

# Tooling Delphin modular clamping system



Design and  
quality by  
System 3R

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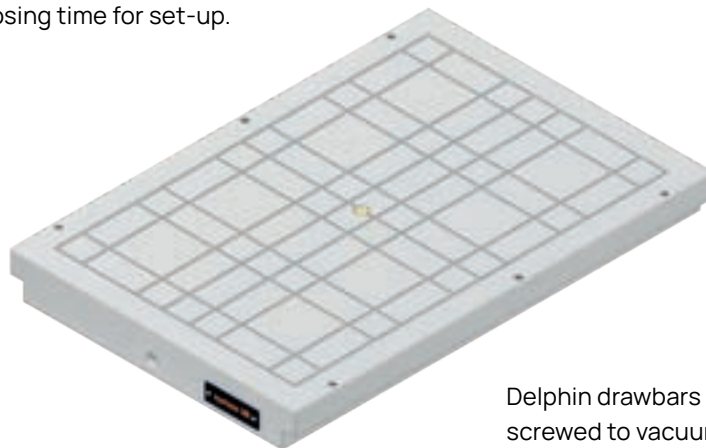
# One Machine Base – Lots of workpieces held in



Pre-assemble all types and sizes of vices on the pallet



Milling magnets are particularly suitable for five-sided machining. The magnet pallet can be changed immediately without losing time for set-up.



Delphin drawbars can easily be screwed to vacuum plates.

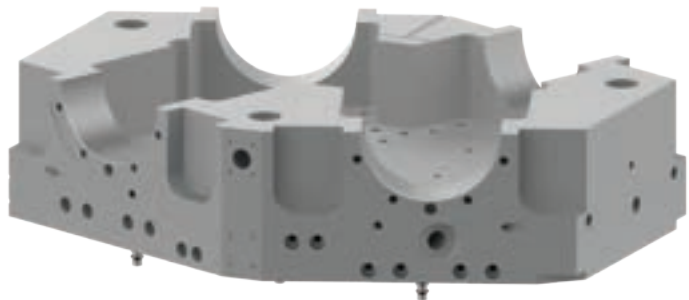




The T-slots are particularly suitable for clamping: workpieces of any kind; vices; rotary tables; stops; dividing attachments; and, prisms.



System 3R supplies stationary and rail-travelling industrial robots and handling devices that load the Delphin system easily.



Drawbars serve as an interface between machine table and workpiece. Especially in mould making, direct part clamping is very popular. It ensures accurate positioning of moulds and workpieces on the machines in question.



Customer-specific fixtures can be easily switched between different machines (e.g. milling, CMM and grinding) without losing accuracy or time in setting up.

# Different Delphin applications



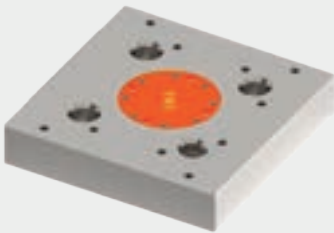
## 4-FOLD BASEPLATES

4-fold baseplates with a sealing frame are becoming popular for automated handling of pallets and parts.



## BUILT-UP

Free positioning with built-up chucks.



## HIGH-TEMPERATURE AND ADDITIVE MANUFACTURING

Delphin high-temperature chucks work particularly well in additive manufacturing.



## PALGRIP

Universal lateral gripper for light and heavy weights.



## PALLET GRIPPER

The Delphin gripper is the coupling interface between robot and pallet.



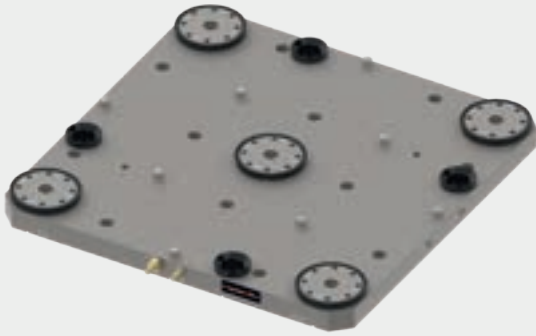
## SPINDLE

Having two chucks on a spindle is very popular in the production of turbine blades. This clamping solution guarantees great stability when acceleration forces are high.



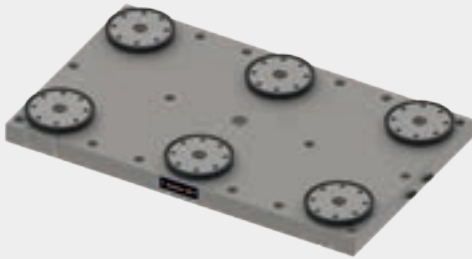
## TOWER

Simple and easy vertical palletising of vices, pallets and fixtures. Fewer problems with chips (because they drop downwards).



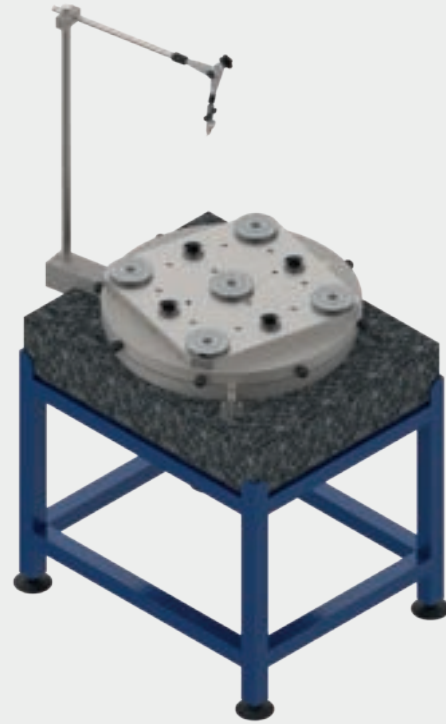
### 5-FOLD BASEPLATES

5-fold baseplates are popular with a Delphin index chuck in the middle. Thus, even small pallets can be used and it has more space in the magazine.



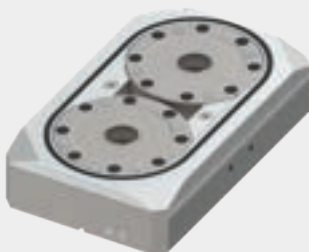
### 6-FOLD BASEPLATES

Baseplates with any number of Delphin chucks are possible.



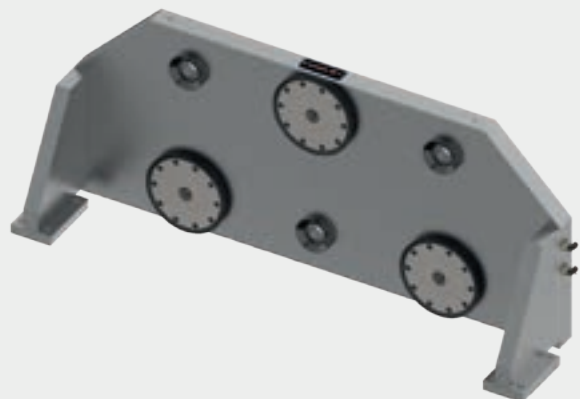
### ROTATABLE PRESETTING STATION

While the machine is running, workpieces can be pre-positioned on the rotatable presetting station.



### 2-FOLD BASEPLATES

2-fold baseplates are especially suitable for single vices.



### CUSTOMISED APPLICATIONS

Delphin offers you maximum flexibility and freedom to design your customised applications.

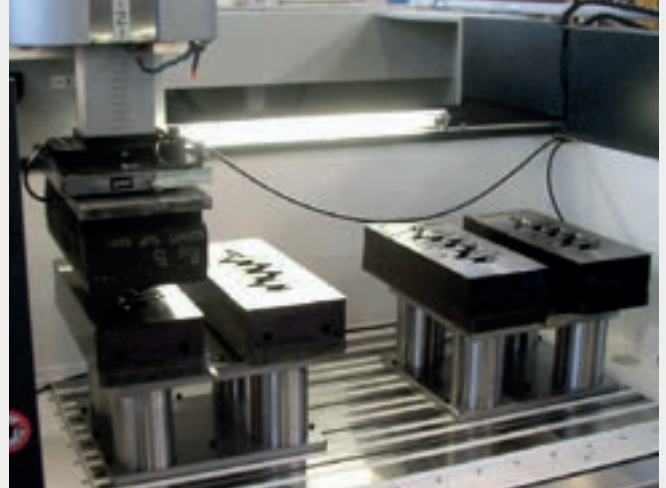
## MILLING WITH DELPHIN



Example customer application

Thanks to high clamping force and mechanical locking, the Delphin clamping system is particularly suitable for milling, even under the extreme loads. Its modularity ensures extraordinarily accurate fitting for various devices and fixtures. This is essential in milling.

## EDM WITH DELPHIN



Example customer application

Attaching electrodes or workpieces to a pallet has the great advantage of transferring the accuracy of upstream processes (e.g. CMM and milling) to the EDM process. The Delphin clamping system can even handle especially large electrodes and workpieces.

## MEASURING WITH DELPHIN



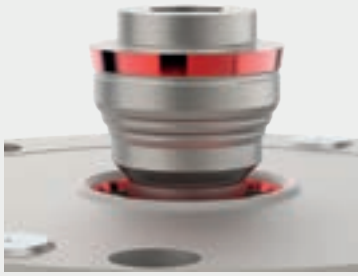
Without removing the fixture, a workpiece can be measured on a measuring machine (e.g. for an intermediate check). Thanks to the drawbars, returning the workpiece to the production machine for further processing is highly accurate.

## AUTOMATION WITH DELPHIN

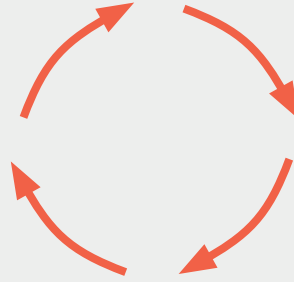


Depending on the Delphin system, activation is either pneumatic or hydraulic. The control signals can be sent from the machine or the robot to the corresponding machine valves. These then activate the Delphin system. Modern robots and software work perfectly with the Delphin clamping system. This enables your machine to work day and night.

# Why Delphin?

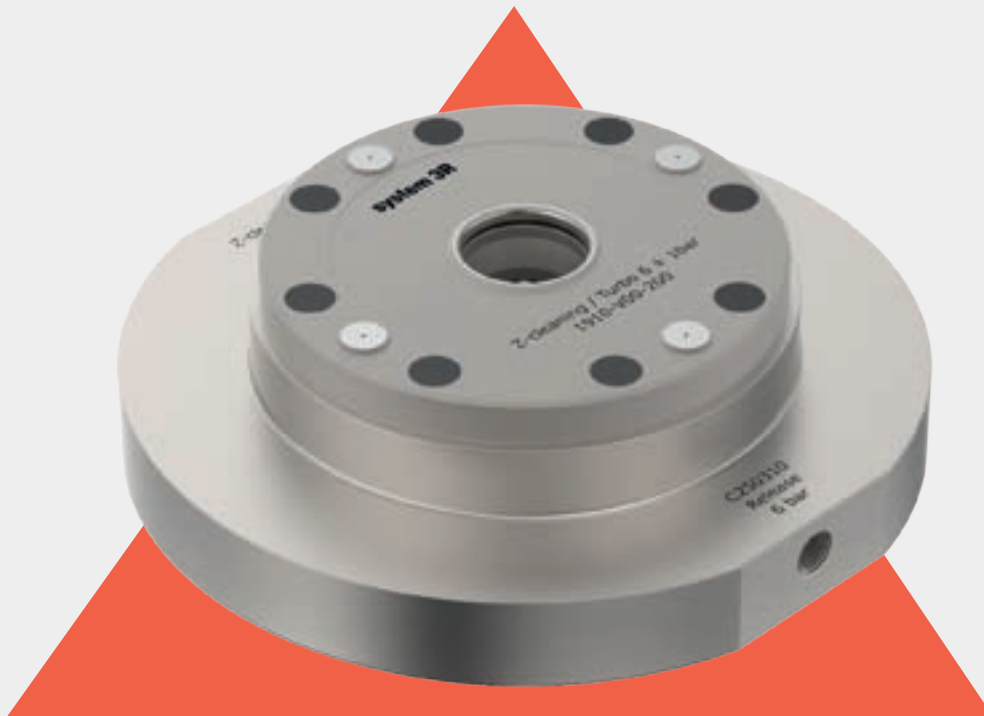


Highest repeatability.



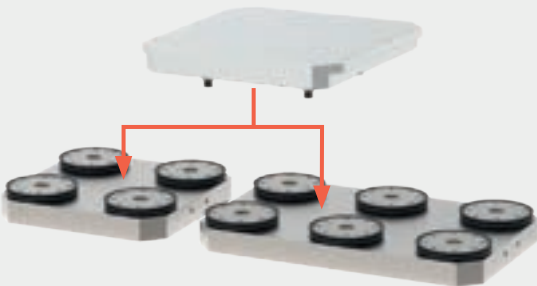
Highest process reliability.

QUALITY



FLEXIBILITY

PRODUCTIVITY



The Delphin clamping system is modular and adapts to your machine. Standardised interface for all machines.



Fastest possible changing of pallets, devices and workpieces. Reduced set-up times. Unmanned operation with Delphin automation.

