



**STARK**

# Zero Point Mounting *System 1000*

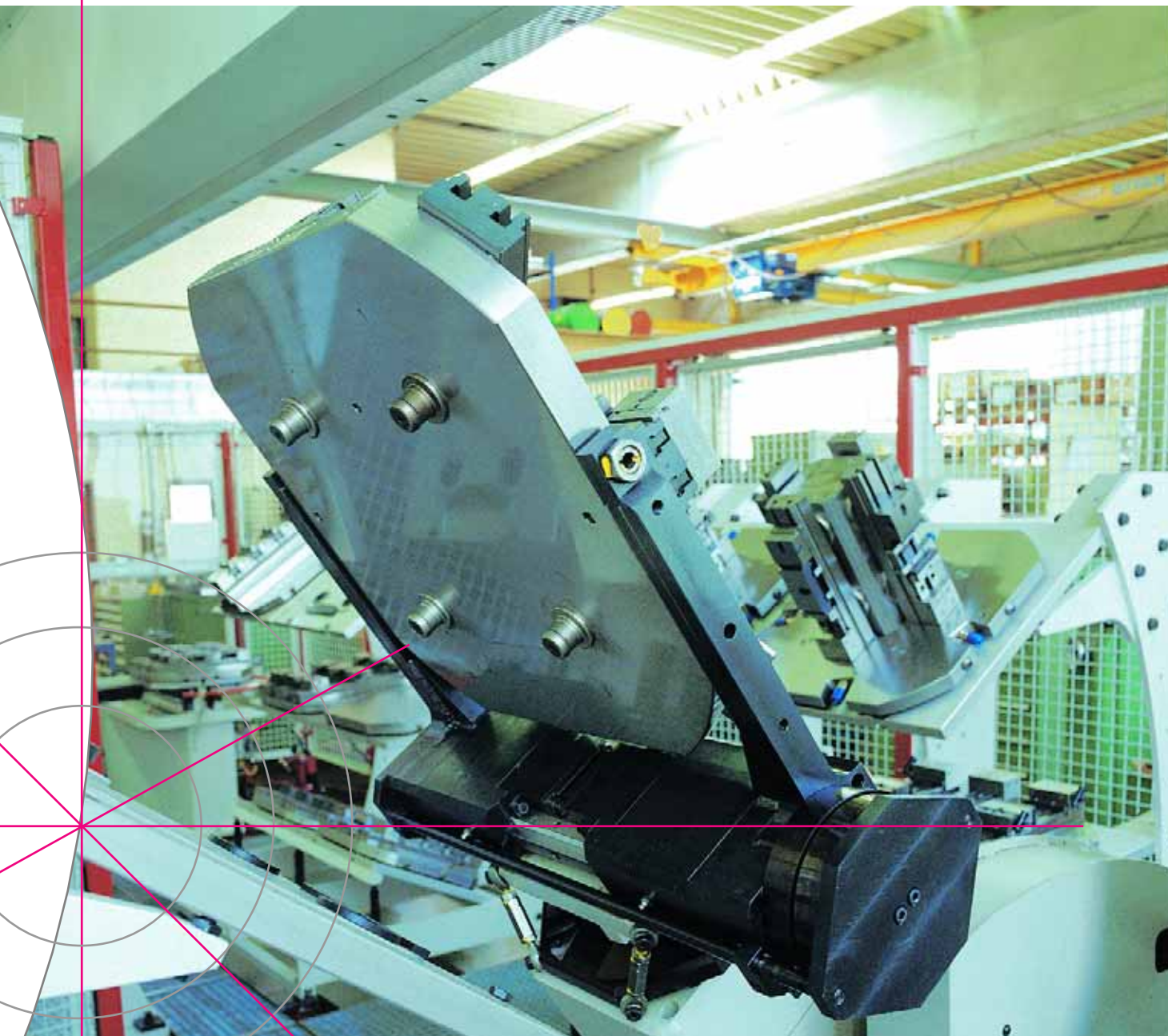
Complete Catalogue



exact, fast and powerful



WM-020-150 / 01.2007



Automatic mounting and removal on a 5-axis machine equipped with the Stark zero point mounting system. Specially developed for automatic systems – has proven its performance in practical operation.



# STARK

Stark Spannsysteme GmbH  
Kommingerstraße 48  
A-6840 Götzis

Tel. +43 (0)5523 64 739 - 0  
Fax +43 (0)5523 64 739 - 7  
[www.stark-inc.com](http://www.stark-inc.com)  
E-mail: [verkauf@stark-inc.com](mailto:verkauf@stark-inc.com)



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For mounting data sheets see [www.stark-inc.com](http://www.stark-inc.com)





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## STARK - high productivity systems

For decades we have been developing and manufacturing "Zero Point Mounting Systems". Our experience makes us your competent partner in the Zero Point mounting technology. We provide first-rate solutions and customer oriented services.

