



Integrated systems for production



GOLD

Automatic Clamp



Integrated systems for production

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Automatic clamping devices suitable for locking-unlocking pallets. They are based on a mechanical locking-unlocking system pneumatically/hydraulically activated by means of a manual or automatic control.

MAIN FEATURES & STRENGTHS

Safety locking system (normally closed) with a dedicated internal channel for the swarf evacuation and the locking control.

Lifting system to remove and set down the pallet easily.

Capable of **adapting** to the pallet **micro deformation**.



GOLD

Flexible manufacturing system (FMS): machine tools feeding by a pallet changer system

An handling system carries workpieces or pallets from the storage stations to a machines and vice versa.

It could be:

- automatic (if the pallet/workpiece changer system can be controlled by a software).
- manual (if the handling is controlled by an operator, which moves the pallet/workpiece using its physical force, or by means of a lifting/moving system as a bridge crane in case of heavier loads).

The Gold devices, placed on the machines table, allow to clamp/un-clamp the pallet. They can be anyway applied for other purposes.

GOLD - FEATURES AND STRENGTHS

GOLD - FEATURES AND STRENGTHS

APPLICATION DETAILS



For further technical details,
see the corresponding data sheet

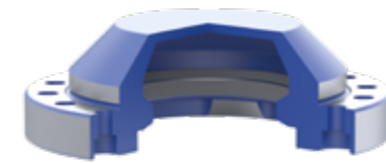
UNLOCKING-LIFTING AND BLOWING SYSTEMS

Two lines to control the unlocking-lifting and the blowing systems:

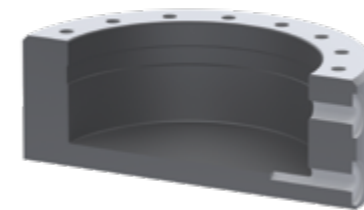
- BLOWING:** supplying air at proper pressure the blowing central outflow could be used:
 - for the swarf evacuation, 6÷8bar, CLEANING function;
 - to verify if the pallet is correctly locked/unlocked (using the pressure variation caused by the closing chamber coming from the contact between the Gold with the pallet), CHECKING function.
- UNLOCKING-LIFTING:** without providing air or oil, the pallet is locked by the action of the spheres (normally closed). Supplying air or oil at the proper pressure, the spheres retract (un-locking the pallet) and the piston goes up (lifting the pallet).

The air/oil supply can be controlled manually by the operator or automatically by PLC or CNC.

CENTERING FLANGE



GOLD SEAT

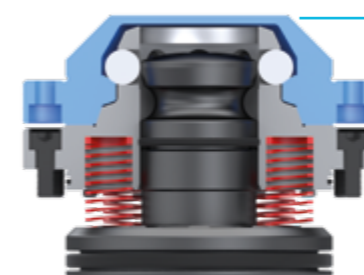


- Inlet Blowing (Cleaning and Checking). Fluid type: air
 - Inlet Unlocking-lifting. Fluid type: air or oil
- For the fluid Inlets can be used the inlets available on the Gold itself if any or the inlets coming from the Gold seat.

MANUAL CONTROL

AUTOMATIC CONTROL
by PLC/CNC

FLANGE LIFTED DOWN AND LOCKED



The piston goes down and the spheres go out

FLANGE UN-LOCKED AND LIFTED UP



The piston goes up and the spheres retract

Lifting stroke

↑ Pressure

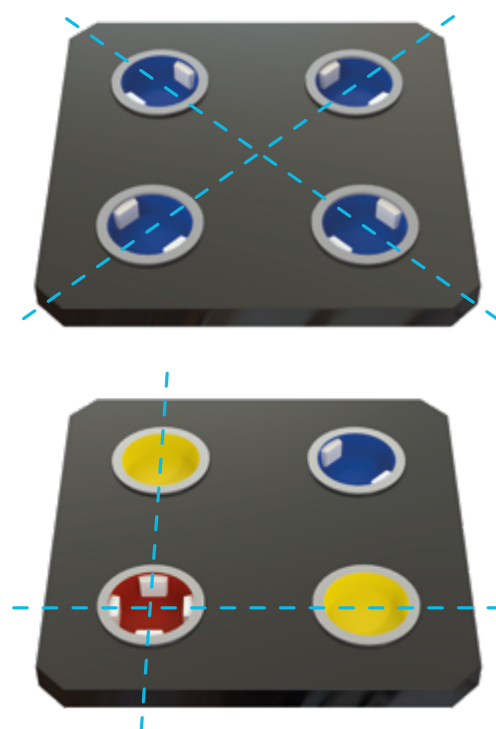
GOLD - FEATURES AND STRENGTHS

GOLD - FEATURES AND STRENGTHS

MICRO DEFORMATIONS AND DIRECTION CONTROL

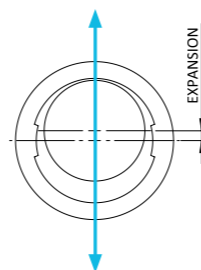
The heat generated by the machining can expand the pallet. In the case it is required to remove the pallet from the Gold without leaving it for the cooling down, it is recommended to use dedicated type of Centering flange, which differ on the inner conical surface extension. This allows to manage the thermal expansion of the pallet as shown below.

Type of fit:



APPLICATION EXAMPLES

SYSTEM TO GET A UNIFORM EXPANSION FROM THE PALLET CENTRE



SYSTEM TO GET A LINEAR EXPANSION FROM A PALLET CORNER

PRODUCT RANGE AND TECHNICAL DATA

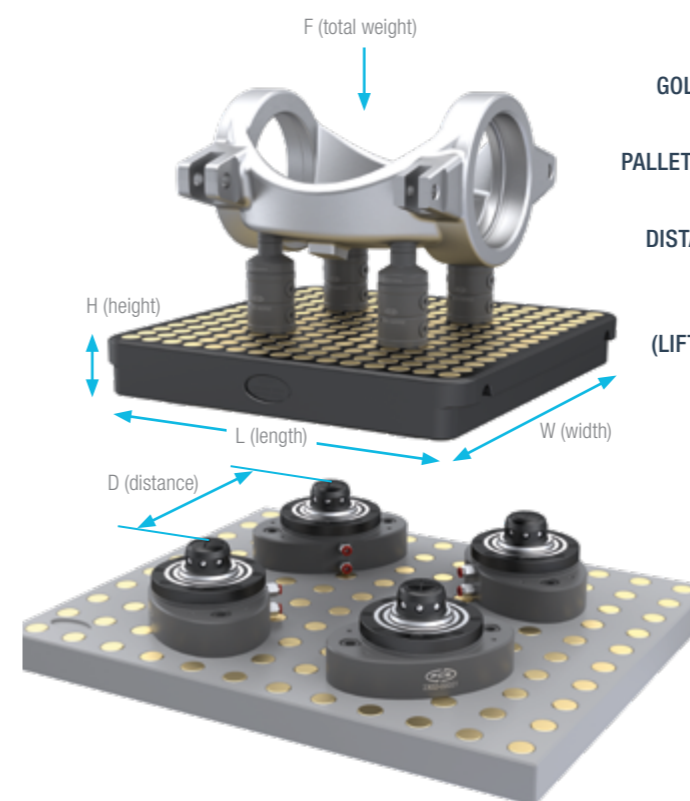


| | GOLD 1 | GOLD 2 | GOLD 3 | GOLD 7 |
|--|-----------|------------|------------|-----------|
| OVERALL DIMENSIONS (mm) | D95 H60,5 | D119 H74,5 | D119 H75,5 | D170 H84 |
| WEIGHT (kg) | 1,3 | 2,6 | 2,6 | 5,5 |
| MIN CLAMPS DISTANCE (mm) | 100 | 150 | 150 | 200 |
| UNLOCKING-LIFTING SYSTEM (fluid type and pressure value range in bar) | Air 6÷8 | Air 6÷8 | Oil 10÷25 | Oil 25÷45 |
| CLEANING SYSTEM (fluid type and pressure value in bar) | Air 6÷8 | Air 6÷8 | Air 6÷8 | Air 6÷8 |
| LIFTING STROKE (mm) | 1,5 | 1,5 | 2,5 | 2 |
| NUMBER OF CYCLES (BASE) | 50000 | 50000 | 50000 | 50000 |



Values referred per each single device

PALLET MATCHING



| | GOLD 1 | GOLD 2 | GOLD 3 | GOLD 7 |
|--|--------|-----------------|-------------------|-------------------|
| GOLD CAPACITY - K (mm2/each) | 22000 | 62500 | 90000 | 200000 |
| PALLET THICKNESS - H (mm) | MIN 55 | MIN 55 | MIN 55 | MIN 80 |
| DISTANCE BETWEEN GOLD - D (mm) | 100 | 150÷250 | 150÷350 | 200÷800 |
| COMPRESSIVE (LIFTING) FORCE (N) | 842 | 1415 (Air 8bar) | 10100 (Oil 25bar) | 29545 (Oil 45bar) |

Procedure to identify Gold type and quantities:

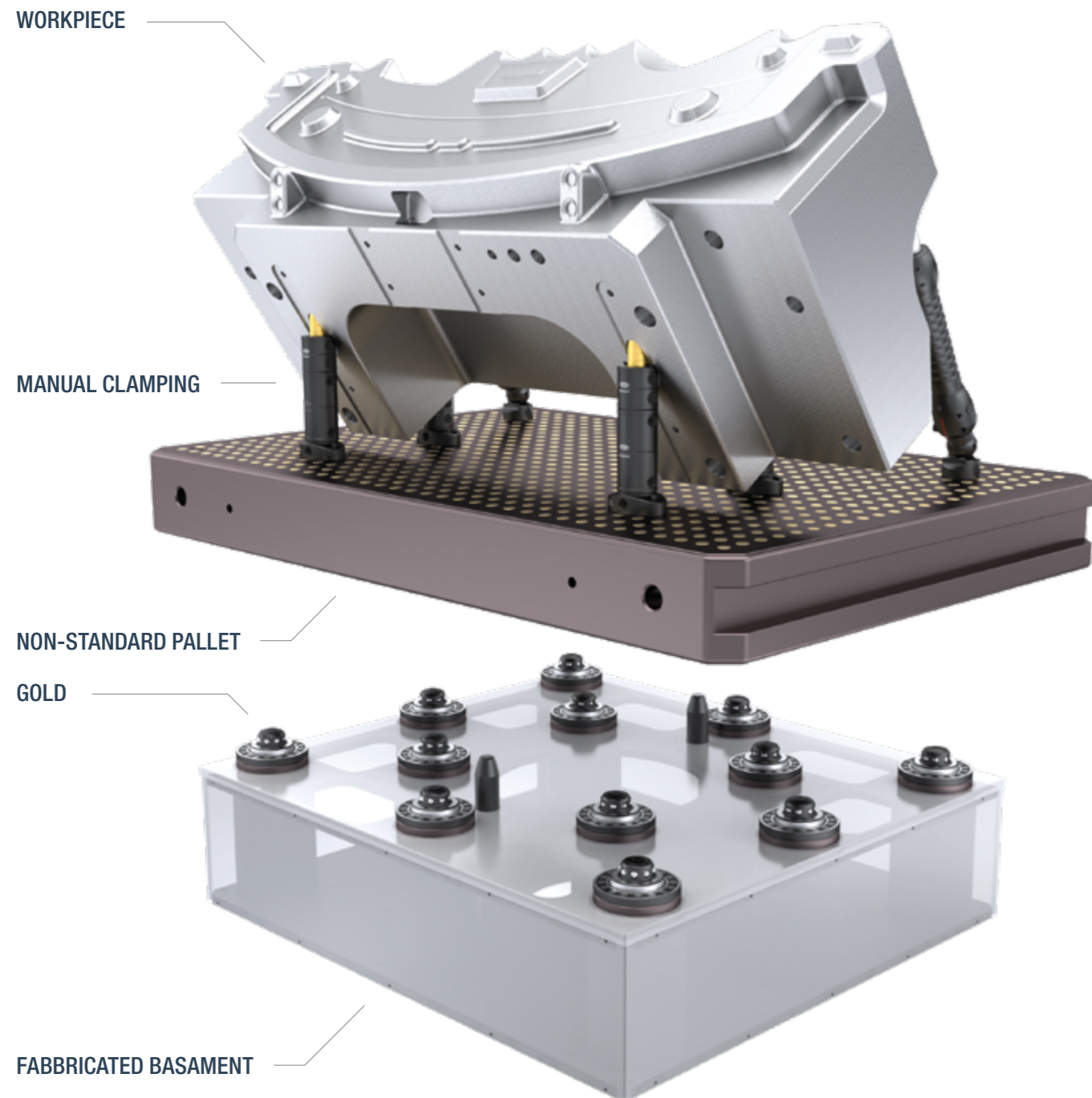
GOLD QUANTITY = PALLET SIZE / GOLD CAPACITY = (L x W) / K
 GOLD QUANTITY ≥ 4
 MAX COMPRESSIVE FORCE x GOLD QUANTITY ≥ F (pallet+workpiece)

GOLD - FEATURES AND STRENGTHS

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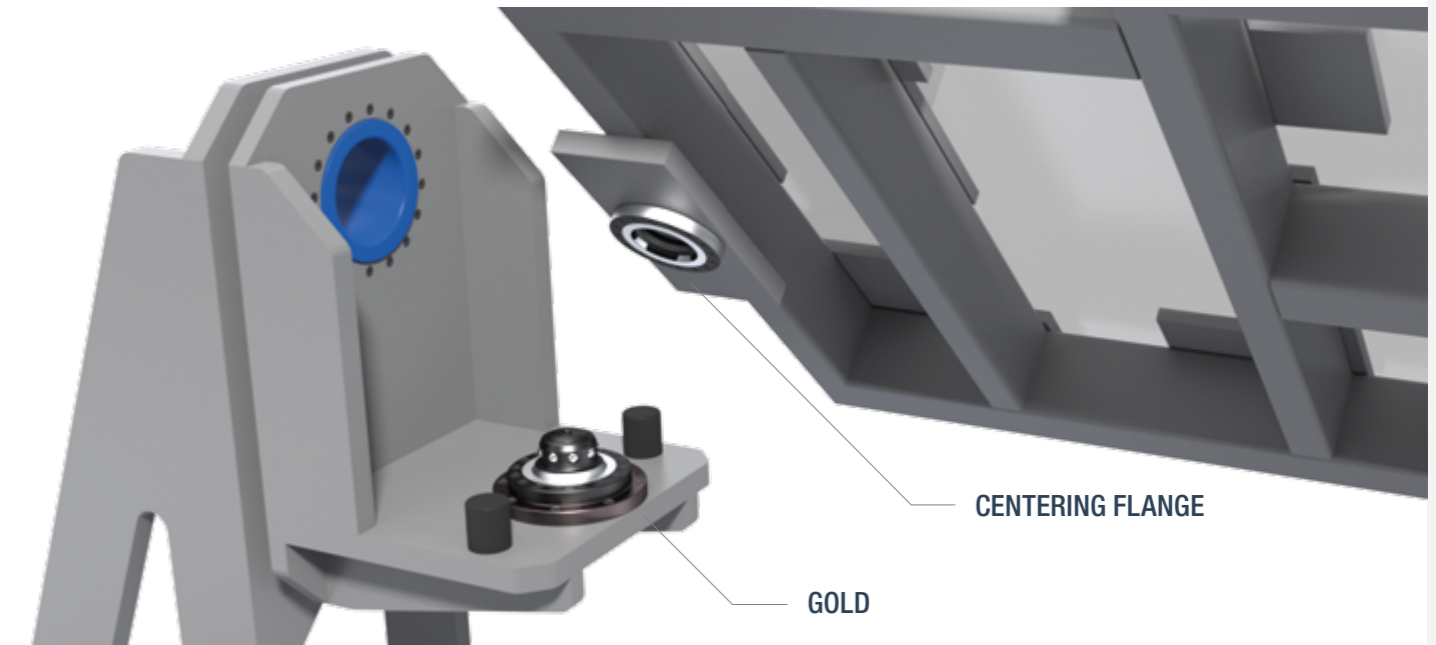
NON-STANDARD PALLET APPLICATIONS

Gold are flexible devices and they can be used in case of non-standard pallet as well. Gold type, quantity and location can vary depending on the pallet size and the working load to be handled.



DIFFERENT PURPOSE APPLICATIONS

Gold devices can be applied also to connect temporary two mechanical parts assuring high coupling accuracy and quick clamping/un-clamping performance.



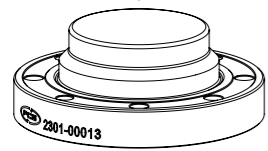
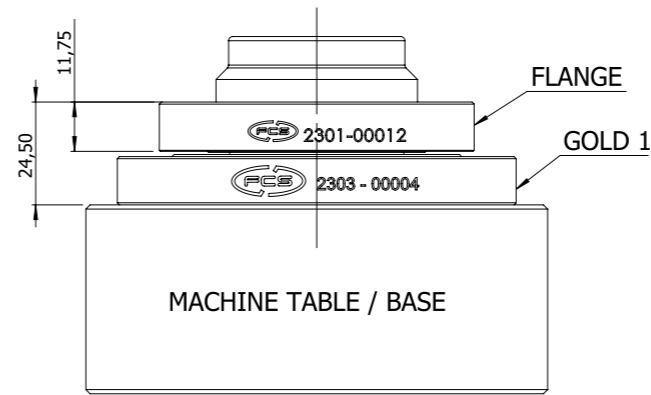
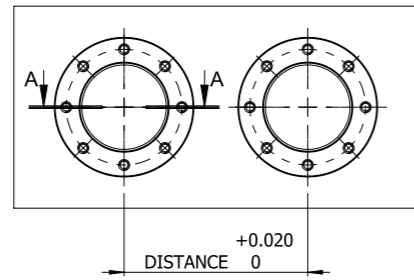
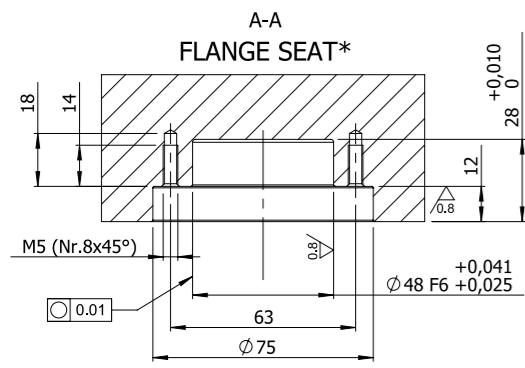
AUTOMATIC - MANUAL INTERCONNECTIONS

The automatic Gold 2 clamp can be connected to the manual clamping components using as interface a specific Body.



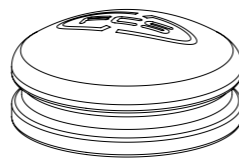
GOLD 1 - DATA SHEET

GOLD 1 - DATA SHEET

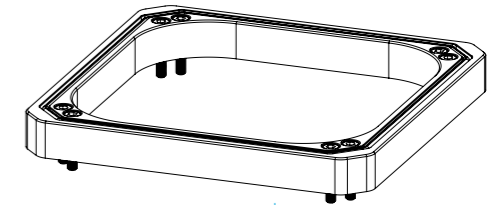


FLANGE GOLD 1:
 CODE 2301-00012 ●
 CODE 2301-00014 ●
 CODE 2301-00013 ●

PLUG
 CODE 0015-04554



SEALING KIT
 SET CODE 2305-00038



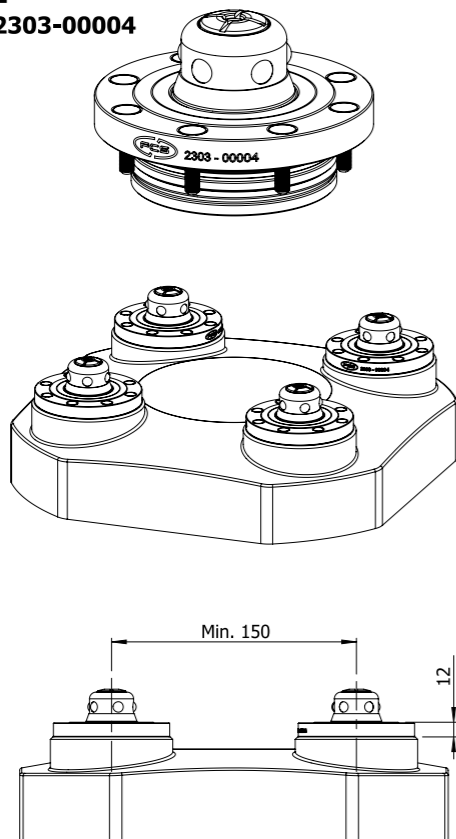
General tolerance ISO 2768-mK $1.6 / (0.8)$

* Flange seat to be carried out on the workpiece, support equipment and special pallet.

- Centering
- Positioning
- Closing

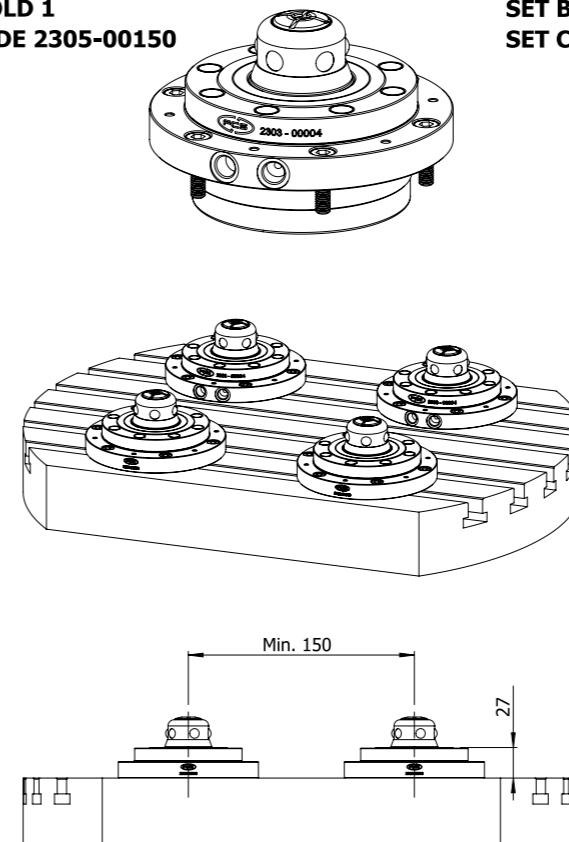
A

SET GOLD 1
 SET CODE 2303-00004



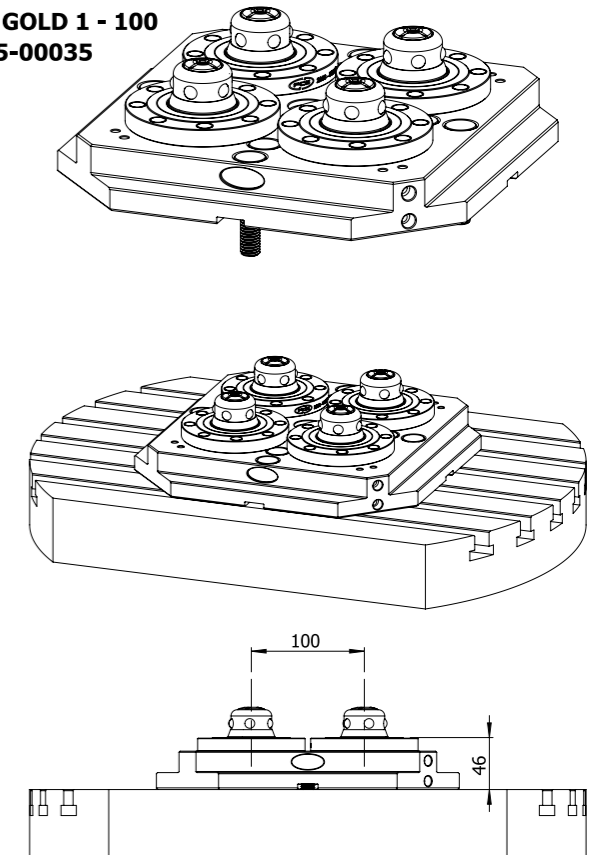
B

SET BUILT-IN BASE
 Nr.1 GOLD 1
 SET CODE 2305-00150

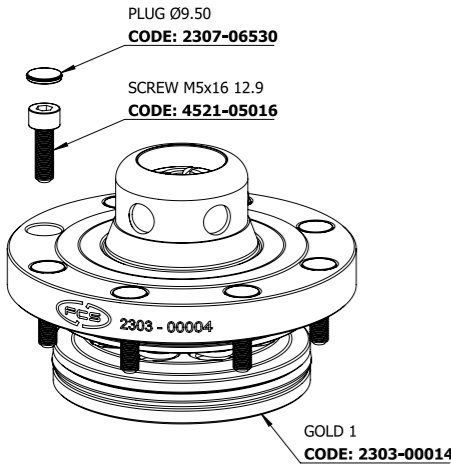
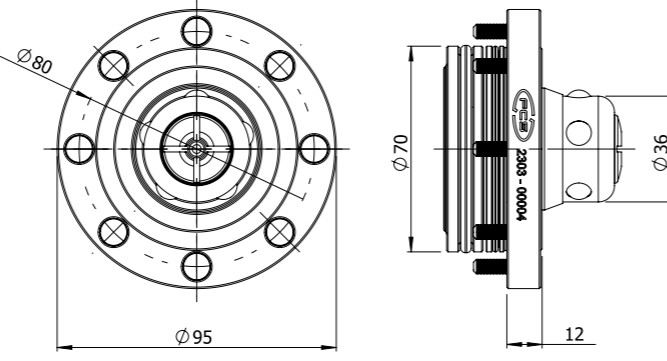


C

SET BASE Nr.4 GOLD 1 - 100
 SET CODE 2305-00035

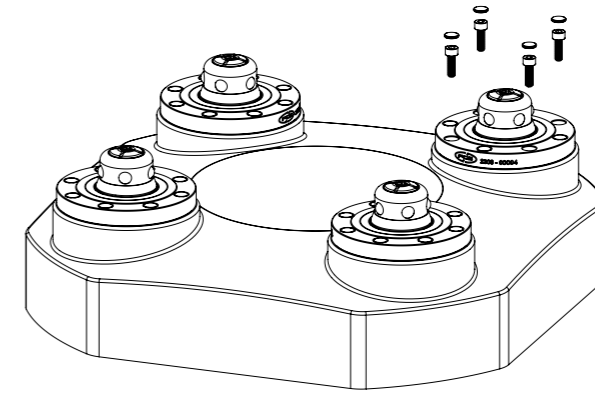


A MACHINING AND ASSEMBLING PROCEDURE

| | | | | | |
|---|---|------------------|--|-----------------------------|-----------------|
| SET CODE: 2303-00004 | | | TECHNICAL DATA | | |
|  | | |  | | |
| THE SET INCLUDES | | | UNLOCKING-LIFTING | 6÷8 bar (Air) 842 N (8 bar) | |
| Nr. | 1 | GOLD 1 | CODE 2303-00014 | LIFTING STROKE | 1.50 mm |
| Nr. | 8 | SCREW M5x16 12.9 | CODE 4521-05016 | BLOWING | Max 8 bar (Air) |
| Nr. | 8 | PLUG Ø9.50 | CODE 2307-06530 | NUMBER OF CYCLES | 500000 |
| | | | WEIGHT | 1.3 kg | |

STEP 2:

Assembly the Golds in the corresponding seats using nr.4 M5 screws, located at 90° each other (recommended torque 5 Nm).



STEP 3:

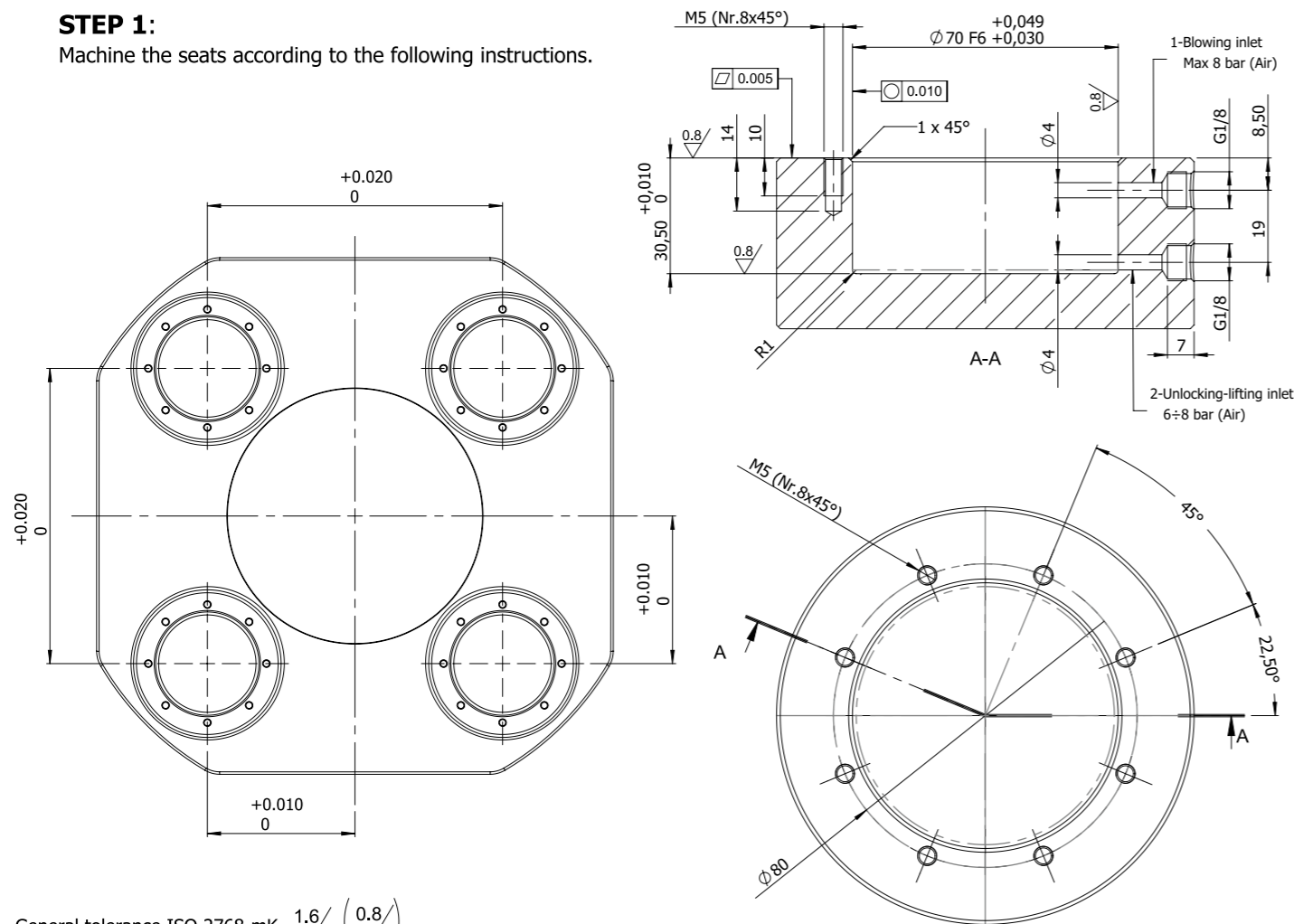
Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the Golds). Lift down the pallet until it comes in contact with the Golds. Release pressure (to lock the pallet on the Golds).