# Product overview



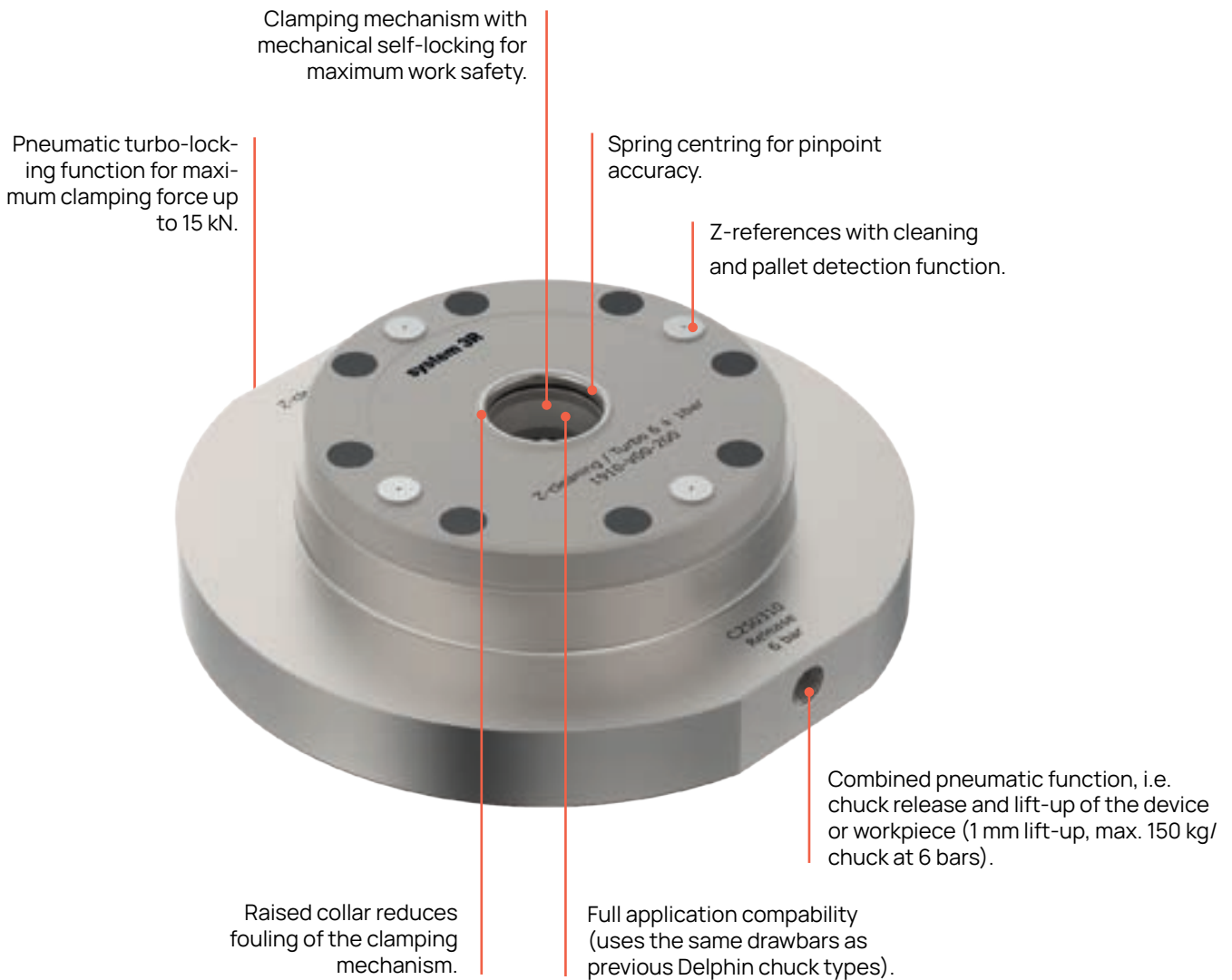
| Description                          | DelphinClassic                                     | DelphinCompact                                      | DelphinCompact index  |
|--------------------------------------|--|---|---|
|                                      | Manual   | Manual and automatic                                | Manual and automatic  |
| Recommended applications             | milling, wire/die-sinking EDM and laser            | milling, wire/die-sinking EDM, laser and automation | milling, wire/die-sinking EDM, laser and automation                         |
| Recommended workpiece weight / chuck | up to 500 kg                                       | up to 500 kg  | up to 500 kg<br>up to 80 kg, manual handling*<br>up to 50 kg in automation* |
| Clamping force                       | 10 kN  | 15 kN, with turbo locking                           | 15 kN, with turbo locking   |
| Holding force                        | 60 kN  | 60 kN   | 60 kN   |
| Safety                               | mechanical self-locking                            | mechanical self-locking                             | mechanical self-locking   |
| Presence control and cleaning        | no   | yes   | yes   |
| Releasing                            | pneumatic, 6 - 10 bars<br>hydraulic, up to 30 bars | pneumatic, 4 - 10 bars<br>hydraulic, up to 30 bars  | pneumatic, 4 - 10 bars<br>hydraulic, up to 30 bars                          |
| Soft landing and lift-up function    | no   | up to 1 mm  | up to 1 mm  |
| Lift-up weight / chuck               |  | up to 150 kg at 6 bars<br>up to 1,000 kg at 30 bars | up to 150 kg at 6 bar<br>up to 1000 kg at 30 bars                           |
| Centre-to-centre distance (cc)       | 120 - 400 mm                                       | 120 - 400 mm  | 120 - 400 mm  |
| Diameter                             | Ø 115 mm   | Ø 115 mm  | Ø 115 mm  |
| Centre repeatability                 | 0.003 mm   | 0.003 mm  | 0.003 mm  |
| Angle repeatability                  | -  | -   | 0.02 mm   |
| System centring accuracy             | 0.005 mm   | 0.005 mm  | 0.005 mm<br>0.02 mm angle / 100 mm*   |
| Material                             | hardened stainless steel                           | hardened stainless steel                            | hardened stainless steel  |

\*Valid for index single chuck C254810 pallet.



| Description                          | DelphinHCP  | DelphinBIG                    |
|--------------------------------------|---|-------------------------------|
|                                      | Manual and automatic  | Large part manufacturing      |
| Recommended applications             | milling, die-sinking EDM, laser and automation                          | milling, laser and automation |
| Recommended workpiece weight / chuck | up to 500 kg  | up to 2 000 kg                |
| Clamping force                       | 15 kN   | 50 kN, with turbo locking     |
| Holding force                        | 60 kN   | 100 kN                        |
| Safety                               | mechanical self-locking   | mechanical self-locking       |
| Presence control and cleaning        | yes   | yes                           |
| Releasing                            | hydraulic, 30 - 70 bars   | hydraulic, 40 - 60 bars       |
| Soft landing and lift-up function    | up to 1 mm  | up to 2 mm                    |
| Lift-up weight / chuck               | up to 1,000 kg at 55 bars   | up to 2,500 kg at 60 bars     |
| Centre-to-centre distance (cc)       | 100 - 400 mm  | 400 - 1,000 mm                |
| Diameter                             | Ø 95 mm   | Ø 150 mm                      |
| Centre repeatability                 | 0.003 mm  | 0.005 mm                      |
| Angle repeatability                  | -   | -                             |
| System centring accuracy             | 0.005 mm  | 0.010 mm                      |
| Material                             | chuck front, hardened stainless steel; other components, hardened steel | hardened steel                |

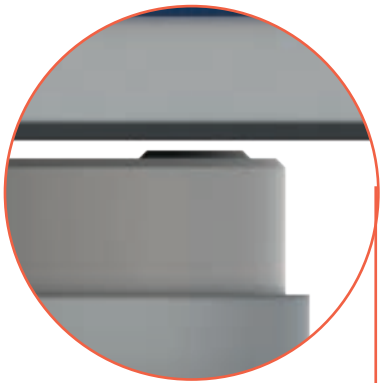
# DelphinCompact chuck



## KEY FACTS

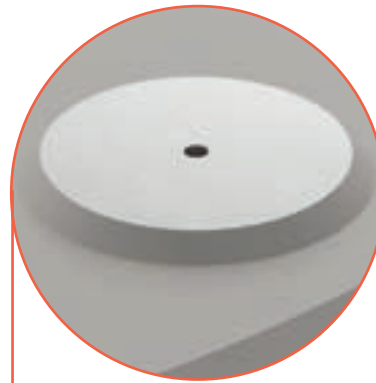
- Very compact design (outer diameter 115 mm)
- Stainless steel (used for milling, EDM, wire EDM, turning and grinding processes)
- High clamping force (up to 15 kN with turbo locking)
- Pneumatic opening (lift-up function, 150 kg at 6 bars).

## DelphinCompact chuck



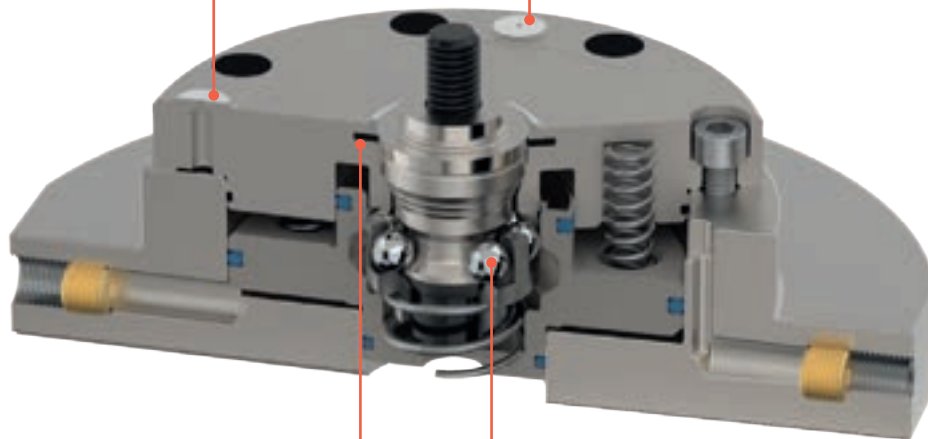
### LIFT-UP

The lift-up function lets pallets land softly on the Z-supports and protects them from impacts. This function also significantly improves pallet presence control.



### Z-SUPPORT CLEANING

Perfectly balanced Z-support surface for the best possible cleanliness, dirt removal and detection.



### CENTRING

Conical spring centring for absolutely zero play between drawbar and chuck. This ensures the highest possible repeatability, excellent rigidity and less vibration.

### DIRT INSENSITIVE

A floating ball cage permits a larger angular deviation between pallet and chuck during loading and unloading. In Addition, the design is dirt insensitive.



## DelphinCompact chuck

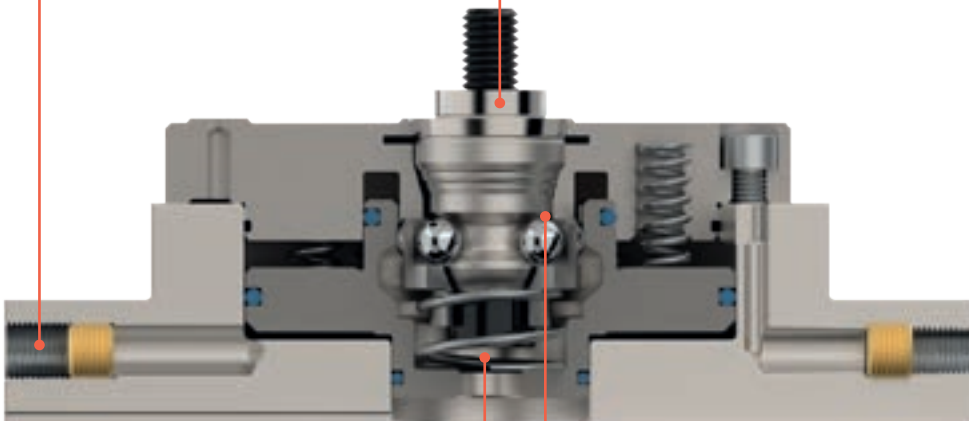


### REQUIRED AIR PRESSURE

Many clamping systems need an at least 6-bar compressed air supply. The DelphinCompact chuck requires only 4 bars to open the chuck and release the drawbar. This saves money and increases process safety.

### HOLDING FORCE

The holding force sets the maximum permissible pull-out force. In turn, this latter force determines safety until the pallet is pulled out of the chuck. Delphin chucks have a minimum holding force of 60 kN.

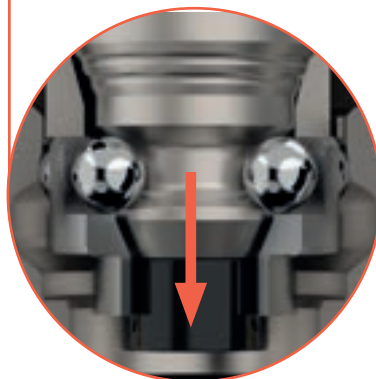


### DRAIN HOLE

When unloading a pallet, dirt and water from the milling process can get into the clamping system. The Delphin system has a drain hole. Thus, dirt and water flush out and the chuck keeps the functionality.

### CLAMPING FORCE / PULL-IN FORCE

The clamping or pull-in force sets how tightly a drawbar is pulled into the system. Together with other features such as centring, it determines system stability and rigidity.



# DelphinCompact – for automated and manual applications

## Technical data

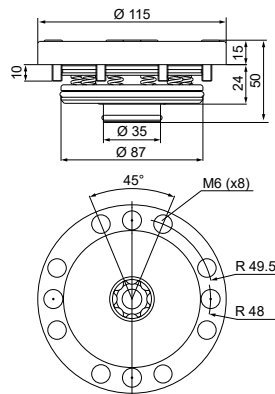
- Clamping force at 6 bars turbo pressure, up to 15 kN
- Holding force, 60 kN
- Air pressure open, 4 - 10 bars
- Oil pressure open, max 30 bars
- Lift-up function, pneumatic, 150 kg at 6 bars (lift-up 1 mm)
- function, hydraulic, 1,000 kg at 30 bars (lift-up 1 mm)
- Repeatability, within 0.003 mm
- Material, hardened stainless steel

## Applications

Milling, wire/die-sinking EDM, laser and automation.

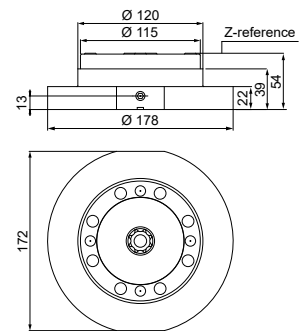
## Built-in

Built into machine table or baseplate.



## Built-up

Built on machine table.



### DelphinCompact built-in chuck C250000

For easy installation in machine tables and baseplates.



### DelphinCompact built-in chuck without lift-up C250010

For easy installation in machine tables and baseplates. Specially designed for tower or other applications with lateral loads.



### DelphinCompact built-in chuck index C250050

For easy installation in machine tables and baseplates. To be used with single pallet C254810.



### DelphinCompact built-up chuck C250310

For mounting directly on machine tables. Mounting holes to be drilled when installing.



