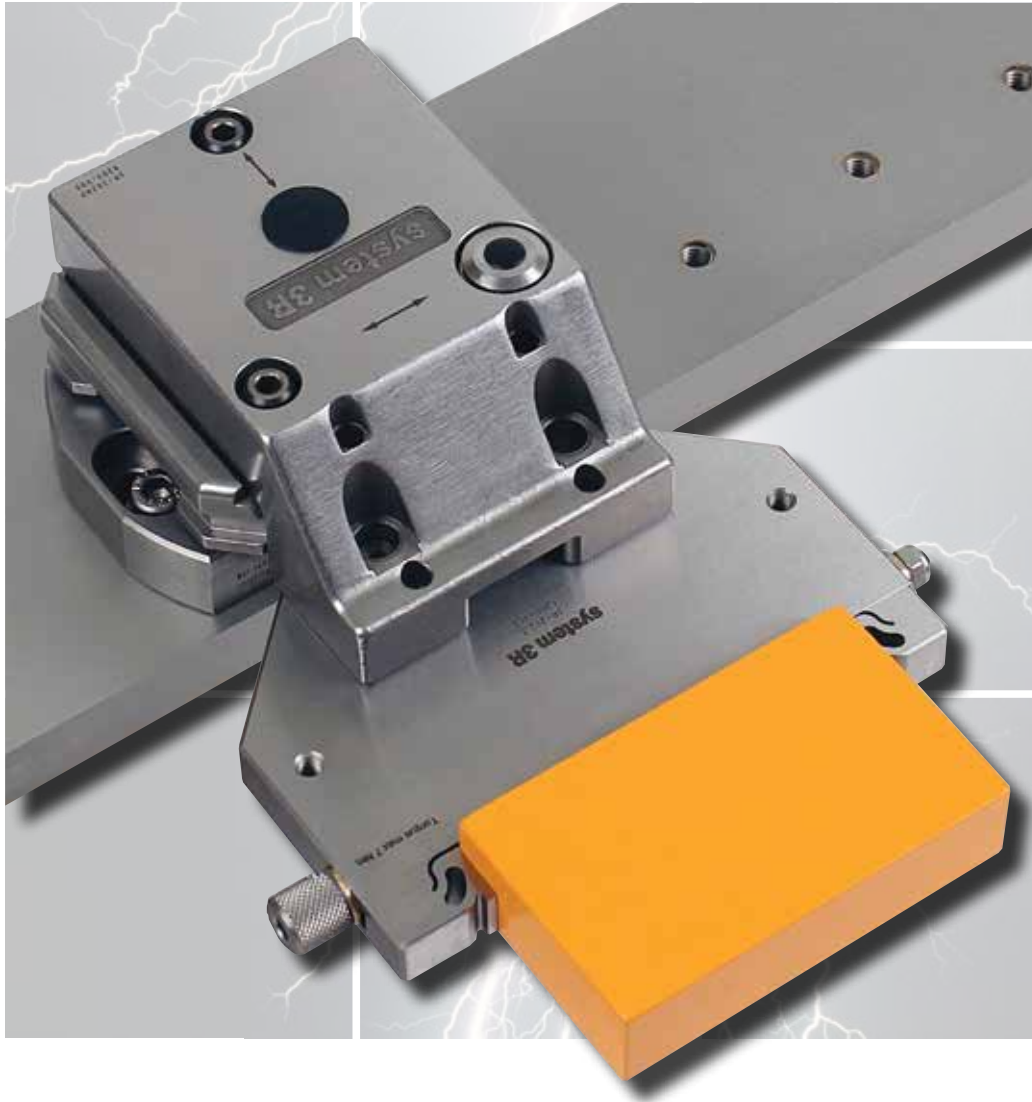


## Reference system for wire EDMing







## Contents

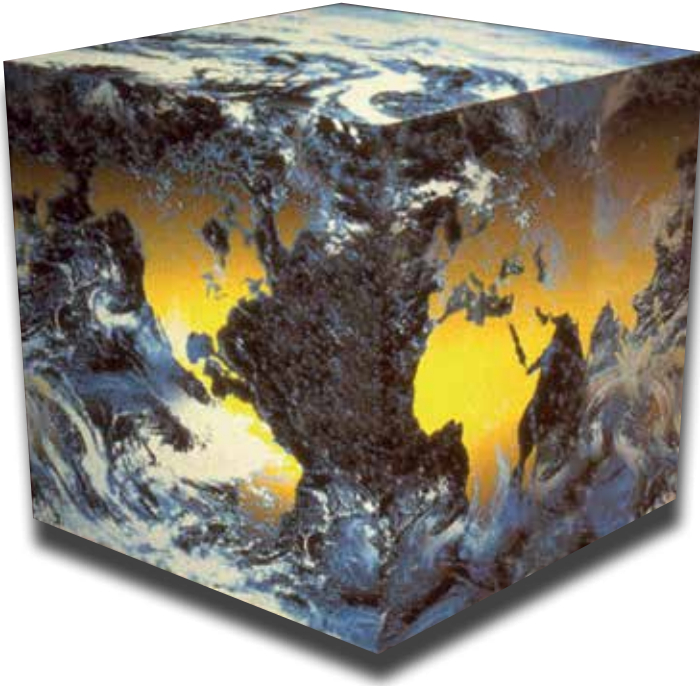
Basic equipment, WEDM .....	page 6
Basic equipment, Macro .....	page 8
Mounting heads .....	page 15
Holders and vices for mounting in mounting heads.....	page 20
Chuck adapters .....	page 26
Holders for mounting in chuck adapters.....	page 30
Adapter elements.....	page 33
3Ruler ruler system.....	page 35
EconoRuler System.....	page 39
3P three-point mounting.....	page 43
Presetting and inspection.....	page 44
Rotating spindles and accessories .....	page 47
Basic equipment, ICS .....	page 48
ICS Zeroline .....	page 49
ICS guide elements .....	page 54
ICS vertical-guide elements & adaptations.....	page 58
Unimatic .....	page 59
Unimatic pallets.....	page 62
Unimatic twin pallet & frame .....	page 63
Unimatic accessories.....	page 64
ICS clamping elements.....	page 65
ICS clamping elements A.....	page 66
ICS clamping elements B.....	page 68
ICS clamping elements C .....	page 71
Unimatic clamping elements .....	page 72
Electrode clamping systems Unimatic / ICS .....	page 75
System adapters.....	page 76
Unimatic presetting stations.....	page 77
Specific solutions.....	page 78
Frame systems .....	page 79
Accessories.....	page 80
Automation .....	page 81
Index.....	page 84

*Dimensions and weights stated in the product boxes are not normative unless this is expressly stated.*

-  *Manufactured to meet System 3R's quality requirements, but partly or completely made in a production plant that is not covered by System 3R's ISO9000 certificate.*
-  *Indicates that the product will normally be shipped within two weeks, provided that it is in stock when the order is placed.*

*3R-XXX in an article number means that the article is established on the market and has proven its quality in extensive use by customers. All 3R articles are to be regarded as standard articles and thus have a quality certificate.*





## **A changing world**

Our world is constantly changing and so is the manufacturing industry.

The catalogue has two main sections – an orange section for customers who traditionally use wire EDM products from System 3R, and a grey section which is mainly for users of wire EDM accessories which used to be made by Mecatool. In both sections you will find adapter elements that give you free access to the entire product range, regardless of which system you used before.



## **Care for the environment and protection of natural resources are key elements in System 3R's operations**

- *We take all necessary precautions to prevent contamination of soil, air and water.*
- *In our production processes, we continually improve the efficiency of our energy use.*
- *The products and methodologies we offer the market improve the efficiency of our customers' use of existing resources.*





### **Three steps to success**

The route to rational production in wire EDM machines can be summarised in three steps – Mounting, Reference system and Automation.



#### **Mounting**

First of all, the workpiece needs to be positioned and secured in the working area of the machine, preferably on the zero line, and with the risk of collision with the machine's wire guides reduced to a minimum. And so firmly that it can handle the high flushing pressures of modern machines.



#### **Reference system**

Once the problem of effective mounting of the workpiece in the machine has been solved, the next step is to minimise downtimes when retooling the machine.

Technical developments of the machines in recent years have resulted in significantly higher material removal rates. But you won't benefit from this potential if the machine is idle for lengthy, troublesome retooling. So the aim must be to minimise retooling times with the machine idle.

With a reference system you can prepare and preset the workpiece away from the machine, then lift it in and secure it in the machine – quickly and precisely – with minimised downtime and consequent better utilisation of machine capacity.



#### **Automation**

With a reference system and a pneumatic chuck on the machine table, you have laid a firm foundation for the crucial step towards maximised machine utilisation – automation.

Add a pallet changer to your machine and you have created an automated production cell. A cell that can generate revenue 24 hours a day, weekdays and weekends, all year round!



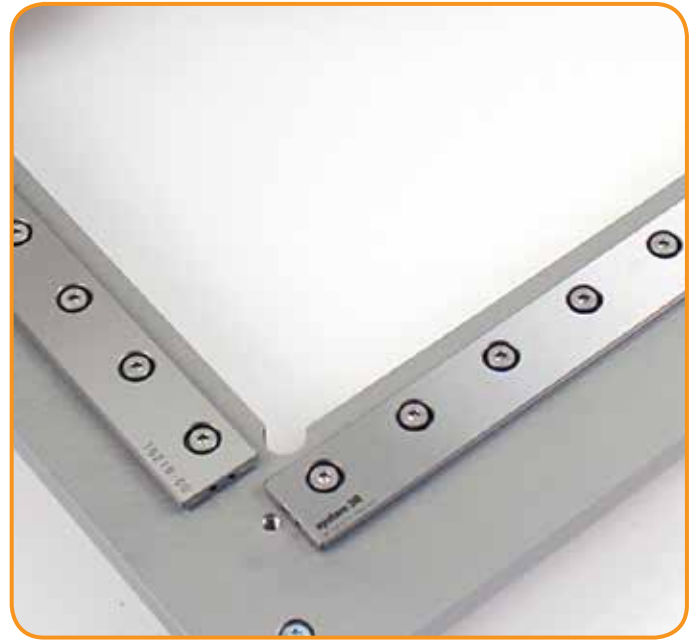


## Basic equipment – WEDM

WEDM positions the workpiece within the working area of the machine and on the machine's zero line. Whether the workpiece is rectangular or round, small or large, thin or thick, tall or short, it is clamped with minimal risk of collision. There are infinitely many possible combinations in the product range, the only limitation being the user's imagination.

Without doubt, System 3R offers the most comprehensive product range on the market. What's more, it also leads in terms of number of installations – world wide.

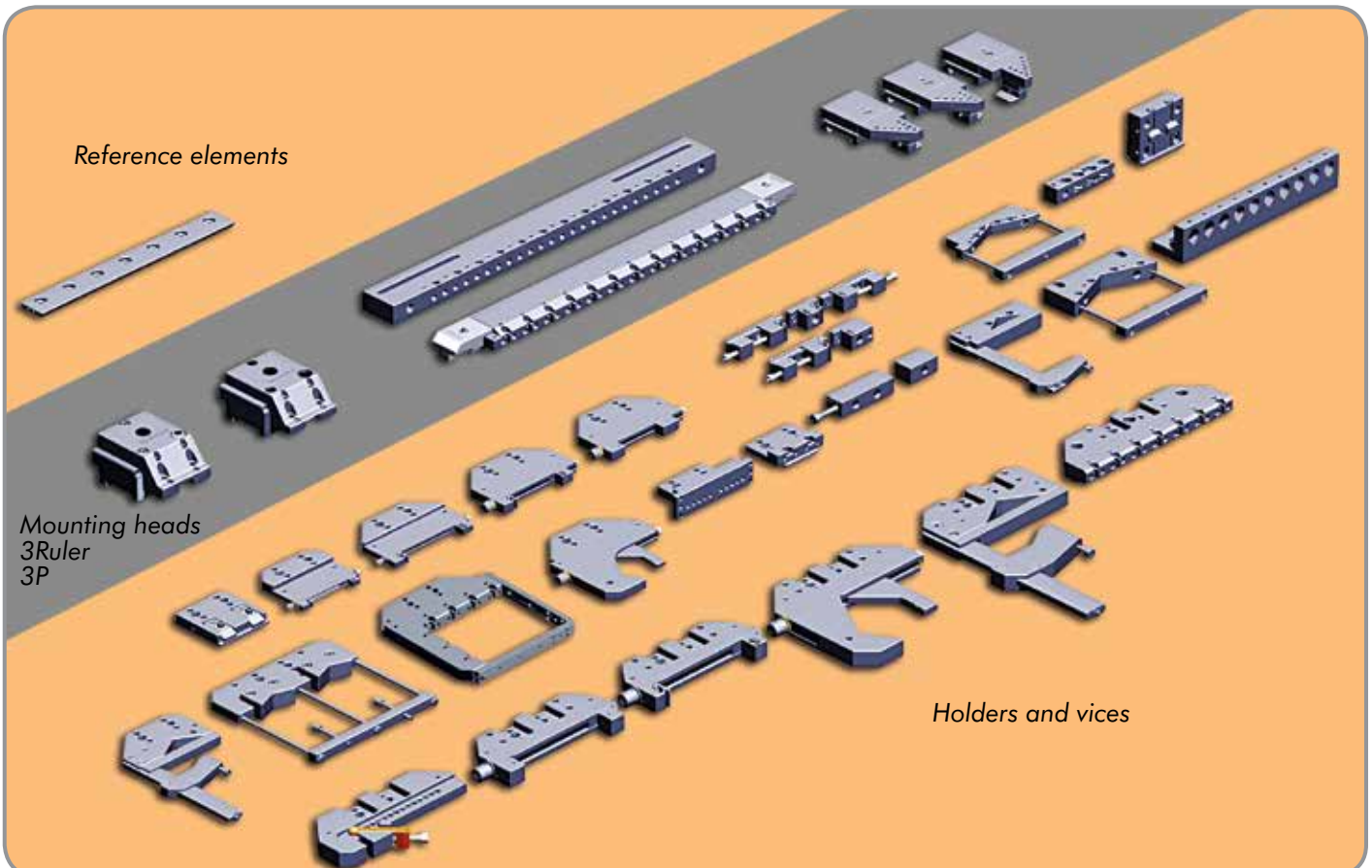
- Exceptional flexibility
- Accurately ground-in references
- Repeatable accuracy
- Double-sided parallel references
- Fits all machine tables with 25 or 50 mm pitch.



Machine table with reference elements.

## Overview of the WEDM system

Basic equipment on the machine table



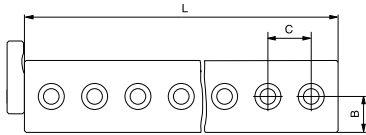
## Basic equipment – WEDM

### Reference element WEDM 3R-200.XJ-X

Reference elements for machines with zero-line table. The length (L), hole spacing (C) and hole edge spacing (B) of the hardened reference elements are matched to the machine in question.

Note: When ordering, state machine mark and type.

- Supplied with end stops

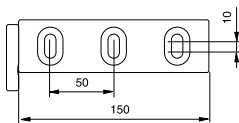


See also the reference element guides for your machine on – [www.system3R.com](http://www.system3R.com)

### Reference element WEDM 3R-200.1J-U

Universal 150 mm reference element, with oval holes, for all machines that have M8 holes in the machine table, 30 to 40 mm from the edge of the table.

- Weight 0.4 kg



### Reference stop 3R-225

Can be moved infinitely along the entire reference element.

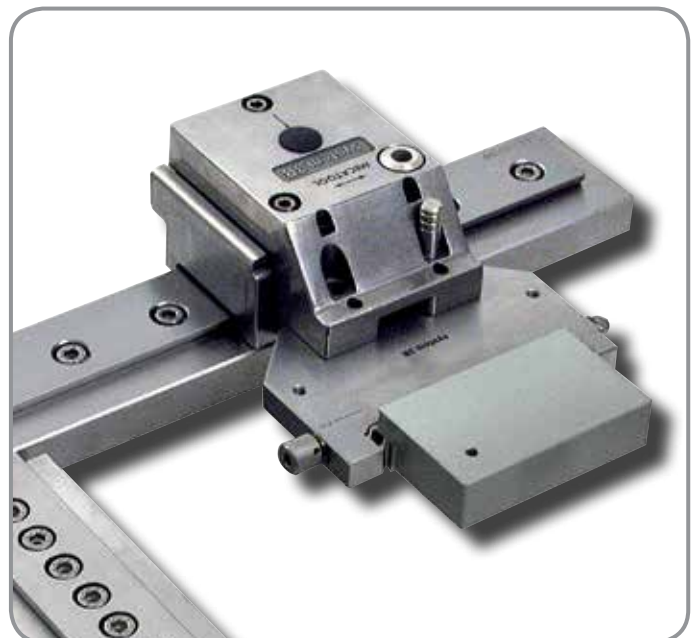
- Hardened
- Weight 0.4 kg



### Reference stop 3R-225.1

Mounts in any of the mounting holes in the reference element.

- Weight 0.15 kg

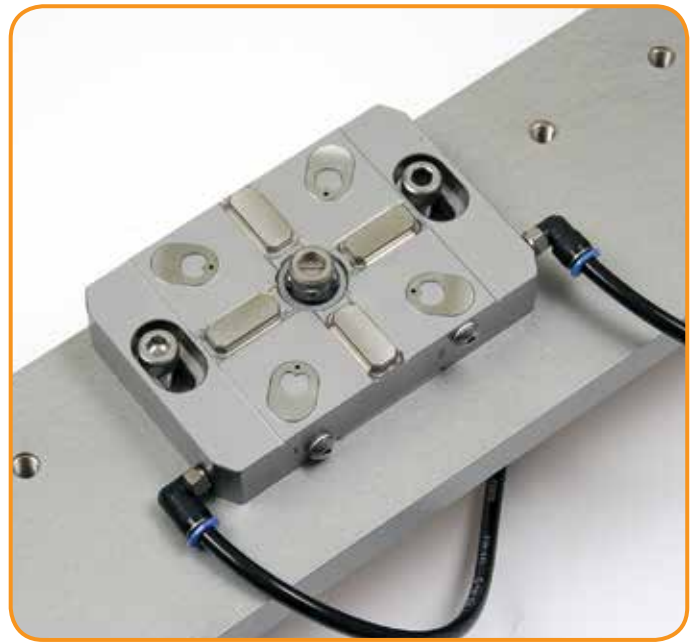


## Basic equipment – Macro

With a Macro chuck as basic equipment on the machine table, you can interconnect all your machines to create a single system. Move the workpiece from the wire EDM machine to the grinding machine or the die-sinking machine without subsequent alignment – quickly and precisely.

If you choose a pneumatic Macro chuck, you can operate round-the-clock production if you wish.

- Allows fully automated production
- Links all your machines together
- Z-references with automatic air-blast cleaning
- X and Y references of cemented carbide
- Repetition accuracy 0.002 mm
- Turbo locking – enhanced clamping force.

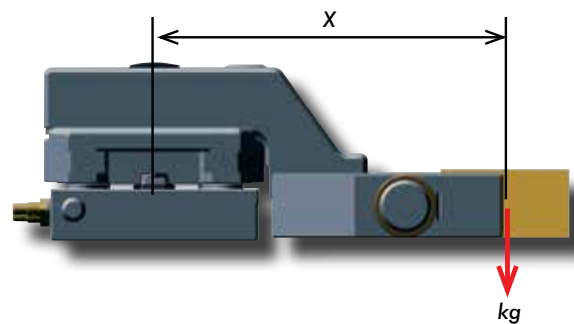


Note: The pneumatic chucks require an air pressure of  $6 \pm 1$  bar.

## Recommendations for loading in Macro chucks

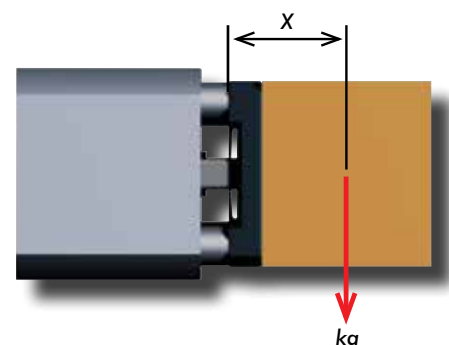
### Table chucks with horizontal mounting of the workpiece

Article number	Max torque	Capacity (X=150 mm)
3R-600.24RS	6 Nm	4 kg
3R-600.24-4RS	8 Nm	5 kg
3R-602.10	22.5 Nm	15 kg
3R-602.10-1	30 Nm	20 kg
3R-602.12-1	45 Nm	30 kg
3R-602.26	30 Nm	20 kg
3R-602.27	30 Nm	20 kg
3R-602.27-1	18 Nm	12 kg
3R-602.81RS	30 Nm	20 kg



### Table chucks with vertical mounting of the workpiece

Article number	Max torque	Capacity (X=100 mm)
3R-600.24RS	6 Nm	6 kg
3R-600.24-4RS	8 Nm	7-8 kg
3R-602.4.1	8 Nm	7-8 kg
3R-602.27-1	8 Nm	7-8 kg
3R-60.360-X	8 Nm	7-8 kg

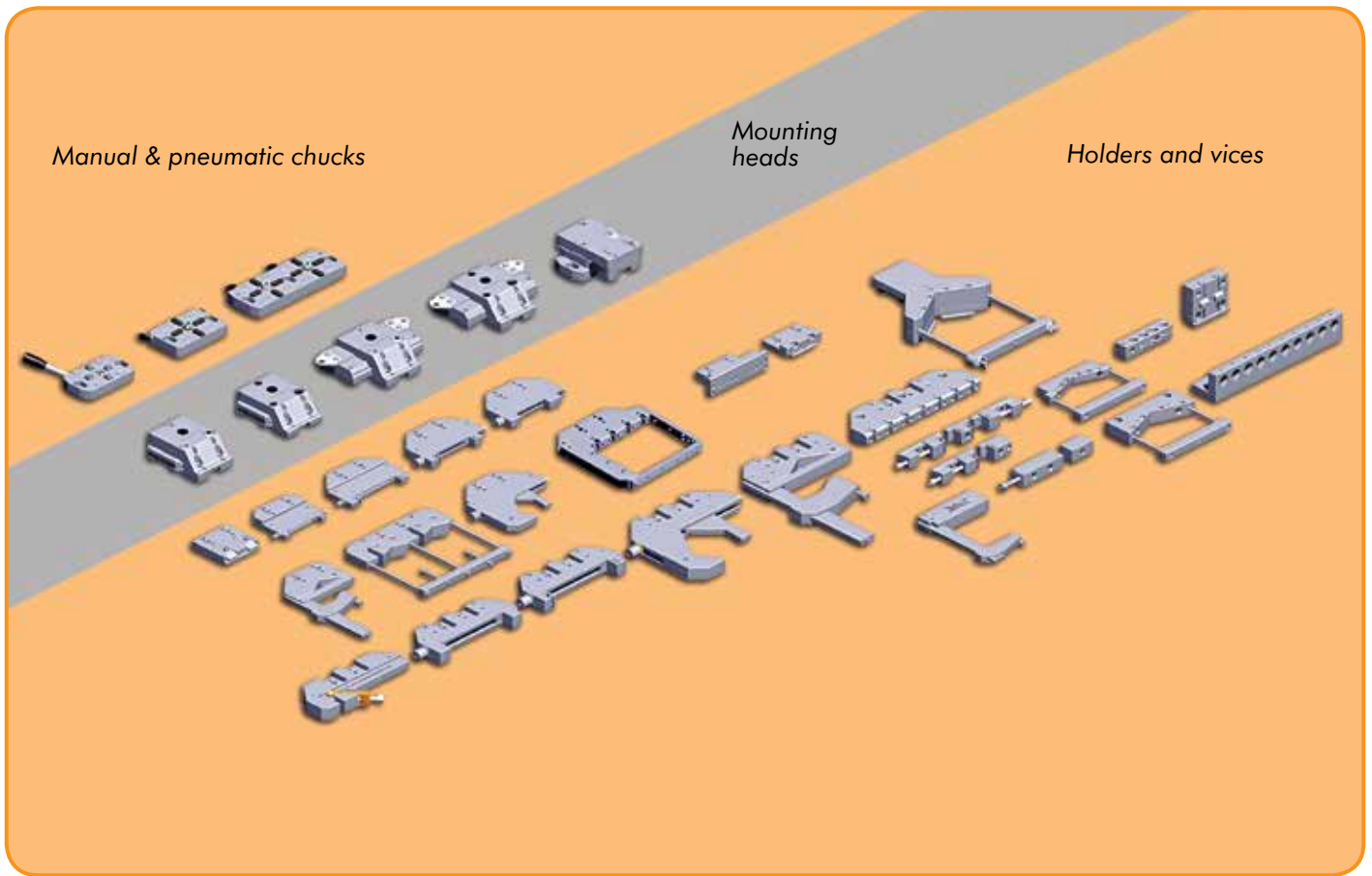




## Basic equipment – Macro

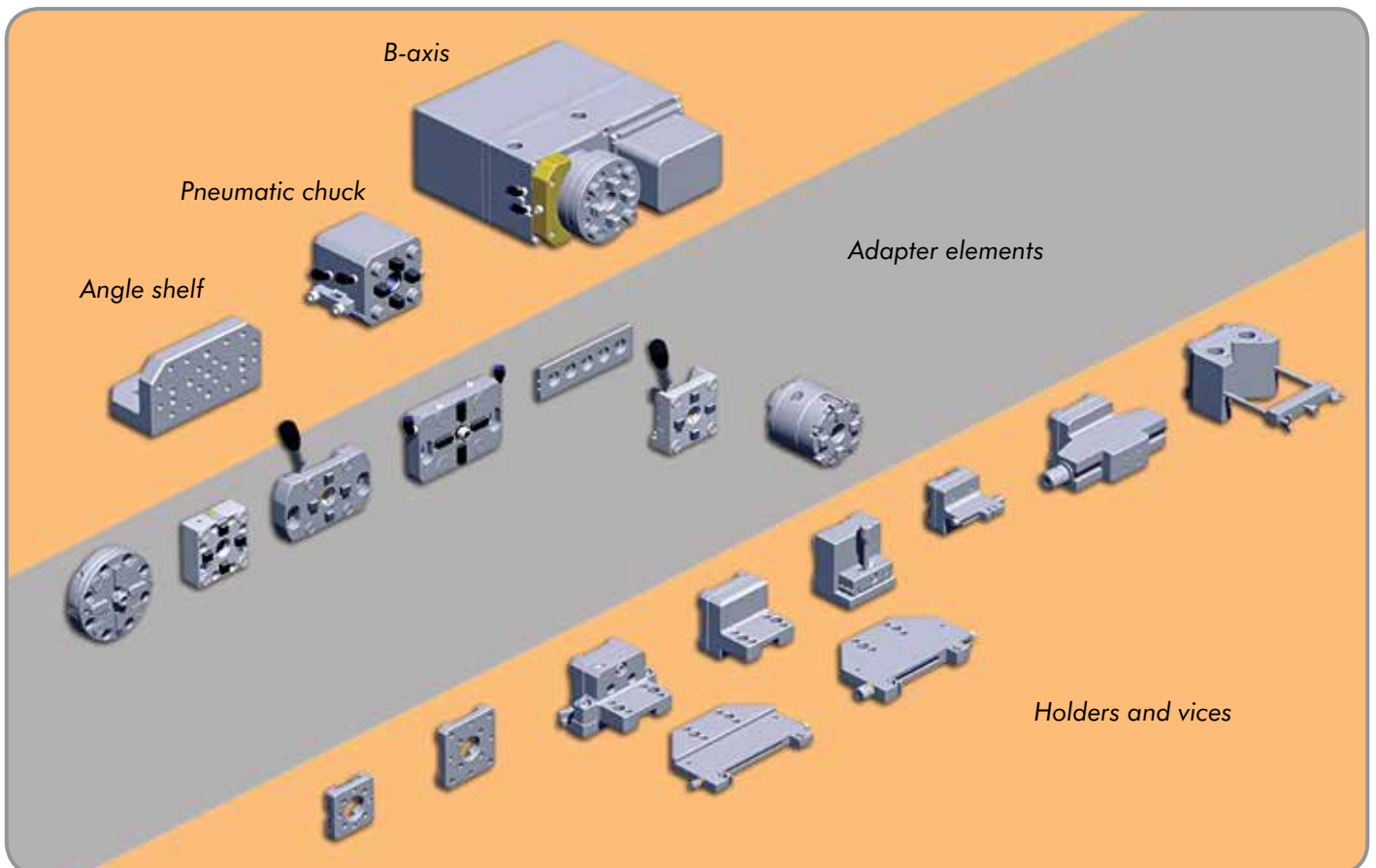
Overview of the Macro system with horizontal mounting

Basic equipment on the machine table



Overview of the Macro system with vertical mounting

Basic equipment on the machine table

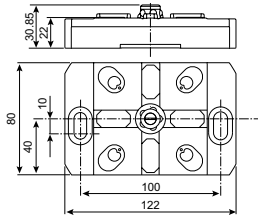


## Basic equipment – Macro

### Pneumatic chuck, Macro 3R-602.10-1

Pneumatic chuck for Macro holders. Supplied with drawbar 3R-605.10 and protective cover.

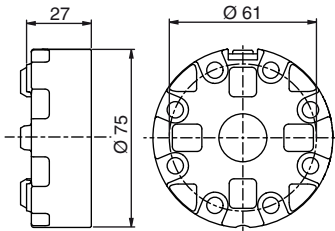
- Clamping force 6700 N
- Fixed index positions 4x90°
- Air-blast cleaning of Z-references
- Weight 1.0 kg



### Manual chuck, Macro 3R-600.24RS

Manual chuck for Macro holder. Designed for permanent mounting.

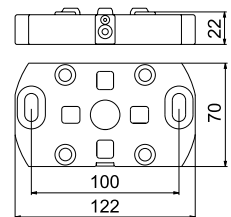
- Tightening torque 6 Nm
- Required drawbar 3R-605.2RS
- Fixed index positions 4x90°
- Weight 0.7 kg



### Manual chuck, Macro 3R-602.26

Manual chuck for Macro holder. Supplied with drawbar 3R-605.26.

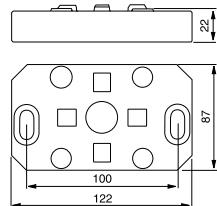
- Tightening torque 6 Nm
- Clamping force 6000 N
- Fixed index positions 4x90°
- Weight 1.1 kg



### Manual chuck, Macro 3R-602.27

Manual chuck with lever for Macro holder. Supplied with drawbar 3R-605.27RS.

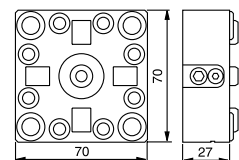
- Clamping force 6000 N
- Built-in latch function
- Fixed index positions 4x90°
- Weight 1.1 kg



### Manual chuck, Macro 3R-600.24-4RS

Chuck for Macro holder. Mounts on a suitable fixture.

- Required drawbar 3R-605.2RS
- Fixed index positions 4x90°
- Grinded front edge
- Tightening torque 6 Nm
- Weight 1 kg

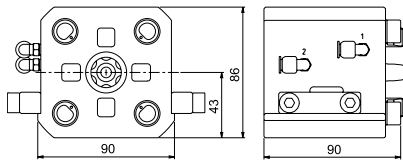


## Basic equipment – Macro

### Pneumatic chuck, Macro 3R-602.4.1

Pneumatic chuck for Macro holder.

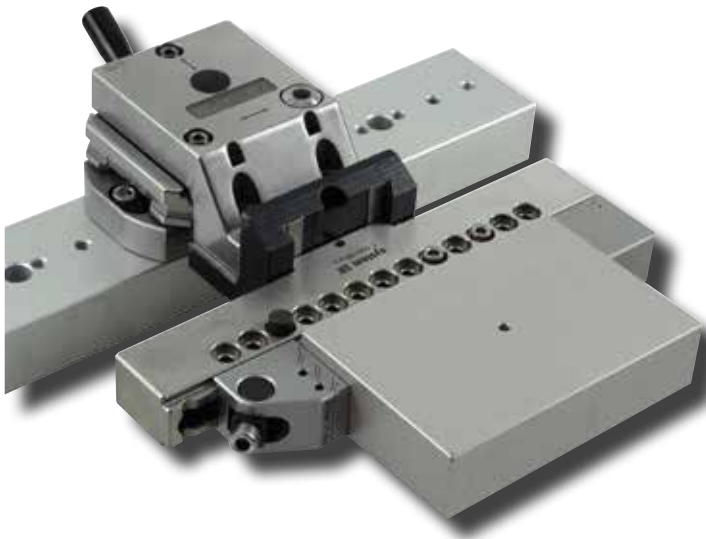
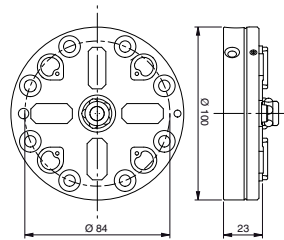
- Required drawbar 3R-605.1RS
- Clamping force 6000 N
- Fixed index positions 4x90°
- Air-blast cleaning of Z-references
- Weight 4.1 kg



### Pneumatic chuck, Macro 3R-602.81RS

Pneumatic chuck, low-profile, for Macro holder.

- Required drawbar 3R-605.10
- Clamping force 6000 N
- Fixed index positions 4x90°
- Air-blast cleaning of Z-references
- Weight 4.1 kg

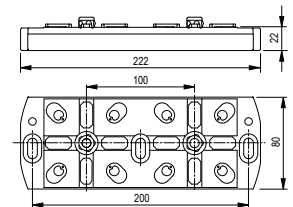


### Pneumatic chuck, MacroTwin 3R-602.12-1

Pneumatic chuck for Macro or MacroTwin. Horizontal mounting on the machine table. Supplied with two drawbars 3R-605.10 and protective covers.

*Note: On automatic changing with WorkPal – MacroTwin holders only.*

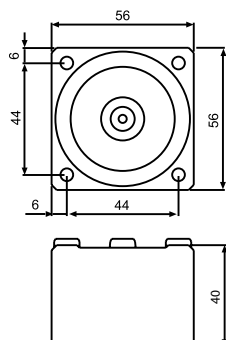
- Fixed index positions 4x90°
- Air-blast cleaning of the Z-references
- Clamping force 2x6700 N
- Weight 1.5 kg



### Pneumatic chuck, Macro 3R-600.15-3

Pneumatic chuck for permanent mounting on the machine table.

- Drawbar 3R-605.2RS included
- Required air pressure 6±1 bar
- Clamping force 4500 N
- Fixed index positions 4x90°
- Rust resistant
- Weight 0.8 kg



### Pneumatic built-in chuck, Macro 3R-SP26771-RS

Chuck for Macro holder. For permanent mounting on the machine spindle or fixture

- Clamping force 6000 N
- Required drawbar 3R-605.1RS
- Fixed index positions 4x90°
- Weight 2 kg



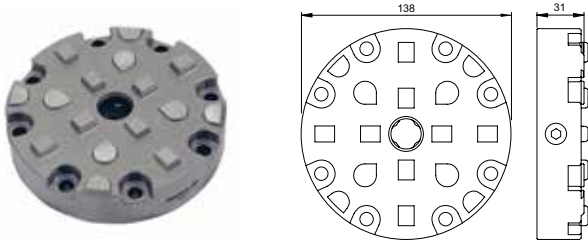
## Basic equipment – Macro

### Manual chuck, MacroMagnum 90809.02

Chuck for MacroMagnum holder. For permanent mounting on the machine spindle or table.

Note: Master 3R-606.1 or 3R-686.1-HD required at installation.

- Clamping force – Macro at 5000 N: 6000 N, MacroMagnum at 12000 N: 16000 N
- Required drawbar 3R-605.2RS
- Fixed index positions 4x90°
- Weight 5 kg

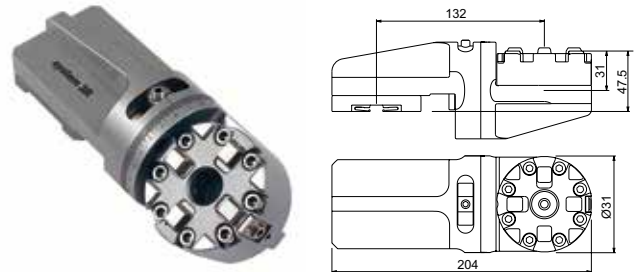


### Angle Tool, Macro D-30215

Angle tool, Macro with vernier scale -90° to 0 to +90°.