STEP 4:

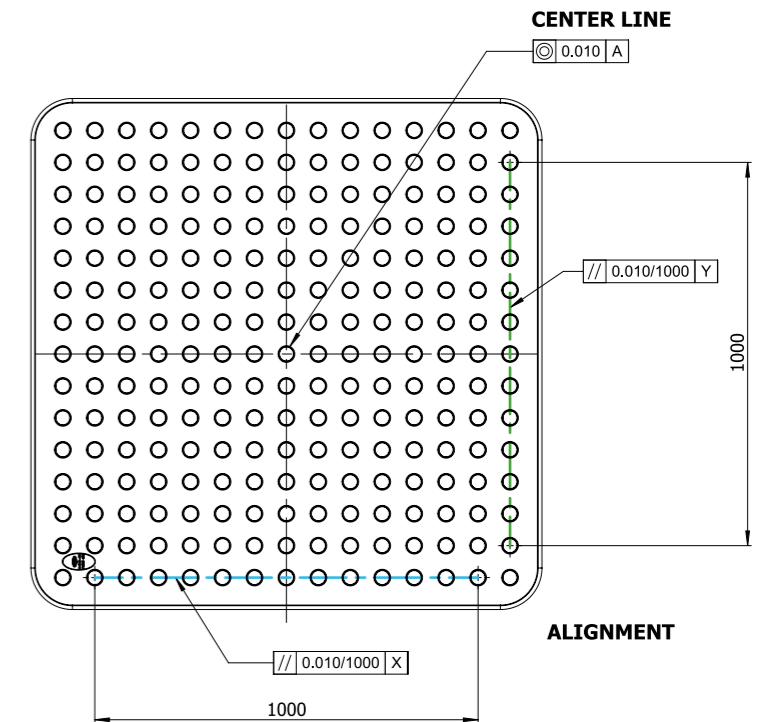
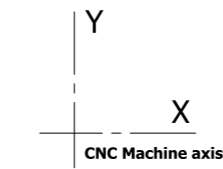
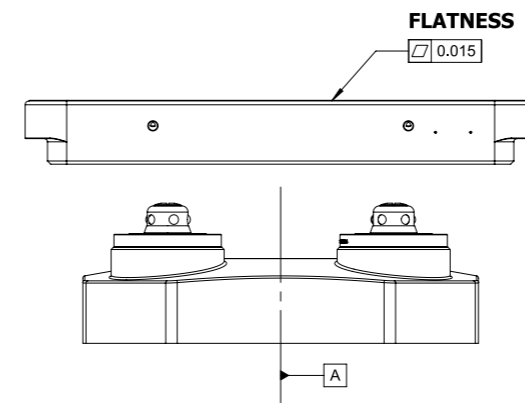
Control the pallet flatness on the upper surface: max 0.015mm. Control and re-adjust the pallet in order to get:
 - Alignment along the x and y axis: max 0.010/1000 mm.
 - Center line coaxiality: max 0.010 mm.

STEP 1:

Machine the seats according to the following instructions.



General tolerance ISO 2768-mK 1.6 / (0.8)



STEP 5:

Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds). Remove/lift-up the pallet. Release pressure (to lock the Golds). Tighten all M5 screws (Nr.32) with the criss-cross sequence method at 10 Nm.

STEP 6:

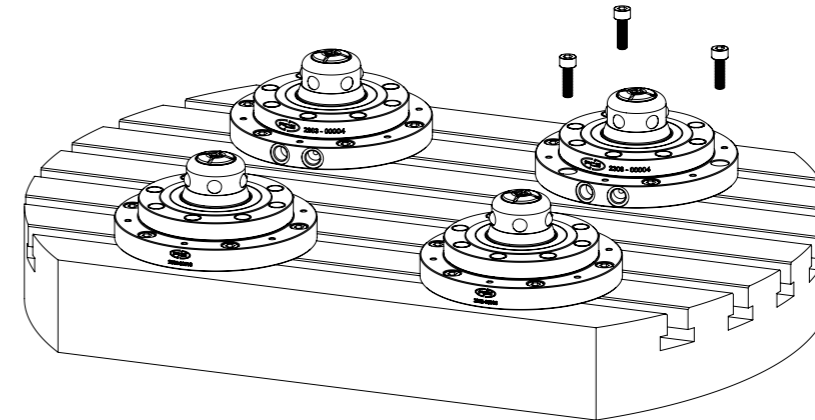
Re-control the pallet repeating the steps 3, 4 and 5 (without tighten the M5 screws, because this was already done previously).

B MACHINING AND ASSEMBLING PROCEDURE

| | | | |
|--|---|--|---------------------|
| SET CODE: 2305-00150 | | TECHNICAL DATA | |
| <p>SCREW M6x20 12.9 CODE: 4521-06020</p> <p>SET GOLD 1 SET CODE: 2303-00004</p> <p>BUILT-IN BASE Nr.1 GOLD 1 CODE: 2302-00065</p> <p>THREAD HOLES G1/8</p> | | <p>Dimensions: 25, 14,50, 27, 0,89, 0,36, 0,95, 0,124, 0,109</p> | |
| UNLOCKING-LIFTING | | 6÷8 bar (Air) 842 N (8 bar) | |
| LIFTING STROKE | | 1.50 mm | |
| BLOWING | | Max 8 bar (Air) | |
| NUMBER OF CYCLES | | 500000 | |
| WEIGHT | | 3.0 kg | |
| THE SET INCLUDES | | | |
| Nr. | 1 | SET GOLD 1 | SET CODE 2303-00004 |
| Nr. | 1 | BUILT-IN BASE Nr.1 GOLD 1 | CODE 2302-00065 |
| Nr. | 6 | SCREW M6x20 12.9 | CODE 4521-06020 |

STEP 2:

Assembly the Golds in the corresponding seats using nr.3 M6 screws, located at 60° each other (recommended torque 5 Nm).

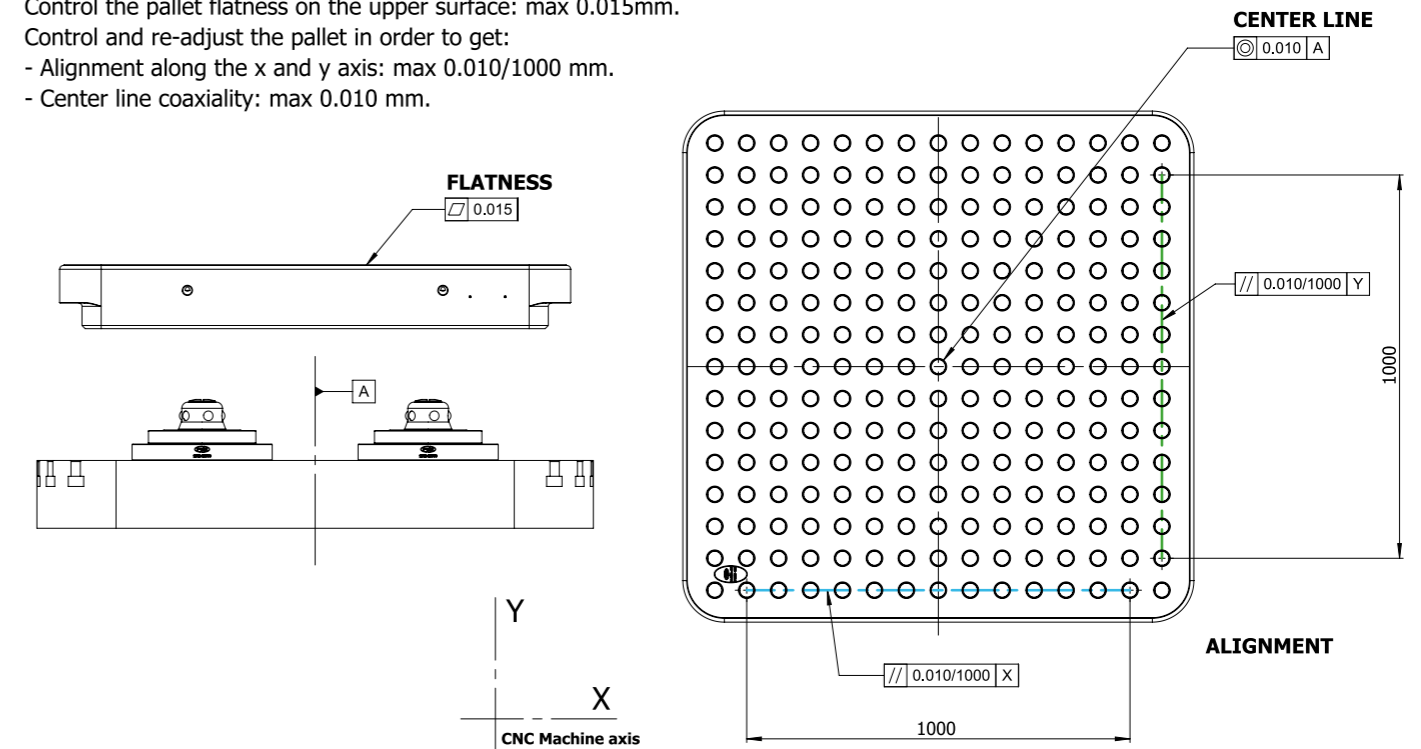


STEP 3:

Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the Golds).
Lift down the pallet until it comes in contact with the Golds.
Release pressure (to lock the pallet on the Golds).

STEP 4:

Control the pallet flatness on the upper surface: max 0.015mm.
Control and re-adjust the pallet in order to get:
- Alignment along the x and y axis: max 0.010/1000 mm.
- Center line coaxiality: max 0.010 mm.



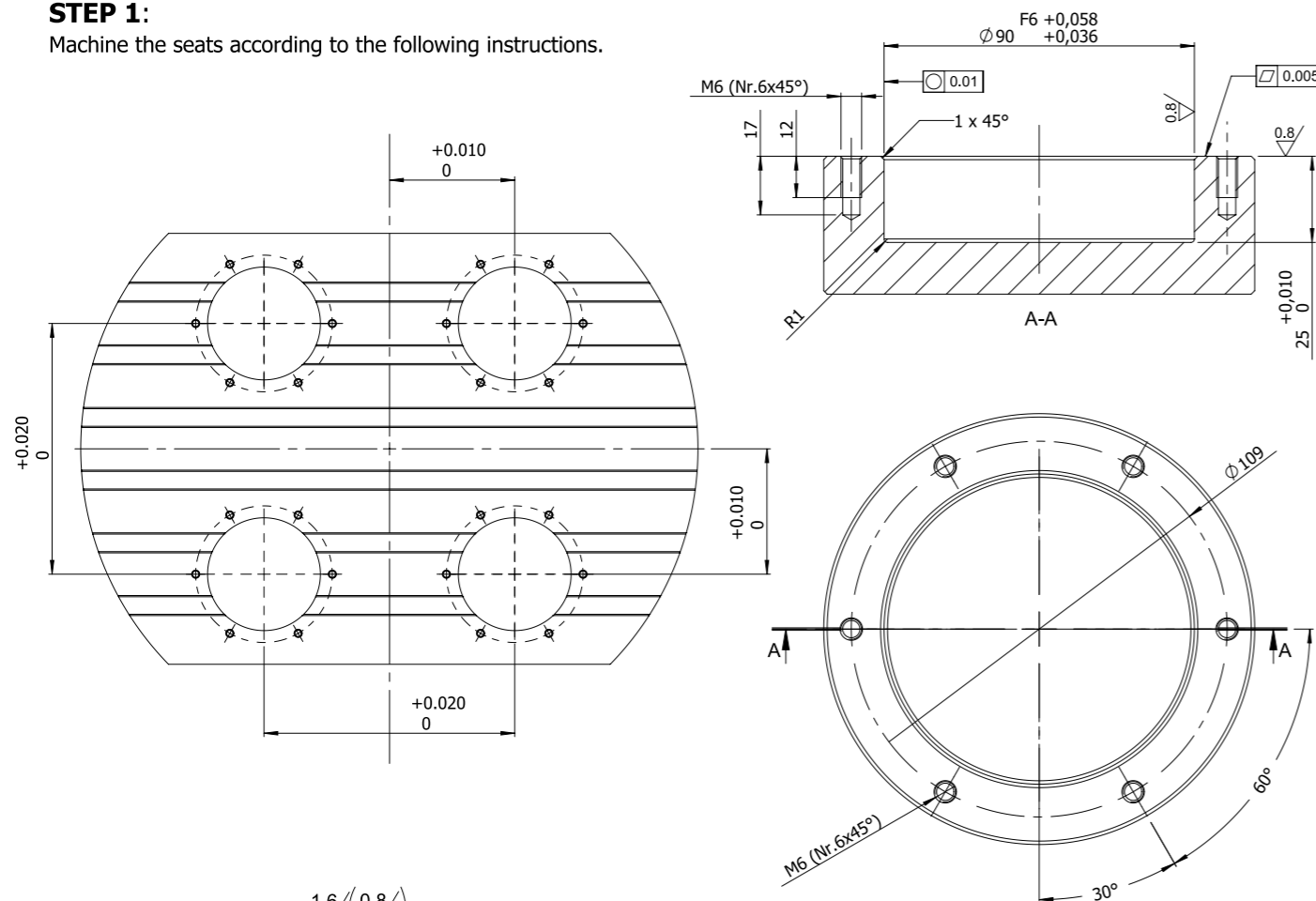
STEP 5:

Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds).
Remove/lift-up the pallet.
Release pressure (to lock the Golds).
Tighten all M6 screws (Nr.24) with the criss-cross sequence method at 20 Nm.

STEP 6:

Re-control the pallet repeating the steps 3, 4 and 5 (without tighten the M6 screws, because this was already done previously).

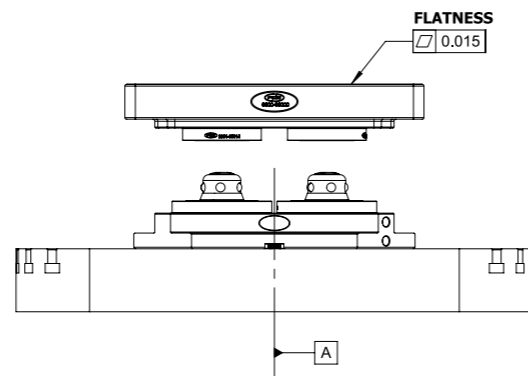
STEP 1:
Machine the seats according to the following instructions.



C MACHINING AND ASSEMBLING PROCEDURE

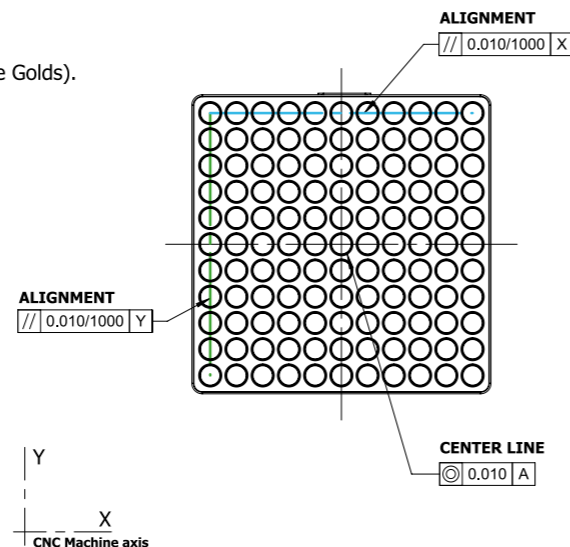
| SET CODE: 2305-00035 | | | | TECHNICAL DATA | |
|---|---|-----------------------|---------------------|---|-----------------------------|
| <p>PLUG Ø20 CODE: 0015-04501</p> <p>SCREW M12x45 12.9 CODE: 4524-12045</p> <p>SET GOLD 1 SET CODE: 2303-00004</p> <p>BASE Nr.4 GOLD 1 CODE: 2305-00037</p> <p>THREAD HOLES G1/8</p> | | | | <p>100</p> <p>46</p> <p>29</p> <p>200</p> <p>268</p> <p>Workable area</p> | |
| THE SET INCLUDES | | | | UNLOCKING-LIFTING | 6÷8 bar (Air) 842 N (8 bar) |
| Nr. | 1 | BASE Nr.4 GOLD1 - 100 | CODE 2305-00037 | LIFTING STROKE | 1.50 mm |
| Nr. | 4 | SET GOLD 1 | SET CODE 2303-00004 | BLOWING | Max 8 bar (Air) |
| Nr. | 4 | PLUG Ø20 | CODE 0015-04501 | NUMBER OF CYCLES | 500000 |
| Nr. | 4 | SCREW M12x45 12.9 | CODE 4521-12045 | WEIGHT | 16.1 kg |

STEP 1: Verify the feasibility of the fixing holes on the machine table.
The fixing holes on the machine table have to be carried-out according to the existing holes on the Gold base (Nr.4 M12x45, thread depth 30mm).
As alternative option the fixing holes can be drilled on the Gold base inside the workable area. Recommended holes quantity and size as follows:
- Nr.8 M8 12.9 screws



STEP 2: Place the set base gold on the machine table. Set in the fixing screws using a low torque (5 Nm) and align using as reference the conical and coupling surface of the Gold devices (by means of a dial gauge fixed on the machine head).

- Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the Golds). Lift down the pallet until it comes in contact with the Golds. Release pressure (to lock the pallet on the Golds).
- Control the pallet flatness* on the upper surface: max 0.015mm.
- Control and re-adjust the pallet in order to get:
 - Alignment along the x and y axis: max 0.010/1000 mm.
 - Center line coaxiality: max 0.010 mm.
- Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds).
- Remove/lift-up the pallet.
- Release pressure (to lock the Golds).
- Tighten the screws at the recommended torque as follows:
 - M12 12.9 screws at 130 Nm
 - M8 12.9 screws at 40 Nm
- Re-control the pallet repeating the above steps.

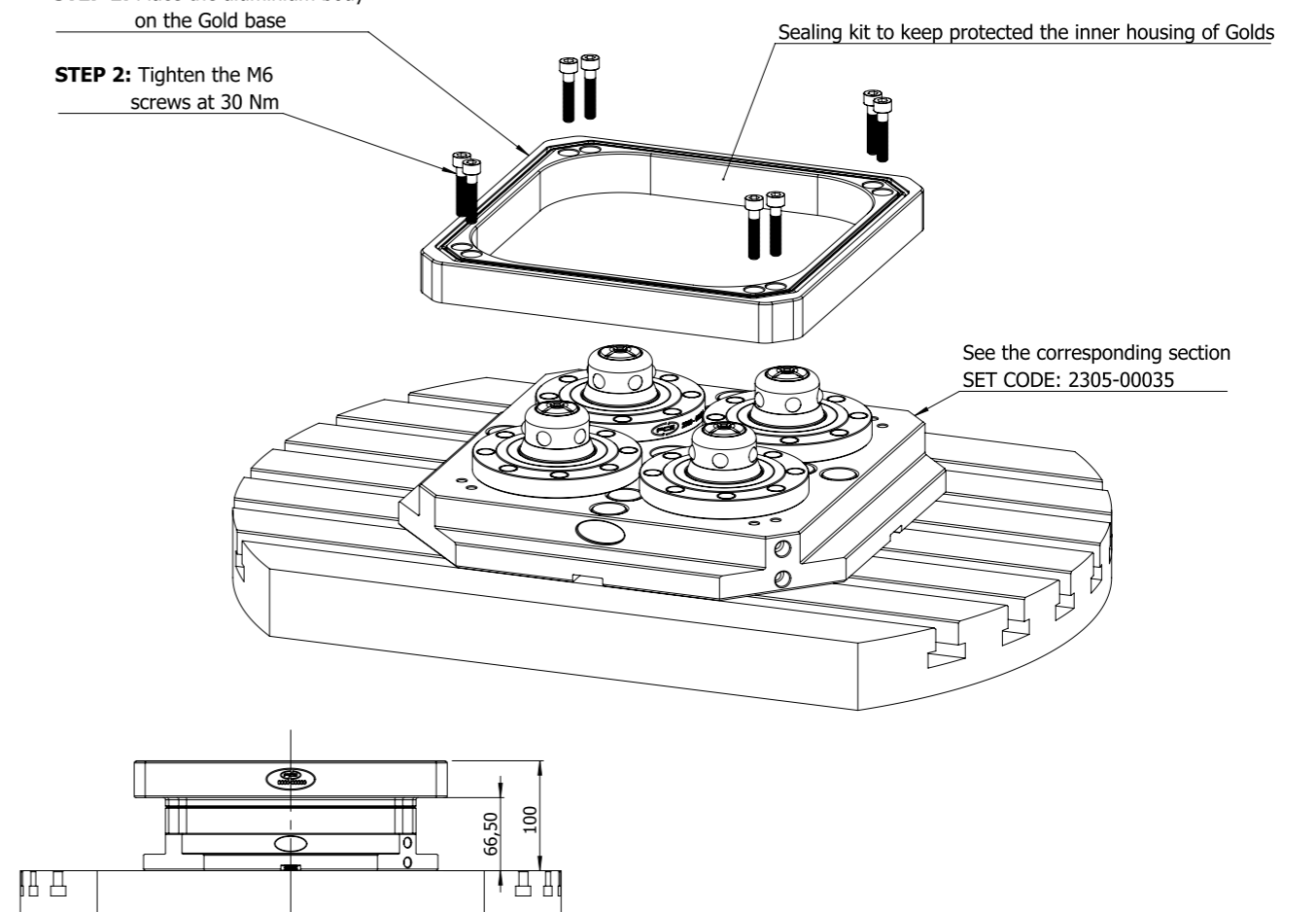


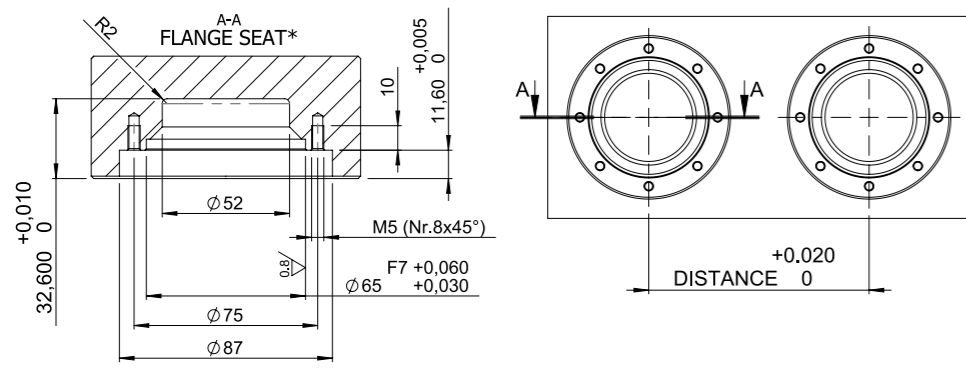
*The machine table flatness accuracy could affect the Golds flatness.

SEALING KIT

| SET CODE: 2305-00038 | | | TECHNICAL DATA | |
|---|---|------------------|---|---------|
| <p>SCREW M6x30 12.9 CODE: 4521-06030</p> <p>ALUMINIUM BODY CODE: 0017-00026</p> | | | <p>23.80</p> <p>196</p> <p>228</p> <p>R48</p> | |
| THE SET INCLUDES | | | WEIGHT | 16.1 kg |
| Nr. | 1 | ALUMINIUM BODY | CODE 2307-00007 | |
| Nr. | 8 | SCREW M6x30 12.9 | CODE 4521-06030 | |

STEP 1: Place the aluminium body on the Gold base
STEP 2: Tighten the M6 screws at 30 Nm



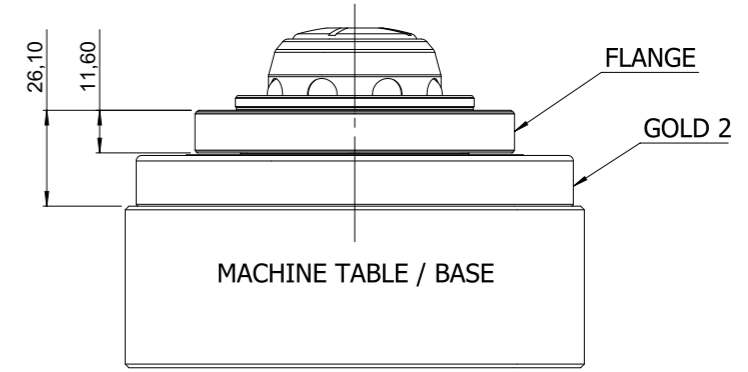
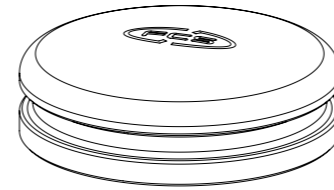


FLANGE GOLD 2:
 CODE 2301-00001 ●
 CODE 2301-00002 ●
 CODE 2301-00003 ●

SET BODY ADAPTER M16 H80 GOLD2
 SET CODE 2303-00008



PLUG
 CODE 0015-04551

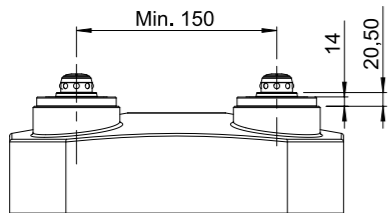
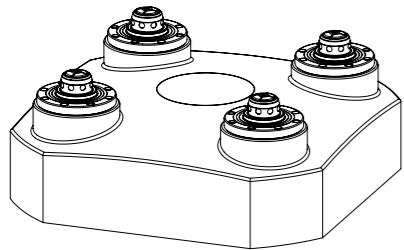
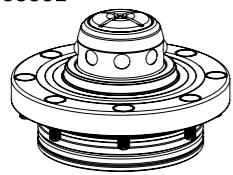


General tolerance ISO 2768-mK $\sqrt{1.6 / (0.8)}$

* Flange seat to be carried out on the workpiece, support equipment and special pallet.

- Centering
- Positioning
- Closing

SET GOLD 2
 SET CODE 2303-00001



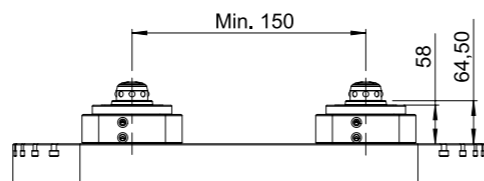
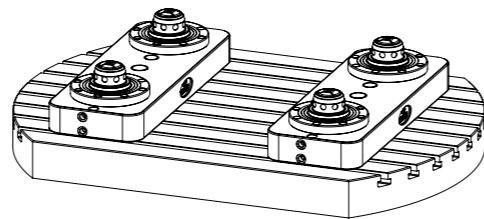
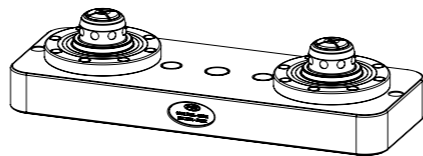
B1 SET BASE Nr.2 GOLD 2 - 200
 SET CODE 2305-00003

B2 SET BASE Nr.2 GOLD 2 - 250
 SET CODE 2305-00004

B3 SET BASE Nr.4 GOLD 2 - 200
 SET CODE 2305-00009

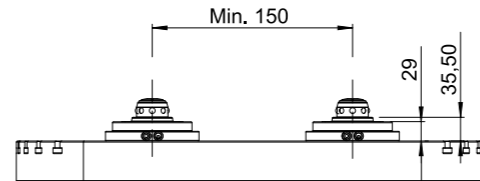
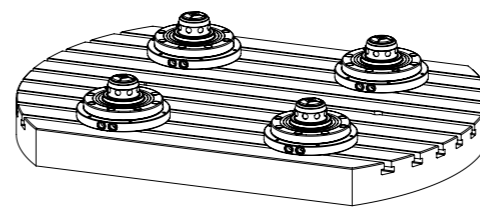
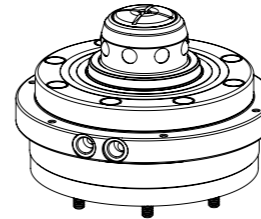
B4 SET BASE Nr.4 GOLD 2 - 250
 SET CODE 2305-00010

B5 SET BASE Nr.1 GOLD 2
 SET CODE 2305-00011

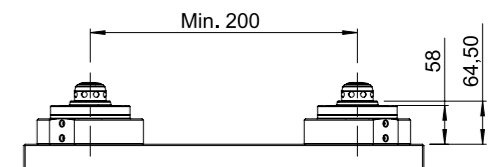
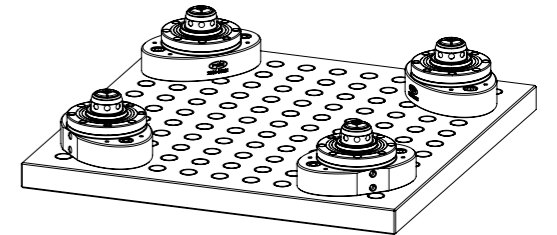
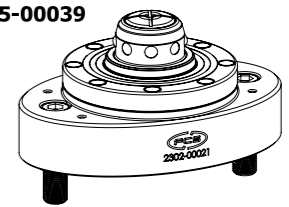


C1 SET BUILT-IN BASE
 Nr.1 GOLD 2 V.1
 SET CODE 2305-00045

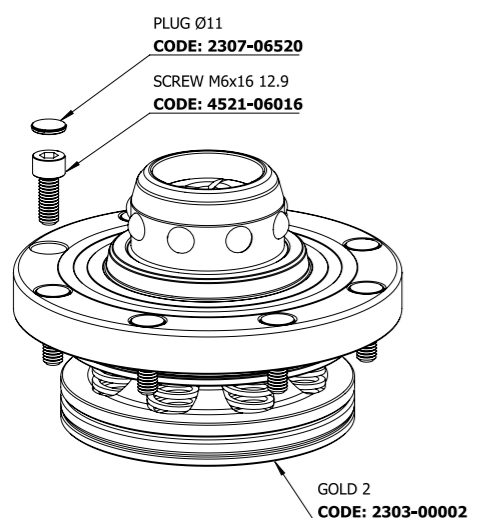
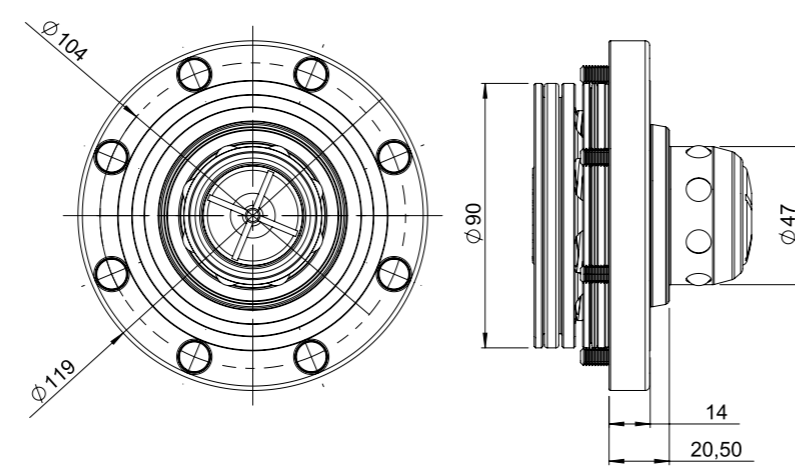
C2 SET BUILT-IN BASE
 Nr.1 GOLD 2 V.2
 SET CODE 2305-00239



