



## Zero Point Clamping System classic 3

Set your manu-  
facturing to

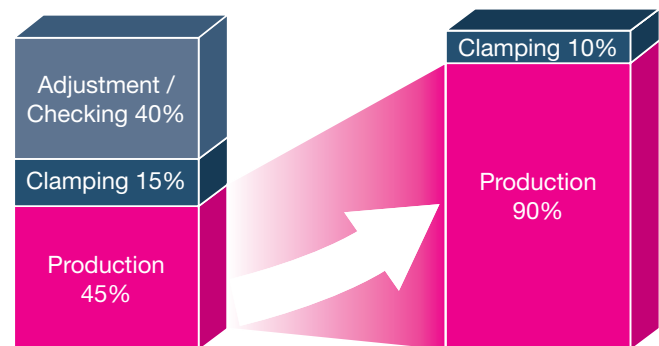




# GO!

## Maximum productivity - even with large parts

- Using the zero point clamping system SPEEDY classic you will increase your production times to a maximum. Adjustment and checking processes are no longer necessary at all, this means more time for your production.
- With the zero point clamping system by STARK, adjustment and checking processes on processing machines can be carried out more easily.



## Maximum flexibility

- SPEEDY classic has a common interface. As a result all equipment can be used on all machines.

## Maximum machine availability

- Machining processes can be interrupted for urgent orders without loss of time and completed later.

**SPEEDY classic – an investment that pays for itself in a very short space of time.**



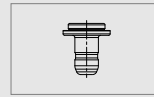
# STARK clamping systems overview

Differentiation is by the method of actuation and varying size of the retractable nipples:

## SPEEDY classic - clamp mechanically / release hydraulically

Most comprehensive and versatile zero point clamping system,

- Four sizes and numerous variants



**SPEEDY**  
classic **1**

Catalogue order no. WM-020-217-02-en



**SPEEDY**  
classic **2**

Catalogue order no. WM-020-276-03-en



**SPEEDY**  
classic **3**

Catalogue order no. WM-020-278-02-en



**SPEEDY**  
classic **4**

Catalogue order no. WM-020-280-01-en

## SPEEDY metec - clamp / release mechanically

Robust mechanical zero point clamping system for simple, low-cost solutions,

- Three sizes



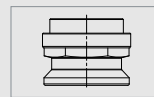
**SPEEDY**  
metec **1**

Catalogue order no. WM-020-283-02-en



**SPEEDY**  
metec **2**

Catalogue order no. WM-020-293-02-en



**SPEEDY**  
metec **3**

Catalogue order no. WM-020-293-02-en

## SPEEDY airtec - clamp mech. / release pneum.

Pneumatic zero point clamping system,

- One size and numerous variants



**SPEEDY**  
airtec **1**

Catalogue order no. WM-020-288-02-en

## SPEEDY hydratec - clamp / release hydraulically

Hydraulic, double action zero point clamping system for very high clamping speeds,

- One size and numerous variants



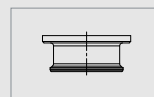
**SPEEDY**  
hydratec **1**

Catalogue order no. WM-020-290-02-en

## system 3000 - clamp / release hydraulically

Double action zero point clamping system with small size and high clamping force,

- One size and numerous variants



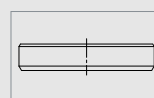
system **3000**

Catalogue order no. WM-020-333-02-en

## system 4000 - custom systems

Flexible zero point clamping system for mechanical, pneumatic and hydraulic applications,

- One size and numerous variants



system **4000**

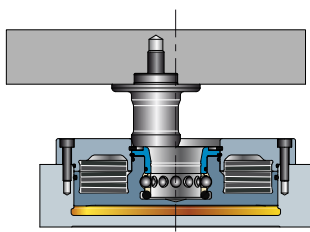
Catalogue order no. WM-020-067-00-en

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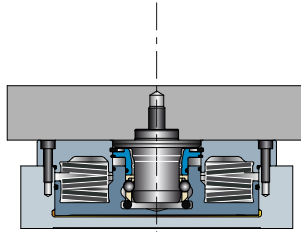
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<b>2</b>	<b>Surface Mount</b>	For technical reasons the zero point clamping system SPEEDY classic 3 is integrated into plates and predominantly supplied as a built-in variant (see section 1). Special solutions for your individual requirements on request.
		
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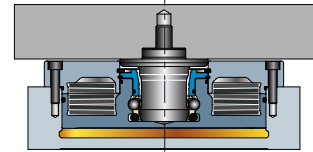
## Function description SPEEDY classic 3 - positioning and clamping in one function



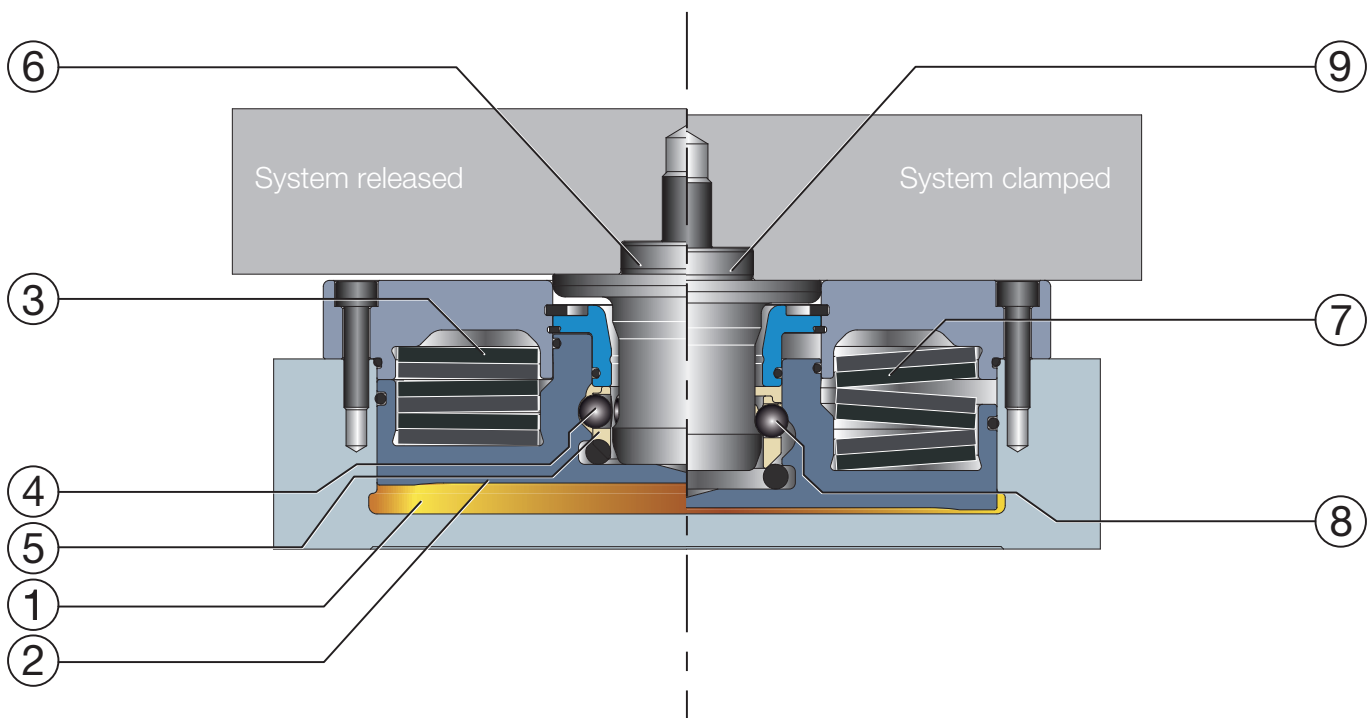
Insert and pre-position



Position and clamp



Release and lift off



### Releasing hydraulically

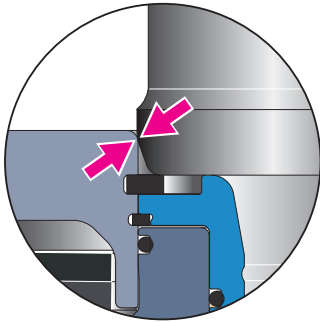
- Hydraulic pressure (1) is applied to the piston (2) and the piston moves upwards.  
The spring pack (3) is compressed.
- The balls (4) in the ball cage (5) move outwards to the parking position.
- The retractable nipple (6) moves into the fast closing clamp until it is in contact with the base of the piston.
- The retractable nipple (6) is pre-positioned.

### Clamping mechanically

- The hydraulics are de-pressurised, the oil pressure drops to 0 bar.
- The spring pre-load is applied via the piston (2), the piston moves downwards.  
The fit is aligned, the retractable nipple (9) highly precisely positioned.
- The balls (8) are positively positioned between piston and retractable nipple in the related contour.
- The pre-load on the springs (7) now acts downwards directly and constantly on the retractable nipple.

# Proven technology with a system - original down to the smallest detail

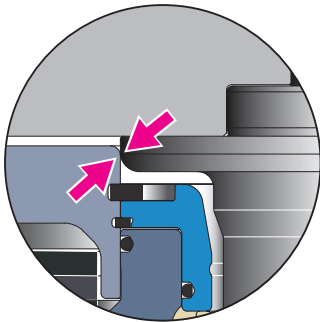
**Advantages**  
to be worth it!



## Wear-proof insertion and pre-centring

Due to the special retractable nipple contour, the fit is not damaged on insertion in the SPEEDY.

High alloy tool steel provides resilience to wear.

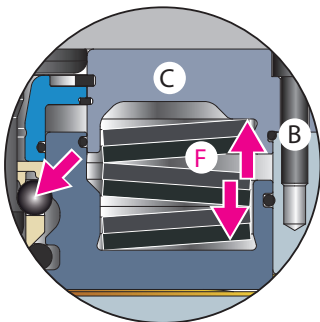


## Matched radii on the bore

Matched radii on the SPEEDY and on the insertion nipple result in exact pre-positioning.

The fit is automatically aligned by drawing in the pallet.  
The operator only needs to set down or remove the pallet.

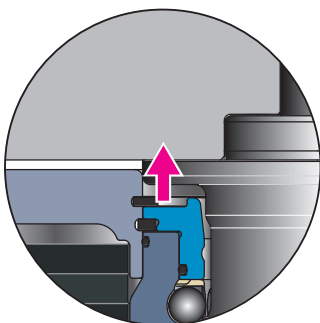
No chips can be jammed in the cylindrical bore.



## High positioning accuracy due to optimal application of force - no bending or lifting

The retractable nipples are fixed positively and with very high precision - this action has a vibration attenuation effect and increases the quality of the surface to be machined as well as the life of the tools.

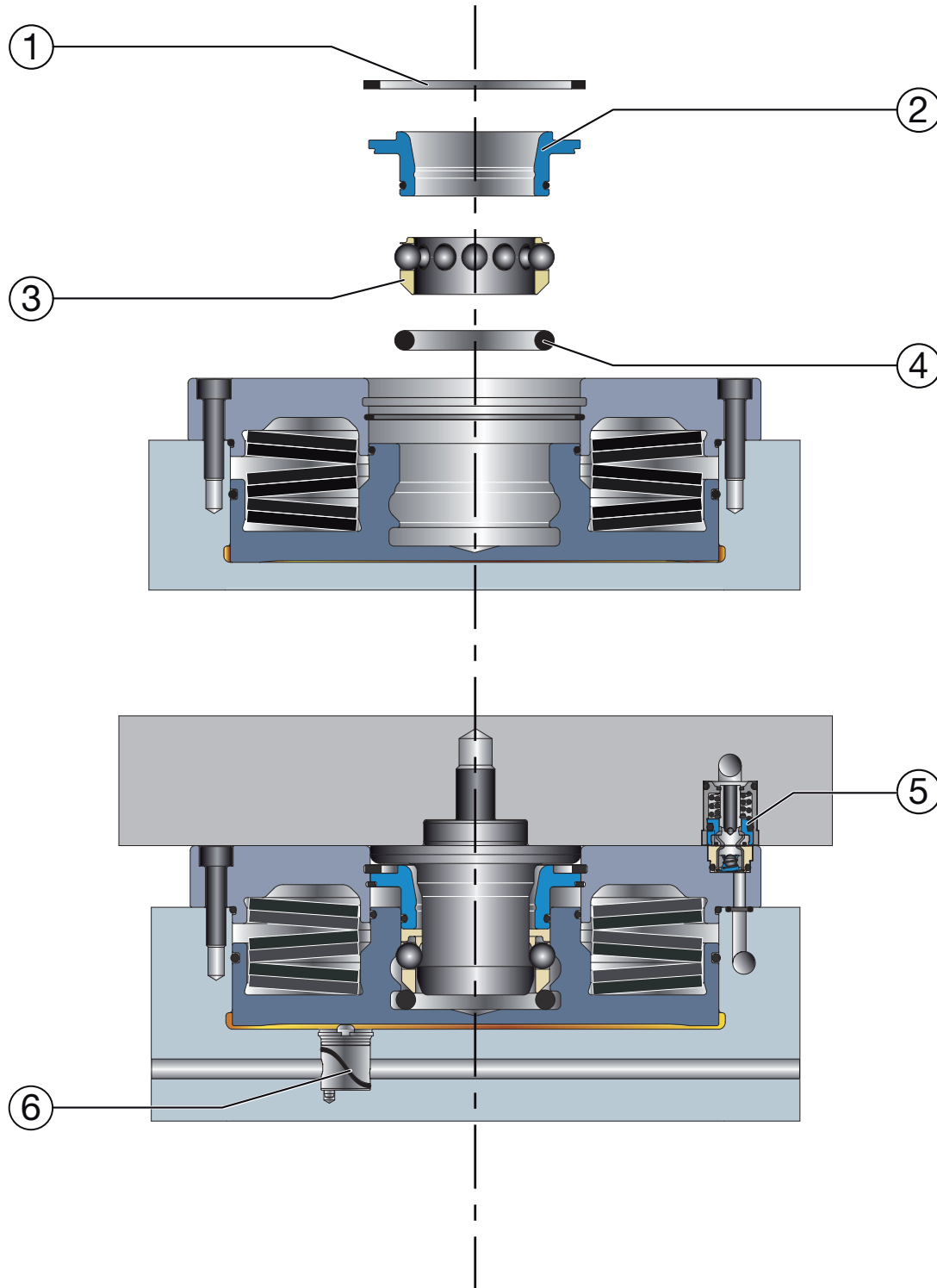
The force from the springs (F) acts close to the fastening screw (B). As a result there is no bending on the cover (C).



## Lifting out of the fit

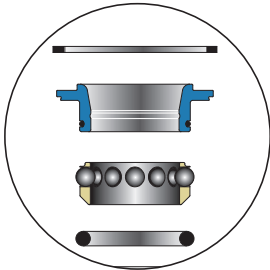
On release the retractable nipple is lifted out of the fit in a controlled manner and the operator can see that the system has been released. The result is safe and very straightforward handling.

# Other advantages of SPEEDY classic 3 - discover the difference





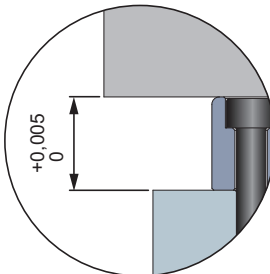
## Well thought out solutions - reliable clamping for a very wide range of tasks



### Simple cleaning

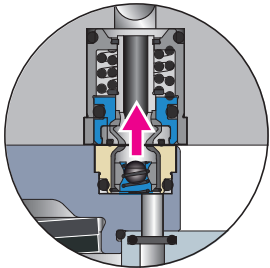
During machining, soiling of the clamping system over the long term is inevitable. For this reason ease of cleaning is very important.

On SPEEDY classic the retaining ring (2), ball cage (3) and O-ring (4) can be straightforwardly taken out after removing the locking ring (1), and then cleaned and re-fitted. This feature simplifies maintenance and provides the shortest possible downtimes.



### Precise contact

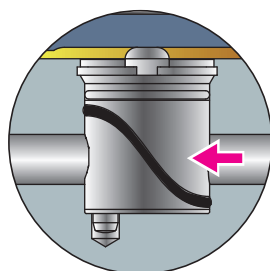
Very high accuracy to reduce tolerance errors (bearing plate thickness manufactured to within 5 µm).