Note: Macro chuck is required on the machine table for clamping.

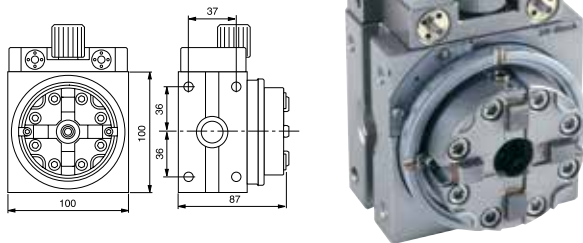
- Required drawbar 3R-605.2RS
- Weight 3.5 kg



### 3R-block, Macro 3R-217-1

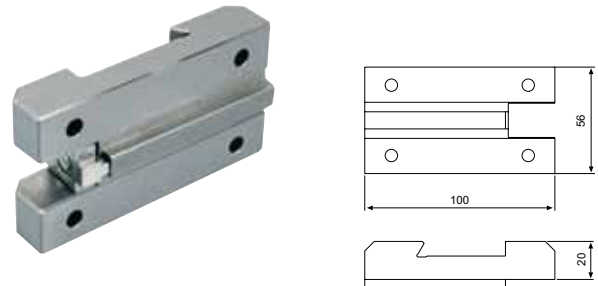
Manual block for Macro holder. Vertical or horizontal mounting on the machine table, or alternatively the WEDM system with the aid of 3R-SP6435.

- Required drawbar 3R-605.2RS
- Fixed index positions 24x15°
- Vernier scale
- Weight 5.4 kg



### Adapter 3R-SP6435

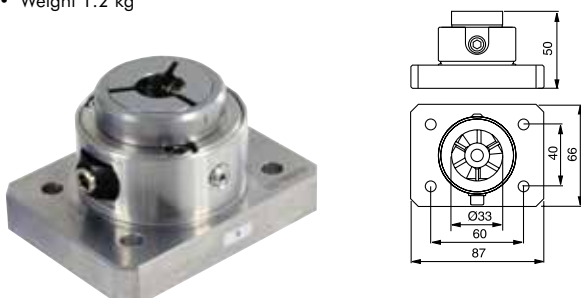
Adapter element for mounting 3R-217-1 in the WEDM system.



### Manual chuck, MacroJunior 3R-402.1

Chuck for MacroJunior holder. Can be mounted on 3R-237.2, 3R-292.66HP, 3R-294, the 3Ruler system, or on Macro element 54x54.

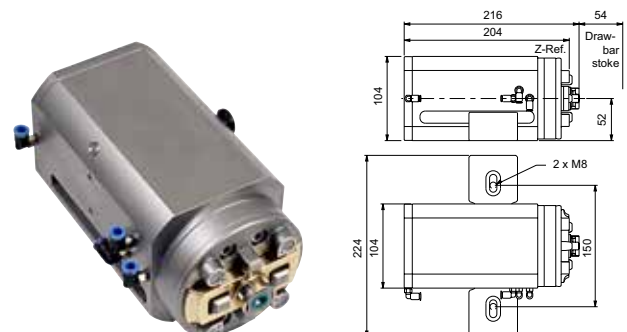
- Required drawbar 3R-405.21RS
- Rust-resistant
- Clamping force 4000 N
- Fixed index positions 3x120°
- Weight 1.2 kg



### Automatic indexing chuck, Macro D-30206

Pneumatic built-in chucks for Macro holders. Can also be used in milling and grinding operations without high cutting forces.

- Submerged automatic index positions 4x90°
- Clamps 3R-A239 included.
- Suitable control unit D-30206-01 (not included)
- Weight 14 kg



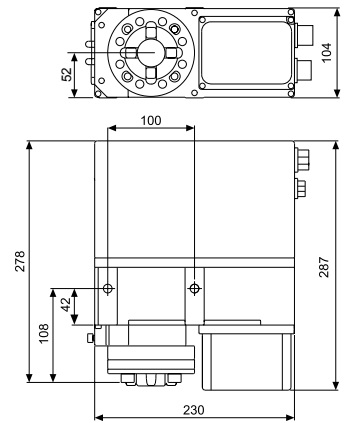


## Basic equipment – Macro

### Rotary Indexing Tables Macro

Compact Rotary Indexing Tables with pneumatic Macro chuck. Indexing 0-360° with smallest step 0.001°. Air connections for open/close, as well as turbo-locking/air-blast cleaning.

- Required drawbar 3R-605.1RS
- Rust-resistant
- Indexing accuracy  $\pm 0.003^\circ$  without correction
- Speed range 0-10 rev/min
- Automatic air-blast cleaning of the Z-references
- Weight 18 kg



### Machine-adapted Rotary Indexing Table 3R-60.360X

Note: The units are controlled by the machine. The mark and type of the machine must therefore be stated when ordering.

### Neutral Rotary Indexing Table 3R-60.360SA

Supplied with a separate control unit.

## Drawbars

### 3R-605.1RS

- Drawbar  $\varnothing 20 \times 57.1$  mm with flushing hole  $\varnothing 7$  mm
- Rust-resistant
- Supplied singly



### 3R-605.27RS

- Drawbar  $\varnothing 20 \times 27$  mm
- Rust-resistant
- Supplied singly



### 3R-605.10

- Drawbar  $\varnothing 20 \times 13$  mm
- Rust-resistant
- Supplied singly

### 3R-605.10E

- Drawbar  $\varnothing 20 \times 13$  mm
- Rust-resistant
- Supplied in sets of 10.



### 3R-605.2RS

- Drawbar  $\varnothing 20 \times 36.9$  mm with flushing hole  $\varnothing 7$  mm
- Rust-resistant
- Supplied singly



### 3R-605.26

- Drawbar  $\varnothing 20 \times 32$  mm
- Rust-resistant
- Supplied singly



### 3R-605.10EE

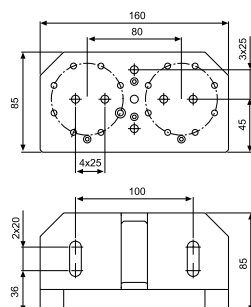
- Drawbar  $\varnothing 20 \times 13$  mm
- Rust-resistant
- Supplied in sets of 20.



## Angle shelf 3R-201.5

Mounts directly on the machine table. For vertical mounting of a Macro chuck or short reference element in the machine. Supplied with M8 screw and washer (x3).

- Weight 4.2 kg



## Locking ring key 3R-605-GE

To lift the drawbar locking ring.

- Supplied in sets of 2





## Basic equipment – Macro

### Spare parts kit 3R-SSP012

Spare parts kit including instructions for 3R-602.10-1 or 3R-602.12-1 (Twin chuck, use 2 pcs. 3R-SSP012)



### Air unit 3R-611.60

Unit for operating pneumatic chucks in B-axes. Two functions – open/closed with four seconds delay for air-blast cleaning.



### Air unit 3R-611.46

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



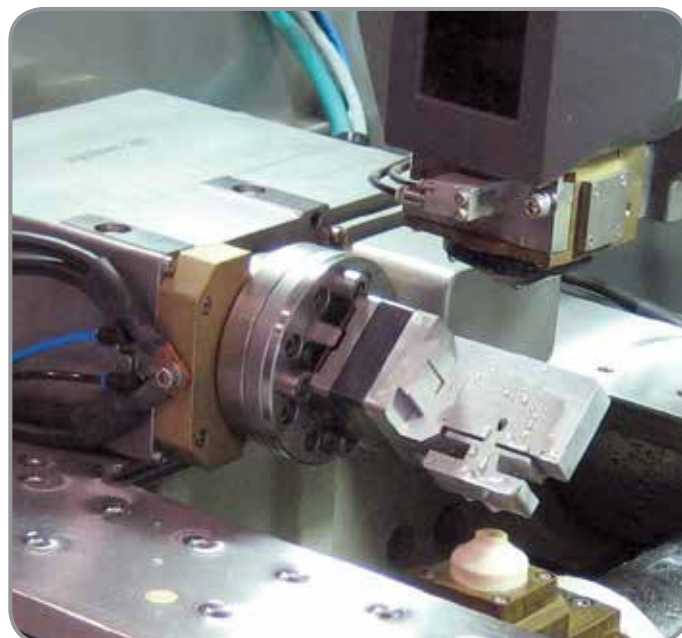
### Air unit 3R-611.4

Unit for operation of pneumatic chucks.  
Two positions – open/closed.



### Insulating kit K-30266

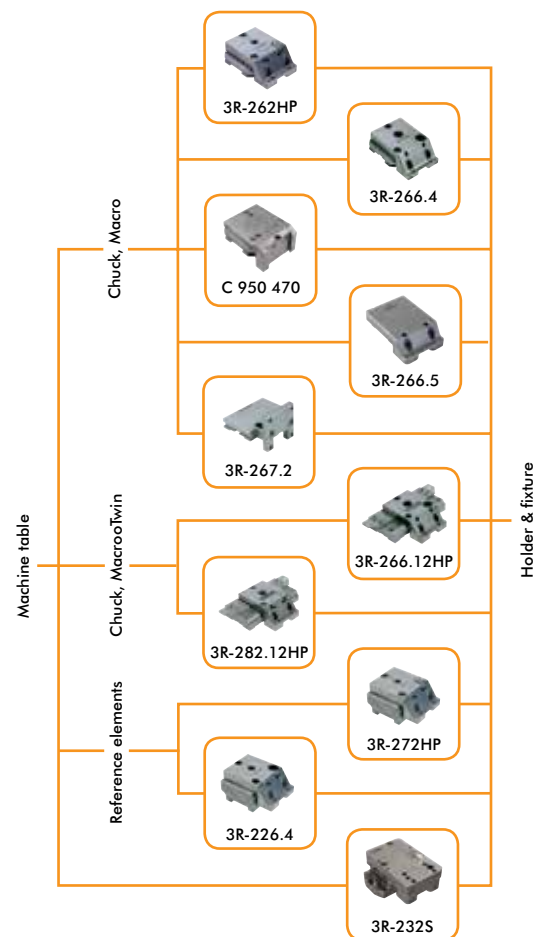
Insulating kit for 3R-602.10-1, 3R-602.26 and 3R-602.27.



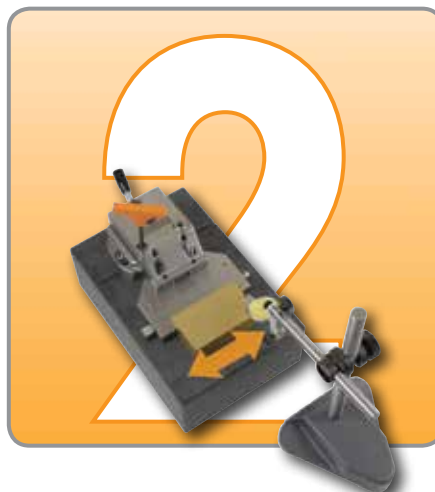
## Mounting heads

Rapid setup is essential if you want to benefit from the material removal capacity and the accuracy offered by modern machines. However, faster machines with increased flushing pressure cause resonance and vibration. So in order to fully utilise the capability of the machines it is necessary to have stable tools and workpiece mountings.

- *Setup done in seconds*
- *Gives maximum workpiece precision*
- *Utilises the machine capacity*
- *More stable than any other system*
- *Minimal vibration*
- *Minimises resonance*



## Pre-set in three axes



Pre-set in three axes with System 3Rs levelling adapter. This can be done with an accuracy of thousandths of a millimetre!

The simple, directly measurable references of the levelling adapter mean that presetting can be done on an ordinary surface plate, using one of System 3R's presetting stones.

Preset away from the machine. Lift the preset "package" into place – levelling adapter, holder and workpiece – fix with a few simple manual operations and start the machine. Simple, quick and precise.

## Mounting heads

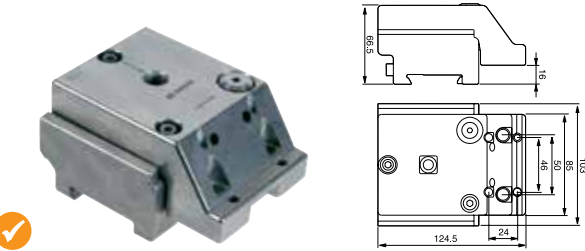
### Levelling adapter, WEDM 3R-272HP

For manual mounting of SuperVice, a holder or a fixture in the WEDM system.

*Note: All holders including HP can be mounted.*

*Note: Also fits the ICS system if the clamping jaw (17850-00) is changed.*

- Adjustable in three axes
- Supplied without drawbar
- Recommended maximum load 15 kg
- Weight 1.4 kg



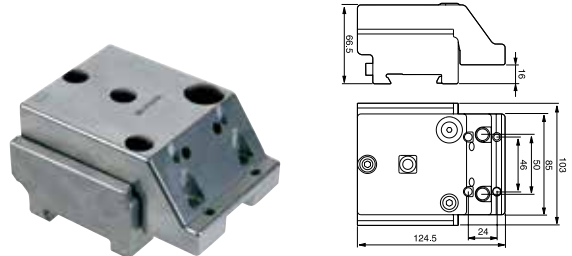
### Fixed mounting head, WEDM 3R-226.4

For manual mounting of SuperVice, a holder or a fixture in the WEDM system.

*Note: All holders including HP can be mounted.*

*Note: Also fits the ICS system if the clamping jaw (17850-00) is changed.*

- Recommended maximum load 15 kg
- Weight 1.4 kg

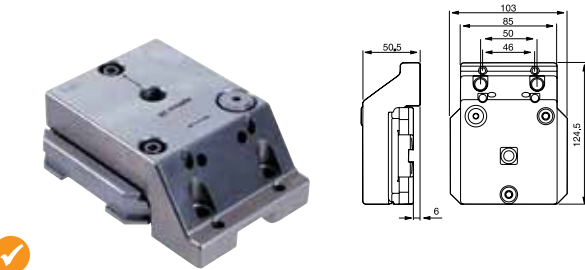


### Levelling adapter, Macro 3R-262HP

For mounting SuperVice, a holder or a fixture in the Macro system.

*Note: All holders including HP can be mounted.*

- Adjustable in three axes
- Supplied without drawbar
- Adapted for automatic changing
- Ready for code carrier
- Recommended maximum load 15 kg
- Weight 2.4 kg

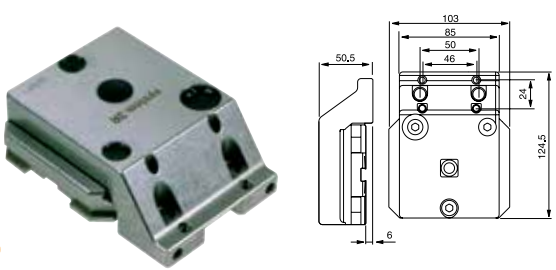


### Fixed mounting head, Macro 3R-266.4

For manual mounting of SuperVice, a holder or a fixture in the Macro system.

*Note: All holders including HP can be mounted.*

- Adapted for automatic changing
- Ready for code carrier
- Supplied without drawbar
- Recommended maximum load 15 kg
- Weight 1.4 kg.



### Fixed mounting head, Macro 3R-266.5

For mounting SuperVice, a holder or a fixture in the Macro system.

*Note: All holders including HP can be mounted.*

- Can be adapted to automatic changing with 3R-WP1
- Ready for code carrier
- Supplied without drawbar
- Recommended maximum load 15 kg
- Weight 2.4 kg

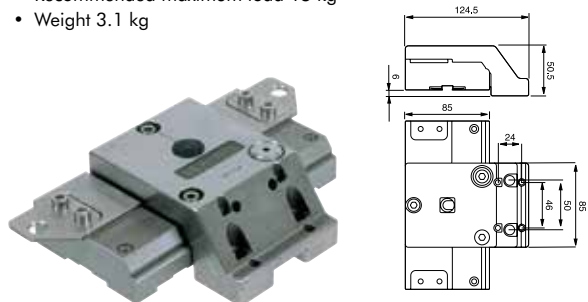


### Levelling adapter, Magnum MacroTwin 3R-282.12HP

For mounting Magnum holders in the MacroTwin system.

*Note: All holders including HP can be mounted.*

- Adjustable in three axes
- Can be adapted to automatic changing with 3R-W12-S
- Supplied with drawbar 3R-605.10 x2
- Ready for code carrier
- Recommended maximum load 15 kg
- Weight 3.1 kg



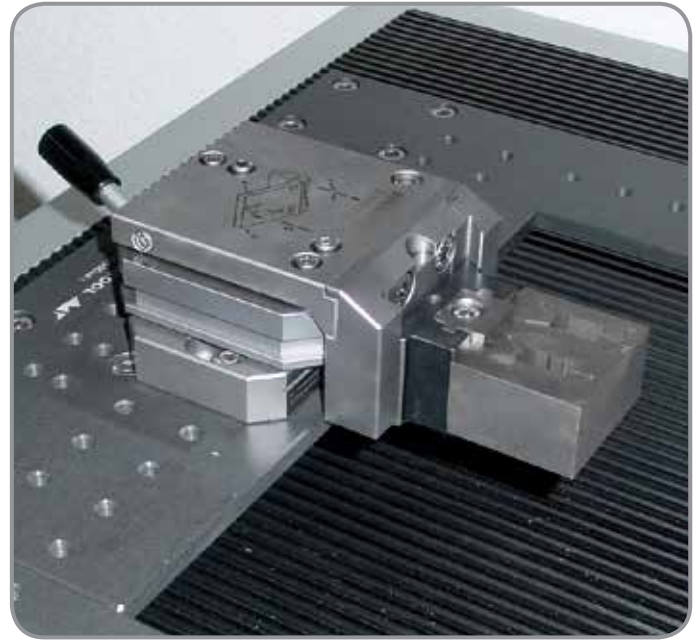
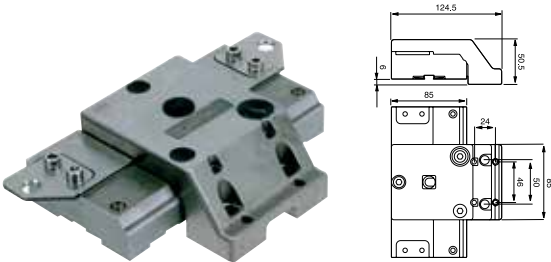
## Mounting heads

### Fixed mounting head, Magnum MacroTwin 3R-266.12HP

For manual mounting of Magnum holders in the MacroTwin system.

*Note: All holders including HP can be mounted.*

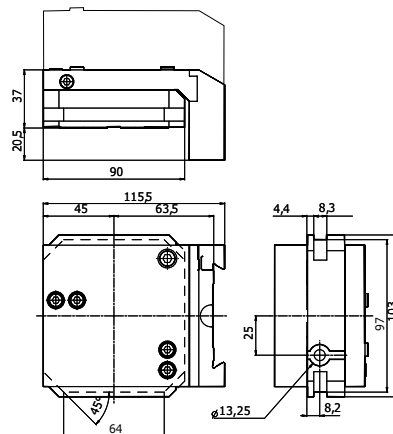
- Can be adapted to automatic changing with 3R-W12-S
- Supplied with drawbar 3R-605.10 x2
- Ready for code carrier
- Recommended maximum load 15 kg
- Weight 3.1 kg



### Unimacro Adjusting pallet C 950 470

For manual mounting of Unimatic holders and Unimatic clamping elements in the Macro system. Adjusting pallet with dovetail guide adaptation.

- Adjustment range  $\pm 0.2$  mm for all three axes
- Functional height 59 mm, Unimatic pallet placed onto Macro chuck
- Ready for code carrier
- Weight 2.7 kg

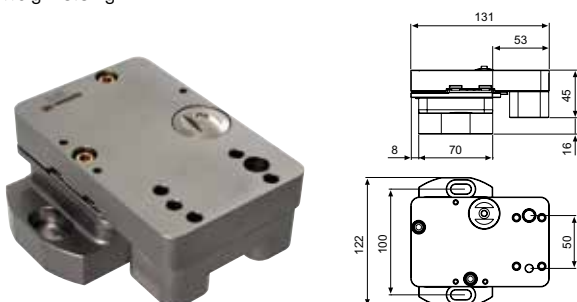


### Levelling adapter 3R-232S

For mounting SuperVice, a holder or a fixture directly on the machine table.

*Note: All holders including HP can be mounted.*

- Adjustable in three axes when clamped in the machine.
- Recommended maximum load 15 kg
- Weight 3.8 kg



### Adapters

For mounting ICS holders in WEDM, Macro and MacroTwin mounting heads.

#### C 457 940

- ICS A

#### C 457 960

- ICS B

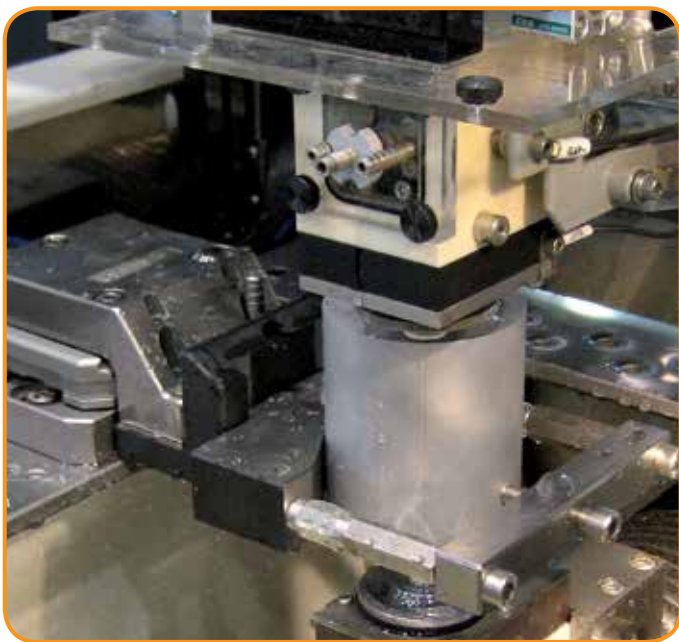
#### C 457 980

- ICS C



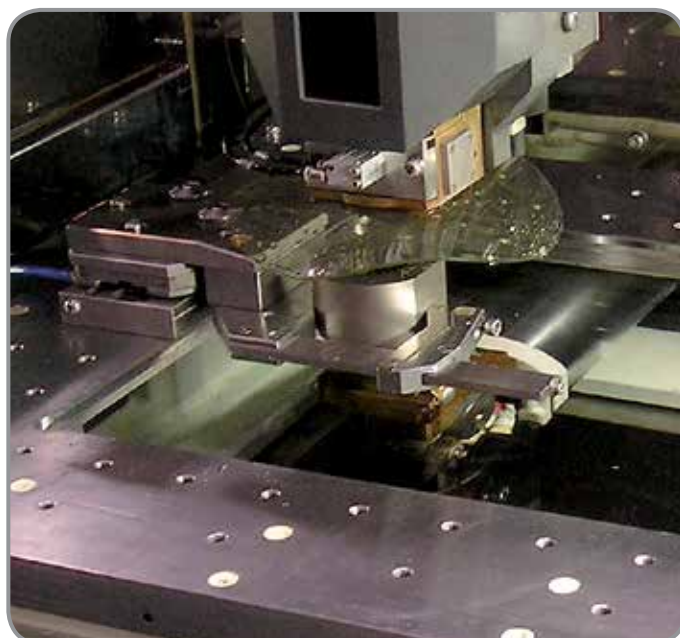


## Mounting heads



### Adapter C 950 280

For mounting Unimatic holders in WEDM, Macro and MacroTwin mounting heads.

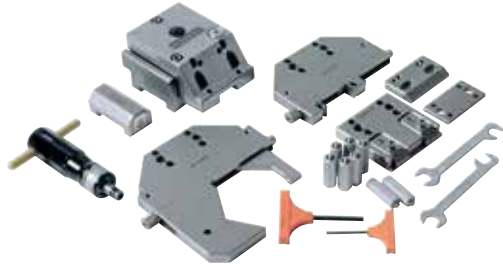




## Mounting heads – User kits

### User kit 3R-242HP

3R-225	Reference stop	x1
3R-272HP	Levelling adapter HP	x1
3R-292.3	SuperVice <100 mm	x1
3R-293.3	SuperVice Ø8-90 mm	x1
3R-294.3	Vice <100 mm	x1
3R-914.07	Torque wrench, 7Nm	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1



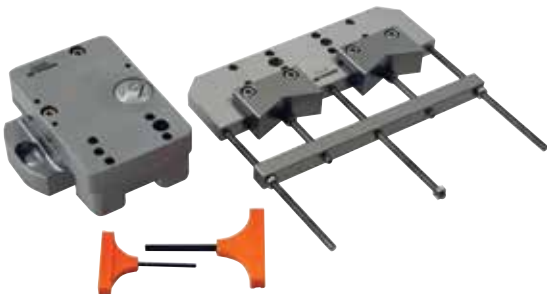
### User kit 3R-242.82HP

3R-239.1	Ruler vice	x1
3R-272HP	Levelling adapter HP	x1
3R-292.66HP	Magnum Holder HP	x1



### User kit 3R-242S-1

3R-232S	Levelling adapter	x1
3R-292.3S	Universal holder	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1



### User kit 3R-242S-2

3R-232S	Levelling adapter	x1
3R-292.6S	SuperVice Magnum	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1



### User kit 3R-242S-3

3R-232S	Levelling adapter	x1
3R-293.33	Universal holder	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1



### User kit 3R-242S-4

3R-602.26	Manual chuck	x1
3R-262HP	Levelling adapter Macro	x1
3R-292.6S	SuperVice Magnum	x1
3R-605.26	Drawbar	x1
3R-333-05	Allen key, 5 mm	x1
45600-N03	Allen key, 3 mm	x1
45600-N041	Allen key, 6 mm	x1

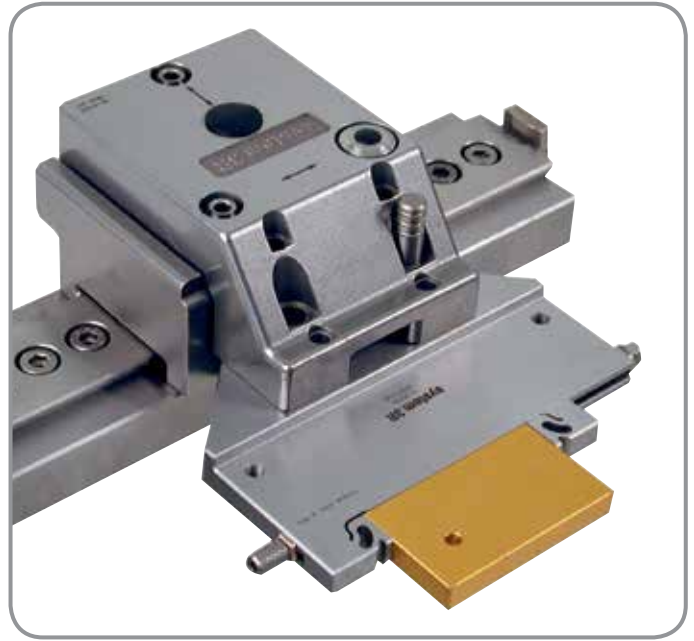


## Holders and vices for mounting in mounting heads

Supervice solves setting-up problems for the most frequently occurring sizes of workpiece – small to medium-sized.

The high repetition accuracy not only allows presetting and fast setup; it also provides a solid foundation for rational series production. The springback is minimal and resonance damping is significant. Add this together and you have a very firm grip on production. SuperVice delivers more than others dare to promise.

- The low profile gives clearance from the upper and lower wire guides
- High clamping force.

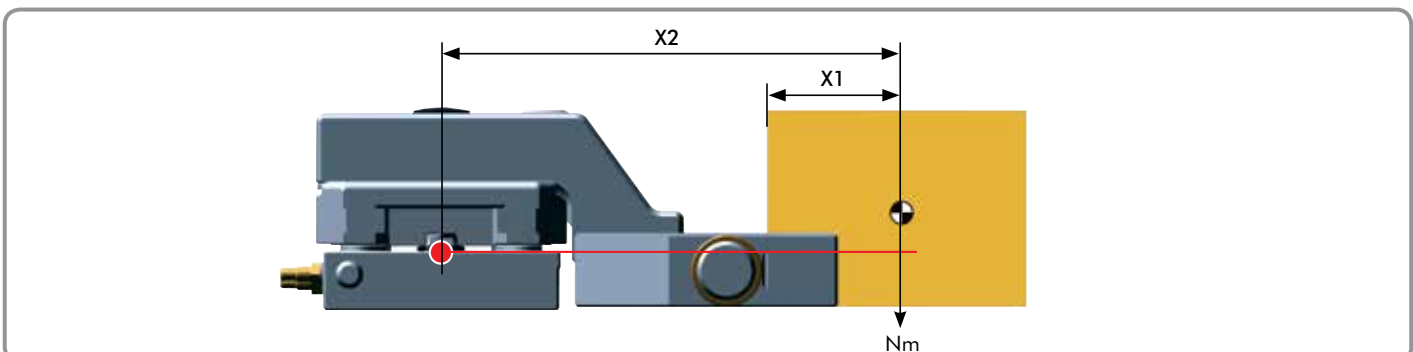


*The unique, patented asymmetric design of the locking jaws gives extremely high locking force and enhances the contact between the workpiece and the reference surface at the same time.*

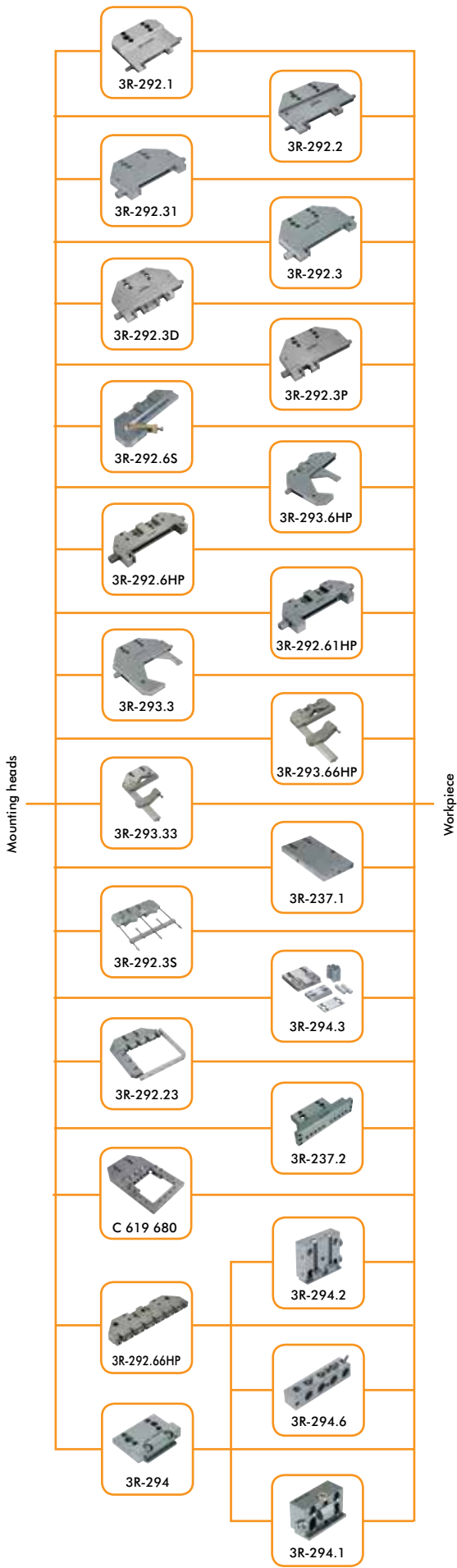


Article number	X1 Recommended maximum torque	Maximum workpiece weight X1* = 50 mm	Maximum workpiece weight X1* = 100 mm	X2 Torque generated in chuck coupling
3R-292.1	3.0 Nm	6 kg	3.0 kg	10.8 Nm
3R-292.2	3.5 Nm	7 kg	3.5 kg	12.4 Nm
3R-292.3	8.0 Nm	16 kg	8.0 kg	28.6 Nm
3R-292.3D	8.0 Nm	16 kg	8.0 kg	28.6 Nm
3R-292.3P	8.0 Nm	16 kg	8.0 kg	28.6 Nm
3R-292.31	5.5 Nm	11 kg	5.5 kg	20.0 Nm
3R-292.6HP	20.0 Nm	40 kg	20.0 kg	63.0 Nm
3R-292.61HP	13.0 Nm	26 kg	13.0 kg	39.6 Nm
3R-292.6S	9.0 Nm	18 kg	9.0 kg	30.4 Nm
3R-294.1	2.5 Nm	5 kg	2.5 kg	9.3 Nm
3R-294.2	5.0 Nm	10 kg	5.0 kg	18.8 Nm
3R-294.3	6.0 Nm	12 kg	6.0 kg	20.4 Nm

\*Centre of gravity of the workpiece with X mm overhang



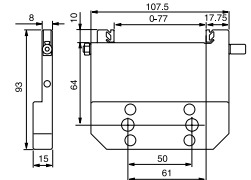
# Holders and vices for mounting in mounting heads



## SuperVice 3R-292.1

For clamping rectangular workpieces up to 77 mm.

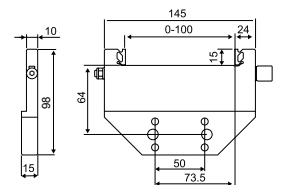
- Tightening torque 4 Nm
- Weight 0.6 kg



## SuperVice 3R-292.2

For clamping rectangular workpieces up to 100 mm.

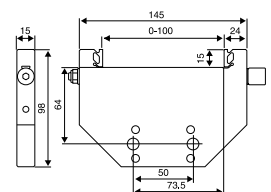
- Tightening torque 3 Nm
- Weight 0.9 kg



## SuperVice 3R-292.3

For clamping rectangular workpieces up to 100 mm.

- Tightening torque 7 Nm
- Weight 1.1 kg

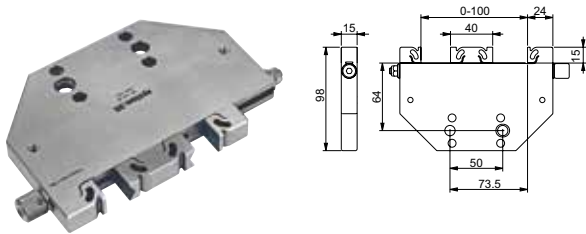


## Holders and vices for mounting in mounting heads

### SuperVice, Double 3R-292.3D

For collision-free clamping of both rectangular and round workpieces (14-45 mm and  $\varnothing$  3-15 mm respectively). Total clamping range, 60 mm (to be split between two workpieces). Alternatively, dismount the double jaw and use as a regular 3R-292.3 vice for rectangular workpieces (0-100 mm).

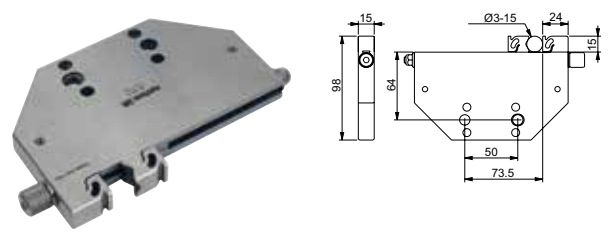
- Tightening torque 7 Nm
- Weight 1.2 kg



### SuperVice, Prisma 3R-292.3P

For vertical or horizontal collision-free clamping of round workpieces ( $\varnothing$  3-15 mm). Alternatively, rotate the movable jaw and use as a regular 3R-292.3 vice for rectangular workpieces (0-100 mm).

