

# MacroMagnum

MacroMagnum is a larger variant of our patented Macro system. Its high clamping force and the position of the reference surfaces far away from the chuck centre mean that MacroMagnum can provide “Macro class” stability and accuracy, even in applications with high machining forces. The double references of the chucks mean that, in addition to the MacroMagnum pallets, the extensive range of Macro pallets can also be fixed to MacroMagnum.

## THE DIFFERENCE BETWEEN A PALLET AND A REFERENCE ELEMENT

Usually an electrode blank is mounted directly on a pallet. Throughout the manufacturing process, this then carries the blank from machine to machine without subsequent re-alignment.

Reference elements are primarily intended for mounting on fixtures or vices in which a workpiece is to be clamped. They are significantly thinner and thus have height advantages.

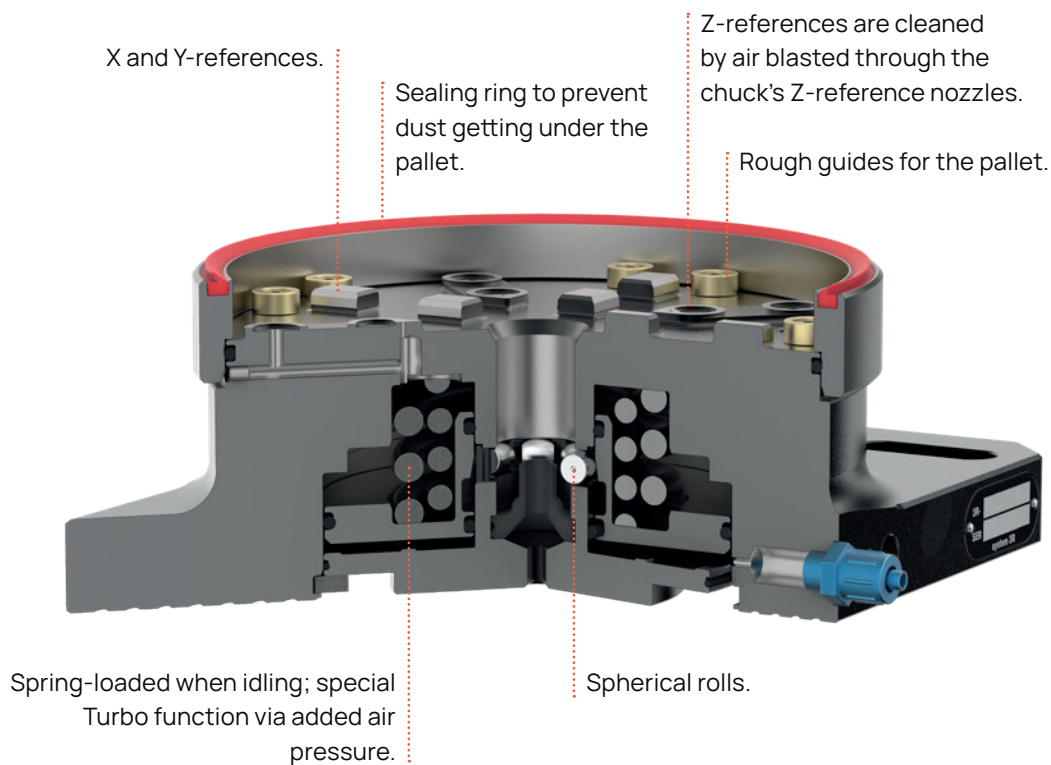
- Repetition accuracy within 0.002 mm
- Clamping force 16,000 N
- Fixed index positions 4x90°
- Required air pressure, pneumatic chuck 6 bars ( $\pm 1$ )
- Recommended tightening torque manual chuck Macro-pallet 4 Nm
- Recommended tightening torque manual chuck MacroMagnum-pallet 10 Nm.
- Max. workpiece weight (manual loading) 100 kg.

## ADVANTAGES

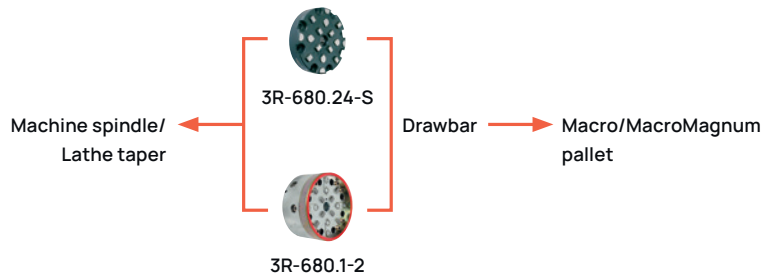
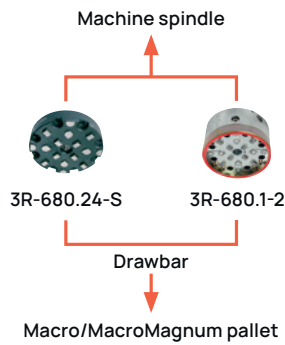
- enables mounting of both MacroMagnum and Macro pallets.
- Reduces set-up times.
- Ensures precision and quality.
- Can handle high machining forces.
- Is suitable for automatic changing with System 3R's automation program.



