



Fagor Automation S. Coop.

Manual code: 14460160

Manual version 1512



ENCODER HAP-D90

MANUAL DE INSTALACIÓN *INSTALLATION MANUAL*

FAGOR AUTOMATION S. COOP.

B^a San Andrés N° 19

Apdo de correos 144

20500 Arrasate/Mondragón

- Spain -

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Email: info@fagorautomation.es

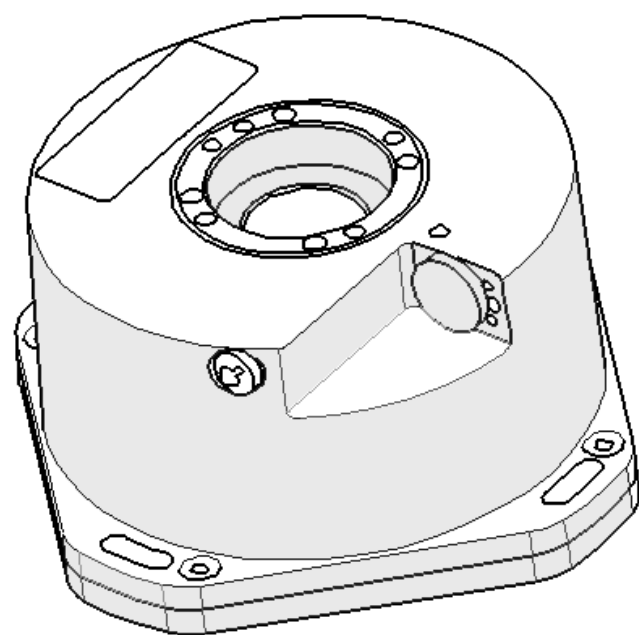
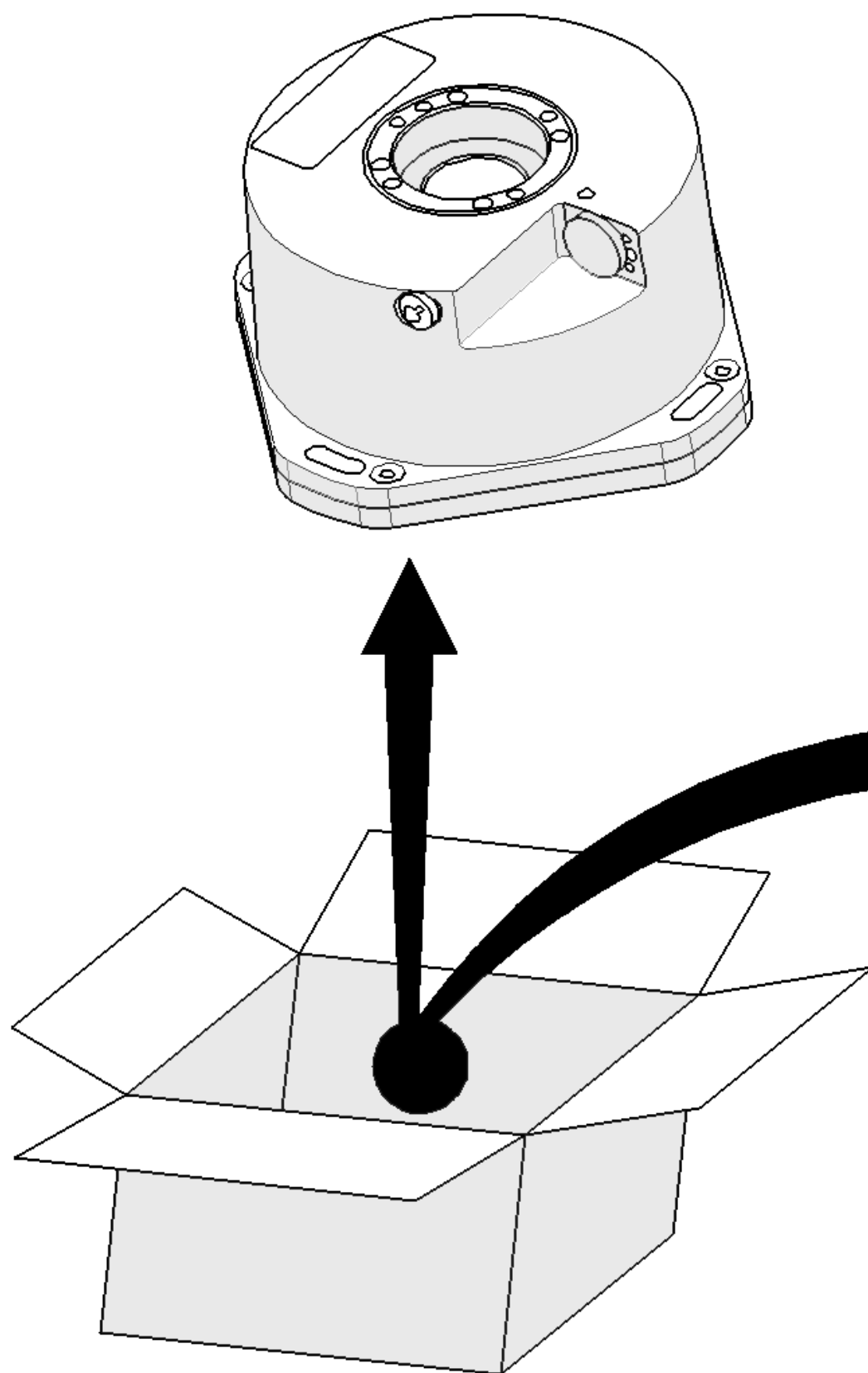
Tel.: (34) 943 719200

Fax: (34) 943 791712

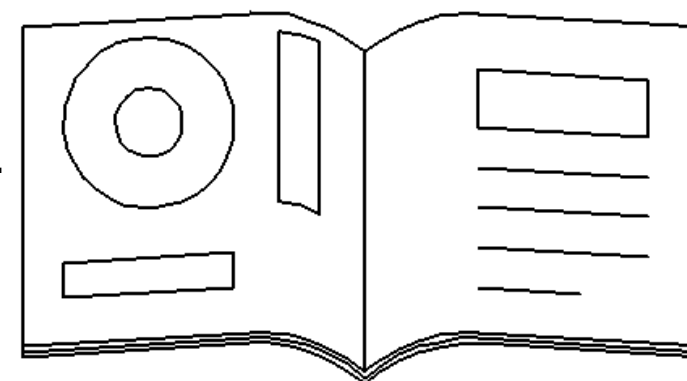


Fagor Automation S. Coop.