### Integrated media ducts

For carrying media, e.g. oil, water etc. if required SPEEDY classic is equipped with integrated media ducts (5). The ducts are positioned and coupled automatically during clamping.

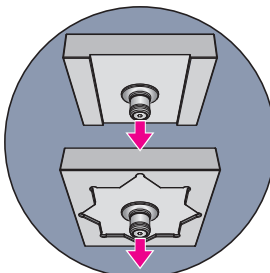
In this way, e.g., clamping devices fitted to the machine pallets can be supplied with power (hydraulic, pneumatic etc.). The coupling force is applied by the SPEEDY - straightforward handling, the pallet is fully automatically positioned, clamped and coupled (for more information see page page 6.2).



### Clamping check

For safety reasons, a clamping check is strongly recommended on all machines that rotate at high speeds. For this purpose SPEEDY classic can be equipped with a mechanical clamp control valve (6).

The evaluation of the clamping check can be integrated directly in the machine control system. Existing machines can also be upgraded using an appropriate hydraulic unit and suitable control system. Your STARK partner will be pleased to provide you with information on the optimal solution (for more information see page page 6.2).



### Position-orientated single mounting

On the usage of a square fast closing clamp the pallet is positioned and clamped in a specific orientation even on single mounting due to the square shape.

The system is characterised by high repeat accuracy, the possibility of simple divisions and easy cleaning.



# Technical data - transparency from the start

		STANDARD	STANDARD	TORNADO	TWISTER
			with increased lifting force		
Maintenance interval, spring pack	Clamping cycles	40.000	40.000	40.000	40.000
Insertion force <sup>1</sup>	[ N ]	30.000	30.000	30.000	30.000
Retention force <sup>2</sup>	[ N ]	55.000	55.000	55.000	55.000
Release pressure	[ bar ]	30-35	40-45	30-35	30-35
Max. pressure	[ bar ]	35	45	35	35
Lifting force at max.	[ N ]	15.000	25.000	15.000	15.000
Lateral forces max. allowed	[ N ]	10.500	10.500	10.500	10.500
Tilting torque	[ Nm ]	2.000	2.000	2.000	2.000
Twisting torque *	[ Nm ]	2.000	2.000	2.000	2.000
Oil volume	[ cm <sup>3</sup> ]	124	124	124	124
Operating temperature	[ °C ]	10-80	10-80	10-80	10-80
Min. clamping time allowed	[ s ]	ca. 2	ca. 2	ca. 2	ca. 2
Min. release time allowed	[ s ]	ca. 2	ca. 2	ca. 2	ca. 2
Radial pre-positioning <sup>3</sup>	[ mm ]	± 4	± 4	± 4	± 4
Max. axial pre-positioning automated loading	[ mm ]	- 0,3	- 0,3	- 0,3	- 0,3
Repeatability <sup>4</sup>	[ mm ]	< 0,005	< 0,005	< 0,005	< 0,005
System accuracy <sup>5</sup>	[ mm ]	< 0,01 **	< 0,01 **	< 0,01 **	< 0,01 **
Weight	[ kg ]	ca. 4,6	ca. 5,0	ca. 4,7	ca. 4,7

\* Only on square version

\*\* With appropriate design and adjustments, accuracies in the μ-range are possible.

- <sup>1</sup> Insertion force**      The insertion force (pre-load on the spring pack) refers to the load up to which the zero point is guaranteed. The insertion force stated must not be exceeded,
- <sup>2</sup> Retention force**      Retention force refers to the max. overload up to which the nipple will continue to be retained, but the zero point has already been left (designed for M12 screw).
- <sup>3</sup> Radial pre-positioning**      The loading device must have play in the case of automated handling.
- <sup>4</sup> Repeatability**      Repeatability generally refers to the accuracy with which the same pallet is positioned on changing on the same interface.
- <sup>5</sup> System accuracy**      System accuracy refers to the accuracy resulting from changing several pallets, e.g. on different machines.

# Tilting torque calculation example

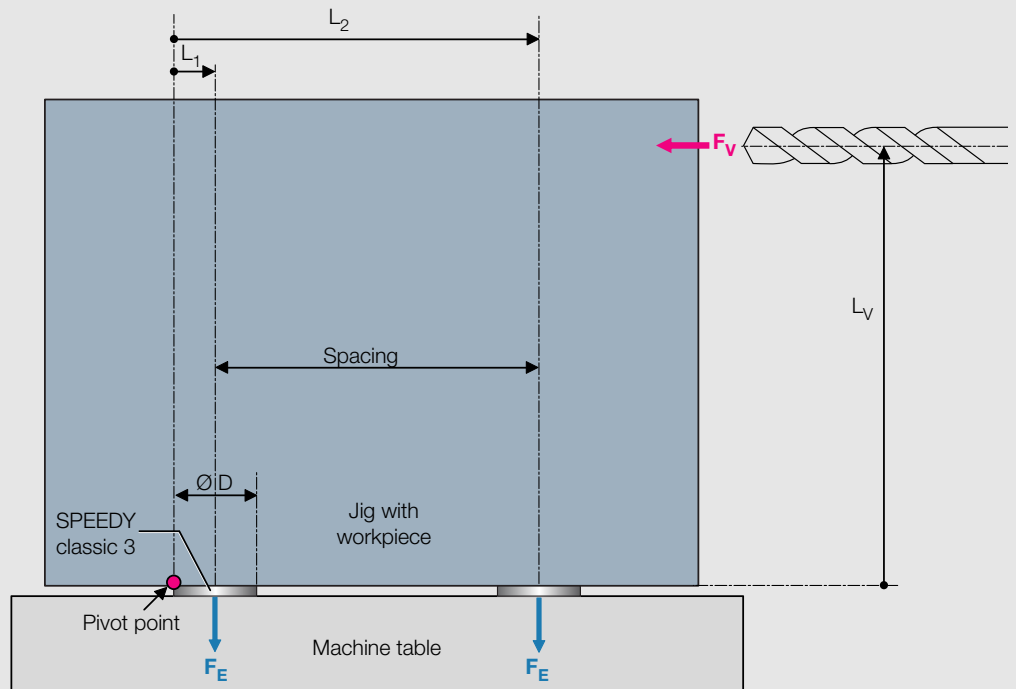
## Profit from our specialist competence

**Example:**

Fast closing clamp plate 4x SPEEDY classic 3 with 600 x 600 spacing and max. feed force of 15 kN with distance of 1500 mm.

**Question:**

Due to the predominance of roughing work, the system is to be checked for double safety. Are the insertion force, number of fast closing clamps and the selected spacing right for this application?

**Solution:**

$$M_E > 2 \times M_V ?$$

$$M_V = F_V \times L_V = 15.000 \text{ N} \times 1,5 \text{ m}$$

$$M_V = \mathbf{22.500 \text{ Nm}}$$

$$M_E = 2 \times (F_E \times L_1) + 2 \times (F_E \times L_2)$$

$$M_E = 2 \times F_E \times (L_1 + L_2)$$

$$L_1 = \text{ØD} / 2$$

$$L_2 = \text{ØD} / 2 + \text{Spacing}$$

$$L_1 + L_2 = \text{ØD} + \text{Spacing}$$

$$L_1 + L_2 = 0,176 \text{ m} + 0,60 \text{ m} = 0,776 \text{ m}$$

$$M_E = 2 \times F_E \times (L_1 + L_2) = 2 \times 30.000 \text{ N} \times 0,776 \text{ m}$$

$$M_E = \mathbf{46.560 \text{ Nm}}$$

$$M_E / M_V > 2 ?$$

$$M_E / M_V = 46.560 \text{ Nm} / 22.500 \text{ N}$$

$$M_E / M_V = \mathbf{2,07 > 2}$$

With this design, safety by around a factor of two is provided.

(All dimensions to be entered in SI units (metres, Newtons))

$M_V$  : Moment from feed force

$M_E$  : Moment from insertion force

$F_V$  : Feed force (15.000 N)

$F_E$  : Insertion force (30.000 N)

Spacing = 600 mm = 0,60 m

Ø D: 176 mm = 0,176 m

$L_V$ : 1.500 mm = 1,5 m

# Flush Mount

# 1

For direct installation in machine pallets, plates, angles, cubes, mounting towers or swivelling yokes  
SPEEDY classic 3 Flush Mount is the proven zero point clamping system.

High quality tool steel ensures accuracy and robustness even under extreme conditions.

SPEEDY classic 3 Flush Mount has options for every application:

- Integrated media ducts
- Mount control (quality)
- Clamp check (safety)
- Optimised blow-out ducts
- Coolant drainage
- Modular structure
- Square shape for single mounting

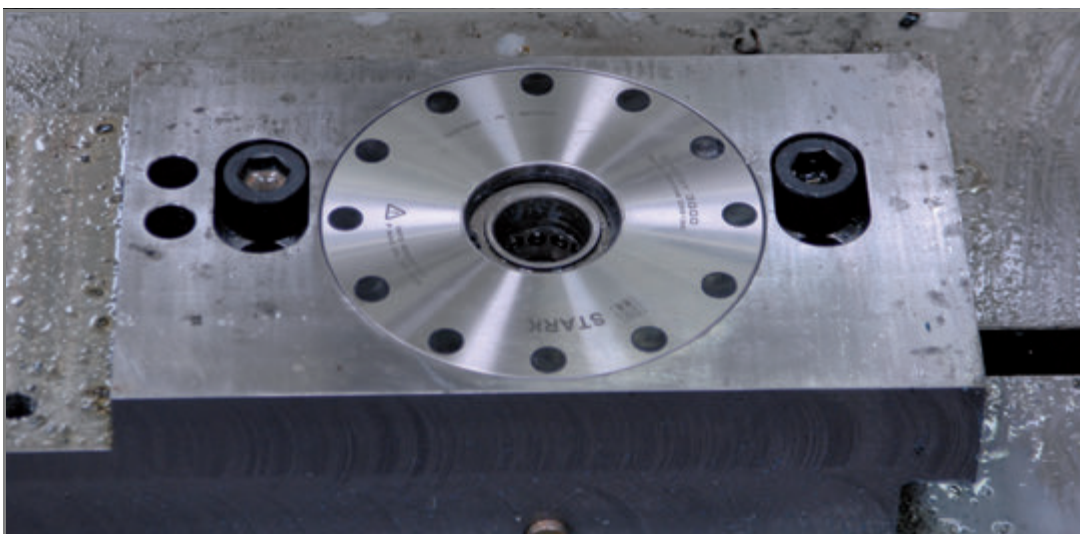
*Maximum force in the smallest space.*



The compact zero point mounting solution for the highest requirements:



SPEEDY classic 3 fast closing clamps, fitted in rectangular plate.



SPEEDY classic 3 fast closing clamps, fitted in plate.

**STANDARD**

- Flush Mount
- Round

**Characteristics:**

Flush Mount fast closing clamp made of high quality tool steel.

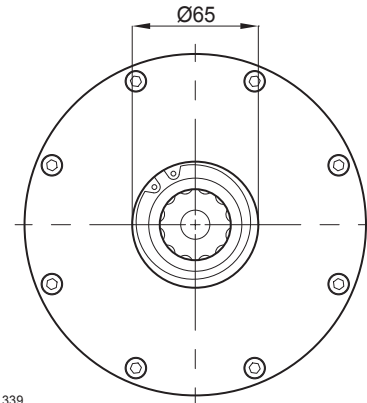
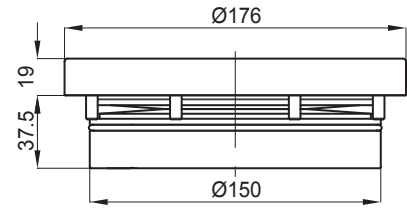
Due to low height little space needed (can be installed even from plate thickness of 49 mm).

Is clamped mechanically and released hydraulically.

**Application:**

For flush mounting in machine pallets, plates, angles, cubes, towers and swivelling yokes.

Can be used for all common machining tasks such as milling, turning (note information in section see "Clamp control valve" on page 7), grinding, eroding as well as on test stands for mounting devices.



Z 804 339

Order no.	Retention force	Insertion force	DHF*	Hydr. pressure to release	Weight	Data sheet
804 339	55,000 N	30,000 N	without	30-35 bar	6.20 kg	D020, D032
804 570	55,000 N	30,000 N	with	30-35 bar	6.20 kg	D020, D032

Fastening screws included with the items supplied. For mounting and service accessories, see section 7.

\* DHF = third hand function. For explanation see section 4.



## STANDARD

- Flush Mount
- Round
- With increased lifting force



### Characteristics:

Flush Mount fast closing clamp made of high quality tool steel.

Due to low height little space needed (can be installed even from plate thickness of 58 mm).

Increased lifting force of 25,000 N.

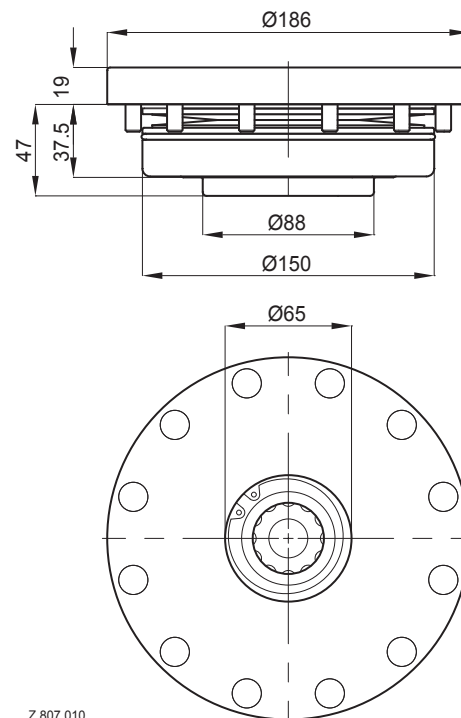
Is clamped mechanically and released hydraulically.

### Application:

For flush mounting in machine pallets, plates, angles, cubes.

For machining large and heavy parts.

Can be used for machining tasks such as milling, turning (note section see "Clamp control valve" on page 7) as well as on tests stands for mounting devices.



Z 807 010

Order no.	Retention force	Insertion force	DHF*	Hydr. pressure to release	Weight	Data sheet
807 010	55,000 N	30,000 N	without	40-45 bar	6.65 kg	D055, D056
807 012	55,000 N	30,000 N	with	40-45 bar	6.65 kg	D055, D056

Fastening screws included with the items supplied. For mounting and service accessories, see section 7.

\* DHF = third hand function. For explanation see section 4.



### SPEEDY classic fast closing clamps with increased lifting force:

A higher hydraulic pressure of 40-45 bar makes possible an increased lifting force for the above mentioned SPEEDY classic fast closing clamps 807 010 and 807 012.

As a result it is also possible to de-couple particularly heavy fast closing clamp plates and jigs without problems.

SPEEDY classic 3 – the fast closing clamp system for the highest requirements.





## STANDARD

- Flush Mount
- Square



### Characteristics:

Flush Mount fast closing clamp made of high quality tool steel.

Due to low height little space needed (can be installed even from plate thickness of 49 mm).

Is clamped mechanically and released hydraulically.

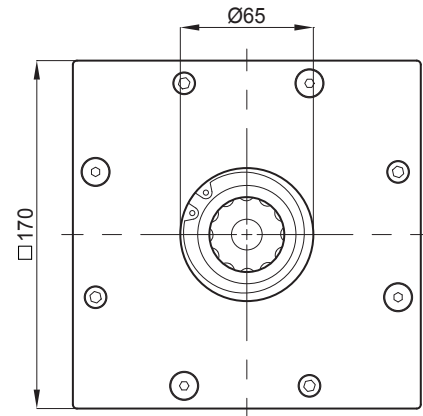
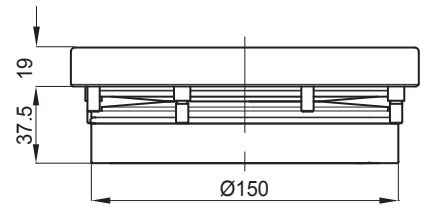
Due to the square shape the pallet is positioned and clamped in a specific orientation even on single mounting.