# MacroMagnum in detail

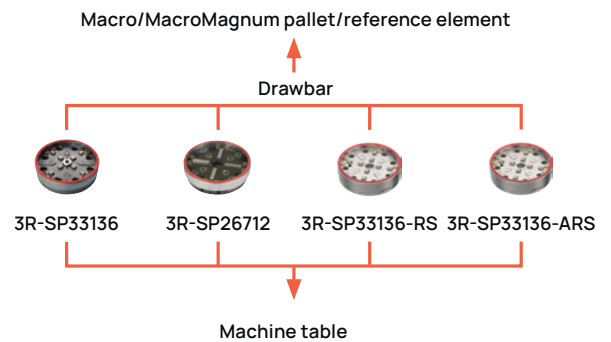
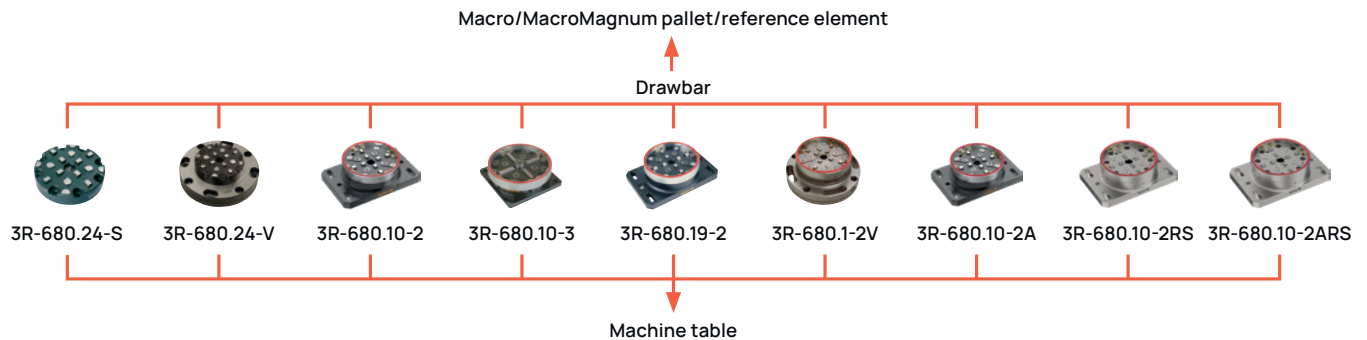


## MacroMagnum – Chucks



| Spindle chucks | Article number | Drawbar             | Feature     |
|----------------|----------------|---------------------|-------------|
| Manual         | 3R-680.24-S    | 3R-605.2            | low profile |
| Pneumatic      | 3R-680.1-2     | 3R-605.1 / 3R-605.4 |             |

| Lathe chucks | Article number | Drawbar             | Feature                       |
|--------------|----------------|---------------------|-------------------------------|
| Manual       | 3R-680.24-S    | 3R-605.2            | low profile, fits 90809.01-10 |
| Pneumatic    | 3R-680.1-2     | 3R-605.1 / 3R-605.4 |                               |



| Table chucks | Article number | Drawbar             | Feature                           |
|--------------|----------------|---------------------|-----------------------------------|
| Manual       | 3R-680.24-S    | 3R-605.2            | low profile                       |
| Manual       | 3R-680.24-V    | 3R-605.2            | vibration damped                  |
| Pneumatic    | 3R-680.10-2    | 3R-605.1 / 3R-605.4 |                                   |
| Pneumatic    | 3R-680.10-3    | 3R-605.2            | low profile                       |
| Pneumatic    | 3R-680.19-2    | 3R-605.1 / 3R-605.4 | 3Refix Ø 20 mm                    |
| Pneumatic    | 3R-680.1-2V    | 3R-605.1 / 3R-605.4 | vibration damped                  |
| Pneumatic    | 3R-680.10-2A   | 3R-605.1 / 3R-605.4 | for chuck adapter                 |
| Pneumatic    | 3R-680.10-2RS  | 3R-605.1RS          | rust resistant                    |
| Pneumatic    | 3R-680.10-2ARS | 3R-605.1RS          | rust resistant, for chuck adapter |

| In-built chucks | Article number | Drawbar             | Feature                           |
|-----------------|----------------|---------------------|-----------------------------------|
| Pneumatic       | 3R-SP33136     | 3R-605.1 / 3R-605.4 |                                   |
| Pneumatic       | 3R-SP26712     | 3R-605.2            | low profile                       |
| Pneumatic       | 3R-SP33136-RS  | 3R-605.1RS          | rust resistant                    |
| Pneumatic       | 3R-SP33136-ARS | 3R-605.1RS          | rust resistant, for chuck adapter |

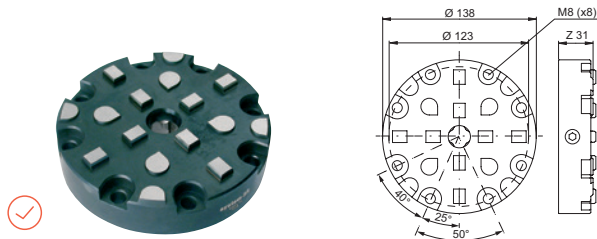
## MacroMagnum – Chucks

### Manual chuck, 3R-680.24-S

Low profile pneumatic chuck for permanent mounting on machine spindle or table.