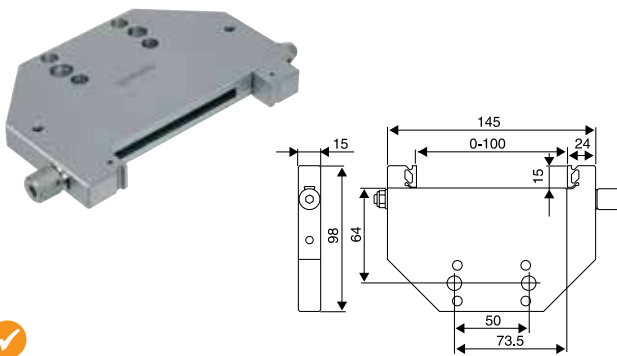
- Tightening torque 7 Nm
- Weight 1.1 kg



### SuperVice 3R-292.31

Vice with solid jaws for clamping rectangular workpieces up to 100 mm.

- Tightening torque 8 Nm
- Weight 1.1 kg

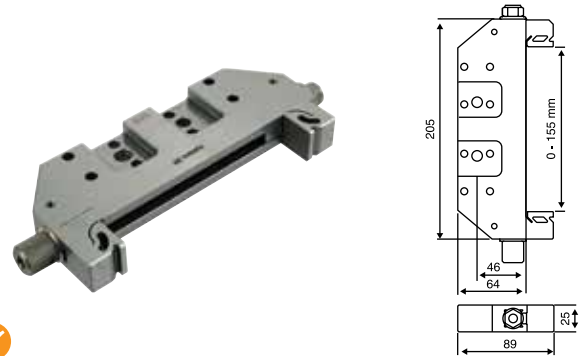


### SuperVice, Magnum 3R-292.6HP

Vice for clamping rectangular workpieces up to 155 mm.

*Note: Mounts on HP, Magnum or MacroTwin levelling adapter.*

- Tightening torque 15 Nm
- Weight 2.8 kg

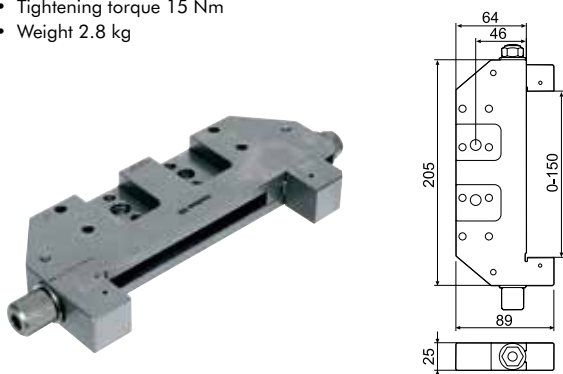


### SuperVice, Magnum 3R-292.61HP

Vice with solid jaws for clamping rectangular workpieces up to 150 mm.

*Note: Mounts on HP, Magnum or MacroTwin levelling adapter.*

- Tightening torque 15 Nm
- Weight 2.8 kg

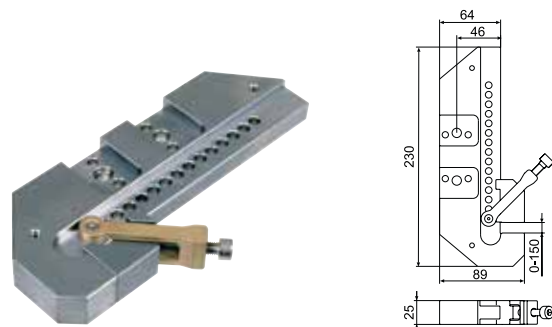


### SuperVice, Magnum 3R-292.6S

Vice for clamping rectangular workpieces up to 150 mm.

*Note: Mounts on HP, Magnum or MacroTwin levelling adapter.*

- Tightening torque 10 Nm
- Weight 2.7 kg

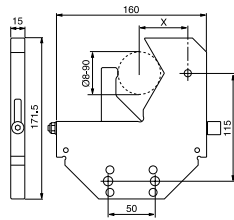


## Holders and vices for mounting in mounting heads

### SuperVice 3R-293.3

Vice for clamping round workpieces 8-90 mm.

- Recommended maximum workpiece weight 7 kg
- Tightening torque 8 Nm
- Weight 1.7 kg



$$X = \frac{D}{\sqrt{3}} + 25\text{mm}$$

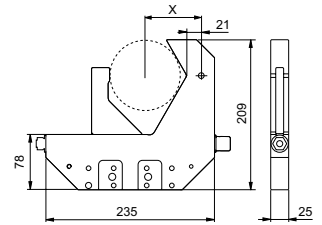


### SuperVice, Magnum 3R-293.6HP

Vice for clamping round workpieces 15-155 mm.

Note: Mounts on HP, Magnum or MacroTwin levelling adapter.

- Recommended maximum workpiece weight 12 kg
- Tightening torque 10 Nm
- Weight 4.5 kg



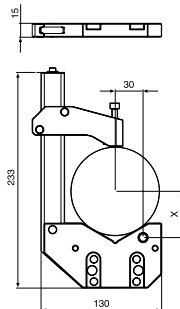
$$X = \frac{D}{\sqrt{3}} + 20\text{mm}$$



### Universal holder 3R-293.33

Holder for round workpieces 8-100 mm, or rectangular workpieces up to 100 mm.

- Recommended maximum workpiece weight 7 kg.
- Tightening torque 3 Nm
- Weight 1.5 kg



$$X = \frac{D}{\sqrt{3}} - 5\text{mm}$$

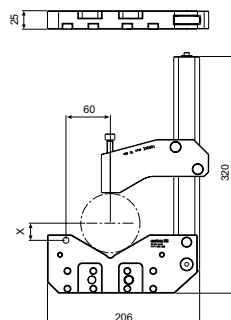
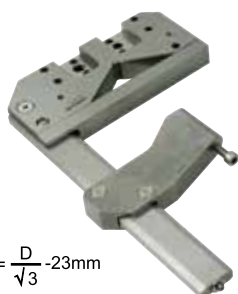


### Universal holder, Magnum 3R-293.66HP

For round workpieces 15-150 mm diameter, or rectangular workpieces up to 150 mm.

Note: Mounts on HP, Magnum or MacroTwin mounting head.

- Recommended maximum workpiece weight 12 kg.
- Tightening torque 6 Nm
- Weight 4.2 kg.



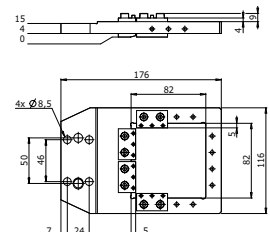
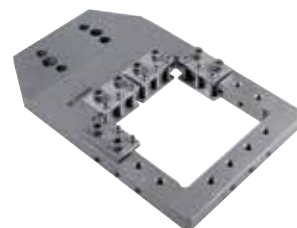
$$X = \frac{D}{\sqrt{3}} - 23\text{mm}$$

### Clamping frame C 619 680

Carrier for flat round or cubic workpieces up to 80x80 mm.

Note: Mounts on HP, Magnum or MacroTwin levelling adapter.

- Functional height 13 mm
- Clamping range round or cubic up to 80 mm / maximum workpiece height 12 mm
- Maximum workpiece weight 1.5 kg
- Maximum workpiece dimensions Ø 80 mm or 80x80 mm
- Weight 0.9 kg





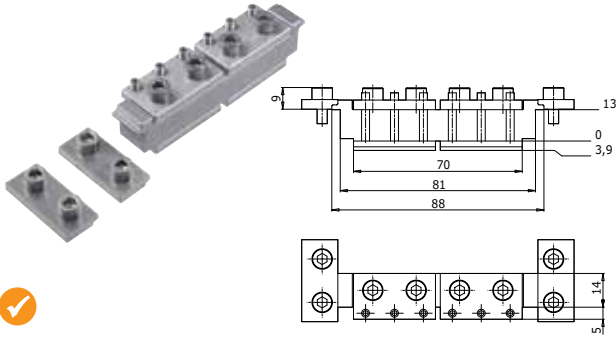
## Holders and vices for mounting in mounting heads

### Clamping bar to clamping frame

C 619 670

Clamping bar to use with ICS clamping frame C 619 680.

- Dimensions 88 x 20 x 26 mm
- Overall height 26 mm (incl. support lips and clamping lips)
- Weight 0.25 kg

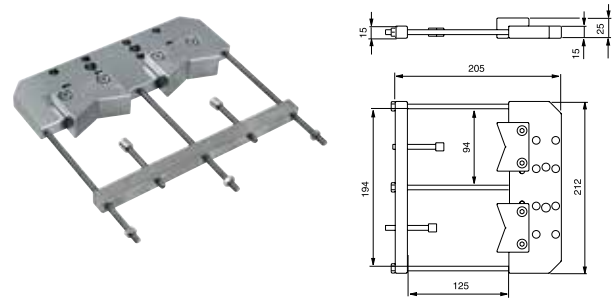


### Universal holder

3R-292.3S

Holder for round workpieces up to 90 mm, or rectangular workpieces 100x90 mm.

- Recommended maximum workpiece weight 7 kg.
- Tightening torque 4 Nm
- Weight 2.3 kg.

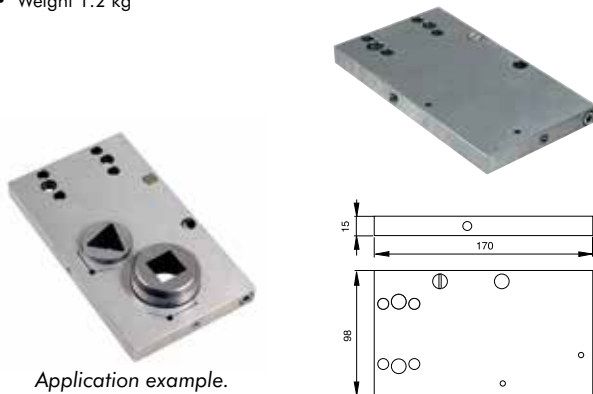


### Holder

3R-237.1

Stainless steel hardened "do-it-yourself" holder. With start hole for wire EDM of the required shape for clamping one or more workpieces.

- Recommended maximum weight 7 kg
- Weight 1.2 kg

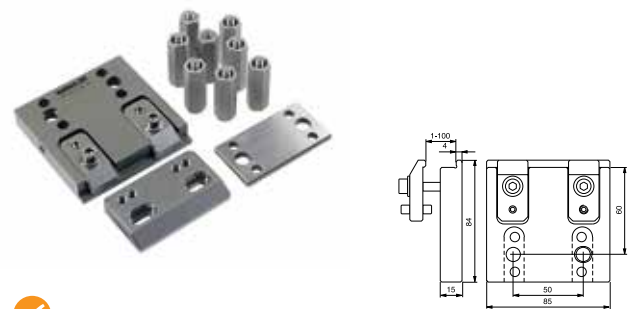


### Vice

3R-294.3

For clamping workpieces up to 100 mm.

- Tightening torque 7 Nm
- Weight 0.7 kg

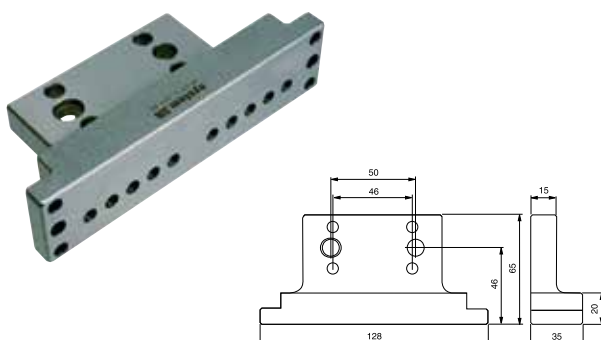


### Holder

3R-237.2

For fixture, workpiece or 3R-239.2, 3R-239.3, 3R-294.1, 3R-294.2, 3R-294.6 and 3R-402.1.

- Weight 0.6 kg

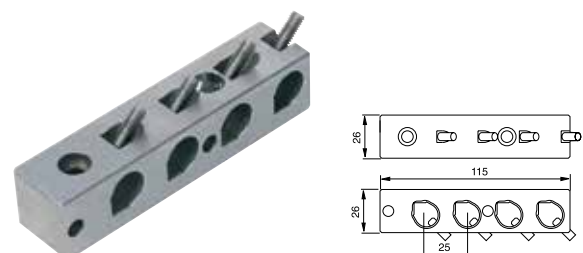


### Multiple holder

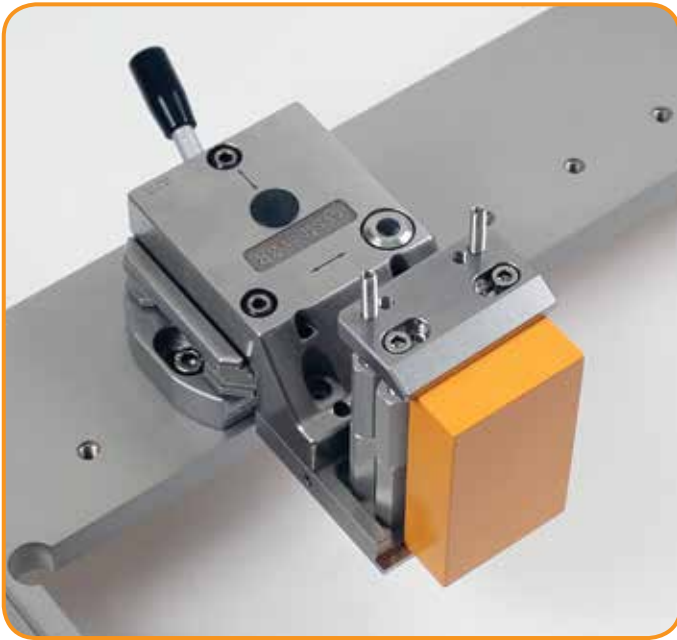
3R-294.6

For mounting four workpieces  $\varnothing$ 5-13 mm at the same time. Mounts on 3R-237.2, 3R-294, 3R-292.66HP or a ruler in the 3Ruler system.

- Tightening torque 3 Nm
- Weight 0.6 kg



## Holders and vices for mounting in mounting heads

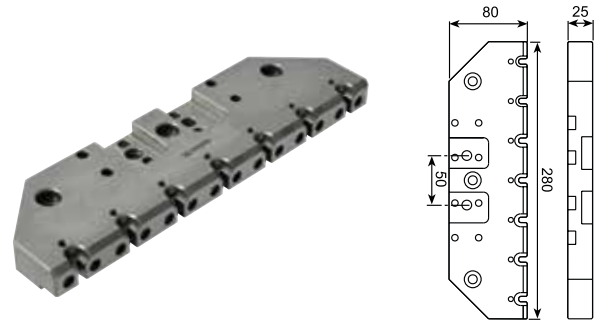


### Holder, Magnum 3R-292.66HP

Can be supplemented with 3Ruler accessories.

Note: Mounts on an HP mounting head.

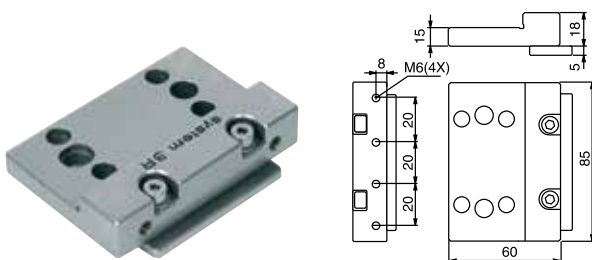
- Weight 3 kg



### Adapter 3R-294

For mounting 3R-294.1, 3R-294.2 and 3R-294.6 on a levelling adapter.

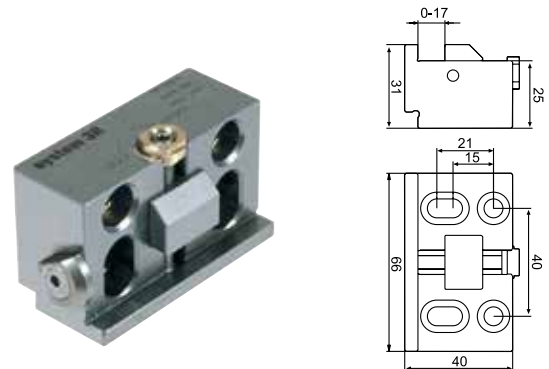
- Weight 0.6 kg



### Vice 3R-294.1

For clamping workpieces up to 17 mm. Mounts on 3R-237.2, 3R-294, 3R-292.66HP or rulers in the 3Ruler system.

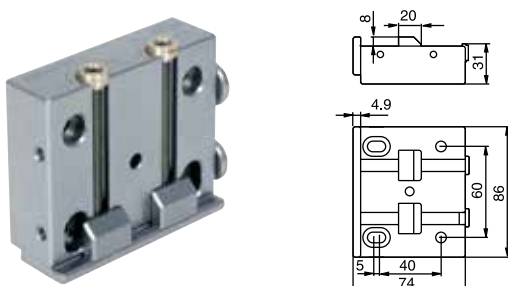
- Tightening torque 3 Nm
- Weight 0.5 kg



### Vice 3R-294.2

For clamping workpieces up to 50 mm. Mounts on 3R-237.2, 3R-294, 3R-292.66HP or a ruler in the 3Ruler system or Macropallet 54x54 mm.

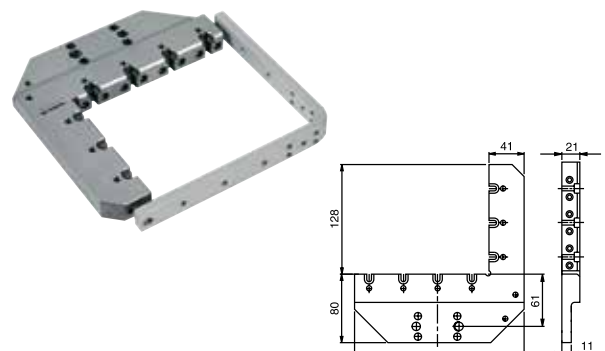
- Tightening torque 3 Nm
- Weight 1.2 kg



### Angled holder 3R-292.23

For clamping a workpiece or fixture on a mounting head. Can be supplemented with 3Ruler accessories.

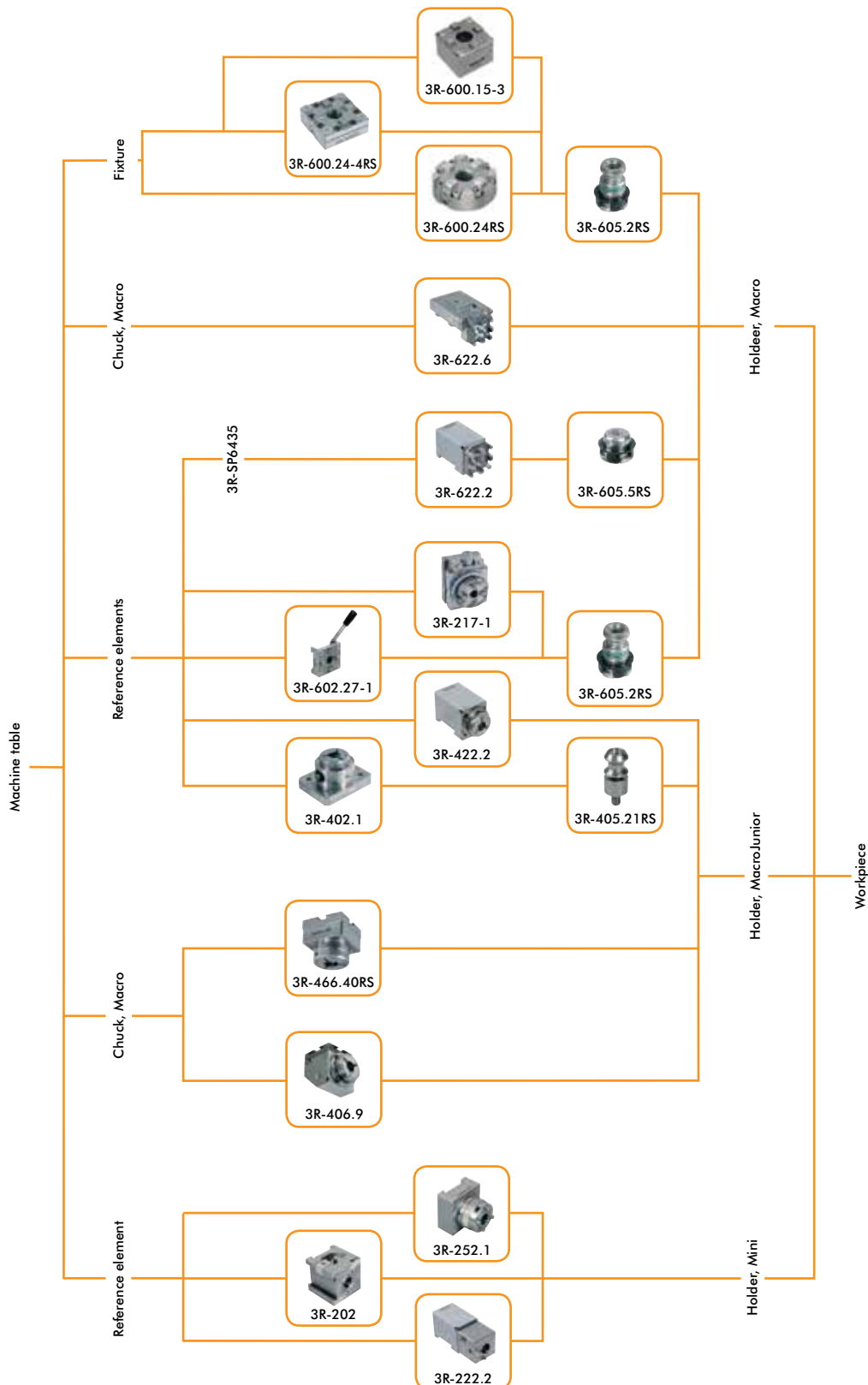
- Weight 3 kg



## Chuck adapters

A wide range of chuck adapters for clamping workpieces on pallets in the Macro, MacroJunior and Mini systems. An ever-growing field of application is the manufacture of precision parts for the medical industry; another is the manufacture of electrodes for die-sinking EDM.

The chuck adapters can interconnect all your machines to form a single system. All chuck adapters are hardened and rust-resistant.

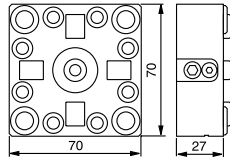


## Chuck adapters

### Manual chuck, Macro 3R-600.24-4RS

Chuck for Macro holder. Mounts on a suitable fixture.

- Grinded front edge
- Tightening torque 6 Nm
- Required drawbar 3R-605.2RS
- Fixed index positions 4x90°
- Weight 1 kg

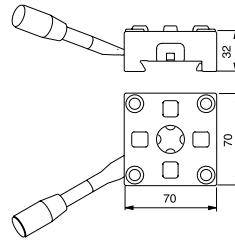


### Manual chuck, Macro 3R-602.27-1

Chuck adapter with lever for Macro holder in the WEDM system. Supplied with drawbar.

*Note: When mounted on the reference element, the two clamping jaws must be tightened with the same torque, 4 Nm.*

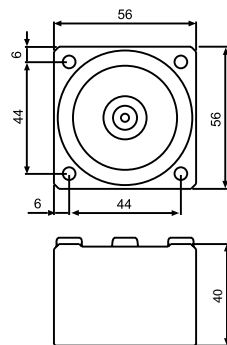
- Required drawbar 3R-605.27RS
- Clamping force 6000 N
- Fixed index positions 4x90°
- Weight 1.1 kg



### Pneumatic chuck, Macro 3R-600.15-3

Pneumatic chuck for permanent mounting on the machine table.

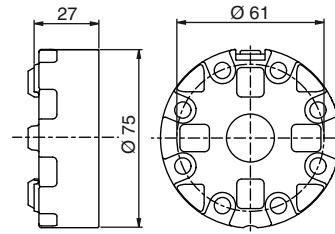
- Drawbar 3R-605.2RS included
- Required air pressure 6 ± 1 bar
- Fixed index positions 4x90°
- Clamping force 4500 N
- Rust resistant
- Weight 0.8 kg



### Manual chuck, Macro 3R-600.24RS

Manual chuck for Macro holder. Designed for permanent mounting.

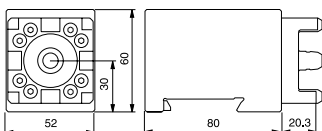
- Tightening torque 6 Nm
- Required drawbar 3R-605.2RS
- Fixed index positions 4x90°
- Weight 0.7 kg



### Manual chuck, Macro 3R-622.2

Chuck adapter for Macro holders in the WEDM system.

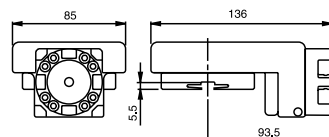
- Supplied with drawbar 3R-605.5RS
- Fixed index positions 4x90°
- Clamping force 6000 N
- Weight 1.9 kg



### Manual chuck, Macro 3R-622.6

Chuck adapter for mounting Macro holders 90° in the Macro system.

- Supplied with drawbar 3R-605.5RS
- Fixed index positions 4x90°
- Clamping force 6000 N
- Ready for code carrier holder 3R-U30638
- Can be adapted to automatic changing with 3R-WP1
- Weight 2.3 kg

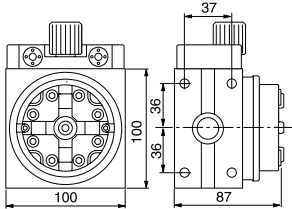


## Chuck adapters

### 3R-block, Macro 3R-217-1

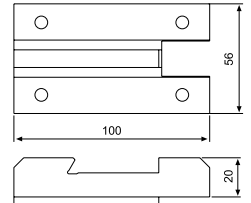
Manual block for Macro holder. Vertical or horizontal mounting on the machine table, or alternatively the WEDM system with the aid of 3R-SP6435.

- Required drawbar 3R-605.2RS
- Fixed index positions 24x15°
- Vernier scale
- Weight 5.4 kg



### Adapter 3R-SP6435

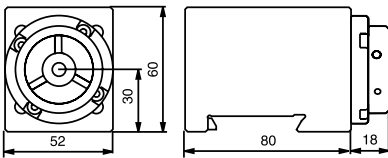
Adapter element for mounting 3R-217-1 in the WEDM system.



### Manual chuck, MacroJunior 3R-422.2

Chuck adapter with axial locking screw for MacroJunior holders in the WEDM system.

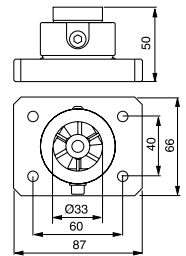
- Fixed index positions 3x120°
- Clamping force 6000 N
- Weight 1.8 kg



### Manual chuck, MacroJunior 3R-402.1

Chuck for MacroJunior holder. Can be mounted on 3R-237.2, 3R-292.66HP, 3R-294, the 3Ruler system, or on Macro element 54x54.

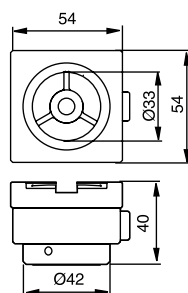
- Required drawbar 3R-405.21RS
- Clamping force 4000 N
- Rust-resistant
- Fixed index positions 3x120°
- Weight 1.2 kg



### Manual chuck adapter, MacroJunior 3R-466.40RS

Chuck adapter, stainless steel, for MacroJunior holders in the Macro system. Axial locking screw.

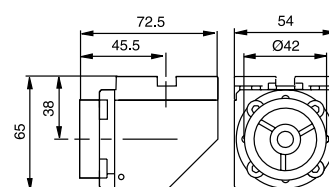
- Fixed index positions 3x120° and 4x90°
- Clamping force 6000 N
- Weight 0.4 kg



### Manual chuck adapter, MacroJunior 3R-406.9

For horizontal mounting of MacroJunior holder in the Macro system. Axial locking screw.

- Adapted for automatic changing
- Clamping force 6000 N
- Rust-resistant
- Fixed index positions 3x120°
- Weight 1.2 kg



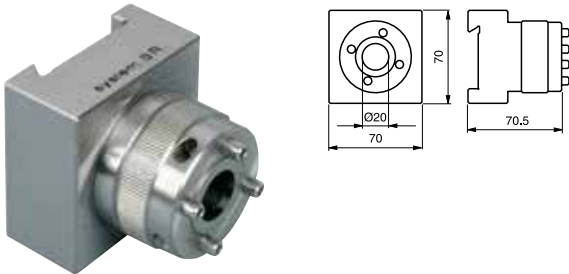


## Chuck adapters

### Manual chuck adapter, Mini 3R-252.1

Chuck adapter with dual hydraulic chambers for Mini holders in the WEDM-system.

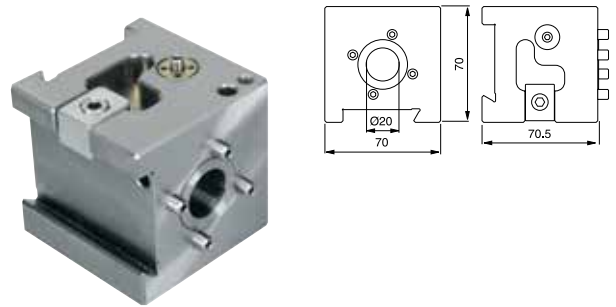
- Fixed index positions 4x90°
- Weight 1.6 kg



### MiniBlock 3R-202

Manual chuck with dual hydraulic chambers for Mini holders. Vertical or horizontal mounting in the WEDM system.

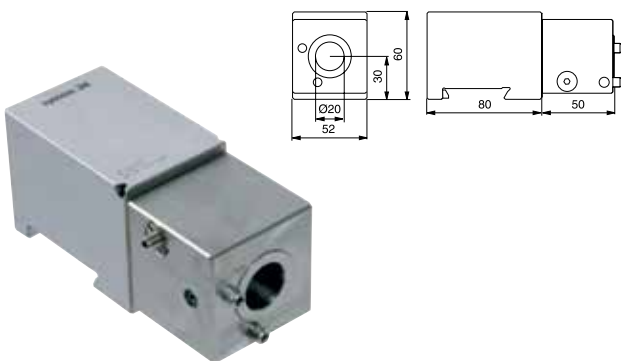
- Fixed index positions 4x90°
- Weight 1.9 kg



### Manual chuck adapter, Mini 3R-222.2

Chuck adapter with dual hydraulic chambers for Mini holders in the WEDM-system.

- Fixed index positions 2x90°
- Weight 2.5 kg



### Locking ring key 3R-605-GE

To lift the drawbar locking ring.

- Supplied in sets of 2.



## Drawbars

### 3R-405.21RS

- Drawbar Ø15x24 mm
- Rust-resistant
- Supplied singly



### 3R-605.5RS

- Drawbar Ø20x19 mm
- Rust-resistant
- Supplied singly



### 3R-605.2RS

- Drawbar Ø20x36.9 mm with flushing hole Ø7 mm
- Rust-resistant
- Supplied singly



### 3R-605.27RS

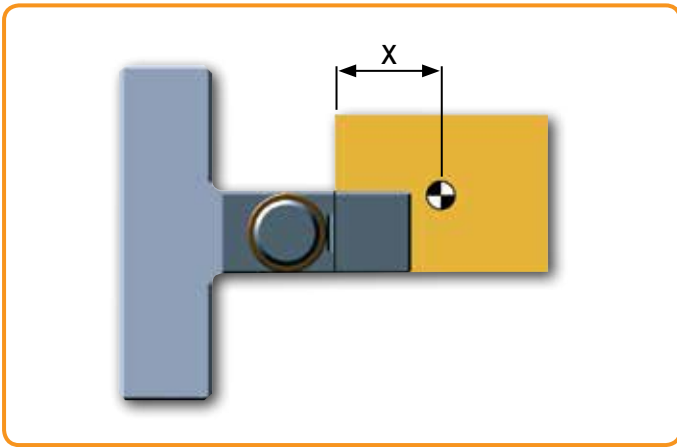
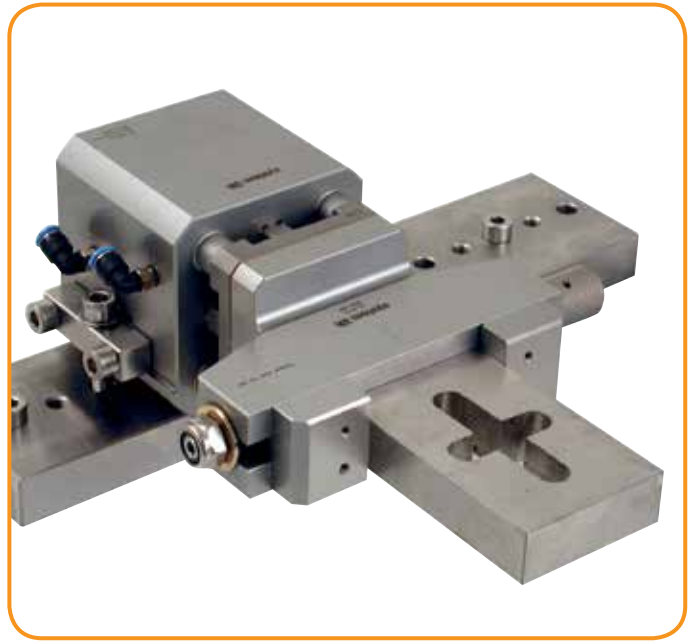
- Drawbar Ø20x27 mm
- Rust-resistant
- Supplied singly



## Holders for mounting in chuck adapters

The holders have been adapted for modern machines with high flushing pressure. These holders are mainly intended for clamping small to medium-sized workpieces on the zero line of the machine.

An example is the manufacture of electrodes for die-sinking EDM. The electrode is manufactured on its holder in the wire EDM machine. The electrode on its holder is then ready for immediate use in the die-sinking EDM machine, without intervening mounting operations and adjustments.



Article number	Recommended maximum torque	Maximum workpiece weight X* = 50 mm	Maximum workpiece weight X* = 100 mm
3R-613.4	3.0 Nm	6 kg	3.0 kg
3R-232.8	12.5 Nm	25 kg	12.5 kg
3R-613.6	12.5 Nm	25 kg	12.5 kg
3R-213.4	3.0 Nm	6 kg	3.0 kg

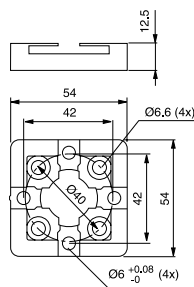
\*Centre of gravity of the workpiece with X mm overhang.

### Pallet 54x54 mm, Macro 3R-651.7E-P

Hardened and precision-cast, with clearance holes for four fixing screws.

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

- Parallel-ground top and bottom faces
- Fixed index positions 4x90°
- Rust-resistant
- Supplied in sets of 8
- Weight per set 1.2 kg

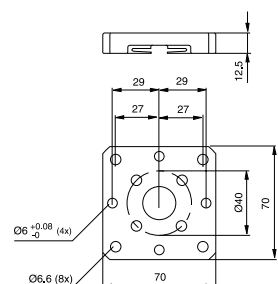
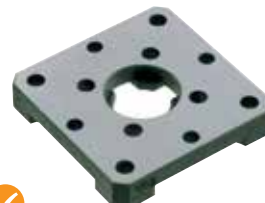


### Pallet 70x70 mm, Macro 3R-601.7E-P

Hardened and precision-cast, with clearance holes for eight fixing screws.

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

- Parallel-ground top and bottom faces
- Fixed index positions 4x90°
- Rust-resistant
- Supplied in sets of 5
- Weight per set 3 kg



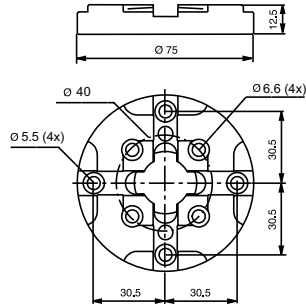
## Holders for mounting in chuck adapters

### Pallet Ø 75 mm, Macro 3R-651.75E-P

Hardened X, Y & Z-references. Clearance holes for fixing screws.

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

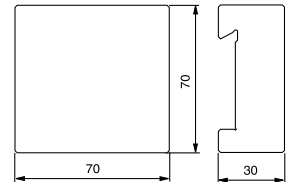
- Parallel-ground top and bottom faces
- Fixed index positions 4x90°
- Rust-resistant
- Supplied in sets of 10
- Weight per set 3.0 kg



### Pallet WEDM 3R-205.2

Unhardened holder for mounting in the WEDM system.