### DelphinCompact built-up chuck index C250350

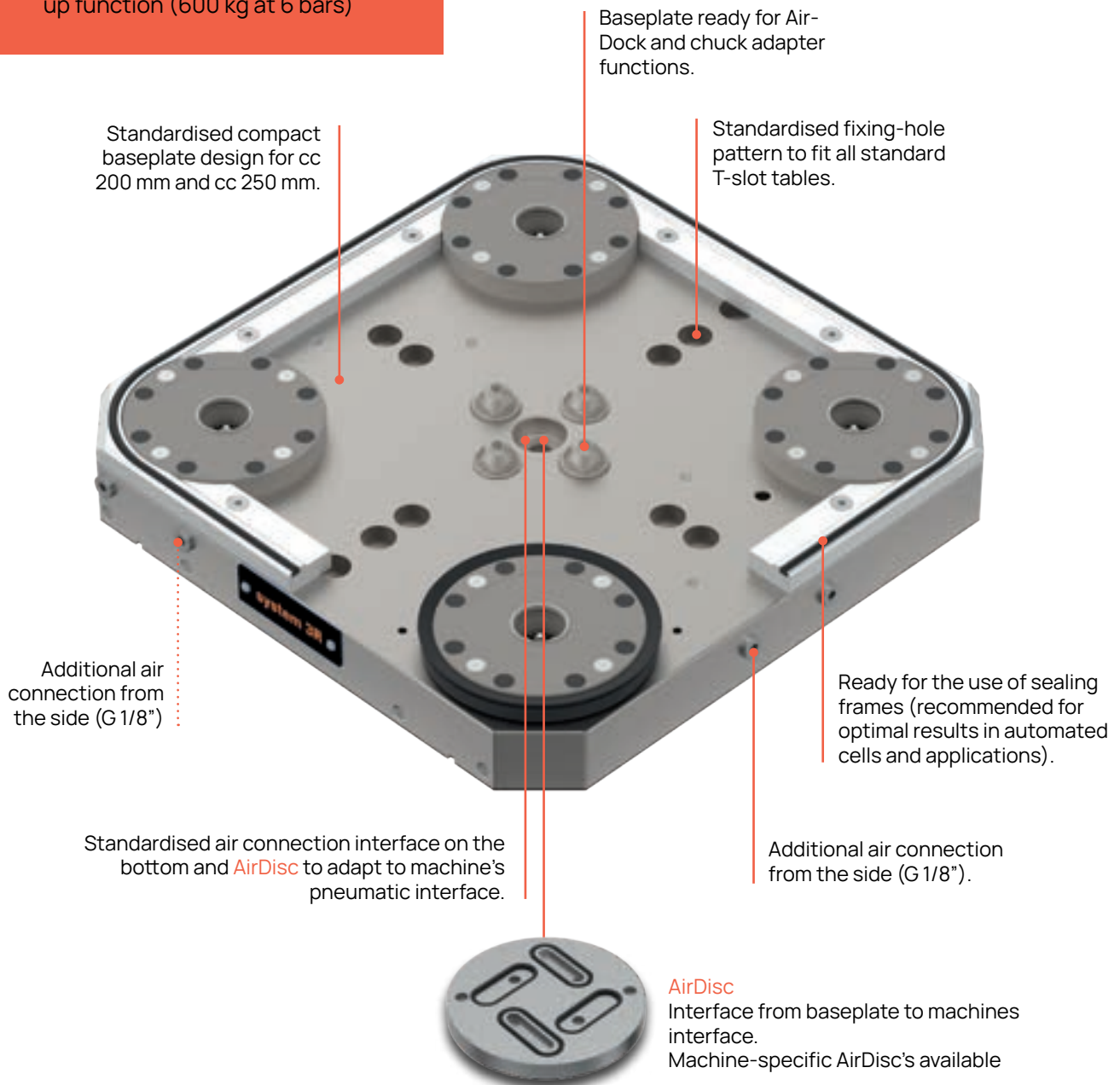
For mounting directly on machine tables. Mounting holes to be drilled when installing.



# DelphinCompact baseplates (2-fold, 4-fold and 6-fold)

## KEY FACTS

- Standardised design
- Ready for full use in automated solutions
- Easy adaptation to machine-specific air connections (via AirDisc)
- High clamping force (up to 60 kN with turbo locking)
- Pneumatic opening with 1 mm lift-up function (600 kg at 6 bars)

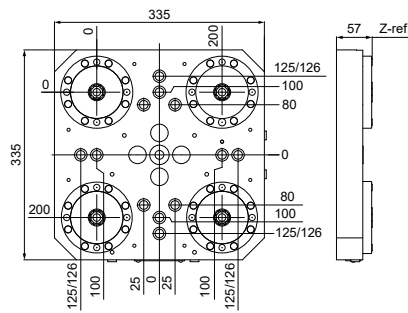


# DelphinCompact baseplates – For automated and manual applications

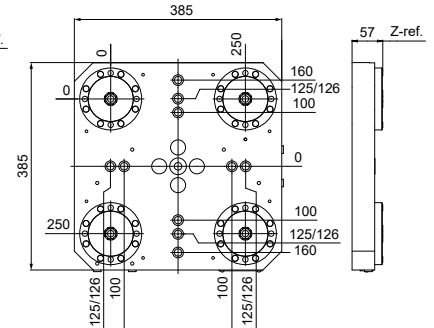
## Technical data

- Clamping force at 6 bars turbo pressure, up to 60 kN
- Holding force, 240 kN
- Release pressure, 4 – 30 bars hydraulic or pneumatic
- function, pneumatic, 600 kg at 6 bars (lift-up 1 mm)
- Lift-up function, hydraulic, 4,000 kg at 30 bars (lift-up 1 mm)
- Repeatability, within 0.003 mm
- Chuck material, hardened stainless steel
- Baseplate material, tempered steel

## DelphinCompact 4-fold baseplates cc 200 mm



## cc 250 mm



## Applications

Milling, laser and automation.

## DelphinCompact 4-fold baseplates with 4 sealing rings

Supplied without AirDisc, but with 2 fittings for side connection.

### S252201

- cc 200 mm

### S252251

- cc 250 mm



## DelphinCompact 4-fold baseplates with sealing frame

Supplied without AirDisc, but with 2 fittings for side connection.

### S252202

- cc 200 mm

### S252252

- cc 250 mm



## Applications

Also suitable for die-sinking

## DelphinCompact 4-fold baseplates with sealing frame with AirDock valves

Supplied without AirDisc. Suitable for chuck adapter pallets.

### S252203

- cc 200 mm

### S252253

- cc 250 mm



## DelphinCompact 6-fold baseplates with 6 sealing rings with AirDock valves

Supplied without AirDisc **S252351**

- cc 250 mm



## Delphin – accessories

### DelphinCompact 2-fold baseplates

(delivered without AirDisc; 2 fittings for side connection)

#### S252101

- cc 200 mm

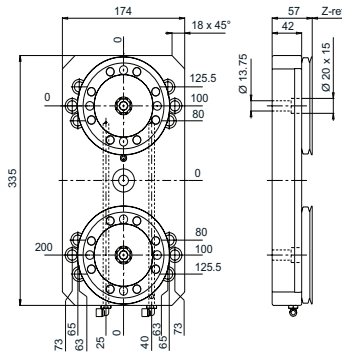
#### S252151

- cc 250 mm



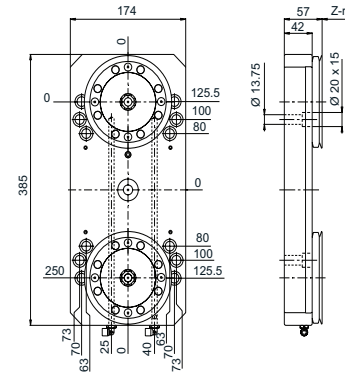
### 2-fold baseplate, cc 200 mm

Supplied without AirDisc.



### 2-fold baseplate, cc 250 mm

Supplied without AirDisc.



### Delphin load and wash station

Supplied without AirDisc, but with 2 fittings for side connection.

#### S252204

- cc 200 mm

#### S252254

- cc 250 mm



### AirDisc C253XXX

Can be designed for any machine-specific interface on request.



### Chuck sealing ring C254090

Recommended only where DelphinCompact and DelphinClassic are used manually.



### DelphinCompact sealing frames

#### C252210

For baseplate C252200.

- cc 200 mm

#### C252260

For baseplate C252250.

- cc 250 mm

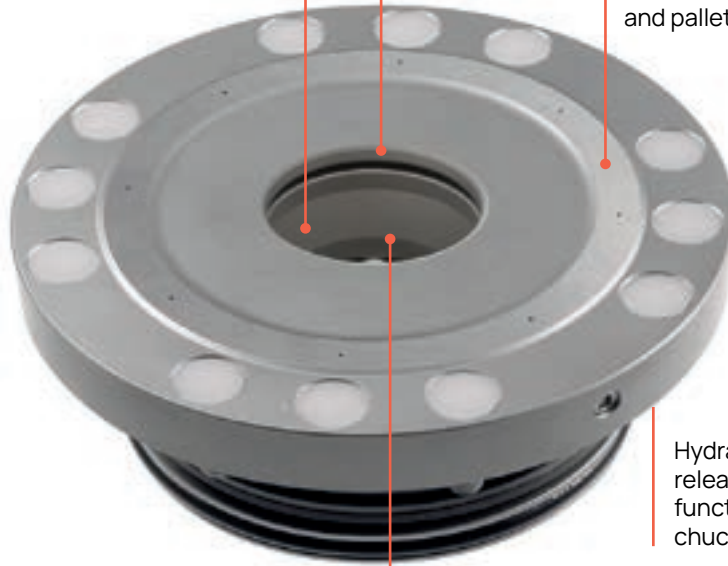


# DelphinHCP chuck

Clamping mechanism with mechanical self-locking for maximum work safety.

Spring centring for pinpoint accuracy.

Z-references with cleaning and pallet detection function.



Hydraulic function – chuck releasing and lift-up (lift-up function up to 1,000 kg per chuck at 55 bars).

Full application compatibility (uses the same drawbars as previous Delphin chuck types).

## KEY FACTS

- Very compact design (outer diameter 95 mm)
- Chuck front, hardened stainless steel; other components, hardened steel
- For use in milling, EDM, turning and grinding processes
- High clamping force (up to 15 kN)
- Hydraulic opening with lift-up function up to 1,000 kg per chuck at 55 bars

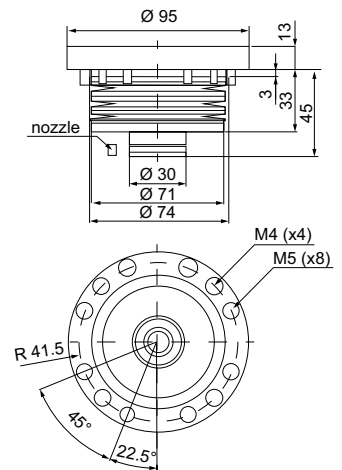
## Technical data

- Clamping with cup springs and self-locking mechanism
- Clamping force 15,000 N
- Holding force, 60,000 N
- Pressure control and cleaning, 6 bars
- Lift-off during unclamping, 1 mm
- Releasing hydraulic pressure, 30 - 70 bars
- Accuracy, 3 µm
- chuck front, hardened stainless steel; other components, hardened steel

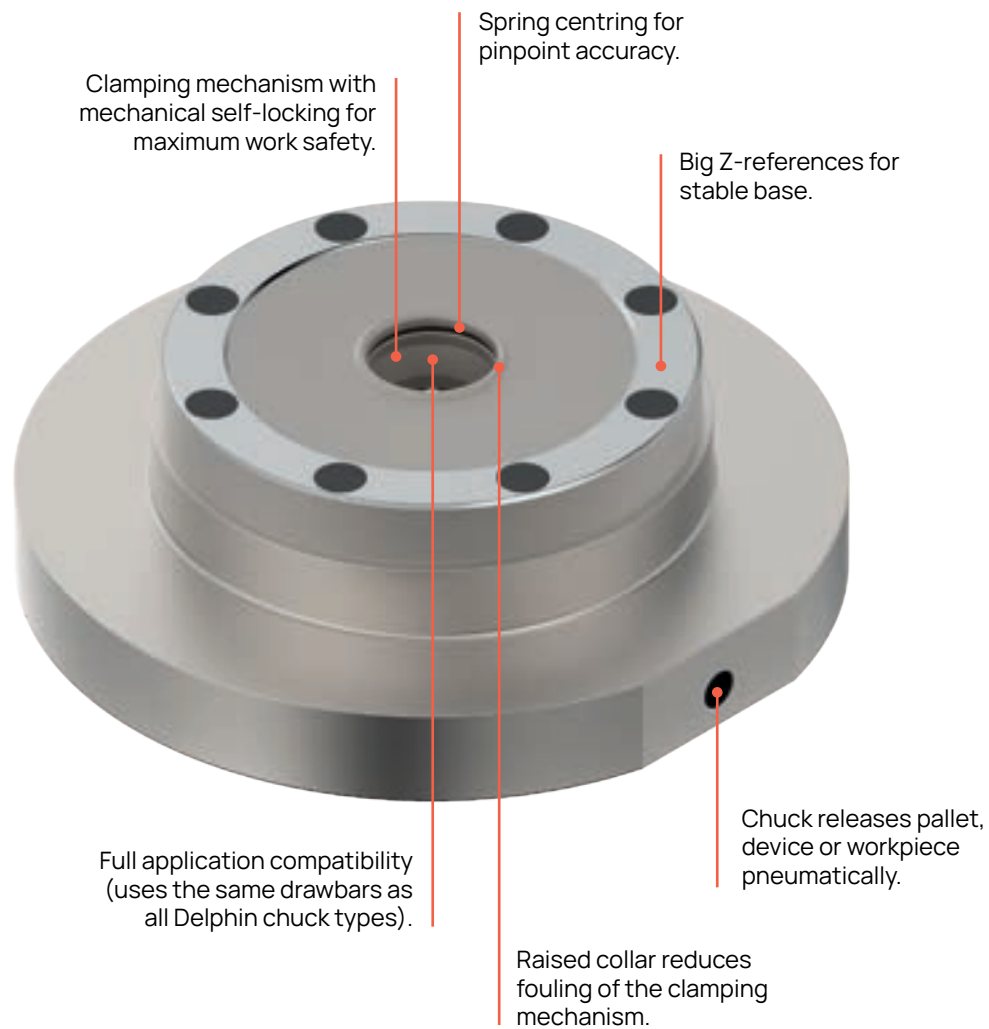
## DelphinHCP hydraulic built-in chuck C220000

For easy installation in machine tables and baseplates.