### ■ *System 1000*

Our most comprehensive and versatile system. Available in three sizes.



### ■ *System 2000*

Our solid, mechanical Point Zero Mounting System for straightforward and low-cost solutions.



### ■ *System 3000*

Our high-force, small-size, bi-directional Zero Point Mounting System.



### ■ *System 4000*

Our flexible Zero Point Mounting System for mechanical, pneumatic and hydraulic applications.





## Increase operating time of the machine spindles with Stark's fast clamp systems

2



Vice pallet with handling grips



Pallet of draw-in type three-jaw chuck with handling grip



Special hydraulic actuated clamp module

**Upgrade your machinery at any time**



Breadboard pallet with flat tension frame



Pressure booster to activate the Stark fast closing clamp cylinder





## Amortization through reduced set-up time

Reference sample based on a vertical machine. Set-up time is taken as machine downtime.  
Applies to 5 tool-up procedures per work shift.

### Manually tooling up a module:

5 times approx. 20 minutes = 100 minutes

### Tooling up with Stark's Zero Point Mounting System:

Mean value by experience = 4 minutes

5 times 4 minutes = 20 minutes

### Time savings with Stark's Zero Point Mounting System:

100 minutes - 20 minutes = 80 minutes

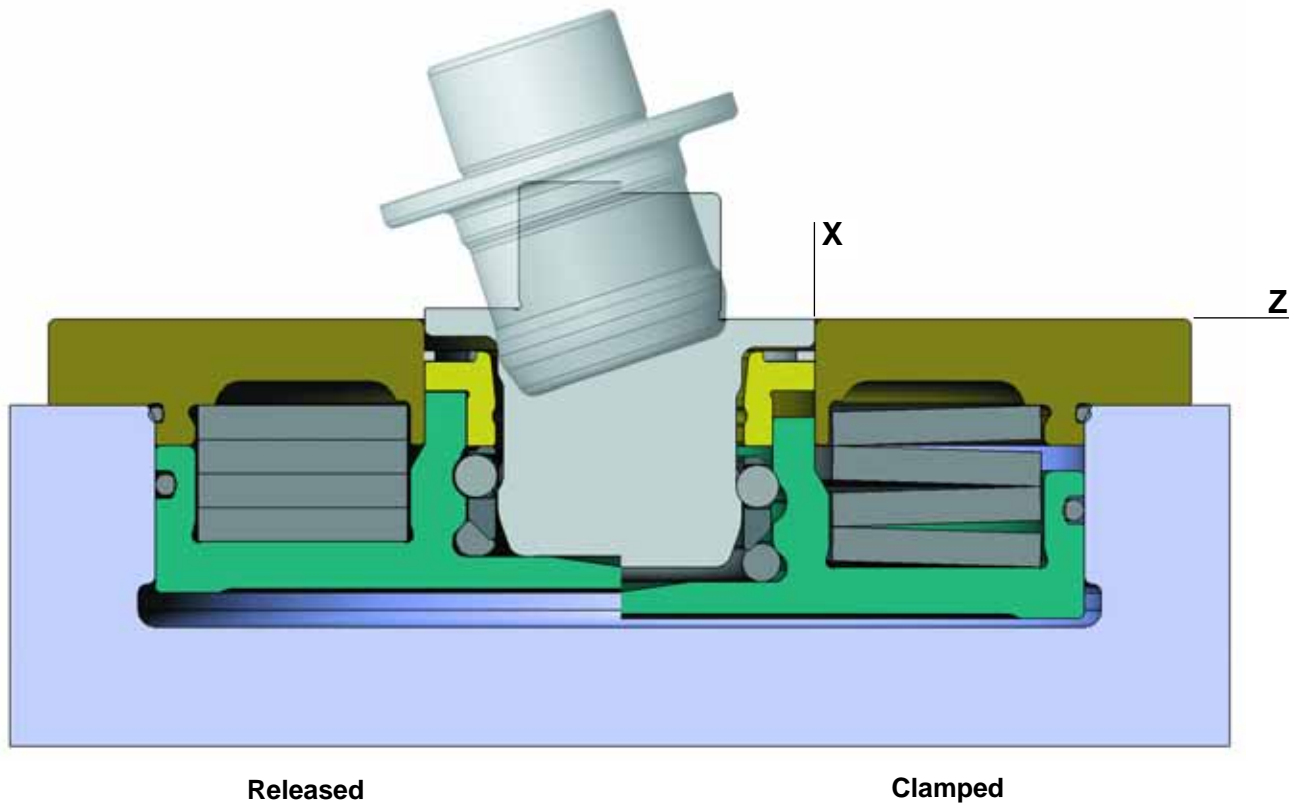
Time savings per shift = 80 minutes

**Time savings** assuming 200 work days per annum = 266 hours

**Convince yourself: make your own calculations or consult our experts.**



Mounting towers with SPEEDY 1000 and SPEEDY 1000 assembly with pipe system.