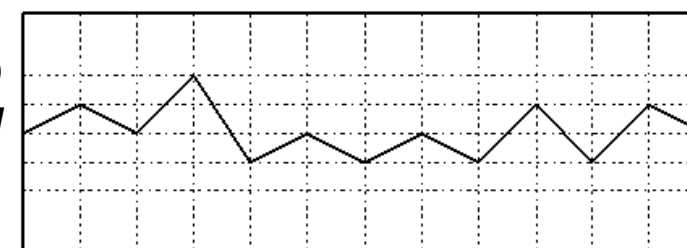




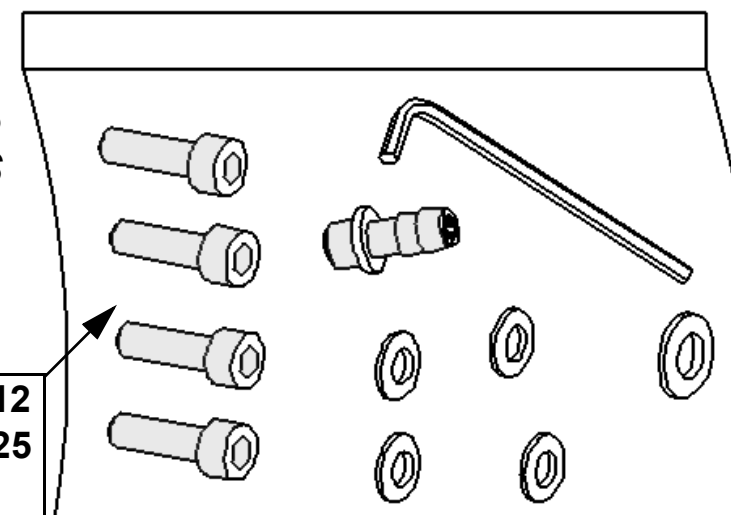
MANUAL



**GRÁFICO
GRAPH**



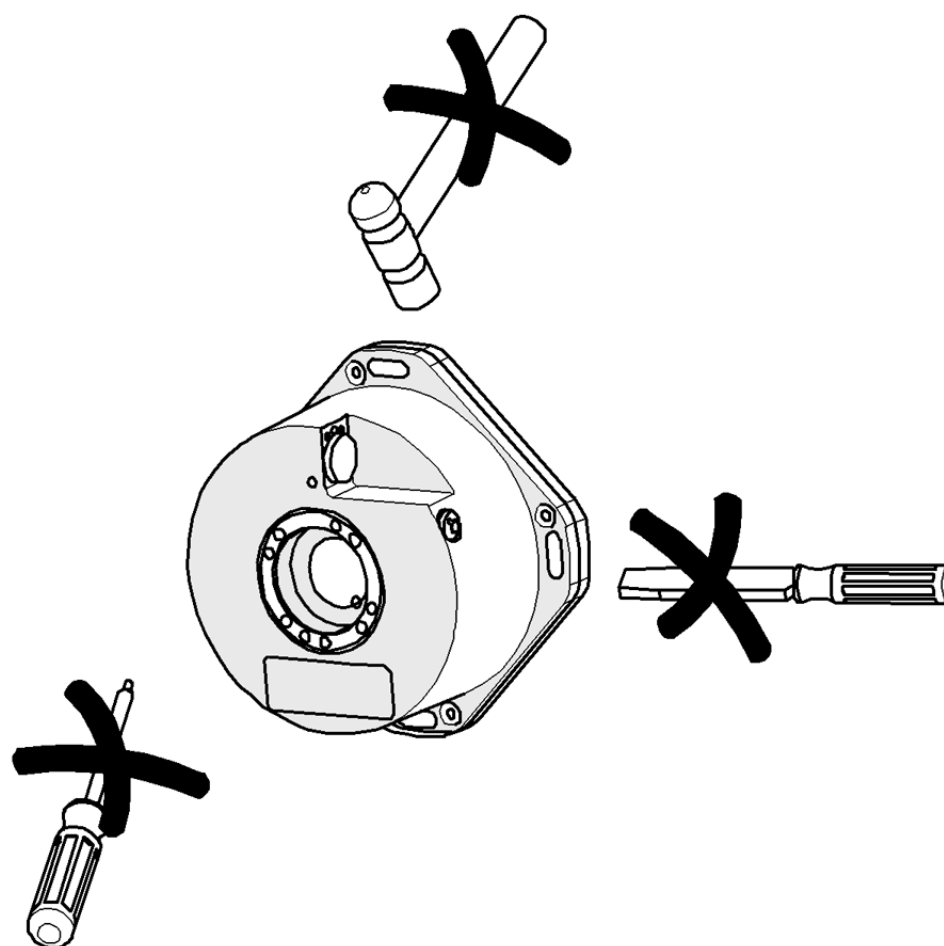
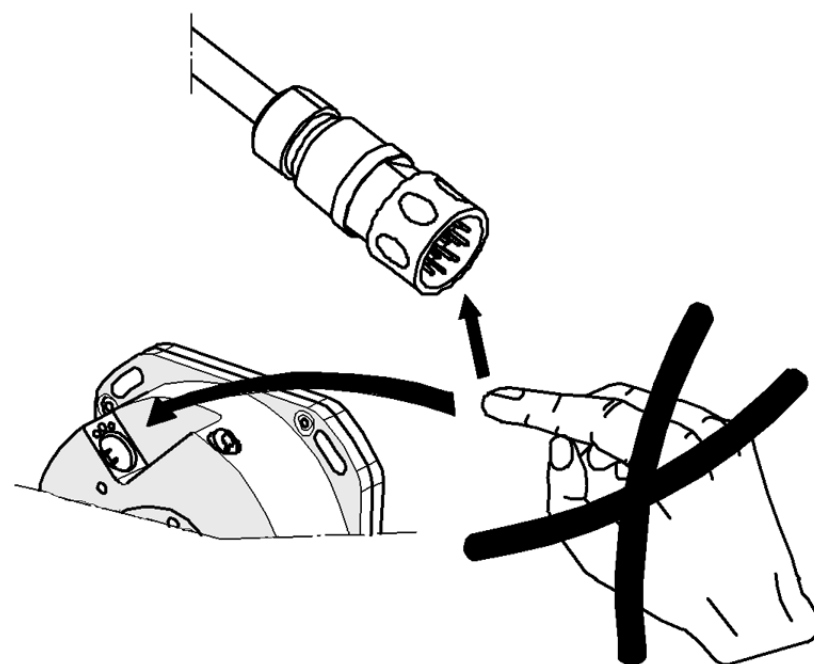
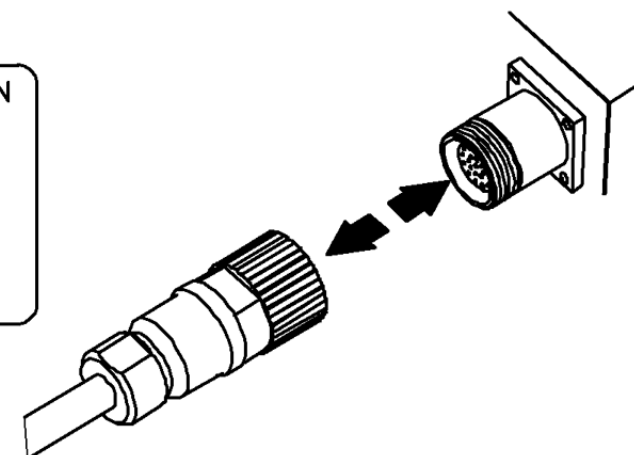
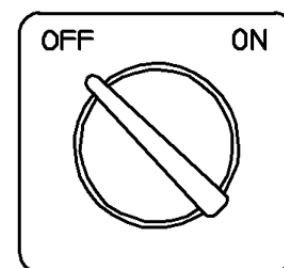
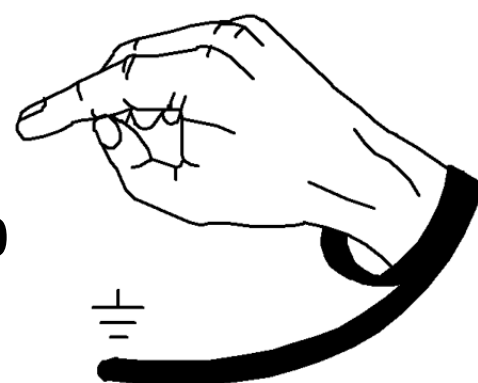
**ACCESORIOS
ACCESSORIES**



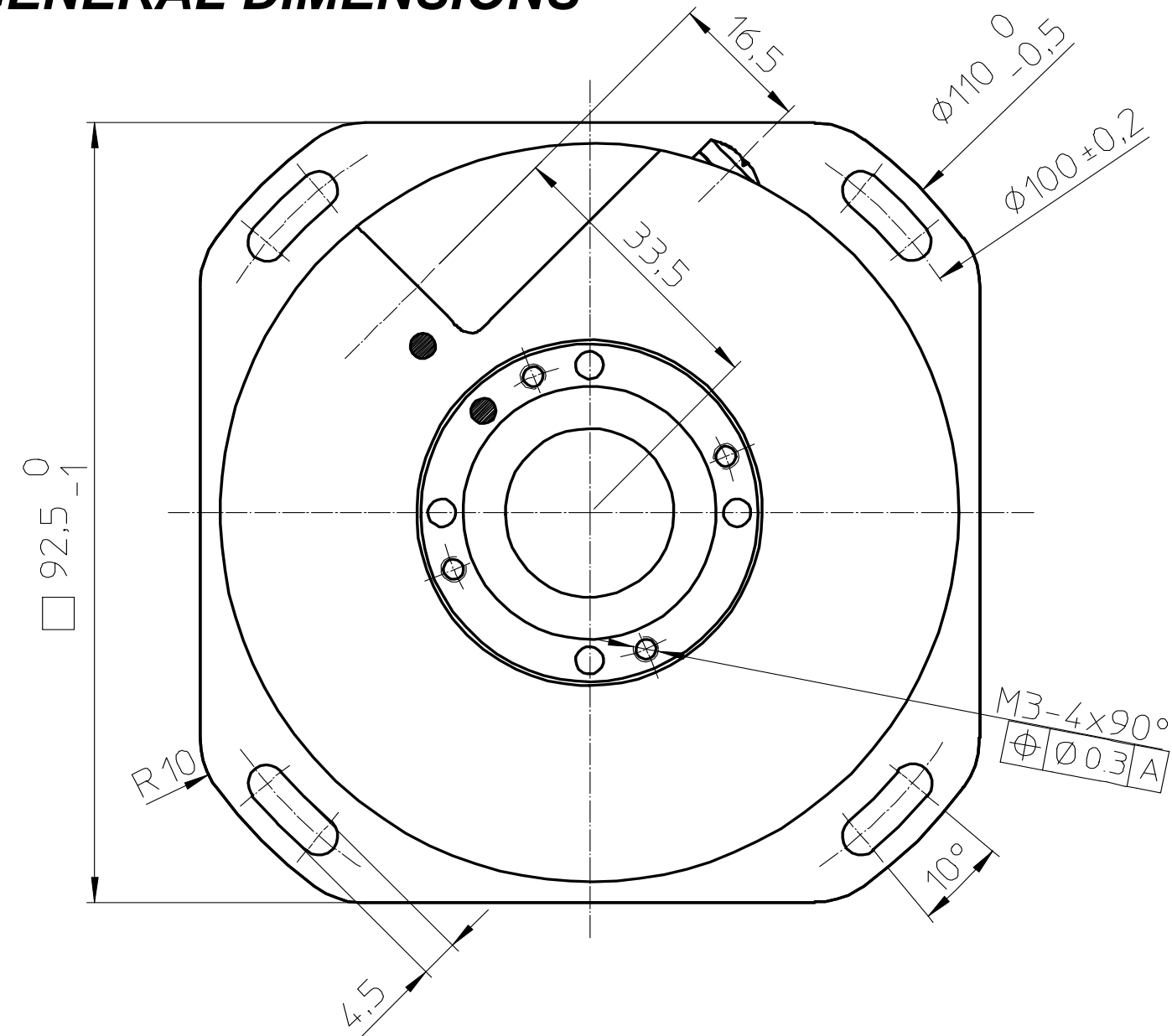
4 tornillos/bolts M4 x 16 DIN 912
4 arandelas/washers M4 DIN 125
1 racor de aire / air intake
1 arandela racor de aire /
air intake washer
1 llave Allen / Allen wrench