- Outer diameter, 95 mm



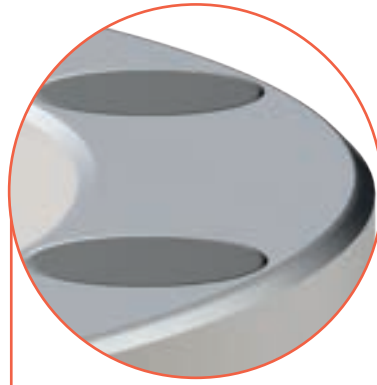
# DelphinClassic chuck



## KEY FACTS

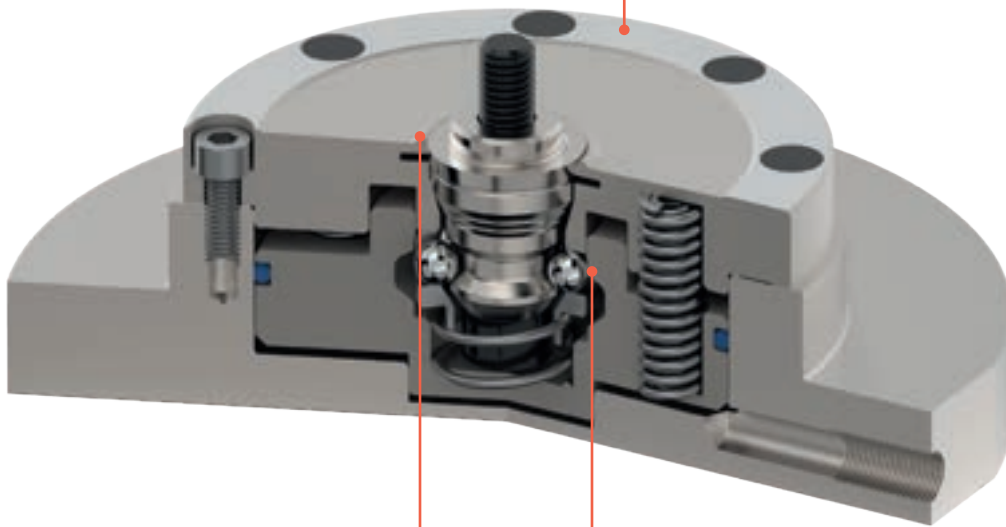
- Very compact design (outer diameter 115 mm)
- Stainless steel (used for milling, EDM, wire EDM, turning and grinding processes)
- High clamping force (up to 10 kN)

## DelphinClassic chuck



### LARGE Z-SUPPORT

Large and precision-ground contact surfaces for the best possible support and maximum rigidity.



### CENTRING

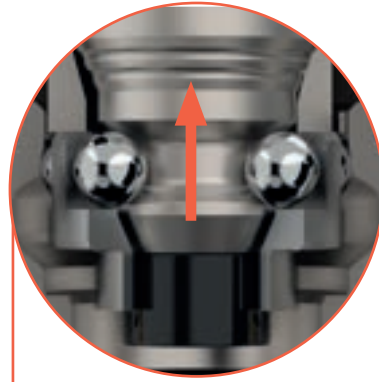
Conical spring centring for absolutely zero play between drawbar and chuck. This ensures the highest possible repeatability, excellent rigidity and less vibration.

### DIRT INSENSITIVE

A floating ball cage permits larger angular deviation between pallet and chuck during loading and unloading. Additionally, the design is dirt insensitive.

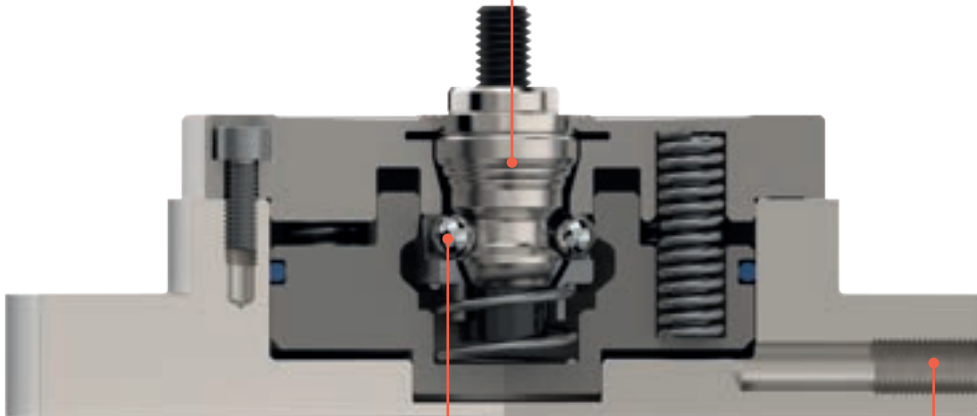


## DelphinClassic chuck



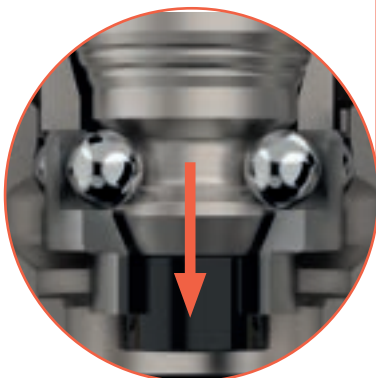
### HOLDING FORCE

The holding force sets the maximum permissible pull-out force. In turn, this latter force determines safety until the pallet is pulled out of the chuck. Delphin chucks have a minimum holding force of 60 kN.



**CLAMPING FORCE / PULL-IN FORCE**  
The clamping or pull-in force sets how tightly a drawbar is pulled into the system. Together with other features such as centring, it determines system stability and rigidity.

**REQUIRED AIR PRESSURE**  
The DelphinClassic chuck requires 6-bar air pressure to open the chuck and release the drawbar.



## DelphinClassic – For manual applications

### Technical data

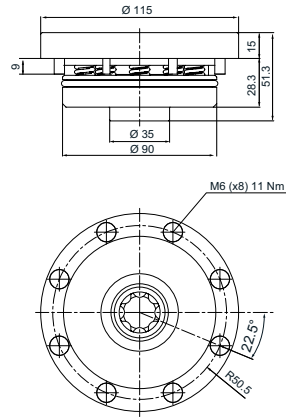
- Clamping force, 10 kN
- Holding force, 60 kN
- Air pressure open, 6 - 10 bars
- Oil pressure open, max 30 bars
- Repeatability, within 0.003 mm
- Material, hardened stainless steel

### Applications

Milling, wire/die-sinking EDM and laser.

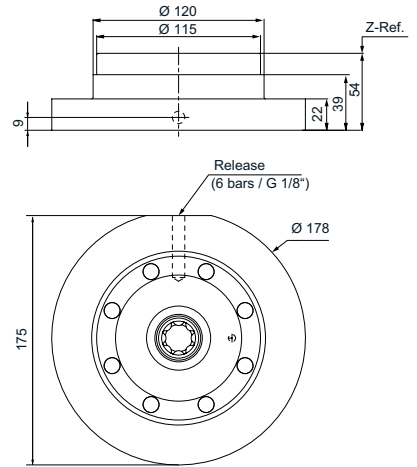
### Built-in

Built into machine table or baseplate.



### Built-up

Built on machine table



### DelphinClassic built-in chuck C272000

For easy installation in machine tables and baseplates.



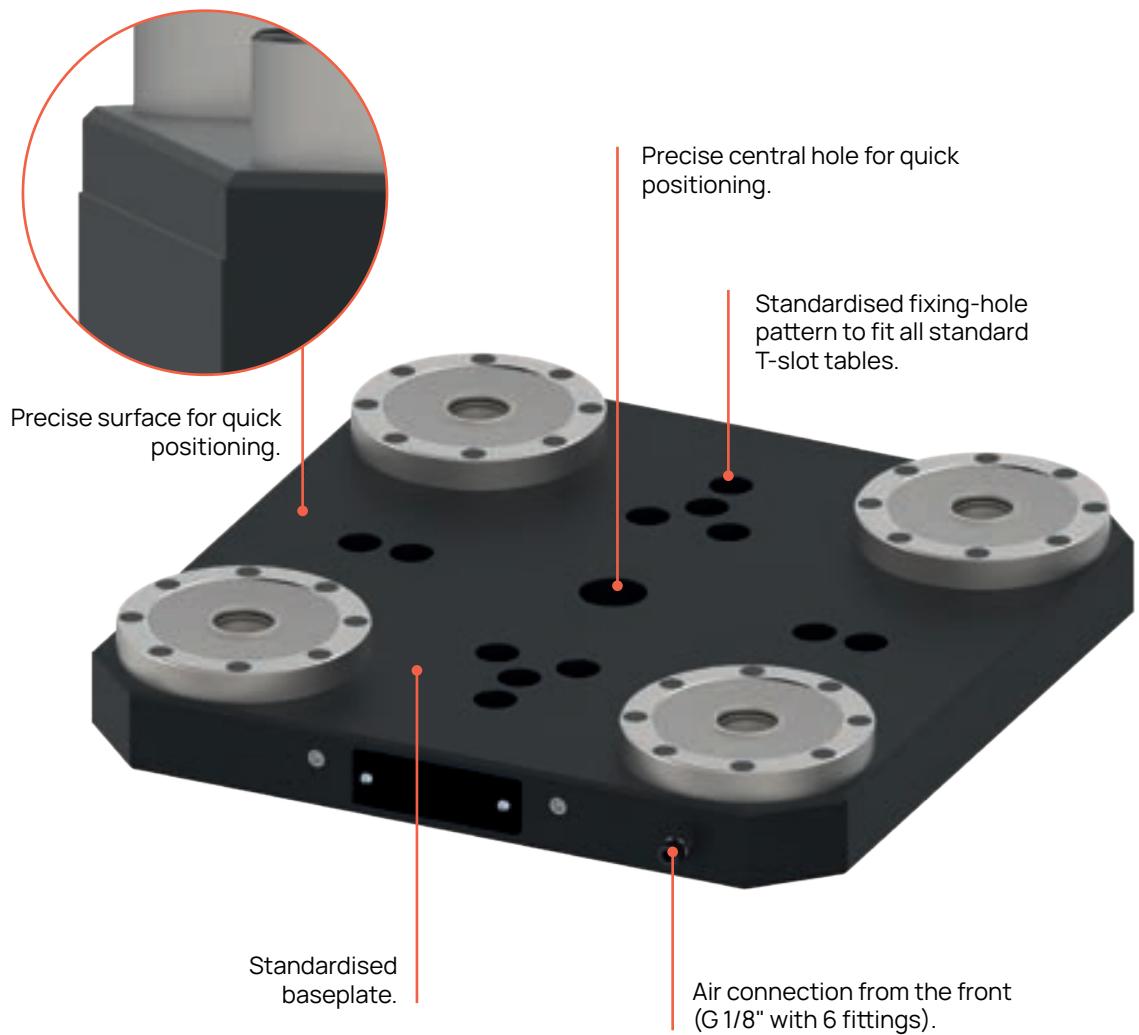
### DelphinClassic built-up chuck C272310

For mounting directly on machine tables.  
Mounting holes to be drilled when installing.



# DelphinClassic baseplate

Our starter baseplate prepares you for the fastest possible pallet, device and workpiece changes. The Delphin baseplate offers maximum flexibility and process reliability throughout the entire production process. High clamping force with maximum accuracy is guaranteed.



## KEY FACTS

- High clamping force, up to 40,000 N
- Pneumatic opening
- Mechanical self-locking for highest process reliability

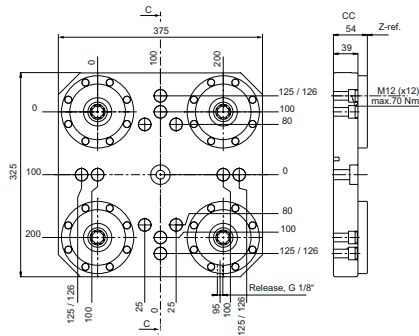
# DelphinClassic baseplates – For manual applications

## Technical data

- Clamping force, up to 40 kN
- Holding force, 240 kN
- Release pressure, 6 - 10 bars
- Repeatability, within 0.003 mm
- Material, hardened stainless steel and hard anodised aluminium

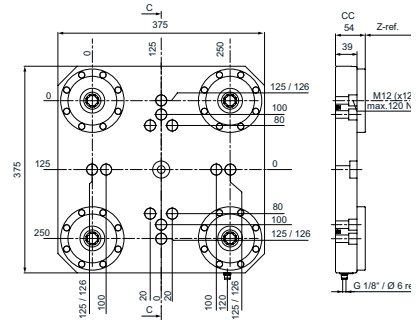
## 4-fold baseplate, cc 200 mm

Supplied without AirDisc.



## 4-fold baseplate, cc 250 mm

Supplied without AirDisc.

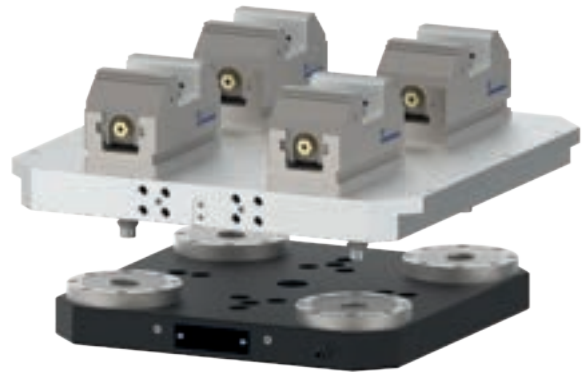


## Applications

Milling and laser.



Example customer application



## DelphinClassic 4-fold baseplates

Has 1 fitting for side connection.

### C272200

- cc 200 mm

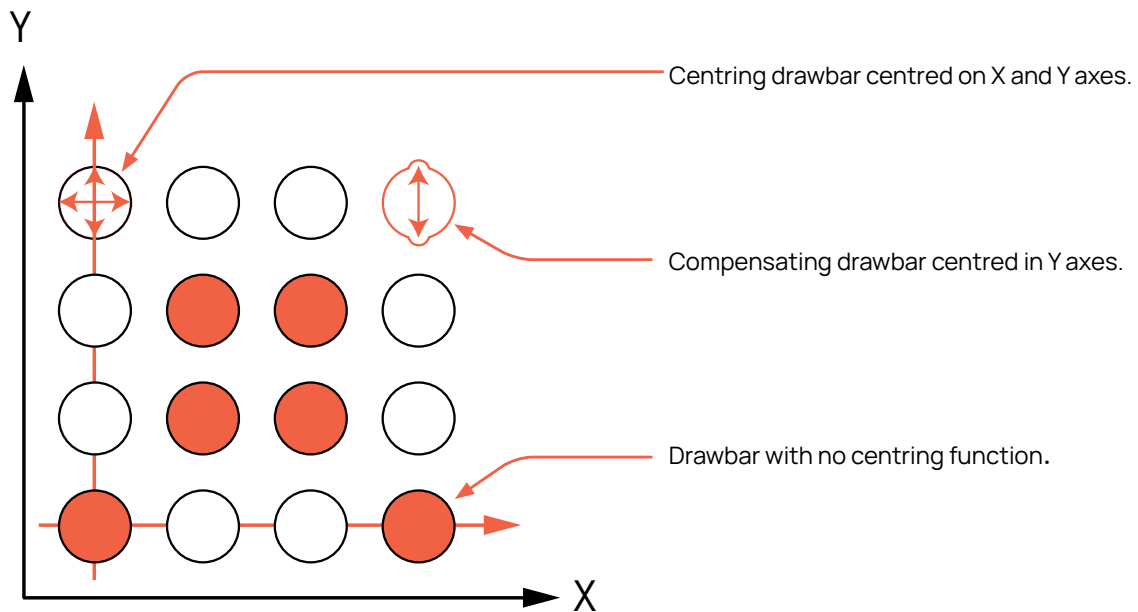
### C272250

- cc 250 mm



# Delphin drawbars

Drawbars are mounted directly into a workpiece, pallet or fixture. There are three different types of drawbars. One type defines the zero point and thus centres in 2 axes. Another drawbar type centres in one axis only. All other drawbars have no centring function. They are solely for clamping.