- The clamping bolt is retracted from the fitting hole. This prevents damage to the fitting hole diameter "X" and to the bearing face "Z".
- No over determination of the support surface / positioning.
- Permanent hold on the insertion nipples (non-locking). This eliminates vibrations, increases the quality of the processed surface and the idle time of the cutting tool.
- Integrated blow-off and coolant outflow.  
Dedicated support and positioning surface.
- Slanted lift off, system size 20kN  
Tilt-proof workpiece / pallet change
- Various checks made by the Mounting system 1000
  - Support check
  - Clamping check
  - Positioning check

Additional checks upon request.





## Media ducts – small sized variable designs



Media ducts NW 4



Media duct, integrated in the SPEEDY assembly variant, 4-fold



Assembly example with media duct NW 4

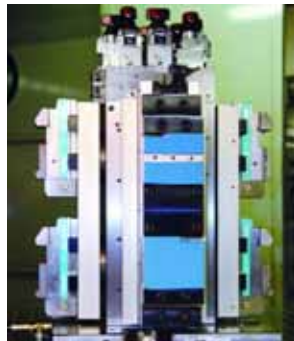


Sweeper 2000  
Multi coupling  
Coupling plate can be activated under load

## "Third Hand" function – easy mounting for vertical clamping positions



Click the palette on



Release the palette



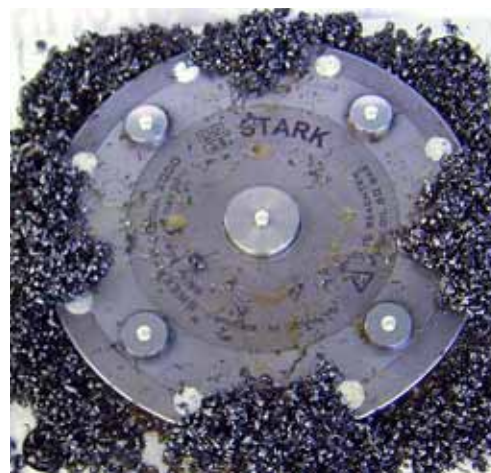
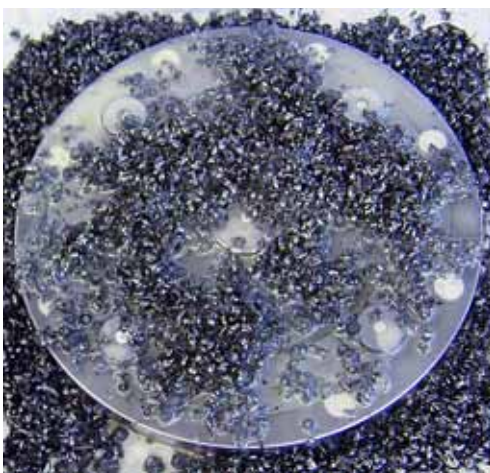
Clamp



Process the workpiece

The "Third hand" function secures the palette against falling off during clamping and also while releasing the fast closing clamp. The palette locks into place effortlessly and is then clamped/released by the pressure booster activated by a foot pedal.

## The Sweeper in automatic processes – solves the problem of swarf



An effective and reliable blow-off system for the supporting and positioning surfaces. Also blows off wet swarf in practical, daily operations.



For mounting data sheets see [www.stark-inc.com](http://www.stark-inc.com)

