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AUTOMATION

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All drawings and information present on this catalog are subject to technical changes.

1

APS



FEATURES

100-140-160-190-250 APS
Accessories

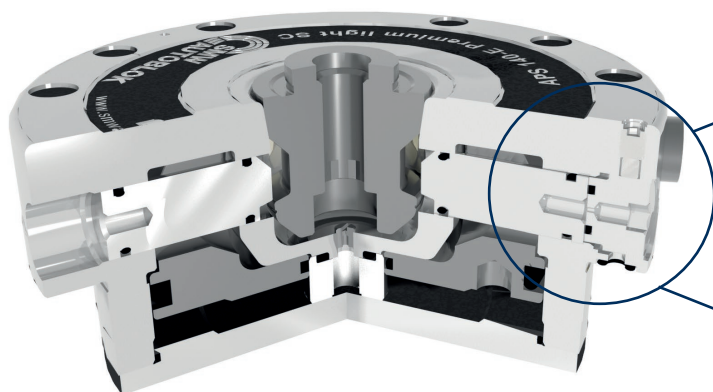


1 CLAMPING SYSTEM WITH 3 JAWS AT 120°

APS is the only one ZERO POINT clamping system with 3 jaws at 120° and thanks to special treatments of the clamping jaws further improves its durability.

2 STROKE CONTROL SYSTEM

The **SC system** is ideal for automated applications with robot loading and unloading of the pallets. The APS locking and unlocking is monitored by air pressure.



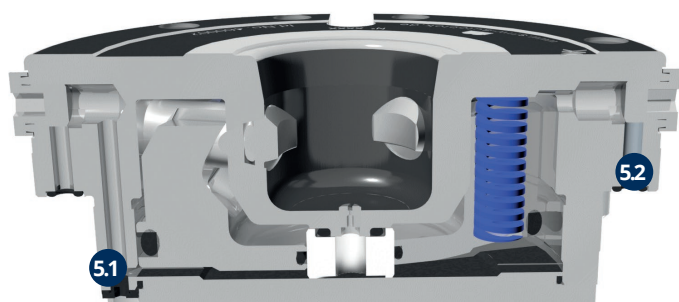
3 MAXIMUM RIGIDITY

Jaws with double inclined plane which generates the "PULL DOWN" effect and piston with integral inclined planes.

4 MAXIMUM ACCURACY

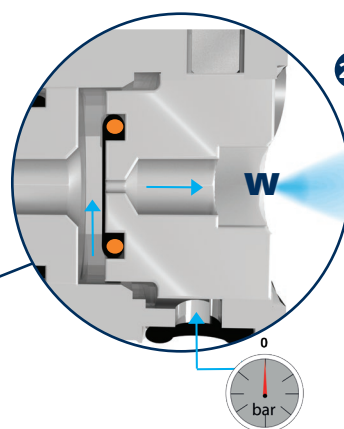
Maximum accuracy of the tapered coupling between the pin and the module.

5 TURBO FUNCTION



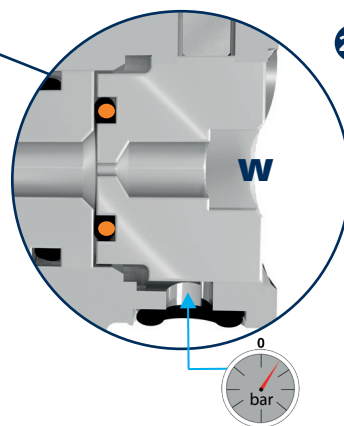
21 LOCKING POSITION

The air enters from the lower side inlet the hole and exits out from the hole **W** = pressure drop in the line and the machine receives a "APS locked" confirmation.



22 UNLOCKING POSITION

The air enters from the lower side inlet and it can't escape from the hole **W** = no pressure drop in the line and the machine receives a "APS unlocked" confirmation.



5.1 UNLOCKING FUNCTION at 6 bar

5.2 TURBO FUNCTION

The **TURBO** function is always integrated in **APS** modules. **TURBO** is the function by means of which the compressed air increases the clamping force applied by the springs until reaching the "PULL DOWN" clamping force

ATTENTION: the pneumatic system of the pressure switch must signal the alarm condition and must prevent the pallet exchange on the APS or any robot operation when the inlet pressure is less than 6 bar.

APS 100 E BASIC - ID.N. 460007 for external mounting

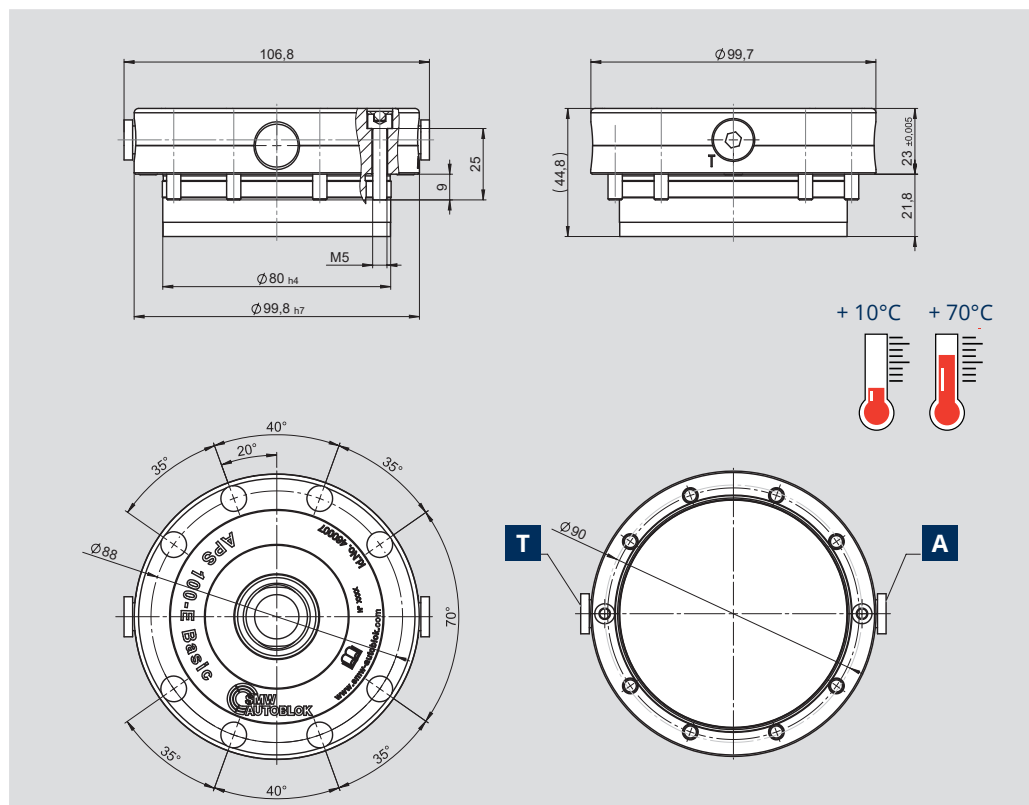


Zero Point Clamping Module

Technical features

- 2 Clamping slides
- TURBO function **T** to increase the clamping force

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
460007	4 / 15**kN	13(M6)*** 25(M8) kN	6 bar	< 0,005 mm	1,9 Kg

APS 100 E PREMIUM - ID.N. 460005 for external mounting

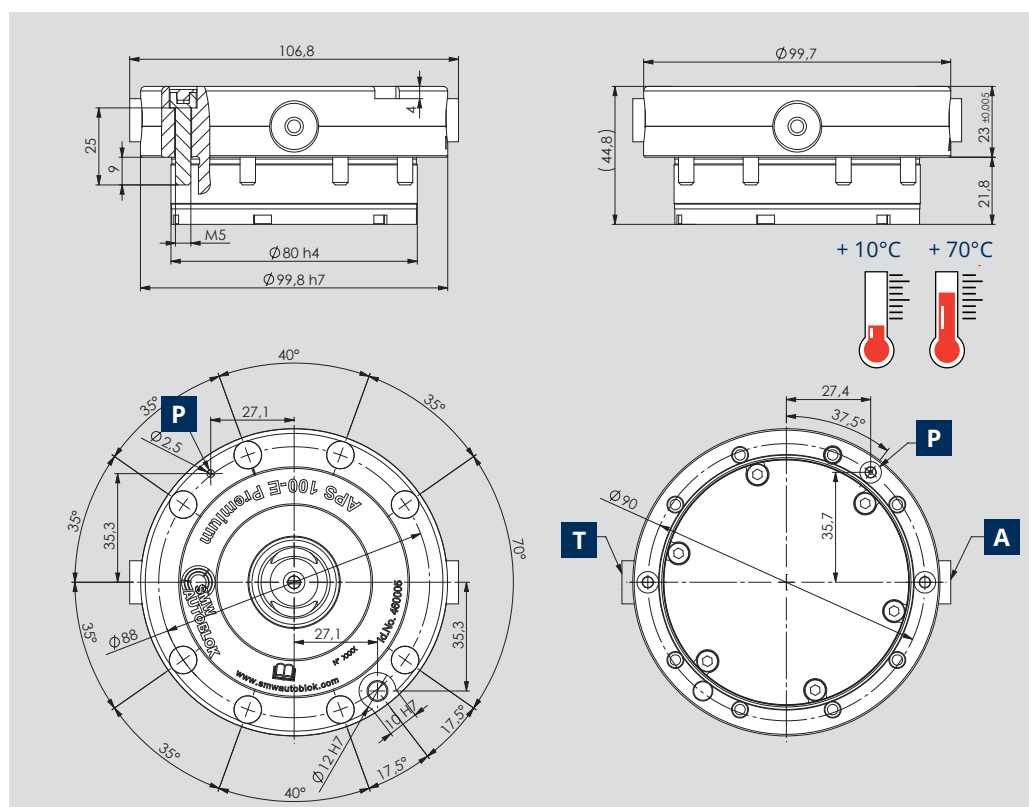


Zero Point Clamping Module

Technical features

- 2 Clamping slides
- TURBO function **T** to increase the clamping force
- Anti-rotation key seat
- Air sensing **P**
- Air cleaning

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
460005	4 / 15**kN	13(M6)*** 25(M8) kN	6 bar	< 0,005 mm	1,9 Kg

(*) with screws DIN EN ISO 4762 - 12.9 / (**) with "turbo effect"/ (***) screws EN-ISO10642

APS 140 E BASIC - ID.N. 460001 for external mounting

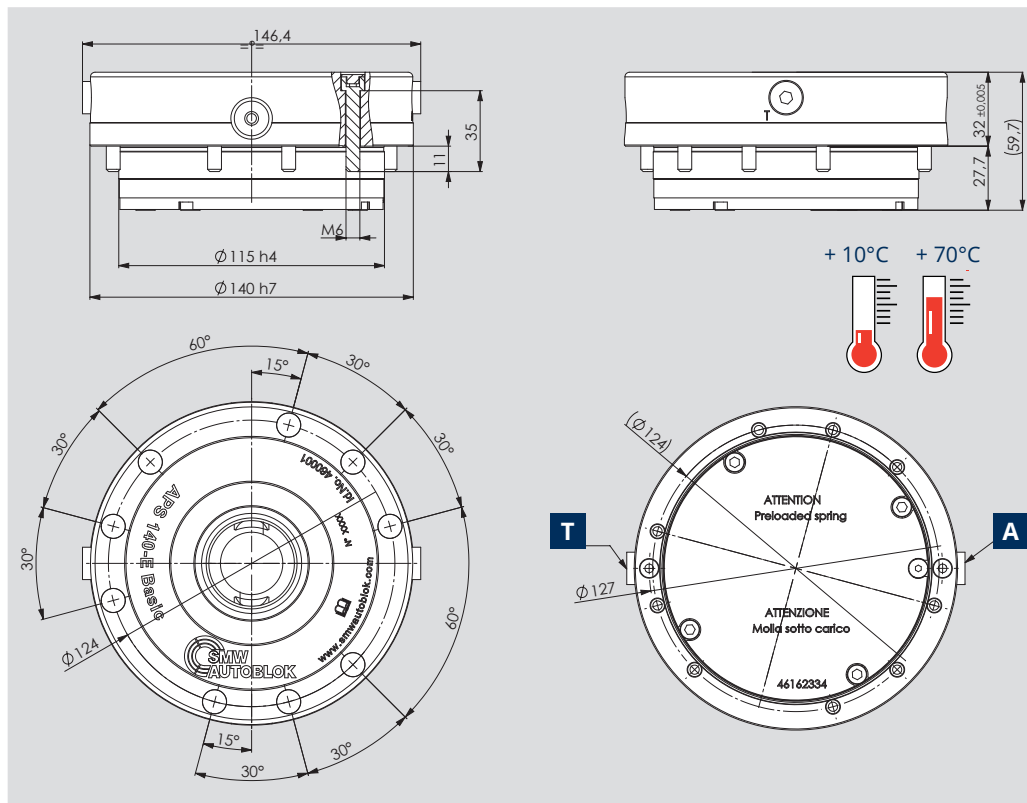


Zero Point Clamping Module

Technical features

- 2 Clamping slides
- TURBO function **T** to increase the clamping force

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
460001	7,5 / 26** kN	35(M10) 50(M12) 75(M16) kN	6 bar	< 0,005 mm	4,5 Kg

APS 140 E PREMIUM LIGHT - ID.N. 460003 for external mounting

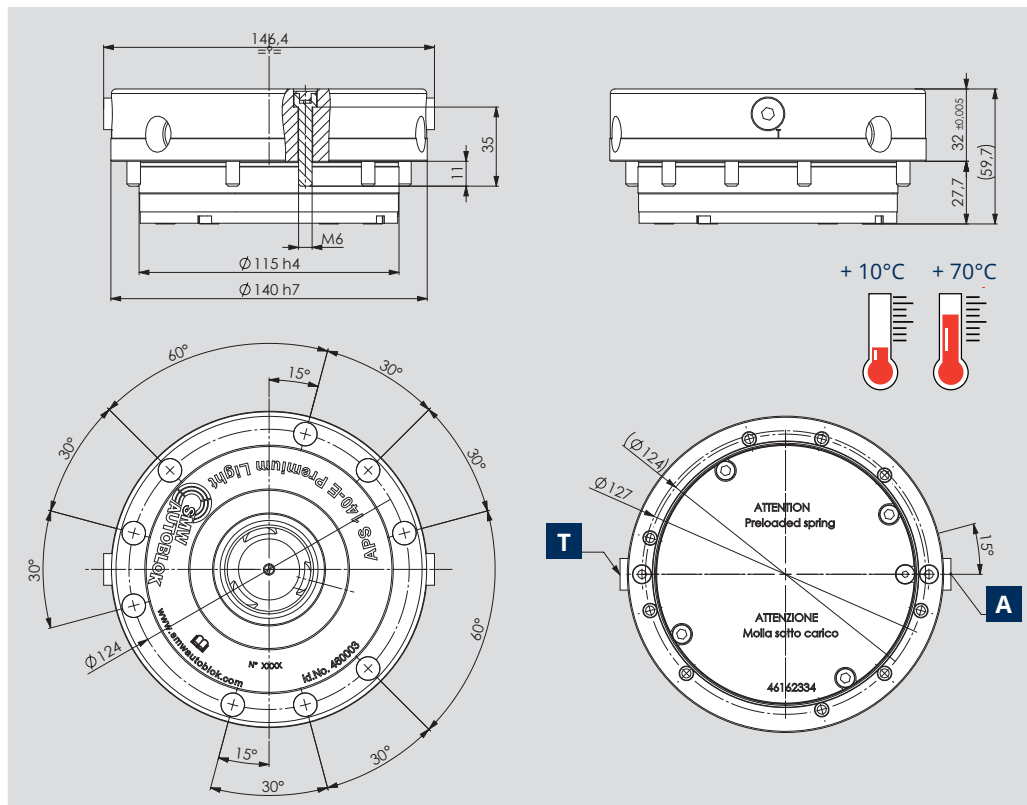


Zero Point Clamping Module

Technical features

- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Air cleaning

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
460003	7,5 / 26**kN	35(M10) 50(M12) 75(M16) kN	6 bar	< 0,005 mm	4,5 Kg

(*) with screws DIN EN ISO 4762 - 12.9 / (**) with "turbo effect"

APS 140 E PREMIUM LIGHT SC - ID.N. 46162540 with pneumatic stroke control

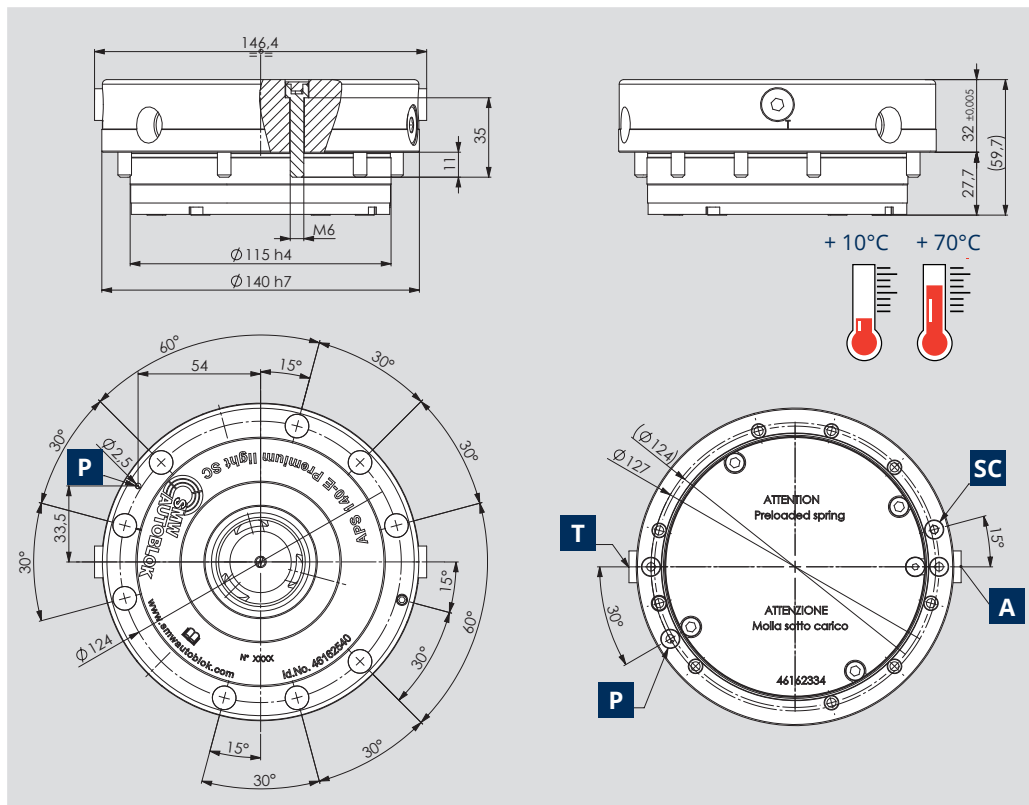


Zero Point Clamping Module

Technical features

- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Pneumatic stroke control **SC**
- Air sensing **P**
- Air cleaning

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
46162540	7,5 / 26** kN	35(M10) 50(M12) 75(M16) kN	6 bar	< 0,005 mm	4,5 Kg

APS 140 E PREMIUM SC - ID.N. 460002 for external mounting

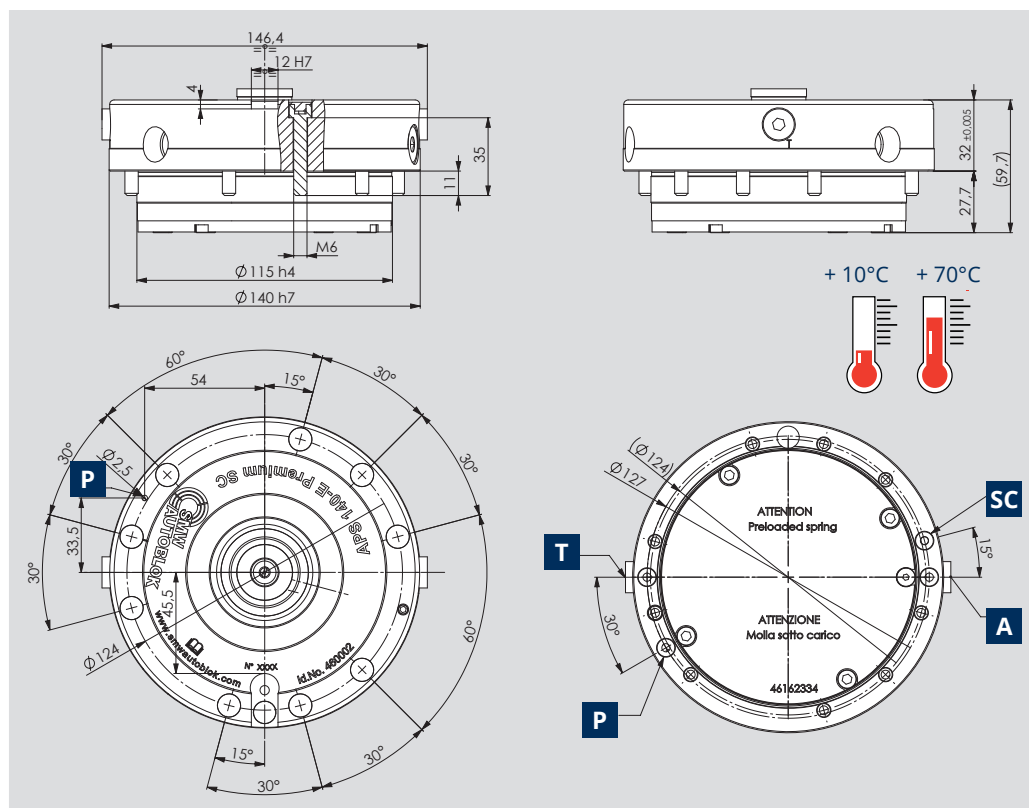


Zero Point Clamping Module

Technical features

- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Pneumatic stroke control **SC**
- Air sensing **P**
- Air cleaning
- Anti-rotation key seat

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
460002	7,5 / 26** kN	35(M10) 50(M12) 75(M16) kN	6 bar	< 0,005 mm	4,5 Kg

(*) with screws DIN EN ISO 4762 - 12.9 / (**) with "turbo effect"

APS 140 E PREMIUM LIGHT INOX - ID.N. 46162830 for external mounting

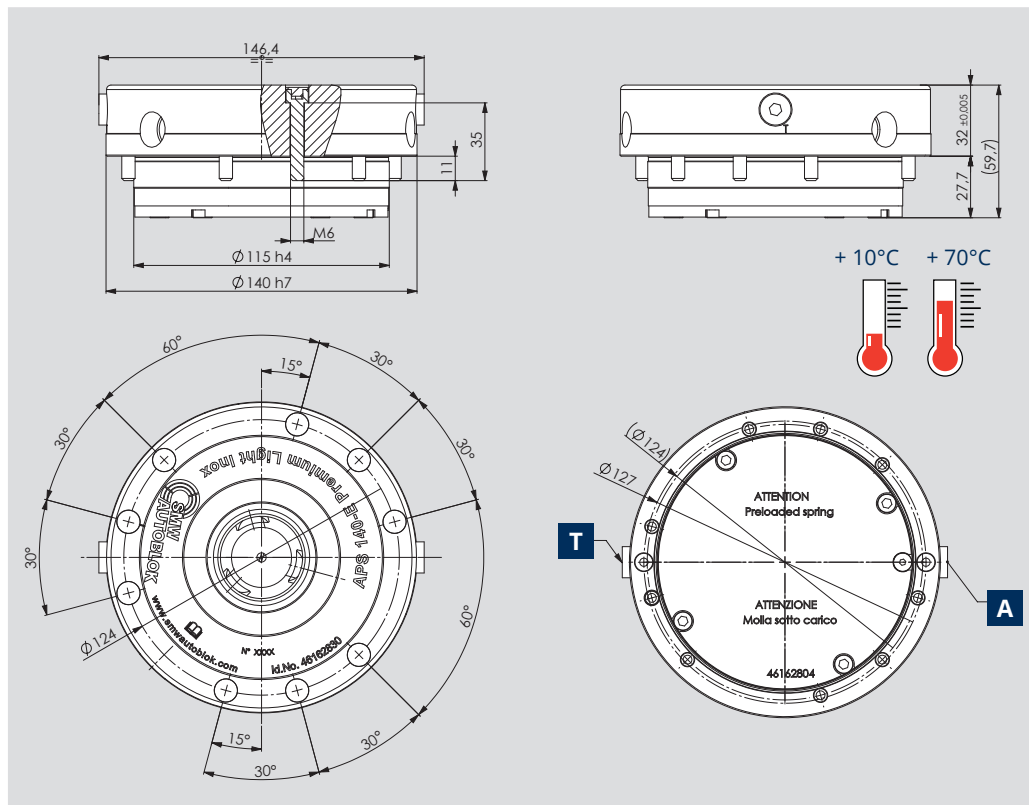


Zero Point Clamping Module

Technical features

- Inox body
- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Ideal for EDM Machines

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
46162830	7,5 / 26** kN	35(M10) 50(M12) 75(M16) kN	6 bar	< 0,005 mm	4,5 kg

APS 140 E PREMIUM LIGHT INOX-HEAT - ID.N. 46162860 for external mounting

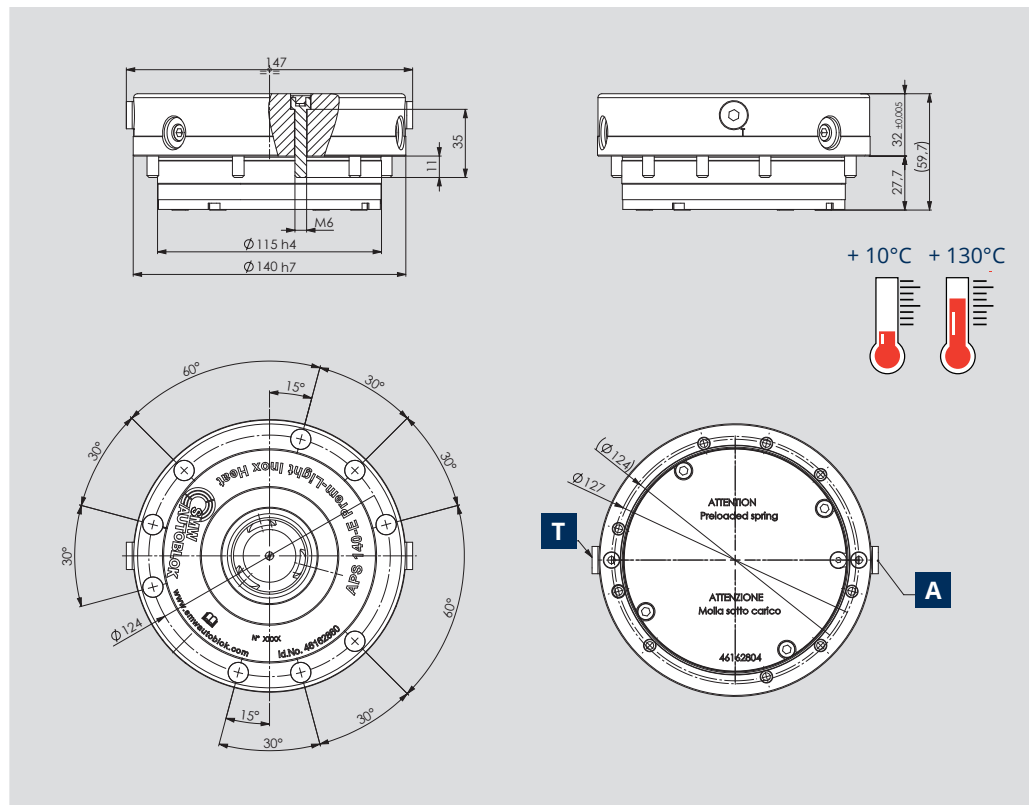


Zero Point Clamping Module

Technical features

- Inox body
- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Ideal for HT

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
46162860	7,5 / 26** kN	35(M10) 50(M12) 75(M16) kN	6 bar	< 0,005 mm	4,5 kg

(*) with screws DIN EN ISO 4762 - 12.9 / (**) with "turbo effect"

APS 140 I PREMIUM LIGHT - ID.N. 46162480 for built-in mounting

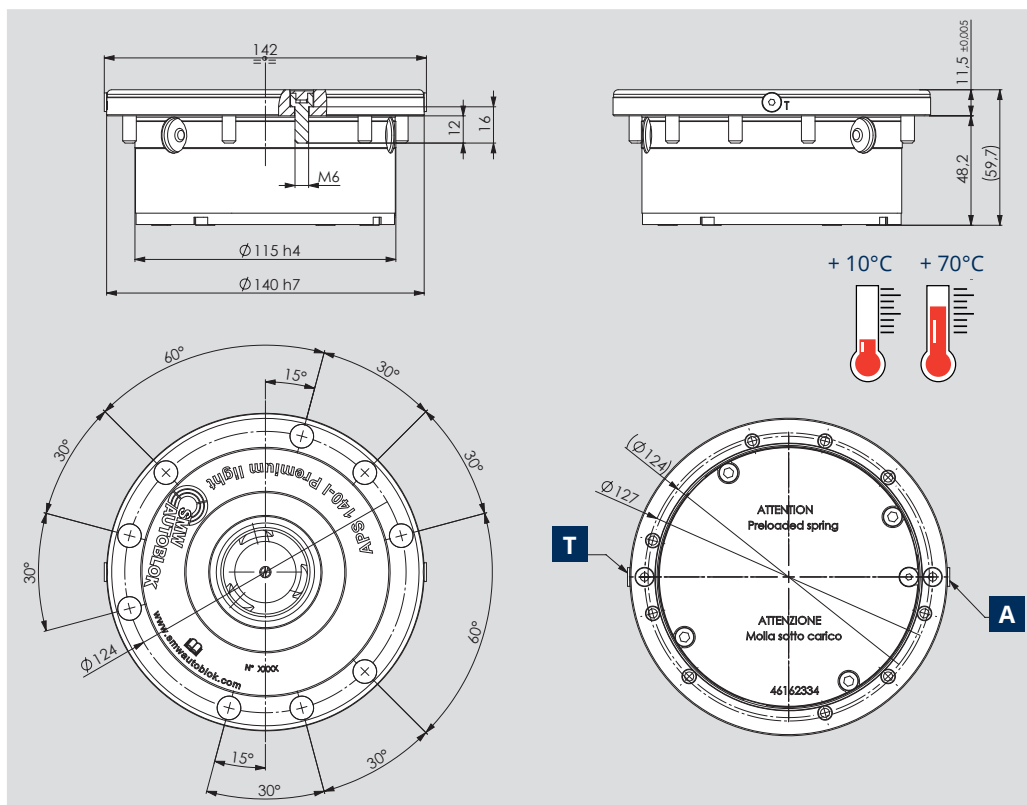


Zero Point Clamping Module

Technical features

- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Air cleaning

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
46162480	7,5 / 26**kN	35(M10) 50(M12) 75(M16) kN	6 bar	<0,005mm	4,5 kg

APS 140 E Ve SC - ID.N. 46165500 NSE plus 138 interchangeable

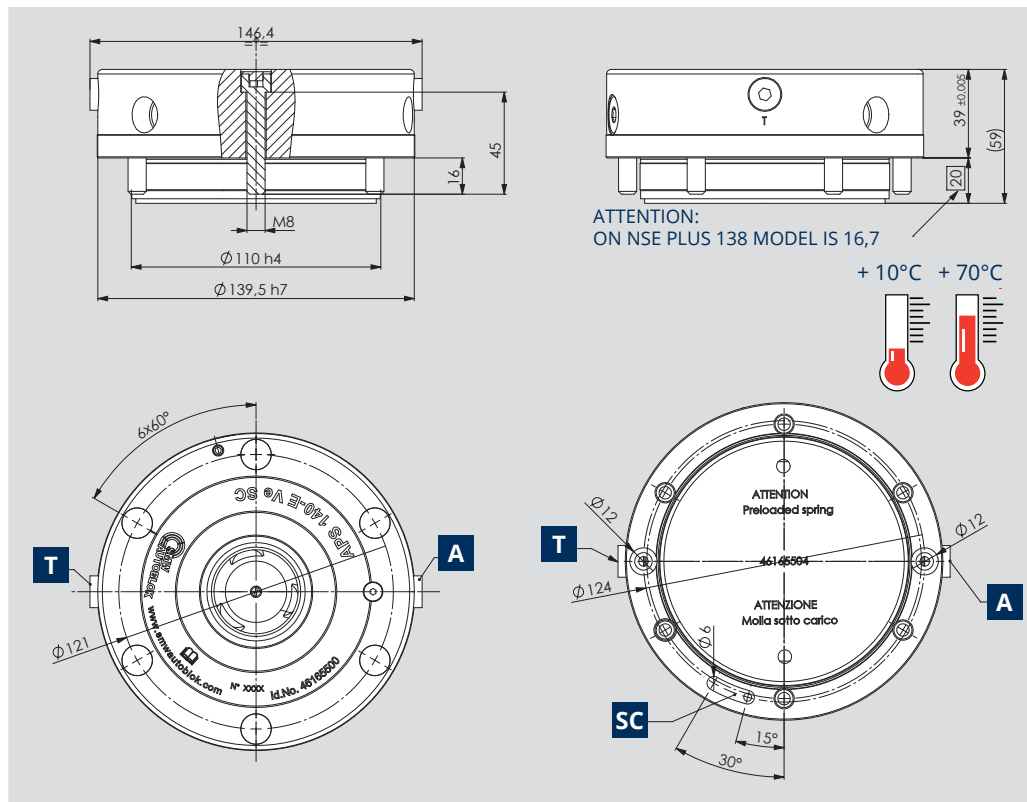


Zero Point Clamping Module

Technical features

- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Pneumatic stroke control **SC**
- Air cleaning

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
46165500	7,5 / 26** kN	35(M10) 50(M12) 75(M16) kN	6 bar	< 0,005 mm	4,8 Kg

(*) with screws DIN EN ISO 4762 - 12.9 / (**) with "turbo effect"

APS 160 E PREMIUM LIGHT SC - ID.N. 46165700
for external mounting

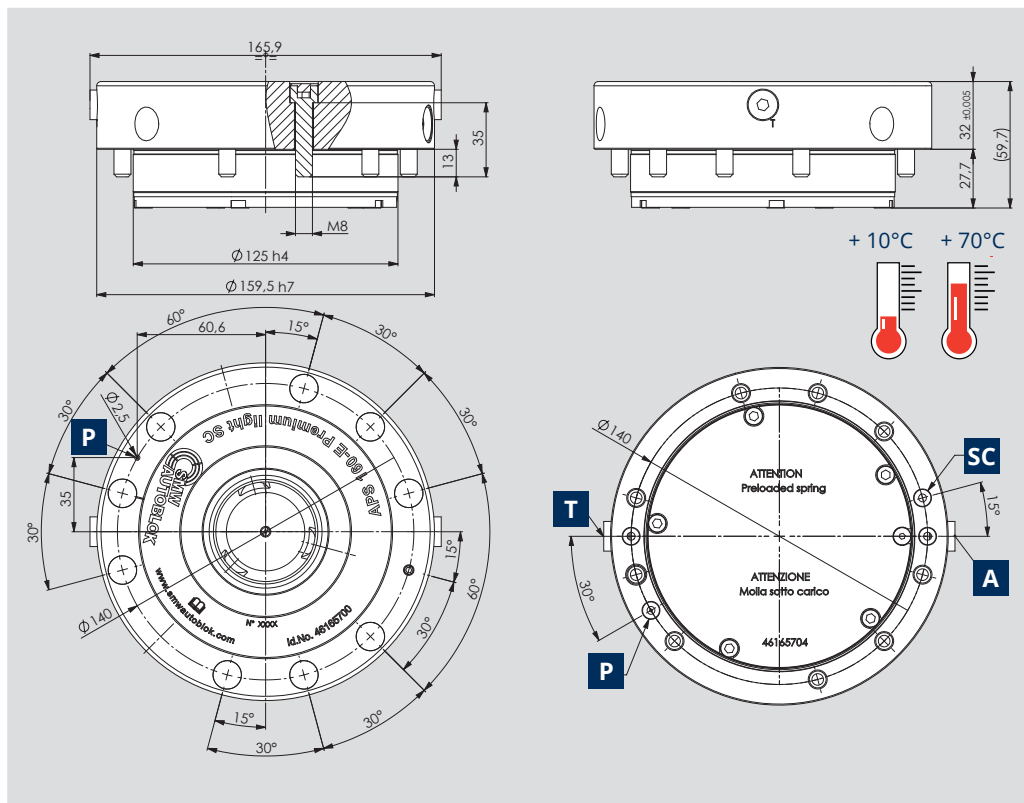


Zero Point Clamping Module

Technical features

- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Air sensing **P**
- Air cleaning
- Pneumatic stroke control **SC**

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
46165700	9 / 30**kN	50(M12) 75(M16) kN	6 bar	<0,005mm	5,9 Kg

APS 190 E PREMIUM SC - ID.N. 46165640
with pneumatic stroke control

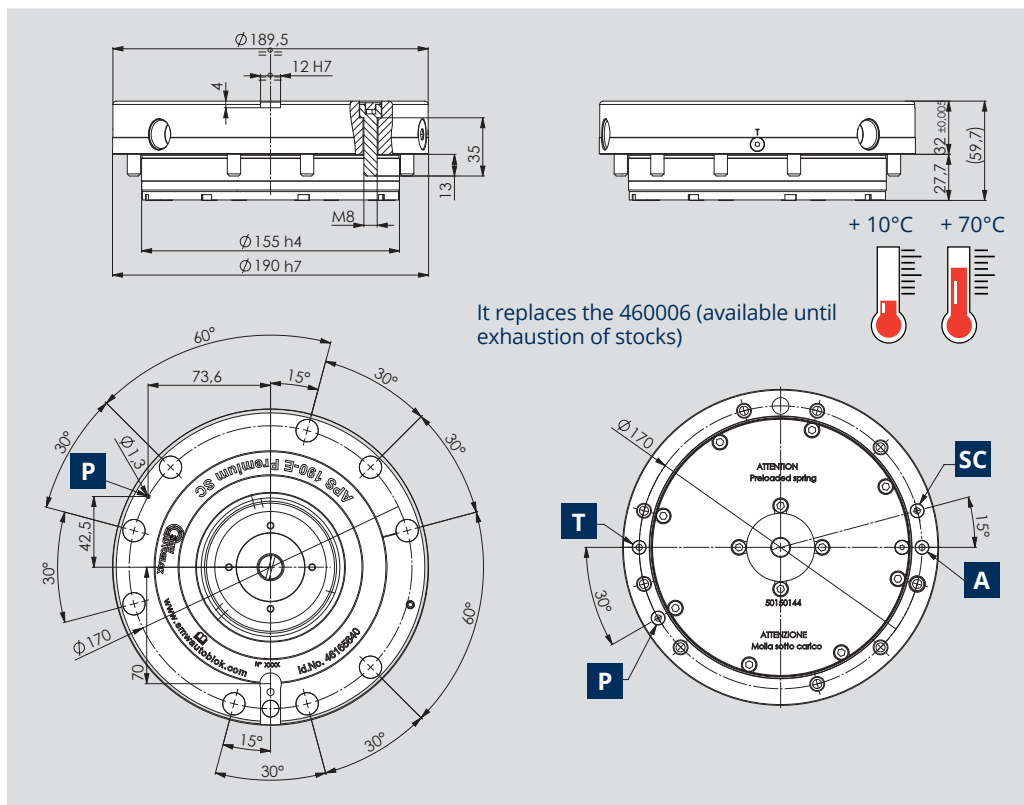


Zero Point Clamping Module

Technical features

- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Anti-rotation key seat
- Air sensing **P**
- Pneumatic stroke control **SC**

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
46165640	13,5 / 45** kN	50(M12) 75(M16) 80(6xM6) 150(6xM8) kN	6 bar	< 0,005 mm	6,9 Kg

(*) with screws DIN EN ISO 4762 - 12.9 / (**) with "turbo effect"

APS 190 E PREMIUM SC-6S - ID.N. 46162650

prepared for maximum 6 couplers

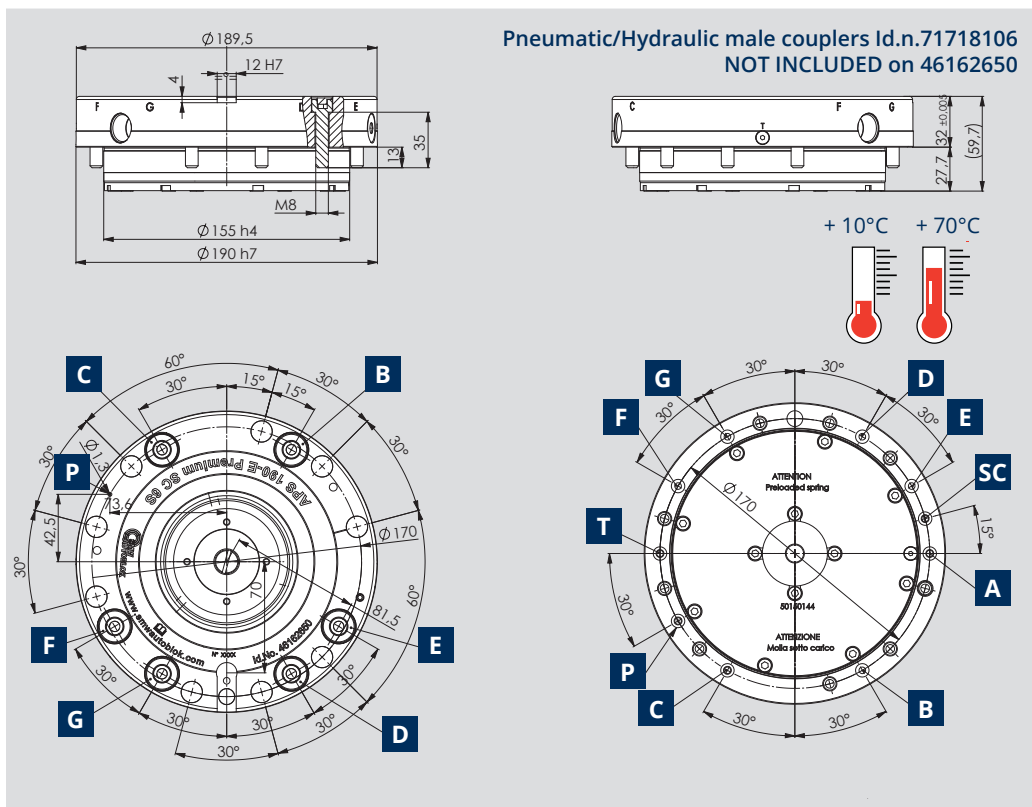


Zero Point Clamping Module

Technical features

- 3 Clamping slides
- TURBO function **T** to increase the clamping force
- Anti-rotation key seat
- Air sensing **P**
- Pneumatic stroke control **SC**
- n.6 seats **B C D E F G** prepared to mount pneumatics/hydraulics couplers

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
46162650	13,5 / 45** kN	50(M12) 75(M16) 80(6xM6) 150(6xM8) kN	6 bar	< 0,005 mm	6,9 Kg

APS 250 E PREMIUM SC - ID.N. 46165030

with pneumatic stroke control

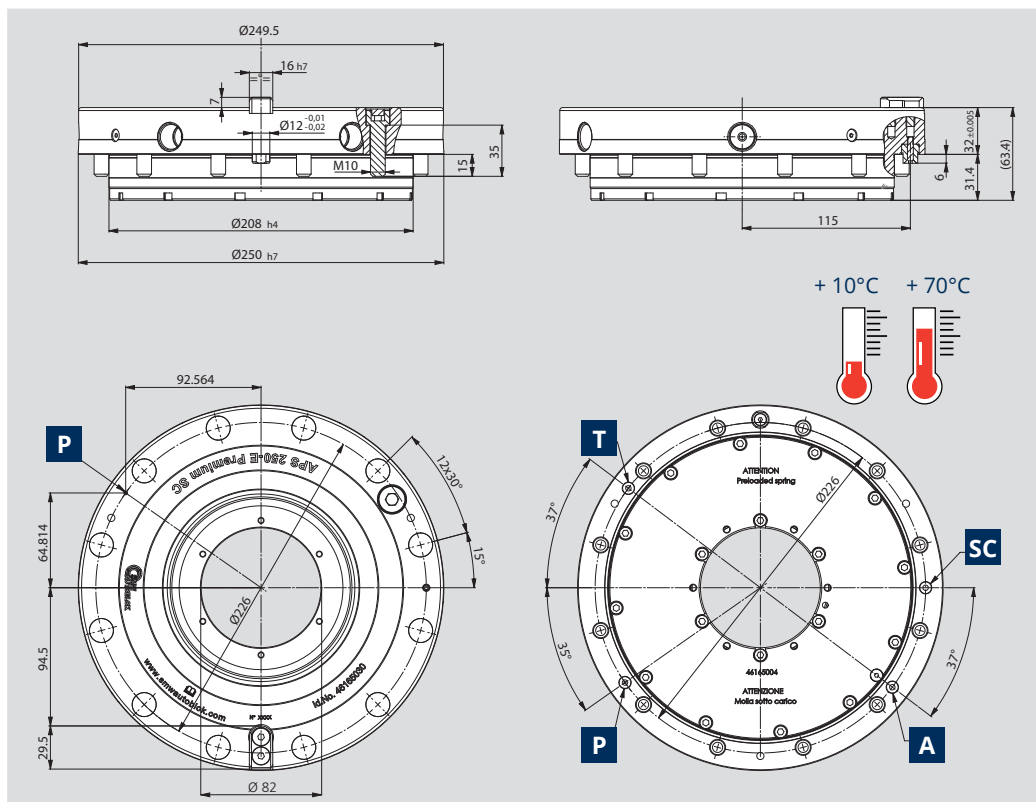


Zero Point Clamping Module

Technical features

- 6 Clamping slides
- TURBO function **T** to increase the clamping force
- Anti-rotation key seat
- Air sensing **P**
- Pneumatic stroke control **SC**

A = Open



ID.No.	Pull down force	Holding force (*)	Unlocking pressure	Repeatability	Weight
46165030	18 / 55** kN	300(6xM12) 210(6xM10) 375(15xM8) kN	6 bar	< 0,005 mm	15 kg

(*) with screws DIN EN ISO 4762 - 12.9 / (**) with "turbo effect"

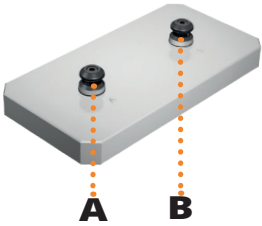
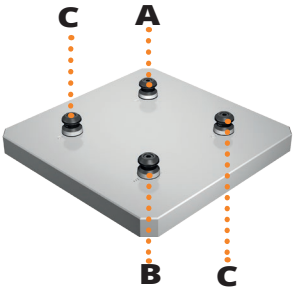
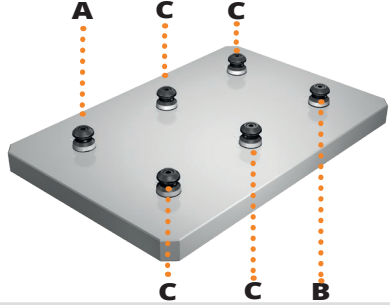
APS summary

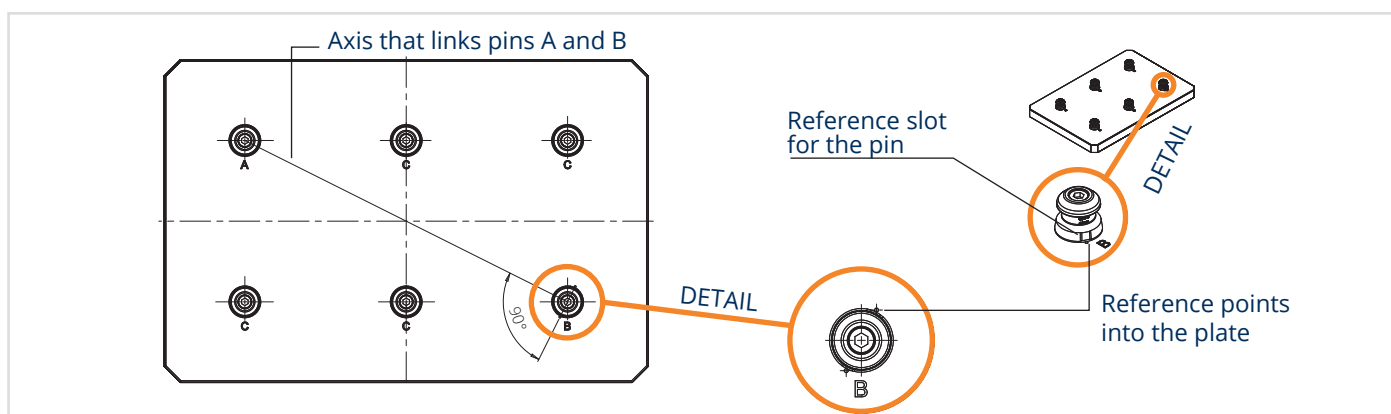
divided by increasing functional levels

PRODUCT RANGE	APS CLASSIFICATION	SIZE	CLAMPING SLIDES	TURBO	AIR CLEANING	STROKE CONTROL	AIR SENSING	KEY	PREPARED FOR COUPLERS	+10°C + 70°C	+10°C + 130°C
BASIC	BASIC	100	2								
		140	2								
PREMIUM LIGHT	PREMIUM LIGHT	140	3								
	PREMIUM-LIGHT INOX	140	3								
	PREMIUM-LIGHT INOX-HEAT	140	3								
PREMIUM LIGHT SC	PREMIUM LIGHT SC	140	3								
		160	3								
PREMIUM	PREMIUM	100	2								
	PREMIUM SC	140	3								
		190	3								
		250	6								
	PREMIUM SC-6S	190	3								
APS 140 E VeSC		140	3								

CLAMPING PINS

Positioning and clamping of the devices and/or of the workpiece are achieved through the clamping pins.

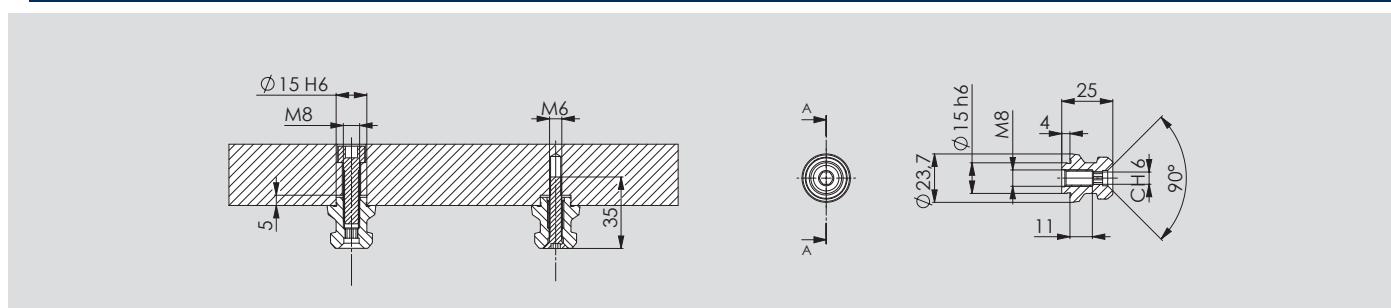
TYPE A Centering pin	TYPE B Reference pin	TYPE C Pull-down pin $\pm 0,05$ mm
 used for centering and clamping	 used for reference and clamping	 only for clamping
		



Tightening torque for pins mounting bolts

BOLTS	N·M
M6	13
M8	35
M10	60
M12	110
M16	200

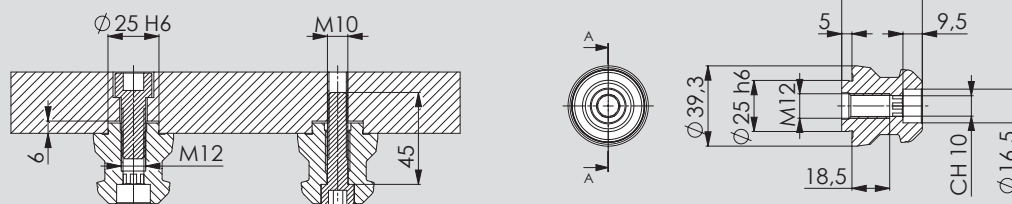
Pins for APS 100



ID.N.	TYPE		WEIGHT
46 16 21 55	A	M8	0,05 Kg
46 16 21 56	B	M8	0,05 Kg
46 16 21 57	C	M8	0,05 Kg

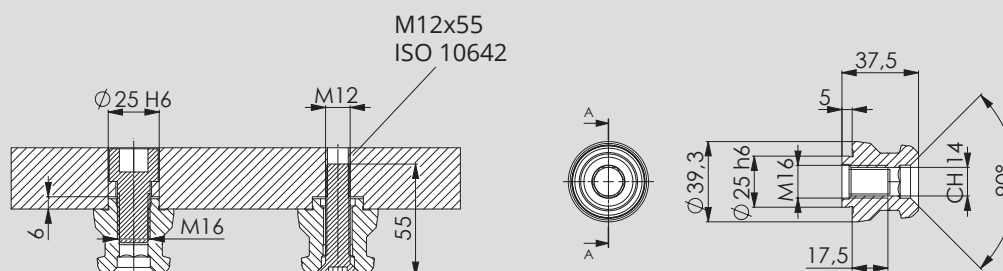
Pins for APS 140 M12 thread

Compatible with
Unilock/Vero-S
system



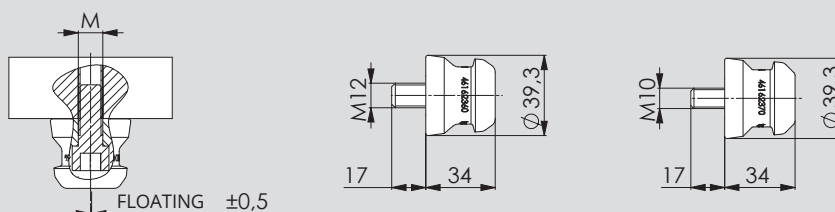
ID.N.	TYPE		WEIGHT
46 16 23 55	A	M12	0,2 Kg
46 16 23 56	B	M12	0,2 Kg
46 16 23 57	C	M12	0,2 Kg

Pins for APS 140 M16 thread



ID.N.	TYPE		WEIGHT
46 16 24 55	A	M16	0,2 Kg
46 16 24 56	B	M16	0,2 Kg
46 16 24 57	C	M16	0,2 Kg

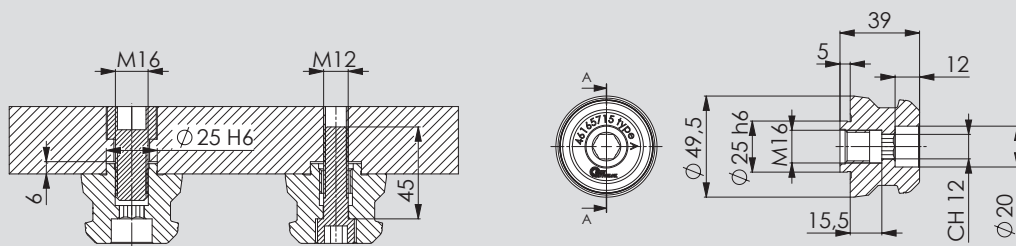
Pins TYPE C floating for APS 140



These pins don't require centering. They are floating only radially and not angularly.

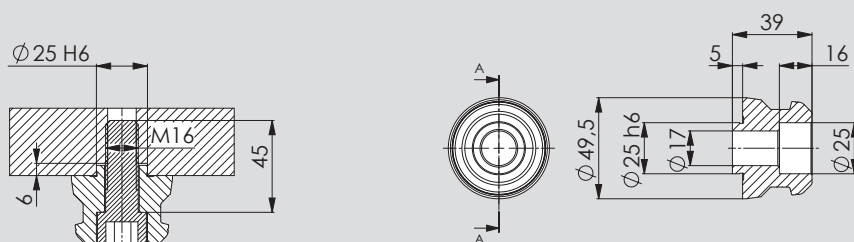
ID.N.	TYPE		WEIGHT
46 16 23 70	C - FLOATING $\pm 0,5$ mm	M10	0,2 Kg
46 16 23 60	C - FLOATING $\pm 0,5$ mm	M12	0,2 Kg

Pins for APS 160 M16 thread



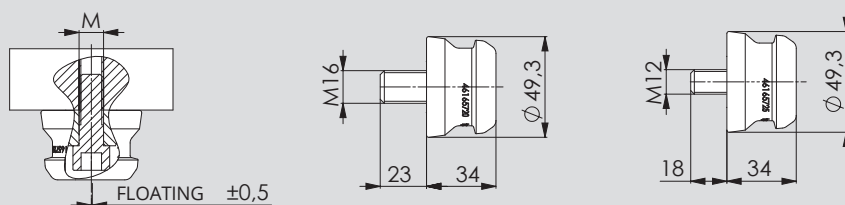
ID.N.	TYPE		WEIGHT
46 16 57 15	A	M16	0,35 Kg
46 16 57 16	B	M16	0,35 Kg
46 16 57 17	C	M16	0,35 Kg

Pins for APS 160 D17



ID.N.	TYPE		WEIGHT
46 16 57 05	A	D17	0,3 Kg
46 16 57 06	B	D17	0,3 Kg
46 16 57 07	C	D17	0,3 Kg

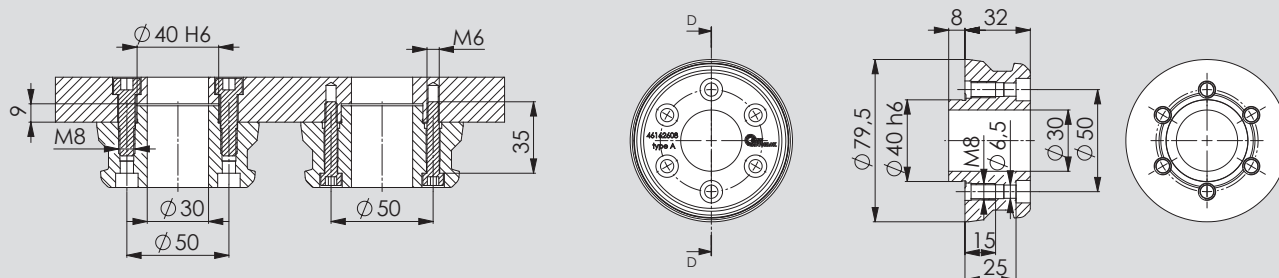
Pins TYPE C floating for APS 160



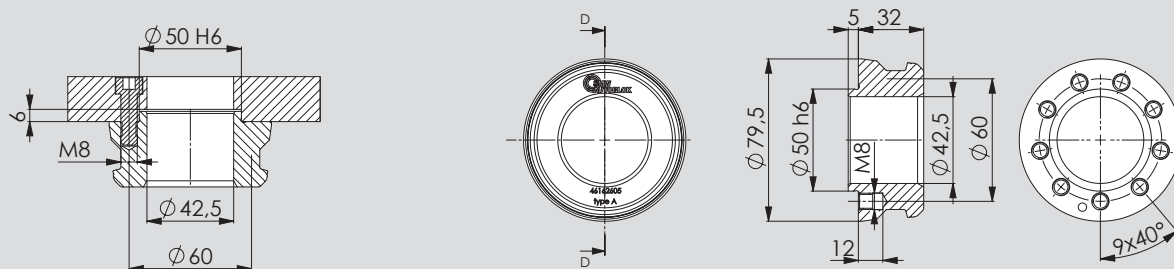
These pins don't require centering. They are floating only radially and not angularly.

ID.N.	TYPE		WEIGHT
46 16 57 20	C - FLOATING $\pm 0,5$ mm	M16	0,4 Kg
46 16 57 25	C - FLOATING $\pm 0,5$ mm	M12	0,35 Kg

Pins for APS 190

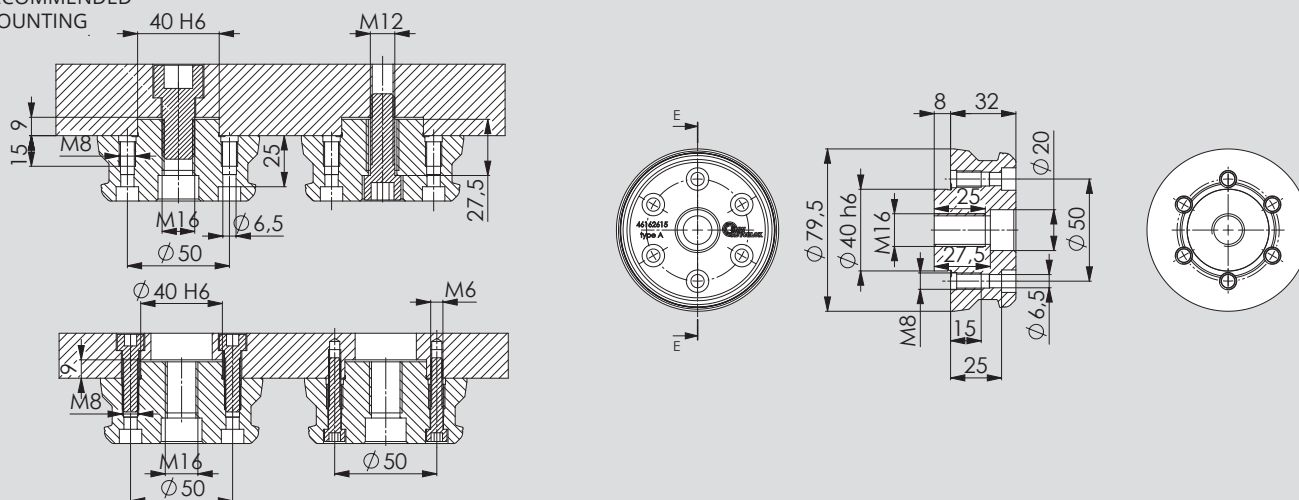


ID.N.	TYPE	WEIGHT	NOTE
46 16 26 08	A	0,85 Kg	Pin with central hole Ø 30



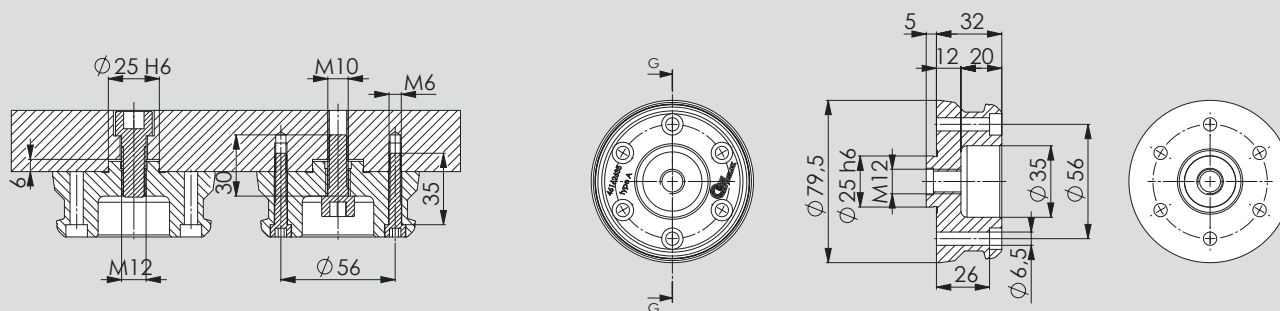
ID.N.	TYPE	WEIGHT	NOTE
46 16 26 05	A	0,7 Kg	Pin with central hole Ø 42

RECOMMENDED
MOUNTING



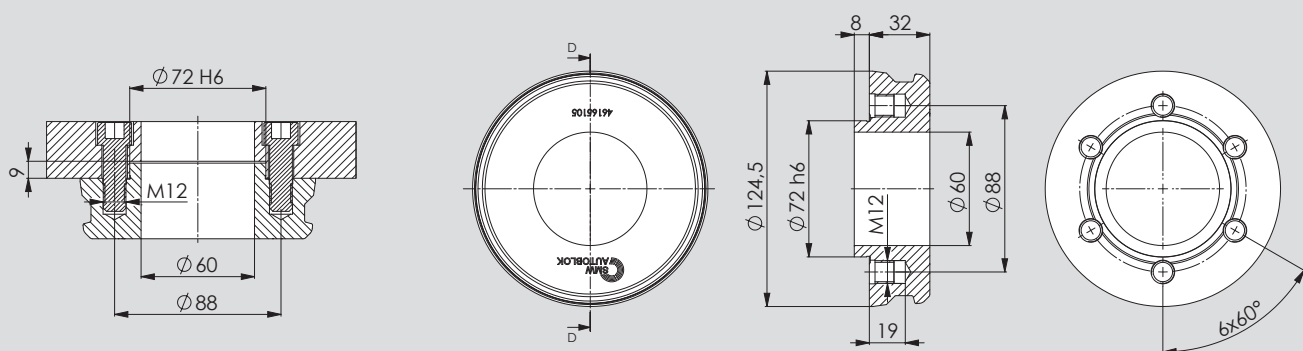
ID.N.	TYPE	WEIGHT
46 16 26 15	A	M16 1 kg
46 16 26 16	B	M16 1 kg
46 16 26 17	C	M16 1 kg

Pins for APS 190

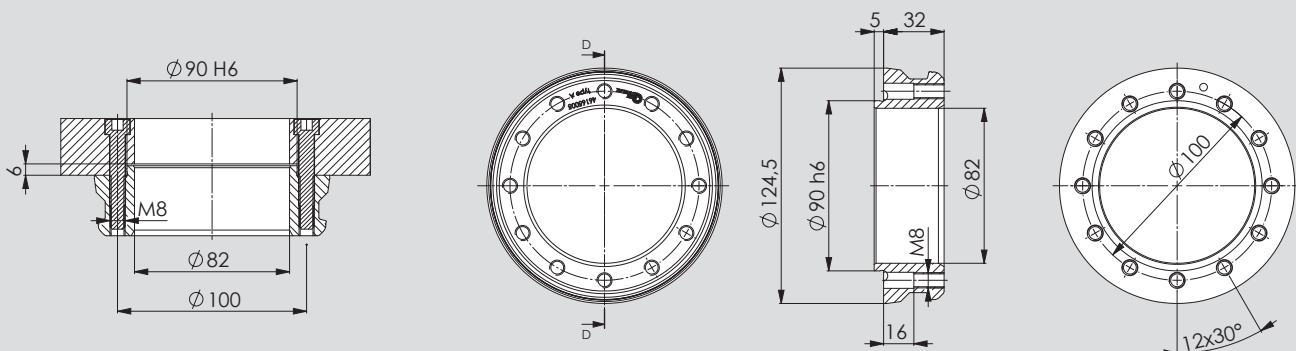


ID.N.	TYPE		WEIGHT
46 16 26 35	A	Mounting pin = to the pin APS-140 M12	0,85 kg

Pins for APS 250

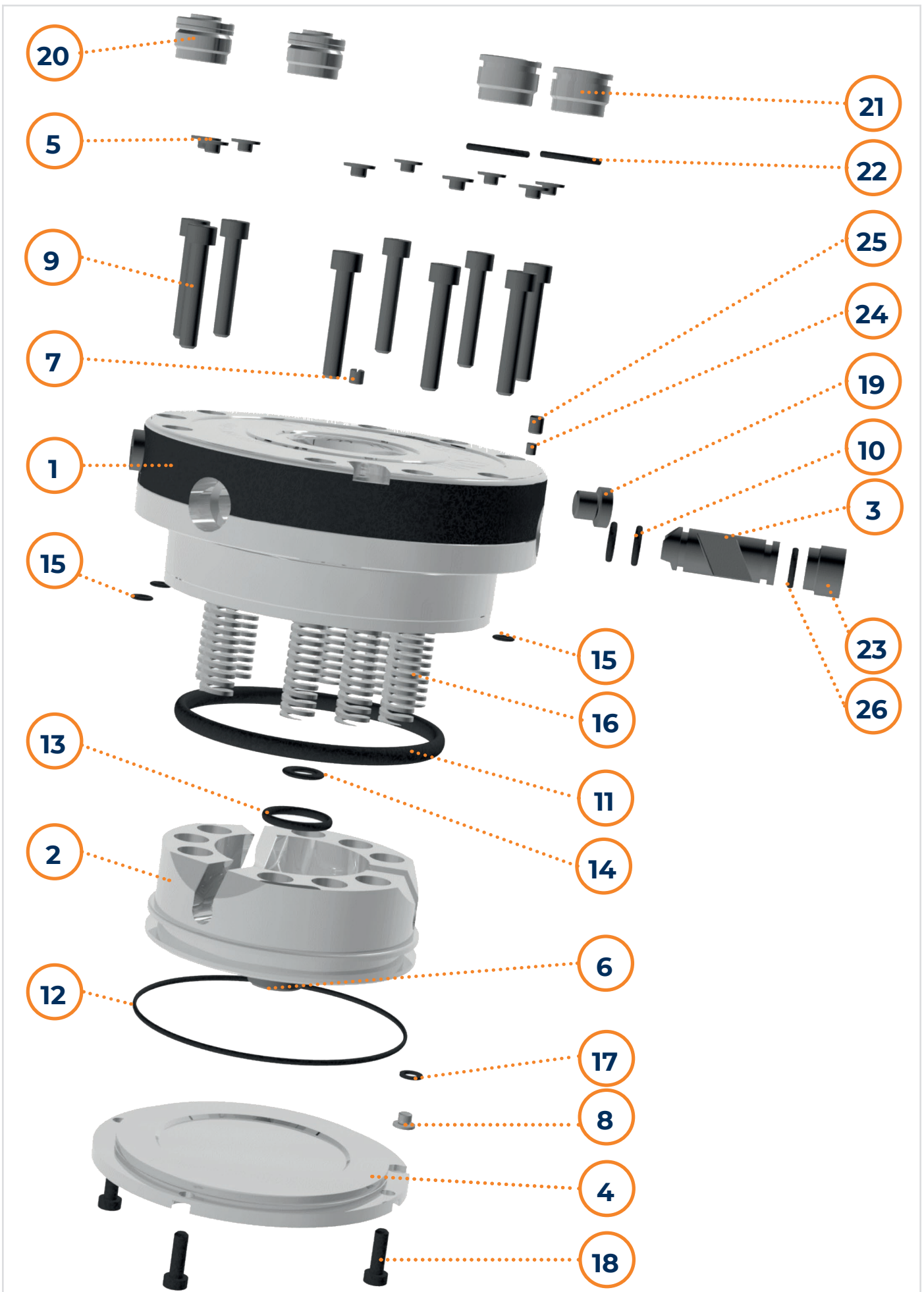


ID.N.	TYPE	WEIGHT	NOTE
46 16 51 05	A	2 Kg	Pin with central hole Ø 60



ID.N.	TYPE	WEIGHT	NOTE
46 16 50 05	A	1,3 Kg	Pin with central hole Ø 82

EXPLODED VIEW APS for spare parts



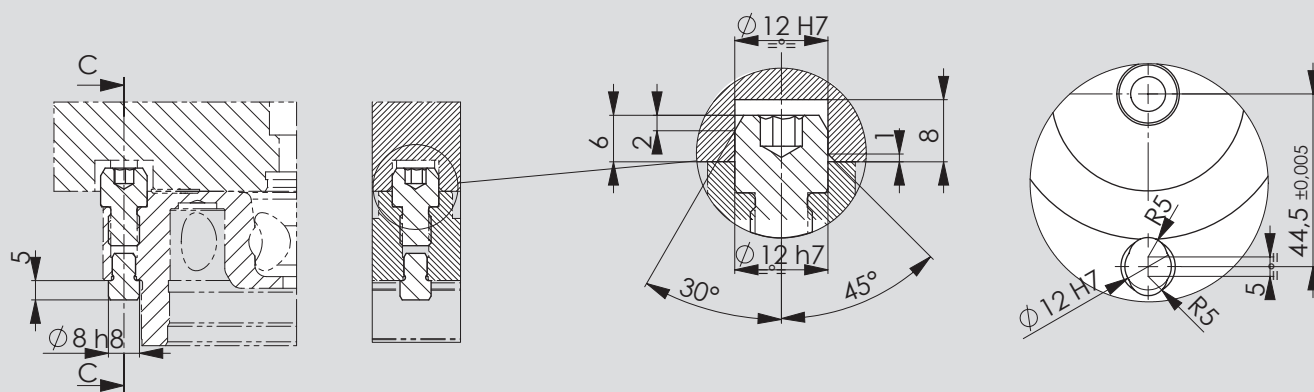
SPARE PARTS LISTS

for all APS models

POS.	DESCRIPTION	Q.TY	460007 APS 100 E BASIC	460005 APS 100 E PREMIUM	460001 APS 140 E BASIC	460003 APS 140 E PREMIUM LIGHT	46162540 APS 140 E SC PREMIUM LIGHT	460002 APS 140 E SC PREMIUM	46162830 APS 140 E PREMIUM LIGHT INOX
1	BODY	1	46162181	46162121	46162501	46162391	46162541	46162351	46162831
2	WEDGE	1	46162182	46162122	46162502	46162352	46162352	46162352	46162352
3	DRIVER PIN	3	46162183 (2)	46162183 (2)	46162803 (2)	46162803	46162803	46162803	46162803
4	BACK COVER	1	46162124	46162124	46162334	46162334	46162334	46162334	46162804
5	PLUG	9	46162129 (8)	46162129 (8)	46162309	46162309	46162309	46162309	46162309
6	PIN	1	-	46162130	-	46162340	46162340	46162340	46162340
7	GRUB SCREW	1	-	46162341	-	46162341	46162341	46162341	14191630
8	PLUG	1	71112505	71112505	09111123	09111123	09111123	09111123	09111123
9	SCREW UNI5931 12.9	9	71113027 (8)	71113027 (8)	71113048	71113048	71113048	71113048	71123048
10	OR SEAL	6	71310226 (4)	71310226 (4)	71310226 (4)	71310226	71310226	71310226	71318226
11	OR SEAL	1	71310432	71310432	71310637	71310637	71310637	71310637	71310637
12	OR SEAL	1	71310250	71310250	71310257	71310257	71310257	71310257	71310257
13	OR SEAL	1	-	71310316	-	71310324	71310324	71310324	71310324
14	OR SEAL	1	-	71310311	-	71310312	71310312	71310312	71310312
15	OR SEAL	3	71310217 (2)	71310217	71310219 (2)	71310219 (2)	71310219 (4)	71310219	71310219 (2)
16	SPRING	-	71282703 (8)	71282703 (8)	71282913 (8)	71282913 (6) 71282813 (3)	71282913 (6) 71282813 (3)	71282913 (6) 71282813 (3)	71282913 (6) 71282813 (3)
17	WASHER USIT	1	-	-	71372012	71372012	71372012	71372012	71372012
18	SCREW TCEIBAS 10,9	4	71113710 (6)	71113710 (6)	71119519	71119519	71119519	71119519	71123719
19	PLUG EI+SEAL ISO228	2	71628602	71628602	71628602	71628602	71628602	71628602	71628602
20	COUPLERS	2	-	-	-	-	-	-	-
21	PLUG	2	-	-	-	-	-	-	-
22	OR SEAL	2	-	-	-	-	-	-	-
23	PLUG	1	-	-	-	-	46162543	46162543	46162833 (3)
24	COPPER DISK	1	-	-	-	-	09341010	09341010	-
25	SCREW STEI UNI5923	1	-	-	-	-	71112111	71112111	-
26	OR SEAL	1	-	-	-	-	71310221	71310221	71318313 (3)
SEAL KIT			20590054	20590054	20590042	20590042	20590042	20590042	20590096

POS.	DESCRIPTION	Q.TY	46162860 APS 140 E PREM LIGHT INOX-HEAT	46162480 APS 140 I PREMIUM LIGHT	46165500 APS 140 E Ve SC	46165700 APS 160 E SC PREMIUM LIGHT	46165640 APS 190 E SC PREMIUM	46162650 APS 190 PREMIUM SC-6S	46165030 APS 250 E SC PREMIUM
1	BODY	1	46162831	46162481	46165501	46165701	46165611	46162651	46165001
2	WEDGE	1	46162352	46162352	46162352	46165702	46165612	46165612	46165002
3	DRIVER PIN	3	46162803	46162803	46162803	46162803	46165003	46165003	46165003 (6)
4	BACK COVER	1	46162804	46162334	46165504	46165704	50150144	50150144	46165004
5	PLUG	9	46162309	46162309	46162609 (6)	46162609	46162609	46162609	46165109(12)
6	PIN	1	46162340	46162340	46162340	46162340	-	-	-
7	GRUB SCREW	1	14191630	46162341	46162341	46162341	60360717+ 71372027	60360717+ 71372027	-
8	PLUG	1	09111123	09111123 (3)	09111123	09111123	09111123	09111123	09111123
9	SCREW UNI5931 12.9	9	71123048	71113044	71113068 (6)	71113066	71113066	71113066	71113085(12)
10	OR SEAL	6	71318226	71310226	71310226	71310226	71310227	71310227	71310227(12)
11	OR SEAL	1	71318637	71310637	71310637	71310641	71310653	71310653	71310665
12	OR SEAL	1	71318257	71310257	71310257	71310258	71310264	71310264	71310378
13	OR SEAL	1	71318324	71310324	71310324	71310324	71310439	71310439	71310460
14	OR SEAL	1	71318312	71310312	71310312	71310312	71310350	71310350	71310365
15	OR SEAL	3	71318219	71310219 (2)	71310223 (2)	71310219 (4)	71310219 (4)	71310219 (10)	71310219 (4)
16	SPRING	-	71282913 (6) 71282813 (3)	71282913 (6) 71282813 (3)	71282913 (6) 71282813 (3)	71282913 (6) 71282813 (6)	71282813(15)	71282813(15)	71282723 (6) 71282823(12)
17	WASHER USIT	1	71372213	71372012 (3)	71372012	71372012	71372012	71372012	71372012
18	SCREW TCEIBAS 10,9	4	71123719	71119519	-	71119519 (5)	71113719(8)+ 71113026(4)	71113719(8)+ 71113026(4)	71113024(12)+ 71113027(6)
19	PLUG EI+SEAL ISO228	2	71628302+ 71372123	POS.8+17	71628602	71628602	POS.8+17	POS.8+17	POS.8+17
21	PLUG	6	-	-	-	-	-	46162634	-
22	OR SEAL	6	-	-	-	-	-	71310230	-
23	PLUG	1	46162833 (3)	-	46162543	46204208	46165618	46165618	46165008
24	COPPER DISK	1	-	-	09341010	09341010	09341010	09341010	09341010
25	SCREW STEI UNI5923	1	-	-	71112111	71112111	71112111	71112111	71112111
26	OR SEAL	1	71318313 (3)	-	71310221	71310221	71310221	71310221	71310221
SEAL KIT			20590053	20590042	20590042	20590091	20590095	20590095	20590094

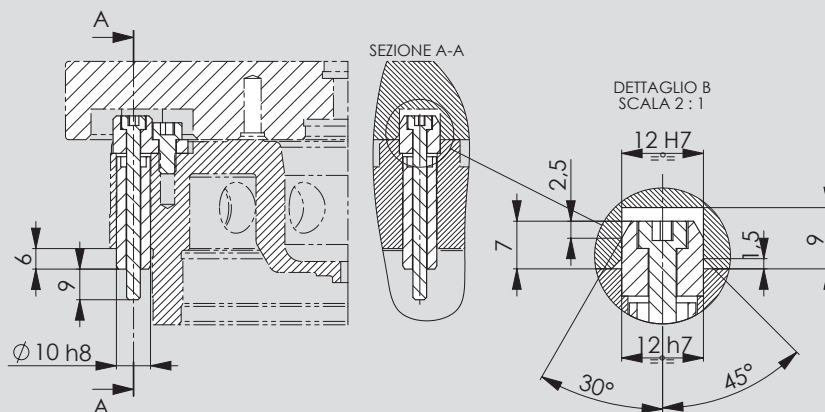
KEYS key kit for all APS models



ID.N.

46162133 KEY KIT FOR APS 100

* The SEMIFINISHED KEY in the part that comes out from APS is supplied increased to 12,5mm to be finished to 12h7.



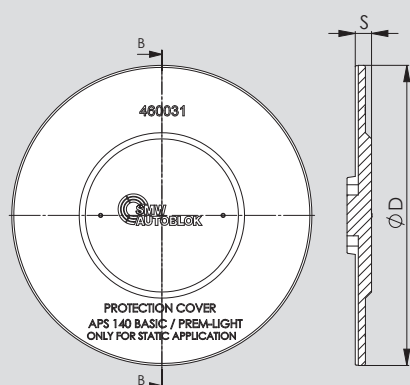
ID.N.

46162333 KEY KIT FOR APS 140E / APS 190E

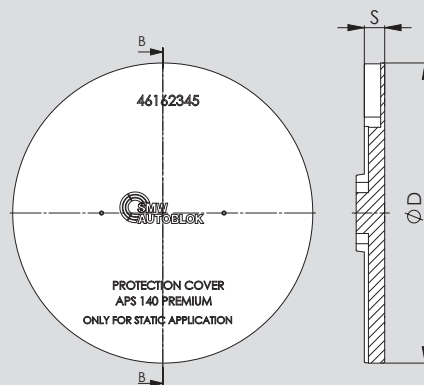
* 46162335 KEY KIT SMF 12,5 APS 140E / APS 190E

MAGNET PROTECTION COVERS for all APS models

FOR BASIC MODULE FOR PREMIUM LIGHT MODULE

NON
ROTATINGONLY FOR
STATIC
APPLICATION

FOR PREMIUM MODULE with key mounted

NON
ROTATINGONLY FOR
STATIC
APPLICATION

ID.N.	MODEL	S	ØD	WEIGHT	ID.N.	MODEL	S	ØD	WEIGHT
460031*	MAGNET PROTECTION COVER FOR APS 140 BASIC	8	147	0,8 Kg	460030*	MAGNET PROTECTION COVER FOR APS 100 PREMIUM	8	107	0,45 Kg
46165730*	MAGNET PROTECTION COVER FOR APS 160 BASIC	8	167	1 Kg	46162345**	MAGNET PROTECTION COVER FOR APS 140 PREMIUM	10	147	0,45 Kg
NOTE: all APS Premium covers can be mounted on the Basic model.					46162625**	MAGNET PROTECTION COVER FOR APS 190 PREMIUM	10	197	0,85 Kg
					46165033**	MAGNET PROTECTION COVER FOR APS 250 PREMIUM	10	257	1,5 Kg

* Steel ** Aluminium

2

MODULE HEIGHT EXTENSION APS



CONFIGURATIONS

- Without feedings integrated on machine
- With 2-4-6 feedings integrated on machine

MODULE HEIGHT EXTENSION

Without integrated feedings configuration possible scheme

(for example 3 axis machine)

APS Ø 100 one configuration

APS 100 E PREMIUM (1 KEY)

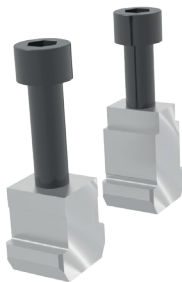
460005



Module Height Extension APS 100



T-NUTS SET optionals



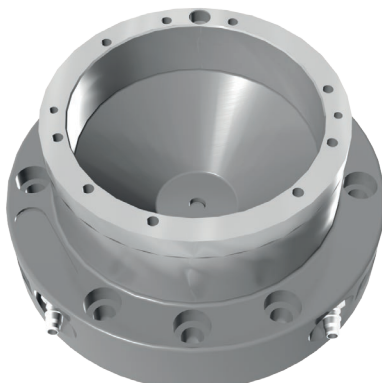
APS Ø 140 two configurations

APS 140 E PREMIUM (1 KEY)

460002



Soluzion 1: Module Height Extension APS 140



Soluzion 2: Module Height Extension APS 140 with SAB-1 valve



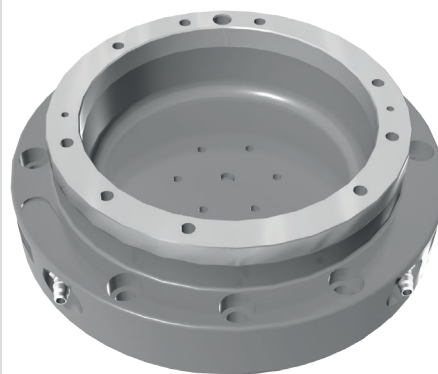
APS Ø 190 two configurations

APS 190 E PREMIUM (1 KEY)

46165640



Soluzion 1: Module Height Extension APS 190

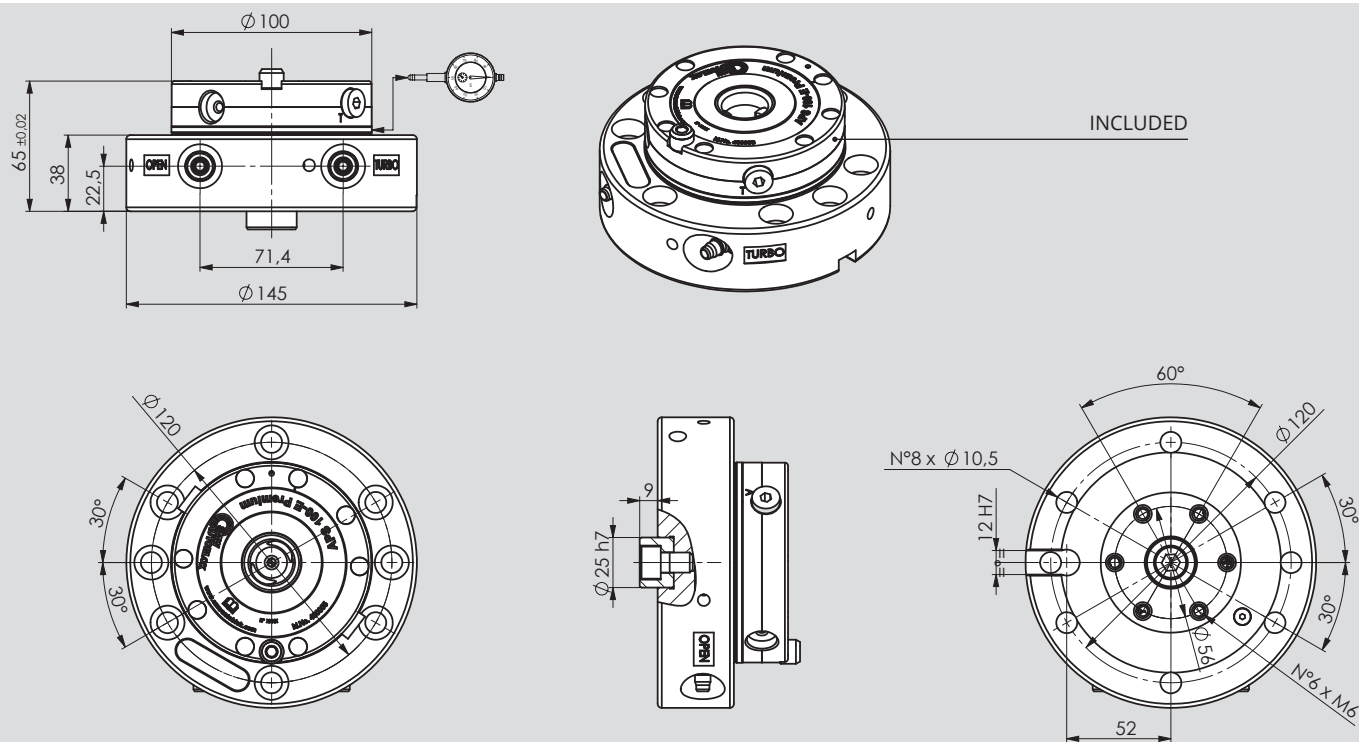


Soluzion 2: Module Height Extension APS 190 with SAB-1 valve



ATTENTION: the pneumatic system of the pressure switch must signal the alarm condition and must prevent the pallet exchange on the APS or any robot operation when the inlet pressure is less than 6 bar.