For centring in 2 axes  
= zero point.



For centring in 1 axis  
= angle definition.



No centring  
= only clamping.



## Delphin drawbars

### Delphin 2 axes-centring drawbar C282000

Fixed in pallet.

- Material, stainless steel (hardened and ground)
- Dimensions (screwed in), Ø 28 x 40.5 mm



two grooves

### Delphin 1 axis-centring drawbar C282100

Fixed in pallet.

- Material, stainless steel (hardened and ground)
- Dimensions (screwed in), Ø 28 x 40.5 mm



single groove

### Delphin no-centring drawbar C282200

Fixed in pallet.

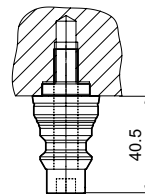
- Material, stainless steel (hardened and ground)
- Dimensions (screwed in), Ø 28 x 40.5 mm



no grooves

### Delphin drawbar function

- ⊗ centring on 2 axes
- ↻ centring on 1 axis
- no centring



fixed in pallet

## Drawbar sets

### 2-drawbar set S812000

Set comprises:

- 1 x C282000 (centring on 2 axes)
- 1 x C282100 (centring on 1 axis)



### 4-drawbar set S812100

Set comprises:

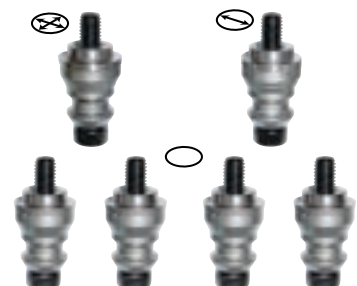
- 1 x C282000 (centring on 2 axes)
- 1 x C282100 (centring on 1 axis)
- 2 x C282200 (no centring)



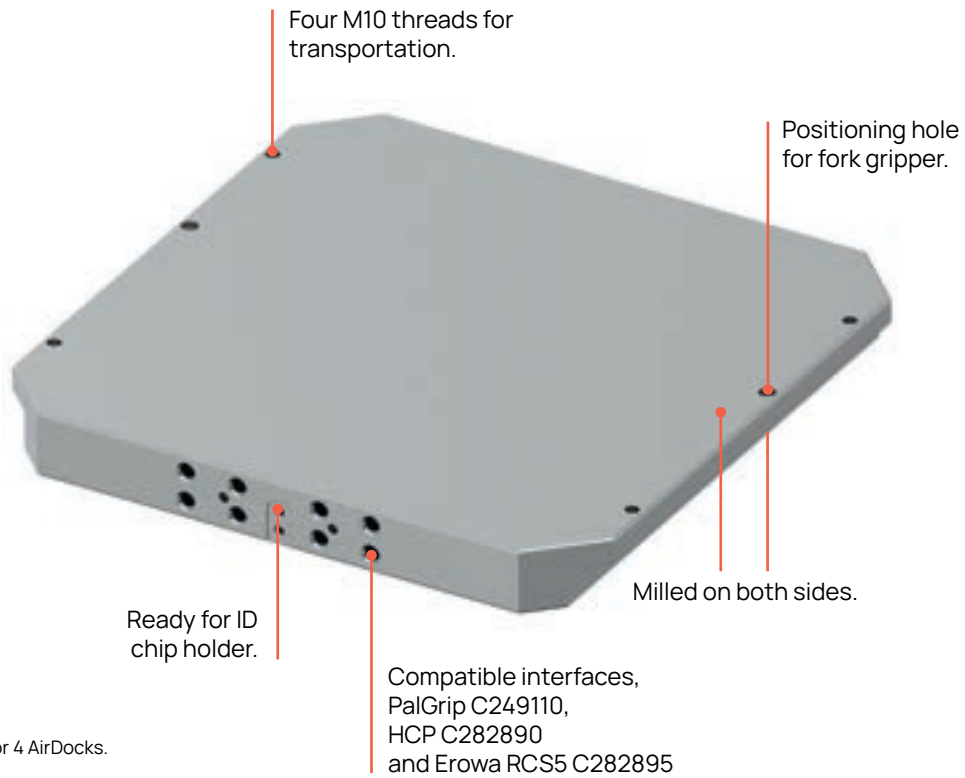
### 6-drawbar set S812200

Set comprises:

- 1 x C282000 (centring on 2 axes)
- 1 x C282100 (centring on 1 axis)
- 4 x C282200 (no centring)



# Delphin pallets



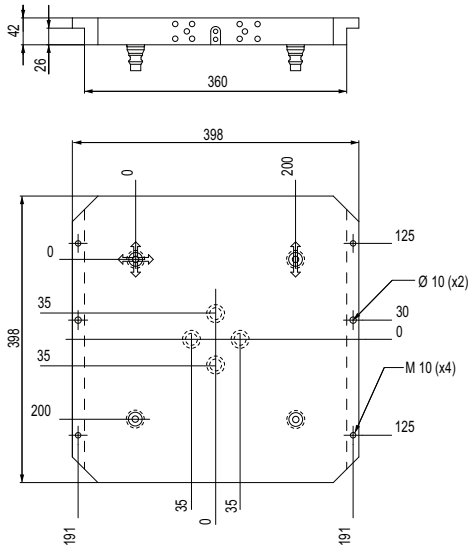
**NOTE:** The pallet is ready for 4 AirDocks.

## Delphin 4-drawbar pallet C282820

- Automation ready
- Material, aluminium
- Parallelism, 0.04 mm
- 4 ready-assembled drawbars

## Pallet set S282820

- C282820 supplied as a set of 5

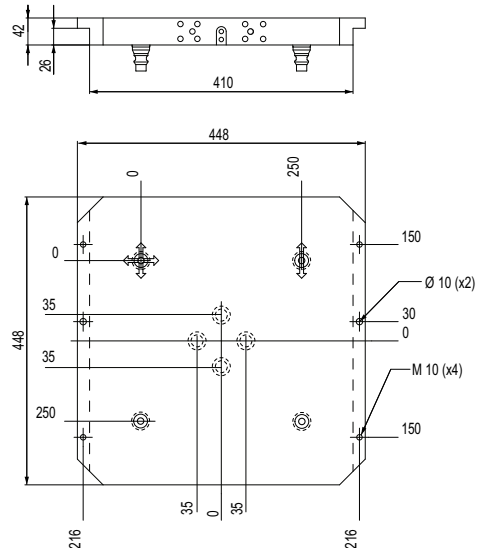


## Delphin 4-drawbar pallet C282830

- Automation ready
- Material, aluminium
- Parallelism, 0.04 mm
- 4 ready-assembled drawbars

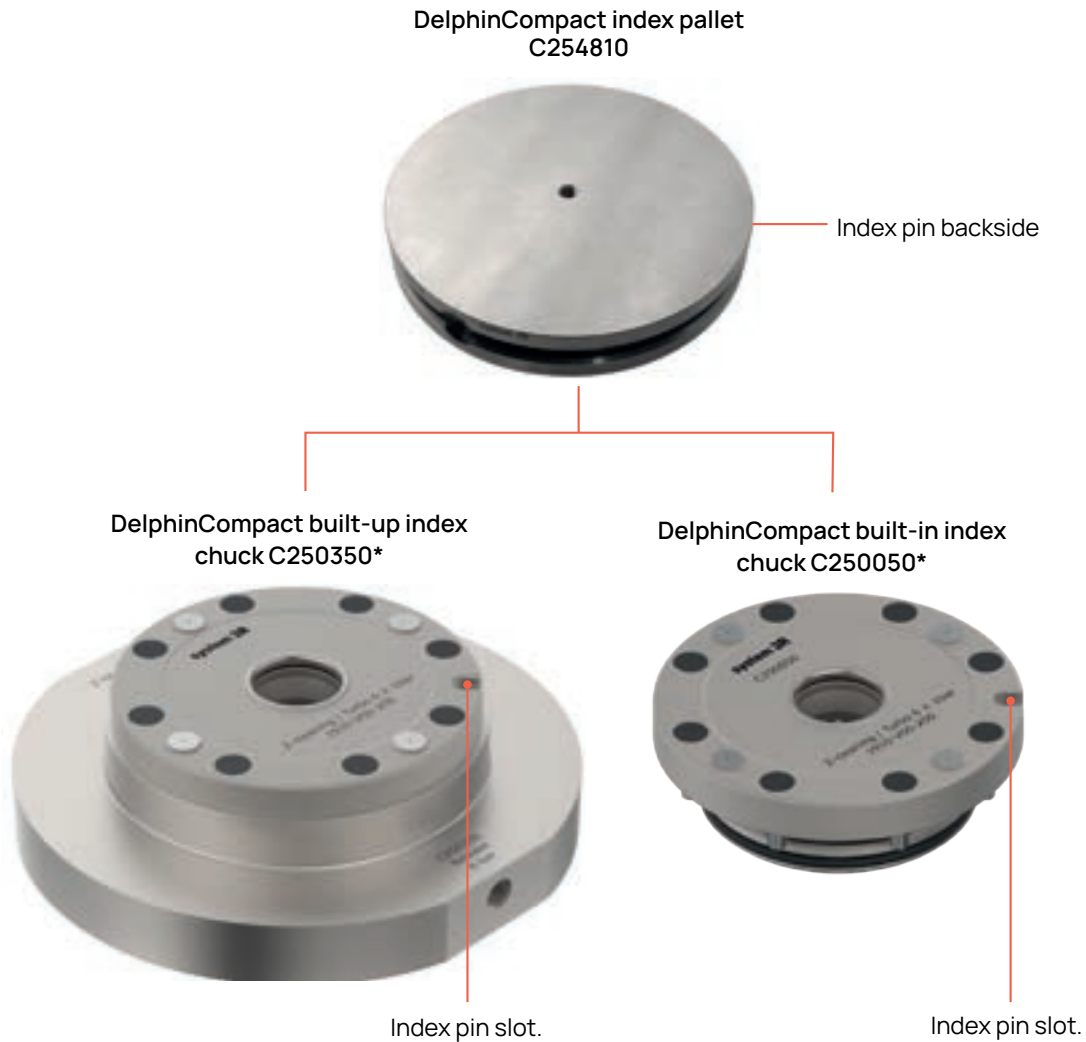
## Pallet set S282830

- C282830 supplied as a set of 5



# DelphinCompact index

## Single chuck and pallet application



### POSITIONING ACCURACY

- Centre repeatability, within 0.003 mm
- Angle repeatability, within 0.020 mm per 100 mm.

**NOTE:** For flexibility, an index chuck can be integrated into a baseplate so that it is possible to work with a single pallet.

\* Delphin HT chucks are also available for use in high-temperature environments.

# Delphin accessories

## Chuck-side AirDock valve S254000

Needed to build chuck adapter baseplates.  
Suitable for vacuum applications and pressures up to 8 bars.

- Set of 2



## Pallet-side AirDock valve S254010

Needed to build chuck adapter pallets.  
Suitable for vacuum applications and pressures up to 8 bars.

- Set of 2



## OilDock valves chuck-side, S254060

Needed to build chuck adapter baseplates.  
Thanks to the sealed design, cooling water cannot penetrate.  
Suitable for hydraulic pressures up to 200 bars.

- Set of 2



## OilDock valves pallet-side, S254070

Needed to build chuck adapter pallets.  
Thanks to the sealed design, cooling water cannot penetrate.

Suitable for hydraulic pressures up to 200 bars.

- Set of 2



## Spare parts

For Delphin chucks. Includes O-rings, compression springs or disc springs, balls, screws, screw cover and assembly tool.

| Table chuck type | item no. |
|------------------|----------|
| DelphinClassic   | S272000  |
| DelphinCompact   | S250000  |
| HCP              | S840040  |
| HSP              | S840000  |
| HHP              | S840010  |
| HHPA             | S840060  |
| PSP              | S840030  |
| PHP              | S840020  |
| PHPA             | S840050  |



## Delphin accessories

### DelphinCompact pneumatic control unit C254950

Control unit especially for DelphinCompact.  
• Includes 10 m tube (Ø 6 mm) and 2 fittings



### Baseplate connection fittings S254050

To be used when connecting air laterally to the Delphin baseplate.



**NOTE:** Connection fittings (S254050) are needed.

### Pneumatic control unit, C254970

This pneumatic control unit is used for the baseplate.

- Sliding hand valve
- Connecting fitting G 1/8"
- Coupling



### Baseplate fixing accessory sets

For fixing baseplate on machine table.