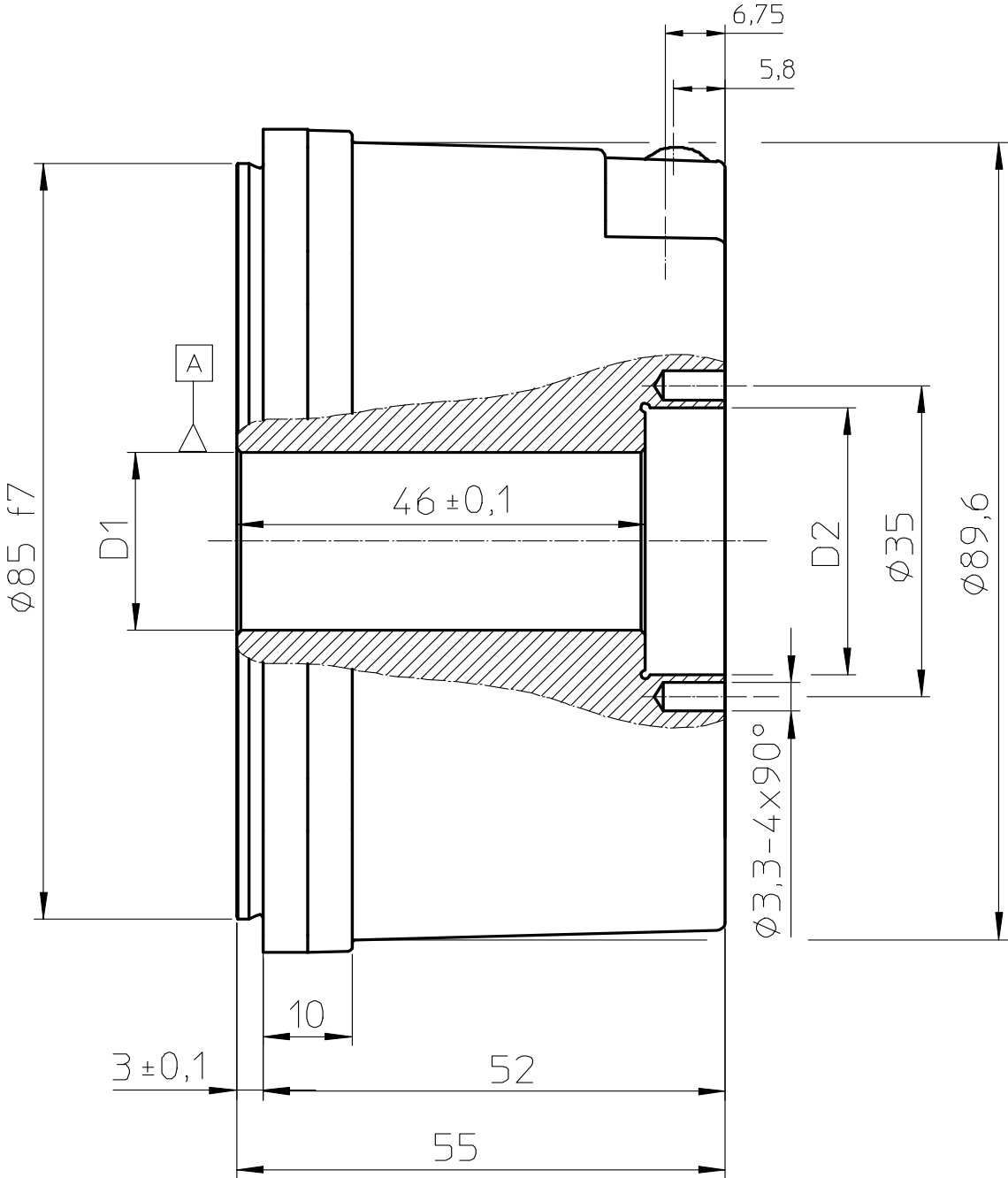
DIN EN 100



GENERAL DIMENSIONS

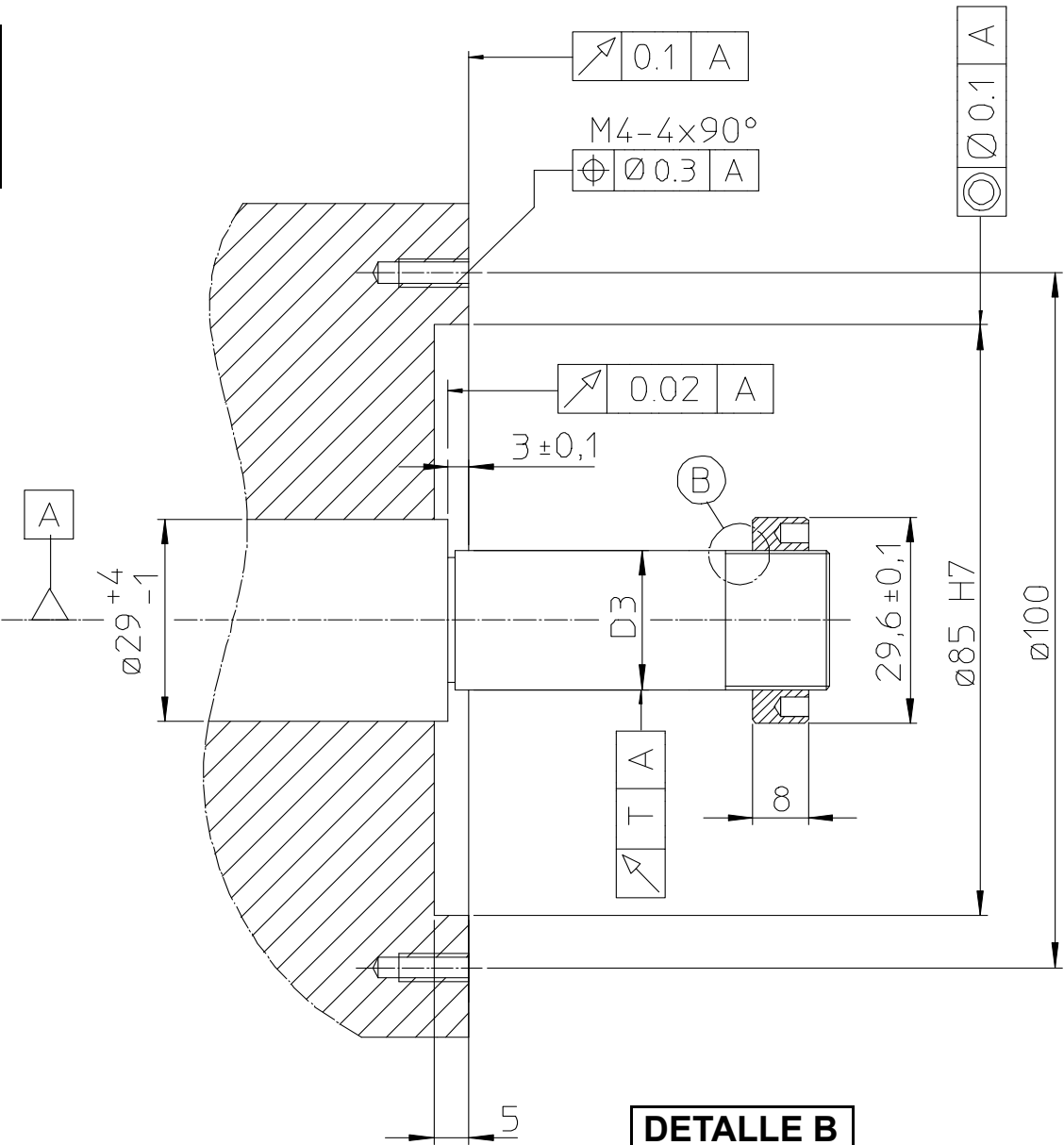
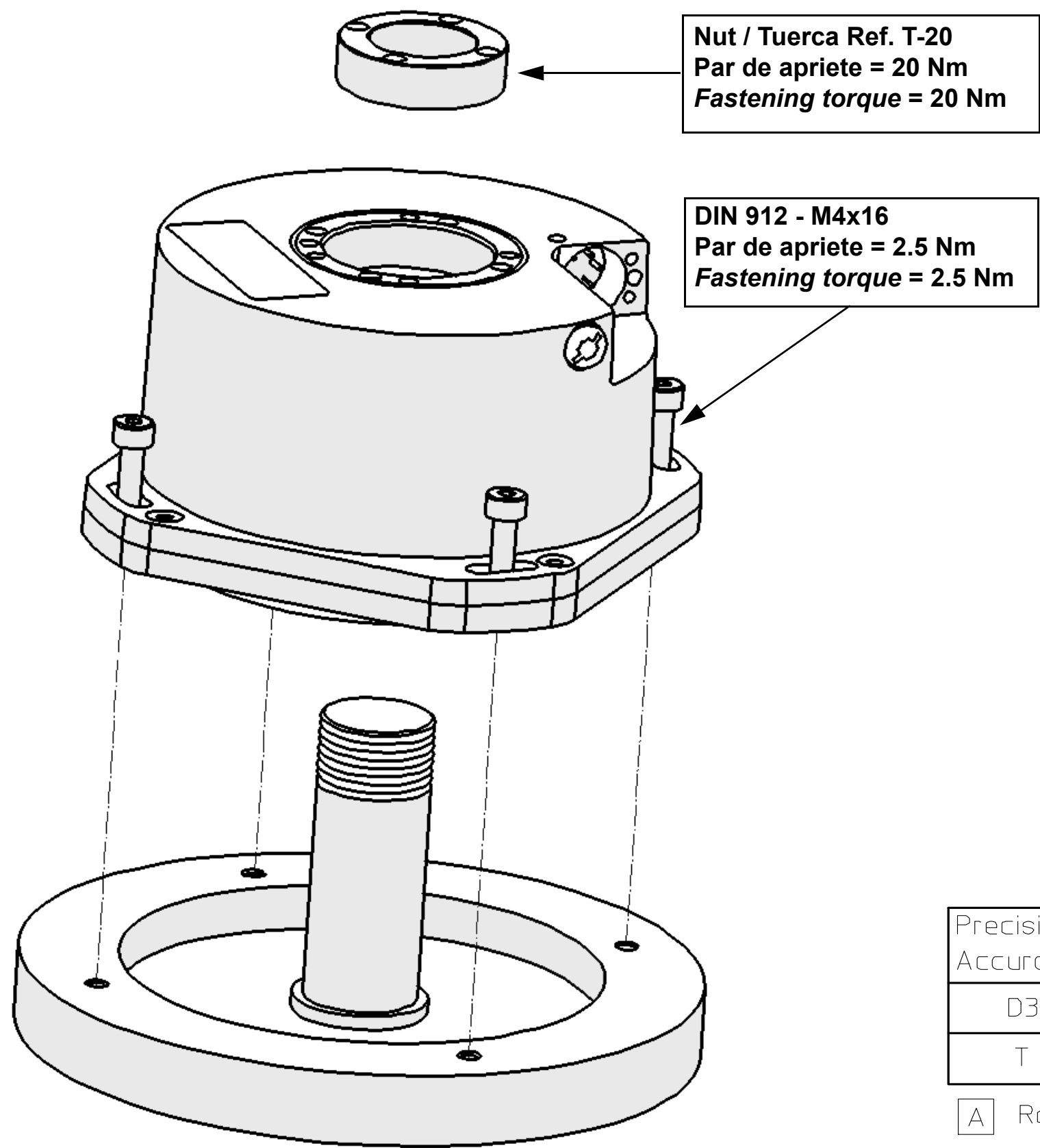


