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# Zero Point Clamping System classic 3

WM-020-278-00-en

Hyquip Limited New Brunswick Street Horwich Bolton Lancashire BL6 7JB UK Company Registered in England No: 4167649 VAT Registration No: 732 5692 25 BS EN ISO 9001:2008 No: LRQ 0964389

for productivity

Products





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# Set your manufacturing to

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50\_SPEEDY 00..10..20..30..40. CLASSIC 3

STARK





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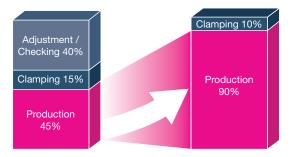


# GO!

# 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 SPEEDY classic even trainees can undertake set-up work on your manufacturing machinery. This will lower your costs and makes it possible to load several machines at the same time.





### **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.





# Zero Point Clamping System





# STARK clamping systems overview

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

SPEEDY classic - clamp mechanically / release hydraulically		SPEEDY Classic Catalogue order no. WM-020-217-00-en
<ul><li>Most comprehensive and versatile zero point clamping system,</li><li>Four sizes and numerous variants</li></ul>		SPEEDY classic Catalogue order no. WM-020-276-00-en
		SPEEDY C   a S S i C Catalogue order no. WM-020-278-00-en
		SPEEDY Classic Catalogue order no. WM-020-280-00-en
SPEEDY metec - clamp / release mechanically Robust mechanical zero point clamping system for simple, low-cost solutions,		SPEEDY m e t e c Catalogue order no. WM-020-282-00-en
	ŧ	SPEEDY m e t e c Catalogue order no. WM-020-284-00-en
		SPEEDY 3 M e t e c 3 Catalogue order no. WM-020-286-00-en
<ul> <li>SPEEDY airtec - clamp mech. / release pneum.</li> <li>Pneumatic zero point clamping system,</li> <li>One size and numerous variants</li> </ul>		SPEEDY a i r t e c Catalogue order no. WM-020-288-00-en
<ul> <li>SPEEDY hydratec - clamp / release hydraulically</li> <li>Hydraulic, double action zero point clamping system for very high clamping speeds,</li> <li>One size and numerous variants</li> </ul>		SPEEDY hydratec Catalogue order no. WM-020-290-00-en
system 3000 - clamp / release hydraulically		
Double action zero point clamping system with small size and high clamping force, One size and numerous variants		S Y S t e M 3000 Catalogue order no. WM-020-066-00-en
system 4000 - custom systems		_
<ul> <li>Flexible zero point clamping system for mechanical, pneumatic and hydraulic applications,</li> <li>One size and numerous variants</li> </ul>		S Y S İ Ə M 4000 Catalogue order no. WM-020-067-00-en

Introduction





# Zero Point Clamping System





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2	Surface Mount	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.
3	Retractable nipple	Retractable nipple with zero point / with equaliser / without equaliser
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5	Plates, angles, mounting towers	Fast closing clamp plate 3x5.2
6	Media ducts	Media duct NW 4 coupling mechanism / coupling nipple       6.2 - 6.3         Multiple coupling NW 4 coupling mechanism / coupling nipple       6.4 - 6.5         Media duct NW 4 blanking plug / Media duct pliers       6.6         Clamp control valve mechanical       6.7
7	SPEEDY accessories	Shut-off valve       .7.1         Accessories for pipework       .7.2 - 7.3         Torque wrench / Sealing plug       .7.4         Wing handle tool / Transport protection       .7.5         Service-set O-rings & cup springs / Circlip pliers       .7.6         Mechanical insertion force tester       .7.7

Introduction

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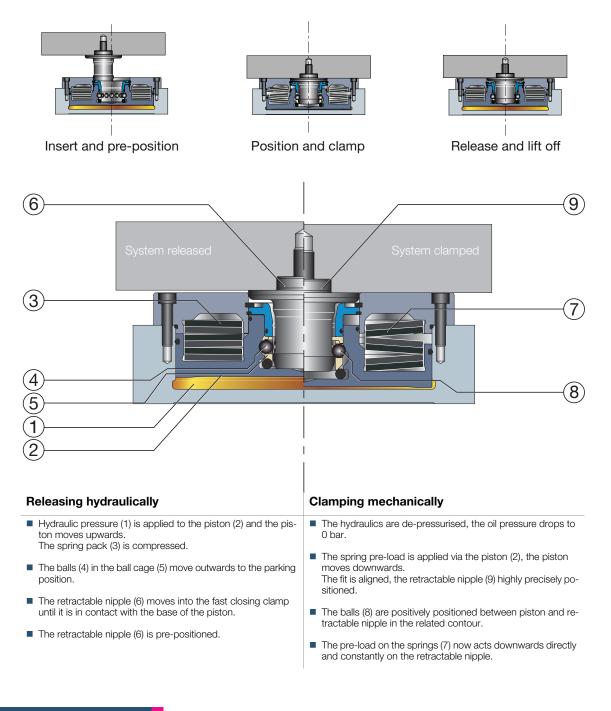


# Function description SPEEDY classic 3 -

positioning and clamping in one function

SPEEDY classic

3



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3

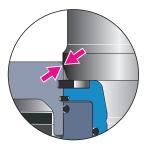


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# Proven technology with a system original down to the smallest detail





### Wear-proof insertion and pre-centring

SPEEDY

classic

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

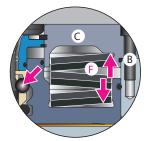
High alloy tool steel provides resilience to wear.