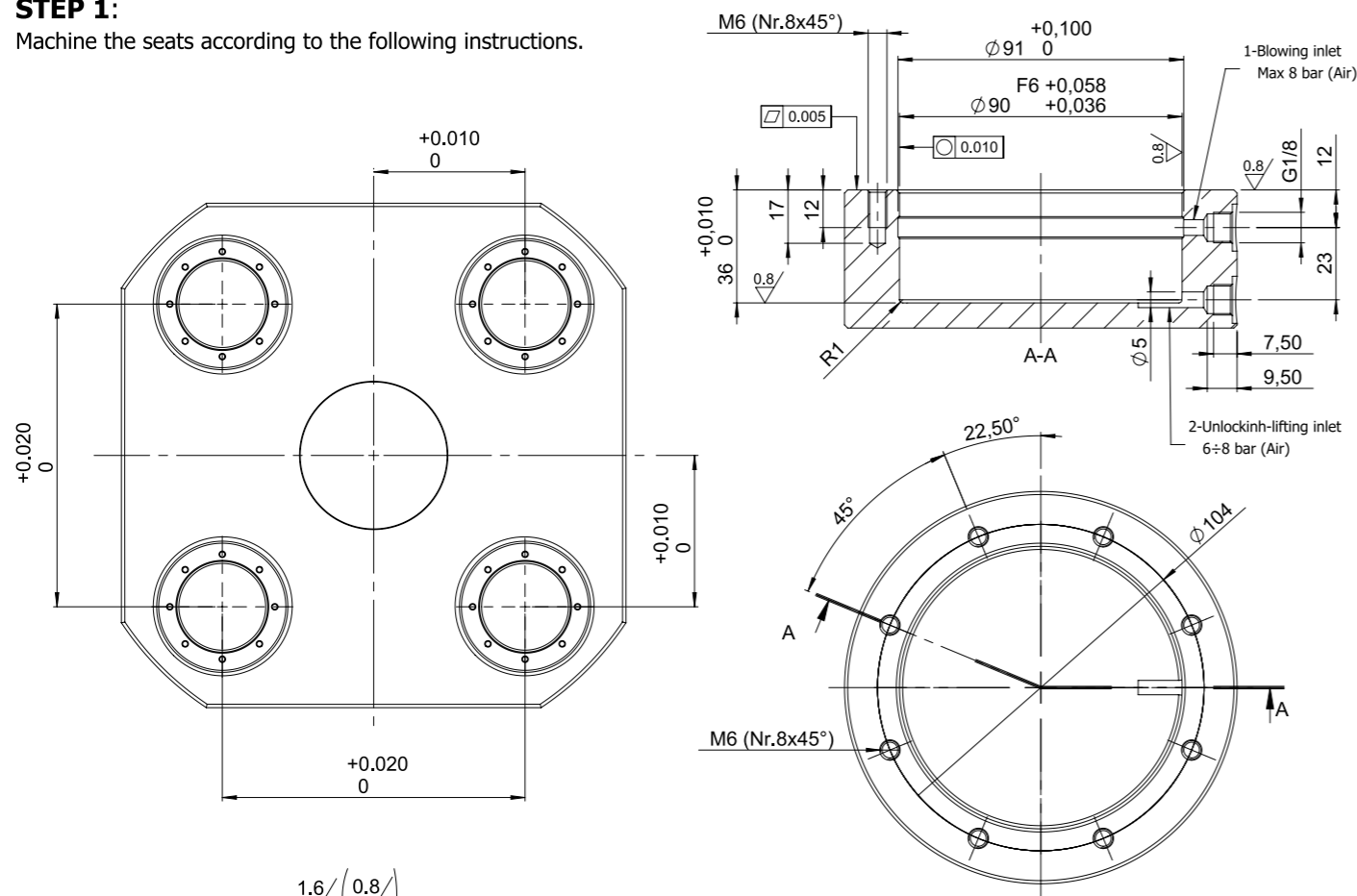
SET BASE Nr.1 GOLD 2
 SET CODE 2305-00039



A MACHINING AND ASSEMBLING PROCEDURE

| | | | |
|---|---|--|-----------------|
| SET CODE: 2303-00001 | | TECHNICAL DATA | |
|  | |  | |
| UNLOCKING-LIFTING | | 6÷8 bar (Air) 1415 N (8 bar) | |
| LIFTING STROKE | | 1.5 mm | |
| BLOWING | | Max 8 bar (Air) | |
| NUMBER OF CYCLES | | 500000 | |
| WEIGHT | | 2.6 kg | |
| THE SET INCLUDES | | | |
| Nr. | 1 | GOLD 2 | CODE 2303-00002 |
| Nr. | 8 | SCREW M6x16 12.9 | CODE 4521-06016 |
| Nr. | 8 | PLUG Ø11 | CODE 2307-06520 |

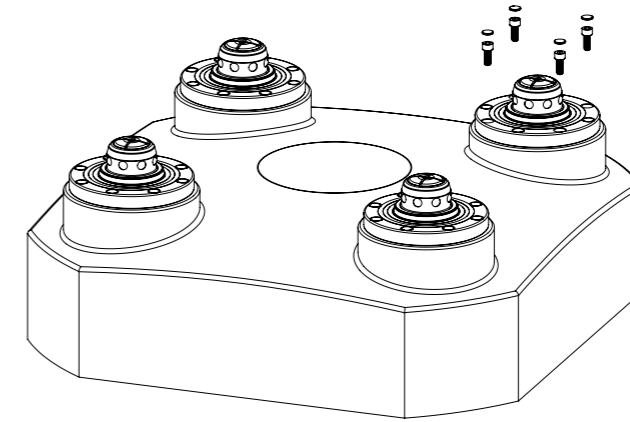
STEP 1:
Machine the seats according to the following instructions.



General tolerance ISO 2768-mK $\sqrt{1.6 / 0.8}$

STEP 2:

Assembly the Golds in the corresponding seats using nr.4 M6 screws, located at 90° each other (recommended torque 5 Nm).

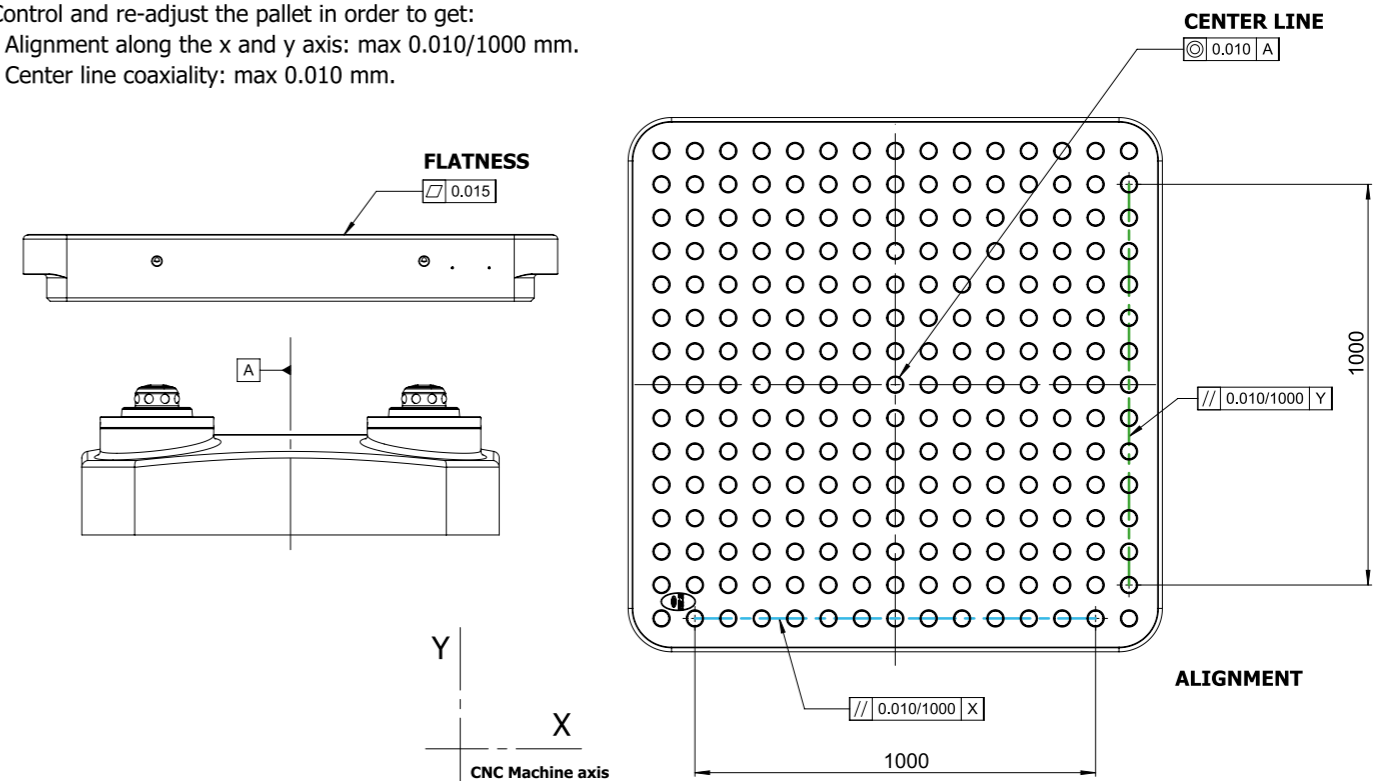


STEP 3:

Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the Golds). Lift down the pallet until it comes in contact with the Golds. Release pressure (to lock the pallet on the Golds).

STEP 4:

Control the pallet flatness on the upper surface: max 0.015mm. Control and re-adjust the pallet in order to get:
- Alignment along the x and y axis: max 0.010/1000 mm.
- Center line coaxiality: max 0.010 mm.



STEP 5:

Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds). Remove/lift-up the pallet. Release pressure (to lock the Golds). Tighten all the M6 screws (Nr.32) with the criss-cross sequence method at 20 Nm.

STEP 6:

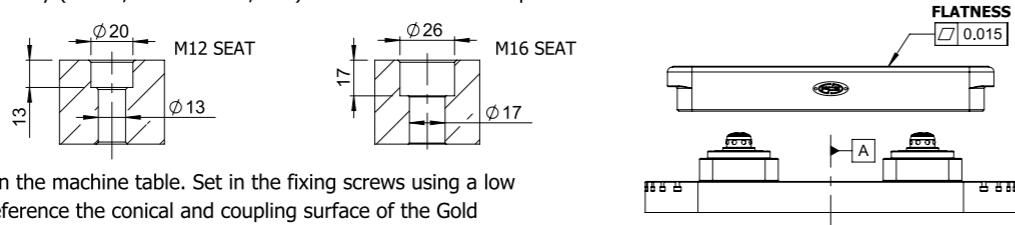
Re-control the pallet repeating the steps 3, 4 and 5 (without tighten the M6 screws because this was already done previously).

B1 MACHINING AND ASSEMBLING PROCEDURE

| SET CODE: 2305-00003 | | TECHNICAL DATA | |
|-------------------------|--------------------------|--------------------------|------------------------------|
| | | | |
| THE SET INCLUDES | | UNLOCKING-LIFTING | 6÷8 bar (Air) 2830 N (8 bar) |
| Nr. | 1 BASE Nr.2 GOLD 2 - 200 | CODE 2304-03305 | LIFTING STROKE |
| Nr. | 2 SET GOLD 2 | SET CODE 2303-00001 | 1.50 mm |
| Nr. | 1 PLUG Ø24 | CODE 0015-04500 | BLOWING |
| Nr. | 8 PLUG Ø20 | CODE 0015-04501 | Max 8 bar (Air) |
| | | | NUMBER OF CYCLES |
| | | | 500000 |
| | | | WEIGHT |
| | | | 19.7 kg |

STEP 1: Drill the fixing holes on each Gold base inside the workable area; the fixing holes position should be define according to the machine table geometry (t-slots, thread holes, etc.). Recommended holes quantities and size as follows:

- Nr.6 M12 12.9 screws
- Nr.4 M16 12.9 screws.



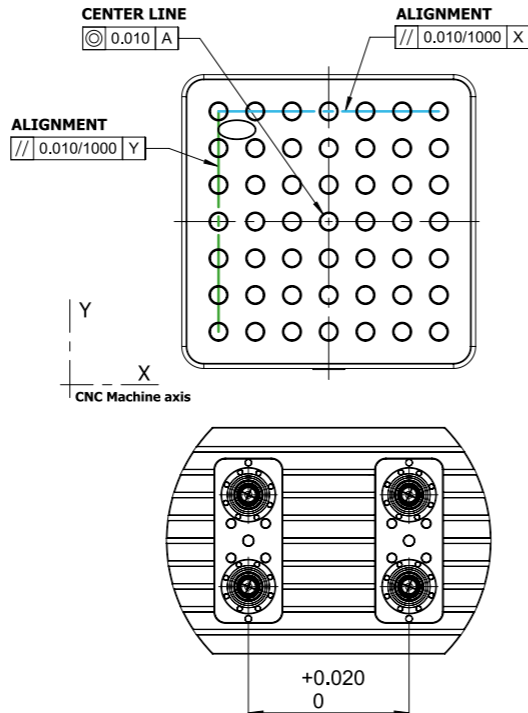
STEP 2: Place the set base gold on the machine table. Set in the fixing screws using a low torque (5 Nm) and align using as reference the conical and coupling surface of the Gold devices (by means of a dial gauge fixed on the machine head).

In case of one single Gold base:

- Control the Gold devices flatness* on the upper surface: max 0.015mm.
- Tighten the screws at the recommended torque as follows:
 - M12 12.9 screws at 130 Nm
 - M16 12.9 screws at 180 Nm

In case of two or more Gold bases:

- position them according to the requested distance between Gold axis (distance accuracy = 0/+0.020 mm) as well.
- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the Golds). Lift down the pallet until it comes in contact with the Golds. Release pressure (to lock the pallet on the Golds).
- Control the pallet flatness* on the upper surface: max 0.015mm.
- Control and re-adjust the pallet in order to get:
 - Alignment along the x and y axis: max 0.010/1000 mm.
 - Center line coaxiality: max 0.010 mm.
- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds).
- Remove/lift-up the pallet.
- Release pressure (to lock the Golds).
- Tighten the screws at the recommended torque as follows:
 - M12 12.9 screws at 130 Nm
 - M16 12.9 screws at 180 Nm
- Re-control the pallet repeating the above steps.



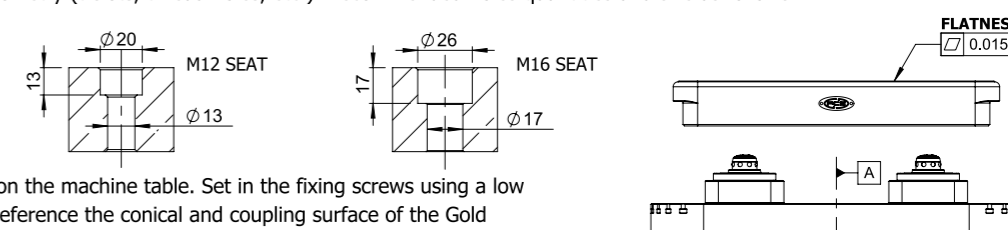
*The machine table flatness accuracy could affect the Golds flatness.

B2 MACHINING AND ASSEMBLING PROCEDURE

| SET CODE: 2305-00004 | | TECHNICAL DATA | |
|-------------------------|--------------------------|--------------------------|------------------------------|
| | | | |
| THE SET INCLUDES | | UNLOCKING-LIFTING | 6÷8 bar (Air) 2830 N (8 bar) |
| Nr. | 1 BASE Nr.2 GOLD 2 - 250 | CODE 2304-03304 | LIFTING STROKE |
| Nr. | 2 SET GOLD 2 | SET CODE 2303-00001 | 1.50 mm |
| Nr. | 1 PLUG Ø24 | CODE 0015-04500 | BLOWING |
| Nr. | 2 PLUG Ø20 | CODE 0015-04501 | Max 8 bar (Air) |
| | | | NUMBER OF CYCLES |
| | | | 500000 |
| | | | WEIGHT |
| | | | 22.3 kg |

STEP 1: Drill the fixing holes on each Gold base inside the workable area; the fixing holes position should be define according to the machine table geometry (t-slots, thread holes, etc.). Recommended holes quantities and size as follows:

- Nr.6 M12 12.9 screws
- Nr.4 M16 12.9 screws.



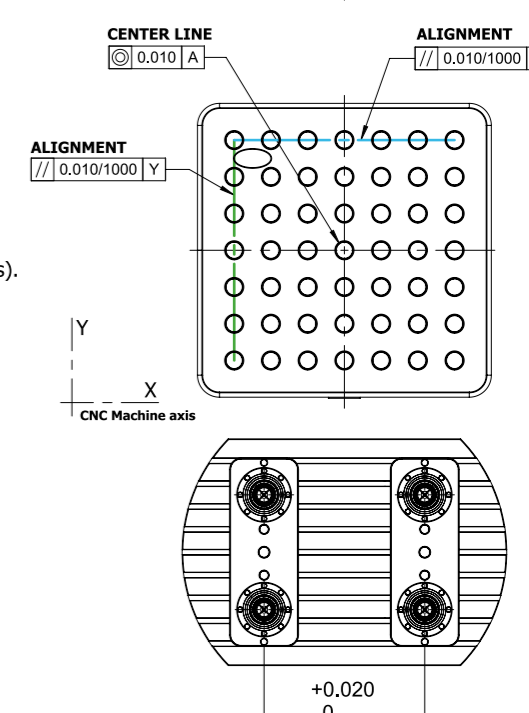
STEP 2: Place the set base gold on the machine table. Set in the fixing screws using a low torque (5 Nm) and align using as reference the conical and coupling surface of the Gold devices (by means of a dial gauge fixed on the machine head).

In case of one single Gold base:

- Control the Gold devices flatness* on the upper surface: max 0.015mm.
- Tighten the screws at the recommended torque as follows:
 - M12 12.9 screws at 130 Nm
 - M16 12.9 screws at 180 Nm

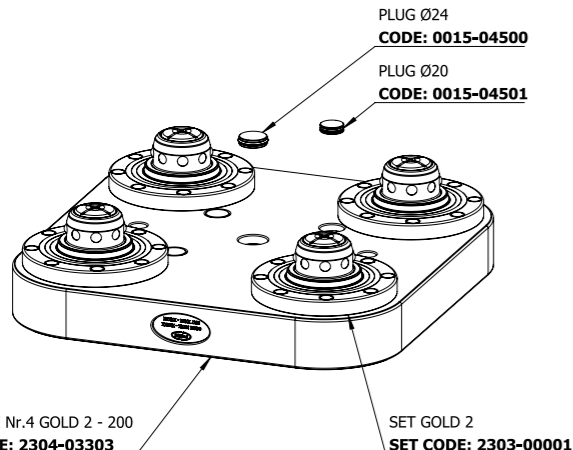
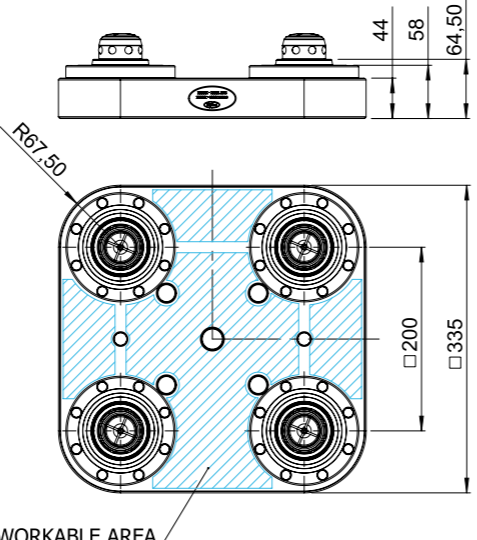
In case of two or more Gold bases:

- position them according to the requested distance between Gold axis (distance accuracy = 0/+0.020 mm) as well.
- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the Golds). Lift down the pallet until it comes in contact with the Golds. Release pressure (to lock the pallet on the Golds).
- Control the pallet flatness* on the upper surface: max 0.015mm.
- Control and re-adjust the pallet in order to get:
 - Alignment along the x and y axis: max 0.010/1000 mm.
 - Center line coaxiality: max 0.010 mm.
- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds).
- Remove/lift-up the pallet.
- Release pressure (to lock the Golds).
- Tighten the screws at the recommended torque as follows:
 - M12 12.9 screws at 130 Nm
 - M16 12.9 screws at 180 Nm
- Re-control the pallet repeating the above steps.



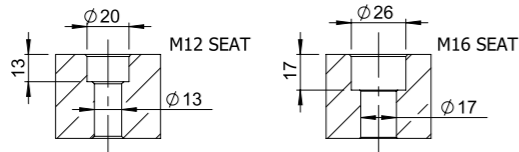
*The machine table flatness accuracy could affect the Golds flatness.

B3 MACHINING AND ASSEMBLING PROCEDURE

| | | | |
|---|---|--|------------------------------|
| SET CODE: 2305-00009 | | TECHNICAL DATA | |
|  | |  | |
| THREAD HOLES G1/8 ARE PRESENT FOR PNEUMATIC CONNECTIONS | | | |
| THE SET INCLUDES | | UNLOCKING-LIFTING | 6÷8 bar (Air) 5660 N (8 bar) |
| Nr. | 1 | BASE Nr.4 GOLD 2 - 200 | CODE 2304-03303 |
| Nr. | 4 | SET GOLD 2 | SET CODE 2303-00001 |
| Nr. | 1 | PLUG Ø24 | CODE 0015-04500 |
| Nr. | 4 | PLUG Ø20 | CODE 0015-04501 |
| | | LIFTING STROKE | 1.50 mm |
| | | BLOWING | Max 8 bar (Air) |
| | | NUMBER OF CYCLES | 500000 |
| | | WEIGHT | 40.0 kg |

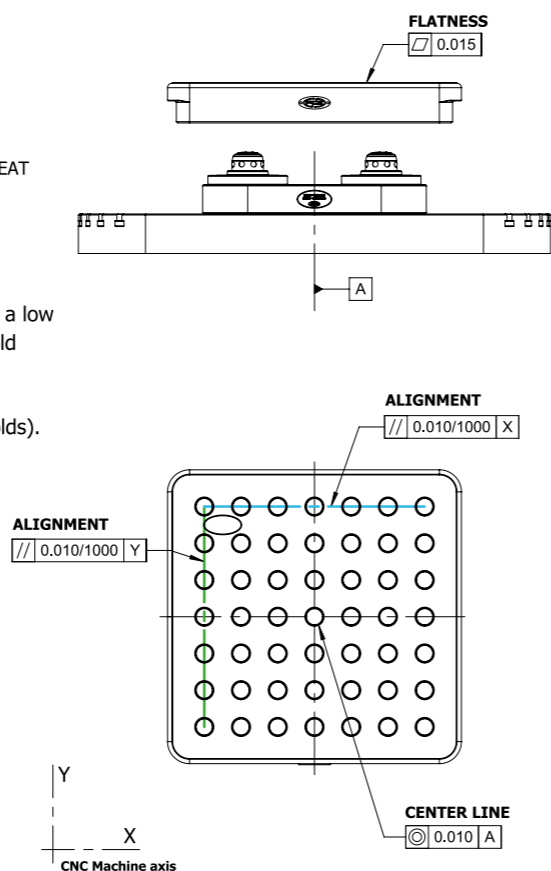
STEP 1: Drill the fixing holes on each Gold base inside the workable area; the fixing holes position should be define according to the machine table geometry (t-slots, thread holes, etc.). Recommended holes quantities and size as follows:

- Nr.8 M12 12.9 screws
- Nr.6 M16 12.9 screws.



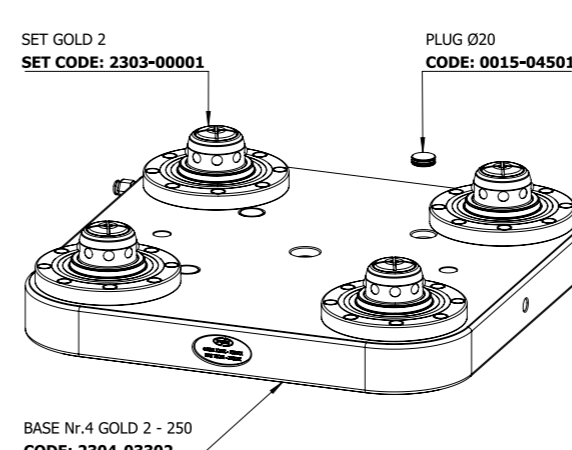
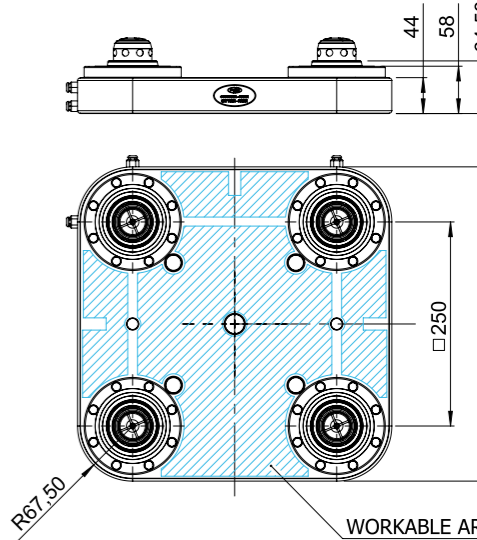
STEP 2: Place the set base gold on the machine table. Set in the fixing screws using a low torque (5 Nm) and align using as reference the conical and coupling surface of the Gold devices (by means of a dial gauge fixed on the machine head).

- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the Golds). Lift down the pallet until it comes in contact with the Golds. Release pressure (to lock the pallet on the Golds).
- Control the pallet flatness* on the upper surface: max 0.015mm.
- Control and re-adjust the pallet in order to get:
 - Alignment along the x and y axis: max 0.010/1000 mm.
 - Center line coaxiality: max 0.010 mm.
- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds).
- Remove/lift-up the pallet.
- Release pressure (to lock the Golds).
- Tighten the screws at the recommended torque as follows:
 - M12 12.9 screws at 130 Nm
 - M16 12.9 screws at 180 Nm
- Re-control the pallet repeating the above steps.



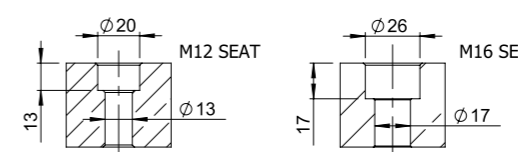
*The machine table flatness accuracy could affect the Golds flatness.

B4 MACHINING AND ASSEMBLING PROCEDURE

| | | | |
|---|---|---|------------------------------|
| SET CODE: 2305-00010 | | TECHNICAL DATA | |
|  | |  | |
| THREAD HOLES G1/8 ARE PRESENT FOR PNEUMATIC CONNECTIONS | | | |
| THE SET INCLUDES | | UNLOCKING-LIFTING | 6÷8 bar (Air) 5660 N (8 bar) |
| Nr. | 1 | BASE Nr.4 GOLD 2 - 250 | CODE 2304-03302 |
| Nr. | 4 | SET GOLD 2 | SET CODE 2303-00001 |
| Nr. | 4 | PLUG Ø20 | CODE 0015-04501 |
| | | LIFTING STROKE | 1.50 mm |
| | | BLOWING | Max 8 bar (Air) |
| | | NUMBER OF CYCLES | 500000 |
| | | WEIGHT | 52.5 kg |

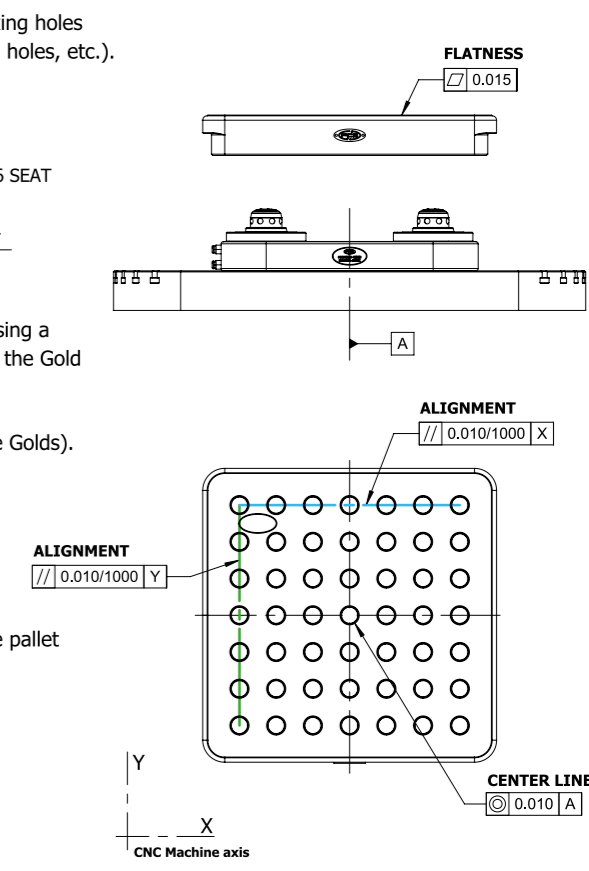
STEP 1: Drill the fixing holes on each Gold base inside the workable area; the fixing holes position should be define according to the machine table geometry (t-slots, thread holes, etc.). Recommended holes quantities and size as follows:

- Nr.8 M12 12.9 screws
- Nr.6 M16 12.9 screws.



STEP 2: Place the set base gold on the machine table. Set in the fixing screws using a low torque (5Nm) and align using as reference the conical and coupling surface of the Gold devices (by means of a dial gauge fixed on the machine head).

- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the Golds). Lift down the pallet until it comes in contact with the Golds. Release pressure (to lock the pallet on the Golds).
- Control the pallet flatness* on the upper surface: max 0.015mm.
- Control and re-adjust the pallet in order to get:
 - Alignment along the x and y axis: max 0.010/1000 mm.
 - Center line coaxiality: max 0.010 mm.
- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds).
- Remove/lift-up the pallet.
- Release pressure (to lock the Golds).
- Tighten the screws at the recommended torque as follows:
 - M12 12.9 screws at 100 Nm
 - M16 12.9 screws at 180 Nm
- Re-control the pallet repeating the above steps.

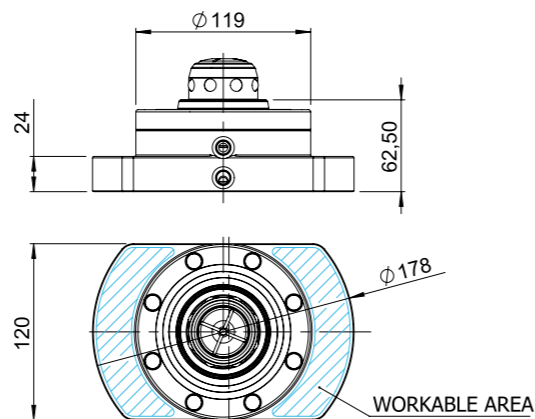
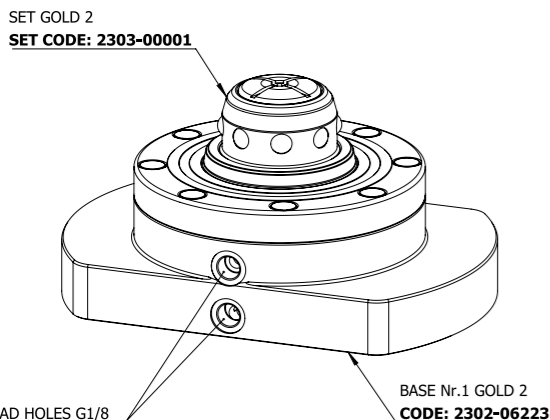


*The machine table flatness accuracy could affect the Golds flatness.