Precisión Accuracy	$\pm 2.5''$	$\pm 5''$
D1	$\phi 20 \text{ H6}$	$\phi 20 \text{ H7}$
D2	$\phi 30 \text{ H6}$	$\phi 30 \text{ H7}$

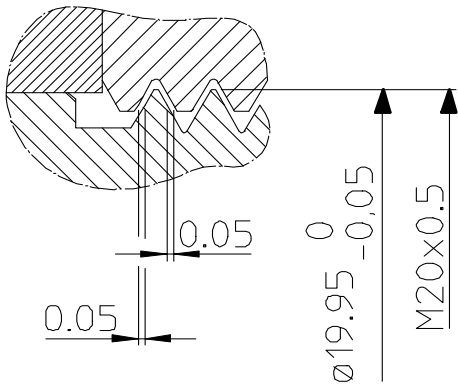


MONTAJE / MOUNTING

Cotas de montaje / Mounting dimensions



DETALLE B
DETAIL B

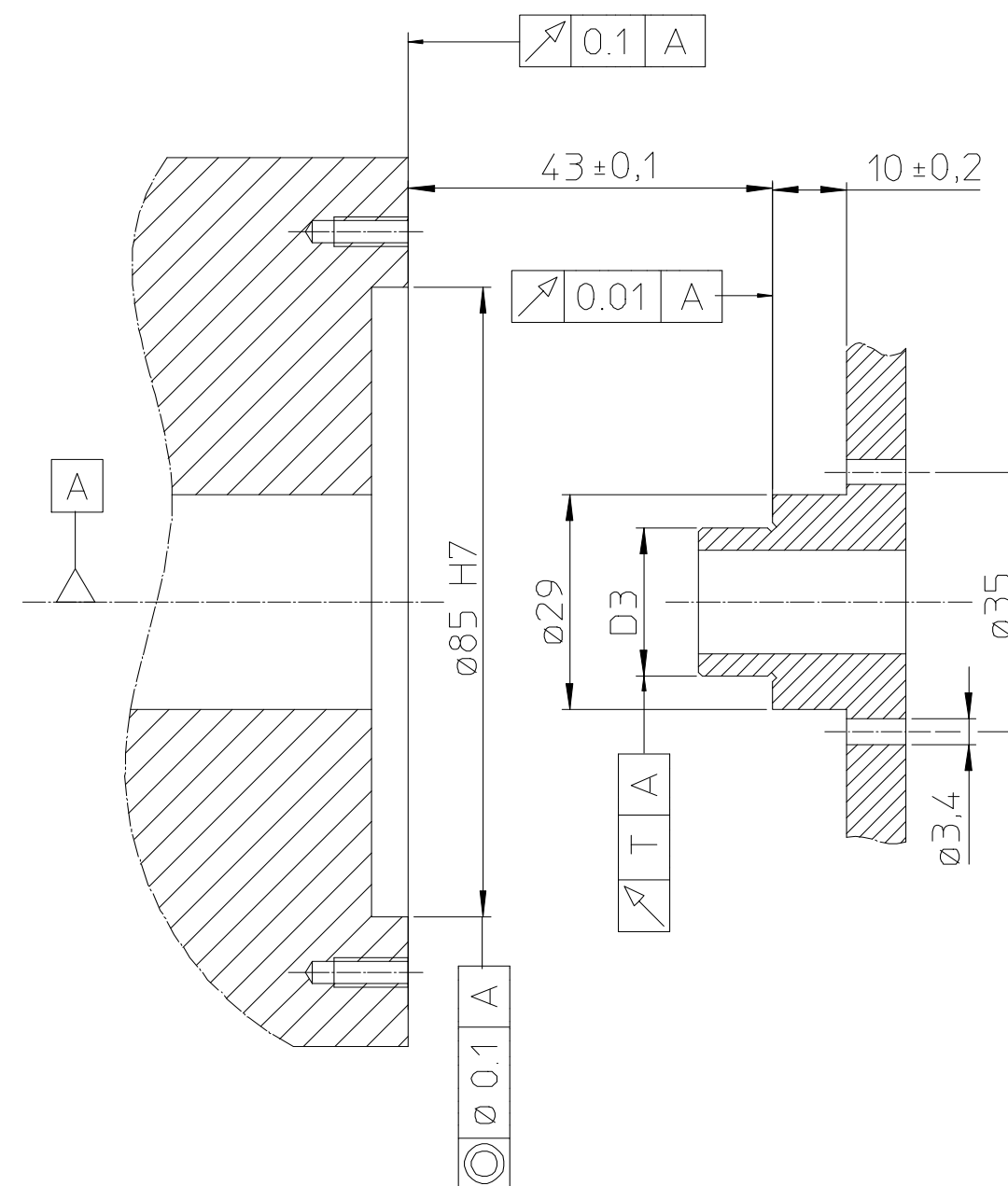
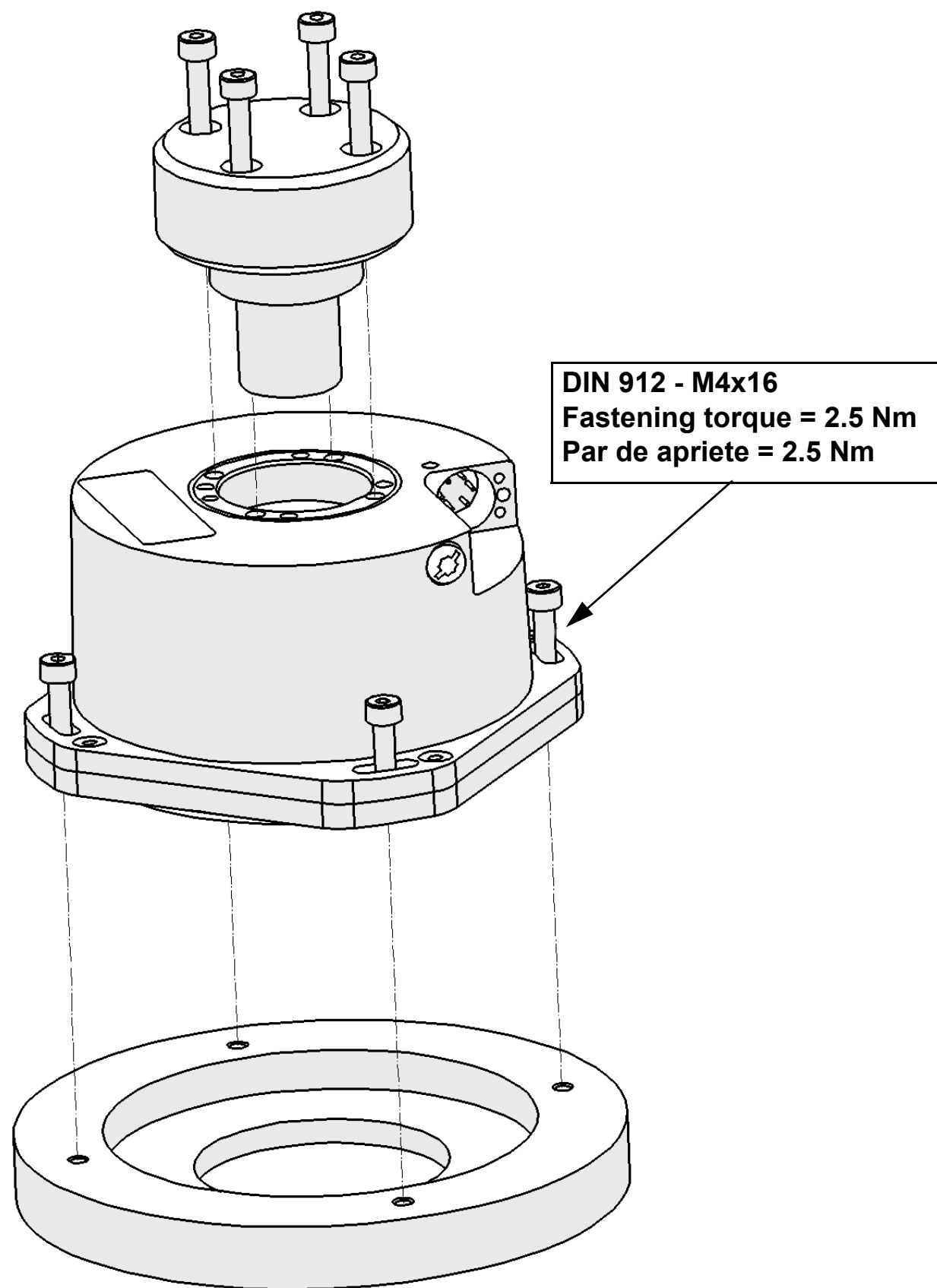