**NOTE:** Master pallet 3R-606.1 or 3R-686.1-HD is required at installation.

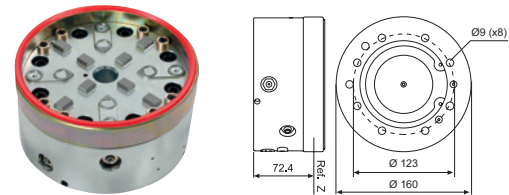
- Required drawbar 3R-605.2
- Recommended tightening torque Macro pallet 4 Nm, MacroMagnum pallet 10 Nm
- Fixed index positions 4x90°
- Weight 5 kg.



### Pneumatic chuck, 3R-680.1-2

Pneumatic chuck for machine spindles and lathes. Opened/locked by an air gun connected to a valve on the side or on the back of the chuck.

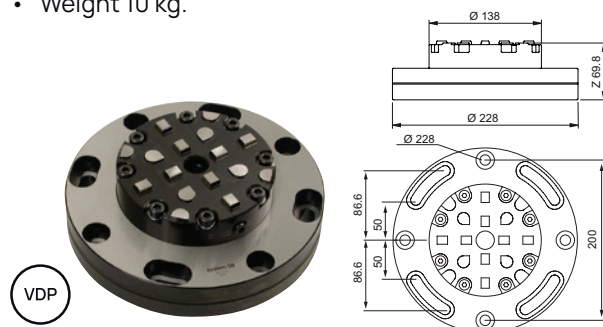
- Required drawbar 3R-605.1 or 3R-605.4
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Sealing ring
- Turbo locking of MacroMagnum pallets
- Weight 9 kg.



### Manual chuck, VDP, 3R-680.24-V

Manual vibration-damped table chuck.

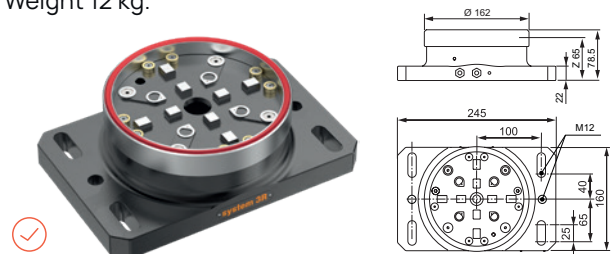
- Required drawbar 3R-605.2
- Recommended tightening torque Macro pallet 4 Nm, MacroMagnum pallet 10 Nm
- Fixed index positions 4x90°
- Weight 10 kg.



### Pneumatic chuck, 3R-680.10-2

Pneumatic table chuck.

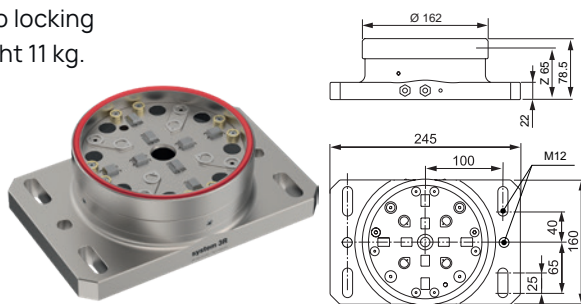
- Required drawbar 3R-605.1 or 3R-605.4
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Air-blast cleaning of the Z-references
- Sealing ring
- Turbo locking of MacroMagnum pallets
- Weight 12 kg.



### Pneumatic chuck, 3R-680.10-2RS

Rust-resistant pneumatic table chuck.

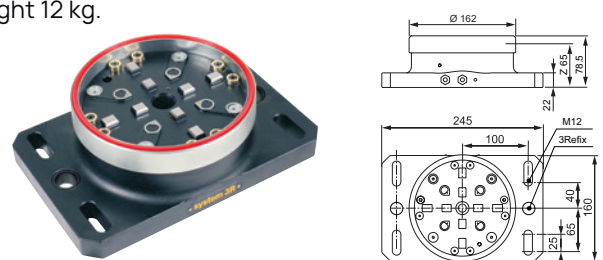
- Required drawbar 3R-605.1RS
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Flushing duct
- Air-blast cleaning of the Z-references
- Sealing ring
- Turbo locking
- Weight 11 kg.



### Pneumatic chuck, 3R-680.19-2

Pneumatic table chuck with 3Refix-holes.

- 3Refix Ø 20 mm
- Required drawbar 3R-605.1 or 3R-605.4
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Air-blast cleaning of the Z-references
- Sealing ring
- Turbo locking of MacroMagnum pallets
- Weight 12 kg.

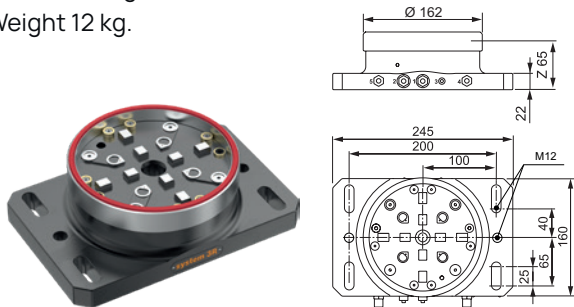


## MacroMagnum – Chucks

### Pneumatic chuck, 3R-680.10-2A

Pneumatic table chuck for chuck adapter.

