kg	3.8
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



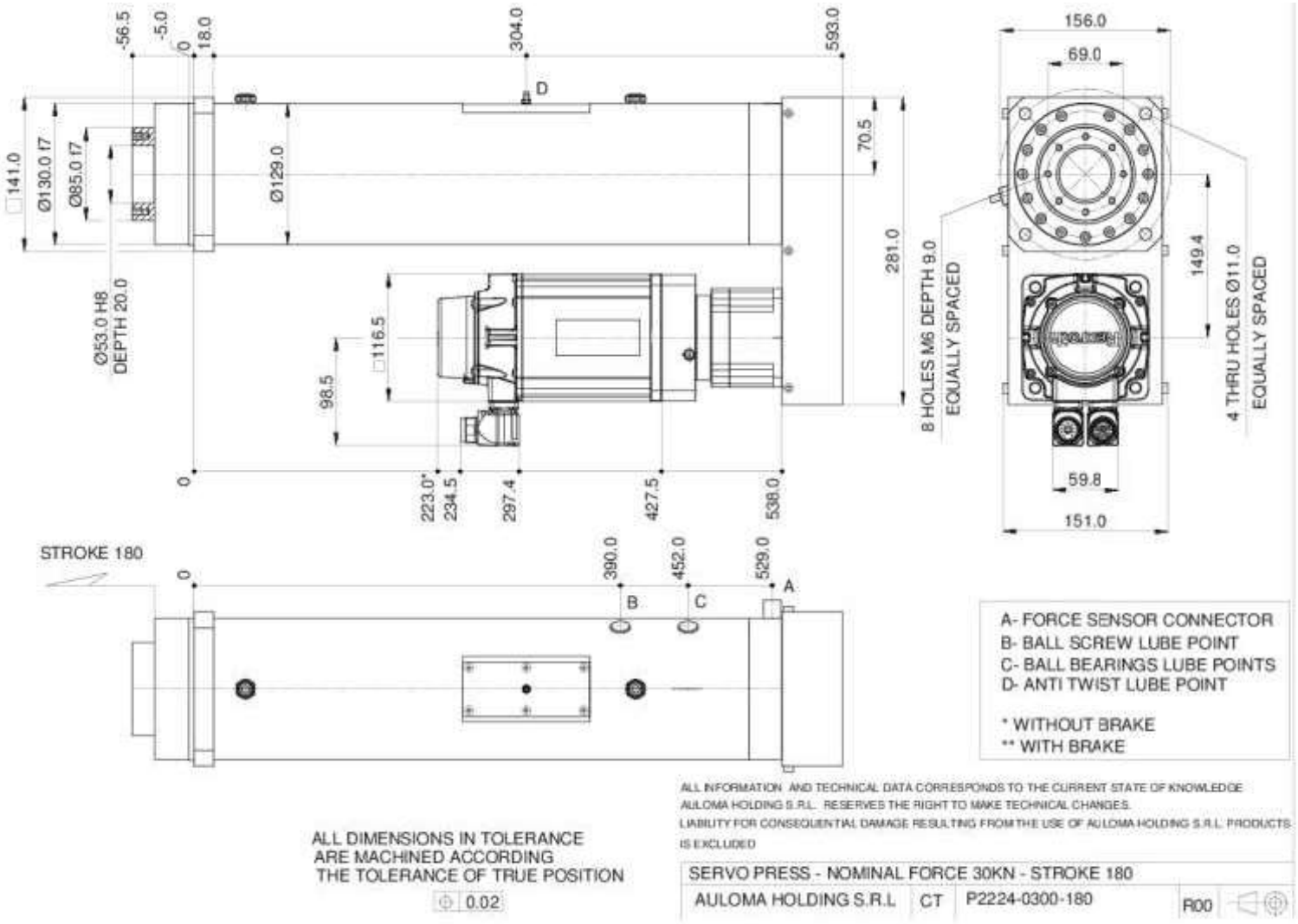
Servo press P2224-0300-180

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	30
Tensile Force		kN	30
Stroke		mm	180
Max Ram Speed		mm/s	142
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	0.84
Ram Repeatability	<	mm	0.01
Weight		Kg	58
Admissible Tool Weight		Kg	20
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	30
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	11.3
Peak Output Current	A	28.3
Max output power	Kw	8
Dimensions WxH	mm	65x352
Dimension Depth	mm	252
Weight	Kg	3.8
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



Perfection in press fit operation

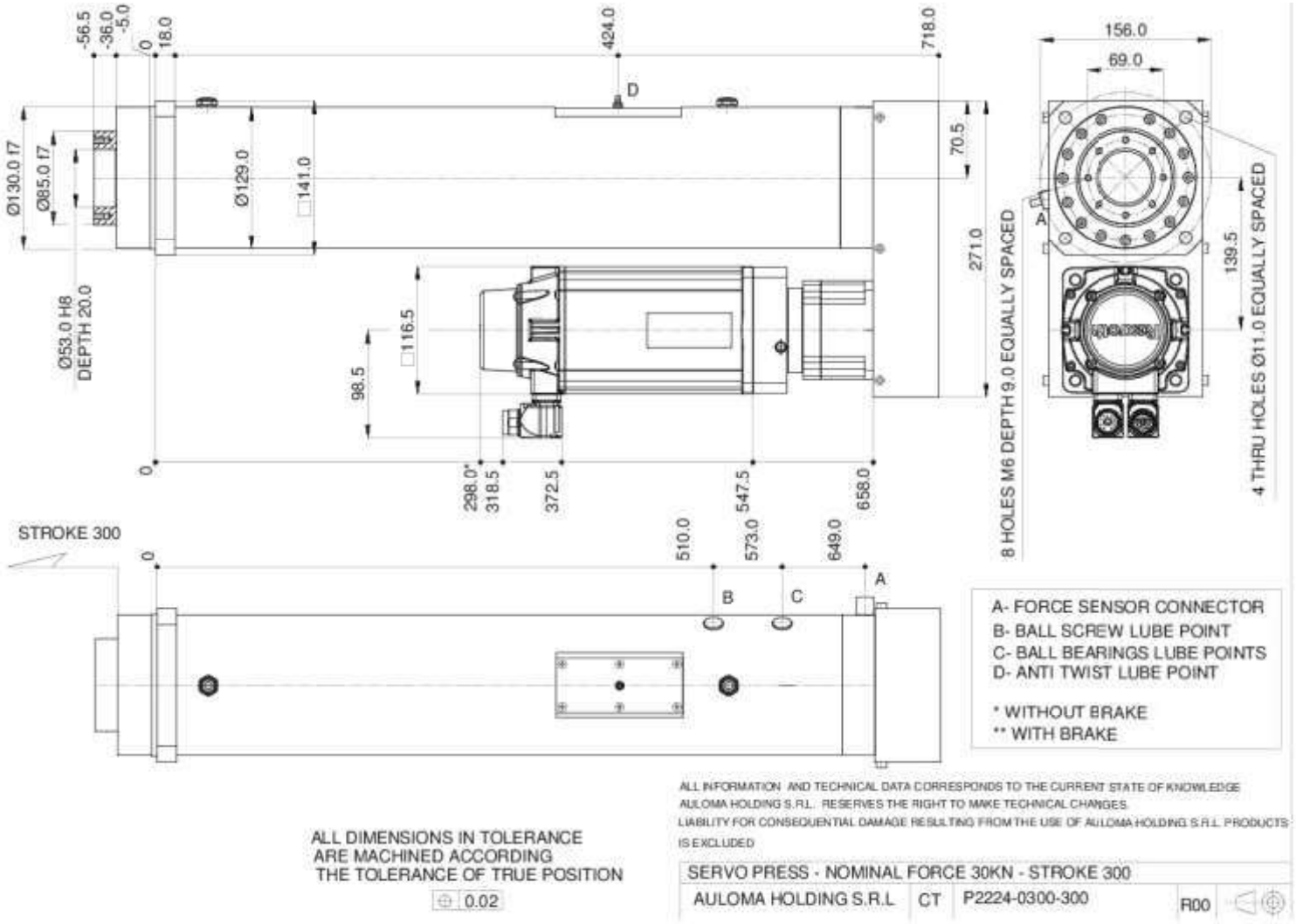
Servo press P2224-0300-300

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	30
Tensile Force		kN	30
Stroke		mm	300
Max Ram Speed		mm/s	217
Max Ram Acceleration		m/s^2	1.4
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.46
Ram Repeatability	<	mm	0.01
Weight		Kg	66
Admissible Tool Weight		Kg	18
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	30
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	11.3
Peak Output Current	A	28.3
Max output power	Kw	8
Dimensions WxH	mm	65x352
Dimension Depth	mm	252
Weight	Kg	3.8
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