MODULE HEIGHT EXTENSION with one APS 100 E PREMIUM



ID.N. MODULE HEIGHT EXTENSION (APS INCLUDED)	HEIGHT	WEIGHT
460110 MODULE EXTENSION APS 100 PREMIUM H65	65 mm	6 Kg

NOTE 1: for every unit is included the key Id.n. 46162133 (see page 20).

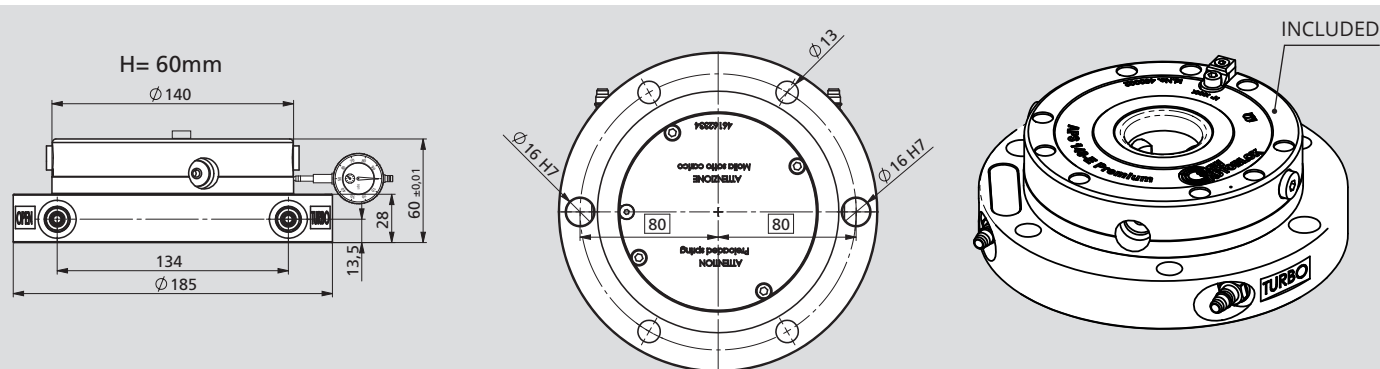
NOTE 2: OPTIONALS T-nuts set: - 46204100 with T-slot 12 / - 46204101 with T-slot 14 / - 46204102 with T-slot 18
Drawings and shares of these sets see page 29.

NOTE 3: the module height extension can also be mounted on APS 140 using the pin 46162355 like can see at drawing on page 52. (see also an example on page 25).

NOTE 4: when use the module in rotation (rpm 200-1000) request balancing (listed separately).

NOTE 5: the module extension is equipped with radial screws for the fine centering of the APS.

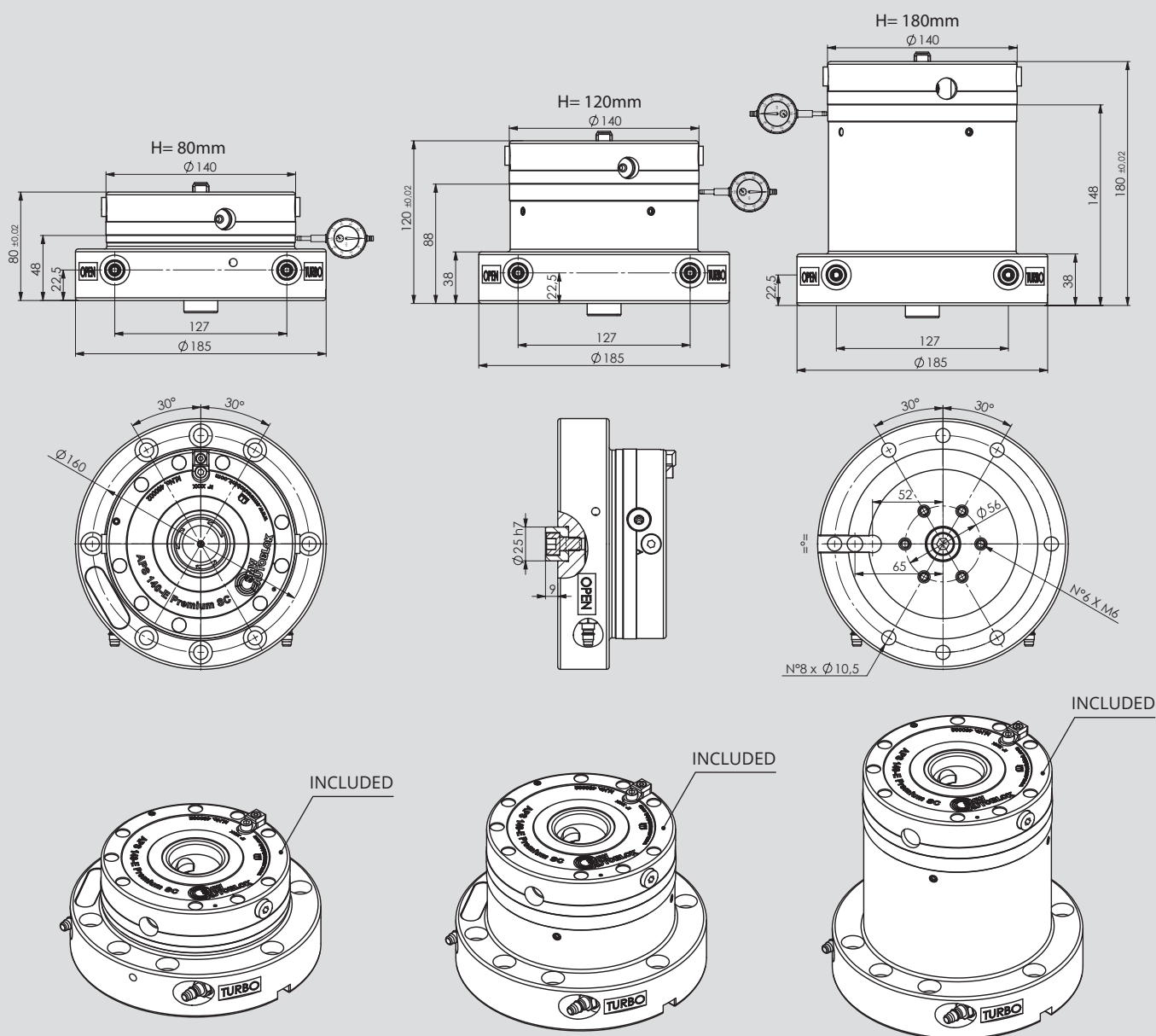
MODULE HEIGHT EXTENSION with one APS 140 E PREMIUM



ID.N. MODULE HEIGHT EXTENSION (APS INCLUDED)	HEIGHT	WEIGHT
460112 MODULE EXTENSION APS 140 PREMIUM H60	60 mm	8 Kg

NOTE 1: for every unit is included the key Id.n. 46162333 (see page 20 and example pag.25).

MODULE HEIGHT EXTENSION with APS 140 E PREMIUM



ID.N. MODULE HEIGHT EXTENSION (APS INCLUDED)	HEIGHT	WEIGHT
460113 MODULE EXTENSION APS 140 PREMIUM H80	80 mm	11 Kg
460114 MODULE EXTENSION APS 140 PREMIUM H120	120 mm	14 Kg
460115 MODULE EXTENSION APS 140 PREMIUM H180	180 mm	18 Kg

NOTE 1: for every unit is included the key Id.n. 46162333 (see page 20).

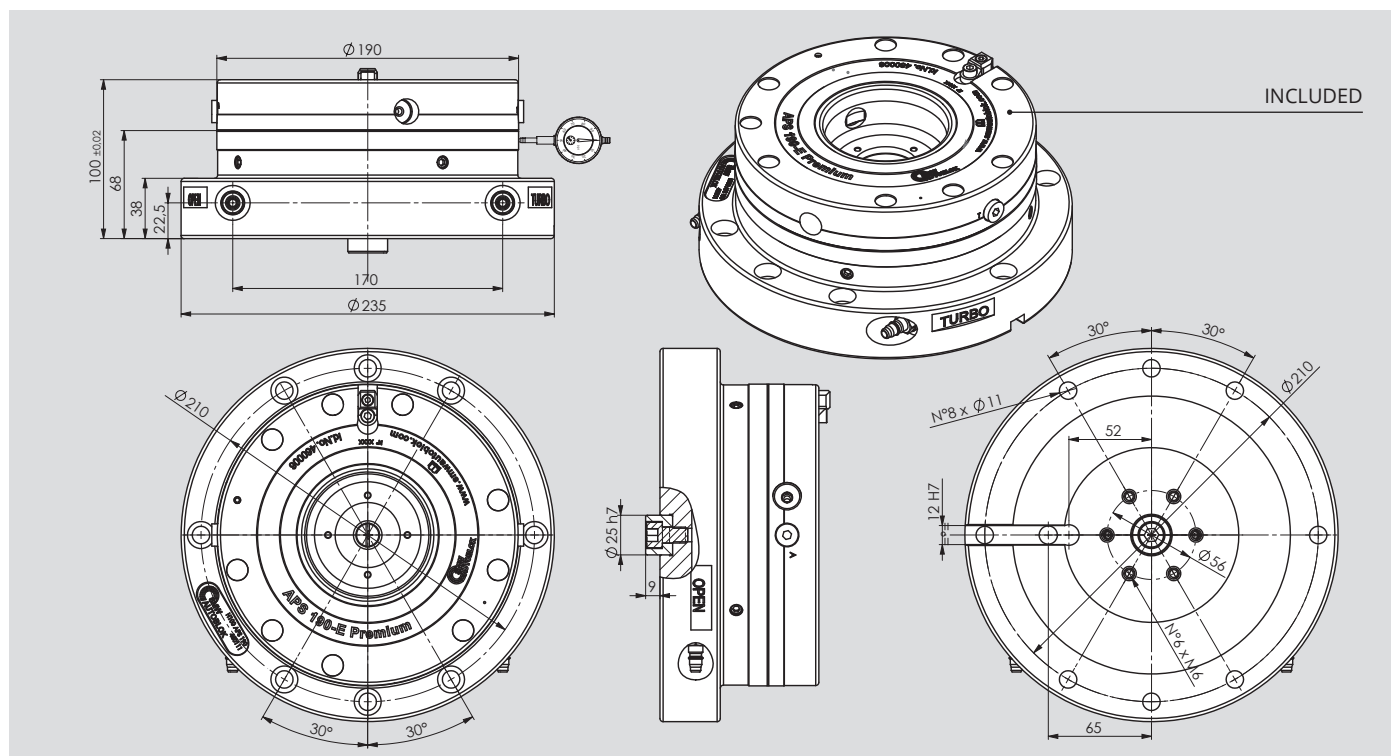
NOTE 2: OPTIONALS T-nuts set: - 46204100 with T-slot 12 / - 46204101 with T-slot 14 / - 46204102 with T-slot 18
Drawings and shares of these sets see page 29.

NOTE 3: the module height extension can also be mounted on APS 140 and APS 190 using respectively the pins 46162355 (APS 140) and 46162635 (APS 190) like can see at drawing on page 52. (see also an example on page 25).

NOTE 4: when use the module in rotation (rpm 200-1000) request balancing (listed separately).

NOTE 5: the module extension is equipped with radial screws for the fine centering of the APS.

MODULE HEIGHT EXTENSION with APS 190 E PREMIUM



ID.N. MODULE HEIGHT EXTENSION (APS INCLUDED)	HEIGHT	WEIGHT
460111 MODULE EXTENSION APS 190 PREMIUM H100	100 mm	20,5 Kg

NOTE 1: for every unit is included the key Id.n. 46162333 (see page 20).

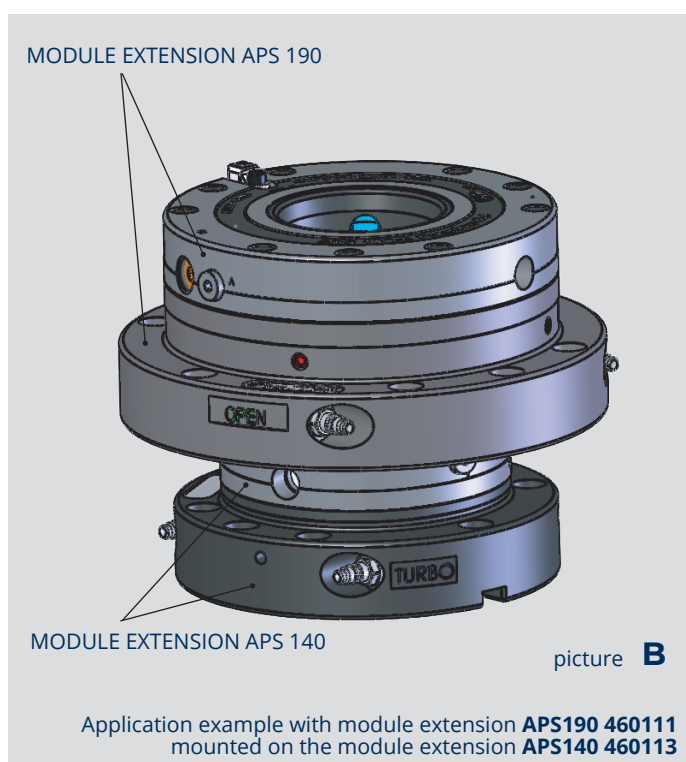
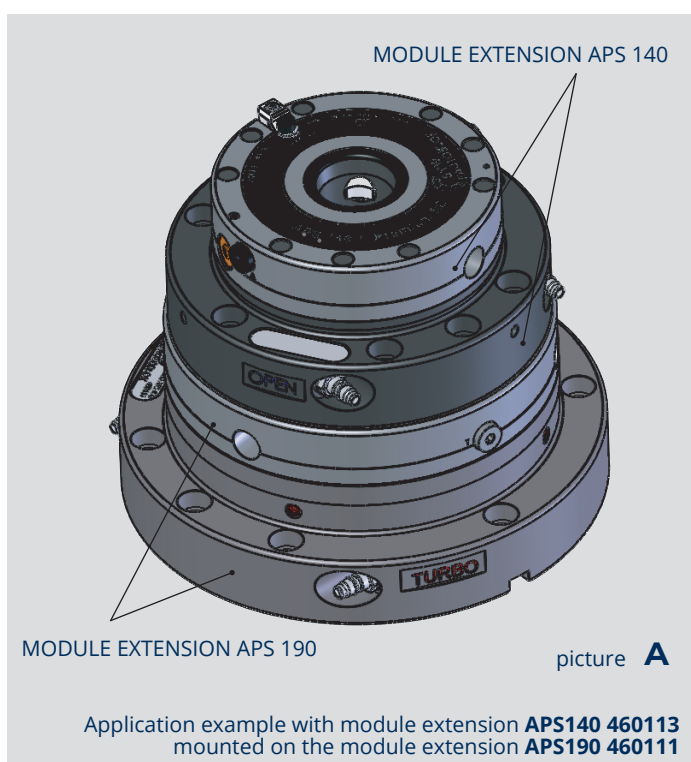
NOTE 2: OPTIONALS T-nuts set (see on page 29): - 46204100 with T-slot 12 / - 46204101 with T-slot 14 / - 46204102 with T-slot 18.

NOTE 3: the module height extension can also be mounted on APS 140 and APS 190 using respectively the pins 46162355 (APS 140) and 46162635 (APS 190) like can see at drawing on page 52. (see the drawing below).

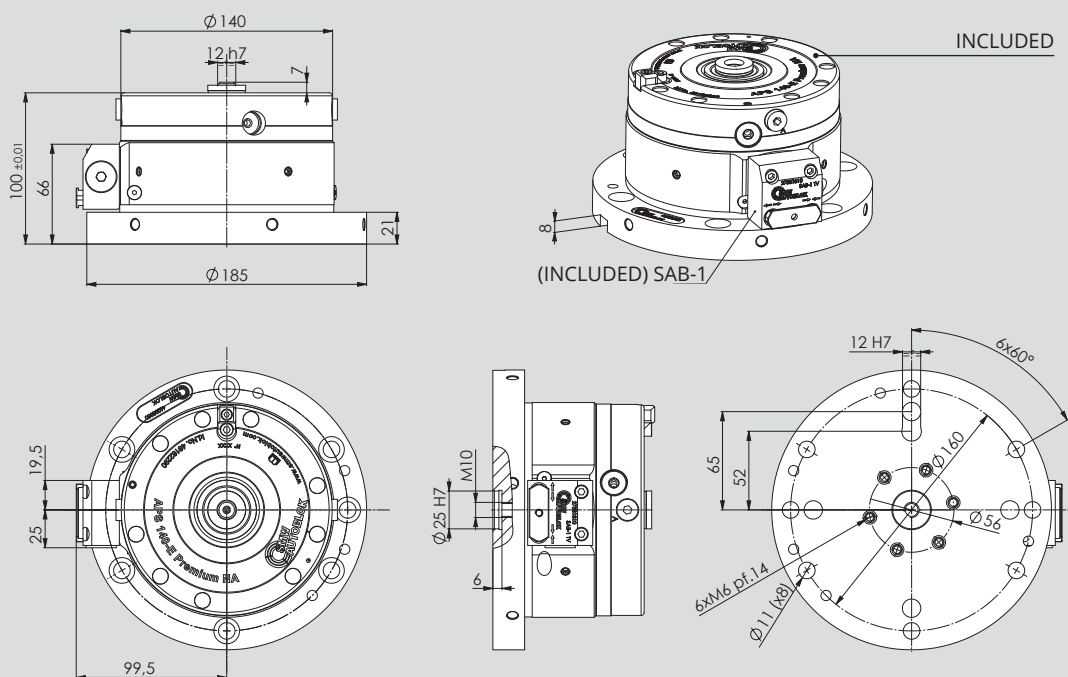
NOTE 4: when use the module in rotation (rpm 200-1000) request balancing (listed separately).

NOTE 5: the module extension is equipped with radial screws for the fine centering of the APS.

MOUNTING EXAMPLES



ONE APS WITH SAB-1 VALVE MODULE HEIGHT EXTENSION with APS 140



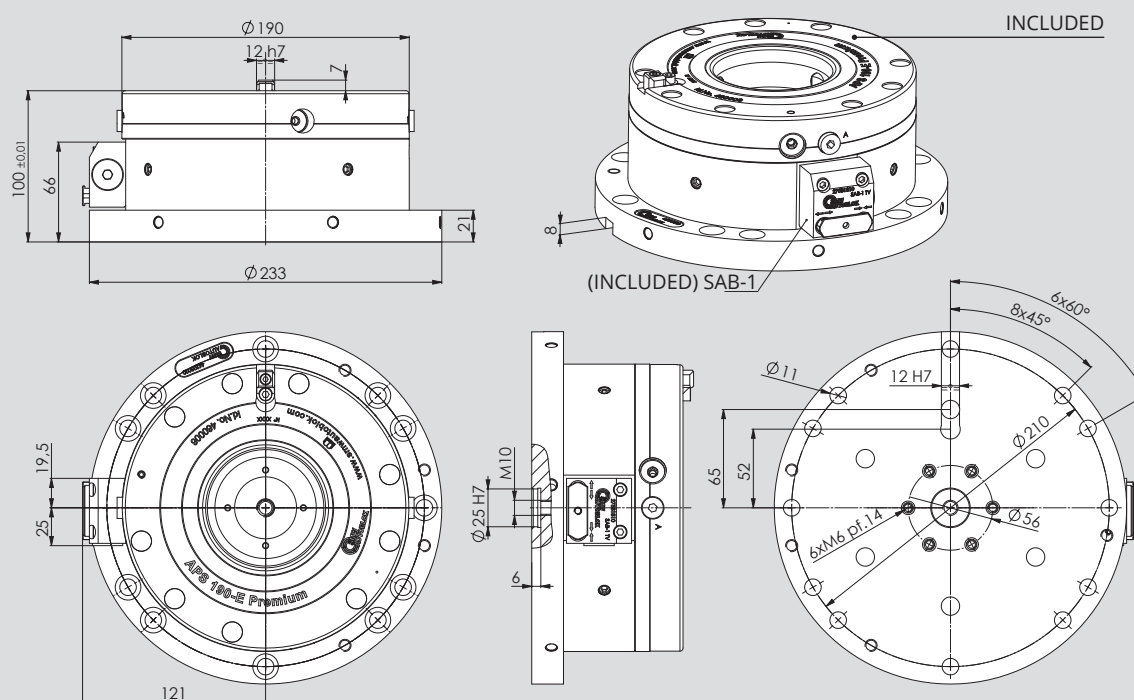
ID.N. MODULE HEIGHT EXTENSION (APS INCLUDED)	HEIGHT	WEIGHT
46203030 MODULE HEIGHT EXTENSION APS 140 E PREMIUM H100 + SAB-1	100 mm	12 Kg

NOTE 1: when use the module in rotation (rpm 200-1000) request balancing (listed separately).

NOTE 2: the module extension is equipped with radial screws for the fine centering of the APS.

NOTE 3: the module height extension can also be mounted on APS 140 and APS 190 using respectively the pins 46162355 (APS 140) and 46162635 (APS 190) like can see at drawing on page 52. (see also an example on page 25).

ONE APS WITH SAB-1 VALVE MODULE HEIGHT EXTENSION with APS 190



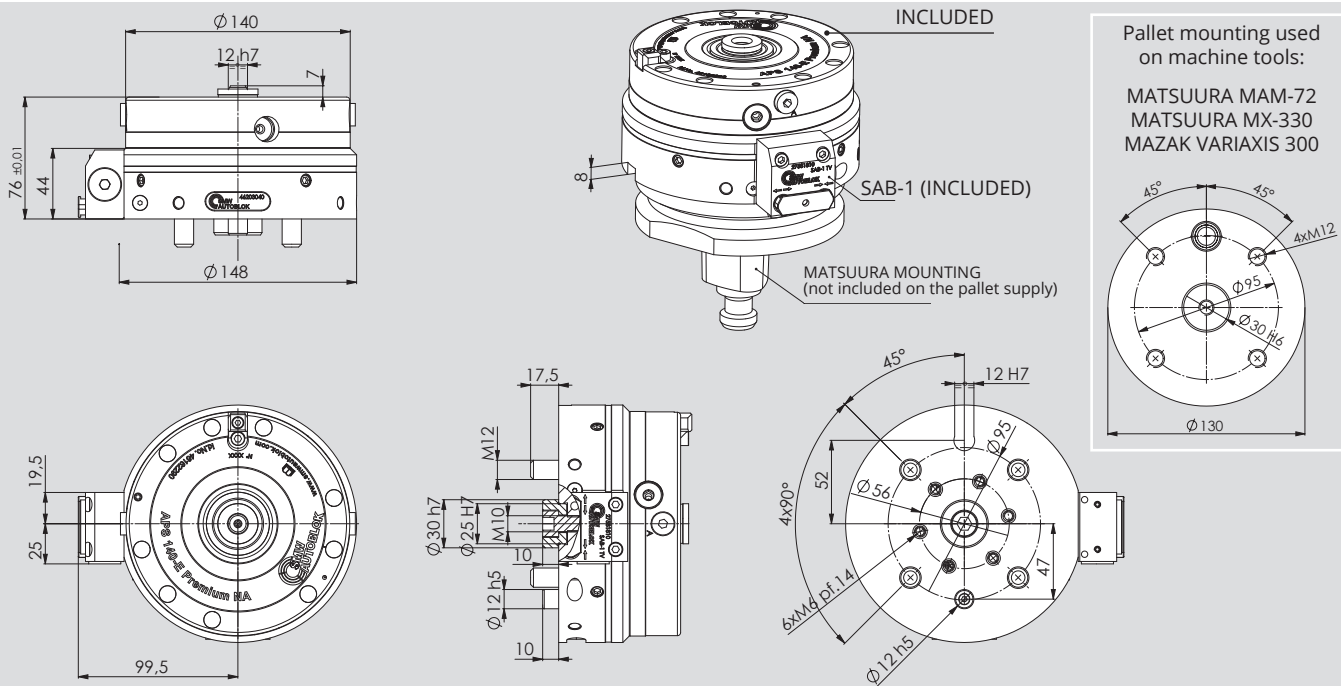
ID.N. MODULE HEIGHT EXTENSION (APS INCLUDED)	HEIGHT	WEIGHT
46203020 MODULE HEIGHT EXTENSION APS 190 E PREMIUM H100 + SAB-1	100 mm	18 Kg

NOTE 1: when use the module in rotation (rpm 200-1000) request balancing (listed separately).

NOTE 2: the module extension is equipped with radial screws for the fine centering of the APS.

NOTE 3: the module height extension can also be mounted on APS 140 and APS 190 using respectively the pins 46162355 (APS 140) and 46162635 (APS 190) like can see at drawing on page 52. (see also an example on page 25).

ONE APS WITH SAB-I VALVE D130 MODULE HEIGHT EXTENSION with APS 140



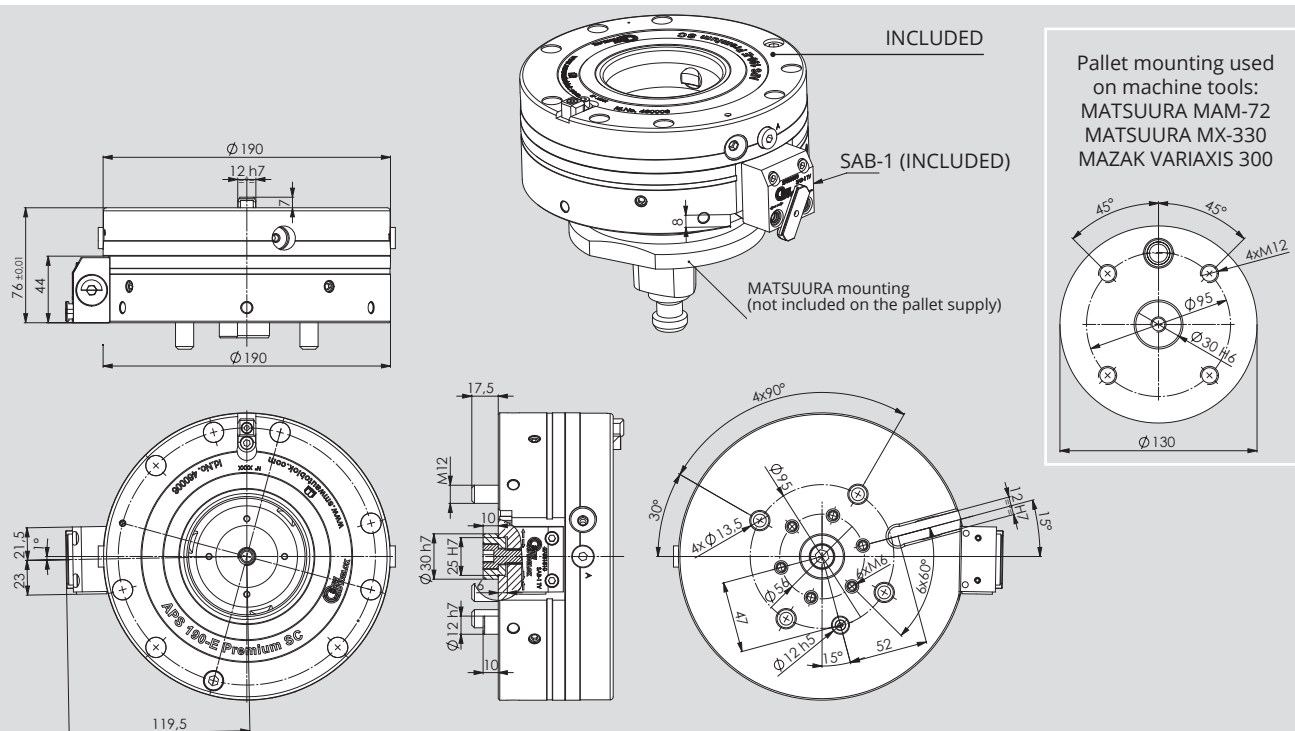
ID.N. MODULE HEIGHT EXTENSION (APS INCLUDED)	HEIGHT	WEIGHT
46203040 MODULE HEIGHT EXTENSION ONE APS 140 E PREMIUM H76 + SAB-1	76 mm	8,3 Kg

NOTE 1: when use the module in rotation (rpm 200-1000) request balancing (listed separately).

NOTE 2: the module extension is equipped with radial screws for the fine centering of the APS.

NOTE 3: the module height extension can also be mounted on APS 140 using the pin 46162355 like can see at drawing on page 52 (see the examples on page 25).

ONE APS WITH SAB-1 VALVE D130 MODULE HEIGHT EXTENSION with APS 190



ID.N. MODULE HEIGHT EXTENSION (APS INCLUDED)	HEIGHT	WEIGHT
41702150 MODULE HEIGHT EXTENSION ONE APS 190 E PREMIUM H76 + SAB-1	76 mm	14,5 Kg

NOTE 1: when use the module in rotation (rpm 200-1000) request balancing (listed separately).

NOTE 2: the module extension is equipped with radial screws for the fine centering of the APS.

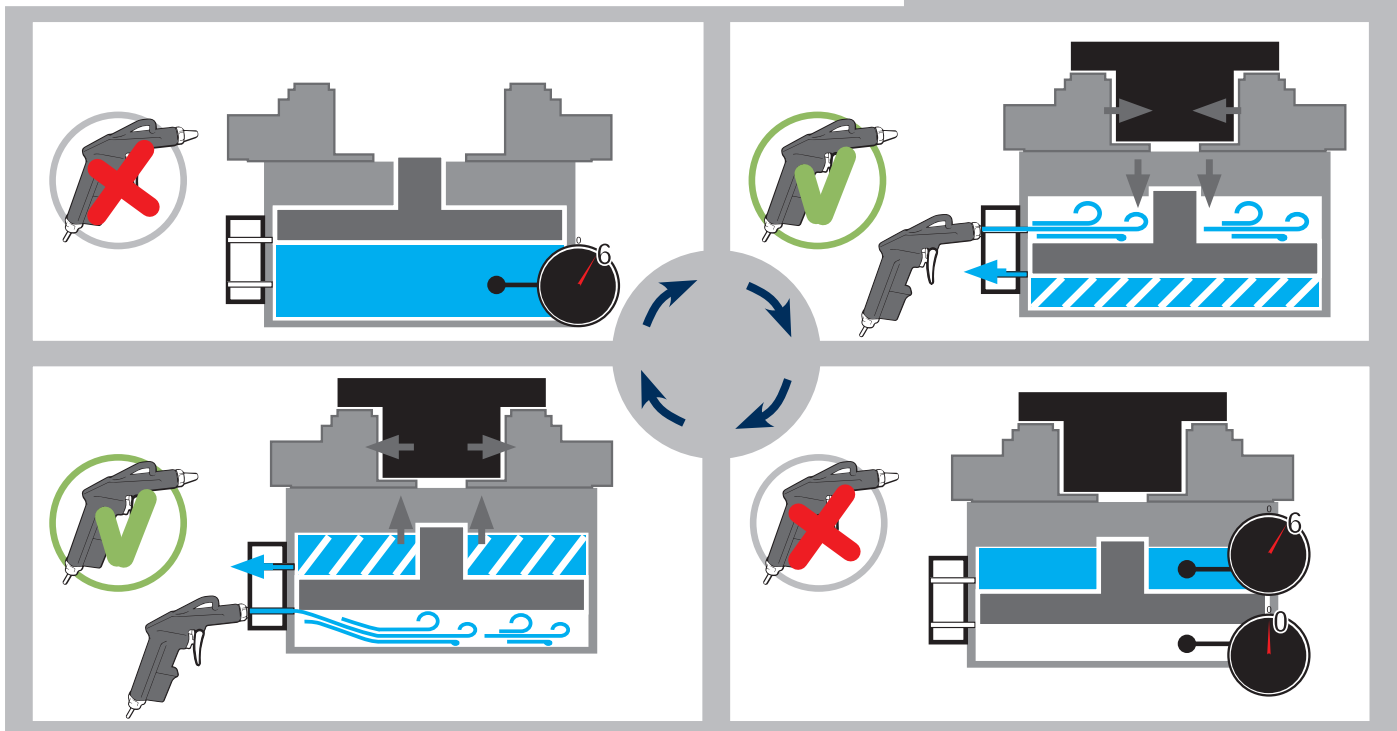
NOTE 3: the module height extension can also be mounted on APS 140 and APS 190 using respectively the pins 46162355 (APS 140) and 46162635 (APS 190) like can see at drawing on page 52. (see also an example on page 25).

SAB-1 safety valve

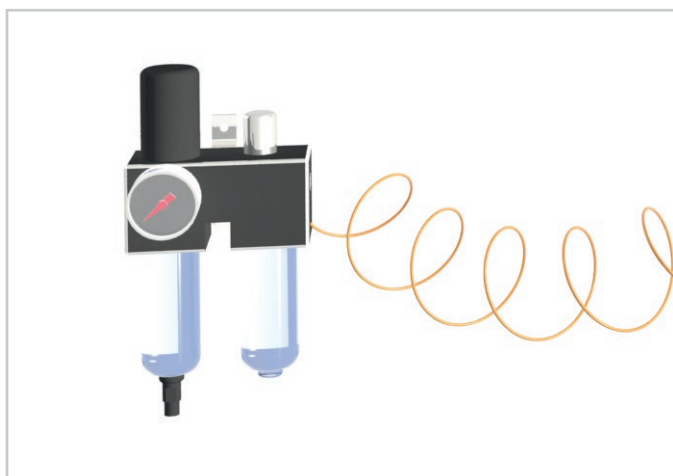


The Safety valve SAB-1 maintains air pressure in the cylinder pallet transportation / storage or machining without feed.

SAB-1 OPERATION

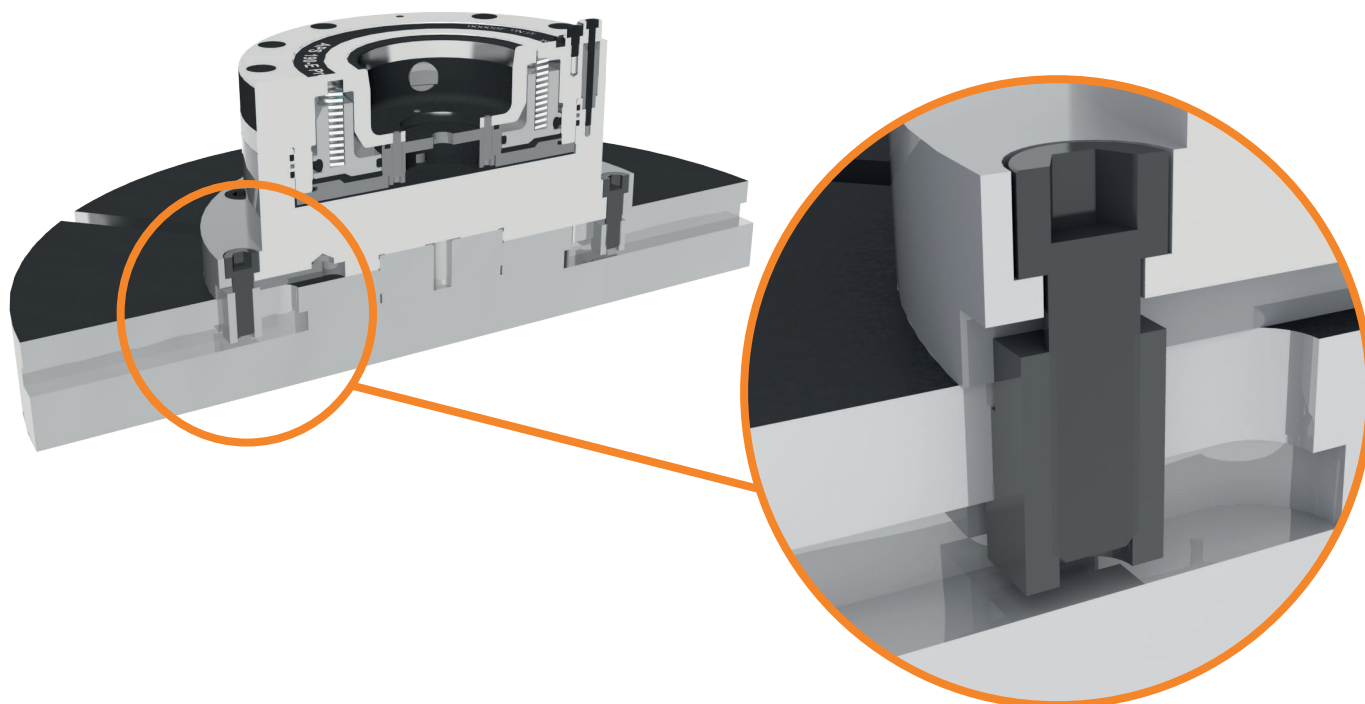


PNEUMATIC GUN with steel nozzle

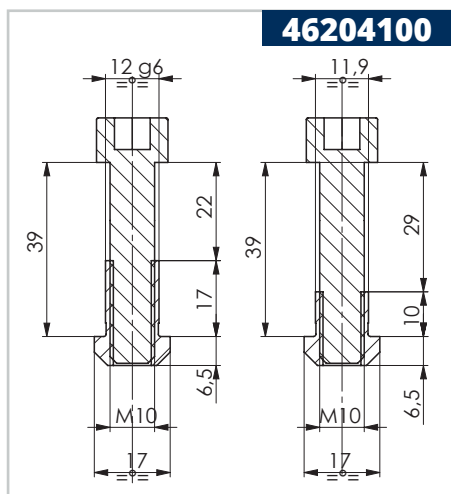


IMPORTANT:
USE WITH ALL PRODUCTS THE FILTER-
REGULATION-LUBRICATION GROUP **FRL**

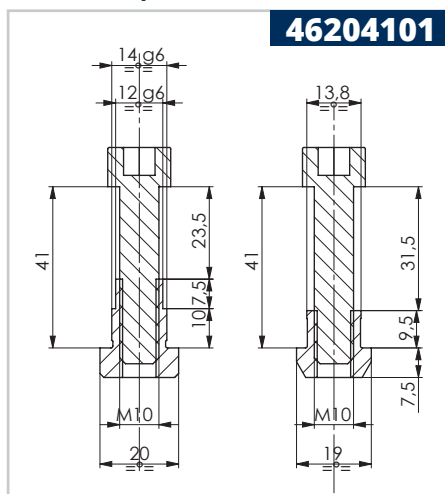
T-NUTS SET for multiple plate APS and flange one APS



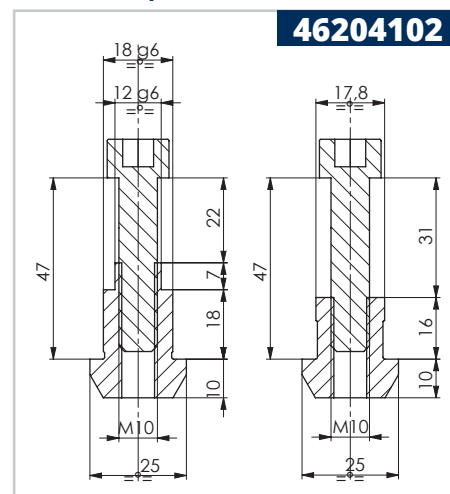
SET 9-T-NUTS T-SLOT 12
M10 for plate 4 APS 140



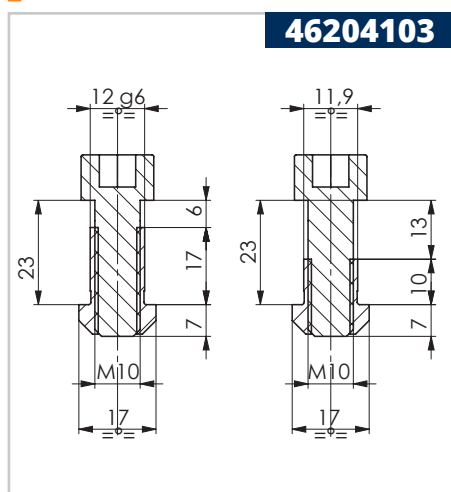
SET 9-T-NUTS T-SLOT 14
M10 for plate 4 APS 140



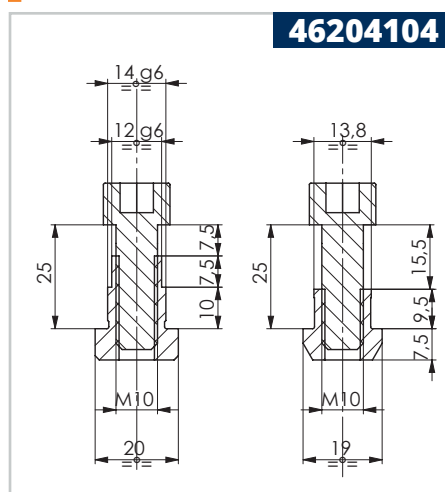
SET 9-T-NUTS T-SLOT 18
M10 for plate 4 APS 140



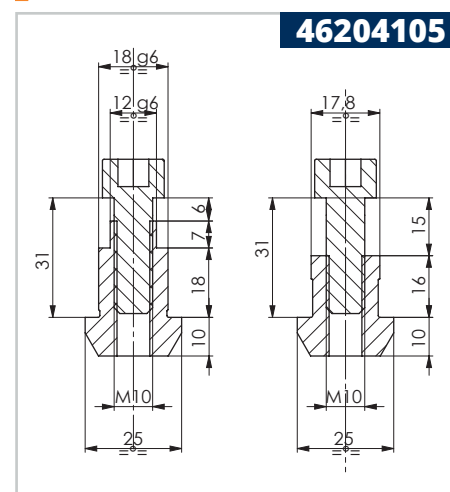
SET 8-T-NUTS T-SLOT 12
M10 for m.h.exten. one APS



SET 8-T-NUTS T-SLOT 14
M10 for m.h.exten. one APS



SET 8-T-NUTS T-SLOT 18
M10 for m.h.exten. one APS



MODULE HEIGHT EXTENSION APS

possible configurations scheme for 5 AXIS machine 2-4-6 FEEDINGS



MODULE HEIGHT EXTENSION COMPOSITION		2 FEEDINGS			4 FEEDINGS			6 FEEDINGS		
		ID.No.	Q.TY	PAG.	ID.No.	Q.TY	PAG.	ID.No.	Q.TY	PAG.
1	MODULE HEIGHT EXTENSION GROUP	46203000	1	31	46203000	1	31	46203000	1	31
2	APS 190	46165640	1	10	46162650	1	11	46162650	1	11
3	KEY	46162333	1	20	46162333	1	20	46162333	1	20
4	DISTRIBUTOR**	CUSTOMIZED	1	32	CUSTOMIZED	1	32	CUSTOMIZED	1	32
5	T-NUTS SET optional	to choose according to the T-Slot	1	29	to choose according to the T-Slot	1	29	to choose according to the T-Slot	1	29
6	MALE COUPLER*	-	-	-	71718106	2	-	71718106	4	-

* MALE COUPLER: the ID.n. refers to a single piece

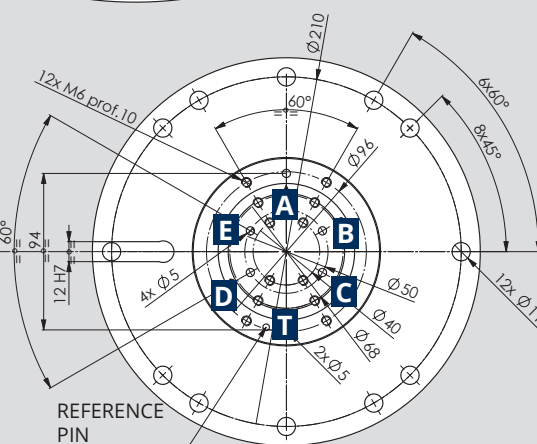
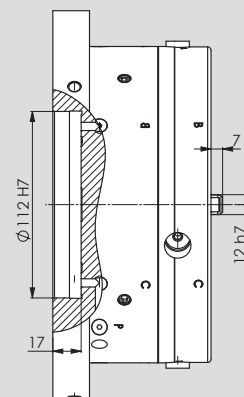
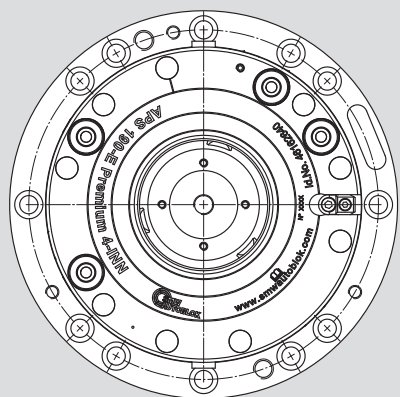
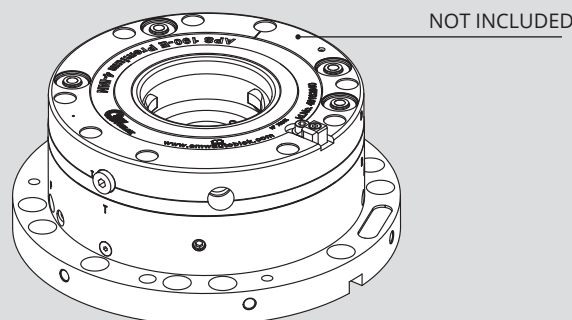
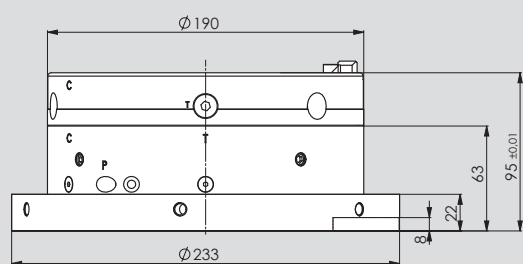
** DISTRIBUTOR EXAMPLE: to be designed specifically for each machine until to 6 feedings

NOTE 1: When use the module in rotation (rpm 200-1000) request balancing (listed separately).

NOTE 2: The module extension is equipped with radial screws for the fine centering of the APS.

ATTENTION: the pneumatic system of the pressure switch must signal the alarm condition and must prevent the pallet exchange on the APS or any robot operation when the inlet pressure is less than 6 bar.

MODULE HEIGHT EXTENSION APS prepared for 5 AXIS machine until 6 FEEDINGS



ID.N. (APS NOT INCLUDED)	HEIGHT	WEIGHT
46203000 MODULE HEIGHT EXTENSION GROUP N.6 FEEDINGS H95	95 mm	10,5 Kg

A APS open

T Air sensing / TURBO APS

The feedings **B C D E** are used on the pallet (see page 53) between pneumatics and hydraulics couplers put on the body of 190 APS (Id.n. 46162650). When on the pallet is mounted a TWIN VISE model STV or PT the feedings can be used in these different ways:

B TWIN VISE open

C TWIN VISE closed

D TWIN VISE Stroke control valve

E Air Sensing TWIN VISE or Driver pin Stroke control APS

The feeding **E** can not to be used on the pallet with the pneumatic / hydraulic coupler but can be used in another way to oversee the pneumatic stroke control of the APS 190; in this case the feeding is called **SC**.

Below a list of the possible configurations of the feedings:

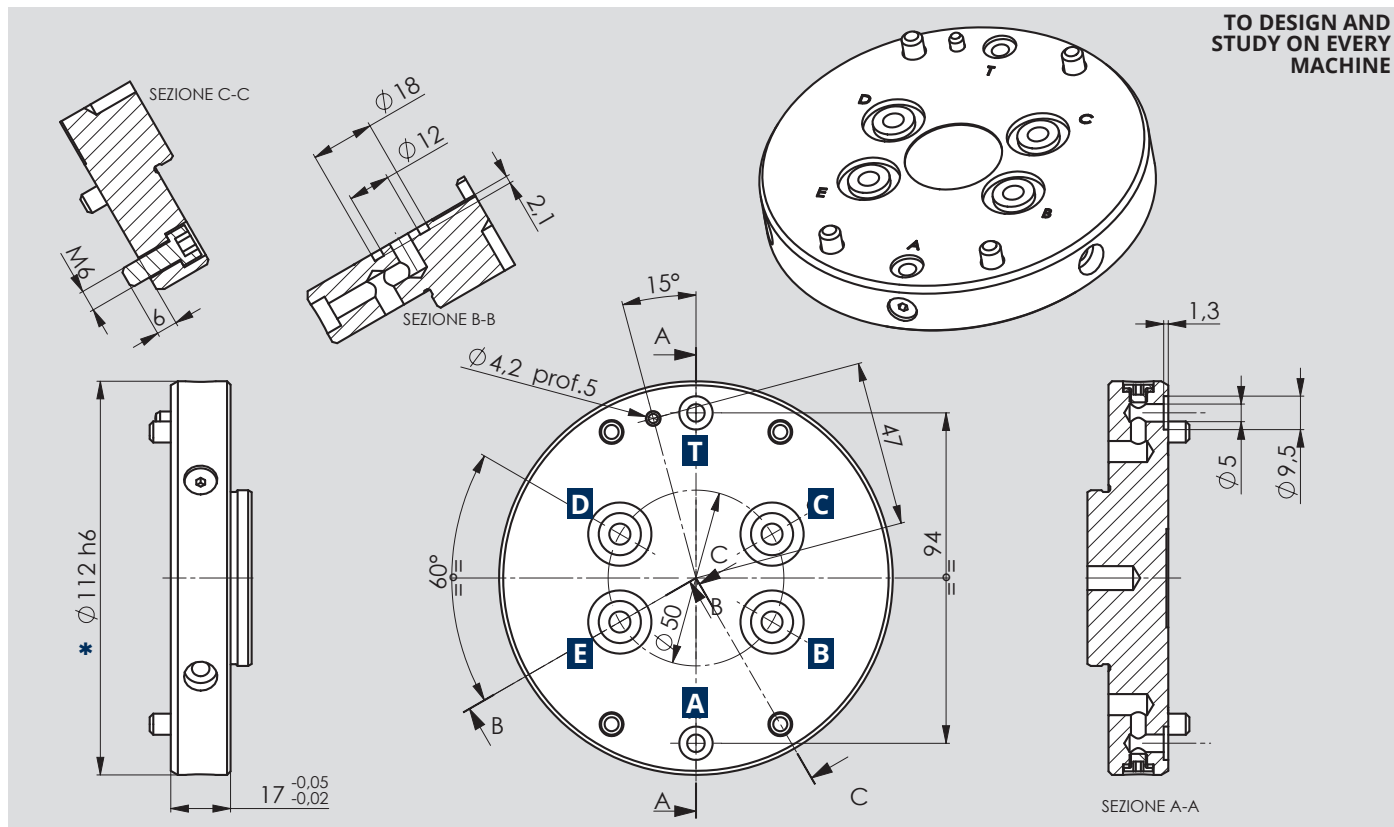
Configuration feedings

SOLUTION TYPE	sol. n.	A open APS	T TURBO APS	T Air Sensing APS control	T MINITURBO +Air Sensing APS	T TURBO or Air sensing or MINITURBO/ Air sensing	E SC Stroke control APS	C Air sensing APS control	Number of feedings transferred on the pallet with the couplers
with n.2 feedings	1								
	2								
	3								
with n.4 feedings	1								2
	2								2
	3								2
	4								2
	5								3
	6								1
	7								
with n.6 feedings	1								4
	2								4
	3								4
	4								3
	5								2

DISTRIBUTOR

specific for every machine until to 6 feedings

TO DESIGN AND
STUDY ON EVERY
MACHINE



CUSTOMER REQUEST DATA

required for the preparation of the offer

MACHINE NAME details to the side											
MACHINE TYPE details to the side		VERTICAL HORIZONTAL		3 AXIS		4 AXIS		5 AXIS			
NUMBER OF FEEDINGS hydraulics		0		1		2		3		4	
Specify the function:											
NUMBER OF FEEDINGS pneumatics		0		1		2		3		4	
Specify the function:											
ROTARY TABLE DRAWINGS delivered by the customer										YES	
FEEDINGS DRAWINGS ON THE ROTARY TABLE delivered by the customer										YES	
MACHINE MANUAL delivered by the customer										YES	
PALLET CHANGING customer use										AUTOMATIC	
										MANUAL	
DETAILED REQUEST OF THE CUSTOMER enter here the specific notes											

NOTE: for standard applications are sufficient pneumatics feedings of least 6.5 - 7 bar.

NOTE 1: the rotary table drawings, the feeding drawings and the detailed request of the customer are essential in order to do the correct interface between the machine and the clamping solutions.

NOTE 2: the adaptation of the machine software must be charged to the customer with detailed instructions given by SMW-Autoblok.

NOTE 3: if the veins seal seat size are $\geq \varnothing 112$ please contact the technical office SMW-Autoblok.

3

CLAMPING UNIT



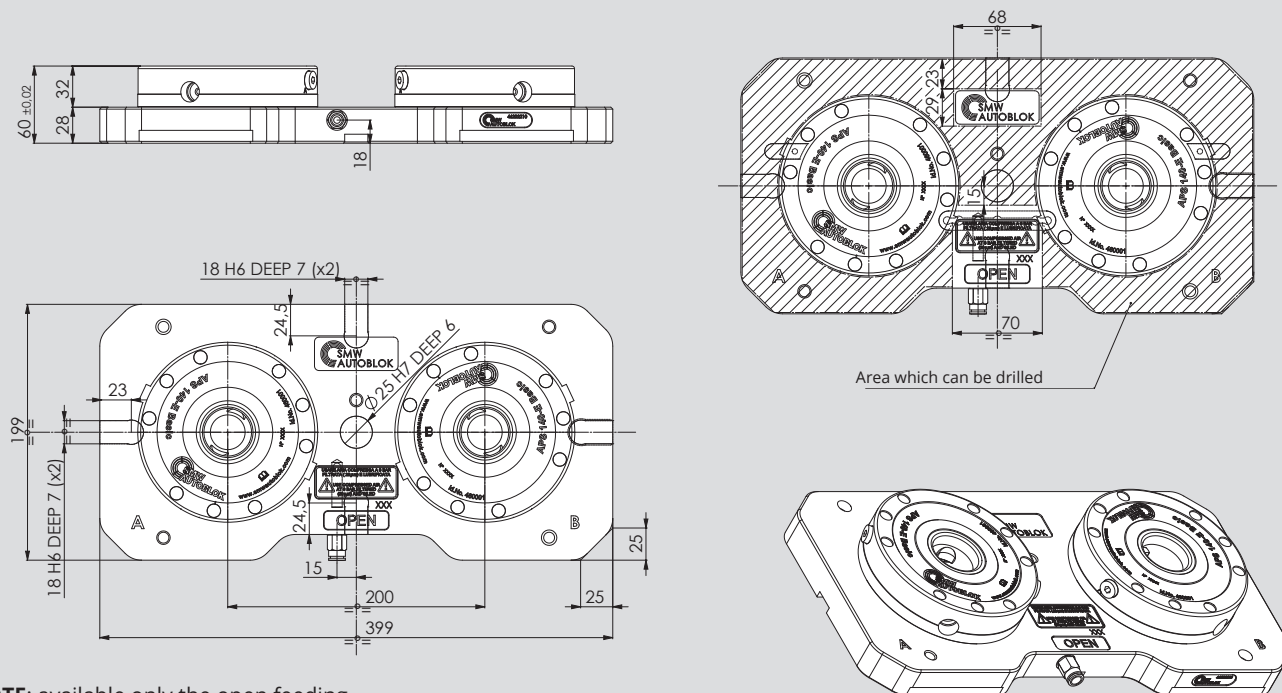
WITH AND WITHOUT FEEDINGS

Prepared until to 6 feedings
For 3-4-5 axis machines

CLAMPING UNIT FOR MULTIPLE APS WITHOUT INTEGRATED FEEDINGS ON MACHINE (FOR EXAMPLE 3 AXIS MACHINES)

1
FEEDING

2 APS 140 BASIC



NOTE: available only the open feeding.

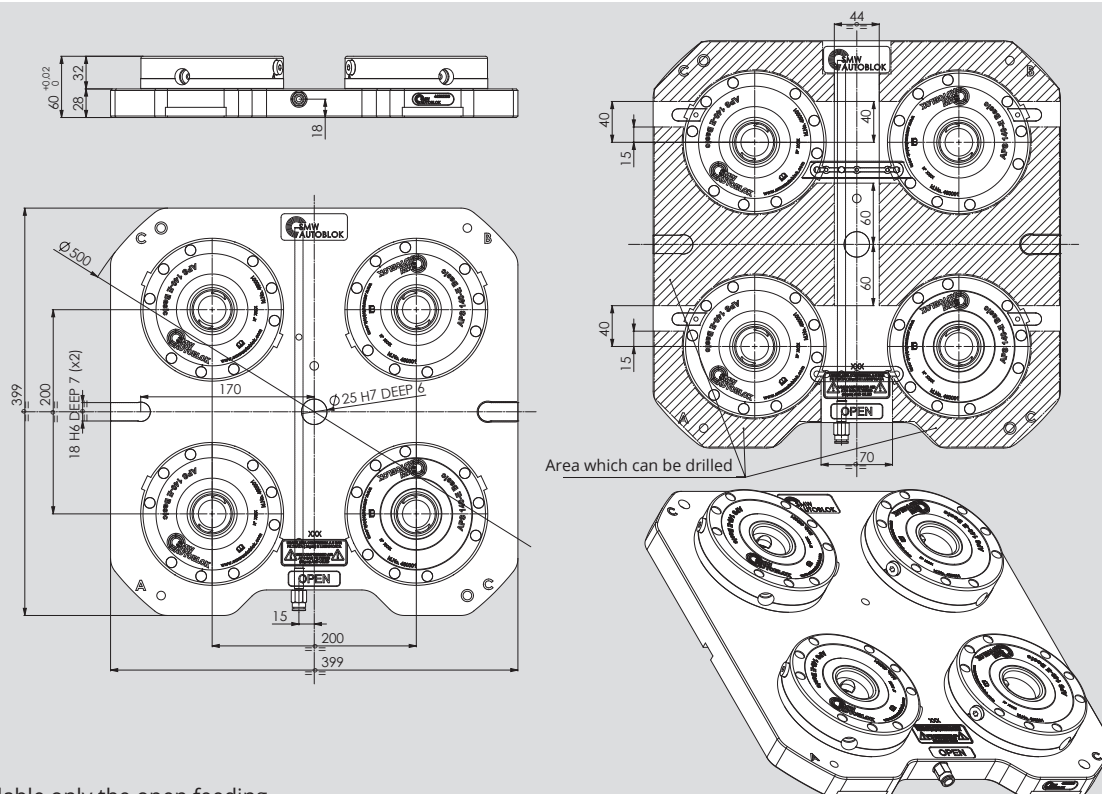
CLAMPING UNIT APS ID.No (APS included)

46202210 CLAMPING UNIT 2 APS140 BASIC

WEIGHT

21 Kg

4 APS 140 BASIC



NOTE: available only the open feeding.

CLAMPING UNIT APS ID.No (APS included)

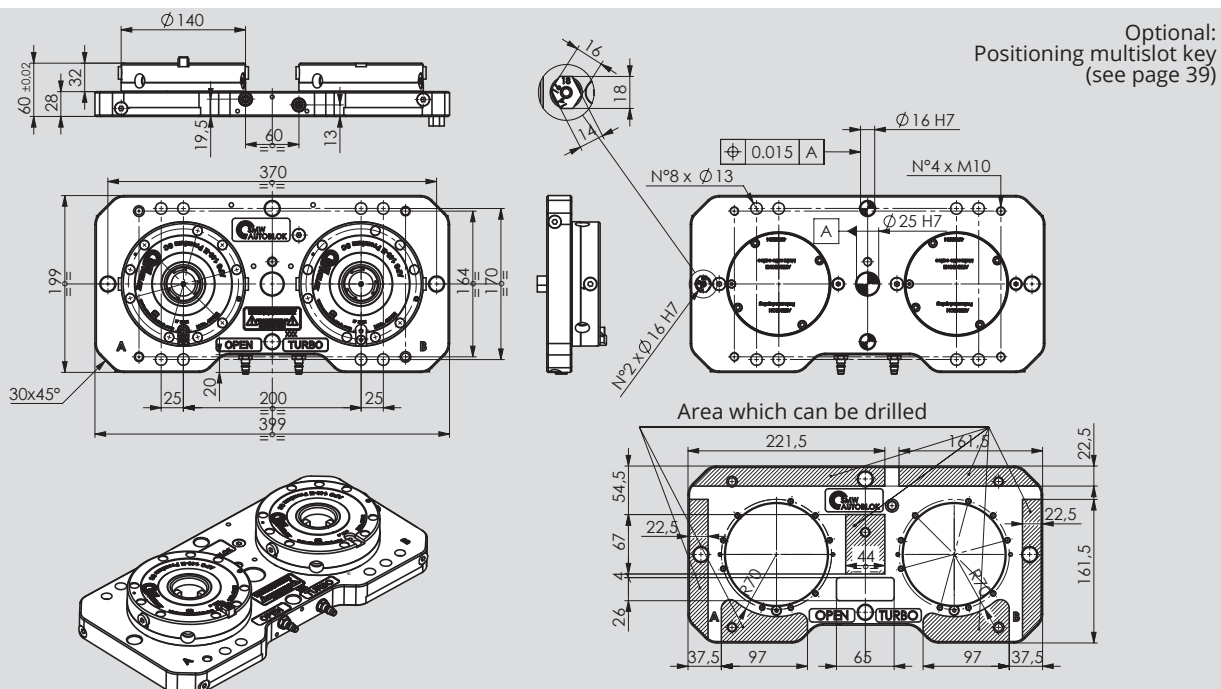
46202200 CLAMPING UNIT 4 APS140 BASIC

WEIGHT

42 Kg

CLAMPING UNIT FOR MULTIPLE APS WITHOUT INTEGRATED FEEDINGS ON MACHINE (FOR EXAMPLE 3 AXIS MACHINES)

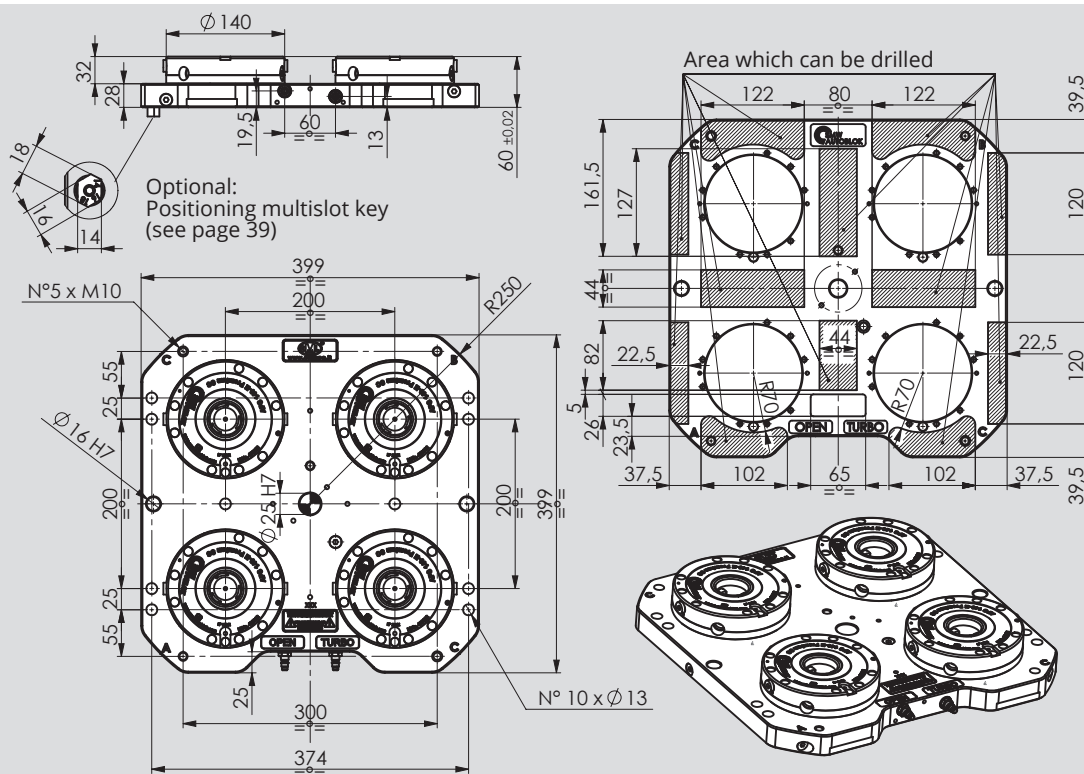
2 APS 140 E PREMIUM LIGHT / BASIC



NOTE: it's possible to order the PREMIUM configuration on request and with a surcharge. **NOTE 1:** available 2 feed.: OPEN and TURBO.

CLAMPING UNIT APS ID.N.	WEIGHT
460020 CLAMPING UNIT 2 APS140 E PREMIUM LIGHT 3 AXIS	21 Kg
460021 CLAMPING UNIT 2 APS140 E BASIC 3 AXIS	21 Kg

4 APS 140 E PREMIUM LIGHT / BASIC



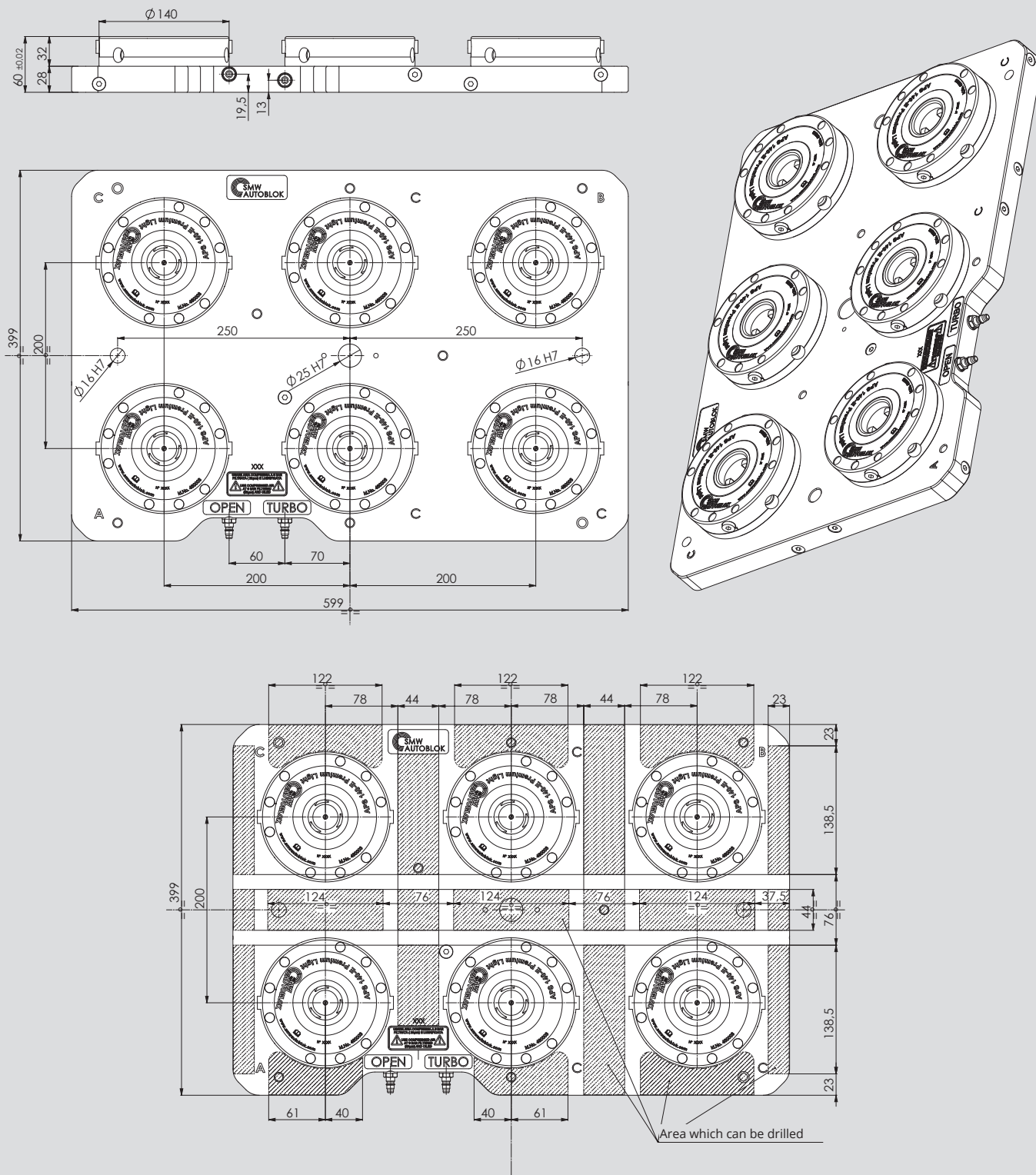
NOTE: it's possible to order the PREMIUM configuration on request and with a surcharge. **NOTE 1:** available 2 feed.: OPEN and TURBO.

CLAMPING UNIT APS ID.N.	WEIGHT
460022 CLAMPING UNIT 4 APS140 E PREMIUM LIGHT 3 AXIS	41 Kg
460023 CLAMPING UNIT 4 APS140 E BASIC 3 AXIS	41 Kg

CLAMPING UNIT FOR MULTIPLE APS WITHOUT INTEGRATED FEEDINGS ON MACHINE (FOR EXAMPLE 3 AXIS MACHINES)

2
FEEDINGS

6 APS 140 E PREMIUM LIGHT / BASIC



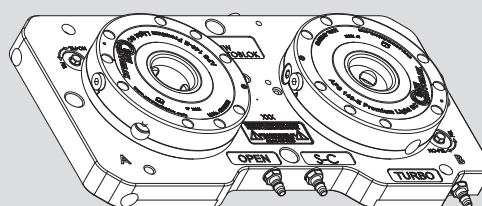
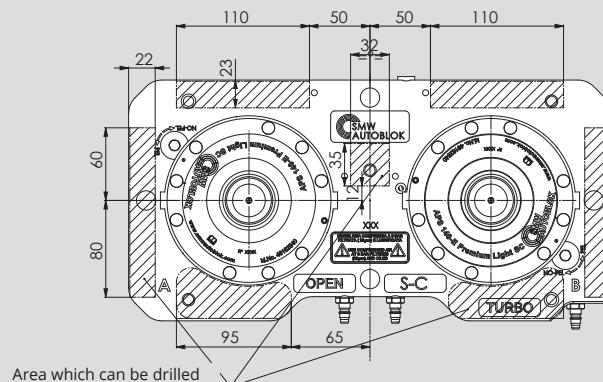
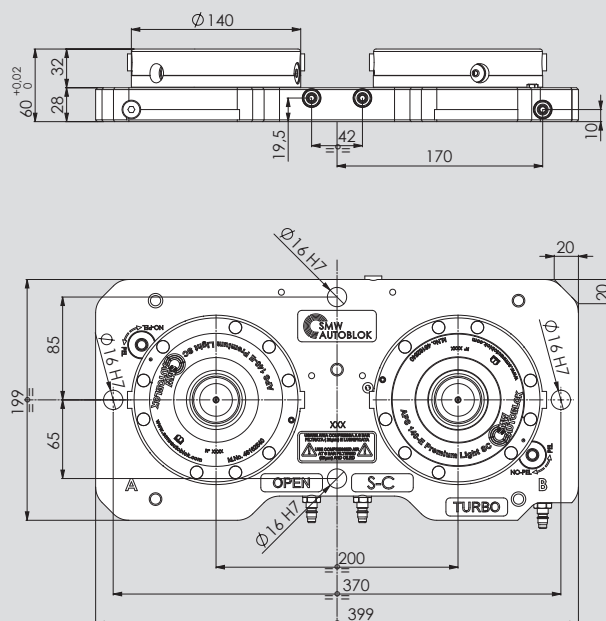
NOTE 1: available 2 feedings: OPEN and TURBO.

CLAMPING UNIT APS ID.No (APS included)	WEIGHT
46186672 CLAMPING UNIT 6 APS140 E BASIC	64 Kg
46186674 CLAMPING UNIT 6 APS140 E PREMIUM LIGHT	64 Kg

3 FEEDINGS

CLAMPING UNIT FOR MULTIPLE APS WITHOUT INTEGRATED FEEDINGS ON MACHINE (FOR EXAMPLE 3 AXIS MACHINES)

2 APS 140 E PREMIUM LIGHT SC



NOTE 1: available 3 feedings: OPEN, STROKE CONTROL SC and TURBO/AIR SENSING.

NOTE 2: when the Air sensing is not used, it's possible to exclude it thanks to two selectors placed on the front plate.

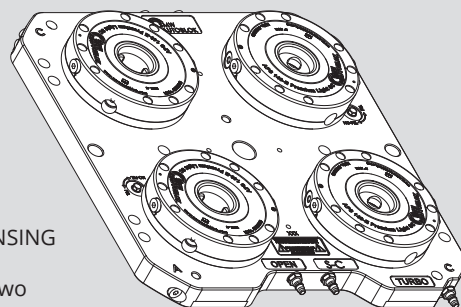
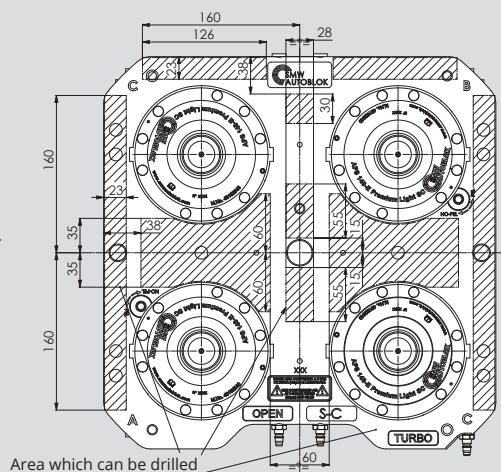
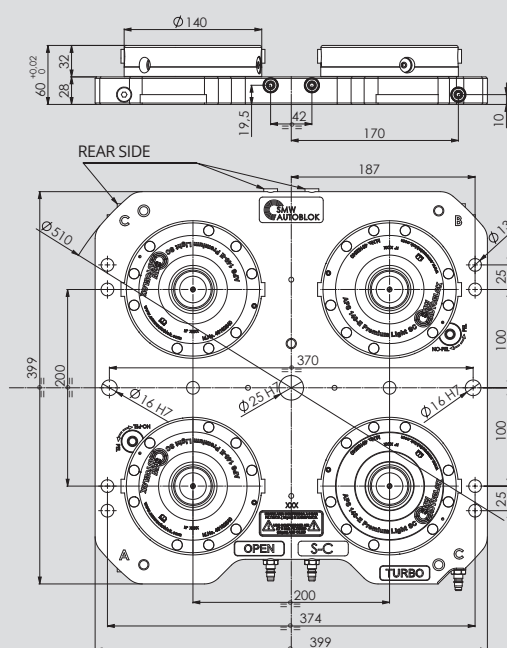
CLAMPING UNIT APS ID.No (APS included)

46202230 CLAMPING UNIT 2 APS140 E PREMIUM LIGHT SC

WEIGHT

21 Kg

4 APS 140 E PREMIUM LIGHT SC



NOTE 1: available 3 feedings: OPEN, STROKE CONTROL SC and TURBO/AIR SENSING (it is possible to load also on rear side).

NOTE 2: when the Air sensing is not used, it's possible to exclude it thanks to two selectors placed on the front plate.