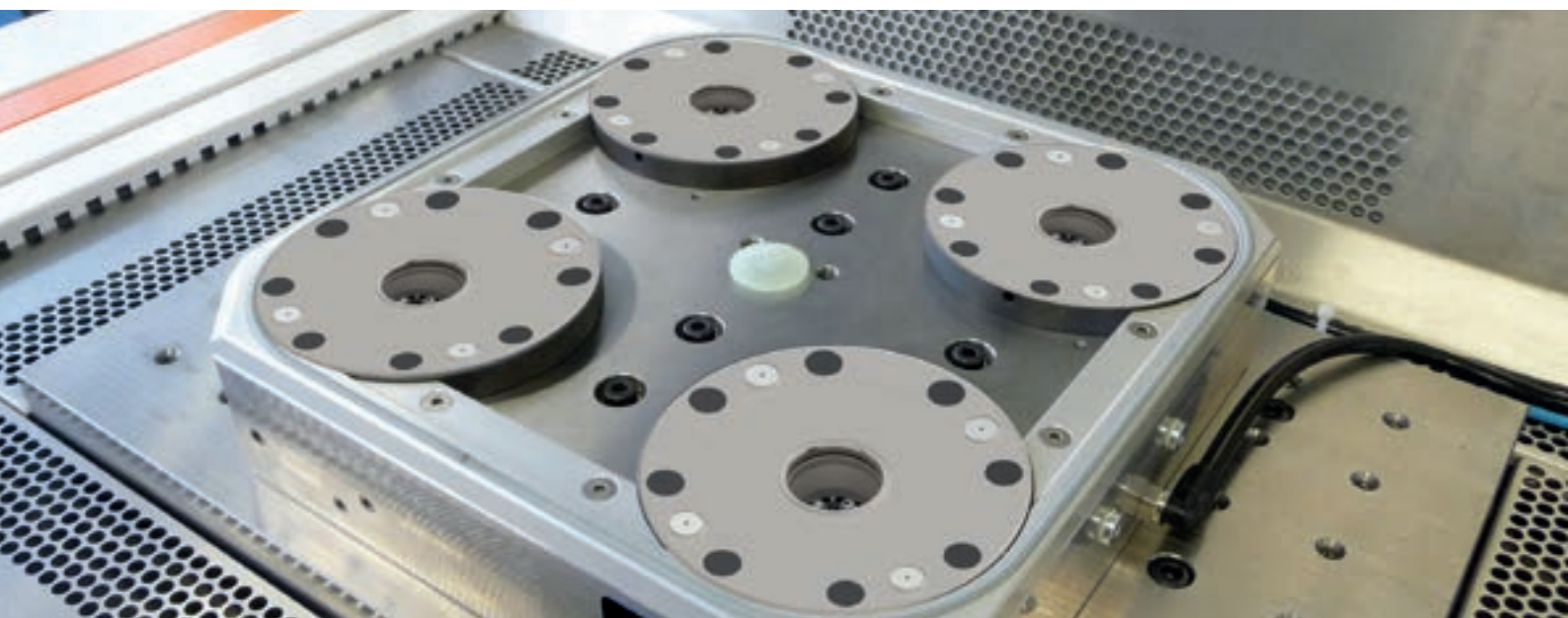
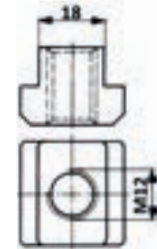
#### C289130

- M12x45 cylinder head screws (x6)
- M12x55 cylinder head screws (x6)
- M12x14 T-slot nuts (x6)

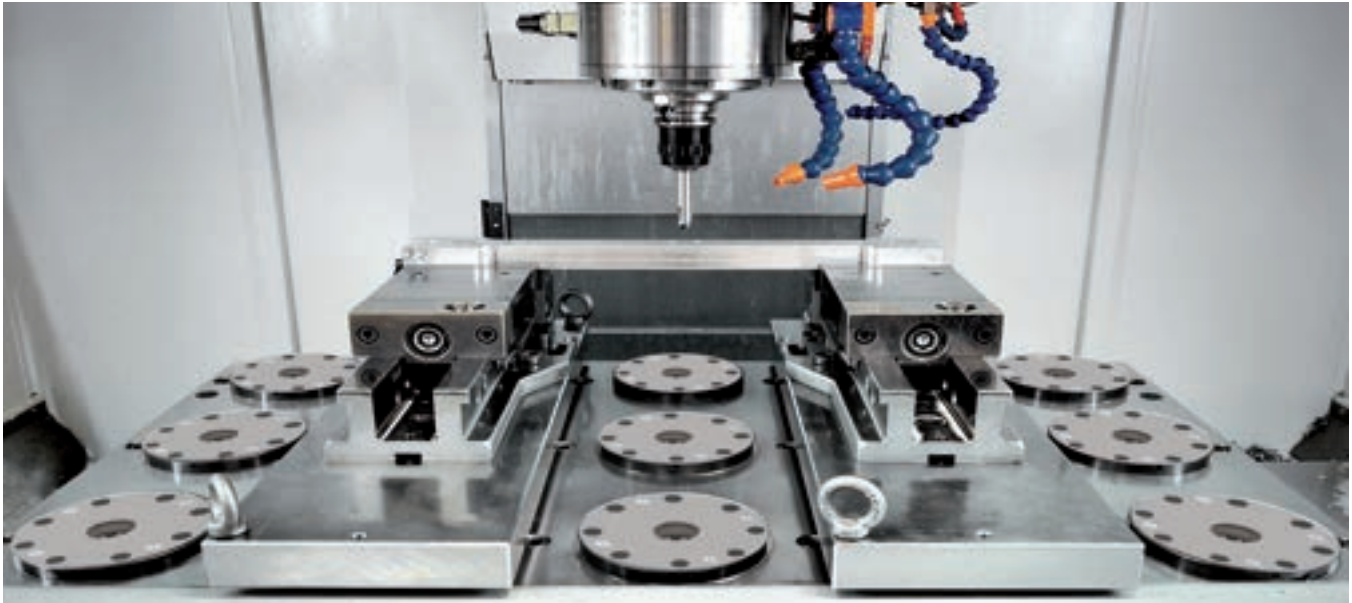


#### C289140

- M12x45 cylinder head screws (x6)
- M12x55 cylinder head screws (x6)
- M12x18 T-slot nuts (x6)



## Delphin accessories

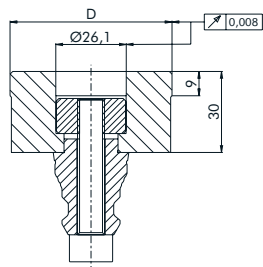


### Reference mandrel C288170

Alignment aid for chuck installation.

- Material: steel stainless, hardened and ground
- For all chucks

Diameter (D), 110 mm



### Delphin protective pallet S254100

Chip and air pressure (turbo locking) protection for DelphinCompact and DelphinClassic chucks.

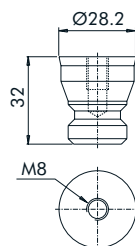
- Fits to chuck with sealing ring
- Set comprises:
  - Drawbar C282000 (x1)
  - Protective pallet C266040 (x1).



### Protective Drawbar DelphinClassic, C286060

Chip protection for chuck, seals centre bore, Z-support of chuck remains usable.

- Material, plastic
- Dimensions, Ø 28 x 32 mm
- M8 for dismounting



### Frame sealing cords

#### 4 metre sealing cord S817200

#### 4 metre FKM sealing cord S817220

- Sealing cords for most Delphin sealing frames.
- Suitable for, C252210 and C252260
- Length, 4 m



## Delphin index pallet and accessories

### DelphinCompact index pallet C254810

To be used with single index chuck C250050 or C250350

- Material, hardened steel
- Drawbar C282000 included
- Weight 4.3 kg



### DelphinCompact checking ruler C254800

Reference pallet for index chuck. To be used for aligning built-in and built-up index chucks at installation.

- Suitable for C250050, C250070, C250350 and C370560
- Drawbar included
- Stainless steel (hardened and ground)
- Weight 2.9 kg



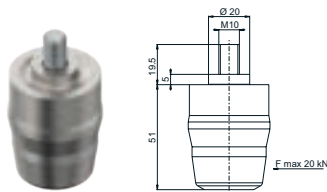
### Pre-centring pin / Pre-centring bush

Pre-centring for medium to large workpieces. Should always be used wherever possible.

- Stainless steel

### C286160

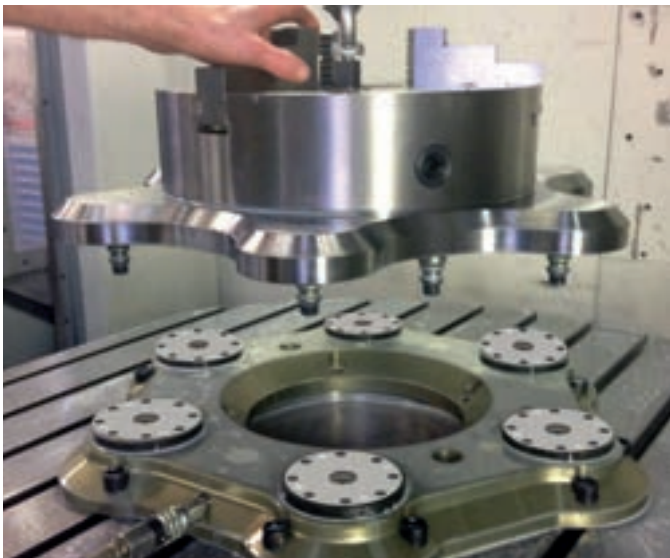
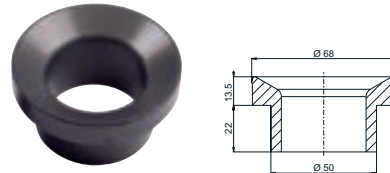
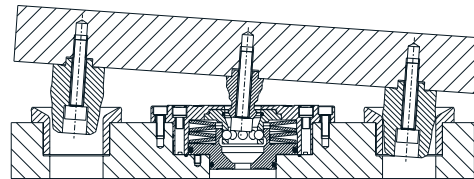
Pre-centring pin for for pallets/devices.



### C286250

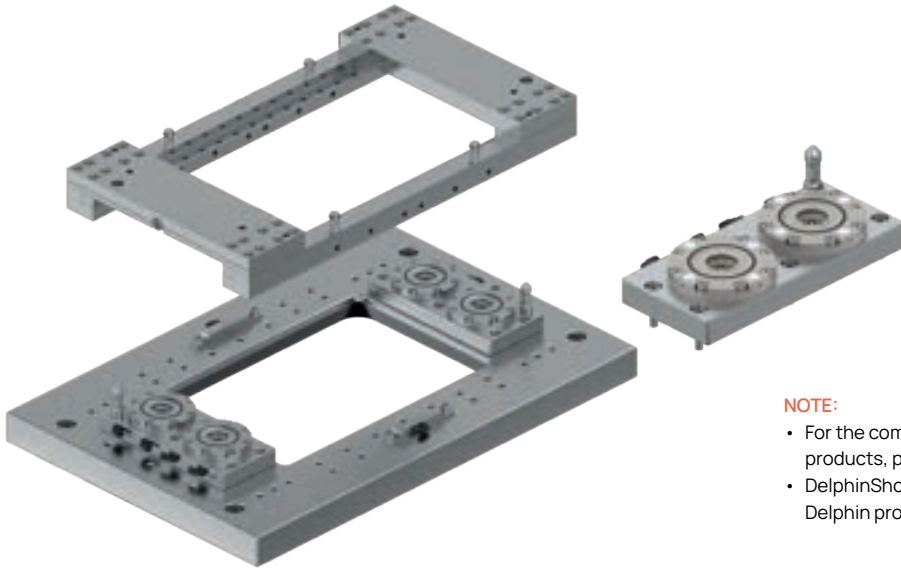
Pre-centring bush for DelphinCompact and DelphinClassic.

- Aluminium



Example customer application

# DelphinShort and frames for wire EDM



**NOTE:**

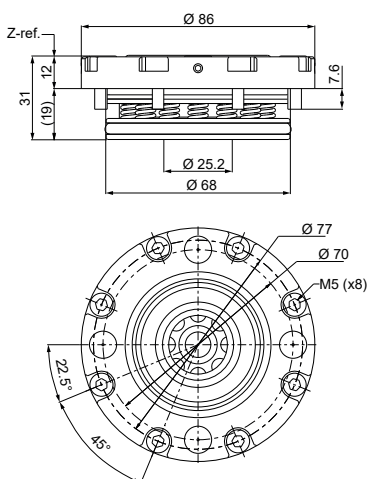
- For the complete range of wire EDM products, please ask for separate catalogue.
- DelphinShort is not compatible with other Delphin products.

## ADVANTAGES

DelphinShort is often the answer when tooling size is an issue. Smaller diameter and lower built-in height are just two of the advantages of DelphinShort tooling. Can be used in many applications besides wire EDM.

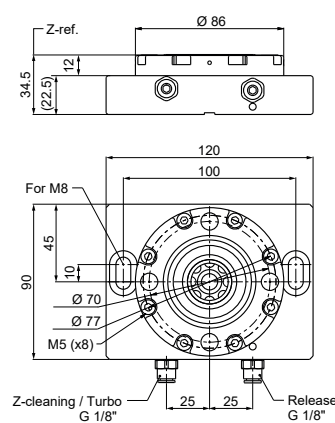
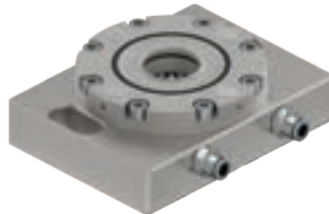
### DelphinShort built-in chuck C225000

For easy installation in machine tables and baseplates.



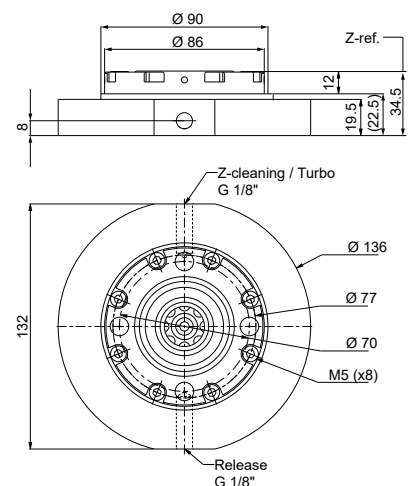
### DelphinShort built-up chuck (with wire EDM flange) C225300

For easy installation on wire EDM machine table frames.