B5 MACHINING AND ASSEMBLING PROCEDURE

SET CODE: 2305-00011

TECHNICAL DATA



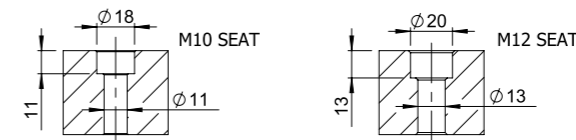
| | |
|--------------------------|------------------------------|
| UNLOCKING-LIFTING | 6÷8 bar (Air) 1415 N (8 bar) |
| LIFTING STROKE | 1.50 mm |
| BLOWING | Max 8 bar (Air) |
| NUMBER OF CYCLES | 500000 |
| WEIGHT | 6.0 kg |

THE SET INCLUDES

| | | | |
|-----|---|------------------|---------------------|
| Nr. | 1 | BASE Nr.1 GOLD 2 | CODE 2302-06223 |
| Nr. | 1 | SET GOLD 2 | SET CODE 2303-00001 |

STEP 1: Drill the fixing holes on each Gold base inside the workable area; the fixing holes position should be define according to the machine table geometry (t-slots, thread holes, etc.). Recommended holes quantities and size as follows:

- Nr.6 M10 12.9 screws
- Nr.4 M12 12.9 screws.



STEP 2: Place the set base gold on the machine table. Set in the fixing screws using a low torque (5 Nm) and align using as reference the conical and coupling surface of the Gold devices (by means of a dial gauge fixed on the machine head).

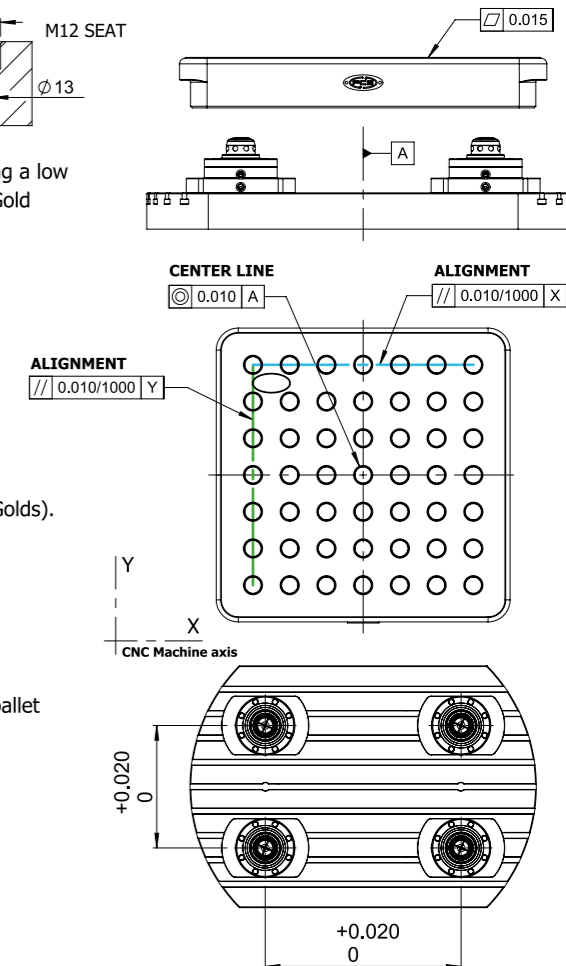
In case of one single Gold base:

- Control the Gold devices flatness* on the upper surface: max 0.015mm.
- Tighten the screws at the recommended torque as follows:
 - M10 12.9 screws at 80 Nm
 - M12 12.9 screws at 130 Nm

In case of two or more Gold bases:

- position them according to the requested distance between axis (distance accuracy = 0/+0.020 mm) as well.
- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the Golds). Lift down the pallet until it comes in contact with the Golds. Release pressure (to lock the pallet on the Golds).
- Control the pallet flatness* on the upper surface: max 0.015mm.
- Control and re-adjust the pallet in order to get:
 - Alignment along the x and y axis: max 0.010/1000 mm.
 - Center line coaxiality: max 0.010 mm.
- Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds).
- Remove/lift-up the pallet.
- Release pressure (to lock the Golds).
- Tighten the screws at the recommended torque as follows:
 - M10 12.9 screws at 80 Nm
 - M12 12.9 screws at 130 Nm
- Re-control the pallet repeating the above steps.

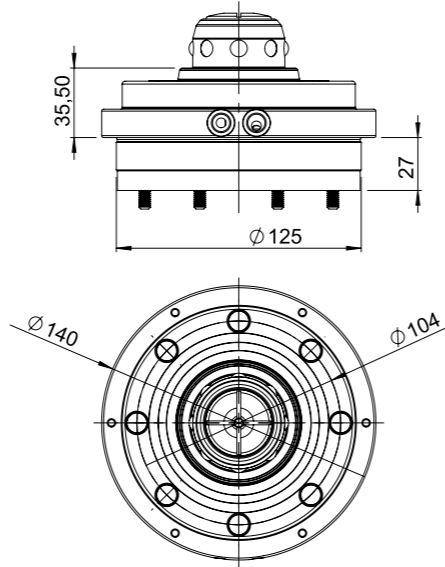
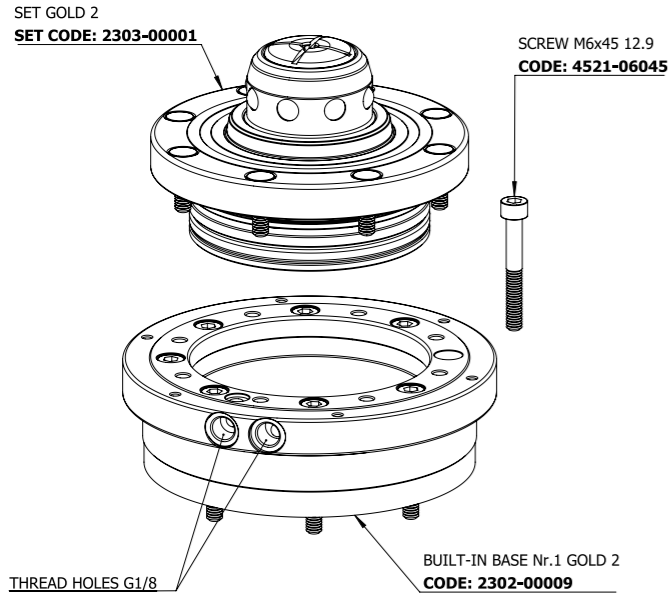
*The machine table flatness accuracy could affect the Golds flatness.



C1 MACHINING AND ASSEMBLING PROCEDURE

SET CODE: 2305-00045

TECHNICAL DATA

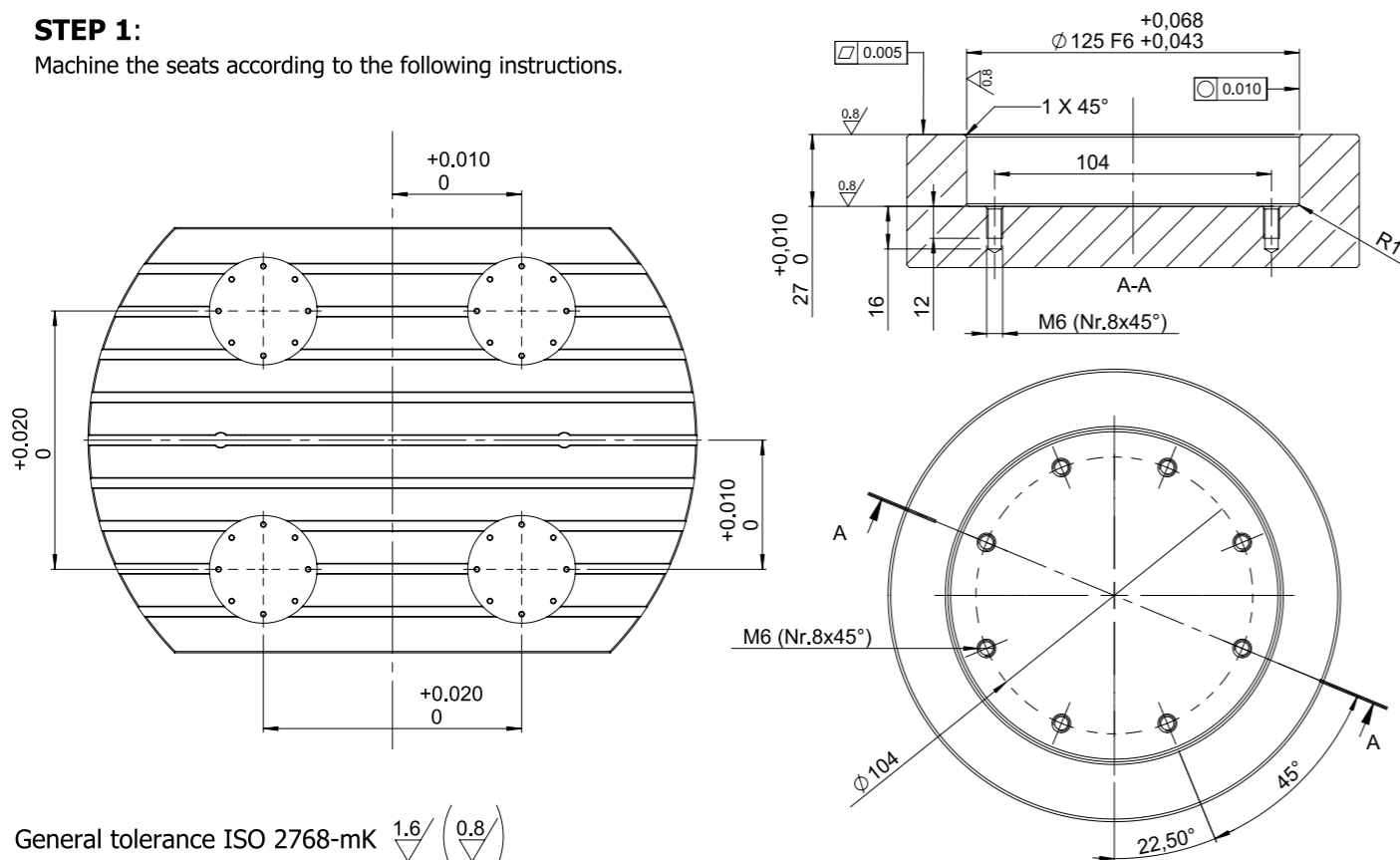


| | |
|--------------------------|------------------------------|
| UNLOCKING-LIFTING | 6÷8 bar (Air) 1415 N (8 bar) |
| LIFTING STROKE | 1.5 mm |
| BLOWING | Max 8 bar (Air) |
| NUMBER OF CYCLES | 500000 |
| WEIGHT | 5.0 Kg |

THE SET INCLUDES

| | | | |
|-----|---|---------------------------|---------------------|
| Nr. | 1 | SET GOLD 2 | SET CODE 2303-00001 |
| Nr. | 1 | BUILT-IN BASE Nr.1 GOLD 2 | CODE 2302-00009 |
| Nr. | 8 | SCREW M6x45 12.9 | CODE 4521-06045 |

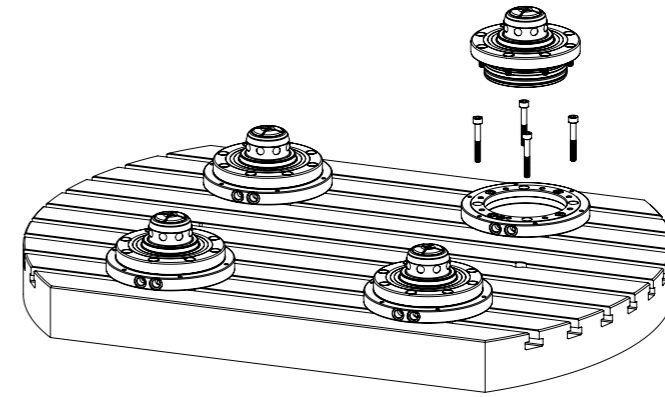
STEP 1:
Machine the seats according to the following instructions.



General tolerance ISO 2768-mK $1.6 / \left(\frac{0.8}{\nabla} \right)$

STEP 2:

Assembly the Golds in the corresponding seats using nr.4 M6 screws, located at 90° each other (recommended torque 5 Nm).

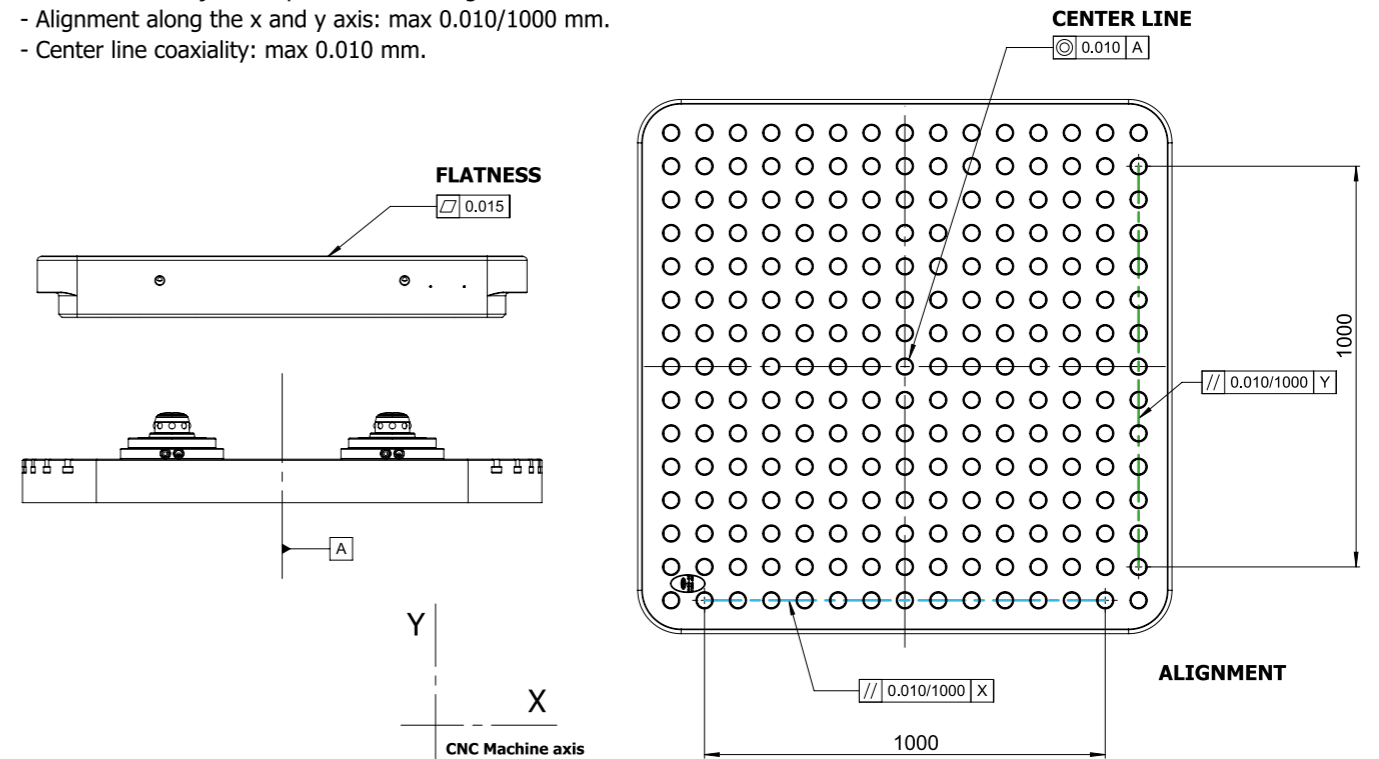


STEP 3:

Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the Golds).
Lift down the pallet until it comes in contact with the Golds.
Release pressure (to lock the pallet on the Golds).

STEP 4:

Control the pallet flatness on the upper surface: max 0.015mm.
Control and re-adjust the pallet in order to get:
- Alignment along the x and y axis: max 0.010/1000 mm.
- Center line coaxiality: max 0.010 mm.



STEP 5:

Supply and keep pressure by the Unlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds).
Remove/lift-up the pallet.
Release pressure (to lock the Golds).
Tighten all the M6 screws (Nr.32) with the criss-cross sequence method at 15 Nm.

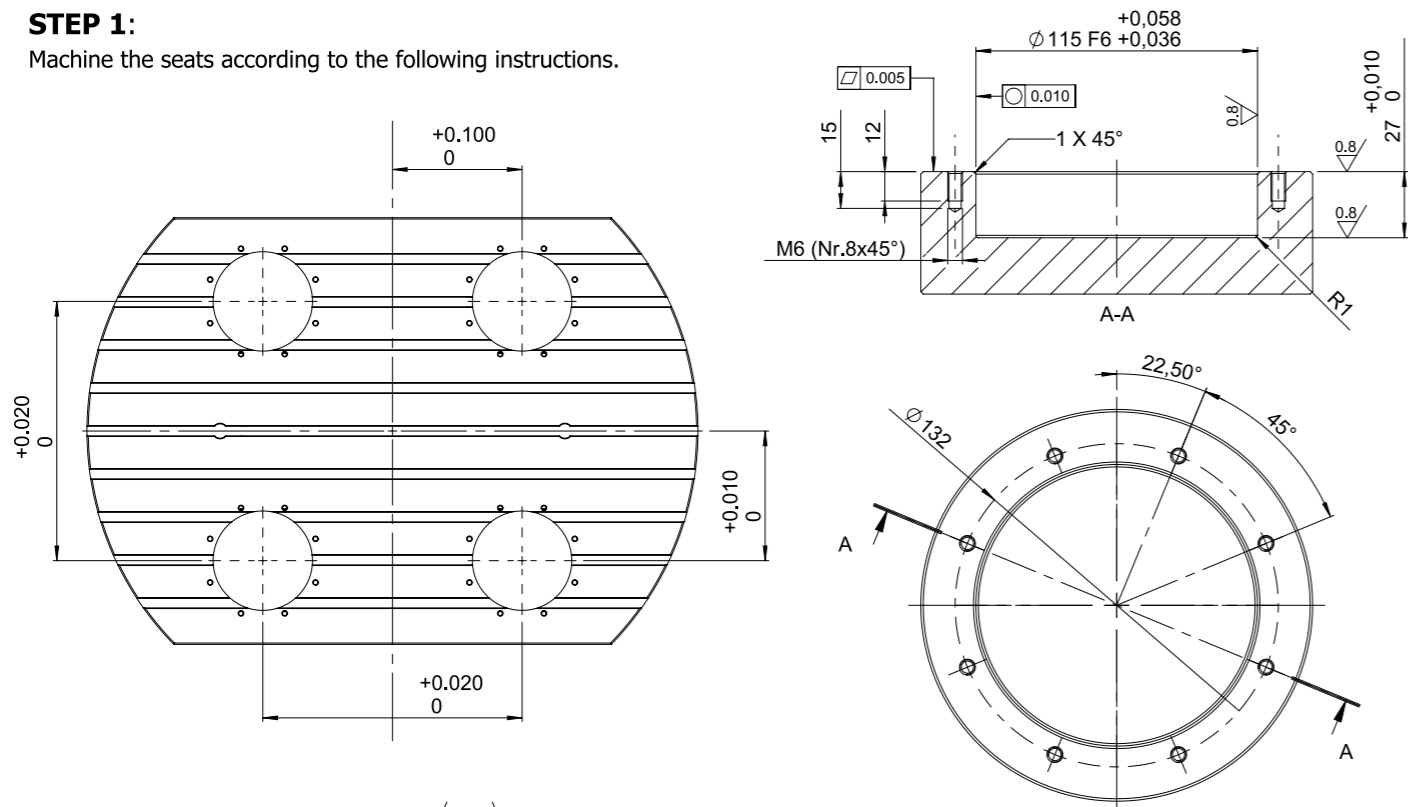
STEP 6:

Re-control the pallet repeating the steps 3, 4 and 5 (without tighten the M6 screws, because this was already done previously).

C2 MACHINING AND ASSEMBLING PROCEDURE

| | | | |
|-------------------------|---|--------------------------|------------------------------|
| SET CODE: 2305-00239 | | TECHNICAL DATA | |
| | | | |
| THE SET INCLUDES | | UNLOCKING-LIFTING | 6÷8 bar (Air) 1415 N (8 bar) |
| Nr. | 1 | LIFTING STROKE | 1.5 mm |
| Nr. | 1 | BLOWING | Max 8 bar (Air) |
| Nr. | 8 | NUMBER OF CYCLES | 500000 |
| | | WEIGHT | 5.0 Kg |

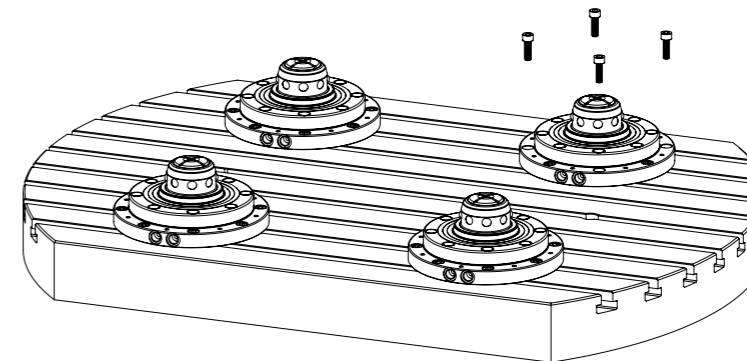
STEP 1:
Machine the seats according to the following instructions.



General tolerance ISO 2768-mK $1.6 / \left(\frac{0.8}{\nabla} \right)$

STEP 2:

Assembly the Golds in the corresponding seats using nr.4 M6 screws, located at 90° each other (recommended torque 5 Nm).

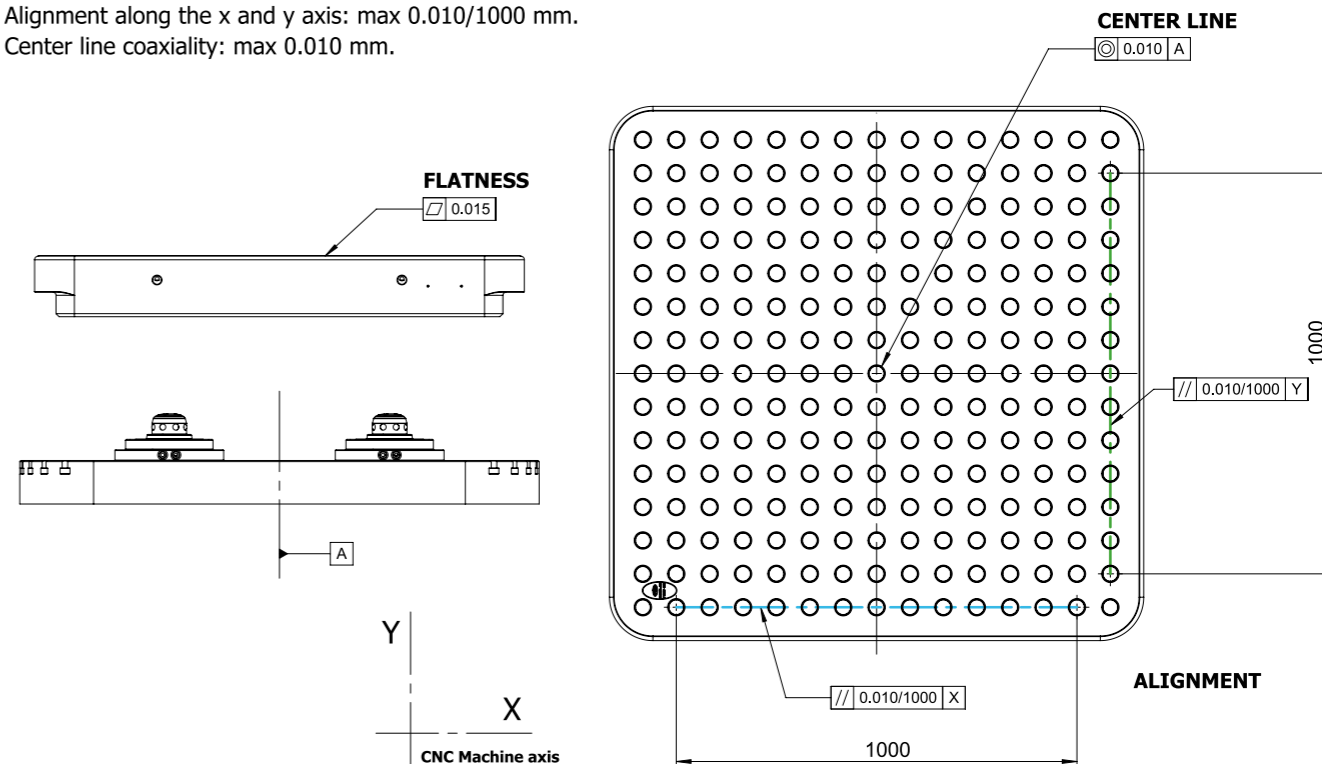


STEP 3:

Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the Golds).
Lift down the pallet until it comes in contact with the Golds.
Release pressure (to lock the pallet on the Golds).

STEP 4:

Control the pallet flatness on the upper surface: max 0.015mm.
Control and re-adjust the pallet in order to get:
- Alignment along the x and y axis: max 0.010/1000 mm.
- Center line coaxiality: max 0.010 mm.



STEP 5:

Supply and keep pressure by the UInlocking-lifting inlet at 6÷8 bar (to unlock the pallet from the Golds).
Remove/lift-up the pallet.
Release pressure (to lock the Golds).
Tighten all the M6 screws (Nr.32) with the criss-cross sequence method at 15 Nm.

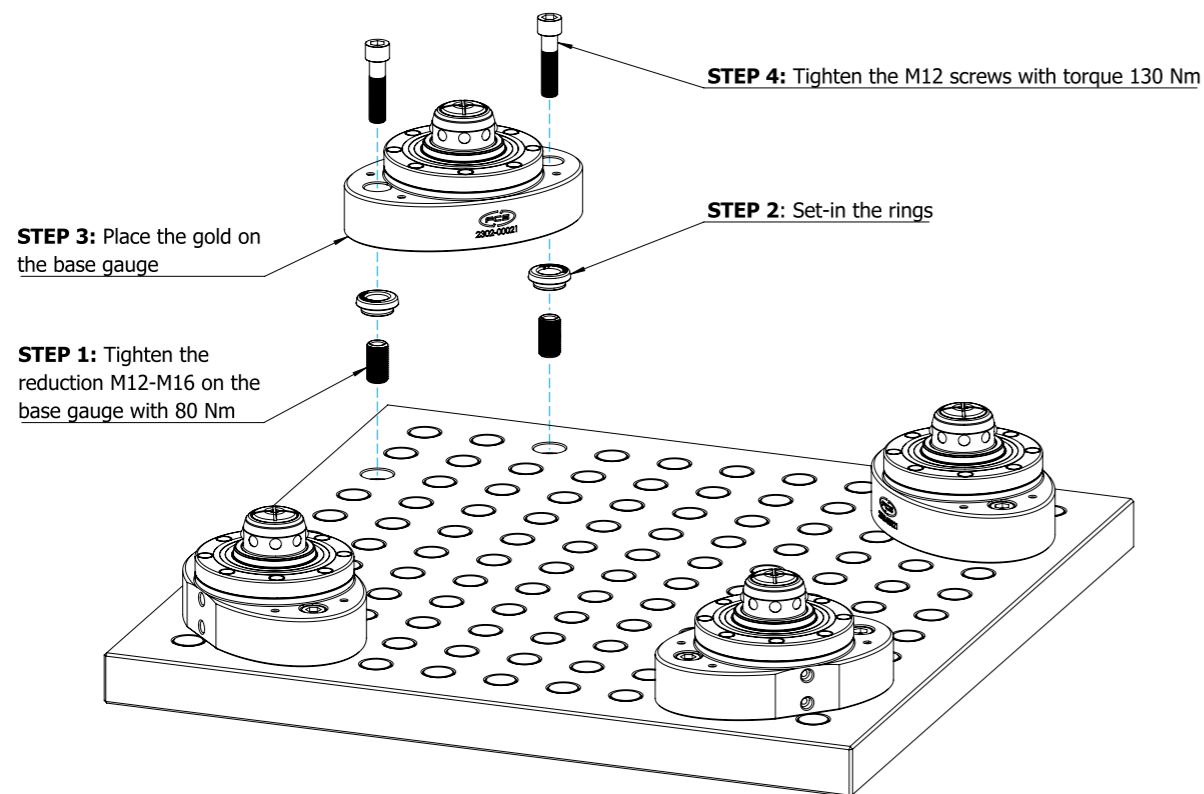
STEP 6:

Re-control the pallet repeating the steps 3, 4 and 5 (without tighten the M6 screws, because this was already done previously).

D ASSEMBLING PROCEDURE

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----|-------------------|---------------------|--------------------------|------------------------------|------------------------------|-----|---|------------|---------------------|-----------------------|---------|-----|---|-----------------|-----------------|----------------|-----------------|-----|---|-------------------|-----------------|-------------------------|--------|-----|---|-------------------|-----------------|---------------|--------|-----------------------|
| <p>SET CODE: 2305-00039</p> <p>THREAD HOLES G1/8 ARE PRESENT FOR PNEUMATIC CONNECTIONS</p> <p>THE SET INCLUDES</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Nr.</td> <td>1</td> <td>BASE Nr.1 GOLD 2</td> <td>CODE 2302-00021</td> <td>UNLOCKING-LIFTING</td> <td>6÷8 bar (Air) 1415 N (8 bar)</td> </tr> <tr> <td>Nr.</td> <td>1</td> <td>SET GOLD 2</td> <td>SET CODE 2303-00001</td> <td>LIFTING STROKE</td> <td>1.50 mm</td> </tr> <tr> <td>Nr.</td> <td>2</td> <td>RING M16 Ø24 H0</td> <td>CODE 0001-00501</td> <td>BLOWING</td> <td>Max 8 bar (Air)</td> </tr> <tr> <td>Nr.</td> <td>2</td> <td>REDUCTION M16-M12</td> <td>CODE 4521-01612</td> <td>NUMBER OF CYCLES</td> <td>500000</td> </tr> <tr> <td>Nr.</td> <td>2</td> <td>SCREW M12x50 12.9</td> <td>CODE 4521-12050</td> <td>WEIGHT</td> <td>6.7 kg</td> </tr> </table> | Nr. | 1 | BASE Nr.1 GOLD 2 | CODE 2302-00021 | UNLOCKING-LIFTING | 6÷8 bar (Air) 1415 N (8 bar) | Nr. | 1 | SET GOLD 2 | SET CODE 2303-00001 | LIFTING STROKE | 1.50 mm | Nr. | 2 | RING M16 Ø24 H0 | CODE 0001-00501 | BLOWING | Max 8 bar (Air) | Nr. | 2 | REDUCTION M16-M12 | CODE 4521-01612 | NUMBER OF CYCLES | 500000 | Nr. | 2 | SCREW M12x50 12.9 | CODE 4521-12050 | WEIGHT | 6.7 kg | <p>TECHNICAL DATA</p> |
| Nr. | 1 | BASE Nr.1 GOLD 2 | CODE 2302-00021 | UNLOCKING-LIFTING | 6÷8 bar (Air) 1415 N (8 bar) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nr. | 1 | SET GOLD 2 | SET CODE 2303-00001 | LIFTING STROKE | 1.50 mm | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nr. | 2 | RING M16 Ø24 H0 | CODE 0001-00501 | BLOWING | Max 8 bar (Air) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nr. | 2 | REDUCTION M16-M12 | CODE 4521-01612 | NUMBER OF CYCLES | 500000 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nr. | 2 | SCREW M12x50 12.9 | CODE 4521-12050 | WEIGHT | 6.7 kg | | | | | | | | | | | | | | | | | | | | | | | | | | |

Tightening torques, clamping forces and accuracy: see the corresponding sections.