### Matched radii on the bore

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

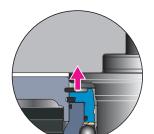
The fit is automatically aligned by drawing in the pallet. The operator only needs to set down or remove the pallet. No chips can be jammed in the cylindrical bore.



# 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.

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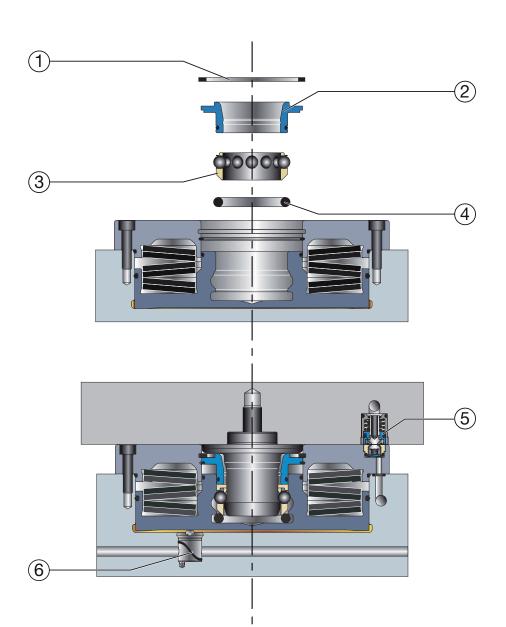




Other advantages of SPEEDY classic 3 discover the difference

**SPEEDY** classic

3



Introductio





Zero Point Clamping System





# Well thought out solutions -

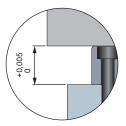
reliable clamping for a very wide range of tasks



### Simple cleaning

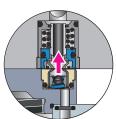
During machining, soiling of the clamping system over the long term is inevitable. For this reason ease of cleaning is very important.

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**

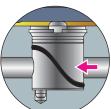
Very high accuracy to reduce tolerance errors (bearing plate thickness manufactured to within 5 um).



# 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 6.2).





# control valve (6).

**Clamping check** 

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 6.2).

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

### 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.

Introduction





Zero Point Clamping System





# 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 guar- anteed. 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.

Introduction



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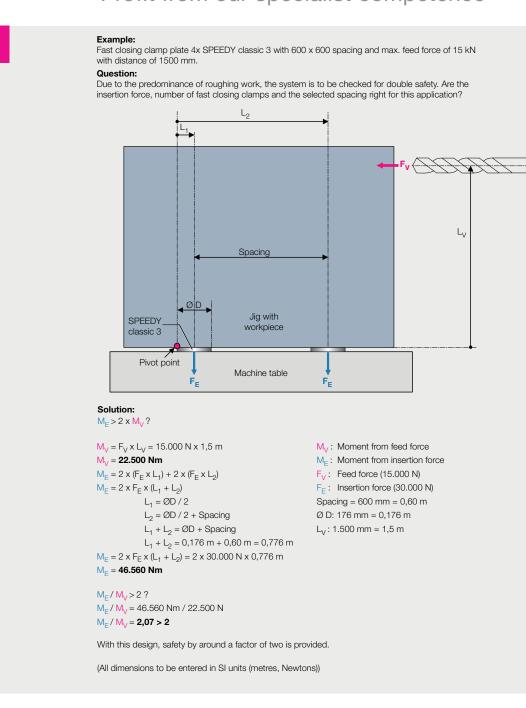
Zero Point Clamping System





# Tilting torque calculation example

Profit from our specialist competence



Introduction

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# Flush Mount



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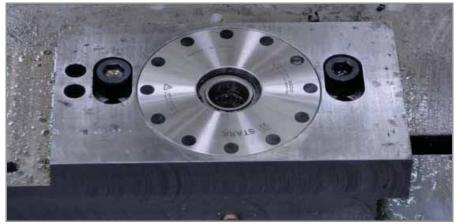




# The compact zero point mounting solution for the highest requirements:



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



SPEEDY classic 3 fast closing clamps, fitted in plate.





Zero Point Clamping System





### **STANDARD**

- Flush Mount
- Round



### **Characteristics:**

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

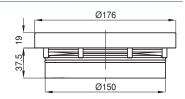
Due to low height little space needed (can be installed even from plate thickness of 49 mm).

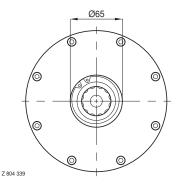
Is clamped mechanically and released hydraulically.

### 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.





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.







# Zero Point Clamping System





### 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.

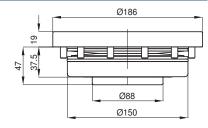
Is clamped mechanically and released hydraulically.

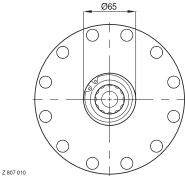
### Application:

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.





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

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

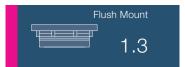
# i

### 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.







# Zero Point Clamping System





### STANDARD

Flush Mount





### **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.

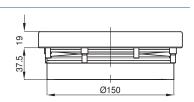
Due to the square shape the pallet is positioned and clamped in a specific orientation even on single mounting.

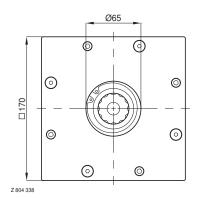
### Application:

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.



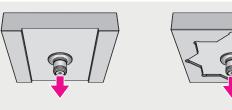


Order no.	Retention force	Insertion force	DHF*	Hydr. pressure to release	Weight	Data sheet			
804 338	55,000 N	30,000 N	without	30-35 bar	8.25 kg	D020			
804 571	55,000 N	30,000 N	with	30-35 bar	8.25 kg	D020			
Fastening screws and precision collar bolts included in the items supplied. For mounting and service accessories, see section 7.									