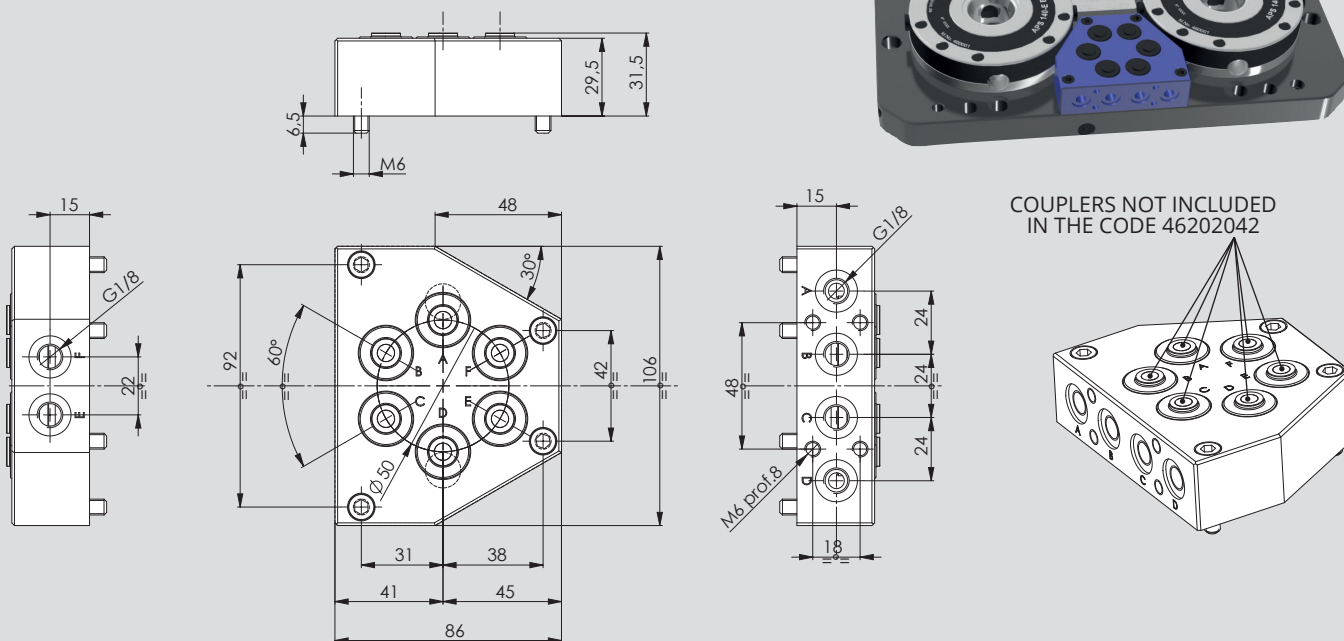
CLAMPING UNIT APS ID.No (APS included)

46202220 CLAMPING UNIT 4 APS140 E PREMIUM LIGHT SC

WEIGHT

41 Kg

MEDIA FEED WITHOUT INTEGRATED MACHINE FEEDINGS (f.e. 3 axis machines) for plate with 2 APS 140 E



ID.N. MEDIA FEED PREPARED FOR N. 6 COUPLERS

POSSIBLE FEEDINGS

WEIGHT

46202042 MEDIA FEED PREPARED FOR N.6 MALE COUPLERS

A-B-C-D-E-F

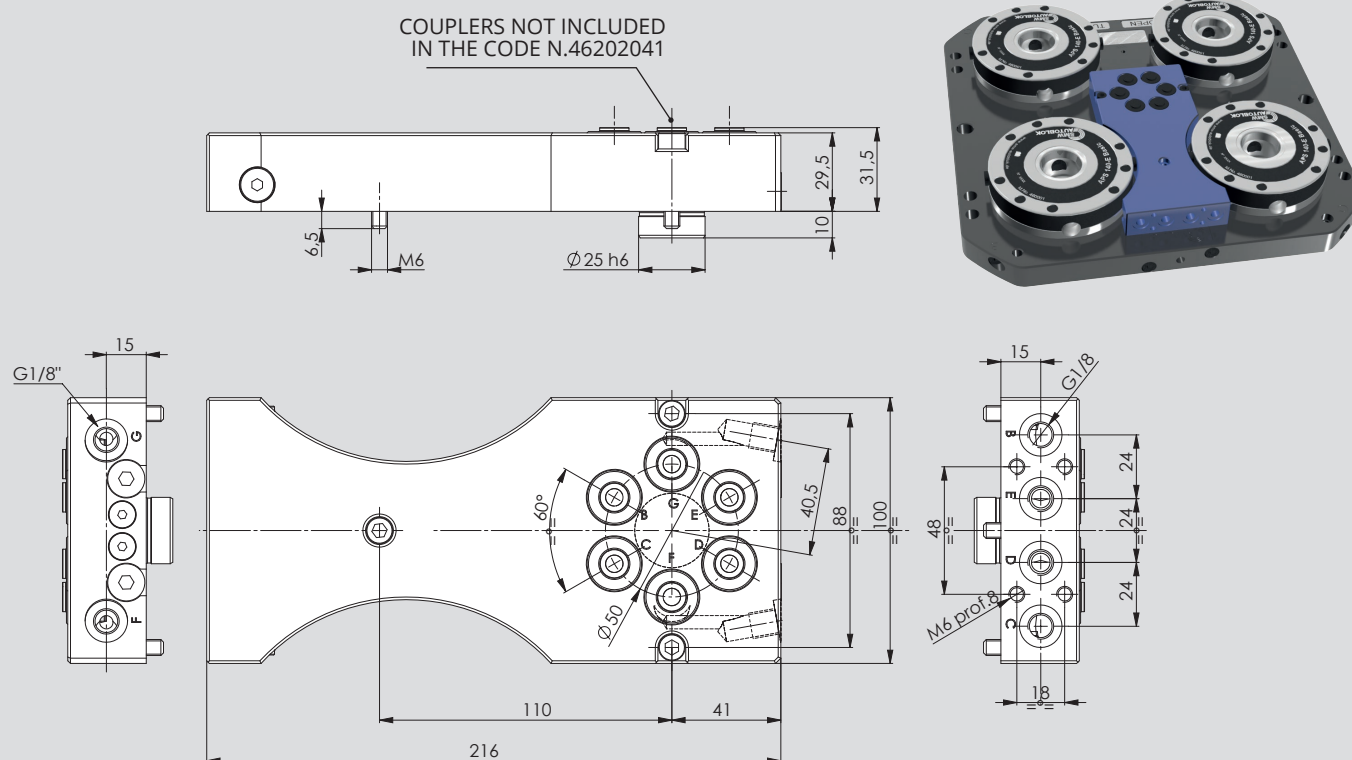
1,6 Kg

71718106 MALE COUPLER

-

0.030 kg

MEDIA FEED WITHOUT INTEGRATED MACHINE FEEDINGS (f.e. 3 axis machines) for plate with 4 APS 140 E



ID.N. MEDIA FEED PREPARED FOR N.6 COUPLERS

POSSIBLE FEEDINGS

WEIGHT

46202041 MEDIA FEED PREPARED FOR N.6 MALE COUPLERS

B-C-D-E-F-G

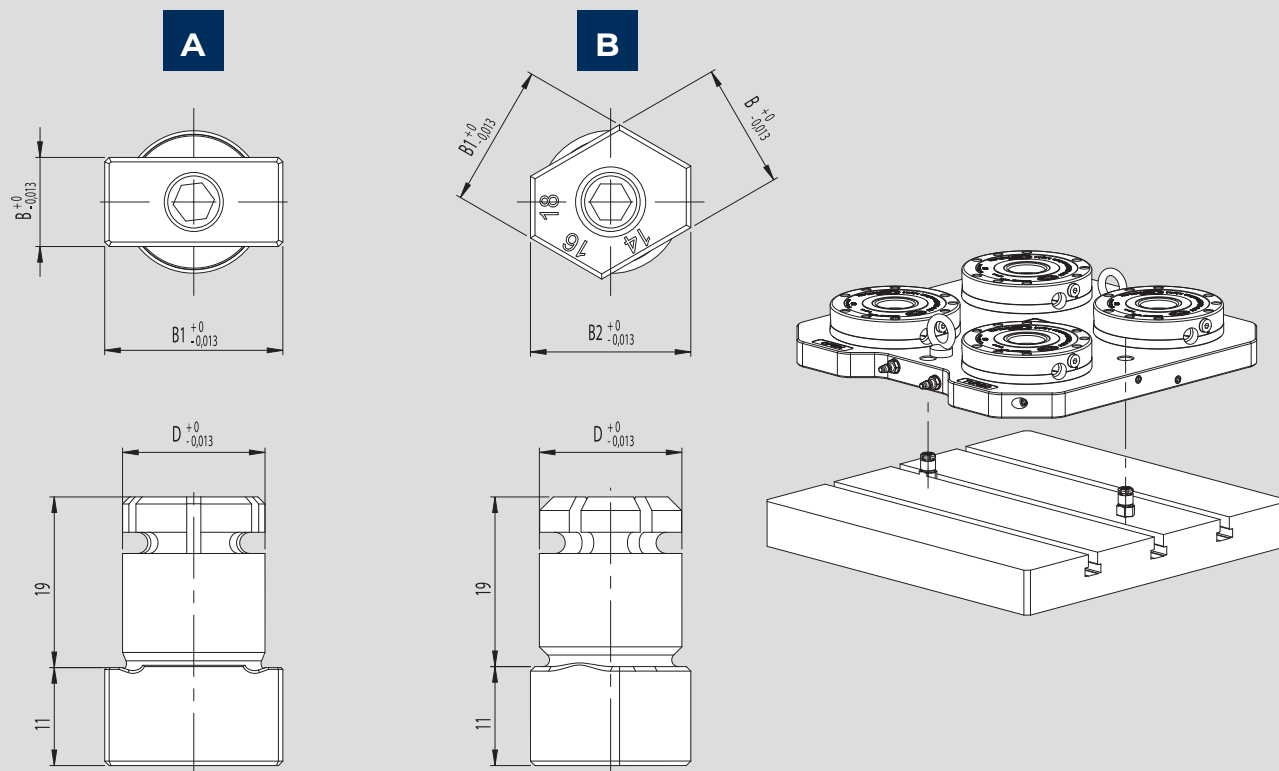
1,6 Kg

71718106 MALE COUPLER

-

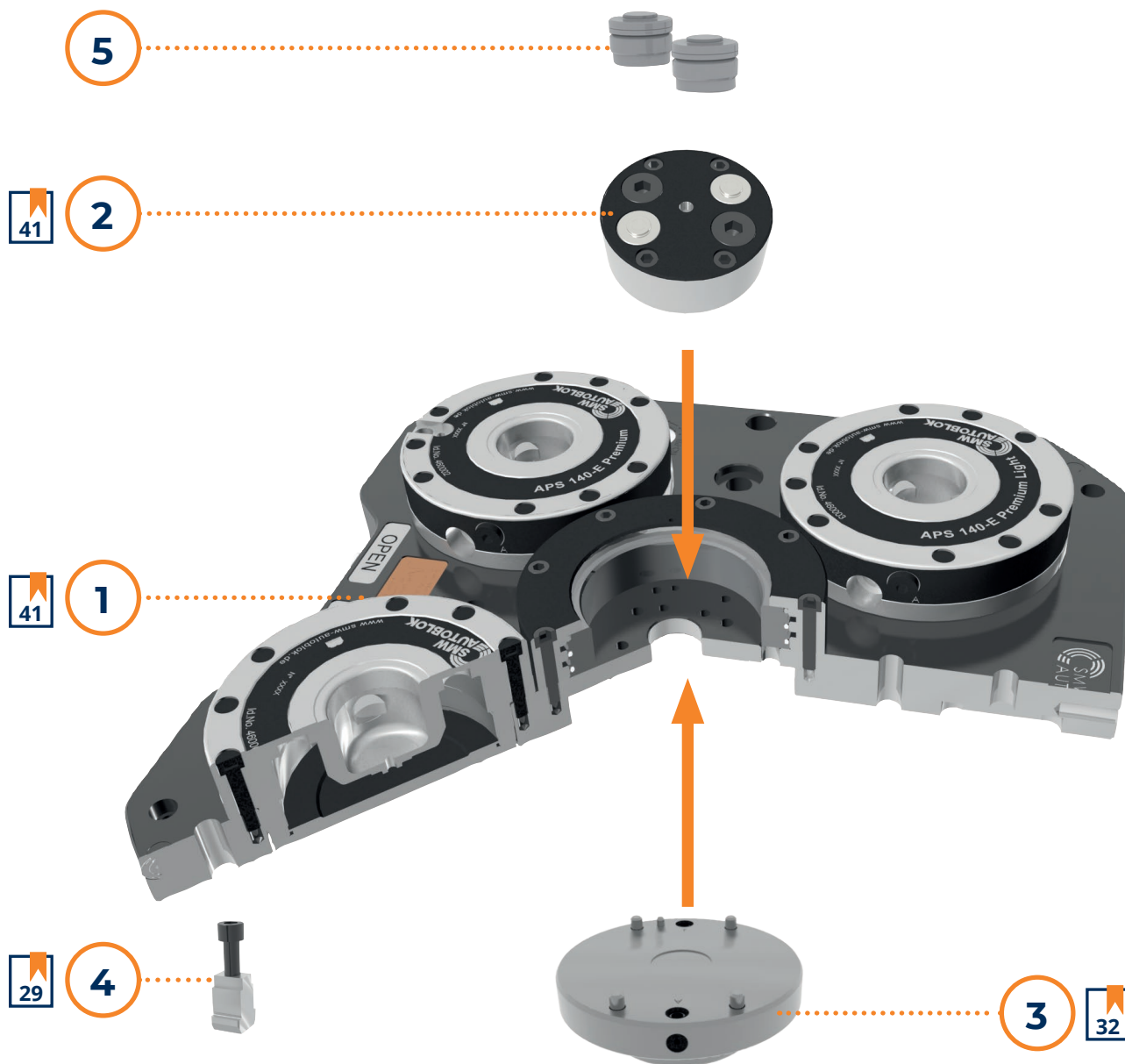
0.030 kg

MULTISLOT KEY optional



	ID.No.	D mm	B mm	B1 mm	B2 mm	Ø mm
A	71290181 MULTISLOT OPTIONAL KEY	16	12	22	-	16.01±0.01
B	71290182 MULTISLOT OPTIONAL KEY	16	14	16	18	16.01±0.01
A	71290183 MULTISLOT OPTIONAL KEY	16	10	20	-	16.01±0.01
B	71290184 MULTISLOT OPTIONAL KEY	20	24	28	32	20.01±0.01

CLAMPING UNIT FOR AUTOMATION WITH 4 APS 140 AND FEEDINGS FOR 5 AXIS possible configuration scheme for 5 axis machines 2-4-6 FEEDINGS



CLAMPING UNIT COMPOSITION		2 FEEDINGS			4 FEEDINGS			6 FEEDINGS		
		ID.No.	Q.TY	PAG.	ID.No.	Q.TY	PAG.	ID.No.	Q.TY	PAG.
1	CLAMPING UNIT with 4 APS 140	46202000	1	41	46202000	1	41	46202000	1	41
2	MEDIA FEED	Cover supplied***	-	-	46202026***	1	41	46202026***	1	41
3	DISTRIBUTOR**	CUSTOMIZED	1	32	CUSTOMIZED	1	32	CUSTOMIZED	1	32
4	T-NUTS SET	to choose according to the T-Slot	1	29	to choose according to the T-Slot	1	29	to choose according to the T-Slot	1	29
5	MALE COUPLER*	-	-	-	71718106	2	-	71718106	4	-

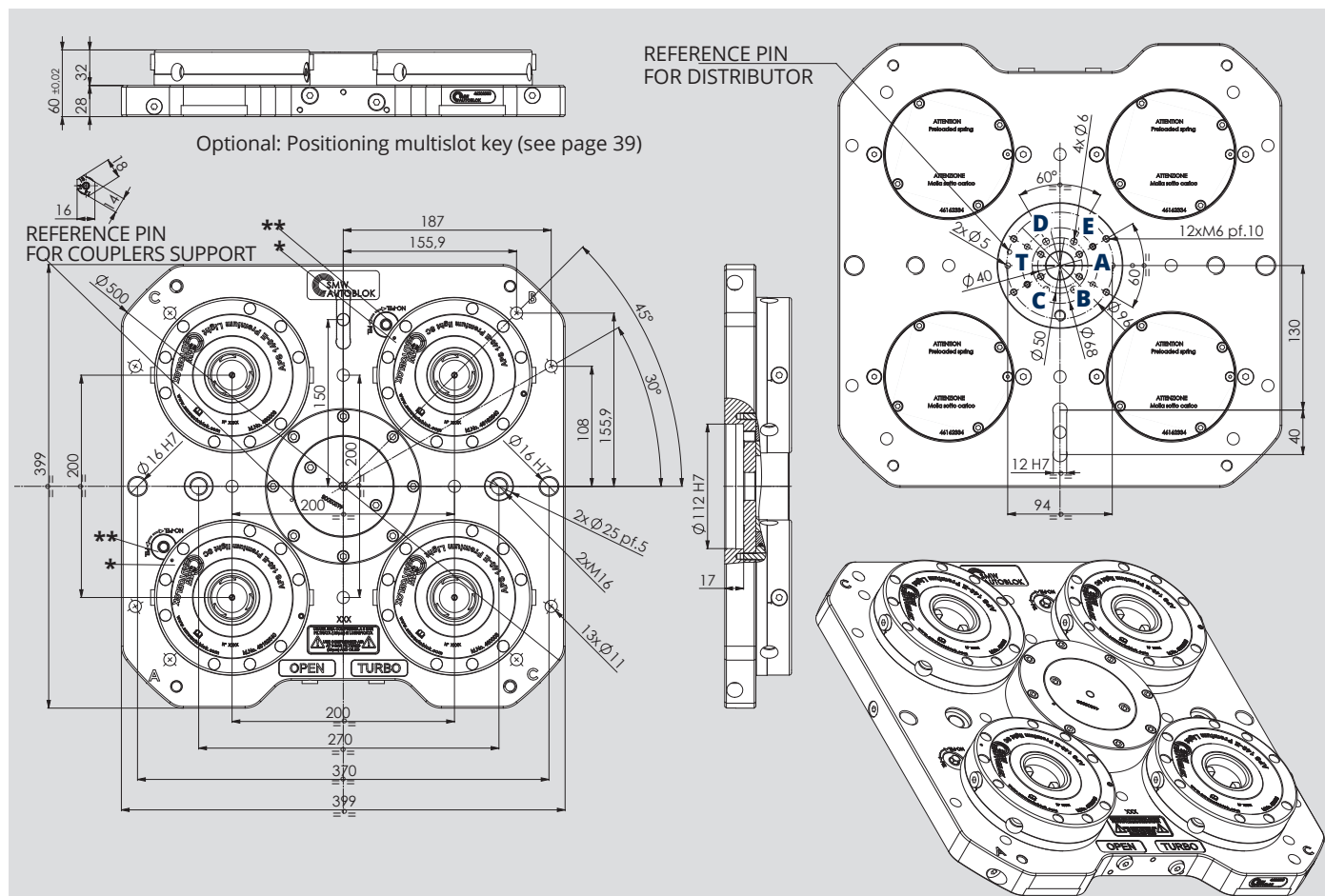
* MALE COUPLER: the ID.n. refers to a single piece

** CUSTOMIZED DISTRIBUTOR EXAMPLE: to be designed specifically for each machine until to 6 feedings

*** To use the Media Feed 46202026 it's necessary to remove the supplied central cover supplied.

ATTENTION: the pneumatic system of the pressure switch must signal the alarm condition and must prevent the pallet exchange on the APS or any robot operation when the inlet pressure is less than 6 bar.

CLAMPING UNIT FOR AUTOMATION WITH MULTIPLE APS 5 AXIS 2-4-6 FEEDINGS with 4 APS 140 E PREMIUM LIGHT SC



ID.N. (INCLUDED APS)	WEIGHT
46202000 CLAMPING UNIT 4 APS140 E PREMIUM LIGHT SC FOR 5 AXIS	43 Kg

A APS open **T** Air sensing/Turbo APS

The feedings **B C D E** are transferred on the pallet (see pages 64-65) between pneumatics and hydraulics couplers put on the body of the APS (Id.n. 46202026). If on the pallet is mounted one or more TWIN VISE model STV or PT the feedings can be used in these different ways:

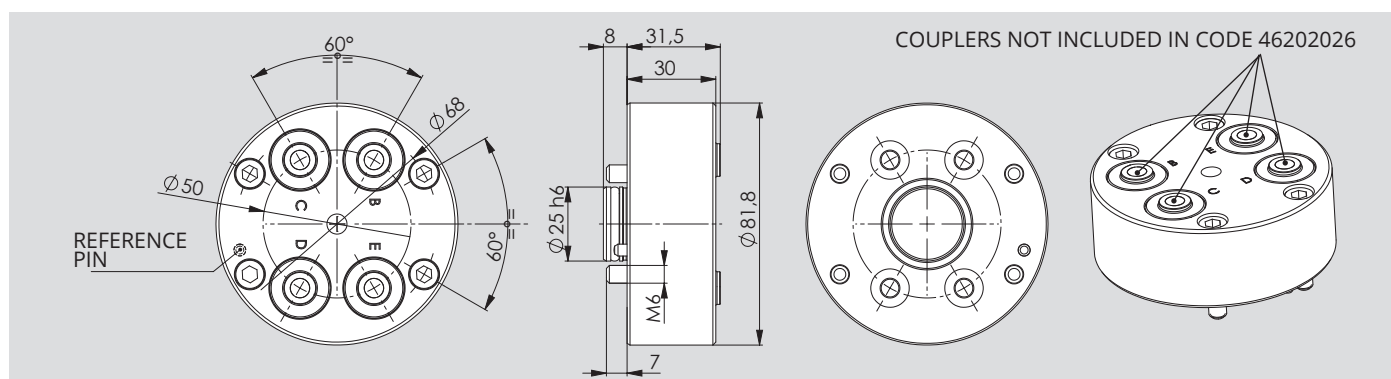
B TWIN VISE open **C** TWIN VISE closed **D** Stroke control valve TWIN VISE

E Air sensing TWIN VISE

***Note 1:** can be used the Air sensing on the plate for the 5 axis using the TURBO feeding.

****Note 2:** when don't use the Air sensing, it can be excluded between two selectors present on the plate face.

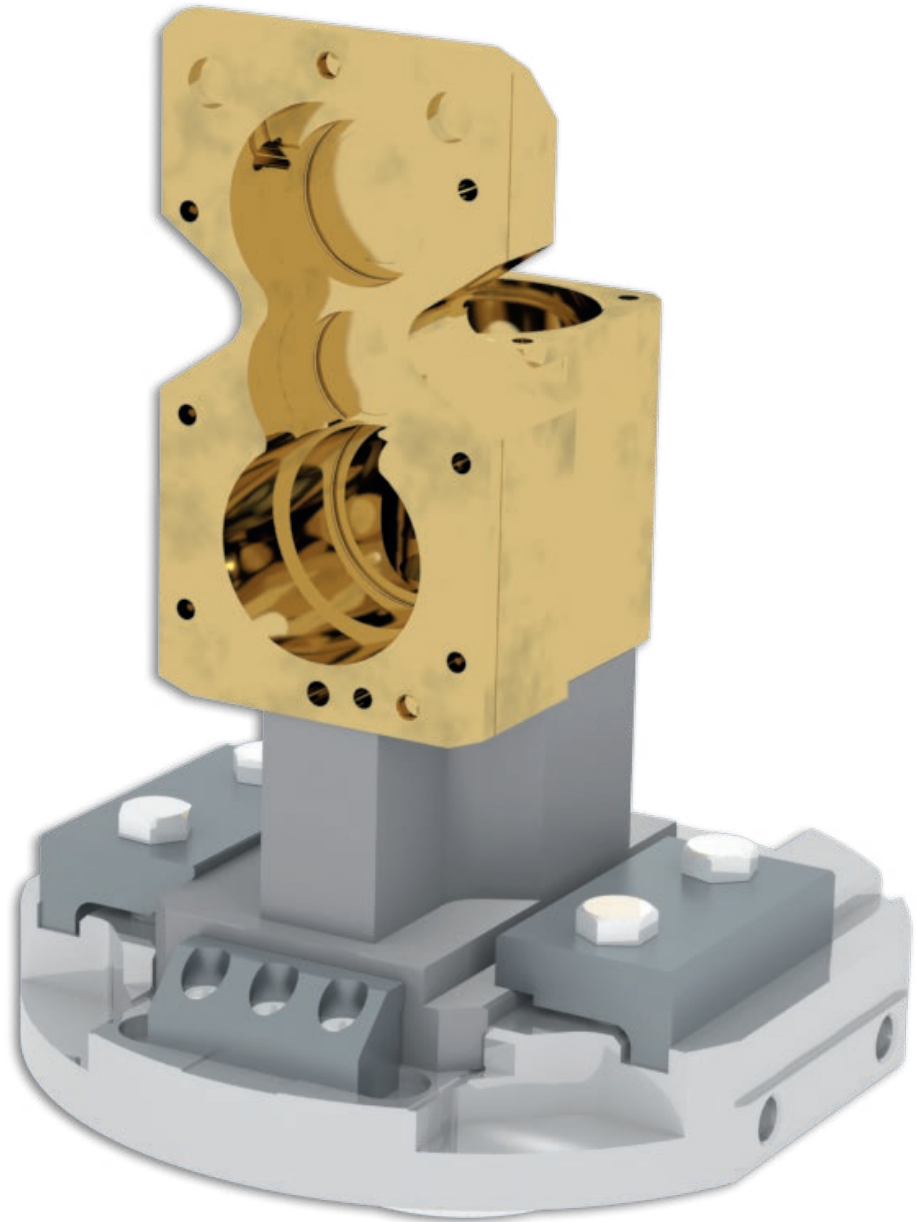
MEDIA FEED 5 AXIS 2-4-6 FEEDINGS
for plate with 4 APS 140 E PREMIUM LIGHT SC



MEDIA FEED PREPARED FOR 4 COUPLERS (AT MAXIMUM)	Possible feedings	WEIGHT
46202026 - MEDIA FEED WITH 4 SEAT MALE COUPLERS	B-C-D-E	1,2 kg
71718106 - MALE COUPLER	-	0,030 kg

4

ONE APS PALLET



CONFIGURATIONS

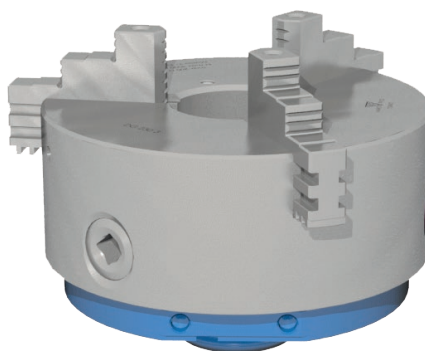
Prepared for manual loading or by robot
with manual chuck, Twin vise, pallet and tools
Ideal for 5 axis machines

4.1 Round semifinished Pallet



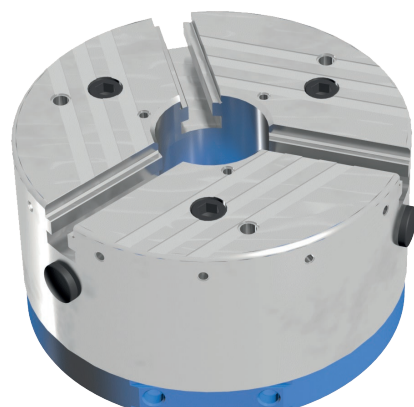
46

4.2 Pallet for DIN6350 chucks



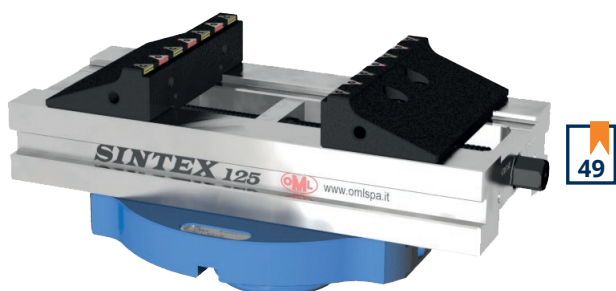
47

4.3 Pallet for HG-N chucks

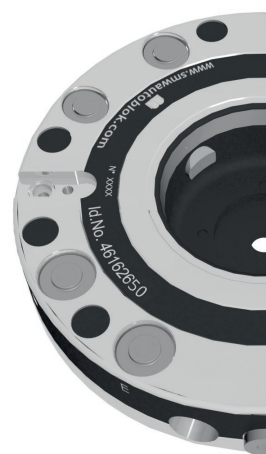


48

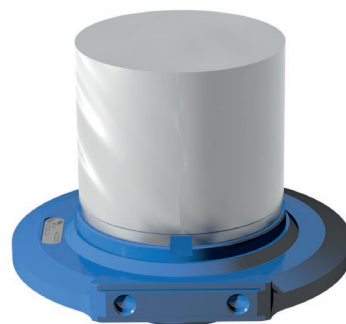
4.4 Manual vises Pallet holder



49

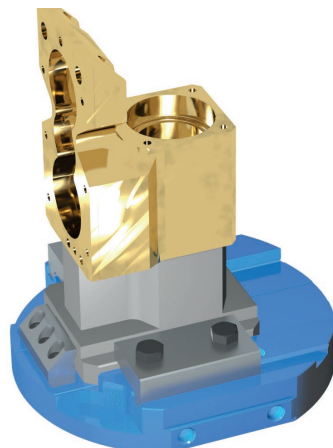


4.5 Two parts Pallet



50

4.6 Pallet-88



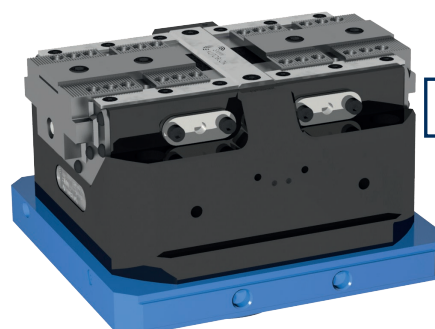
51

4.7 STV Pallet holder with SAB-1



52

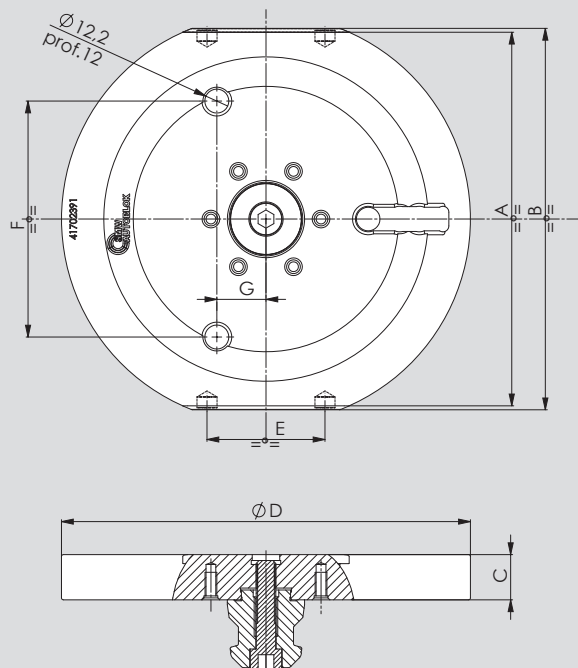
4.8 STV Pallet holder with feedings



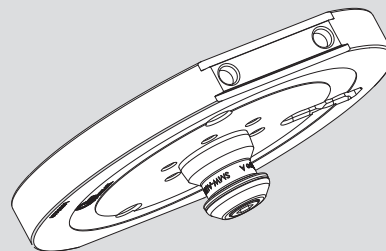
53



4.1 ROUND SEMIFINISHED PALLET prepared for robot loading



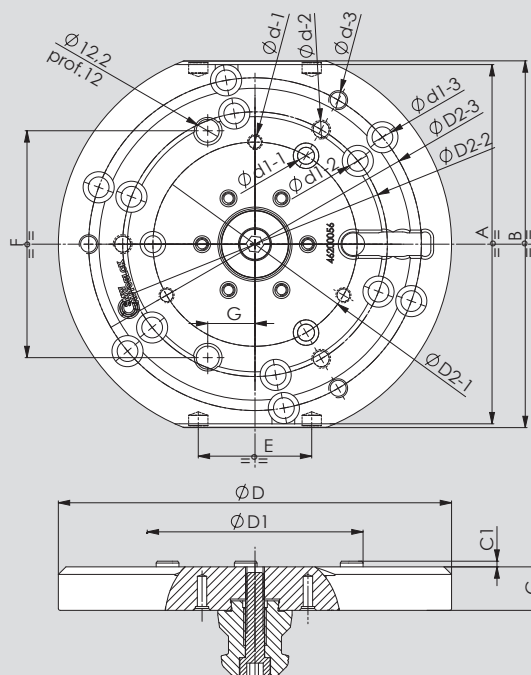
Induction-hardened material



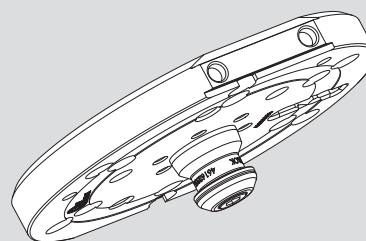
The pallets are prepared for handling with robot using the PPL vises shown on page 72 and the corresponding top jaws from page 86.

MODULE	ID.N.	PALLET Ø D	A	B	C	E	F	G	TOP JAWS KIT 160 PPL VISE	TOP JAWS KIT 200 PPL VISE	Kg
100 APS	46200000	130	115	119	23	40	90	25	46204010		2,3
140 APS	46200005	166	150	154	23	50	120	25	46204020		4
140 APS	46200010	208	190	194	23	60	120	25	46204030	46204050	6
190 APS	46200015	208	190	194	23	60	120	25	46204030	46204050	6,8
190 APS	46200020	260	240	244	23	60	120	25		46204040	10,2

4.2 PALLET FOR CHUCKS DIN6350 prepared for robot loading



Hardened and tempered material

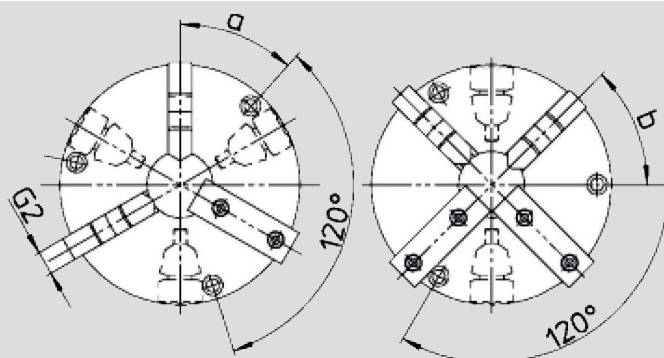


The pallets are prepared for handling with robot using the PPL vises shown on page 72 and the corresponding top jaws from page 86.

MOD.	ID.N. without chuck	PALLET Ø D	Ø D1-1	Ø D1-2	Ø D1-3	Ø D2-1	Ø D2-2	Ø D2-3	Ø d-1	Ø d-2	Ø d-3	Ø d1-1	Ø d1-2	Ø d1-3	A	B	C	C1	E	F	G	Kg
100 APS	46200030	133	94,9	-	-	108	-	-	3xM8	-	-	3xØ9	-	-	118	122	25	3	40	90	25	2,5
140 APS	46200035	172	94,9	124,9	-	108	140	-	3xM8	3xM10	-	3xØ9	6xØ11	-	155	159	25	3	50	120	25	4,2
140 APS	46200054	208	94,9	124,9	159,9	108	140	176	3xM8	3xM10	3xM10	3xØ9	6xØ11	6xØ11	190	194	25	3	60	120	25	5,5
190 APS	46200055	208	94,9	124,9	159,9	108	140	176	3xM8	3xM10	3xM10	3xØ9	6xØ11	6xØ11	190	194	25	3	60	120	25	6,2

MODULE	ID.N.	TOP JAWS KIT FOR 160 PPL	TOP JAWS KIT FOR 200 PPL	MANUAL CHUCKS OPTIONALS
100 APS	46200030	46204010	-	SGSF 125-35
140 APS	46200035	46204020	-	SGSF 125-35 / SGSF 160-42
140 APS	46200054	46204030	46204050	SGSF 125-35 / SGSF 160-42 / SGSF 200-55
190 APS	46200055	46204030	46204050	SGSF 125-35 / SGSF 160-42 / SGSF 200-55

MANUAL CHUCKS recommended for pallet with chucks described on point 4.2

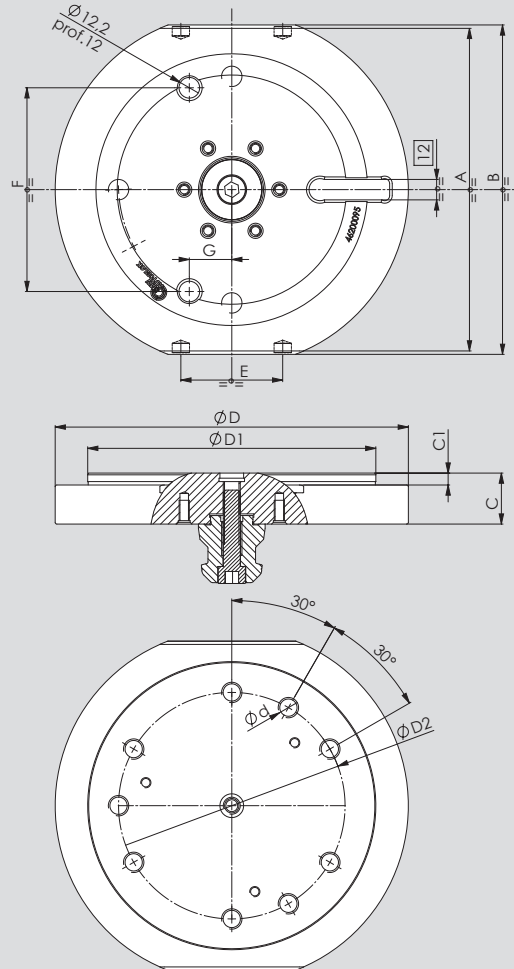


MODEL SGS-SGSF		125-35	160-42	200-55
Frontal mounting/Front mtg. 3+3		33031212	33031216	33031220
Frontal mounting/Front mtg. 4+4		-	33033216	33033220
 Set-3 GRC		03651230	03651630	03652030
 Set-4 GRC		-	03651640	03652040
 Set-3 Soft jaws		03601230	03601630	03602030
 Set-4 Soft jaws		-	03601640	03602040

4.3 PALLET FOR HG-N CHUCKS prepared for robot loading

SUITABLE
WITH DIN 702/4

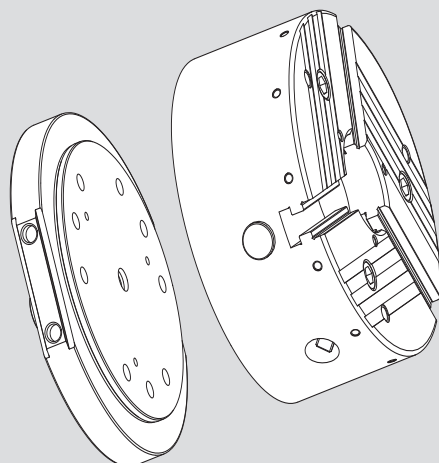
Induction-hardened material



The pallets are prepared for handling with robot using the PPL vises shown on page 72 and the corresponding top jaws from page 86.

MODULE	ID.N. without chuck	PALLET Ø D	Ø D1	Ø D2	Ø d	A	B	C	C1	E	F	G	TOP JAWS KIT 160 PPL VISE	TOP JAWS KIT 200 PPL VISE	WEIGHT
140 APS	46200090	208	139,7	104,8	12xM10	190	194	30	7	60	120	25	46204030	46204050	6,6 Kg
140 APS	46200091	208	169,7	133,4	9xM12	190	194	30	7	60	120	25	46204030	46204050	7 Kg
190 APS	46200092	208	139,7	104,8	12xM10	190	194	30	7	60	120	25	46204030	46204050	7,4 Kg
190 APS	46200093	208	169,7	133,4	9xM12	190	194	30	7	60	120	25	46204030	46204050	7,8 Kg

MANUAL CHUCKS recommended for pallet with chucks described on point 4.3



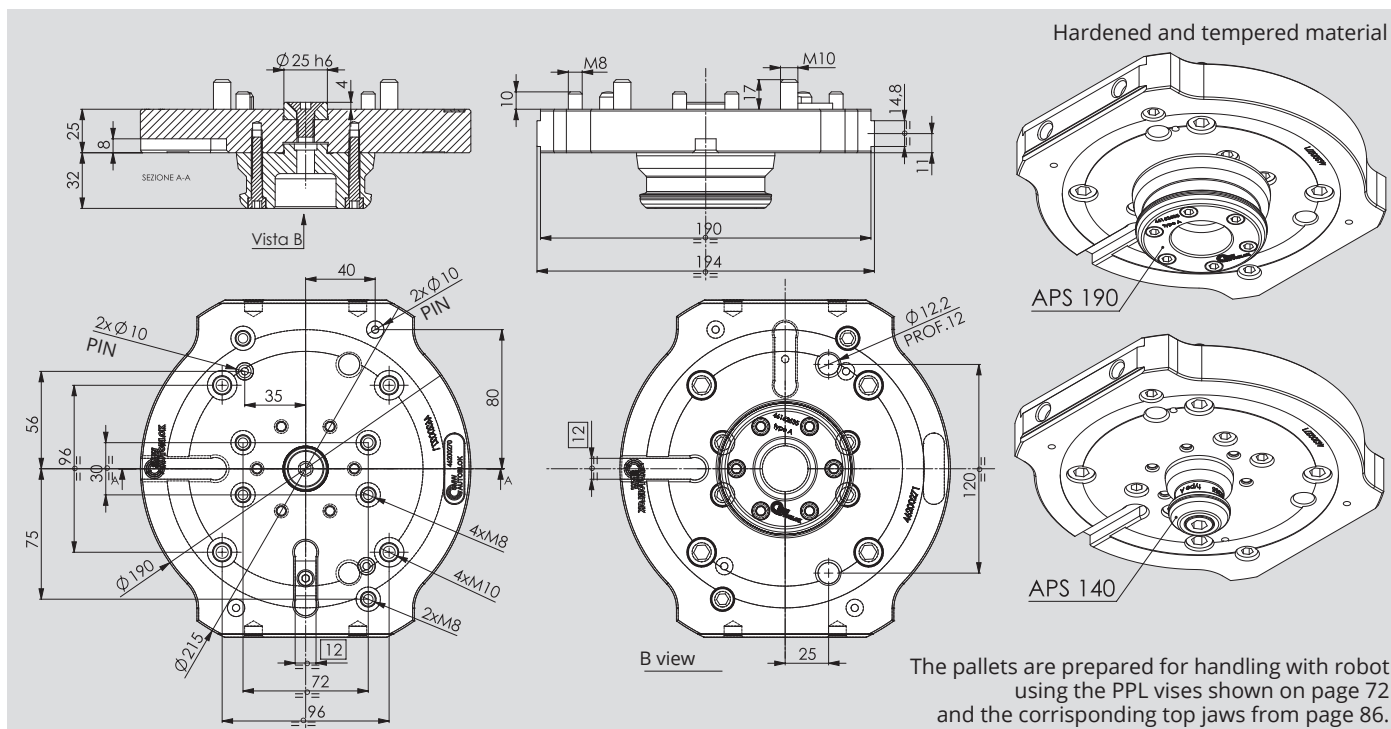
Manual chuck HG-N
suitable with flange
DIN702/4
(see side table)

Pallet for chucks HG-N
(see table above)

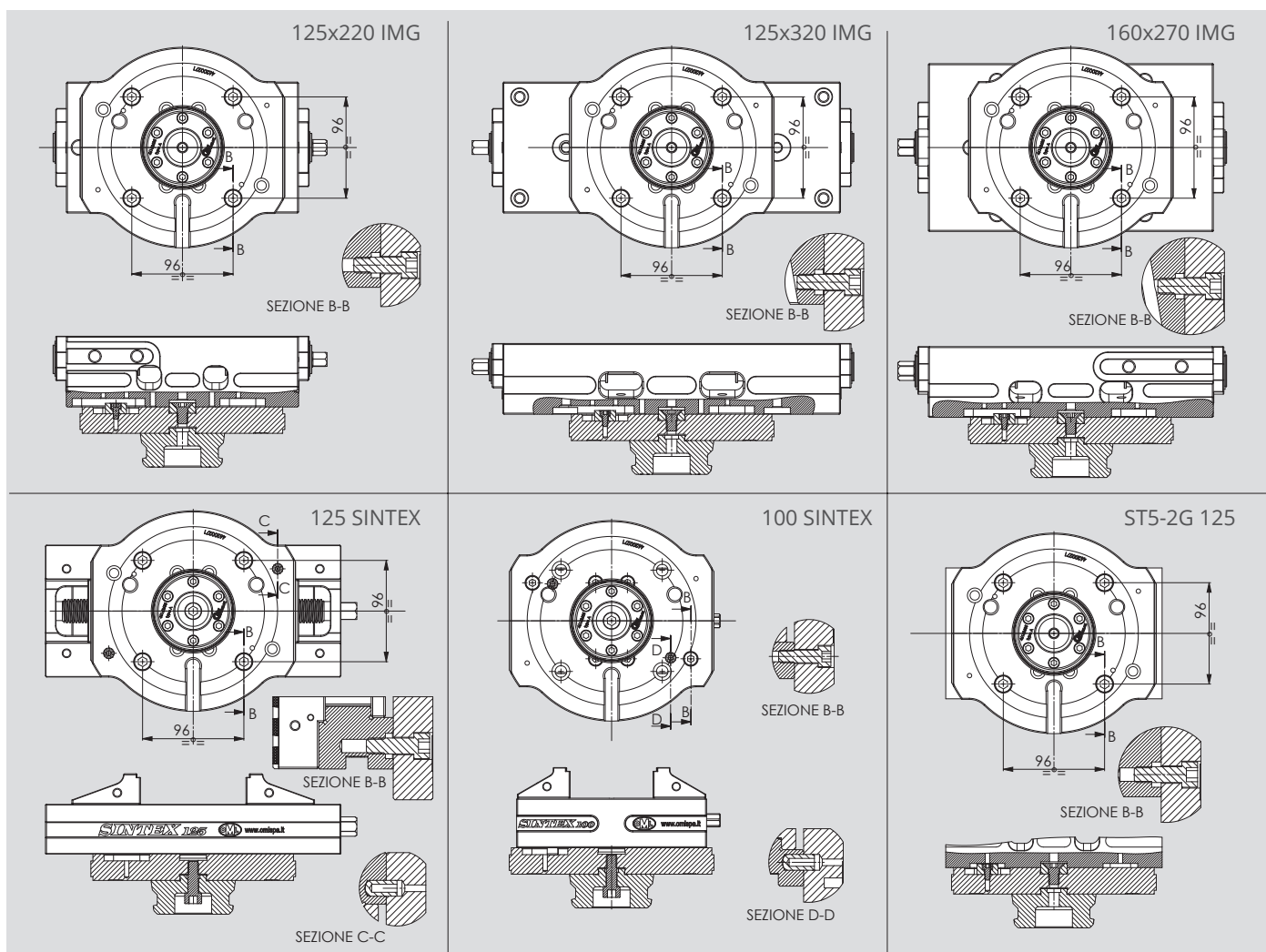
MANUAL CHUCKS HG-N OPTIONALS		
CHUCK MODEL	WITH MODULE	ID.N. FOR PALLET
160/46 HG-N	140 APS	46200090
	190 APS	46200092
210/60 HG-N	140 APS	46200091
	190 APS	46200093

see on the www.smwautoblok.com
the HG-N jaws

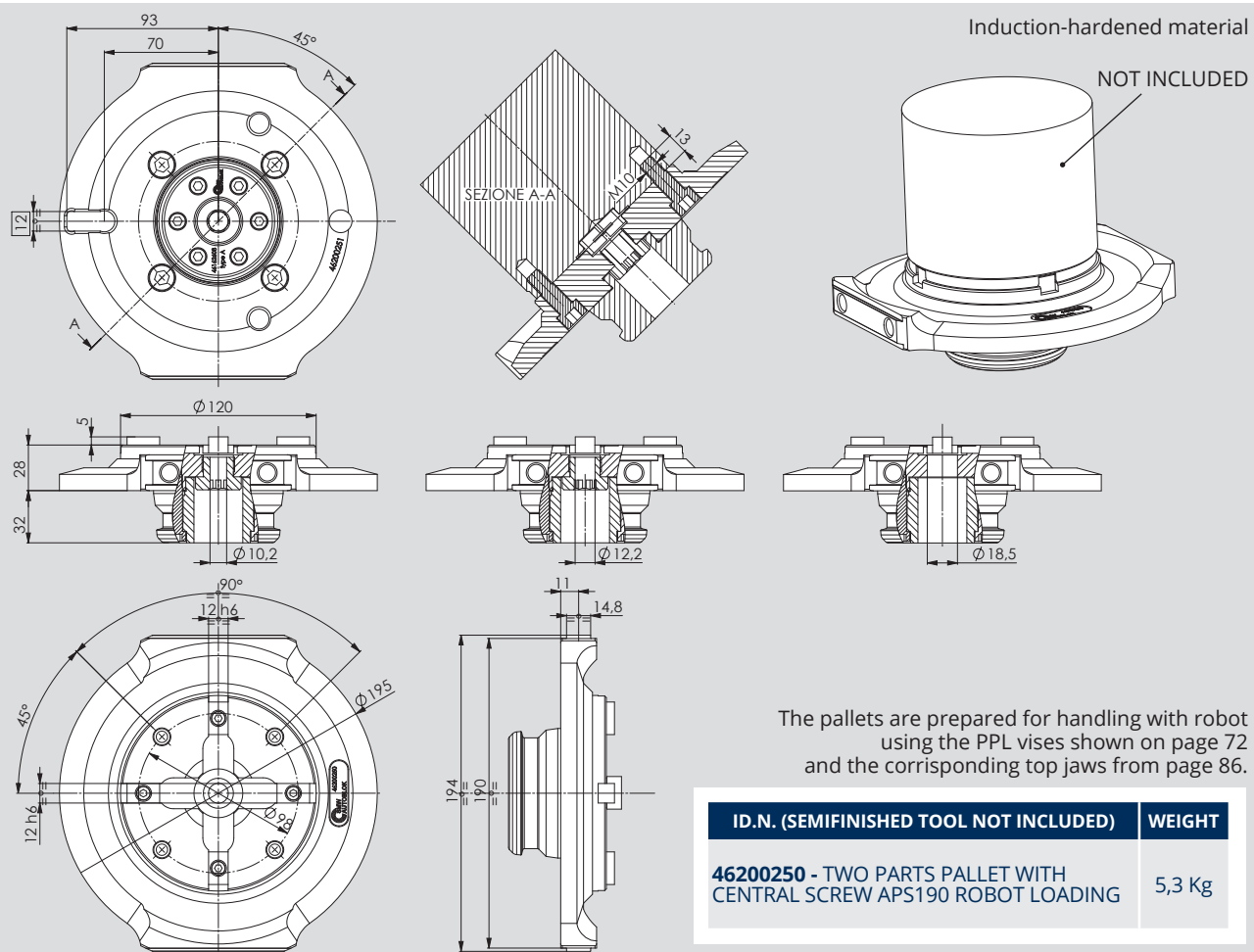
4.4 MANUAL VISES PALLET HOLDER prepared for robot loading



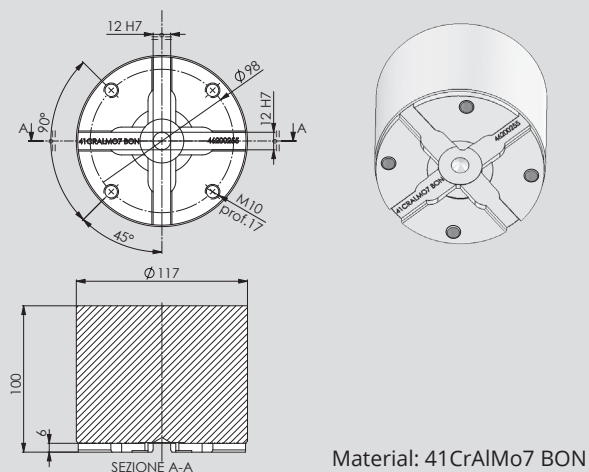
ID.N. PALLET WITHOUT VISE	WEIGHT	VISE MODEL (SEE SCHEME BELOW)		
46200275 PALLET HOLDER VISES LOADING ROBOT APS140	6 Kg	100-125 SINTEX	125x220 IMG	125ST5-2G
46200270 PALLET HOLDER VISES LOADING ROBOT APS190	6,7 Kg		125x320 IMG 160x270 IMG	



4.5.1 TWO PARTS PALLET prepared for robot loading

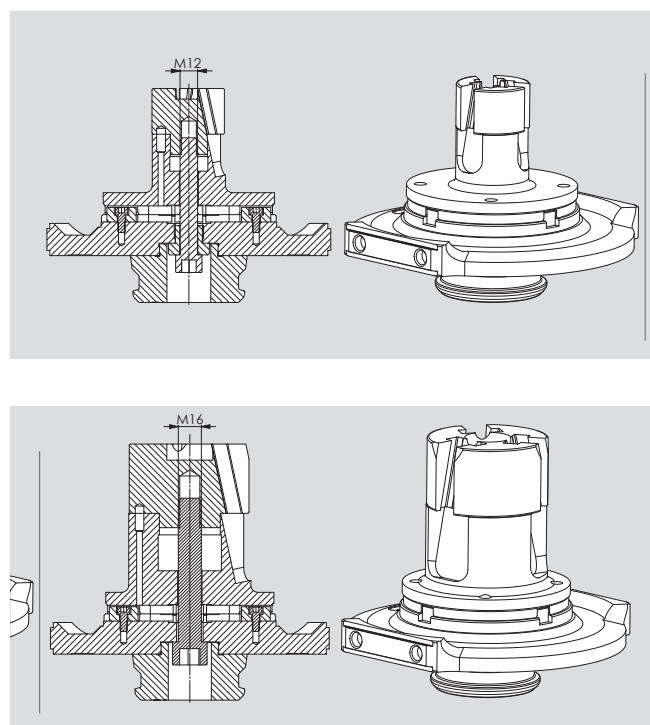


4.5.2 SEMIFINISHED TOOL for two-pieces pallet

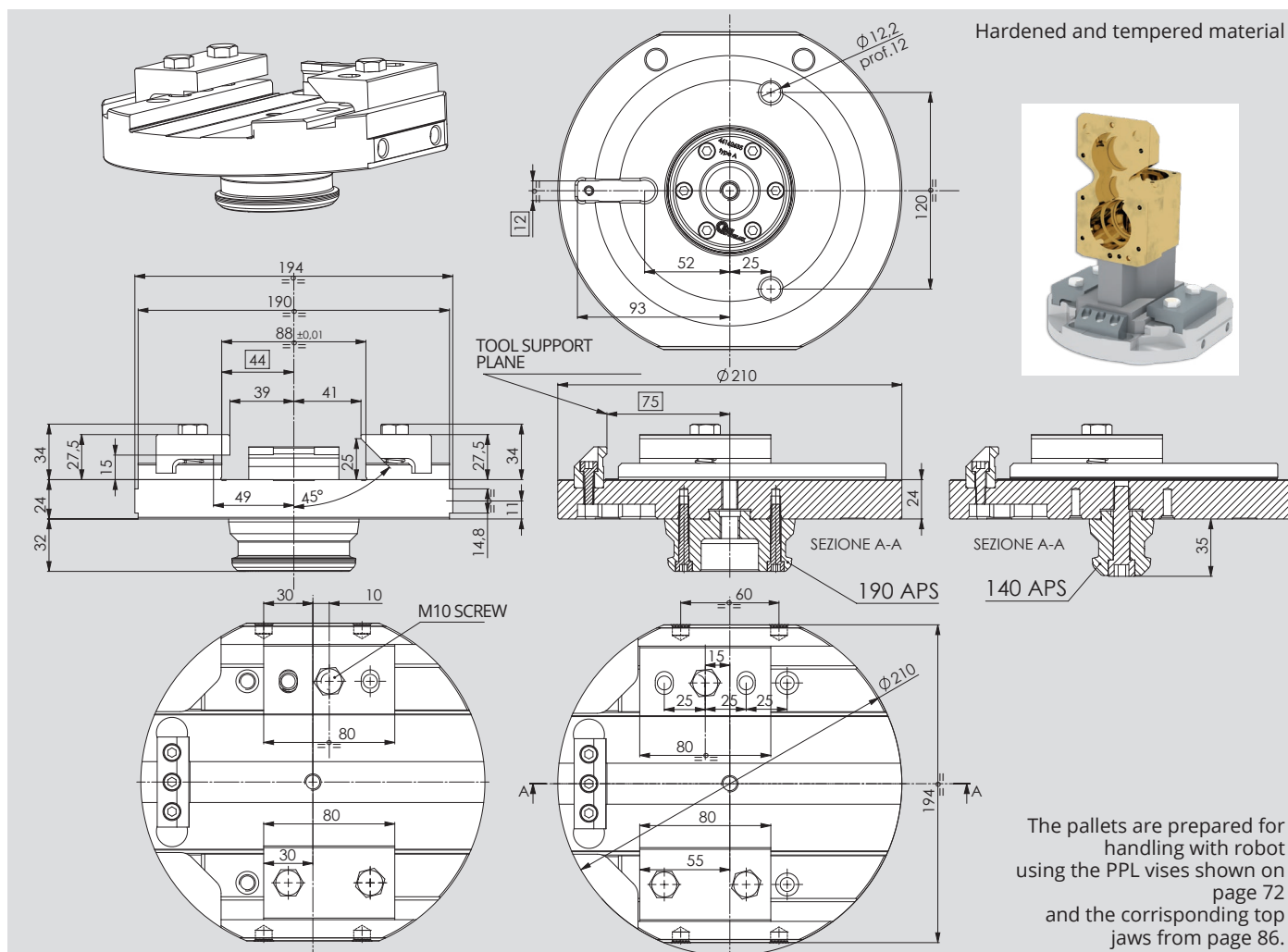


ID SEMIFISHED TOOL N.	WEIGHT
46200255 - SEMIFINISHED TOOLS- 2PZ WITH CENTRAL SCREW APS 190	8,2 Kg

APPLICATION EXAMPLE

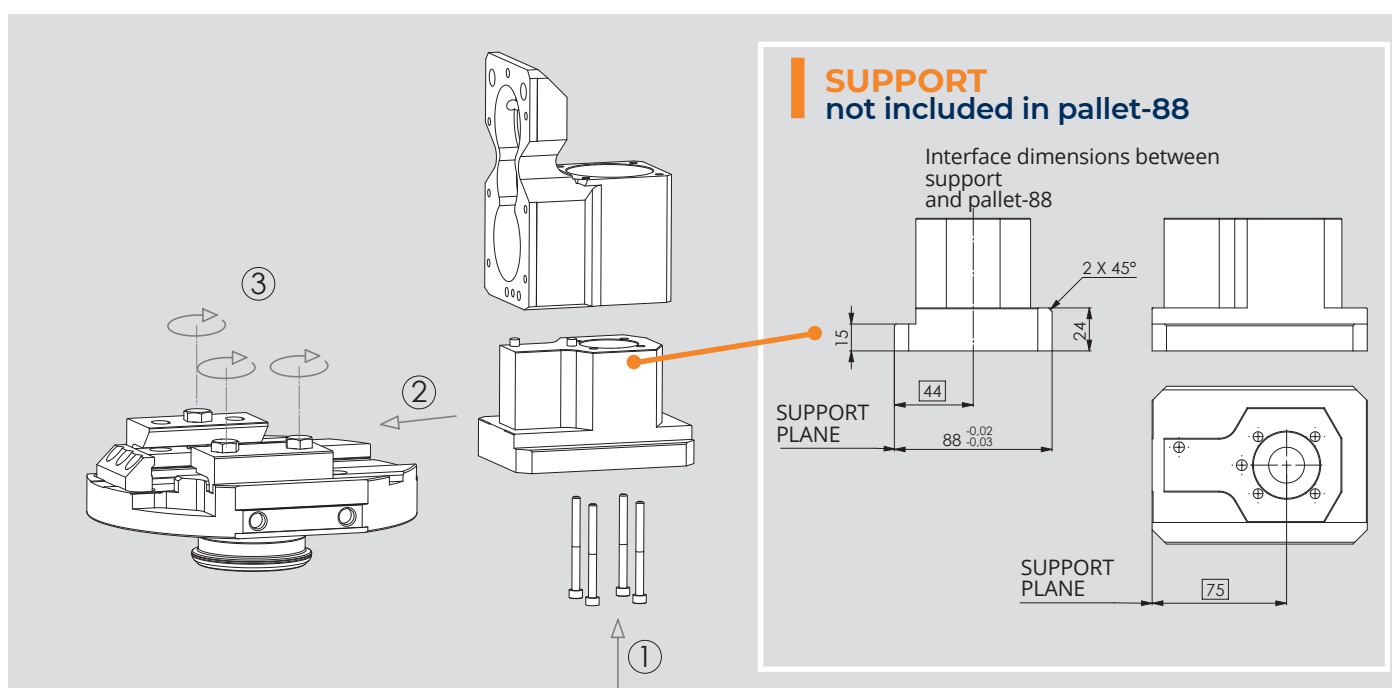


4.6 PALLET-88 prepared for robot loading

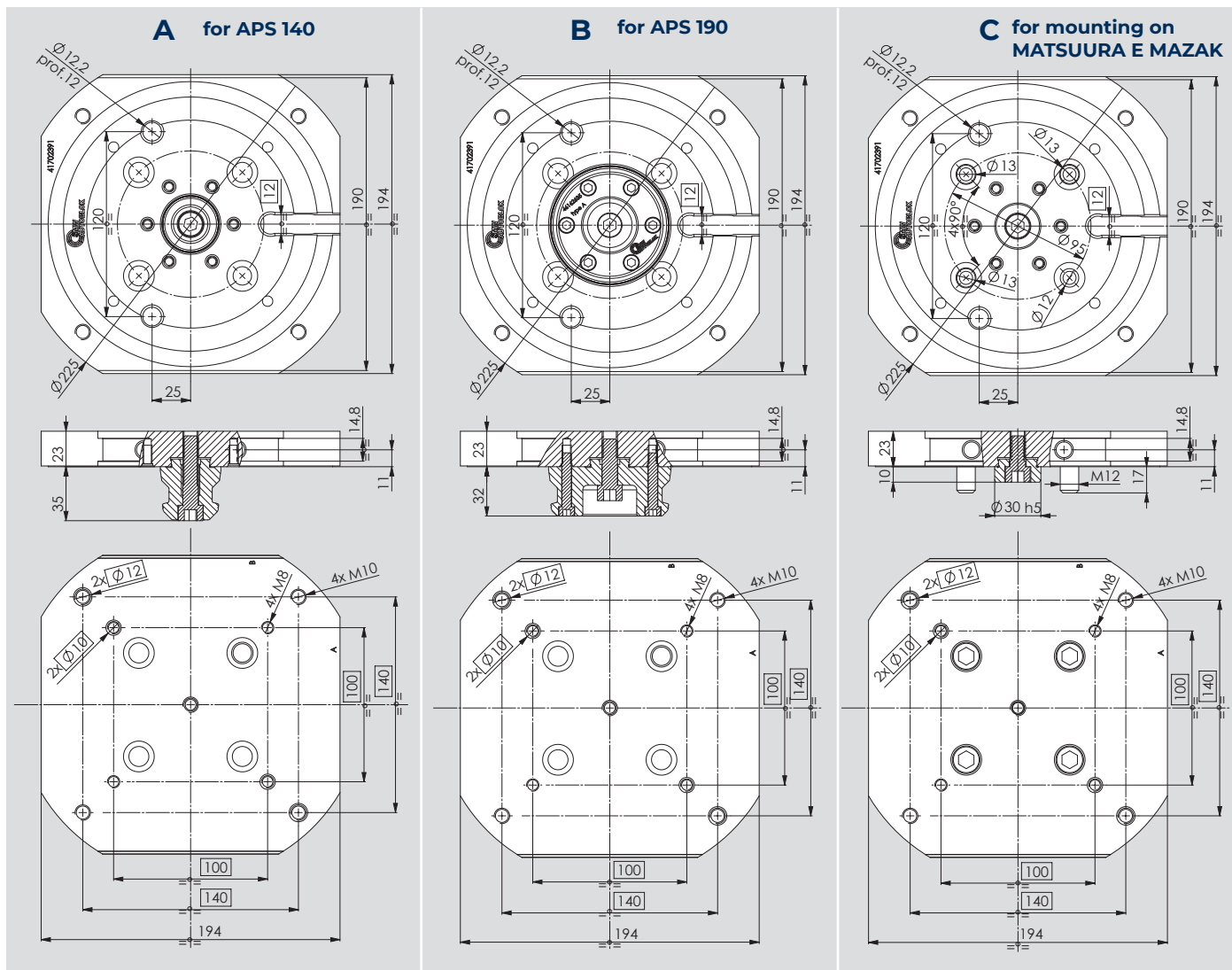


ID.N.	WEIGHT
46200216 - PALLET-88 D210 APS140 LOADING ROBOT	8 Kg
46200210 - PALLET-88 D210 APS190 LOADING ROBOT	8,7 Kg

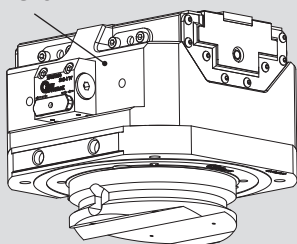
EXAMPLE OF USE



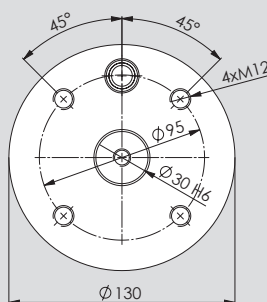
4.7 STV PALLET HOLDER WITH ZERO FEEDINGS AND SAB-1 prepared for robot loading



NOT INCLUDED



Mounting pallet used on machine tools indicated on the table.



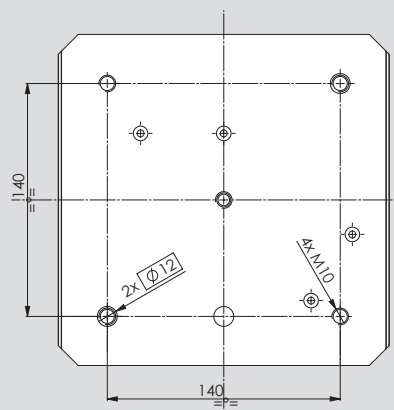
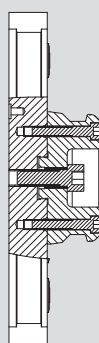
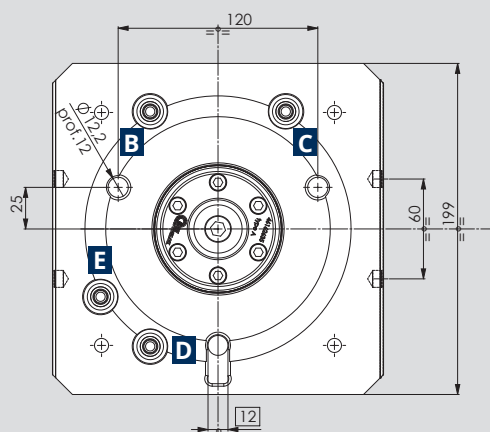
Hardened and tempered material

The pallets are prepared for handling with robot using the PPL vises shown on page 72 and the corresponding top jaws from page 86.

On these pallets the TWIN VISE can be mounted only if the SAB-1 valve is mounted.

	ID.N. PALLET (VISE NOT INCLUDED)	WEIGHT	TWIN VISE MODEL +SAB-1 USABLE (OPTIONAL)	MODULE APS	MACHINE TOOLS PALLET
A	46200280 GRP PALLET Q194 STV HOLDER VISE ON APS 140	6,2 Kg	125 STV-2 180 STV-2 180 STV-3	APS 140	-
B	46200281 GRP PALLET Q194 STV HOLDER VISE ON APS 190	6,8 Kg		APS 190	-
C	46200282 GRP PALLET Q194 STV HOLDER VISE ON PALLET Ø 130	6,1 Kg		-	MATSUURA MAM-72 MATSUURA MX 330 MAZAK 300 HSK 100

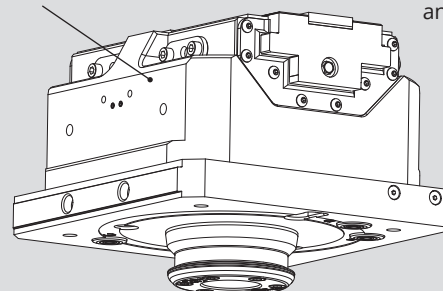
4.8A 180 STV PALLET HOLDER WITH 2-4 FEEDINGS prepared for robot loading



Hardened
and tempered
material

The pallets are
prepared for handling
with robot
using the PPL vises
shown on page 72
and the corresponding
top jaws
from page 86.

NOT INCLUDED



- B** TWIN VISE open **D** TWIN VISE stroke control valve
C TWIN VISE closed **E** Air sensing Twin vise

ID.N. PALLET (VISE AND COUPLERS NOT INCLUDED)

46200104 PALLET HOLDER 180STV 2-3J APS190 ROBOT LOADING PREPARED FOR 4 FEMALE COUPLERS

71718105 FEMALE COUPLER

FEEDINGS
TO USE

B-C-D-E

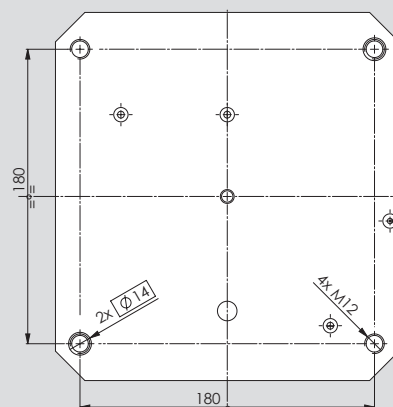
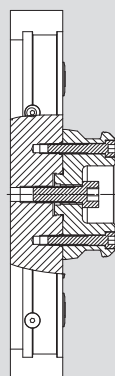
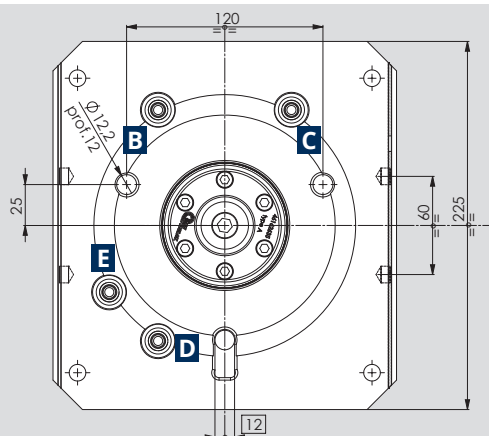
WEIGHT

7,7 Kg

-

0,030 kg

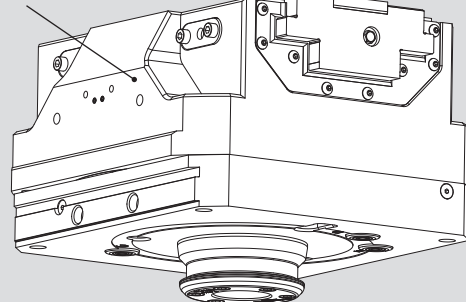
4.8B 225 STV PALLET HOLDER WITH 2-4 FEEDINGS prepared for robot loading



Hardened
and tempered
material

The pallets are
prepared for handling
with robot
using the PPL vises
shown on page 72
and the corresponding
top jaws
from page 86.

NOT INCLUDED



- B** TWIN VISE open **D** Stroke control valve TWIN VISE
C TWIN VISE closed **E** Air sensing Twin vise

ID.N. PALLET (VISE AND COUPLERS NOT INCLUDED)

46200109 PALLET HOLDER 225STV 2-3J APS190 ROBOT LOADING PREPARED FOR 4 FEMALE COUPLERS

71718105 FEMALE COUPLER

FEEDINGS
TO USE

B-C-D-E

WEIGHT

12 Kg

-

0,030 kg

5 AXIS SOLUTION WITH N.4 PNEUMATIC FEEDINGS: all feedings for APS control

Upper plate manual change or by robot

Pallet for D125 D160
D200 SGSF chuck

46200055



Pallet for IMG
SINTEX ST5-2G vises

46200270



G88 Pallet

46200210



125STV-2N + SAB1	77904812
125STV-2L + SAB1	77904912
180STV-2N + SAB1	77904818
180STV-2L + SAB1	77904918
180STV-3N + SAB1	77905018

Semi-finished D260
blank Pallet

46200020



Pallet for 160-HGN chuck

46200092



Semi-finished D208
blank Pallet

46200015



Pallet for 210-HGN chuck

46200093

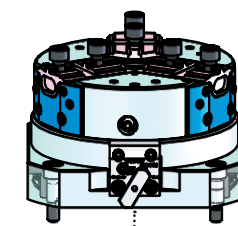
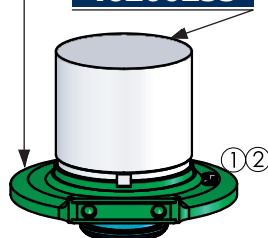


Two pieces Pallet

46200250

Semi-finished workpiece

46200255



Pallet for STV+SAB1

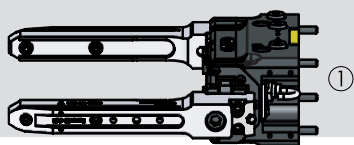
46200281

160PPL gripper

77901966

Top jaws set

46204030 *

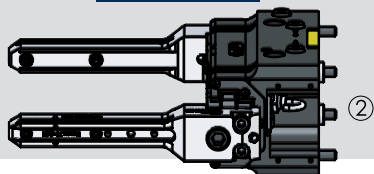


200PPL gripper

77901970

Top jaws set

46204050 *

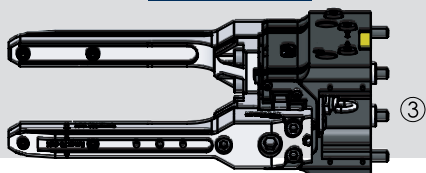


200PPL gripper

77901970

Top jaws set

46204040 *



Antirotation key

46162333

APS190 E PREMIUM SC

46165640

PORT1 = APS opening (A)
PORT2 = APS air sensing (C)
PORT3 = APS turbo function (T)
PORT4 = APS stroke control SC (E)

Extension module for APS

46203000

T-Nuts set
(only if required)

Customized distributor

Adapting flange
(only if required)

N.4 FEEDINGS

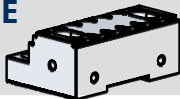
PORT1 = APS opening (A)
PORT2 = APS air sensing (C)
PORT3 = APS turbo function (T)
PORT4 = APS stroke control SC (E)

* ID.No. refers to 1 set = 2 top jaws

5 AXIS SOLUTION WITH N.4 PNEUMATIC FEEDINGS: n.2 on APS + n.2 on the pallet

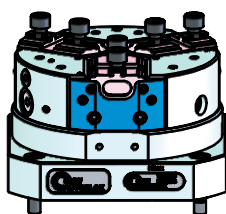
Upper plate manual change or by robot
Workpiece manual loading or by robot

SEE TWIN VISES
CATALOGUE



180STV-3N

77904618

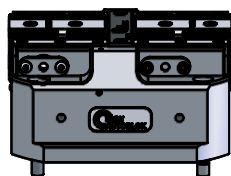


180STV-2N

77904318

180STV-2L

77904418

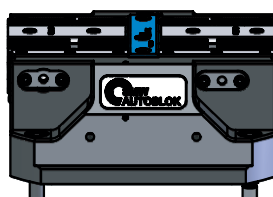


225STV-2N

77904322

225STV-2L

77904422

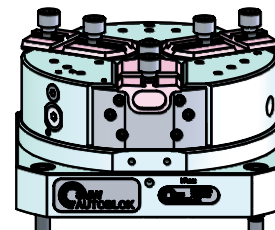


225STV-3N

77904622

225STV-3L

77904722



Pallet for 180STV

46200104



PORT3 = STV vise opening (B)
PORT4 = STV vise closing (C)

Female coupler

71718105



Pallet for 225STV

46200109



Female coupler

71718105



Antirotation key

46162333

Male coupler

71718106



APS190 E PREMIUM SC 6S

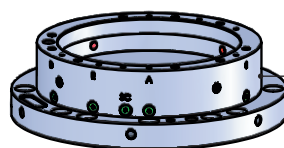
46162650

PORT1 = APS opening (A)
PORT2 = APS air sensing (T)



Extension module for APS

46203000



T-Nuts set

(only if required)



Customized distributor

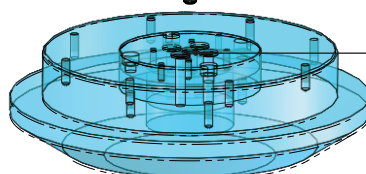


Adapting flange
(only if required)



N.4 FEEDINGS

PORT1 = APS opening (A)
PORT2 = APS air sensing (T)
PORT3 = STV vise opening (B)
PORT4 = STV vise closing (C)

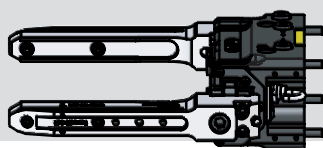


160PPL gripper

77901966

Top jaws set

46204030 *

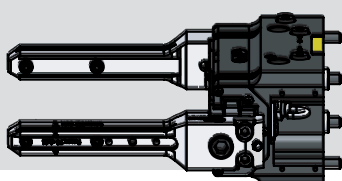


200PPL gripper

77901970

Top jaws set

46204050 *

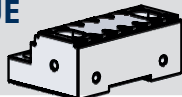


* ID.No. refers to 1 set = 2 top jaws

5 AXIS SOLUTION WITH N.6 PNEUMATIC FEEDINGS: n.3 on APS + n.3 on the pallet

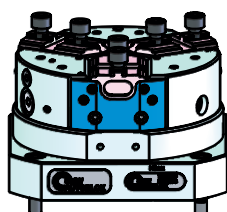
Upper plate manual change or by robot
Workpiece manual loading or by robot

SEE TWIN VISES
CATALOGUE



180STV-3N

77904618

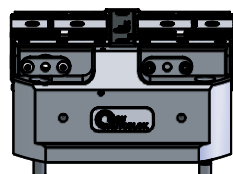


180STV-2N

77904318

180STV-2L

77904418

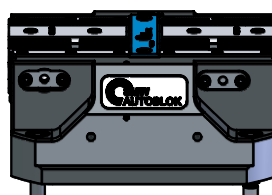


225STV-2N

77904322

225STV-2L

77904422

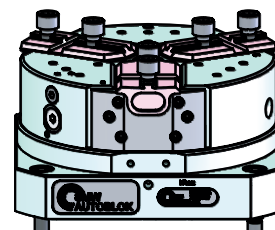


225STV-3N

77904622

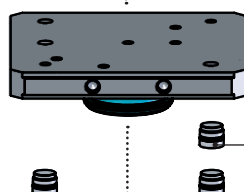
225STV-3L

77904722



Pallet for 180STV

46200104



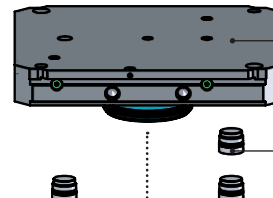
PORT4 = STV vise opening (B)
PORT5 = STV vise closing (C)
PORT6 = STV vise stroke control (D)

Female coupler

71718105

Pallet for 225STV

46200109



Female coupler

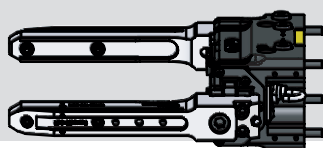
71718105

160PPL gripper

77901966

Top jaws set

46204030 *

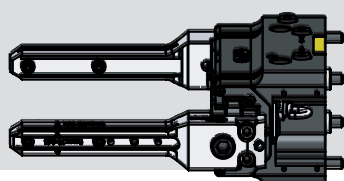


200PPL gripper

77901970

Top jaws set

46204050 *



Antirotation key

46162333

Male coupler

71718106

APS190 E PREMIUM SC 6S

46162650

PORT1 = APS opening (A)
PORT2 = APS air sensing (T)
PORT3 = APS stroke control SC (E)

Extension module for APS

46203000

T-Nuts set

(only if required)

Customized distributor

Adapting flange

(only if required)

N.6 FEEDINGS

PORT1 = APS opening (A)
PORT2 = APS air sensing (T)
PORT3 = APS stroke control SC (E)
PORT4 = STV vise opening (B)
PORT5 = STV vise closing (C)
PORT6 = STV vise stroke control (D)

* ID.No. refers to 1 set = 2 top jaws

5

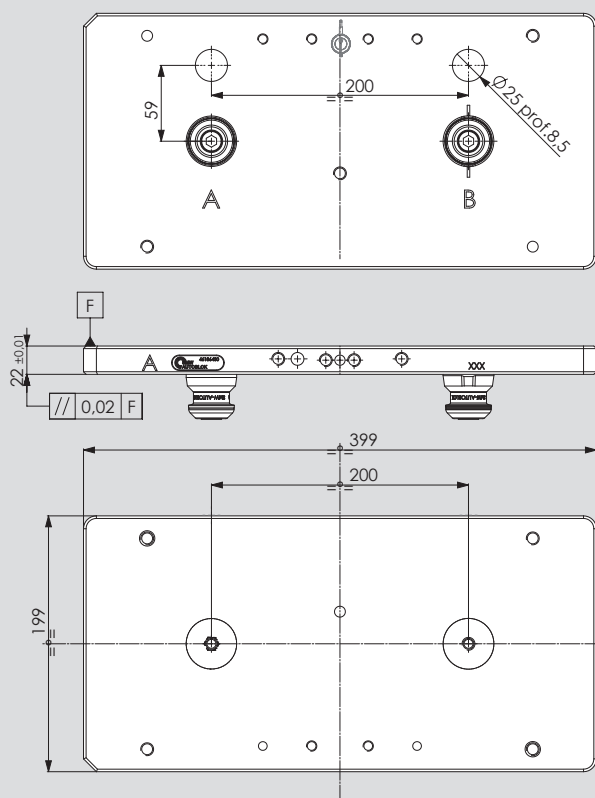
MULTIPLE CLAMPING PALLET



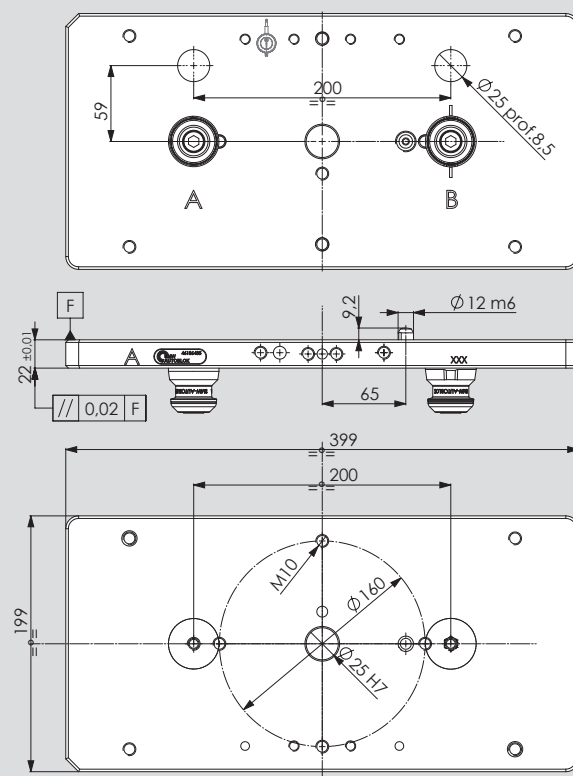
CONFIGURATIONS

For robot or manual loading with PP-A vise with manual chuck, Twin vise, pallet and tools

MULTIPLE CLAMPING PALLET WITH 2 APS 140 semifinished pallet



BASIC VERSION



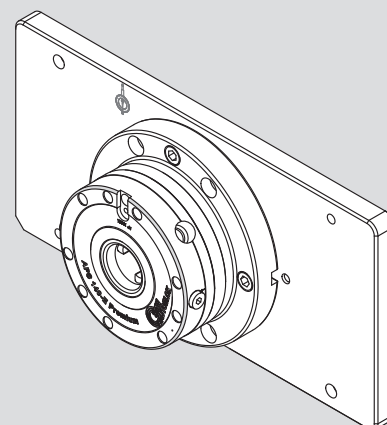
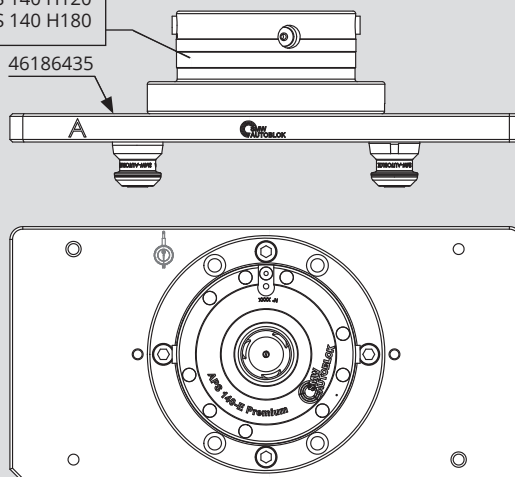
PREMIUM VERSION

The pallets are prepared for loading with robot using the 160x98 PPA (shown on pages 94-95) or the vise 200 PP-N (shown from page 72)

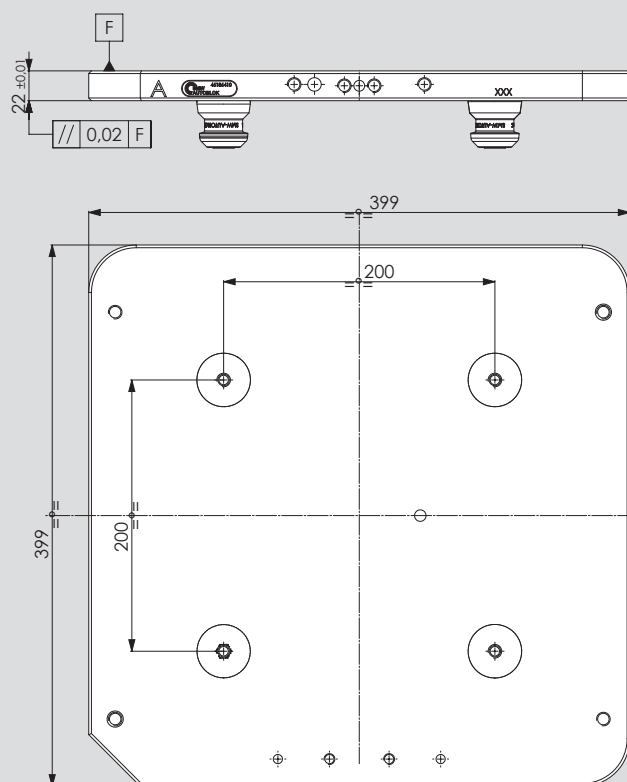
ID.N. COMPLETE PALLET	WEIGHT
46186435 CLAMPING PALLET PREMIUM SP22 2APS-140	14 Kg
46186430 CLAMPING PALLET BASIC SP22 2APS-140	14 Kg

APPLICATION EXAMPLE with PREMIUM CLAMPING PALLET 2 APS 140

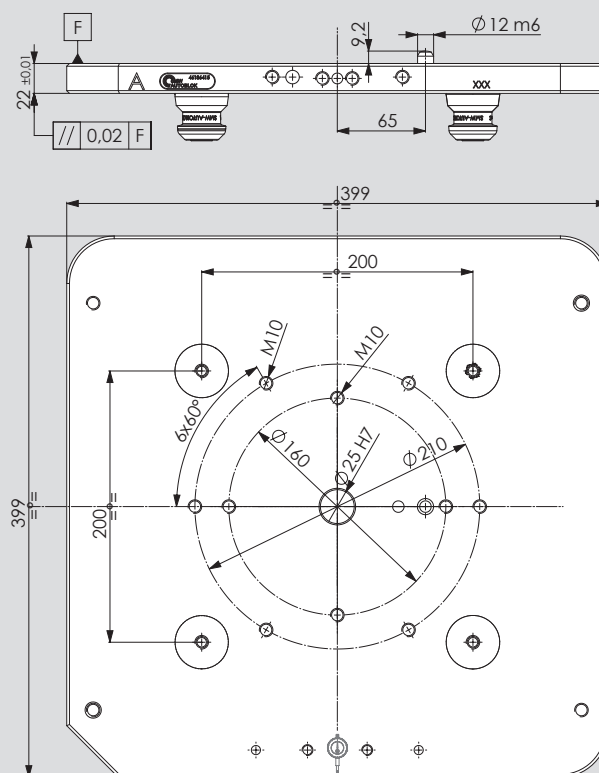
460113 MODULE HEIGHT EXTENSION APS 140 H80
460114 MODULE HEIGHT EXTENSION APS 140 H120
460115 MODULE HEIGHT EXTENSION APS 140 H180



MULTIPLE CLAMPING PALLET WITH 4 APS 140 semifinished pallet



BASIC VERSION



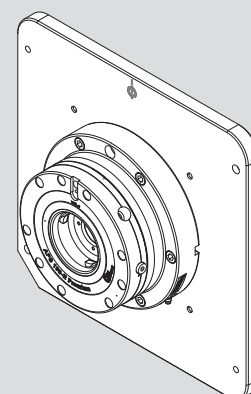
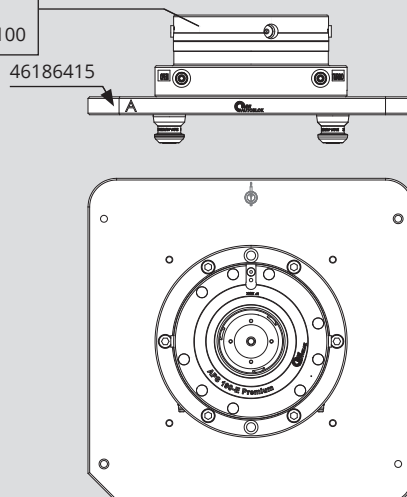
PREMIUM VERSION

The pallets are prepared for loading with robot using the 160x98 PPA (shown on pages 94-95) or the vise 200 PP-N (shown from page 72)

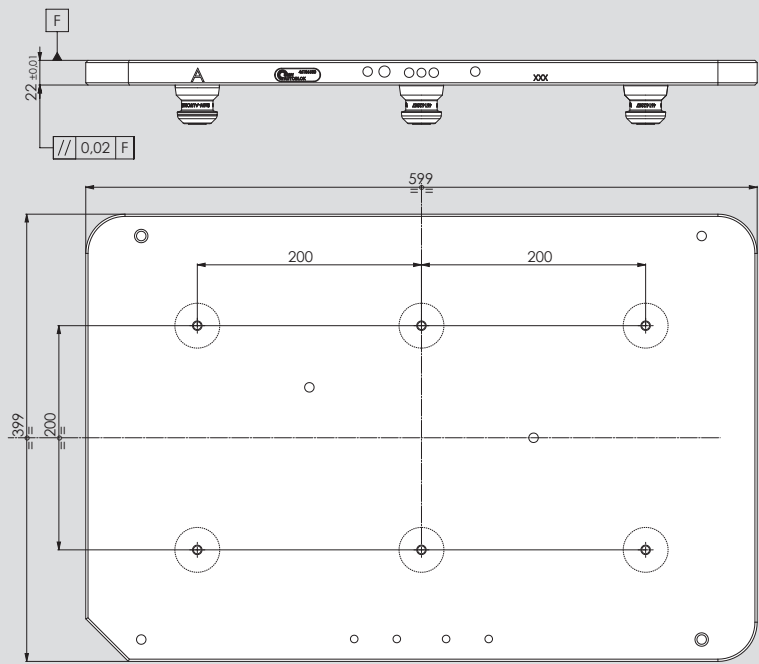
ID.N.COMPLETE PALLET	WEIGHT
46186415 CLAMPING PALLET PREMIUM SP22 4APS-140	28 Kg
46186410 CLAMPING PALLET BASIC SP22 4APS-140	28 Kg