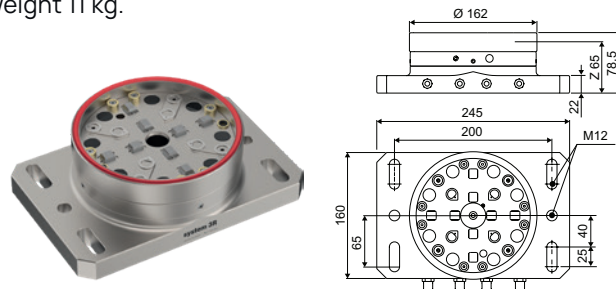
- Required drawbar 3R-605.1 or 3R-605.4
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Air-blast cleaning of Z-references on chuck and chuck adapter
- Sealing ring
- Turbo locking
- Weight 12 kg.



### Pneumatic chuck, 3R-680.10-2ARS

Rust-resistant pneumatic table chuck for chuck adapter.

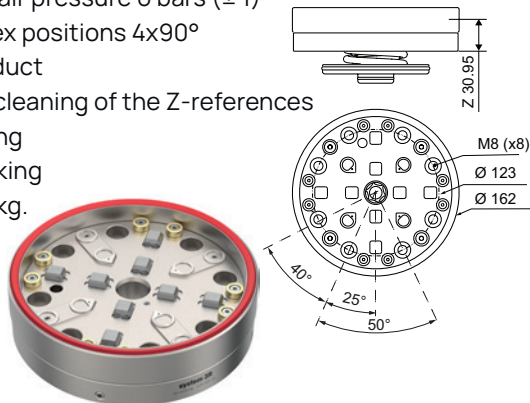
- Required drawbar 3R-605.1RS
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Flushing duct
- Air-blast cleaning of the Z-references
- Sealing ring
- Turbo locking
- Weight 11 kg.



### Pneumatic chuck, 3R-SP33136

Pneumatic chuck with coarse guiding of the pallet. Intended for permanent building-in.

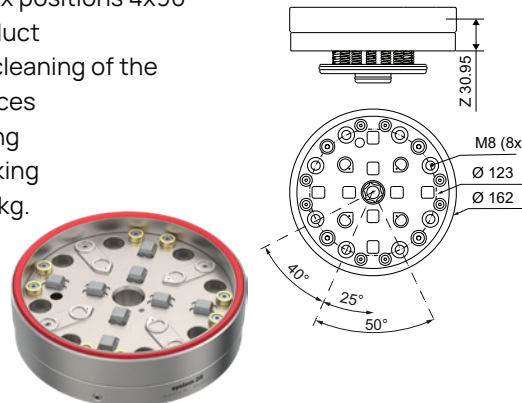
- Required drawbar 3R-605.1 or 3R-605.4
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Flushing duct
- Air-blast cleaning of the Z-references
- Sealing ring
- Turbo locking
- Weight 5 kg.



### Pneumatic chuck, 3R-SP33136-RS

Rust-resistant pneumatic table chuck.

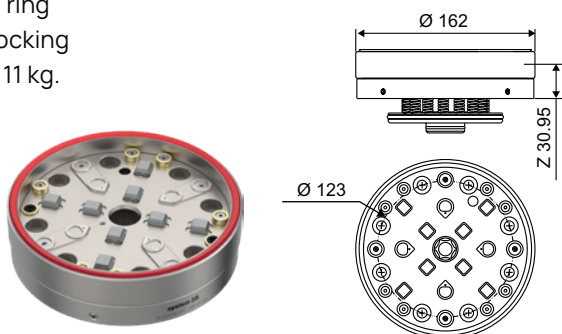
- Required drawbar 3R-605.1RS
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Flushing duct
- Air-blast cleaning of the Z-references
- Sealing ring
- Turbo locking
- Weight 11 kg.



### Pneumatic chuck, 3R-SP33136-ARS

Rust-resistant pneumatic table chuck for chuck adapter.

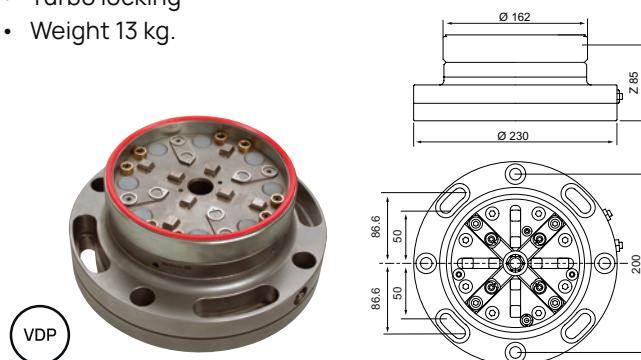
- Required drawbar 3R-605.1RS
- Required air pressure 6  $\pm 1$  bar
- Fixed index positions 4x90°
- Flushing duct
- Air-blast cleaning of the Z-references
- Sealing ring
- Turbo locking
- Weight 11 kg.



### Pneumatic chuck, VDP, 3R-680.1-2V

Pneumatic vibration-damped chuck.

- Required drawbar 3R-605.1 or 3R-605.4
- Required air pressure 6  $\pm 1$  bar
- Fixed index positions 4x90°
- Air-blast cleaning of the Z-references
- Turbo locking
- Weight 13 kg.



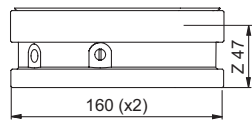


## MacroMagnum – Chucks

### Pneumatic chuck, 3R-680.10-3

For permanent mounting on machine table.

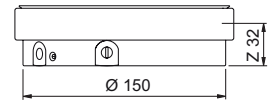
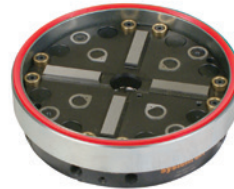
- Supplied with drawbar 3R-605.2
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Air-blast cleaning of the Z-references
- Sealing ring
- Turbo locking
- Weight 7.5 kg.