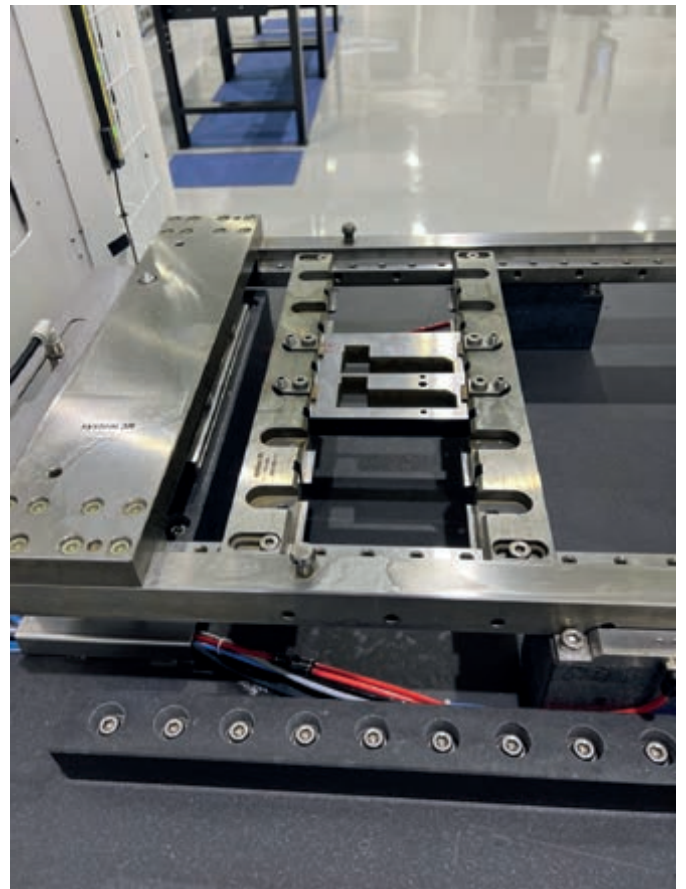
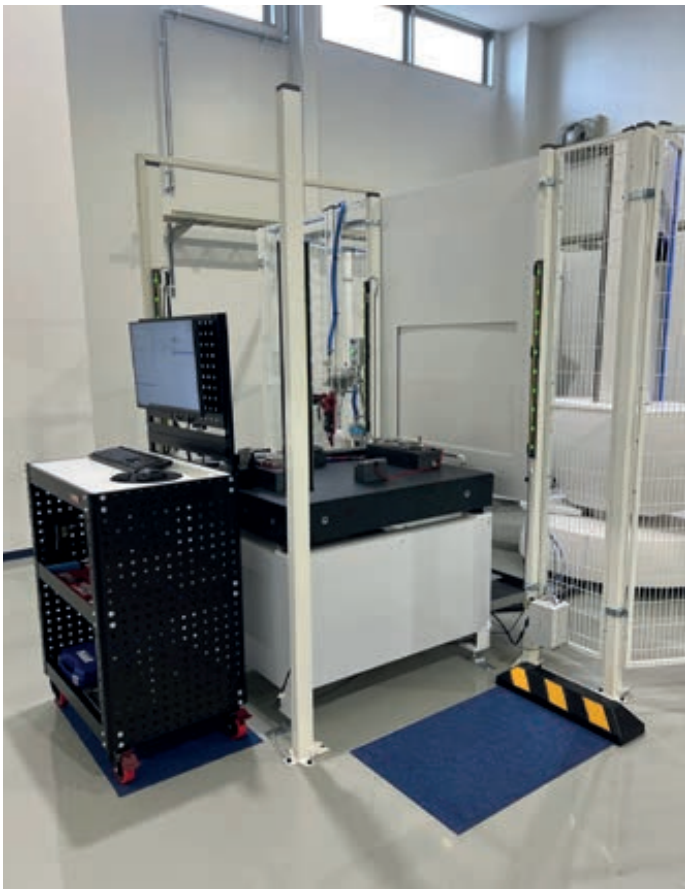
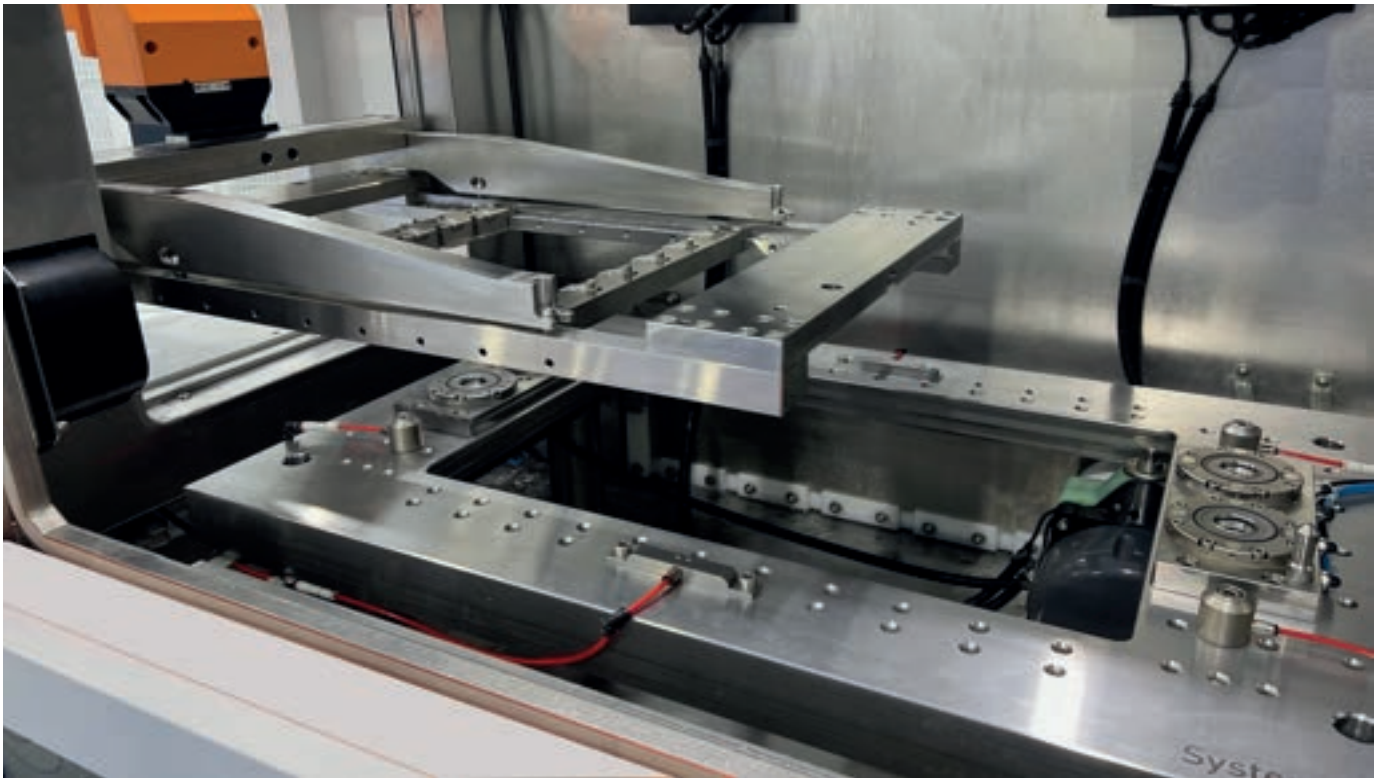


### DelphinShort built-up chuck C225310

For mounting directly on machine tables. Mounting holes to be drilled when installing.

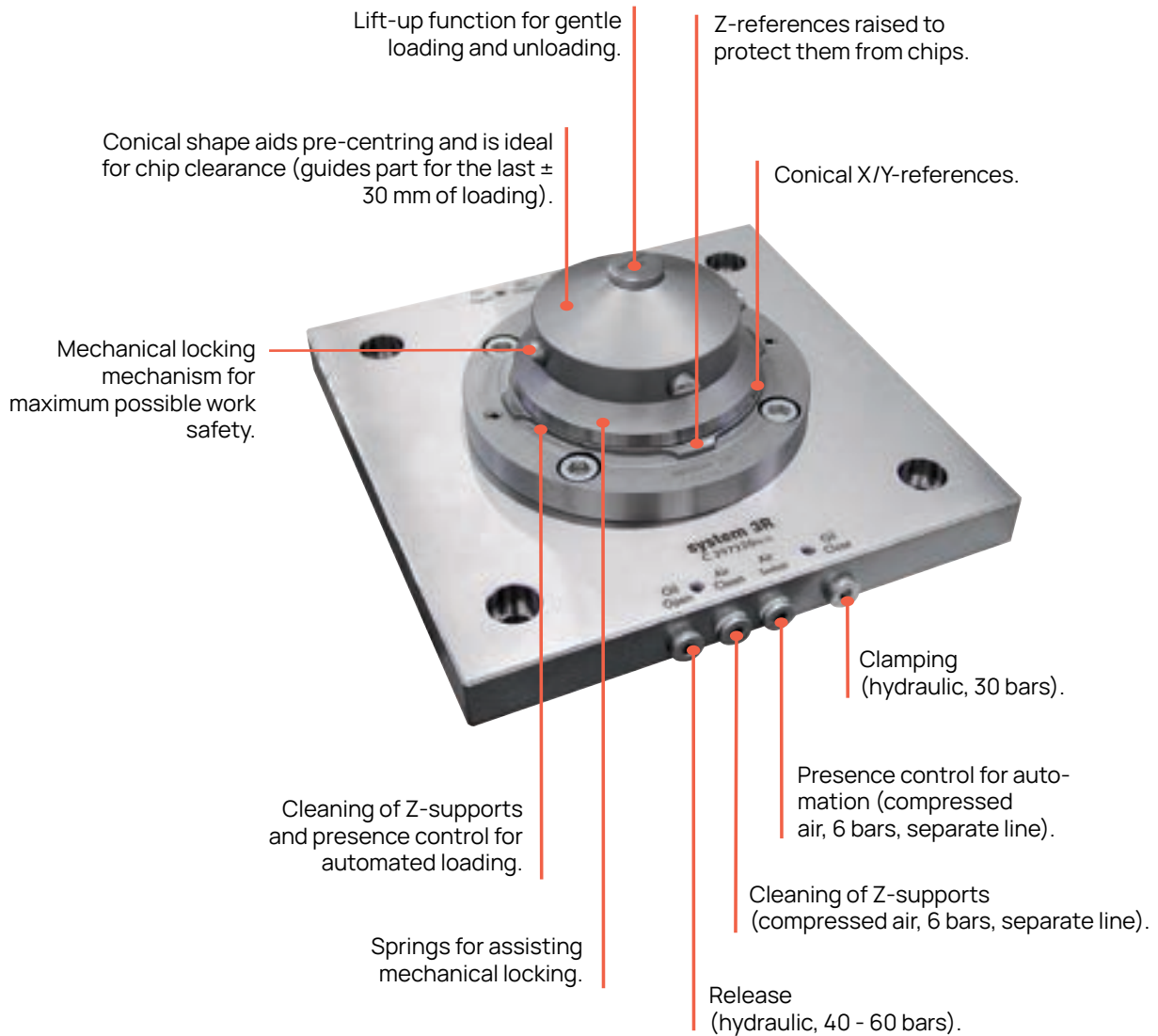


# DelphinShort wire EDM frame applications



Stationary automation cell with rack magazine for wire EDM frames.  
Coordinate measuring machine (CMM) outside the cell also used as loading station for larger wire EDM frames.

# DelphinBIG chuck



## KEY FACTS

- Can be used for large workpieces
- High clamping force (up to 50 kN with turbo locking)
- Hydraulic release (with lift-up function of 2,500 kg at 60 bars)
- Simple loading (thanks to integrated pre-centring)
- Workpiece thermal expansion accommodated (up to  $\pm 0.4$  mm)

# DelphinBIG –For automated and manual applications

## Technical data

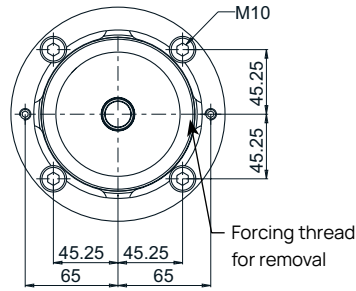
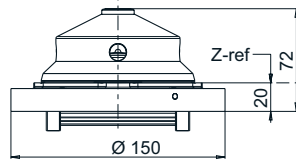
- Clamping force at 30 bars turbo pressure, up to 50 kN
- Holding force, 100 kN
- Oil pressure release, max 30 - 60 bars
- Lift-up function, 2,500 kg, 2 mm at 60 bars release pressure
- Repeatability, within 0.005 mm
- Material, hardened steel

## Applications

Milling

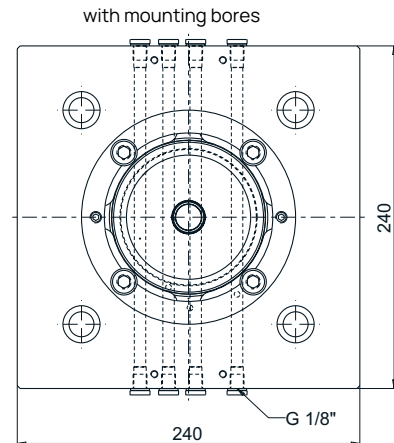
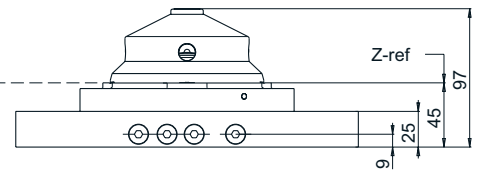
## Built-in chuck

Built into machine table or baseplate.



## Built-up chuck

Built on machine table.



## DelphinBIG built-in chuck C297000

For easy installation in machine tables.

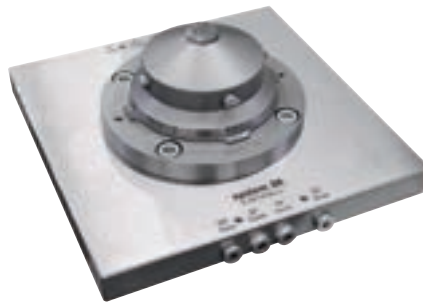


## DelphinBIG built-up chuck C297310

Mounting holes can be made by customer.

At least 4 chucks per application are recommended.

- Chuck C297000



## DelphinBIG spare parts set S850000

For Delphin BIG chucks. Includes O-rings, compression springs or disc springs, balls, screws, screw cover and assembly tool.

## DelphinBIG 2-axes centring ring C298010

Includes fixing.