Precisión Accuracy	±2.5"	±5"
D3	ø20 g6	ø20 g7
T	0.01	0.02

[A] Rodamiento / Roller bearing

MONTAJE / MOUNTING

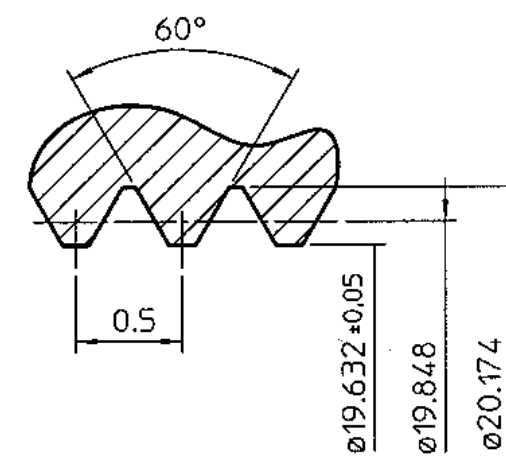
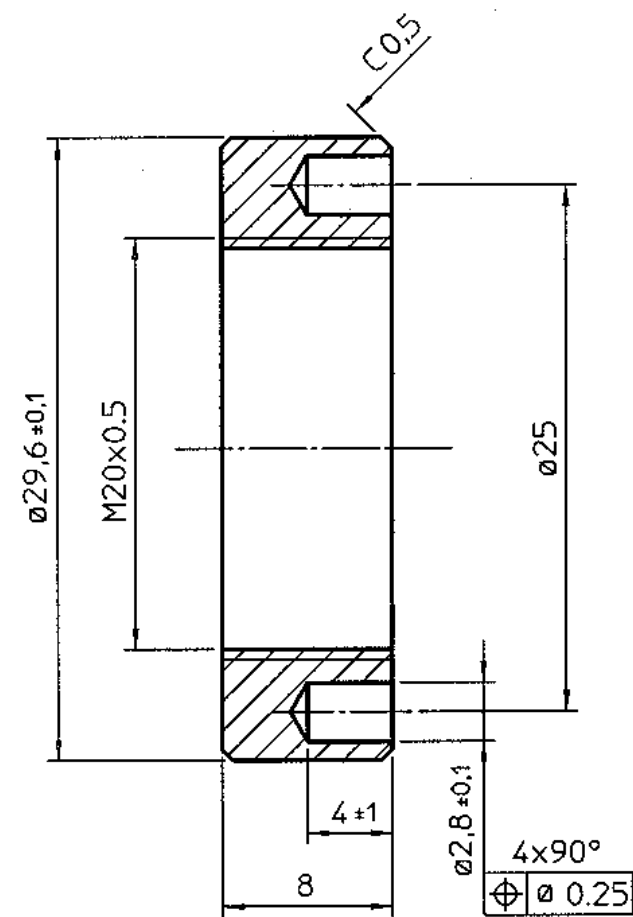
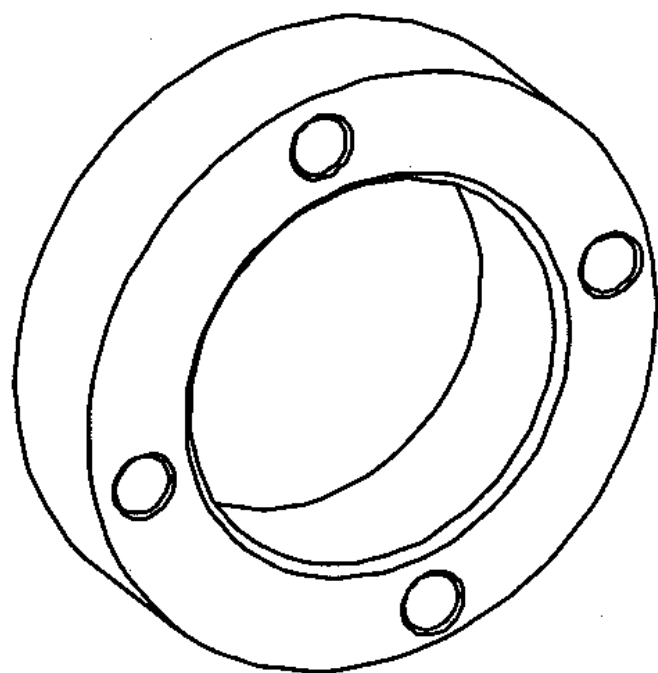
Cotas de montaje / *Mounting dimensions*



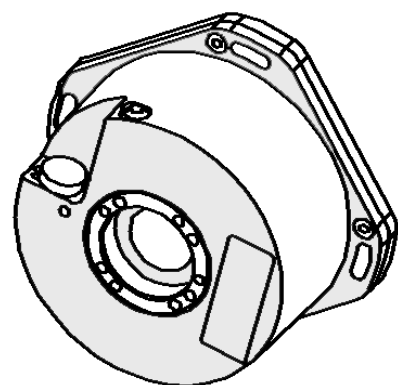
Precisión Accuracy	±2.5"	±5"
D3	∅20 g6	∅20 g7
T	0.01	0.02