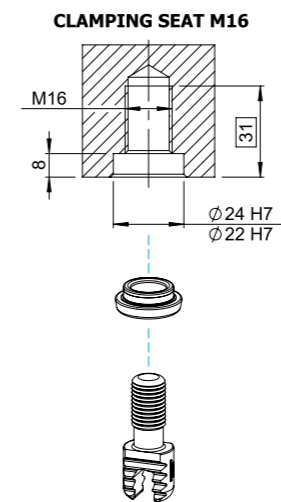


ASSEMBLING PROCEDURE

| | | | | | | | | | | | | | | | | | |
|--|-----|-----------------------------|-----------------------------|-----------------|-----|---|-----------------|-----------------|-----|---|-----------------|-----------------|-----|---|----------------|-----------------|-----------------------|
| <p>SET CODE: 2303-00008</p> <p>THE SET INCLUDES</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Nr.</td> <td>1</td> <td>BODY ADAPTER M16 H80 GOLD 2</td> <td>CODE 2303-00007</td> </tr> <tr> <td>Nr.</td> <td>1</td> <td>RING M16 Ø24 H0</td> <td>CODE 0001-00501</td> </tr> <tr> <td>Nr.</td> <td>1</td> <td>RING M16 Ø22 H0</td> <td>CODE 0001-00500</td> </tr> <tr> <td>Nr.</td> <td>1</td> <td>ROD M16 L35 H0</td> <td>CODE 0002-01200</td> </tr> </table> | Nr. | 1 | BODY ADAPTER M16 H80 GOLD 2 | CODE 2303-00007 | Nr. | 1 | RING M16 Ø24 H0 | CODE 0001-00501 | Nr. | 1 | RING M16 Ø22 H0 | CODE 0001-00500 | Nr. | 1 | ROD M16 L35 H0 | CODE 0002-01200 | <p>TECHNICAL DATA</p> |
| Nr. | 1 | BODY ADAPTER M16 H80 GOLD 2 | CODE 2303-00007 | | | | | | | | | | | | | | |
| Nr. | 1 | RING M16 Ø24 H0 | CODE 0001-00501 | | | | | | | | | | | | | | |
| Nr. | 1 | RING M16 Ø22 H0 | CODE 0001-00500 | | | | | | | | | | | | | | |
| Nr. | 1 | ROD M16 L35 H0 | CODE 0002-01200 | | | | | | | | | | | | | | |

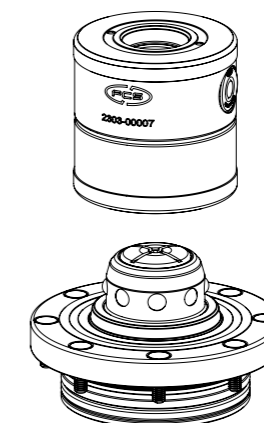
Tightening torques, clamping forces and accuracy: see the corresponding sections.

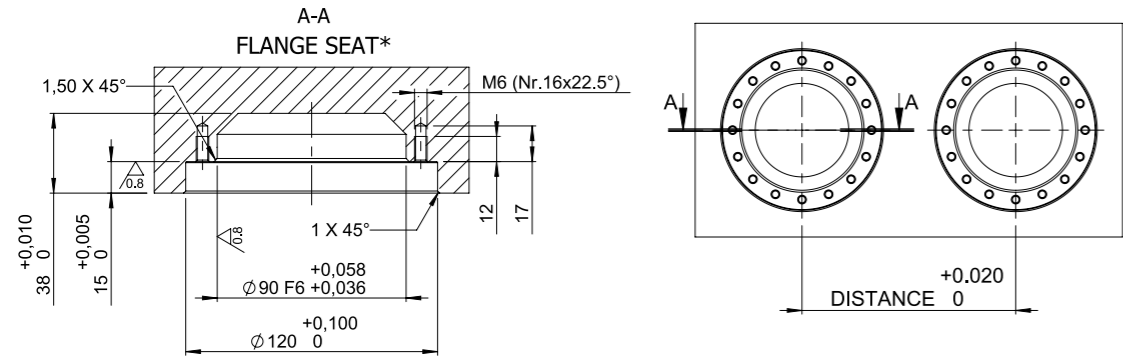
Minimum seat length required



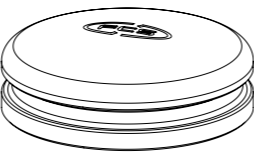
For further combinations see the corresponding catalog

[BODIES M16 Clamping line](#)

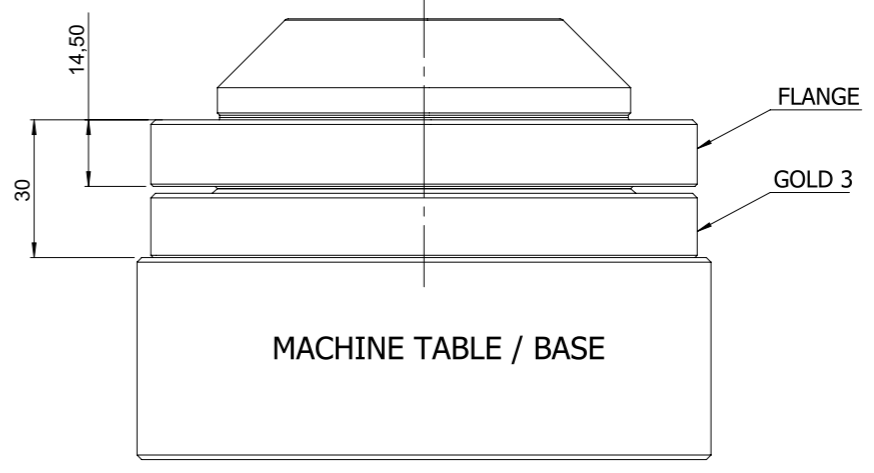




PLUG
CODE 0015-04558



- FLANGE GOLD 3:**
- CODE 2301-00041 ●
 - CODE 2301-00042 ●
 - CODE 2301-00043 ●



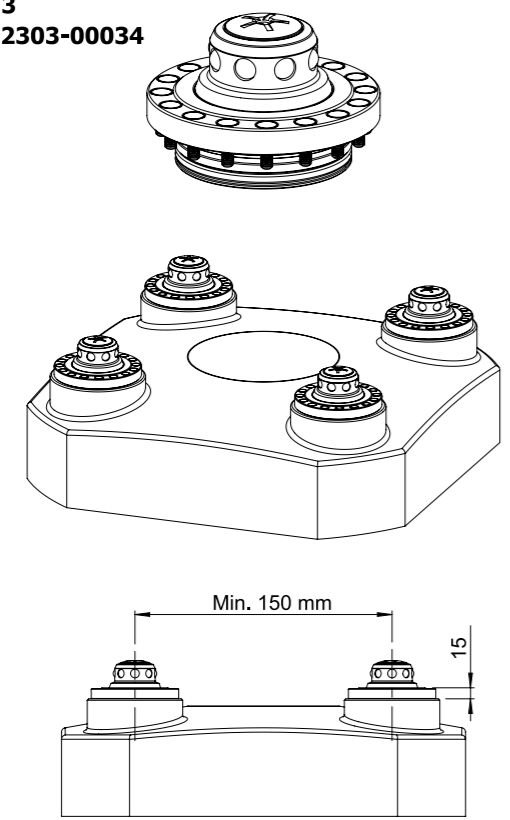
General tolerance ISO 2768-mK $\frac{1.6}{\sqrt{0.8}}$

* Flange seat to be carried out on the workpiece, support equipment and special pallet.

- Centering
- Positioning
- Closing

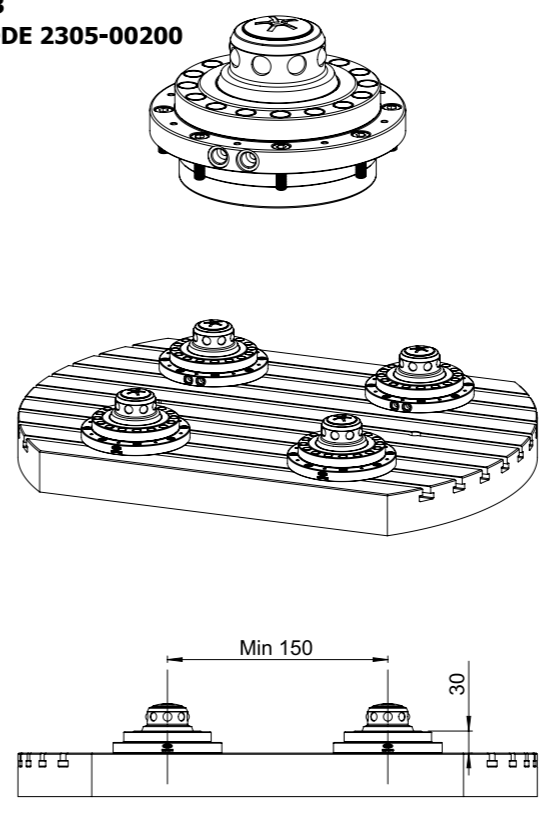
A

SET GOLD 3
SET CODE 2303-00034



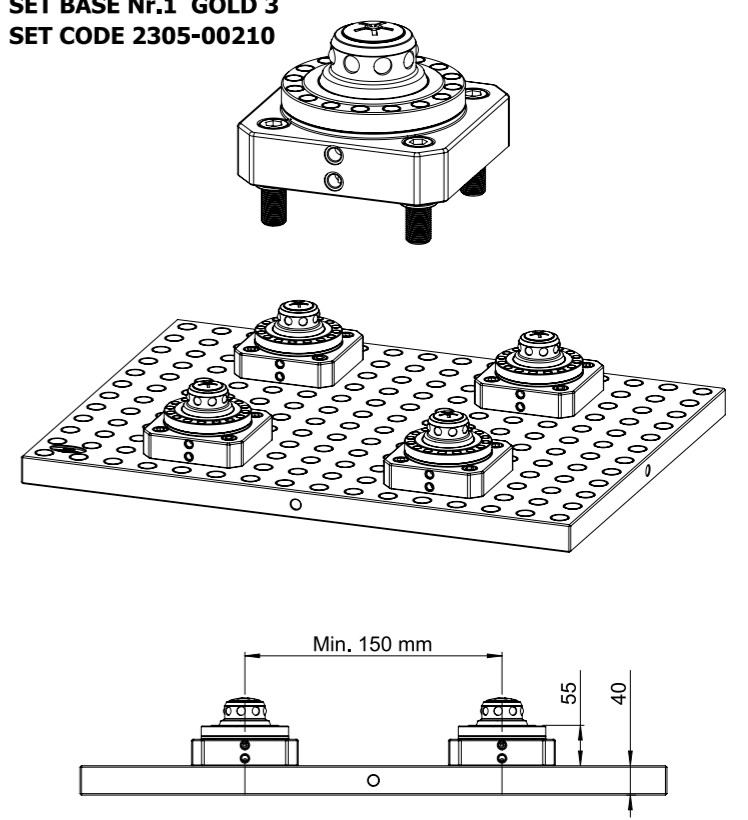
B

SET BUILT-IN BASE Nr.1
GOLD 3
SET CODE 2305-00200

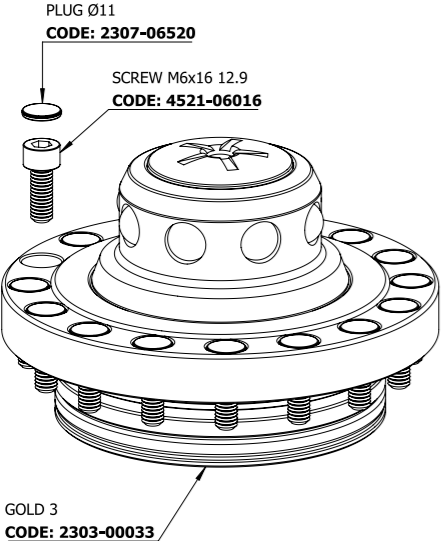
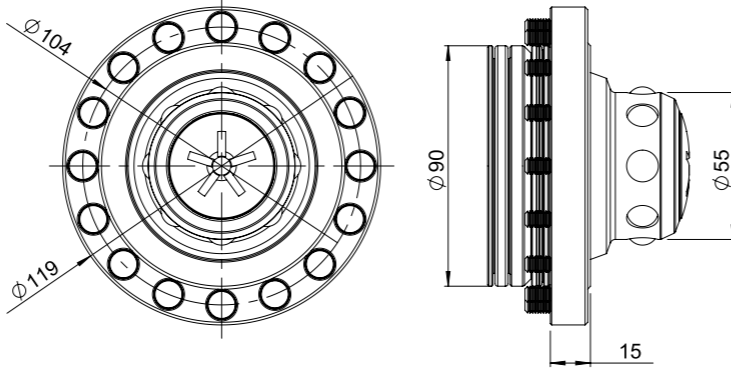


C

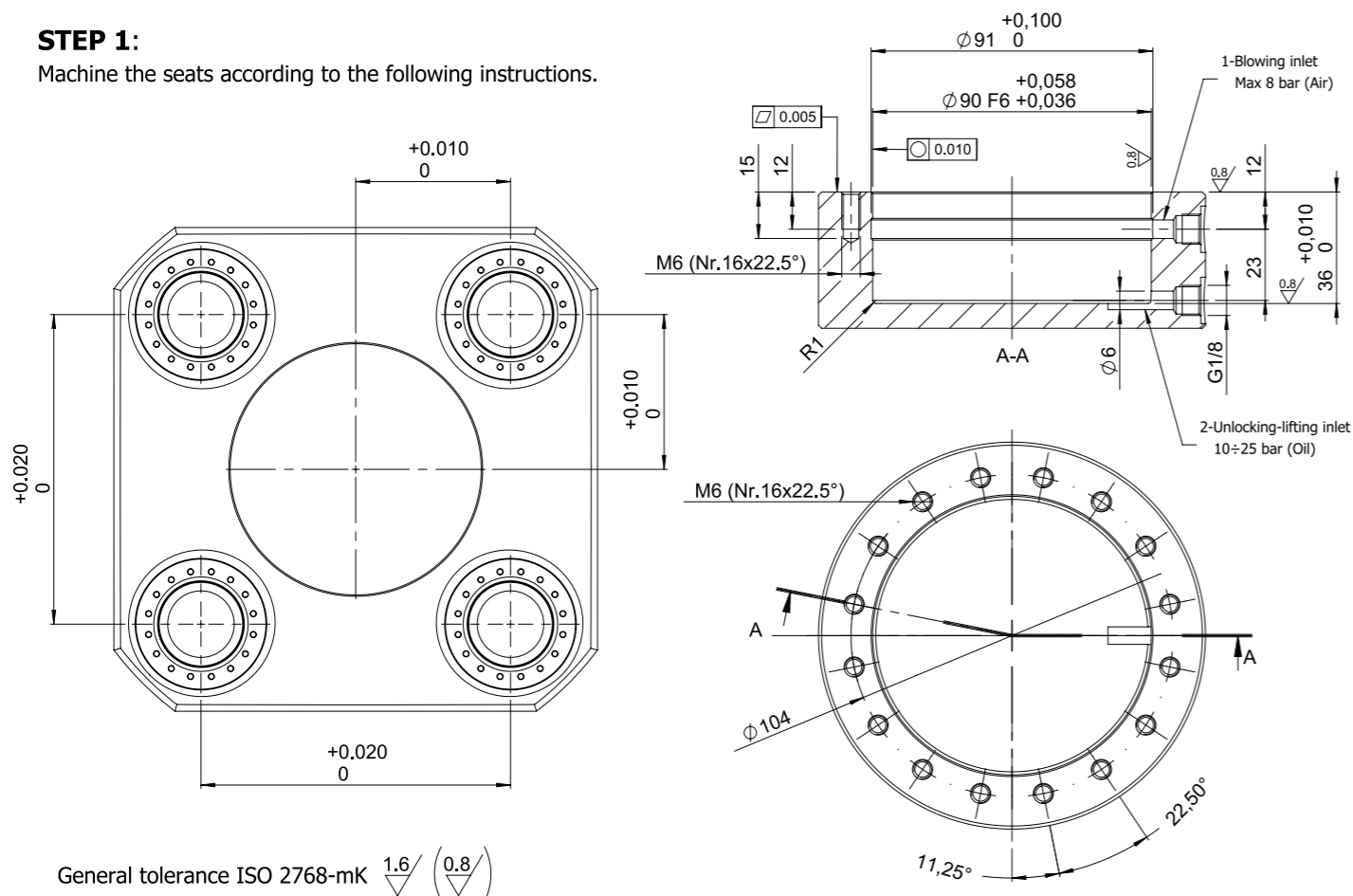
SET BASE Nr.1 GOLD 3
SET CODE 2305-00210



A MACHINING AND ASSEMBLING PROCEDURE

| | | | |
|---|----|--|------------------------------|
| SET CODE: 2303-00034 | | TECHNICAL DATA | |
|  | |  | |
| THE SET INCLUDES | | UNLOCKING-LIFTING FORCE | 10÷25 (Oil) 10100 N (25 bar) |
| Nr. | 1 | LIFTING STROKE | 2.5 mm |
| Nr. | 16 | BLOWING | Max 8 bar (Air) |
| Nr. | 16 | NUMBER OF CYCLES | 500000 |
| Nr. | 16 | WEIGHT | 2.6 kg |

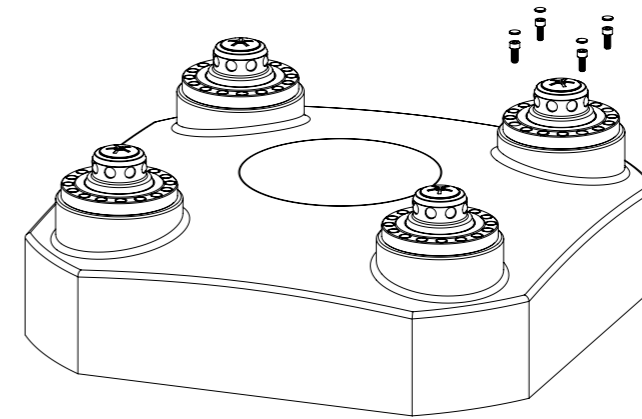
STEP 1:
Machine the seats according to the following instructions.



General tolerance ISO 2768-mK $\sqrt[1.6]{0.8}$

STEP 2:

Assembly the Golds in the corresponding seats using nr.4 M6 screws, located at 90° each other (recommended torque 5 Nm).

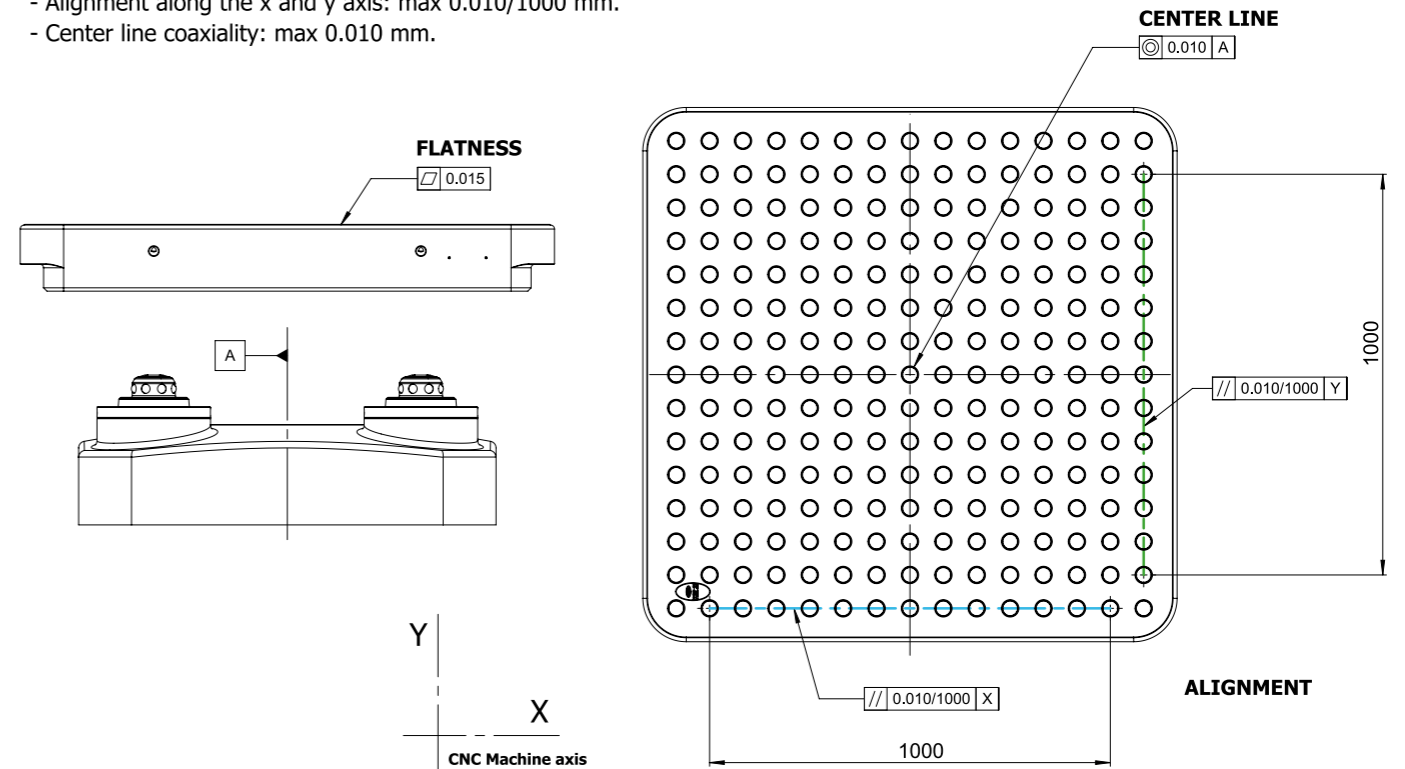


STEP 3:

Supply and keep pressure by the Unlocking-lifting inlet at 10÷25 bar (to unlock the Golds).
Lift down the pallet until it comes in contact with the Golds.
Release pressure (to lock the pallet on the Golds).

STEP 4:

Control the pallet flatness on the upper surface: max 0.015mm.
Control and re-adjust the pallet in order to get:
- Alignment along the x and y axis: max 0.010/1000 mm.
- Center line coaxiality: max 0.010 mm.



STEP 5:

Supply and keep pressure by the Unlocking-lifting inlet at 10÷25 bar (to unlock the pallet from the Golds).
Remove/lift-up the pallet.
Release pressure (to lock the Golds).
Tighten all the M6 screws (Nr.64) with the criss-cross sequence method at 20 Nm.

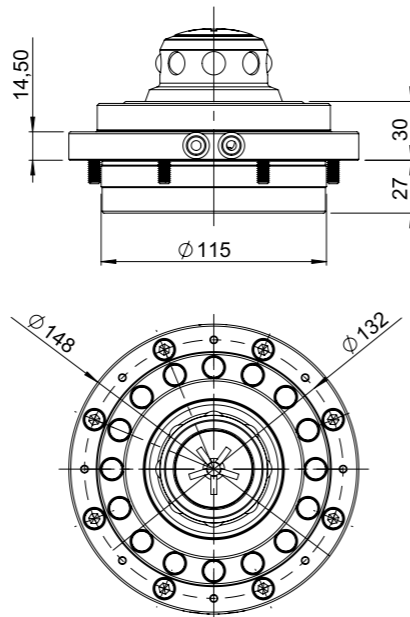
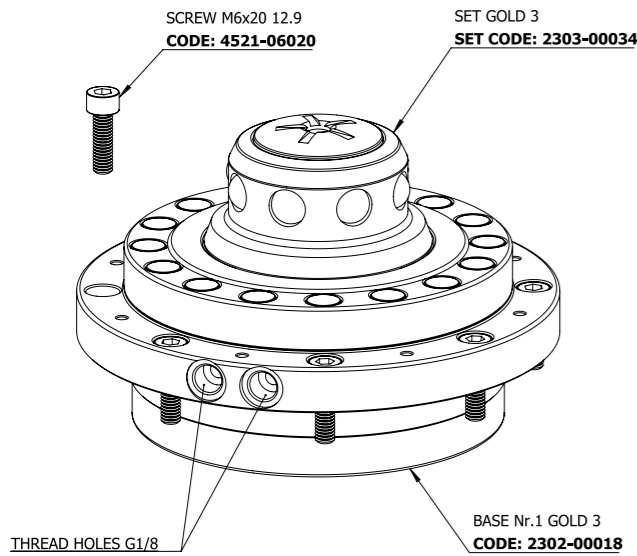
STEP 6:

Re-control the pallet repeating the steps 3, 4 and 5 (without tighten the M6 screws, because this was already done previously).

B MACHINING AND ASSEMBLING PROCEDURE

SET CODE: 2305-00200

TECHNICAL DATA

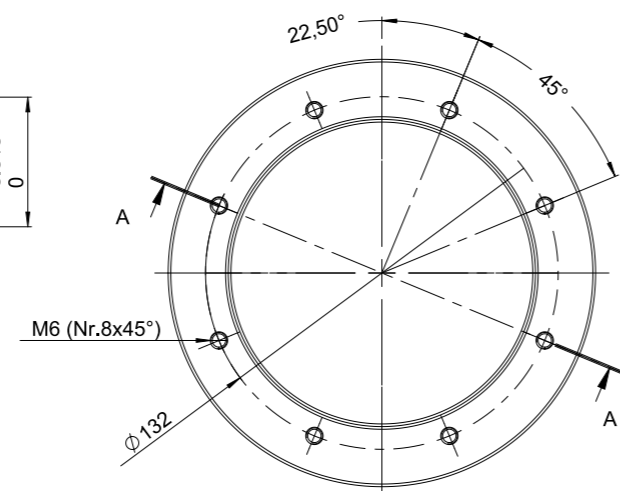
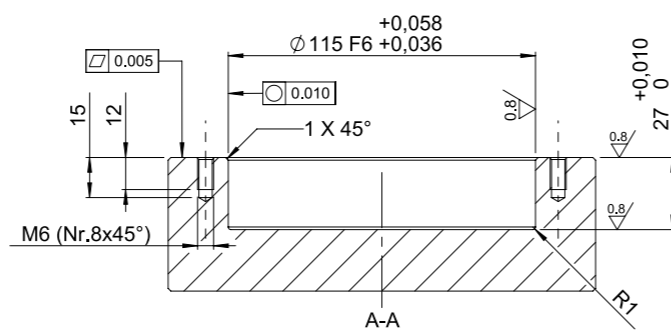
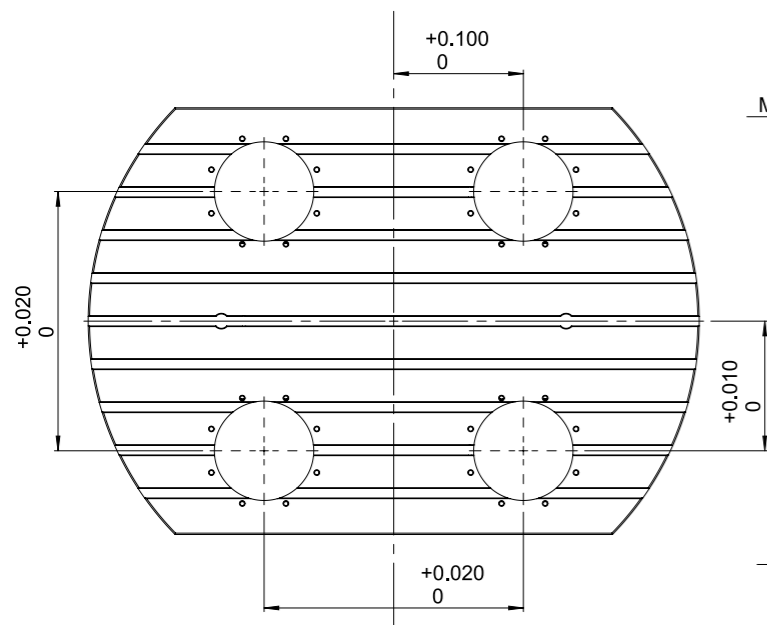


| | |
|--------------------------|----------------------------------|
| UNLOCKING-LIFTING | 10÷25 bar (Oil) 10100 N (25 bar) |
| LIFTING STROKE | 2.5 mm |
| BLOWING | Max 8 bar (Air) |
| NUMBER OF CYCLES | 500000 |
| WEIGHT | 4.80 Kg |

THE SET INCLUDES

| | | | |
|-----|---|------------------|---------------------|
| Nr. | 1 | SET GOLD 3 | SET CODE 2303-00034 |
| Nr. | 1 | BASE Nr.1 GOLD 3 | CODE 2302-00018 |
| Nr. | 8 | SCREW M6x20 12.9 | CODE 4521-06020 |

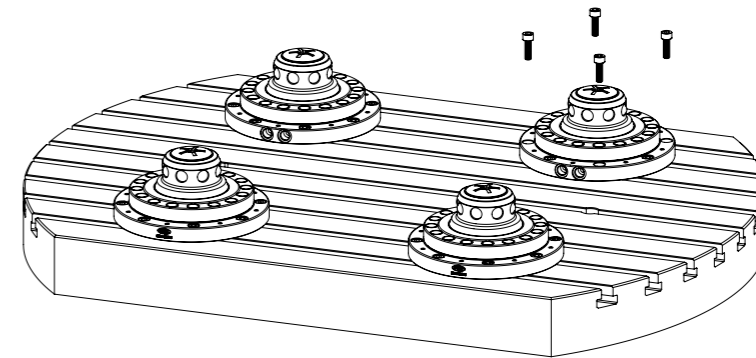
STEP 1:
Machine the seats according to the following instructions.



General tolerance ISO 2768-mK 1.6 / (0.8)

STEP 2:

Assemble the Golds in the corresponding seats using nr.4 M6 screws, located at 90° each other (recommended torque 5 Nm).

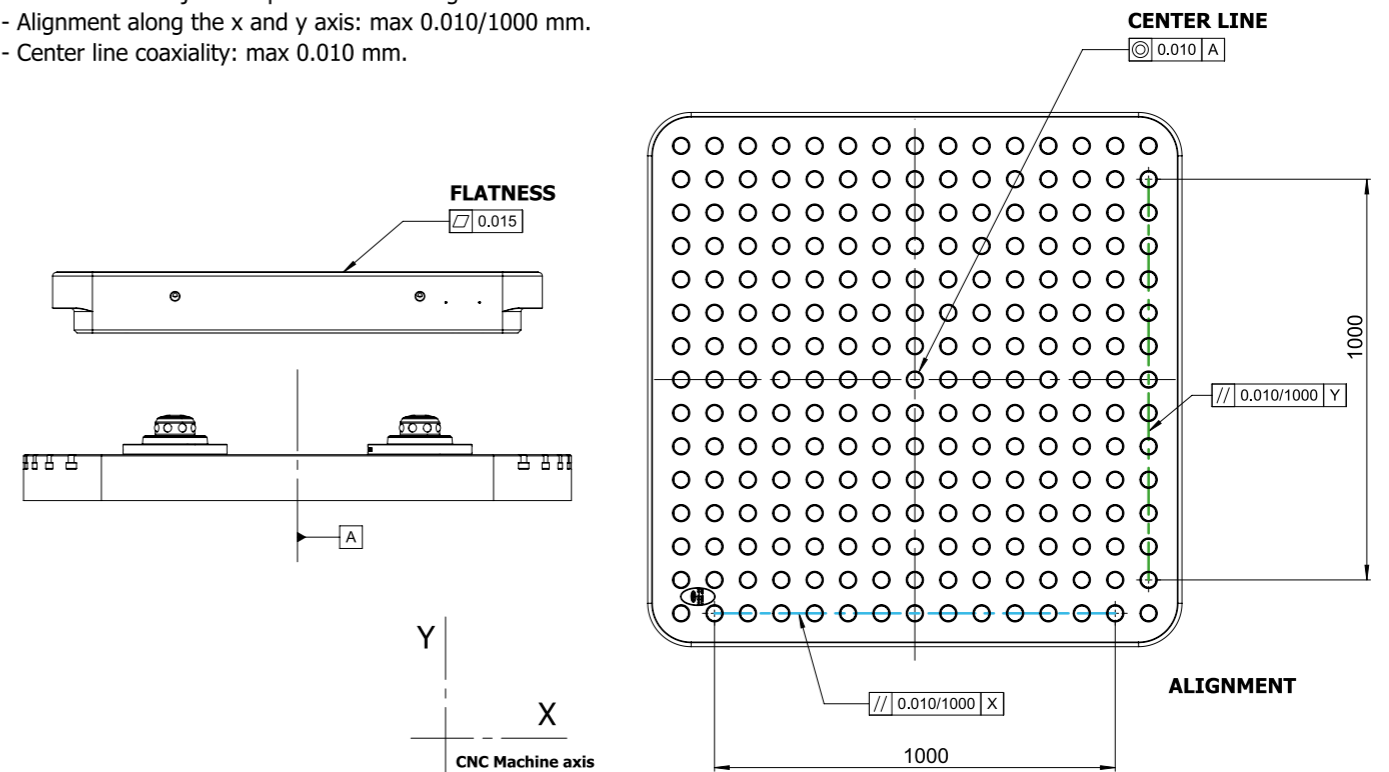


STEP 3:

Supply and keep pressure by the Unlocking-lifting inlet at 10÷25 bar (to unlock the Golds).
Lift down the pallet until it comes in contact with the Golds.
Release pressure (to lock the pallet on the Golds).