## DelphinBIG 1-axis centring ring C298110

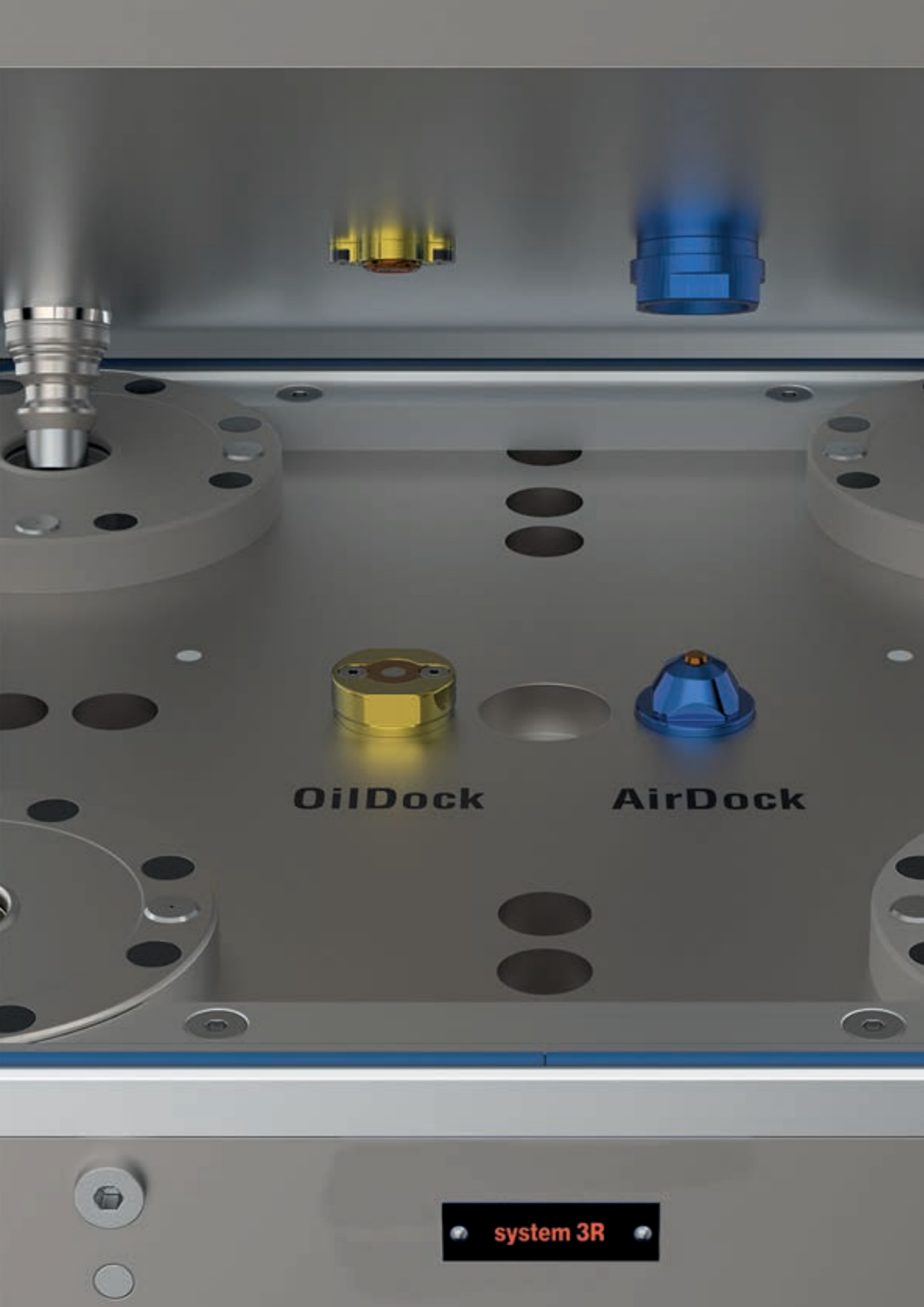
Includes fixing



## DelphinBIG no centring ring C298210

Includes fixing





**OilDock**

**AirDock**

**system 3R**

# 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!

Boost your productivity and sharpen your competitiveness with our three winners: WorkPal 1, WorkPartner 1+ and Fanuc.

Last, but not least, our winners ensure faster payback on your investments.

For powder press automation solutions, please ask for more information.



## WorkPal 1

Modest demands, major benefits.



## Automation

With six-axis Fanuc industrial robot.



## WorkPartner 1+

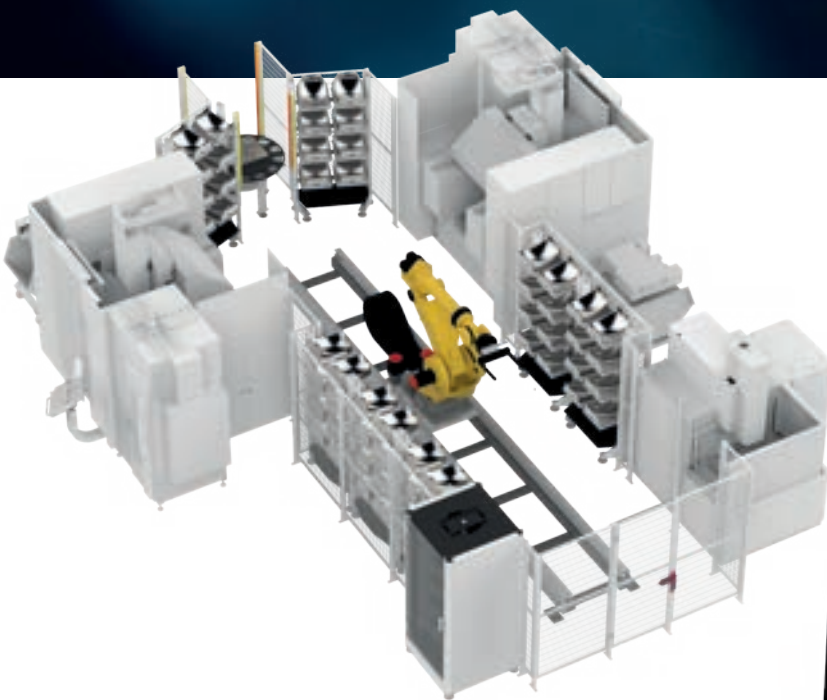
Can serve two machines.

# WorkShopManager WSM

## User-friendly cell-management software

Master workshop complexity and manage all control processes with our software. For manually controlled and automated processes.

- Simplify job preparation
- Execute jobs easily in manual or automated machines
- Monitor processes, changes priorities and collect utilisation statistics
- Use ID chip management to ensure highest process reliability



# Sustainability declaration

## IMPROVED PRODUCTIVITY

Improve your productivity by: using existing production equipment optimally; and, increasing resource use, e.g. run machines during unmanned hours (nights, weekends, etc.). Instead of outsourcing production and incurring shipping costs, produce in-house 24/7.

By seamlessly integrating advanced technology into your operations, you can execute repetitive tasks with precision and speed, thereby freeing up human resources for higher-value activities. Machines equipped with our automation systems work tirelessly, reducing errors, optimising production schedules and achieving consistent output.

## ADVANCED EASE OF OPERATION

Machine automation has improved operation simplicity and revolutionised efficiency and productivity on an industrial scale. With intuitive interfaces and streamlined processes, workers can, with minimal training, quickly adapt and control complex tasks. Automated systems eliminate human error and promote precise execution. Consistent output and reduced downtime are two of the results.

## SAFEGUARD OPERATOR HEALTH BY USING ROBOTS IN SELF-CONTAINED ENVIRONMENTS

Machine automation is a highly promising avenue for improving operator health. By taking over physically demanding tasks, our machines reduce the risk of musculoskeletal injuries and fatigue-related issues.

Additionally, advanced sensors and AI algorithms can detect hazardous conditions, alerting operators to potential dangers and enabling prompt intervention. This synergy between automation and human operators enhances workplace safety and promotes a healthier work environment.

In-house 24/7 production



**TOOLING + AUTOMATION + SOFTWARE**

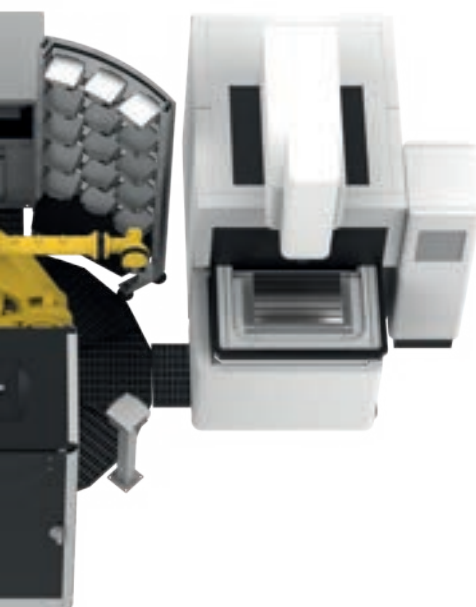
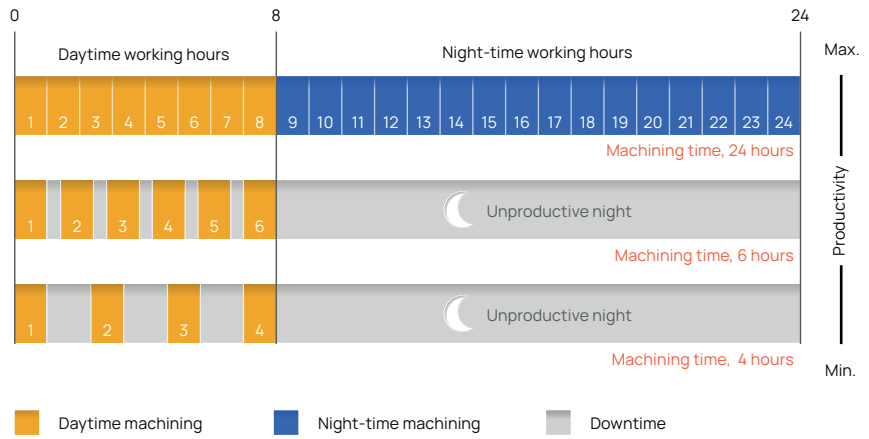
One manned shift - 8 hours  
Two more unmanned shifts - 16 hours

**TOOLING**

One manned shift - 8 hours

**CONVENTIONAL SETUP**

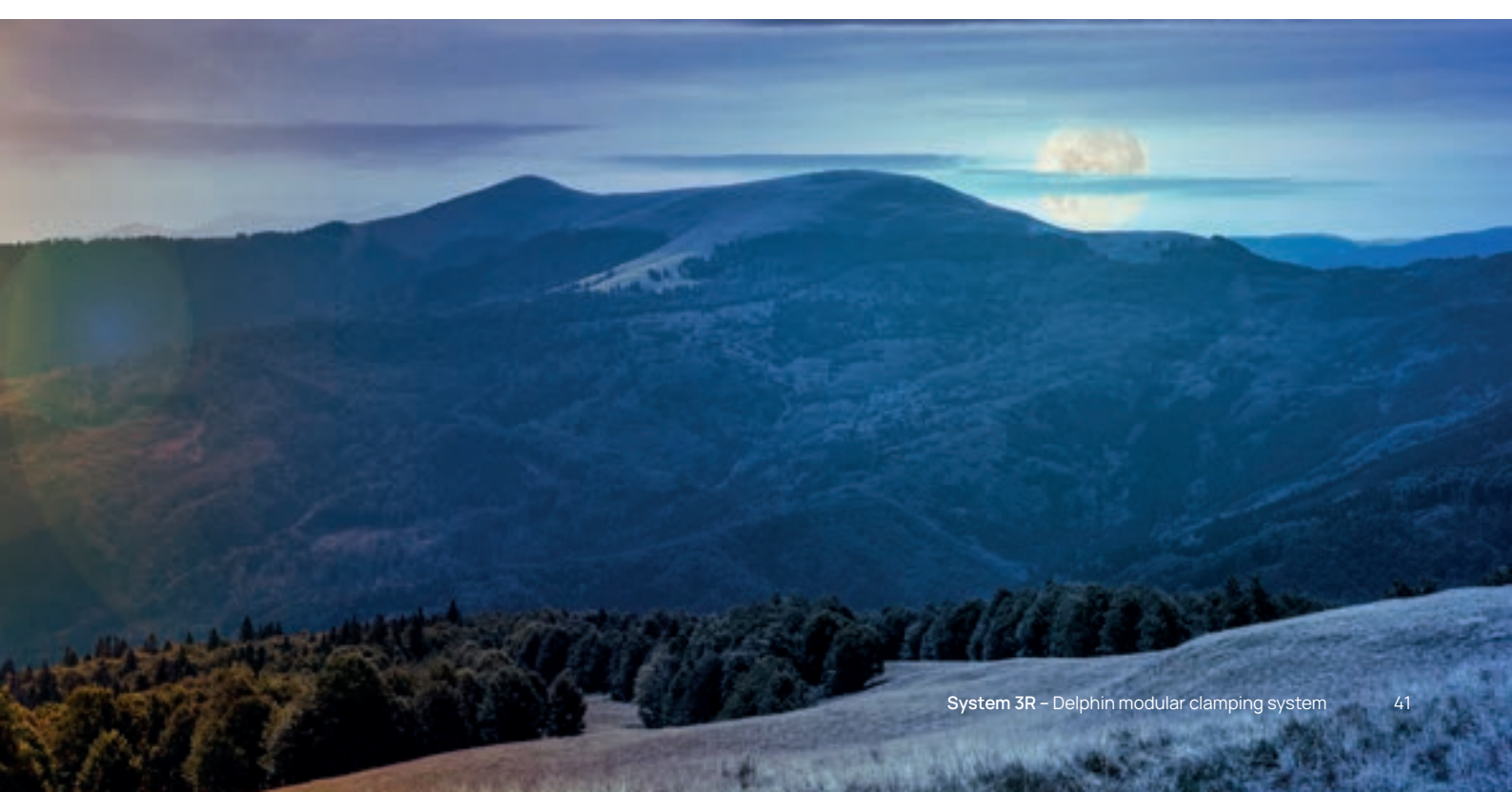
One manned shift - 8 hours



**CARBON-NEUTRAL FROM THE VERY START OF MANUFACTURING ALL THE WAY TO RECYCLING AFTER USE**

Our automation solutions are manufactured at our CO<sub>2</sub> neutral facility in Vällingby, Sweden. With the ability to self-diagnose and adapt, these solutions extend working lives, reduce maintenance costs and optimise production processes. They can also make optimum use of cheaper electricity supplied outside daily peak hours.

At the end of their service lives, the items of equipment they use can be recycled as metals and standard electronics.



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**Work smarter,  
not harder**

# Use our Customer Services to optimise your equipment uptime

System 3R's Customer Services department is uniquely positioned to help you maximize the availability, value, precision and productivity of your System 3R equipment. Our cost-effective, customer-centric and expert services put your success at the centre, ramp up your productivity and ensure predictable, uninterrupted uptime.

System 3R's service engineers are your expert partners for a wide range of success-triggering services.

For further details, contact your local System 3R dealer.

[www.system3r.com](http://www.system3r.com)