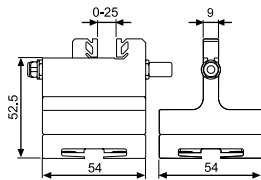
- Recommended maximum workpiece weight 7 kg
- Rust-resistant
- Weight 1 kg



### SuperVice, Macro 3R-613.4

Vice for mounting rectangular workpieces 0-25 mm in the Macro system.

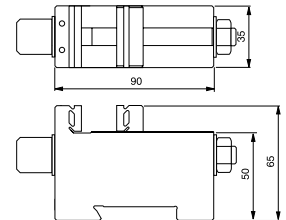
- Rust-resistant
- Tightening torque 3 Nm
- Weight 0.6 kg



### SuperVice WEDM 3R-232.8

Vice for mounting rectangular (<60 mm) and round (8-45 mm) workpieces in the WEDM system.

- Rust-resistant
- Tightening torque 15 Nm
- Weight 1.5 kg



### Vice, Macro 3R-613.6

Vice for mounting rectangular workpieces 0-80 mm in the Macro system. Movable jaws for centred mounting. Can be supplemented with insert 16115-00 for mounting round workpieces 15-55 mm.

- Rust-resistant
- Tightening torque 15 Nm
- Weight 2.4 kg



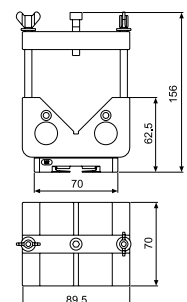
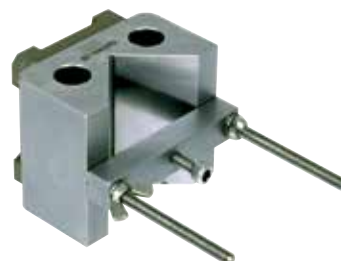
Accessory 16115-00 to mount round workpiece.



### V-holder, Macro 3R-207.6

For clamping round workpieces 8-70 mm, or rectangular workpieces 10-52 mm in the Macro system.

- Hardened
- Rust-resistant
- Recommended maximum workpiece weight 8 kg
- Weight 2 kg



## Holders for mounting in chuck adapters

### V-holder, Macro 3R-208.6

For clamping round workpieces 25-160 mm in the Macro system.

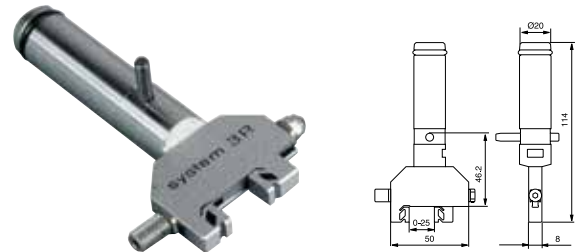
- Hardened
- Rust-resistant
- Recommended maximum workpiece weight 12 kg
- Weight 5.5 kg



### SuperVice, Mini 3R-213.4

Vice for mounting rectangular workpieces up to 25 mm in the Mini system.

- Rust-resistant
- Tightening torque 3 Nm
- Weight 0.4 kg



### Holder, Mini 3R-322/50E

Electrode holder for the Mini system with 50 mm long unhardened electrode mounting part.

- Adapted for automatic changing
- Hardened reference part
- Flushing duct
- Supplied in sets of 30
- Weight per set 7.7 kg



### 3Ready-to-Run 3R-494-XXX

Blanks mounted on MacroJunior holders for the manufacture of electrodes. The stock range is matched to local preferences and ways of working. This applies to electrode materials, different grades of graphite and copper, and to dimensions. Contact your local 3R representative for further information.

The Vällingby factory can supply holders with factory-mounted copper blanks in sets of ten, as shown in the table.

Article number	Dimensions
3R-494-D10x50	Round blank $\varnothing$ 10x50 mm
3R-494-D12x50	Round blank $\varnothing$ 12x50 mm
3R-494-D16x50	Round blank $\varnothing$ 16x50 mm
3R-494-D22x50	Round blank $\varnothing$ 22x50 mm
3R-494-D26x50	Round blank $\varnothing$ 26x50 mm
3R-494-D32x50	Round blank $\varnothing$ 32x50 mm
3R-494-D40x50	Round blank $\varnothing$ 40x50 mm
3R-494-D50x50	Round blank $\varnothing$ 50x50 mm
3R-494-S12x50	Square blank 12x12x50 mm
3R-494-S22x50	Square blank 22x22x50 mm
3R-494-S26x50	Square blank 26x26x50 mm
3R-494-S32x50	Square blank 32x32x50 mm
3R-494-S40x50	Square blank 40x40x50 mm
3R-494-32x22x50	Square blank 32x22x50 mm
3R-494-40x22x50	Square blank 40x22x50 mm

### Collet chucks

#### 3R-659.16-P

- For collets ER16
- Workpiece size 0.5-10 mm
- Flushing duct
- Building-in height 62 mm
- Weight 0.8 kg

#### 3R-659.32-P

- For collets ER32
- Workpiece size 2-20 mm
- Flushing duct
- Building-in height 94 mm
- Weight 1.2 kg

#### 3R-659.20-P

- For collets ER20
- Workpiece size 1-13 mm
- Flushing duct
- Building-in height 69 mm
- Weight 1.2 kg



## Adapter elements

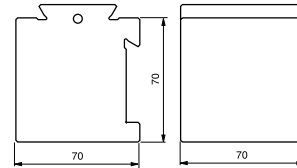
Adapter elements allow machining of complex geometries, even if the machine is not the very latest model. The range includes products for swivelling or height adjustment, as well as plain spacer elements.

All adapter elements are hardened and rust-resistant.

### Adapter 90°, WEDM 3R-201J

Basic element for 3D accessories.

- Fits on all System 3R basic element
- Hardened
- Weight 2.7 kg

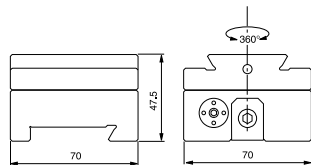


### Swivelling element 360°, WEDM 3R-203

Hydraulic locking of set position.

Note: For angle setting, 3R-216 is recommended.

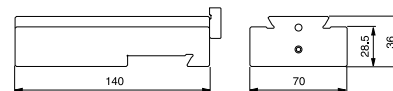
- Can be mounted on 3R-204 or directly on 3R-201J
- Hardened
- Weight 1.5 kg



### Height adapter, WEDM 3R-204

Can be turned upwards or downwards when mounting on 3R-201J.

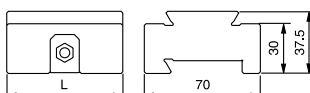
- Height adjustment  $\pm 65$  mm
- Hardened
- Weight 1.9 kg



### Spacer element 30 mm, WEDM

Used where vertical or horizontal displacement of workpiece or accessory is necessary.

- Hardened



#### 3R-223

- Length 70 mm

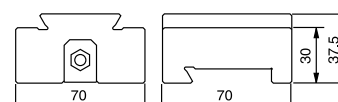
#### 3R-223.3

- Length 140 mm

### Spacer element 90°, WEDM 3R-224

Used where it is necessary turn workpiece or accessory through 90°

- Hardened
- Weight 1.1 kg





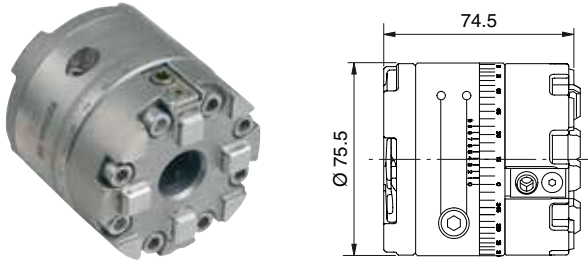
## Adapter elements

### Swivelling element 360°, Macro 3R-203.66

Swivelling element with manual Macro chuck. Mechanical locking of the set position. Vernier scale for quick setting in 0.1-degree steps.

*Note: For angle setting sine ruler 3R-216.6 and gauge block are recommended.*

- Maximal hanging load 8000 N
- Suitable drawbar 3R-605.2RS not included
- Weight 2 kg



### Swivelling element 360° 90937

Swivelling element to be mounted onto leveling heads. Mechanical locking of the set position. Vernier scale for quick setting in 0.1-degree steps.

*Note: For angle setting sine ruler 3R-216.6 and gauge block are recommended.*

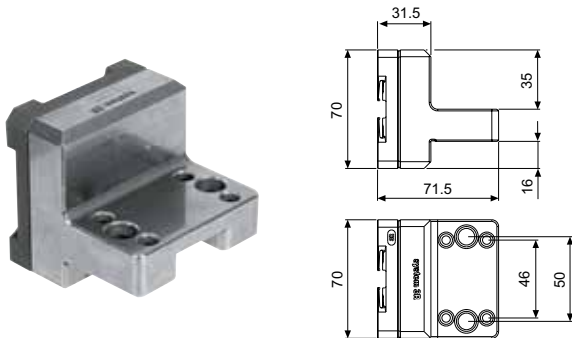
- Maximal hanging load 8000 N
- Suitable drawbar 3R-605.2RS not included
- Weight 3.1 kg



### Angled holder, Macro 3R-226.6

For horizontal clamping SuperVice and holders in vertical Macro chucks.

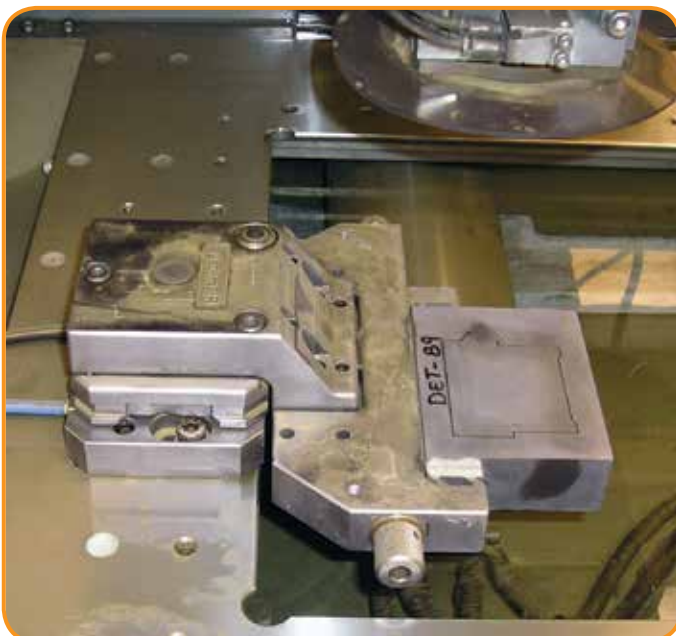
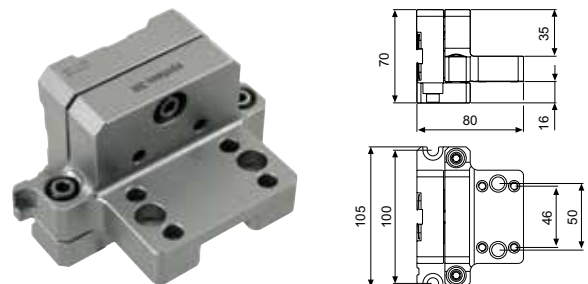
- Weight 1.4 kg.



### Vertical levelling adapter, Macro 3R-262.6

For horizontal mounting of SuperVice and holders in vertical Macro chucks.

- Adjustable in three axes
- Weight 1.5 kg



### User kit 3R-243.2-1

3R-201J	Adapter 90	x1
3R-204	Height adapter	x1
3R-602.27-1	Manual chuck for Macro	x1
3R-605.27RS	Drawbar	x1
3R-333-05	Allen key, 5 mm	x1



## The 3Ruler ruler system

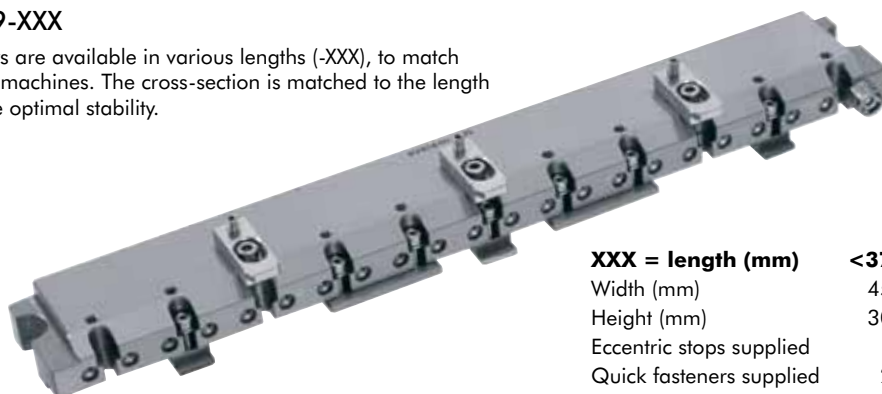
The 3Ruler ruler system has been developed for clamping medium-sized and large workpieces in machines with a parallel or U-shaped machine table, as well as for machines with a frame table. The rulers, which have built-in height adjustment, are used singly or in pairs.

With the aid of 3Ruler, rectangular or round workpieces, lightweight or heavy, large or small, are located on the machine zero line, without risk of collision. A comprehensive range of accessories gives an unsurpassed range of applications.

- Machine-adapted ruler lengths
- Repeatable accuracy with the aid of reference elements
- Stable mounting of large workpieces
- A broad range of accessories gives great flexibility

### 3Ruler 3R-239-XXX

The rulers are available in various lengths (-XXX), to match different machines. The cross-section is matched to the length to ensure optimal stability.

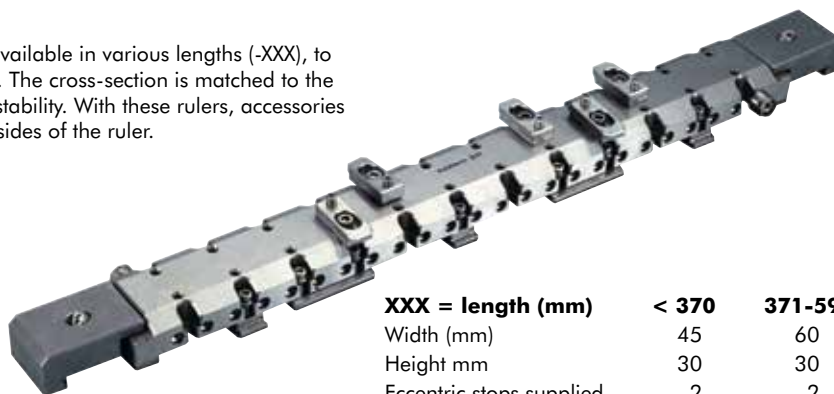


XXX = length (mm)	<370	371-595	596-950	>950
Width (mm)	45	60	86	86
Height (mm)	30	30	36	36
Eccentric stops supplied	1	1	1	1
Quick fasteners supplied	2	2	2	2
Zero line tabs supplied	2	2	3	5
5 mm tabs supplied	2	2	2	3
Clamps supplied	2	2	3	5

See also the 3Ruler guides for your machine on – [www.system3R.com](http://www.system3R.com)

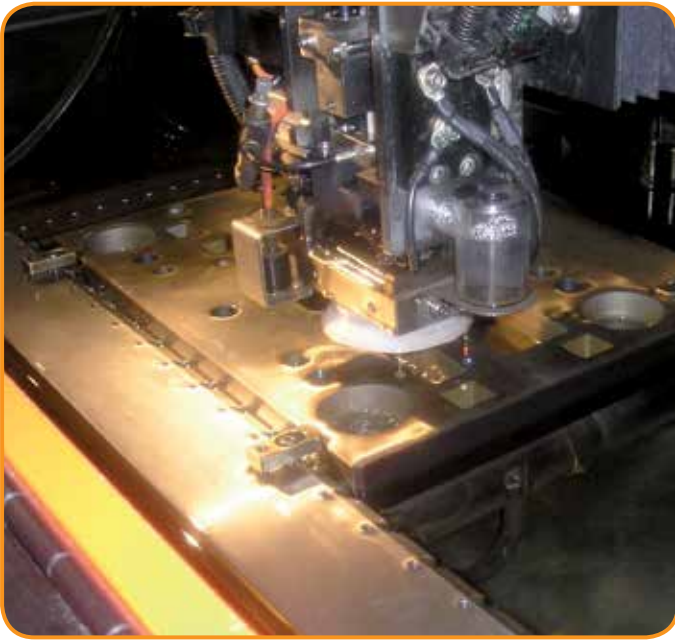
### 3Ruler, double-sided 3R-239-XXX-D

Double-sided rulers are available in various lengths (-XXX), to match different machines. The cross-section is matched to the length to ensure optimal stability. With these rulers, accessories can be clamped on both sides of the ruler.



XXX = length (mm)	< 370	371-595	596-950	> 950
Width (mm)	45	60	86	86
Height mm	30	30	36	36
Eccentric stops supplied	2	2	2	2
Quick fasteners supplied	2	2	2	2
Zero line tabs supplied	4	4	6	10
5 mm tabs supplied	4	4	4	6
Clamps supplied	4	4	6	10

## The 3Ruler ruler system



### Ruler vice 3R-239.1

Movable jaws of SuperVice design provide a wide clamping range for rectangular workpieces. Detachable Z-support tabs ensure simple setting-up.

- Hardened
- Recommended maximum workpiece weight with one vice: 15 kg
- Recommended maximum workpiece weight with two vices: 200 kg
- Tightening torque 8 Nm
- Weight 0.7 kg



### Low-profile holder 3R-239.2

For clamping thin workpieces.

- Hardened
- Clamping range 0-27 mm
- Supplied in sets of 4
- Weight per set 0.6 kg



### Vee holder 3R-239.3

For clamping round workpieces. To be mounted on ruler 3R-237.2 or 3R-292.66HP.

- Hardened
- Clamping range  $\varnothing 25-300$  mm
- Weight 0.9 kg



### Double ruler vice 3R-239.11

Movable jaws for mounting two rectangular workpieces at the same time. Detachable Z-support tabs ensure simple setting-up.

- Hardened
- Recommended maximum workpiece weight 7 kg
- Tightening torque 8 Nm
- Weight 1 kg



### Reference stop 3R-225.2

For positioning 3Ruler anywhere on the reference elements. The stops have adjusting screws for accurate alignment.

- Supplied in sets of 2
- Weight per set 0.6 kg



## The 3Ruler ruler system

### 3Ruler kit 3R-239.20

Kit for clamping rectangular, round or thin workpieces.

Contents:

3R-239.1	Ruler vice	x1
3R-239.2	Low-profile holder	x1
3R-239.3	Vee holder	x1
3R-914-10L	Torque wrench, 8 Nm	x1
3R-333-03	Allen key, 3 mm	x1
45600-N039	Allen key, 4 mm	x1



### Vice 3R-294.2

Mounts on 3R-237.2, 3R-292.66HP, 3R-294, a ruler in the 3Ruler system or Macropallet 54x54.

- Hardened
- Clamping range 0-50 mm
- Recommended maximum workpiece weight 5 kg
- Tightening torque 3 Nm
- Weight 1.2 kg



### Vice 3R-294.1

Mounts on 3R-237.2, 3R-292.12, 3R-292.66HP, 3R-294 or a ruler in the 3Ruler system.

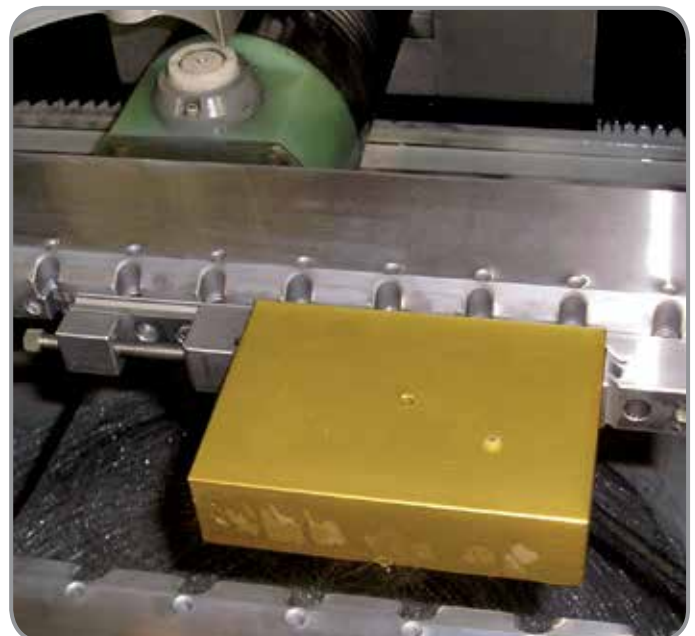
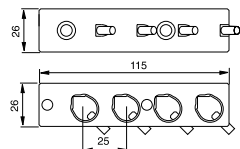
- Clamping range 0-17 mm
- Recommended maximum workpiece weight 2.5 kg
- Tightening torque 3 Nm
- Weight 0.5 kg



### Multiple holder 3R-294.6

For mounting of four workpieces Ø5-13 mm at the same time. Mounts on 3R-237.2, 3R-292.66HP, 3R-294 or a ruler in the 3Ruler system.

- Tightening torque 3 Nm
- Weight 0.6 kg



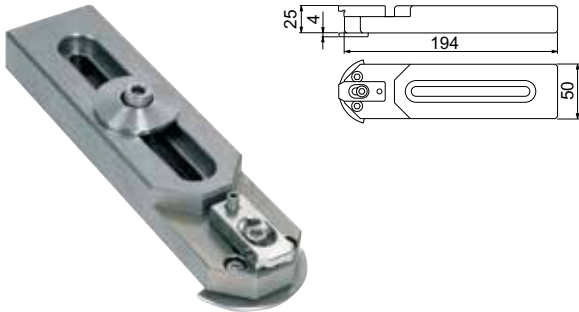


## The 3Ruler ruler system

### Support 3R-261.1

For mounting directly on the machine table.

- Adjustable length 35-135 mm
- Includes 5 mm spacer for collision free set-up
- Recommended maximum workpiece weight 20 kg
- Weight 1.5 kg



### Clamps 3R-A239.1

Clamps for clamping rulers on reference elements.

- Supplied in sets of 2.



### Zero-line support tab 5 mm 3R-239.22

- Hardened
- Recommended maximum workpiece weight per stop 50 kg
- Supplied in sets of 2.



### Zero-line support tab 5 mm 3R-239.26

- Hardened
- Recommended maximum workpiece weight per stop 50 kg
- Supplied in sets of 2.



### Miniclamps 3R-239.24

For clamping thin workpieces. To be fitted together with zero-line support tab.

- Recommended maximum workpiece weight per stop 1 kg
- Supplied in sets of 2.



### Clamps 3R-A239

Clamps of aluminium for mounting a ruler directly on the machine table without reference elements.

- Supplied in sets of 2, with M8 screw and washers
- Weight per set 0.3 kg





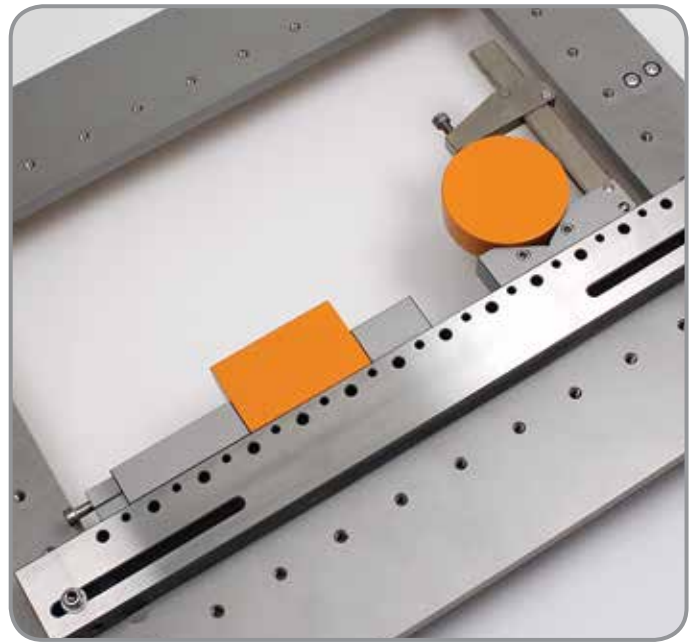
## The EconoRuler system

The EconoRuler have been developed for clamping medium-sized and large work pieces in machines with a parallel or U-shaped machine table, as well as in machines with a frame table.

A comprehensive range of accessories enables a wide variety of applications.

### Advantages

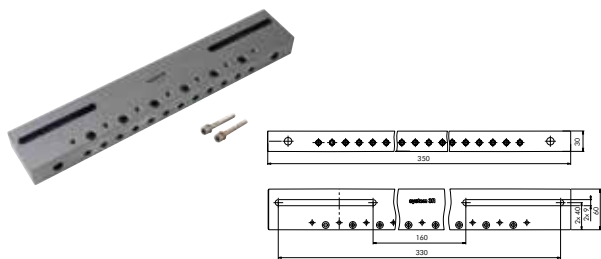
- Robust design
- Flexible – use the rulers in pair or alone, depending on your set-up
- Highest cutting rates – locate the work piece on the machine zero line
- Collision free set-up – use spacers under the rulers
- Fitting wide range of machine tables
- Enables usage of various work piece sizes



### Ruler 3R-209-350

Universal ruler for mounting directly on the machine table.  
Fits machine tables with hole pitch 160-330 mm.

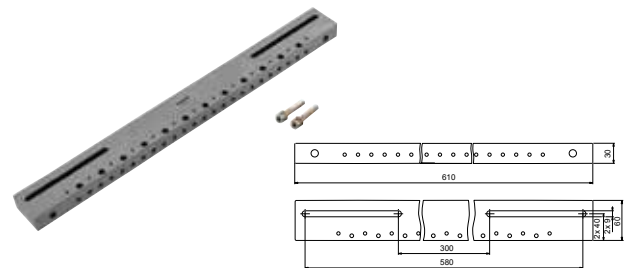
- Dimensions: 350x60x30 mm
- Clamping range: 160-330 mm
- Material: Ramax
- M8 screws and washers supplied.



### Ruler 3R-209-610

Universal ruler for mounting directly on the machine table.  
Fits machine tables with hole pitch 300-580 mm.

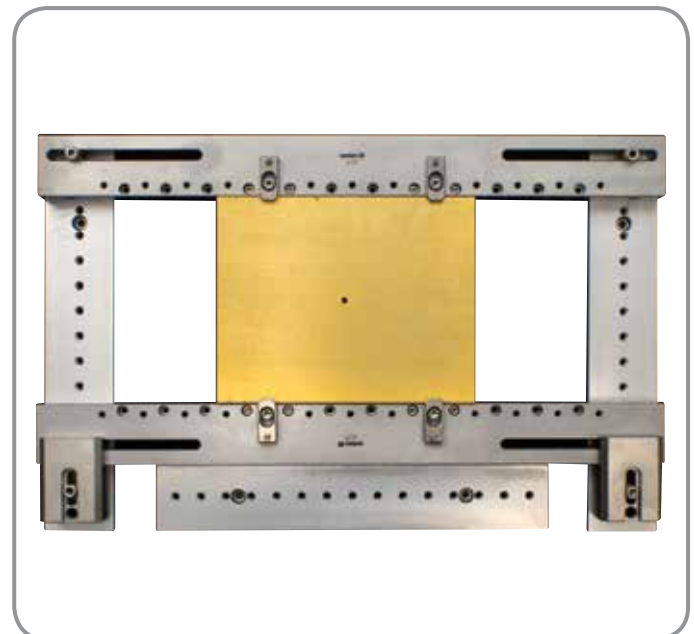
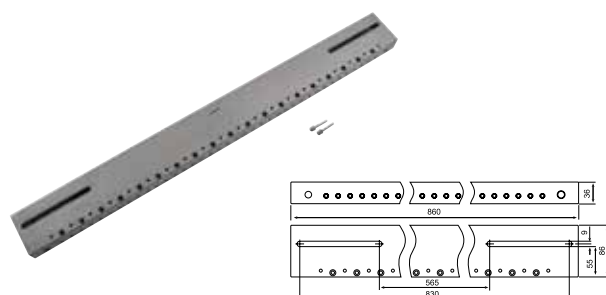
- Dimensions: 610x60x30 mm
- Clamping range: 300-580 mm
- Material: Ramax
- M8 screws and washers supplied



### Ruler 3R-209-860

Universal ruler for mounting directly on the machine table.  
Fits machine tables with hole pitch 565-830 mm.

- Dimensions: 860x86x36 mm
- Clamping range: 565-830 mm
- Material: Ramax
- M8 screws and washers supplied



## EconoRuler kits

### EconoRuler kit

Kit for clamping rectangular workpieces.



#### 3R-209-350.1

3R-209-350	Ruler, 350 mm	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	+ Accessories	

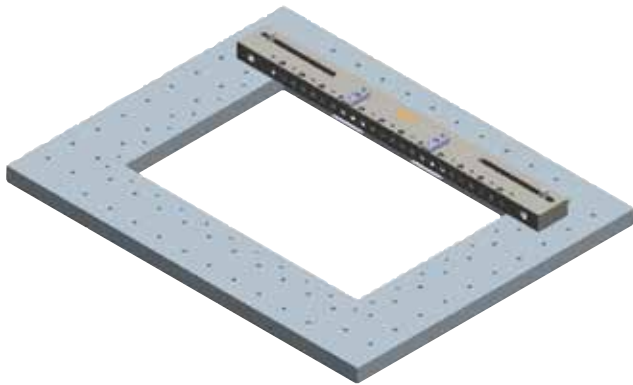
#### 3R-209-610.1

3R-209-610	Ruler, 610 mm	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	+ Accessories	

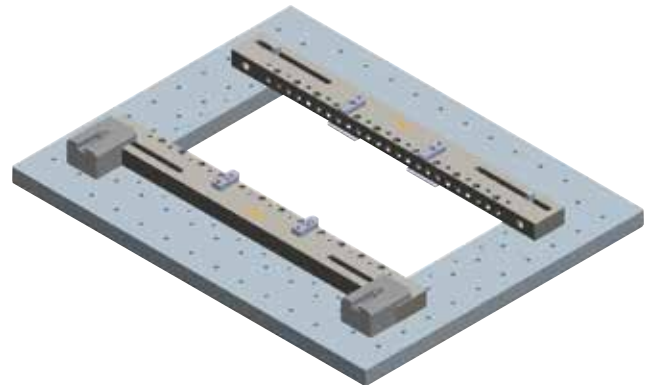
#### 3R-209-860.1

3R-209-860	Ruler, 860 mm	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	+ Accessories	

Application example: EconoRuler kit 3R-209-XXX.1



Application example: EconoRuler kit 3R-209-XXX.2



### EconoRuler kit

Kit for clamping rectangular workpieces.



#### 3R-209-350.2

3R-209-350	Ruler, 350 mm	x2
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	Clamps	x2
	+ Accessories	

#### 3R-209-610.2

3R-209-610	Ruler, 610 mm	x2
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	Clamps	x2
	+ Accessories	

#### 3R-209-860.2

3R-209-860	Ruler, 860 mm	x2
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	Clamps	x2
	+ Accessories	

## EconoRuler kits

### EconoRuler kit

Kit for clamping rectangular workpieces.



#### 3R-209-350.3

3R-209-350	Ruler, 350 mm	x1
3R-261.1	Support	x2
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	+ Accessories	

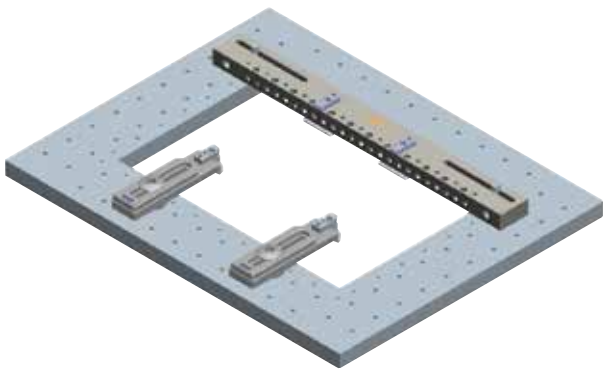
#### 3R-209-610.3

3R-209-610	Ruler, 610 mm	x1
3R-261.1	Support	x2
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	+ Accessories	

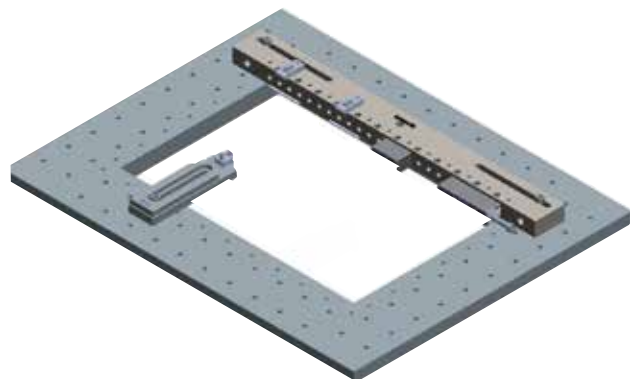
#### 3R-209-860.3

3R-209-860	Ruler, 860 mm	x1
3R-261.1	Support	x2
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	+ Accessories	

Application example: EconoRuler kit 3R-209-XXX.3



Application example: EconoRuler kit 3R-209-XXX.4



### EconoRuler kit

Kit for clamping rectangular workpieces.



#### 3R-209-350.4

3R-209-350	Ruler, 350 mm	x1
3R-261.1	Support	x1
3R-209.1	Ruler vice, Econo	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	+ Accessories	

#### 3R-209-610.4

3R-209-610	Ruler, 610 mm	x1
3R-261.1	Support	x1
3R-209.1	Ruler vice, Econo	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	+ Accessories	

#### 3R-209-860.4

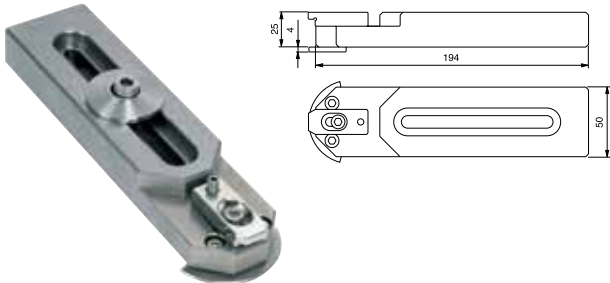
3R-209-860	Ruler, 860 mm	x1
3R-261.1	Support	x1
3R-209.1	Ruler vice, Econo	x1
3R-333-03	Allen key, 3 mm	x1
3R-333-05	Allen key, 5 mm	x1
	+ Accessories	

## EconoRuler accessories

### Support 3R-261.1

For mounting directly on the machine table.

- Adjustable length 35-135 mm
- Recommended maximum workpiece weight 20 kg
- Includes 5 mm spacer for collision free set-up
- Weight 1.5 kg



### Ruler vice, Econo 3R-209.1

Movable jaws of SuperVice design provide a wide clamping range for rectangular workpieces. Detachable Z-support tabs ensure simple setting-up.

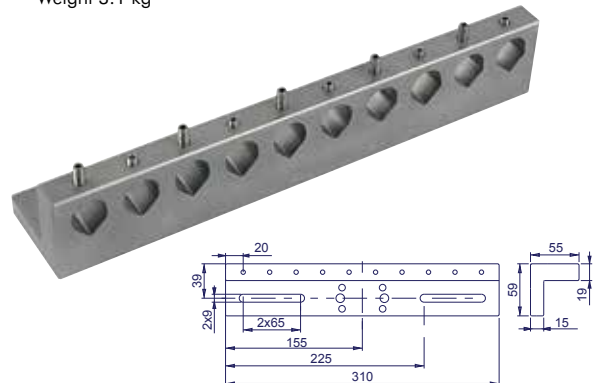
- Hardened
- Recommended maximum workpiece weight with one vice: 15 kg
- Recommended maximum workpiece weight with two vices: 200 kg
- Tightening torque 8 Nm
- Weight 0.7 kg



### Multiple holder, Econo D-30214

Multiple holder 220 for ten workpieces Ø2-20 mm at the same time. Mount direct on table or with a levelling head.