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



Application example



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







# Zero Point Clamping System





### 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 blowout ducts.

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

Is clamped mechanically and released hydraulically.

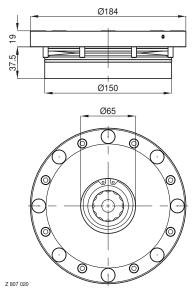
Intelligent blow-out system for cleaning the raised supports and the precision bore. Mount control via differential pressure, blocking air possible – STARK will be pleased to provide advice.

### 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.

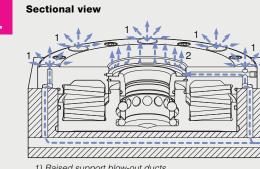


1) Raised supports with blow-out ducts

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.

Detail view



Blowing out is performed directly at the bearing surfaces

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

and at the precision diameter.



Openings for centre blow-out ducts

Flush Mount



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## Zero Point Clamping System





### TWISTER

- 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.

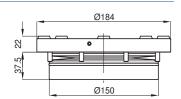
Due to extending duct particularly effective cleaning of the raised supports. Due to 3 mm high raised supports, not possible to trap swarf.

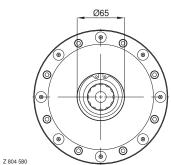
### Application:

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.





1) Raised supports with intelligent blow-out system

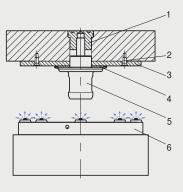
Order no.	Retention force	Insertion force	DHF*	Hydr. pressure to release	Weight	Data sheet
804 580	55,000 N	30,000 N	without	30-35 bar	6.35 kg	D016
804 581	55,000 N	30,000 N	with	30-35 bar	6.35 kg	D016
-						

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

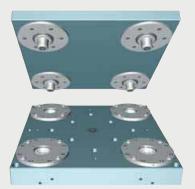
 $^{\ast}$  DHF = third hand function. For explanation see section 4.

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

Sectional view



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!



1) Nipple fastening 2) Countersunk screw DIN 7991

b) Hardened bearing plate
 c) Spacer washer
 c) Retractable nipple
 c) SPEEDY classic Twister

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### **DHF** conversion kit **Characteristics:** Application: With the DHF conversion kit (DHF = "third hand" Particularly suitable for vertical loading using function) the fast closing clamp can be operahandling equipment. It is not necessary for the ted using the "third hand" function. For further loading arm to follow during clamping. information, see section 4. Engage By using the "third hand" function the resistance Let go to engagement is reduced for almost zero. The Clamp 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). Order no. Description Weight 704 229 DHF conversion kit ("third hand" function) 0.04 kg Sectional view (1)(2) $\mathbf{O}\mathbf{O}\mathbf{C}$ (3) (4) 1) Locking ring 2) Retaining ring 3) Ball cage 4) O-ring







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# Surface Mount

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.

Vpgvade now it is never too late for a zevo clamping system!

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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.





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# Retractable nipple

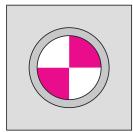


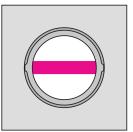






# One thing is certain – the fixed zero point with SPEEDY classic retractable nipples:







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

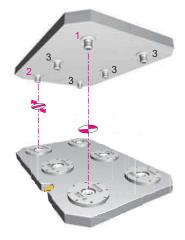
3) Retractable nipple

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.





# Zero Point Clamping System





### Retractable nipple 🔶

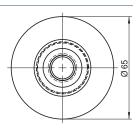
### • With zero point

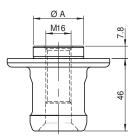


### **Characteristics:** Retractable nipple with zero point.

### Application:

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





Order no.	ØA	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

Z 804 290

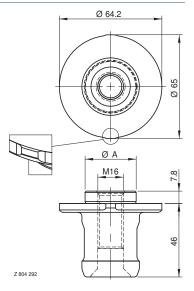
### Retractable nipple 👄

• With equaliser

### Characteristics:

Retractable nipple with equaliser on one axis. Application:

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



Order no.	ØA	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







# Zero Point Clamping System





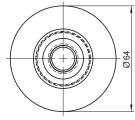
### Retractable nipple 🔵

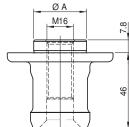


### Retractable nipple without centring. **Application:** For secure clamping on machine pallets,

**Characteristics:** 

machine vices, chucks, jigs, direct workpiece clamping.





Z 804 294

Variant D

Order no.	ØA	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

Variant C



Application

example



Variant B









Variant E

### Variant A:

Variant A

For applications in which nipple bores are not allowed on the surface of the pallet, or in case of direct workpiece clamping. This variant is not possible for retractable nipples with equaliser.

### 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. This variant is not possible for retractable nipples with equaliser.

### 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 (3.4).







# Zero Point Clamping System





### Nipple fastening D



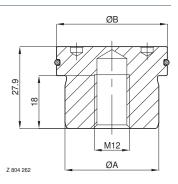
### Characteristics:

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.

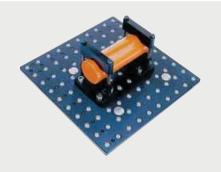




Order no.	ØA	ØB	Weight	Data sheet
804 262	32	37.8	0.175 kg	D029
804 263	25	29.8	0.170 kg	D029



### Application example



### Nipple fastening D

### Nipple fastening E



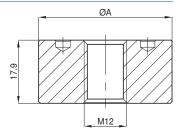
### **Characteristics:**

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.