### Application:

For single mounting, 5-axis machining and simple divisions. Can also be used mixed with round fast closing clamps.

For flush mounting in machine pallets, plates, angles, cubes, towers and swivelling yokes.

Can be used for all common machining tasks such as milling, turning (note information in section see "Clamp control valve" on page 7), grinding, eroding as well as on test stands for mounting devices.



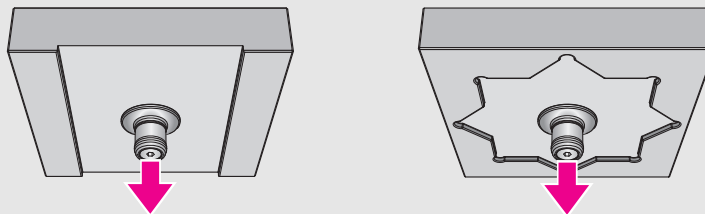
Z 804 338

Order no.	Retention force	Insertion force	DHF*	Hydr. pressure to release	Weight	Data sheet
804 338	55,000 N	30,000 N	without	30-35 bar	8.25 kg	D020
804 571	55,000 N	30,000 N	with	30-35 bar	8.25 kg	D020

Fastening screws and precision collar bolts included in the items supplied. For mounting and service accessories, see section 7.

\* DHF = third hand function. For explanation see section 4.

## **i** Application example



Due to special cut-outs, several clamping positions can be realised with one and the same pallet using square fast closing clamps.





## TORNADO

- Flush Mount
- Round
- Raised supports
- Blow-out ducts



### Characteristics:

Flush Mount fast closing clamp made of high quality tool steel with raised supports and blow-out ducts.

Due to low height little space needed (can be installed even from plate thickness of 49 mm).

Is clamped mechanically and released hydraulically.

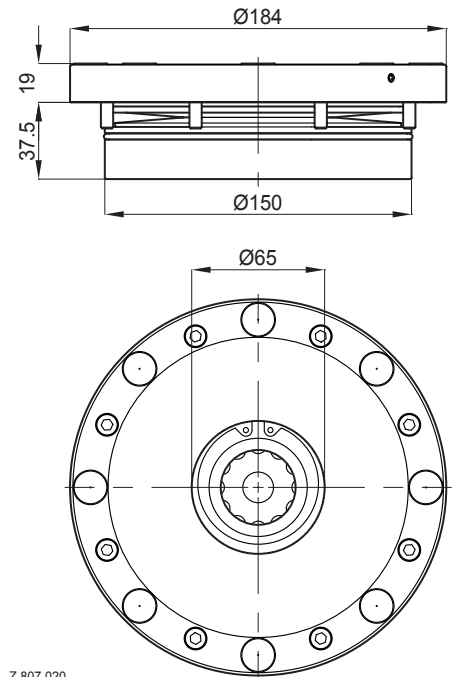
Intelligent blow-out system for cleaning the raised supports and the precision bore. Mount control via differential pressure, blocking air possible – STARK will be pleased to provide advice.

### Application:

For flush mounting in machine pallets, plates, angles, cubes, swivelling yokes and mounting towers.

For partial automation, reduces the cleaning effort.

Can be used for all common machining tasks such as milling, turning (note information in section see "Clamp control valve" on page 7), grinding, eroding as well as on test stands for mounting devices.



Z 807 020

1) Raised supports with blow-out ducts

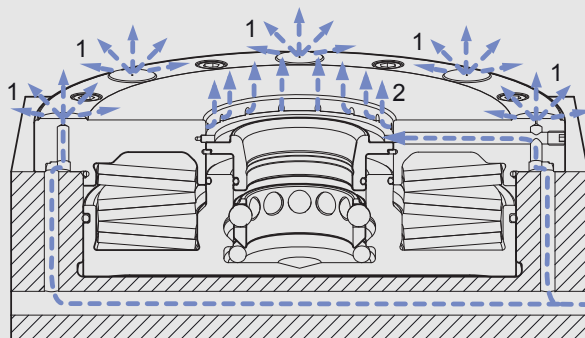
Order no.	Retention force	Insertion force	DHF*	Hydr. pressure to release	Weight	Data sheet
807 020	55,000 N	30,000 N	without	30-35 bar	6.35 kg	D016
807 022	55,000 N	30,000 N	with	30-35 bar	6.35 kg	D016

Fastening screws included with the items supplied. For mounting and service accessories, see section 7.

\* DHF = third hand function. For explanation see section 4.



### Sectional view



- 1) Raised support blow-out ducts
- 2) Centre blow-out ducts

Blowing out is performed directly at the bearing surfaces and at the precision diameter.

### Detail view



Openings for centre blow-out ducts





### TWISTER

- Flush Mount
- Round
- Raised supports
- Blow-out ducts



for  
**AUTOMATION!**

#### Characteristics:

Flush Mount fast closing clamp made of high quality tool steel with raised supports and blow-out ducts.

Due to low height little space needed (can be installed even from plate thickness of 49 mm).

Is clamped mechanically and released hydraulically.

Intelligent blow-out system for cleaning the raised supports and the precision bore. Mount control via differential pressure, blocking air possible.

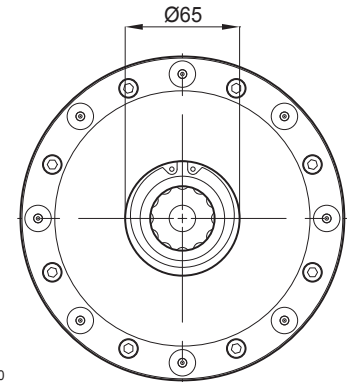
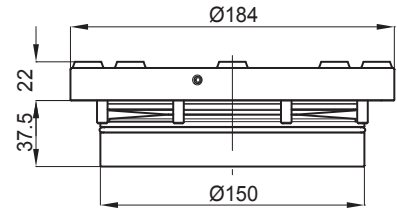
Due to extending duct particularly effective cleaning of the raised supports. Due to 3 mm high raised supports, not possible to trap swarf.

#### Application:

For high accuracy during automatic loading.

For flush mounting in machine pallets, plates, angles, cubes and swivelling yokes.

Can be used for all common machining tasks such as milling, turning (note information in section see "Clamp control valve" on page 7), grinding, eroding as well as on test stands for mounting devices.



Z 804 580

1) Raised supports with intelligent blow-out system

Order no.	Retention force	Insertion force	DHF*	Hydr. pressure to release	Weight	Data sheet
804 580	55,000 N	30,000 N	without	30-35 bar	6.35 kg	D016
804 581	55,000 N	30,000 N	with	30-35 bar	6.35 kg	D016

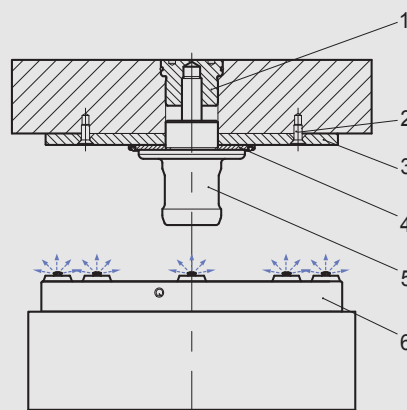
Fastening screws included with the items supplied. For mounting and service accessories, see section 7.

\* DHF = third hand function. For explanation see section 4.



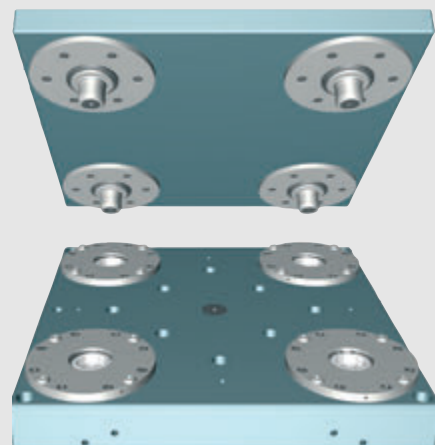
#### Recommended configuration: SPEEDY classic TWISTER with hardened bearing plate

Sectional view



- 1) Nipple fastening
- 2) Countersunk screw DIN 7991
- 3) Hardened bearing plate
- 4) Spacer washer
- 5) Retractable nipple
- 6) SPEEDY classic Twister

Practical example



SPEEDY classic 3 TWISTER fast closing clamps, fitted in plate

**The spacer washer (4) is imperative for each SPEEDY classic 3 TWISTER and must be fitted to each retractable nipple!**



## DHF conversion kit

### Characteristics:

With the DHF conversion kit (DHF = "third hand" function) the fast closing clamp can be operated using the "third hand" function. For further information, see section 4.

By using the "third hand" function the resistance to engagement is reduced for almost zero. The pallet stays in position and can be clamped.

The DHF conversion kit replaces the ball cage and the O-ring in the fast closing clamp (see drawing below, item 3/4).

### Application:

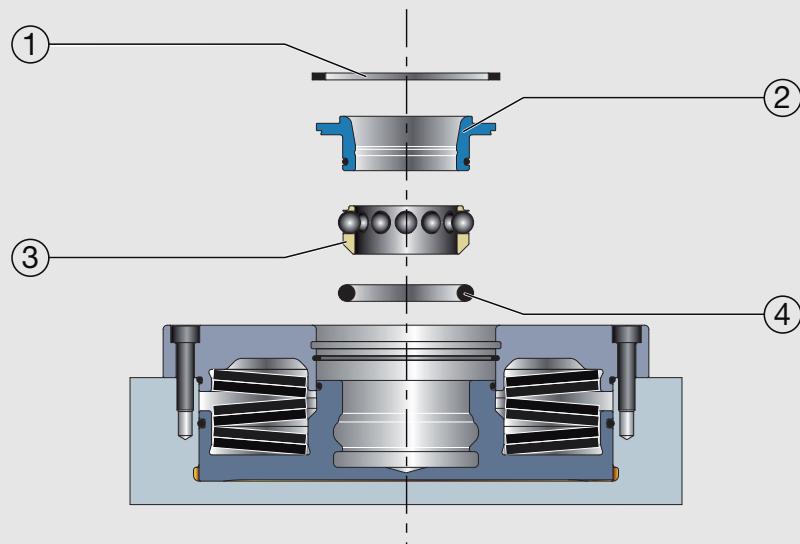
Particularly suitable for vertical loading using handling equipment. It is not necessary for the loading arm to follow during clamping.

- Engage
- Let go
- Clamp

Order no.	Description	Weight
704 229	DHF conversion kit ("third hand" function)	0.04 kg



### Sectional view



- 1) Locking ring
- 2) Retaining ring
- 3) Ball cage
- 4) O-ring



# Surface Mount

## 2

For technical reasons the zero point clamping system SPEEDY classic 3 is integrated into plates and predominantly supplied as a built-in variant (see section 1).

Special solutions for your individual requirements on request.

*Upgrade now -  
it is never too late for a  
zero clamping system!*

Every production machine deserves to have its own SPEEDY classic zero point clamping system:



SPEEDY classic 3 fast closing clamps, fitted in mounting plates. The compact mounting plates make alignment on the machine table easy.

# Retractable nipple

# 3

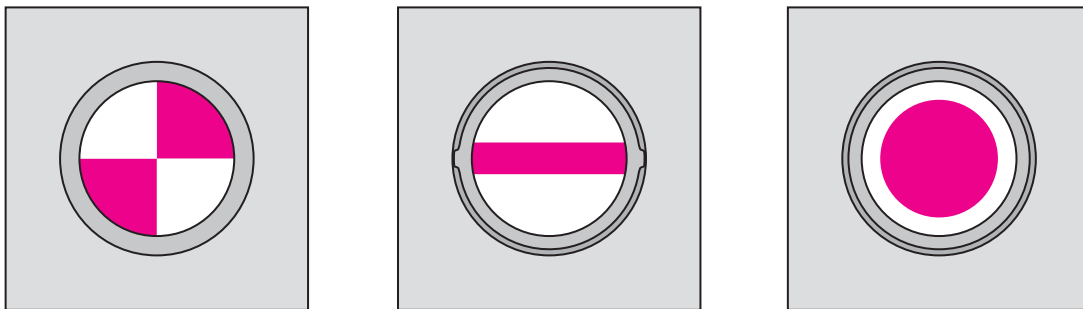
The critical conflicts of stable clamping and the necessary movement for thermal expansion are ideally solved with three different retractable nipples.

Independent of the size of the pallet, you always have a fixed zero point also during machining. You can define where the retractable nipple with zero point is positioned.

*Precise positioning  
for stable clamping*

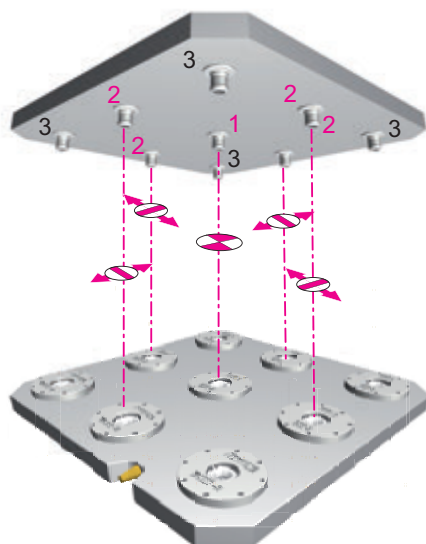


One thing is certain – the fixed zero point with SPEEDY classic retractable nipples:



1) Retractable nipple with zero point 2) Retractable nipple with equaliser 3) Retractable nipple

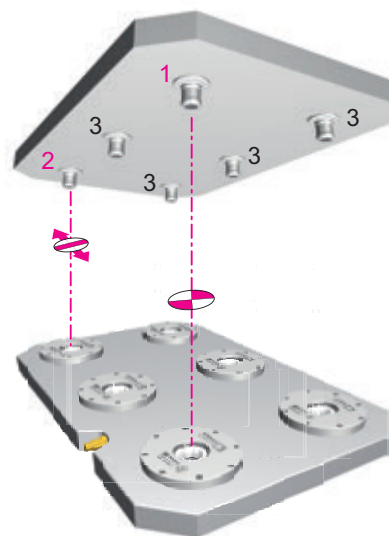
**Retractable nipple with zero point in the middle of the pallet**



**Application:**

Equalisation of thermal expansion.  
(Manufacturing tolerances = position tolerances for fast closing clamps and retractable nipples, each 0.01 mm)

**Retractable nipple with zero point at the corner of the pallet**



**Application:**

Equalisation of thermal expansion and manufacturing tolerances.



## Retractable nipple

- With zero point

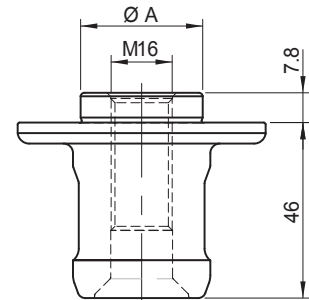
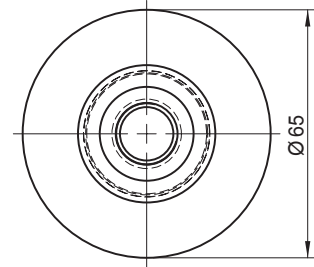


**Characteristics:**

Retractable nipple with zero point.

**Application:**

For positioning and clamping on machine pallets, machine vices, chucks, jigs, direct workpiece clamping.



Z 804 290

Order no.	Ø A	Screw grade	Tightening torque for screw M12	Tightening torque for screw M16	Weight	Data sheet
804 290	32	min. 10.9	75 Nm	90 Nm	0.40 kg	D029
804 291	25	min. 10.9	75 Nm	90 Nm	0.35 kg	D029

## Retractable nipple

- With equaliser

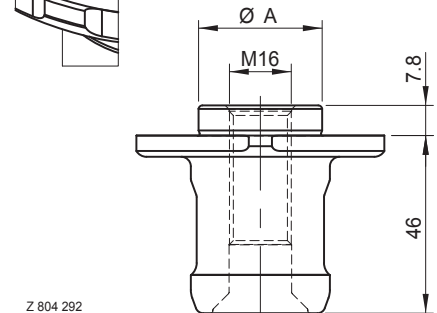
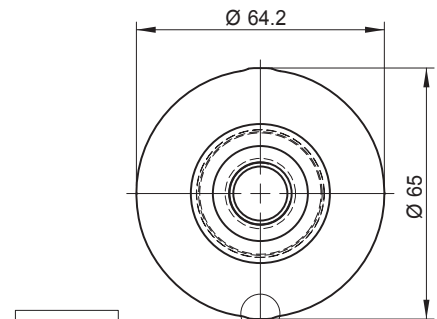


**Characteristics:**

Retractable nipple with equaliser on one axis.