STEP 4:

Control the pallet flatness on the upper surface: max 0.015mm.
Control and re-adjust the pallet in order to get:
- Alignment along the x and y axis: max 0.010/1000 mm.
- Center line coaxiality: max 0.010 mm.



STEP 5:

Supply and keep pressure by the Unlocking-lifting inlet at 10÷25 bar (to unlock the pallet from the Golds).
Remove/lift-up the pallet.
Release pressure (to lock the Golds).
Tighten all the M6 screws (Nr.32) with the criss-cross sequence method at 15 Nm.

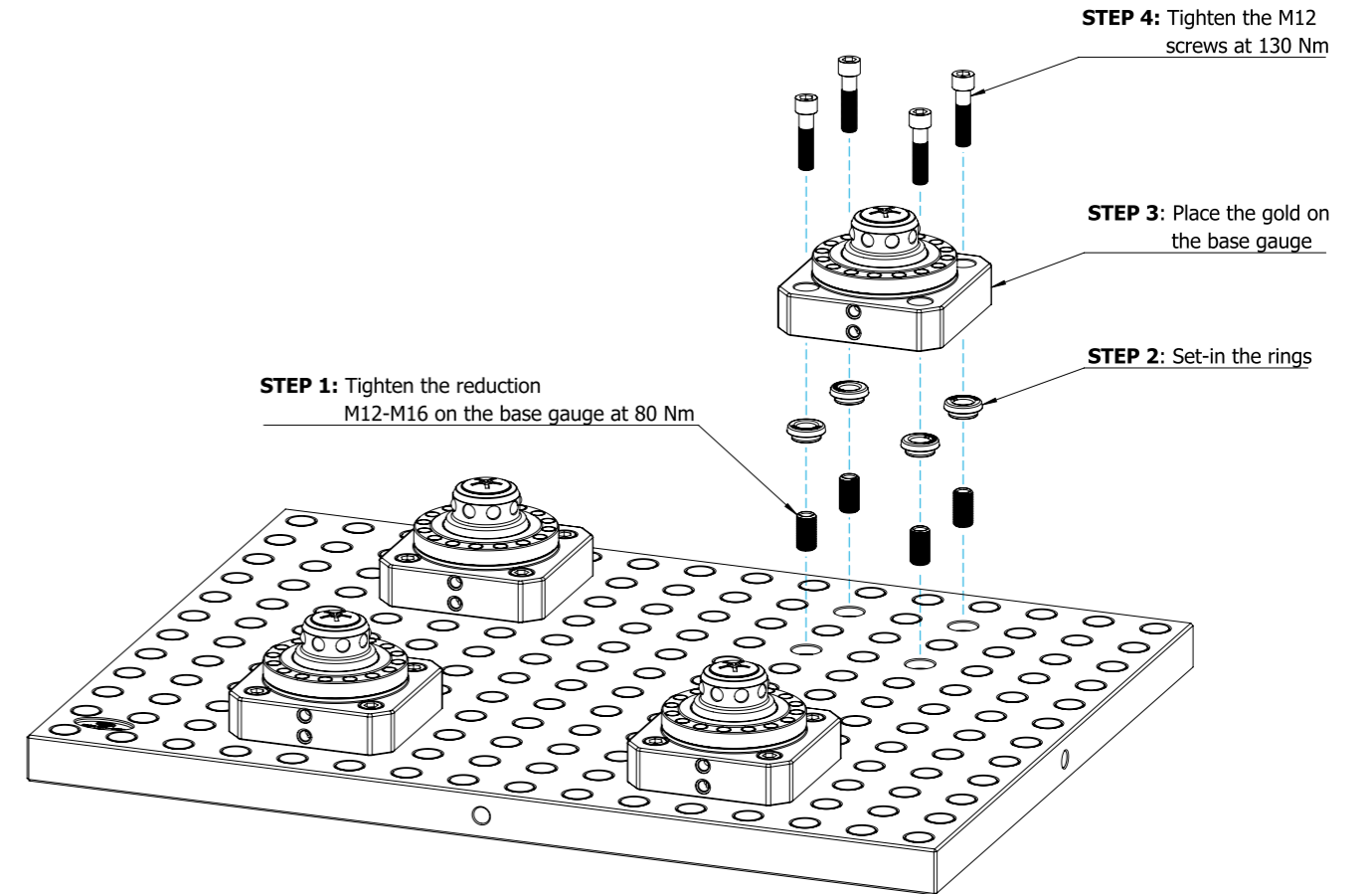
STEP 6:

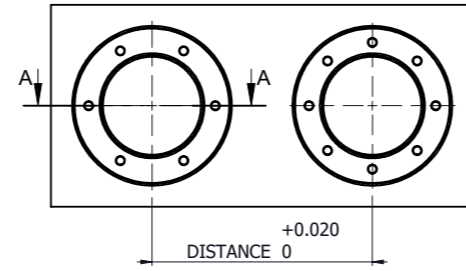
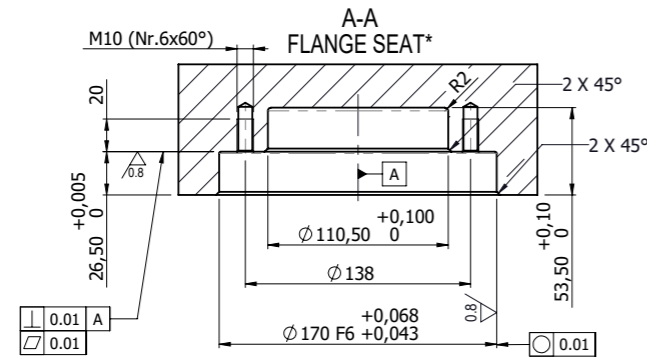
Re-control the pallet repeating the steps 3, 4 and 5 (without tighten the M6 screws, because this was already done previously).

ASSEMBLING PROCEDURE

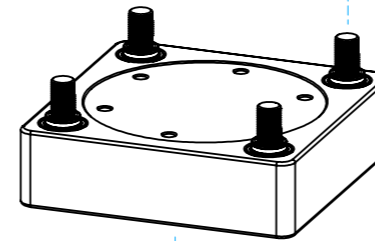
| SET CODE: 2305-00210 | | TECHNICAL DATA | | | |
|-------------------------|---|-------------------|---------------------|--------------------------|----------------------------------|
| | | | | | |
| THE SET INCLUDES | | | | | |
| Nr. | 1 | SET GOLD 3 | SET CODE 2303-00034 | UNLOCKING-LIFTING | 10÷25 bar (Oil) 10100 N (25 bar) |
| Nr. | 1 | BASE Nr.1 GOLD 3 | CODE 2304-00210 | LIFTING STROKE | 2.5 mm |
| Nr. | 4 | RING M16 Ø24 H0 | CODE 0001-00501 | BLOWING | Max 8 bar (Air) |
| Nr. | 4 | SCREW M12x50 12.9 | CODE 4521-12050 | NUMBER OF CYCLES | 500000 |
| Nr. | 4 | REDUCTION M16-M12 | CODE 4521-01612 | WEIGHT | 6.8 kg |

Tightening torques, clamping forces and accuracy: see the corresponding sections.



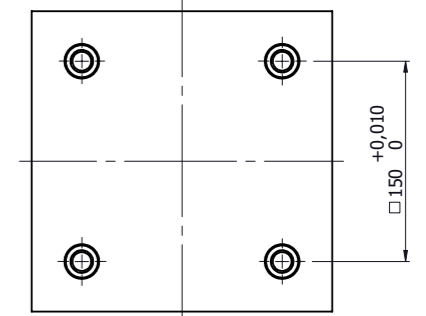
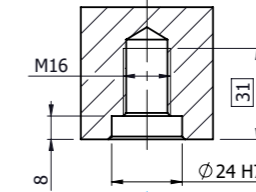


SET BASE FLANGE GOLD 7
SET CODE 2305-00050



CLAMPING SEAT M16 STEP DIMENSIONS

CLAMPING SEAT M16 Ø24 (Nr.4)

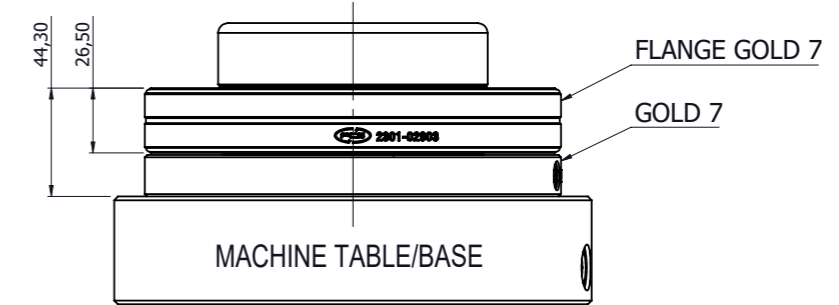
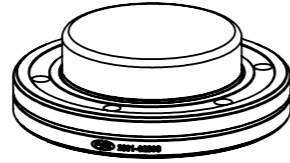


PLUG
CODE 0015-004552



FLANGE GOLD 7:

- CODE 2301-02903 ●
- CODE 2301-02902 ●
- CODE 2301-02901 ●



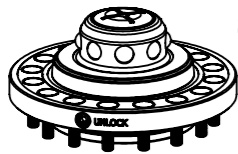
General tolerance ISO 2768-mK $\sqrt[1,6]{0,8}$

* Flange seat to be carried out on the workpiece, support equipment and special pallet.

- Centering
- Positioning
- Closing

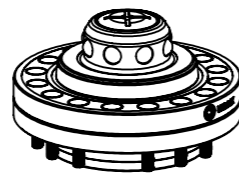
A

SET GOLD 7
SET CODE 2303-02900



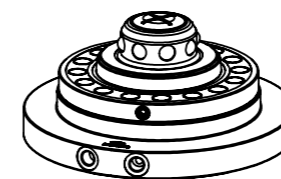
B

SET BUILT IN BASE Nr.1 GOLD 7
SET CODE 2305-00049

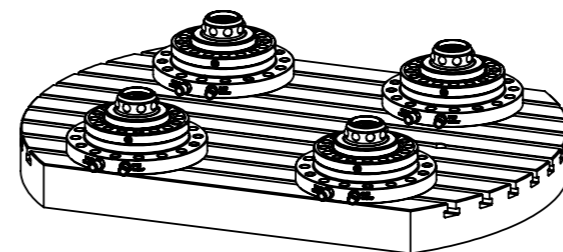


C

C1 SET BASE Nr.1 GOLD 7 WITH FIXING HOLES
SET CODE 2305-00044

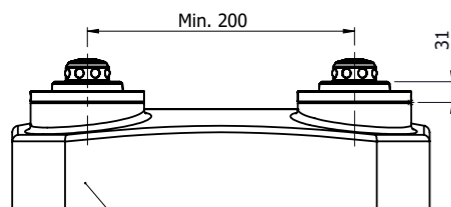
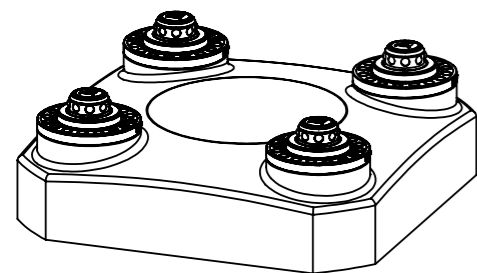
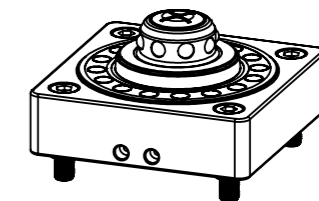


C2 SET BASE Nr.1 GOLD 7 WITHOUT FIXING HOLES
SET CODE 2305-00040

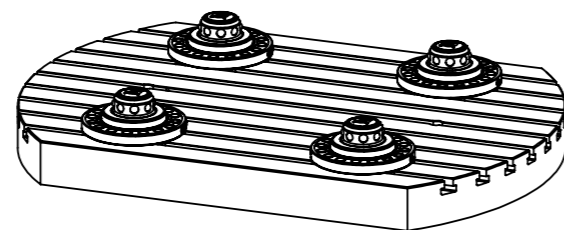


D

SET BASE NR.1 GOLD 7 MODULAR
SET CODE 2305-00901

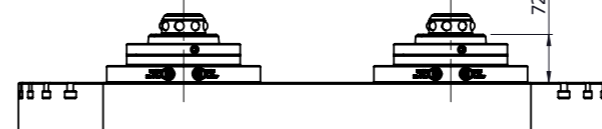


CONNECTION INTEGRATED IN THE TABLE MACHINE

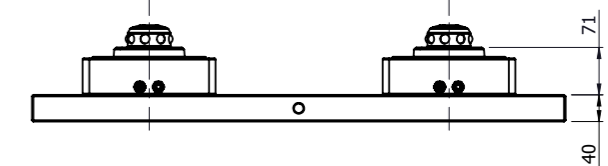


(For this option there is not enough space to apply a sheet protection for pipes.)

Min. 250



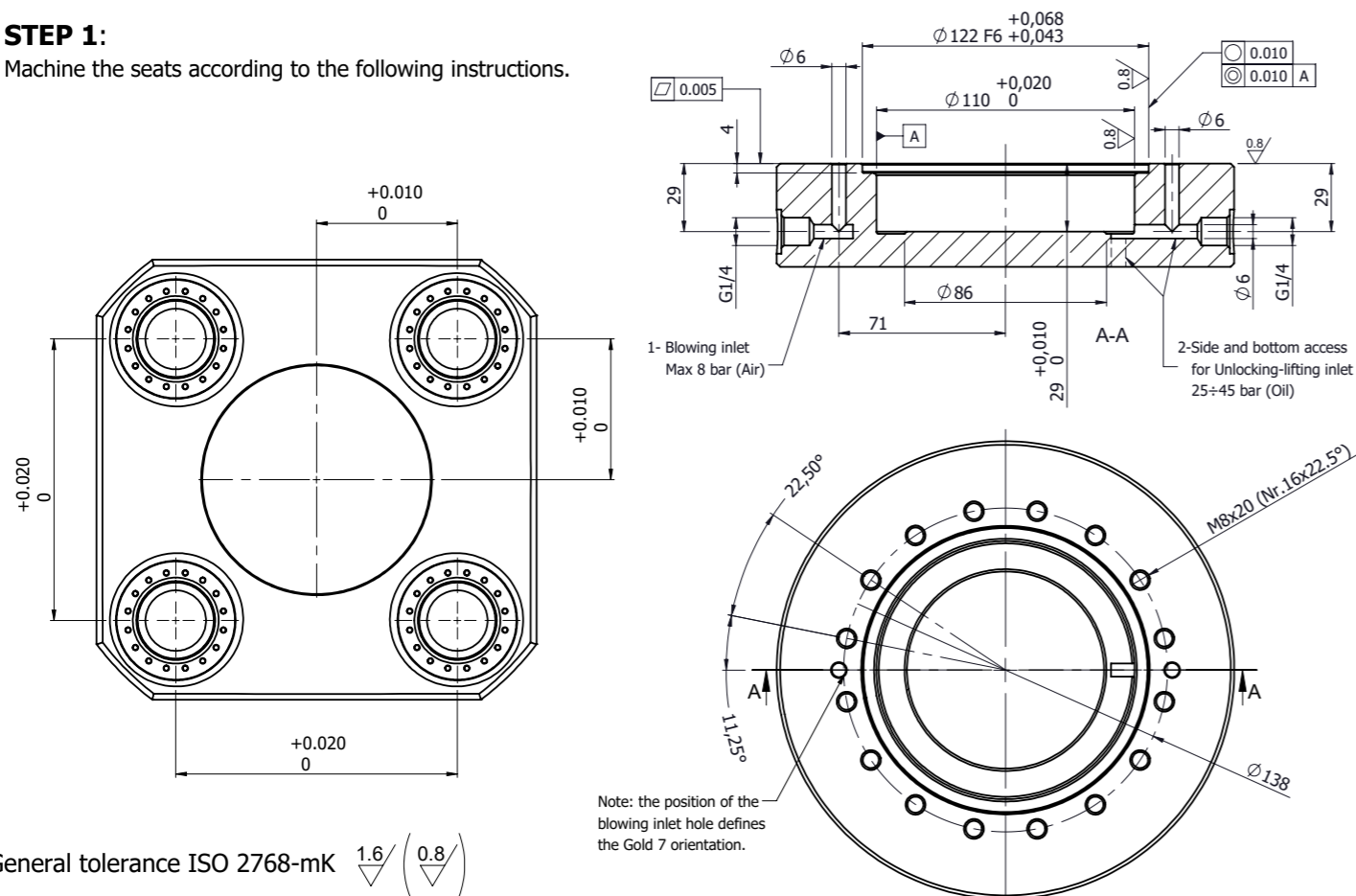
Min. 200



A MACHINING AND ASSEMBLING PROCEDURE

| | | | |
|--------------------------|----|----------------------------------|-----------------|
| SET CODE: 2303-02900 | | TECHNICAL DATA | |
| | | | |
| UNLOCKING-LIFTING | | 25÷45 bar (Oil) 29545 N (45 bar) | |
| LIFTING STROKE | | 2.0 mm | |
| BLOWING | | Max 8 bar (Air) | |
| NUMBER OF CYCLES | | 500000 | |
| WEIGHT | | 5.5 Kg | |
| THE SET INCLUDES | | | |
| Nr. | 1 | GOLD 7 | CODE 2303-02700 |
| Nr. | 16 | SCREW M8x25 12.9 | CODE 4521-08025 |
| Nr. | 16 | PLUG Ø14.80 | CODE 2307-06525 |

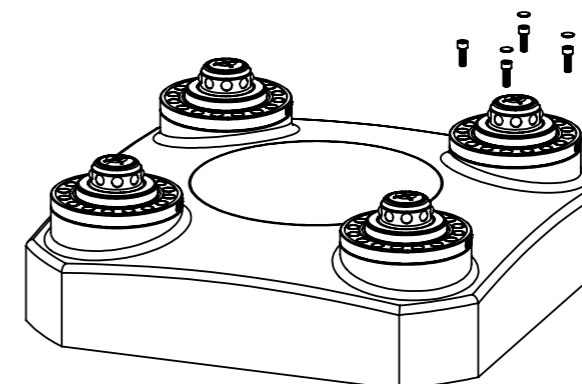
STEP 1:
Machine the seats according to the following instructions.



General tolerance ISO 2768-mK $1.6 / (0.8)$

STEP 2:

Assembly the Golds in the corresponding seats using nr.4 M8 screws, located at 90° each other (recommended torque 5 Nm).

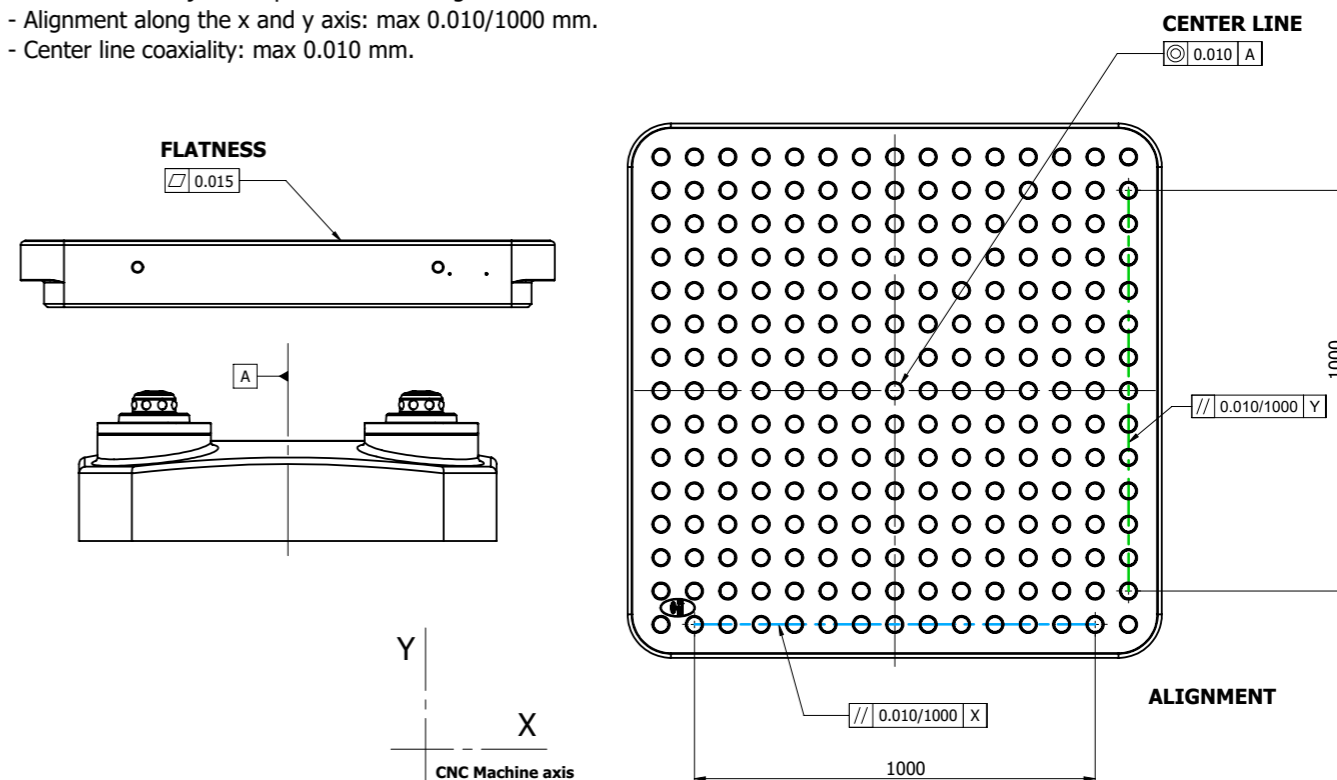


STEP 3:

Supply and keep pressure by the Unlocking-lifting inlet at 25÷45 bar (to unlock the Golds).
Lift down the pallet until it comes in contact with the Golds.
Release pressure (to lock the pallet on the Golds).

STEP 4:

Control the pallet flatness on the upper surface: max 0.015mm.
Control and re-adjust the pallet in order to get:
- Alignment along the x and y axis: max 0.010/1000 mm.
- Center line coaxiality: max 0.010 mm.



STEP 5:

Supply and keep pressure by the Unlocking-lifting inlet at 25÷45 bar (to unlock the pallet from the Golds).
Remove/lift-up the pallet.
Release pressure (to lock the Golds).
Tighten all the M8 screws (Nr.64) with the criss-cross sequence method at 40 Nm.

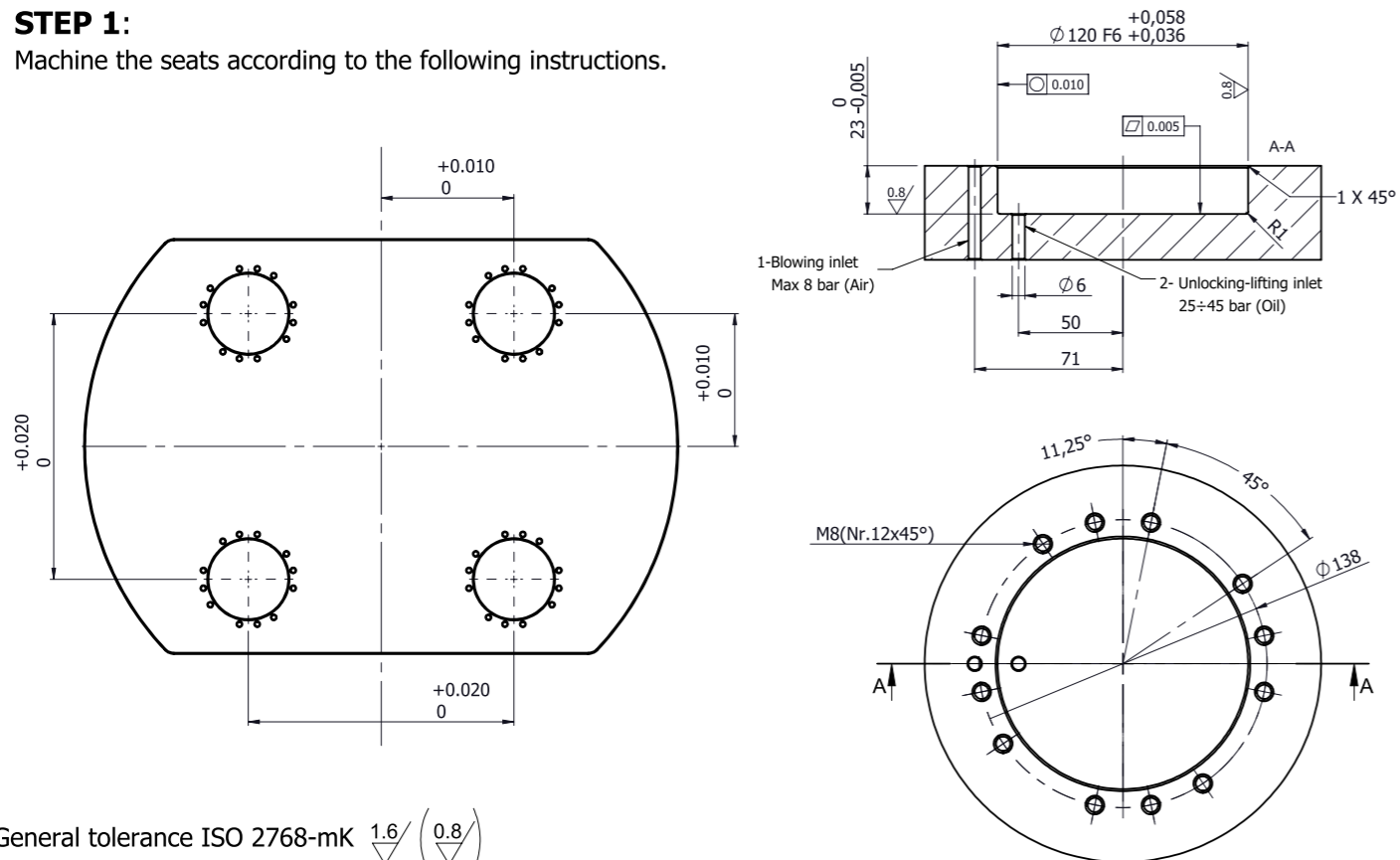
STEP 6:

Re-control the pallet repeating the steps 3, 4 and 5 (without tighten the M8 screws, because this was already done previously).

B MACHINING AND ASSEMBLING PROCEDURE

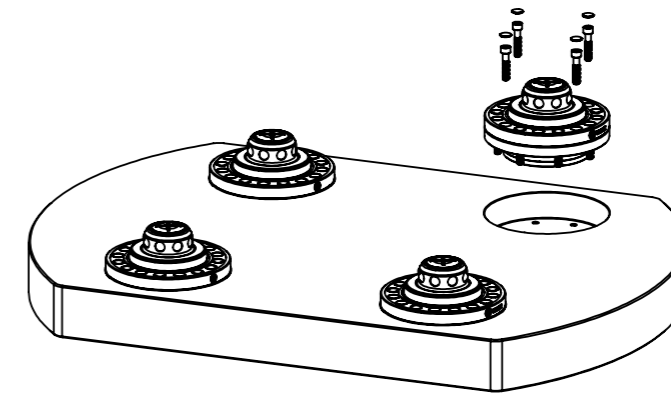
| | | | |
|---|---|---------------------------|----------------------------------|
| SET CODE: 2305-00049 | | TECHNICAL DATA | |
| <p>PLUG SCREW M8 CODE: 2307-06525</p> <p>SCREW M8x40 12.9 CODE: 4521-08040</p> <p>SET GOLD 7 SET CODE: 2303-02900</p> <p>BUILT-IN BASE Nr.1 GOLD 7 CODE: 2302-00064</p> | | | |
| | | UNLOCKING-LIFTING | 25÷45 bar (Oil) 29545 N (45 bar) |
| | | LIFTING STROKE | 2.0 mm |
| | | BLOWING | Max 8 bar (Air) |
| | | NUMBER OF CYCLES | 500000 |
| | | WEIGHT | 7.8 Kg |
| THE SET INCLUDES | | | |
| Nr. | 1 | SET GOLD 7 | SET CODE 2303-02900 |
| Nr. | 1 | BUILT-IN BASE Nr.1 GOLD 7 | CODE 2302-00064 |
| Nr. | 8 | SCREW M8x40 12.9 | CODE 4521-08040 |

STEP 1:
Machine the seats according to the following instructions.