Perfection in press fit operation

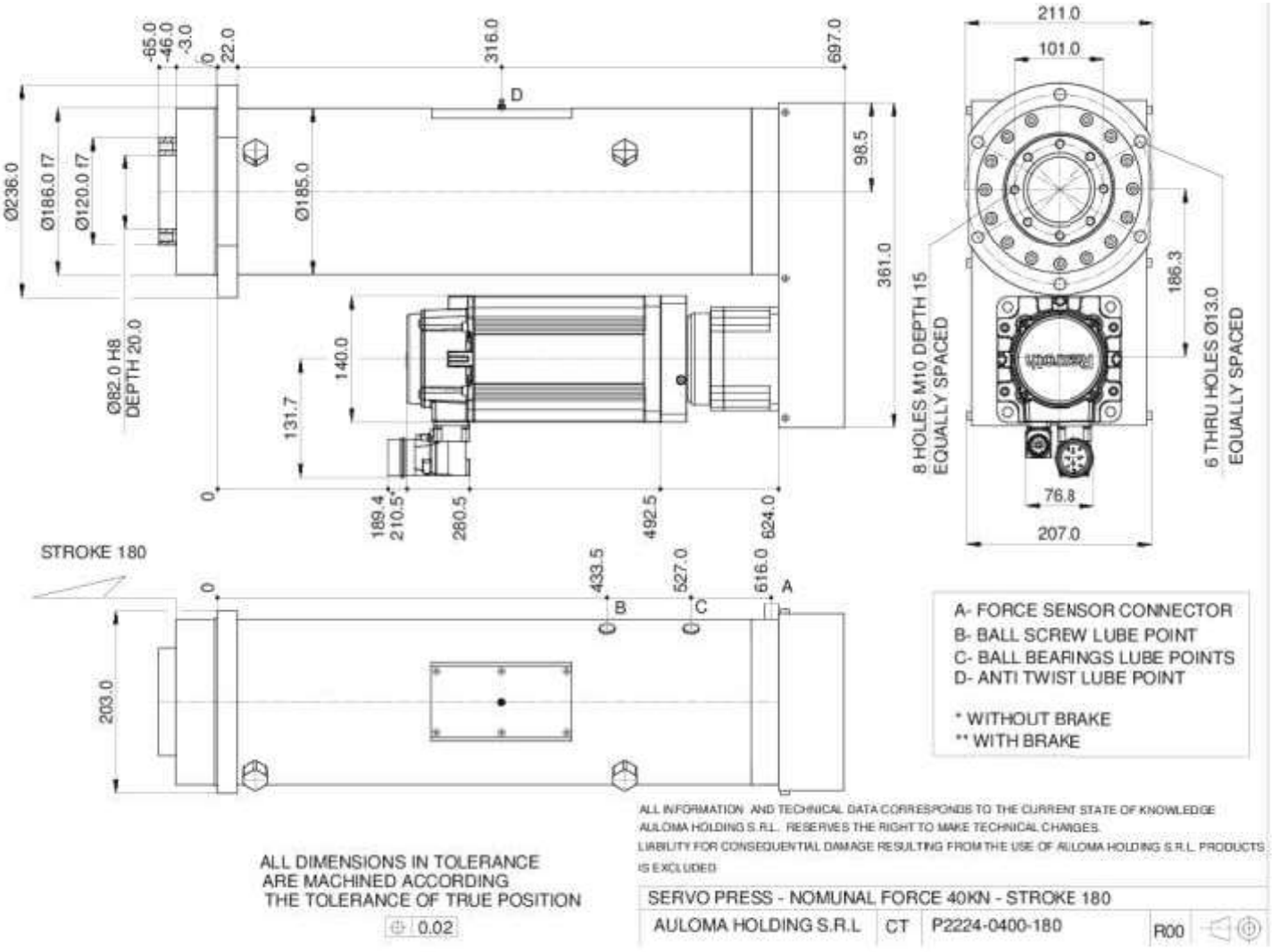
Servo press P2224-0400-180

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	40
Tensile Force		kN	40
Stroke		mm	180
Max Ram Speed		mm/s	152
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.56
Ram Repeatability	<	mm	0.01
Weight		Kg	160
Admissible Tool Weight		Kg	34
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	40
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	20.6
Peak Output Current	A	54
Max output power	Kw	12
Dimensions WxH	mm	105x352
Dimension Depth	mm	252
Weight	Kg	6.7
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



Perfection in press fit operation

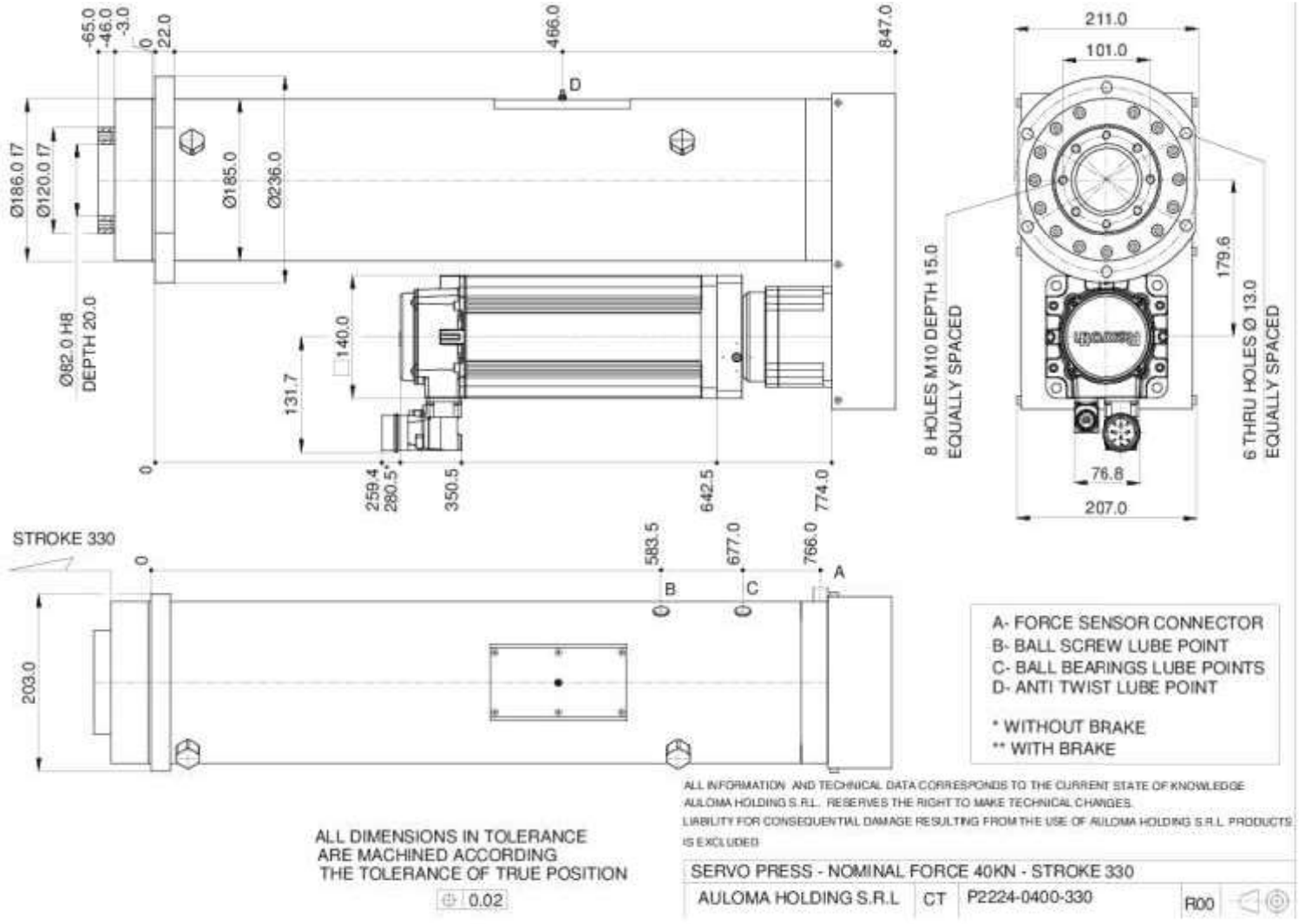
Servo press P2224-0400-330

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	40
Tensile Force		kN	40
Stroke		mm	330
Max Ram Speed		mm/s	254
Max Ram Acceleration		m/s^2	1.6
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.95
Ram Repeatability	<	mm	0.01
Weight		Kg	194
Admissible Tool Weight		Kg	28
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	40
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	20.6
Peak Output Current	A	54
Max output power	Kw	12
Dimensions WxH	mm	105x352
Dimension Depth	mm	252
Weight	Kg	6.7
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