**Application:**

On machine pallets, machine vices, chucks, jigs, direct workpiece clamping.



Z 804 292

Order no.	Ø A	Screw grade	Tightening torque for screw M12	Tightening torque for screw M16	Weight	Data sheet
804 292	32	min. 10.9	75 Nm	90 Nm	0.40 kg	D029
804 293	25	min. 10.9	75 Nm	90 Nm	0.35 kg	D029





## Retractable nipple

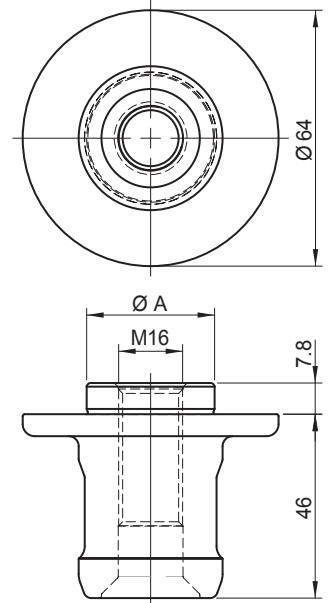


### Characteristics:

Retractable nipple without centring.

### Application:

For secure clamping on machine pallets, machine vices, chucks, jigs, direct workpiece clamping.



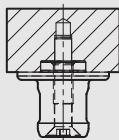
Z 804 294

Order no.	Ø A	Screw grade	Tightening torque for screw M12	Tightening torque for screw M16	Weight	Data sheet
804 294	32	min. 10.9	75 Nm	90 Nm	0.40 kg	D029
804 295	25	min. 10.9	75 Nm	90 Nm	0.35 kg	D029

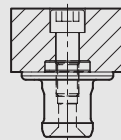


### Application example

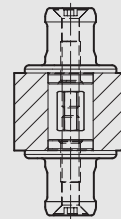
Variant A



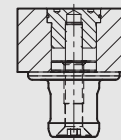
Variant B



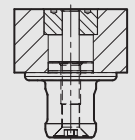
Variant C



Variant D



Variant E



#### Variant A:

For applications in which nipple bores are not allowed on the surface of the pallet, or in case of direct workpiece clamping.

#### Variant B:

Simple nipple fastening from above, if high accuracy between the position of the nipple and the top side of the pallet is not required.

#### Variant C:

Ideal fastening variant for clamping for manufacturing with reversing. The highest accuracy is ensured because the nipple is fastened in the same mounting bore.

#### Variant D, E:

These fastening variants are to be preferred. The precision bore for the nipple and all necessary positioning bores on the pallet can be manufactured in one work step. As a result the accuracy between the positions is very high.

Special nipple fastenings are required for these variants (page 3.4).





## Nipple fastening D

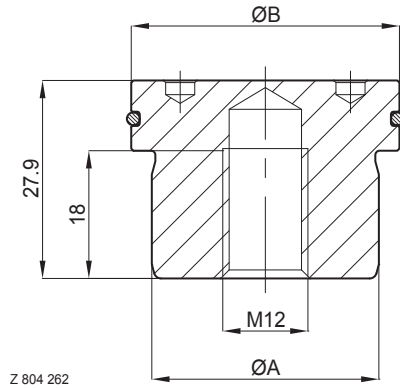
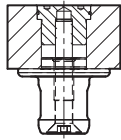


**Characteristics:**

Makes it possible to fasten the nipple with one clamping action. As a result the highest accuracy is achieved.

**Application:**

Machine pallets, machine vices, chucks, jigs, direct workpiece clamping.

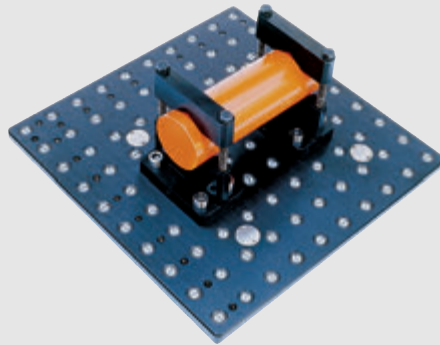


Z 804 262

Order no.	Ø A	Ø B	Weight	Data sheet
804 262	32	37.8	0.175 kg	D029
804 263	25	29.8	0.170 kg	D029



**Application example**



Nipple fastening D

## Nipple fastening E

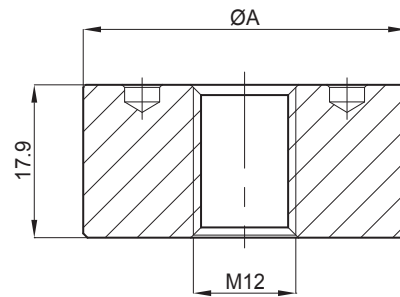
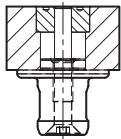


**Characteristics:**

Makes it possible to fasten the nipple with one clamping action. As a result the highest accuracy is achieved.

**Application:**

Machine pallets, machine vices, chucks, jigs, direct workpiece clamping.



Z 804 264

Order no.	Ø A	Weight	Data sheet
804 264	37.8	0.15 kg	D029
804 265	29.8	0.15 kg	D029





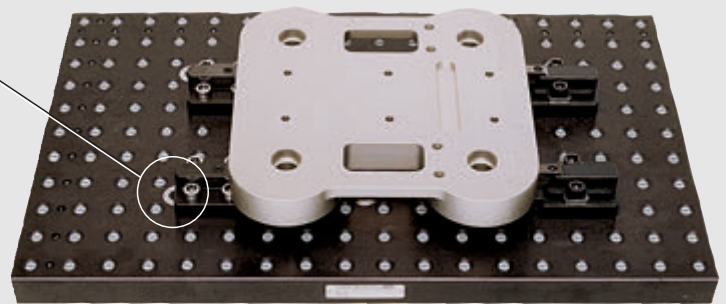
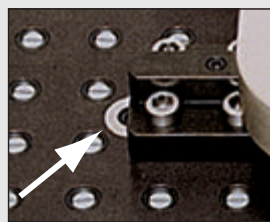
**Application example**



Nipple fastening A



**Application example**



Nipple fastening E

## Countersunk head screw

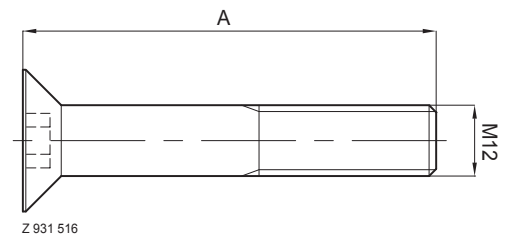


**Characteristics:**

Countersunk screw M12.

**Application:**

Retractable nipple fastening (for fastening variant A).

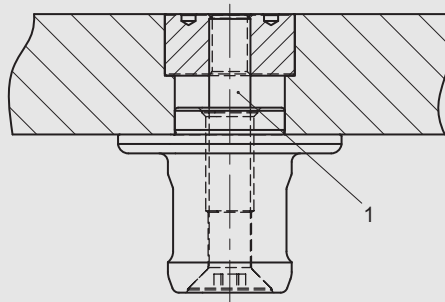


Z 931 516

Order no.	Dimension	Application material	Size A	Strength class	Data sheet
931 070	M12 x 80 - DIN 7991	Steel	80 mm	10.9	D029



**Application example**



1) Countersunk head screw





### Bearing plate Ø 179

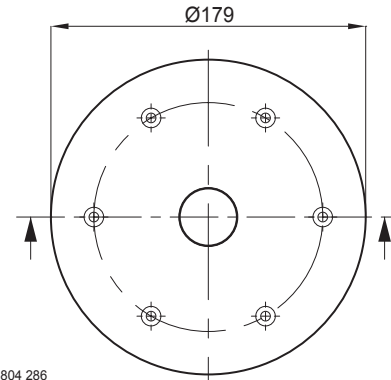
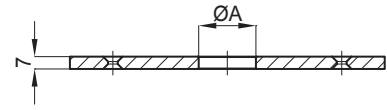


**Characteristics:**

Bearing plate made of hardened steel.  
High resistance to wear with unhardened machine pallet surfaces.

**Application:**

Bearing plate for SPEEDY classic 3 TWISTER or SPEEDY classic 3 TORNADO. For the usage of unhardened machine pallet surfaces.



Z 804 286

Order no.	Surface	Ø A	Weight	Data sheet
804 061	Ground on both sides	32	1.2 kg	D033
804 286	Ground on both sides	25	1.2 kg	D033

Fastening screws not included with the items supplied.

Order no.	Description	Weight
931 368	Countersunk screw M5 x 12 UN 4851 Torx 8.8 galvanised	0.02 kg

### Spacer washer for TWISTER

- With O-ring

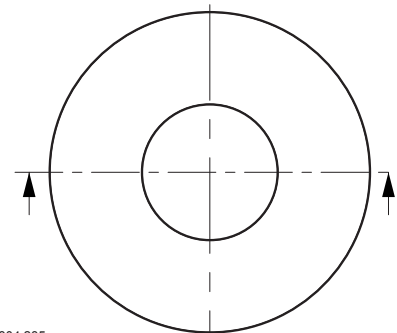
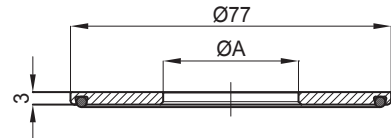


**Characteristics:**

Very precise mount control (down to 0.01 mm) possible, as due to the sealing of the centre bore, air can only escape at the 4 raised supports.

**Application:**

Spacer washer for sealing the centre bore and for equalising the height for SPEEDY classic TWISTER.



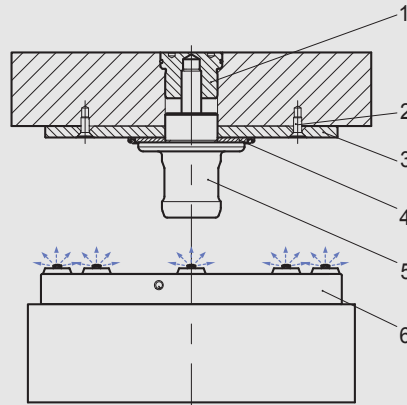
Z 804 285

Order no.	Ø A	Weight	Data sheet
804 060	32	0.02 kg	D033
804 285	25	0.02 kg	D033



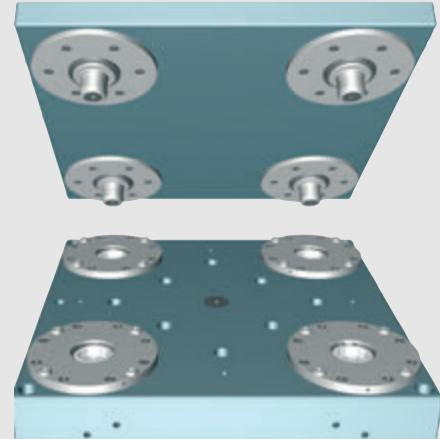


#### Sectional view



- 1) Nipple fastening
- 2) Countersunk screw  
DIN 7991
- 3) Hardened bearing plate
- 4) Spacer washer
- 5) Retractable nipple
- 6) SPEEDY classic Twister

#### Practical example



SPEEDY classic 3 TWISTER fast closing clamps, fitted in plate

**The spacer washer (4) is imperative for each SPEEDY classic 3 TWISTER and must be fitted to each retractable nipple!**

### Positioning nipple

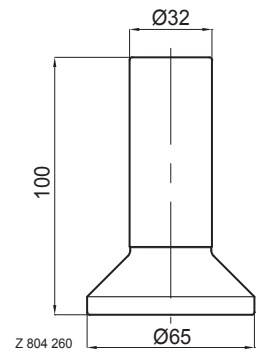


#### Characteristics:

Positioning nipple for mounting in a collet.

#### Application:

For quick, accurate positioning of the SPEEDY classic 3 fast closing clamps.



Order no.	Description	Weight
804 260	Positioning nipple for SPEEDY classic 3	0.9 kg



#### Application example



Positioning example based on a SPEEDY classic fast closing clamp plate



# Pressure boosters

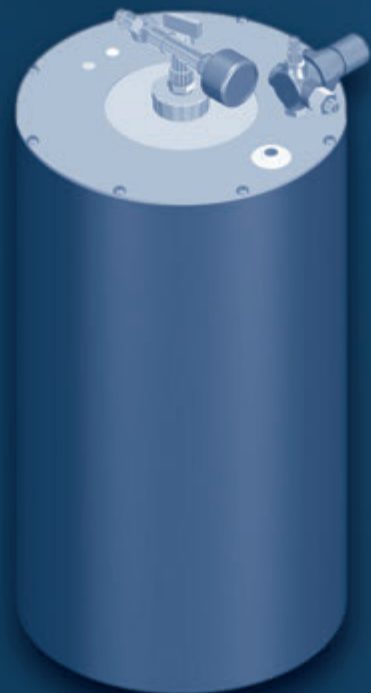
## 4

The pressure boosters from STARK convert air pressure into hydraulic pressure and can be used from 30 to 180 bar.

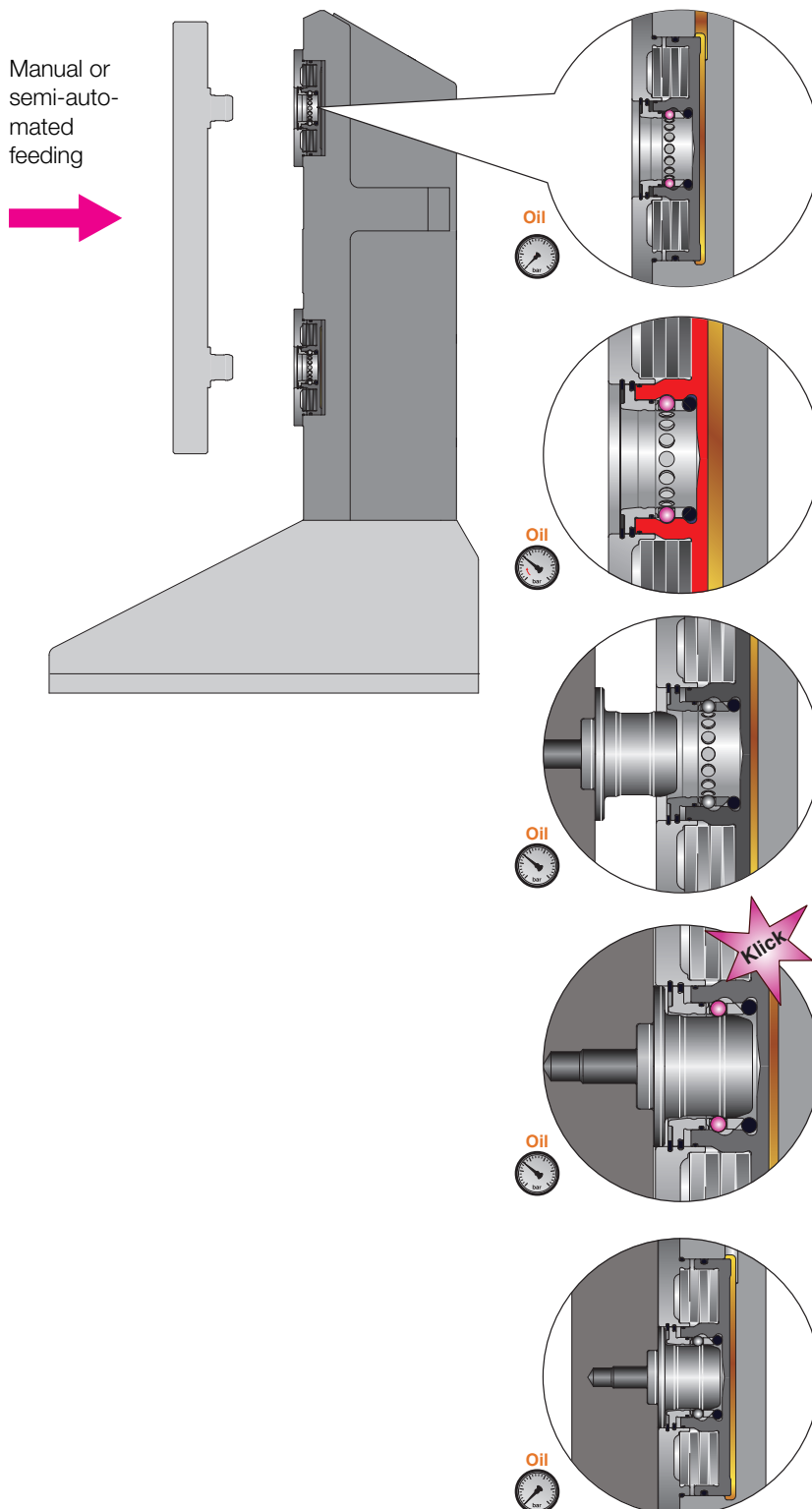
With the "third hand" function (DHF) the workpiece or pallet is held in the engaged position after positioning.