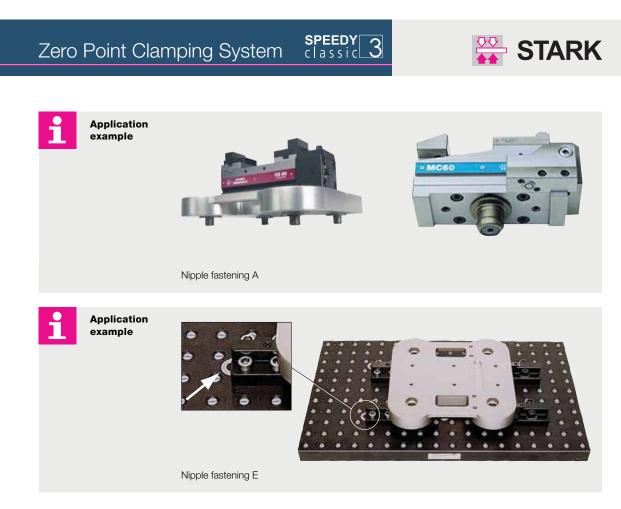
Z 804 264

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







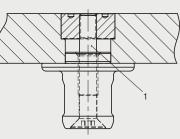


### **Countersunk head screw**



Application Retractable r variant A).	1: hipple fastening (for fast	zening	
Order no.	Dimension	Application material	Size A
931 070	M12 x 80 - DIN 7991	Steel	80 mm





**Characteristics:** 

Countersunk screw M12.

1) Countersunk head screw

A

Strength class

10.9



M12

Data sheet

D029





# Zero Point Clamping System





### Bearing plate Ø 179

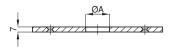


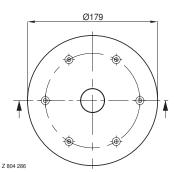
### Characteristics:

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.





Order no.	Surface	ØA	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
Eastening scre	ws not included with the items supplied			

ed with the items supp ws not inc

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

### **Spacer washer for TWISTER**

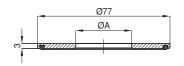
• With O-ring

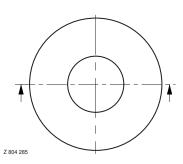
### Characteristics:

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.