- C-C = 30 mm
- Squareness 0,1 mm/100 mm
- Weight 3.1 kg



### Vee holder, Econo 3R-209.3

For clamping round workpieces. To be mounted on EconoRuler

- Hardened
- Clamping range: Ø25-130 mm
- Weight 0,9 kg



### Universal holder, Econo 3R-209.33

For clamping round workpieces. To be mounted on EconoRuler.

- Hardened
- Clamping range Ø 15-110 mm or 120 x 120 mm
- Weight 1,5 kg



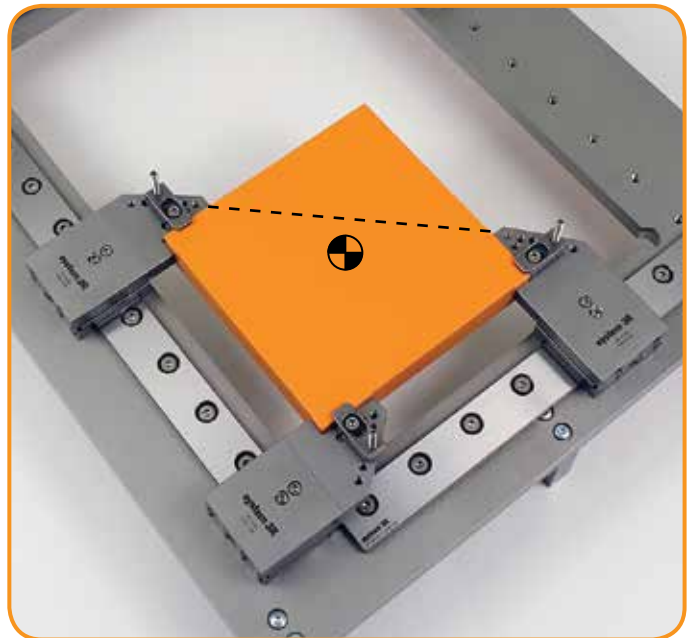
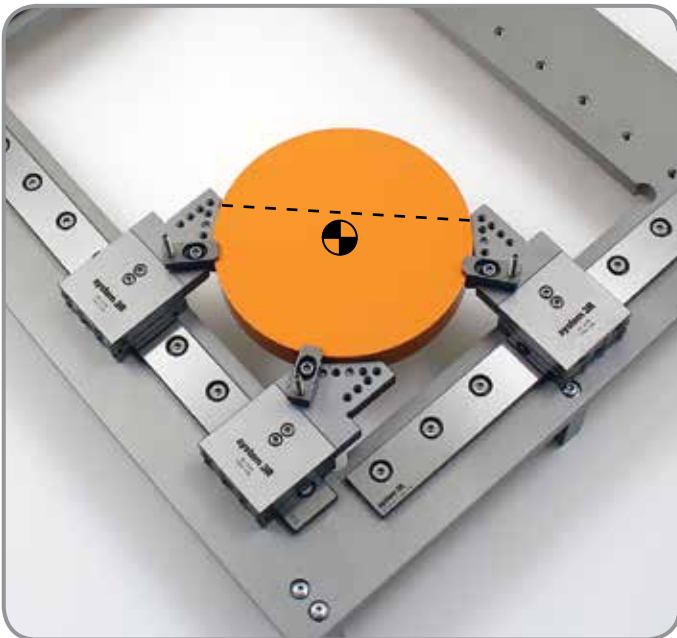
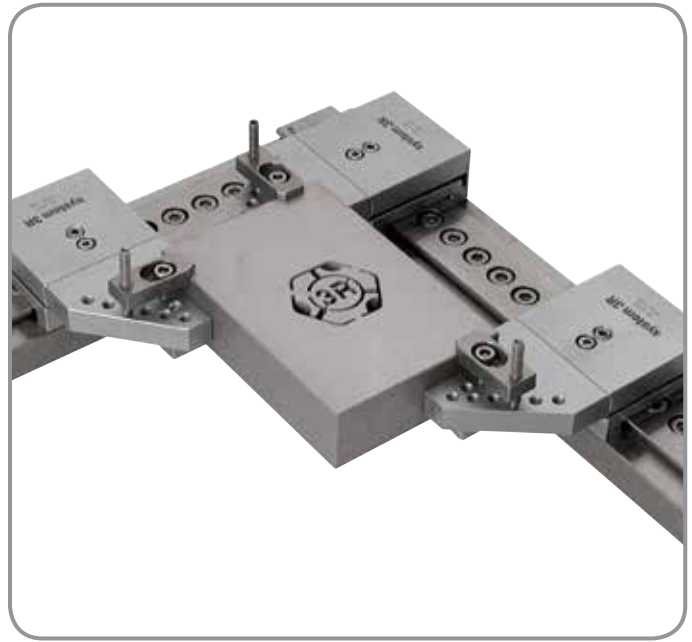


### 3P Three-point mounting

Minimal risk of collision with three-point clamping. 3P is equally well suited to rectangular or round workpieces. Clamping takes only a few seconds.

3P has been developed for medium-sized and large workpieces in wire-EDM machines with an L-shaped or U-shaped machine table, as well as in machines with a frame table. The holders are matched to the size of the workpiece by sliding them along the reference element. The holders can be adjusted vertically.

- *Can be aligned in the machine*
- *Gives great flexibility*
- *Excellent value for money*
- *Easy cleaning*
- *Mounting on or above the zero line of the machine*



#### Holder set 3R-218S

Set of three holders and fixing parts.

- Reversible jaws
- Holder length 70/23.5 mm.
- Recommended maximum workpiece weight 60 kg
- Weight per set 3 kg





## Presetting and inspection

Make efficient use of machine time.

Machine can be used either for active machining or for non-productive setting-up operations on an idle machine.

You can optimise machine capacity by presetting away from the machine in a presetting station, while the machine is actively working on another workpiece.

So – preset away from the machine, lift in the preset package, secure it with a few simple manual operations, press the start button and the wire EDM machine is working again – One Minute Set-up.

System 3R's presetting stations are constructed on a modular system, where the customer chooses a suitable packet of prepared "measuring stones", for which the customer chooses the necessary chuck/reference elements in order to match the installation on the wire EDM machine table, as well as a pneumatic control unit if required.



Pneumatic chuck for Macro  
3R-602.10-1



Manual chuck for Macro  
3R-602.27



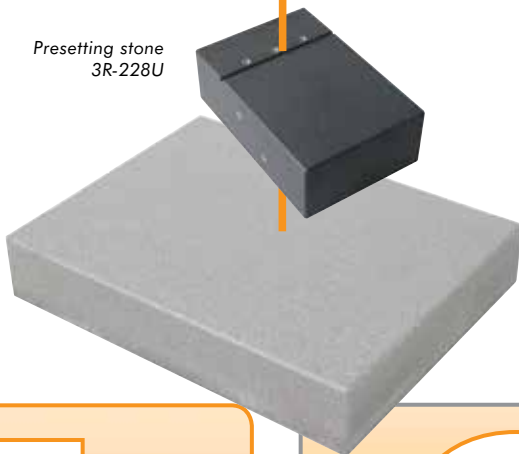
Reference element  
3R-200.1J-U



Pneumatic chuck for MacroTwin  
3R-602.12-1



Presetting stone  
3R-228U



Presetting station  
3R-228.1



Actuator  
3R-611.4



## Presetting and inspection

### Presetting stone 3R-228J

Stone with three ground faces, a reference element and a clearance stone. Together with a surface plate and a dial indicator, 3R-228J is an excellent presetting tool for a modest outlay.

- Dimensions 150x110x80 mm
- Weight 5.4 kg



### Presetting stone 3R-228U

Mounting stone with bushings and holes for mounting chuck/reference elements. Use together with existing measuring machine or surface plate and a dial indicator.

- Dimensions 300x200x100 mm



### Presetting station 3R-228.1

Surface plate with reference stops, a mounting stone with bushings and holes for mounting a chuck/reference element and through holes for mounting on the surface plate, and a check stone. A dial indicator is required.

- Dimensions 500x300 mm



### Presetting kit, Econo 3R-228E & 3R-228EI

Mounting stone with bushings and holes for mounting chuck/reference elements. Use together with existing measuring machine or surface plate.

*Note: 3R-228EI delivers with dial indicator measuring inch.*

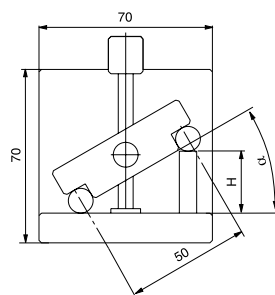
- Dimensions 300x200x100 mm
- Presetting stone
- Measuring stand
- Dial indicator (measures in mm)



### Sine ruler 3R-216

With magnetic attachments for setting angles on swivelling elements. Angles are set with gauge blocks.

- Measuring length 50 mm
- Weight 1.2 kg

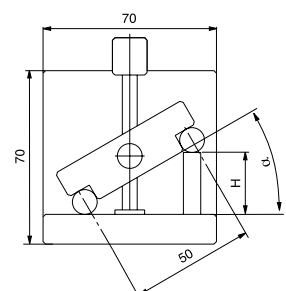


$$\sin \alpha = \frac{H}{50}$$

### Sine ruler, Macro 3R-216.6

For setting angles on swivelling elements. Angles are set with gauge blocks.

- Measuring length 50 mm
- Weight 1.4 kg



$$\sin \alpha = \frac{H}{50}$$

## Presetting and inspection

### Master 3R-206.10

Master for horizontal Macro chucks. One long side ground to the Macro references. Supplied with engraved dimensions in the X-, Y- and Z-directions.

- Supplied with drawbar 3R-605.10
- For automatic changing, 3R-WP1 must be added.



### Master 3R-606.2

Master for determining the position of vertical Macro chucks. Cylinder ground to the Macro references. Supplied with engraved dimensions in the X-, Y- and Z-directions.

- Supplied without drawbar



### Air unit 3R-611.4

Unit for operation of pneumatic chucks. Two positions – open/closed.



### Air unit 3R-611.46

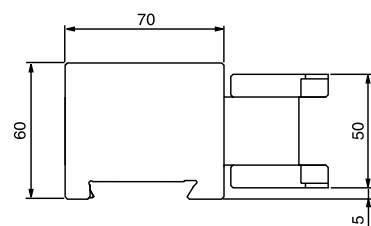
Unit for operation of pneumatic chucks. Three functions – open/neutral/closed.



### Wire alignment unit 3R-220.3

Unit with double-insulated reference contacts for wire alignment.

- For Mitsubishi machines
- Four wires in the cable
- Weight 2.2 kg



## Rotating spindles and accessories

Really small parts that are difficult to produce in lathes or grinders can usefully be wire-EDMed using a rotating spindle on the machine table.

### Rotating spindle 3R-6.600-VHS

For clamping in a horizontal Macro chuck. Flushing via the spindle or an external flushing connection.

- Control unit included
- Required drawbar 3R-605.2RS
- Rust-resistant
- Immersible
- Speed range 60-1500 rev/min
- Maximum workpiece weight 2 kg
- Maximum flushing pressure through the chuck 15 bar
- Maximum external flushing pressure 40 bar
- Weight 9.5 kg



### Rotating spindle 3R-6.300-EHS16

For clamping in a vertical Macro chuck. Flushing via the spindle or an external flushing connection. Recommended collets – Balzer EHS16, Regofix ER16 or Tecnopinz ETS16.

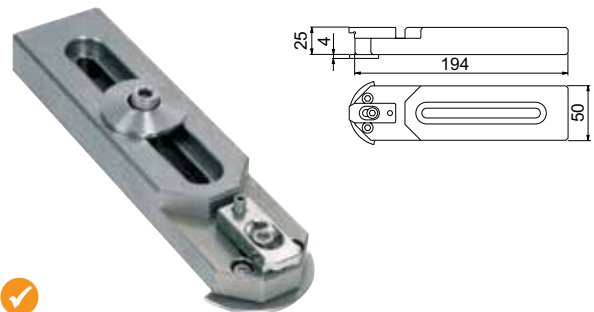
- Control unit included
- Drawbar depends on chosen chuck
- Rust-resistant
- Immersible
- Speed range 60-2000 rev/min
- Maximum flushing pressure through the chuck 15 bar
- Maximum external flushing pressure 80 bar
- Weight 10 kg



### Support 3R-261.1

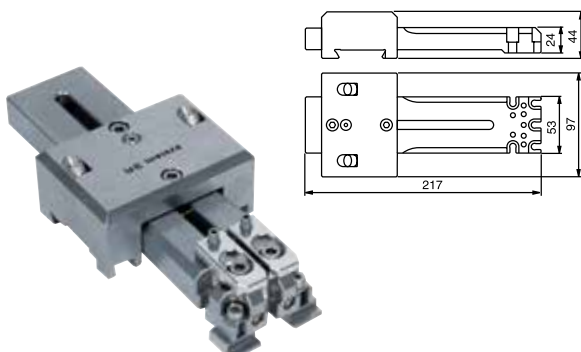
For mounting directly on the machine table.

- Adjustable length 35-135 mm
- Includes 5 mm spacer for collision free set-up
- Recommended maximum workpiece weight 20 kg
- Weight 1.5 kg



### Adjustable support WEDM 3R-261

- Adjustable length 38-138 mm
- Adjustable height 0-0.2 mm
- Recommended maximum workpiece weight 20 kg



### Expanding mandrel 3Refix 3R-901-10RS

*Note: When positioning with 3Refix mandrels – always tighten the expanding mandrel in the R<sup>0</sup> hole first.*

- 3Refix Ø10 mm
- Rust-resistant
- Recommended tightening torque 4 Nm
- Supplied singly
- Weight 0.05 kg



## Basic equipment, ICS

### ICS Zeroline tooling

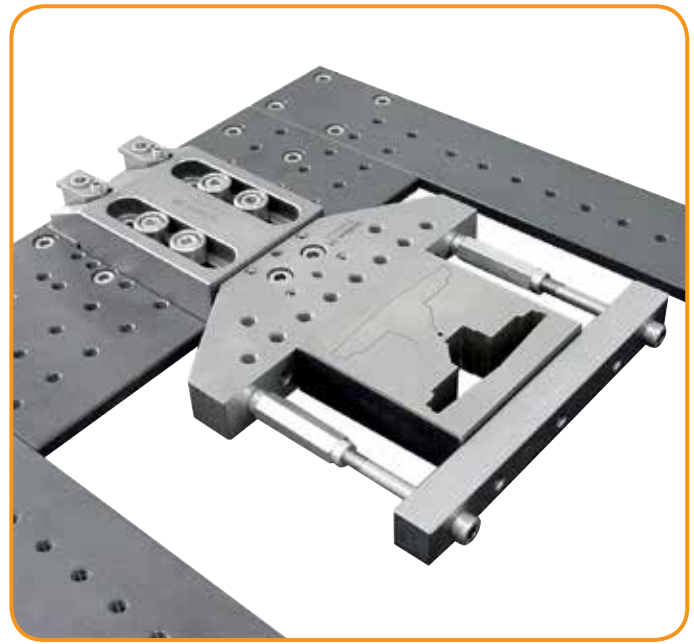
is designed for fast, easy and universal use directly on the wire EDM machine table at the zeroline. ICS Zeroline can be mounted and set up very quickly and can be reconfigured or dismantled just as easily and quickly, regardless of whether it is designed as a clamping support, levelling head or Mecarail.

The ICS Zeroline range also features adapter elements allowing the user to use the entire range of ICS and Unimatic clamping elements for direct table mounting.

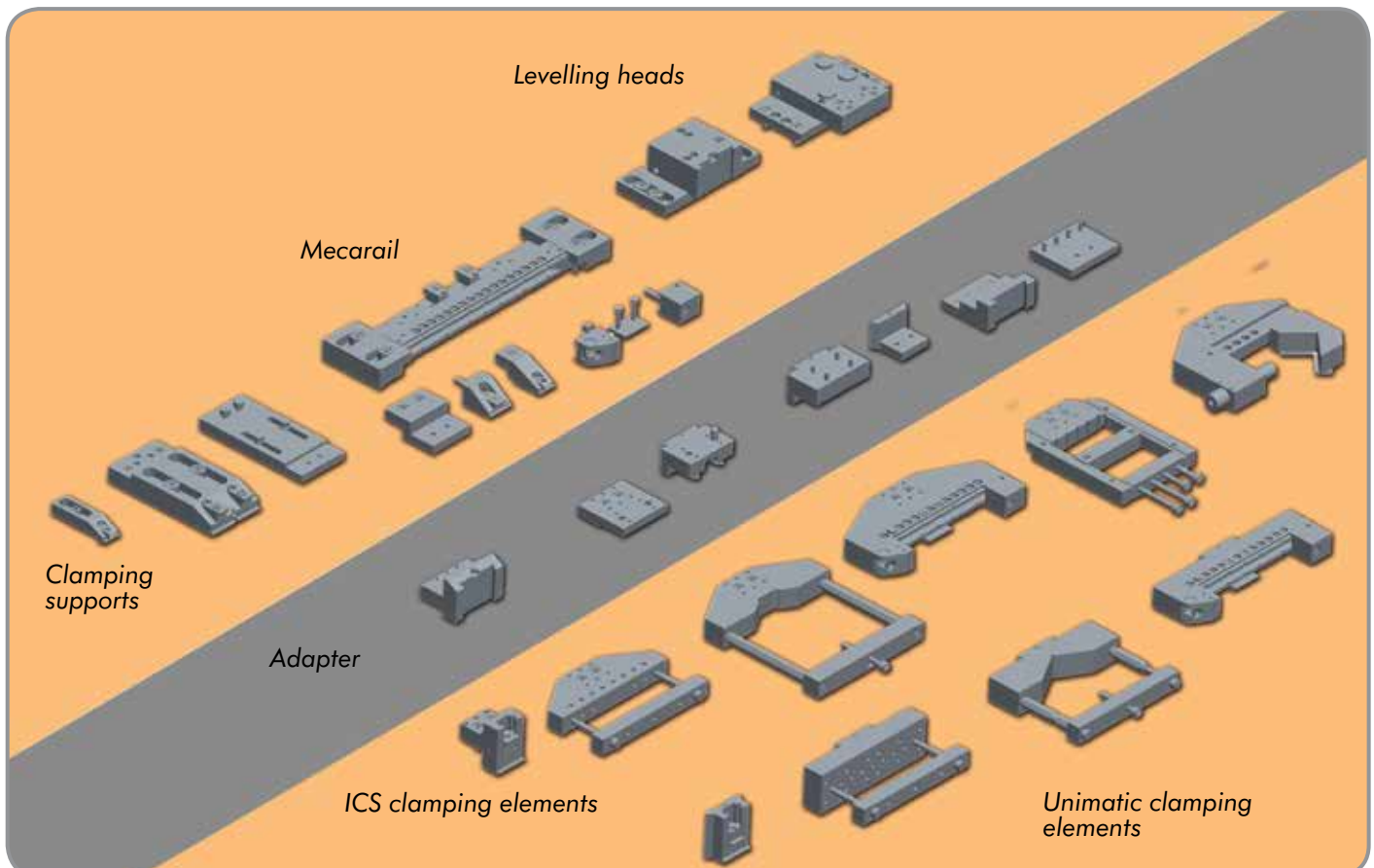
### Adapters and adaptation elements

allow the user to utilise the entire diversity and all the strengths of the 3R clamping elements on his or her machine configuration.

Manual ICS and Unimatic adapters offer the option of mounting the clamping elements directly on Zeroline tables and nevertheless utilising the advantage of the levelling head.



## Overview ICS Zeroline System





## ICS Zeroline

### Set ICS Zeroline Mini S 150 500

consisting of:

C 666 020	Clamping support 300	x1
C 666 040	Clamping support 180	x1
N 150 000	Support lips " +4"	x4
C 666 022	Support lips "0"	x4
S 150 350	Set screws/prolongations M8	x1
N 153 010	Bushings M8 (inkl. screws)	x6
N 153 020	Bushings M6 (inkl. screws)	x6
E 100 007	Set hexagon Allen wrench	x1

Set packed in case



### Set ICS Zeroline Go! S 150 550

consisting of:

C 666 020	Clamping support 300	x1
C 666 040	Clamping support 180	x1
C 642 050	Flange 26/200	x1
N 150 000	Support lips " +4"	x4
C 666 022	Support lips "0"	x4
S 150 350	Set screws/prolongations M8	x1
N 153 010	Bushings M8	x6
E 100 007	Set hexagon Allen wrench	x1

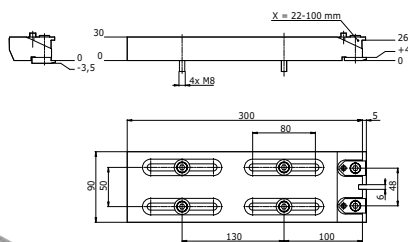
Set packed in case



### ICS Zeroline clamping support 300 C 666 020

Clamping support for the direct installation on WEDM machine table.

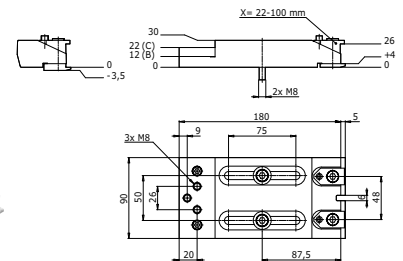
- Support lips „+4“ and „0“
- Recommended maximum workpiece weight 50 kg in application as support element
- Weight 5.3 kg



### ICS Zeroline clamping support 180 C 666 040

Clamping support for the direct installation on WEDM machine table.

- Support lips „+4“ and „0“
- ICS adaptation B&C for the installation of ICS clamps & holders
- Recommended maximum workpiece weight 50 kg in application as support element
- Weight 3.1 kg



### Set GFAC CUT 1000 S 150 560

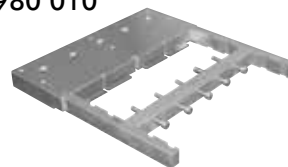
consisting of:

C 666 060	Clamping support 155	x1
C 557 300	Vertex 1 clamping bar	x1
	Set screws/prolongations M8	x1
E 100 007	Set hexagon Allen wrench	x1

Set packed in case



### Clamping Frame Zeroline RoFlex C 980 010

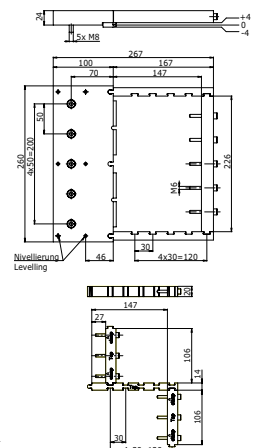
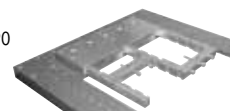


### Expansion Set Zeroline RoFlex C 980 090



### Complete Set Zeroline RoFlex S161 000

C 980 010 + C 980 090





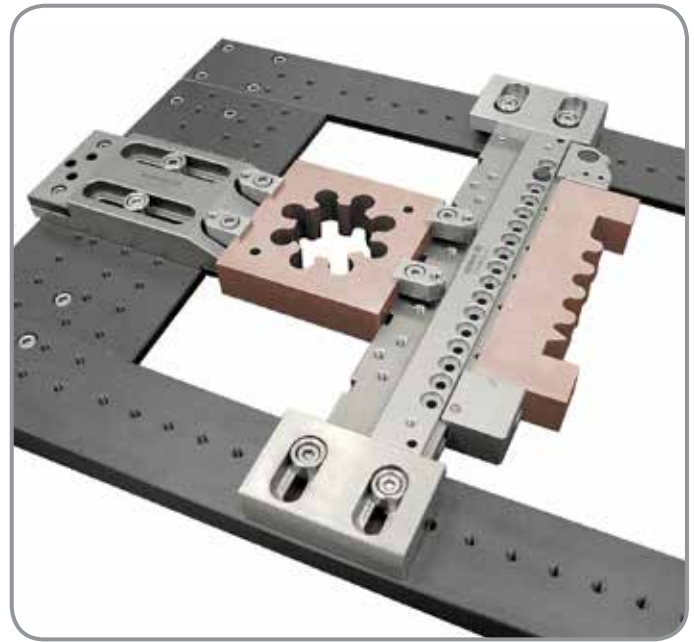
## ICS Zeroline

### ICS Zeroline Mecarail

are available in various sizes, matched to the wire EDM machine tables.

The brackets and screws required for attachment on the machine table are included in the scope of delivery.

Please use the selection table on our website ([www.system3r.ch](http://www.system3r.ch)) to determine the ICS Zeroline Mecarail specific to your machine or state the make of machine and type when ordering.



#### ICS Zeroline Mecarail C 558 XXX

Double sided clamping bar, including brackets.

Length	< 570	571 - 750	> 750	
Width	70	75	75	
Height	30	35	40	
Length	< 380	< 480	< 680	< 750
Number of lips/brackets	2	3	4	6



#### Set ICS Zeroline Maxi S 206 4XX

\* When ordering, please state the machine type as well as X or Y axes.

consisting of:

C 558 0xx	Standard Mecarail *	1x
S 150 000	Set Mecarail-Vice	1x
S 150 310	Set base plates "+4"	1x
E 100 007	Set hexagon Allen wrench	1x
Set packed in case (Mecarail in carton)		



#### Set ICS Zeroline Mega

consisting of:

S 150 360	Set ICS Zeroline Mega Accessories
C 558 XXX	ICS Zeroline Mecarail

#### Set ICS Zeroline Mega Accessories S 150 360

consisting of:

S 150 000	Set Mecarail-Vice	1x
S 150 310	Set base plates "+4"	1x
C 666 040	ICS Zeroline clamping support 180	1x
C 860 000	Set Double clamping M8	1x
E 100 007	Set hexagon Allen wrench	1x



#### ICS Zeroline Mecarail C 558 XXX

Double sided clamping bar, including brackets.



Example of order  
for CUT 2000 X-axis:  
1x S 150 360  
1x C 558 030

## ICS Zeroline

### ICS Adaptation A, B or C

Adapter to ICS Zeroline Mecarail C 558 xxx for the adaptation of ICS clamping elements

- Weight approx. 0.7 kg

#### C 456 650

- Adaptation to all clamping elements ICS A
- Adaptation height 7 mm (ICS A)

#### C 456 660

- Adaptation to all clamping elements ICS B
- Adaptation height 12 mm (ICS B)

#### C 456 670

- Adaptation to all clamping elements ICS C
- Adaptation height 22 mm (ICS C)



### ICS Clamp C 552 620

The main application of the ICS clamp is fixing small workpieces of different dimensions.

- Functional height workpiece on „0 mm“, with intermediate plate "+4"
- Clamping range 0 – 10 mm
- Maximum workpiece weight 3 kg, not for overhung clamping!
- Adaptation to all ICS C 557 xxx
- Dimensions 80 x 28 mm
- Weight 0.2 kg



### Mecarail Clamp "+4" C 552 600

The main application of the ICS clamp is fixing workpieces of different dimensions.

- Functional height workpiece on „+4 mm“
- Clamping range 0 – 20 mm
- Maximum workpiece weight 6 kg, not for overhung clamping!
- Adaptation to all Mecarail C 558 xxx
- Dimensions 40 x 55 x 30 mm
- Weight 0.2 kg



### Mecarail Clamp "0" C 552 610

The main application of the ICS clamp is fixing workpieces of different dimensions.

- Functional height workpiece on „0 mm“
- Clamping range 0 – 20 mm
- Maximum workpiece weight 6 kg, not for overhung clamping!
- Adaptation to all Mecarail C 558 xxx
- Dimensions 40 x 55 x 34 mm
- Weight 0.2 kg



### Mecarail Vice S 150 000

Jaw set for Mecarail; with guide; for horizontal parallel clamping.

- Functional height 30 mm
- Maximum workpiece weight 15 kg
- Maximum workpiece dimensions 100 x 120 x 160 mm
- Adaptation to all Mecarail C 558 xxx
- Overall height 30 mm
- Weight 0.8 kg



### Mecarail Twinvice S 149 900

Twin-Jaw set for Mecarail; with guide; for horizontal parallel clamping.

- Functional height 30 mm
- Maximum workpiece weight 15 kg
- Maximum workpiece dimensions 100 x 120 x 160 mm
- Adaptation to all Mecarail C 558 xxx
- Overall height 30 mm
- Weight 1.2 kg



### Mecarail V-block C 597 560

Workpiece carrier for round parts; for the use on Mecarail.

- Functional height 30 mm
- Clamping range Ø20 – 150 mm
- Maximum workpiece weight 15 kg
- Maximum workpiece dimensions Ø150 x 100 mm
- Adaptation to all Mecarail C 558 xxx
- Dimensions 210 x 53 mm
- Weight 2.8 kg



### Set base plates "+4" S 150 310

4 mm baseplates for collision-free clamping of workpieces on Mecarails .

- Weight 0.2 kg

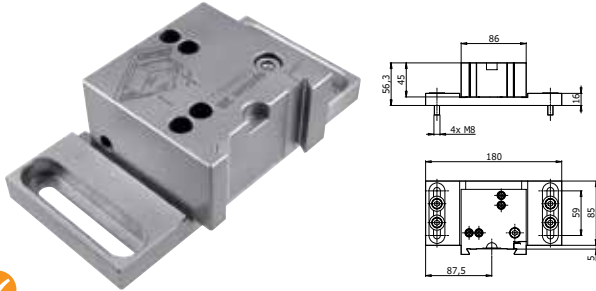


## ICS Zeroline

### Unimatic Adapter manual with adjusting function C 950 090

Zeroline table adapter manual with adjusting function, for all Unimatic clamping elements.

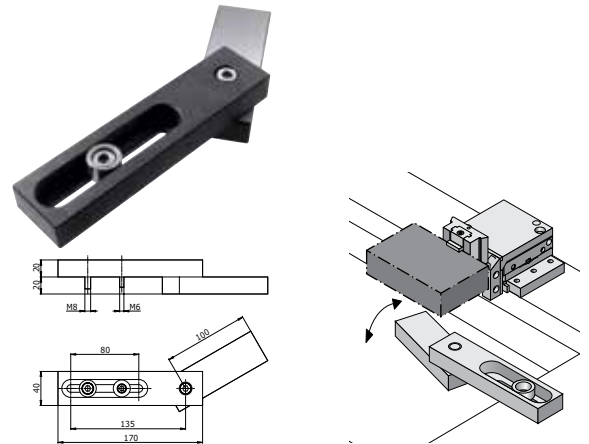
- Functional height 45 mm
- Adjustment range  $\pm 0.2$  mm for all three axes
- Weight 3.8 kg



### Unimatic Reference ruler C 960 440

Tool for setting workpieces to Zeroline on machine tables.

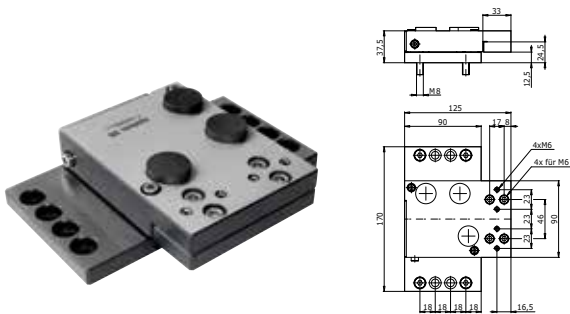
- Weight 1.5 kg



### ICS Levelling head C 458 000

Levelling head for direct mounting on Zeroline tables. Adaptation elements for Unimatic and all ICS clamping elements available.

- Adjustment range approx.  $\pm 1.0$  mm for all three axes
- Weight 3.4 kg



### ICS Adapter A, B or C

Adapter to ICS levelling head C 458 000 and C 458 010 for the adaptation of ICS clamping elements.

- Dimensions 90 x 73 mm

#### C 458 040

- ICS A, Adaptation height 7 mm
- Weight 0.4 kg

#### C 458 060

- ICS B, Adaptation height 12 mm
- Weight 0.8 kg

#### C 458 080

- ICS C, Adaptation height 22 mm
- Weight 0.9 kg



### Unimatic Guide C 950 290

Adapter to ICS levelling head C 458 000 and C 458 010 for the adaptation of Unimatic clamping elements.

- Functional height 40 mm
- Dimensions 90 x 81 mm
- Weight 1.2 kg





## ICS Guide Elements

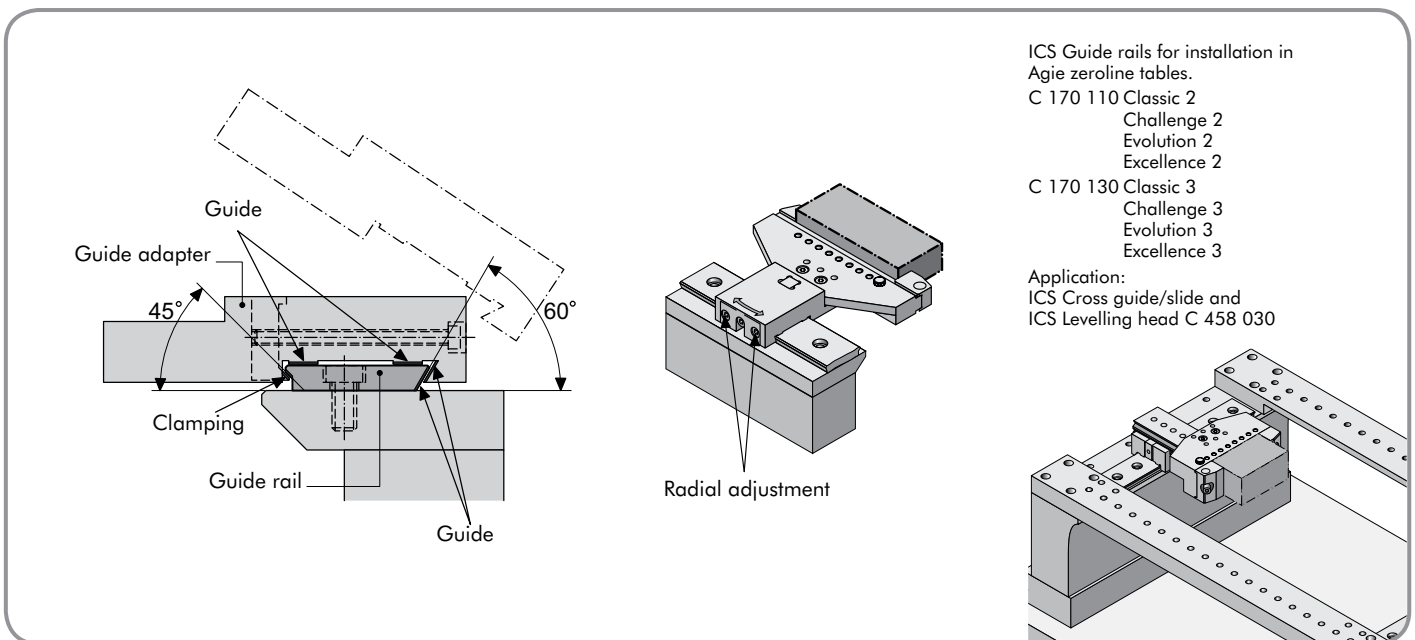
### ICS Guide Rails

Mounting hardened ICS guide bars on the Zeroline is a basic approach for a wide variety of clamping requirements and all ICS clamping elements like ICS clamps and holders, ICS guides and levelling units as well as ICS cross guides and slide elements.