ALL DIMENSIONS IN TOLERANCE
ARE MACHINED ACCORDING
THE TOLERANCE OF TRUE POSITION
⌖ 0.02

SERVO PRESS - NOMINAL FORCE 40KN - STROKE 330

AULOMA HOLDING S.R.L	CT	P2224-0400-330	R00

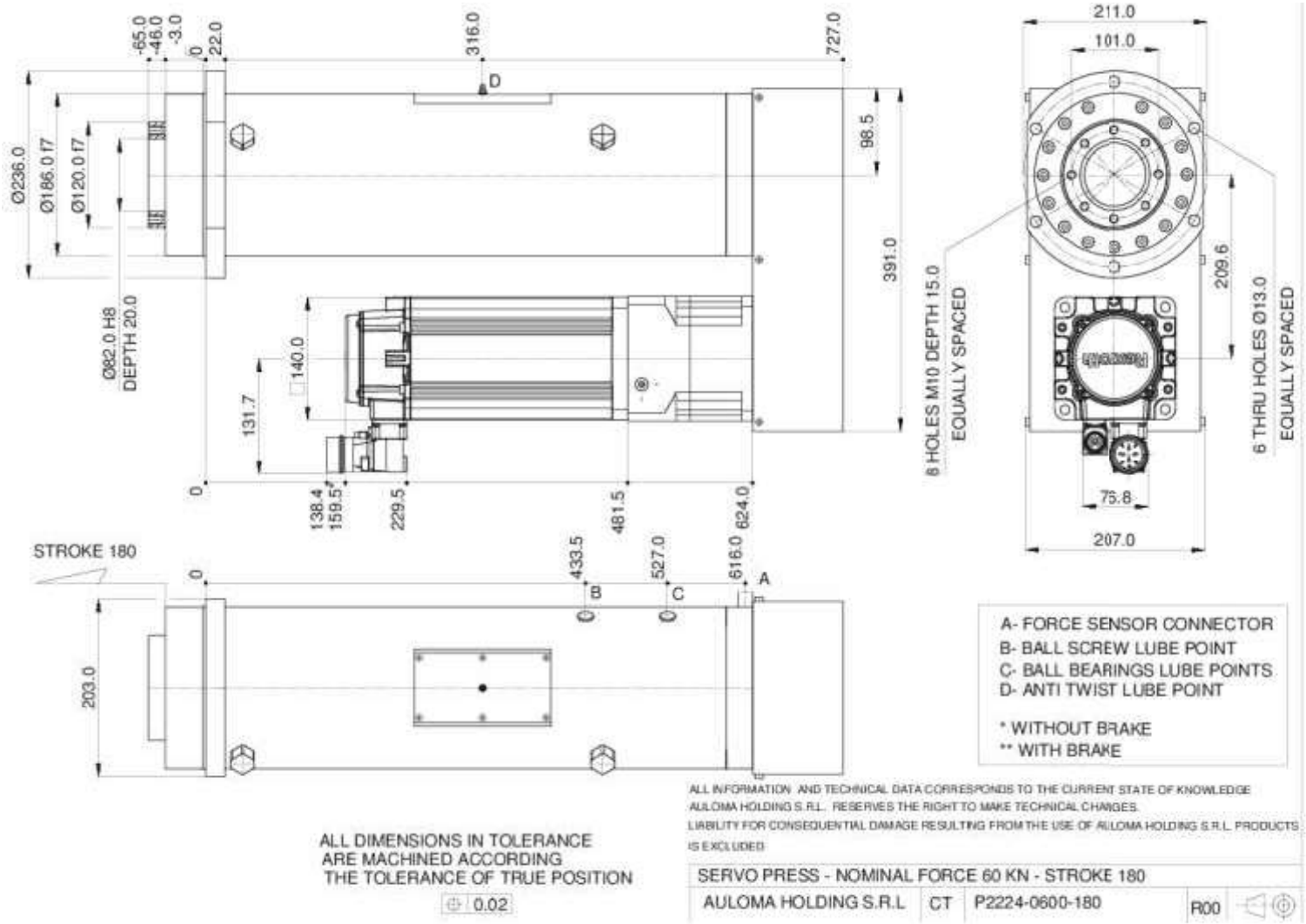
Servo press P2224-0600-180

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	60
Tensile Force		kN	60
Stroke		mm	180
Max Ram Speed		mm/s	118
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.12
Ram Repeatability	<	mm	0.01
Weight		Kg	177
Admissible Tool Weight		Kg	44
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	60
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	20.6
Peak Output Current	A	54
Max output power	Kw	12
Dimensions WxH	mm	105x352
Dimension Depth	mm	252
Weight	Kg	6.7
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



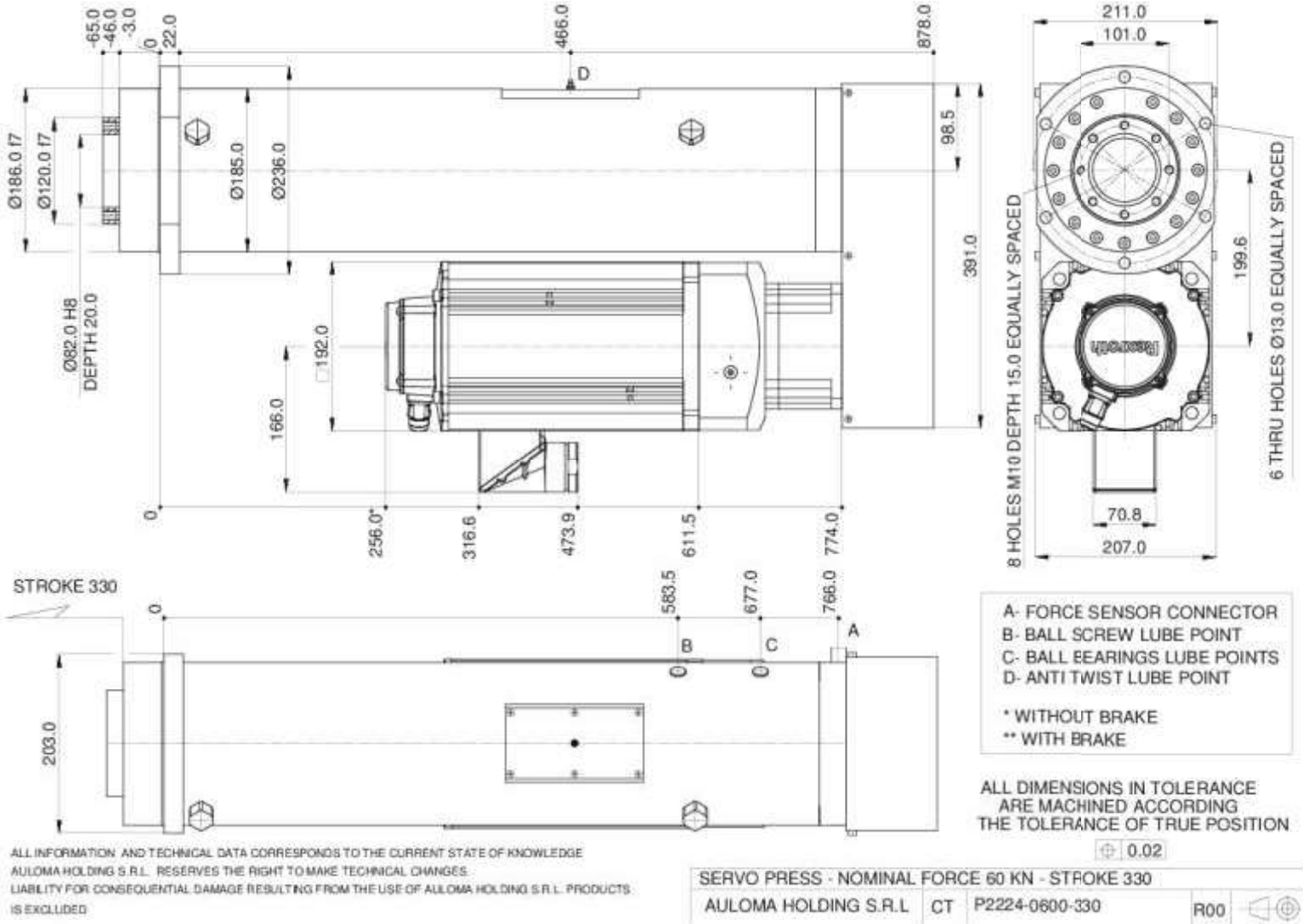
Servo press P2224-0600-330

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	60
Tensile Force		kN	60
Stroke		mm	330
Max Ram Speed		mm/s	260
Max Ram Acceleration		m/s^2	1.7
Dwell Time at Nominal Thrust		s	4
Resolution		µm	2.60
Ram Repeatability	<	mm	0.01
Weight		Kg	210
Admissible Tool Weight		Kg	59
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	60
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	45
Peak Output Current	A	70
Max output power	Kw	20
Dimensions WxH	mm	125x440
Dimension Depth	mm	309
Weight	Kg	13
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