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





3

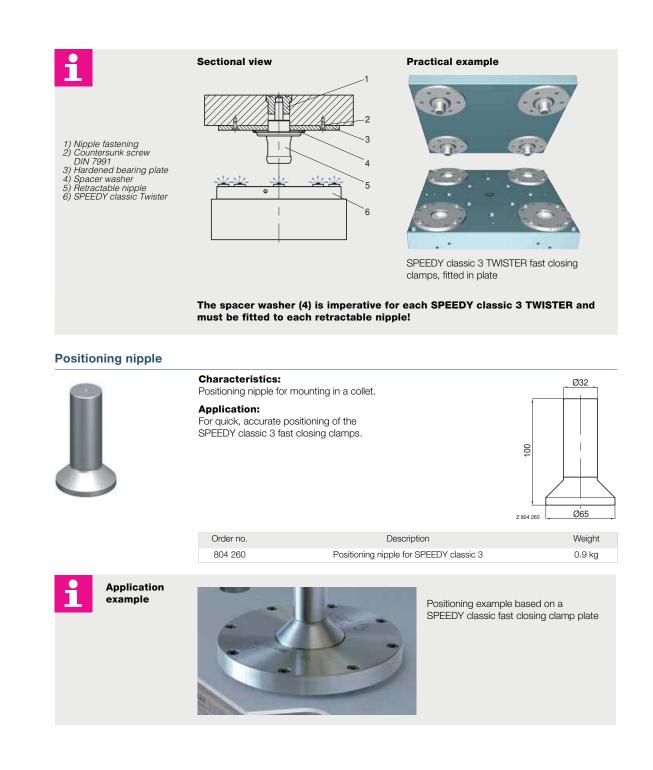
SPEEDY

classic



# Zero Point Clamping System





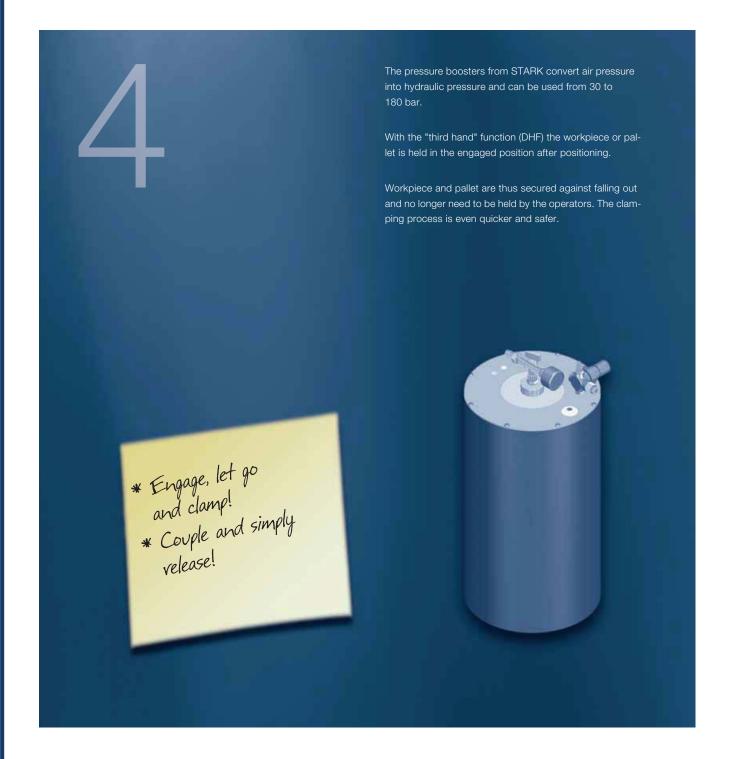






Sales partner

# Pressure boosters

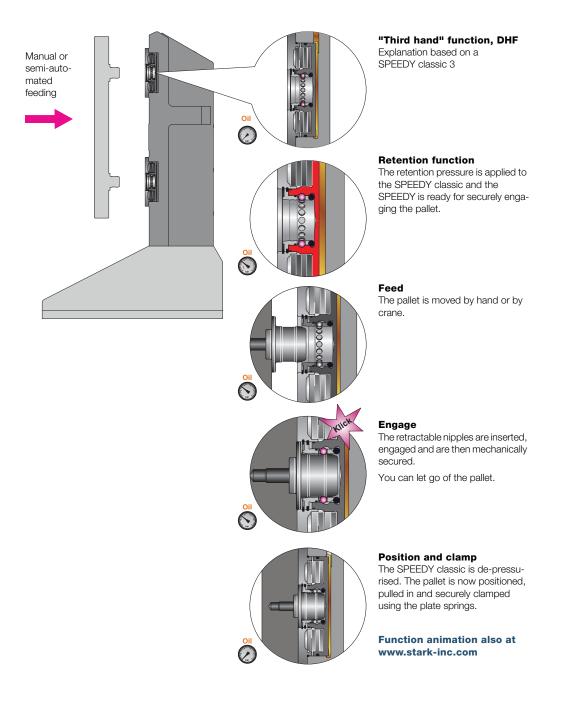








# The "third hand" function – the option for process safety:



4.1





# Zero Point Clamping System





### BOOSTER



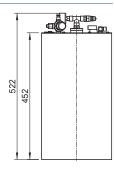
### Characteristics:

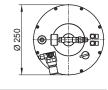
The pressure BOOSTER converts air pressure to the necessary hydraulic system pressure for the operation of the SPEEDY classic fast closing clamps.

### Application:

Operation of 7 SPEEDY classic 3 fast closing clamps up to max. 40 bar.

Can also be used for other sizes (adjustment using pressure regulator).





7 804 435

Order no.Releases approx. [pcs.]System pressure \*Air pressureOil volumeWeight804 4357 SPEEDY classic30-40 bar6 bar1 I27.30 kg

\* The system pressure must be adjusted to the related SPEEDY classic 3 release pressure using the adjusting valve.

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.

### **Trolley for BOOSTER**

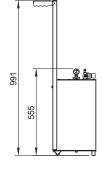


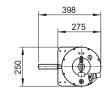
### **Characteristics:**

Makes it easy to transport the BOOSTER.

### Application:

Individual usage of the BOOSTER. Using the trolley the pressure booster can be easily transported from machine to machine (can be used on several machining centres).





Z 804 434

Order no.	Description	Wei	ght
804 434	Trolley for BOOSTER 40/80	1.53	¦ kg







SPEEDY



# Zero Point Clamping System





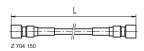
### Hydraulic hose with couplings



**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 coupler	s, see page 7.2 / 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 ka

### **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







kg

# Zero Point Clamping System





### 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.

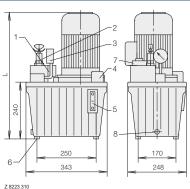
Including hydraulic oil HLP32 and electrical connection with 10m long cable and CEE 5/16 connector.

### Application:

Particularly suitable for single action SPEEDY classic fast closing clamps.

### **Technical data:**

Q = 3.2 l/minV = 11 l U = 400 V 50 Hz ~3PE p = 40 bar (can also be changed 15-80 bar) P = 0.55 kWValve and control voltage: 24 VDC Medium: Hydraulic oil HLP32 DIN 51519/51524 Part 2 Connections: G 1/4



# 1) Filter check 2) Pressure limiting valve

Pressure gauge
 Filler and breather filter
 Oil level gauge
 4 fastening holes M8 x 8 deep
 High pressure filter
 Oil drain plug G 3/8

Order no.	Description	Weight
804 442	Hydraulic pump set	Approx. 27
OUTTIE	nyaraalie partip eet	Approx: E1
For more detailed information, re	fer to BÖMHELD data sheet D8 021	

### Hydraulic pump set

<ul> <li>Clamping check</li> </ul>	Characteristics With sampling of t	s: the clamping check.			
	ι,	/draulic and electrical control via th 7 m cable (with Harting con-			
	Function triggered using control panel with three illuminated pushbuttons. Including hydraulic oil HLP32 and electrical connec- tion with 10m long cable and CEE 5/16 connector.				
		<b>Technical data</b> $Q = 3.2 \ I/min$ V = 111 $U = 400 \ V 50 \ Hz$ $p = 45/15 \ bar$ $P = 0.55 \ kW$ Valve and control Medium: Hydraulii DIN 51519/51524 Connections: G 1.	~3PE voltage: 24 VDC c oil HLP32 I Part 2		
	Order no.	Description	Weight		





3

SPEEDY

classic



# Zero Point Clamping System





4.5

### Hydraulic pump set **Characteristics:** Clamping check With sampling of the clamping check and "third hand" "Third hand" function 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 I 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 Approx. 27 kg "third hand" function 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. Pressure boosters





# Zero Point Clamping System







### 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:

- EngageLet go
- Let goClamp





3

SPEEDY

classic



### Zero Point Clamping System





#### 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 differentholes.



Application video at www.stark-inc.com/movie







## Plates, angles, mounting towers

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 mounting plate for angle.