APPLICATION EXAMPLE with PREMIUM CLAMPING PALLET 4 APS 140

460113 MODULE HEIGHT EXTENSION APS 140 H80
460114 MODULE HEIGHT EXTENSION APS 140 H120
460115 MODULE HEIGHT EXTENSION APS 140 H180
460111 MODULE HEIGHT EXTENSION APS 190 H100
41702305 MODULE HEIGHT EXTENSION APS 190+SAB1 H100

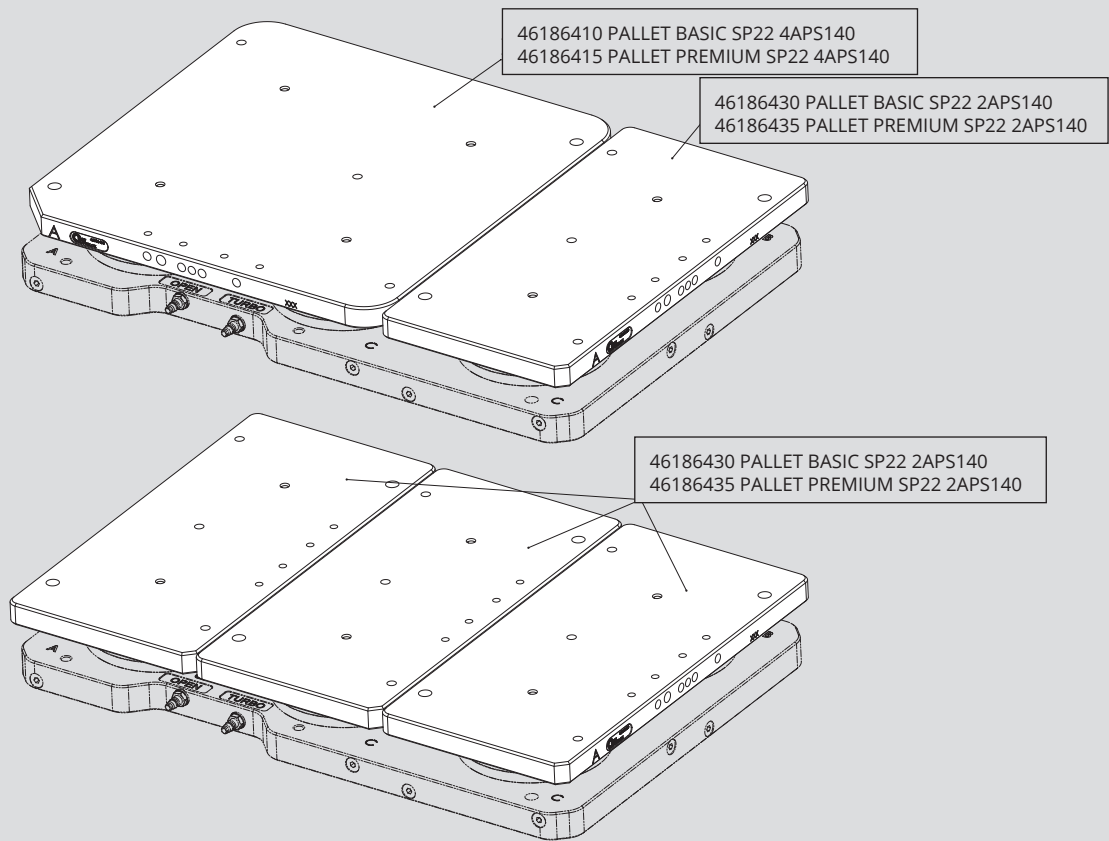


MULTIPLE CLAMPING PALLET WITH 6 APS 140
semifinished pallet



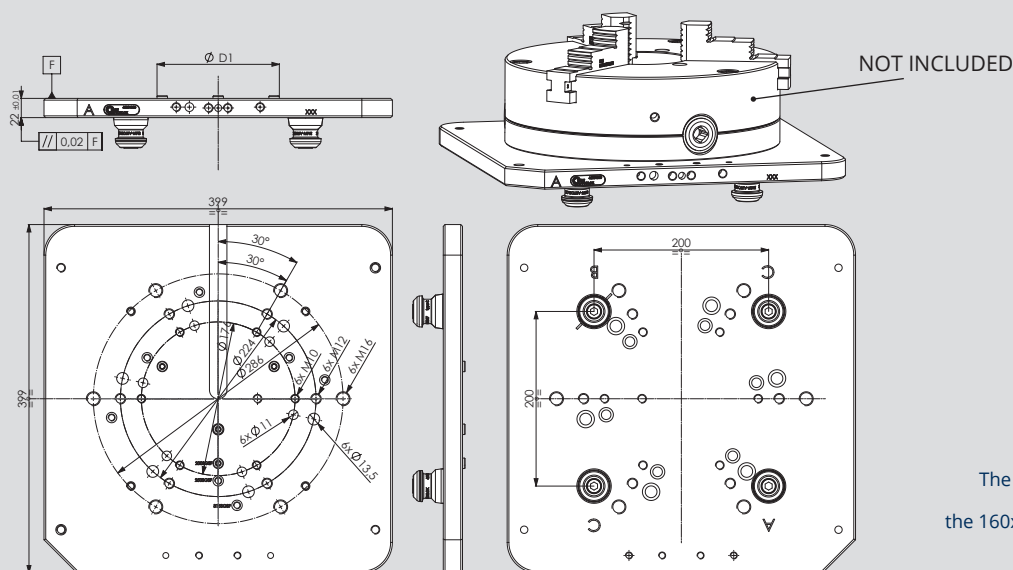
ID.N. COMPLETE PALLET	WEIGHT
46186680 CLAMPING PALLET BASIC SP22 6APS-140	42 Kg

APPLICATION EXAMPLE
with BASIC CLAMPING PALLET 6 APS 140



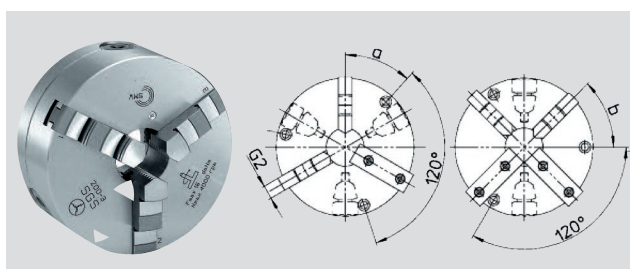
Q400 CLAMPING PALLET CHUCK SGSF

pallet prepared for mounting SGSF chucks



The pallets are prepared for loading with robot using the 160x98 PPA (shown on pages 94-95) or the vise 200 PP-N (shown from page 72)

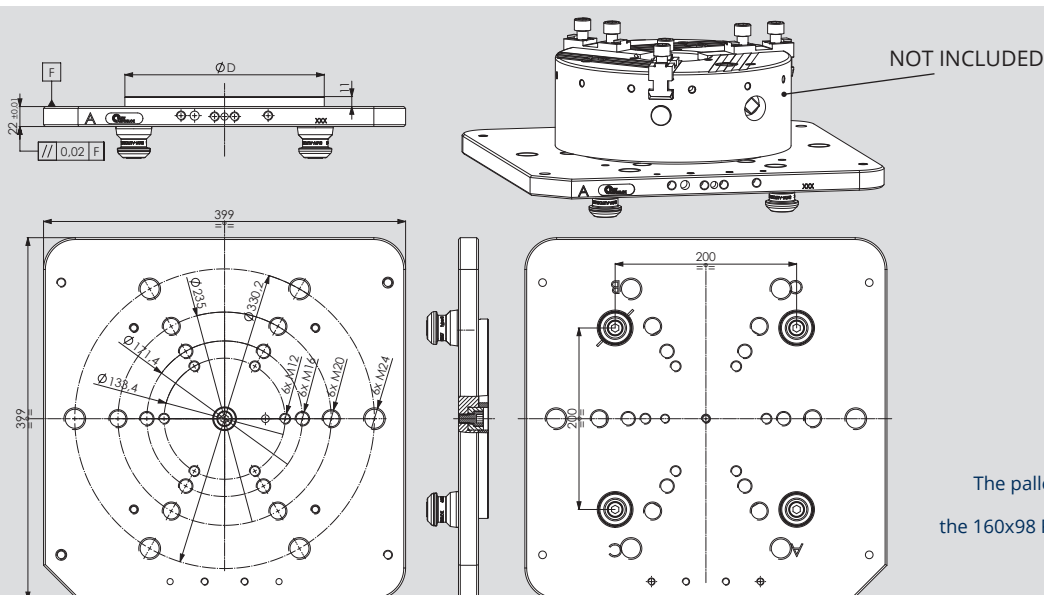
PALLET ID.N. (CHUCK NOT INCLUDED)	WEIGHT	MANUAL CHUCKS SGSF (OPTIONAL)	
46201020 CLAMPING PALLET Q400 PREPARED FOR CHUCKS 200-250-315 SGSF HANDLING ROBOT	28 Kg	Ø D1	CHUCK MODEL
		159,9	200 SGSF
		199,9	250 SGSF
		259,9	315 SGSF



CHUCK TYPE SGS-SGSF	200-55	250-76	315-103
Front thread 3+3	33031220	33031225	33031231
Front thread 4+4	33033220	33033225	33033231
Set-3 GRC	03652030	03652530	03653130
Set-4 GRC	03652040	03652540	03653140
Set-3 Soft jaws	03602030	03602530	03603130
Set-4 Soft jaws	03602040	03602540	03603140

Q400 CLAMPING PALLET CHUCKS HG-N

pallet prepared for mounting HG-N chucks

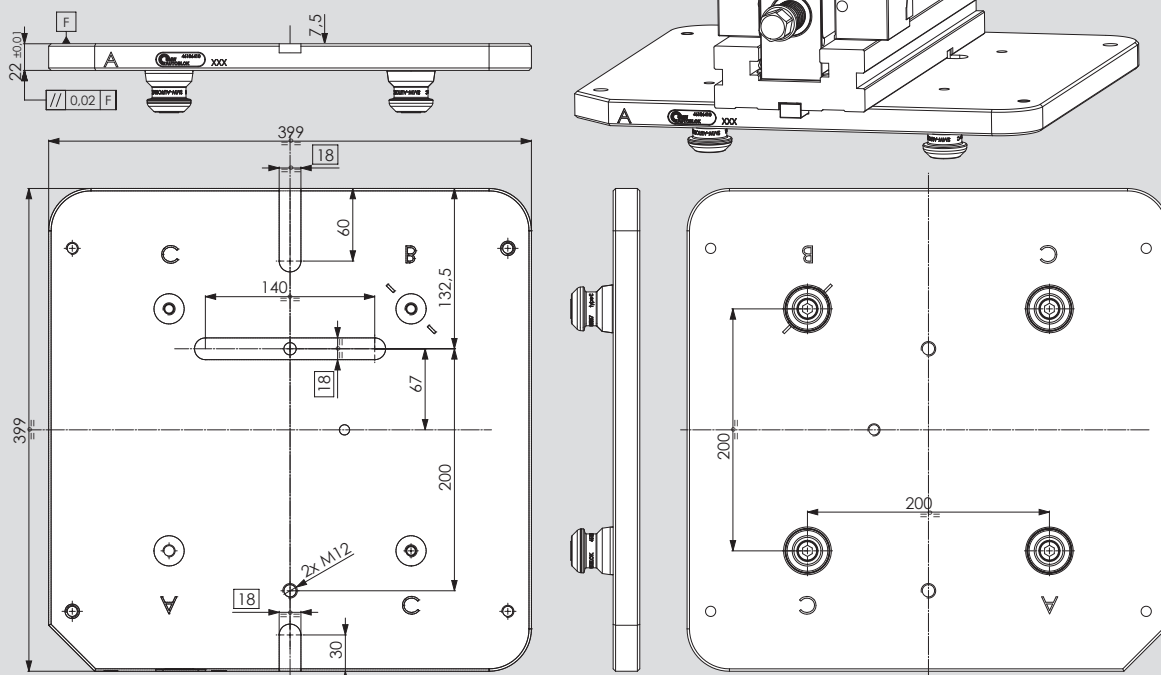


The pallets are prepared for loading with robot using the 160x98 PPA (shown on pages 94-95) or the vise 200 PP-N (shown from page 72) (excluded pallet 46201041)

PALLET ID.N. (CHUCK NOT INCLUDED)	ØD	WEIGHT
46201012 GRP PALLET Q400 + MOUNTING D220 AUTC 260HG LOADING ROBOT	219,7	30 Kg
46201013 GRP PALLET Q400 + MOUNTING D300 AUTC 315HG LOADING ROBOT	299,7	32 Kg
46201014 GRP PALLET Q400 + MOUNTING D380 AUTC 400-500HG MANUAL LOADING	379,7	36 Kg

4 APS 140 CLAMPING PALLET FOR VISES MC150X200 AND TCT150X200 prepared for n.1 vise

NOT INCLUDED: MC 150x200 Vise ID.N. 77580601
TCT 150x200 Vise ID.N. 77580201



The pallet is NOT prepared for handling with robot.

PALLET ID.N. (VISE NOT INCLUDED)

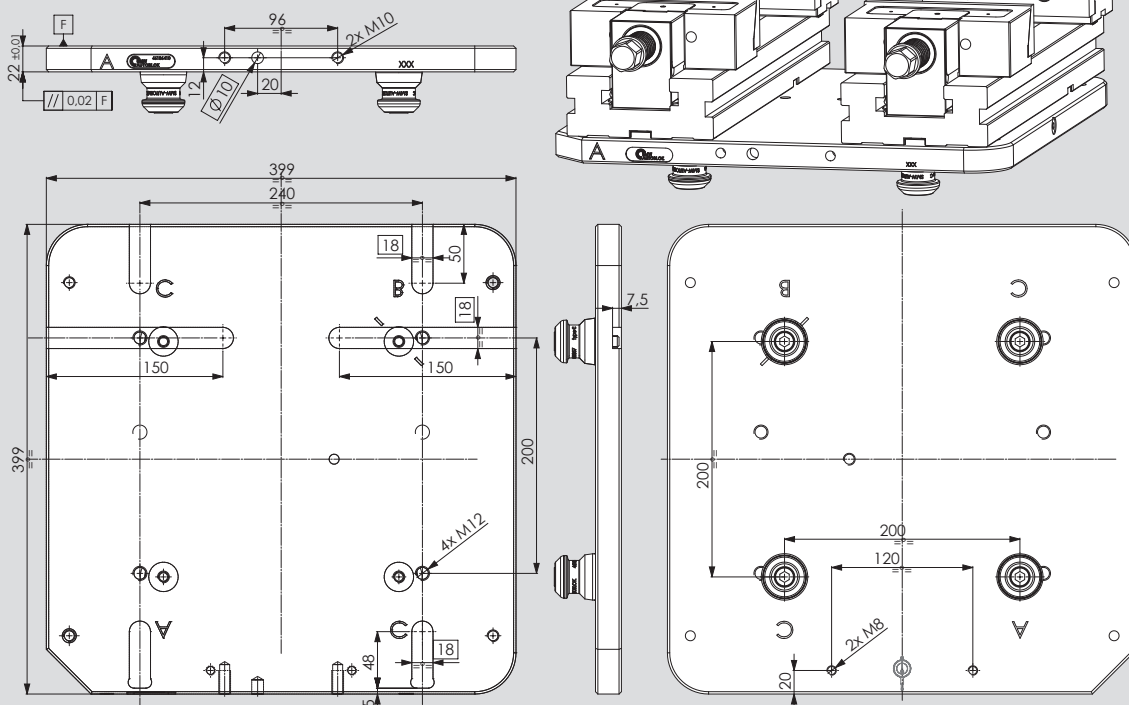
WEIGHT

41702271 CLAMPING PALLET Q400 PREPARED FOR 1 VISE MC and TCT 150x200 MANUAL LOADING

28 Kg

4 APS 140 PALLET FOR VISES MC150X200 AND TCT150X200 prepared for 2 vises

NOT INCLUDED: MC 150x200 Vise ID.N.77580601
TCT 150x200 Vise ID.N.77580201



The pallet is prepared for handling with robot using the 160x98 PPA vise shown on pages 94-95.

PALLET ID.N. (VISE NOT INCLUDED)

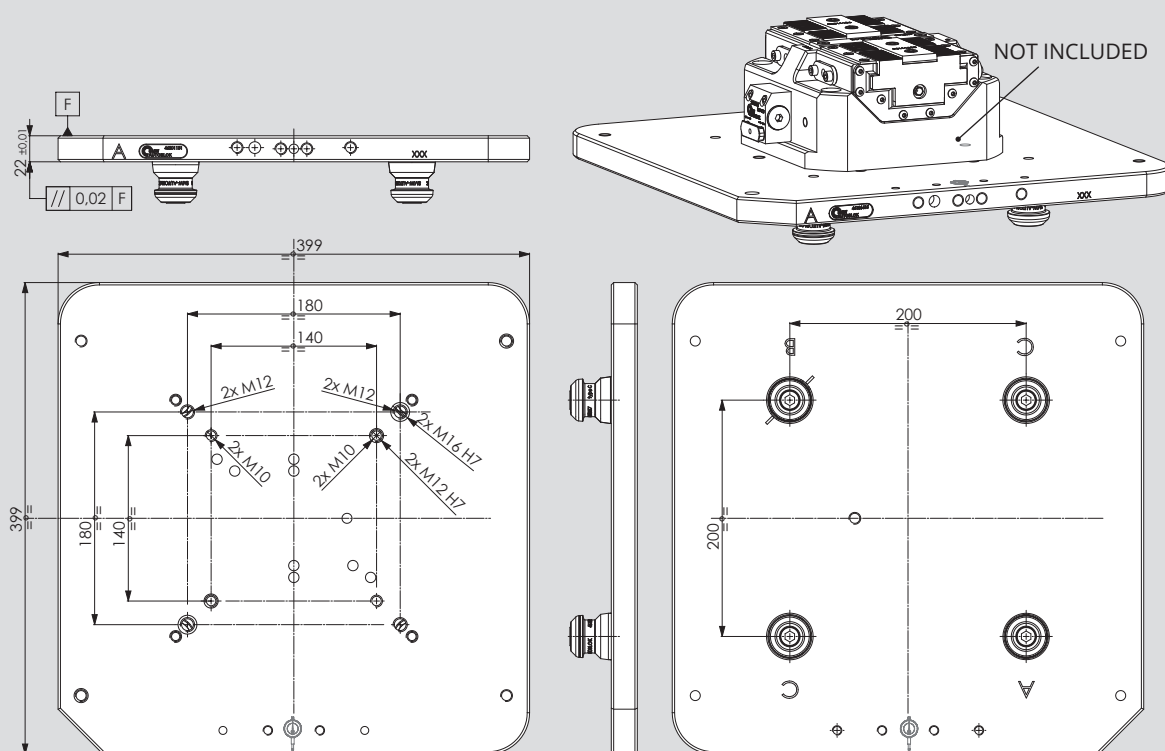
WEIGHT

41702261 CLAMPING PALLET Q400 PREPARED FOR 2 VISES MC and TCT 150x200 ROBOT LOADING

28 Kg

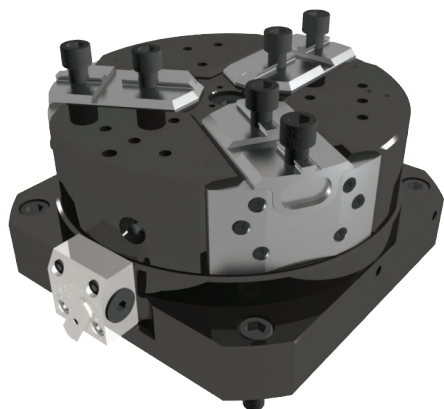
4 APS 140 CLAMPING PALLET STV SAB-1 HOLDER

pallet without feedings for vises STV+SAB-1



The pallets are prepared for loading with robot using the 160x98 PPA (shown on pages 94-95) or the vise 200 PP-N (shown from page 72)

PALLET ID.N. (VISE NOT INCLUDED)	WEIGHT
46201131 CLAMPING PALLET Q400 PREPARED FOR 180/225 STV WITH SAB-1 ROBOT LOADING	28 Kg

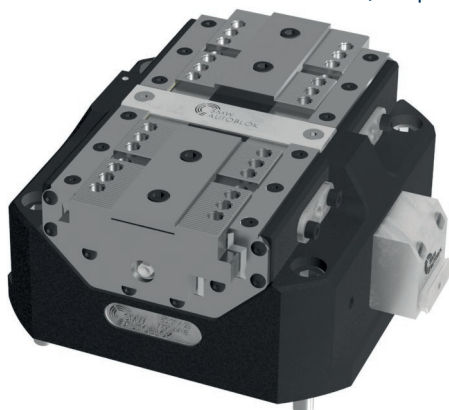


STV MODELS AVAILABLE ON THIS PALLET:

MODEL	ID.N.
180 STV-2N + SAB-1	77904818*
180 STV-2L + SAB-1	77904918*
180 STV-3N + SAB-1	77905018*
225 STV-2N + SAB-1	77904822**
225 STV-2L + SAB-1	77904922**
225 STV-3N + SAB-1	77905022**
225 STV-3L + SAB-1	77905122**

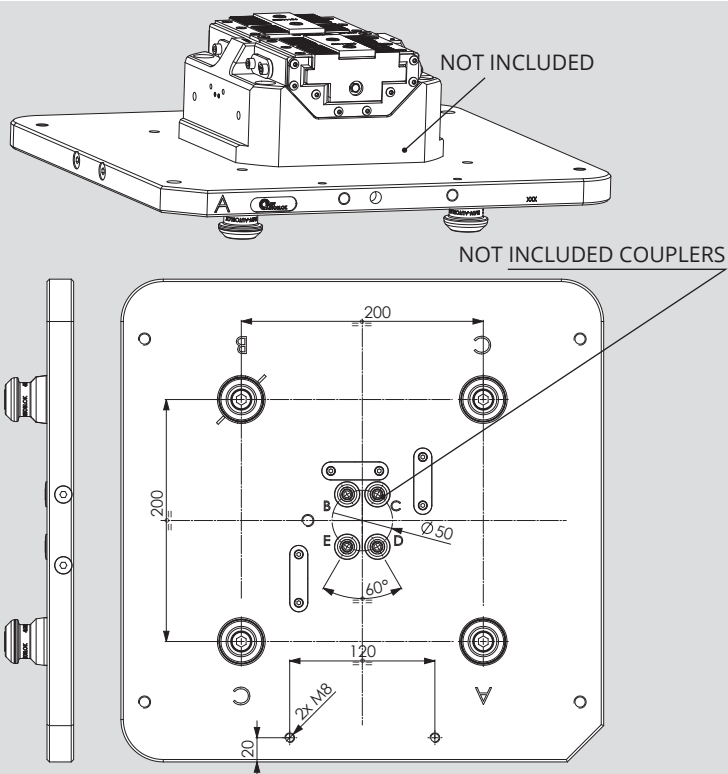
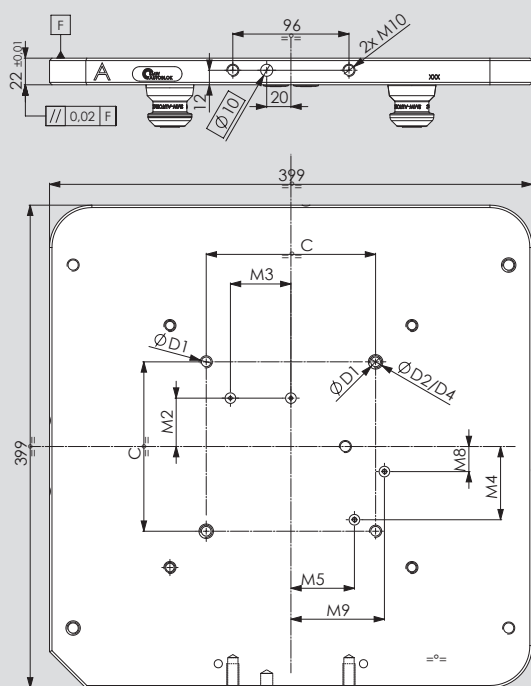
*attention! this STV vise must be mounted in standard solution1 (see product manual)

**attention! this STV vise must be mounted in standard solution2 (see product manual)



4 APS 140 CLAMPING PALLET STV HOLDER

pallet with n.4 feedings



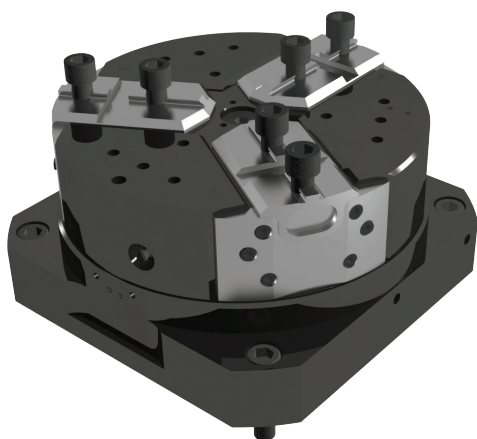
The pallets are prepared for loading with robot using the 160x98 PPA (shown on pages 94-95) or the vise 200 PP-N (shown from page 72)

ID N. PALLET (NOT INCLUDED VISES AND COUPLERS)		WEIGHT
46201115	CLAMPING PALLET Q400 180 STV 2/3J ROBOT LOADING PREPARED FOR 4 FEMALE COUPLERS	28 Kg
46201105	CLAMPING PALLET Q400 225 STV 2/3J ROBOT LOADING PREPARED FOR 4 FEMALE COUPLERS	28 Kg
71718105	FEMALE COUPLER	0,030 Kg

PALLET	C	D1	D2 H7	D4 H7	M2	M3	M4	M5	M8	M9	STV MODELS AVAILABLE ON THIS PALLET:	
											MODEL	ID.N.
46201115	140	M10	12	/	40	50	60,5	52,5	20,7	77,3	180 STV-2N	77904318*
											180 STV-2L	77904418*
											180 STV-3N	77904618*
46201105	180	M12	/	16	50	65	79	63	15	99,9	225 STV-2N	77904322**
											225 STV-2L	77904422**
											225 STV-3N	77904622**
											225 STV-3L	77904722**

*attention! this STV vise must be mounted in standard solution 1 (see product manual)

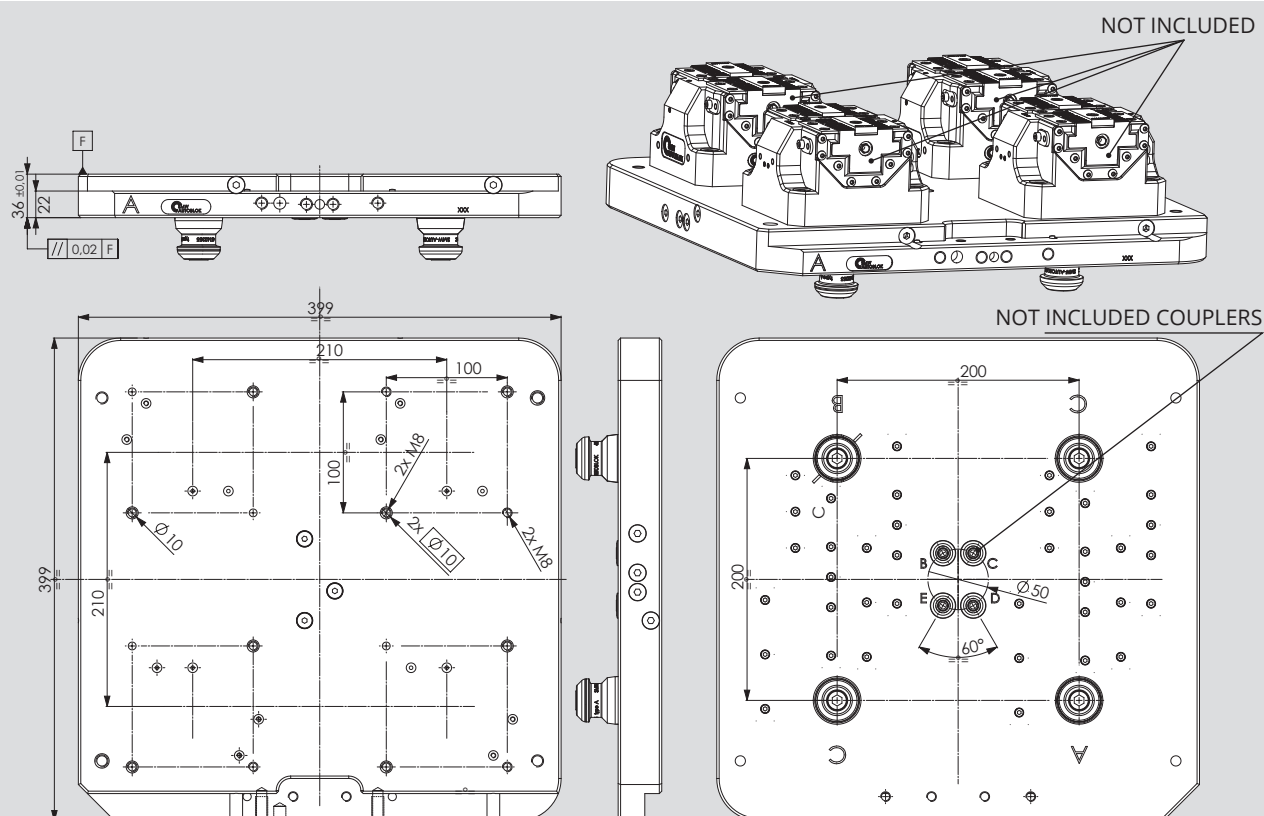
**attention! this STV vise must be mounted in standard solution 2 (see product manual)



The feedings **B C D E** are transferred on the pallet between pneumatic/hydraulic couplers

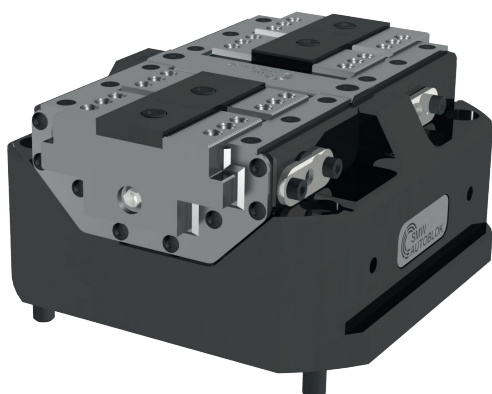
- B** TWIN VISE open
- C** TWIN VISE closed
- D** Stroke control valve TWIN VISE
- E** Air sensing TWIN VISE

4 APS 140 MULTIPLE CLAMPING PALLET HOLDER N.4 125 STV pallet with 4 FEEDINGS



The pallets are prepared for loading with robot using the 160x98 PPA (shown on pages 94-95) or the vise 200 PP-N (shown from page 72)

ID.N. PALLET (NOT INCLUDED VISES AND COUPLERS)	WEIGHT
46201125 CLAMPING PALLET Q400 125 STV ROBOT LOADING PREPARED FOR 4 FEMALE COUPLERS	44 Kg
71718105 FEMALE COUPLERS	0,030 Kg



STV MODEL AVAILABLE ON THIS PALLET:

MODEL	ID.N.
125 STV-2N	77904312
125 STV-2L	77904412

The feedings **B C D E** are transferred on the pallet between pneumatic/hydraulic couplers

- B** TWIN VISE open
- C** TWIN VISE closed
- D** Stroke control valve TWIN VISE
- E** Air sensing TWIN VISE

5 AXIS MACHINE SOLUTION WITH N.2 PNEUMATIC FEEDINGS: all feeding on the APS control

Upper plate manual change or by robot

Pallet for 260HG chuck Pallet for 315HG chuck Pallet for 400HG chuck

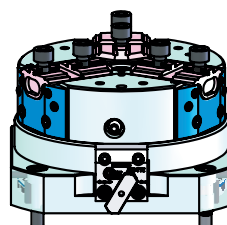
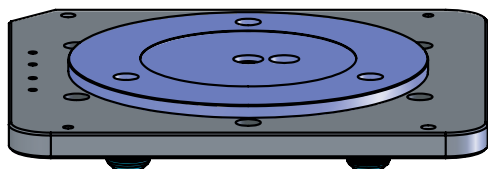
46201012

46201013

46201014

① ②

① ②



180STV-2N + SAB1

77904818

180STV-2L + SAB1

77904918

180STV-3N + SAB1

77905018

225STV-2N + SAB1

77904822

225STV-2L + SAB1

77904922

225STV-3N + SAB1

77905022

225STV-3L + SAB1

77905122

Pallet for
200-250-315
SGSF chuck

46201020

① ②

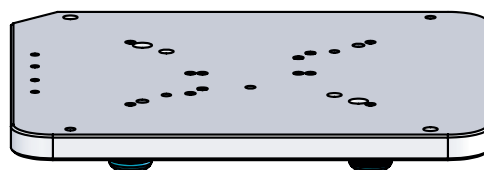
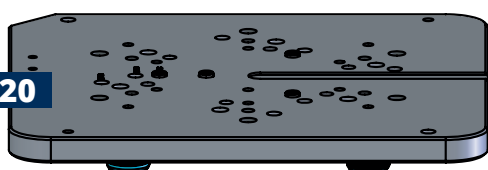


Plate for
STV+SAB1

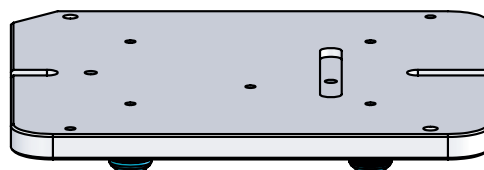
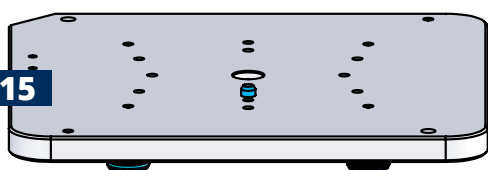
46201131

① ②

Premium
Pallet

46186415

① ②



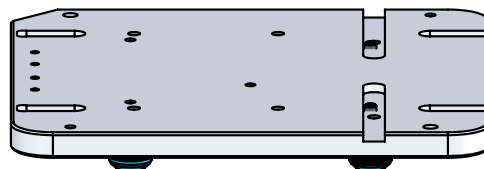
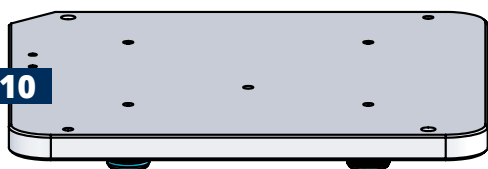
Pallet for n°1
MC and TCt
150x200 vise

41702271

Basic
Pallet

46186410

① ②



Pallet for n°2
MC and TCt
150x200 vise

41702261

②

200PPN gripper

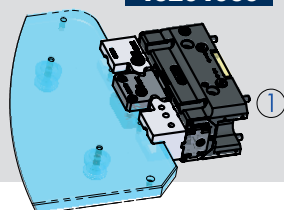
77901870

Top jaws set

46204070 *

Bracket set

46201060

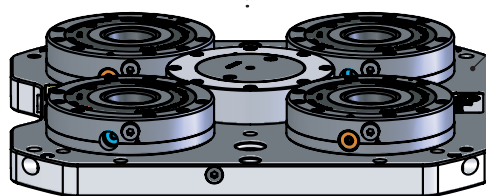
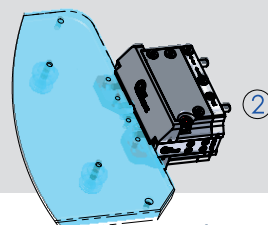


160PPA gripper

46204200

Bracket set

46201050



Pallet with 4APS140

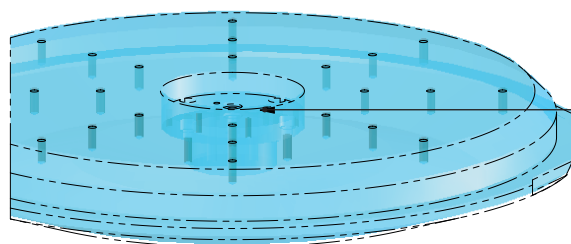
46202000

PORT1 = APS opening (A)
PORT2 = APS air sensing and
APS miniturno function (T)

T-Nuts set
(only if required)



Customized distributor



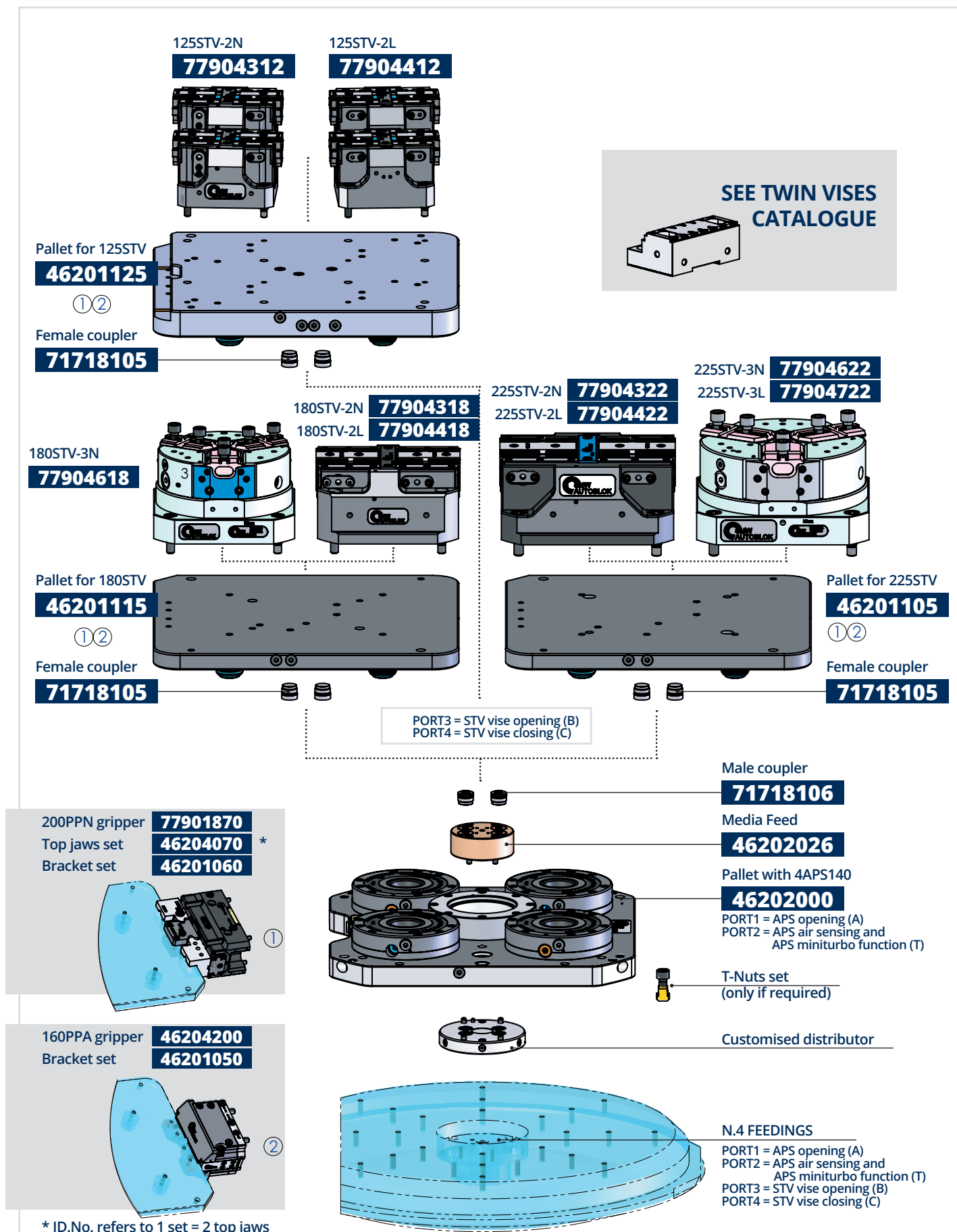
N.2 FEEDINGS

PORT1 = APS opening (A)
PORT2 = APS air sensing and
APS miniturno function (T)

* ID.No. refers to 1 set = 2 top jaws

5 AXIS MACHINE SOLUTION WITH N.4 PNEUMATIC FEEDINGS: n.2 for APS control + n.2 for upper plate

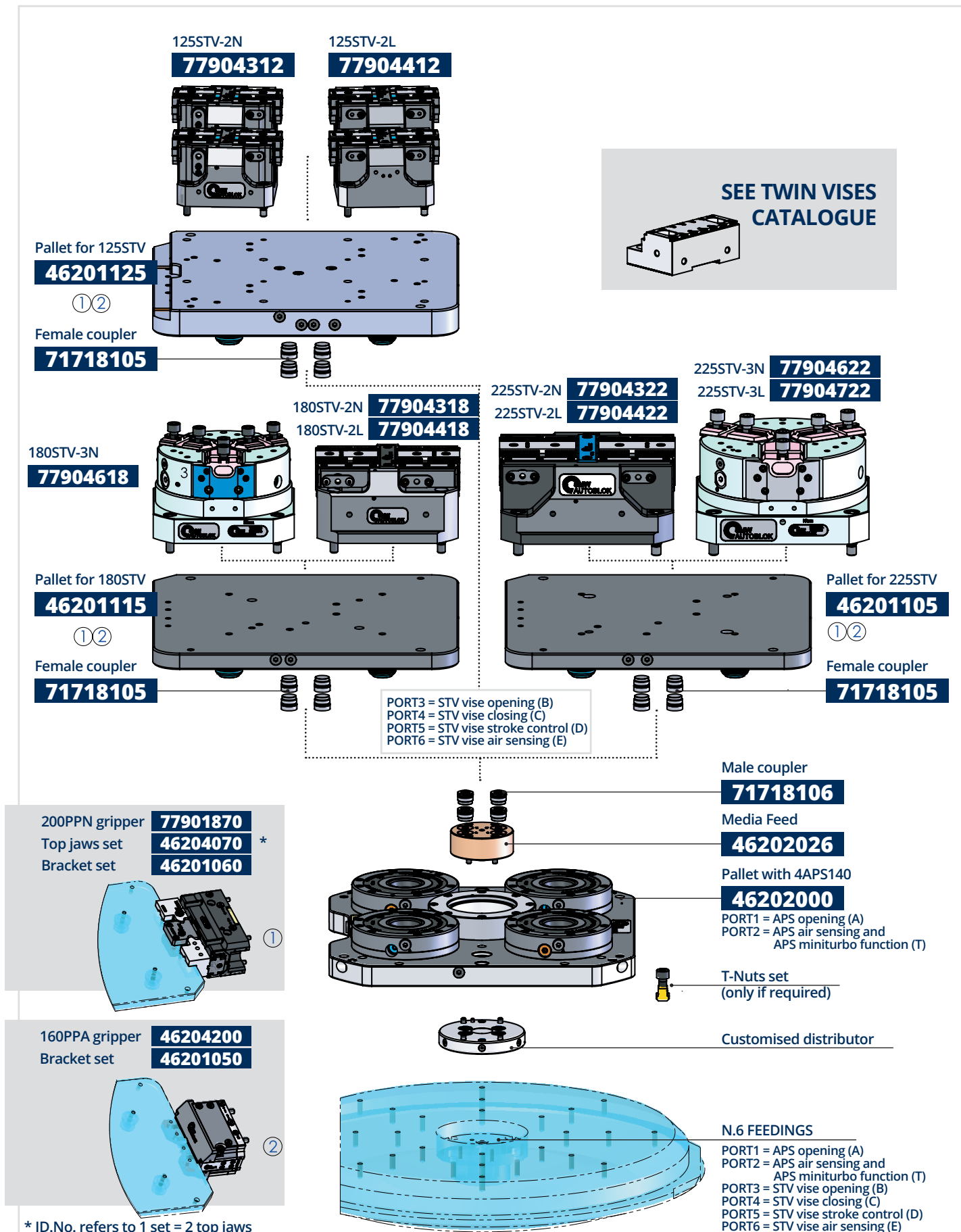
Upper plate manual change or by robot
Workpiece manual loading or by robot



* ID.No. refers to 1 set = 2 top jaws

5 AXIS MACHINE SOLUTION WITH N.6 PNEUMATIC FEEDINGS: n.2 for APS control + n.4 for upper plate

Upper plate manual change or by robot
Workpiece manual loading or by robot



* ID.No. refers to 1 set = 2 top jaws

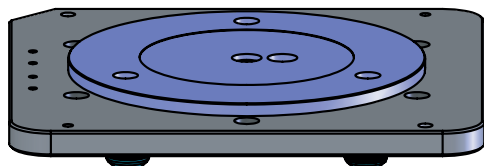
3 AXIS MACHINE SOLUTION WITH N.3 PNEUMATIC FEEDINGS for APS

Upper plate manual change or by robot

Pallet for 260HG chuck Pallet for 315HG chuck Pallet for 400HG chuck

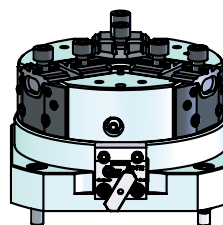
46201012

① ②



46201013

① ②



180STV-2N + SAB1

77904818

180STV-2L + SAB1

77904918

180STV-3N + SAB1

77905018

225STV-2N + SAB1

77904822

225STV-2L + SAB1

77904922

225STV-3N + SAB1

77905022

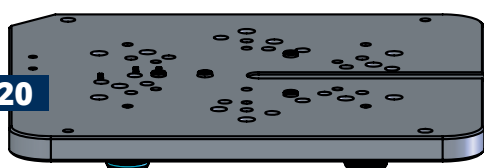
225STV-3L + SAB1

77905122

Pallet for
200-250-315
SGSF chuck

46201020

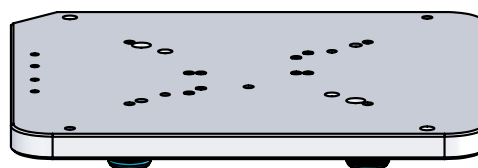
① ②



Pallet for
STV+SAB1

46201131

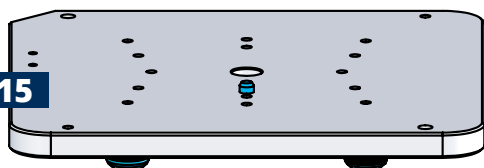
① ②



Premium
Pallet

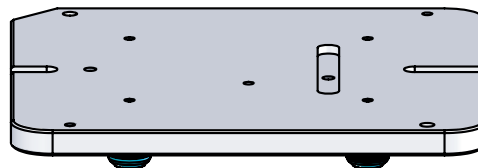
46186415

① ②



Pallet for n°1
MC and TCt
150x200 vise

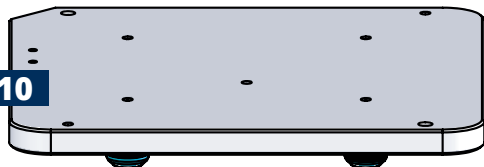
41702271



Basic
Pallet

46186410

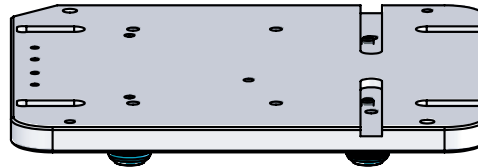
① ②



Pallet for n°2
MC and TCt
150x200 vise

41702261

②



200PPN gripper

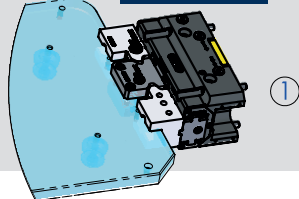
77901870

Top jaws set

46204070 *

Bracket set

46201060

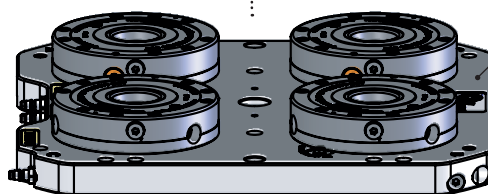


Pallet with 4APS140

46202000

PORT1 = APS opening (A)

PORT2 = APS air sensing and
APS miniturno function (T)



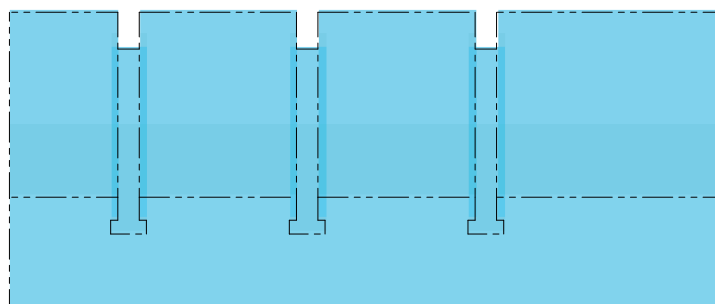
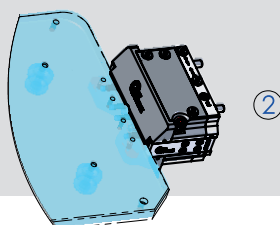
T-Nuts set
(only if required)



160PPA gripper
Bracket set

46204200

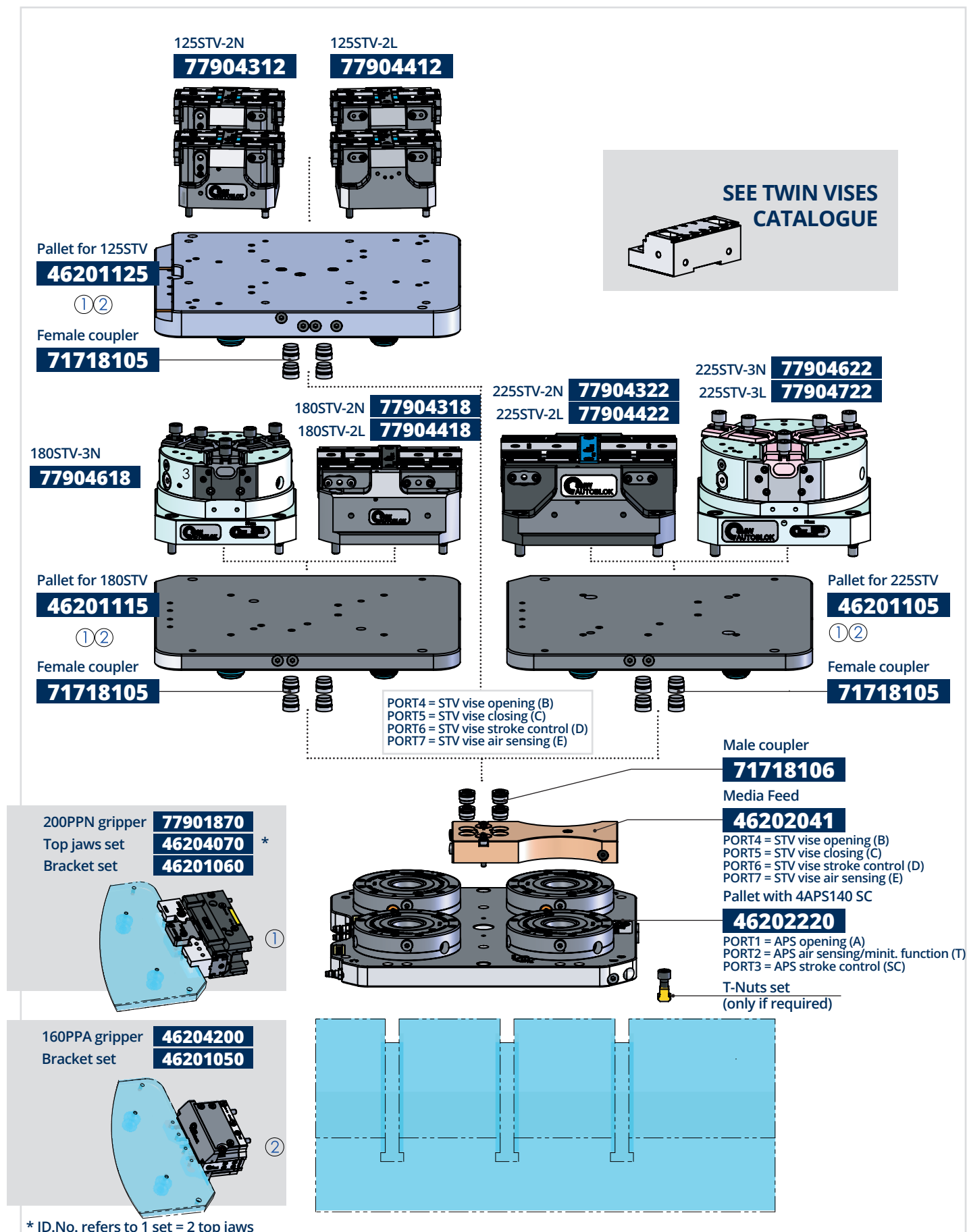
46201050



* ID.No. refers to 1 set = 2 top jaws

3 AXIS MACHINE SOLUTION WITH N.3 PNEUMATIC FEEDINGS for APS + n.4 for upper plate

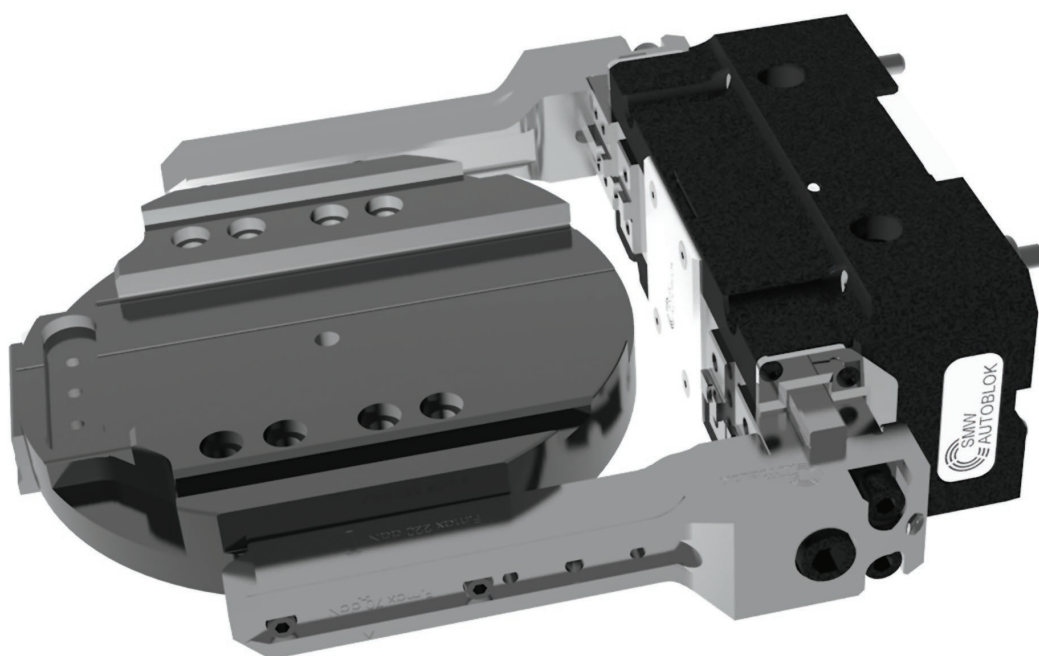
Upper plate manual change or by robot
Workpiece manual loading or by robot



* ID.No. refers to 1 set = 2 top jaws

6

VICES



CONFIGURATIONS

Prepared for manual and robot loading

PL PP PL-RR

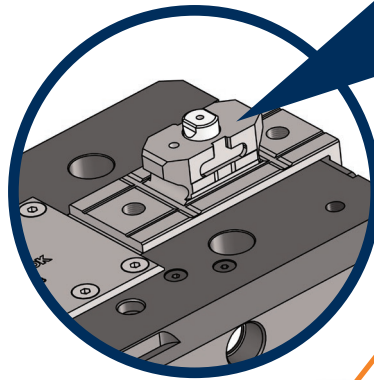
Self centering protected vises

Protected
Pneumatics
Hydraulics
Quick jaws change

Master jaws guide protected against swarf and chips

Tongue & Groove master jaws

Analogic inductive sensor stroke control of the jaws (optional)



RR version
320 and 380 sizes

Air sensing

Pneumatic open/close stroke control master jaws valve (optional)

Possibility of rear feeding

Possibility of side feeding

Applications /Customer benefits

- Compact design
- Master jaws guide protected against swarf and chips
- Highest repeatability
- Highest rigidity
- Linear pressure adjustment

Standard equipment

Self-centering vise without top jaws
All bolts and centering bushings included

Technical features

- Body and functional parts hardened for high precision and long life
- Prepared to air purge
- Tongue & Groove master jaws (in the long stroke master jaws is prepared for rear mounting top jaw) -no 320-380 sizes
- Only for 320 and 380 sizes: Jaws prepared for the quick jaws change and fixed mounting of the jaw
- OD and ID clamping
- Pneumatic open/close -stroke control- master jaws valve optional (see dedicated page)
- Air sensing
- Lubricated with SMW-Autoblok K67 grease
- Stroke control system via analogic proximity switches (optional)

PL - aluminium body version

PP - steel body version

PL-RR - quick jaws change version

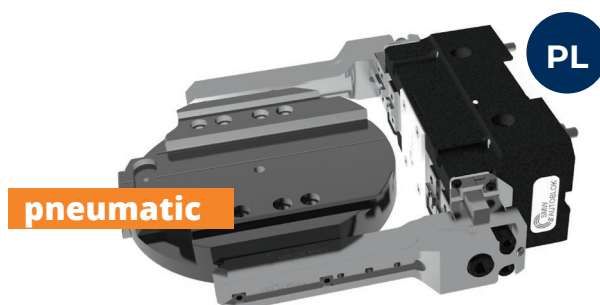
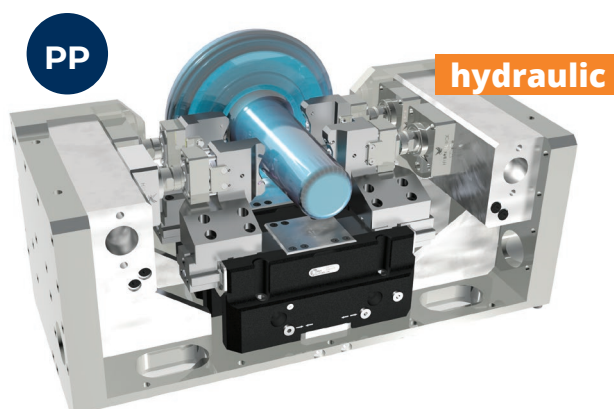
Technical data PL, PP and PL-RR vises

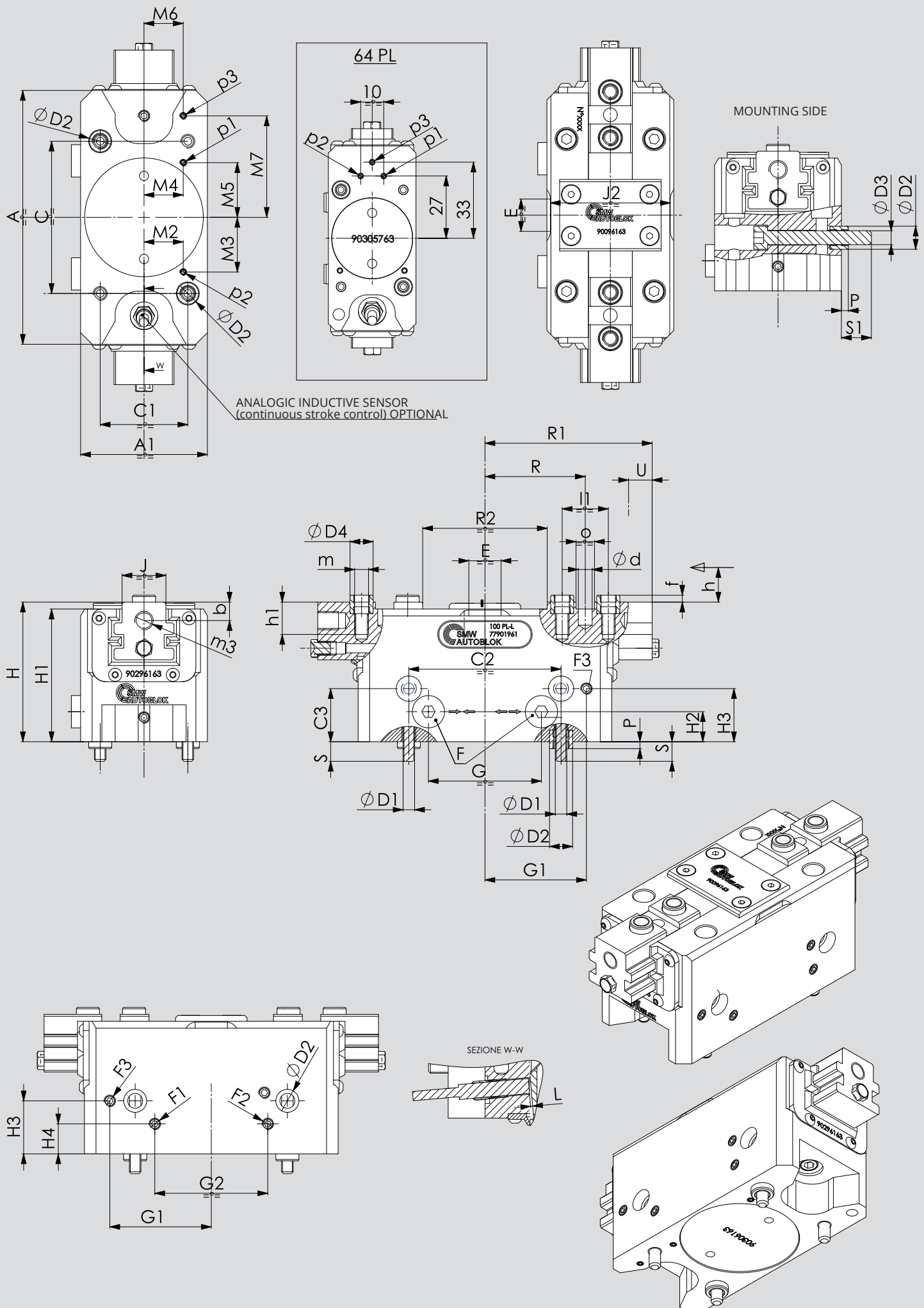
MODEL	BODY MATERIAL	ID.No.	STROKE TYPE	STROKE	PISTON AREA cm ²	MAX CLAMPING FORCE		MAX PRESSURE		WEIGHT
						PNEUMATIC	HYDRAULIC	PNEUMATIC	HYDRAULIC	
64 PL-L	ALUMINUM	77901957	Long	6 mm	6,3 cm ²	400 N	/	3/8 bar	/	0,55 kg
80 PL-L	ALUMINUM	77901959	Long	8 mm	9 cm ²	570 N	/	3/8 bar	/	0,87 kg
100 PL-L	ALUMINUM	77901961	Long	10 mm	14,1 cm ²	900 N	/	3/8 bar	/	1,3 kg
125 PL-L	ALUMINUM	77901963	Long	13 mm	27 cm ²	1700 N	/	3/8 bar	/	3 kg
125 PP-N	STEEL	77901862	Normal	5,5 mm	27 cm ²	3900 N	14,6 kN	3/8 bar	8/30 bar	4,9 kg
125 PP-L	STEEL	77901962	Long	13 mm	27 cm ²	1700 N	6,5 kN	3/8 bar	8/30 bar	4,9 kg
160 PL-L	ALUMINUM	77901967	Lunga	13 mm	35 cm ²	2300 N	/	3/8 bar	/	3,6 kg
160 PP-N	STEEL	77901866	Normal	5,5 mm	35 cm ²	5300 N	19 kN	3/8 bar	8/30 bar	5,7 kg
160 PP-L	STEEL	77901966	Long	13 mm	35 cm ²	2300 N	8,4 kN	3/8 bar	8/30 bar	5,7 kg
200 PP-N	STEEL	77901870	Normal	7,2 mm	53 cm ²	7700 N	28,5 kN	3/8 bar	8/30 bar	11 kg
200 PP-L	STEEL	77901970	Long	16,7 mm	53 cm ²	3300 N	12,7 kN	3/8 bar	8/30 bar	11 kg
250 PP-N	STEEL	77901875	Normal	10,1 mm	81 cm ²	11600 N	43,7 kN	3/8 bar	8/30 bar	19,5 kg
250 PP-L	STEEL	77901975	Long	29,8 mm	81 cm ²	4300 N	15,8 kN	3/8 bar	8/30 bar	19,5 kg
320 PL-L-RR	ALUMINUM	77902683	Long	45 mm	153 cm ²	8000 N	30 kN	3/8 bar	8/30 bar	33 kg
380 PL-L-RR	ALUMINUM	77902689	Long	50 mm	235 cm ²	12300 N	46 kN	3/8 bar	8/30 bar	48 kg

Technical features vises summary

MODEL	BODY MATERIAL	ID.No.	TONGUE&GROOVE MASTER JAWS	QUICK CHANGE JAWS	AIR SENSING	ELECTRIC STROKE CONTROL (OPTIONAL)	PNEUMATIC STROKE CONTROL (OPTIONAL)
64 PL-L	ALUMINUM	77901957	YES	NO	NO	YES	NO
80 PL-L	ALUMINUM	77901959	YES	NO	NO	YES	NO
100 PL-L	ALUMINUM	77901961	YES	NO	NO	YES	NO
125 PL-L	ALUMINUM	77901963	YES	NO	YES	YES	YES
125 PP-N	STEEL	77901862	YES	NO	YES	YES	YES
125 PP-L	STEEL	77901962	YES	NO	YES	YES	YES
160 PL-L	ALUMINUM	77901967	YES	NO	YES	YES	YES
160 PP-N	STEEL	77901866	YES	NO	YES	YES	YES
160 PP-L	STEEL	77901966	YES	NO	YES	YES	YES
200 PP-N	STEEL	77901870	YES	NO	YES	YES	YES
200 PP-L	STEEL	77901970	YES	NO	YES	YES	YES
250 PP-N	STEEL	77901875	YES	NO	YES	YES	YES
250 PP-L	STEEL	77901975	YES	NO	YES	YES	YES
320 PL-L-RR	ALUMINIUM	77902683	NO	YES	YES	YES	YES
380 PL-L-RR	ALUMINIUM	77902689	NO	YES	YES	YES	YES

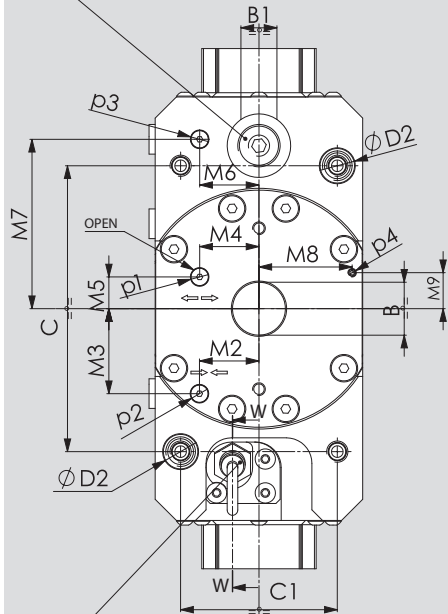
Application examples vises





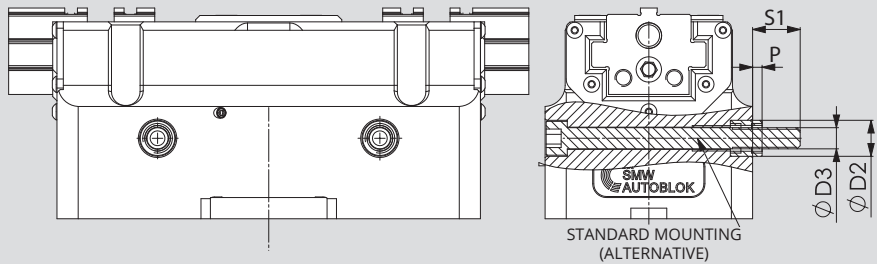
SMW-AUTOBLOK MODEL		64 PL-L	80 PL-L	100 PL-L
A		80	94	110
A1		38	45	55
C		42	52	66
C1		27	32	38
C2		42	52	66
C3		15	18	23
D1 (ø)		M4	M4	M5
D2 (øjs7)		8	8	10
D3 (ø)		M4	M5	M6
D4 (øjs7)		6	8	10
E		14	14	14
F		M5	M5	G1/8
F1	OPEN	M5	M5	M5
F2	CLOSED	M5	M5	M5
F3	AIR PURGE	M5	M5	M5
G		31	40	49
G1		33	37	44
G2		31	40	49
H		50	54	60,5
H1		47	51	57,5
H2		7,5	10	13
H3		15	18	23
H4		7,5	10	13
J		12,6	16	19
J2 (h7)		36	42	52
L	MIN / MAX	0,9 / 1,6	0,9 / 1,6	0,8 / 1,7
M2		VEDI DISEGNO	16	17
M3			18,5	23,7
M4			16	17
M5			18,5	23,7
M6			16	17
M7			37	44
P		2,5	2,5	3
R	MIN / MAX	20,75 / 26,75	26,5 / 34,5	33,5 / 43,5
R1	MIN / MAX	47,5 / 53,5	54,5 / 62,5	62,5 / 72,5
R2	MIN / MAX	19,5 / 31,5	26 / 42	34 / 54
S		11	9	8,5
S1		9	9	13
U	STROKE	6	8	10
b		5,5	6,5	8
d (H7)		4	5	6
f		2,5	2,5	3
h		12	14	16
h1		10	10	14
l1		13	16	20
m		M4	M5	M6
m3		M5	M6	M8
o (H7)		5	6	8
p1 (ø)	OPEN	M3	M3	M3
p2 (ø)	CLOSED	M3	M3	M3
p3 (ø)	AIR PURGE	M3	M3	M3
JAWS STROKE CONTROL (OPTIONAL)		PROXIMITY BALLUFF BAW000J - RING-NUT BAM000W (OPTIONAL)		

PNEUMATIC OPEN CLOSE STROKE CONTROL VALVE (OPTIONAL)
check full closed and full opened positions

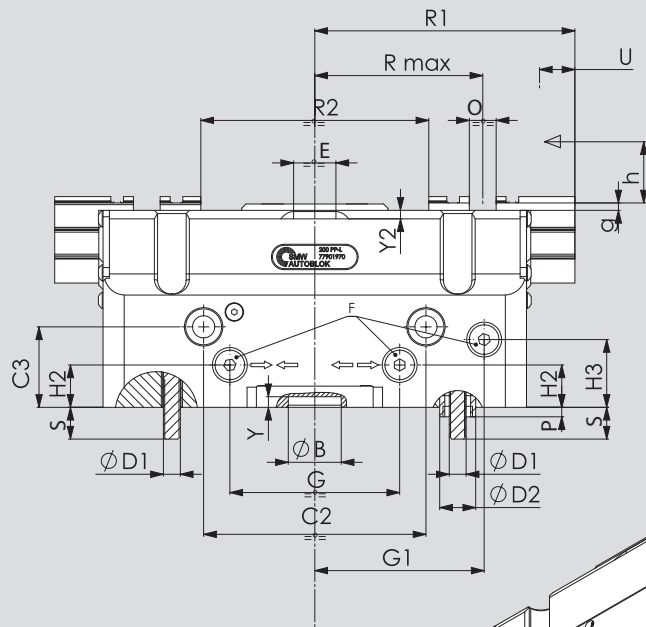
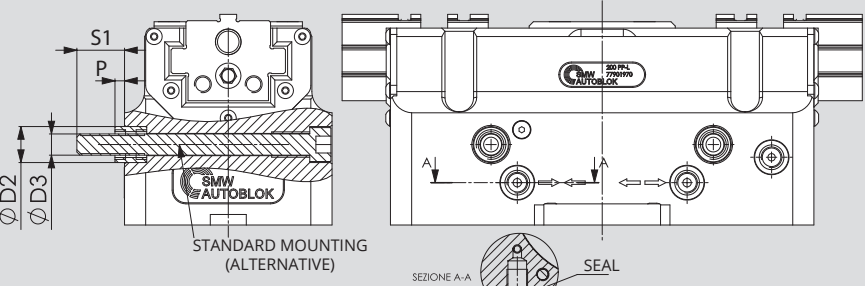


INDUCTIVE SENSOR M12x1 L=30
(continuous stroke control) OPTIONAL

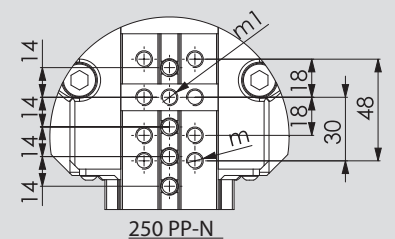
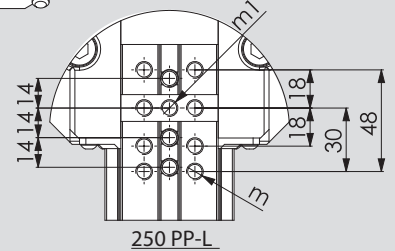
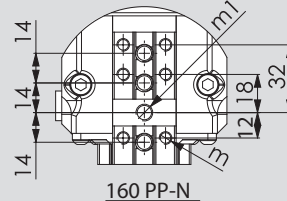
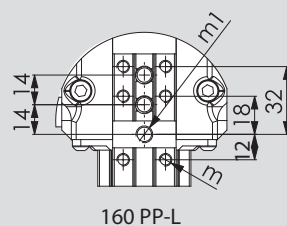
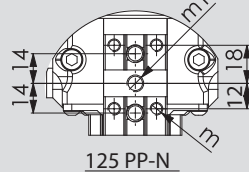
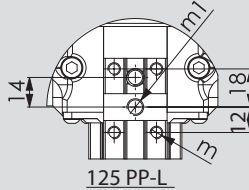
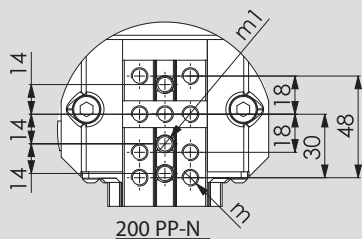
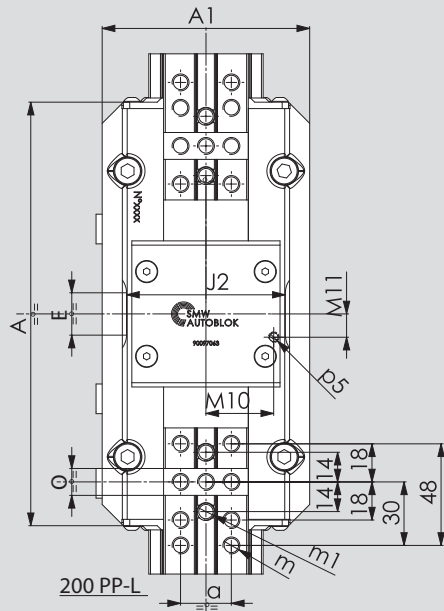
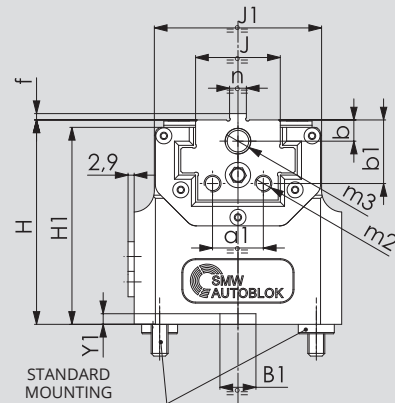
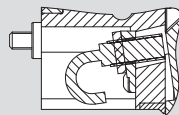
MOUNTING SIDE C



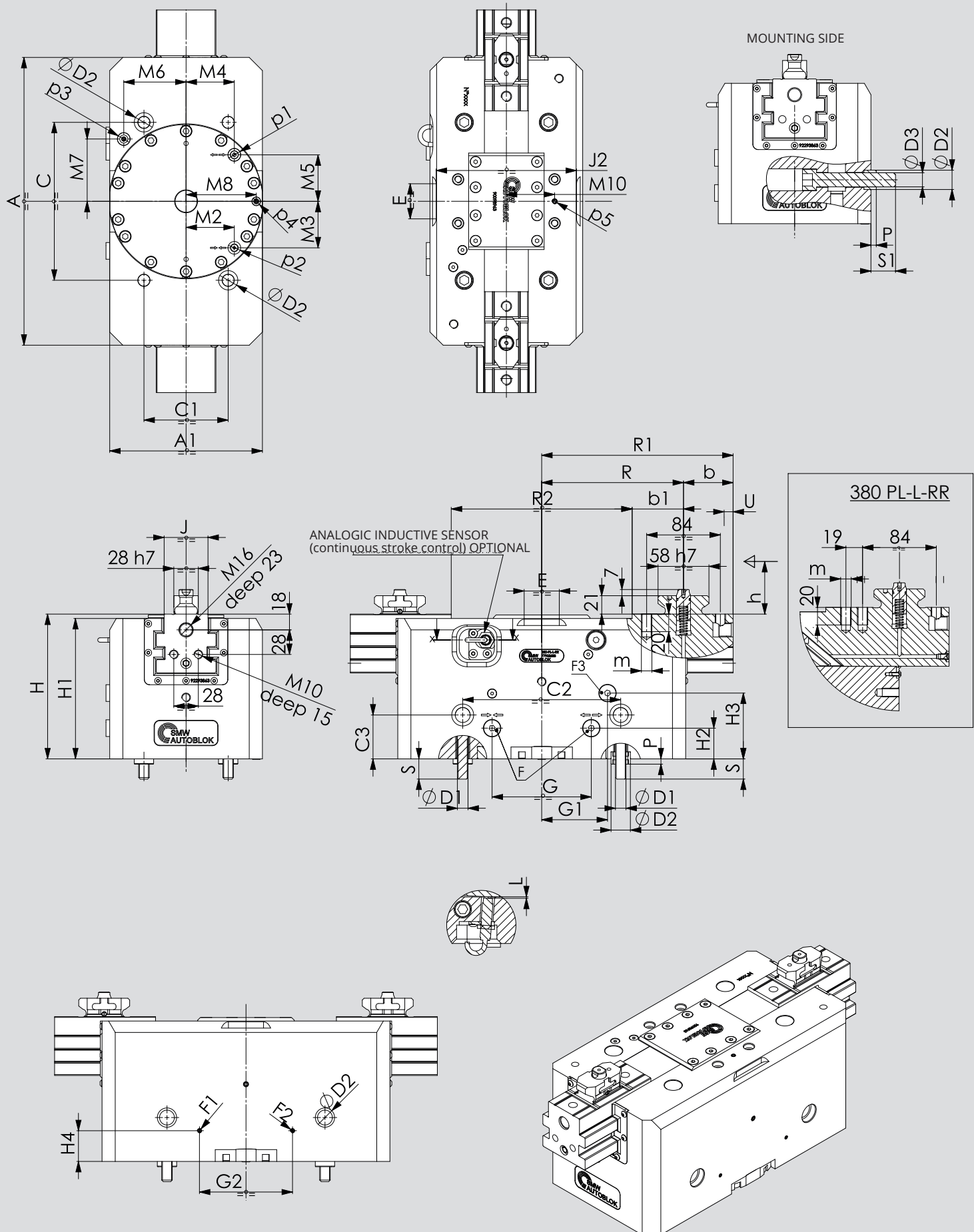
MOUNTING SIDE B



SEZIONE W-W

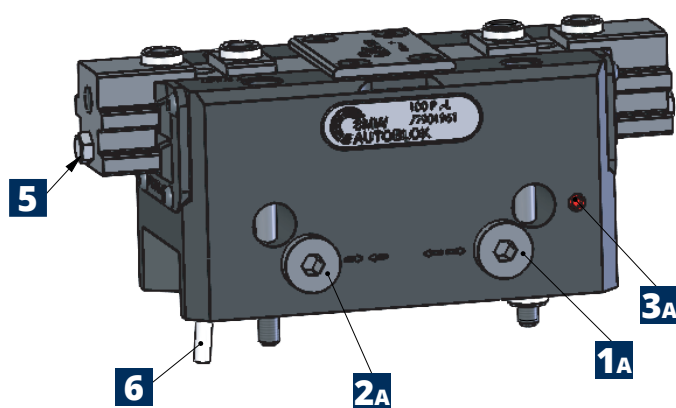
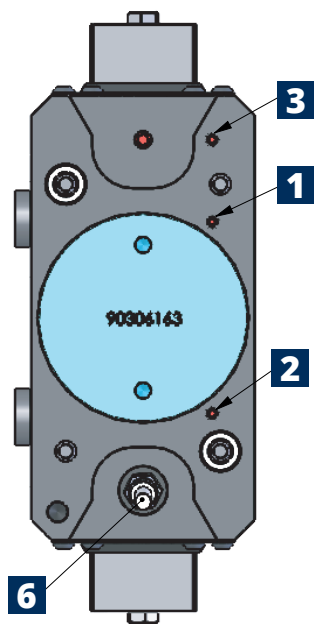
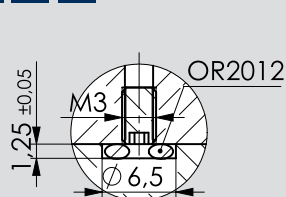
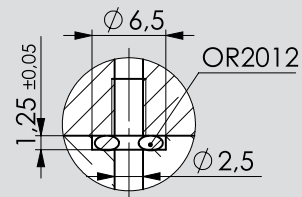


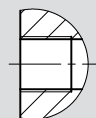
SMW-AUTOBLOK Type		125 PP/PL	160 PP/PL	200 PP	250 PP
A		130	160	200	250
A1		78	78	98	120
B (øH7)		25	25	25	25
B1 (H7)		-	14	17	20
C		84	110	135	160
C1		60	60	74	85
C2		-	86	105	128
C3		-	32	38	38
D1 (Ø)		M6	M6	M8	M10
D2 (Ø js7)		14	14	17	20
D3 (Ø)		-	M8	M10	M12
E		20	20	20	20
F		G1/8"	G1/8"	G1/8"	G1/8"
G		59	65,4	80,2	102
G1		53	65	80	95
H		79,5	79,5	96,5	114,5
H1		76	76	93	111
H2		18	18	20	20
H3		-	19,5	32	35
J		30	30	40	46
J1		69	69	79	94
J2 (h7)		60	60	75	90
M2		20,5	22,5	28	29,5
M3		29,5	32,5	40,1	51,1
M4		20,5	22,5	28	29,5
M5		10	12	15	18
M6		22,5	22,5	28	29,5
M7		53	65	80	95
M8		34	34,5	44	54
M9		10	13,5	17	18
M10		26	26	32	36
M11		7	7	11	11
P		4,5	4,5	4,5	4,5
R max	MIN/MAX (LONG STROKE)	47,5/60,5	62,5/75,5	62,5/79,2	78/107,8
R max	MIN/MAX (NORMAL STROKE)	47,5/53	62,5/68	62,5/69,7	78/88,1
R1	MIN/MAX (LONG STROKE)	72/85	87/100	106/122,7	131/160,8
R1	MIN/MAX (NORMAL STROKE)	72/77,5	87/92,5	106/113,2	131/141,1
R2	MIN/MAX (LONG STROKE)	49/75	49/75	74/107,4	96/155,6
R2	MIN/MAX (NORMAL STROKE)	49/60	49/60	74/88,4	96/116,2
S		16	16	15	17
S1		-	20,5	22,5	22,5
U	LONG STROKE	13	13	16,7	29,8
U	NORMAL STROKE	5,5	5,5	7,2	10,1
Y		4,5	4,5	5	5
Y1		-	5	5	5
Y2		4	4	4	4
a		20	20	24	24
a1	LONG STROKE	17	17	24	24
a1	NORMAL STROKE	\	\	\	\
b	LONG STROKE	8	8	10	10
b	NORMAL STROKE	\	\	\	\
b1	LONG STROKE	27	27	30	30
b1	NORMAL STROKE	\	\	\	\
f		3	3	3	3
g		3,5	3,5	3,5	3,5
h		16	25	35	40
m		M6-12	M6-12	M8-15	M8-15
m1		M8-15	M8-15	M8-15	M8-15
m2		M6-10	M6-10	M8-15	M8-15
m3		M10-15	M10-15	M12-18	M12-18
n (h6)		7,94	7,94	7,94	7,94
o (H7)		12,68	12,68	12,68	12,68
p1 (Ø)	OPEN	8,8-M5	8,8-M5	8,8-M5	8,8-M5
p2 (Ø)	CLOSE	8,8-M5	8,8-M5	8,8-M5	8,8-M5
p3 (Ø)	PNEUM OPEN CLOSE VALVE (OPTIONAL) OR AIR PURGE	8,8-M5	8,8-M5	8,8-M5	8,8-M5
p4	AIR SENSING CONNECTION	M4	M4	M4	M4
p5	AIR SENSING OUTLET (UNDER FRONT PLATE)	M4	M4	M5	M5
PNEUMATIC OPEN/CLOSE-STROKE CONTROL VALVE (OPTIONAL)		90901163	90901763	90901763	97901801
PROXIMITIES SET L (OPTIONAL)		90686263	90687063	90687063	90687563
PROXIMITIES SET N (OPTIONAL)		90686260	90687060	90687060	90687063