A- FORCE SENSOR CONNECTOR
B- BALL SCREW LUBE POINT
C- BALL BEARINGS LUBE POINTS
D- ANTI TWIST LUBE POINT

* WITHOUT BRAKE
** WITH BRAKE

ALL DIMENSIONS IN TOLERANCE ARE MACHINED ACCORDING THE TOLERANCE OF TRUE POSITION

⌖ 0.02

SERVO PRESS - NOMINAL FORCE 60 KN - STROKE 330

AULOMA HOLDING S.R.L	CT	P2224-0600-330	R00

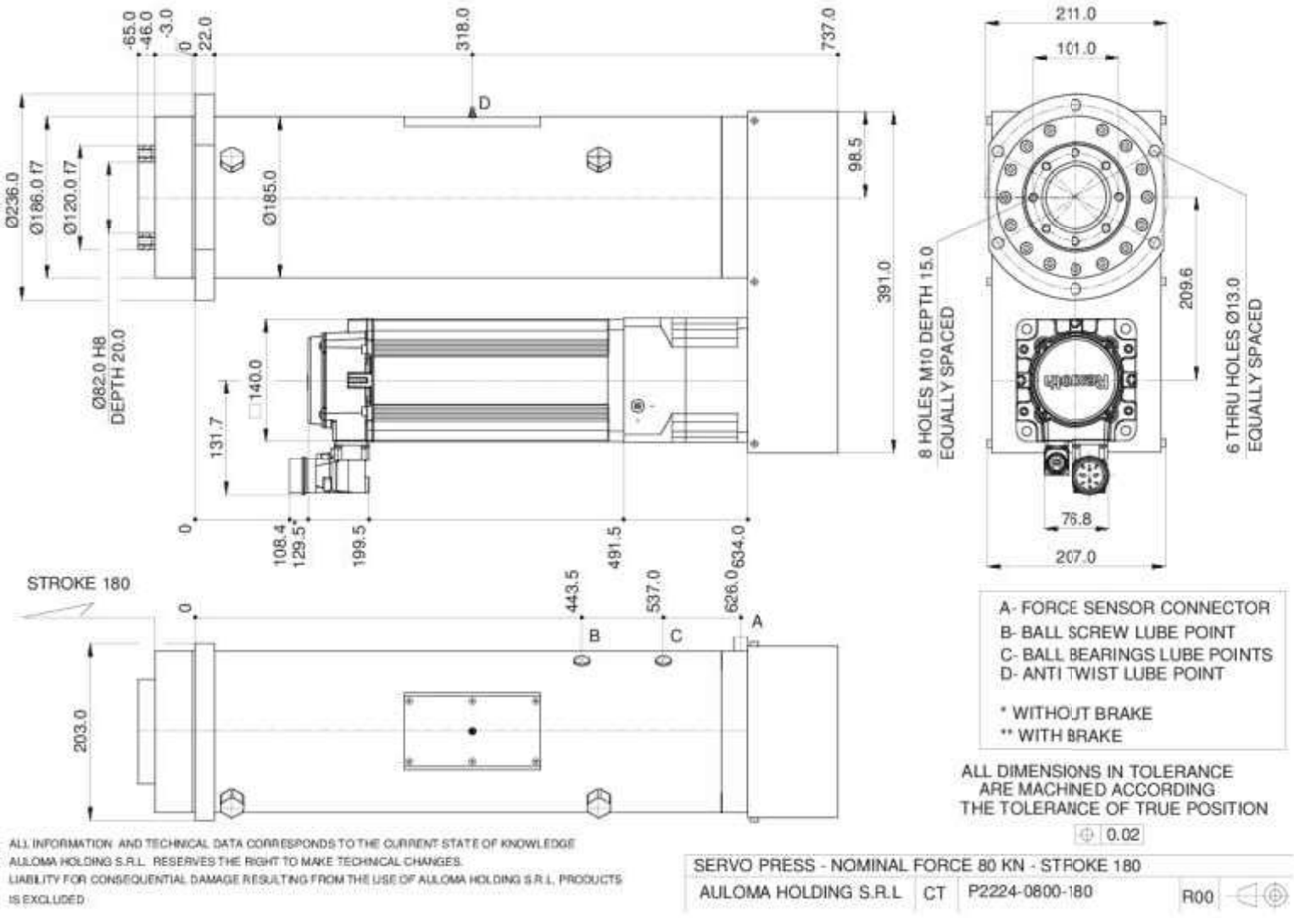
Servo press P2224-0800-180

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	80
Tensile Force		kN	80
Stroke		mm	180
Max Ram Speed		mm/s	162
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.22
Ram Repeatability	<	mm	0.01
Weight		Kg	184
Admissible Tool Weight		Kg	86
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	80
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	20.6
Peak Output Current	A	54
Max output power	Kw	12
Dimensions WxH	mm	105x352
Dimension Depth	mm	252
Weight	Kg	6.7
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