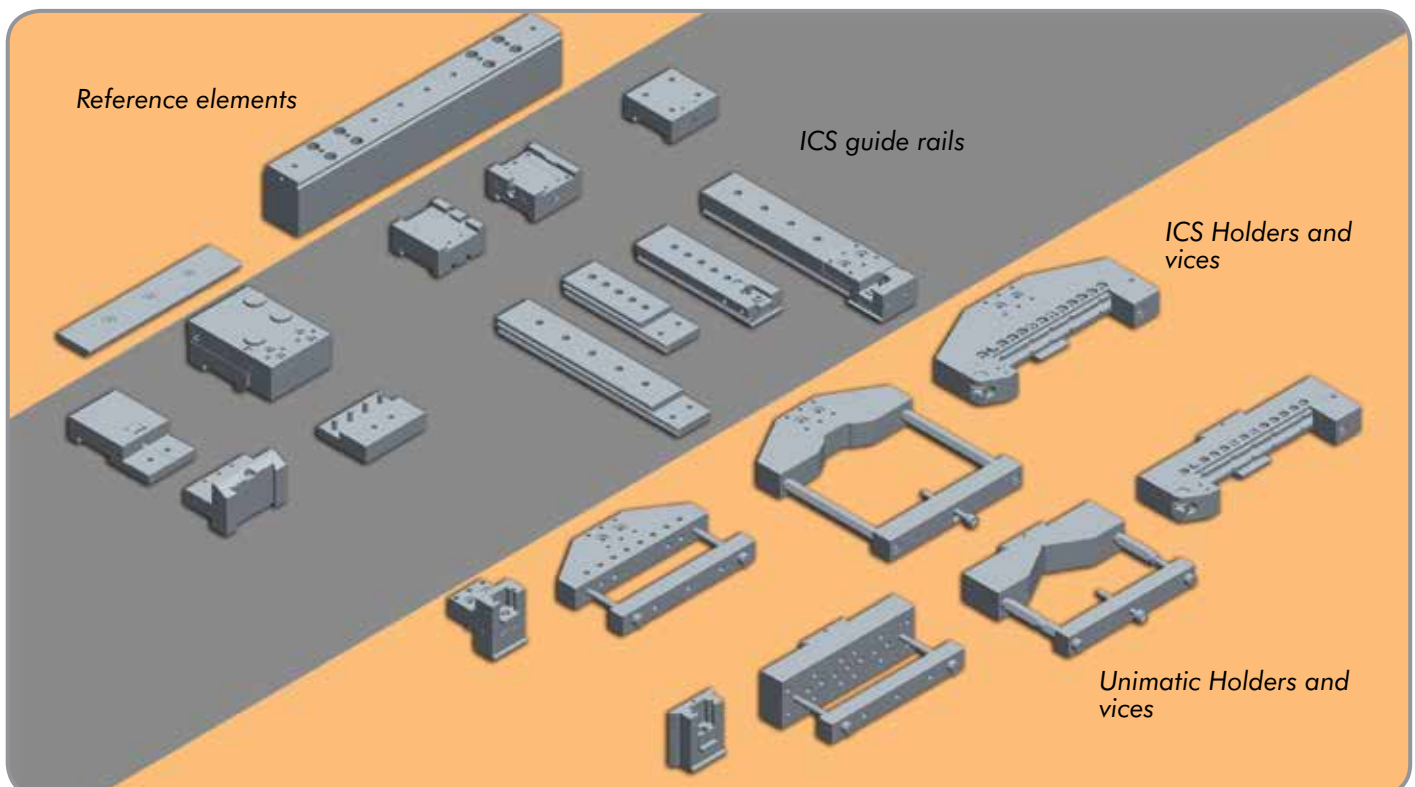
Clamping and exact adjustment of the workpieces in the required position can be made directly in the WEDM machine or at the presetting station with control elements, which simulate a machine base.

The alignment of the clamping elements and thus also the workpieces are ensured by dovetail adapters. Since the guiding and the clamping surfaces are not identical, any clamping-related wear will not affect positioning accuracy.

Please use the selection table on our website ([www.system3r.ch](http://www.system3r.ch)) to determine the ICS guide rails specific to your machine or state the make of machine and type when ordering.



### Overview

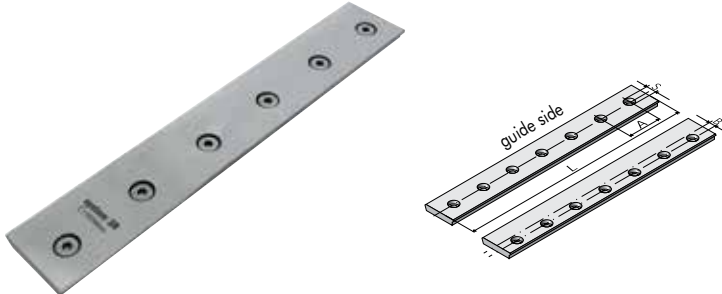


## ICS Guide Elements

### ICS Guide rail C 170 XXX

Guide element for the installation of ICS elements like ICS guide adapter and ICS levelling head.

- Dimensions 48.5 x 8 mm
- Weight depending on the length, approx. 0.26 kg/100 mm



Item no.	L	A	B	S
C 170 000	230	50	-	M8 x5
C 170 050	230	50	5	M8 x5
C 170 110	280	40	-	M8 x7
C 170 130	380	42,5	-	M8 x9
C 170 150	220	25	-	M8 x9
C 170 200	220	25	5	M8 x9
C 170 300	350	50	-	M8 x7
C 170 600	350	50	5	M8 x7
C 170 650	120	25	-	M8 x4
C 170 750	410	50	5	M8 x7
C 170 760	288	50	5	M8 x6
C 170 770	348	50	2	M8 x7
C 170 800	320	50	5	M8 x6
C 170 840	298	50	4	M8 x6
C 170 850	320	50	7.5	M8 x6
C 170 950	338	50	5	M8 x7

### ICS Guide adapter A, B or C

Adapter with ICS adaptation for the use on ICS guide rails.

#### C 456 250

- ICS A (7/70)
- Functional height 7 mm
- Weight 1.1 kg

#### C 456 350

- ICS B (12/70)
- Functional height 12 mm
- Weight 1.3 kg

#### C 456 450

- ICS C (22/70)
- Functional height 22 mm
- Weight 1.5 kg

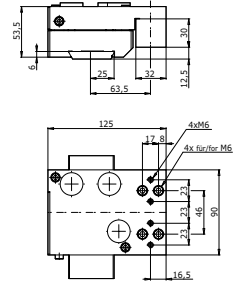


### ICS Levelling head C 458 010

Levelling head for the use on ICS guide rails.

Adaptation elements for Unimatic and all ICS clamping elements available.

- Functional height 55.5 mm
- Adjustment range approx.  $\pm 1.0$  mm for all three axes
- Weight 3.4 kg



### ICS Adapter A, B or C

Adapter to ICS levelling head C 458 000 and C 458 010 for the adaptation of ICS clamping elements.

- Dimensions 90 x 73 mm

#### C 458 040

- ICS A, adaptation height 7 mm
- Weight 0.4 kg

#### C 458 060

- ICS B, adaptation height 12 mm
- Weight 0.8 kg

#### C 458 080

- ICS C, adaptation height 22 mm
- Weight 0.9 kg



### Unimatic guide C 950 290

Adapter to ICS levelling head C 458 000 and C 458 010 for the adaptation of Unimatic clamping elements.

- Functional height 40 mm
- Dimensions 90 x 81 mm
- Weight 1.2 kg



## ICS Guide Elements

The time-proven ICS guide system, with the guide elements, offers various options for clamping workpieces in various positions.

The ICS guide elements are the connecting elements between the ICS beam and the ICS slides and the ICS slide clamping elements.

The ICS slides are the supports for the ICS clamping elements whose adapter faces are matched to series A, B and C.

The ground stop faces ensure a rectangular position of the bolted-on clamping elements.

### ICS Cross guide C 300 050

The connecting link between the ICS guide rail / ICS beam and the standard slide or the supporting clamping elements.

*Note: the outer faces of C 300 500 are ground at right angles to be used with limit stops.*

- Functional height 22 mm
- Weight 0.9 kg

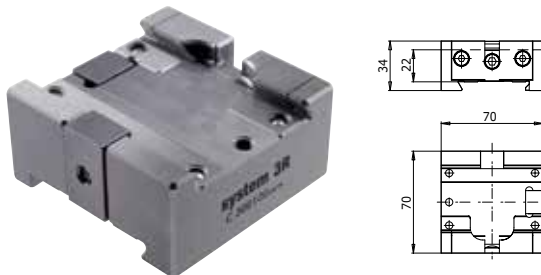


### ICS Cross guide universal C 300 100

The connecting link between the ICS guide rail / ICS beam and the standard slide or the supporting clamping elements.

*Note: the outer faces of C 300 100 are ground at right angles. The two adjusting screws allow radial adjustment.*

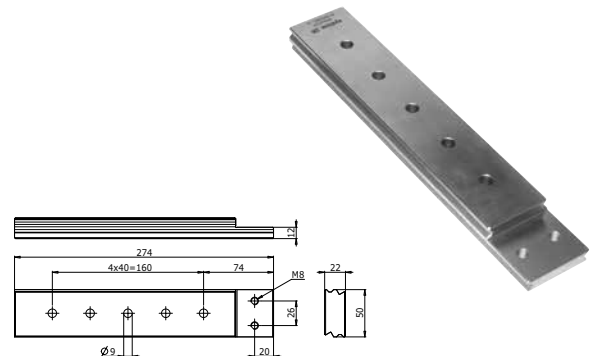
- Functional height 22 mm
- Weight 0.9 kg



### ICS Slide B (12/22) N 460 000

Support for the ICS clamping elements series B.

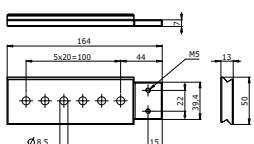
- Functional height 12 mm
- Weight 1.9 kg



### ICS Slide A N 460 700

Support for the ICS clamping elements series A.

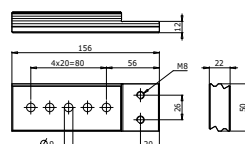
- Adaptation height 7 mm
- Weight 0.6 kg



### ICS Slide B N 460 100

Support for the ICS clamping elements series B.

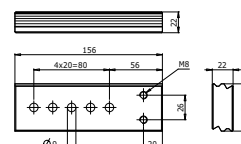
- Adaptation height 12 mm
- Weight 1.0 kg



### ICS Slide C N 460 300

Support for the ICS clamping elements series C.

- Adaptation height 22 mm
- Weight 1.2 kg



### ICS Support "+4" N 150 050

The ICS support "+4" can be fitted between the ICS slides B and C and clamping elements for collision-free clamping.



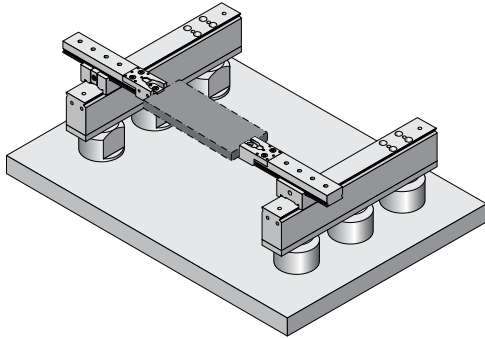
## ICS Guide Elements

### ICS Slide Clamping Elements

The main application of the ICS slide clamps is fixing workpieces of different dimensions in position from two sides.

Recommendation:

Work with opposite elements wherever possible.

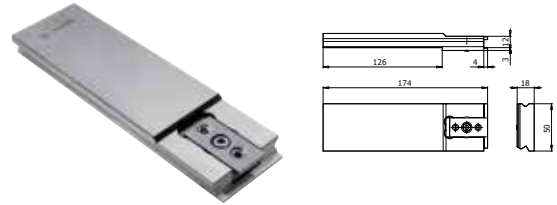


### ICS Slide clamp 12

#### C 550 500

The main application of the ICS clamp is fixing workpieces of different dimensions in position from two sides.

- Functional height 12 mm
- Weight 0.9 kg

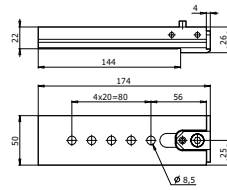


### ICS Slide clamp 26

#### C 550 900

The main application of the ICS clamp is fixing workpieces of different dimensions in position from two sides.

- Functional height 26 mm
- Weight 1.3 kg



### ICS Slide clamp 30

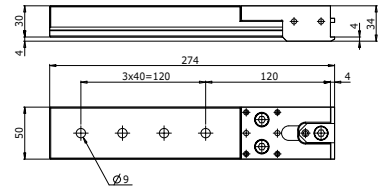
#### C 551 300

The main application of the ICS clamp is fixing workpieces of different dimensions in position from two sides.

consisting of:

C 551 350 ICS Clamping head D  
N 460 600 ICS Slide D

- Functional height 30 mm
- Weight 3.0 kg



### ICS Slide clamp 30 left

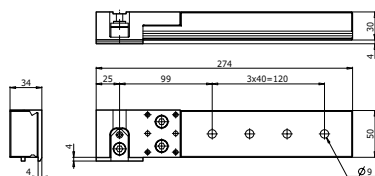
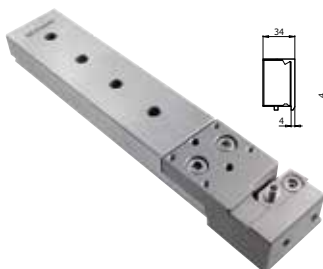
#### C 552 100

The main application of the ICS clamp is fixing workpieces of different dimensions in position from two sides.

consisting of:

C 552 150 ICS Clamping head D left  
N 460 600 ICS Slide D

- Functional height 30 mm
- Weight 3.0 kg



### ICS Slide clamp 30 right

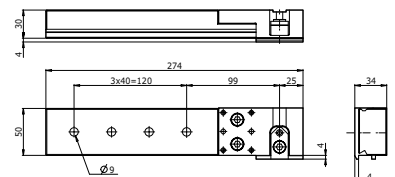
#### C 551 700

The main application of the ICS clamp is fixing workpieces of different dimensions in position from two sides.

consisting of:

C 551 750 ICS Clamping head D right  
N 460 600 ICS Slide D

- Functional height 30 mm
- Weight 3.0 kg

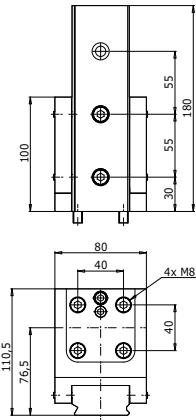


## ICS Vertical-Guide elements & Adaptations

### ICS Slide guide vertical C 909 000

Variable vertical clamping and adjustment of workpieces and electrodes.

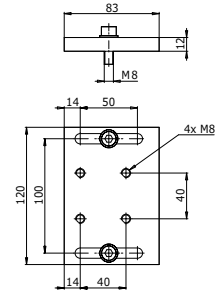
- Functional height maximum 180 mm
- Workpiece weight maximum 20 kg
- Weight 5.0 kg



### Base plate C 909 060

Base plate to ICS slide guide vertical C 909 000 for installation on Zeroline machine tables.

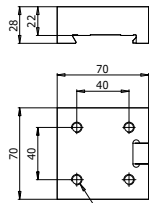
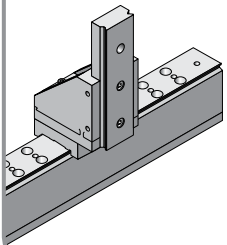
- Functional height 12 mm
- Weight 0.9 kg



### ICS Pallet C 350 100

The connecting link between the ICS guide rail / ICS beam and elements with hole pattern 40 / 40 mm / M8.

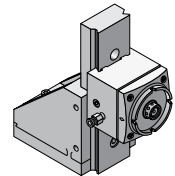
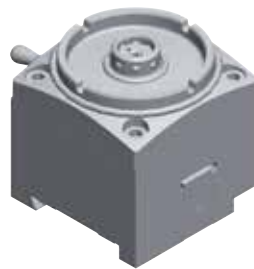
- Functional height 22 mm
- Weight 0.8 kg



### GPS 70 Chuck C 187 900

Use in combination with C 909 000.

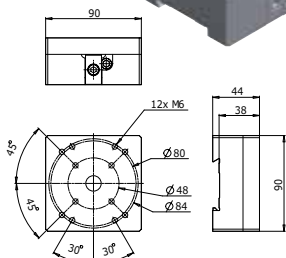
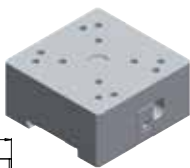
- Weight 2.5 kg



### ICS Pallet 38 rotating C 909 020

ICS pallet with adaptation height 38 mm, top part of the pallet is rotatable.

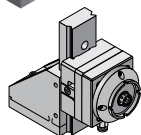
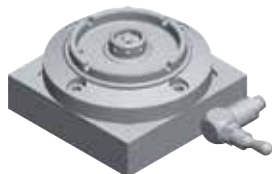
- Weight 1.4 kg



### GPS 70 Chuck C 188 750

Use in combination with C 909 000.

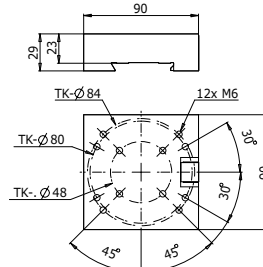
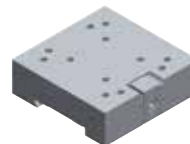
- Weight 1.6 kg



### ICS Pallet 23 C 909 010

ICS pallet with adaptation height 23 mm.

- Weight 0.8 kg



### ICS Adapter A and B/C

Use in combination with C 909 000 and C 909 010.

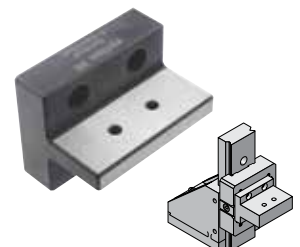
- Weight 1.4 kg

#### C 456 610

- Adapter A

#### C 456 600

- Adapter B/C





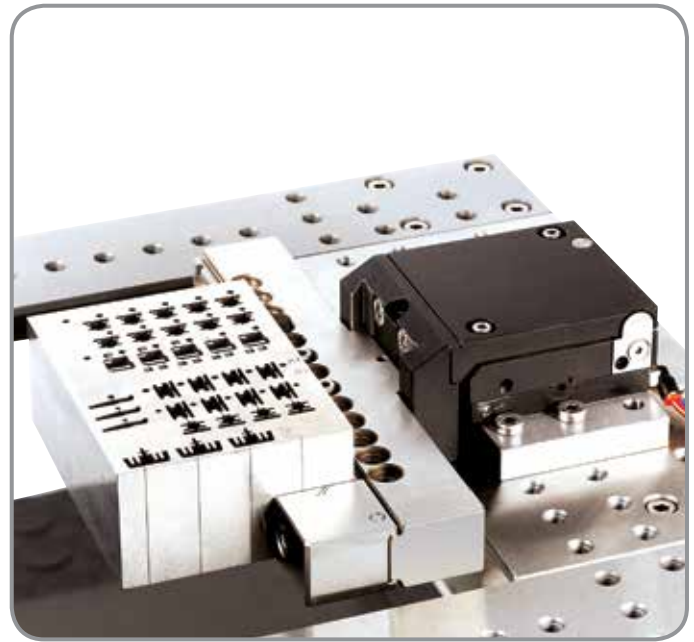
## Unimatic

### Unimatic Pallet System

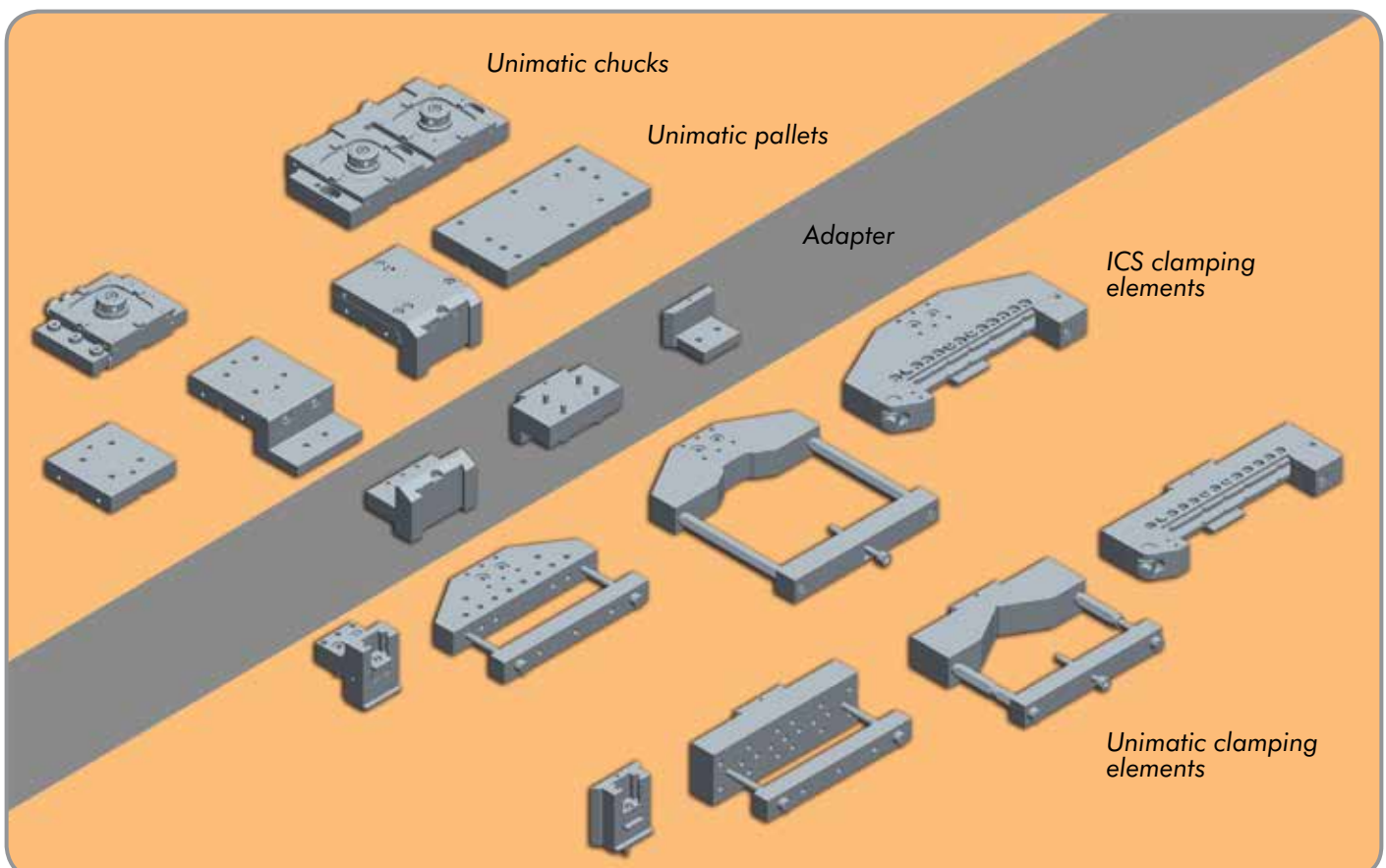
Reducing setting times and optimising productive times and doing all this with no reduction in machining quality are crucial criteria for ensuring competitiveness.

One promising approach is certainly to enhance flexibility by using pallet systems, specifically universal systems, allowing a fast, flexible response to customer requirements.

It is precisely these demands that are met by the Unimatic Pallet System.



### Overview of the Unimatic System



## Unimatic

### Unimatic Chuck

is the basic element for manual or automatic feed to the wire EDM machine with palletised workpieces

- Axial suspension of the X/Y-centring cams in the chuck and ground centering prism in the pallets, ensures maximum repeat and transmission accuracy
- Unchanging positioning accuracy and high stability even when strong flushing pressure

### 3-axis adjustment

The workpieces clamped in the clamping elements can be accommodated directly in an adjusting or levelling pallet without further adapters.

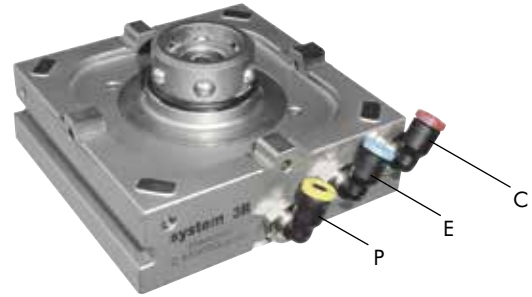
- This allows the adjustment and levelling movements and vertical adjustability to be utilised directly
- Unsupported clamping of workpieces weighing up to 25 kg with a repeat accuracy of  $\pm 0.002$  mm and a projection of 160 mm

### Compressed-air actuation

Pressure 6 bar minimum

Pressure 10 bar maximum

Compressed-air quality: 40  $\mu$ m filtered, dry and de-oiled



Clamping mechanically with pneumatic release provides maximum operational safety and reliability.

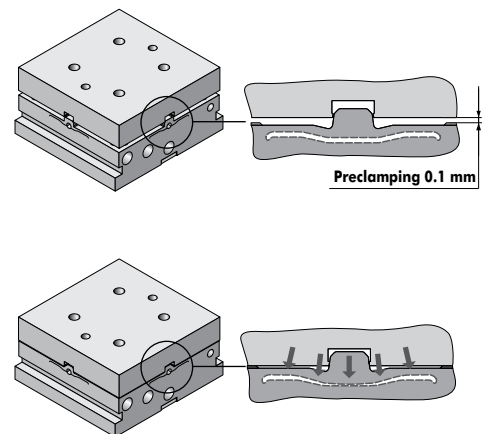
The functions of the compressed air ports are as follows:

P = releasing / clamping

E = ventilation

C = support cleaning / presence check

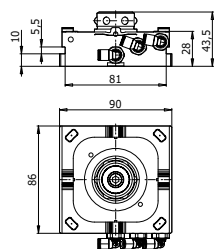
### Unimatic clamping function



### Unimatic Chuck C 950 000

Manual and automatic palletizing of work carriers.

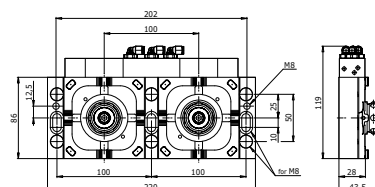
- Functional height 28 mm
- Clamping force 5000 N
- Weight 1.9 kg



### Unimatic Twin Chuck C 950 070

Manual and automatic palletizing of work carriers with workpieces > 25 kg.

- Functional height 28 mm
- Clamping force 10000 N
- Weight 2.8 kg



## Unimatic control elements

### Unimatic Brackets C 950 0XX

The Unimatic brackets for mounting the chuck C 950 000 on the zeroline table are machine-dependent.

*Note: Please use the selection tables on our webpage ([www.system3r.ch](http://www.system3r.ch)) to determine the appropriate Unimatic bracket or state the make of machine and type when ordering.*



### Set Unimatic Basic equipment S 206 301

consisting of:

C 950 000	Unimatic Chuck	x1
C 960 500	Unimatic Control unit	x1
C 960 710	Unimatic Protection pallet	x1
C 950 0XX	Unimatic Bracket*	x1

\* When ordering, please state the machine type to allow us to determine the Unimatic brackets.



### Set Unizero Go! S 112 050

consisting of:

C 950 000	Unimatic Chuck	x1
C 950 170	Unimatic Adjusting pallet	x1
C 960 110	Unimatic Vice 10-30	x1
C 190 820	Air-pistol valve	x1
E 100 007	Set hexagon Allen wrench	x1
C 950 020	Unimatic Brackets	x1

Set packed in case



### Set Unizero Go2! S 112 060

consisting of:

C 950 000	Unimatic Chuck	x1
C 950 170	Unimatic Adjusting pallet	x1
C 960 040	Unimatic V-block flange 30/200	x1
C 190 820	Air-pistol valve	x1
E 100 007	Set hexagon Allen wrench	x1
C 950 020	Unimatic Brackets	x1

Set packed in case



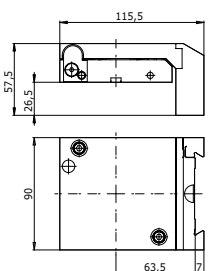
### Unimatic Levelling pallet C 950 150

Levelling pallet with dovetail guide adaptation.

- Adjustment range approx.  $\pm 1.0$  mm for all three axes
- Functional height 59 mm, Unimatic pallet placed onto Unimatic chuck
- Weight 2.5 kg

#### C 951 150

- Ready for use for automation with assembled code tag and pins.



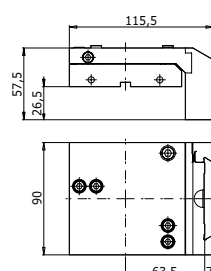
### Unimatic Adjusting pallet C 950 170

Adjusting pallet with dovetail guide adaptation.

- Adjustment range  $\pm 0.2$  mm for all three axes
- Functional height 59 mm, Unimatic pallet placed onto Unimatic chuck
- Weight 2.5 kg

#### C 951 170

- Ready for use for automation with assembled code tag and pins.



## Unimatic pallets

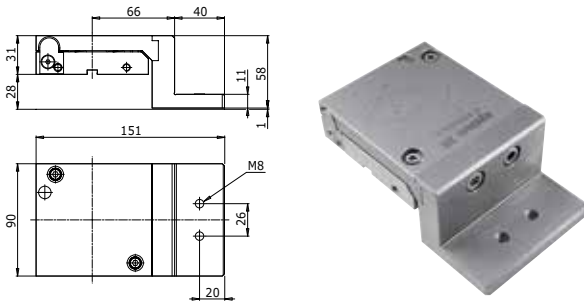
### Unimatic Levelling pallet ICS B C 950 180

Levelling pallet with ICS B adaptation.

- Adjustment range approx.  $\pm 1.0$  mm for all three axes
- Functional height 59 mm, Unimatic pallet placed onto Unimatic chuck
- Adaptation height 12 mm
- Weight 2.5 kg

#### C 951 180

- Ready for use for automation with assembled code tag and pins.



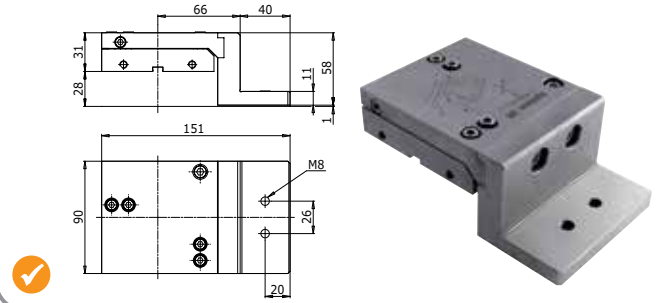
### Unimatic Adjusting pallet ICS B C 950 190

Adjusting pallet with ICS B adaptation.

- Adjustment range  $\pm 0.2$  mm for all three axes
- Functional height 59 mm, Unimatic pallet placed onto Unimatic chuck
- Adaptation height 12 mm
- Weight 2.5 kg

#### C 951 190

- Ready for use for automation with assembled code tag and pins.



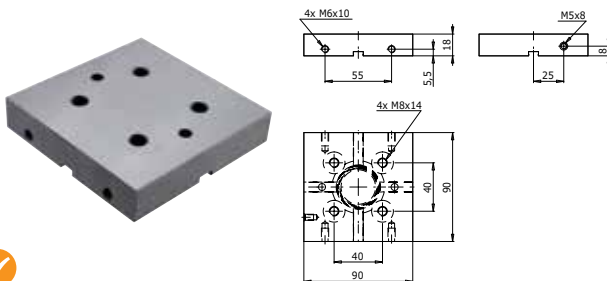
### Unimatic Pallet C 950 100

Pallet used as fixture carrier.

- The overall height of the Unimatic chuck C 950 000 together with the Unimatic pallet C 950 100 is 46 mm
- Functional height 18 mm
- Weight 0.9 kg

#### C 951 100

- Ready for use for automation with assembled code tag and pins.



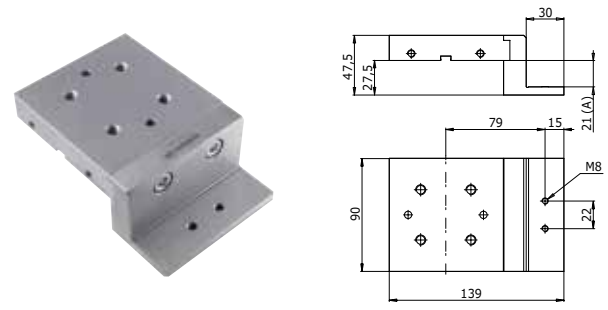
### Unimatic Pallet A C 950 120

Support for ICS clamping elements series A.

- Functional height 21 mm (A)
- Adaptation height 7 mm
- Weight 1.6 kg

#### C 951 120

- Ready for use for automation with assembled code tag and pins.



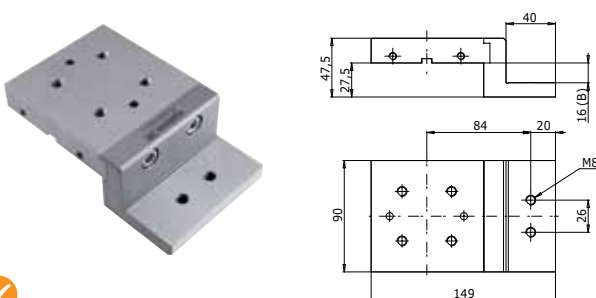
### Unimatic Pallet B C 950 130

Support for ICS clamping elements series B.

- Functional height 16 mm (B)
- Adaptation height 12 mm
- Weight 1.9 kg

#### C 951 130

- Ready for use for automation with assembled code tag and pins.



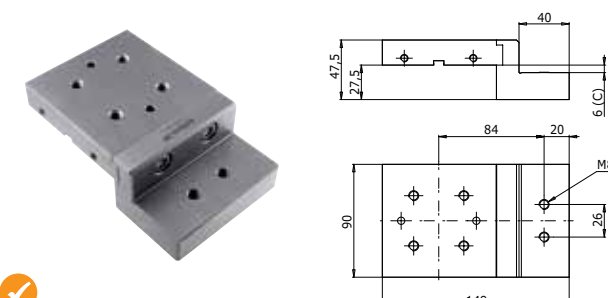
### Unimatic Pallet C C 950 140

Support for ICS clamping elements series C.

- Functional height 6 mm (C)
- Adaptation height 22 mm
- Weight 2.0 kg

#### C 951 140

- Ready for use for automation with assembled code tag and pins.





## Unimatic twin pallet & frame

### Unimatic Twin pallet

Unimatic Twin Pallets are designed and supplied customer-specifically in accordance with requirements.



### Set Unimatic Clamping frame S 149 500

The Unimatic clamping frame with clamping range of 200 x 220 mm is the ideal element for multiple clamping of small parts.

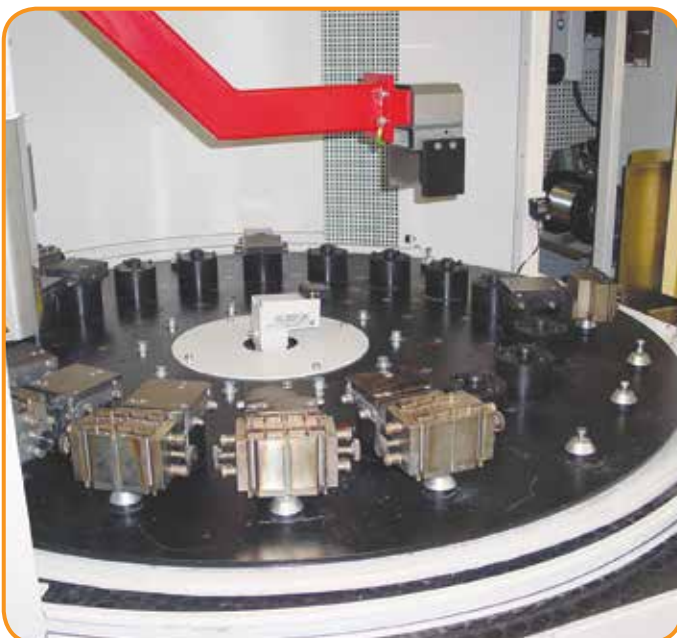
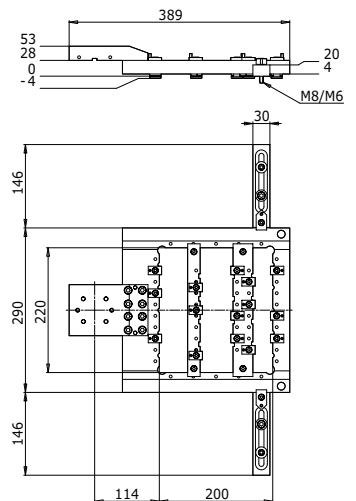
The workpieces can be clamped at zero line or collision-free at +4 mm.