Workpiece and pallet are thus secured against falling out and no longer need to be held by the operators. The clamping process is even quicker and safer.

- \* Engage, let go and clamp!
- \* Couple and simply release!



# The "third hand" function – the option for process safety:



Manual or semi-automated feeding



### "Third hand" function, DHF

Explanation based on a SPEEDY classic 3

### Retention function

The retention pressure is applied to the SPEEDY classic and the SPEEDY is ready for securely engaging the pallet.

### Feed

The pallet is moved by hand or by crane.

### Engage

The retractable nipples are inserted, engaged and are then mechanically secured.

You can let go of the pallet.

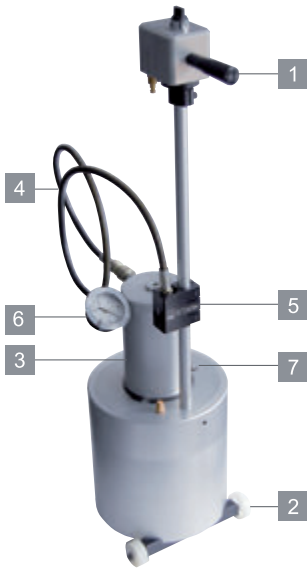
### Position and clamp

The SPEEDY classic is de-pressurised. The pallet is now positioned, pulled in and securely clamped using the plate springs.

Function animation also at [www.stark-inc.com](http://www.stark-inc.com)



## BOOSTER

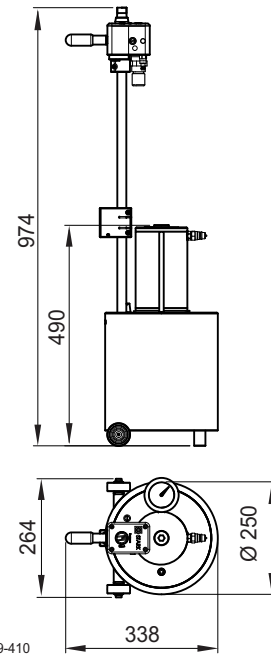


### Characteristics:

The booster is used for releasing single-acting clamping systems. It converts compressed air into hydraulic pressure and is suitable for ranges from 30 to 80 bar.

### Application:

- 1 Handle for safe transport
- 2 Two robust rollers and one foot for secure positioning (can be removed easily for stationary applications)
- 3 Pressure 40 bar with 1 litre oil capacity for more than 20 SPEEDY classic 2 (also available with 80 bar pressure)
- 4 Hose available in various lengths also with self-sealing quick-release coupling
- 5 Holder for coupling for safe transport and for storage
- 6 Hydraulic pressure gauge with maximum pressure marking
- 7 Dipstick



Order no.	Releases approx. [pcs.]	System pressure	Air pressure	Oil volume	Weight
804 432	7 SPEEDY	40 bar	6 bar	1 l	27,30 kg
804 433	3 SPEEDY	80 bar	6 bar	0.5 l	27,30 kg

Pressure booster can be expanded to DHF using article 804 427.

Hydraulic connection via hydraulic coupler 804 371, hydraulic hose not included with the items supplied.

## Hydraulic hose with couplings

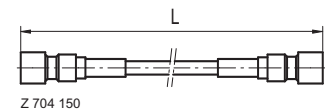


### Characteristics:

Hydraulic hose with hydraulic coupler on both ends.

### Application:

Is used for the connection between pressure booster and fast closing clamp plate or SPEEDY classic 3 Surface Mount.



Order no.	Self-sealing couplings	L	Max. pressure	Weight
704 150	No (952 044)	1.5 m	300 bar	0.60 kg
704 151	Yes (952 177)	1.5 m	300 bar	0.60 kg
704 152	No (952 044)	3.0 m	300 bar	0.60 kg
704 153	Yes (952 177)	3.0 m	300 bar	0.60 kg

For suitable couplers, see page 7.2 / page 7.3.





## Pedal control



### Characteristics:

Pedal control for operating the pressure booster.

### Application:

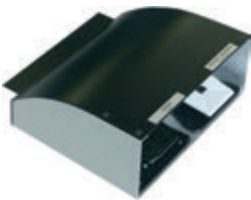
Operation of the pressure booster using your foot.

The pressure booster does not need to be in the immediate vicinity.

Both hands are free for the changing process.

Order no.	Description	Weight
804 419	Pedal control for pressure booster (incl. pneumatic hose and male connections)	1.50 kg

## DHF pedal control (third hand function)



### Characteristics:

Due to the special control of the pressure (operation) to the fast closing clamps, the workpiece, the pallet or the jig can be straightforwardly engaged. Feed, engage and clamp.

### Application:

On a vertical clamping system or in case of feed by robots or handling systems.

Order no.	Description	Weight
804 427	DHF pedal control for pressure boosters (incl. pneumatic hose and male connections)	4.00 kg



## Hydraulic pump set



Symbol photo

### Characteristics:

With integrated hydraulic and electrical control via remote control with 7 m cable (with Harting connector).

Function triggered using control panel with illuminated pushbuttons.

Including hydraulic oil HLP32 and electrical connection with 10m long cable and CEE 5/16 connector.

### Application:

Particularly suitable for single action SPEEDY classic fast closing clamps.

### Technical data:

Q = 3.2 l/min

V = 11 l

U = 400 V 50 Hz ~3PE

p = 40 bar (can also be changed 15-80 bar)

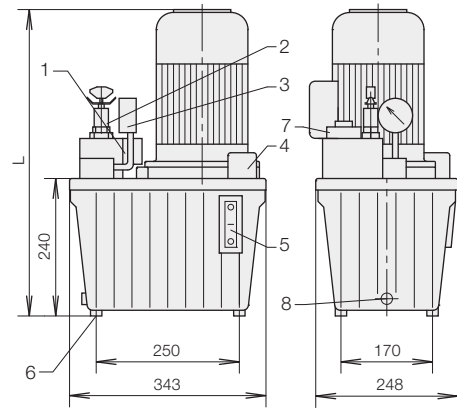
P = 0.55 kW

Valve and control voltage: 24 VDC

Medium: Hydraulic oil HLP32

DIN 51519/51524 Part 2

Connections: G 1/4



Z 8223 310

- 1) Filter check
- 2) Pressure limiting valve
- 3) Pressure gauge
- 4) Filler and breather filter
- 5) Oil level gauge
- 6) 4 fastening holes M8 x 8 deep
- 7) High pressure filter
- 8) Oil drain plug G 3/8

Order no.	Description	Weight
804 442	Hydraulic pump set	Approx. 27 kg

For more detailed information, refer to RÖMHELD data sheet D8.021.

## Hydraulic pump set

### • Clamping check

### Characteristics:

With sampling of the clamping check.

With integrated hydraulic and electrical control via remote control with 7 m cable (with Harting connector).

Function triggered using control panel with three illuminated pushbuttons.

Including hydraulic oil HLP32 and electrical connection with 10m long cable and CEE 5/16 connector.

### Application:

Particularly suitable for single action SPEEDY classic fast closing clamps.

### Technical data:

Q = 3.2 l/min

V = 11 l

U = 400 V 50 Hz ~3PE

p = 45/15 bar

P = 0.55 kW

Valve and control voltage: 24 VDC

Medium: Hydraulic oil HLP32

DIN 51519/51524 Part 2

Connections: G 1/4

Order no.	Description	Weight
804 443	Hydraulic pump set with sampling of the clamping check	Approx. 27 kg

Further details on request.





## Hydraulic pump set

- Clamping check
- "Third hand" function

**Characteristics:**

With sampling of the clamping check and "third hand" function (DHF).

With integrated hydraulic and electrical control via remote control with 7 m cable (with Harting connector).

Function triggered using control panel with three illuminated pushbuttons.

Including hydraulic oil HLP32 and electrical connection with 10m long cable and CEE 5/16 connector.

**Application:**

Particularly suitable for single action SPEEDY classic fast closing clamps.

**Technical data:**

Q = 3.2 l/min

V = 11 l

U = 400 V 50 Hz ~3PE

p = 45/15 bar

P = 0.55 kW

Valve and control voltage: 24 VDC

Medium: Hydraulic oil HLP32

DIN 51519/51524 Part 2

Connections: G 1/4

Order no.	Description	Weight
804 444	Hydraulic pump set with sampling of the clamping check and "third hand" function	Approx. 27 kg

Further details on request.

## Hydraulic pump set

- "Third hand" function

**Characteristics:**

With "third hand" function (DHF).

With integrated hydraulic and electrical control via remote control with 7 m cable (with Harting connector).

Function triggered using control panel with two illuminated pushbuttons.

Including hydraulic oil HLP32 and electrical connection with 10m long cable and 380 V connector.

**Application:**

Particularly suitable for single action SPEEDY classic fast closing clamps.

**Technical data:**

Q = 3.2 l/min

V = 11 l

U = 400 V 50 Hz ~3PE

p = 45/15 bar

P = 0.55 kW

Valve and control voltage: 24 VDC

Medium: Hydraulic oil HLP32

DIN 51519/51524 Part 2

Connections: G 1/4

Order no.	Description	Weight
804 445	Hydraulic pump set with "third hand" function (DHF)	Approx. 27 kg

Further details on request.





### Application example

Large parts manufacture with SPEEDY classic 3.

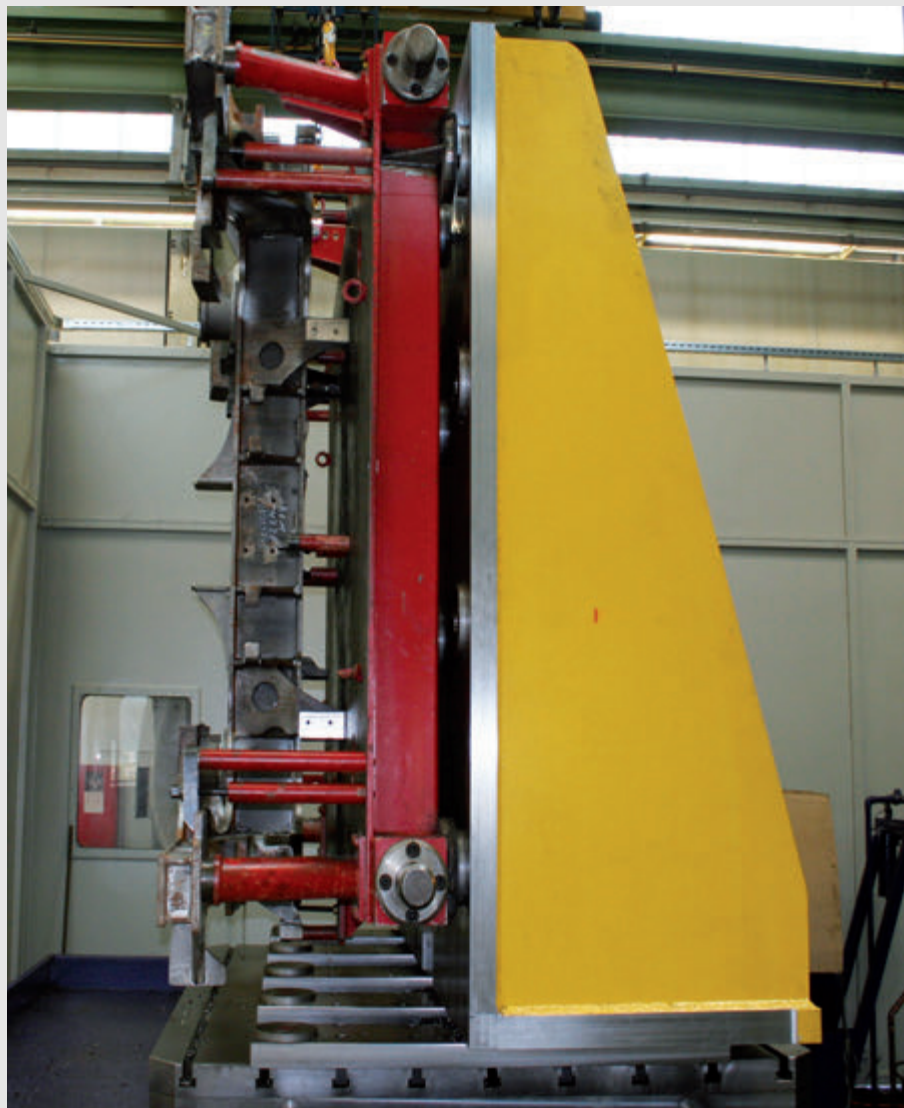
Release of the SPEEDY classic 3 release with 40 bar hydraulic pressure.



Clamping angle for workpieces up to 2.5 m high with 12 SPEEDY classic 3, 360 kN insertion force.

Clamp / release with "third hand" function:

- Engage
- Let go
- Clamp





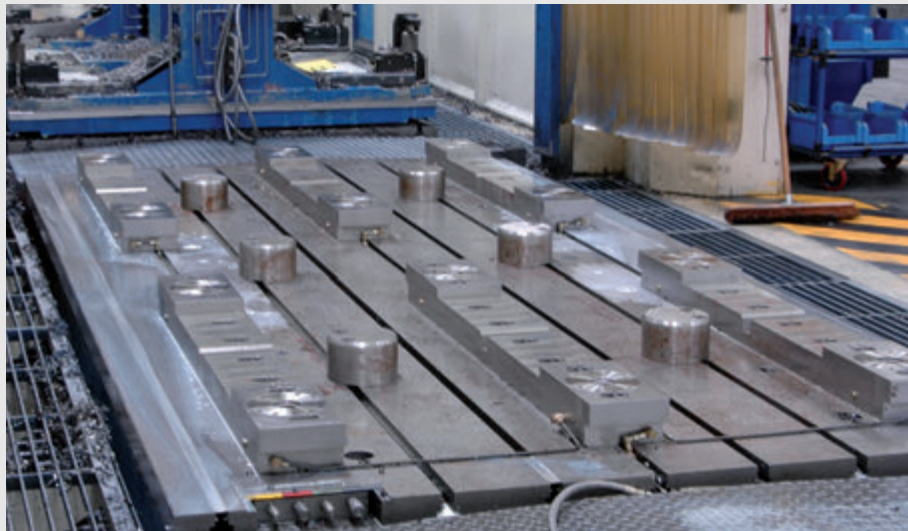
## Application example

Large parts manufacture with SPEEDY classic 3. Increased machine operating time due to external setting-up.

Machine pallet with clamping device for workpieces.



SPEEDY classic 3 fast closing clamps fitted in clamping strips with pipework. Using the two jigs, workpieces up to 12 m can be clamped and machined.



Loading using the handling system manufactured by STARK.

The centre of gravity of the clamping device can be adjusted using the different holes.