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



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!





### Zero Point Clamping System





### Fast closing clamp plate 3x



Characteristics: Fast closing clamp plate with

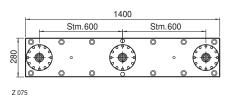
SPEEDY classic 3 STANDARD.

#### **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.



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 an extension from a set in each of the formation for the large strength of the					

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



Application example









## Zero Point Clamping System









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







Sales partner

## Media ducts (MD)

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.

Zevo point clamping and media duct integrated into one system!

Hyquip Limited New Brunswick Street Horwich Bolton Lancashire BL6 7JB UK Company Registered in England No: 4167649 VAT Registration No: 732 5692 25 BS EN ISO 9001:2008 No: LRQ 0964389





### Zero Point Clamping 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

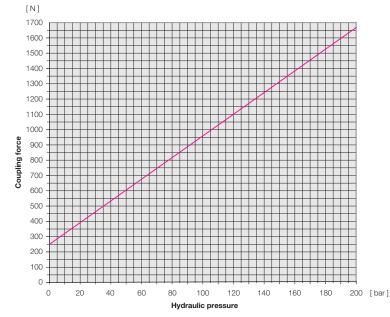
Insertion force SPEEDY classic 3 = 30,000 N

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

(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 Ø 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.







### Zero Point Clamping System





### Media duct NW 4 coupling mechanism

- SPEEDY side
- With mounting flange



#### **Characteristics:**

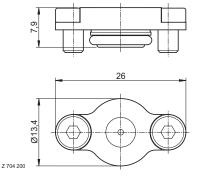
Media duct for the supply of hydraulic oil and air, other media on request.

The media duct is coupled by the drawing in stroke of the fast closing clamps and is selfsealing 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
Eastening screws in	cluded with the items supplied		

Media duct NW 4 coupling nipple

• Pallet side

 With mounting flange

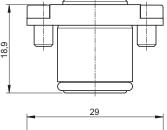
### **Characteristics:**

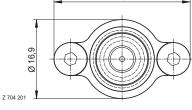
Media duct for the supply of hydraulic oil and air, other media on request.

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

#### Application:

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

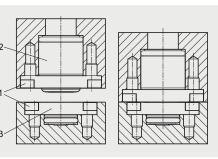




Order no.	Max. coupling force	Weight	Data sheet
704 201	See diagram at the start of this section	0.03 kg	D025
Fastening screws in	ncluded with the items supplied.		



Application example



- Fastening screws
   Media duct pallet side
   Media duct SPEEDY side







### Zero Point Clamping System





### Media duct NW 4 coupling nipple

٠	Pal	let	S	de

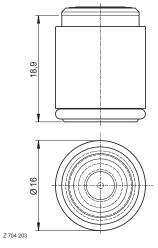
### Characteristics:

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

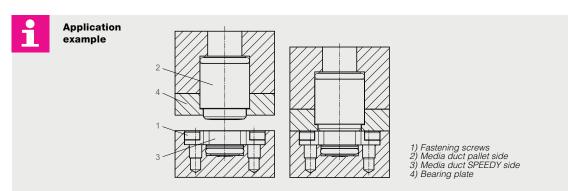
The media duct is coupled by the drawing in stroke of the fast closing clamps and is self-sealing when uncoupled.

### 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.



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









### Zero Point Clamping System





### Multiple coupling NW4 coupling mechanism

• Plate side



#### Characteristics:

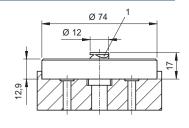
Media duct with one or more control circuits. Integrated blow-out ducts.

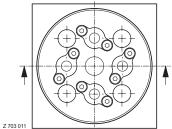
### Application:

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.





Order no.	Pos. and number of the media ducts	Weight	Data sheet
	(see fig. on page 6.6)		
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:

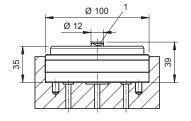
Media duct with six control circuits. Integrated blow-out ducts.

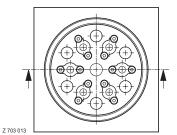
#### Application:

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.





Order no.	Pos. and number of the media ducts (see fig. on page 6.6)	Weight	Data sheet
703 013	6	2.00 kg	D080
Footoning oprovio op	d aarow aavara included in the items avanlied		

Fastening screws and screw covers included in the items supplied.







### Zero Point Clamping System





### Multiple coupling NW4 coupling nipple

• Pallet side



### **Characteristics:**

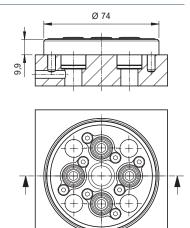
Media duct with 1-4 control circuits. Integrated blow-out ducts.

### 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.

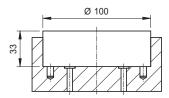
Integrated blow-out ducts.

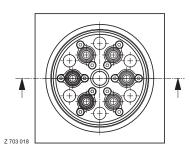
### Application:

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.





703 018	6	1.50 kg	D081
Order no.	Pos. and number of the media ducts	Weight	Data sheet

Fastening screws and screw covers included in the items supplied.