A Rodamiento / Roller bearing

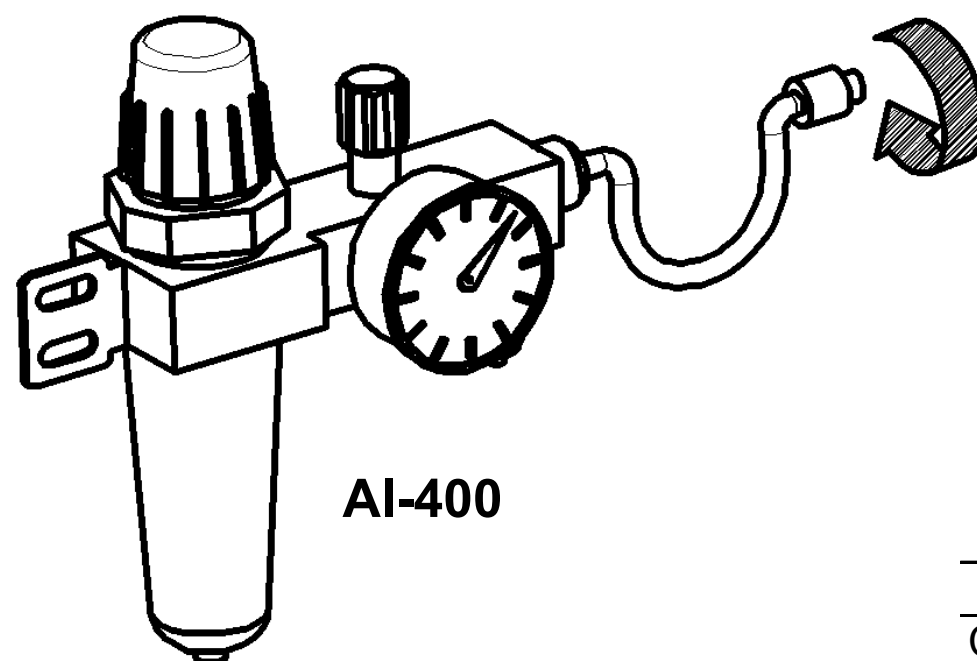
TUERCA T-20 / T-20 NUT



Nivel máximo: IP 64
Maximum level IP 64

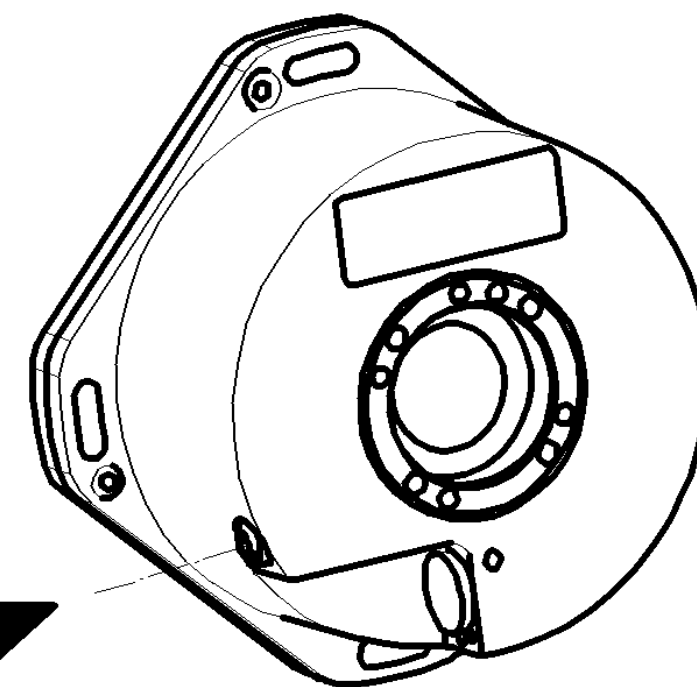


> IP 64



AI-400

(A)



(A) AIR CONDITIONS

DIN ISO 8573 - 1

Class 1 - *Particle* Max. 0.1 μm

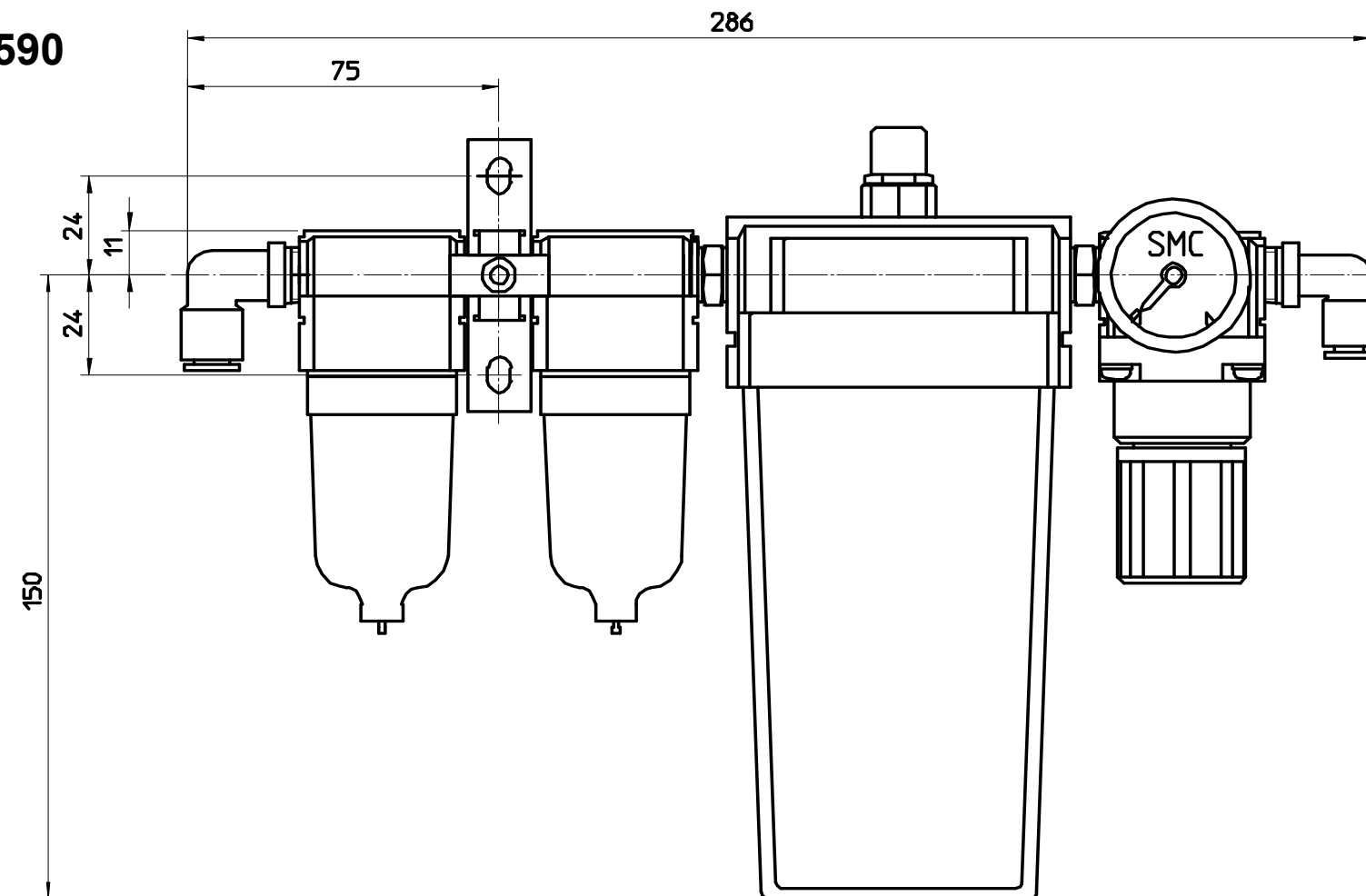
Class 4 (7 bar) - *Punto rocío / Dewpoint* 3 °C