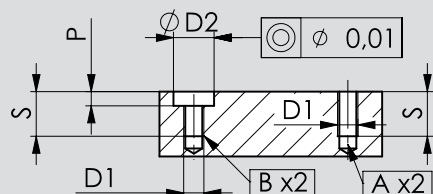
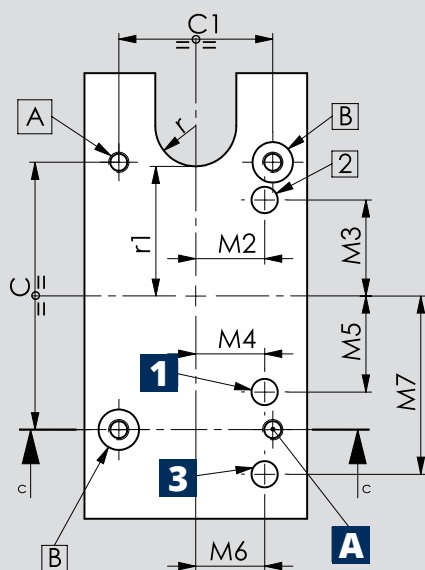


SMW-AUTOBLOK Type		320 PL-L-RR	380 PL-L-RR
A		328	380
A1		174	212
C		180	250
C1		96	116
C2		180	250
C3		50	60
D1 (ø)		M12	M16
D2 (øjs7)		22	28
D3 (ø)		M16	M20
E		40	40
F		G1/4	G1/4
F1	OPEN	M5	M5
F2	CLOSED	M5	M5
F3	OPEN/CLOSE JAWS STROKE CONTROL OR AIR PURGE	G1/4	G1/4
G		113	140
G1		75	98
G2		106	140
H		165	182
H1		160	177
H2		35	30
H3		75	75
H4		35	30
J		50	50
J2 (h7)		160	160
L	MIN / MAX	2,4 / 4,8	2,3 / 4,9
M2		55	70
M3		53	70
M4		55	70
M5		53	70
M6		71	80
M7		71	98
M8		80	99
M10		55	70
P		6	7
R	MIN / MAX	116,5 / 161,5	140,5 / 190,5
R1	MIN / MAX	173 / 218	197 / 247
R2	MIN / MAX	116 / 206	113 / 213
S		23	27
S1		28	30
U	STROKE	45	50
h		50	50
b		56,5	56,5
b1		58,5	84
m		M12	M12
p1 (ø)	OPEN	14,5	14,5
p2 (ø)	CLOSE	14,5	14,5
p3 (ø)	OPEN/CLOSE JAWS STROKE CONTROL OR AIR PURGE	14,5	14,5
p4 (ø)	AIR SENSING CONNECTION	10	10
p5 (ø)	AIR SENSING OUTLET	M6	M6
PNEUMATIC OPEN/CLOSE-STROKE CONTROL VALVE (OPTIONAL)		90901763	90901763
JAWS STROKE CONTROL (OPTIONAL)		PROXIMITY BALLUFF BAW0067 - BRACKET 90167563	

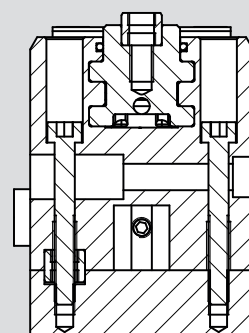
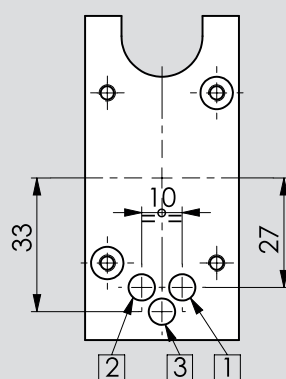
REAR MOUNTING INSTRUCTIONS **64 / 80 / 100 sizes**


1 2 3

 SIDE FEEDING
in 1A 2A 3A

 REAR FEEDING
in 1 2 3

1A 2A 3A

 SIDE FEEDING
in 1A 2A 3A

 REAR FEEDING
in 1 2 3


64 PL


1 Open-
Rear feeding

2 Closed-
Rear feeding

3 Air Purge-
Rear feeding

5 Lubrication
fittings

1A Open-
Side feeding

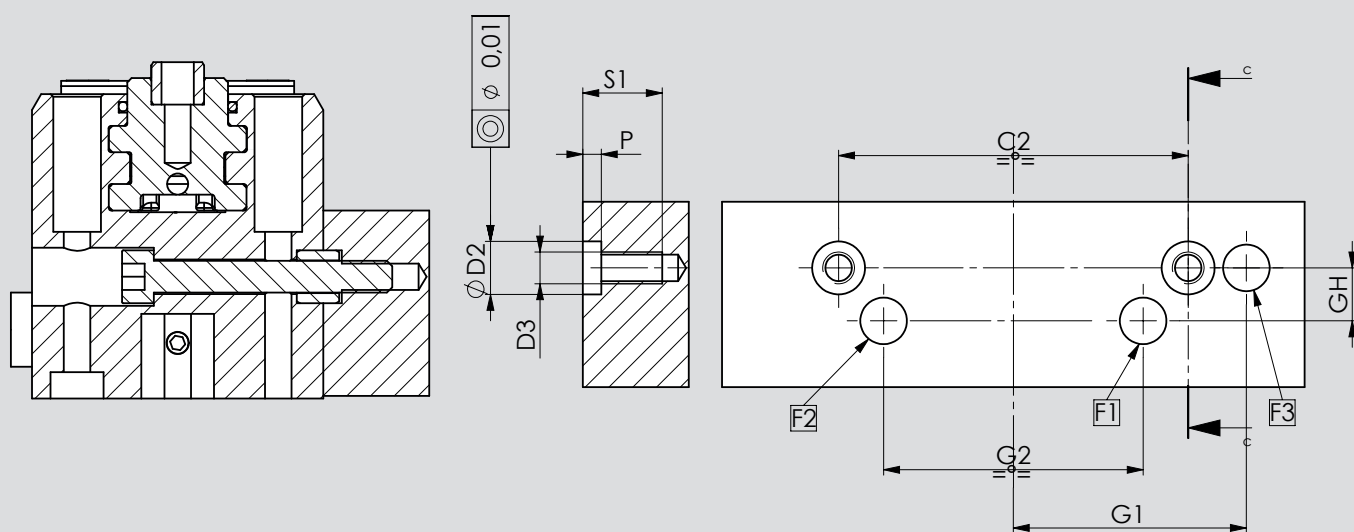
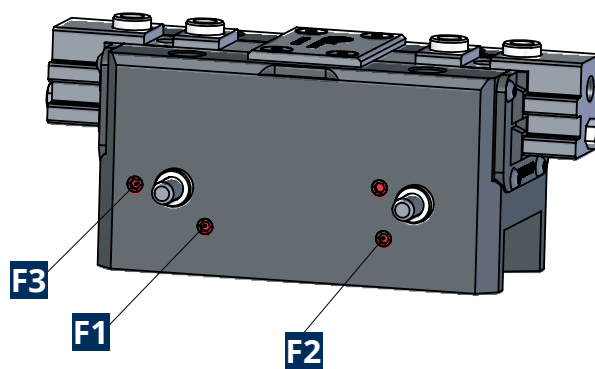
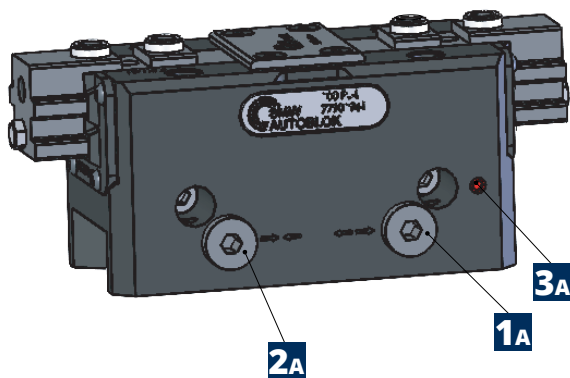
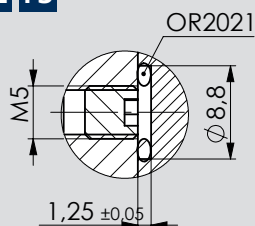
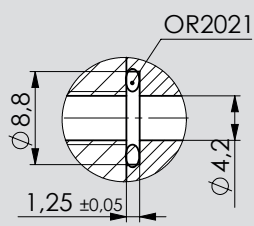
2A Closed-
Side feeding

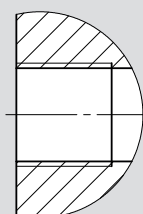
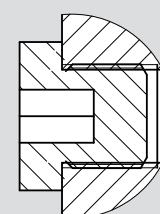
3A Air Purge-
Side feeding

6 Proximity switches seat
(optional)

MODEL	C	C1	D1	D2 (H7)	M2	M3	M4	M5	M6	M7	r	r1	P	S
64 PL	42	27	M4	8	SEE ABOVE DRAWING						8	25	3,5	13
80 PL	52	32	M4	8	16	18,5	16	18,5	16	37	10	26	3,5	11
100 PL	66	38	M5	10	17	23,7	17	23,7	17	44	10	32	4	11

SIDE MOUNTING INSTRUCTIONS **64 / 80 / 100 sizes**


F1 F2 F3

 SIDE FEEDING
in 1A 2A 3A

 SIDE FEEDING
in F1 F2 F3

1A 2A 3A

 SIDE FEEDING
in 1A 2A 3A

 SIDE FEEDING
in F1 F2 F3

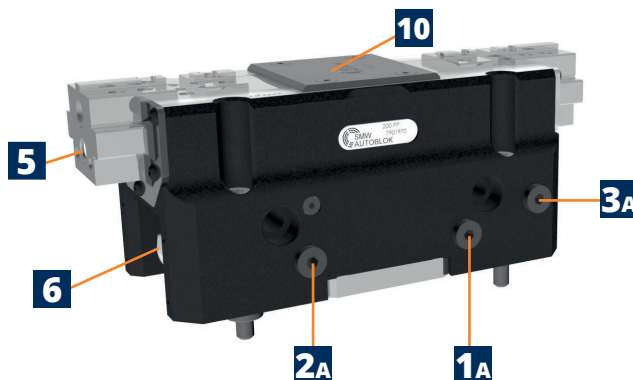
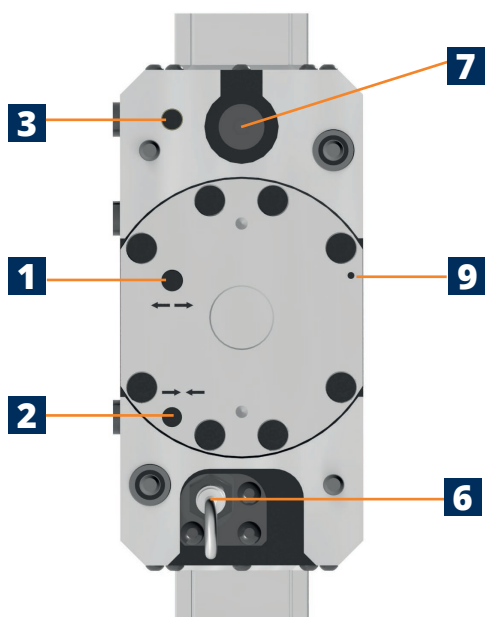
1A F1 Open-
Side feeding

2A F2 Closed-
Side feeding

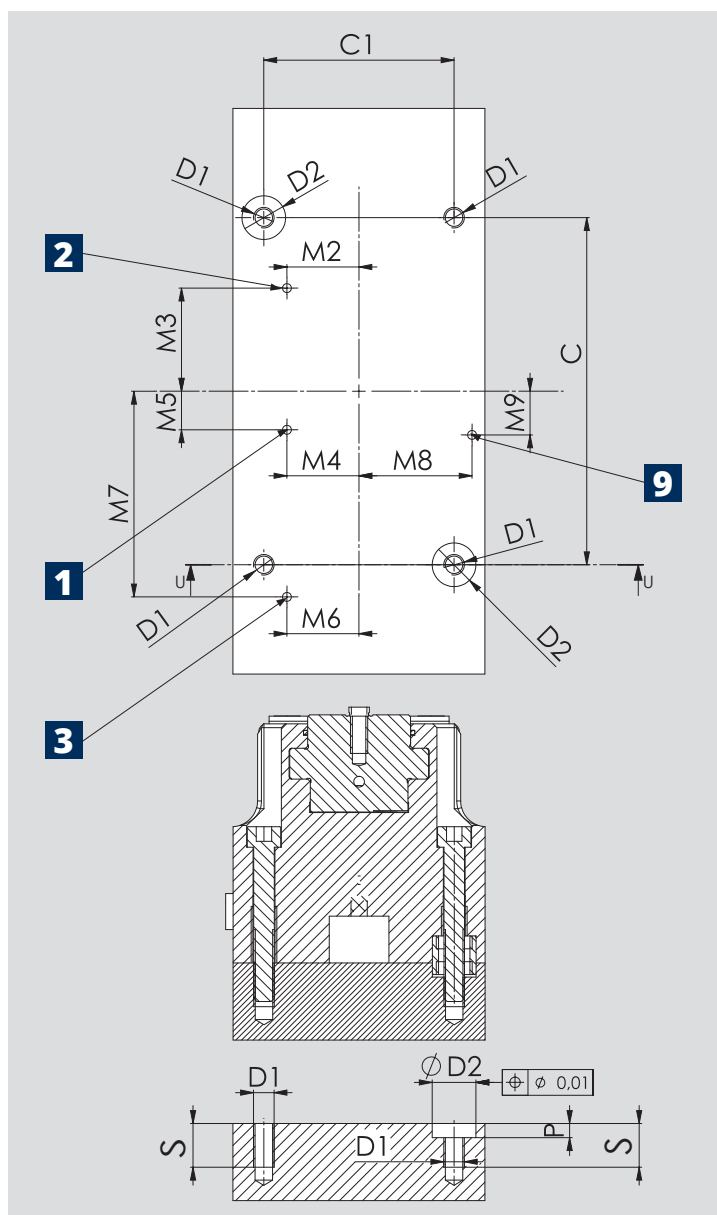
3A F3 Air sensing
Side feeding

MODEL	C2	D2 (H7)	D3	G1	G2	GH	P	S1
64 PL	42	8	M4	33	31	7,5	3,5	11
80 PL	52	8	M5	37	40	8	3,5	11
100 PL	66	10	M6	44	49	10	4	15

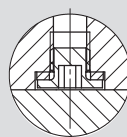
REAR MOUNTING INSTRUCTIONS 125 / 160 / 200 / 250 PP- PL sizes



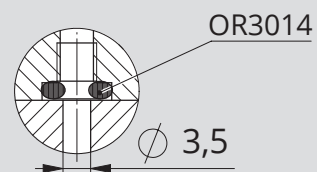
REAR FEEDING SOLUTION



1 2 3

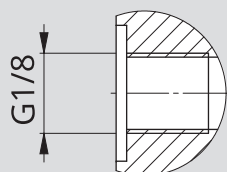


SIDE FEEDING
in 1A 2A 3A

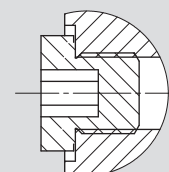


REAR FEEDING
in 1 2 3

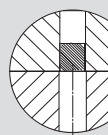
1A 2A 3A



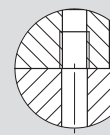
SIDE FEEDING
in 1A 2A 3A



REAR FEEDING
in 1 2 3

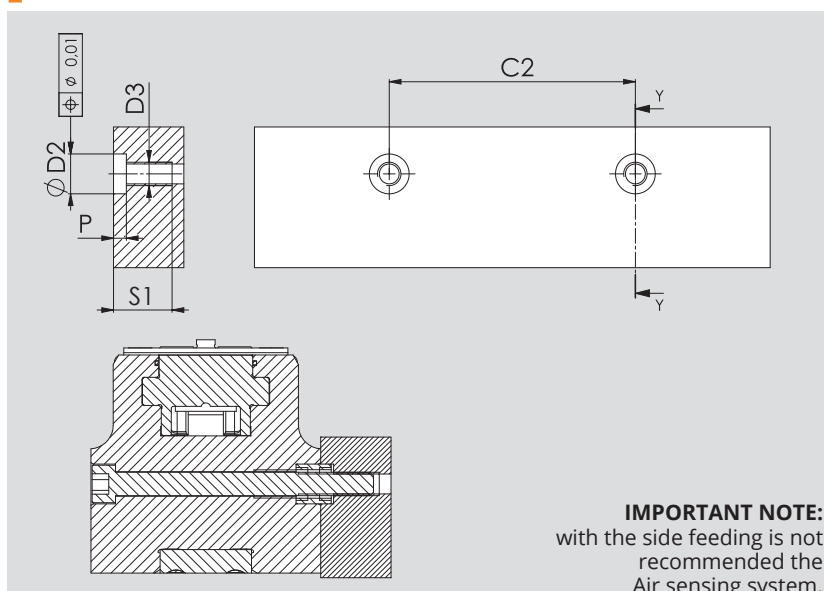


9



9

SIDE FEEDING B SOLUTION

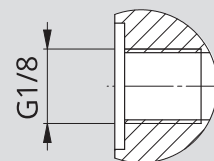


1 2 3



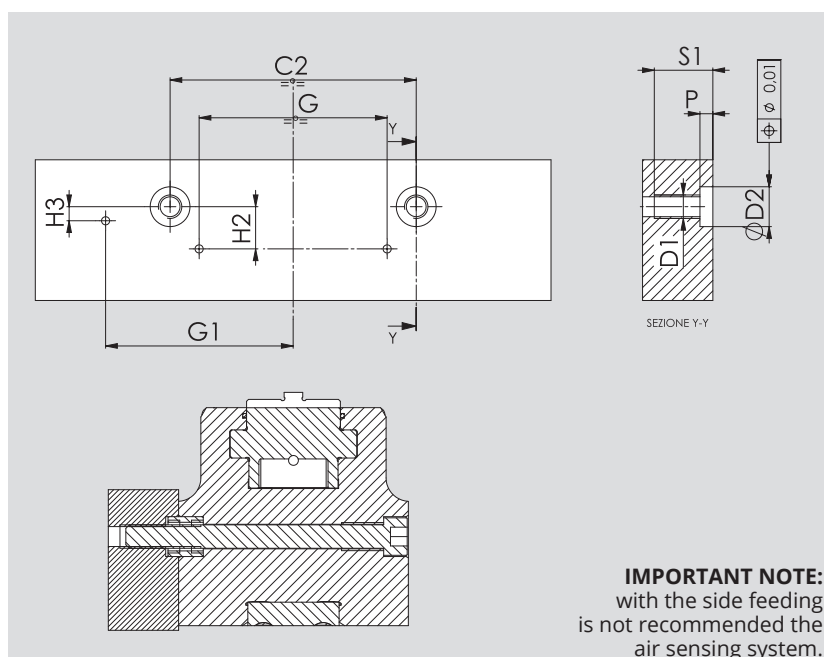
SIDE FEEDING
in 1A 2A 3A

1A 2A 3A



SIDE FEEDING
in 1A 2A 3A

SIDE FEEDING C SOLUTION

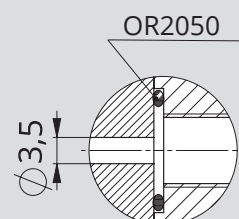


1 2 3



SIDE FEEDING
in 1A 2A 3A

1A 2A 3A



SIDE FEEDING
in 1A 2A 3A

1 Open-rear Feeding

2 Closed Rear feeding

3 Pneumatic open/close stroke control (optional) or Air purge* Rear feeding

5 Lubrication Fitting

7 Pneumatic jaw Open/close stroke control valve (optional)

10 Air sensing outlet (under front plate)

1A Open-side Feeding

2A Closed Side feeding

3A Pneumatic open/close stroke control (optional) or Air purge* Side feeding

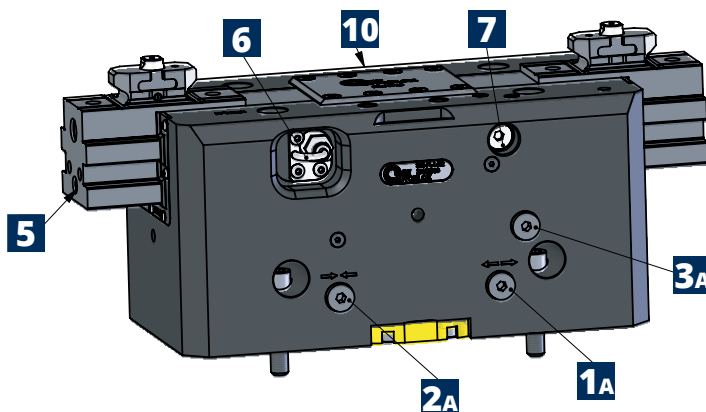
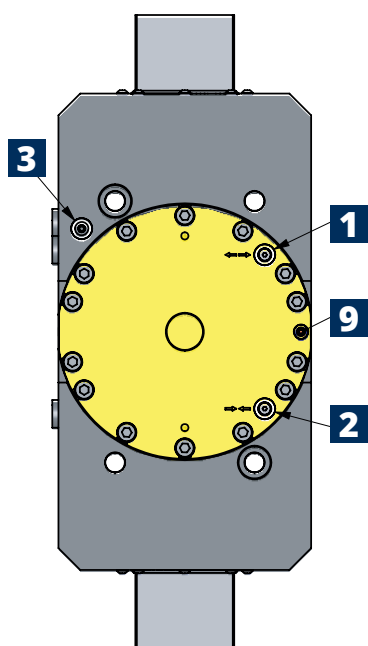
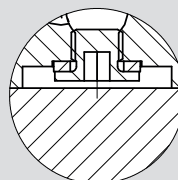
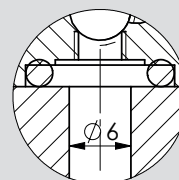
6 Proximity Switches seat (optional)

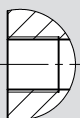
9 Air sensing connection (on rear flange)

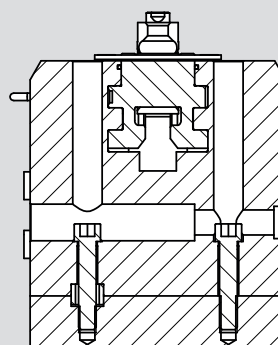
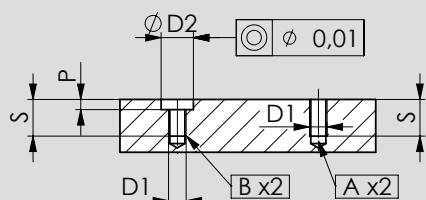
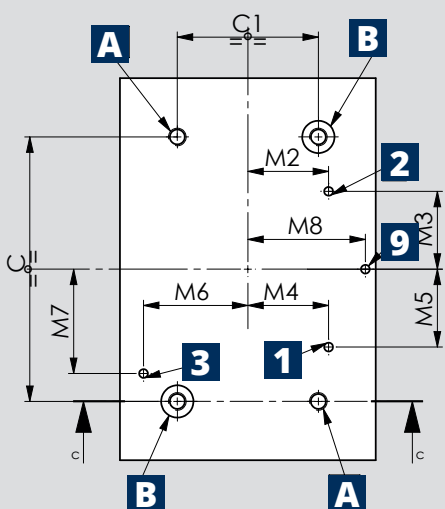
*The air purge can be used only without the valve.

Type	C	C1	C2	D1	D2H7	D3	G	G1	H2	H3	M2	M3	M4	M5	M6	M7	M8	M9	P	S	S1
125 PP	84	60	-	M6	14	-	-	-	-	-	20,5	29,5	20,5	10	22,5	53	34	10	5,5	18	-
160 PP	110	60	86	M6	14	M8	65,4	65	14	12,5	22,5	32,5	22,5	12	22,5	65	34,5	13,5	5,5	18	23
200 PP	135	74	105	M8	17	M10	80,2	80	18	6	28	40,1	28	15	28	80	44	17	5,5	17	25
250 PP	160	85	128	M10	20	M12	102	95	18	3	29,5	51,1	29,5	18	29,5	95	54	18	5,5	19	25

REAR MOUNTING INSTRUCTIONS **320 / 380 sizes**


1 2 3 9

 SIDE FEEDING
in 1A 2A 3A

 REAR FEEDING
in 1 2 3

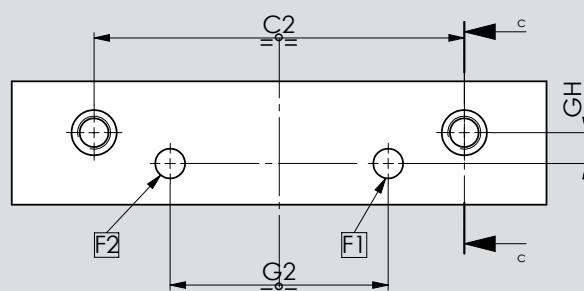
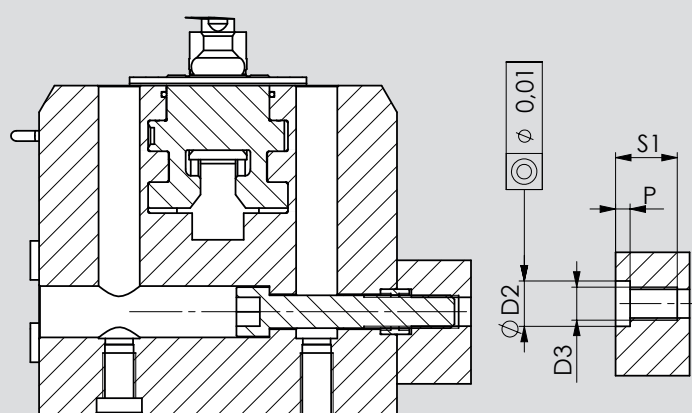
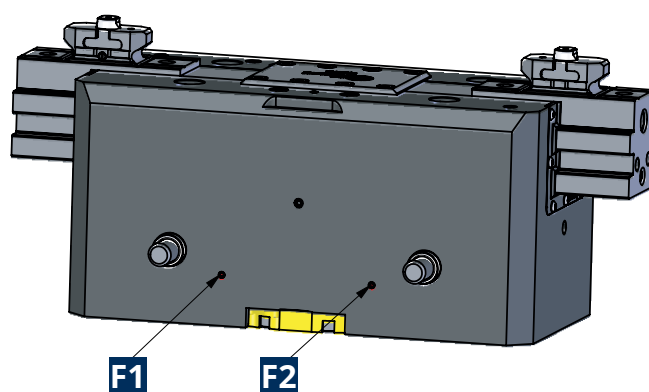
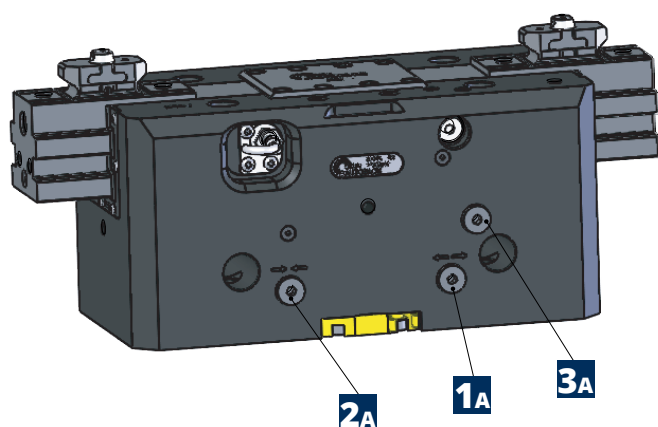
1A 2A 3A

 SIDE FEEDING
in 1A 2A 3A

 REAR FEEDING
in 1 2 3


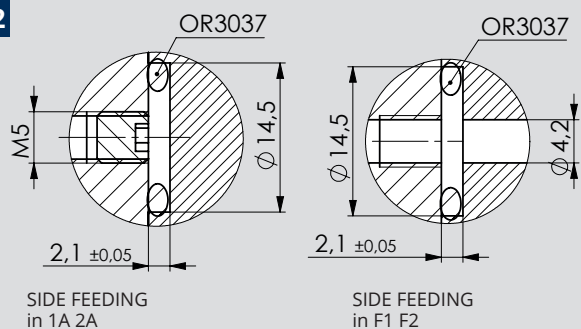
- | | | | | | |
|-----------------------------|-------------------------------|--|---|---|--|
| 1 Open-Rear feeding | 2 Closed-Rear feeding | 3 Pneumatic open/close stroke control (optional) or Air purge-Rear feeding | 5 Lubrication fittings | 7 Pneumatic jaw Open/close stroke control valve (optional) | 10 Air sensing outlet (under front plate) |
| 1A Open-Side feeding | 2A Closed-Side feeding | 3A Pneumatic open/close stroke control valve (optional) or Air purge Side feeding | 6 Proximity switches seat jaws stroke control (optional) | 9 Air sensing connection (on rear flange) | |

MODEL	C	C1	D1	D2 (H7)	M2	M3	M4	M5	M6	M7	M8	P	S
320 PL	180	96	M12	22	55	53	55	53	71	71	80	7	25
380 PL	250	116	M16	28	70	70	70	70	80	98	99	8	29

SIDE MOUNTING INSTRUCTIONS **320 / 380 sizes**



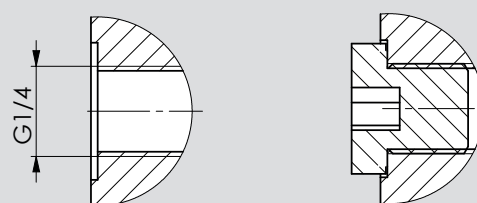
F1 F2



SIDE FEEDING
in 1A 2A

SIDE FEEDING
in F1 F2

1A 2A



SIDE FEEDING
in 1A 2A

SIDE FEEDING
in F1 F2

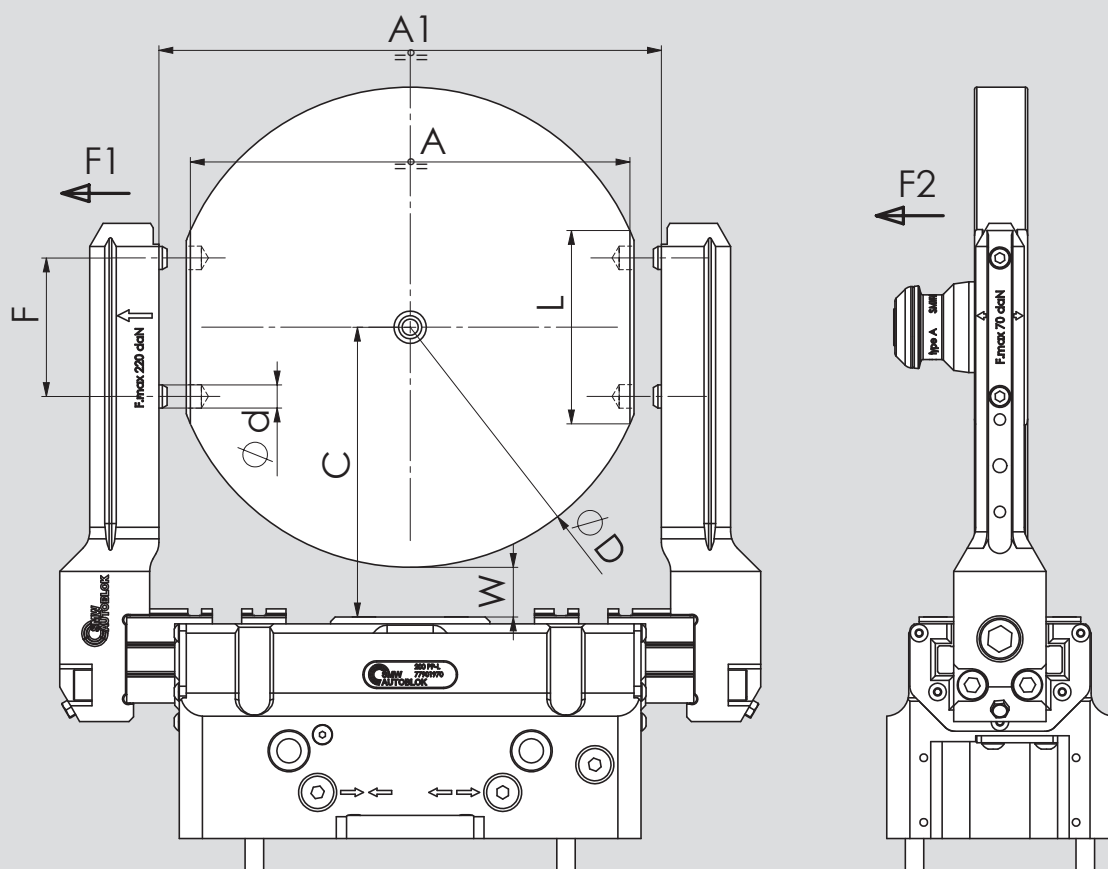
1A F1 Open-
Side feeding

2A F2 Closed-
Side feeding

3A Pneumatic open/ close
stroke control (optional) or
Air purge*
Side feeding

MODEL	C2	D2 (H7)	D3	G2	GH	P	S1
320 PL	180	22	M16	106	15	7	30
380 PL	250	28	M20	140	30	8	32

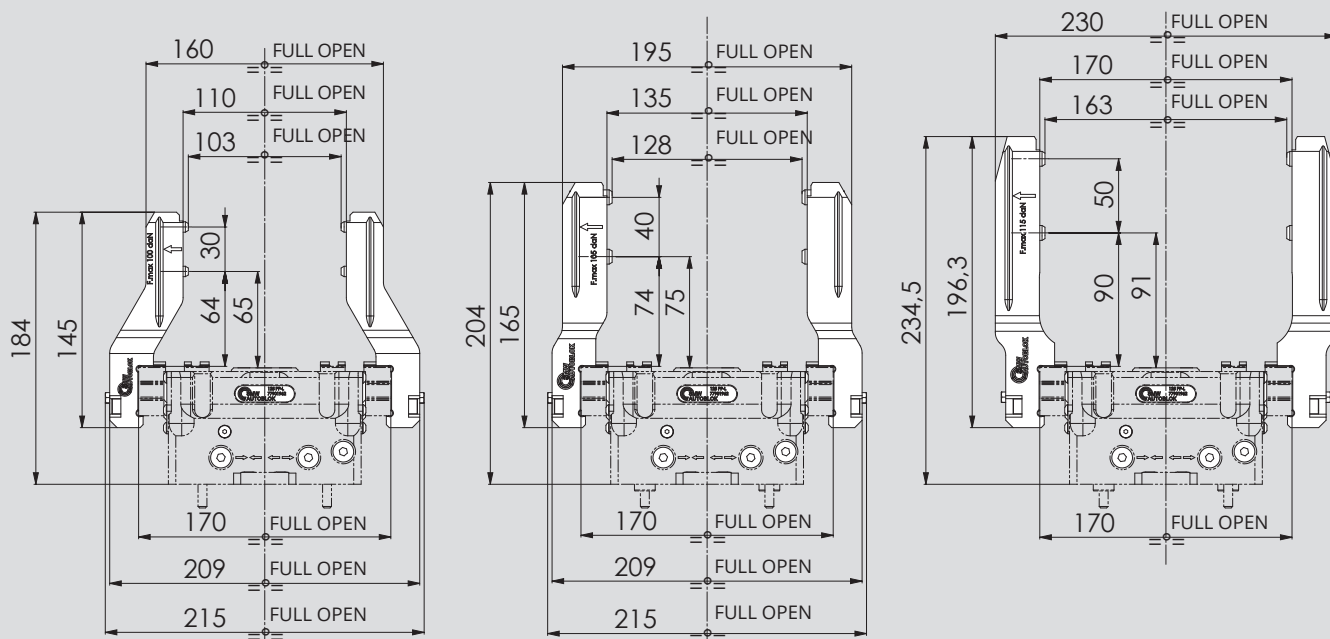
PP-L VISES TOP JAWS features list



WISE MODEL	PALLET	TOP JAWS KIT ID.N.	A1 max VISE OPEN	A (*) max/min PALLET	C	D (*) max/min PALLET DIAMETER	ød	F	L mm	W (with D max)	MAXIMUM CAPACITY ON PALLET	F1 max (for every top jaw)	F2 max (for every top jaw)
125 PP-L	100	46204090	110	97/88	80	109/101	7	30	50	21,5	25 kg	100 daN	25 daN
	125	46204005	135	122/113	95	137/128	10	40	61	26,5	50 kg	105 daN	30 daN
	160	46204015	170	157/148	116	173/164	10	50	71	29,5	63 kg	115 daN	40 daN
160 PP-L	125	46204010	135	122/113	81	137/128	10	40	61	12,5	63 kg	140 daN	40 daN
	160	46204020	170	157/148	106	173/164	10	50	71	19,5	80 kg	150 daN	50 daN
	200	46204030	210	197/188	126	215/206	10	60	85	18,5	80 kg	150 daN	50 daN
200 PP-L	160	46204025	177,7	164/148	120	180/164	10	50	71	30	80 kg	210 daN	60 daN
	200	46204050	217,7	204/189	126	220/207	10	60	85	16	90 kg	220 daN	70 daN
	250	46204040	267,7	254/239	173	272/260	10	60	100	37	100 kg	220 daN	70 daN
250 PP-L	200	46204055	244	230/189	162	245/207	10	60	85	39,5	100 kg	270 daN	80 daN
	250	46204045	294	280/239	200	297/260	10	60	100	51,5	100 kg	270 daN	80 daN
	315	46204080	359	345/304	242	365/325	10	60	112	59,5	125 kg	280 daN	90 daN

(*) to the A max and A min dimensions must correspond respectively the D max and D min dimension of the pallet. To pallet with øD middle dimension to the maximum and the minimum must correspond a A proportional dimension.

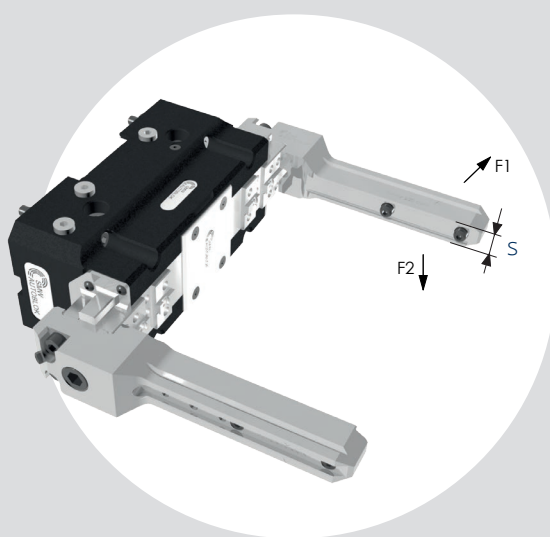
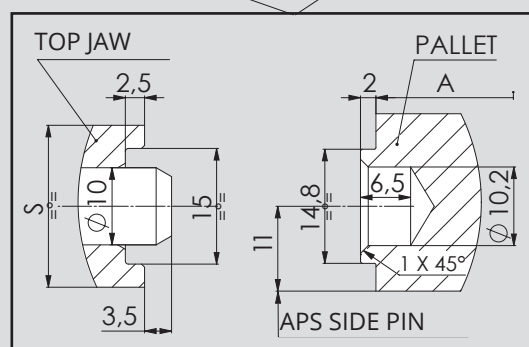
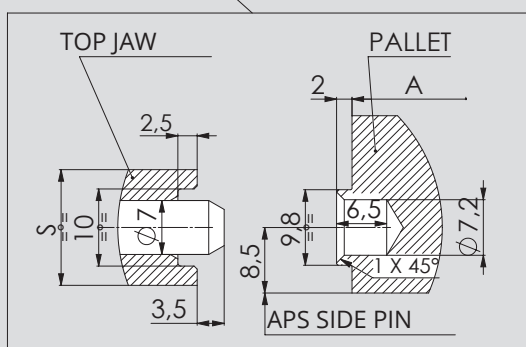
TOP JAWS SET for 125 PP-L vises



46204090

46204005

46204015

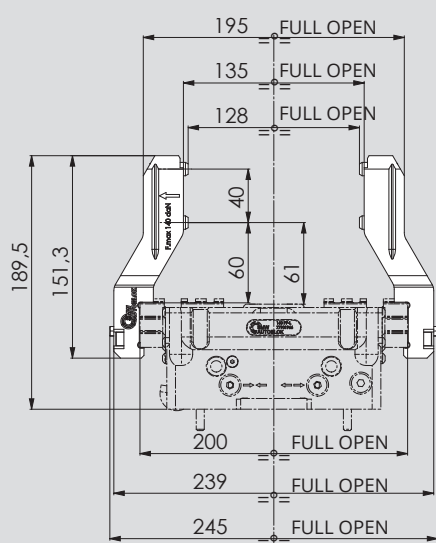


These top jaws kit are available
only for the PP-L vises
(long stroke version)

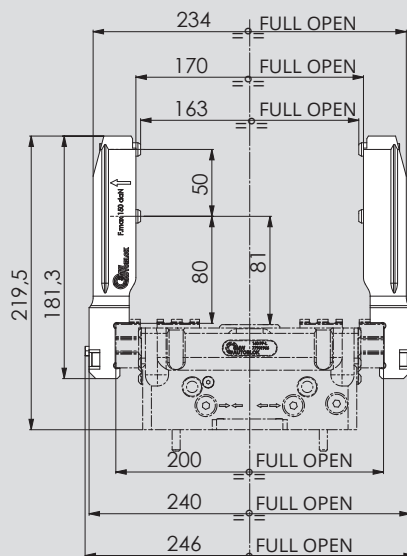
Top jaws kit (the kit consisting in n.2 top jaws plus mounting bolts)	A (pallet)		S	F1max*	F2max*	Weight
	max	min				
46204090 2-TOP JAWS KIT 125 PP-L VISE / PALLET 100	97	88	15	100 daN	25 daN	1 Kg
46204005 2-TOP JAWS KIT 125 PP-L VISE / PALLET 125	122	113	21	105 daN	30 daN	1,5 Kg
46204015 2-TOP JAWS KIT 125 PP-L VISE / PALLET 160	157	148	21	115 daN	40 daN	1,9 Kg

* for every top jaw

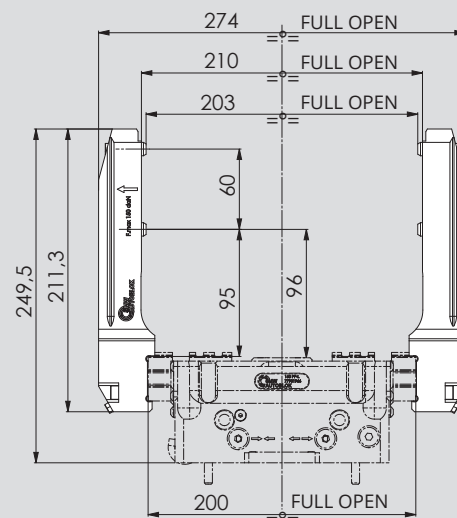
TOP JAWS SET for 160 PP-L vises



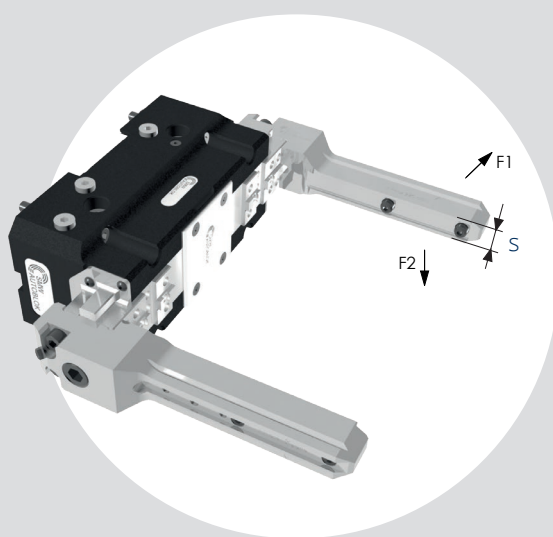
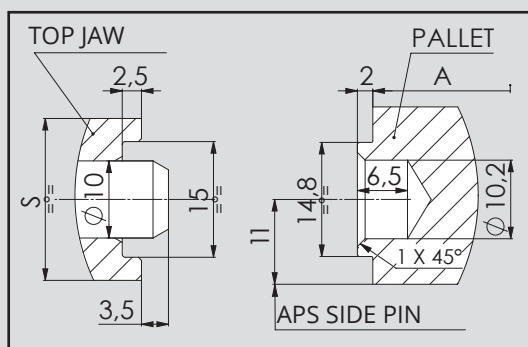
46204010



46204020



46204030

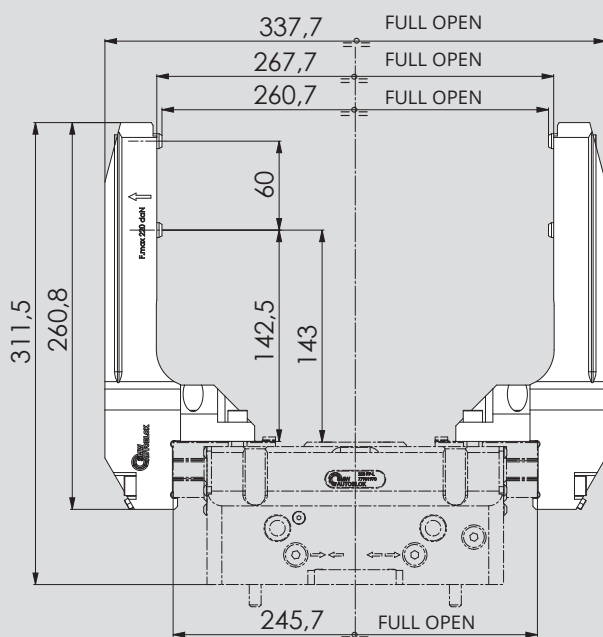


These top jaws kit are available
only for the PP-L vises
(long stroke version)

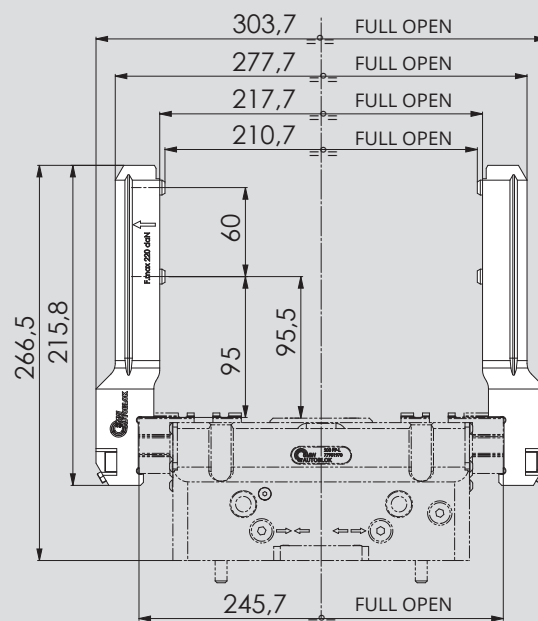
Top jaws kit (the kit consisting in n.2 top jaws plus mounting bolts)	A (pallet)		S	F1max*	F2max*	Weight
	max	min				
46204010 2-TOP JAWS KIT 160 PP-L VISE / PALLET 125	122	113	21	140 daN	40 daN	1,4 Kg
46204020 2-TOP JAWS KIT 160 PP-L VISE / PALLET 160	157	148	21	150 daN	50 daN	1,6 Kg
46204030 2-TOP JAWS KIT 160 PP-L VISE / PALLET 200	197	188	21	150 daN	50 daN	2,3 Kg

* for every top jaw

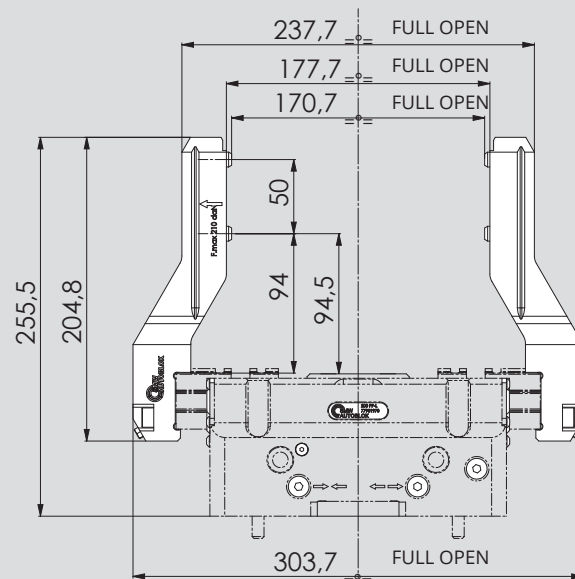
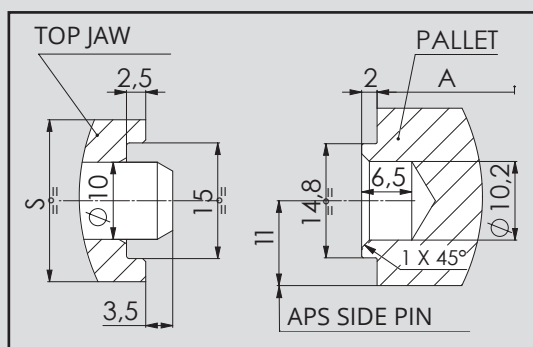
TOP JAWS SET for 200 PP-L vises



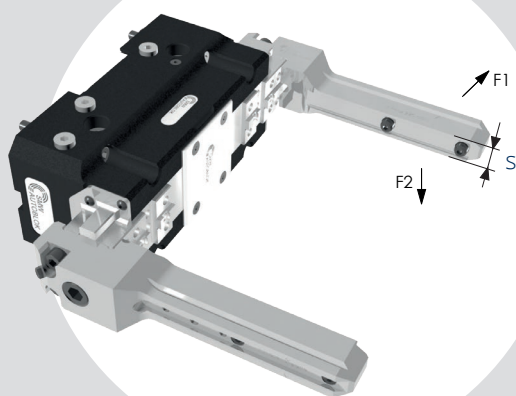
46204040



46204050



46204025

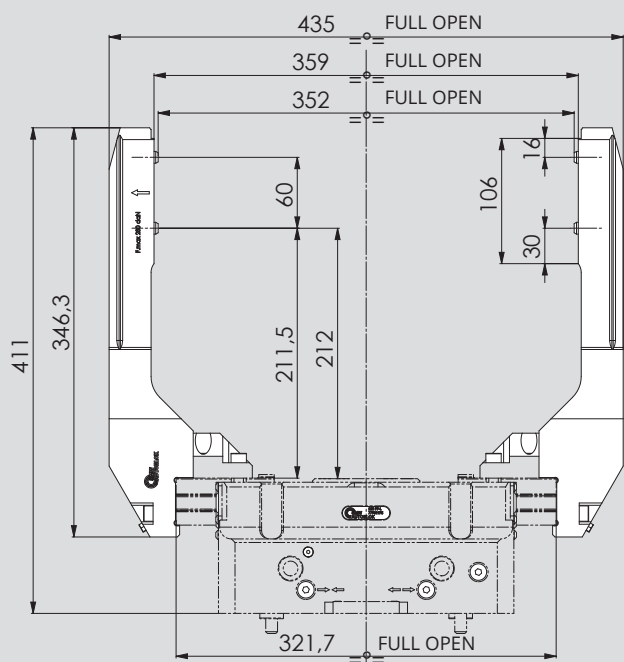


These top jaws kit are available
only for the PP-L vises
(long stroke version)

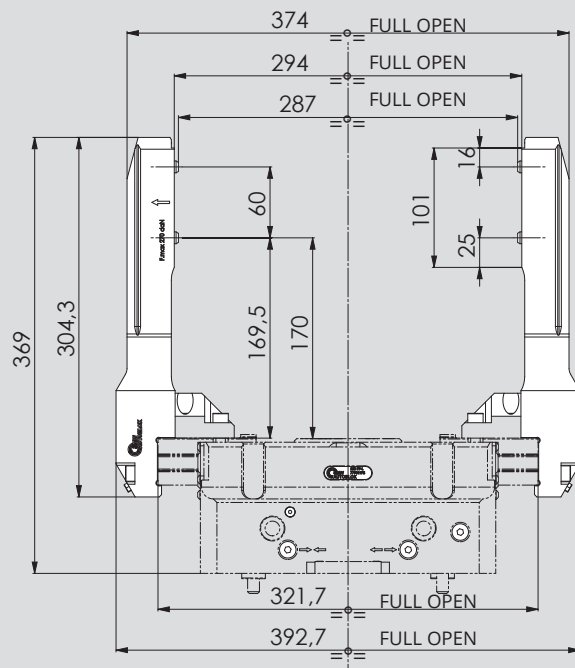
Top jaws kit (the kit consisting in n.2 top jaws with mounting bolts)	A (pallet)		S	F1max*	F2max*	Weight
	max	min				
46204025 2-TOP JAWS KIT 200 PP-L VISE / PALLET 160	164	148	21	210 daN	60 daN	2,6 Kg
46204040 2-TOP JAWS KIT 200 PP-L VISE / PALLET 250	254	239	21	220 daN	70 daN	4,6 Kg
46204050 2-TOP JAWS KIT 200 PP-L VISE / PALLET 200	204	189	21	220 daN	70 daN	2,6 Kg

* for every top jaw

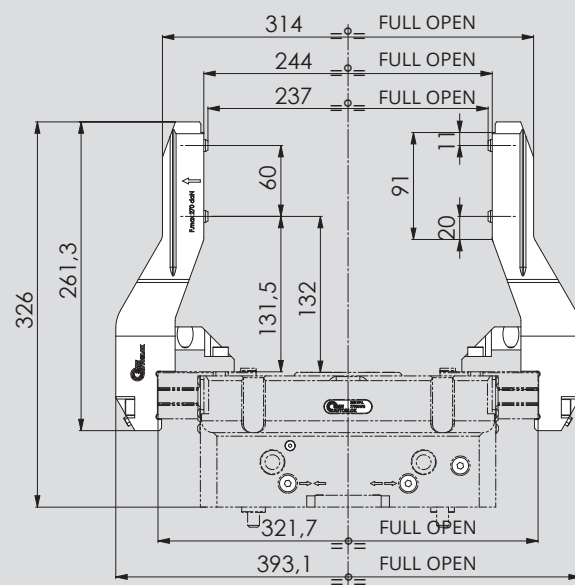
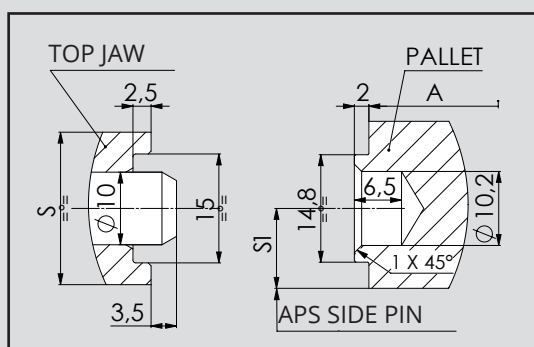
TOP JAWS SET for 250 PP-L vises



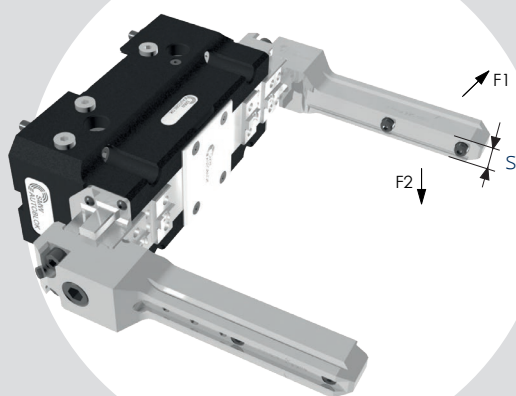
46204080



46204045



46204055



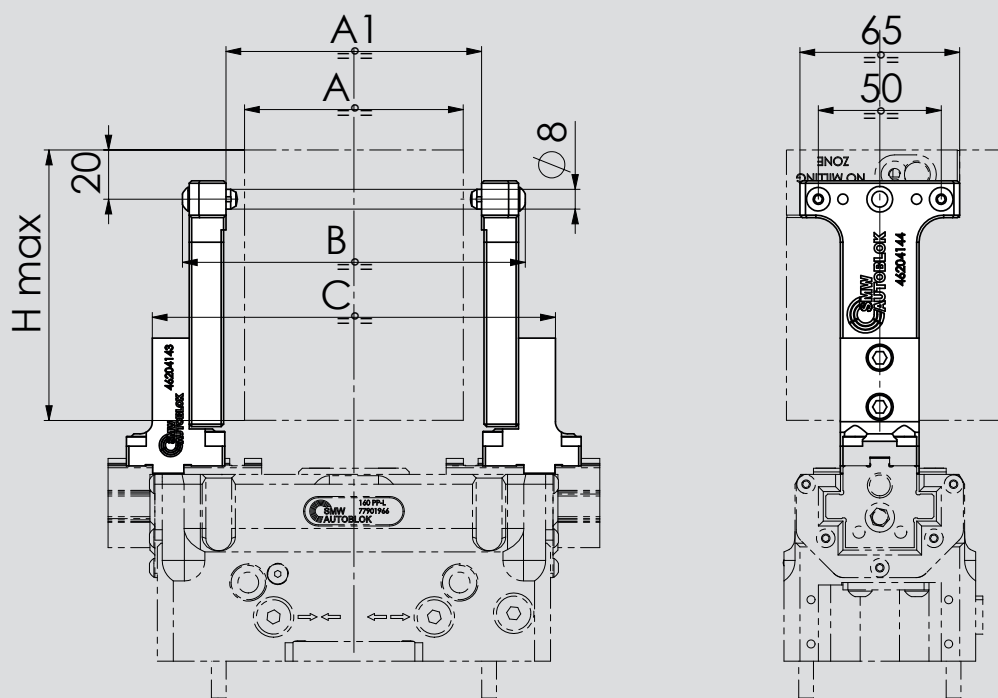
These top jaws kit are available
only for the PP-L vises
(long stroke version)

Top jaws kit (the kit consisting in n.2 top jaws plus mounting bolts)	A (pallet)		S	S1	F1max*	F2max*	Peso
	max	min					
46204055 2-TOP JAWS KIT 250 PP-L VISE / PALLET 200	230	189	21	11	270 daN	80 daN	5,4 Kg
46204045 2-TOP JAWS KIT 250 PP-L VISE / PALLET 250	280	239	21	11	270 daN	80 daN	6 Kg
46204080 2-TOP JAWS KIT 250 PP-L VISE / PALLET 315	345	304	25	13.5	280 daN	90 daN	8 Kg

* for every top jaw

160 PP-L VISES TOP JAWS SET

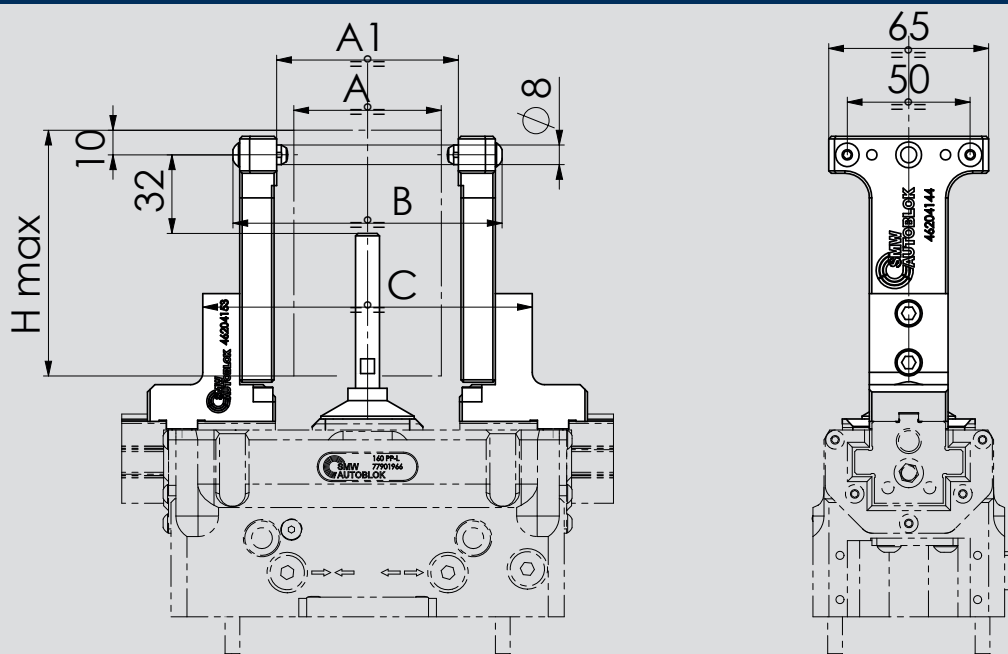
quick jaws change RR on PT-RR



TOP JAWS SET ID.N.	WISE MODEL	A1 max open vise	A min/max clamping range	B max	C max	H max	WISE PT-RR Model	Base Id.n.	Extension Id.n.
46204130	160 PP-L	104	81/91	140	162	110	160 PT	46204143	46204144
46204131		123	100/110	159	187	140	200 PT	46204133	46204134
46204132		153	130/140	189	217	140	250 PT	46204135	46204134

125 AND 160 PP-L VISES TOP JAWS SET

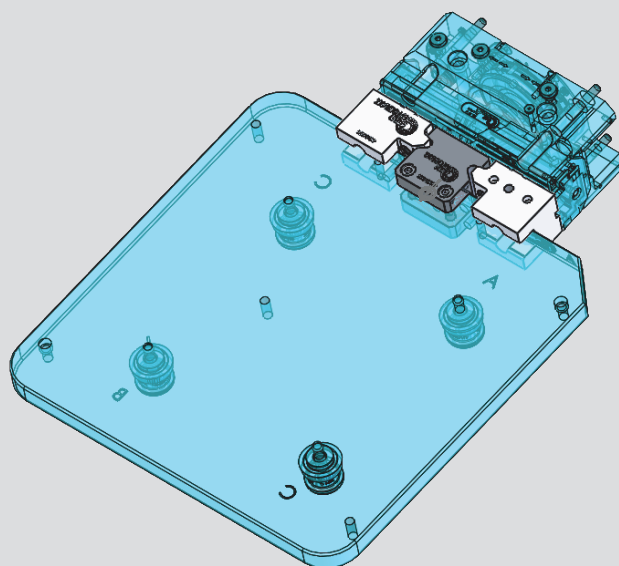
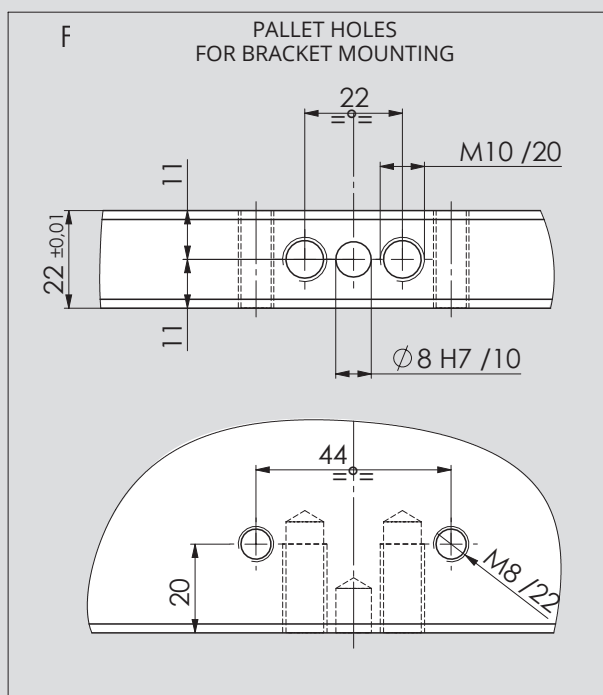
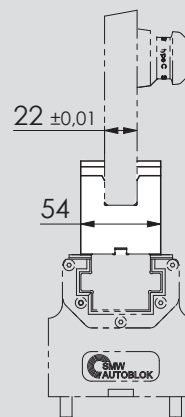
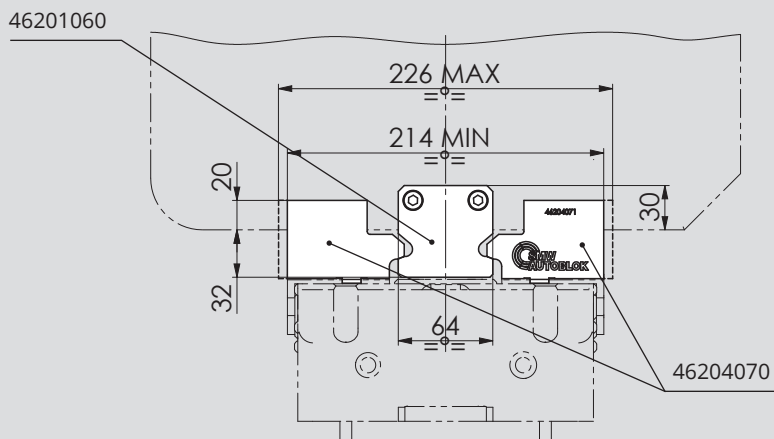
quick jaws change RR on chuck APL-RR



TOP JAWS SET ID.N.	WISE MODEL	A1 max open vise	A min/max clamping range	B max	C max	H max	APL-RR CHUCK Model	Base Id.n.	Extension Id.n.
46204140	125 PP-L	69	46/56	105	129	100	210-260-315 APL-RR	46204142	46204144
46204141		74	51/61	110	135	100	260-315-400 APL-RR	46204143	46204144
46204150	160 PP-L	69	46/56	105	129	100	210-260-315 APL-RR	46204152	46204144
46204151		74	51/61	110	135	100	260-315-400 APL-RR	46204153	46204144

BRACKET PALLET KIT 400x400 AND 400x200 with 200 PP-N vise

MAXIMUM PALLET WEIGHT: 150KG



ID.No.

46201060 BRACKET KIT 200 PP-N VISE / PALLET Q400

46204070 2 TOP JAWS KIT 200 PP-N VISE / PALLET Q400

77901870 200 PP-N VISE

WEIGHT

1,2 Kg

2,4 Kg

11 Kg

PP-A 160x98 PNEUMATIC VISE

- Pneumatic version
- Spring closed + TURBO

Function

400x400, 200x400 and 500x500 pallet change pneumatic vise

Application/customer benefits

- Compact design
- High accuracy and durability
- High rigidity

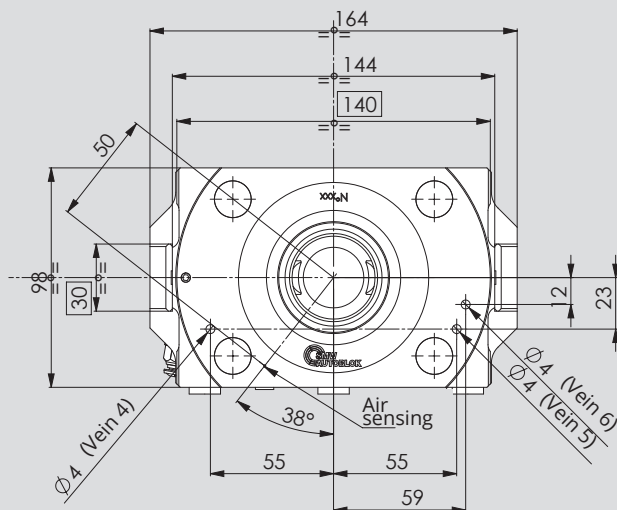
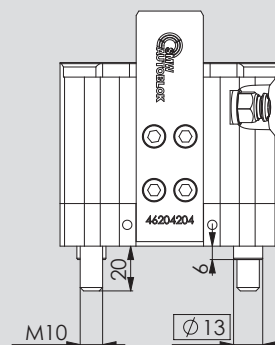
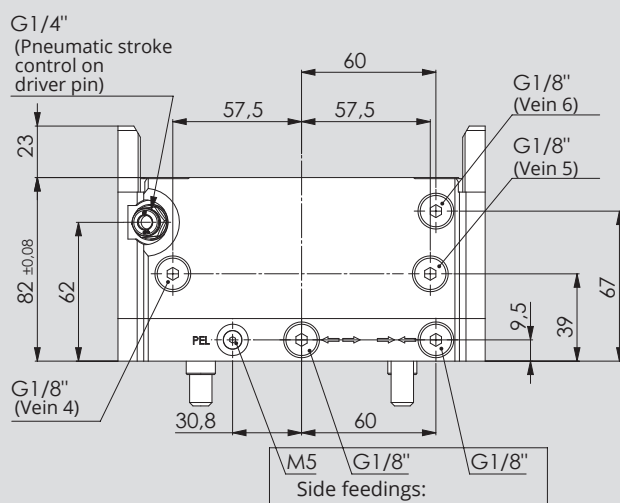
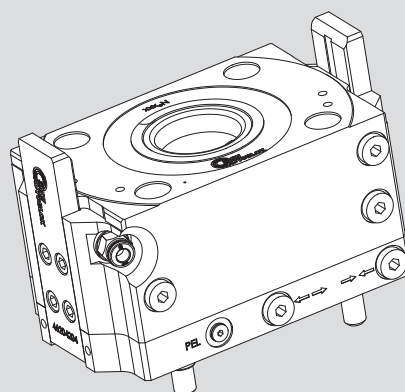
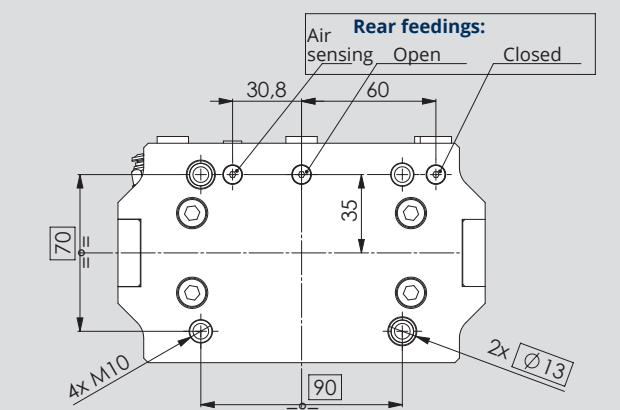
Standard equipment

Pneumatic vise
All bolts and centering bushings included

Technical features

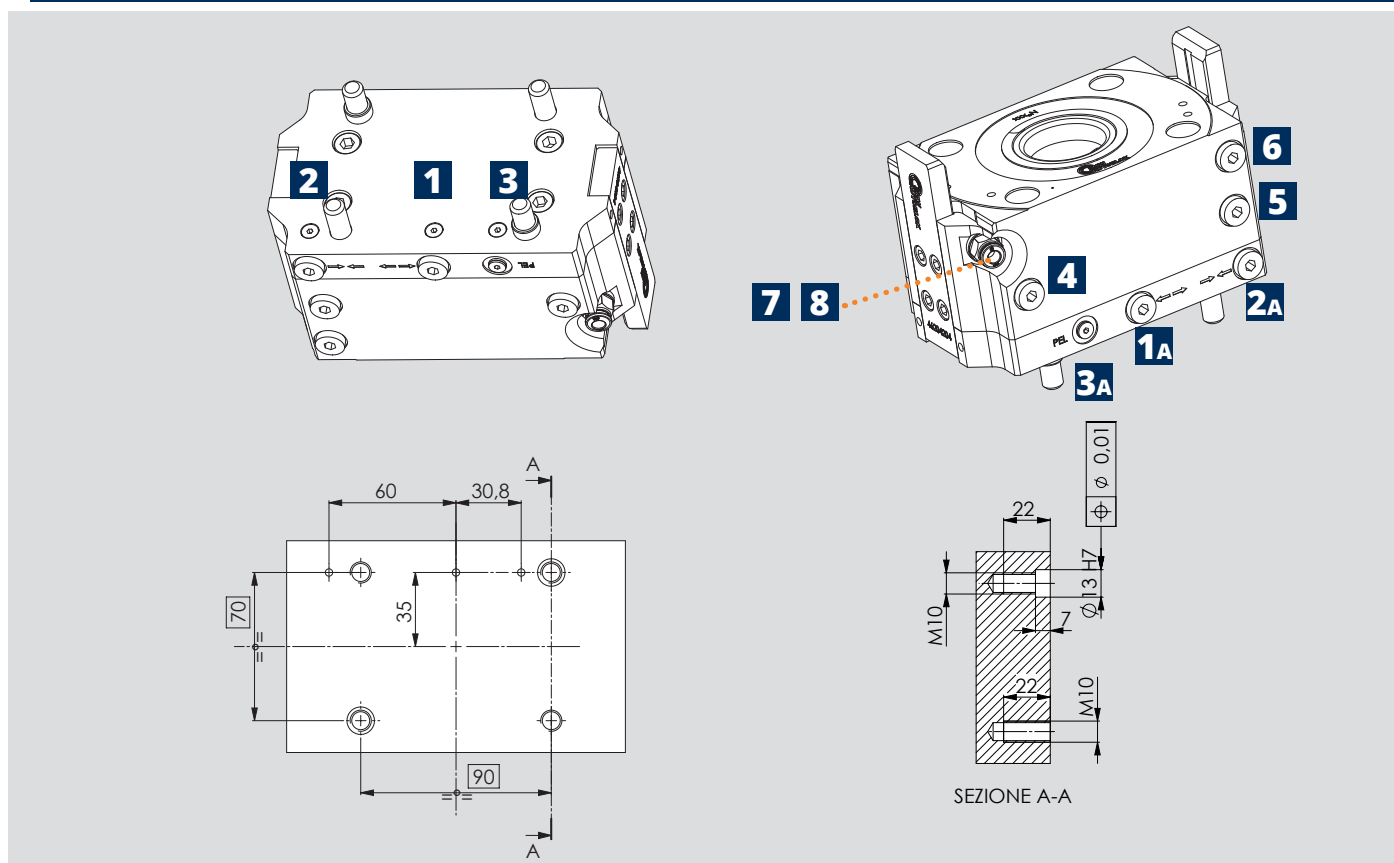
- Body and functional parts hardened for high precision and long life
- Pneumatic stroke control on driver pin
- Air sensing
- Stroke control analogic continuous inductive system (optional)
- Pneumatic open
- Spring closed + TURBO

Model	Id.n.	Stroke	Pull down force		Pressure		Weight
			spring	spring+TURBO	open	TURBO	
160x98 PP-A	46204200	4 mm	6 KN	17 KN	6 bar	6 bar	7 Kg

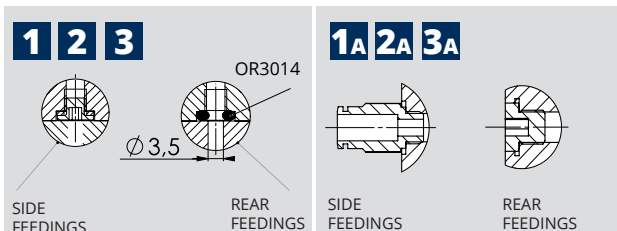


WISE PP-A MOUNTING INSTRUCTION

160X98 vise

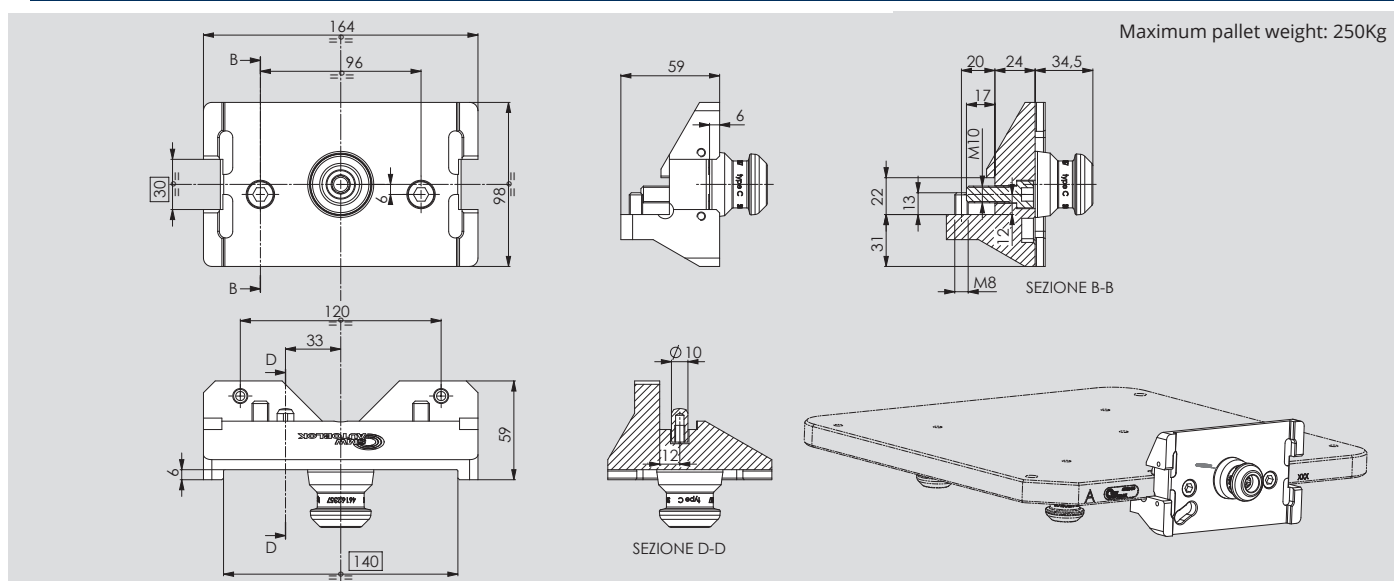


FEEDING SEATS



- | | | | |
|--|-------------------------------|---------------------------------------|-------------------------------------|
| 1 Open Rear Feeding | 2 Closed Rear Feeding | 3 Rear air sensing connection | 7 Proximity seats (optional) |
| 1A Open Side Feeding | 2A Closed Side Feeding | 3A Side air sensing connection | 8 Pneumatic stroke control |
| 4 5 6 Available feedings on face vise | | | |

BRACKET PALLET KIT to mount on pallet



Id.n. (pallet not included)

Weight

46201050 - PALLET BRACKET KIT Q400 FOR 160x98 VISE PP-A ROBOT LOADING

3,2 Kg

GRIPPERS

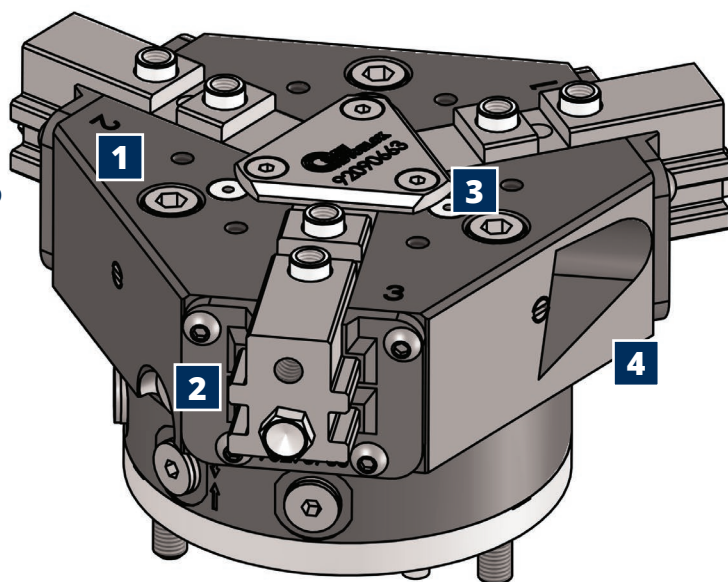
3 jaws self-centering vises

64

Pneumatics - Protected

1 SAB-1 PNEUMATIC
SAFETY VALVE SUPPLIED

2 MASTER JAWS GUIDE
PROTECTED AGAINST
SWarf AND CHIPS



3 POSSIBILITY
TO INSERT
SPRING
WORKSTOP

4 STROKE CONTROL JAWS
ANALOGIC CONTINUOUS
INDUCTIVE SENSOR
(OPTIONAL)

Applications /Customer benefits

- Light and compact design
- Master jaws guide protected against swarf and chips
- Highest rigidity
- Linear pressure adjustment

Standard equipment

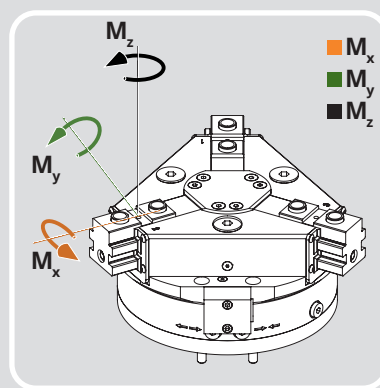
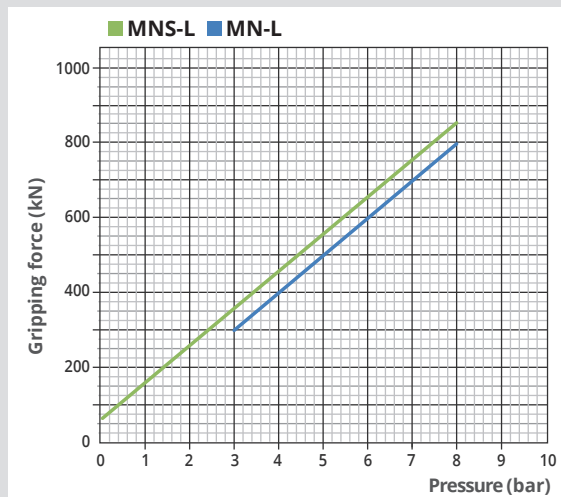
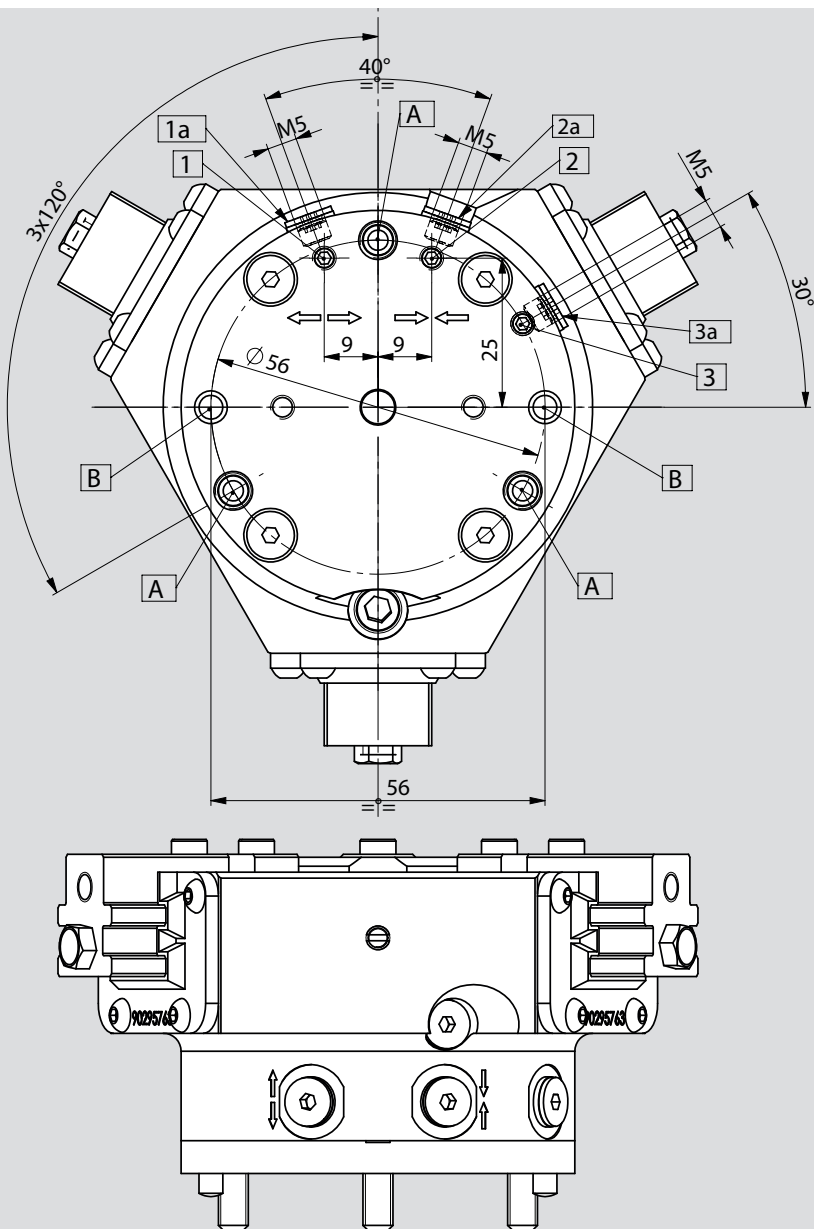
Self-centering vise without top jaws
All bolts and centering bushings included

Technical features

- Aluminium body to contain the gripper weight.
- Body and functional parts hardened for high precision and long life
- Prepared to air purge
- 3 master jaws with a long stroke: for safety reasons given the entity strokes of the gripper is recommended only the loading with robot
- OD and ID clamping: MNS spring model only for O.D. clamping
- Lubricated with SMW-Autoblok K67 grease
- Continuous stroke control system via analogic proximity optional
- Spring workstop system - optional
- 3MN-L 3 jaws long stroke version
- 3MNS-L 3 jaws normal stroke version

Model	Id.n.	Stroke type	Clamping force at 8 bar	Clamping force -only springs- middle stroke	Jaw Stroke mm	Piston area cm ²	Press. min / max	e min/max	R min/max	R1 min/max	Weight Kg	Repeatability	Ring-nut and stroke control master jaw proximity code -not supplied-
64 3MN-L	77920106	Long	800 N	/	6	12,7	3/8 bar	17,5/23,5	24/30	50,8/56,8	0,8	0,02 mm	GHIERA BALLUFF BAM000W PROX BALLUFF BAW000J
64 3MNS-L (*)	77920206	Long	800 N	85 N	6	12,7	3/8 bar	17,5/23,5	24/30	50,8/56,8	0,8	0,02 mm	GHIERA BALLUFF BAM000W PROX BALLUFF BAW000J

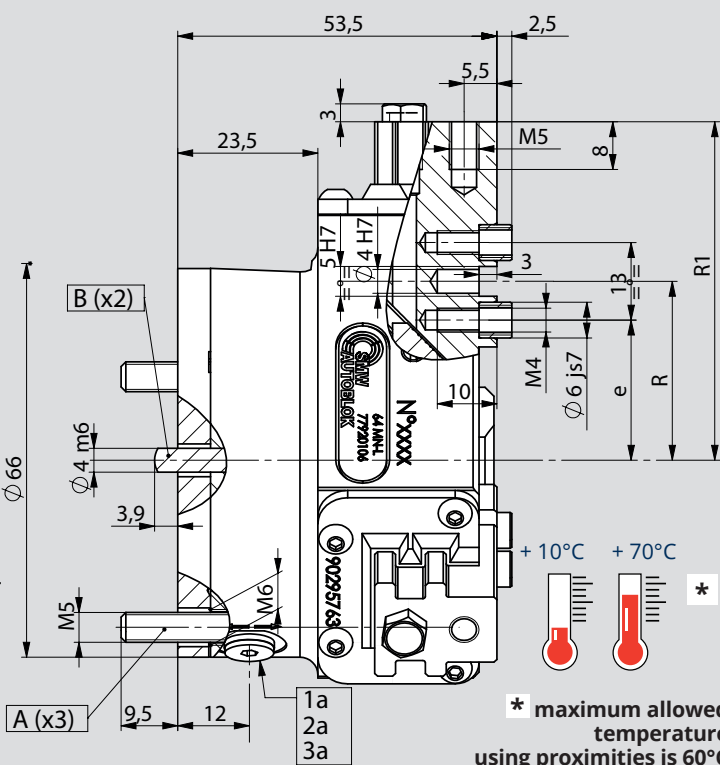
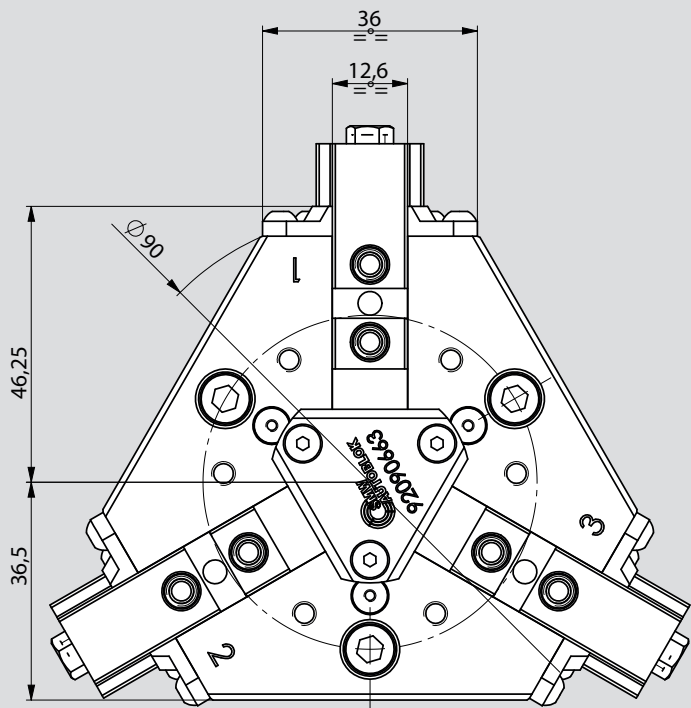
* the spring version are only available on request



max. 40 Nm*
max. 60 Nm*
max. 40 Nm*

* THE MOMENTS OF INERTIA INDICATED REFER TO ONE MASTER JAWS AND CAN BE OCCUR SIMULTANEOUSLY. THE **M_y** MOMENT CAN BE ADDED TO THE GRIPPING FORCE MOMENT.