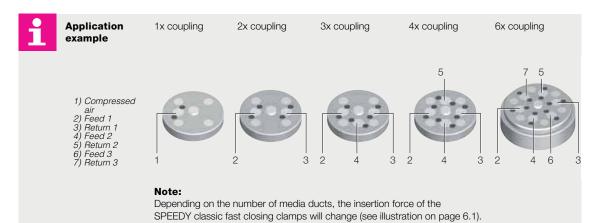




### Zero Point Clamping System





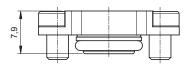


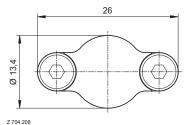
### Media duct NW 4 blanking plug



Characteristics: Blanking plug for media ducts.

#### **Application:** For sealing media ducts that are not required.





Order no.	Weight	Data sheet	
704 208	0.01 kg	D023	
estening scrows included with the items supplied			

Fastening screws included with the items supplied.

### Media duct pliers

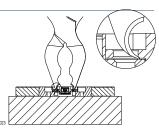


### Characteristics:

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

#### Application:

Pliers for removing media ducts.



Weight 0.18 kg

Order no. 504 015



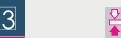


SPEEDY

classic



### Zero Point Clamping System





### **Clamp control valve** Mechanical **Characteristics:** Control valve for checking for secure clamping. **Application:** The clamping check must be used on all rotary ¢'.2. machines! Particularly important for vertical changing processes and on lathes. Ø 15 Z 704 210 Order no. Max. pressure Weight Data sheet 704 210 10 bar 0.01 kg D024 Hydraulic schematic 3°M ŚŴ / Locking ring Clamp control valve Flow direction SPEEDY classic Pressure switch for clamping signal Hydraulic valve for clamping check Hydraulic valve for releasing the SPEEDY classic fast closing clamps Pressure limiting valve, 40 bar (80 bar) Pressure limiting valve, 8 bar Oil supply from machine Non-return valve (bypass) $\Box$ $\Box$ 10 Z 704 210-2 Explanation of The correct and safe clamping of the fast closing clamp is checked on each clamping action by function using the mechanical clamp control valve (item 2). If a retractable nipple is not clamped or is not

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.

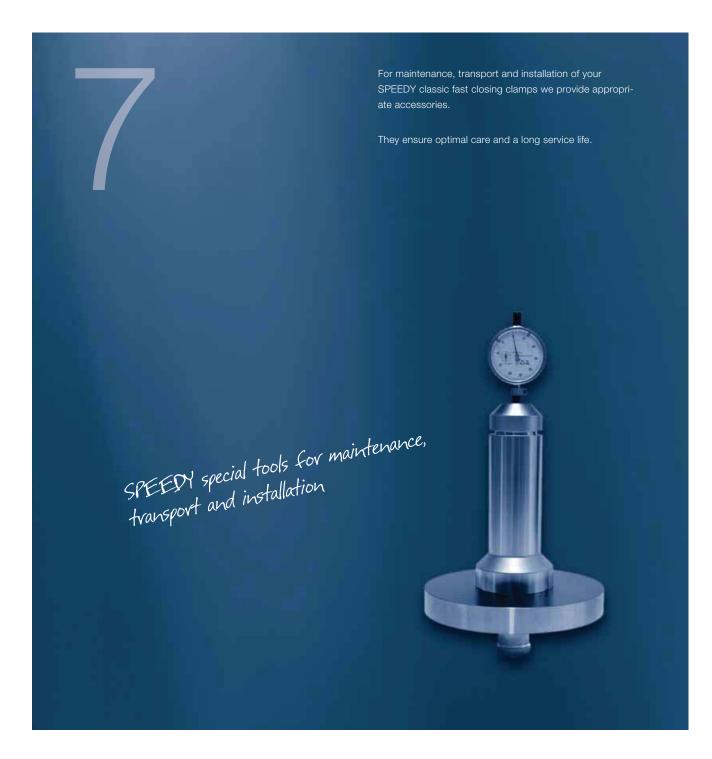
On plates or in towers all fast closing clamps are polled in series – as a result the exact clamping of all fast closing clamps can be checked at any time.







# SPEEDY classic accessories



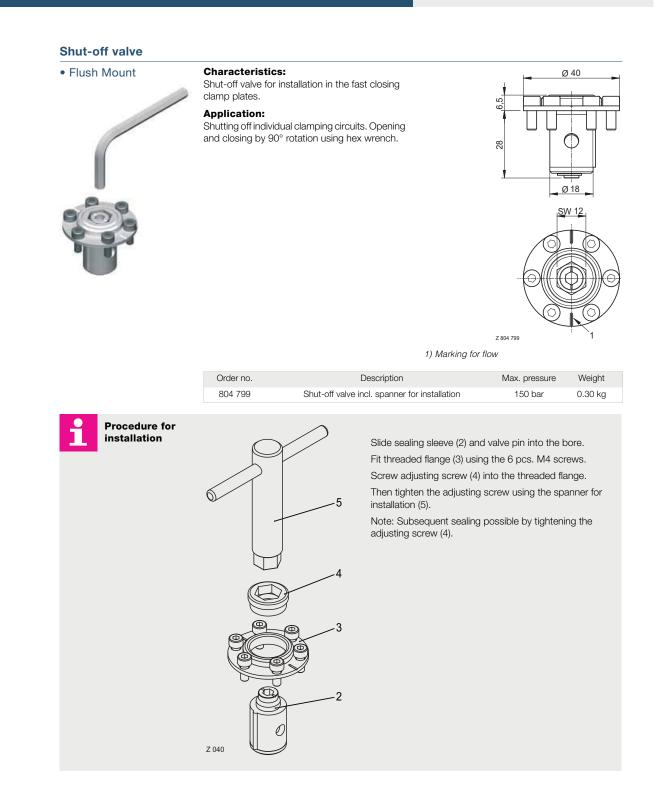




### Zero Point Clamping System





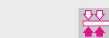








### Zero Point Clamping System





#### Hydraulic coupler **Characteristics:** SPEEDY side Self-sealing Self-sealing coupler 14 Ċ Application: Coupling for fast closing clamp plates or connection block for pipework for the SPEEDY classic 3 Surface Mount fast closing 2 952 126 1) Sealing washer 2) AF 22 3) Cours " 44 clamps Particularly recommended for use in conjunc-3) Coupling tion 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

**SPEEDY** classic

3

### Connection block with hydraulic coupler

• Can be screwed in place

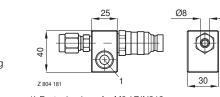
Self-sealing



**Characteristics:** 

systems.