**Application video at [www.stark-inc.com/movie](http://www.stark-inc.com/movie)**

# Plates, angles, mounting towers

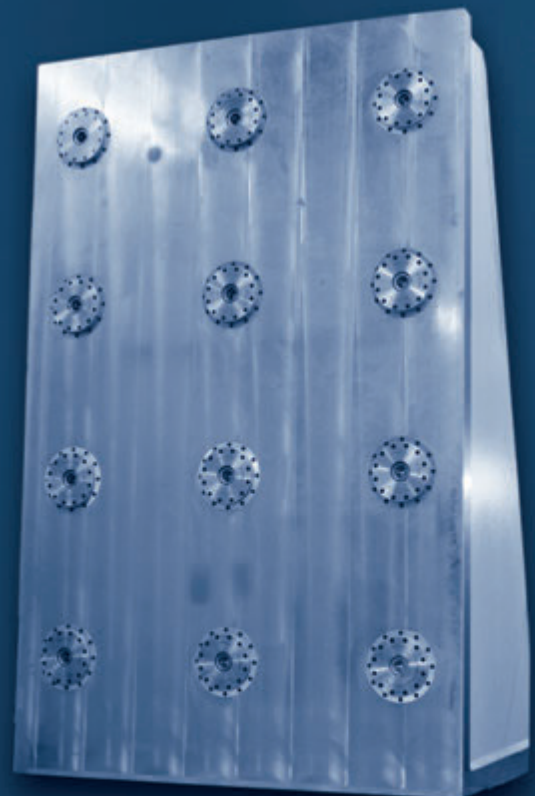
# 5

STARK develops and manufactures mounting towers to your requirements or drawings.

Your advantages:

- Direct application of your CAD data
- In-house Engineering department
- Air-conditioned measuring room with the latest instruments
- QA report on delivery for your quality management
- One contact for complete order processing

*Mounting towers and fast  
closing clamp plates from  
in-house manufacture ...  
everything from a single source!*

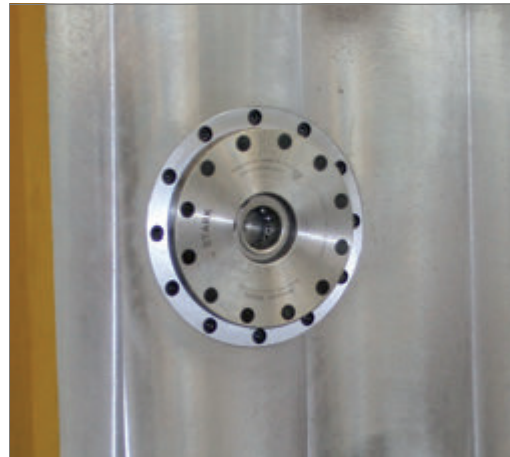




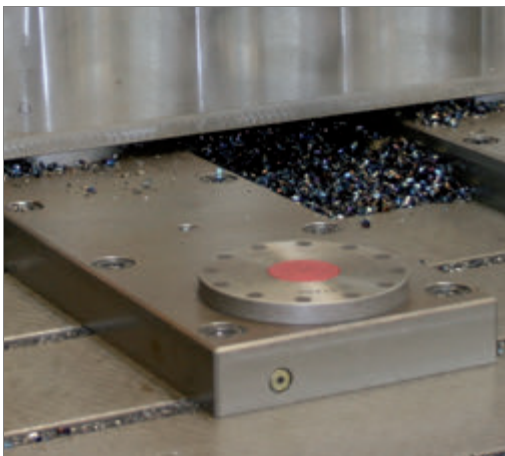
## Flexible clamping solutions for the latest manufacturing systems:



SPEEDY classic 3 fast closing clamps, fitted in angle.



SPEEDY classic 3 fast closing clamps, fitted in angle (detail).



SPEEDY classic 3 fast closing clamps, fitted in mounting plate for angle.



Setting-up process.

STARK manufactures all applications in-house.

Customer-specific solutions are optimally adapted to your requirements.

**Consultation, planning, design, production, mounting, service – everything from a single source!**



## Fast closing clamp plate 3x



**Characteristics:**

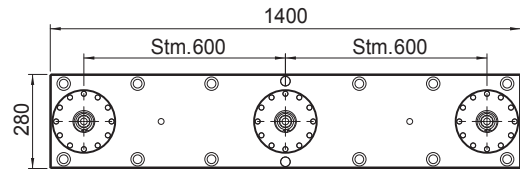
Fast closing clamp plate with SPEEDY classic 3 STANDARD.

**Application:**

For all common machining tasks such as milling and turning at high loads and high weights.

Attachment bores as per customer requirements.

Detailed information to suit your machine on request.



Z 075

Order no.	Retention force*	Insertion force *	Hydr. pressure to release	Spacing	Weight
105 160	55,000 N	30,000 N	30-35 bar	600 mm	150 kg

\* Details on retention force and insertion force per fast closing clamp



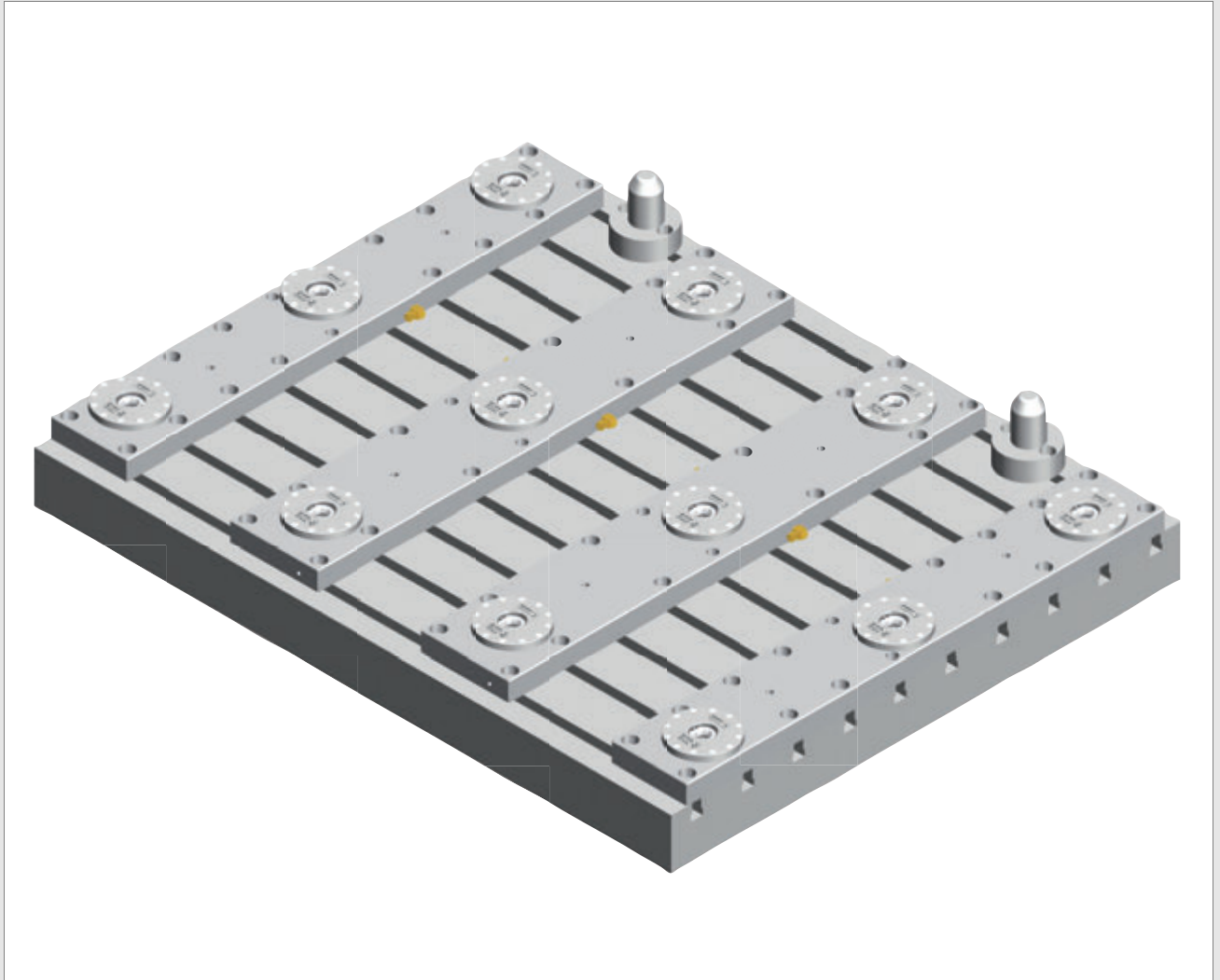
**Application example**



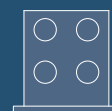




## Application example



Fast closing clamp plate SPEEDY classic 3 with two pre-centring pins



# Media ducts (MD)

6

Media ducts are used to carry media, e.g. oil, air, water etc. through the zero point clamping system SPEEDY classic.

They allow, e.g. clamping devices fitted to the machine pallets to be supplied with power (hydraulic oil, compressed air).

Media ducts comprise two components – one for installation in SPEEDY classic and one for installation in the pallet that is automatically coupled when the retractable nipples are clamped.

*Zero point clamping and media duct integrated into one system!*



## Information on the media duct NW 4

### Advantages

- Media ducts can be integrated directly in the SPEEDY classic zero point clamping system.
- Up to 4 media ducts per SPEEDY classic are possible.
- The coupling travel is adjusted to the travel of the SPEEDY classic fast closing clamps.

### Technical data

Min. coupling force	Operating pressure	Flow rate
250 N	Max. 200 bar	28 l/min with static pressure of 90 bar on HLP 46

### Formulas for calculations

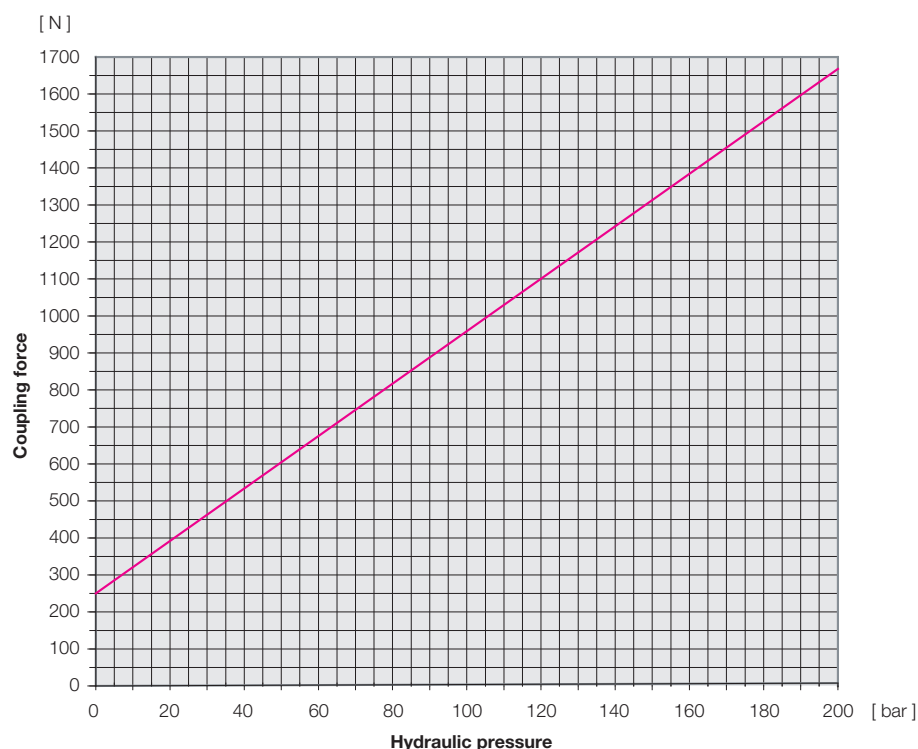
Insertion force SPEEDY classic 3 = 30,000 N

Coupling force  $F$  [N] = ( 250 + 7.1 x p [bar] ) x n

(n = number of pipes pressurised to the same pressure in coupled state)

- Unpressurised pipes are subject to 250 N spring force.
- The sum of the axial forces on the media ducts acts against the insertion force on the SPEEDY classic fast closing clamps.
- The actuating force and the coupling force to be absorbed must not exceed the insertion force on the zero point clamping system!

### Diagram for determining the coupling force per media duct NW 4



### Important notes for the correct usage of the media ducts:

- The media ducts are only allowed to be coupled when unpressurised.
- Machine pallets with media ducts fitted are not allowed to be pressurised when uncoupled.
- Concentric pre-positioning of  $\varnothing$  0.2 mm is necessary.
- Both media duct components are closed when uncoupled.

Our consultants will be pleased to advise you on the correct usage of media ducts.



### Media duct NW 4 coupling mechanism

- SPEEDY side
- With mounting flange



#### Characteristics:

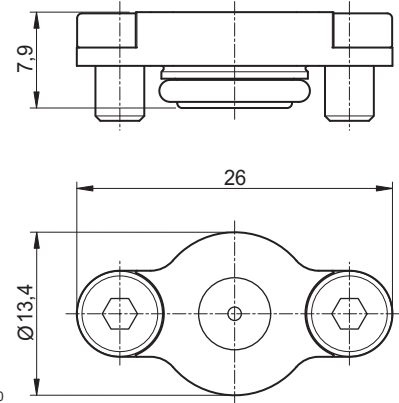
Media duct for the supply of hydraulic oil and air, other media on request.

The media duct is coupled by the drawing in stroke of the fast closing clamps and is self-sealing when uncoupled.

Together with the SPEEDY classic fast closing clamps, the necessary positioning is provided by the fast closing clamps.

#### Application:

For direct installation in fast closing clamps, as well as single and multiple couplings with and without blow-out ducts.



Order no.	Max. coupling force	Weight	Data sheet
704 200	See diagram at the start of this section	0.02 kg	D023

Fastening screws included with the items supplied.

### Media duct NW 4 coupling nipple

- Pallet side
- With mounting flange



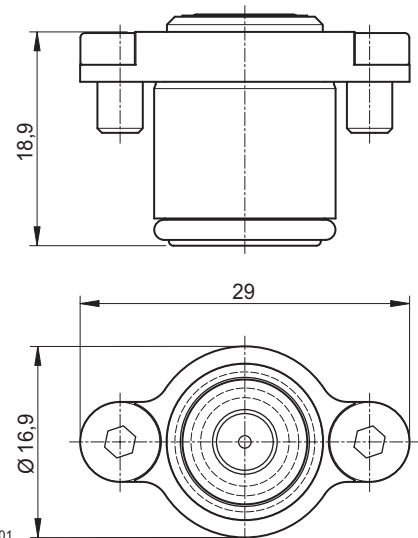
#### Characteristics:

Media duct for the supply of hydraulic oil and air, other media on request.

The media duct is coupled by the drawing in stroke of the fast closing clamps and is self-sealing when uncoupled.

#### Application:

For direct installation in machine pallets, as well as single and multiple couplings with and without blow-out ducts.

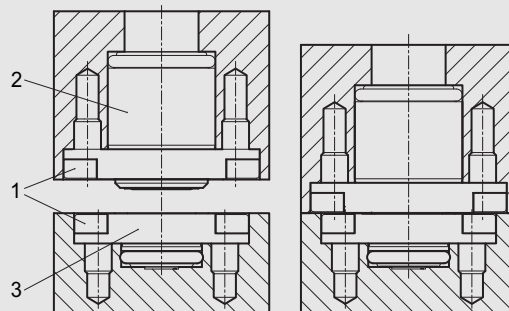


Order no.	Max. coupling force	Weight	Data sheet
704 201	See diagram at the start of this section	0.03 kg	D025

Fastening screws included with the items supplied.



#### Application example



- 1) Fastening screws
- 2) Media duct pallet side
- 3) Media duct SPEEDY side



## Media duct NW 4 coupling nipple

- Pallet side



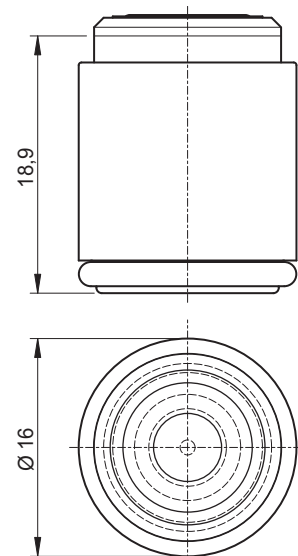
### Characteristics:

Media duct for the supply of hydraulic oil and air, other media on request.