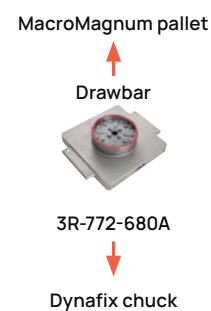
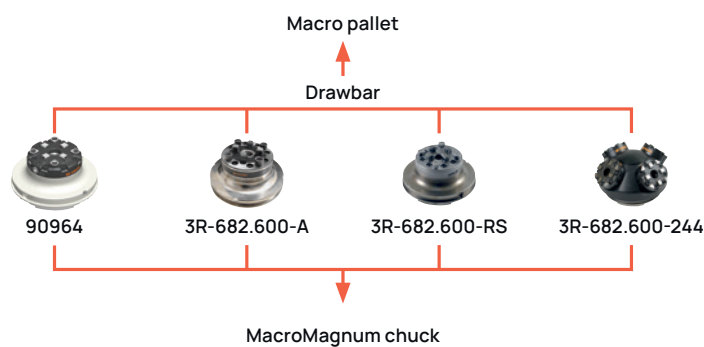
### Pneumatic chuck, 3R-SP26712

For permanent mounting on machine table.

- Supplied with drawbar 3R-605.2
- Required air pressure 6 bars ( $\pm 1$ )
- Fixed index positions 4x90°
- Flushing duct
- Air-blast cleaning of the Z-references
- Sealing ring
- Turbo locking
- Weight 5 kg.



## MacroMagnum – Chuck adapters



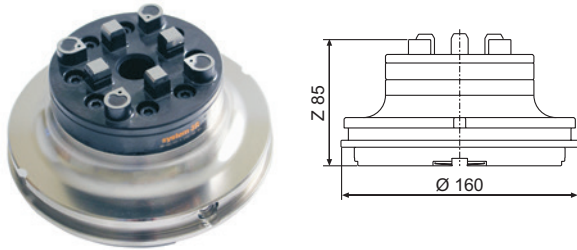
| Chuck adapters | Article number | Drawbar             | Feature                             |
|----------------|----------------|---------------------|-------------------------------------|
| Manual         | 90964          | 3R-605.2            | MacroMagnum → Macro                 |
| Pneumatic      | 3R-682.600-A   | 3R-605.1 / 3R-605.4 | MacroMagnum → Macro                 |
| Pneumatic      | 3R-682.600-RS  | 3R-605.1RS          | MacroMagnum → Macro, rust resistant |
| Manual         | 3R-682.600-244 | 3R-605.2 (x4)       | MacroMagnum → Macro                 |
| Pneumatic      | 3R-772-680A    | 3R-605.1 / 3R-605.4 | Dynafix → MacroMagnum               |

## MacroMagnum – Chuck adapters

### Pneumatic chuck adapter, MacroMagnum-Macro, 3R-682.600-A

Chuck adapter with in-built pneumatic Macro chuck for mounting in 3R-680.10-2A.

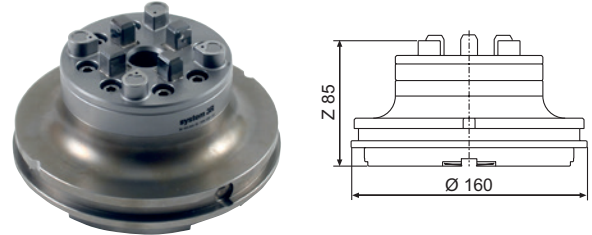
- Required drawbar 3R-605.1
- Carbide X & Y-references
- Clamping force 6000 N
- Turbo locking
- Max. load for 0.002 mm accuracy, 50 kg
- Weight 4.5 kg.



### Pneumatic chuck adapter, MacroMagnum-Macro, 3R-682.600-RS

Chuck adapter with built-in Pneumatic Macro chuck.

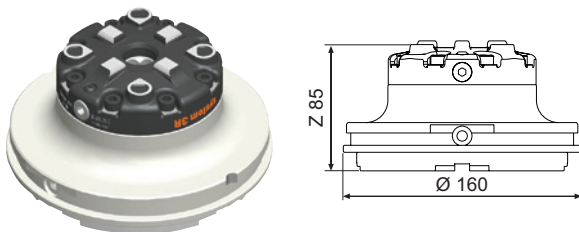
- Requires drawbar 3R-605.1RS
- Carbide X & Y-References
- Rust resistant
- Clamping force 6000 N
- Turbo locking
- Max load 50 kg to acquire accuracy 0.002 mm
- Weight 4.8 kg.



### Manual chuck adapter, MacroMagnum-Macro, 90964

From MacroMagnum into Macro system. Chuck adapter with in-built Macro chuck.

- Requires drawbar 3R-605.2 or similar.
- Solid X & Y-References
- Clamping force 6000 N
- Max load 50 kg to acquire accuracy 0.002 mm
- Weight 4.3 kg.