Connection block for hydraulic pipework. Application: Connection block for pipework for SPEEDY classic 3 Surface Mount fast closing



1) Fastening bore for M8 / DIN912

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

#### **Characteristics:**

Self-sealing



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





**(**+44 (0)1204 699 959 enquiries@hyquip.co.uk www.hyquip.co.uk



### Zero Point Clamping System





SPEEDY side	Characteristics: Coupler for connection work.	on block for hydraulic pipe-			4 5
	Application:Coupling for fast closing clamp plates or connection block for pipework for the1) Double nippleSPEEDY classic 3 Surface Mount fast closing3) AF 18clamps.5) Coupling			43 43	
	Order no.	Description		Max. pressure	Weight
	804 371	Hydraulic couple	r	700 bar	0.15 kg
	804 372	Steel double nipp	le	500 bar	0.15 kg
	804 395	Aluminium protective	e cap		0.10 kg
Connection block					
Can be screwed in place	Characteristics: Connection block for	r hydraulic pipework.	٦	25	Ø8
	Application: Connection block for SPEEDY classic 3 Su systems.	pipework for urface Mount fast closing	Z 804 385		
0 1000			1) Eastening bor	o for M8 / DINI012	

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		
Drotactive cap for budroulie coupler included in the items supplied					

Protective cap for hydraulic coupler included in the items supplied.

### Hydraulic coupler



#### **Characteristics:**

Hydraulic coupler for hydraulicpipework.

### 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







### Zero Point Clamping System





### **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



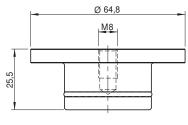
#### **Characteristics:**

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.



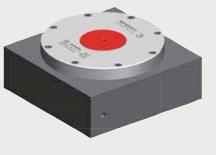
Z 704 096

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











### Zero Point Clamping System





Characteristics: Wing handle tool with plastic handle.	
Application: For removing the sealing plug.	
Order no. Description	Weigh
704 096-01 Wing handle tool for sealing plugs for SPEEDY classic 3	0.01 kg

### **Transport protection**

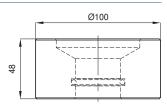


Characteristics:
Plastic protective cap.

Order no. Description

#### Application:

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



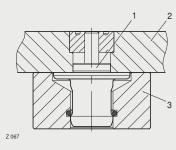
Z 704 131

Weight
0.001

 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.
 0.30 kg





Retractable nipple
 Pallet
 Transport protection







### Zero Point Clamping System





### Service-set O-rings



### Characteristics:

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

#### **Application:**

Order no.

804 192

Maintenance of SPEEDY classic 3 fast closing clamps.

Service set for SPEEDY classic 3



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!

> Weight 0.01 kg

Weight

0.20 kg

### Service set cup springs



**Characteristics:** 

Application:

clamps.

Service set comprising cup springs for SPEEDY classic 3.

Maintenance of SPEEDY classic 3 fast closing

Description

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

**Characteristics:** 

180 mm internal, straight version.

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**



Order no. Description 504 006 Circlip pliers Application example Removal of the locking ring for easy dismantling







### Zero Point Clamping System





### **Mechanical insertion force tester**



Characteristic	s:
----------------	----

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.







### Zero Point Clamping System





### 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.



ith lar-

tting up

3

"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.

Leward or 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-

Press report at www.stark-inc.com/press





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.

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



speedy classic 3



Sales partner

### Zero Point Clamping System



## Order number index

105 1605.2	704 2006.2	804 292 3.2	804 581 1.6
504 0047.7	704 2016.2	804 293 3.2	804 7997.1
504 0067.6	704 2036.3	804 294 3.3	804 9547.6
504 0156.6	704 2086.6	804 295 3.3	807 010 1.3
703 0096.4	704 2106.7	804 338 1.4	807 012 1.3
703 0106.4	704 2291.7	804 339 1.2	807 020 1.5
703 0116.4	804 060	804 3717.3	807 022 1.5
703 0126.4	804 0613.6	804 3727.3	931 070 3.5
703 0136.4	804 1817.2	804 3857.3	931 368 3.6
703 0146.5	804 1927.6	804 3957.3	952 0447.3
703 0156.5	804 2557.4	804 419 4.3	952 1267.2
703 0166.5	804 2567.4	804 427 4.3	952 1777.2
703 0176.5	804 260	804 434 4.2	
703 0186.5	804 262	804 435 4.2	
704 094-017.5	804 263	804 442 4.4	
704 0967.4	804 264	804 443 4.4	
704 1317.5	804 265	804 4444.5	
704 1504.3	804 285	804 445 4.5	
704 1514.3	804 286	804 570 1.2	
704 1524.3	804 290	804 571 1.4	
704 1534.3	804 2913.2	804 580 1.6	

Order number index





Sales partner

# Only the original ...



## ... fits together!

### For this reason our customers receive:

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





Sales partner