The media duct is coupled by the drawing in stroke of the fast closing clamps and is self-sealing when uncoupled.

### Application:

For two-piece installation in machine pallets, as well as single and multiple couplings with and without blow-out ducts, e. g. combined with hardened bearing plate.

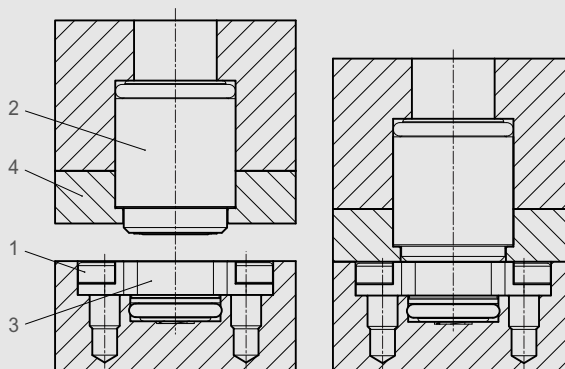


Z 704 203

Order no.	Max. coupling force	Weight	Data sheet
704 203	See diagram on page 6.1	0.02 kg	D083



### Application example



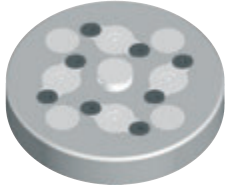
- 1) Fastening screws
- 2) Media duct pallet side
- 3) Media duct SPEEDY side
- 4) Bearing plate





## Multiple coupling NW4 coupling mechanism

• Plate side

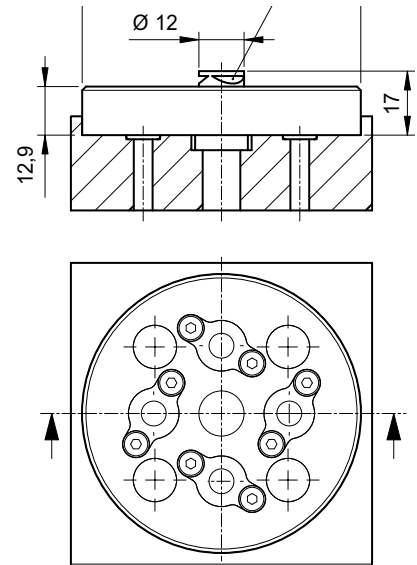


**Characteristics:**

Media duct with one or more control circuits.  
Integrated blow-out ducts.

**Application:**

Operation of jigs or hydraulic vices on machine pallets.  
Particularly suitable for automated loading due to integrated blow-out ducts.  
Upgrading existing zero point clamping system with media ducts.



Z 703 011

Order no.	Pos. and number of the media ducts (see fig. on page 6.6)	Weight	Data sheet
703 009	1	0.50 kg	D042
703 010	2	0.50 kg	D042
703 012	3	0.50 kg	D042
703 011	4	0.50 kg	D042

Fastening screws and screw covers included in the items supplied.

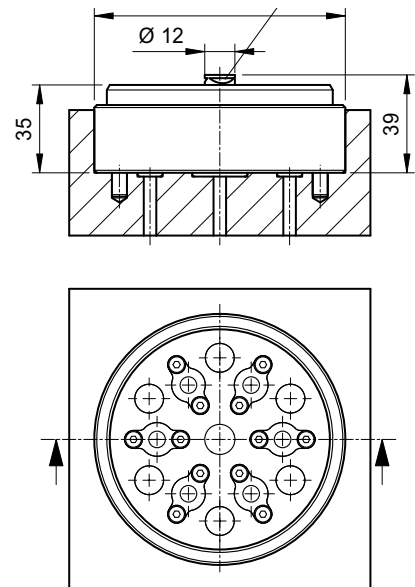


**Characteristics:**

Media duct with six control circuits.  
Integrated blow-out ducts.

**Application:**

Operation of jigs or hydraulic vices on machine pallets.  
Particularly suitable for automated loading due to integrated blow-out ducts.  
Upgrading existing zero point clamping system with media ducts.



Z 703 013

Order no.	Pos. and number of the media ducts (see fig. on page 6.6)	Weight	Data sheet
703 013	6	2.00 kg	D059
703 022	5	2.00 kg	D059

Fastening screws and screw covers included in the items supplied.



## Multiple coupling NW4 coupling nipple

### • Pallet side

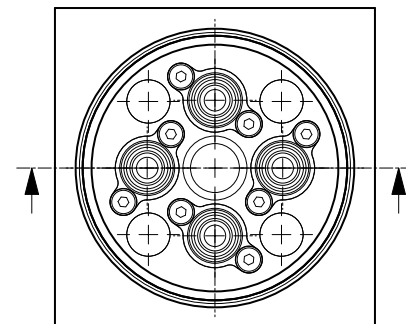
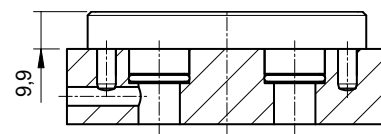


#### Characteristics:

Media duct with 1-4 control circuits.  
Integrated blow-out ducts.

#### Application:

Operation of jigs or hydraulic vices on machine pallets.  
Particularly suitable for automated loading due to integrated blow-out ducts.  
Upgrading existing zero point clamping system with media ducts.



Z 703 016

Order no.	Pos. and number of the media ducts (see figure on page 6.6)	Weight	Data sheet
703 014	1	0.50 kg	D040
703 015	2	0.50 kg	D040
703 017	3	0.50 kg	D040
703 016	4	0.50 kg	D040

Fastening screws and screw covers included in the items supplied.

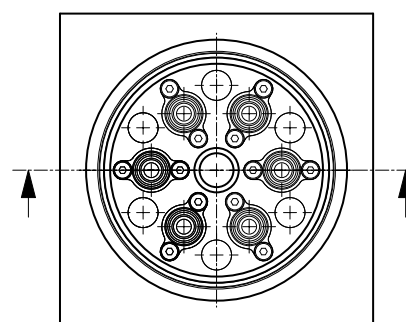
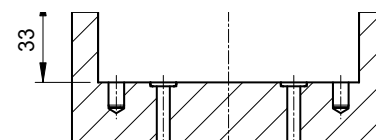


#### Characteristics:

Media duct with six control circuits.  
Integrated blow-out ducts.

#### Application:

Operation of jigs or hydraulic vices on machine pallets.  
Particularly suitable for automated loading due to integrated blow-out ducts.  
Upgrading existing zero point clamping system with media ducts.



Z 703 018

Order no.	Pos. and number of the media ducts	Weight	Data sheet
703 018	6	1.50 kg	D059
703 023	5	1.50 kg	D059

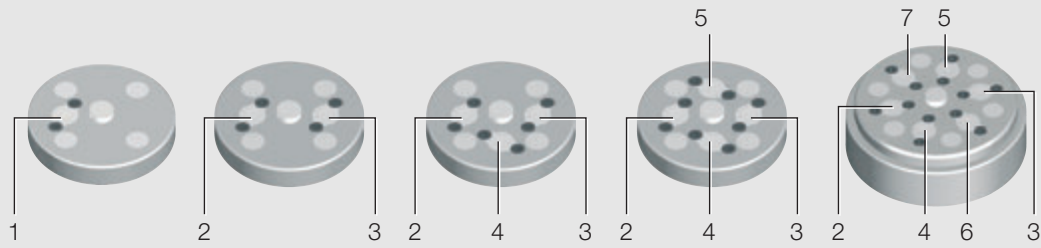
Fastening screws and screw covers included in the items supplied.



**Application example**

1x coupling      2x coupling      3x coupling      4x coupling      6x coupling

- 1) Compressed air
- 2) Feed 1
- 3) Return 1
- 4) Feed 2
- 5) Return 2
- 6) Feed 3
- 7) Return 3



**Note:**

Depending on the number of media ducts, the insertion force of the SPEEDY classic fast closing clamps will change (see illustration on page 6.1).

## Media duct NW 4 blanking plug

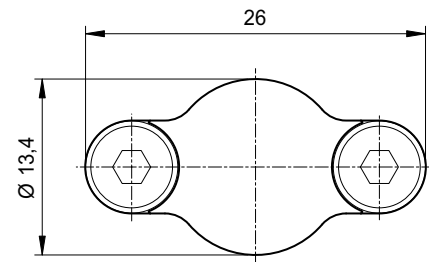
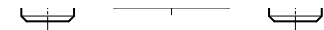


**Characteristics:**

Blanking plug for media ducts.

**Application:**

For sealing media ducts that are not required.



Z 704 208

Order no.	Weight	Data sheet
704 208	0.01 kg	D023

Fastening screws included with the items supplied.

## Media duct pliers

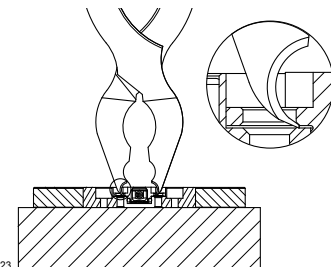


**Characteristics:**

Due to the matched contour of the media duct pliers, the media duct is not damaged during removal.

**Application:**

Pliers for removing media ducts.



Z 033 023

Order no.	Weight
504 015	0.18 kg





## Clamp control valve

- Mechanical



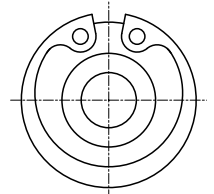
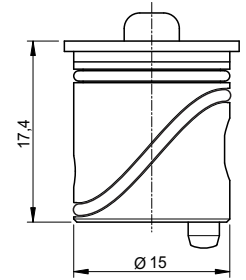
### Characteristics:

Control valve for checking for secure clamping.

### Application:

The clamping check must be used on all rotary machines!

Particularly important for vertical changing processes and on lathes.

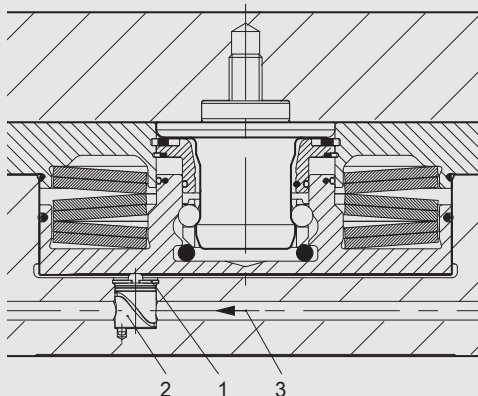


Z 704 210

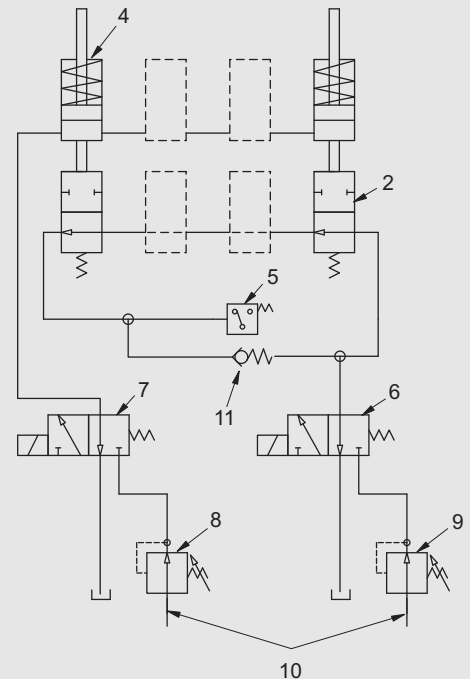
Order no.	Max. pressure	Weight	Data sheet
704 210	10 bar	0.01 kg	D024



## Hydraulic schematic



- 1) Locking ring
- 2) Clamp control valve
- 3) Flow direction
- 4) SPEEDY classic
- 5) Pressure switch for clamping signal
- 6) Hydraulic valve for clamping check
- 7) Hydraulic valve for releasing the SPEEDY classic fast closing clamps
- 8) Pressure limiting valve, 40 bar (80 bar)
- 9) Pressure limiting valve, 8 bar
- 10) Oil supply from machine
- 11) Non-return valve (bypass)



Z 704 210-2

This hydraulic schematic is only an example and explains the principle of operation.



## Explanation of function

The correct and safe clamping of the fast closing clamp is checked on each clamping action by using the mechanical clamp control valve (item 2). If a retractable nipple is not clamped or is not clamped correctly, the piston moves past the normal position and with the clamp control valve inhibits the flow in the hydraulic pipe (item 3). This signal can be easily integrated into the control system, e.g. hydraulic unit, external evaluation of machine control system.

On plates or in towers all fast closing clamps are polled in series – as a result the exact clamping of all fast closing clamps can be checked at any time.



# SPEEDY classic accessories

# 7

For maintenance, transport and installation of your SPEEDY classic fast closing clamps we provide appropriate accessories.

They ensure optimal care and a long service life.

*SPEEDY special tools for maintenance,  
transport and installation*



## Shut-off valve

- Flush Mount

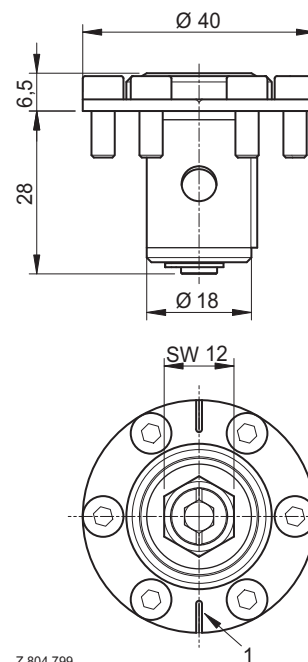


### Characteristics:

Shut-off valve for installation in the fast closing clamp plates.

### Application:

Shutting off individual clamping circuits. Opening and closing by 90° rotation using hex wrench.



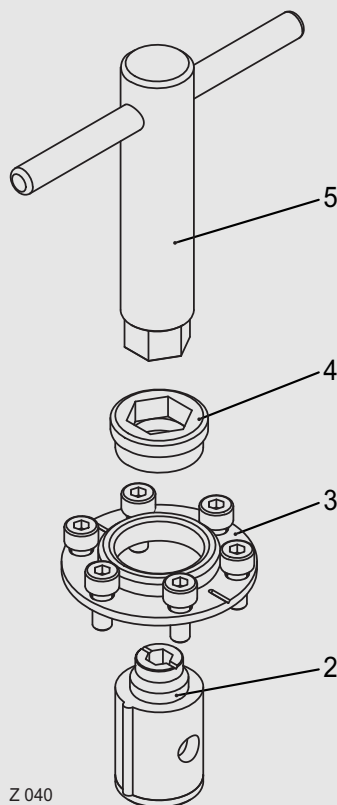
Z 804 799

1) Marking for flow

Order no.	Description	Max. pressure	Weight
804 799	Shut-off valve incl. spanner for installation	150 bar	0.30 kg



## Procedure for installation



Z 040

Slide sealing sleeve (2) and valve pin into the bore. Fit threaded flange (3) using the 6 pcs. M4 screws. Screw adjusting screw (4) into the threaded flange. Then tighten the adjusting screw using the spanner for installation (5).

Note: Subsequent sealing possible by tightening the adjusting screw (4).





## Hydraulic coupler

- SPEEDY side
- Self-sealing



### Characteristics:

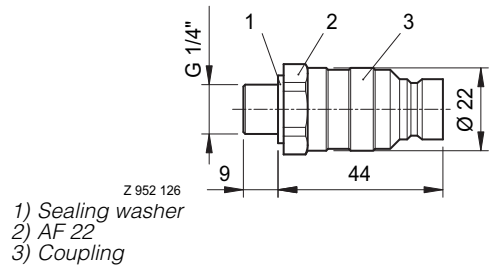
Self-sealing coupler

### Application:

Coupling for fast closing clamp plates or connection block for pipework for the SPEEDY classic 3 Surface Mount fast closing clamps.