It is advisable to support the clamping frame with the two clamps C 552 640 for workpiece weights exceeding 5 kg.

- Functional dimensions clamping range 200 x 220 mm
- Weight 14 kg

consisting of:

C 950 600	Clamping frame 200/220	x1
C 950 610	Clamping bar 22/220	x1
C 950 620	Clamping bar 35/220	x1
C 552 640	Standard clamp 150	x2
S 149 510	Set screws/lips/bracket	x1



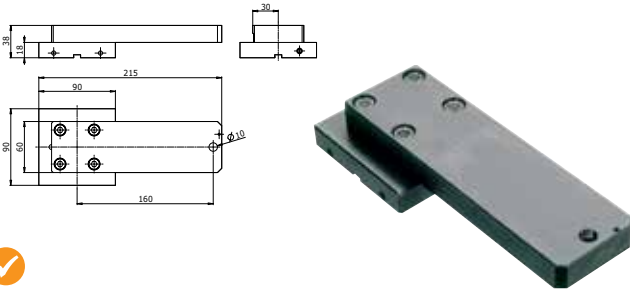


## Unimatic accessories

### Unimatic Reference pallet C 960 450

Measuring and inspection element.

- Functional height 18 mm
- Indexing 4 x 90°
- Accuracy repetition 0.001 mm / transfer  $\pm 0.002$  mm on 160 mm
- Positioning of reference hole  $160 \pm 0.002$  mm to pallet centre
- Weight 2.7 kg



### Unimatic Force checking unit C 960 430

Force checking on the Unimatic chuck.

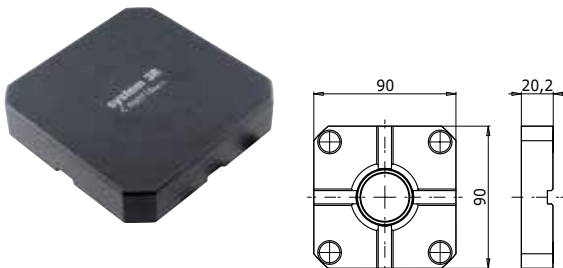
- Weight 0.7 kg



### Unimatic Protection pallet C 960 710

Protection of ball cage and X/Y-reference elements of the Unimatic chuck.

- Functional height 20 mm
- Weight 0.4 kg



### Unimatic Control unit (1-fold) C 960 500

Pneumatic control for Unimatic chuck.

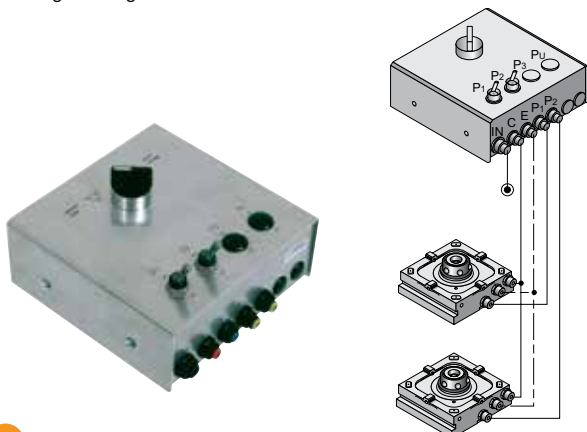
- Weight 0.4 kg



### Unimatic Control unit (2-fold) S 190 520

Individual actuation of two Unimatic chucks.

- Weight 4.2 kg



### Set Unimatic Revision S 190 900

Wear parts set for Unimatic chucks C 950 000 and C 950 070.



## ICS Clamping elements

The diverse range of clamping elements included in the two ICS and Unimatic product lines offer an optimum solution for virtually any clamping problem.

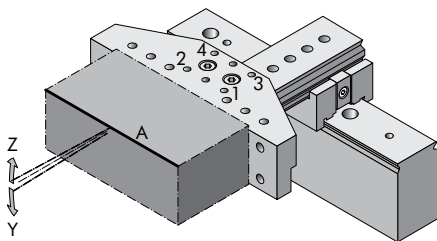
The corresponding adapters allow the user to freely combine ICS, Unimatic and also System 3R clamping elements and clamping systems.

### ICS A, B and C

The right clamping element for every large workpiece.

- Series A / for small workpieces up to 3 kg
- Series B / for medium-size workpieces up to 10 kg
- Series C / for large workpieces over 10 kg

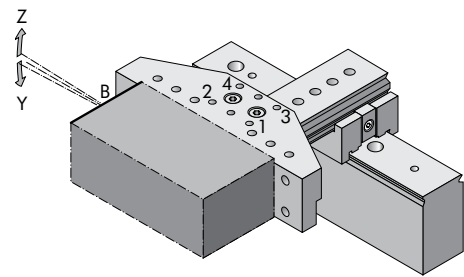
Adjusting screws can be used to adjust in the range of 0.05 mm on all ICS clamping elements.



#### Correction, Line A

Tightening 1 and 2 corrects line A in direction Z shown by the arrow.

Tightening 3 and 4 corrects line A in direction Y shown by the arrow.



#### Correction, Line B

Tightening 2 and 4 corrects line B in direction Z shown by the arrow.

Tightening 1 and 3 corrects line B in direction Y shown by the arrow.



## ICS Clamping elements A

### Series A

Application: Small parts up to 3 kg

Adaptation height: 7 mm

Height of the clamping element: 13 mm

Mounting: 2 screws M5

spacing 22 mm

tightening torques 5 Nm

Adaptation to:

ICS: All elements with ICS A adaptation

Unimatic: C 950 120 or via C 950 510

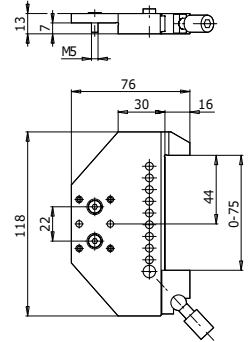
on C 950 150 / C 950 170

### ICS Mecavice A (0-75)

#### C 577 250

Workpiece holder with guide for horizontal parallel clamping.

- Functional height 13 mm
- Clamping range 0 – 75 mm
- Maximum workpiece weight 1 kg
- Maximum workpiece dimensions 75 x 75 x 20 mm
- Weight 0.5 kg

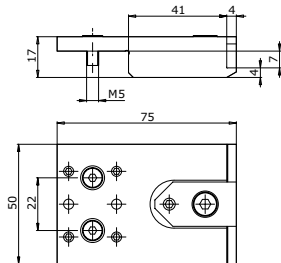


### ICS Clamping head A (7/50)

#### C 550 650

The main application of the ICS clamp is fixing workpieces of different dimensions in position from two sides.

- Clamping range 0 -10 mm
- Maximum workpiece weight 3 kg – not for overhung clamping!
- Weight 0.3 kg

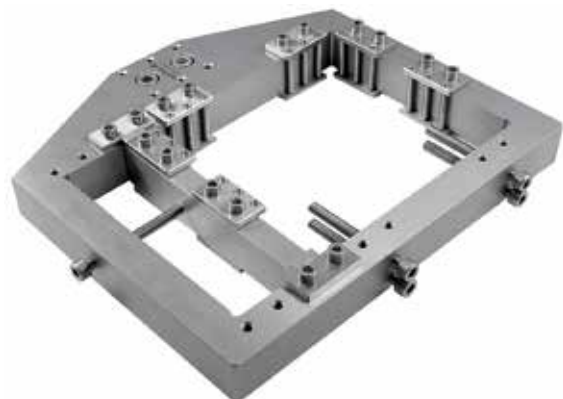
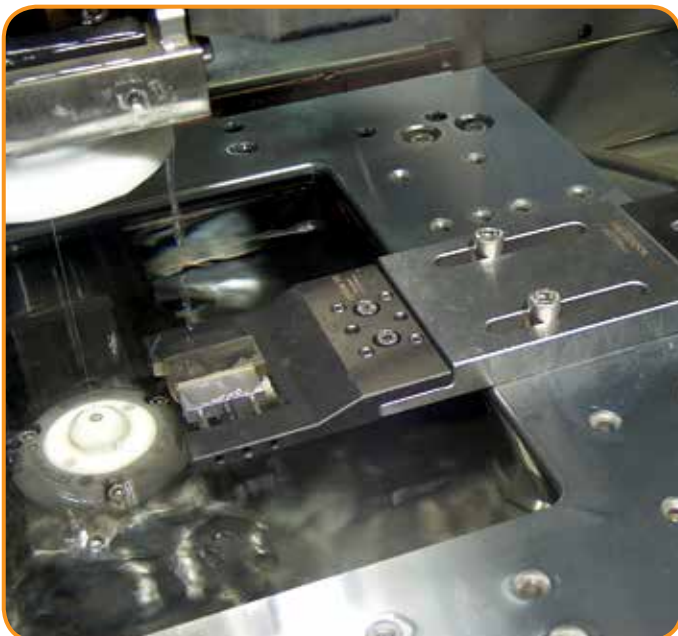
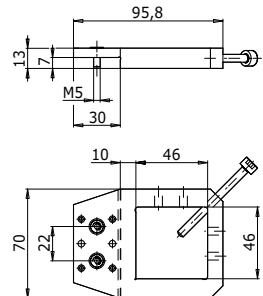
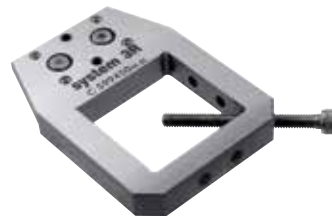


### ICS V-block A 45/45

#### C 599 450

Workpiece carrier for round and cubic parts.

- Functional height 13 mm
- Clamping range round or cubic up to 45 mm
- Maximum workpiece weight 3 kg
- Maximum workpiece dimensions Ø45 mm or 45 x 45 mm
- Weight 0.4 kg

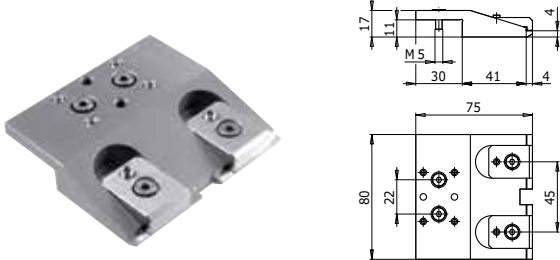


## ICS Clamping elements A

### ICS Double clamp A (5/80) C 550 670

Clamp for holding thin plates with support lips at zero height. A 4 mm thin shim can be inserted between the adaptation faces for collision free clamping.

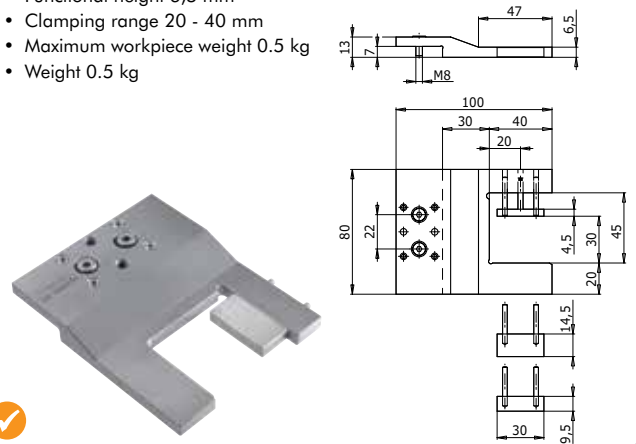
- Clamping range 0 - 5 mm
- Maximum workpiece weight 1 kg - overhung clamping
- Weight 0.4 kg



### ICS Side clamp A (20-40) C 577 200

Collateral clamping of rectangular or square small workpieces from 20 to 40 mm width.

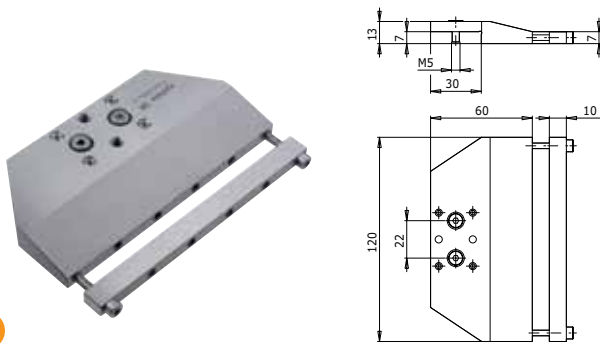
- Functional height 6,5 mm
- Clamping range 20 - 40 mm
- Maximum workpiece weight 0.5 kg
- Weight 0.5 kg



### ICS Flange A (7/120) C 641 900

Support for the lateral mounting of workpiece.

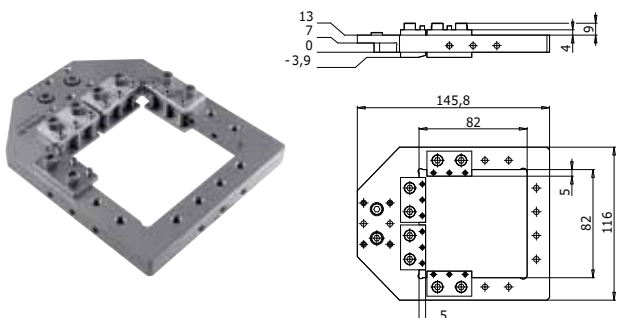
- Functional height 7 mm
- Maximum workpiece weight 1 kg
- Maximum workpiece dimensions width 100 mm max.
- Weight 0.5 kg



### ICS Clamping frame A C 619 660

Carrier for flat round or cubic workpieces up to 80x80 mm.

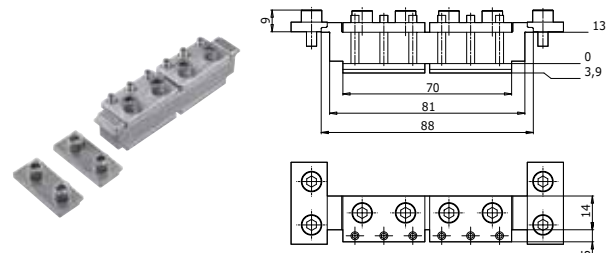
- Functional height 13 mm
- Clamping range round or cubic up to 80 mm / maximum workpiece height 12 mm
- Maximum workpiece weight 1.5 kg
- Maximum workpiece dimensions  $\varnothing$  80 mm or 80x80 mm
- Weight 0.9 kg



### ICS Clamping bar to clamping frame A C 619 670

Clamping bar to use with ICS clamping frame A C 619 660.

- Dimensions 88 x 20 x 26 mm
- Overall height 26 mm (incl. support lips and clamping lips)
- Weight 0.25 kg





## ICS Clamping elements B

### Series B

Application: Medium-sized workpieces up to 10 kg

Adaptation height: 12 mm

Mounting: 2 screws M8  
spacing 26 mm  
tightening torques 20 Nm

Adaptation to:

ICS: All elements with ICS B adaptation

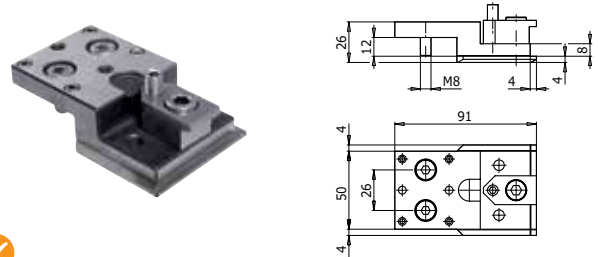
Unimatic: C 950 130 or  
via C 950 530  
on C 950 150 / C 950 170  
and C 950 180 / C 950 190

### ICS Clamping head B (12/50)

#### C 552 300

The main application of the ICS clamp is fixing workpieces of different dimensions.

- Clamping range 0 - 20 mm
- Maximum workpiece weight 10 kg – not for overhung clamping!
- Weight 0.5 kg

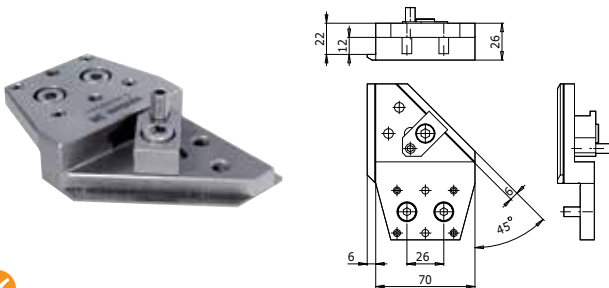


### ICS Clamping head B right (12/50)

#### C 552 400

The main application of the ICS clamp is fixing workpieces of different dimensions.

- Clamping range 0 - 20 mm
- Maximum workpiece weight 10 kg – not for overhung clamping!
- Weight 0.5 kg

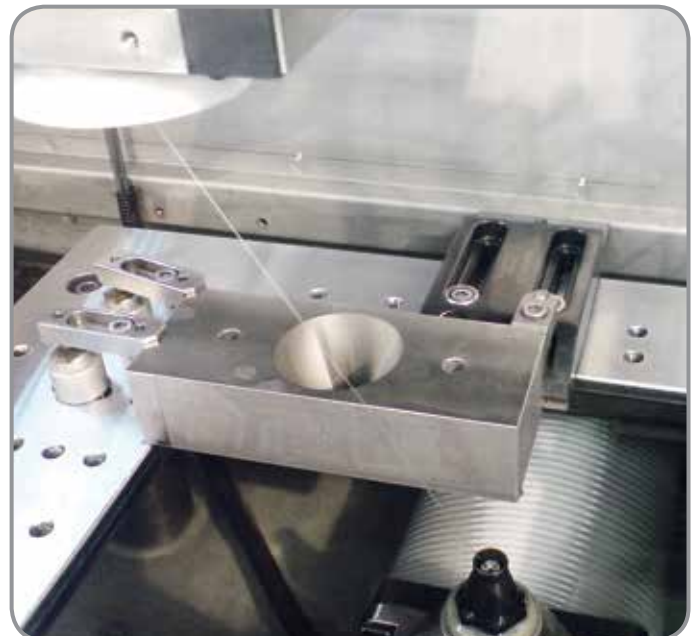
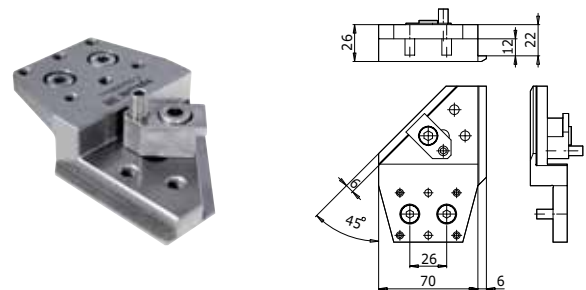


### ICS Clamping head B left (12/50)

#### C 552 500

The main application of the ICS clamp is fixing workpieces of different dimensions.

- Clamping range 0 - 20 mm
- Maximum workpiece weight 10 kg – not for overhung clamping!
- Weight 0.5 kg



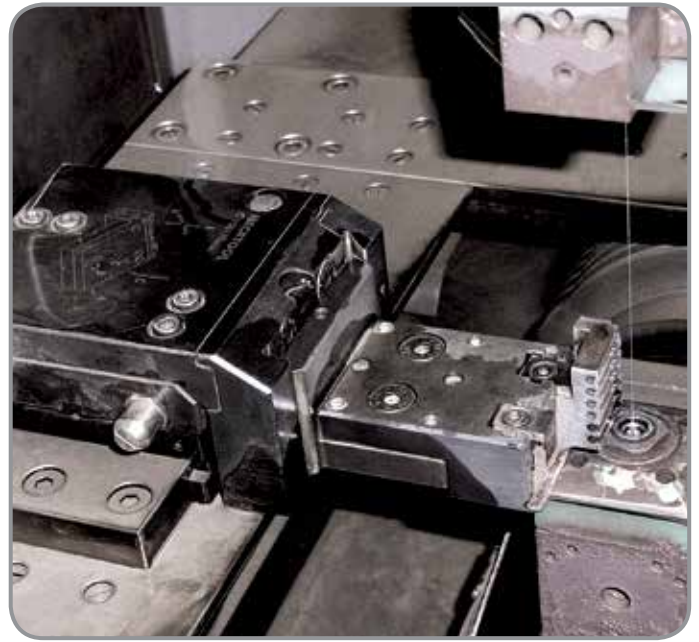
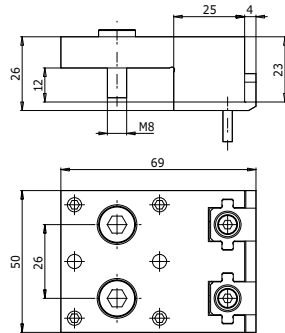


## ICS Clamping elements B

### ICS Vice B 0-20 C 573 550

Workpiece carrier with guide for vertical parallel clamping,  
with 2 clamping jaws.

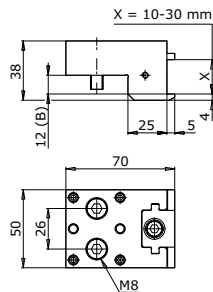
- Functional height 20 mm
- Clamping range 0 - 20 mm
- Maximum workpiece weight 1 kg
- Maximum workpiece dimensions 20 x 50 x 50 mm
- Weight 0.4 kg



### ICS Vice B 10-30 C 574 150

Workpiece carrier with guide for vertical parallel clamping.

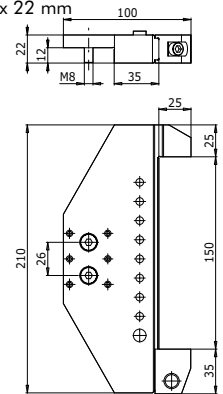
- Functional height 30 mm
- Clamping range 0 - 30 mm
- Maximum workpiece weight 3 kg
- Maximum workpiece dimensions 30 x 90 x 90 mm
- Weight 0.6 kg



### ICS Mecavice B 15-150 C 577 350

Workpiece holder with guide for horizontal parallel clamping.

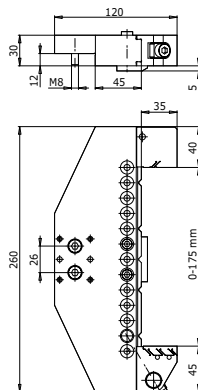
- Functional height 22 mm
- Clamping range 15 - 150 mm
- Maximum workpiece weight 4 kg
- Maximum workpiece dimensions 150 x 120 x 22 mm
- Weight 1.6 kg



### ICS Mecavice B 0-175 C 577 370

Workpiece holder with guide for horizontal parallel clamping.

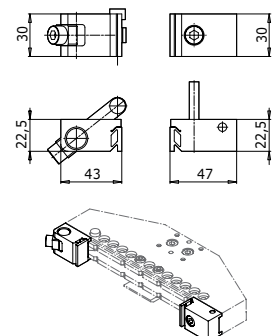
- Functional height 30 mm
- Clamping range 0 - 175 mm
- Maximum workpiece weight 10 kg
- Maximum workpiece dimensions 100 x 120 x 175 mm
- Weight 3.7 kg



### Vice jaw set S 150 100

Jaw set for Mecavice B and Unimatic vice with guide for horizontal parallel clamping.

- Functional height 30 mm
- Clamping depth jaw 18 mm
- Maximum workpiece weight 5 kg
- Weight 0.4 kg

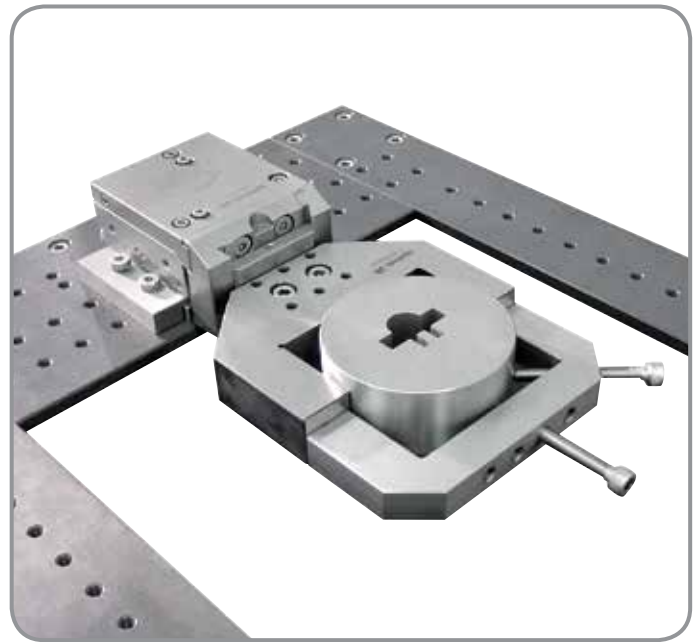
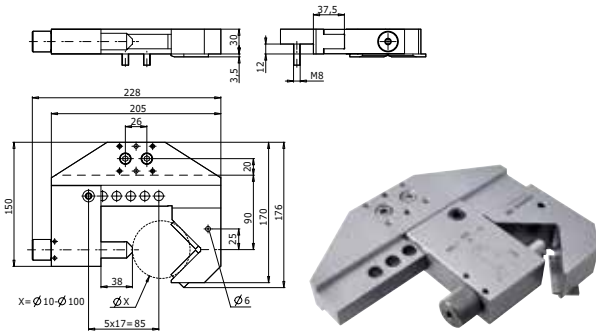


## ICS Clamping elements B

### ICS V-block vice B $\varnothing 10-100$ C 596 050

Workpiece holder for round parts.

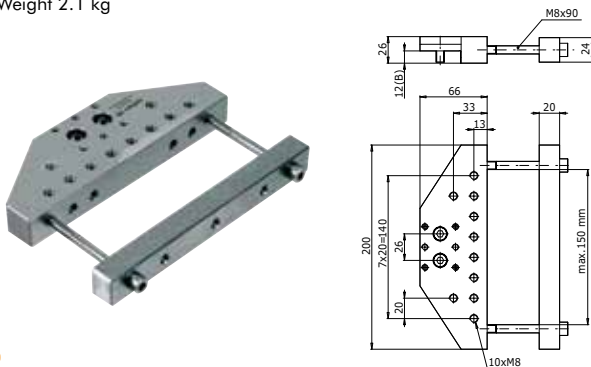
- Functional height 30 mm
- Clamping range  $\varnothing 10 - 100$  mm
- Maximum workpiece weight 10 kg
- Maximum workpiece dimensions  $\varnothing 100 \times 150$  mm
- Weight 4.0 kg



### ICS Flange B (26/200) C 642 050

Support for the lateral mounting of workpiece.

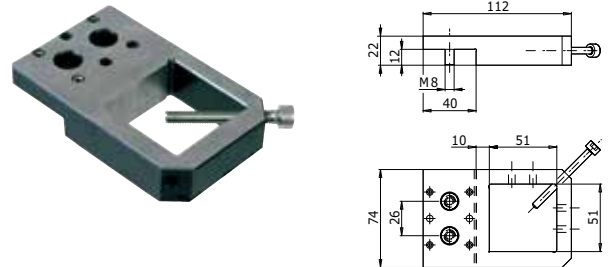
- Functional height 26 mm
- Maximum workpiece weight 10 kg
- Maximum workpiece dimensions quadratic 120 x 120 mm / rectangular 120 x 150 mm
- Weight 2.1 kg



### ICS V-block B 50/50 C 596 650

Workpiece carrier for round and cubic parts.

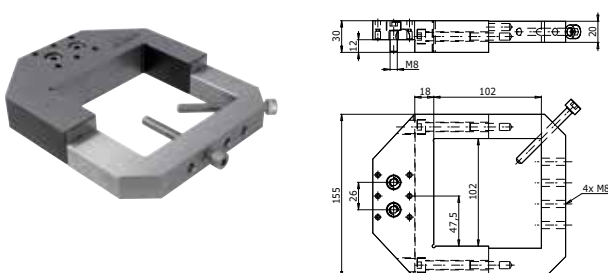
- Functional height 22 mm
- Clamping range round or cubic 10 - 50 mm
- Maximum workpiece weight 3 kg
- Maximum workpiece dimensions  $\varnothing 50$  mm or 50 x 50 mm
- Weight 0.7 kg



### ICS V-block B 100/100 C 597 250

Workpiece carrier for round and cubic parts.

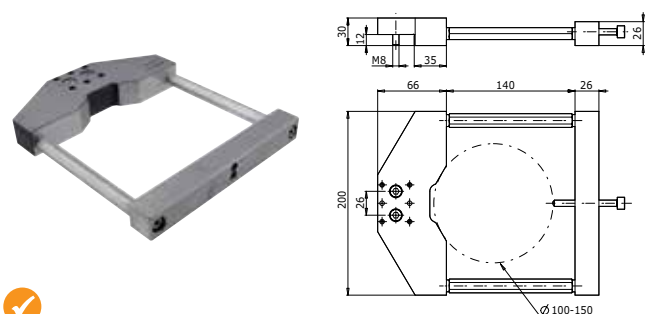
- Functional height 30 mm
- Clamping range round or cubic 75 - 100 mm
- Maximum workpiece weight 8 kg
- Maximum workpiece dimensions  $\varnothing 100$  mm or 100 x 100 mm
- Weight 2.7 kg



### ICS V-block B 100 - 150 C 597 550

Workpiece holder for round parts.

- Functional height 30 mm
- Clamping range  $\varnothing 100 - 150$  mm
- Maximum workpiece weight 10 kg
- Maximum workpiece dimensions  $\varnothing 150 \times 80$  mm
- Weight 3.4 kg



## ICS Clamping elements C

### Series C

Application: Large workpieces over 10 kg

Adaptation height: 22 mm

Mounting: 2 screws M8

spacing 26 mm

tightening torques 20 Nm

Adaptation to:

ICS: All elements with ICS C adaptation

Unimatic: C 950 140 or via C 950 550

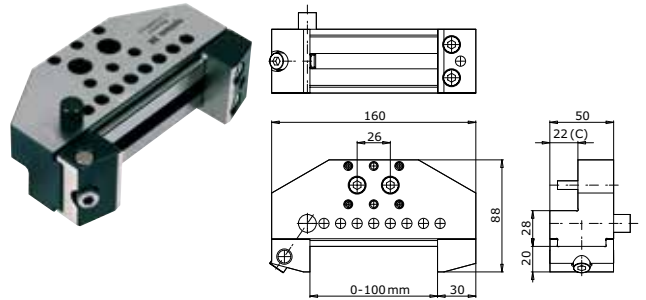
on C 950 150 / C 950 170

### ICS Mecavice C 0-100

#### C 575 600

Workpiece holder with guide for horizontal parallel clamping.

- Functional height 50 mm
- Clamping range 0 – 100 mm
- Maximum workpiece weight 12 kg
- Maximum workpiece dimensions 100 x 120 x 130 mm
- Weight 2.7 kg



### ICS Vices C (10-40 / 26-60 / 50-100)

Workpiece carrier with guide for vertical parallel clamping.

#### C 574 550

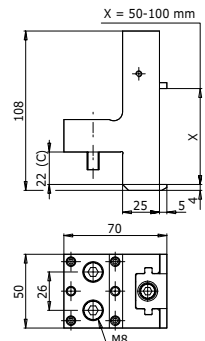
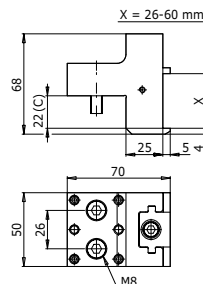
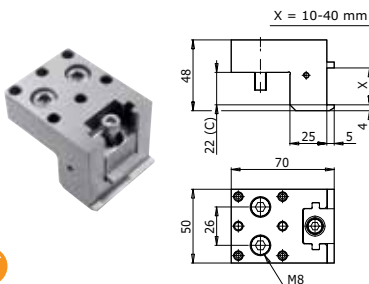
- Clamping range 10 – 40 mm
- Functional height 40 mm
- Maximum workpiece weight 4 kg
- Maximum workpiece dimensions 40x100x100 mm
- Weight 0.7 kg

#### C 575 050

- Clamping range 26 – 60 mm
- Functional height 60 mm
- Maximum workpiece weight 6 kg
- Maximum workpiece dimensions 60x100x100 mm
- Weight 0.9 kg

#### C 575 550

- Clamping range 50 – 100 mm
- Functional height 100 mm
- Maximum workpiece weight 8 kg
- Maximum workpiece dimensions 100x100x100 mm
- Weight 1.2 kg

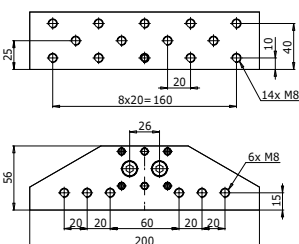


### ICS Flange C (50/200)

#### C 642 150

Support for the lateral mounting of workpiece.

- Functional height 50 mm
- Maximum workpiece weight 20 kg
- Maximum workpiece dimensions quadratic 120 x 120 mm / rectangular 120 x 200 mm
- Weight 2.0 kg

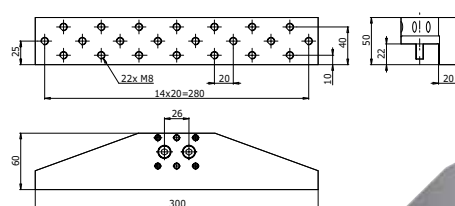


### ICS Flange C (50/300)

#### C 642 160

Support for the lateral mounting of workpiece.

- Functional height 50 mm
- Maximum workpiece weight 25 kg
- Maximum workpiece dimensions quadratic 150 x 150 mm / rectangular 150 x 300 mm
- Weight 3.3 kg



## Unimatic Clamping elements

### The Unimatic clamping elements

are vertically adjustable in the dovetail guide. It is important that the slides of the clamping elements always engage at least 20 mm in the guide.

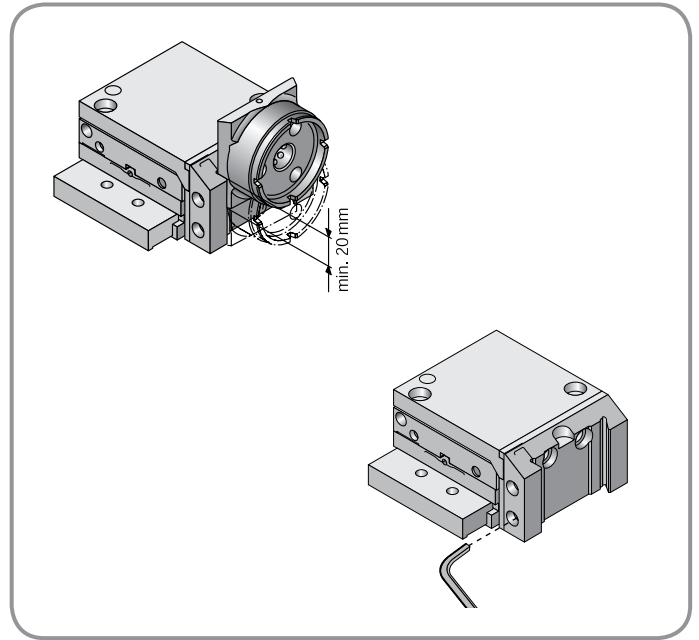
The Clamping Elements are clamped by means of the two M5 screws at the side.

Very little clamping force is required for achieving a very stable connection.

Tightening torque: max. 5 Nm

#### Important:

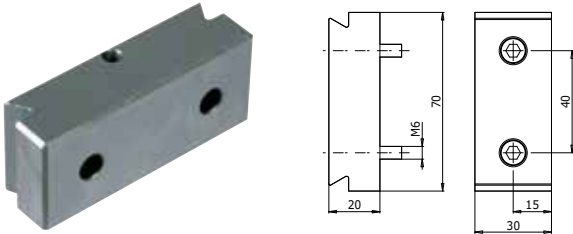
Clamp with both screws only when the slide has engaged over the entire length of the guide.



### Unimatic Flange 30/70 C 960 010

Support for the lateral mounting of workpiece.