**MAXIMUM WEIGHT
CLAMPING WORKPIECE =
64 3MN-L - 3 kg**



GRIPPERS

3 jaws self-centering vises

80

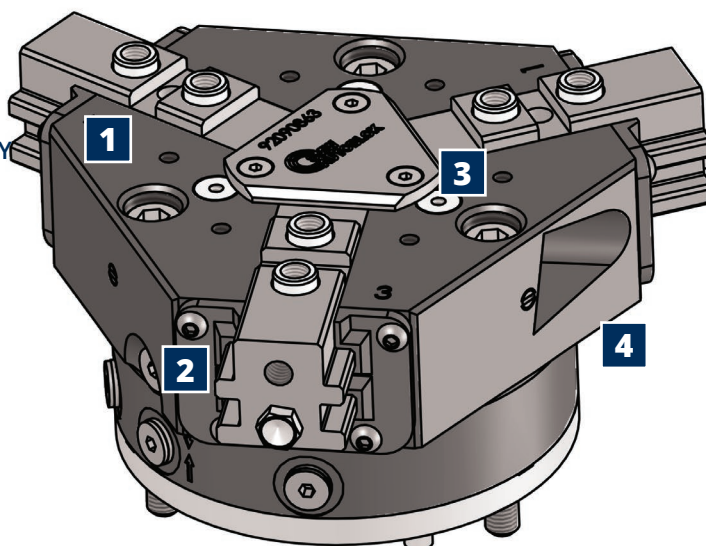
Pneumatics - Protected

1 SAB-1 PNEUMATIC SAFETY VALVE SUPPLIED

2 MASTER JAWS GUIDE PROTECTED AGAINST SWarf AND CHIPS

3 POSSIBILITY TO INSERT SPRING WORKSTOP

4 STROKE CONTROL JAWS ANALOGIC CONTINUOUS INDUCTIVE SENSOR (OPTIONAL)



Applications /Customer benefits

- Light and compact design
- Master jaws guide protected against swarf and chips
- Highest rigidity
- Linear pressure adjustment

Standard equipment

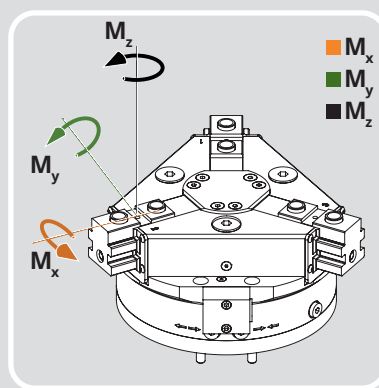
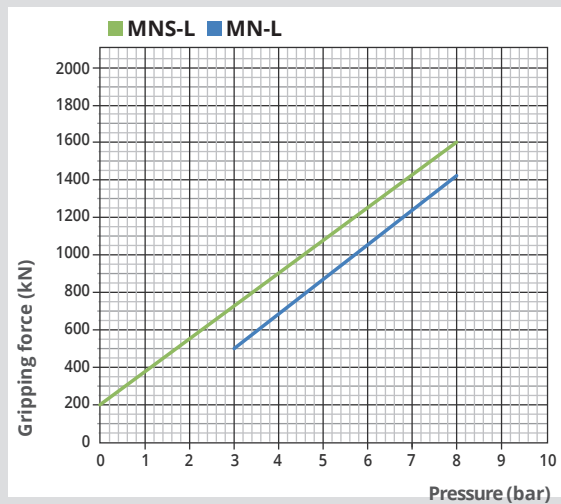
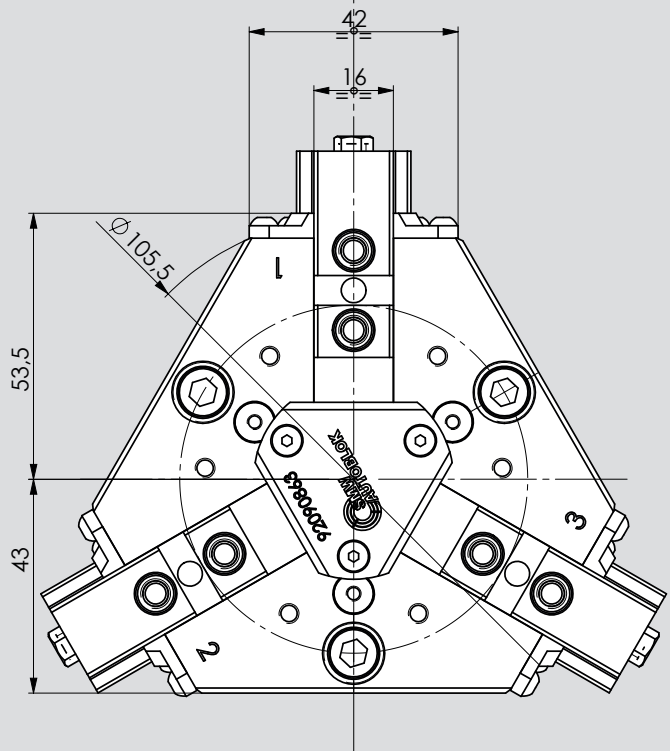
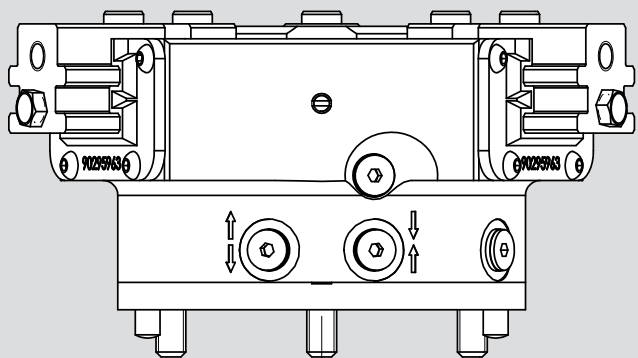
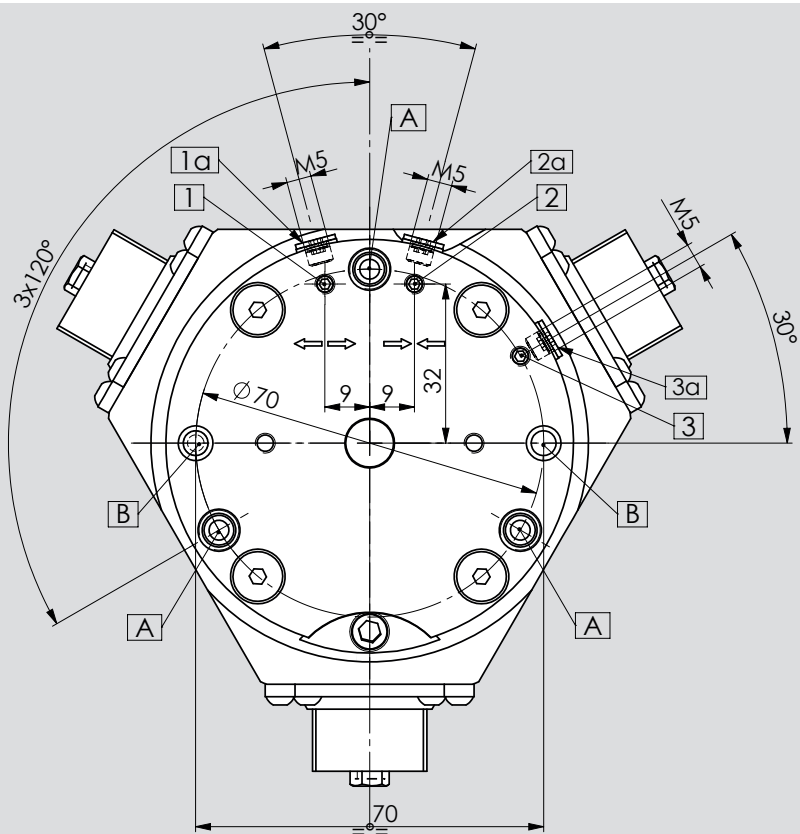
Self-centering vise without top jaws
All bolts and centering bushings included

Technical features

- Aluminium body to contain the gripper weight.
- Body and functional parts hardened for high precision and long life
- Prepared to air purge
- 3 master jaws with a long stroke: for safety reasons given the entity strokes of the gripper is recommended only the loading with robot
- OD and ID clamping: MNS spring model only for O.D. clamping
- Lubricated with SMW-Autoblok K67 grease
- Continuous stroke control system via analogic proximity optional
- Spring workstop system - optional
- 3MN-L 3 jaws long stroke version
- 3MNS-L 3 jaws normal stroke version

Model	Id.n.	Stroke type	Clamping force at 8 bar	Clamping force -only springs-middle stroke	Jaw Stroke mm	Piston area cm ²	Press. min / max	e min/max	R min/max	R1 min/max	Weight Kg	Repeatability	Ring-nut and stroke control master jaw proximity code -not supplied-
80 3MN-L	77920108	Long	1400 N	/	8	22	3/8 bar	22/30	30/38	58/66	1,3	0,02 mm	RING-NUT BALLUFF BAM000W PROX BALLUFF BAW000J
80 3MNS-L (*)	77920208	Long	1400 N	200 N	8	22	3/8 bar	22/30	30/38	58/66	1,3	0,02 mm	RING-NUT BALLUFF BAM000W PROX BALLUFF BAW000J

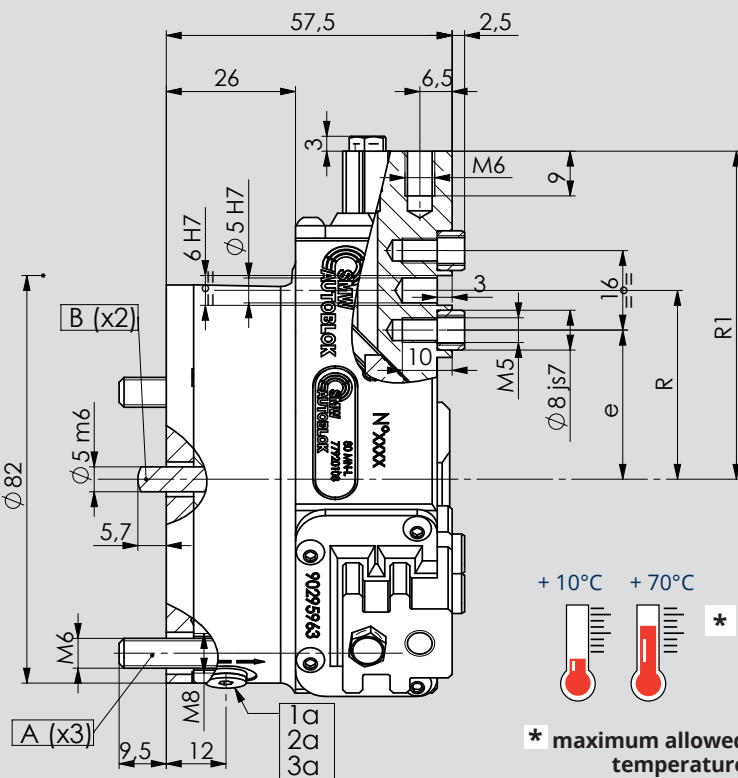
* the spring version are only available on request



max. 60 Nm*

* THE MOMENTS OF INERTIA INDICATED REFER TO ONE MASTER JAWS AND CAN BE OCCUR SIMULTANEOUSLY. THE **M_y** MOMENT CAN BE ADDED TO THE GRIPPING FORCE MOMENT.

**MAXIMUM WEIGHT
CLAMPING WORKPIECE =
80 3MN-L - 5 kg**



+ 10°C + 70°C



* maximum allowed temperature using proximities is 60°C

GRIPPERS

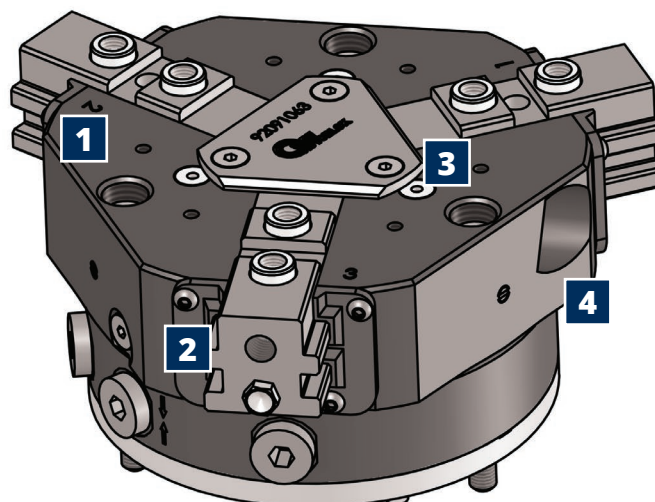
3 jaws self-centering vises

100

Pneumatics - Protected

1 SAB-1 PNEUMATIC SAFETY VALVE SUPPLIED

2 MASTER JAWS GUIDE PROTECTED AGAINST SWarf AND CHIPS



3 POSSIBILITY TO INSERT SPRING WORKSTOP

4 STROKE CONTROL JAWS ANALOGIC CONTINUOUS INDUCTIVE SENSOR (OPTIONAL)

Applications /Customer benefits

- Light and compact design
- Master jaws guide protected against swarf and chips
- Highest rigidity
- Linear pressure adjustment

Standard equipment

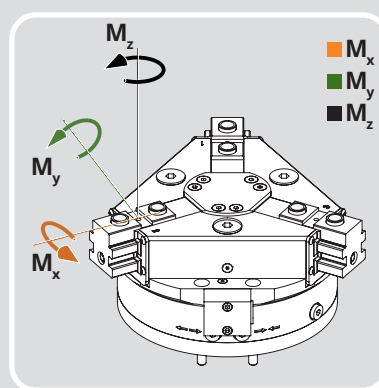
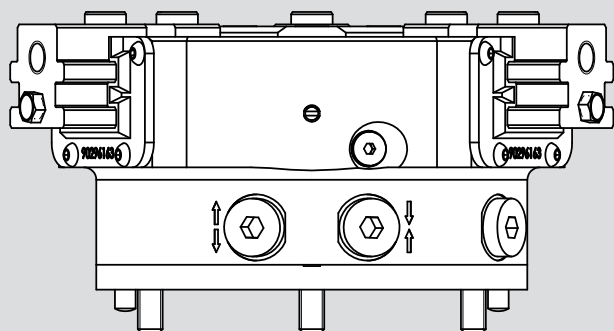
Self-centering vise without top jaws
All bolts and centering bushings included

Technical features

- Aluminium body to contain the gripper weight.
- Body and functional parts hardened for high precision and long life
- Prepared to air purge
- 3 master jaws with a long stroke: for safety reasons given the entity strokes of the gripper is recommended only the loading with robot
- OD and ID clamping: MNS spring model only for O.D. clamping
- Lubricated with SMW-Autoblok K67 grease
- Continuous stroke control system via analogic proximity optional
- Spring workstop system - optional
- 3MN-L 3 jaws long stroke version
- 3MNS-L 3 jaws normal stroke version

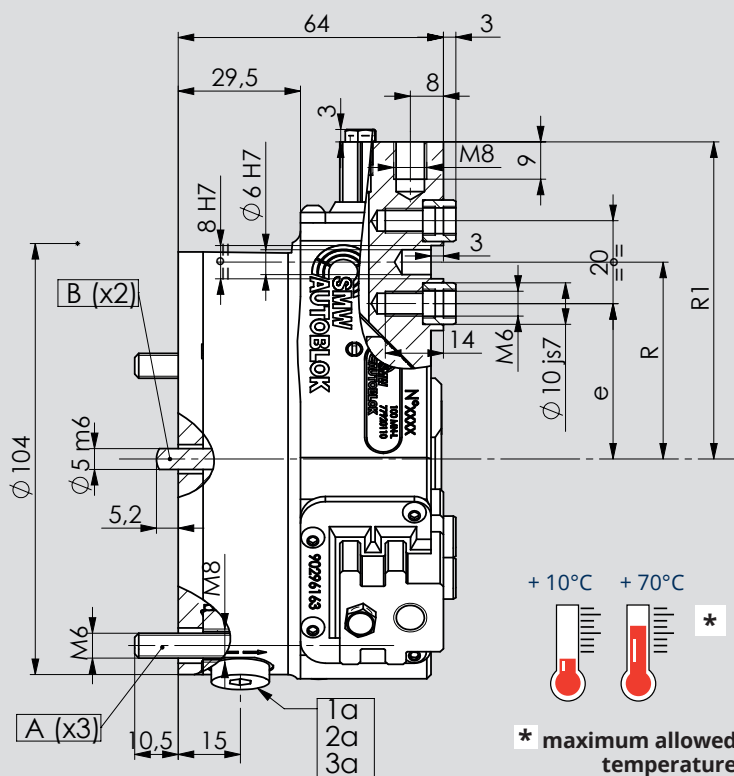
Model	Id.n.	Stroke type	Clamping force at 8 bar	Clamping force -only springs-middle stroke	Jaw Stroke mm	Piston area cm ²	Press. min / max	e min/max	R min/max	R1 min/max	Weight Kg	Repeatability	Ring-nut and stroke control master jaw proximity code -not supplied-
100 3MN-L	77920110	Long	2400 N	/	10	38	3/8 bar	27,5/37,5	37,5/47,5	66,5/76,5	2	0,02 mm	RING-NUT BALLUFF BAM000W PROX BALLUFF BAW000J
100 3MNS-L (*)	77920210	Long	2400 N	450 N	10	38	3/8 bar	27,5/37,5	37,5/47,5	66,5/76,5	2	0,02 mm	RING-NUT BALLUFF BAM000W PROX BALLUFF BAW000J

* the spring version are only available on request



* THE MOMENTS OF INERTIA INDICATED REFER TO ONE MASTER JAWS AND CAN BE OCCUR SIMULTANEOUSLY. THE **M_y** MOMENT CAN BE ADDED TO THE GRIPPING FORCE MOMENT.

**MAXIMUM WEIGHT
CLAMPING WORKPIECE =
100 3MN-L - 10 kg**



* maximum allowed temperature using proximities is 60°C

GRIPPERS

3 jaws self-centering vises

125

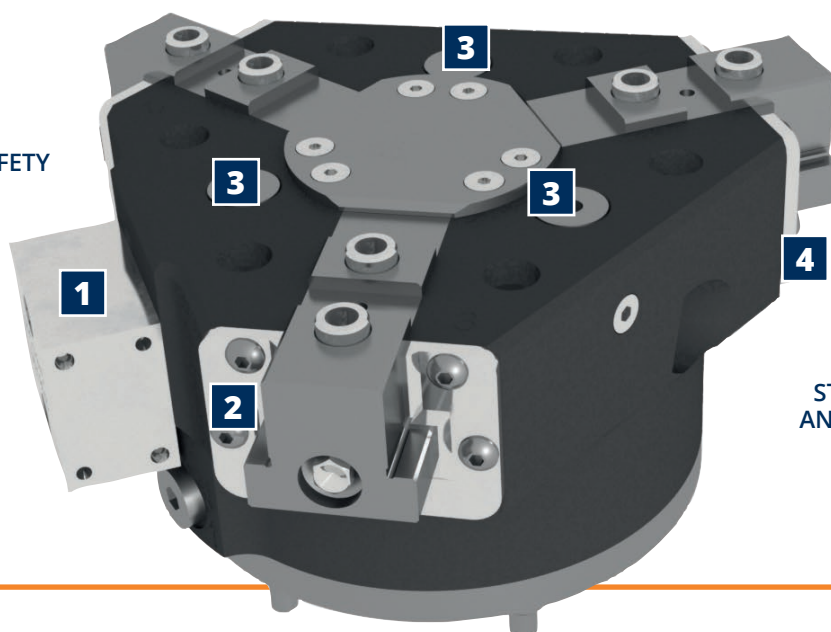
Pneumatics - Protected

1 SAB-1 PNEUMATIC SAFETY VALVE SUPPLIED

2 MASTER JAWS GUIDE PROTECTED AGAINST SWarf AND CHIPS

3 POSSIBILITY TO INSERT SPRING WORKSTOP

4 STROKE CONTROL JAWS ANALOGIC CONTINUOUS INDUCTIVE SENSOR (OPTIONAL)



Applications /Customer benefits

- Light and compact design
- Master jaws guide protected against swarf and chips
- Highest rigidity
- Linear pressure adjustment

Standard equipment

Self-centering vise without top jaws
All bolts and centering bushings included
Pneumatic safety valve included

Technical features

- Body and functional parts hardened for high precision and long life
- Prepared to air purge
- 3 master jaws with a long stroke: for safety reasons given the entity strokes of the gripper is recommended only the loading with robot
- OD and ID clamping
- Lubricated with SMW-Autoblok K67 grease
- Continuous stroke control system via analogic proximity optional
- Spring workstop system - optional
- 3MN-L 3 jaws long stroke version
- 3MN-N 3 jaws normal stroke version

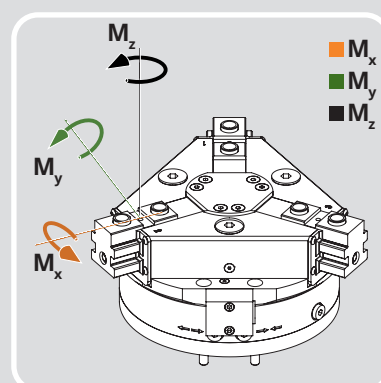
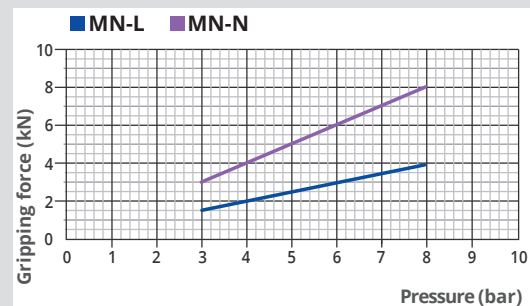
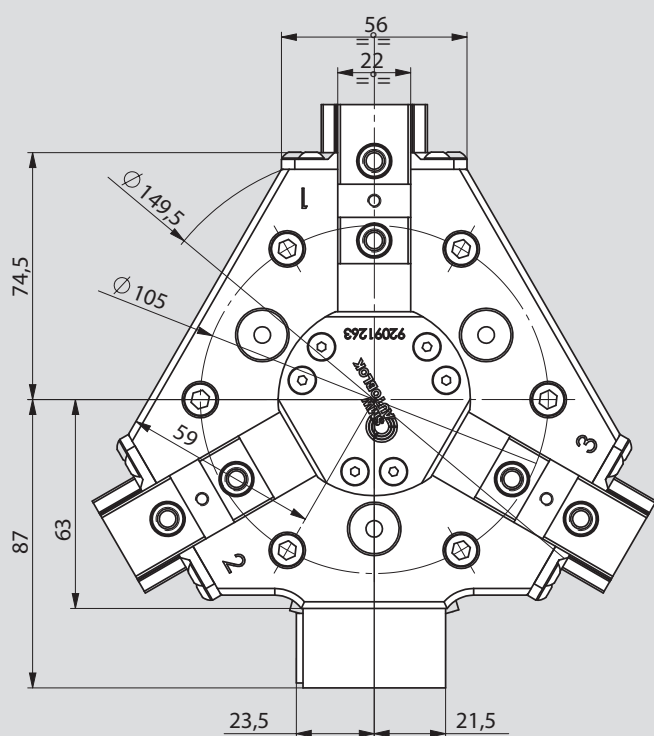
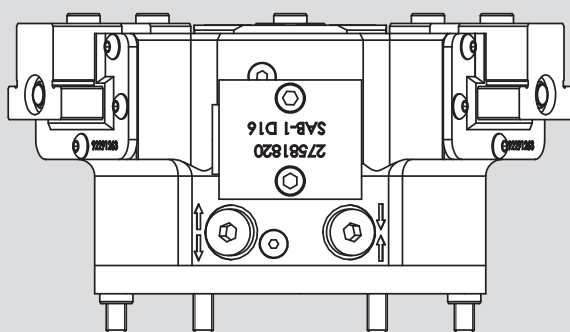
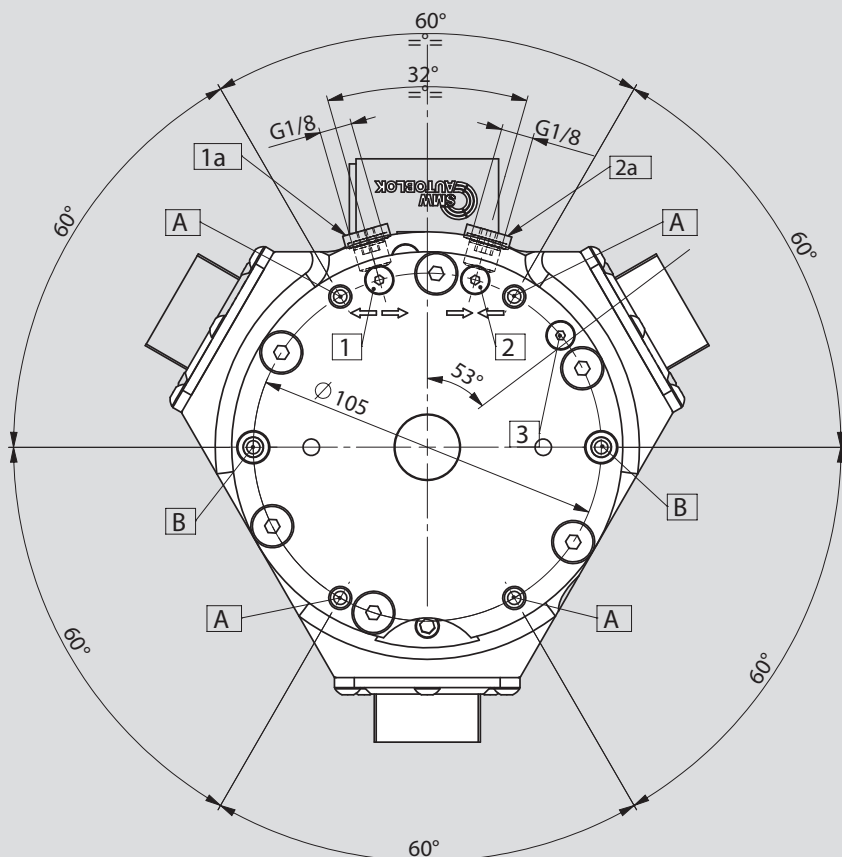
STANDARD SOLUTION

Aluminium body to contain the gripper weight.

STEEL SOLUTION

Steel hardened body suitable for heavy applications.

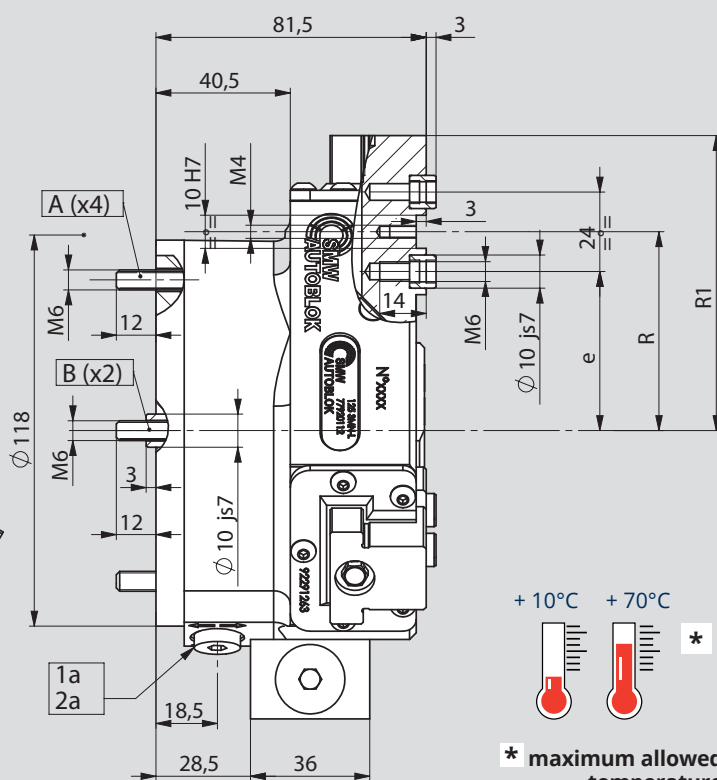
Model	Id.n.	Stroke type	Clamping force at 8 bar	Jaw Stroke mm	Piston area cm ²	Press. min / max	e min/max	R min/max	R1 min/max	Weight Kg	Repeatability	Ring-nut and stroke control master jaw proximity code -not supplied-
125 3MN-L	77920112	Long	4 kN	13	63	3/8 bar	35/48	47/60	76/89	3,8	0,03 mm	RING-NUT BALLUFF BAM000W PROX BALLUFF BAW000J
125 3MN-N	77920412	Normal	8 kN	6	63	3/8 bar	35/41	47/53	76/82	3,8	0,03 mm	RING-NUT BALLUFF BAM000W PROX BALLUFF BAW000J
125 3MN-L STEEL	77920162	Long	4 kN	13	63	3/8 bar	35/48	47/60	76/89	6,2	0,03 mm	RING-NUT BALLUFF BAM000W PROX BALLUFF BAW000J
125 3MN-N STEEL	77920462	Normal	8 kN	6	63	3/8 bar	35/41	47/53	76/82	6,2	0,03 mm	RING-NUT BALLUFF BAM000W PROX BALLUFF BAW000J



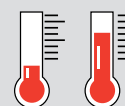
max. 120 Nm*
max. 145 Nm*
max. 100 Nm*

* THE MOMENTS OF INERTIA INDICATED REFER TO ONE MASTER JAWS AND CAN BE OCCUR SIMULTANEOUSLY. THE M_y MOMENT CAN BE ADDED TO THE GRIPPING FORCE MOMENT.

**MAXIMUM WEIGHT
CLAMPING WORKPIECE =**
125 3MN-L - 15 kg | 125 3MN-N - 30 kg



+ 10°C + 70°C



* maximum allowed temperature using proximities is 60°C

GRIPPERS

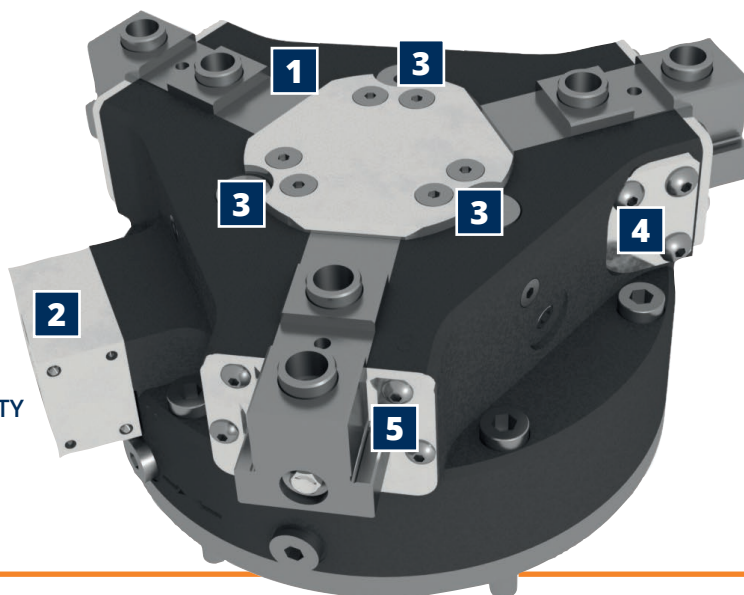
3 jaws self-centering vises

160

Pneumatics - Protected

1 POSSIBILITY TO INSERT SPRINGS TO INCREASE THE CLAMPING FORCE IN OD CLAMPING (OPTIONAL)

2 SAB-1 PNEUMATIC SAFETY VALVE SUPPLIED



POSSIBILITY TO INSERT SPRING WORKSTOP **3**

STROKE CONTROL JAWS ANALOGIC CONTINUOUS INDUCTIVE SENSOR (OPTIONAL) **4**

MASTER JAWS GUIDE PROTECTED AGAINST SWarf AND CHIPS **5**

Applications /Customer benefits

- Light and compact design
- Master jaws guide protected against swarf and chips
- Highest rigidity
- Linear pressure adjustment

Standard equipment

Self-centering vise without top jaws
All bolts and centering bushings included
Pneumatic safety valve included

Technical features

- Body and functional parts hardened for high precision and long life
- Prepared to air purge

- 3 master jaws with a long stroke: for safety reasons given the strokes entity of the gripper is recommended only the loading with robot
- OD and ID clamping; the spring version MNS it is only for OD clamping
- Pneumatic open/close -stroke control- master jaws valve optional (see the dedicated page)
- Lubricated with SMW-Autoblok K67 grease
- Continuous stroke control system via analogic proximity optional
- Spring workstop system - optional
- 3MN-L 3 jaws long stroke version
- 3MN-N 3 jaws normal stroke version
- 3MNS-L 3 jaws long stroke version with springs
- 3MNS-N 3 jaws normal stroke version with springs

STANDARD SOLUTION

Aluminium body to contain the gripper weight.

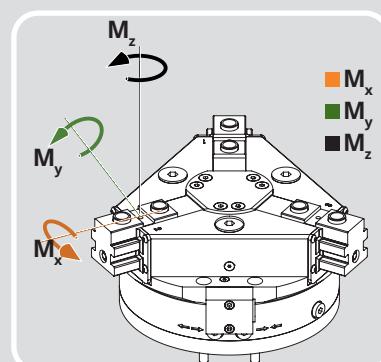
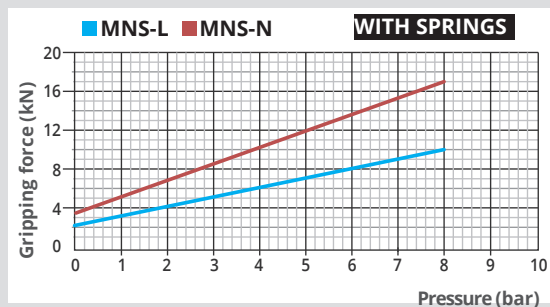
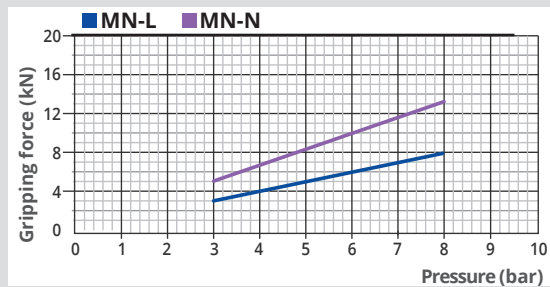
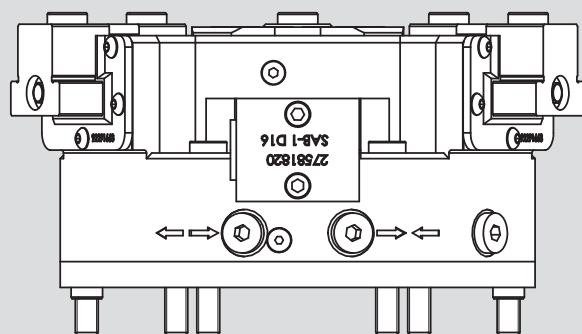
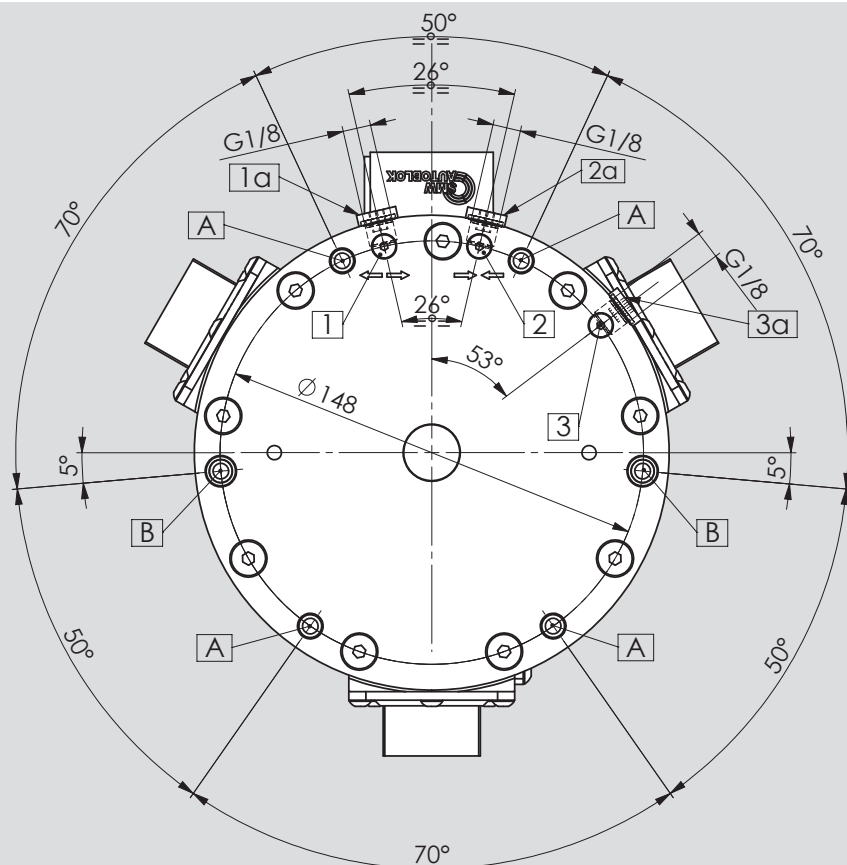
STEEL SOLUTION

Steel hardened body suitable for heavy applications.

Model	Id.n.	Stroke type	Clamping force at 8 bar	Clamping force only spring and middle stroke	Jaw Stroke mm	Piston area cm ²	Press. min / max	e min/ max	R min/ max	R1 min/ max	Weight Kg	Repeatability	Master jaws stroke control proximity bracket **
160 3MN-L	77920116	Long	8,1 kN	/	16	128	3/8	45/61	61/77	90/106	6	0,03 mm	90166663
160 3MN-N	77920416	Normal	13,3 kN	/	8,1	128	3/8	45/53,1	61/69,1	90/98,1	6	0,03 mm	90166663
160 3MNS-L*	77920216	Long	8,1 kN	2,1 kN	16	128	3/8	45/61	61/77	90/106	6	0,03 mm	90166663
160 3MNS-N*	77920516	Normal	13,3 kN	3,4 kN	8,1	128	3/8	45/53,1	61/69,1	90/98,1	6	0,03 mm	90166663
160 3MN-L STEEL	77920166	Long	8,1 kN	/	16	128	3/8	45/61	61/77	90/106	9,8	0,03 mm	90166663
160 3MN-N STEEL	77920466	Normal	13,3 kN	/	8,1	128	3/8	45/53,1	61/69,1	90/98,1	9,8	0,03 mm	90166663
160 3MNS-L* STEEL	77920266	Long	8,1 kN	2,1 kN	16	128	3/8	45/61	61/77	90/106	9,8	0,03 mm	90166663
160 3MNS-N* STEEL	77920566	Normal	13,3 kN	3,4 kN	8,1	128	3/8	45/53,1	61/69,1	90/98,1	9,8	0,03 mm	90166663

* the spring version are only available on request

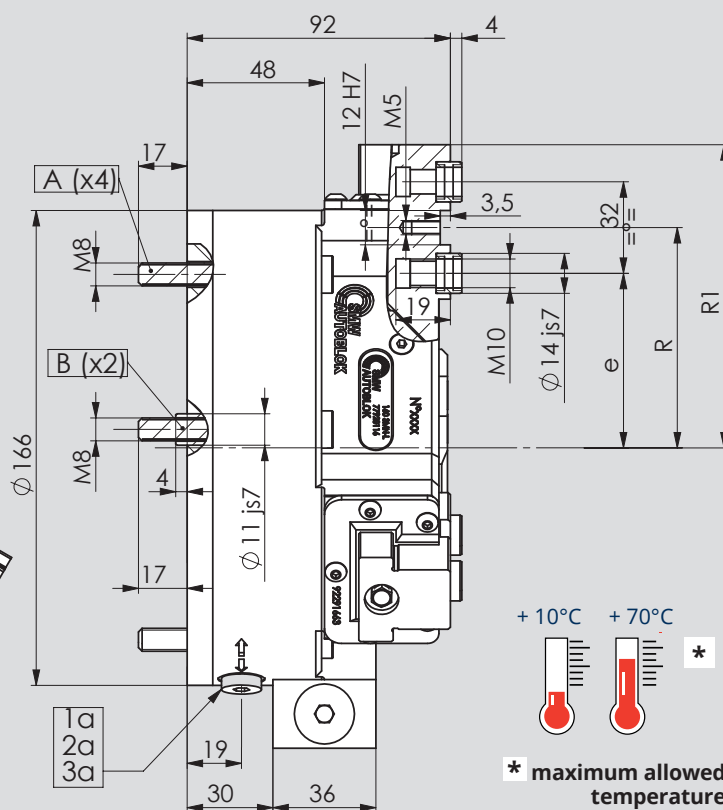
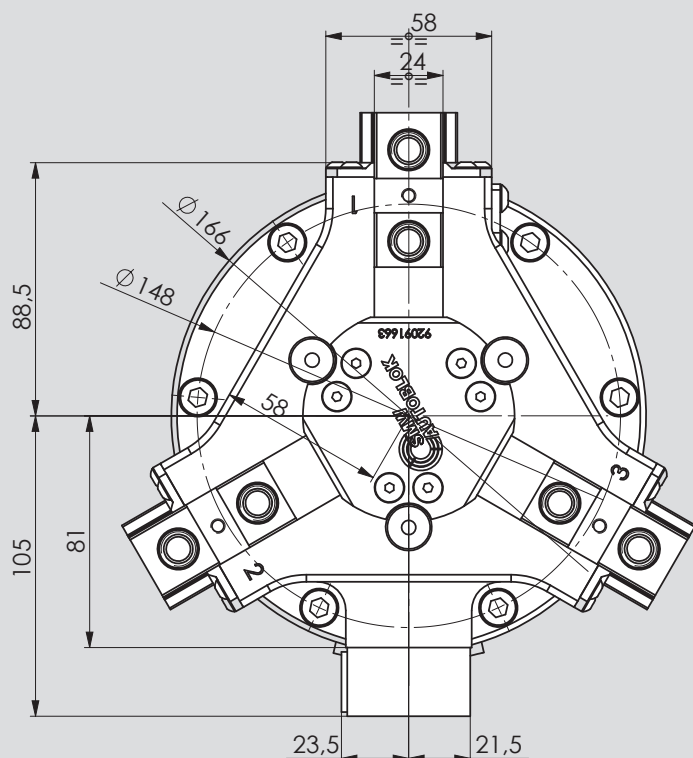
** recommended proximity for master jaws stroke control not supplied: BALLUFF M12x1 BAW0011 (or similar)



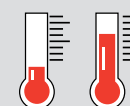
max. 170 Nm*
 max. 180 Nm*
 max. 130 Nm*

* THE MOMENTS OF INERTIA INDICATED REFER TO ONE MASTER JAWS AND CAN BE OCCUR SIMULTANEOUSLY. THE M_y MOMENT CAN BE ADDED TO THE GRIPPING FORCE MOMENT.

**MAXIMUM WEIGHT
CLAMPING WORKPIECE =**
 160 3MN-L - 30 kg | 160 3MN-N - 55 kg



+ 10°C + 70°C *



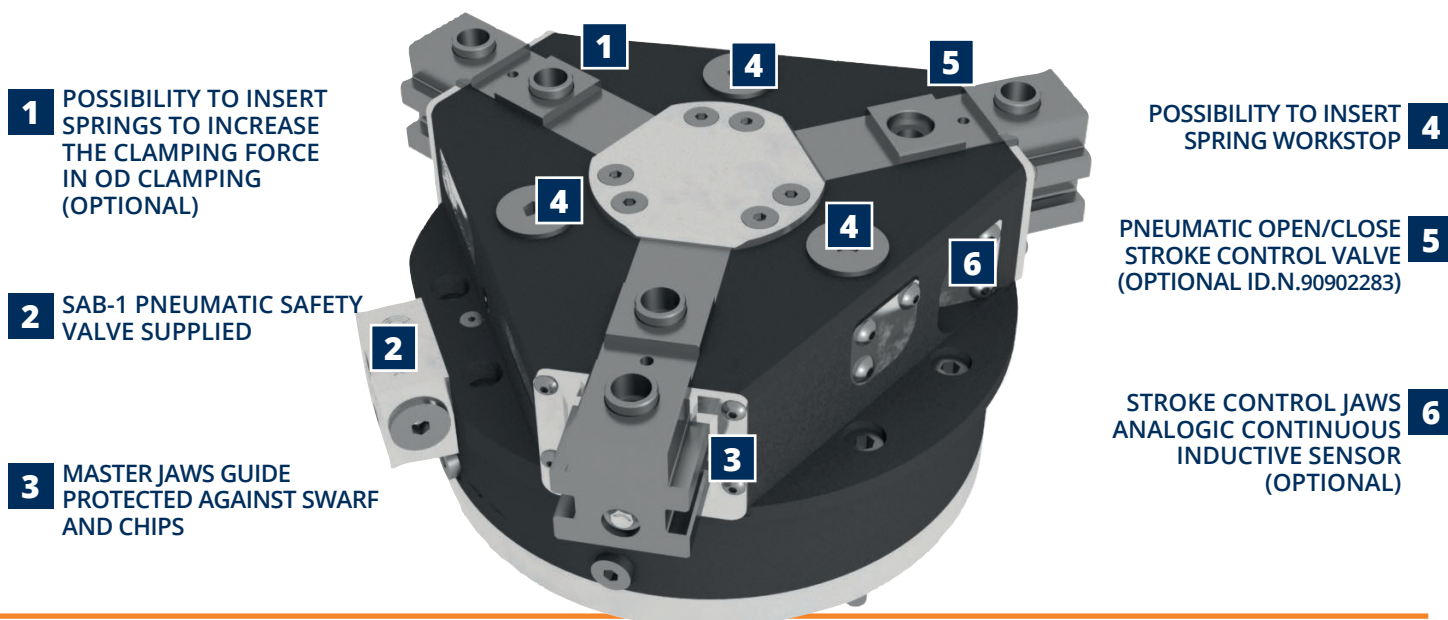
* maximum allowed temperature using proximities is 60°C

GRIPPERS

3 jaws self-centering vises

200

Pneumatics - Protected



1 POSSIBILITY TO INSERT SPRINGS TO INCREASE THE CLAMPING FORCE IN OD CLAMPING (OPTIONAL)

2 SAB-1 PNEUMATIC SAFETY VALVE SUPPLIED

3 MASTER JAWS GUIDE PROTECTED AGAINST SWarf AND CHIPS

4 POSSIBILITY TO INSERT SPRING WORKSTOP

5 PNEUMATIC OPEN/CLOSE STROKE CONTROL VALVE (OPTIONAL ID.N.90902283)

6 STROKE CONTROL JAWS ANALOGIC CONTINUOUS INDUCTIVE SENSOR (OPTIONAL)

Applications /Customer benefits

- Light and compact design
- Master jaws guide protected against swarf and chips
- Highest rigidity
- Linear pressure adjustment

Standard equipment

Self-centering vise without top jaws
All bolts and centering bushings included
Pneumatic safety valve included

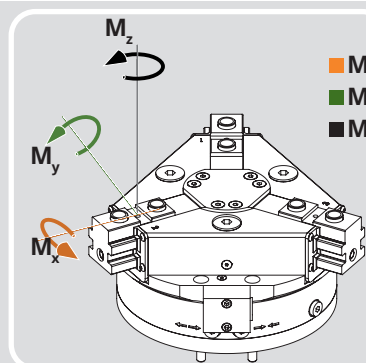
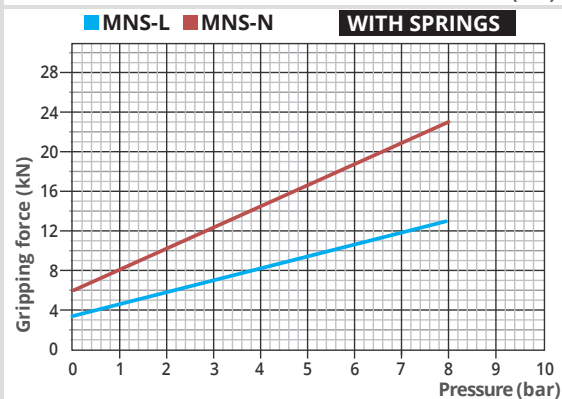
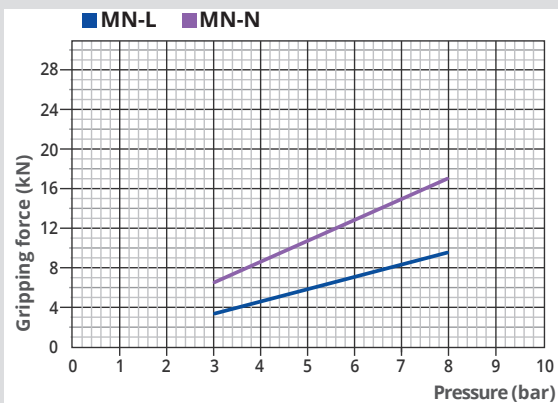
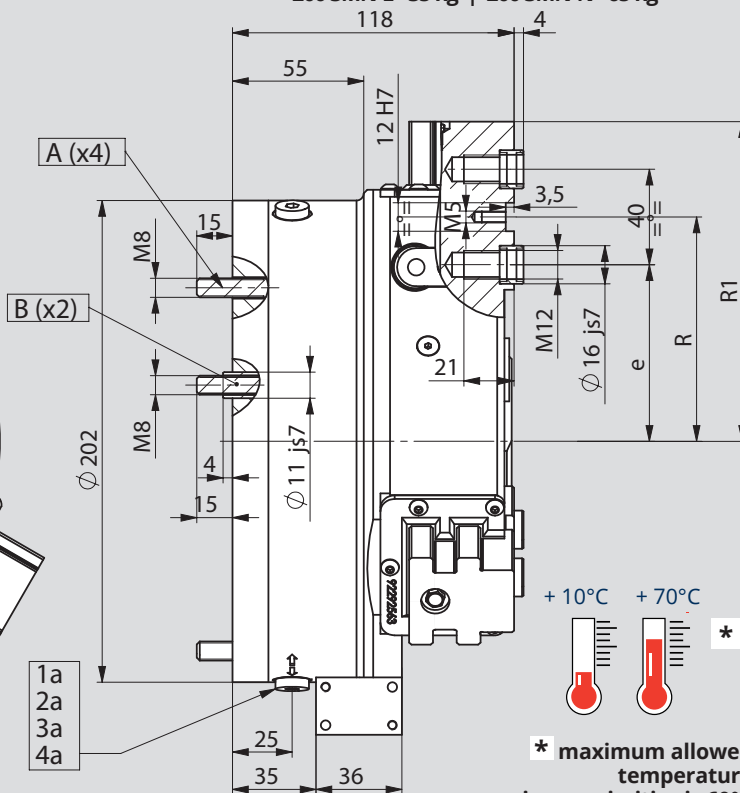
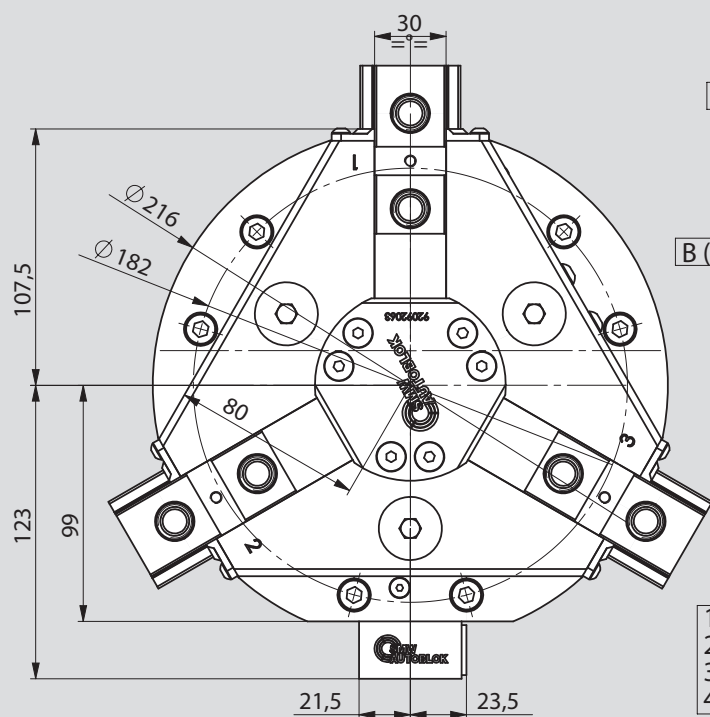
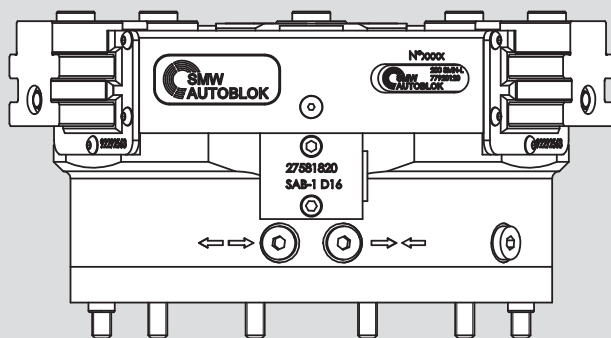
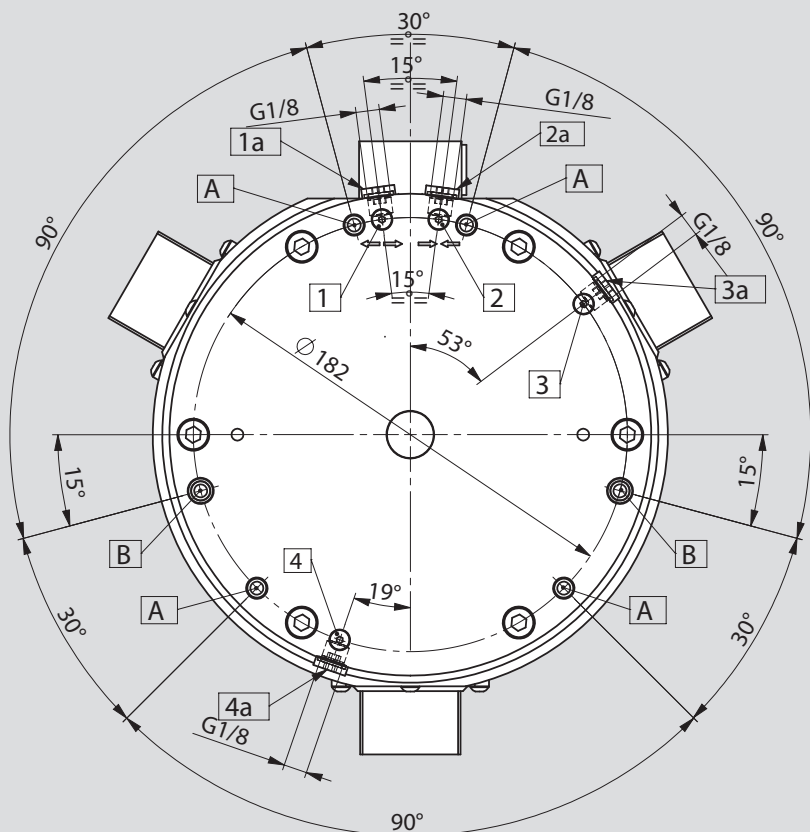
Technical features

- Aluminium body to contain the gripper weight
- Body and functional parts hardened for high precision and long life
- Prepared to air purge
- 3 master jaws with a long stroke: for safety reasons given the strokes entity of the gripper is recommended only the loading with robot
- OD and ID clamping; the spring version MNS it is only for OD clamping
- Pneumatic open/close -stroke control- master jaws valve optional (see the dedicated page)
- Lubricated with SMW-Autoblok K67 grease
- Continuous stroke control system via analogic proximity optional
- Spring workstop system - optional
- 3MN-L 3 jaws long stroke version
- 3MN-N 3 jaws normal stroke version
- 3MNS-L 3 jaws long stroke version with springs
- 3MNS-N 3 jaws normal stroke version with springs

Model	Id.n.	Stroke type	Clamping force at 8 bar	Clamping force only spring and middle stroke	Jaw Stroke mm	Piston area cm ²	Press. min / max	e min/max	R min/ max	R1 min/max	Weight Kg	Repeatability	master jaws stroke control proximity bracket **
200 3MN-L	77920120	Long	9,6 kN	/	25	185	3/8	49/74	69/94	109/134	12	0,05 mm	90167563
200 3MN-N	77920420	Normal	17 kN	/	14,1	185	3/8	48,9/63	68,9/83	108,9/123	12	0,05 mm	90166663
200 3MNS-L*	77920220	Long	9,6 kN	3,3 kN	25	185	3/8	49/74	69/94	109/134	12	0,05 mm	90167563
200 3MNS-N*	77920520	Normal	17 kN	6 kN	14,1	185	3/8	48,9/63	68,9/83	108,9/123	12	0,05 mm	90166663

* the spring version are only available on request

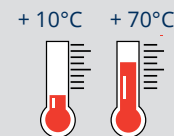
** recommended proximity for master jaws stroke control not supplied: BALLUFF M12x1 BAW0011 (or similar)



- max. 180 Nm* M_x
- max. 200 Nm* M_y
- max. 140 Nm* M_z

* THE MOMENTS OF INERTIA INDICATED REFER TO ONE MASTER JAWS AND CAN BE OCCUR SIMULTANEOUSLY. THE M_y MOMENT CAN BE ADDED TO THE GRIPPING FORCE MOMENT.

MAXIMUM WEIGHT CLAMPING WORKPIECE =
200 3MN-L - 35 kg | 200 3MN-N - 65 kg



* maximum allowed temperature using proximities is 60°C

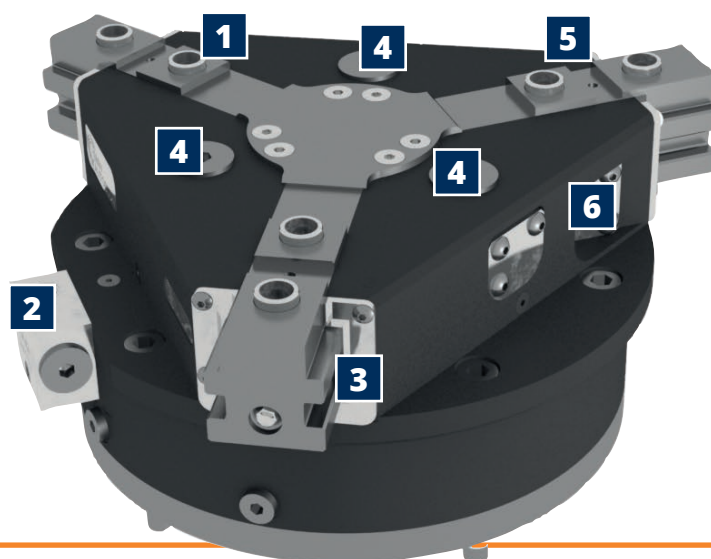
GRIPPERS

250

3 jaws self-centering vises

Pneumatics - Protected

- 1** POSSIBILITY TO INSERT SPRINGS TO INCREASE THE CLAMPING FORCE IN OD CLAMPING (OPTIONAL)
- 2** SAB-1 PNEUMATIC SAFETY VALVE SUPPLIED
- 3** MASTER JAWS GUIDE PROTECTED AGAINST SWARF AND CHIPS



POSSIBILITY TO INSERT SPRING WORKSTOP **4**

PNEUMATIC OPEN/CLOSE STROKE CONTROL VALVE (OPTIONAL ID.N.90902283) **5**

STROKE CONTROL JAWS ANALOGIC CONTINUOUS INDUCTIVE SENSOR (OPTIONAL) **6**

Applications /Customer benefits

- Light and compact design
- Master jaws guide protected against swarf and chips
- Highest rigidity
- Linear pressure adjustment

Standard equipment

Self-centering vise without top jaws
All bolts and centering bushings included
Pneumatic safety valve included

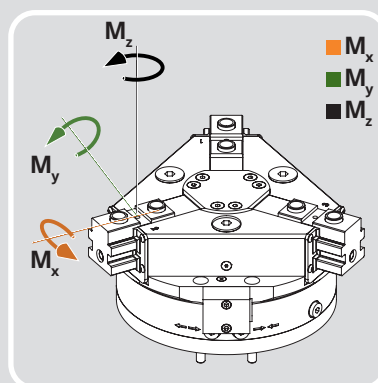
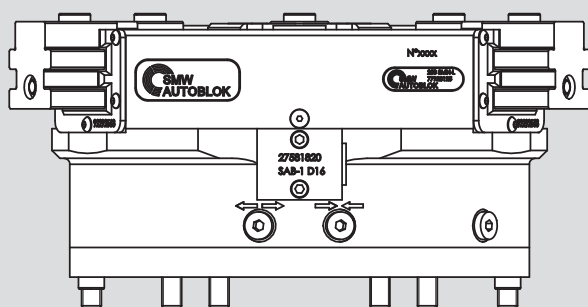
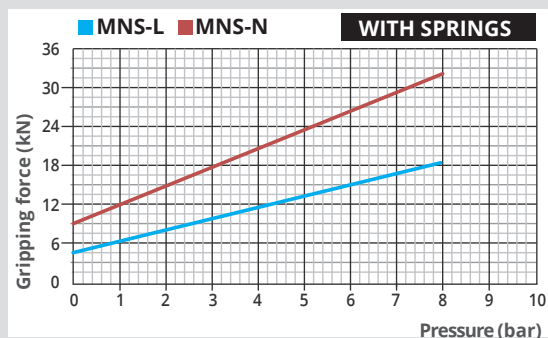
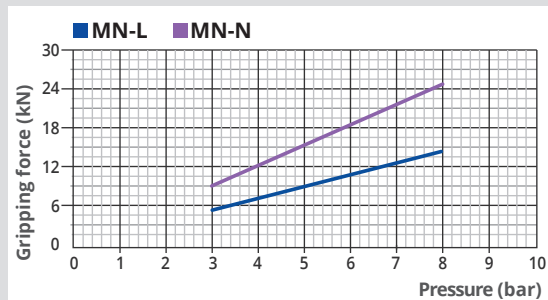
Technical features

- Aluminium body to contain the gripper weight
- Body and functional parts hardened for high precision and long life
- Prepared to air purge
- 3 master jaws with a long stroke: for safety reasons given the strokes entity of the gripper is recommended only the loading with robot
- OD and ID clamping; the spring version MNS it is only for OD clamping
- Pneumatic open/close -stroke control- master jaws valve optional (see the dedicated page)
- Lubricated with SMW-Autoblok K67 grease
- Continuous stroke control system via analogic proximity optional
- Spring workstop system - optional
- 3MN-L 3 jaws long stroke version
- 3MN-N 3 jaws normal stroke version
- 3MNS-L 3 jaws long stroke version with springs
- 3MNS-N 3 jaws normal stroke version with springs

Model	Id.n.	Stroke type	Clamping force at 8 bar	Clamping force only spring and middle stroke	Jaw Stroke mm	Piston area cm ²	Press. min / max	e min/max	R min/ max	R1 min/max	Weight Kg	Repeatability	master jaws stroke control proximity bracket **
250 3MN-L	77920125	Long	13,8 kN	/	30	267	3/8	57/87	79/109	127/157	17	0,05 mm	90167563
250 3MN-N	77920425	Normal	24,6 kN	/	17	267	3/8	57/74	79/96	127/144	17	0,05 mm	90166663
250 3MNS-L*	77920225	Long	13,8 kN	4,5 kN	30	267	3/8	57/87	79/109	127/157	17	0,05 mm	90167563
250 3MNS-N*	77920525	Normal	24,6 kN	8 kN	17	267	3/8	57/74	79/96	127/144	17	0,05 mm	90166663

* the spring version are only available on request

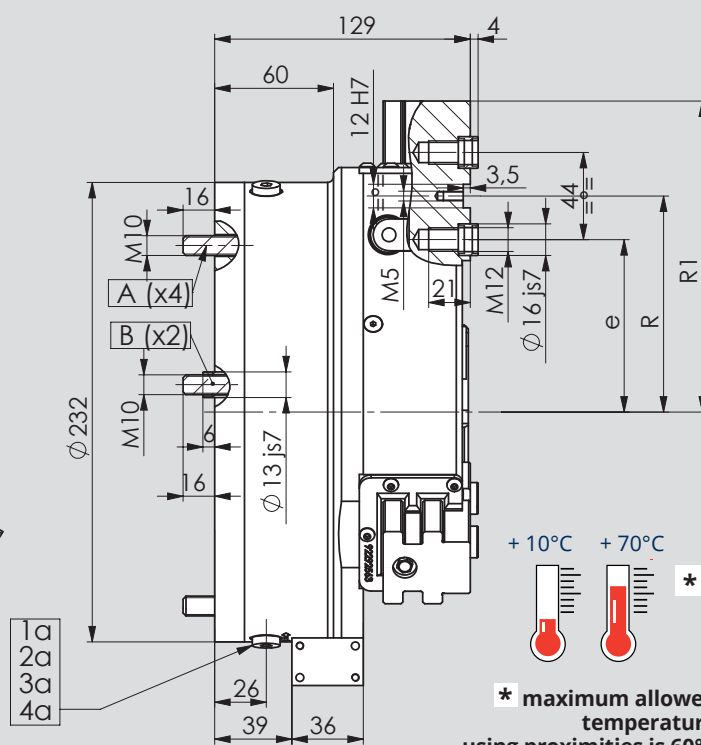
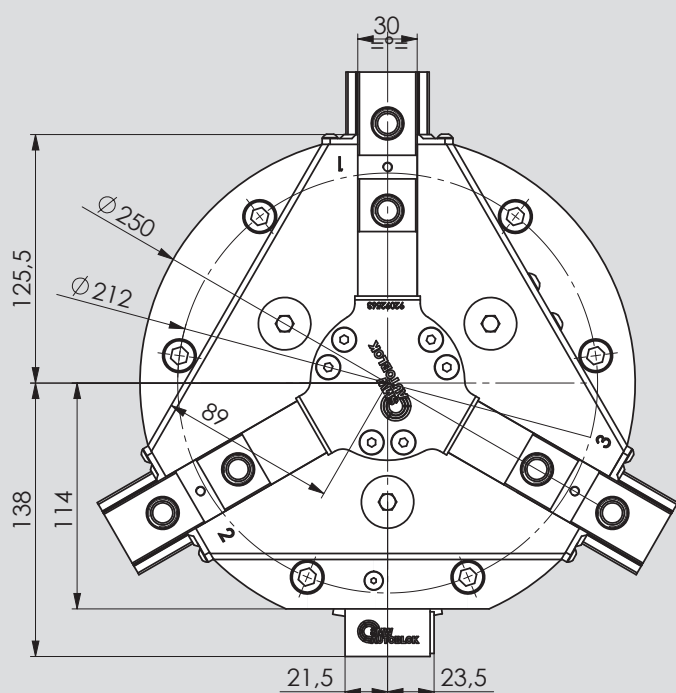
** recommended proximity for master jaws stroke control not supplied: BALLUFF M12x1 BAW0011 (or similar)



max. 265 Nm*
max. 250 Nm*
max. 160 Nm*

* THE MOMENTS OF INERTIA INDICATED REFER TO ONE MASTER JAWS AND CAN BE OCCUR SIMULTANEOUSLY. THE M_y MOMENT CAN BE ADDED TO THE GRIPPING FORCE MOMENT.

**MAXIMUM WEIGHT
CLAMPING WORKPIECE =
250 3MN-L - 50 kg | 250 3MN-N - 100 kg**



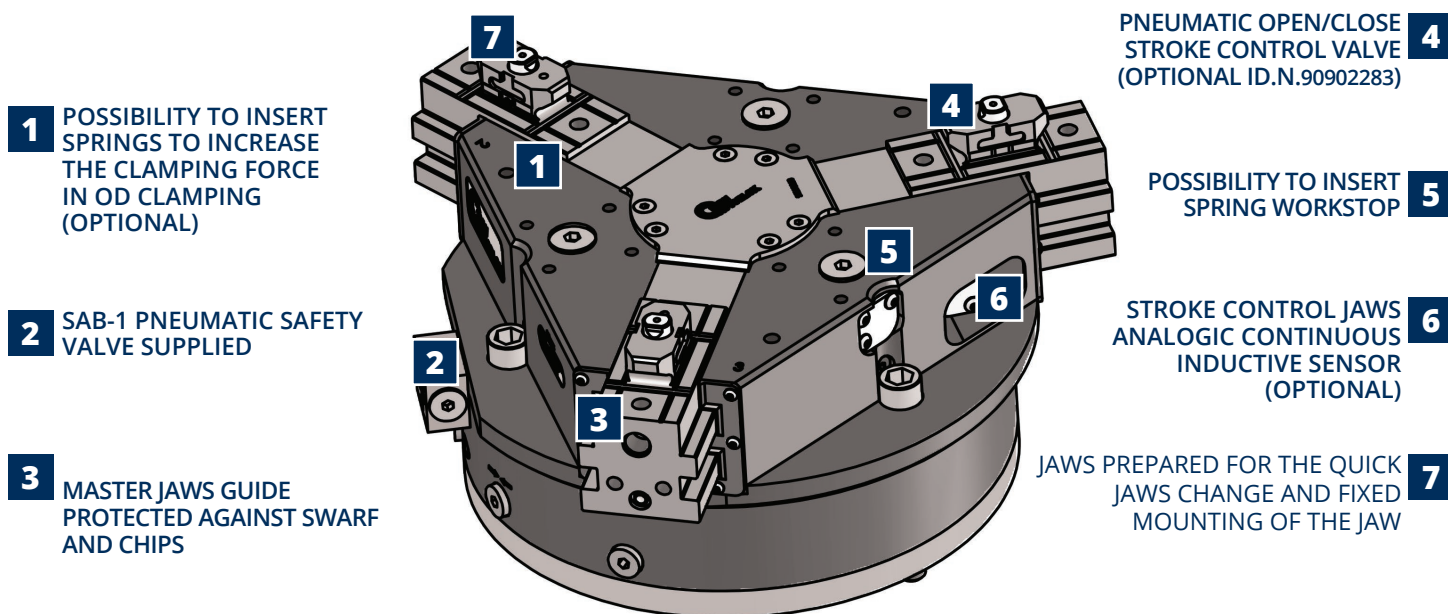
*** maximum allowed temperature using proximities is 60°C**

GRIPPERS

3 jaws self-centering vises

320

Pneumatics - Protected - Quick jaws change



Applications /Customer benefits

- Light and compact design
- Master jaws guide protected against swarf and chips
- Highest rigidity
- Linear pressure adjustment

Standard equipment

Self-centering vise without top jaws
All bolts and centering bushings included
Pneumatic safety valve included

Technical features

- Aluminium body to contain the gripper weight
- Body and functional parts hardened for high precision and long life
- Prepared to air purge
- Jaws prepared for the quick jaws change and fixed mounting of the jaw
- 3 master jaws with a long stroke: for safety reasons given the strokes entity of the gripper is recommended only the loading with robot
- OD and ID clamping; the spring version MNS it is only for OD clamping
- Pneumatic open/close -stroke control- master jaws valve optional (see the dedicated page)
- Lubricated with SMW-Autoblok K67 grease
- Continuous stroke control system via analogic proximity optional
- Spring workstop system - optional
- 3MNL -RR 3 jaws long stroke version
- 3MNSL-RR 3 jaws normal stroke version

Model	Id.n.	Stroke type	Clamping force at 8 bar	Clamping force only spring and middle stroke	Jaw Stroke mm	Piston area cm ²	Press. min / max	R min/max	R1 min/max	Weight Kg	Repeatability	master jaws stroke control proximity bracket **
320 3MNL-RR	77920732	Long	20 kN	/	40	382	3/8 bar	116,5/156,5	173/213	45	0,05 mm	90167563
320 3MNSL-RR (*)	77920832	Long	20 kN	6 kN	40	382	3/8 bar	116,5/156,5	173/213	45	0,05 mm	90167563

* the spring version are only available on request

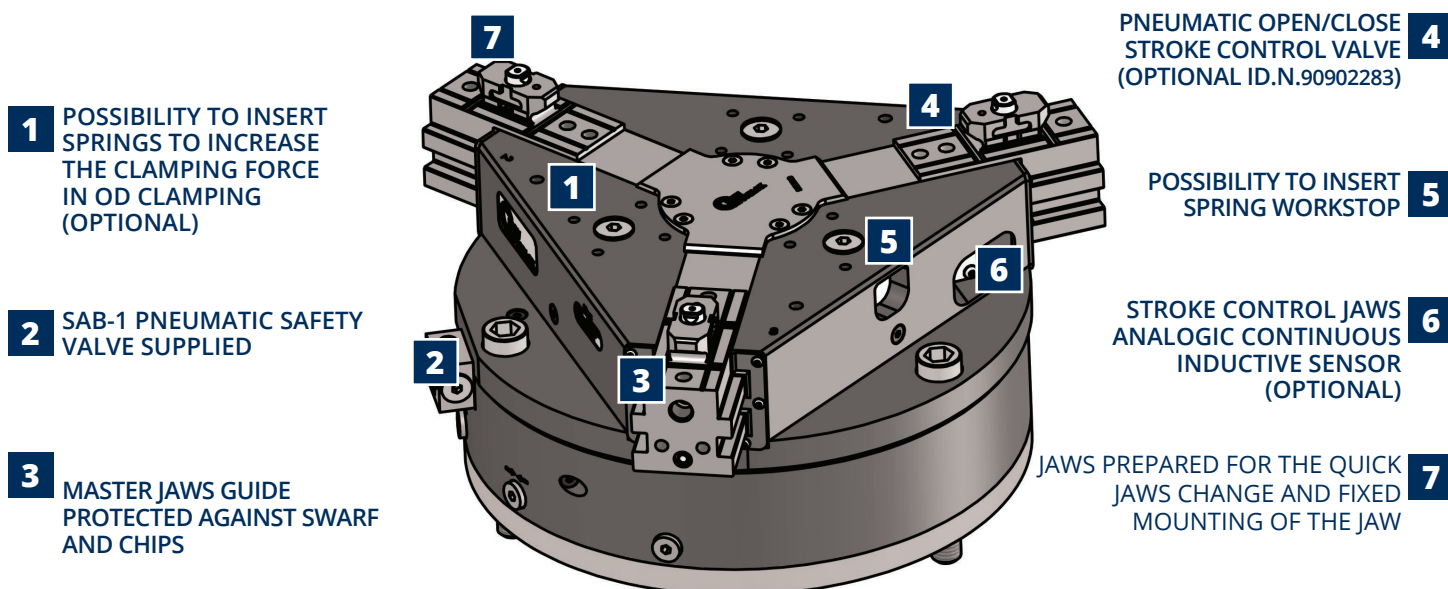
** recommended proximity for master jaws stroke control not supplied: BALLUFF M12x1 BAW0011 (or similar)

GRIPPERS

3 jaws self-centering vises

380

Pneumatics - Protected - Quick jaws change



Applications /Customer benefits

- Light and compact design
- Master jaws guide protected against swarf and chips
- Highest rigidity
- Linear pressure adjustment

Standard equipment

Self-centering vise without top jaws
All bolts and centering bushings included
Pneumatic safety valve included

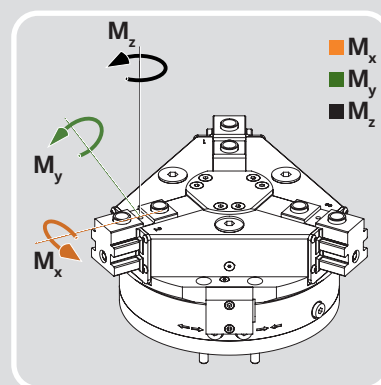
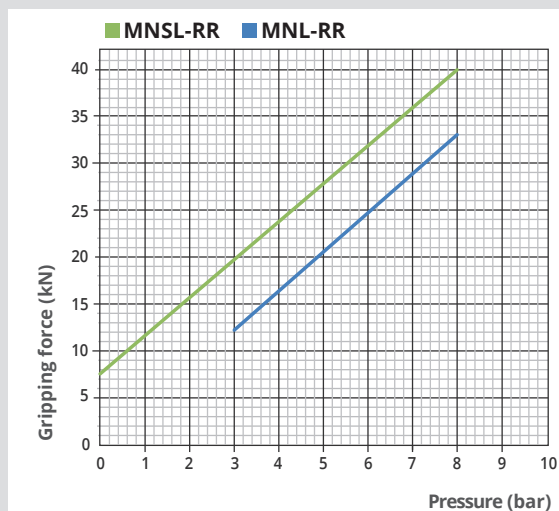
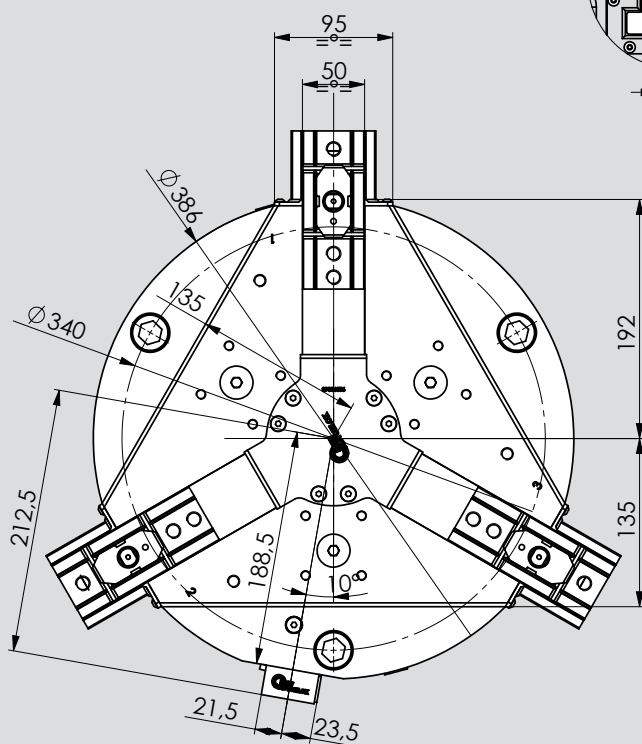
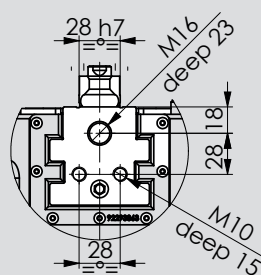
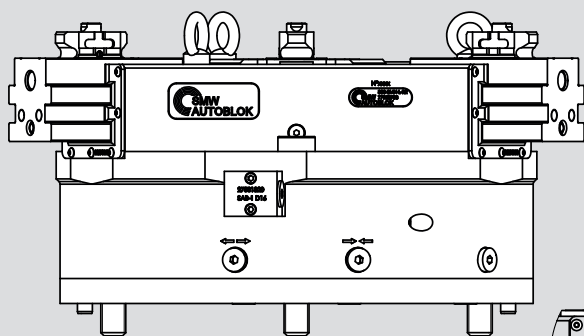
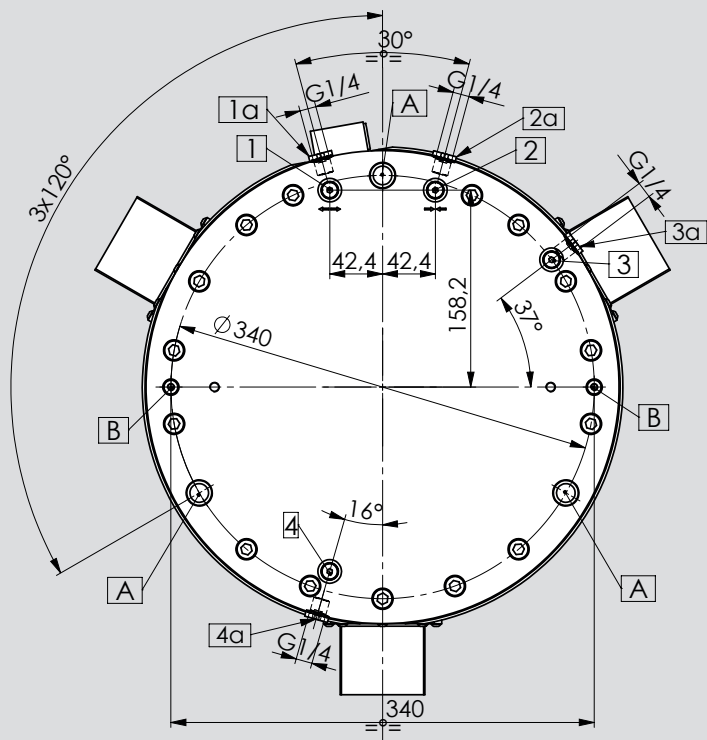
Technical features

- Aluminium body to contain the gripper weight
- Body and functional parts hardened for high precision and long life
- Prepared to air purge
- Jaws prepared for the quick jaws change and fixed mounting of the jaw
- 3 master jaws with a long stroke: for safety reasons given the strokes entity of the gripper is recommended only the loading with robot
- OD and ID clamping; the spring version MNS it is only for OD clamping
- Pneumatic open/close -stroke control- master jaws valve optional (see the dedicated page)
- Lubricated with SMW-Autoblok K67 grease
- Continuous stroke control system via analogic proximity optional
- Spring workstop system - optional
- 3MNL -RR 3 jaws long stroke version
- 3MNSL-RR 3 jaws normal stroke version

Model	Id.n.	Stroke type	Clamping force at 8 bar	Clamping force only spring and middle stroke	Jaw Stroke mm	Piston area cm ²	Press. min / max	R min/max	R1 min/max	Weight Kg	Repeatability	master jaws stroke control proximity bracket **
380 3MNL-RR	77920738	Long	32,5 kN	/	50	627	3/8 bar	140,5/190,5	197/247	65	0,05 mm	90167563
380 3MNSL-RR (*)	77920838	Long	32,5 kN	7,5 kN	50	627	3/8 bar	140,5/190,5	197/247	65	0,05 mm	90167563

* the spring version are only available on request

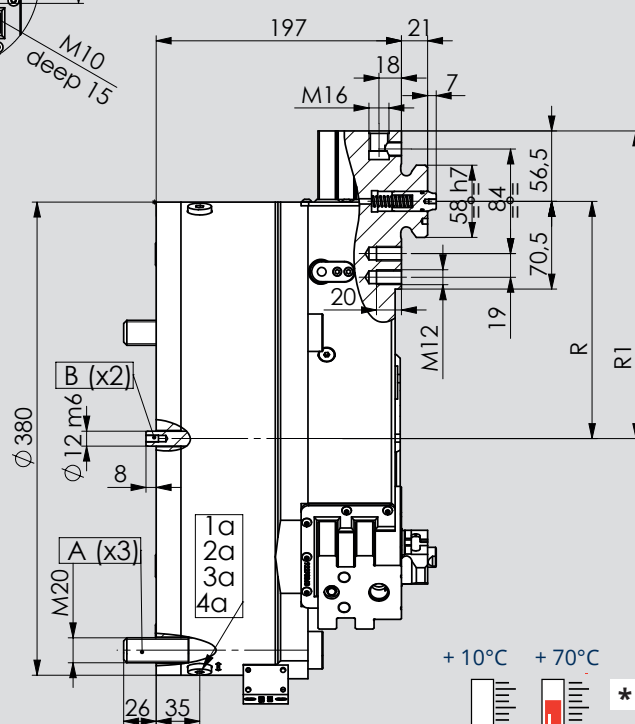
** recommended proximity for master jaws stroke control not supplied: BALLUFF M12x1 BAW0011 (or similar)



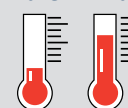
max. 560 Nm*
 max. 560 Nm*
 max. 370 Nm*

* THE MOMENTS OF INERTIA INDICATED REFER TO ONE MASTER JAWS AND CAN BE OCCUR SIMULTANEOUSLY. THE M_y MOMENT CAN BE ADDED TO THE GRIPPING FORCE MOMENT.