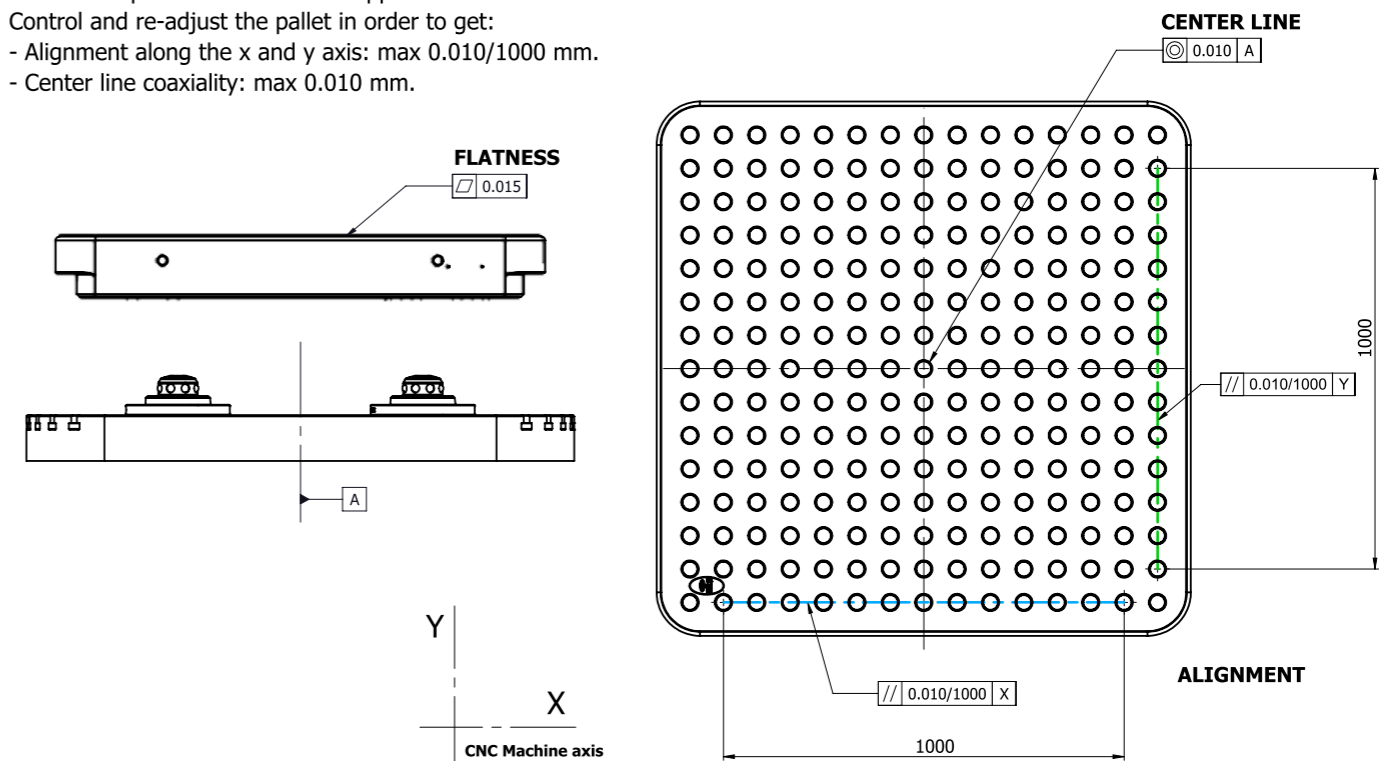
General tolerance ISO 2768-mK $1.6 / \left(\frac{0.8}{\nabla} \right)$

STEP 2:
Assembly the Golds in the corresponding seats using nr.4 M8 screws, located at 90° each other (recommended torque 5 Nm).



STEP 3:
Supply and keep pressure by the Unlocking-lifting inlet at 25÷45 bar (to unlock the Golds).
Lift down the pallet until it comes in contact with the Golds.
Release pressure (to lock the pallet on the Golds).

STEP 4:
Control the pallet flatness on the upper surface: max 0.015mm.
Control and re-adjust the pallet in order to get:
- Alignment along the x and y axis: max 0.010/1000 mm.
- Center line coaxiality: max 0.010 mm.



STEP 5:
Supply and keep pressure by the Unlocking-lifting inlet at 25÷45 bar (to unlock the pallet from the Golds).
Remove/lift-up the pallet.
Release pressure (to lock the Golds).
Tighten all the M8 screws (Nr.48) with the criss-cross sequence method at 40 Nm.

STEP 6:
Re-control the pallet repeating the steps 3, 4 and 5 (without tighten the M8 screws, because this was already done previously).

GOLD 7 - DATA SHEET

GOLD 7 - DATA SHEET

C1 MACHINING AND ASSEMBLING PROCEDURE

| SET CODE: 2305-00044 | | | TECHNICAL DATA | | |
|-------------------------|----|------------------|--------------------------|----------------------------------|-----------------|
| | | | | | |
| THE SET INCLUDES | | | UNLOCKING-LIFTING | 25÷45 bar (Oil) 29545 N (45 bar) | |
| Nr. | 1 | SET GOLD 7 | CODE 2303-02900 | LIFTING STROKE | 2.0 mm |
| Nr. | 1 | BASE Nr.1 GOLD 7 | CODE 2302-00004 | BLOWING | Max 8 bar (Air) |
| Nr. | 16 | PLUG SCREW M8 | CODE 2307-06525 | NUMBER OF CYCLES | 500000 |
| Nr. | 16 | SCREW M8x30 12.9 | CODE 4521-08030 | WEIGHT | 13.9 Kg |

STEP 1: Drill the Nr.16 fixing thread holes M8x20 on the machine table, according to the existing holes on the base (Ø200mm, 45°).

STEP 2: Place the set base gold on the machine table. Set in the fixing screws using a low torque (5 Nm) and align using as reference the conical and coupling surface of the Gold devices (by means of a dial gauge fixed on the machine head).

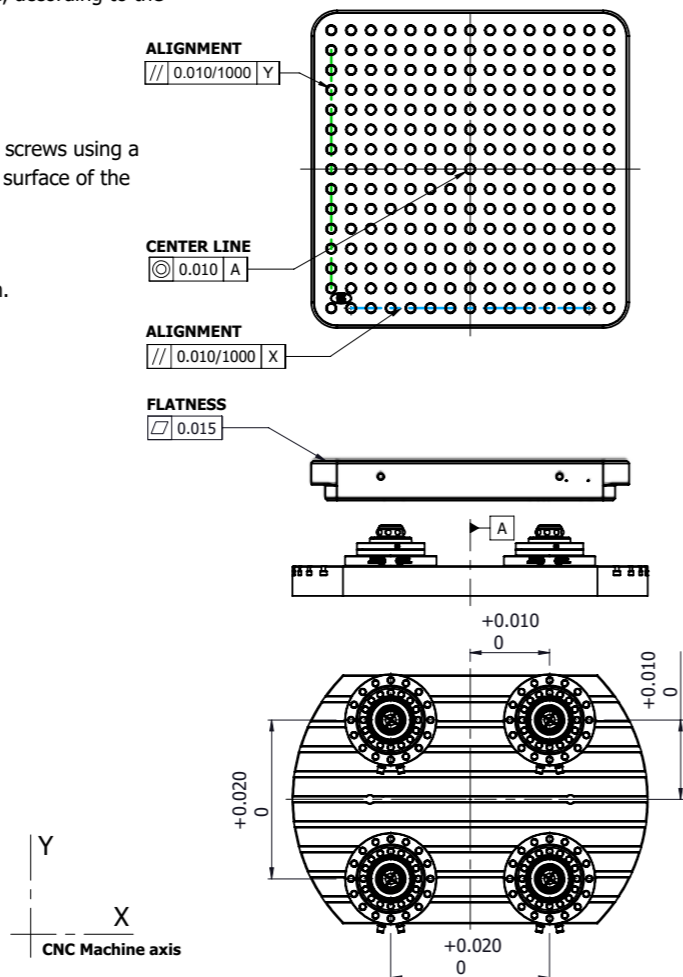
In case of one single Gold base:

- Control the Gold devices flatness* on the upper surface: max 0.010mm.
- Tighten the screws at the recommended torque as follows:
 - M8 12.9 screws at 40 Nm

In case of two or more Gold bases:

- position them according to the requested distance between axis (distance accuracy = 0/+0.020 mm) as well.
- Supply and keep pressure by the Unlocking-lifting inlet at 25÷45 bar (to unlock the Golds).
Lift down the pallet until it comes in contact with the Golds.
Release pressure (to lock the pallet on the Golds).
- Control the pallet flatness* on the upper surface: max 0.015mm.
- Control and re-adjust the pallet in order to get:
 - Alignment along the x and y axis: max 0.010/1000 mm.
 - Center line coaxiality: max 0.010 mm.
- Supply and keep pressure by the Unlocking-lifting inlet at 25÷45 bar (to unlock the pallet from the Golds).
- Remove/lift-up the pallet.
- Release pressure (to lock the Golds).
- Tighten the screws at the recommended torque as follows:
 - M8 12.9 screws at 40 Nm
- Re-control the pallet repeating the above steps.

*The machine table flatness accuracy could affect the Golds flatness.

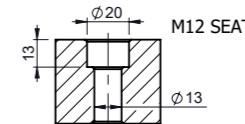


C2 MACHINING AND ASSEMBLING PROCEDURE

| SET CODE: 2305-00040 | | | TECHNICAL DATA | | |
|-------------------------|----|---------------------------------------|--------------------------|----------------------------------|-----------------|
| | | | | | |
| THE SET INCLUDES | | | UNLOCKING-LIFTING | 25÷45 bar (Oil) 29545 N (45 bar) | |
| Nr. | 1 | SET GOLD 7 | CODE 2303-02900 | LIFTING STROKE | 2.0 mm |
| Nr. | 1 | BASE Nr.1 GOLD 7 WITHOUT FIXING HOLES | CODE 2302-06610 | BLOWING | Max 8 bar (Air) |
| Nr. | 16 | PLUG SCREW M8 | CODE 2307-06525 | NUMBER OF CYCLES | 500000 |
| Nr. | 16 | SCREW M8x30 12.9 | CODE 4521-08030 | WEIGHT | 14.0 Kg |

STEP 1: Drill the fixing holes on each Gold base inside the workable area; the fixing holes position should be defined according to the machine table geometry (t-slots, thread holes, etc.). Recommended holes quantities and size as follows:

- Nr.6 M12 12.9 screws



STEP 2: Place the set base gold on the machine table. Set in the fixing screws using a low torque (5 Nm) and align using as reference the conical and coupling surface of the Gold devices (by means of a dial gauge fixed on the machine head).

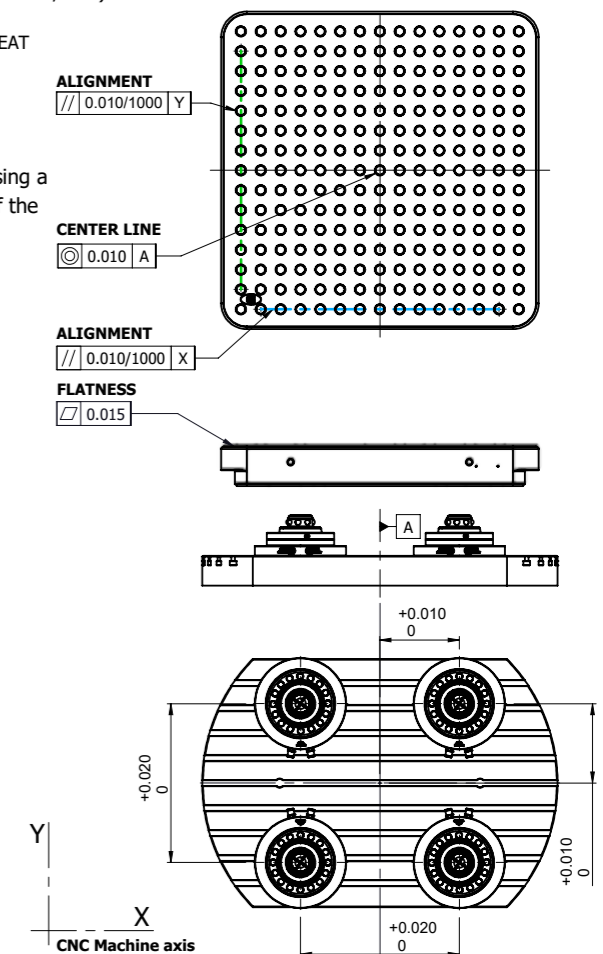
In case of one single Gold base:

- Control the Gold devices flatness* on the upper surface: max 0.015mm.
- Tighten the screws at the recommended torque as follows:
 - M12 12.9 screws at 130 Nm

In case of two or more Gold bases:

- position them according to the requested distance between axis (distance accuracy = 0/+0.020 mm) as well.
- Supply and keep pressure by the Unlocking-lifting inlet at 25÷45 bar (to unlock the Golds).
Lift down the pallet until it comes in contact with the Golds.
Release pressure (to lock the pallet on the Golds).
- Control the pallet flatness* on the upper surface: max 0.015mm.
- Control and re-adjust the pallet in order to get:
 - Alignment along the x and y axis: max 0.010/1000 mm.
 - Center line coaxiality: max 0.010 mm.
- Supply and keep pressure by the Unlocking-lifting inlet at 25÷45 bar (to unlock the pallet from the Golds).
- Remove/lift-up the pallet.
- Release pressure (to lock the Golds).
- Tighten the screws at the recommended torque as follows:
 - M12 12.9 screws at 130 Nm
- Re-control the pallet repeating the above steps.

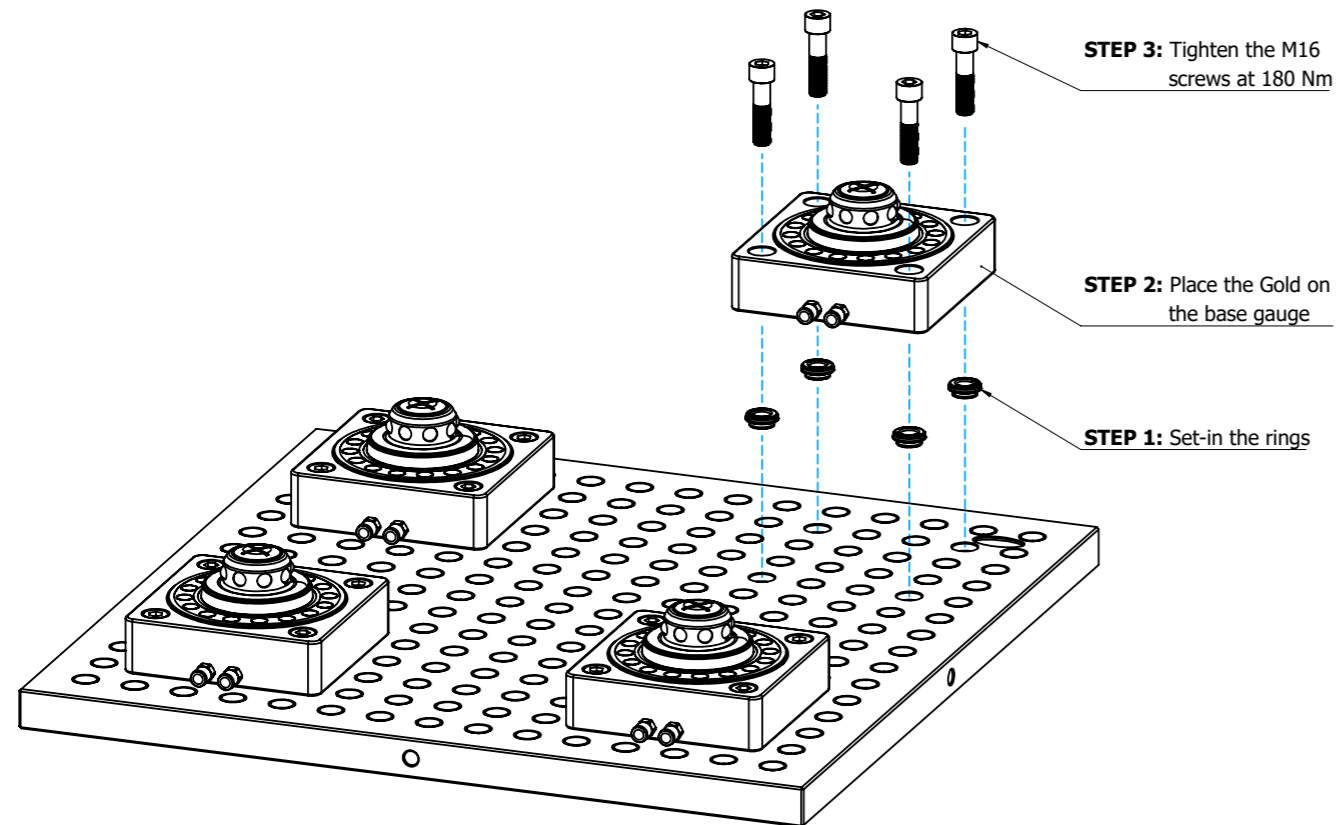
*The machine table flatness accuracy could affect the Golds flatness.



D ASSEMBLING PROCEDURE

| | | | | | | | | | | | | | | | | | | | |
|--|---|-------------------|---------------------|------------|---------------------|-----|---|------------------|-----------------|-----|---|-----------------|-----------------|-----|---|-------------------|-----------------|--|--|
| SET CODE: 2305-00901 | | TECHNICAL DATA | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| <p>THE SET INCLUDES</p> <table border="1"> <tr> <td>Nr.</td> <td>1</td> <td>SET GOLD 7</td> <td>SET CODE 2303-02900</td> </tr> <tr> <td>Nr.</td> <td>1</td> <td>BASE Nr.1 GOLD 7</td> <td>CODE 2304-00901</td> </tr> <tr> <td>Nr.</td> <td>4</td> <td>RING M16 Ø24 H0</td> <td>CODE 0001-00501</td> </tr> <tr> <td>Nr.</td> <td>4</td> <td>SCREW M16x65 12.9</td> <td>CODE 4521-16065</td> </tr> </table> | | Nr. | 1 | SET GOLD 7 | SET CODE 2303-02900 | Nr. | 1 | BASE Nr.1 GOLD 7 | CODE 2304-00901 | Nr. | 4 | RING M16 Ø24 H0 | CODE 0001-00501 | Nr. | 4 | SCREW M16x65 12.9 | CODE 4521-16065 | <p>UNLOCKING-LIFTING</p> <p>25÷45 bar (Oil) 29545 N (45 bar)</p> <p>LIFTING STROKE</p> <p>2.0 mm</p> <p>BLOWING</p> <p>Max 8 bar (Air)</p> <p>NUMBER OF CYCLES</p> <p>500000</p> <p>WEIGHT</p> <p>17.2 Kg</p> | |
| Nr. | 1 | SET GOLD 7 | SET CODE 2303-02900 | | | | | | | | | | | | | | | | |
| Nr. | 1 | BASE Nr.1 GOLD 7 | CODE 2304-00901 | | | | | | | | | | | | | | | | |
| Nr. | 4 | RING M16 Ø24 H0 | CODE 0001-00501 | | | | | | | | | | | | | | | | |
| Nr. | 4 | SCREW M16x65 12.9 | CODE 4521-16065 | | | | | | | | | | | | | | | | |

Tightening torques, clamping forces and accuracy: see the corresponding sections.

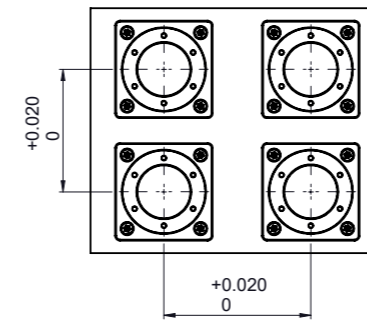


MACHINING AND ASSEMBLING PROCEDURE

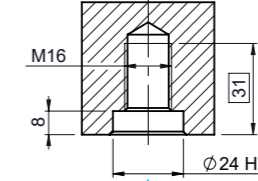
| | | | | | | | | | | | | | | | |
|--|---|--------------------|-----------------|--------------------|-----------------|-----|---|-----------------|-----------------|-----|---|-------------------|-----------------|-------------------------------------|--|
| SET CODE: 2305-00050 | | TECHNICAL DATA | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| <p>THE SET INCLUDES</p> <table border="1"> <tr> <td>Nr.</td> <td>1</td> <td>BASE FLANGE GOLD 7</td> <td>CODE 2304-00902</td> </tr> <tr> <td>Nr.</td> <td>4</td> <td>RING M16 Ø24 H0</td> <td>CODE 0001-00501</td> </tr> <tr> <td>Nr.</td> <td>4</td> <td>SCREW M16x70 12.9</td> <td>CODE 4521-16070</td> </tr> </table> | | Nr. | 1 | BASE FLANGE GOLD 7 | CODE 2304-00902 | Nr. | 4 | RING M16 Ø24 H0 | CODE 0001-00501 | Nr. | 4 | SCREW M16x70 12.9 | CODE 4521-16070 | <p>WEIGHT</p> <p>17.2 Kg</p> | |
| Nr. | 1 | BASE FLANGE GOLD 7 | CODE 2304-00902 | | | | | | | | | | | | |
| Nr. | 4 | RING M16 Ø24 H0 | CODE 0001-00501 | | | | | | | | | | | | |
| Nr. | 4 | SCREW M16x70 12.9 | CODE 4521-16070 | | | | | | | | | | | | |

Tightening torques, clamping forces and accuracy: see the corresponding sections.

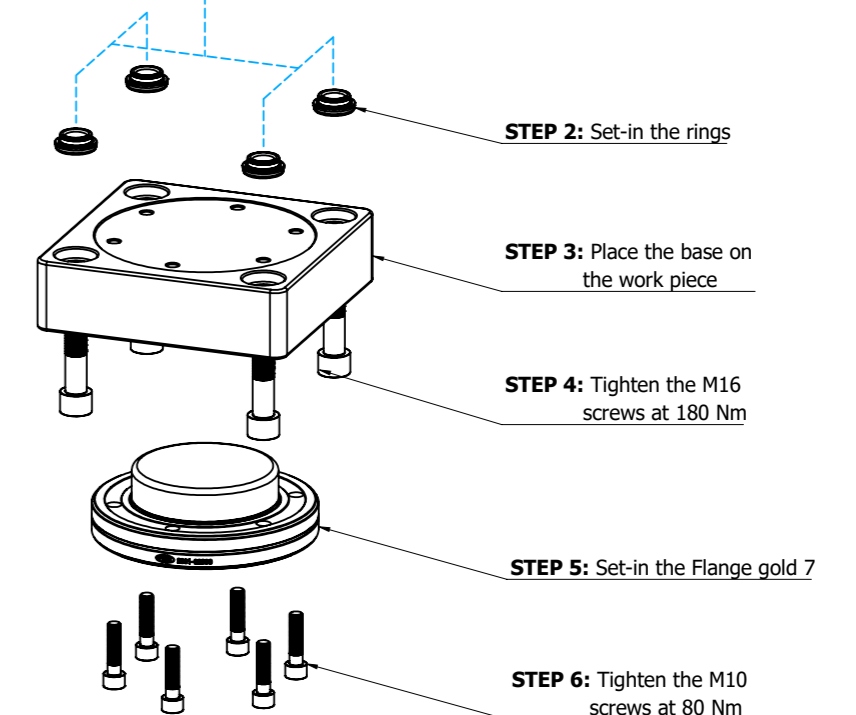
IN CASE OF TWO OR MORE BASE FLANGES



CLAMPING SEAT M16 Ø24

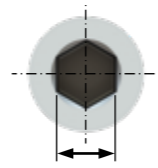


STEP 1: Drill Nr.4 M16 clamping seats on the workpiece or equipment, according to the existing holes on the Flange base (150mm).



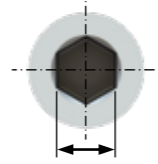
GOLD - TIGHTENING TORQUES AND CLAMPING FORCES

GOLD - ACCURACY



| SCREWS | HEX (mm) | TORQUE (Nm)* |
|---------|----------|--------------|
| M5 12.9 | 4 | 10 |
| M6 12.9 | 5 | 15 |
| M8 12.9 | 6 | 40 |

* Tightening torque: max recommended values



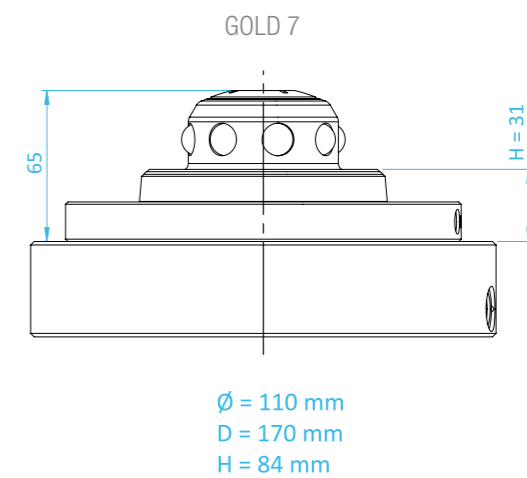
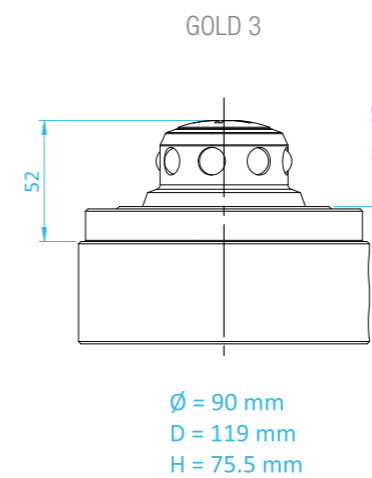
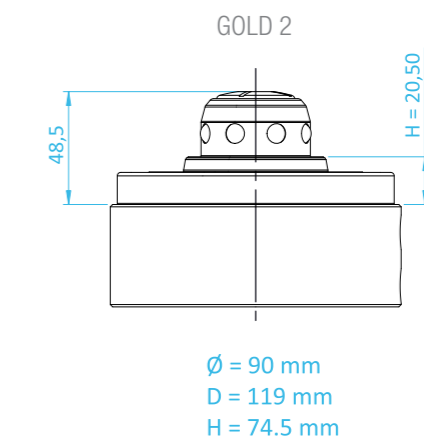
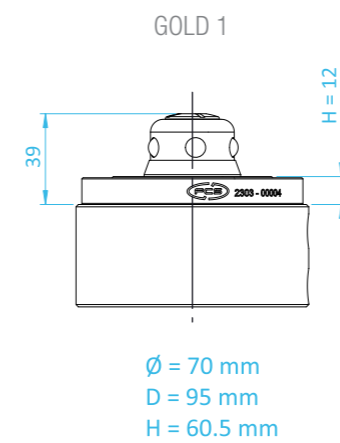
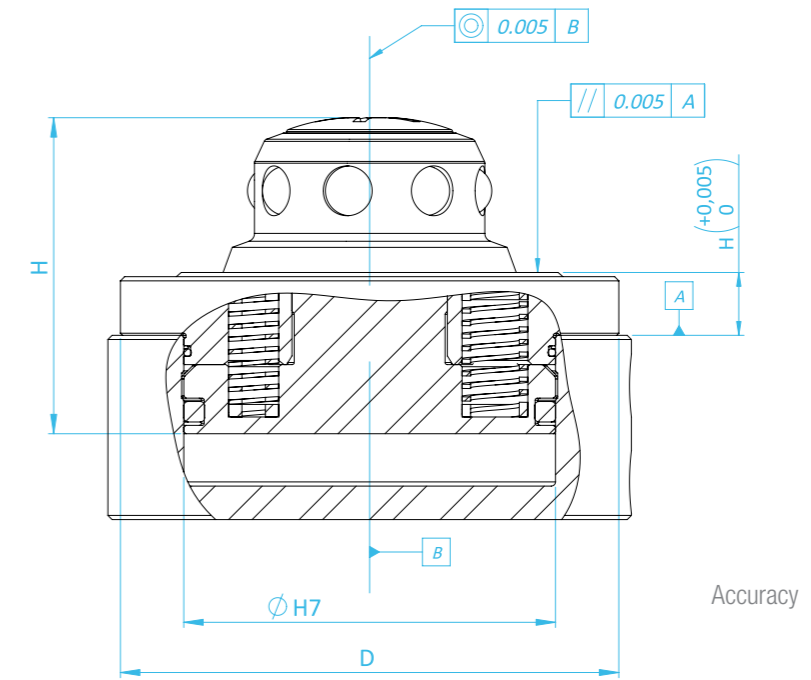
| SCREWS | HEX (mm) | TORQUE (Nm)* |
|----------|----------|--------------|
| M10 12.9 | 8 | 80 |
| M12 12.9 | 10 | 130 |
| M16 12.9 | 14 | 180 |

* Tightening torque: max recommended values



| DESCRIPTION | DIMENSION | COMPRESSIVE FORCE (N)** | TENSILE FORCE (N)** | SHEAR FORCE (N)** |
|-------------|------------|-------------------------|---------------------|-------------------|
| GOLD 1 | D95 H60,5 | 842 (Air 8bar) | 10000 | 17500 |
| GOLD 2 | D119 H74,5 | 1415 (Air 8bar) | 20000 | 35000 |
| GOLD 3 | D119 H75,5 | 10100 (Oil 25bar) | 20000 | 35500 |
| GOLD 7 | D170 H84 | 29545 (Oil 45 bar) | 70000 | 50000 |

** Clamping force: guide values



GOLD - MANUAL CONTROL - OPERATING PROCEDURE

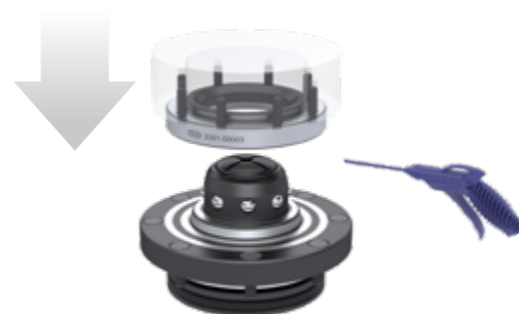
GOLD - MANUAL CONTROL - OPERATING PROCEDURE

MANUAL CONTROL (BY AN OPERATOR) - CLOSING SEQUENCE

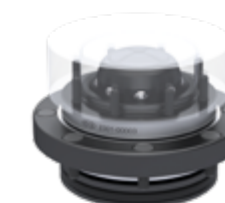


-Place the pallet coaxially above the Gold.

- 1 Inlet Blowing (Cleaning and Checking)
- 2 Inlet Unlocking-lifting

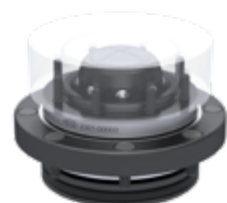


- UNLOCKING-LIFTING CIRCUIT**
- Supply and keep pressure activating the Unlocking-lifting valve.
 - Wait a proper time (some seconds)*.
 - Verify the Unlocking line by means of the pressure gauge that the pressure has increased.
- CLEANING CIRCUIT**
- Use the air compression gun to clean the coupling surfaces (making sure to blow away any swarf/metal powders)
 - Lift down the pallet slowly until it comes in contact with the Gold.



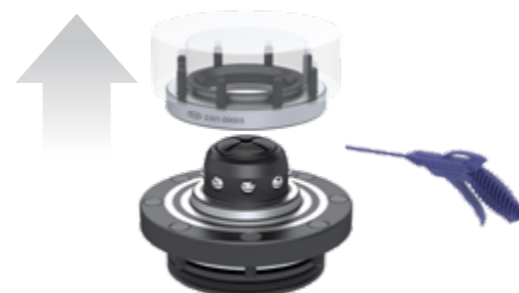
- UNLOCKING-LIFTING CIRCUIT**
- Release pressure deactivating the Unlocking-lifting valve.
 - Wait a proper time (some seconds)*.
 - Verify the Unlocking-lifting line by means of the pressure gauge that the pressure has decreased.
- CHECKING CIRCUIT (OPTIONAL)**
- Supply and keep pressure activating the checking valve to verify if the pallet is correctly locked (air leakages test by the output signal on the pressure gauge):
 - PALLET PROPERLY LOCKED (HELD DOWN)**
pressure in the line > P₁ - 1bar (set-point).
 - PALLET NOT PROPERLY LOCKED (HELD DOWN)**
pressure in the line < P₁ - 1,5bar (reset-point)
 - Release pressure deactivating the Checking valve and proceed with the machine operations only if the pallet was previously properly locked.

MANUAL CONTROL (BY AN OPERATOR) - OPENING SEQUENCE



- UNLOCKING-LIFTING CIRCUIT**
- Supply and keep pressure activating the Unlocking-lifting valve.
 - Pay attention to not activate the checking valve.
 - Wait a proper time (some seconds)*.
 - Verify the Unlocking line by means of the pressure gauge that the pressure has increased.

- CHECKING CIRCUIT (OPTIONAL)**
- Supply and keep pressure activating the checking valve to verify if the pallet is correctly unlocked (air leakages test by the output signal on the pressure gauge):
 - PALLET PROPERLY UNLOCKED (HELD DOWN)**
pressure in the line < P₁ - 1,5bar (reset-point).
 - PALLET NOT PROPERLY UNLOCKED (HELD DOWN)**
pressure in the line > P₁ - 1bar (set-point).