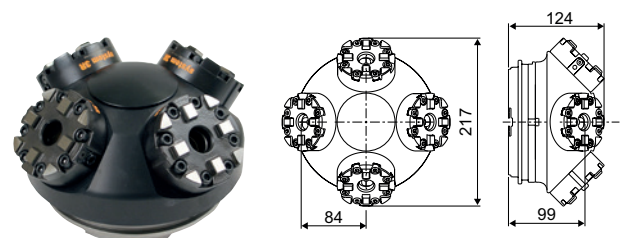


### Manual Multi Station, MacroMagnum-Macro, 3R-682.600-244

Multi holder with 4 Macro chucks (prepared for 5 chucks in total). Angling clears the path for machine tools.

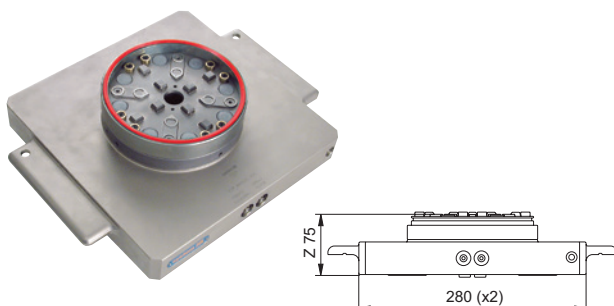
**NOTE:** Also available with 5 Macro chucks, ask for 3R-682.600-245.

- Requires drawbar 3R-605.2 (x4)
- Optimal for 5-axis machines
- Macro chucks 3R-600.24-S included (x4)
- Mounted onto a MacroMagnum pallet
- Weight 10 kg.



### Pneumatic chuck adapter, Dynafix-MacroMagnum, 3R-772-680A

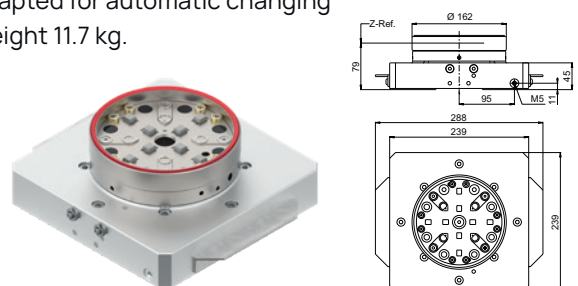
Chuck adapter with in-built pneumatic MacroMagnum chuck for mounting in 3R-770-1A or similar. See Dynafix for further information.



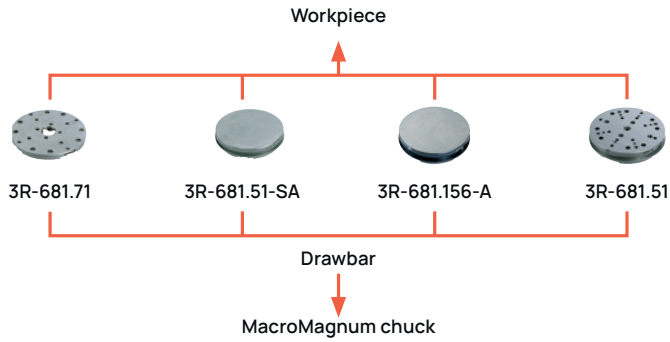
### Pneumatic chuck adapter, GPS 240-MacroMagnum, C522540

Chuck adapter with in-built pneumatic Macro Magnum chuck for mounting in C219800.

- Built-up height 79 mm
- X and Y centring with springy cams, hardened, stainless
- MacroMagnum chuck 3R-90809.03
- Drawbar 3R-605.1 or 3R-605.4
- Adapted for automatic changing
- Weight 11.7 kg.



## MacroMagnum – Pallets



**NOTE:** All Macro pallets can be used in MacroMagnum chucks.

| Reference element Ø 142 mm         | Article number | Feature        |
|------------------------------------|----------------|----------------|
| Hardened reference element 12.5 mm | 3R-681.71      | rust resistant |

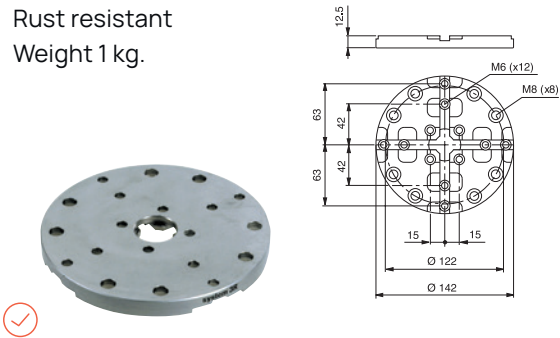
| Pallets Ø 156 mm        | Article number | Feature                    |
|-------------------------|----------------|----------------------------|
| Unhardened pallet 35 mm | 3R-681.51-SA   |                            |
| Unhardened pallet 35 mm | 3R-681.156-A   | reference element Ø 142 mm |
| Hardened pallet 35 mm   | 3R-681.51      | 3Refix Ø 10 mm             |

## Reference element Ø 142 mm, 3R-681.71

Hardened reference element with clearance holes for fixing screws.

**NOTE:** Must be mounted on the workpiece/fixture before it is locked in a chuck.

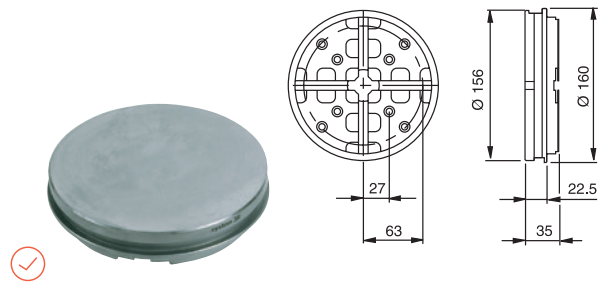
- Rust resistant
- Weight 1 kg.