SERVO PRESS - NOMINAL FORCE 80 KN - STROKE 180

AULOMA HOLDING S.R.L	CT	P2224-0800-180	R00

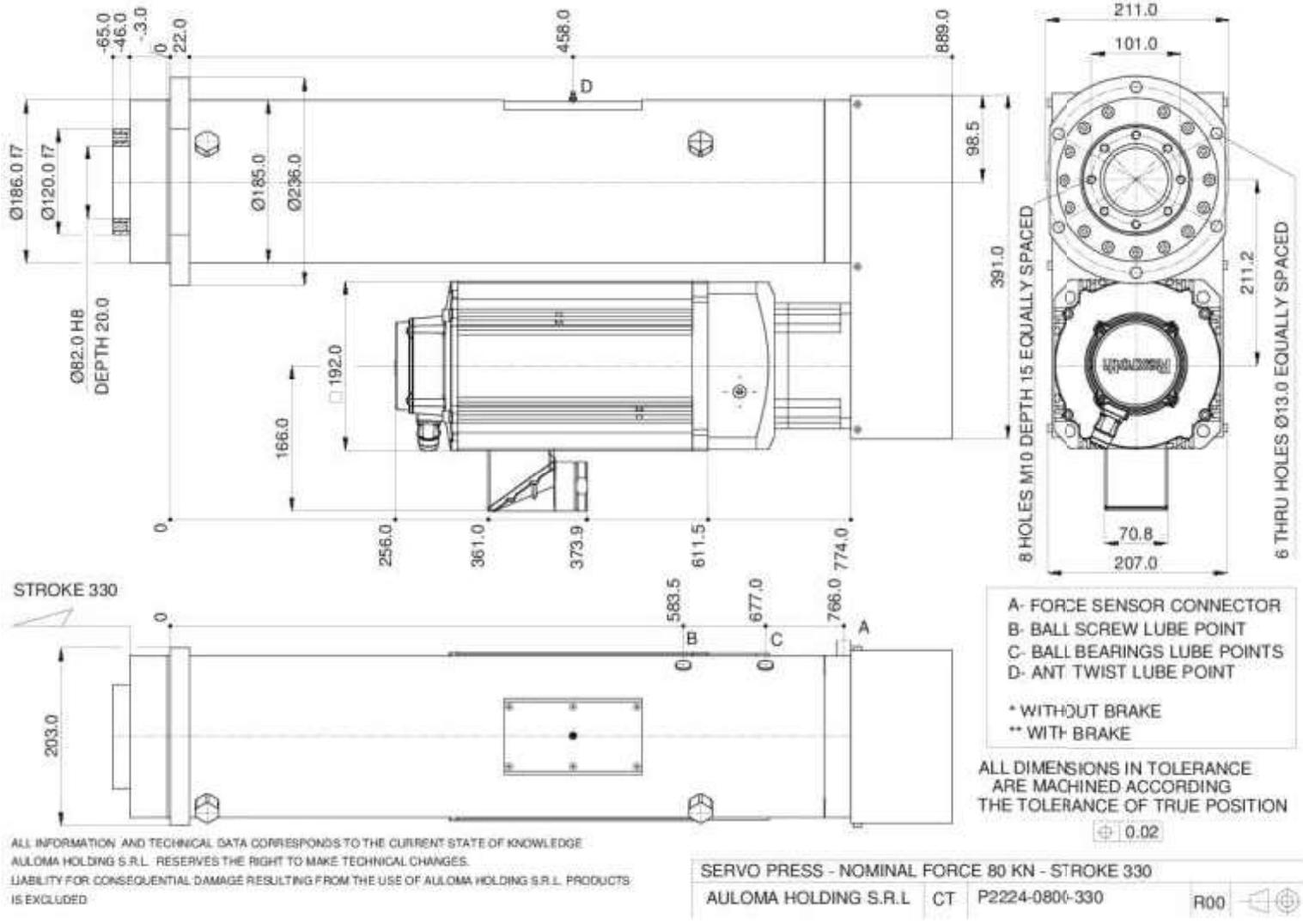
Servo press P2224-0800-330

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	80
Tensile Force		kN	80
Stroke		mm	330
Max Ram Speed		mm/s	200
Max Ram Acceleration		m/s^2	1.3
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.95
Ram Repeatability	<	mm	0.01
Weight		Kg	210
Admissible Tool Weight		Kg	81
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	80
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	45
Peak Output Current	A	70
Max output power	Kw	20
Dimensions WxH	mm	125x440
Dimension Depth	mm	309
Weight	Kg	13
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



SERVO PRESS - NOMINAL FORCE 80 KN - STROKE 330

AULOMA HOLDING S.R.L	CT	P2224-0800-330	R00

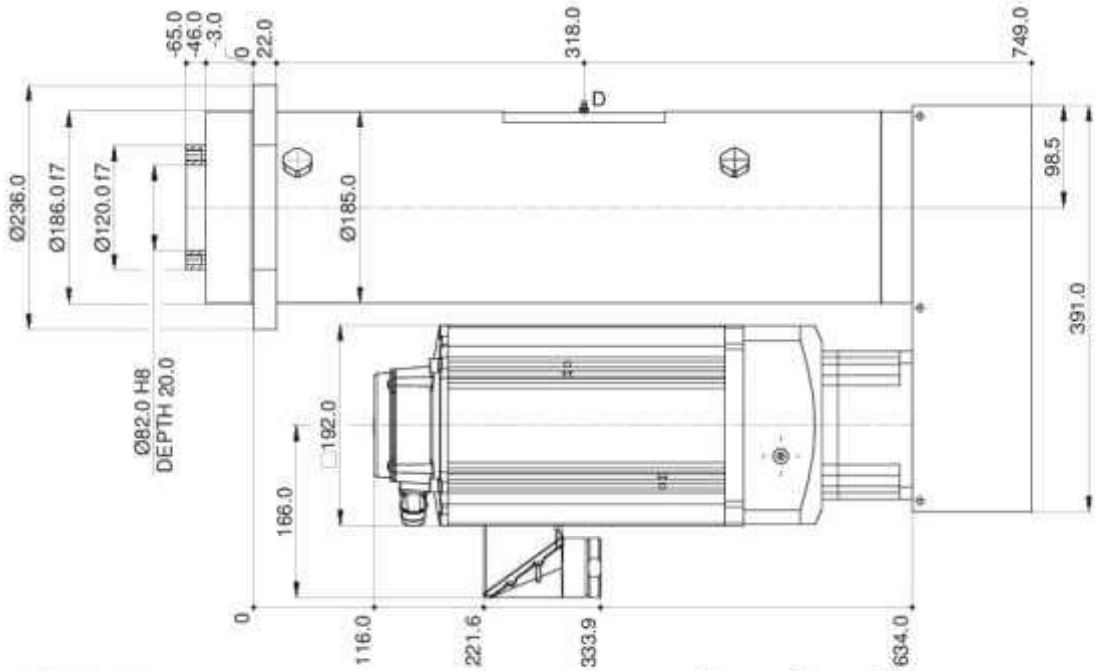
Servo press P2224-1000-180

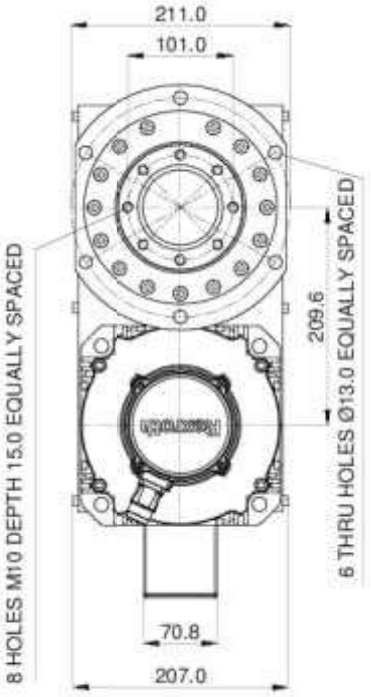
Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	100
Tensile Force		kN	90
Stroke		mm	180
Max Ram Speed		mm/s	125
Max Ram Acceleration		m/s^2	0.8
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.22
Ram Repeatability	<	mm	0.01
Weight		Kg	189
Admissible Tool Weight		Kg	87
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	100
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	45
Peak Output Current	A	70
Max output power	Kw	20
Dimensions WxH	mm	125x440
Dimension Depth	mm	309
Weight	Kg	13
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		