- CHECKING CIRCUIT (OPTIONAL)**
- Release pressure deactivating the Checking valve.
 - Lift up the pallet slowly only if the pallet was previously properly unlocked.

- UNLOCKING-LIFTING CIRCUIT**
- Release pressure deactivating the Unlocking-lifting valve.

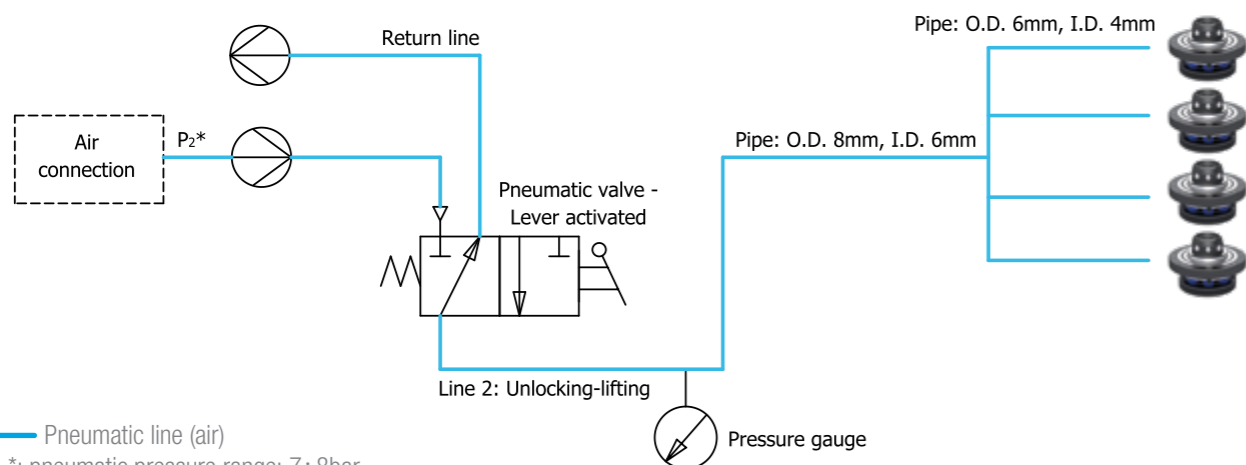
- CLEANING CIRCUIT**
- It is suggested to use the air compression gun to clean, blowing away swarf/metal from the coupling surfaces if any.

*The timing can vary depending on the inlet pressure value (pressure upstream set at the pressure regulator minus the pressure drop. The pressure drop can be reduced, minimizing the length of the pipe; place the valve as much closer as possible to the Gold inlet).
Refer to the corresponding circuit diagram for the further technical specifications.

GOLD 1 & GOLD 2 - MANUAL CONTROL - CIRCUIT DIAGRAM

GOLD 1 & GOLD 2 - MANUAL CONTROL - CIRCUIT DIAGRAM

UNLOCKING - LIFTING CIRCUIT



— Pneumatic line (air)

P_2^* : pneumatic pressure range: 7÷8bar.

P_2^* : pneumatic pressure range:

- GOLD 1: $P_2=6\div 8$ bar. Lifting force per each Gold device = $P_2 \times 384 - 2230$ (N). Max Lifting force = 842 N. Theoretical guide value; the actual value can vary depending on the friction condition.
- GOLD 2: $P_2=6\div 8$ bar. Lifting force per each Gold device = $P_2 \times 635 - 3665$ (N). Max Lifting force = 1415 N. Theoretical guide value; the actual value can vary depending on the friction condition.

The pressure gauge can be used to verify the value of the pressure (its use is not mandatory).

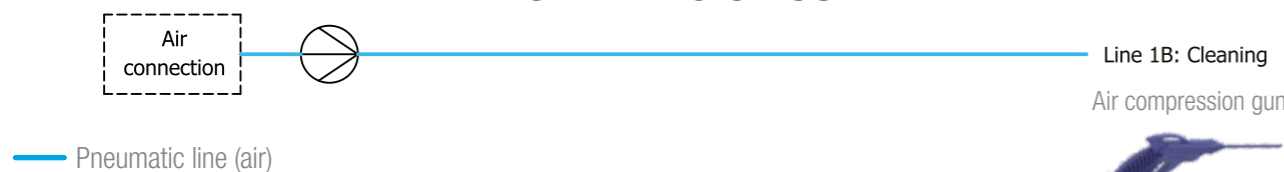


Activating the valve, the piston goes up and the spheres retract.

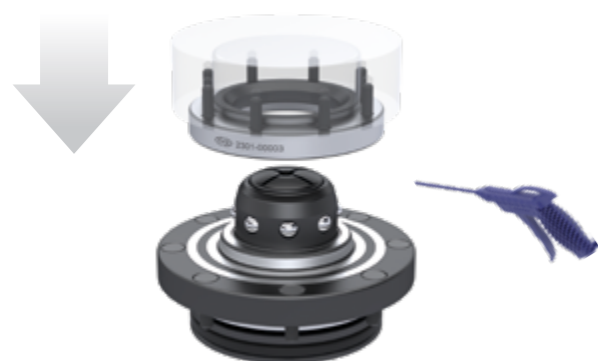


Deactivating the valve, the piston goes down and the spheres go out.

CLEANING CIRCUIT



— Pneumatic line (air)



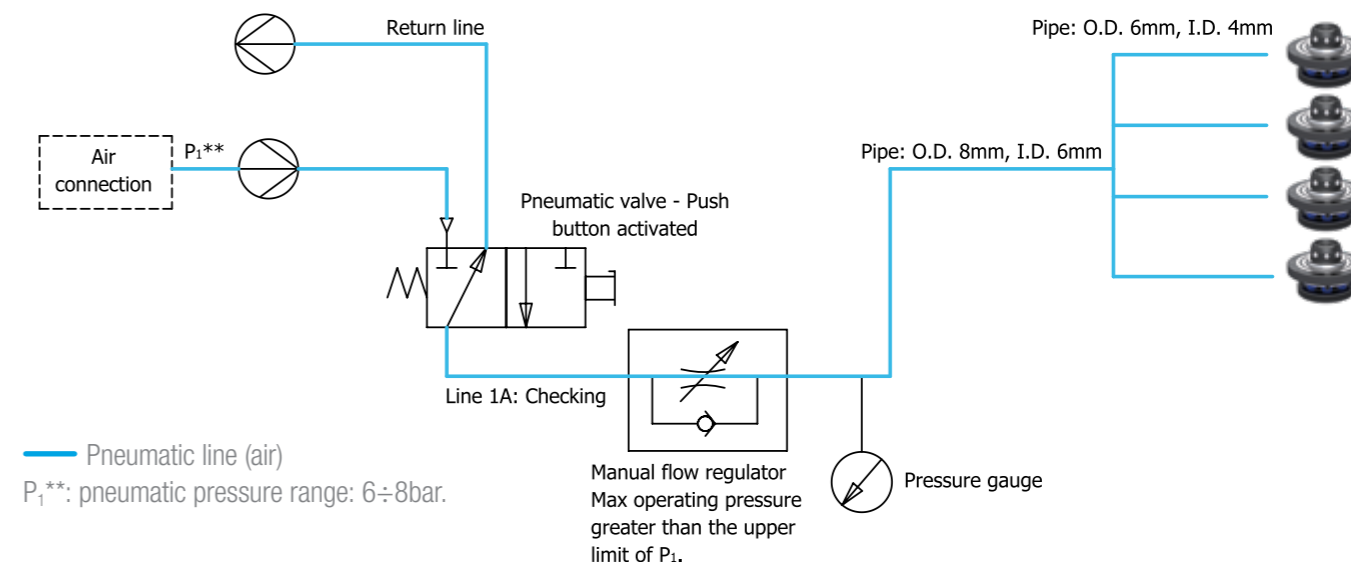
Before lifting down the pallet on the Gold, it is highly recommended to clean the coupling surfaces.



After lifting up the pallet from the Gold, it is recommended to clean the coupling surfaces.

CHECKING CIRCUIT (OPTIONAL)

Remark: pay attention to activate only the Unlocking-lifting valve line 2 to remove the pallet (do not activate the Checking valve line 1A when the pallet has to be removed from the Automatic Clamp).



— Pneumatic line (air)

P_1^{**} : pneumatic pressure range: 6÷8bar.

Manual flow regulator
Max operating pressure greater than the upper limit of P_1 .

Setting operation:
remove the pallet from the Automatic Clamp, activate the Checking valve and set the regulator in order to get 2÷3 bar at the pressure gauge.

For this application (manual control) the Line 1A (Checking) corresponds to the Line 1 (Blowing), because the cleaning is carried-out by the air compression gun.



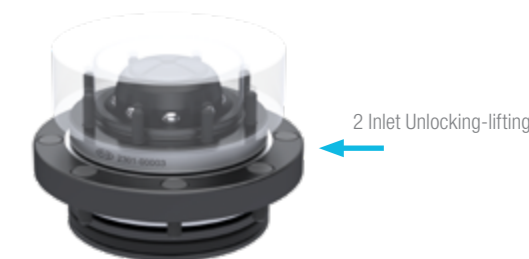
Coupled and locked (the valve at the line 2 is deactivated)

Supply and keep pressure activating the checking valve to verify if the pallet is correctly locked (air leakages test by the output signal on the pressure gauge):
PALLET PROPERLY LOCKED (HELD DOWN)
 pressure in the line > $P_1 - 1$ bar (set-point).
PALLET NOT PROPERLY LOCKED (HELD DOWN)
 pressure in the line < $P_1 - 1,5$ bar (reset-point).

O.D. = Outer Diameter

I.D. = Inner Diameter

Refer to the corresponding operating procedure for the operating sequence description.



Coupled and unlocked (the valve at the line 2 is activated)

Supply and keep pressure activating the checking valve to verify if the pallet is correctly unlocked (air leakages test by the output signal on the pressure gauge):
PALLET PROPERLY UNLOCKED (HELD DOWN)
 pressure in the line < $P_1 - 1,5$ bar (reset-point).
PALLET NOT PROPERLY UNLOCKED (HELD DOWN)
 pressure in the line > $P_1 - 1$ bar (set-point).

AUTOMATIC CONTROL (BY PLC/CNC) - CLOSING SEQUENCE



Pallet

Gold

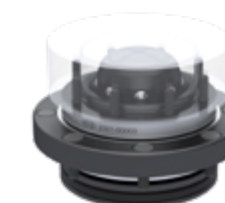
1 Inlet Blowing (Cleaning and Checking)

2 Inlet Unlocking-lifting

-Place the pallet coaxially above the Gold.

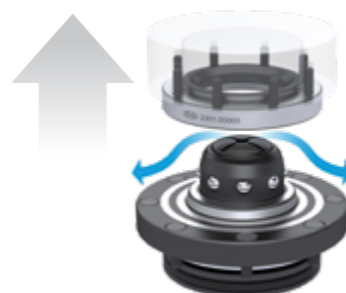
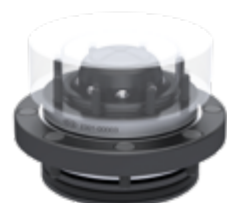


- Supply and keep pressure activating the Unlocking-lifting valve.
- Wait a proper time (some seconds)* depending on the piston lifting duration.
- Verify the Unlocking-lifting line that the output signal on the pressure switch is at 1 (sensor ON); pressure in the line > P_{set} (set-point).
- Supply and keep pressure activating the Cleaning and the Checking valves (both the valves have to be activated for the swarf evacuation).
- Lift down the pallet and release pressure deactivating both the Cleaning and Checking valves a little bit earlier* than the contact happens between Pallet and Automatic clamp.
- Lift down completely the pallet until it comes in contact with the Automatic clamp.



- Release pressure deactivating the Unlocking-lifting valve.
- Wait a proper time (some seconds)* depending on the piston lifting down duration
- Verify the Unlocking-lifting line that the output signal on the pressure switch is at 0 (sensor OFF); pressure in the line < P_{reset} (reset-point).
- Supply and keep pressure activating the Checking valve; air leakages test by the output signal on the pressure switch applied on the Checking line:
PALLET PROPERLY LOCKED (HELD DOWN)
 output signal at 1 (sensor ON); pressure in the line > P₁ - 1bar (set-point).
PALLET NOT PROPERLY LOCKED (HELD DOWN)
 output signal at 0 (sensor OFF); pressure in the line < P₁ - 1,5bar (reset-point).
- Release pressure deactivating the Checking valve and proceed with the machine operations only if the pallet was previously properly locked.

AUTOMATIC CONTROL (BY PLC/CNC) - OPENING SEQUENCE



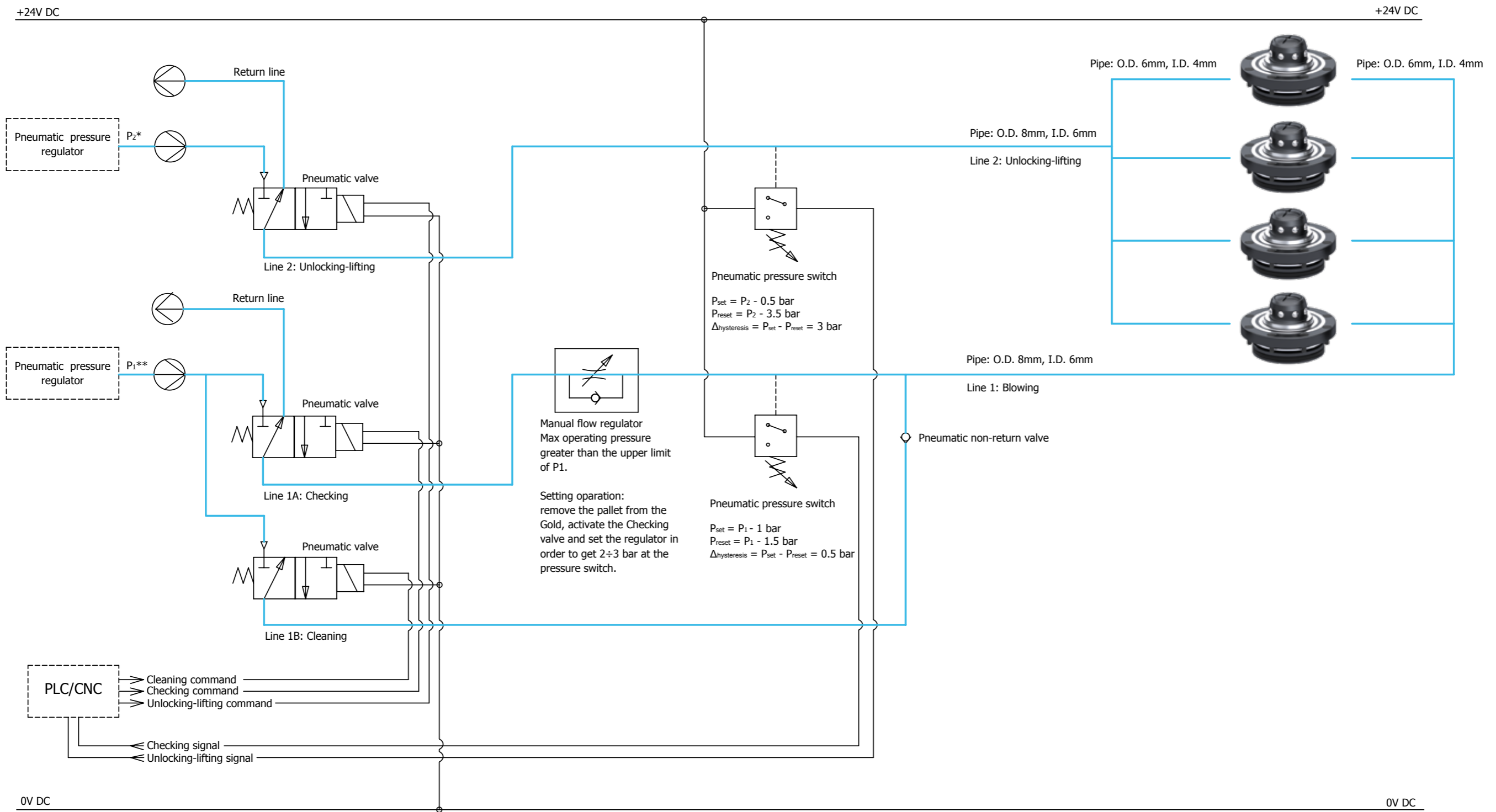
- Supply and keep pressure activating the Unlocking-lifting valve.
- Wait a proper time (some seconds)* depending on the piston lifting duration.
- Verify the Unlocking-lifting line that the output signal on the pressure switch is at 1 (sensor ON); pressure in the line > P_{set} (set-point)
- Supply and keep pressure by the Checking valve.
- Air leakages test by the output signal on the pressure switch applied on the Checking line:
PALLET PROPERLY UNLOCKED (HELD DOWN)
 output signal at 0 (sensor OFF); pressure in the line < P₁ - 1,5bar (reset-point).
PALLET NOT PROPERLY UNLOCKED (HELD DOWN)
 output signal at 1 (sensor ON); pressure in the line > P₁ - 1bar (set-point).

- Release pressure deactivating the Checking valve.
- Lift up the pallet only if the pallet was previously properly un-locked.
- When the pallet is disengaged (flange uncoupled from the spheres), release pressure deactivating the Unlocking-lifting valve.
- Verify on the Unlocking-lifting line that the output signal on the pressure switch is at 0 (sensor OFF); pressure in the line < P_{reset} (reset-point).
- Supply and keep pressure activating both the Cleaning and Checking valves (both the valves have to be activated for the swarf evacuation) until the pallet is completely lifted-up.
- Deactivate both the Cleaning and the Checking valves.

*The timing can vary depending on the inlet pressure value (pressure upstream set at the pressure regulator minus the pressure drop. The pressure drop can be reduced, minimizing the length of the pipe; place the valve as much closer as possible to the Gold inlet).
 Refer to the corresponding circuit diagram for the further technical specifications.

GOLD 1 & GOLD 2 - AUTOMATIC CONTROL - CIRCUIT DIAGRAM

GOLD 1 & GOLD 2 - AUTOMATIC CONTROL - CIRCUIT DIAGRAM



— Pneumatic line (air)

P_2^* : pneumatic pressure range:

- GOLD 1: $P_2=6\div 8$ bar. Lifting force per each Gold device = $P_2 \times 384 - 2230$ (N). Max Lifting force = 842 N. Theoretical guide value; the actual value can vary depending on the friction condition.
- GOLD 2: $P_2=6\div 8$ bar. Lifting force per each Gold device = $P_2 \times 635 - 3665$ (N). Max Lifting force = 1415 N. Theoretical guide value; the actual value can vary depending on the friction condition.

Out of range applications: GOLD 1 and GOLD 2 were tested to be used with an higher value of P_2 (greater than 8 bar), pneumatically by means of an air pressure booster system or hydraulically, adapting properly the circuit components. In any case P_2 cannot exceed the following upper limit:

- GOLD 1: $P_2 \text{ max} = 20$ bar. Max Lifting force = 5450N. Theoretical guide value; the actual value can vary depending on the friction condition.
- GOLD 2: $P_2 \text{ max} = 20$ bar. Max Lifting force = 9035N. Theoretical guide value; the actual value can vary depending on the friction condition.

P_1^{**} : pneumatic pressure range: $6\div 8$ bar.

O.D. = Outer Diameter

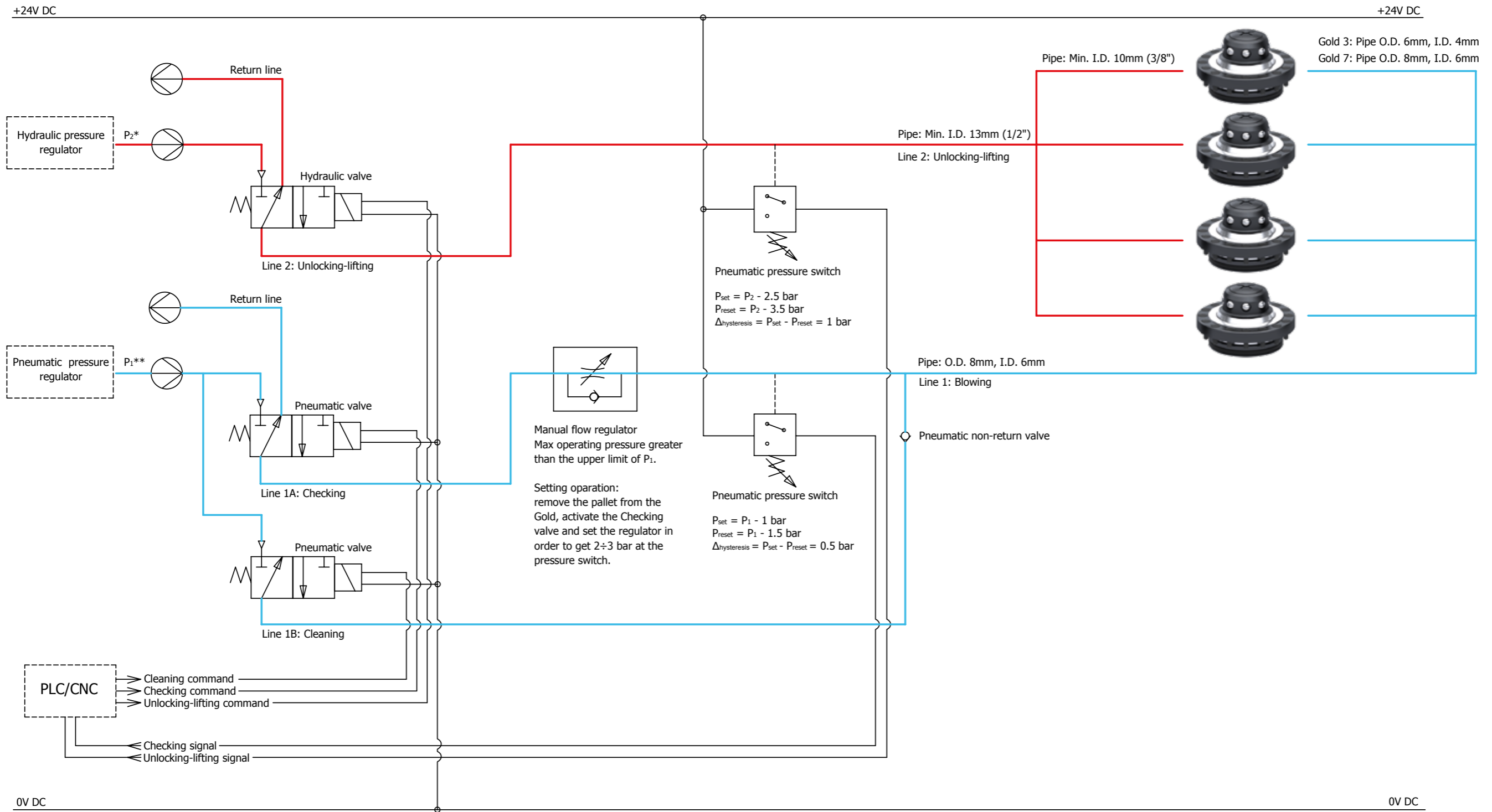
I.D. = Inner Diameter

Refer to the corresponding operating procedure for the operating sequence description.

Usually it is provided also the possibility to control this circuit manually by the operator, by means of the control panel (of the PLC/CNC).

GOLD 3 & GOLD 7 - AUTOMATIC CONTROL - CIRCUIT DIAGRAM

GOLD 3 & GOLD 7 - AUTOMATIC CONTROL - CIRCUIT DIAGRAM



— Pneumatic line (air)
 — Hydraulic line (oil): Recommended oil: ISO VG 32, 46 or 68.

P_2^* : hydraulic pressure range:

- GOLD 3: $P_2=10\div25 \text{ bar}$. Lifting force per each Gold device = $P_2 \times 635 - 5775 \text{ (N)}$. Max Lifting force = 10100 N. Theoretical guide value; the actual value can vary depending on the friction condition.
- GOLD 7: $P_2=25\div45 \text{ bar}$. Lifting force per each Gold device = $P_2 \times 948 - 13115 \text{ (N)}$. Max Lifting force = 29545 N. Theoretical guide value; the actual value can vary depending on the friction condition.

Full pneumatic functioning: the hydraulic line can be converted in pneumatic line, increasing the air pressure by means of an air pressure booster system, adapting properly the circuit components. In any case P_2 cannot exceed the above upper limit.

P_1^{**} : pneumatic pressure range: 6÷8bar.

O.D. = Outer Diameter

I.D. = Inner Diameter





Refer to the corresponding operating procedure for the operating sequence description.

Usually it is provided also the possibility to control this circuit manually by the operator, by means of the control panel (of the PLC/CNC).

GOLD - INDEX

GOLD - INDEX

GOLD

| Items | Description | Dimension | Code | SET Code |
|---|-------------|------------|------------|------------|
|  | GOLD 1 | D95 H60,5 | 2303-00014 | 2303-00004 |
|  | GOLD 2 | D119 H74,5 | 2303-00002 | 2303-00001 |
|  | GOLD 3 | D119 H75,5 | 2303-00033 | 2303-00034 |
|  | GOLD 7 | D170 H84 | 2303-02700 | 2303-02900 |

SET BASE

| Items | Description | Dimension | Code | SET Code |
|---|--------------------------------------|-----------|------|------------|
|  | SET BUILT-IN BASE Nr.1 GOLD 1 | | | 2305-00150 |
|  | SET BASE Nr.4 GOLD 1 - 100 | | | 2305-00035 |
|  | SET BASE Nr. 2 GOLD 2 - 200 | | | 2305-00003 |
|  | SET BASE Nr. 2 GOLD 2 - 250 | | | 2305-00004 |
|  | SET BASE Nr. 4 GOLD 2 - 200 | | | 2305-00009 |
|  | SET BASE Nr. 4 GOLD 2 - 250 | | | 2305-00010 |
|  | SET BASE Nr. 1 GOLD 2 | | | 2305-00011 |
|  | SET BUILT-IN BASE Nr.1 GOLD 2 V.1 | | | 2305-00045 |
|  | SET BUILT-IN BASE Nr.1 GOLD 2 V.2 | | | 2305-00239 |

| Items | Description | Dimension | Code | SET Code |
|---|--|-----------|------|------------|
|  | SET BASE Nr. 1 GOLD 2 | | | 2305-00039 |
|  | SET BUILT-IN BASE Nr.1 GOLD 3 | | | 2305-00200 |
|  | SET BASE Nr.1 GOLD 3 | | | 2305-00210 |
|  | SET BUILT-IN BASE Nr.1 GOLD 7 | | | 2303-02901 |
|  | SET BUILT-IN BASE Nr.1 GOLD 7 WITHOUT FIXING HOLES | | | 2305-00040 |
|  | SET BUILT-IN BASE Nr.1 GOLD 7 WITH FIXING HOLES | | | 2305-00044 |
|  | SET BASE Nr.1 GOLD 7 | | | 2305-00901 |





BASE

| Items | Description | Dimension | Code | SET Code |
|---|--------------------------------------|-----------|------------|----------|
|  | BUILT-IN BASE Nr.1 GOLD 1 | | 2302-00065 | |
|  | BASE Nr.4 GOLD 1 | | 2305-00037 | |
|  | BASE Nr.2 GOLD 2 - 200 | | 2304-03305 | |
|  | BASE Nr.2 GOLD 2 - 250 | | 2304-03304 | |
|  | BASE Nr.4 GOLD 2 - 200 | | 2304-03303 | |
|  | BASE Nr.4 GOLD 2 - 250 | | 2304-03302 | |
|  | BASE Nr.1 GOLD 2 | | 2302-06223 | |
|  | BUILT-IN BASE Nr.1 GOLD 2 | | 2302-00009 | |
|  | BUILT-IN BASE Nr.1 GOLD 2 | | 2302-00018 | |
|  | BASE Nr.1 GOLD 2 | | 2302-00021 | |
|  | BASE Nr.1 GOLD 3 | | 2304-00210 | |
|  | BUILT-IN BASE Nr.1 GOLD 7 | | 2302-06608 | |
|  | BASE Nr.1 GOLD 7 | | 2302-00004 | |
|  | BASE Nr.1 GOLD7 WITHOUT FIXING HOLES | | 2302-06610 | |
|  | BASE Nr.1 GOLD 7 | | 2304-00901 | |


FLANGE

| Items | Description | Dimension | Code | SET Code |
|---|---------------------------|-----------|--------------|------------|
|  | CENTERING FLANGE GOLD 1 | | 2301-00012 ● | |
| | POSITIONING FLANGE GOLD 1 | | 2301-00014 ● | |
| | CLOSING FLANGE GOLD 1 | | 2301-00013 ● | |
|  | CENTERING FLANGE GOLD 2 | | 2301-00001 ● | |
| | POSITIONING FLANGE GOLD 2 | | 2301-00002 ● | |
| | CLOSING FLANGE GOLD 2 | | 2301-00003 ● | |
|  | CENTERING FLANGE GOLD 3 | | 2301-00041 ● | |
| | POSITIONING FLANGE GOLD 3 | | 2301-00042 ● | |
| | CLOSING FLANGE GOLD 3 | | 2301-00043 ● | |
|  | CENTERING FLANGE GOLD 4 | | 2301-02903 ● | |
| | POSITIONING FLANGE GOLD 4 | | 2301-02902 ● | |
| | CLOSING FLANGE GOLD 4 | | 2301-02901 ● | |
|  | BASE FLANGE GOLD 7 | | 2304-00902 | 2305-00050 |





PLUG

| Items | Description | Dimension | Code | SET Code |
|---|-------------|-----------|------------|----------|
|  | PLUG GOLD 1 | | 0015-04554 | |
|  | PLUG GOLD 2 | | 0015-04551 | |
|  | PLUG GOLD 3 | | 0015-04558 | |
|  | PLUG GOLD 7 | | 0015-04552 | |


BODY

| Items | Description | Dimension | Code | SET Code |
|---|-----------------------------|-----------|------------|------------|
|  | BODY ADAPTER M16 H80 GOLD 2 | | 2303-00007 | 2303-00008 |








RING

| Items | Description | Dimension | Code | SET Code |
|---|-------------|-----------|--|----------|
|  | RING M16 | ø24 | 0001-00501  | |
| | RING M16 | ø24 | 0001-00502  | |
| | RING M16 | ø24 | 0001-00503  | |

ROD H0

| Items | Description | Dimension | Code | SET Code |
|---|-------------|-----------|------------|----------|
|  | M16 | H0 L35 | 0002-01200 | |

ACCESSORIES

| Items | Description | Dimension | Code | SET Code |
|---|-------------------|-----------|------------|----------|
|  | SEALING KIT | | 2305-00038 | |
|  | SCREW M5x16 12.9 | | 4521-05016 | |
| | SCREW M6x16 12.9 | | 4521-06016 | |
| | SCREW M6x20 12.9 | | 4521-06020 | |
| | SCREW M6x45 12.9 | | 4521-06045 | |
| | SCREW M8x25 12.9 | | 4521-08025 | |
| | SCREW M8x30 12.9 | | 4521-08030 | |
| | SCREW M8x60 12.9 | | 4521-08060 | |
| | SCREW M16x65 12.9 | | 4521-16065 | |
| | SCREW M16x70 12.9 | | 4521-16070 | |
|  | REDUCTION M16-M12 | | 4521-01612 | |
|  | PLUG | Ø9,5 | 2307-06530 | |
| | | Ø11 | 2307-06520 | |
| | | Ø14,8 | 2307-06525 | |
|  | PLUG | Ø20 | 0015-04501 | |
| | | Ø24 | 0015-04500 | |
|  | PULLER PLUG | | 0015-04800 | |
|  | PULLER RING | | 0014-04600 | |

NOTE

NOTE

Two columns of horizontal lines for handwritten notes.



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