## Pallet Ø 156 mm, 3R-681.51-SA

Unhardened pallet with hardened references and hole markings for eight clearance holes.

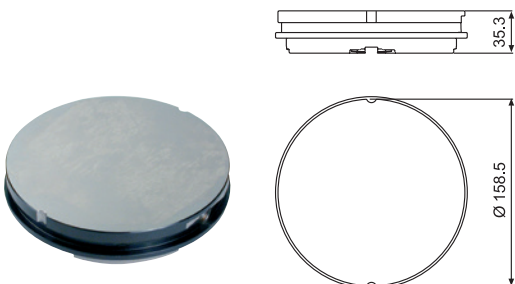
- Adapted for automatic changing
- Ready for code carrier
- Weight 4.5 kg.



Pallet Ø 156 mm, 3R-681.156-A

Unhardened pallet with hardened reference element  
type 3R-681.71.

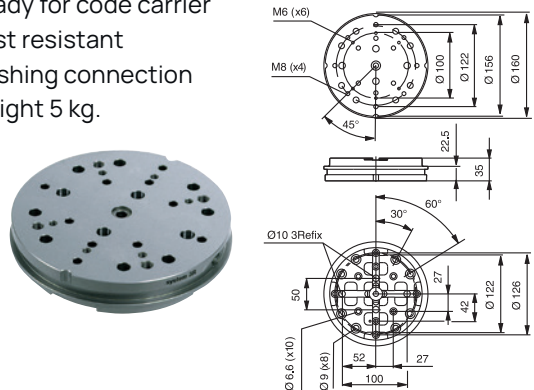
- Adapted for automatic changing
- Ready for code carrier
- Weight 4.5 kg.



Pallet Ø 156 mm, 3R-681.51

Hardened pallet with threads and clearance holes for eight and ten fixing screws.

- 3Refix Ø 10 mm
- Adapted for automatic changing
- Ready for code carrier
- Rust resistant
- Flushing connection
- Weight 5 kg.





## MacroMagnum – accessories

### Drawbars

#### 3R-605.1E

- Ø 20x57.1 mm with flushing hole Ø 7 mm
- Supplied in sets of 10. ✓



#### 3R-605.2E

- Ø 20x36.9 mm with Ø 7 mm flushing hole
- Supplied in sets of 5. ✓



#### 3R-605.4E

For round pallets adapted for automatic changing.

- Ø 20x57.1 without flushing hole
- Supplied in sets of 10.



#### 3R-605.1EE

- Supplied in sets of 40. ✓

#### 3R-605.2EE

- Supplied in sets of 20.

#### 3R-605.4EE

- Supplied in sets of 40.

### Drawbars

#### 3R-605.1RS

- Drawbar Ø 20x57.1 mm with flushing hole Ø 7 mm.

#### 3R-605.1E-RS

- Sets of 10.

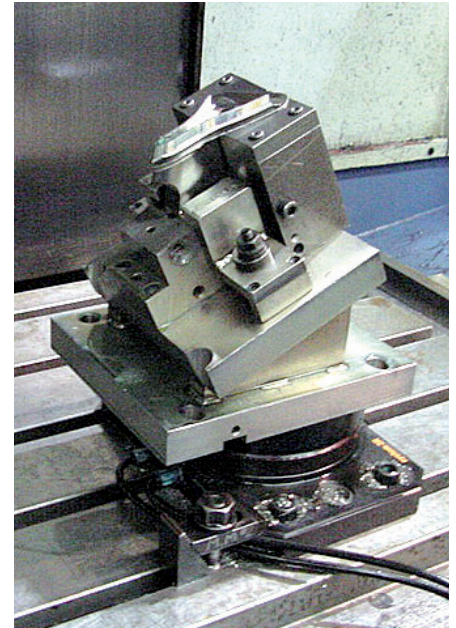
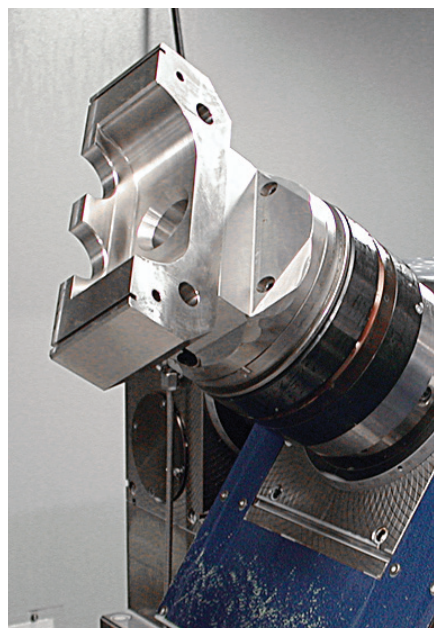
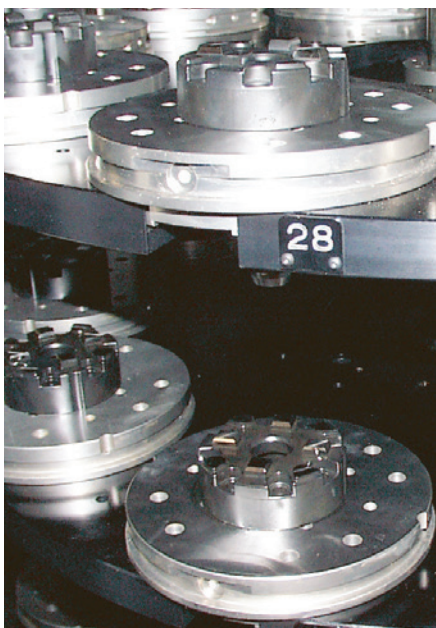


#### 3R-605.2RS

- Ø 20x36.9 mm with flushing hole Ø 7 mm.