A- FORCE SENSOR CONNECTOR
B- BALL SCREW LUBE POINT
C- BALL BEARINGS LUBE POINTS
D- ANTI TWIST LUBE POINT

* WITHOUT BRAKE
** WITH BRAKE

ALL DIMENSIONS IN TOLERANCE ARE MACHINED ACCORDING THE TOLERANCE OF TRUE POSITION

⌖ 0.02

SERVO PRESS - NOMINAL FORCE 100 KN - STROKE 180

AULOMA HOLDING S.R.L	CT	P2224-1000-180	R00

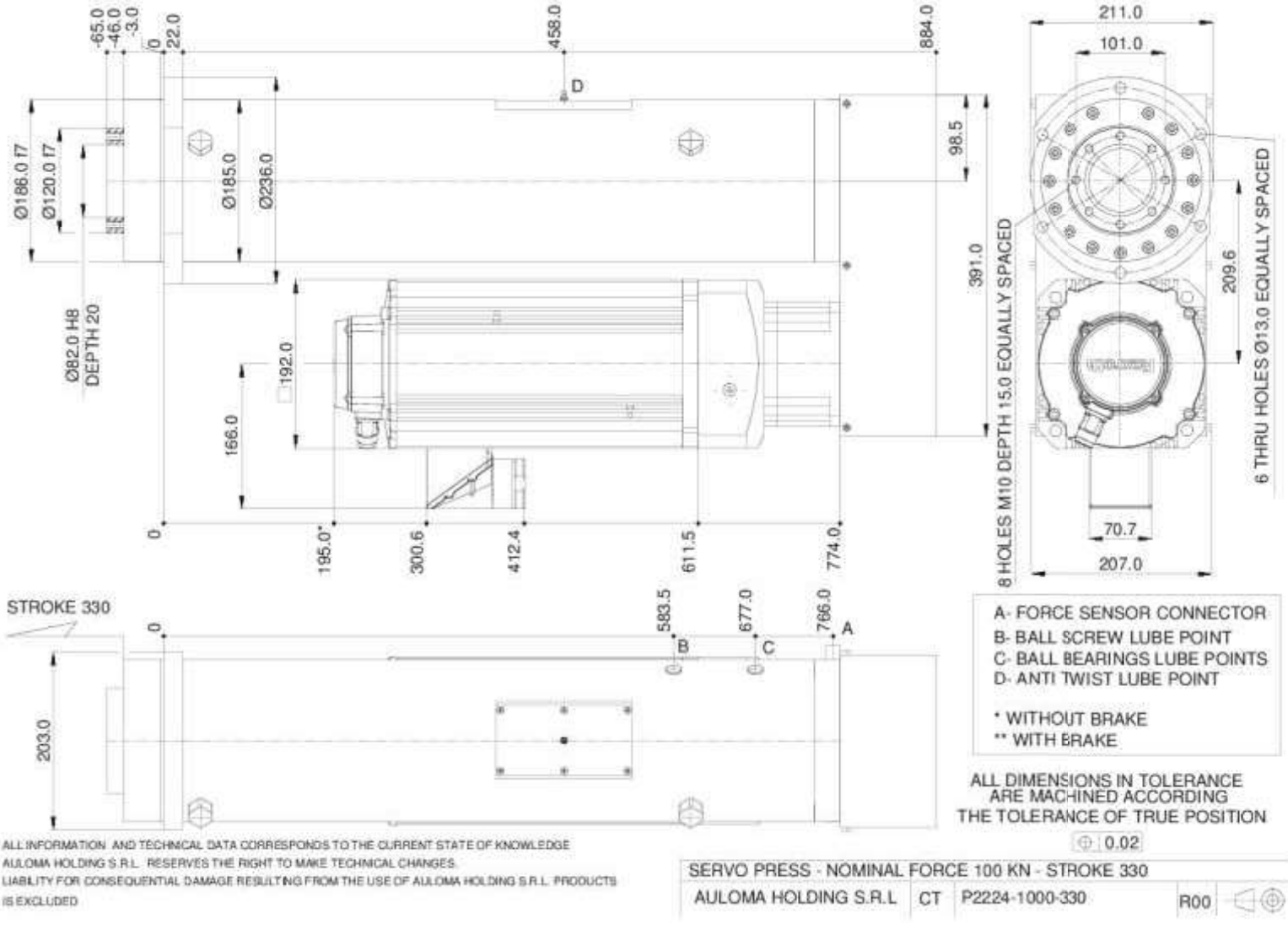
Servo press P2224-1000-330

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	100
Tensile Force		kN	90
Stroke		mm	330
Max Ram Speed		mm/s	204
Max Ram Acceleration		m/s^2	1.3
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.95
Ram Repeatability	<	mm	0.01
Weight		Kg	223
Admissible Tool Weight		Kg	81
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	100
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	73
Peak Output Current	A	100
Max output power	Kw	33
Dimensions WxH	mm	225x440
Dimension Depth	mm	309
Weight	Kg	20
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



SERVO PRESS - NOMINAL FORCE 100 KN - STROKE 330

AULOMA HOLDING S.R.L	CT	P2224-1000-330	R00

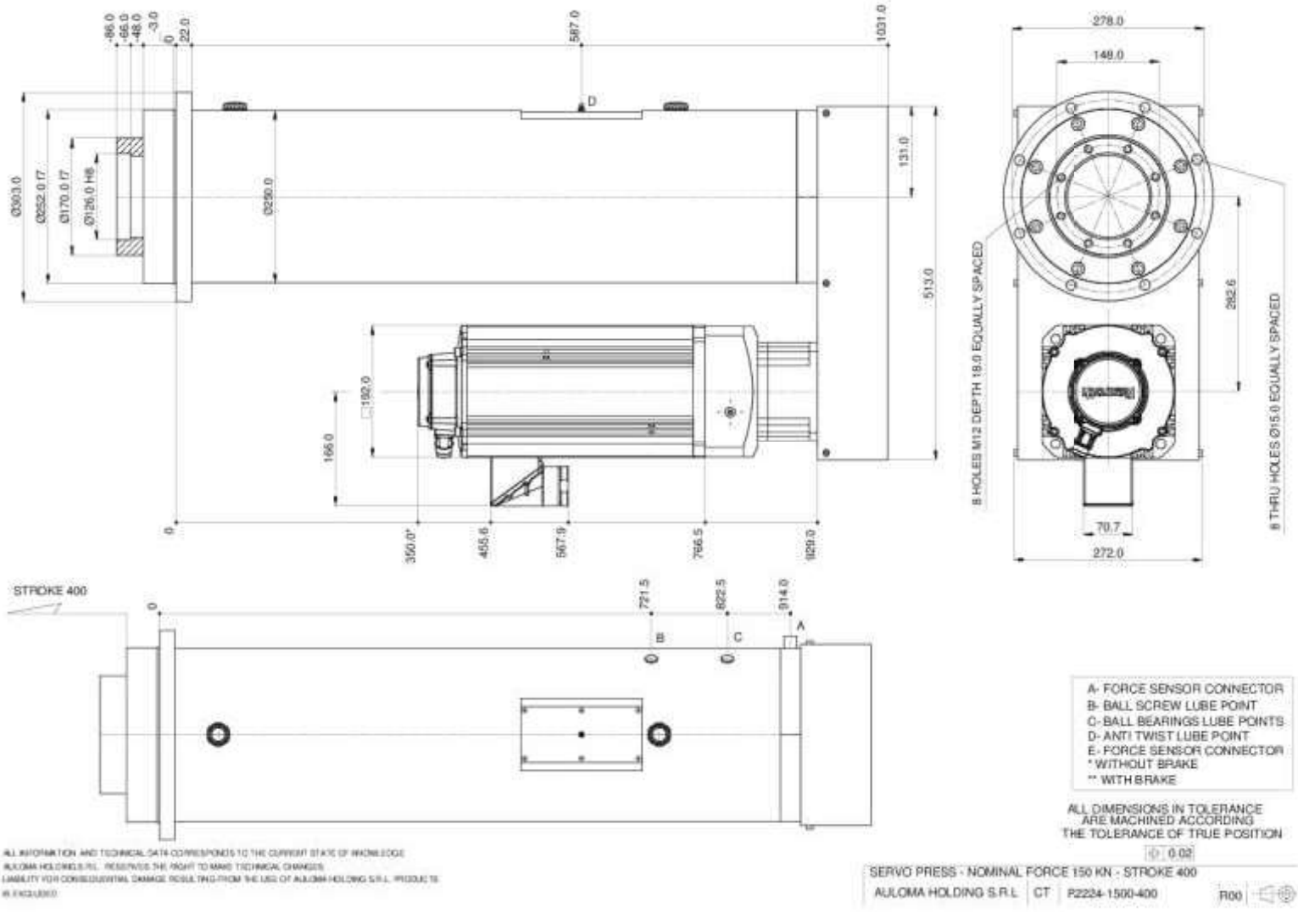
Servo press P2224-1500-400

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	150
Tensile Force		kN	150
Stroke		mm	400
Max Ram Speed		mm/s	154
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.95
Ram Repeatability	<	mm	0.01
Weight		Kg	390
Admissible Tool Weight		Kg	134
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	150
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	73
Peak Output Current	A	100
Max output power	Kw	33
Dimensions WxH	mm	225x440
Dimension Depth	mm	309
Weight	Kg	20
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