Particularly recommended for use in conjunction with pressure boosters (it is not necessary to re-fill the pressure booster).

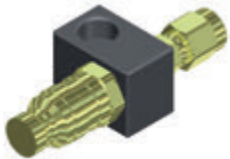
Can be used wherever escaping oil must not enter the drilling emulsion and the coupling is frequently used.



Order no.	Description	Max. pressure	Weight
952 126	Hydraulic coupler	300 bar	0.10 kg

## Connection block with hydraulic coupler

- Can be screwed in place
- Self-sealing

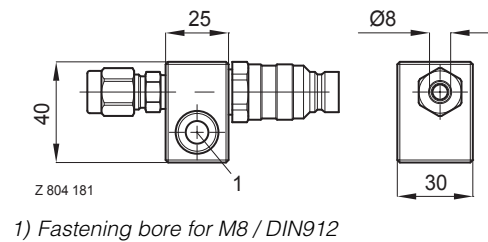


### Characteristics:

Connection block for hydraulic pipework.

### Application:

Connection block for pipework for SPEEDY classic 3 Surface Mount fast closing systems.



Order no.	Description	Max. pressure	Weight
804 181	Connection block for pipework, with self-sealing coupling, suitable for SPEEDY classic 3	100 bar	0.20 kg

Protective cap for hydraulic coupler included in the items supplied.

## Hydraulic coupler

- Hose side
- Self-sealing



### Characteristics:

Self-sealing hydraulic coupler for hydraulic pipework.

### Application:

Self-sealing hydraulic coupler for hydraulic pipework for SPEEDY classic 3 Surface Mount fast closing clamps.

Order no.	Description	Max. pressure	Weight
952 177	Self-sealing hydraulic coupler for hydraulic pipework for SPEEDY classic 3, inside thread G1/4"	300 bar	0.20 kg



### Hydraulic coupler

- SPEEDY side



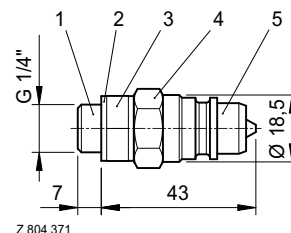
#### Characteristics:

Coupler for connection block for hydraulic pipe-work.

#### Application:

Coupling for fast closing clamp plates or connection block for pipework for the SPEEDY classic 3 Surface Mount fast closing clamps.

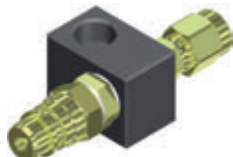
- 1) Double nipple
- 2) Sealing washer
- 3) AF 18
- 4) AF 19
- 5) Coupling



Order no.	Description	Max. pressure	Weight
804 371	Hydraulic coupler	700 bar	0.15 kg
804 372	Steel double nipple	500 bar	0.15 kg
804 395	Aluminium protective cap		0.10 kg

### Connection block

- Can be screwed in place

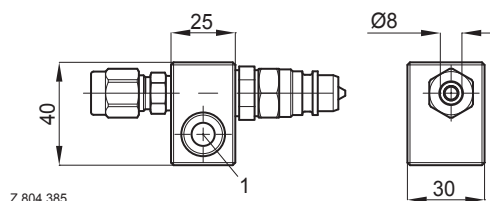


#### Characteristics:

Connection block for hydraulic pipework.

#### Application:

Connection block for pipework for SPEEDY classic 3 Surface Mount fast closing systems.



- 1) Fastening bore for M8 / DIN912

Order no.	Description	Max. pressure	Weight
804 385	Connection block for pipework suitable for SPEEDY classic 3	100 bar	0.20 kg

Protective cap for hydraulic coupler included in the items supplied.

### Hydraulic coupler

- Hose side



#### Characteristics:

Hydraulic coupler for hydraulic pipework.

#### Application:

Hydraulic coupler for hydraulic pipework for SPEEDY classic 3 Surface Mount fast closing clamps.

Order no.	Description	Max. pressure	Weight
952 044	Hydraulic coupler for hydraulic pipework for SPEEDY classic 3, inside thread G1/4"	700 bar	0.20 kg

## Torque wrench



### Characteristics:

Adjustable torque wrench.

### Application:

Fitting and removing retractable nipples. Note torque data in the related operating instructions!

Order no.	Adjustment range	Accessory	Weight
804 255	5 - 50 Nm	3/8" drive for hex socket head AF 4, AF 5, AF 6	0.60 kg
804 256	20 - 100 Nm	1/2" drive for hex socket head AF 10, socket 1/2" AF 22	

When fitting nipples, note torques as per technical data.

## Sealing plug



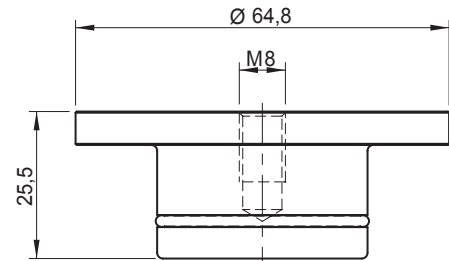
### Characteristics:

Sealing plug with O-ring that prevents the entry of dirt (e.g. coolant).

### Application:

Protection for unused SPEEDY classic fast closing clamps.

Easy to remove using wing handle tool 704 096-01.



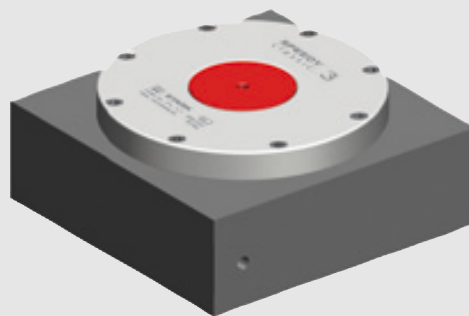
Z 704 096

Order no.	Description	Weight
704 096	Sealing plug for SPEEDY classic 3	0.04 kg

Covering with longer pallets, workpieces or jigs is possible with the recessed sealing plug.



### Application example



## Wing handle tool



**Characteristics:**

Wing handle tool with plastic handle.

**Application:**

For removing the sealing plug.

Order no.	Description	Weight
704 096-01	Wing handle tool for sealing plugs for SPEEDY classic 3	0.01 kg

## Transport protection

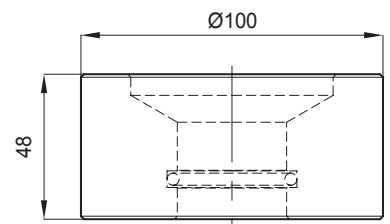


**Characteristics:**

Plastic protective cap.

**Application:**

Protection against damage to the retractable nipple and pallet surface during transport or stacked storage.



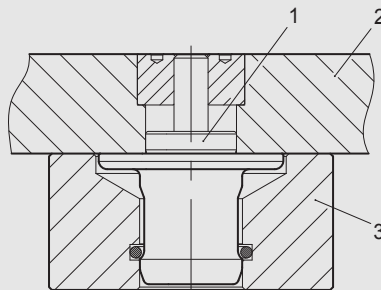
Z 704 131

Order no.	Description	Weight
704 131	Transport protection for SPEEDY classic 3 retractable nipple	0.30 kg

For SPEEDY classic 3 with media ducts a special version of the transport protection is supplied – please state in the order.



**Application example**



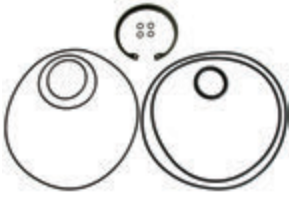
Z 067

- 1) Retractable nipple
- 2) Pallet
- 3) Transport protection





## Service-set O-rings



### Characteristics:

Service-set comprising all O-rings and the locking ring.

### Application:

Maintenance of SPEEDY classic 3 fast closing clamps.



### Attention:

The fast closing clamp is always under spring pressure!

Only an authorised service engineer is allowed to undertake installation work on the fast closing clamps. All necessary safety measures are to be taken without exception during all work!

Order no.	Description	Weight
804 192	Service set for SPEEDY classic 3	0.01 kg

## Service set cup springs



### Characteristics:

Service set comprising cup springs for SPEEDY classic 3.

### Application:

Maintenance of SPEEDY classic 3 fast closing clamps.



### Attention:

The fast closing clamp is always under spring pressure!

Only an authorised service engineer is allowed to undertake installation work on the fast closing clamps. All necessary safety measures are to be taken without exception during all work!

Order no.	Description
804 954	Cup spring pack for SPEEDY classic 3 (30.000 N) 6 pieces

STARK recommends regularly checking the insertion force using the mechanical insertion force tester (order no. 504 004).

## Circlip pliers



### Characteristics:

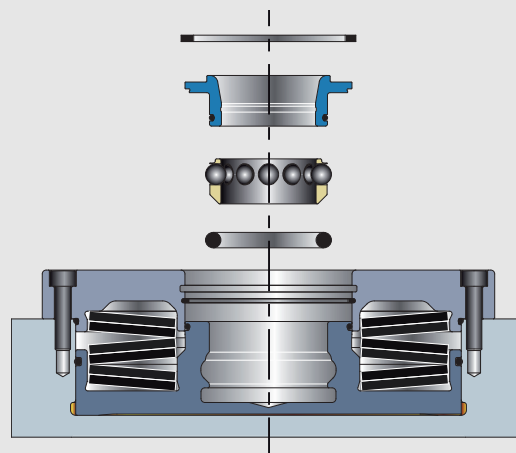
180 mm internal, straight version.

Order no.	Description	Weight
504 006	Circlip pliers	0.20 kg



### Application example

Removal of the locking ring for easy dismantling





## Mechanical insertion force tester



### Characteristics:

The insertion force on the SPEEDY classic fast closing clamps is reliably checked with the aid of the SPEEDY insertion force tester. Fatigued spring packs can cause the insertion force to change as a function of the actuation cycles and wear, the insertion force stated is then no longer reached and the machining forces are no longer fully absorbed by the SPEEDY classic zero point clamping system. STARK recommends an annual preventative check on the fast closing clamps (note operating instructions or table in the introduction, i.8).

### Application:

Installers, fitters and operators who assemble, fit, service and operate the SPEEDY classic zero point clamping system. They should be familiar with the use of hydraulic equipment. Attention, only trained personnel are allowed to perform all service and maintenance work.

Order no.	Description	Weight
504 004	Mechanical insertion force tester SPEEDY classic 3	2.70 kg
	Bearing ring	0.90 kg
	Adapter - retractable nipple SPEEDY classic 3	0.80 kg
	Spacer washer, for SPEEDY classic 3 Twister	0.02 kg
	SET weight:	5.70 kg



The system accuracy depends not only on the geometry of the joint, the insertion force of the zero point clamping systems also has a significant impact on a positive, stable joint.

For safety reasons it is recommended to regularly check the insertion force of the SPEEDY classic zero point clamping system.

For this purpose, STARK offers a fully mechanical insertion force tester. Its principle of operation is based on a linear change in the length of components that is proportional to force. The length change is converted into a force and indicated on an analogue dial gauge.

The mechanical insertion force tester is characterised by its accuracy (measurement precision  $\pm 3\%$ ) and robustness. Low cost and reliable, without any electronics. We supply the mechanical insertion force tester calibrated, with inspection stamp and measuring instructions in a high quality plastic box.

STARK provides training courses for training your operators and service personnel. Training courses are held on site or at Stark Spannsysteme GmbH.

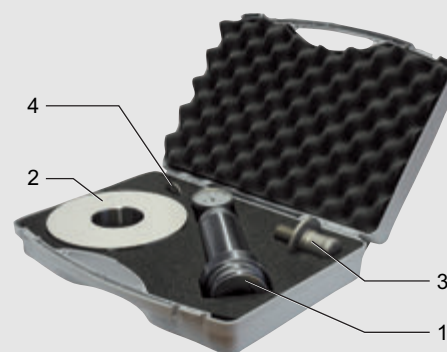
Please ask for information, we would be pleased to advise you.

### Supplied in plastic case:

(L390 x W280 x H110)



Insertion force tester (1) with calibration certificate and operating instructions in a plastic box, with bearing ring (2), retractable nipple adapter (3) and spacer washer (4)



### Calibration:

STARK recommends annual calibration of the insertion force tester, the insertion force tester can be sent to STARK for calibration in the original plastic box.



## Press report

The international specialist press reports on leading technical and commercial solutions manufactured by STARK zero point clamping systems:

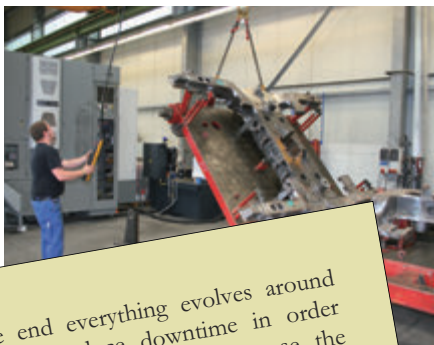
### ZERO POINT CLAMPING SYSTEM



*DMU 100: optical release check – „Thank heavens for hydraulics!“ The Speedys lift the pallet on release. Thus safe handling is guaranteed.*



*Wotan: machine table with right-angled clamping plate 1 and right-angled clamping plate 2. Loading is undertaken using the overhead crane. The „third hand function“ and optional clamping check are also an advantage during handling like the optical release check.*



*Wotan: machine table with right-angled clamping plate 1 and right-angled clamping plate 2. Loading is undertaken using the overhead crane. The „third hand function“ and optional clamping check are also an advantage during handling like the optical release check.*

„In the end everything evolves around one point: to reduce downtime in order to operate economically and increase the business volume - and we achieved this through the zero point solution from Stark“, explains Hermann-Josef Bettendorf, Authorised Representative and Sales Manager at Lewa, subsequently. ✓

In cooperation with STARK, it was decided at Lewa to equip the Wotan machine with the Speedy 3000 zero point clamping system. During this process 5 rails each with 3 Speedy 3000 were attached to the machine table (2000 x 2500 mm). The reinforced version used here permits a maximum load of 25 t (!). Either pallets or workpieces can be placed directly on these rails. In addition, a Römheld hydraulic unit was also supplied for the clamping and releasing; this unit also has an in-

tegrated „third hand function“. STARK systems with the „third hand function“ keep the workpiece or the pallet in the correct position once securely engaged. Workpieces and pallets are then secured against falling out and no longer need to be held by the operator. The system is also prepared for the „clamping check“ option that can be easily added later. „Here we have a right-angle clamping plate 2500 mm high. At the moment 2 clamping plates are fitted, one 1600 mm wide and the other 1200 mm. The clamping plates have been equipped with the retractable nipples. Speedy 3000 are also installed in turn on the clamping faces on the

Press report at [www.stark-inc.com/press](http://www.stark-inc.com/press)





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Only the original ...



... fits together!

**For this reason our customers receive:**

- Manufacturer's warranty
- Functional warranty
- Warranty protection
- Selection of fits

 **40bar**  
max. oil pressure



... speed for your  
manufacturing

 **STARK**

order no. 804 452

058-002

**SPEEDY**  
classic **3**



## **STARK Zero Point Clamping Systems**



*Consultation, planning, design, production, mounting, service - everything from a single source*

Cost savings in manufacturing are these days increasingly only possible during machine set-up and by shortening the process times. Your production will be significantly faster by using zero point clamping systems. Key aspects such as focusing on bottlenecks, shortening of cycle times, batch sizes and inventory reduction, to name but a few advantages, are implemented quickly in manufacturing by using STARK zero point clamping systems.

Utilise the extensive experience and flexibility of specialists in zero point clamping technology to optimise your production.

The clamping system SPEEDY classic 3 is robust in use, thanks to its low height and variable spacing it is also very well suited to one-off parts as well as small and large production runs.

Due to the special retractable nipple contour and the matched radii, the bore is not damaged on insertion in the SPEEDY. No chips can be jammed in the cylindrical bore and due to the optimal application of force - the retractable nipples are fixed positively and highly accurately by spring action - bending or lifting is not possible and as a result high positioning accuracy is guaranteed.

In addition, if required SPEEDY can be equipped with an integrated media duct to carry media, e.g., oil, air or water. Draw-in, position, clamp, release and lift out - SPEEDY classic 3 integrates everything in one intelligent clamping system.

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