MAXIMUM WEIGHT
 CLAMPING WORKPIECE =
 380 3MNL-RR - 125 kg

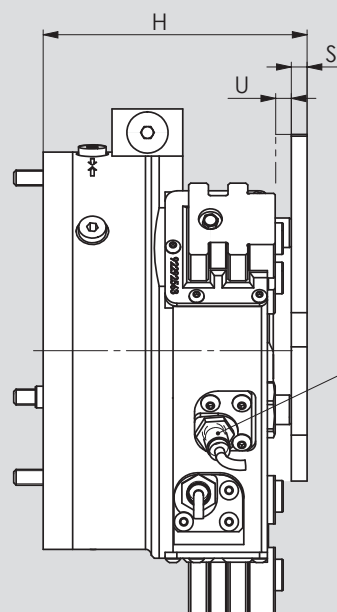
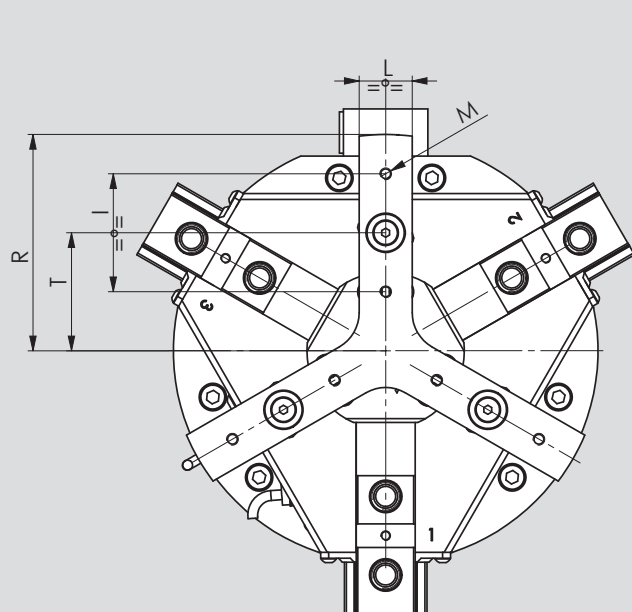


+ 10°C + 70°C *



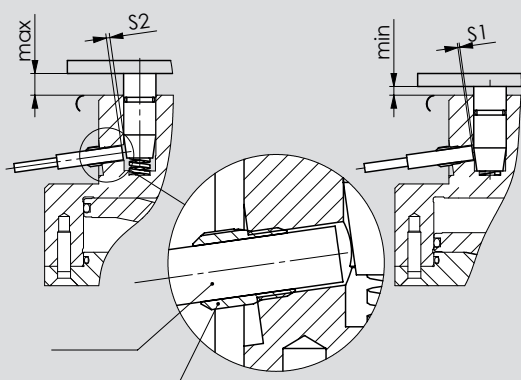
* maximum allowed temperature using proximities is 60°C

SPRING WORKSTOP optional



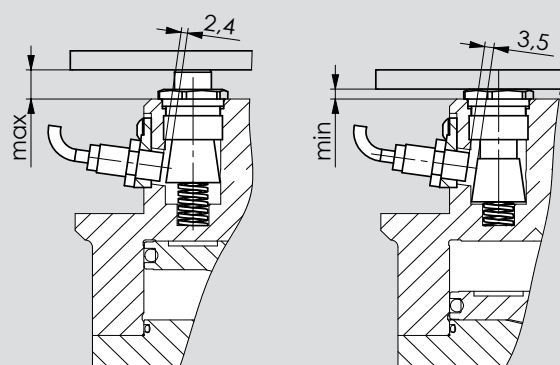
STROKE CONTROL
ANALOGIC INDUCTIVE
SENSOR FOR SPRING
WORKSTOP
(OPTIONAL)

MODEL	ID.N. SPRING WORKSTOP KIT	H max/min mm	I mm	L mm	M	R mm	S mm	T mm	U stroke mm	FORCE min/max
64 3MN	92670663	62,5/58,5 mm	16 mm	10 mm	M4	35	4	19	4	10/14 N
80 3MN	92670863	66,5/62,5mm	16 mm	12 mm	M4	40	4	23	4	15/21 N
100 3MN	92671063	73/69 mm	20 mm	12 mm	M5	50	4	29	4	35/51 N
125 3MN	92671263	94,5/88,5 mm	40 mm	20 mm	M6	72,5	6	39	6	110/180 N
160 3MN	92671663	104/98 mm	40 mm	20 mm	M6	72,5	6	39	6	210/300 N
200 3MN	92672563	134/126 mm	60 mm	27 mm	M6	110	8	60	8	360/600 N
250 3MN	92672563	145/137 mm	60 mm	27 mm	M6	110	8	60	8	360/600 N
320 3MN	92673863	190/182 mm	60 mm	35 mm	M6	150	8	90	8	540/900 N
380 3MN	92673863	212/204 mm	60 mm	35 mm	M6	150	8	90	8	540/900 N



64 MN / 80 MN / 100 MN / 125 MN / 160 MN

MODELLO	GHIERA (non fornita)	PROXIMITY (non fornito)	S1 (±0,1)	S2 (±0,1)
64 3MN	BALLUFF BAM000U	BAUMER IWRM04U9701 /S05	0,3 mm	0,9 mm
80 3MN			0,3 mm	0,9 mm
100 3MN	BALLUFF BAM000W	BALLUFF BAW000J	1 mm	1,6 mm
125 3MN			0,8 mm	1,6 mm
160 3MN			0,8 mm	1,6 mm



200 MN / 250 MN / 320 MN / 380 MN

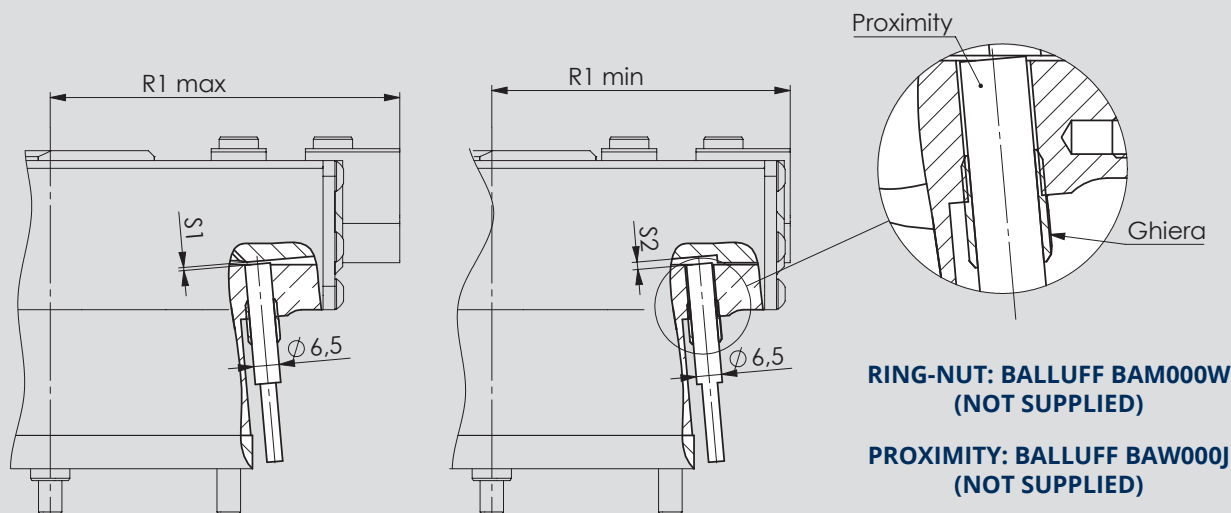
PROXIMITY BRACKET (OPTIONAL): 90166663

RECOMMENDED PROXIMITY:
BALLUFF M12X1 BAW0011 OR SIMILAR (NOT SUPPLIED)

ANALOGIC INDUCTIVE SENSOR for the continuous jaw stroke control (optional)

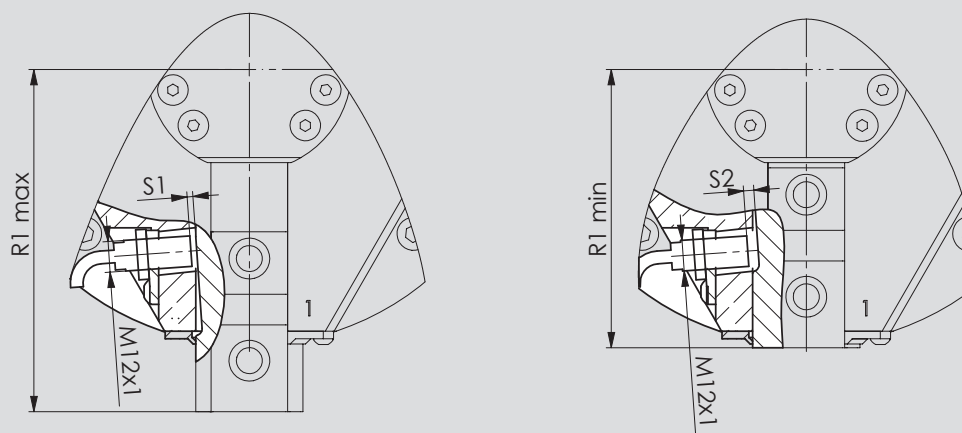
When the master jaws are in the maximum open position (R1 max) the sensor must be adjusted so that between the inclined plane and the sensor is the space S1.

64 MN / 80 MN / 100 MN / 125 MN



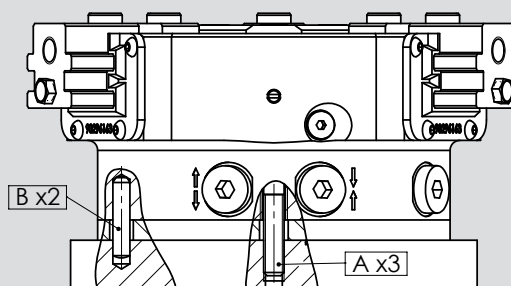
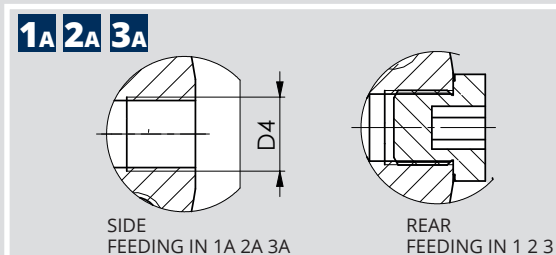
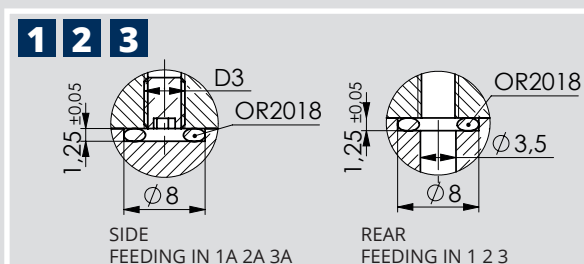
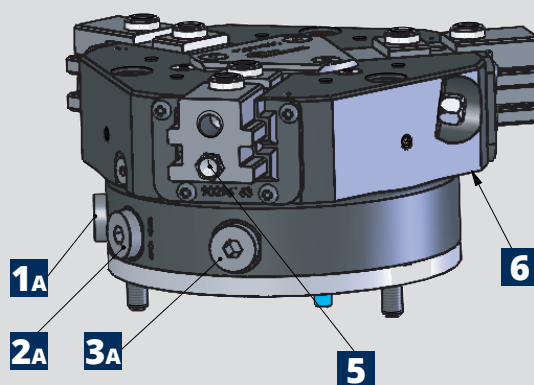
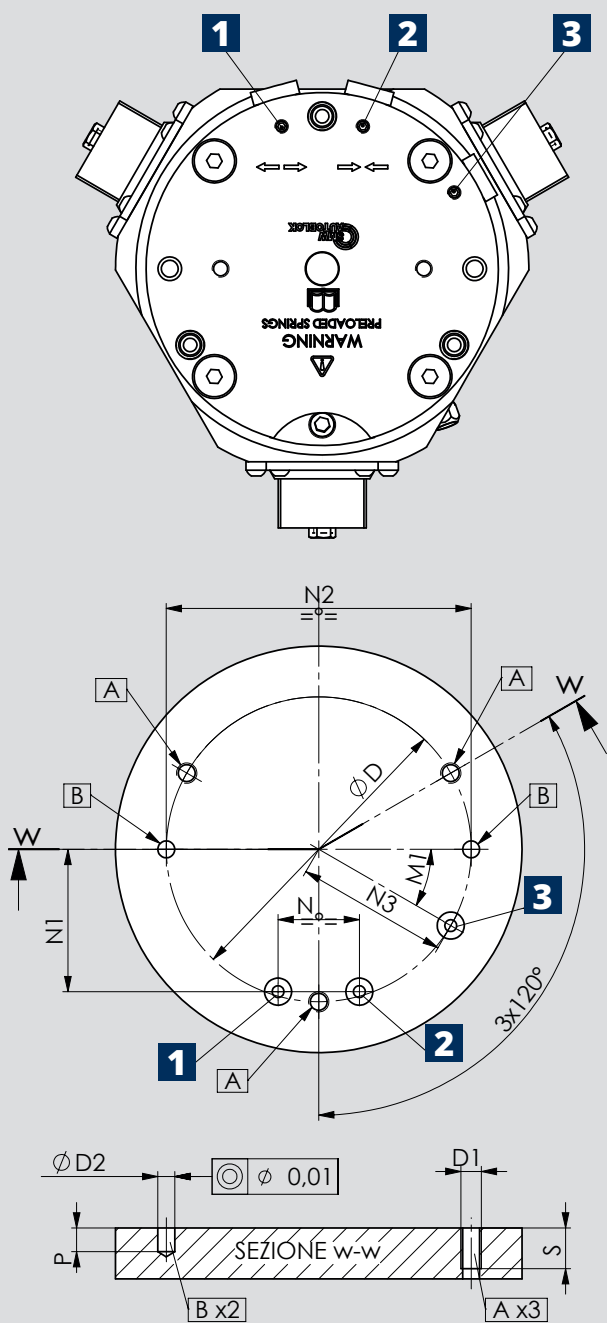
TYPE	S1 (±0,1)	S2 (±0,1)
64 3MN-L	0,9 mm	1,6 mm
80 3MN-L	0,9 mm	1,6 mm
100 3MN-L	0,8 mm	1,7 mm
125 3MN-L	0,7 mm	1,8 mm
125 3MN-N	1 mm	1,5 mm

160 MN / 200 MN / 250 MN / 320 MN / 380 MN



TYPE	BRACKET ID.N. (OPTIONAL)	S1 (±0,1)	S2 (±0,1)
160 3MN-L	90166663	1,9 mm	4,1 mm
160 3MN-N	90166663	2,5 mm	3,6 mm
200 3MN-L	90167563	2,2 mm	3,9 mm
200 3MN-N	90166663	2 mm	4 mm
250 3MN-L	90167563	2 mm	4,1 mm
250 3MN-N	90166663	1,8 mm	4,2 mm
320 3MN-L	90167563	2 mm	4,1 mm
380 3MN-L	90167563	1,7 mm	4,3 mm

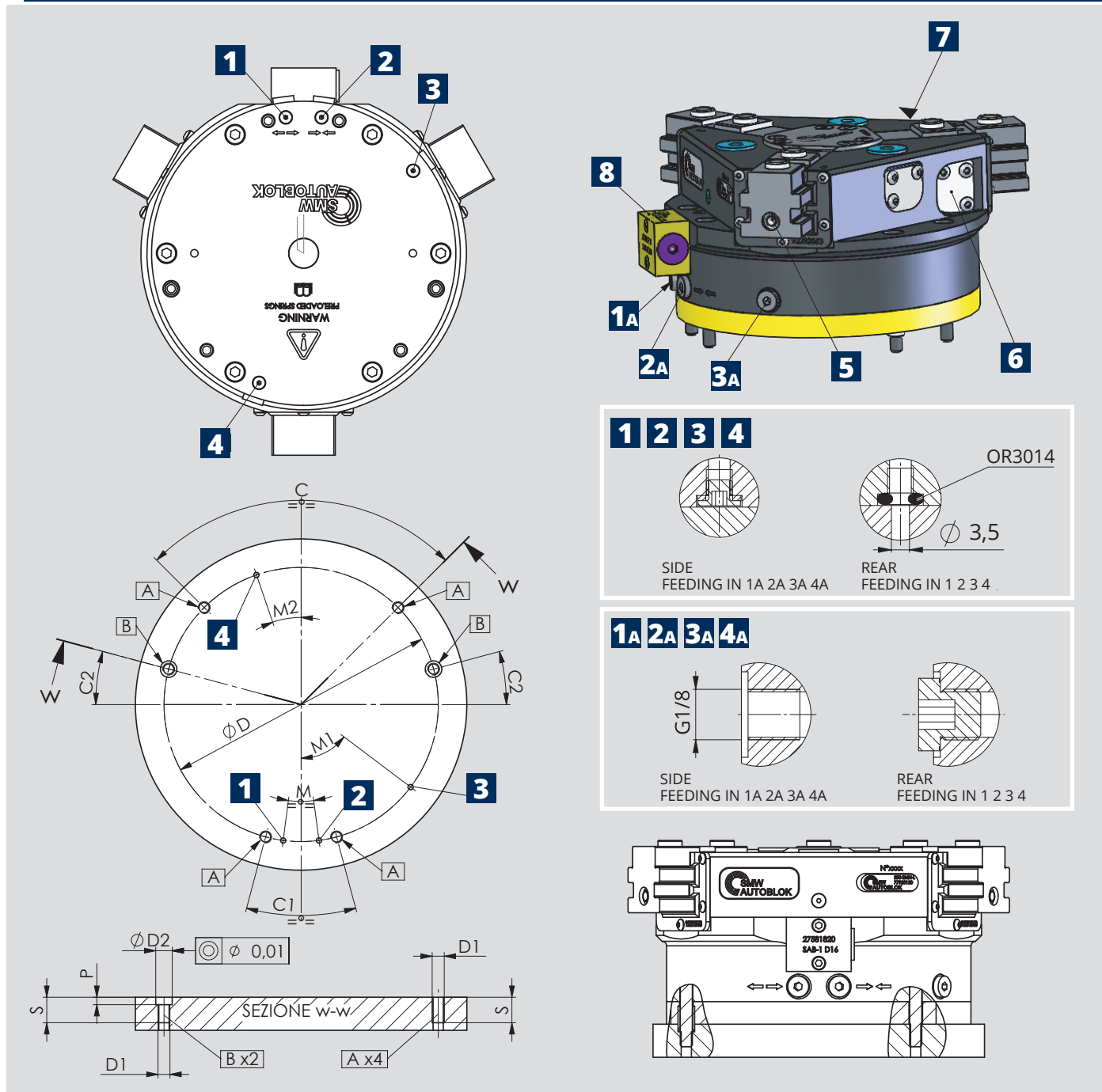
MOUNTING INSTRUCTIONS 64 / 80 / 100 sizes



- 1** Open-Rear feeding
- 2** Closed-Rear feeding
- 3** Air purge connection Rear feeding
- 5** Lubrication fitting
- 1A** Open-Side feeding
- 2A** Closed-Side feeding
- 3A** Air purge connection Side feeding
- 6** Proximity switch seats Jaws stroke (optional)

MODEL	D	D1	D2 (H7)	D3	D4	M1	N	N1	N2	N3	P	S
64 3MN	56	M5	4	M4	M5	30°	18	25	56	28	5	12
80 3MN	70	M6	5	M4	M5	30°	18	32	70	35	7	12
100 3MN	90	M6	5	M4	G1/8	30°	24	42	90	45	7	13

MOUNTING INSTRUCTIONS 125 / 160 / 200 / 250 sizes



- 1** Open-Rear feeding **2** Closed-Rear feeding **3** Air purge connection Rear feeding **4** Pneumatic open/close-stroke control Rear feeding **5** Lubrication fitting **7** Pneumatic open/close-stroke control-m.j.valve (optional)
- 1A** Open-Side feeding **2A** Closed-Side feeding **3A** Air purge connection Side feeding **4A** Pneumatic open/close-stroke control Side feeding **6** Proximity switch seats Jaws stroke (optional) **8** Safety valve

Note 1: the size 125 have not the points **3A** **4** **4A**

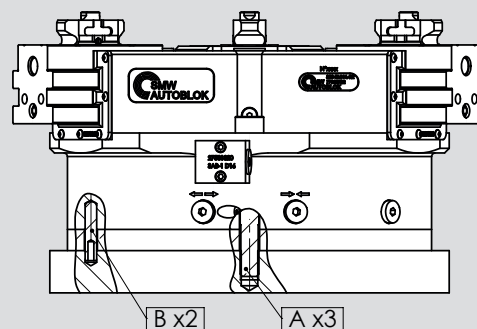
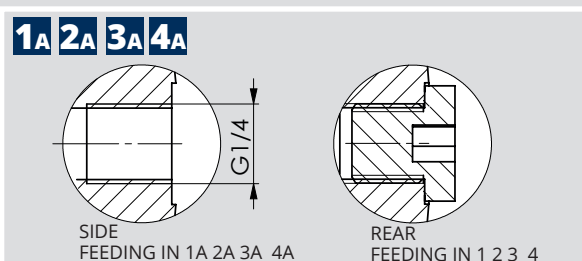
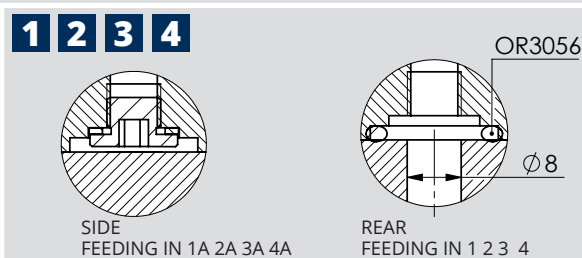
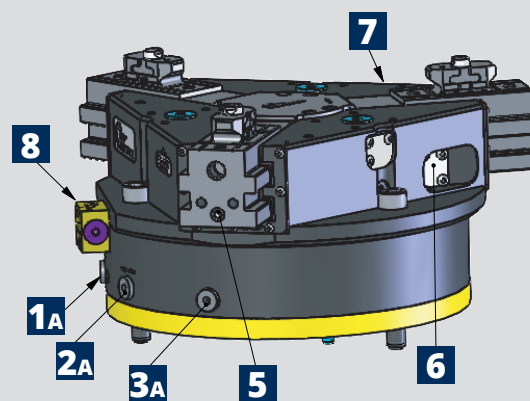
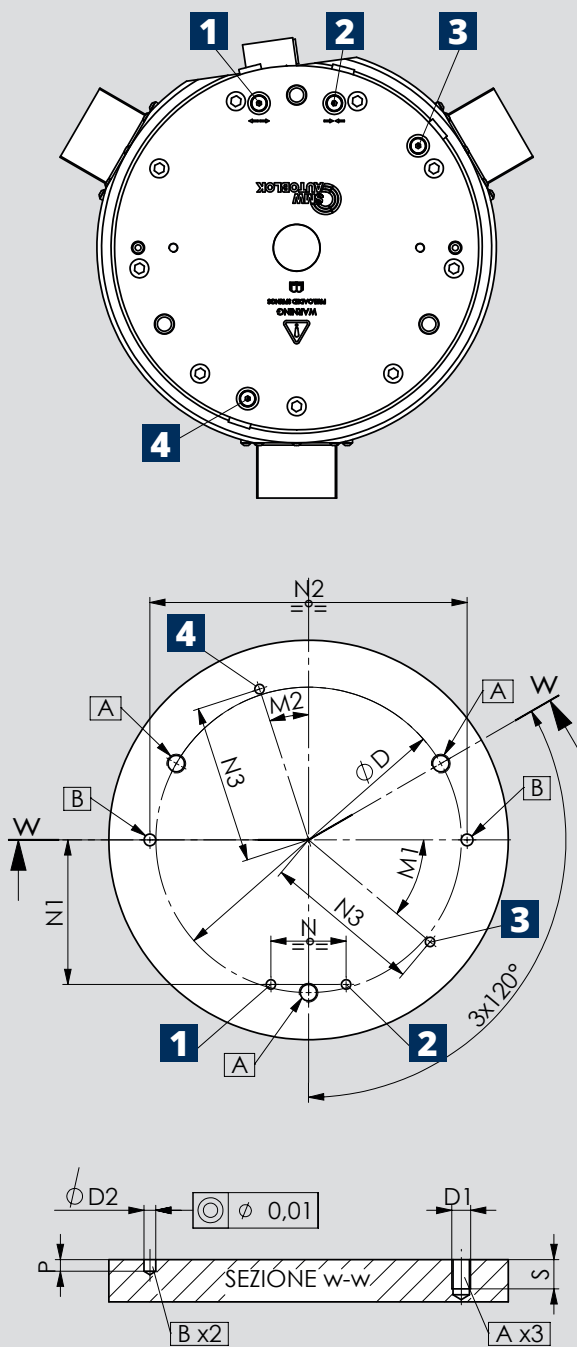
Note 2: the size 160 have not the points **4** **4A**

Note 3: the sizes 125 and 160 have not the pneumatic open/close stroke control valve.

Note 4: don't use the air purge on sizes 200 and 250 when it is used the pneumatic open/close stroke control valve.

MODEL	C	C1	C2	D	D1	D2 (H7)	M	M1	M2	P	S
125 3MN	60°	60°	0°	105	M6	10	32°	50°	/	4	14
160 3MN	70°	50°	5°	148	M8	11	26°	53°	/	5	19
200 3MN	90°	30°	15°	182	M8	11	15°	53°	19°	5	18
250 3MN	75°	45°	7.5°	212	M10	13	15°	53°	16°	7	19

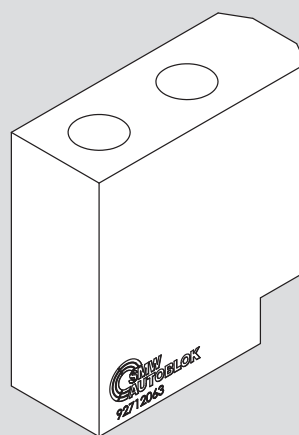
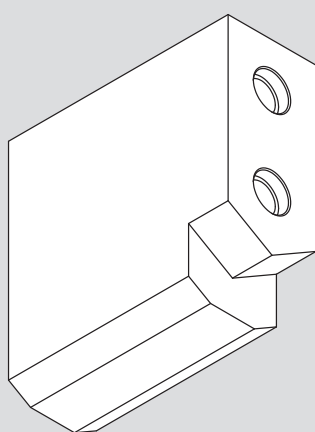
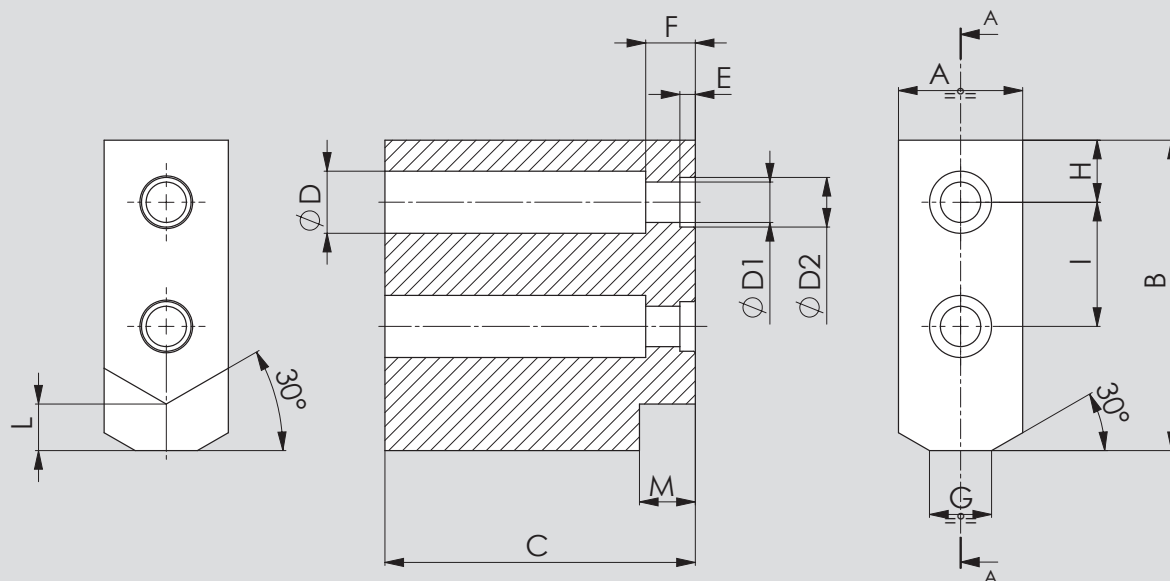
MOUNTING INSTRUCTIONS 320 / 380 sizes



- | | | | | | |
|-----------------------------|-------------------------------|---|--|--|---|
| 1 Open-Rear feeding | 2 Closed-Rear feeding | 3 Air purge connection Rear feeding | 4 Pneumatic open/close-stroke control Rear feeding | 5 Lubrication fitting | 7 Pneumatic open/close-stroke control-m.j.valve (optional) |
| 1A Open-Side feeding | 2A Closed-Side feeding | 3A Air purge connection Side feeding | 4A Pneumatic open/close-stroke control Side feeding | 6 Proximity switch seats Jaws stroke (optional) | 8 Safety valve |

MODEL	D	D1	D2 (H7)	M1	M2	N	N1	N2	N3	P	S
320 3MN	260	M16	10	40°	18°	64	123	270	135	10	25
380 3MN	340	M20	12	37°	16°	84,8	158,2	340	170	10	29

SOFT TOP JAWS for grippers

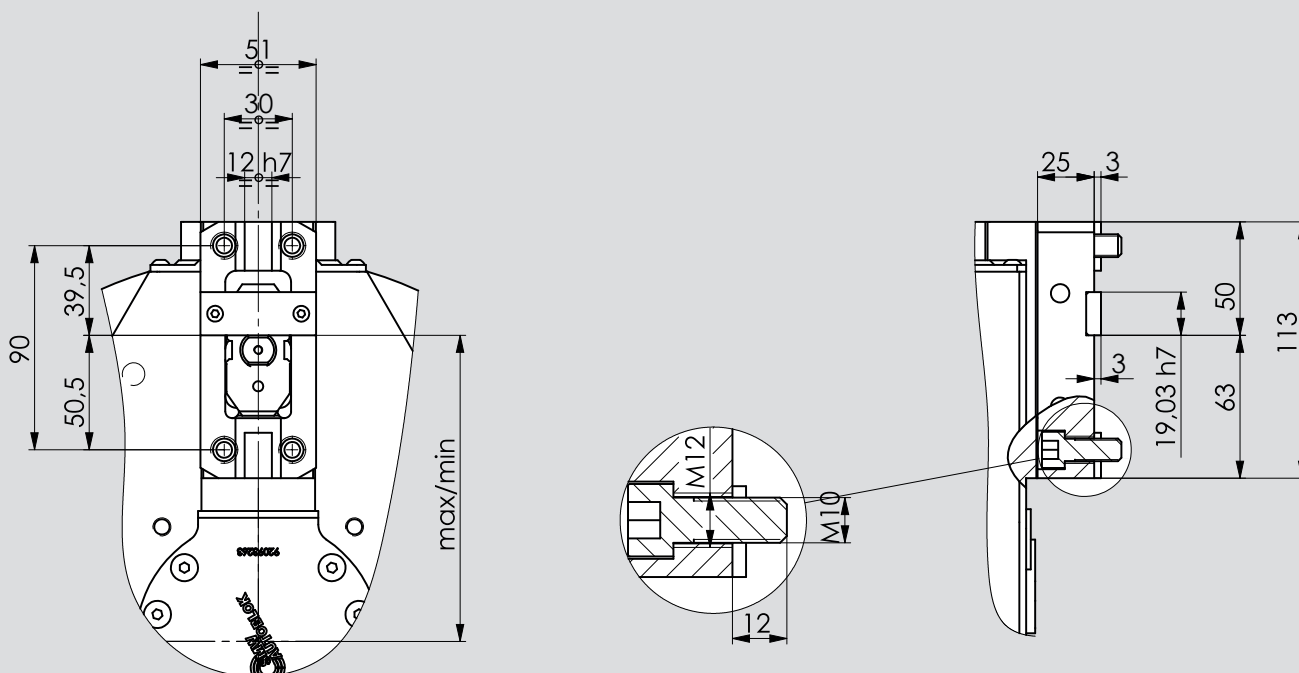


MODEL	ID.N. (*)	MATERIAL	A	B	B	ØD	ØD1	ØD2	E	F	G	H	I	L	M	CLAMPING RANGE	WEIGHT kg
64 3MN	92710663	C45	20	50	35	8	4,5	6	3,5	6	1	21	13	8	11	5-80	0,23
64 3MN	92720663	ALUMINIUM	20	50	35	8	4,5	6	3,5	6	1	21	13	8	11	5-75	0,08
80 3MN	92710863	C45	25	55	45	9	5,5	8	3,5	7	6	20	16	8	11	8-90	0,4
80 3MN	92720863	ALUMINIUM	25	55	45	9	5,5	8	3,5	7	6	20	16	8	11	8-85	0,15
100 3MN	92711063	C45	25	60	55	11	6,5	10	4	8	10	17	20	8	11	12-105	0,55
100 3MN	92721063	ALUMINIUM	25	60	55	11	6,5	10	4	8	10	17	20	8	11	12-100	0,2
125 3MN	92711263	C45	30	70	65	11	6,5	10	4	8	15	17	24	12	15	15-130	0,9
125 3MN	92721263	ALUMINIUM	30	70	65	11	6,5	10	4	8	15	17	24	12	15	15-120	0,35
160 3MN	92711663	C45	30	80	80	17	11	14	5	11	15	13	32	10	14	25-150	1,25
160 3MN	92721663	ALUMINIUM	30	80	80	17	11	14	5	11	15	13	32	10	14	25-140	0,45
200 3MN	92712063	C45	40	100	100	20	13	16	5	13	20	20	40	15	18	25-180	2,5
200 3MN	92722063	ALUMINIUM	40	100	100	20	13	16	5	13	20	20	40	15	18	25-170	0,9
250 3MN	92712563	C45	40	120	120	20	13	16	5	13	20	26	44	15	18	25-210	3,8
250 3MN	92722563	ALUMINIUM	40	120	120	20	13	16	5	13	20	26	44	15	18	25-200	1,3

(*) the ID.N. refers to n.1 single top jaw

QUICK PALLET CHANGE for 320/380 sizes grippers

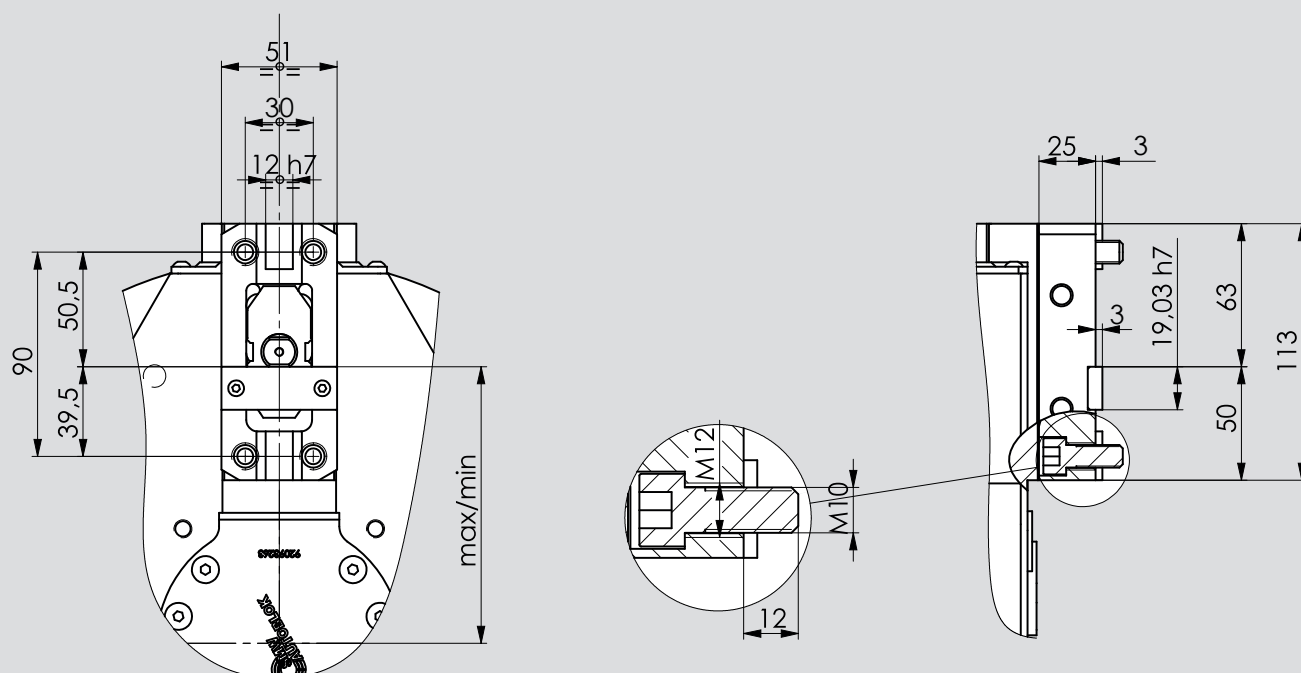
O.D. Clamping



MODEL	PALLET ID.N.(*)	Max / min OD clamping
320 3MNL-RR	18762654	163 / 123
380 3MNL-RR	18762654	197 / 147

(*) the Id.n. refers to 1 single pallet

I.D. Clamping



MODEL	PALLET ID.N.(*)	Max / min ID clamping
320 3MNL-RR	18762654	150 / 110
380 3MNL-RR	18762654	184 / 134

(*) the Id.n. refers to 1 single pallet

55 PRS PNEUMATIC HEAD CHANGING

- Pneumatic operation
- Spring clamping + TURBO

Function

Automatic head/gripper changing system for robots

Technical features

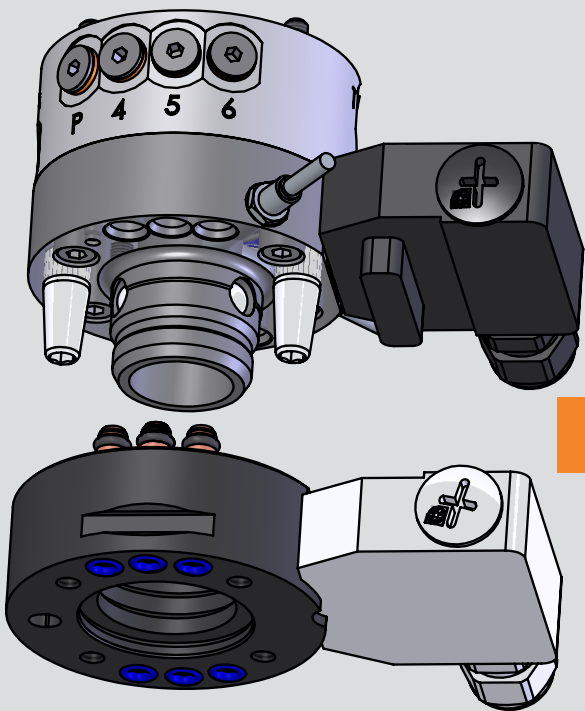
- Body and internal mechanism case-hardened for higher rigidity and longer life
- Inductive and analogic proximity-based stroke control system (as standard)
- Pneumatic opening

- Spring clamp + TURBO
- Electric signal interface module (optional)
- n.x pneumatic connectors for media trasmission between the changing unit and the gripper mounting on it.
- hydraulic connectors are not expected

PREVIEW

Model	Id.n. (without pallet)	Max liftable weight	Repeatability	pneumatic connections n.	Pull down force		Pressure		Weight
					spring	spring+TURBO	open	TURBO	
55 PRS	46xxxxxx	xx Kg	x,xxx mm	x	x KN	x KN	x bar	x bar	x Kg

Model	Pallet	Weight
HEAD CHANGING PALLET 55PRS	46xxxxxx	xx Kg



PREVIEW

**STILL IN THE
PROJECT PHASE**

85 PRS PNEUMATIC
HEAD CHANGING

- Pneumatic operation
- Spring clamping + TURBO

PREVIEW

Function

Automatic head/gripper changing system for robots

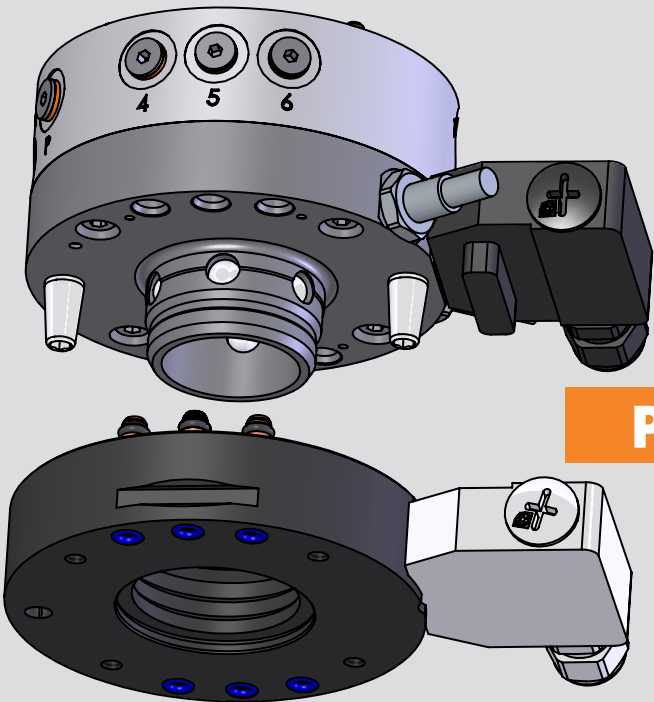
Technical features

- Body and internal mechanism case-hardened for higher rigidity and longer life
- Inductive and analogic proximity-based stroke control system (as standard)
- Pneumatic opening

- Spring clamp + TURBO
- Electric signal interface module (optional)
- n.x pneumatic connectors for media trasmission between the changing unit and the gripper mounting on it.
- hydraulic connectors are not expected

Model	Id.n. (without pallet)	Max liftable weight	Repeatability	pneumatic connections n.	Pull down force		Pressure		Weight
					spring	spring+TURBO	open	TURBO	
85 PRS	46xxxxxx	xx Kg	x,xxx mm	x	x KN	x KN	x bar	x bar	x Kg

Model	Pallet	Weight
HEAD CHANGING PALLET 85 PRS	46xxxxxx	xx



PREVIEW

**STILL IN THE
PROJECT PHASE**

110 PRS PNEUMATIC HEAD CHANGING

- Pneumatic operation
- Spring clamping + TURBO

Function

Automatic head/gripper changing system for robots

Technical features

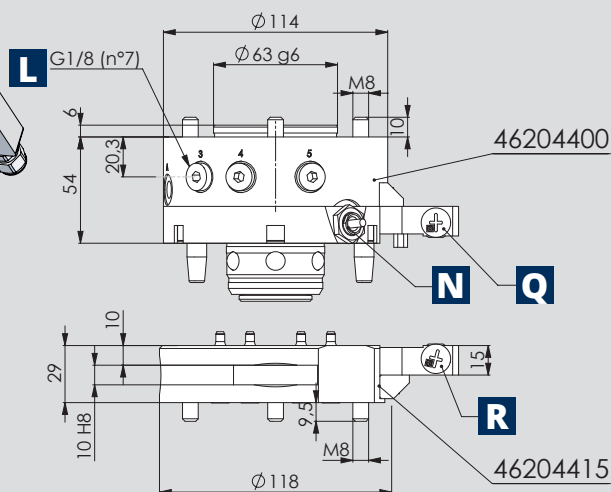
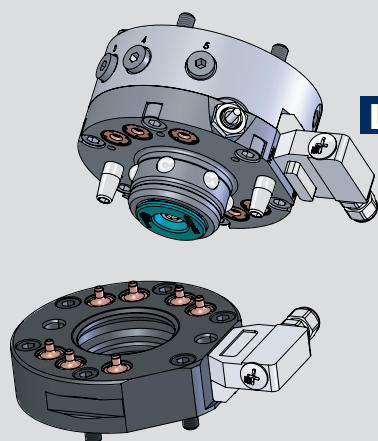
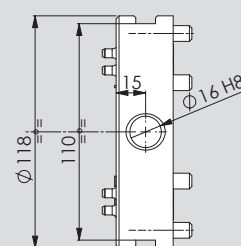
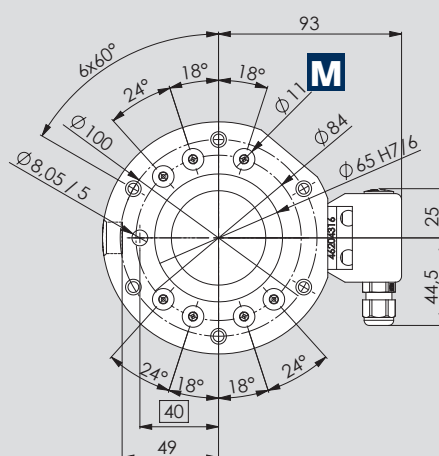
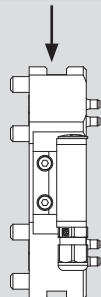
- Body and internal mechanism case-hardened for higher rigidity and longer life
- Inductive and analogic proximity-based stroke control system (as standard)
- Pneumatic opening

- Spring clamp + TURBO
- Electric signal interface module (optional)
- n.7 pneumatic connectors for media trasmission between the changing unit and the gripper mounting on it.
- hydraulic connectors are not expected

Model	Id.n. (without pallet)	Max liftable weight	Repeatability	pneumatic connections n.	Pull down force		Pressure		Weight
					spring	spring+TURBO	open	TURBO	
110PRS	46204400	75 Kg	0,015 mm	7	2 KN	11 KN	6 bar	6 bar	3 Kg

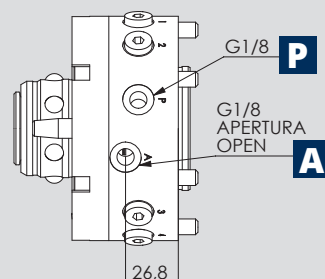
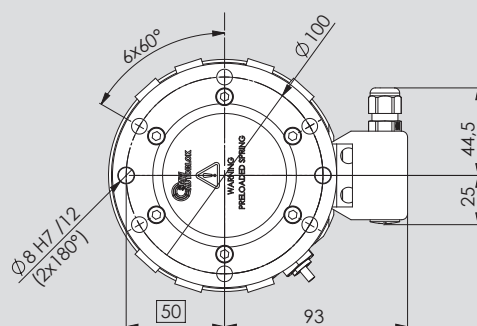
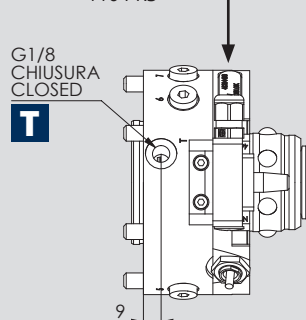
Model	Pallet	Weight
HEAD CHANGING PALLET 110PRS	46204415	1,9 Kg

HEAD CHANGING
PALLET 110 PRS



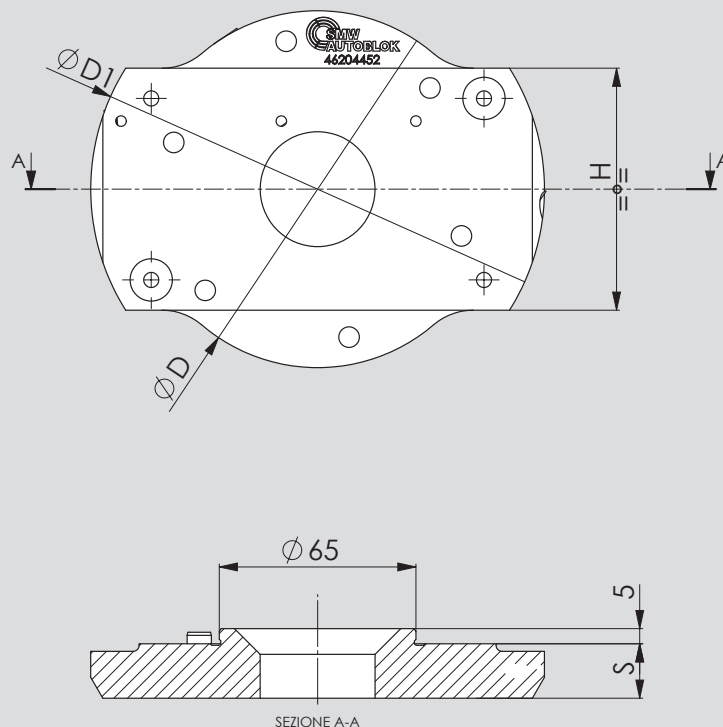
A	CHANGE UNIT PORT OPENING
T	CHANGE UNIT PORT TURBO
L	N.7 INLET PNEUMATIC CONNECTIONS (NUMBERED FROM 1 TO 7)
M	7 PNEUMATIC CONNECTIONS OUTLET
N	CHANGE UNIT STROKE CONTROL INDUCTIVE AND ANALOGIC PROXIMITY
Q	ROBOT SIDE ELECTRIC SIGNAL INTERFACE (OPTIONAL) ID.N.71820303
R	PALLET SIDE ELECTRIC SIGNAL INTERFACE (OPTIONAL) ID.N.71820304
P	AIR SENSING

HEAD CHANGING
WITHOUT PALLET
110 PRS

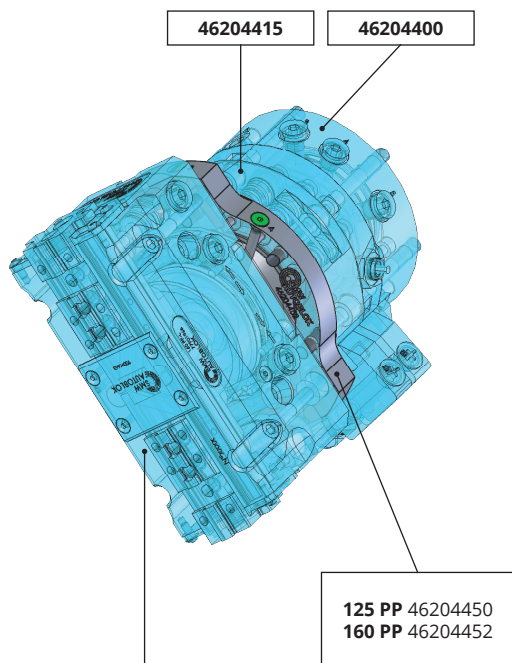


FLANGE GROUP

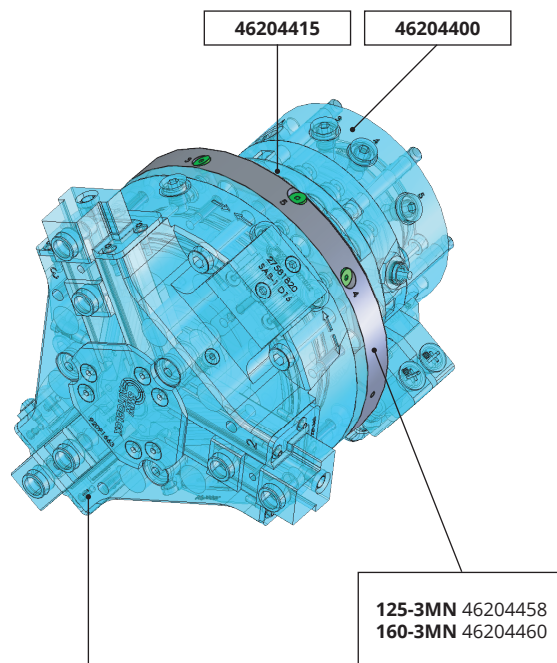
for head changing T10 PRS



FLANGE KIT ID.N.	D	D1	S	H	WEIGHT	MONTABLE VISE CODE
46204450 FLANGE KIT 110PRS/125PP	118	130	18	80	0.5 Kg	125PP 77901862-77901962
46204452 FLANGE KIT 110PRS/160PP	118	150	18	80	0.6 Kg	160PP 77901866-77901966
46204458 FLANGE KIT 110PRS/125-3MN	118	118	19	-	0.5 Kg	125-3MN 77920112-77920412-77920162-77920462
46204460 FLANGE KIT 110PRS/160-3MN	166	166	20	-	1 Kg	160-3MN 77920116-77920216-77920416-77920516 77920166-77920266-77920466-77920566



125 PP 77901862-77901962
160 PP 77901866-77901966



125-3MN 77920112-77920412-77920162-77920462
160-3MN 77920116-77920216-77920416-77920516
77920166-77920266-77920466-77920566

160 PRS HEAD CHANGING

- Pneumatic operation
- Spring clamping + TURBO

Function

Automatic head/gripper changing system for robots

Technical features

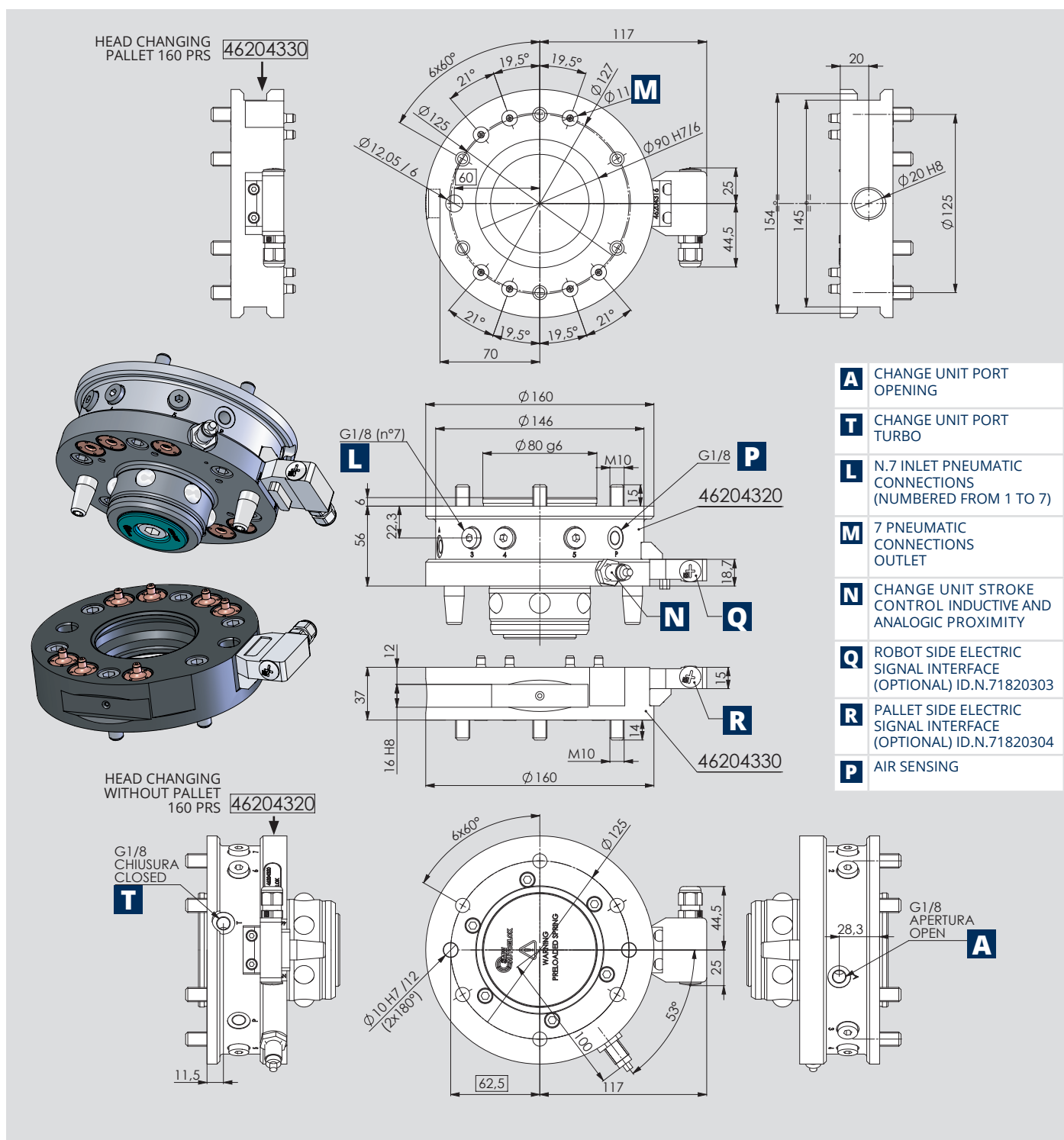
- Body and internal mechanism case-hardened for higher rigidity and longer life
- Analogic inductive stroke control system via proximity (as standard)
- Pneumatic opening

- Spring clamp + TURBO
- Electric signal interface module (optional)
- n.7 pneumatic connectors for media transmission between the changing unit and the gripper mounting on it*

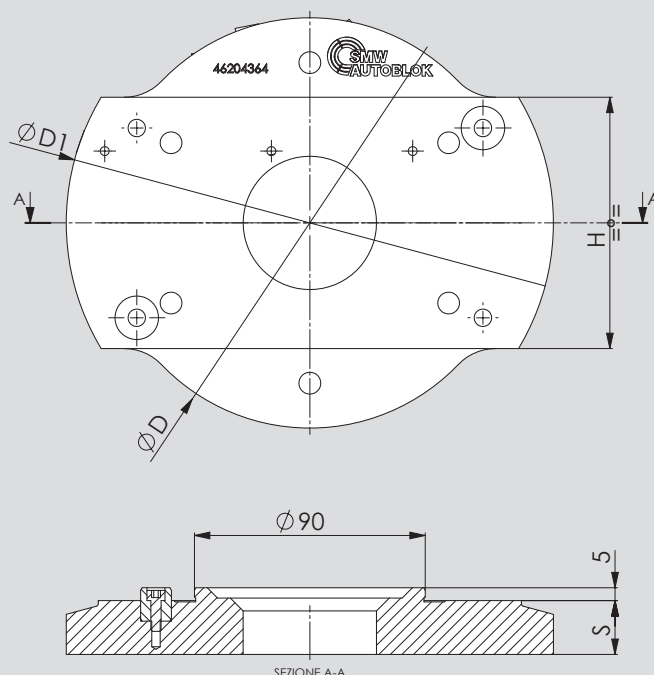
* couplers prepared for pneumatic use; for eventual hydraulic use, request a separate quotation.

Model	without pallet Id.n.	Max liftable weight	Repeatability	pneumatic connections n.	Pull-down force		Pressure		Weight
					spring	spring+TURBO	open	TURBO	
160PRS	46204320	150 Kg	0,015 mm	7	2,5 kN	14,5 kN	6 bar	6 bar	6 Kg

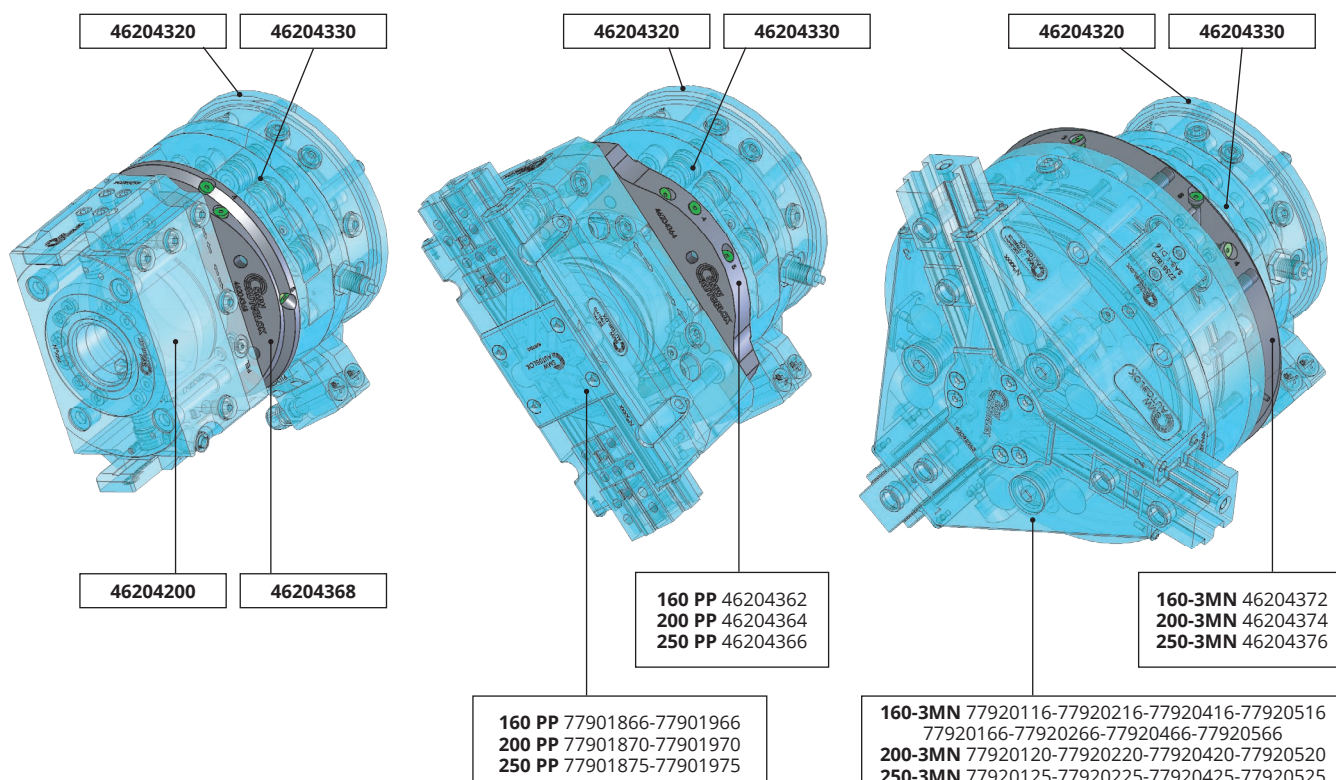
Model	Pallet	Weight
PALLET SISTEMA DI RICAMBIO 160PRS	46204330	4,3 Kg



FLANGE KIT for pneumatic head changing 160 PRS



FLANGE ID.N.	D	D1	S	H	WEIGHT	MOUNTABLE VISE ID.N.
46204362 FLANGE KIT 160 PRS-2V/160PP	160	160	21	-	1 Kg	160PP 77901866-77901966
46204364 FLANGE KIT 160 PRS-2V/200PP	160	190	21	98	1,2 Kg	200PP 77901870-77901970
46204366 FLANGE KIT 160 PRS-2V/250PP	160	212	21	120	1,3 Kg	250PP 77901875-77901975
46204368 FLANGE KIT 160 PRS-2V/160PPA	160	160	21	-	0,9 Kg	160 PP-A 46204200
46204372 FLANGE KIT 160 PRS-2V/160-3MN	166	166	20	-	0,9 Kg	160-3MN 77920116-77920216-77920416-77920516 77920166-77920266-77920466-77920566
46204374 FLANGE KIT 160 PRS-2V/200-3MN	202	202	21	-	1,5 Kg	200-3MN 77920120-77920220-77920420-77920520
46204376 FLANGE KIT 160 PRS-2V/250-3MN	232	232	21	-	2,1 Kg	250-3MN 77920125-77920225-77920425-77920525



240 PRS HEAD CHANGING

- Pneumatic operation
- Spring clamping + TURBO

Function

Automatic head/gripper changing system for robots

Technical features

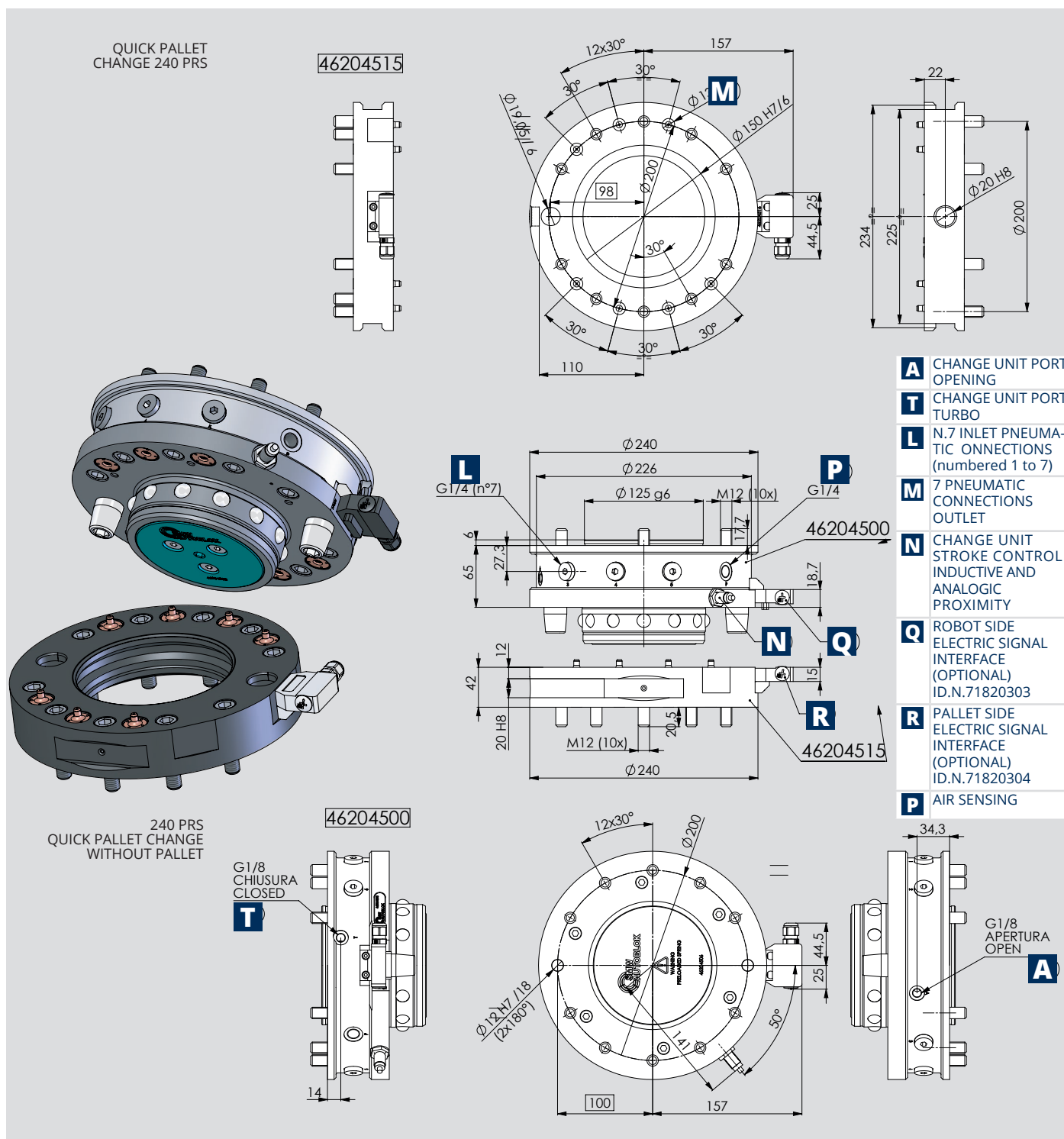
- Body and internal mechanism case-hardened for higher rigidity and longer life
- Analogic inductive stroke control system via proximity (as standard)
- Pneumatic opening

- Spring clamp + TURBO
- Electric signal interface module (optional)
- n.7 pneumatic connectors for media transmission between the changing unit and the gripper mounting on it*

* couplers prepared for pneumatic use; for eventual hydraulic use, request a separate quotation.

Model	without pallet Id.n.	Max liftable weight	Repeatability	pneumatic connections n.	Pull-down force		Pressure		Weight
					spring	spring+TURBO	open	TURBO	
240PRS	46204500	500Kg	0,015 mm	7	12,5 KN	76 KN	6 bar	6 bar	16 Kg

Model	Pallet	Weight
QUICK PALLET CHANGE 240PRS	46204515	9,5 Kg



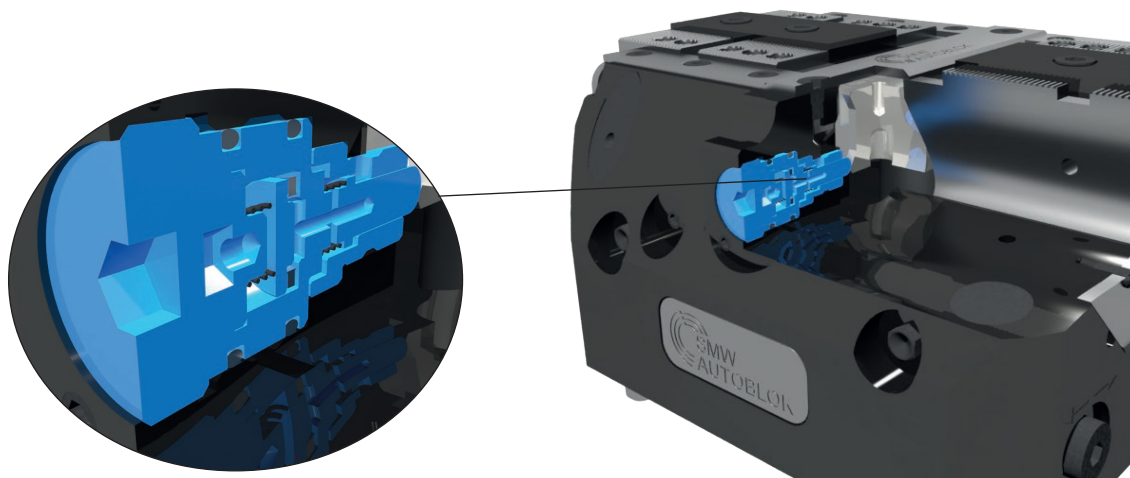
FLANGE GROUP

for head changing 240 PRS

**STILL IN THE
PROJECT PHASE**

Pneumatic valve (optional)

open/close (stroke control) master jaw



The **pneumatic open/close stroke control valve signals the locking jaws end-of-stroke positions**, both in fully open and fully closed positions.

The valve needs a pneumatic line with **filtered and lubricated air and a pressure of 0,5-1 bar**.

- when the locking jaws are in one of the end stroke position (fully open or closed), the valve is open causing a pressure drop in the pneumatic line or the beginning of an air flow.
- when the locking jaws are in the working stroke, the valve is closed and there is no pressure drop in the pneumatic line and there no air flow.