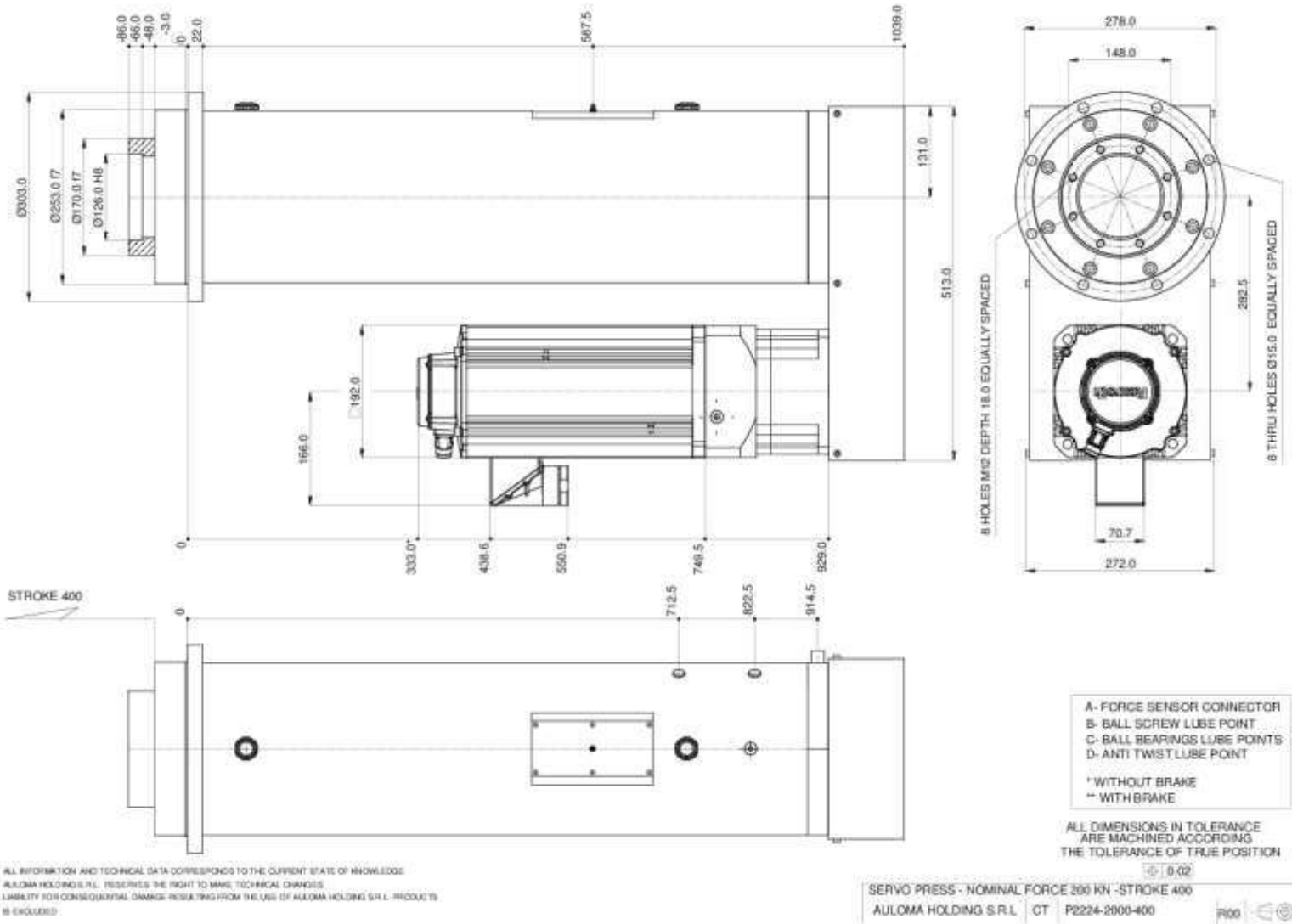
Servo press P2224-2000-400

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	200
Tensile Force		kN	200
Stroke		mm	400
Max Ram Speed		mm/s	110
Max Ram Acceleration		m/s^2	0.7
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.40
Ram Repeatability	<	mm	0.01
Weight		Kg	406
Admissible Tool Weight		Kg	134
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	200
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	73
Peak Output Current	A	100
Max output power	Kw	33
Dimensions WxH	mm	225x440
Dimension Depth	mm	309
Weight	Kg	20
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



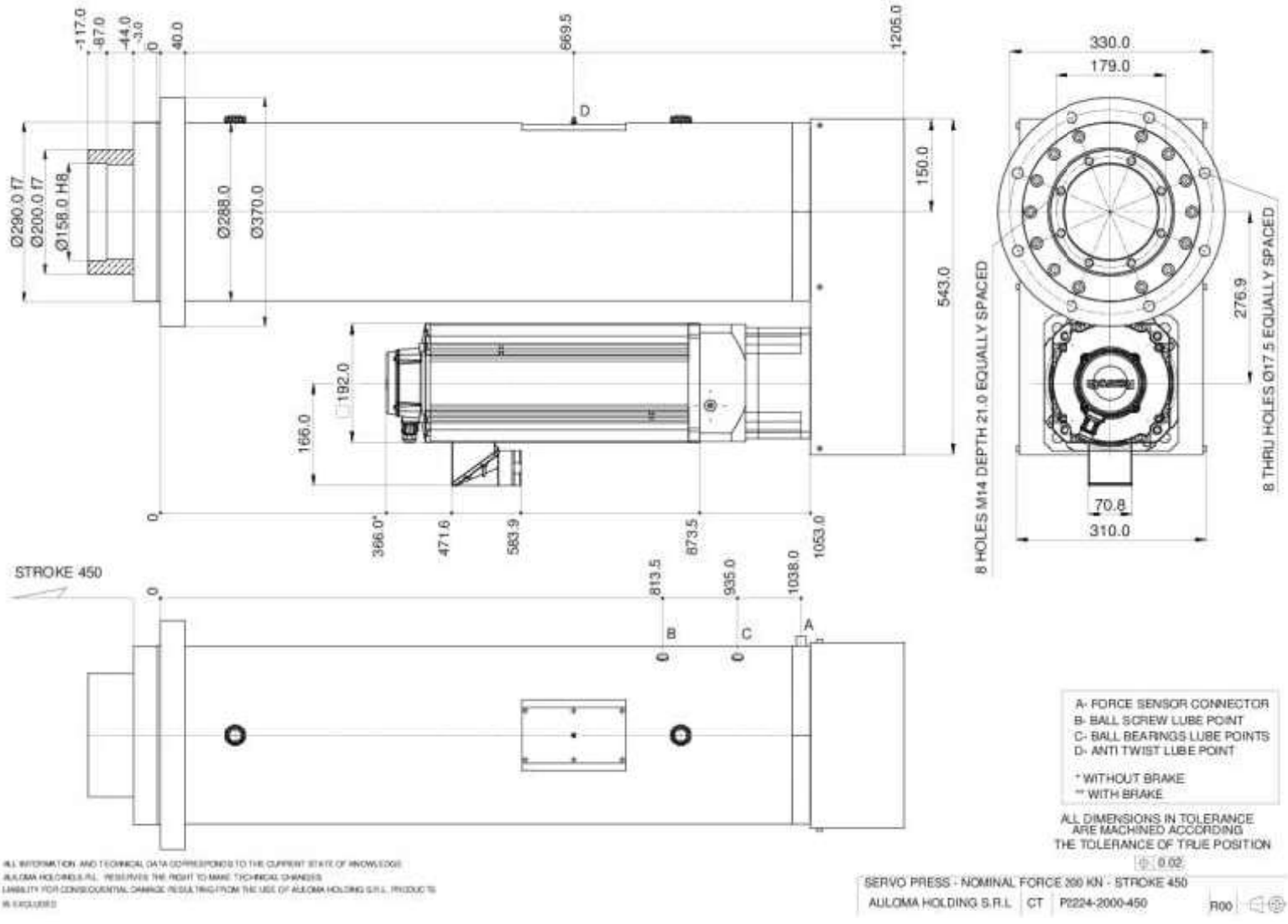
Servo press P2224-2000-450

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	200
Tensile Force		kN	200
Stroke		mm	450
Max Ram Speed		mm/s	155
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.40
Ram Repeatability	<	mm	0.01
Weight		Kg	642
Admissible Tool Weight		Kg	254
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	200
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	95
Peak Output Current	A	150
Max output power	Kw	54
Dimensions WxH	mm	225x440
Dimension Depth	mm	309
Weight	Kg	20
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