#### 3R-605.2E-RS

- Sets of 5.



## MacroMagnum – Accessories

### Check ruler, 3R-686.1-HD

Check ruler for setting flatness and angular positions.  
Ground hole for centring.

- Adapted for automatic changing
- Ready for code carrier
- Measuring length 130 mm
- Weight 6 kg.



### Splash guard, 90027.03

Intended for MacroMagnum chucks. Can also be used as a cover for unused chucks.



### Chip guard, 90443

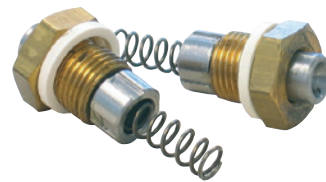
For Macro pallets 52x52, 54x54 and 70x70 in MacroMagnum chucks. For sealing we recommend 3R-RU52L or 3R-RU70 respectively in combination with the debris guard.



### Connection for air gun, 90815

For manual operation of pneumatic chucks with air gun.

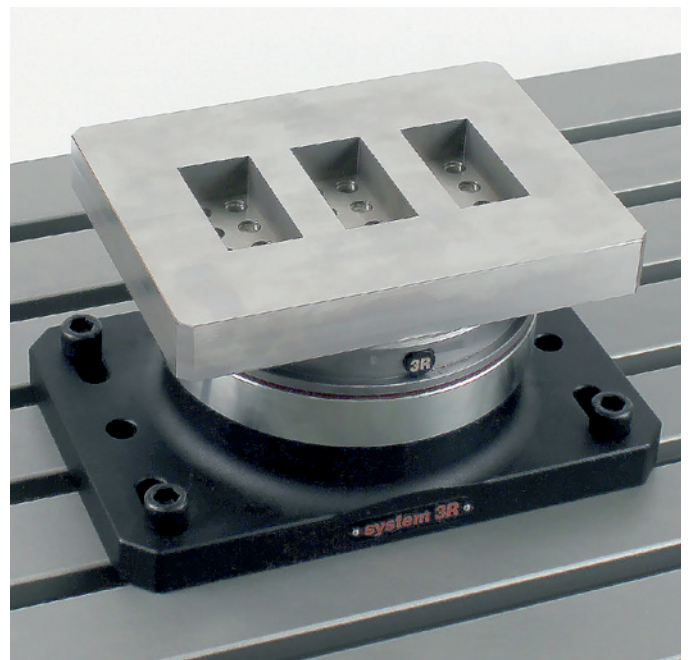
- Supplied in sets of 2.



### Code carriers, 3R-863.01-10

With pre-programmed unique identity, designed for use on pallets.

- Supplied in sets of 10.



## MacroMagnum – Accessories

### 3Refix mandrel, 3R-901-10E-TX

- 3Refix Ø 10 mm
- Recommended tightening torque 4 Nm
- Supplied in sets of 10
- Weight per set 0.2 kg.

**NOTE:** When positioning with 3Refix mandrels, always tighten the expanding mandrel in the R0-hole first.



### Torque wrench, 3R-614-04

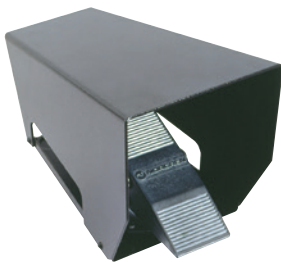
For Ø 10 mm 3Refix mandrels and manual MacroMagnum chucks.

- 4 Nm.



### Air unit, 3R-611.2

Foot operation of pneumatic chucks.



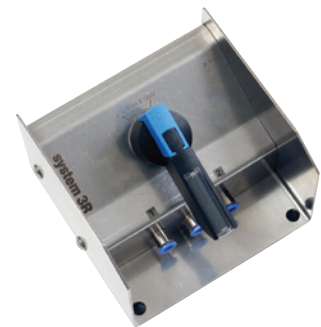
### Air unit, 3R-611.4

Unit for operation of pneumatic chucks. Two functions, open/close.



### Air unit, 3R-611.46

Unit for hand operation of pneumatic chucks. Three positions – open/neutral/closed.



### Clamping force meter kit, 3R-SSP115-Base

For both pneumatic and manual chucks. In combination with individual drawbars or drawbar kits, this stand-alone unit can be used with MacroJunior, Macro, MacroMagnum and Dynafix.

**NOTE:** Requires drawbars with bayonet interface similar to 3R-605.1.

- Add-on kit for use in Macro/MacroMagnum, 3R-SSP115-Macro
- Operating temp. +10 to +40°C
- Gauge size Ø 90x47 mm
- Working range 1-22 kN
- Deviation ± 0.1 kN
- Weight display 0.34 kg, gauge 1.3 kg.



### Add-on kit, 3R-SSP115-Macro

Add-on kit for 3R-SSP115-Base.