SMW-AUTOBLOK ID.N.	WISE MODEL
90901163	125 PP
90901763	160-200 PP
97901801	250 PP
90901763	320-380 PL-RR

7

STORAGE AND LOADING STATION



AUTOMATION ACCESSORIES

For robot loading



 | REL. 19.12.2022

STORAGE WAREHOUSE FOR SINGLE PALLET

prepared for n.3 D350 max pallet for every plan

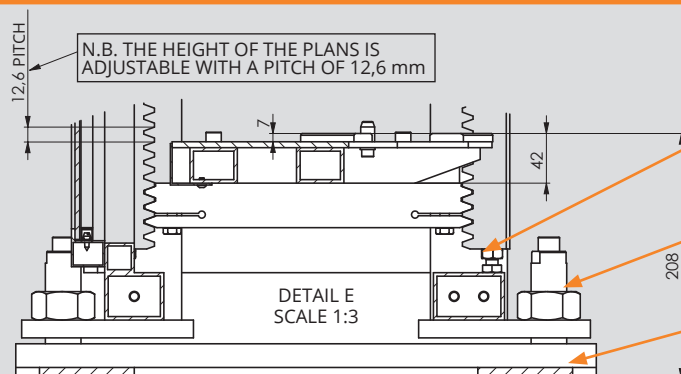
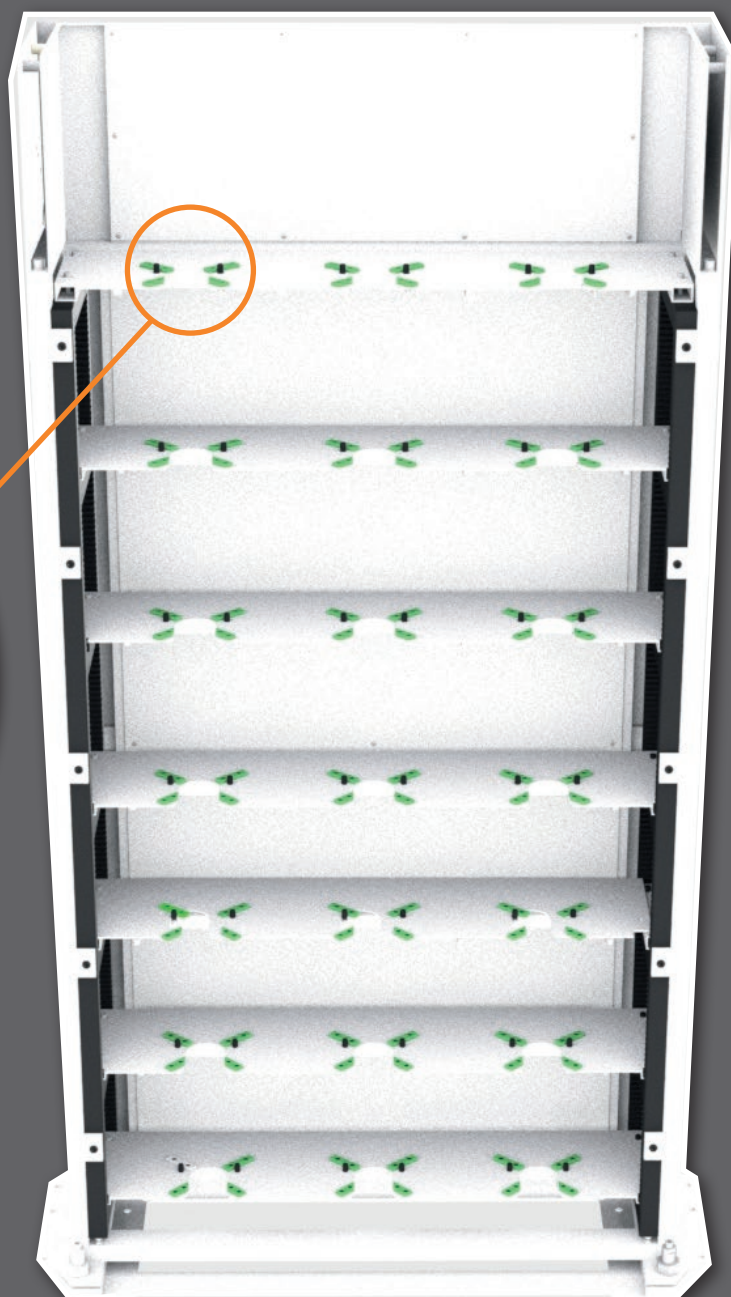
ORDER GUIDE

THE COMPLETE STORAGE WAREHOUSE IS COMPOSED BY:

- N.1 STORAGE CASING 46210049
- + N.X PLANS KIT (AS NECESSARY)

THE STORAGE WAREHOUSE EXAMPLE DRAWING IS COMPOSED BY:

- N.1 STORAGE CASING 46210049
- + N.7 PLANS 46210030



N.4 PLANS LEVEL FINE ADJUSTMENT

N.4 STORAGE WAREHOUSE LEVEL FINE ADJUSTMENT

N.1 FIXING PLATE ON THE FLOOR



 | **REL. 19.12.2022**

STORAGE WAREHOUSE FOR PALLET Q400 prepared for n.2 pallet 500x500 for every plan

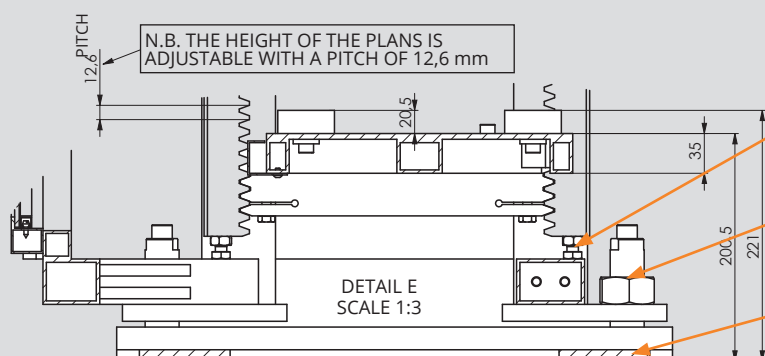
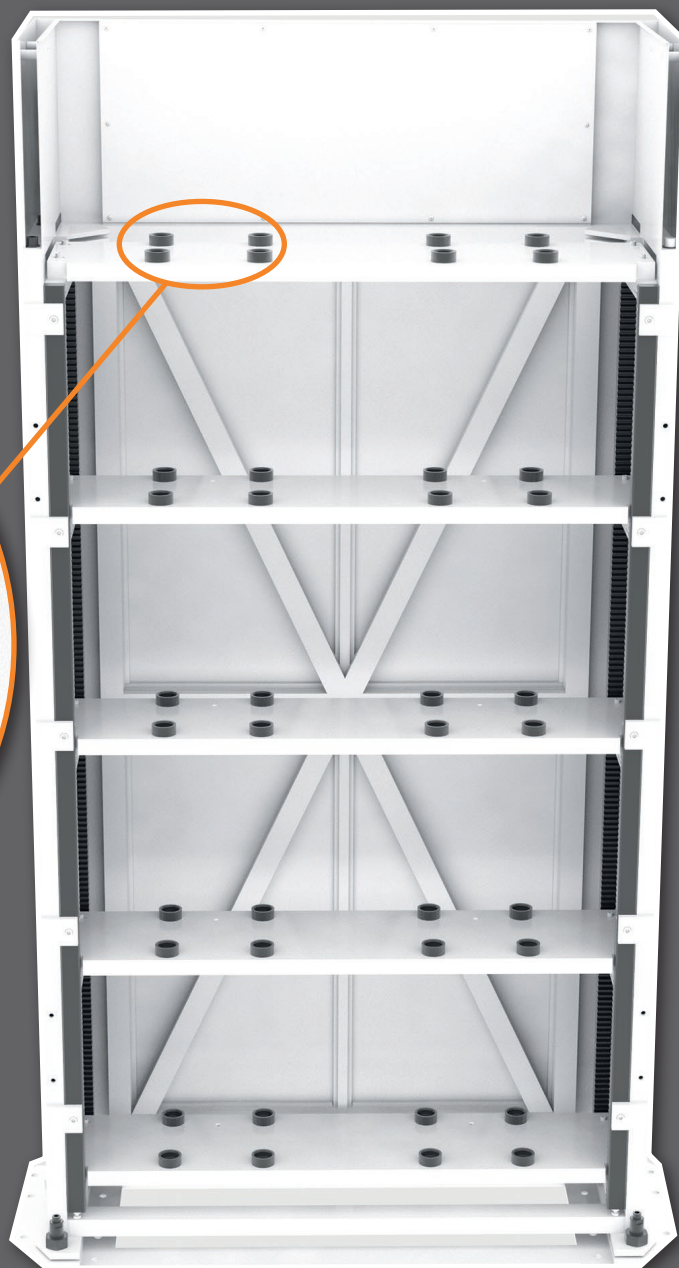
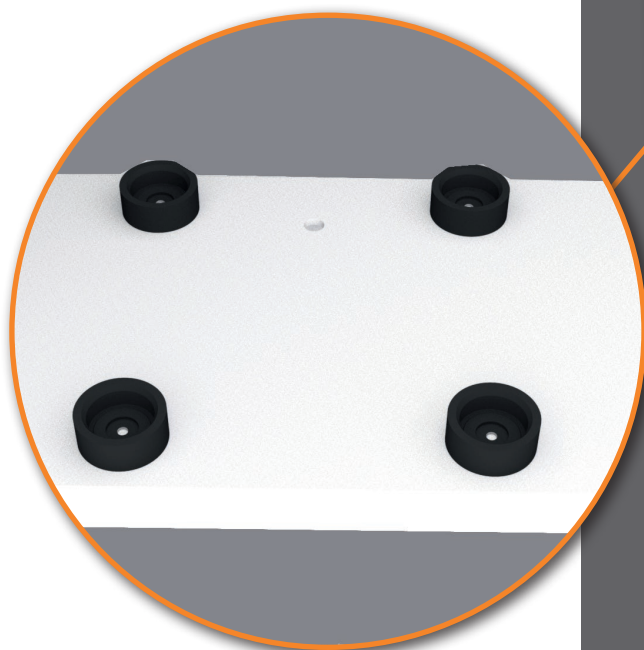
ORDER GUIDE

THE COMPLETE STORAGE WAREHOUSE IS COMPOSED BY:

- N.1 STORAGE CASING 46210069
- + N.X PLANS KIT (AS NECESSARY)

THE STORAGE WAREHOUSE EXAMPLE DRAWING IS COMPOSED BY:

- N.1 STORAGE CASING 46210069
- + N.5 plans 46210060
- (id n. for each plan)



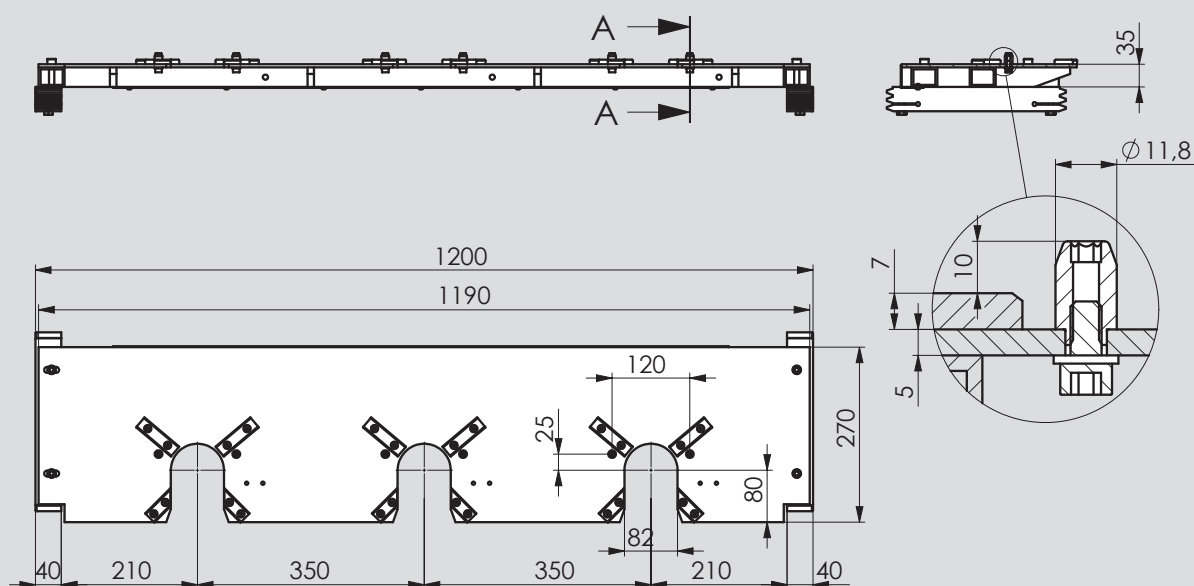
N.4 PLANS LEVEL FINE ADJUSTMENT

N.4 STORAGE WAREHOUSE LEVEL FINE ADJUSTMENT

N.1 FIXING PLATE ON THE FLOOR

SINGLE PALLET STORAGE PLANS

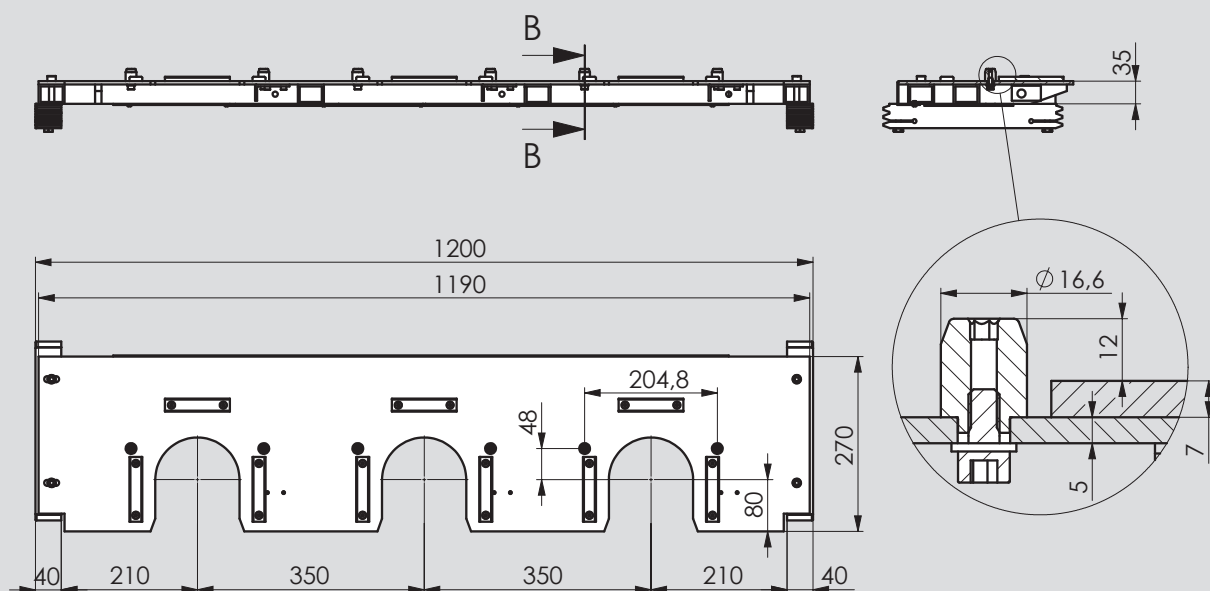
Pallet plane from page 46 to page 53



Plan to be used with storage warehouse 46210049

ID.N.	Maximum permitted weight for one pallet	WEIGHT
46210030 PLAN KIT 3 PALLET APS140/APS190 INT.350	80 Kg	28 Kg

Chucks switching plan on the lathe

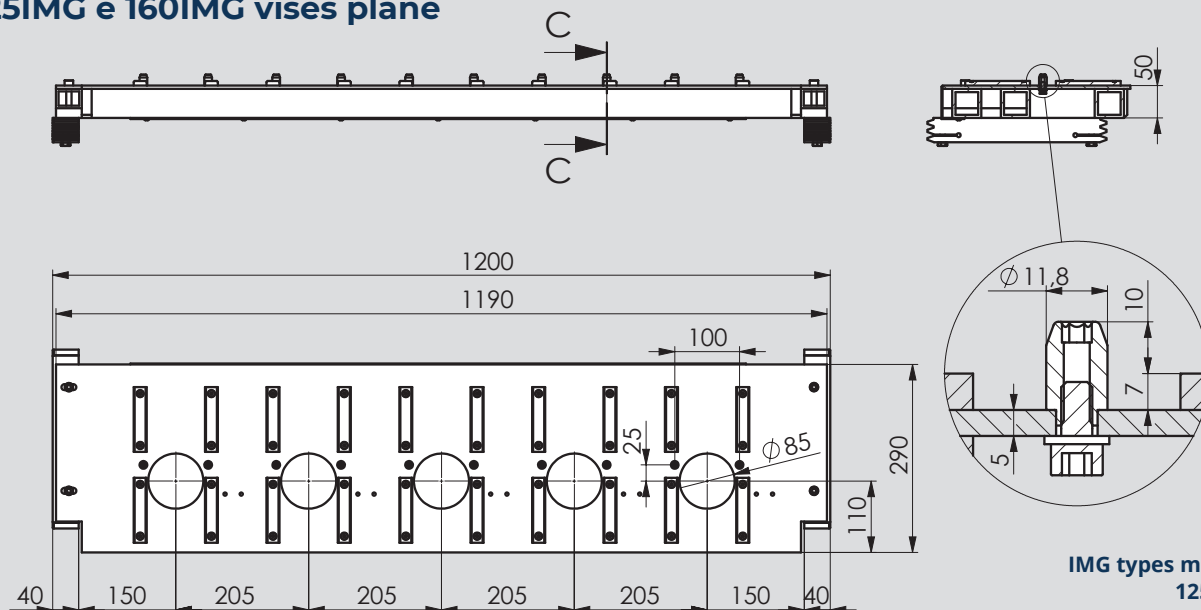


Plan to be used with storage warehouse 46210049

ID.N.	Maximum permitted weight for every pallet	WEIGHT
46210120 PLANE KIT 3 PALLET APS250 INT.350	100 Kg	30 Kg

PALLET Q400 AND VISES STORAGE PLANS

125IMG e 160IMG vises plane

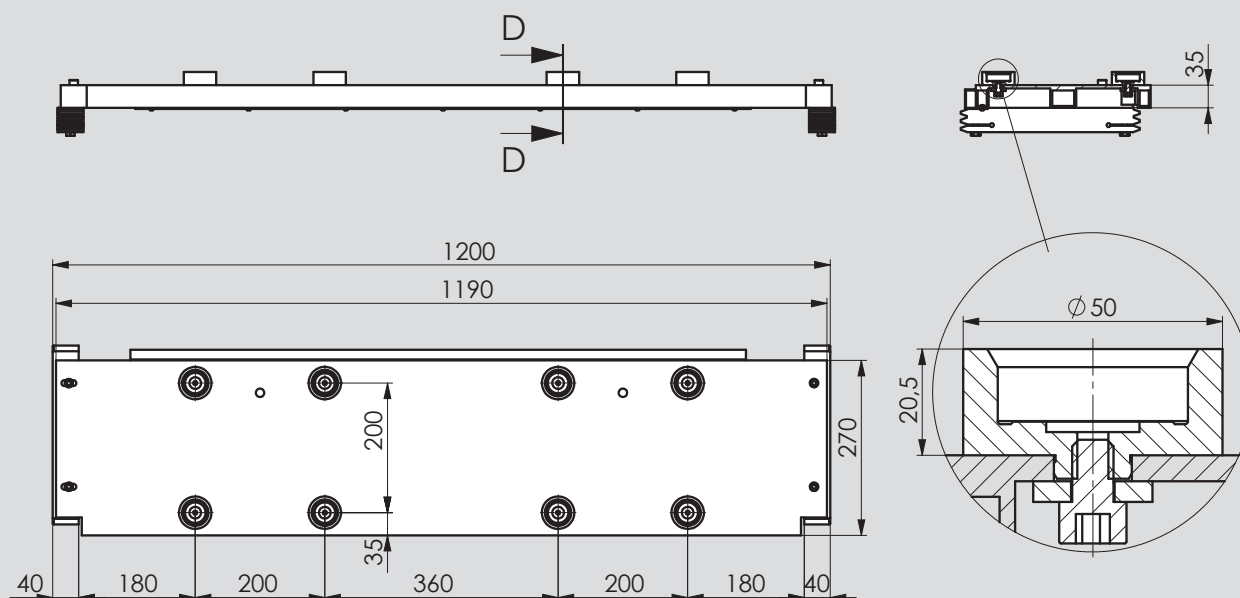


Plan to be used with storage warehouse 46210049

IMG types mountable:
125 IMG-220
125 IMG-320
160 IMG-270

ID.N.	Maximum permitted weight for every position	WEIGHT
46210110 PLAN KIT 5 125IMG/160IMG VISES INT.205	100 Kg	48 Kg

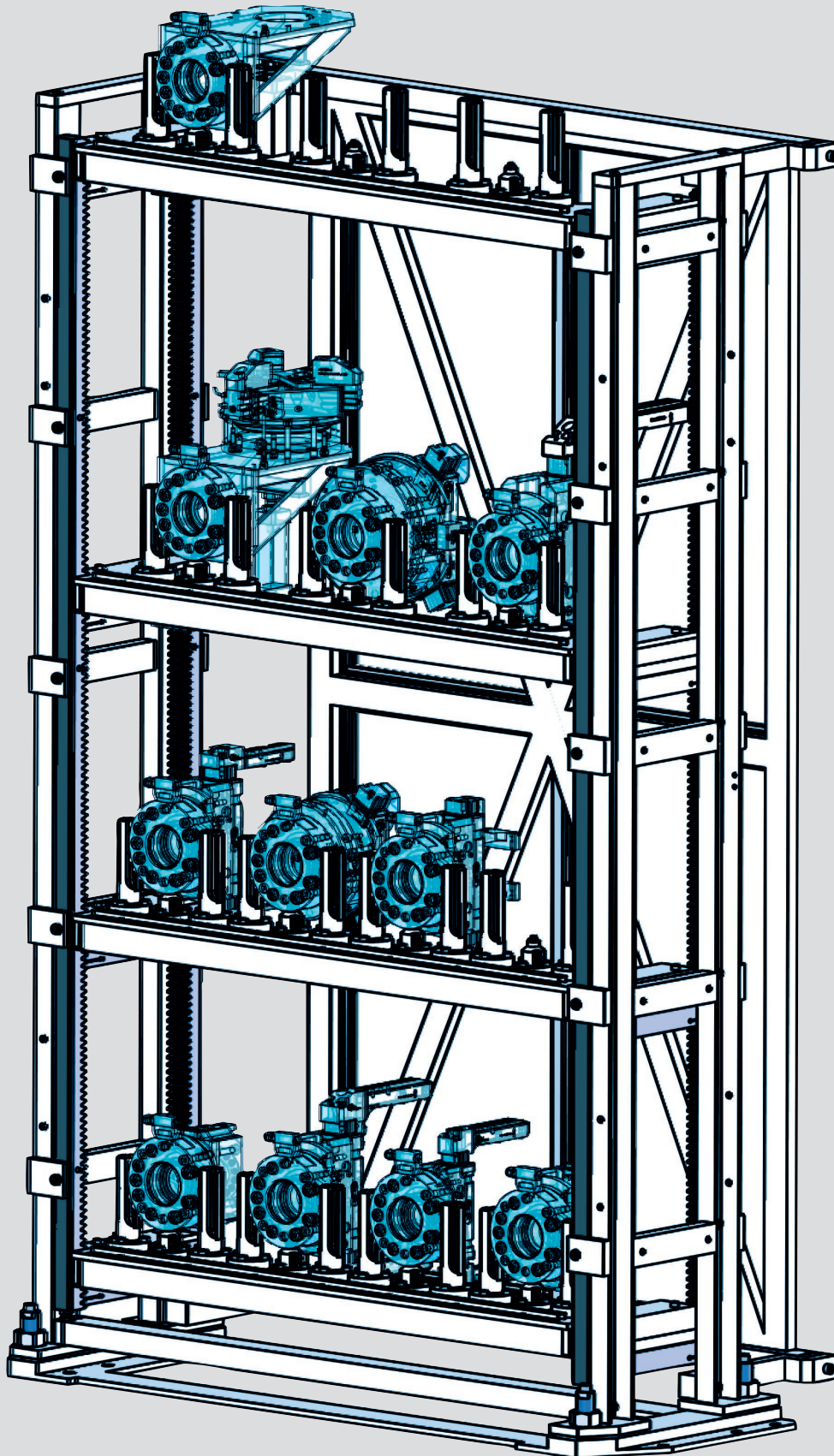
Pallet plane pages 59-61-62-63-64-65



Plan to be used with storage warehouse 46210069

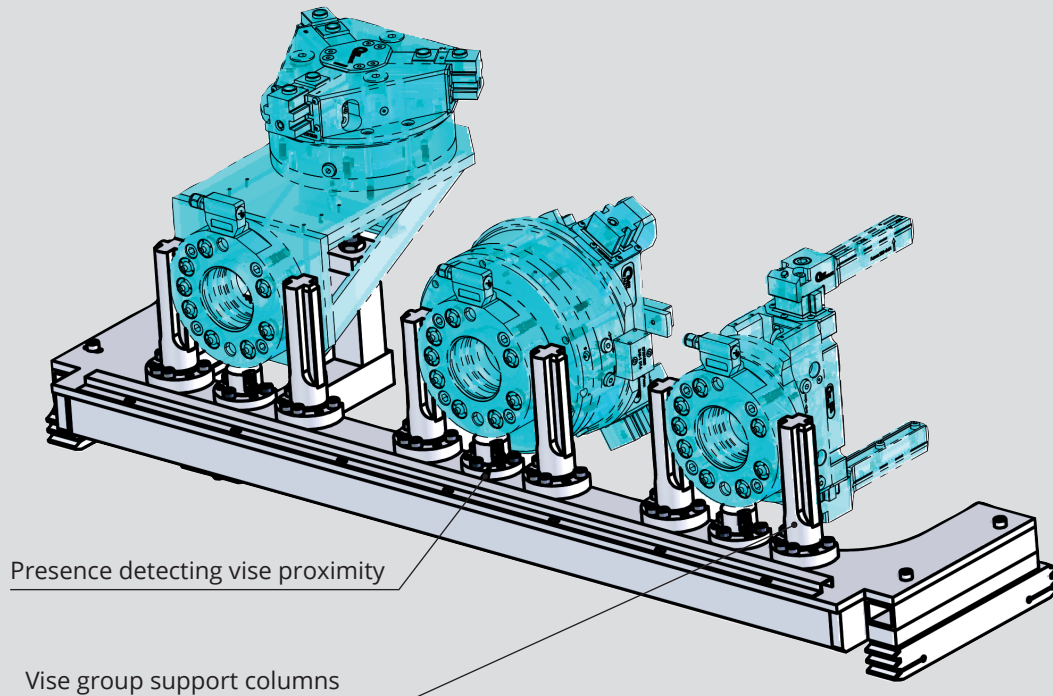
ID.N.	Pallet maximum dimension	Maximum permitted weight for every position	WEIGHT
46210060 PLANE KIT 2 PALLET Q400 INT.560	500x500	200 Kg	31,5 Kg

VISES STORAGE WAREHOUSE FRONT VIEW

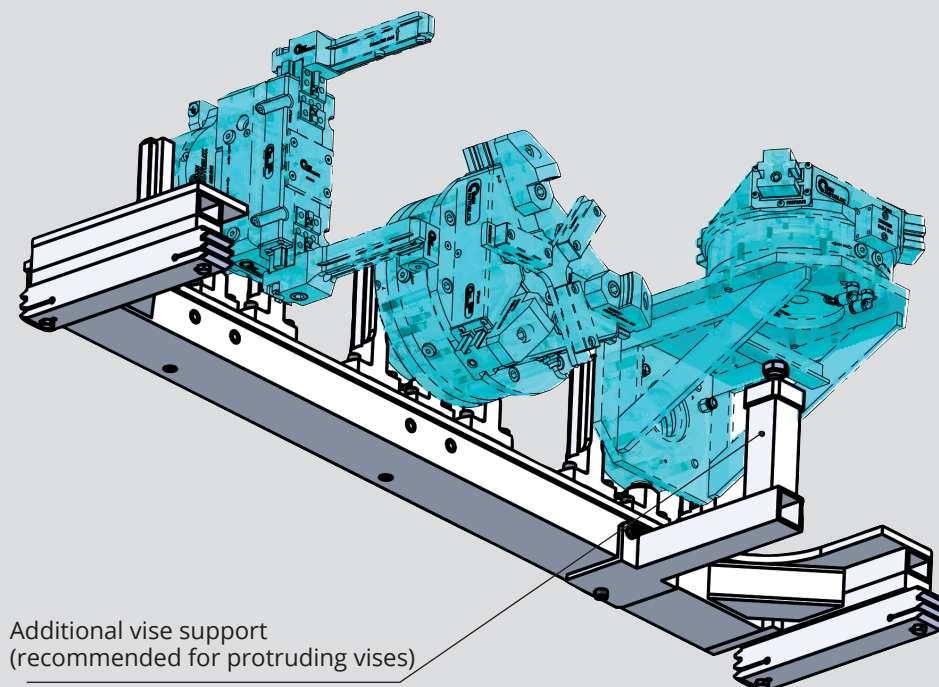


VICES STORAGE WAREHOUSE EXAMPLES

VICES STORAGE WAREHOUSE FRONT VIEW PNEUMATIC HEAD CHANGING 160 PRS

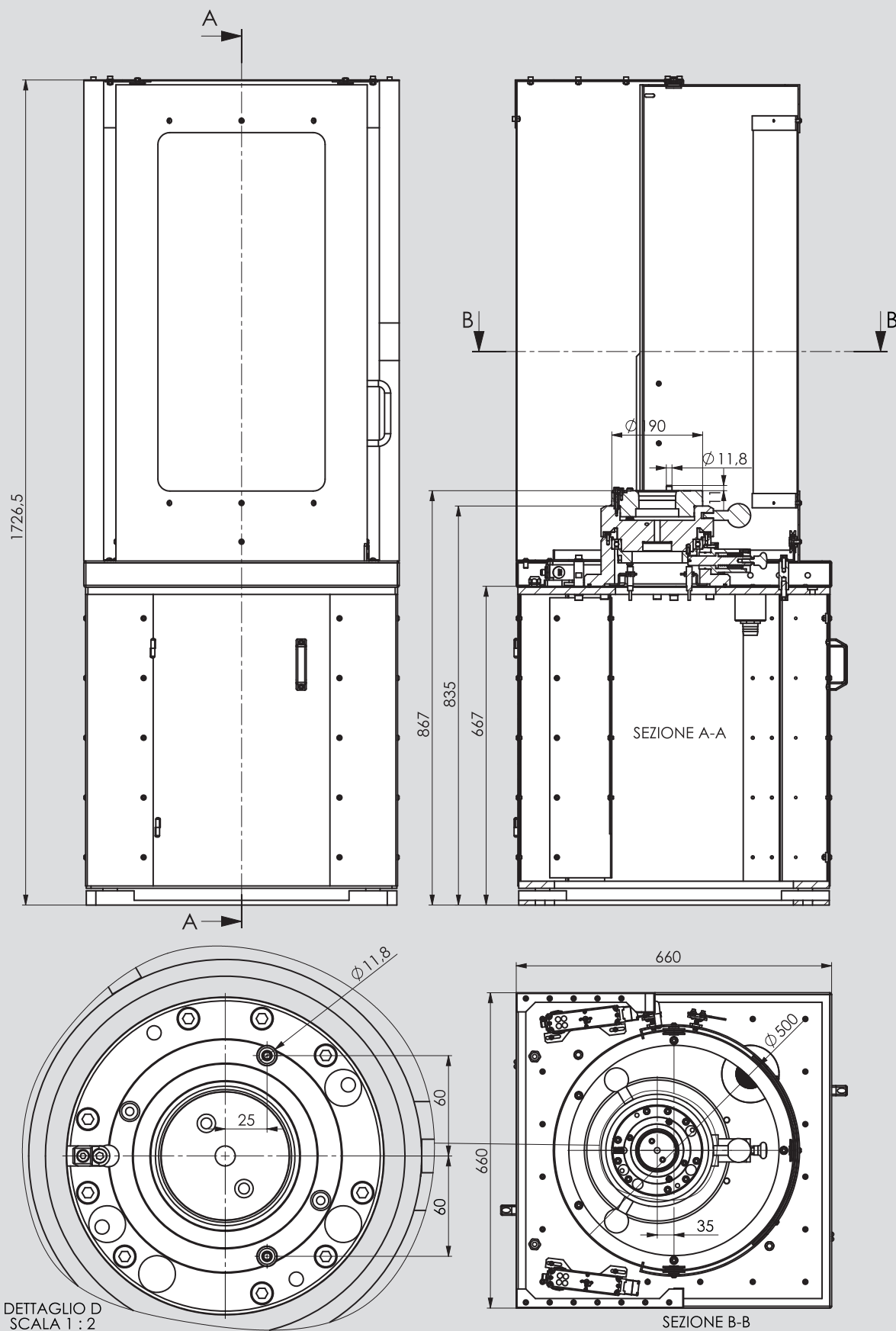


VICES STORAGE WAREHOUSE REAR VIEW PNEUMATIC HEAD CHANGING 160 PRS



LOADING STATION D500 ID.N. 46212000

with one rotating unit casing a pallet D350 MAX with APS 190 pin mounting



Id.n. (electric locks not included)

WEIGHT

46212000 LOADING STATION D500 + ROTATING UNIT PALLET APS 190 PIN

240 Kg

LOADING STATION D500 ID.N. 46212000

with one rotating unit casing a pallet D350 MAX with APS 190 pin mounting

Description:

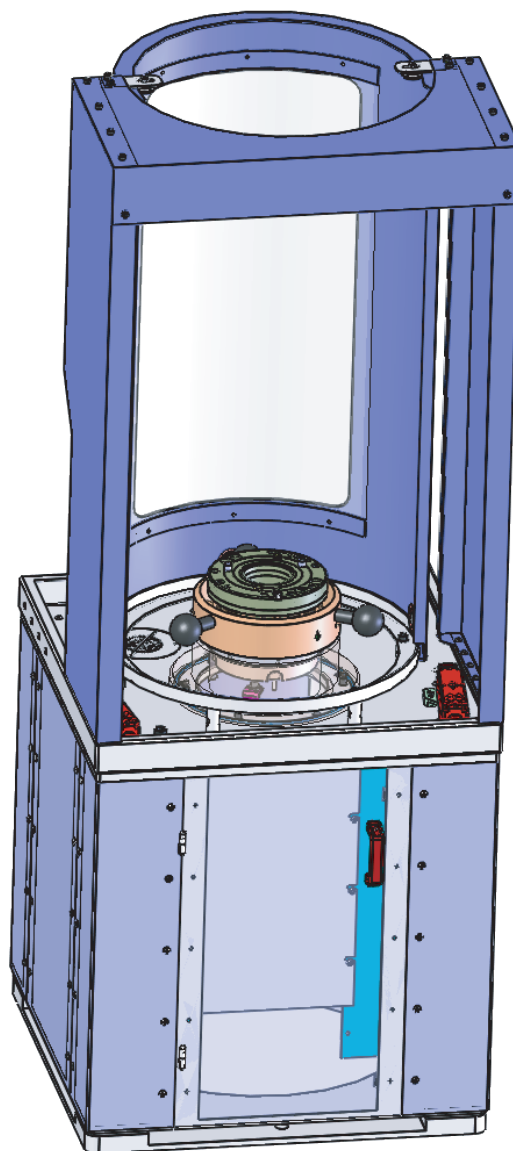
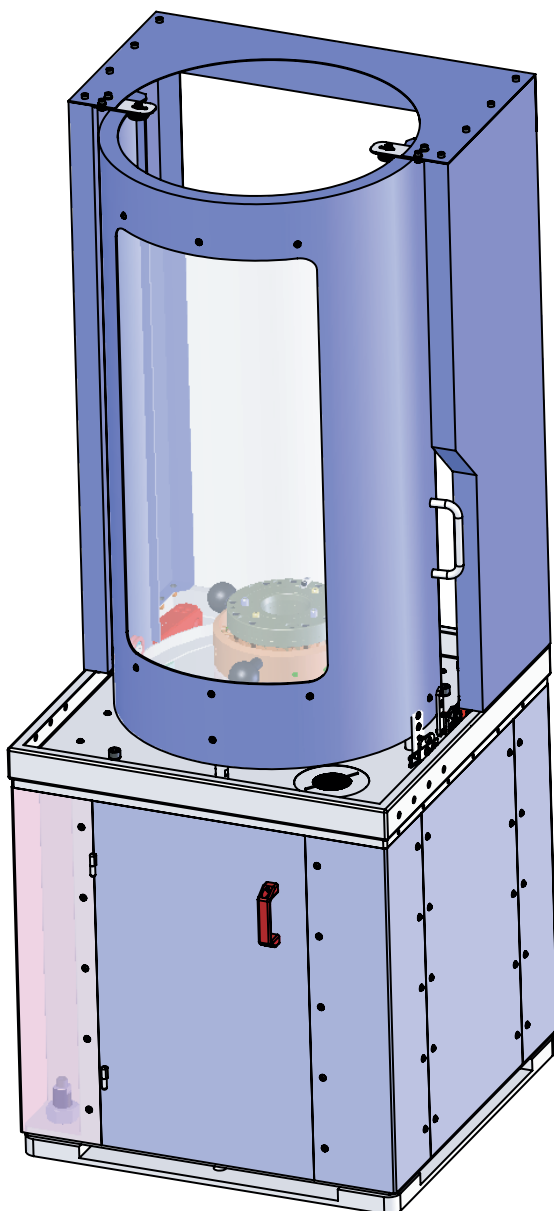
The loading station D500 46212000 is composed by a base (with turning door) + one rotating unit with 4 fixed positions (4x90°).

On rotating unit can be mounted a pallet D350 max with a APS 190 pin mounting.

The loading station is designed to mount n.2 electric locks type EUCHNER (optional and not included inside the supply). These locks check the turning door opening and closing.

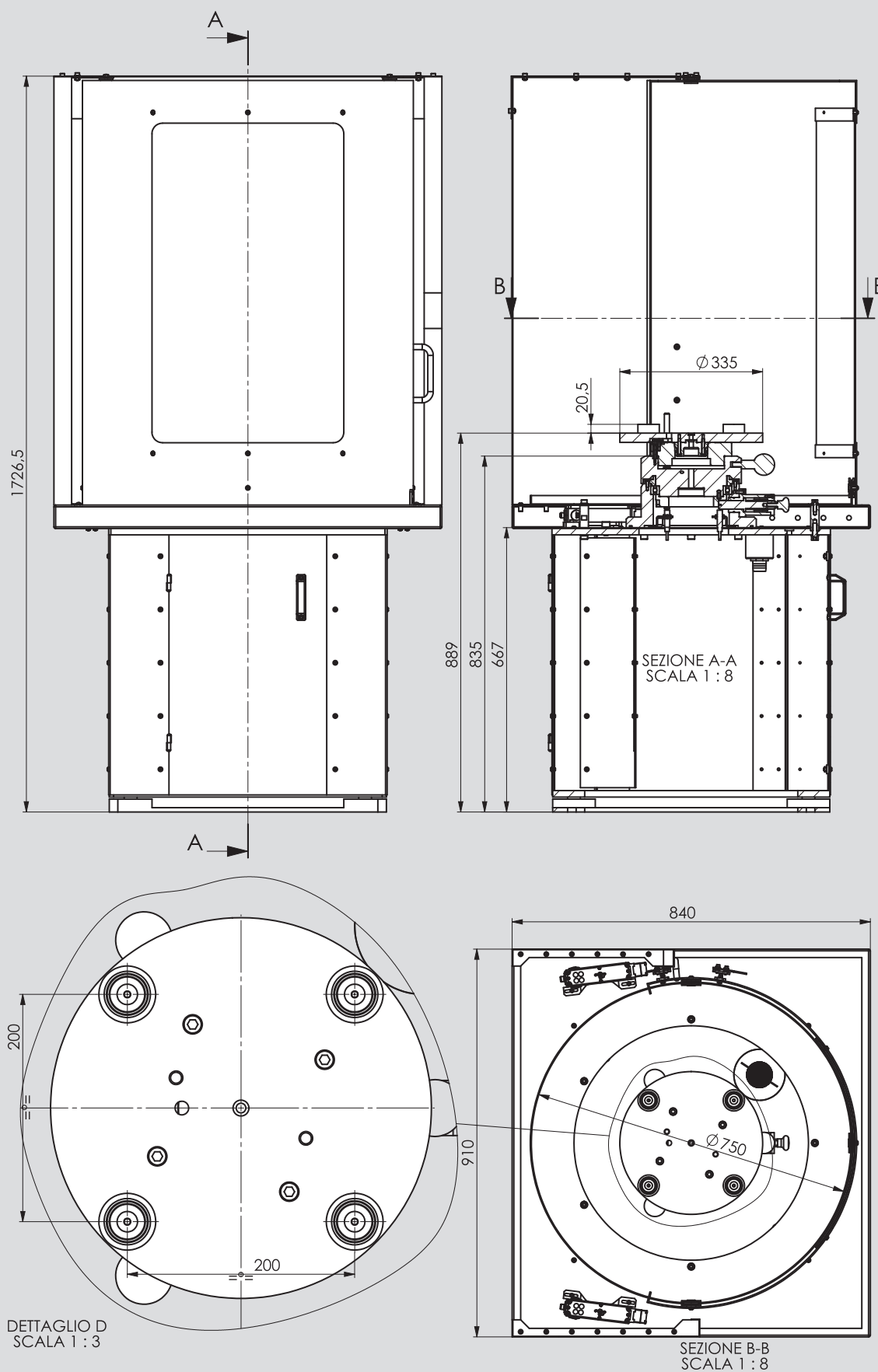
On request:

- On the rotating unit can be mount pallet change systems different from APS 190.
- The rotating unit can be equipped with air sensing system and feedings both as option.
- For any customization contact the SMW-Autoblok technical office.



LOADING STATION D750 ID.N. 46212010

with a rotating unit Q400 4 APS wheelbase 200



Id.n. (electric locks not included)

WEIGHT

46212010 LOADING STATION D750 + ROTATING PALLET UNIT Q400 4APS140 WHEELBASE 200

280 Kg

LOADING STATION D750 ID.N. 46212010 with a rotating unit Q400 4 APS wheelbase 200

Description:

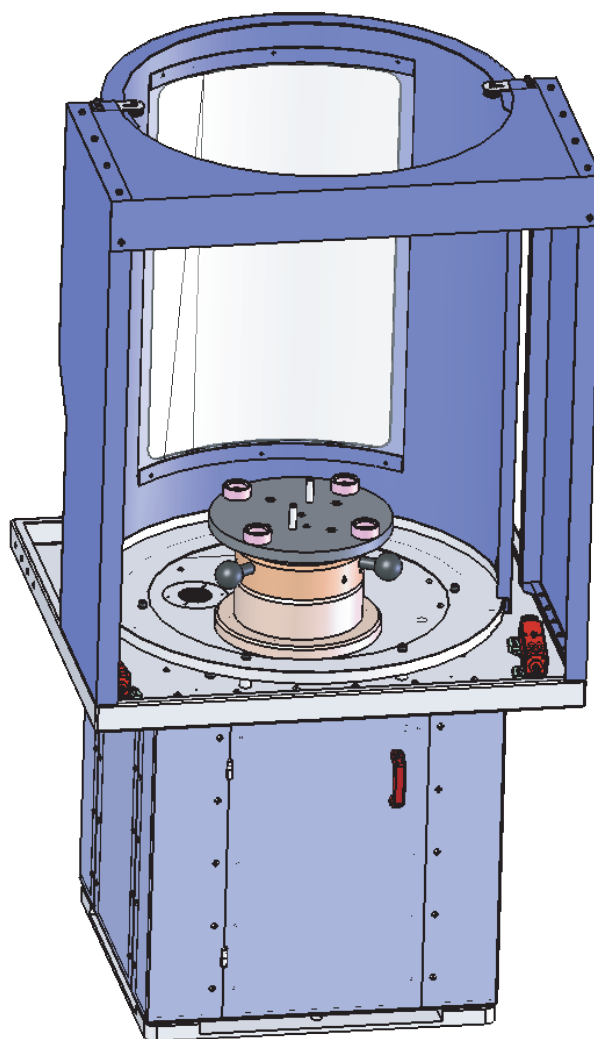
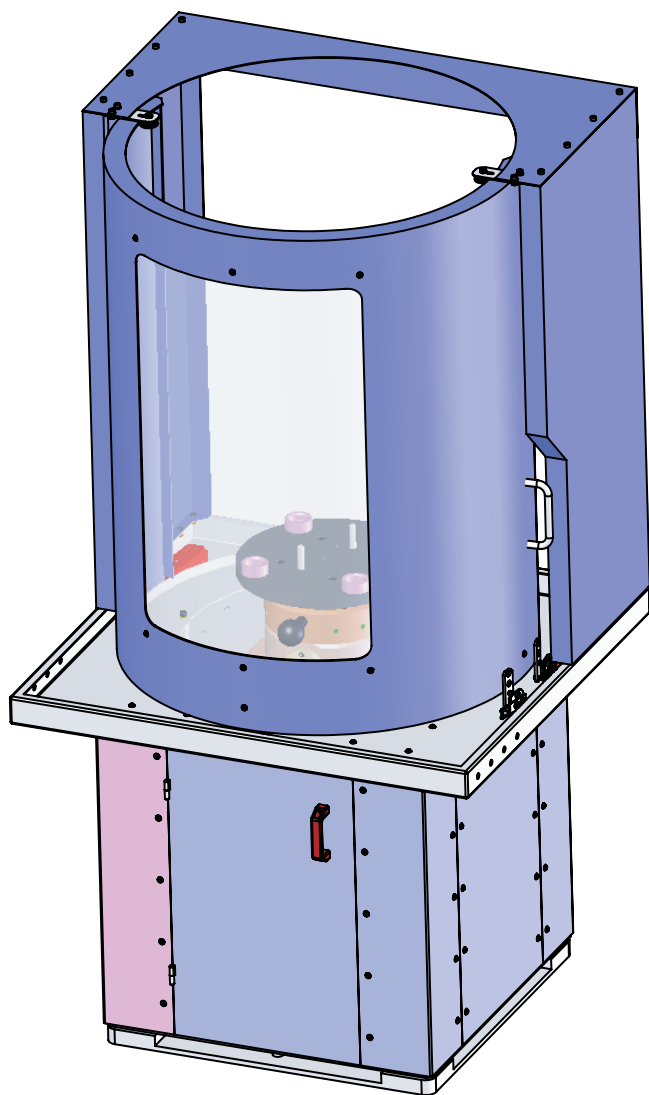
The loading station D750 46212010 is composed by a base (with turning door) + one rotating unit with 4 fixed positions (4x90°).

On rotating unit can be mounted a pallet Q400 with mounting 4APS140 wheelbase 200.

The loading station is designed to mount n.2 electric locks type EUCHNER (optional and not included inside the supply). These locks check the turning door opening and closing.

On request:

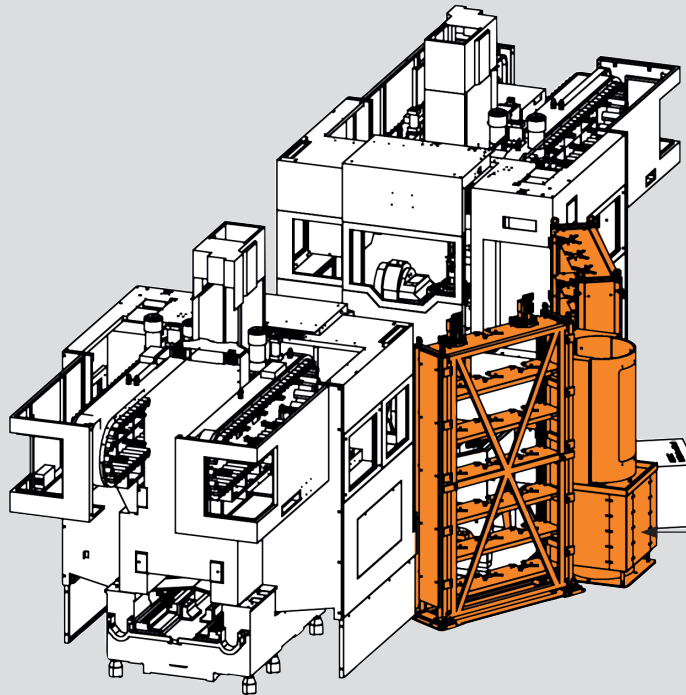
- On the rotating unit can be mount Q400 or D560 pallet change systems different from 4 APS 140 wheelbase 200.
- The rotating unit can be equipped with air sensing system and feedings both as option.
- For any customization contact the SMW-Autoblok technical office.



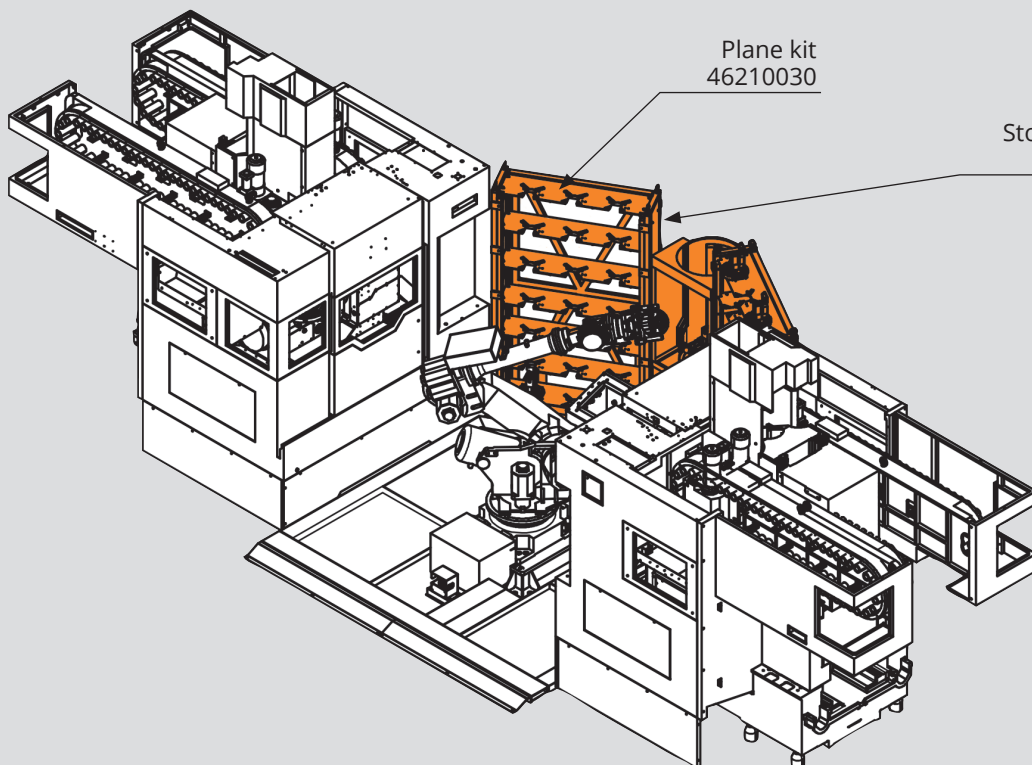


ROBOTIZED AREA

side 2



Loading station
46212000



Plane kit
46210030

Storage casing
46210049

CATALOG CODES LISTS

460002	APS 140 E PREMIUM SC
460003	APS 140 E PREMIUM LIGHT
46162860	APS 140 E PREMIUM LIGHT II
460005	APS 100 E PREMIUM
46165640	APS 190 E PREMIUM SC OTT
460007	APS 100 E BASIC
46162830	APS 140 E PREMIUM LIGHT II
46162540	APS 140 I PREMIUM LIGHT S
46162480	APS 190 E PREMIUM LIGHT
46162630	APS 190 E PREMIUM 2-INNES
46162640	APS 160 E SC PREMIUM LIGH
46165700	APS 250 E SC PREMIUM
46165030	APS 140 E Ve SC
46165500	PERNO A M8 100 APS
46162155	PERNO B M8 100 APS
46162156	PERNO C M8 100 APS
46162157	PERNO A M12 140 APS
55	PERNO B M12 140 APS
60	PERNO C M12 140 APS
70	PERNO C FLOTTANTE M12 140 APS
55	PERNO A M16 140 APS
56	PERNO B M16 140 APS
57	PERNO C M16 140 APS
80	APS 140 I PREMIUM LIGHT
40	APS 140 E PREMIUM LIGHT
05	PERNO A PB42 190 APS
08	PERNO A PB30 190 APS
15	PERNO B M16 190 APS
16	PERNO C M16 190 APS

8.1-PRODUCTS CODES LISTS - AUTOMATION CATALOG

chapters order (1/4)

ID.No.	DESCRIPTION	PAG.	CAP.
460005	APS 100 E PREMIUM	5	cap.1
460007	APS 100 E BASIC	5	cap.1
460001	APS 140 E BASIC	6	cap.1
460003	APS 140 E PREMIUM LIGHT	6	cap.1
460002	APS 140 E PREMIUM SC	7	cap.1
46162540	APS 140 E PREMIUM LIGHT SC	7	cap.1
46162830	APS 140 E PREMIUM LIGHT INOX	8	cap.1
46162860	APS 140 E PREMIUM LIGHT INOX HEAT	8	cap.1
46162480	APS 140 I PREMIUM LIGHT	9	cap.1
46165500	APS 140 E Ve SC	9	cap.1
46165640	APS 190 E PREMIUM SC OTT-D16,5	10	cap.1
46165700	APS 160 E SC PREMIUM LIGHT	10	cap.1
46162650	APS 190 E PREMIUM SC 6S	11	cap.1
46165030	APS 250 E SC PREMIUM	11	cap.1
46162155	PIN A M8 100 APS	13	cap.1
46162156	PIN B M8 100 APS	13	cap.1
46162157	PIN C M8 100 APS	13	cap.1
46162355	PIN A M12 140 APS	14	cap.1
46162356	PIN B M12 140 APS	14	cap.1
46162357	PIN C M12 140 APS	14	cap.1
46162360	FLOATING PIN C M12 140 APS	14	cap.1
46162370	FLOATING PIN C M10 140 APS	14	cap.1
46162455	PIN A M16 140 APS	14	cap.1
46162456	PIN B M16 140 APS	14	cap.1
46162457	PIN C M16 140 APS	14	cap.1
46165705	PIN A D17 160 APS	15	cap.1
46165706	PIN B D17 160 APS	15	cap.1
46165707	PIN C D17 160 APS	15	cap.1
46165715	PIN A M16 160 APS	15	cap.1
46165716	PIN B M16 160 APS	15	cap.1
46165717	PIN C M16 160 APS	15	cap.1
46165720	FLOATING PIN C M16 160 APS	15	cap.1
46165725	FLOATING PIN C M12 160 APS	15	cap.1
46162605	PIN A PB42 190 APS	16	cap.1
46162608	PIN A PB30 190 APS	16	cap.1
46162615	PIN A M16 190 APS	16	cap.1
46162616	PIN B M16 190 APS	16	cap.1
46162617	PIN C M16 190 APS	16	cap.1
46162635	CENTERIN PIN A D25 190 APS	17	cap.1
46165005	PIN A 15XM8 PB82 APS 250	17	cap.1
46165105	PIN A 6XM12 PB60 APS 250	17	cap.1
460030	MAGNET PROTECTION COVER FOR APS 100	20	cap.1
460031	MAGNET PROTECTION COVER FOR APS 140	20	cap.1
46162133	KEY KIT FOR APS 100	20	cap.1
46162333	KEY KIT FOR APS 140 E - APS 190 E	20	cap.1
46162335	KEY KIT SMF 12,5 APS 140 E - APS 190 E	20	cap.1
46162345	MAGNET PROTECTION COVER FOR APS 140 PREM	20	cap.1
46162625	MAGNET PROTECTION COVER FOR APS 190 PREM	20	cap.1
46165033	MAGNET PROTECTION COVER FOR APS 250 PREM	20	cap.1
46165730	MAGNET PROTECTION COVER FOR APS 160 BASIC	20	cap.1
460110	MODULE EXTENSION APS 100 PREMIUM H65	23	cap.2
460112	MODULE EXTENSION APS 140 PREMIUM H60	23	cap.2
460113	MODULE EXTENSION APS 140 PREMIUM H80	24	cap.2
460114	MODULE EXTENSION APS 140 PREMIUM H120	24	cap.2
460115	MODULE EXTENSION APS 140 PREMIUM H180	24	cap.2
460111	MODULE EXTENSION APS 190 PREMIUM H100	25	cap.2
46203020	MODULE HEIGHT EXTENSION APS 190 E PREMIUM H100+SAB-1	26	cap.2
46203030	MODULE HEIGHT EXTENSION APS 140 E PREMIUM H100+SAB-1	26	cap.2
41702150	MODULE HEIGHT EXTENSION APS 190 E PREMIUM H76+SAB-1 MOUNT Ø130	27	cap.2
46203040	MODULE HEIGHT EXTENSION APS 140 E PREMIUM H76+SAB-1 MOUNT Ø130	27	cap.2
27581810	SAB-1 SAFETY VALVE	28	cap.2
41702140	PNEUMATIC GUN WITH STEEL NOZZLE	28	cap.2
46204100	SET 9-T-NUTS T-SLOT 12 12-M10 FOR PLATE 4 APS 140 + SCREWS	29	cap.2

8.1-PRODUCTS CODES LISTS - AUTOMATION CATALOG

chapters order (2/4)

46204101	SET 9-T-NUTS T-SLOT 14 12-M10 FOR PLATE 4 APS 140 + SCREWS	29	cap.2
46204102	SET 9-T-NUTS T-SLOT 18 12-M10 FOR PLATE 4 APS 140 + SCREWS	29	cap.2
46204103	SET 8-T-NUTS T-SLOT 12 12-M10 FOR M.H.EXTEN.ONE APS + SCREWS	29	cap.2
46204104	SET 8-T-NUTS T-SLOT 14 12-M10 FOR M.H.EXTEN.ONE APS + SCREWS	29	cap.2
46204105	SET 8-T-NUTS T-SLOT 18 12-M10 FOR M.H.EXTEN.ONE APS + SCREWS	29	cap.2
46203000	MODULE HEIGHT EXTENSION GROUP APS 190 5AX N.6 FEEDINGS H95	31	cap.2
46202200	CLAMPING UNIT 4 APS 140 BASIC	34	cap.3
46202210	CLAMPING UNIT 2 APS 140 BASIC	34	cap.3
460020	CLAMPING UNIT 2 APS140 E PREMIUM LIGHT	35	cap.3
460021	CLAMPING UNIT 2 APS140 E BASIC	35	cap.3
460022	CLAMPING UNIT 4 APS140 E PREMIUM LIGHT	35	cap.3
460023	CLAMPING UNIT 4 APS140 E BASIC	35	cap.3
46186672	CLAMPING UNIT 6 APS140 E BASIC	36	cap.3
46186674	CLAMPING UNIT 6 APS140 E PREMIUM LIGHT	36	cap.3
46202220	CLAMPING UNIT 4 APS 140 E PREMIUM LIGHT SC	37	cap.3
46202230	CLAMPING UNIT 2 APS 140 E PREMIUM LIGHT SC	37	cap.3
46202041	MEDIA FEED PREPARED FOR N.6 MALE COUPLERS WITH 4APS140 3AX	38	cap.3
46202042	MEDIA FEED PREPARED FOR N.6 MALE COUPLERS WITH 2APS140 3AX	38	cap.3
71718106	MALE COUPLER	38	cap.3
71290181	MULTISLOT OPTIONAL KEY 12-22 D16	39	cap.3
71290182	MULTISLOT OPTIONAL KEY 14-16-18 D16	39	cap.3
71290183	MULTISLOT OPTIONAL KEY 10-20 D16	39	cap.3
71290184	MULTISLOT OPTIONAL KEY 24-28-32 D20	39	cap.3
46202000	CLAMPING UNIT 4 APS140 E PREMIUM LIGHT SC FOR 5AX	41	cap.3
46202026	MEDIA FEED WITH 4 SEAT MALE COUPLERS	41	cap.3
46200000	ROUND SEMIFINISHED PALLET APS100 D125H25	46	cap.4
46200005	ROUND SEMIFINISHED PALLET APS140 D160H25	46	cap.4
46200010	ROUND SEMIFINISHED PALLET APS140 D202H25	46	cap.4
46200015	ROUND SEMIFINISHED PALLET APS190 D202H25	46	cap.4
46200020	ROUND SEMIFINISHED PALLET APS190 D250H25	46	cap.4
46200030	PALLET FOR CHUCKS DIN6350 APS100 D125H25 SGSF 125	47	cap.4
46200035	PALLET FOR CHUCKS DIN6350 APS140 D160H25 SGSF 125-160	47	cap.4
46200054	PALLET FOR CHUCKS DIN6350 APS140 D202H25 SGSF 125-160-200	47	cap.4
46200055	PALLET FOR CHUCKS DIN6350 APS190 D202H25 SGSF 125-160-200	47	cap.4
46200090	PALLET FOR HG 160 APS140 D208	48	cap.4
46200091	PALLET FOR HG 210 APS140 D208	48	cap.4
46200092	PALLET FOR HG 160 APS190 D208	48	cap.4
46200093	PALLET FOR HG 210 APS190 D208	48	cap.4
46200270	PALLET HOLDER - SINTEX/IMG/STS VISES APS190	49	cap.4
46200275	PALLET HOLDER - SINTEX/IMG/STS VISES APS140	49	cap.4
46200250	TWO PARTS PALLET WITH CENTRAL SCREW FOR APS190	50	cap.4
46200255	SEMIFINISHED TOOLS-2PZ WITH CENTRAL SCREW FOR APS 190	50	cap.4
46200210	PALLET-88 D210 APS190 QUICK CHANGE	51	cap.4
46200216	PALLET-88 D210 APS140 QUICK CHANGE	51	cap.4
46200280	GRP PALLET APS140 X 125-180STV + SAB-1	52	cap.4
46200281	GRP PALLET APS190 X 125-180STV + SAB-1	52	cap.4
46200282	GRP PALLET Ø 130 X 125-180STV + SAB-1	52	cap.4
46200104	PALLET HOLDER 180STV 2-3J APS190 ROBOT LOADING - 4 FEMALE COUPLERS	53	cap.4
46200109	PALLET HOLDER 225STV 2-3J APS190 ROBOT LOADING - 4 FEMALE COUPLERS	53	cap.4
71718105	FEMALE COUPLER	53	cap.4
46186430	CLAMPING PALLET 400X200 BASIC SP22 2APS-140	58	cap.5
46186435	CLAMPING PALLET 400X200 PREMIUM SP22 2APS-140	58	cap.5
46186410	CLAMPING PALLET 400X400 BASIC SP22 4APS-140	59	cap.5
46186415	CLAMPING PALLET 400X400 PREMIUM SP22 4APS-140	59	cap.5
46186680	PALLET 400X600 BASIC SP22 6 APS140	60	cap.5
46201012	GRP PALLET 400X400 SP22 + MOUNTING D220 AUTC 260HG	61	cap.5
46201013	GRP PALLET 400X400 SP22 + MOUNTING D300 AUTC 315HG	61	cap.5
46201014	GRP PALLET 400X400 SP22 + MOUNTING D380 AUTC 400-500HG MANUAL LOADING	61	cap.5
46201020	PALLET 400X400 SP22 PREPARED FOR CHUCKS 200-250-315 SGSF	61	cap.5
41702261	PALLET 400X400 SP22 PREPARED FOR 2 VISES MC150x200	62	cap.5
41702271	PALLET 400X400 SP22 PREPARED FOR 1 VISE MC150x200 MANUAL LOADING	62	cap.5
46201131	PALLET 400X400 SP22 PREPARED FOR 180/225 STV WITH SAB-1	63	cap.5
46201105	PALLET 400X400 SP22 PREPARED FOR 225 STV WITH 4 SEATS COUPLERS	64	cap.5
46201115	PALLET 400X400 SP22 PREPARED FOR 180 STV WITH 4 SEATS COUPLERS	64	cap.5

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46201125	PALLET 400X400 SP36 PREPARED FOR N.4 125 STV WITH 4 SEATS COUPLERS	65	cap.5
77901862	125 PP-N	73	cap.6
77901866	160 PP-N	73	cap.6
77901870	200 PP-N	73	cap.6
77901875	250 PP-N	73	cap.6
77901957	64 PL-L	73	cap.6
77901959	80 PL-L	73	cap.6
77901961	100 PL-L	73	cap.6
77901962	125 PP-L	73	cap.6
77901963	125 PP-L ALUM	73	cap.6
77901966	160 PP-L	73	cap.6
77901967	160 PP-L ALUM	73	cap.6
77901970	200 PP-L	73	cap.6
77901975	250 PP-L	73	cap.6
77902683	320 PL-L-RR	73	cap.6
77902689	380 PL-L-RR	73	cap.6
90686260	BRACKET+PROX KIT 125PPN	77	cap.6
90686263	BRACKET+PROX KIT 125PPL	77	cap.6
90687060	BRACKET+PROX KIT160PPN 200PPN	77	cap.6
90687063	BRACKET+PROX KIT 160-200PPL 250PPN	77	cap.6
90687563	BRACKET+PROX KIT 250PPL	77	cap.6
90901163	PNEUMATIC STROKE CONTROL VALVE 100PT	77	cap.6
90901763	PNEUMATIC STROKE CONTROL VALVE 125-160-200PT	77	cap.6
97901801	PNEUMATIC STROKE CONTROL VALVE 180STV-3	77	cap.6
46204005	2-TOP JAWS KIT 125 PP-L VISE / PALLET 125	86	cap.6
46204010	2-TOP JAWS KIT 160 PP-L VISE / PALLET 160	86	cap.6
46204015	2-TOP JAWS KIT 160 PP-L VISE / PALLET 125	86	cap.6
46204020	2-TOP JAWS KIT 200 PP-L VISE / PALLET 160	86	cap.6
46204025	2-TOP JAWS KIT 200 PP-L VISE / PALLET 250	86	cap.6
46204030	2-TOP JAWS KIT 160 PP-L VISE / PALLET 200	86	cap.6
46204040	2-TOP JAWS KIT 250 PP-L VISE / PALLET 250	86	cap.6
46204045	2-TOP JAWS KIT 250 PP-L VISE / PALLET 200	86	cap.6
46204050	2-TOP JAWS KIT 200 PP-L VISE / PALLET 200	86	cap.6
46204055	2-TOP JAWS KIT 250 PP-L VISE / PALLET 315	86	cap.6
46204080	2-TOP JAWS KIT 125 PP-L VISE / PALLET 100	86	cap.6
46204090	2-TOP JAWS KIT 125 PP-L VISE / PALLET 160	86	cap.6
46204130	2-TOP JAWS KIT 160 PP-L VISE / 160 PT-RR	91	cap.6
46204131	2-TOP JAWS KIT 160 PP-L VISE / 200 PT-RR	91	cap.6
46204132	2-TOP JAWS KIT 160 PP-L VISE / 250 PT-RR	91	cap.6
46204140	2-TOP JAWS KIT 125PP-L VISE / 210-260-315 APL-RR	91	cap.6
46204141	2-TOP JAWS KIT 125PP-L VISE / 260-315-400 APL-RR	91	cap.6
46204150	2-TOP JAWS KIT 160 PP-L VISE / 210-260-315 APL-RR	91	cap.6
46204151	2-TOP JAWS KIT 160PP-L VISE / 260-315-400 APL-RR	91	cap.6
46201060	BRACKET KIT VISE 200PP-N / PALLET Q400	92	cap.6
46204070	2-TOP JAWS KIT 200 PP-N VISE / PALLET 400X400	92	cap.6
46204200	PNEUMATIC VISE 160X98 PP-A	94	cap.6
46201050	BRACKET KIT PALLET Q400 FOR 160x98 PP-A VISE	95	cap.6
77920106	GRIPPER 64 3MN-L	96	cap.6
77920206	GRIPPER 64 3MNS-L	96	cap.6
77920108	GRIPPER 80 3MN-L	98	cap.6
77920208	GRIPPER 80 3MNS-L	98	cap.6
77920110	GRIPPER 100 3MN-L	100	cap.6
77920210	GRIPPER 100 3MNS-L	100	cap.6
77920112	GRIPPER 125 3MN-L	102	cap.6
77920162	GRIPPER 125 3MN-L STEEL	102	cap.6
77920412	GRIPPER 125 3MN-N	102	cap.6
77920462	GRIPPER 125 3MN-N STEEL	102	cap.6
77920116	GRIPPER 160 3MN-L	104	cap.6
77920166	GRIPPER 160 3MN-L STEEL	104	cap.6
77920216	GRIPPER 160 3MNS-L (WITH SPRINGS)	104	cap.6
77920266	GRIPPER 160 3MNS-L STEEL (WITH SPRINGS)	104	cap.6
77920416	GRIPPER 160 3MN-N	104	cap.6
77920466	GRIPPER 160 3MN-N STEEL	104	cap.6
77920516	GRIPPER 160 3MNS-N (WITH SPRINGS)	104	cap.6

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77920566	GRIPPER 160 3MNS-N STEEL (WITH SPRINGS)	104	cap.6
77920120	GRIPPER 200 3MN-L	106	cap.6
77920220	GRIPPER 200 3MNS-L (WITH SPRINGS)	106	cap.6
77920420	GRIPPER 200 3MN-N	106	cap.6
77920520	GRIPPER 200 3MNS-N (WITH SPRINGS)	106	cap.6
77920125	GRIPPER 250 3MN-L	108	cap.6
77920225	GRIPPER 250 3MNS-L (WITH SPRINGS)	108	cap.6
77920425	GRIPPER 250 3MN-N	108	cap.6
77920525	GRIPPER 250 3MNS-N (WITH SPRINGS)	108	cap.6
77920732	GRIPPER 320 3MNL-RR	110	cap.6
77920832	GRIPPER 320 3MNSL-RR	110	cap.6
77920738	GRIPPER 380 3MNL-RR	112	cap.6
77920838	GRIPPER 380 3MNSL-RR	112	cap.6
92670663	KIT SPRING WORKSTOP GRIPPER 64 3MN	114	cap.6
92670863	KIT SPRING WORKSTOP GRIPPER 80 3MN	114	cap.6
92671063	KIT SPRING WORKSTOP GRIPPER 100 3MN	114	cap.6
92671263	KIT SPRING WORKSTOP GRIPPER 125 3MN	114	cap.6
92671663	KIT SPRING WORKSTOP GRIPPER 160 3MN	114	cap.6
92672563	KIT SPRING WORKSTOP GRIPPER 200-250 3MN	114	cap.6
92673863	KIT SPRING WORKSTOP GRIPPER 320-380 3MN	114	cap.6
90166663	BRACKET MOD. 160-200-250 3MN-L /160 3MN-L	115	cap.6
90167563	BRACKET MOD. 200-250-320-380 3MN-L	115	cap.6
92710663	SOFT TOP JAW 64 3MN C45	119	cap.6
92710863	SOFT TOP JAW 80 3MN C45	119	cap.6
92711063	SOFT TOP JAW 100 3MN C45	119	cap.6
92711263	SOFT TOP JAW 125-3MN C45	119	cap.6
92711663	SOFT TOP JAW 160-3MN C45	119	cap.6
92712063	SOFT TOP JAW 200-3MN C45	119	cap.6
92712563	SOFT TOP JAW 250-3MN C45	119	cap.6
92720663	SOFT TOP JAW 64 3MN ALUMINIUM	119	cap.6
92720863	SOFT TOP JAW 80 3MN ALUMINIUM	119	cap.6
92721063	SOFT TOP JAW 100 3MN ALUMINIUM	119	cap.6
92721263	SOFT TOP JAW 125-3MN ALUMINIUM	119	cap.6
92721663	SOFT TOP JAW 160-3MN ALUMINIUM	119	cap.6
92722063	SOFT TOP JAW 200-3MN ALUMINIUM	119	cap.6
92722563	SOFT TOP JAW 250-3MN ALUMINIUM	119	cap.6
18762654	PALLET 320-380 3MNL-RR	120	cap.6
46204400	110 PRS PNEUMATIC HEAD CHANGING UNIT	126	cap.6
46204415	PALLET CHANGING UNIT 110PRS	126	cap.6
46204450	ADAPTER ASSEMBLY 110 PRS/125PP	127	cap.6
46204452	ADAPTER ASSEMBLY 110 PRS/160PP	127	cap.6
46204320	ADAPTER ASSEMBLY 160 PRS 2V	127	cap.6
46204330	PALLET CHANGING UNIT 160 PRS 2V	127	cap.6
46204458	ADAPTER ASSEMBLY 110 PRS/125-3MN	128	cap.6
46204460	ADAPTER ASSEMBLY 110 PRS/160-3MN	128	cap.6
43204374	ADAPTER ASSEMBLY 160 PRS - 2V/160 PP	129	cap.6
46204362	ADAPTER ASSEMBLY 160 PRS - 2V/200 PP	129	cap.6
46204364	ADAPTER ASSEMBLY 160 PRS - 2V/250 PP	129	cap.6
46204366	ADAPTER ASSEMBLY 160 PRS - 2V/160 PPA	129	cap.6
46204368	ADAPTER ASSEMBLY 160 PRS-2V/160-3MN	129	cap.6
46204372	ADAPTER ASSEMBLY 160 PRS-2V/200-3MN	129	cap.6
46204376	ADAPTER ASSEMBLY 160 PRS-2V/250-3MN	129	cap.6
46204500	240 PRS PNEUMATIC HEAD CHANGING UNIT	130	cap.6
46204515	PALLET CHANGING UNIT 240PRS	130	cap.6
46210049	STORAGE CASING 1120 X 315 DEPTH PALLET SINGLE	134	cap.7
46210069	STORAGE CASING 1120XPROF 453-2 PALLET Q400	136	cap.7
46210030	APS140 / APS190 / WHEELBASE 350	138	cap.7
46210120	PLAN KIT 3 SINGLE PALLET APS250 WHEELBASE 350	138	cap.7
46210060	SINGLE PLAN KIT 2 PALLET Q400 WHEELBASE 560	139	cap.7
46210110	SINGLE PLAN KIT 5 VISES 125IMG/160IMG WHEELBASE 205	139	cap.7
46212000	LOADING STATION D500 SINGLE PALLET	142	cap.7
46212010	LOADING STATION D750 FOR PALLET Q400	144	cap.7

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ID.No.	DESCRIPTION	PAG.	CAP.
460001	APS 140 E BASIC	6	cap.1
460002	APS 140 E PREMIUM SC	7	cap.1
460003	APS 140 E PREMIUM LIGHT	6	cap.1
460005	APS 100 E PREMIUM	5	cap.1
460007	APS 100 E BASIC	5	cap.1
460020	CLAMPING UNIT 2 APS140 E PREMIUM LIGHT	35	cap.3
460021	CLAMPING UNIT 2 APS140 E BASIC	35	cap.3
460022	CLAMPING UNIT 4 APS140 E PREMIUM LIGHT	35	cap.3
460023	CLAMPING UNIT 4 APS140 E BASIC	35	cap.3
460030	MAGNET PROTECTION COVER FOR APS 100	20	cap.1
460031	MAGNET PROTECTION COVER FOR APS 140	20	cap.1
460110	MODULE EXTENSION APS 100 PREMIUM H65	23	cap.2
460111	MODULE EXTENSION APS 190 PREMIUM H100	25	cap.2
460112	MODULE EXTENSION APS 140 PREMIUM H60	23	cap.2
460113	MODULE EXTENSION APS 140 PREMIUM H80	24	cap.2
460114	MODULE EXTENSION APS 140 PREMIUM H120	24	cap.2
460115	MODULE EXTENSION APS 140 PREMIUM H180	24	cap.2
18762654	PALLET 320-380 3MNL-RR	120	cap.6
27581810	SAB-1 SAFETY VALVE	28	cap.2
41702140	PNEUMATIC GUN WITH STEEL NOZZLE	28	cap.2
41702150	MODULE HEIGHT EXTENSION APS 190 E PREMIUM H76+SAB-1 MOUNT Ø130	27	cap.2
41702261	PALLET 400X400 SP22 PREPARED FOR 2 VISES MC150x200	62	cap.5
41702271	PALLET 400X400 SP22 PREPARED FOR 1 VISE MC150x200 MANUAL LOADING	62	cap.5
43204374	ADAPTER ASSEMBLY 160 PRS - 2V/160 PP	129	cap.6
46162133	KEY KIT FOR APS 100	20	cap.1
46162155	PIN A M8 100 APS	13	cap.1
46162156	PIN B M8 100 APS	13	cap.1
46162157	PIN C M8 100 APS	13	cap.1
46162333	KEY KIT FOR APS 140 E - APS 190 E	20	cap.1
46162335	KEY KIT SMF 12,5 APS 140 E - APS 190 E	20	cap.1
46162345	MAGNET PROTECTION COVER FOR APS 140 PREM	20	cap.1
46162355	PIN A M12 140 APS	14	cap.1
46162356	PIN B M12 140 APS	14	cap.1
46162357	PIN C M12 140 APS	14	cap.1
46162360	FLOATING PIN C M12 140 APS	14	cap.1
46162370	FLOATING PIN C M10 140 APS	14	cap.1
46162455	PIN A M16 140 APS	14	cap.1
46162456	PIN B M16 140 APS	14	cap.1
46162457	PIN C M16 140 APS	14	cap.1
46162480	APS 140 I PREMIUM LIGHT	9	cap.1
46162540	APS 140 E PREMIUM LIGHT SC	7	cap.1
46162605	PIN A PB42 190 APS	16	cap.1
46162608	PIN A PB30 190 APS	16	cap.1
46162615	PIN A M16 190 APS	16	cap.1
46162616	PIN B M16 190 APS	16	cap.1
46162617	PIN C M16 190 APS	16	cap.1
46162625	MAGNET PROTECTION COVER FOR APS 190 PREM	20	cap.1
46162635	CENTERIN PIN A D25 190 APS	17	cap.1
46162650	APS 190 E PREMIUM SC 6S	11	cap.1
46162830	APS 140 E PREMIUM LIGHT INOX	8	cap.1
46162860	APS 140 E PREMIUM LIGHT INOX HEAT	8	cap.1
46165005	PIN A 15XM8 PB82 APS 250	17	cap.1
46165030	APS 250 E SC PREMIUM	11	cap.1
46165033	MAGNET PROTECTION COVER FOR APS 250 PREM	20	cap.1
46165105	PIN A 6XM12 PB60 APS 250	17	cap.1
46165500	APS 140 E Ve SC	9	cap.1
46165640	APS 190 E PREMIUM SC OTT-D16,5	10	cap.1
46165700	APS 160 E SC PREMIUM LIGHT	10	cap.1
46165705	PIN A D17 160 APS	15	cap.1
46165706	PIN B D17 160 APS	15	cap.1
46165707	PIN C D17 160 APS	15	cap.1
46165715	PIN A M16 160 APS	15	cap.1
46165716	PIN B M16 160 APS	15	cap.1

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46165717	PIN C M16 160 APS	15	cap.1
46165720	FLOATING PIN C M16 160 APS	15	cap.1
46165725	FLOATING PIN C M12 160 APS	15	cap.1
46165730	MAGNET PROTECTION COVER FOR APS 160 BASIC	20	cap.1
46186410	CLAMPING PALLET 400X400 BASIC SP22 4APS-140	59	cap.5
46186415	CLAMPING PALLET 400X400 PREMIUM SP22 4APS-140	59	cap.5
46186430	CLAMPING PALLET 400X200 BASIC SP22 2APS-140	58	cap.5
46186435	CLAMPING PALLET 400X200 PREMIUM SP22 2APS-140	58	cap.5
46186672	CLAMPING UNIT 6 APS140 E BASIC	36	cap.3
46186674	CLAMPING UNIT 6 APS140 E PREMIUM LIGHT	36	cap.3
46186680	PALLET 400X600 BASIC SP22 6 APS140	60	cap.5
46200000	ROUND SEMIFINISHED PALLET APS100 D125H25	46	cap.4
46200005	ROUND SEMIFINISHED PALLET APS140 D160H25	46	cap.4
46200010	ROUND SEMIFINISHED PALLET APS140 D202H25	46	cap.4
46200015	ROUND SEMIFINISHED PALLET APS190 D202H25	46	cap.4
46200020	ROUND SEMIFINISHED PALLET APS190 D250H25	46	cap.4
46200030	PALLET FOR CHUCKS DIN6350 APS100 D125H25 SGSF 125	47	cap.4
46200035	PALLET FOR CHUCKS DIN6350 APS140 D160H25 SGSF 125-160	47	cap.4
46200054	PALLET FOR CHUCKS DIN6350 APS140 D202H25 SGSF 125-160-200	47	cap.4
46200055	PALLET FOR CHUCKS DIN6350 APS190 D202H25 SGSF 125-160-200	47	cap.4
46200090	PALLET FOR HG 160 APS140 D208	48	cap.4
46200091	PALLET FOR HG 210 APS140 D208	48	cap.4
46200092	PALLET FOR HG 160 APS190 D208	48	cap.4
46200093	PALLET FOR HG 210 APS190 D208	48	cap.4
46200104	PALLET HOLDER 180STV 2-3J APS190 ROBOT LOADING - 4 FEMALE COUPLERS	53	cap.4
46200109	PALLET HOLDER 225STV 2-3J APS190 ROBOT LOADING - 4 FEMALE COUPLERS	53	cap.4
46200210	PALLET-88 D210 APS190 QUICK CHANGE	51	cap.4
46200216	PALLET-88 D210 APS140 QUICK CHANGE	51	cap.4
46200250	TWO PARTS PALLET WITH CENTRAL SCREW FOR APS190	50	cap.4
46200255	SEMIFINISHED TOOLS-2PZ WITH CENTRAL SCREW FOR APS 190	50	cap.4
46200270	PALLET HOLDER - SINTEX/IMG/STS VISES APS190	49	cap.4
46200275	PALLET HOLDER - SINTEX/IMG/STS VISES APS140	49	cap.4
46200280	GRP PALLET APS140 X 125-180STV + SAB-1	52	cap.4
46200281	GRP PALLET APS190 X 125-180STV + SAB-1	52	cap.4
46200282	GRP PALLET Ø 130 X 125-180STV + SAB-1	52	cap.4
46201012	GRP PALLET 400X400 SP22 + MOUNTING D220 AUTC 260HG	61	cap.5
46201013	GRP PALLET 400X400 SP22 + MOUNTING D300 AUTC 315HG	61	cap.5
46201014	GRP PALLET 400X400 SP22 + MOUNTING D380 AUTC 400-500HG MANUAL LOADING	61	cap.5
46201020	PALLET 400X400 SP22 PREPARED FOR CHUCKS 200-250-315 SGSF	61	cap.5
46201050	BRACKET KIT PALLET Q400 FOR 160x98 PP-A VISE	95	cap.6
46201060	BRACKET KIT VISE 200PP-N / PALLET Q400	92	cap.6
46201105	PALLET 400X400 SP22 PREPARED FOR 225 STV WITH 4 SEATS COUPLERS	64	cap.5
46201115	PALLET 400X400 SP22 PREPARED FOR 180 STV WITH 4 SEATS COUPLERS	64	cap.5
46201125	PALLET 400X400 SP36 PREPARED FOR N.4 125 STV WITH 4 SEATS COUPLERS	65	cap.5
46201131	PALLET 400X400 SP22 PREPARED FOR 180/225 STV WITH SAB-1	63	cap.5
46202000	CLAMPING UNIT 4 APS140 E PREMIUM LIGHT SC FOR 5AX	41	cap.3
46202026	MEDIA FEED WITH 4 SEAT MALE COUPLERS	41	cap.3
46202041	MEDIA FEED PREPARED FOR N.6 MALE COUPLERS WITH 4APS140 3AX	38	cap.3
46202042	MEDIA FEED PREPARED FOR N.6 MALE COUPLERS WITH 2APS140 3AX	38	cap.3
46202200	CLAMPING UNIT 4 APS 140 BASIC	34	cap.3
46202210	CLAMPING UNIT 2 APS 140 BASIC	34	cap.3
46202220	CLAMPING UNIT 4 APS 140 E PREMIUM LIGHT SC	37	cap.3
46202230	CLAMPING UNIT 2 APS 140 E PREMIUM LIGHT SC	37	cap.3
46203000	MODULE HEIGHT EXTENSION GROUP APS 190 5AX N.6 FEEDINGS H95	31	cap.2
46203020	MODULE HEIGHT EXTENSION APS 190 E PREMIUM H100+SAB-1	26	cap.2
46203030	MODULE HEIGHT EXTENSION APS 140 E PREMIUM H100+SAB-1	26	cap.2
46203040	MODULE HEIGHT EXTENSION APS 140 E PREMIUM H76+SAB-1 MOUNT Ø130	27	cap.2
46204005	2-TOP JAWS KIT 125 PP-L VISE / PALLET 125	86	cap.6
46204010	2-TOP JAWS KIT 160 PP-L VISE / PALLET 160	86	cap.6
46204015	2-TOP JAWS KIT 160 PP-L VISE / PALLET 125	86	cap.6
46204020	2-TOP JAWS KIT 200 PP-L VISE / PALLET 160	86	cap.6
46204025	2-TOP JAWS KIT 200 PP-L VISE / PALLET 250	86	cap.6
46204030	2-TOP JAWS KIT 160 PP-L VISE / PALLET 200	86	cap.6
46204040	2-TOP JAWS KIT 250 PP-L VISE / PALLET 250	86	cap.6

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46204045	2-TOP JAWS KIT 250 PP-L VISE / PALLET 200	86	cap.6
46204050	2-TOP JAWS KIT 200 PP-L VISE / PALLET 200	86	cap.6
46204055	2-TOP JAWS KIT 250 PP-L VISE / PALLET 315	86	cap.6
46204070	2-TOP JAWS KIT 200 PP-N VISE / PALLET 400X400	92	cap.6
46204080	2-TOP JAWS KIT 125 PP-L VISE / PALLET 100	86	cap.6
46204090	2-TOP JAWS KIT 125 PP-L VISE / PALLET 160	86	cap.6
46204100	SET 9-T-NUTS T-SLOT 12 12-M10 FOR PLATE 4 APS 140 + SCREWS	29	cap.2
46204101	SET 9-T-NUTS T-SLOT 14 12-M10 FOR PLATE 4 APS 140 + SCREWS	29	cap.2
46204102	SET 9-T-NUTS T-SLOT 18 12-M10 FOR PLATE 4 APS 140 + SCREWS	29	cap.2
46204103	SET 8-T-NUTS T-SLOT 12 12-M10 FOR M.H.EXTEN.ONE APS + SCREWS	29	cap.2
46204104	SET 8-T-NUTS T-SLOT 14 12-M10 FOR M.H.EXTEN.ONE APS + SCREWS	29	cap.2
46204105	SET 8-T-NUTS T-SLOT 18 12-M10 FOR M.H.EXTEN.ONE APS + SCREWS	29	cap.2
46204130	2-TOP JAWS KIT 160 PP-L VISE / 160 PT-RR	91	cap.6
46204131	2-TOP JAWS KIT 160 PP-L VISE / 200 PT-RR	91	cap.6
46204132	2-TOP JAWS KIT 160 PP-L VISE / 250 PT-RR	91	cap.6
46204140	2-TOP JAWS KIT 125PP-L VISE / 210-260-315 APL-RR	91	cap.6
46204141	2-TOP JAWS KIT 125PP-L VISE / 260-315-400 APL-RR	91	cap.6
46204150	2-TOP JAWS KIT 160 PP-L VISE / 210-260-315 APL-RR	91	cap.6
46204151	2-TOP JAWS KIT 160PP-L VISE / 260-315-400 APL-RR	91	cap.6
46204200	PNEUMATIC VISE 160X98 PP-A	94	cap.6
46204320	ADAPTER ASSEMBLY 160 PRS 2V	127	cap.6
46204330	PALLET CHANGING UNIT 160 PRS 2V	127	cap.6
46204362	ADAPTER ASSEMBLY 160 PRS - 2V/200 PP	129	cap.6
46204364	ADAPTER ASSEMBLY 160 PRS - 2V/250 PP	129	cap.6
46204366	ADAPTER ASSEMBLY 160 PRS - 2V/160 PPA	129	cap.6
46204368	ADAPTER ASSEMBLY 160 PRS-2V/160-3MN	129	cap.6
46204372	ADAPTER ASSEMBLY 160 PRS-2V/200-3MN	129	cap.6
46204376	ADAPTER ASSEMBLY 160 PRS-2V/250-3MN	129	cap.6
46204400	110 PRS PNEUMATIC HEAD CHANGING UNIT	126	cap.6
46204415	PALLET CHANGING UNIT 110PRS	126	cap.6
46204450	ADAPTER ASSEMBLY 110 PRS/125PP	127	cap.6
46204452	ADAPTER ASSEMBLY 110 PRS/160PP	127	cap.6
46204458	ADAPTER ASSEMBLY 110 PRS/125-3MN	128	cap.6
46204460	ADAPTER ASSEMBLY 110 PRS/160-3MN	128	cap.6
46204500	240 PRS PNEUMATIC HEAD CHANGING UNIT	130	cap.6
46204515	PALLET CHANGING UNIT 240PRS	130	cap.6
46210030	APS140 / APS190 / WHEELBASE 350	138	cap.7
46210049	STORAGE CASING 1120 X 315 DEPTH PALLET SINGLE	134	cap.7
46210060	SINGLE PLAN KIT 2 PALLET Q400 WHEELBASE 560	139	cap.7
46210069	STORAGE CASING 1120XPROF 453-2 PALLET Q400	136	cap.7
46210110	SINGLE PLAN KIT 5 VISES 125IMG/160IMG WHEELBASE 205	139	cap.7
46210120	PLAN KIT 3 SINGLE PALLET APS250 WHEELBASE 350	138	cap.7
46212000	LOADING STATION D500 SINGLE PALLET	142	cap.7
46212010	LOADING STATION D750 FOR PALLET Q400	144	cap.7
71290181	MULTISLOT OPTIONAL KEY 12-22 D16	39	cap.3
71290182	MULTISLOT OPTIONAL KEY 14-16-18 D16	39	cap.3
71290183	MULTISLOT OPTIONAL KEY 10-20 D16	39	cap.3
71290184	MULTISLOT OPTIONAL KEY 24-28-32 D20	39	cap.3
71718105	FEMALE COUPLER	53	cap.4
71718106	MALE COUPLER	38	cap.3
77901862	125 PP-N	73	cap.6
77901866	160 PP-N	73	cap.6
77901870	200 PP-N	73	cap.6
77901875	250 PP-N	73	cap.6
77901957	64 PL-L	73	cap.6
77901959	80 PL-L	73	cap.6
77901961	100 PL-L	73	cap.6
77901962	125 PP-L	73	cap.6
77901963	125 PP-L ALUM	73	cap.6
77901966	160 PP-L	73	cap.6
77901967	160 PP-L ALUM	73	cap.6
77901970	200 PP-L	73	cap.6
77901975	250 PP-L	73	cap.6
77902683	320 PL-L-RR	73	cap.6

8.2 PRODUCTS CODES LISTS - AUTOMATION CATALOG

numerical order (4/4)

77902689	380 PL-L-RR	73	cap.6
77920106	GRIPPER 64 3MN-L	96	cap.6
77920108	GRIPPER 80 3MN-L	98	cap.6
77920110	GRIPPER 100 3MN-L	100	cap.6
77920112	GRIPPER 125 3MN-L	102	cap.6
77920116	GRIPPER 160 3MN-L	104	cap.6
77920120	GRIPPER 200 3MN-L	106	cap.6
77920125	GRIPPER 250 3MN-L	108	cap.6
77920162	GRIPPER 125 3MN-L STEEL	102	cap.6
77920166	GRIPPER 160 3MN-L STEEL	104	cap.6
77920206	GRIPPER 64 3MNS-L	96	cap.6
77920208	GRIPPER 80 3MNS-L	98	cap.6
77920210	GRIPPER 100 3MNS-L	100	cap.6
77920216	GRIPPER 160 3MNS-L (WITH SPRINGS)	104	cap.6
77920220	GRIPPER 200 3MNS-L (WITH SPRINGS)	106	cap.6
77920225	GRIPPER 250 3MNS-L (WITH SPRINGS)	108	cap.6
77920266	GRIPPER 160 3MNS-L STEEL (WITH SPRINGS)	104	cap.6
77920412	GRIPPER 125 3MN-N	102	cap.6
77920416	GRIPPER 160 3MN-N	104	cap.6
77920420	GRIPPER 200 3MN-N	106	cap.6
77920425	GRIPPER 250 3MN-N	108	cap.6
77920462	GRIPPER 125 3MN-N STEEL	102	cap.6
77920466	GRIPPER 160 3MN-N STEEL	104	cap.6
77920516	GRIPPER 160 3MNS-N (WITH SPRINGS)	104	cap.6
77920520	GRIPPER 200 3MNS-N (WITH SPRINGS)	106	cap.6
77920525	GRIPPER 250 3MNS-N (WITH SPRINGS)	108	cap.6
77920566	GRIPPER 160 3MNS-N STEEL (WITH SPRINGS)	104	cap.6
77920732	GRIPPER 320 3MNL-RR	110	cap.6
77920738	GRIPPER 380 3MNL-RR	112	cap.6
77920832	GRIPPER 320 3MNSL-RR	110	cap.6
77920838	GRIPPER 380 3MNSL-RR	112	cap.6
90166663	BRACKET MOD. 160-200-250 3MN-L /160 3MN-L	115	cap.6
90167563	BRACKET MOD. 200-250-320-380 3MN-L	115	cap.6
90686260	BRACKET+PROX KIT 125PPN	77	cap.6
90686263	BRACKET+PROX KIT 125PPL	77	cap.6
90687060	BRACKET+PROX KIT160PPN 200PPN	77	cap.6
90687063	BRACKET+PROX KIT 160-200PPL 250PPN	77	cap.6
90687563	BRACKET+PROX KIT 250PPL	77	cap.6
90901163	PNEUMATIC STROKE CONTROL VALVE 100PT	77	cap.6
90901763	PNEUMATIC STROKE CONTROL VALVE 125-160-200PT	77	cap.6
92670663	KIT SPRING WORKSTOP GRIPPER 64 3MN	114	cap.6
92670863	KIT SPRING WORKSTOP GRIPPER 80 3MN	114	cap.6
92671063	KIT SPRING WORKSTOP GRIPPER 100 3MN	114	cap.6
92671263	KIT SPRING WORKSTOP GRIPPER 125 3MN	114	cap.6
92671663	KIT SPRING WORKSTOP GRIPPER 160 3MN	114	cap.6
92672563	KIT SPRING WORKSTOP GRIPPER 200-250 3MN	114	cap.6
92673863	KIT SPRING WORKSTOP GRIPPER 320-380 3MN	114	cap.6
92710663	SOFT TOP JAW 64 3MN C45	119	cap.6
92710863	SOFT TOP JAW 80 3MN C45	119	cap.6
92711063	SOFT TOP JAW 100 3MN C45	119	cap.6
92711263	SOFT TOP JAW 125-3MN C45	119	cap.6
92711663	SOFT TOP JAW 160-3MN C45	119	cap.6
92712063	SOFT TOP JAW 200-3MN C45	119	cap.6
92712563	SOFT TOP JAW 250-3MN C45	119	cap.6
92720663	SOFT TOP JAW 64 3MN ALUMINIUM	119	cap.6
92720863	SOFT TOP JAW 80 3MN ALUMINIUM	119	cap.6
92721063	SOFT TOP JAW 100 3MN ALUMINIUM	119	cap.6
92721263	SOFT TOP JAW 125-3MN ALUMINIUM	119	cap.6
92721663	SOFT TOP JAW 160-3MN ALUMINIUM	119	cap.6
92722063	SOFT TOP JAW 200-3MN ALUMINIUM	119	cap.6
92722563	SOFT TOP JAW 250-3MN ALUMINIUM	119	cap.6
97901801	PNEUMATIC STROKE CONTROL VALVE 180STV-3	77	cap.6

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