A- FORCE SENSOR CONNECTOR
B- BALL SCREW LUBE POINT
C- BALL BEARINGS LUBE POINTS
D- ANTI TWIST LUBE POINT

* WITHOUT BRAKE
** WITH BRAKE

ALL DIMENSIONS IN TOLERANCE ARE MACHINED ACCORDING THE TOLERANCE OF TRUE POSITION

⌖ 0.02

SERVO PRESS - NOMINAL FORCE 200 KN - STROKE 450

AULOMA HOLDING S.R.L. | CT | P2224-2000-450 | R00

Perfection in press fit operation

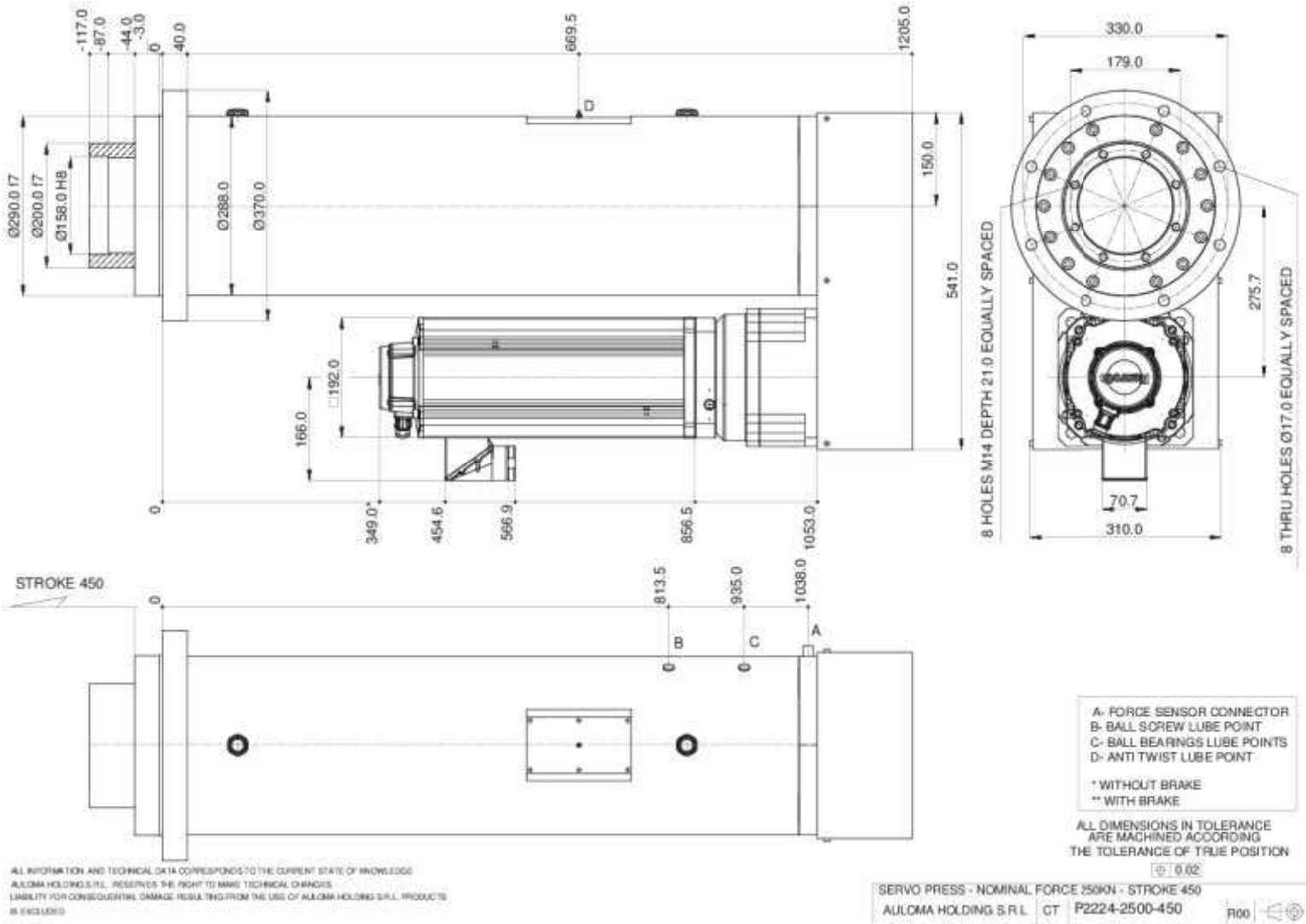
Servo press P2224-2500-450

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	250
Tensile Force		kN	250
Stroke		mm	450
Max Ram Speed		mm/s	121
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	1.22
Ram Repeatability	<	mm	0.01
Weight		Kg	680
Admissible Tool Weight		Kg	254
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	250
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	95
Peak Output Current	A	150
Max output power	Kw	54
Dimensions WxH	mm	225x440
Dimension Depth	mm	309
Weight	Kg	20
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



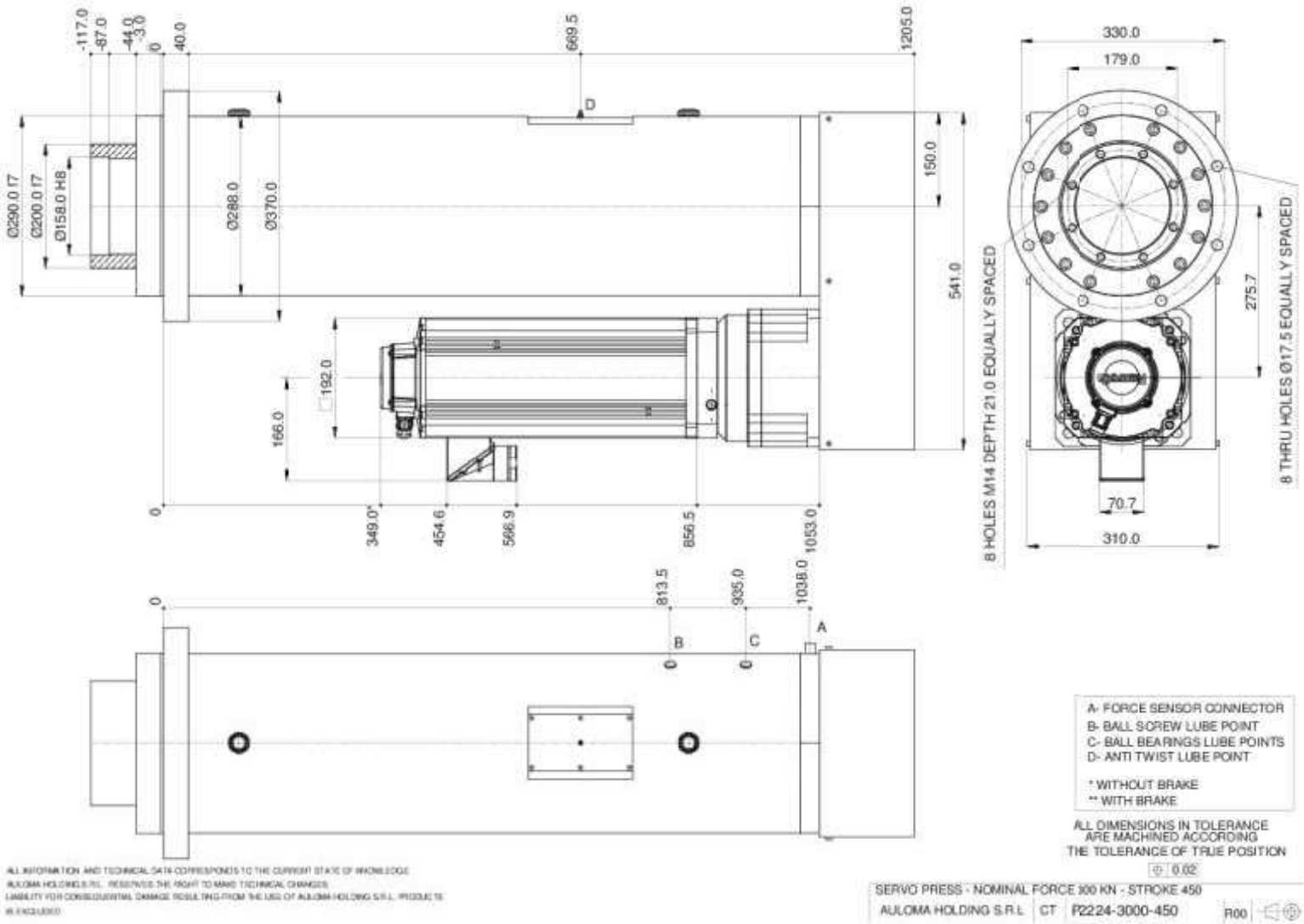
Servo press P2224-3000-450

Technical data and drawings

FOCUS

Servo Press Module			
Compresive Force		kN	300
Tensile Force		kN	300
Stroke		mm	450
Max Ram Speed		mm/s	96
Max Ram Acceleration		m/s^2	1
Dwell Time at Nominal Thrust		s	4
Resolution		µm	0.98
Ram Repeatability	<	mm	0.01
Weight		Kg	680
Admissible Tool Weight		Kg	254
Operating Temperature range		C°	-30+80
Protection Class		IP	54
Force Mesuring			
Force Sensor Capacity	±	kN	300
Output Signal	±	VDC	10
Force Measure Accuracy	<±	%FS	0.3
Supply Voltage Range (Amplifier)		VDC	24

Servo Drive Powe Unit		
Minimum Input Voltage 3Ø	Vac	200
Maximum Input Voltage 3Ø	Vac	500
Nominal Output Current	A	95
Peak Output Current	A	150
Max output power	Kw	54
Dimensions WxH	mm	225x440
Dimension Depth	mm	309
Weight	Kg	20
Protection Class	IP	20
Servo Drive Control Unit		
Dimensions WxH	mm	49.5x241
Dimension Depth	mm	103
NO.2 Multi Ethernet Interface Free		



How to Order

P2224	-	XXXX	-	XXX	-	X	X	0	X

Force Capacity

10 kN = 0100
20 kN = 0200
30 kN = 0300
40 kN = 0400
60 kN = 0600
80 kN = 0800
100 kN = 1000
150 kN = 1500
200 kN = 2000
250 kN = 2500
300 kN = 3000

Standard Stroke

180 mm = 180
200 mm = 200
300 mm = 300
330 mm = 330 ***
400 mm = 400 **
450 mm = 450 *

Communication Protocol

Digital I/O = 0
Profibus = 1
Profinet = 2
Ethercat = 3
Modbus = 6
Sercos = 7

Ball Screw Accuracy

IT1 = 1
IT3 = 3

Brake

Without = 0
With = 1

*** stroke not available for press below 40 kN
** stroke not available for press below 100kN
* stroke not availble for press below 200kN
Optional strokes available: all values between 100 to 450 mm with a step o 50mm
but not over the admissible maximum value (see: *,**,***)

Our clients

FOCUS

Some of our Valued customers

BAJAJ

TVS

KALYANI BHARAT FORGE

NOKIA

ENDURANCE Complete Solutions

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Divgi-TTS

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