Class 1 - Max. Oil concentration 0,01 mg/m³

Presión / Pressure 1 kg/cm²

Flujo / Flow 10 l./min/encoder

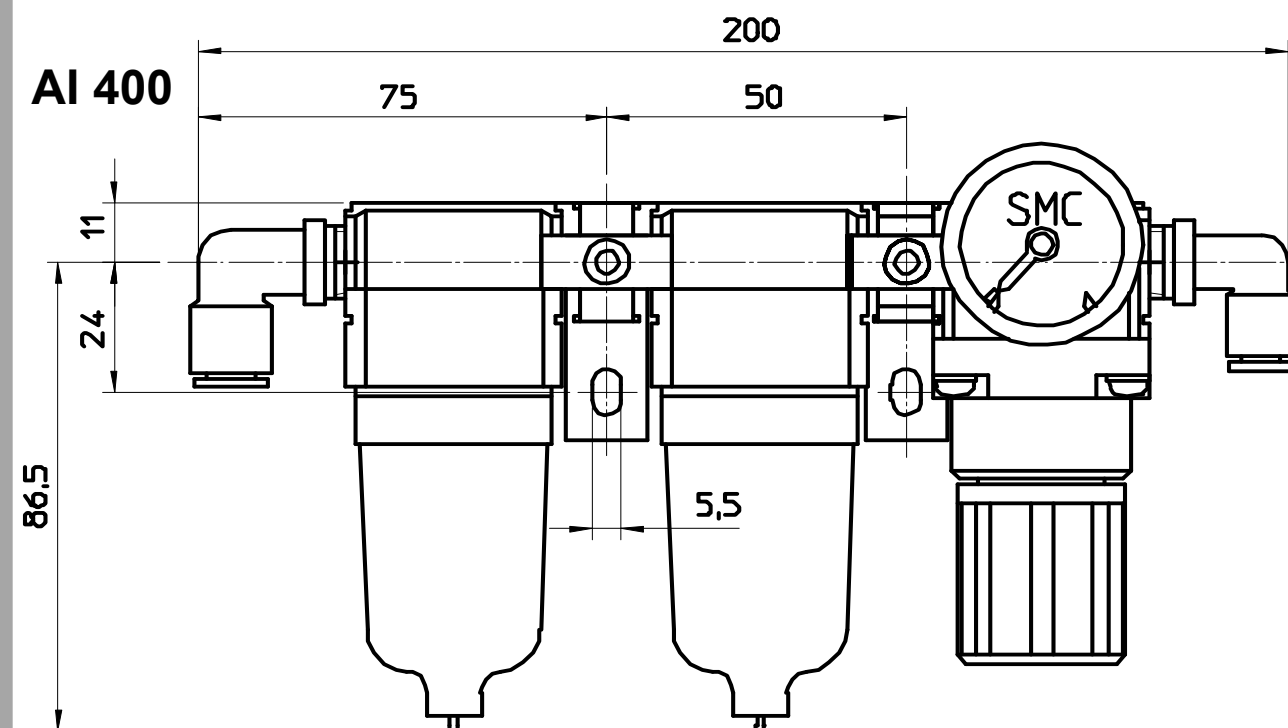
AI 590



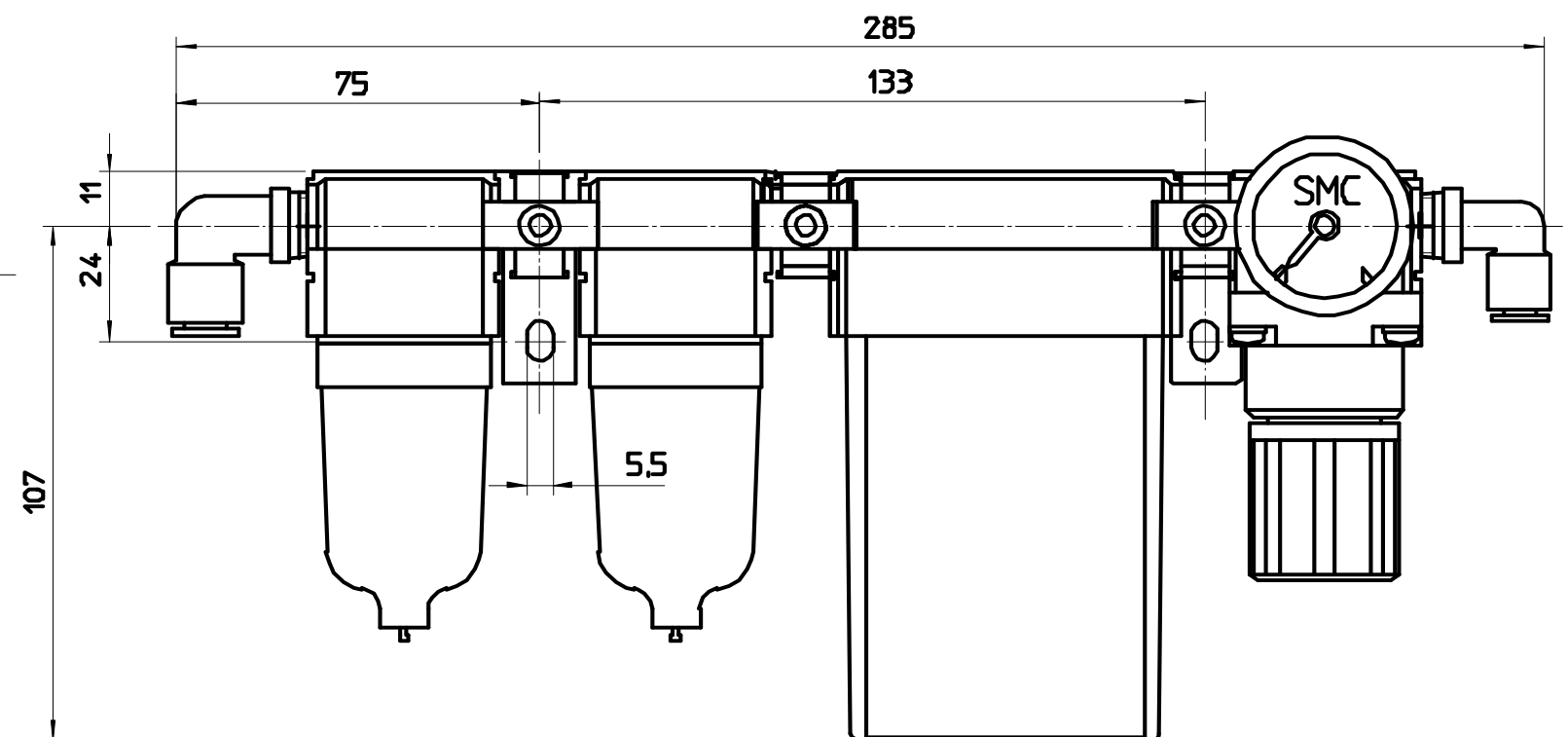
FILTROS DE AIRE / AIR FILTERS

02200000	AI 400	25 l/min
02200001	AI 525	25 l/min
02200002	AI 550	50 l/min
02200003	AI 590	90 l/min

AI 400



AI 525 / AI 550



CARACTERÍSTICAS MECÁNICAS

MECHANICAL CHARACTERISTICS

Modelo	HAP-23-D90-2	HAP-23-D90	Model
Precisión	±2.5"	±5"	Accuracy
Maxima velocidad de giro	3000 rpm *		Max. Turning speed
Momento de inercia del eje	650 gr.cm ²		Inertia of the rotor
Par (20°C)	< 0.08 Nm		Torque
Frecuencia natural	> 1000 Hz		Natural frequency
Peso	0.9 kg		Weight
Estanqueidad	IP-64 (DIN 40050)		Sealing protection
Vibración (50-2000 Hz)	100 m/sec ² (IEC 68-2-6)		Vibration (50-2000 Hz)
Impacto (6ms)	1000 m/sec ² (IEC-68-2-27)		Impact (6 ms)
Temperatura de almacenamiento	-30 °C ... 80 °C (-22 °F ... 176 °F)		Storage temperature
Temperatura de funcionamiento	0 °C ... 50 °C (32 °F ... 122 °F)	-20 °C ... 70 °C (-4 °F ... 158 °F)	Operating temperature

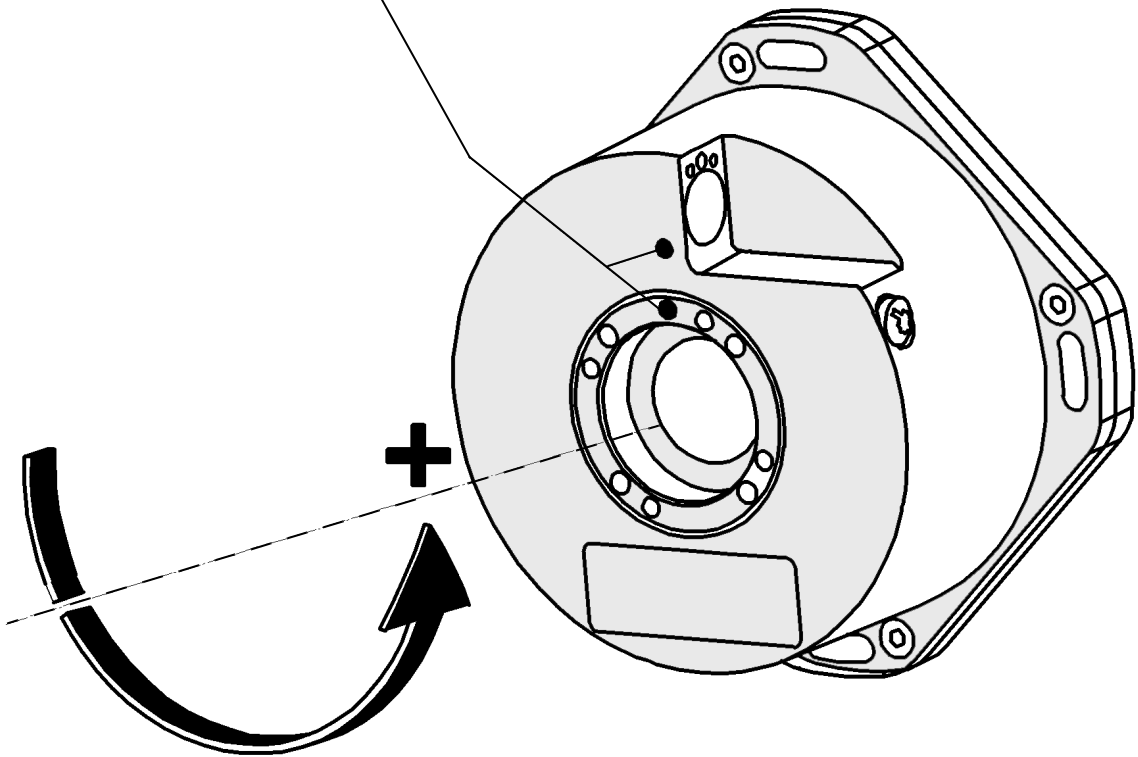
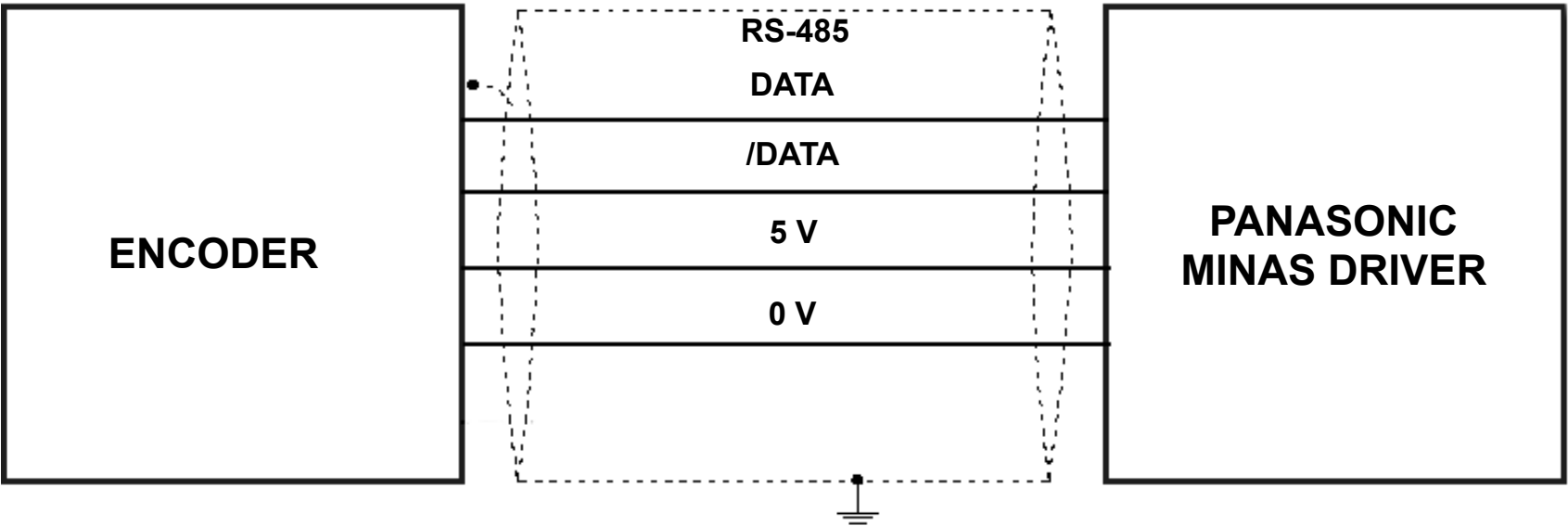
* Limitación eléctrica = 1500 rpm / Electrical limitation = 1500 rpm