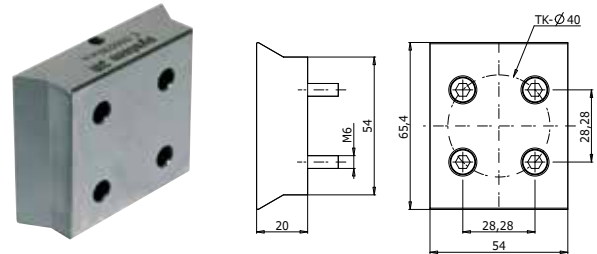
- Functional height 30 mm
- Maximum workpiece weight 12 kg
- Maximum workpiece dimensions 150 x 100 x 100 mm
- Weight 0.3 kg



### Unimatic Flange 54/54 C 960 030

Support for the lateral mounting of workpiece.

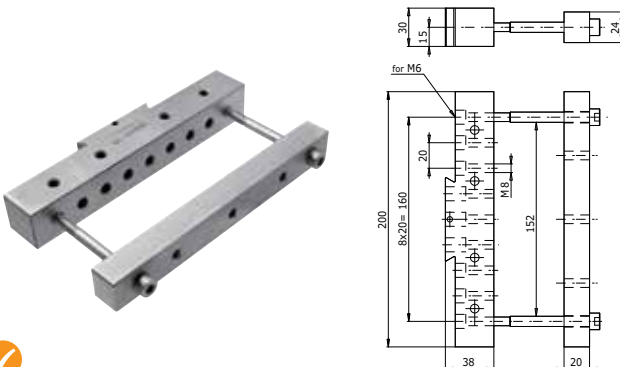
- Functional height 54 mm
- Maximum workpiece weight 15 kg
- Maximum workpiece dimensions 150 x 120 x 100 mm
- Weight 0.3 kg



### Unimatic Flange 30/200 C 960 050

Support for the lateral mounting of workpiece.

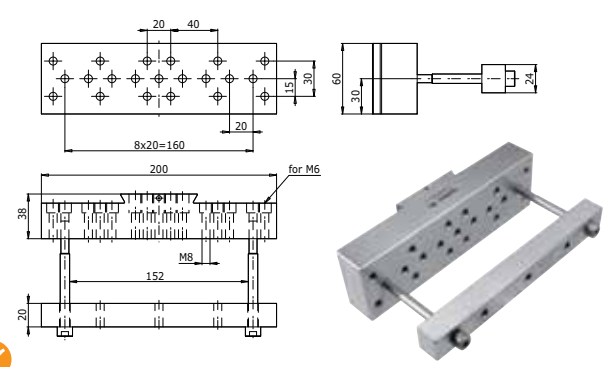
- Functional height 30 mm
- Maximum workpiece weight 15 kg
- Maximum workpiece dimensions 100 x 120 x 150 mm
- Weight 1.5 kg



### Unimatic Flange 60/200 C 960 060

Support for the lateral mounting of workpiece.

- Functional height 60 mm
- Maximum workpiece weight 20 kg
- Maximum workpiece dimensions 100 x 130 x 200 mm
- Weight 2.9 kg



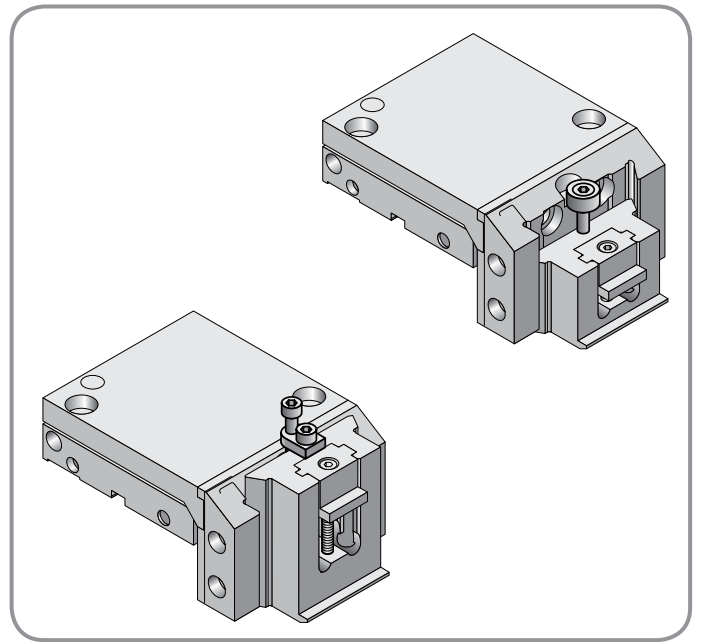
## Unimatic Clamping elements

### The Unimatic Vices

are suitable for clamping parallel and rectangular-machined workpieces. The guided clamping jaw ensures clean and neat parallel clamping.

Tightening torque of the clamping screw:  
max. 9 Nm

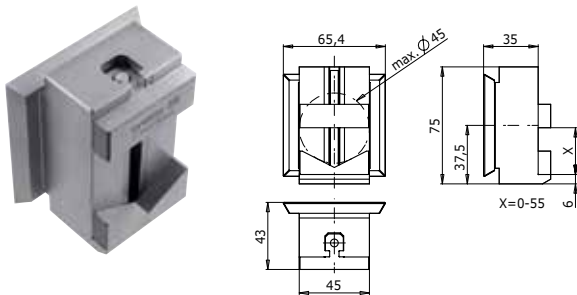
The levelling and adjusting pallets include adjustment screws for vertical setting of the clamping elements.  
(Item no S 206 310)



#### UNIMATIC Vice index 0-55 C 960 100

Workpiece carrier, 90° indexing, for parallel clamping of round and square parts.

- Functional height 55 mm
- Clamping range square 0 – 55 mm / round  $\text{Ø}10 - 45$  mm
- Maximum workpiece weight 4 kg
- Weight 0.9 kg



#### Unimatic Vice 10-30 C 960 110

Workpiece carrier with guide for vertical parallel clamping.

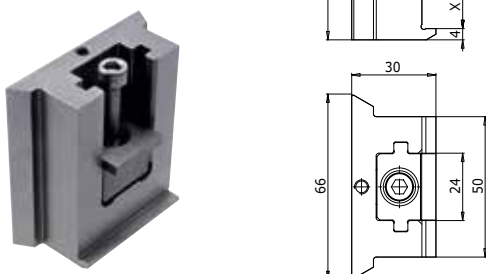
- Functional height 30 mm
- Clamping range 10 – 30 mm
- Maximum workpiece weight 3 kg
- Maximum workpiece dimensions 30 x 100 x 120 mm
- Weight 0.5 kg



#### Unimatic Vice 20-60 C 960 120

Workpiece carrier with guide for vertical parallel clamping.

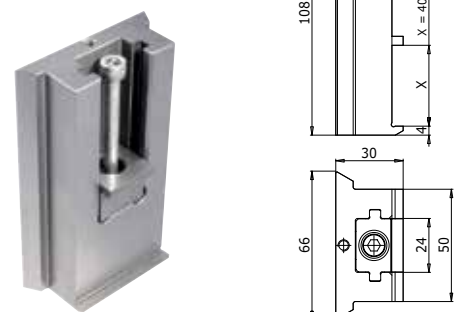
- Functional height 60 mm
- Clamping range 20 – 60 mm
- Maximum workpiece weight 6 kg
- Maximum workpiece dimensions 60 x 100 x 120 mm
- Weight 0.8 kg



#### Unimatic Vice 40-100 C 960 130

Workpiece carrier with guide for vertical parallel clamping.

- Functional height 100 mm
- Clamping range 40 – 100 mm
- Maximum workpiece weight 9 kg
- Maximum workpiece dimensions 100 x 100 x 120 mm
- Weight 1.2 kg





## Unimatic Clamping elements

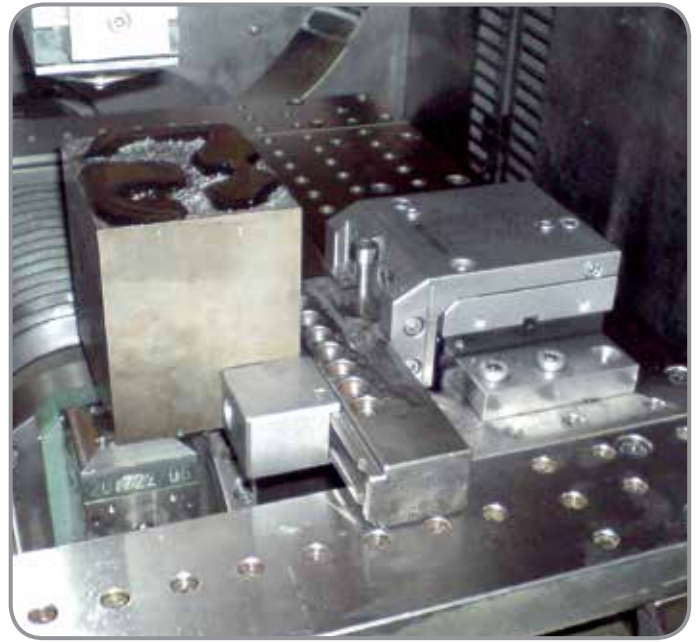
### The Horizontal clamps (Vice)

and horizontal V-blocks require the clamping faces of the workpieces to have been machined parallel and rectangular in order to achieve secure clamping.

Tightening torque at the clamping screw:

M6 max. 9 Nm

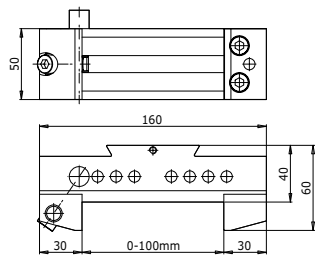
M8 max. 20 Nm



#### Unimatic Vice 0-100 C 960 160

Workpiece holder with guide for horizontal parallel clamping.

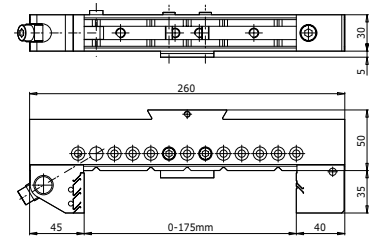
- Functional height 50 mm
- Clamping range 0 - 100 mm
- Maximum workpiece weight 12 kg
- Maximum workpiece dimensions 100 x 120 x 130 mm
- Weight 2.0 kg



#### Unimatic Vice 0-175 C 960 180

Workpiece holder with guide for horizontal parallel clamping.

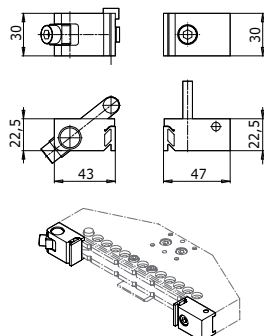
- Functional height 30 mm
- Clamping range 0 - 175 mm
- Maximum workpiece weight 10 kg
- Maximum workpiece dimensions 100 x 120 x 160 mm
- Weight 2.6 kg



#### Vice jaw set S 150 100

Jaw set for Mecavice B and Unimatic Vice with guide for horizontal parallel clamping.

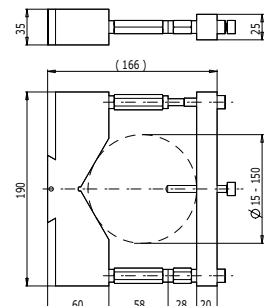
- Functional height 30 mm
- Clamping depth jaw 18 mm
- Maximum workpiece weight 5 kg
- Weight 0.4 kg



#### Unimatic V-block Ø15-150 C 960 260

Workpiece holder for round parts.

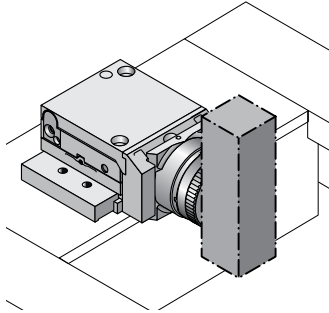
- Functional height 35 mm
- Clamping range  $\varnothing$  15 - 150 mm
- Maximum workpiece weight 15 kg
- Maximum workpiece dimensions  $\varnothing$  150 x 100 mm
- Weight 1.8 kg



# Electrode Clamping Systems Unimatic / ICS

## Electrode Clamping Systems

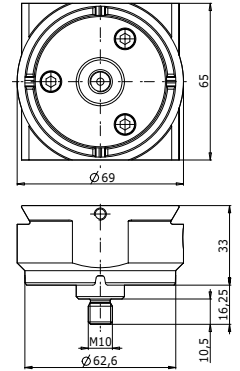
When machining electrodes, the integrated height adjustment facility of the Unimatic system offers particular advantages when setting the zeroline.



### Unimatic Adapter GPS 70 C 960 300

Adapter to Unimatic dovetail guide for the vertical adaptation of GPS 70 pallets in WEDM machines.

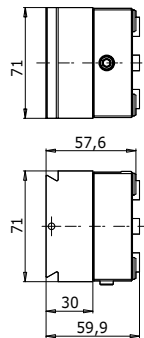
- Adaptation to GPS 70 pallets
- Weight 1.8 kg



### Unimatic Adapter Macro C 960 330

Adapter to Unimatic dovetail guide for the vertical adaptation of Macro pallets in WEDM machines.

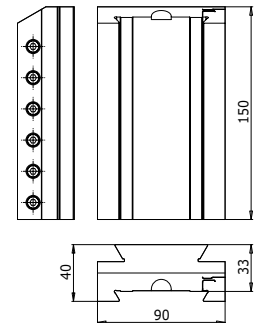
- Adaptation to Macro pallets
- Weight 2.2 kg



### Unimatic Guide vertical 150 C 960 350

The extended vertical guide allows Unimatic clamping elements to be clamped at raised positions. Application: machining of high workpieces or large electrodes for cavity sinking EDM.

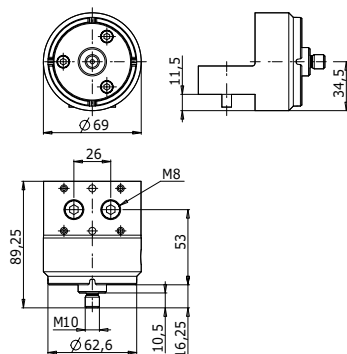
- Functional height 150 mm
- Adaptation to all Unimatic clamping elements directly over dovetail
- Weight 3.2 kg



### ICS Adapter B GPS 70 C 463 140

Adapter to ICS B base elements for the vertical adaptation of GPS 70 pallets in WEDM machines.

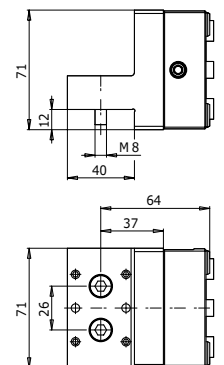
- Functional height 23 mm axis-centre distance GPS 70 to interface ICS B
- Adaptation to GPS 70 pallets
- Weight 0.9 kg



### ICS Adapter B Macro C 463 180

Adapter to ICS B base elements for the vertical adaptation of Macro pallets in WEDM machines.

- Functional height 23,5 mm axis-centre distance Macro to interface ICS B
- Adaptation to Macro pallets
- Weight 1.1 kg



## System Adapters

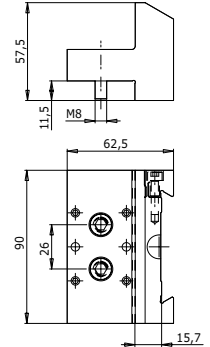
### System adapter

allows the user to employ the total diversity and strengths of all System 3R clamping elements on his machine and tooling configurations.

### ICS Adapter B Unimatic C 642 300

Adaptation of all Unimatic clamping elements on base elements with ICS B interface.

- Adaptation height 12 mm
- Adaptation to all Unimatic clamping elements
- Weight 1.1 kg



### Unimatic Adapter A, B or C

Adapter for ICS clamping elements; with Unimatic dovetail slide.

#### C 950 510

- ICS A
- Weight 0.3 kg

#### C 950 530

- ICS B
- Weight 0.4 kg

#### C 950 550

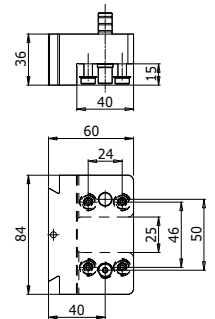
- ICS C
- Weight 0.6 kg



### Unimatic Adapter SuperVice/Macro WEDM C 950 480

Adapter for System 3R clamping elements with adaptation height 15 / 25 mm; with Unimatic dovetail slide.

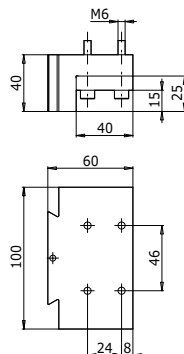
- Functional height Unimatic: 40 mm / SuperVice/Macro: 15 / 25 mm
- Adaptation to Unimatic system C 950 150 or C 950 170 SuperVice/Macro to all clamping elements with functional height 15 / 25 mm
- Weight 1.3 kg



### Unimatic Adapter SuperVice/Macro WEDM C 950 490

Adapter for System 3R clamping elements with adaptation height 15 / 25 mm; with Unimatic dovetail slide.

- Functional height Unimatic: 40 mm / SuperVice/Macro: 15 / 25 mm
- Adaptation to Unimatic system C 950 150 or C 950 170 SuperVice/Macro to all clamping elements with functional height 15 / 25 mm
- Weight 1.3 kg



### Adapters

For upgrading machines fitted with ICS.

The adapter gives access to the entire 3Ruler/3P/Macro range of WEDM accessories.

#### 3R-200.1J-62

- Length 140 mm
- Weight 2.3 kg



#### 3R-A6450

- Length 85 mm
- Weight 1.2 kg

#### 3R-A6450-1

- Length 140 mm
- Weight 2 kg



## Unimatic Presetting stations

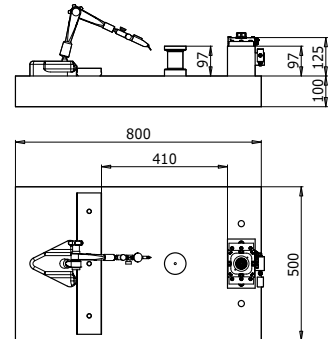
### Set Unimatic Presetting (horizontal) S 206 200

Unimatic presetting station for horizontal clamping on Unimatic pallets. Inclusive support leg and pedestal with dial gauge.

- Functional height support leg = Zeroline 97 mm
- Weight 166 kg

consisting of:

V 000 017	Granite plate 100x500x800	x1
C 930 000	Straight ruler	x1
C 970 440	Support leg 97	x1
V 003 001	Pedestal with dial gauge 0.002	x1
C 950 000	Unimatic Chuck	x1
C 950 012	Unimatic Brackets	x1
C 970 400	Unimatic Support base	x1
C 960 500	Control unit	x1



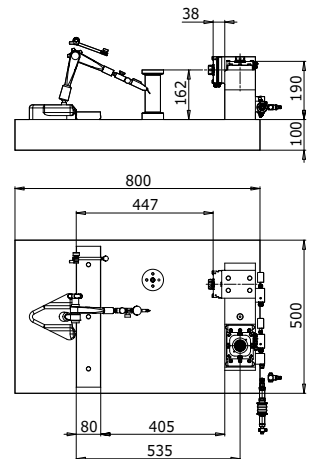
### Set Unimatic Presetting (horizontal/vertical) S 206 220

Unimatic presetting station for horizontal and vertical clamping on Unimatic pallets. Inclusive support leg and pedestal with dial gauge.

- Functional height support leg = Zeroline 162 mm
- Weight 190 kg

consisting of:

V 000 017	Granite plate 100x500x800	x1
C 930 000	Straight ruler	x1
C 848 100	Support leg 162	x1
V 003 001	Pedestal with dial gauge 0.002	x1
C 950 000	Unimatic Chuck	x1
C 950 012	Unimatic Brackets	x1
C 950 050	Unimatic Chuck	x1
C 970 410	Unimatic Support base	x1
C 970 420	Unimatic Distance plate	x1
C 970 430	Unimatic Angle plate	x1
C 960 500	Control unit	x1



Presetting stations designed to user specifications on request.



## Specific solutions

### Customer specific WEDM solutions

With the standard tooling elements of System 3R virtually all clamping tasks can be solved on WEDM machines in classical die and tooling production.

If wire-cut EDM is employed however in the precision manufacture of series parts, then apart from the pure clamping function, values such as the following are determined in addition to the layout and the design of the clamping means:

- Repeatability precision of the clamping of parts
- Expenditure of time for clamping and alignment
- Process safety in series production
- Multiple clamping
- etc

System 3R Schweiz AG (previously Mecatool AG) has stood for over 20 years for quality WEDM Tooling und WEDM System solutions.

The problems defined by our customers are challenges to us.





## Frame systems

### Change frames

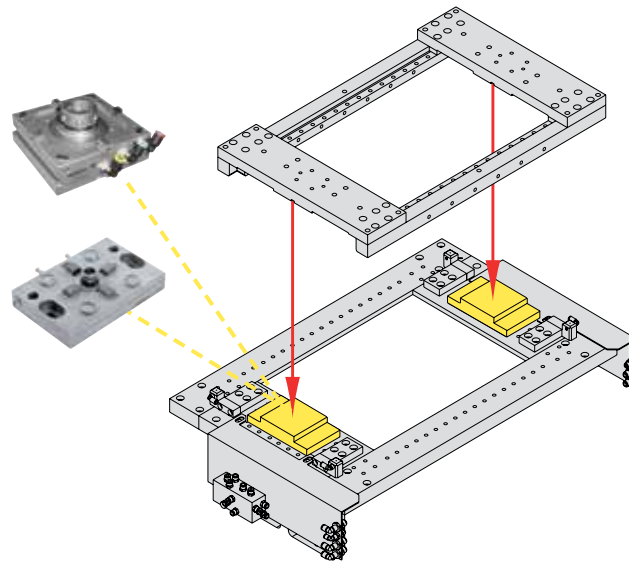
are large palette systems which fit the dimensions of the WEDM machine table.

The sturdy construction enables even large workpieces to be clamped and to be changed with precise repeatability in the WEDM machine.

By adjustment of the clamping jaws to the current workpiece the expenditure on clamping and alignment can be significantly reduced.

System 3R change frames are available in versions for Unimatic or Macro WEDM machine table equipment.

For further information see catalogue A000365.



## Accessories

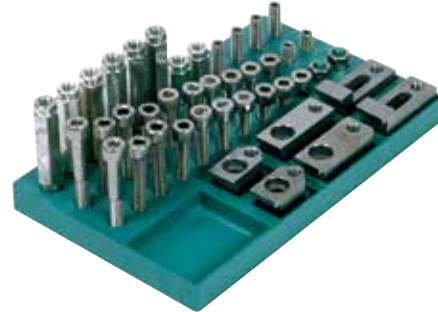
### Clamp kit M6 3R-230.1

For clamping workpieces on rulers, etc.

- Weight 1.8 kg



### Set ICS Double clamping M8 C 860 000



### Torque wrenches

#### 3R-614-04

- 4 Nm

#### 3R-614-06

- 6 Nm



### Torque wrenches

#### 3R-914-07

- Torque 7 Nm

#### 3R-914-10L

- Torque 7.8 Nm

#### 3R-914-10

- Torque 10 Nm

#### 3R-914-15

- Torque 15 Nm



3R-914-10L →

3R-914-07 →  
3R-914-10



### Bridge magnets

#### C 844 000

- medium (8x12x55)

#### C 844 100

- strong (8x18x55)

#### C 844 200

- extra-strong (8x30x55)

#### C 844 300

- medium (8x12x30)



### Bridge magnets round

#### C 868 000

- medium (Ø20)

#### C 868 100

- strong (Ø28)



## Automation

### Utilise every hour of the day and night!

An automatic production cell can generate revenue round the clock, seven days a week. Why be satisfied with 40 productive machine-hours a week when the same machine can achieve over 100 additional hours a week? Use every hour of the day and night for production!

WorkPal, WorkPartner and WorkMaster - three "aces" which boost your productivity and sharpen your competitiveness.

And not least – they bring faster payback on the investments you made.



### WorkPal Compact Servo – modest demands, major benefits

WorkPal Compact Servo is a simple step into the world of automation. It's an easy-to-use, user-friendly pallet changer for automatic changing of pallets in wire EDM machines, for example.

A sliding door gives maximum access to the magazine, making it easier to manage the pallets. The extremely compact unit is simple to install. And what's more, WorkPal Compact Servo only needs minimal floor space.





## Automation

### WorkPartner 1+ – can serve two machines

WorkPartner 1+ is an extremely compact unit for changing pallets – on machine tables and at machine spindles in one or two machines. Its modular construction means that magazine capacity is extremely flexible and can be adapted to your company's needs.

Typical application areas

- Milling – changing of workpieces.
- Grinding – changing of workpieces.
- Die-sinking EDM – changing of workpieces and electrodes.
- Wire EDM – changing of workpieces.



### WorkMaster – a modular automation concept

WorkMaster is a versatile automation concept for a variety of applications in one or more milling machines and/or wire EDM machines, for instance. And changing can be done both in the machine spindle and on the machine table.

The changer unit is completely self-contained and can be adapted to "tailor-made" automation solutions with several types of magazine, as well as a number of options. One, two or three machines in the same production cell.

One clear advantage is the "open architecture" of the system. The customer chooses the machine (or machines) suited to the particular requirements of the business, and a WorkMaster is added.



## Automation

### Grip 3R-W12-S

For automatic changing of 3R-266.12., 3R-266.12HP and 3R-282.12HP



### Code carrier 4 mm 3R-863.01-10

With a pre-programmed unique identity.

- Supplied in sets of 10



### Code carrier spacer D-40106

For mounting code carrier 3R-863.01-10M on pallets



### Code carrier 2 mm 3R-863.01-10M

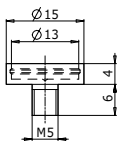
With a pre-programmed unique identity.

- Supplied in sets of 10



### Unimatic code carrier fixture C 960 770

- Weight 0,1 kg



### Fixture with assembled code carrier C 960 800

- Scope of delivery:  
C 960 770 Code tag fixture  
3R-863.01 Code tag



### Grip 3R-WP1

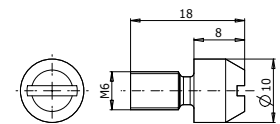
For automatic changing of 3R-206.10, 3R-622.5, 3R-622.6 or customer-made fixtures.



### Unimatic Locating pins C 960 780

Locating pins to all Unimatic pallets, for System 3R gripper.

- Set of 4 pieces
- Weight 0,1 kg



See separate publications for further information about WorkPal, WorkPartner, WorkMaster, WorkMaster Linear, Automation solution with industrial Fanuc robot and WorkShopManager – System 3R's production control software.



## Index

3R-6.300-EHS16 .....	47	3R-228E.....	45	3R-293.33.....	23
3R-6.600-VHS .....	47	3R-228EI.....	45	3R-293.6HP .....	23
3R-60.360SA.....	13	3R-228J.....	45	3R-293.66HP .....	23
3R-60.360X.....	13	3R-228U.....	45	3R-294.....	25
3R-200.XJX.....	7	3R-228.1.....	45	3R-294.1.....	25, 37
3R-200.1J-U.....	7	3R-230.1.....	80	3R-294.2.....	25, 37
3R-200.1J-62 .....	76	3R-232.8.....	31	3R-294.3.....	24
3R-201.5.....	13	3R-232S.....	17	3R-294.6.....	24, 37
3R-201J.....	33	3R-237.1.....	24	3R-322/50E .....	32
3R-202.....	29	3R-237.2.....	24	3R-402.1.....	12, 28
3R-203.....	33	3R-239-XXX.....	35	3R-405.21RS.....	29
3R-203.66.....	34	3R-239-XXX-D.....	35	3R-406.9.....	28
3R-204.....	33	3R-239.1.....	36	3R-422.2.....	28
3R-205.2.....	31	3R-239.2.....	36	3R-466.40RS.....	28
3R-206.10.....	46	3R-239.3.....	36	3R-494-D10x50 .....	30
3R-207.6.....	31	3R-239.11.....	36	3R-494-D12x50 .....	32
3R-208.6.....	32	3R-239.20.....	37	3R-494-D16x50 .....	32
3R-209.1.....	42	3R-239.22.....	38	3R-494-D22x50 .....	32
3R-209.3.....	42	3R-239.24.....	38	3R-494-D26x50 .....	32
3R-209.33.....	42	3R-239.26.....	38	3R-494-D32x50 .....	32
3R-209-350 .....	39	3R-242HP .....	19	3R-494-D40x50 .....	32
3R-209-350.1 .....	40	3R-242S-1 .....	19	3R-494-D50x50 .....	32
3R-209-350.2 .....	40	3R-242S-2 .....	19	3R-494-S12x50 .....	32
3R-209-350.3 .....	41	3R-242S-3 .....	19	3R-494-S22x50 .....	32
3R-209-350.4 .....	41	3R-242S-4 .....	19	3R-494-S26x50 .....	32
3R-209-610 .....	39	3R-242.82HP .....	19	3R-494-S32x50 .....	32
3R-209-610.1 .....	40	3R-243.2-1 .....	34	3R-494-S40x50 .....	32
3R-209-610.2 .....	40	3R-252.1.....	29	3R-494-32x22x50 .....	32
3R-209-610.3 .....	41	3R-261.....	47	3R-494-40x22x50 .....	32
3R-209-610.4 .....	41	3R-261.1.....	38, 42, 47	3R-600.15-3 .....	11, 27
3R-209-860 .....	39	3R-262HP .....	16	3R-600.24RS.....	10, 27
3R-209-860.1 .....	40	3R-262.6.....	34	3R-600.24-4RS.....	10, 27
3R-209-860.2 .....	40	3R-266.4.....	16	3R-601.7E-P.....	30
3R-209-860.3 .....	41	3R-266.5.....	16	3R-602.4.1.....	11
3R-209-860.4 .....	41	3R-266.12HP .....	17	3R-602.10-1 .....	10
3R-213.4.....	32	3R-272HP .....	16	3R-602.12-1 .....	11
3R-216.....	45	3R-282.12HP .....	16	3R-602.26.....	10
3R-216.6.....	39	3R-292.1.....	21	3R-602.27.....	10
3R-217-1 .....	12, 28	3R-292.2.....	21	3R-602.27-1 .....	27
3R-218S.....	43	3R-292.3.....	21	3R-602.81RS.....	11
3R-220.3.....	46	3R-292.3D .....	22	3R-605.1RS.....	13
3R-222.2.....	29	3R-292.3P.....	22	3R-605.2RS.....	13, 29
3R-223.....	33	3R-292.3S.....	24	3R-605.5RS.....	29
3R-223.3.....	33	3R-292.6HP .....	22	3R-605.10.....	13
3R-224.....	33	3R-292.6S.....	22	3R-605.10E.....	13
3R-225.....	7	3R-292.23.....	25	3R-605.10EE.....	13
3R-225.1.....	7	3R-292.31.....	22	3R-605.26.....	13
3R-225.2.....	36	3R-292.61HP .....	22	3R-605.27RS.....	13, 29
3R-226.4.....	16	3R-292.66HP .....	25	3R-605-GE.....	13, 29
3R-226.6.....	34	3R-293.3.....	23	3R-606.2.....	46

## Index

3R-611.4.....	14, 46	C 458 010.....	55	C 666 020.....	49
3R-611.46.....	14, 46	C 458 040.....	53, 55	C 666 040.....	49
3R-611.60.....	14	C 458 060.....	53, 55	C 844 000.....	80
3R-613.4.....	31	C 458 080.....	53, 55	C 844 100.....	80
3R-613.6.....	31	C 463 140.....	75	C 844 200.....	80
3R-614-04.....	80	C 463 180.....	75	C 844 300.....	80
3R-614-06.....	80	C 550 500.....	57	C 860 000.....	80
3R-622.2.....	27	C 550 650.....	66	C 868 000.....	80
3R-622.6.....	27	C 550 670.....	67	C 868 100.....	80
3R-651.7E-P.....	30	C 550 900.....	57	C 909 000.....	58
3R-651.75E-P.....	31	C 551 300.....	57	C 909 010.....	58
3R-659.16-P.....	32	C 551 700.....	57	C 909 020.....	58
3R-659.20-P.....	32	C 552 100.....	57	C 909 060.....	58
3R-659.32-P.....	32	C 552 300.....	68	C 909 010.....	58
3R-863.01-10.....	83	C 552 400.....	68	C 950 000.....	60
3R-863.01-10M.....	83	C 552 500.....	68	C 950 070.....	60
3R-901-10RS.....	47	C 552 600.....	52	C 950 090.....	53
3R-914.07.....	80	C 552 610.....	52	C 950 0XX.....	61
3R-914.10.....	80	C 552 620.....	52	C 950 100.....	62
3R-914.10L.....	80	C 552 630.....	50	C 950 120.....	62
3R-914.15.....	80	C 552 640.....	50	C 950 130.....	62
3R-A239.....	38	C 558 XXX.....	51	C 950 140.....	62
3R-A239.1.....	38	C 573 550.....	69	C 950 150.....	61
3R-A6450.....	76	C 574 150.....	69	C 950 170.....	61
3R-A6450-1.....	76	C 574 550.....	71	C 950 180.....	62
3R-SP26771-RS.....	11	C 575 050.....	71	C 950 190.....	62
3R-SP6435.....	12, 28	C 575 550.....	71	C 950 280.....	18
3R-SSP012.....	14	C 575 600.....	71	C 950 290.....	53, 55
3R-W12-S.....	83	C 577 200.....	67	C 950 470.....	17
3R-WP1.....	83	C 577 250.....	66	C 950 480.....	76
90809.02.....	12	C 577 350.....	69	C 950 490.....	76
90937.....	34	C 577 370.....	69	C 950 510.....	76
C 170 XXX.....	55	C 596 050.....	70	C 950 530.....	76
C 187 900.....	58	C 596 650.....	70	C 950 550.....	76
C 188 750.....	58	C 597 250.....	70	C 951 100.....	62
C 300 050.....	56	C 597 550.....	70	C 951 120.....	62
C 300 100.....	56	C 597 560.....	52	C 951 130.....	62
C 350 100.....	58	C 599 450.....	66	C 951 140.....	62
C 456 250.....	55	C 619 660.....	67	C 951 150.....	61
C 456 350.....	55	C 619 670.....	24, 67	C 951 170.....	61
C 456 450.....	55	C 619 680.....	23	C 951 180.....	62
C 456 600.....	58	C 641 900.....	67	C 951 190.....	62
C 456 610.....	58	C 642 050.....	70	C 960 010.....	72
C 456 650.....	52	C 642 150.....	71	C 960 030.....	72
C 456 660.....	52	C 642 160.....	71	C 960 050.....	72
C 456 670.....	52	C 642 300.....	76	C 960 060.....	72
C 457 940.....	17	C 665 600.....	50	C 960 100.....	73
C 457 960.....	17	C 665 700.....	50	C 960 110.....	73
C 457 980.....	17	C 665 720.....	50	C 960 120.....	73
C 458 000.....	53	C 665 900.....	50	C 960 130.....	73

## Index

C 960 160.....	74
C 960 180.....	74
C 960 260.....	74
C 960 300.....	75
C 960 330.....	75
C 960 350.....	75
C 960 430.....	64
C 960 440.....	53
C 960 450.....	64
C 960 500.....	64
C 960 710.....	64
C 960 770.....	83
C 960 780.....	83
C 960 800.....	83
C 980 010.....	49
C 980 090.....	49
D-30206.....	12
D-30214.....	25
D-30215.....	12
D-40106.....	83
K-30266.....	14
N 150 050.....	56
N 460 000.....	56
N 460 100.....	56
N 460 300.....	56
N 460 700.....	56
S 112 050.....	61
S 112 060.....	61
S 149 500.....	63
S 149 900.....	52
S 150 000.....	52
S 150 100.....	69, 74
S 150 310.....	52
S 150 360.....	51
S 150 500.....	49
S 150 550.....	49
S 150 560.....	49
S 161 000.....	49
S 190 520.....	64
S 190 900.....	64
S 206 200.....	77
S 206 220.....	77
S 206 301.....	61
S 206 4XX.....	51



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