CARACTERÍSTICAS ELÉCTRICAS / *ELECTRICAL CHARACTERISTICS*

Resolución <i>Resolution</i>	23 bit (8 388 608) Pulsos / vuelta <i>pulses / turn</i>
Alimentación <i>Power supply</i>	3.6 V ... 5.25 V, <300 mA
Conexión <i>Connection</i>	Con conector incorporado <i>With built-in connector</i>
Longitud de cable <i>Cable length</i>	30 m 99 feet

Posición del origen 0°
0° origin position

Girar eje para alinear puntos
Turn the shaft lining up the dots



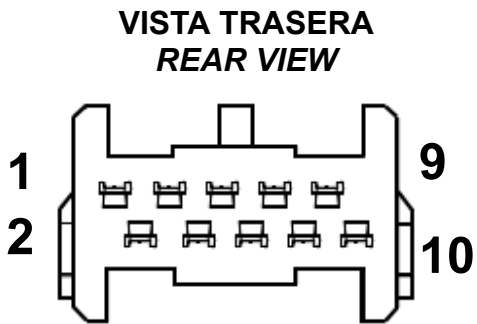
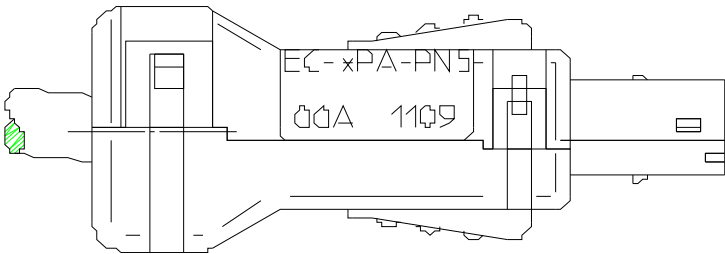
PANASONIC: CONEXIONES / CONNECTIONS

EC...PA...PN5

Cable para **conexión directa** a sistemas MINAS. Disponible en 1, 3, 6 and 9 metros.
*Cable for **direct connection** to MINAS systems. Available in 1, 3, 6 and 9 meters.*

EC-PA-PN5

PIN	3	4	1	2	Carcasa / Housing
SEÑAL SIGNAL	DATA	/DATA	+5V	0V	Tierra / Ground
COLOR	Verde Green	Amarillo Yellow	Marrón + Gris Brown + Gray	Blanco + Rosa White + Pink	Malla Shield



PANASONIC: CONEXIONES / CONNECTIONS

Alargaderas / Extension cables

CABLE		ALARGADERA / EXTENSION CABLE			LONGITUD TOTAL TOTAL LENGTH
Reference	Connector	Connector	Reference	Connector	
EC-1B-C9	C9	C8	XC-C8-xA-PN5	Panasonic	* 30 m
EC-1B-C9-N	Round 17-PM/RM	Round 17-PH/RH	XC-C8-xF-C9	C9-Round 17-PM/RM	

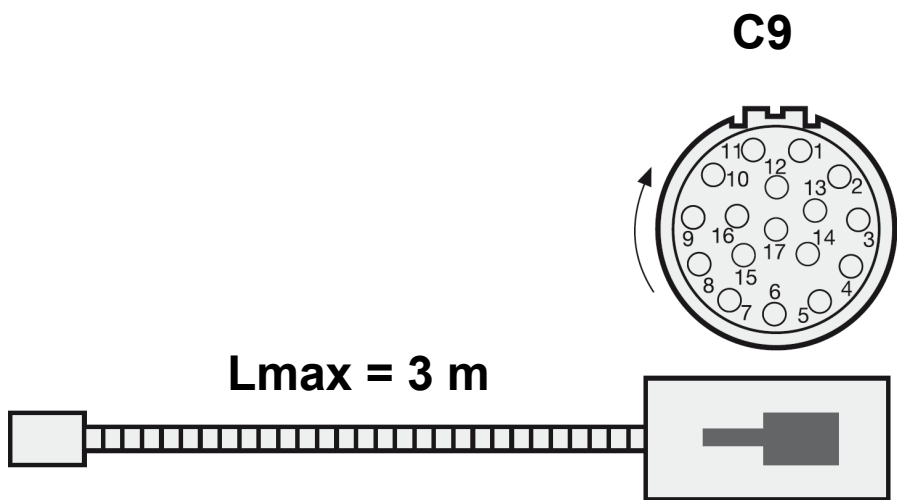
PM = Pines macho, RM = Rosca Macho, PH = Pines hembra, RH = Rosca hembra, M= Macho, H = Hembra
Round = Circular, PM = Male pins; RM = Male thread, PH = Female pins, RH = Female thread, M = Male, H = Female

También se puede utilizar la combinación de un cable **EC...B...C9** con una alargadera **XC...C8...A-PN5** para otras longitudes.
*A combination of **EC...B...C9** cable and an **XC...C8...A-PN5** extension cable may be used for other lengths.*

EC...B...C9 Cable disponible en 1 y 3 metros. Contactar con FAGOR para otras longitudes.
Cable available in 1 and 3 meters. Contact FAGOR for other lengths.

Conector (C9) macho circular 17 male connector

PIN	14	17	7	1	10	4	Caperuza Housing
SEÑAL SIGNAL	DATA	/DATA	+5V	+5V sensor	0V	0V sensor	Tierra Ground
COLOR	Gris Grey	Rosa Pink	Marrón Brown	Verde claro Light green	Blanco White	Naranja Orange	Malla interna Internal shield



GARANTIA

*Plazo: 12 meses a partir de la fecha de expedición de fábrica.

*Cubre gastos de Materiales y Mano de Obra de reparación en FAGOR AUTOMATION.

*Los gastos de desplazamiento son a cargo del cliente.

*No cubre averías por causas ajenas a FAGOR AUTOMATION, como: golpes, manipulación por personal no autorizado, etc.

WARRANTY

**Term: 12 months from factory invoice date.*

**It covers parts and labor at FAGOR AUTOMATION.*

**Travel expenses are payable by the customer.*

**Damages due to causes external to FAGOR AUTOMATION, such as unauthorized handling, blows, etc. are not covered.*

DECLARACION DE CONFORMIDAD

Fabricante: Fagor Automation, S. Coop.

Barrio de San Andrés 19, C.P. 20500, Mondragón -Guipúzcoa- (ESPAÑA)

Declaramos bajo nuestra exclusiva responsabilidad la conformidad del producto al que hace referencia este manual

Nota. Algunos caracteres adicionales pueden seguir a las referencias de los modelos indicados en este manual. Todos ellos cumplen con las siguientes normas:

COMPATIBILIDAD ELECTROMAGNÉTICA:

EN 61000-6-2:2005 Norma de Inmunidad en entornos industriales

EN 61000-6-4:2007 Norma de Emisión en entornos industriales

De acuerdo con las disposiciones de la Directiva Comunitaria: 2004/108/CE de Compatibilidad Electromagnética.

Mondragón a 1 de diciembre de 2015

Fagor Automation, S. Coop.


Director Gerente
Pedro Ruiz de Aguirre

DECLARATION OF CONFORMITY

Manufacturer: Fagor Automation, S. Coop.

Barrio de San Andrés 19, C.P. 20500, Mondragón -Guipúzcoa- (SPAIN)

We declare under our exclusive responsibility the conformity of the product referred to in this manual.

Note. Some additional characters may follow the model references indicated in this manual. They all comply with the following regulations:

ELECTROMAGNETIC COMPATIBILITY:

EN 61000-6-2:2005 Standard on immunity in industrial environments

EN 61000-6-4:2007 Standard on emission in industrial environments

According to the European Directive: 2004/108/CE on electromagnetic compatibility.

Mondragón December 1st 2015

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