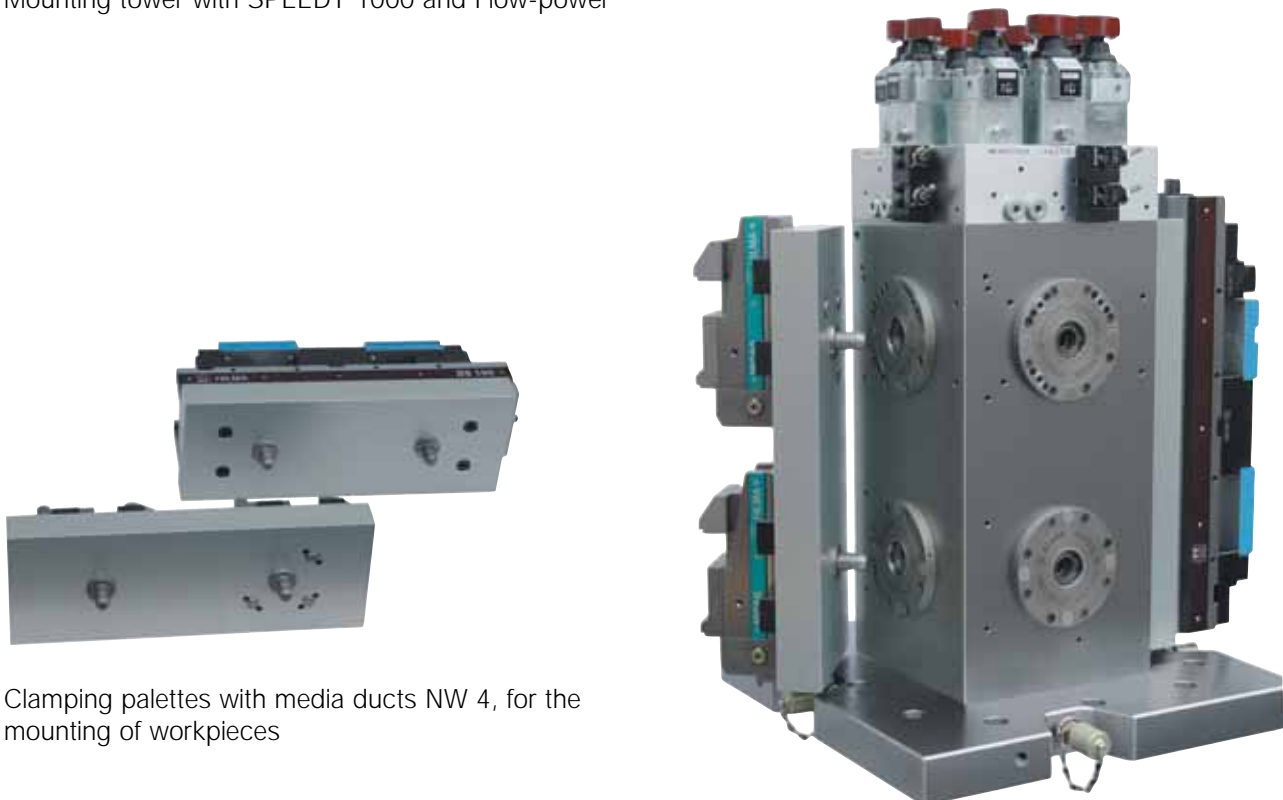
4

	SPEEDY 1000 round	SPEEDY 1000 square	SPEEDY 1000 round, with strong insertion springs	SPEEDY 1000 square with strong insertion springs	SPEEDY Twister 1000 round	SPEEDY Compact 1000 (ø68)
INSERTION FORCE	6722 N	6722 N	10000 N	10000 N	6722 N	5300 N
CLAMPING CYCLES * **	100000	100000	20000	20000	> 100000	15000
EXTRACTION FORCE	>10000 N	>10000 N	10000 N	10000 N	10000 N	10000 N
SIDE FORCES max.permitted	7000 N	7000 N	7000 N	7000 N	7000 N	7000 N
PULL OUT TORQUE *	250 Nm	250 Nm	350 Nm	350 Nm	250 Nm	---
TWISTING TORQUE *	---	300 Nm	---	300 Nm	---	---
OPERATING PRESSURE	40 bar	40 bar	80 bar	80 bar	40 bar	180 bar
<b>max. OPERATING PRESSURE</b>	<b>80 bar</b>	<b>80 bar</b>	<b>80 bar</b>	<b>80 bar</b>	<b>80 bar</b>	<b>180 bar</b>
OIL VOLUME	20 cm <sup>3</sup>	20 cm <sup>3</sup>	20 cm <sup>3</sup>	20 cm <sup>3</sup>	21 cm <sup>3</sup>	7 cm <sup>3</sup>
WEIGHT	~ 3 kg	~ 3 kg	~ 3 kg	~ 3 kg	~ 3 kg	1.5 kg
OPERATING TEMPERATURE	10°C to 80° C		10°C to 80° C		10°C to 80° C	
CLAMPING TIME	~ 2 sec.		~ 2 sec.		~ 2 sec.	
RELEASE TIME	~ 2 sec.		~ 2 sec.		~ 2 sec.	
PREPOSITIONING	±3 mm		±3 mm		±3 mm   ±2 mm	
REPEATED ACCURACY	< 0,01		< 0,01		< 0,01	

\* other specifications upon request

\*\* when a certain amount of clamping cycles is reached, the plate spring must be changed

Mounting tower with SPEEDY 1000 and Flow-power



Clamping palettes with media ducts NW 4, for the mounting of workpieces



For mounting data sheets see [www.stark-inc.com](http://www.stark-inc.com)

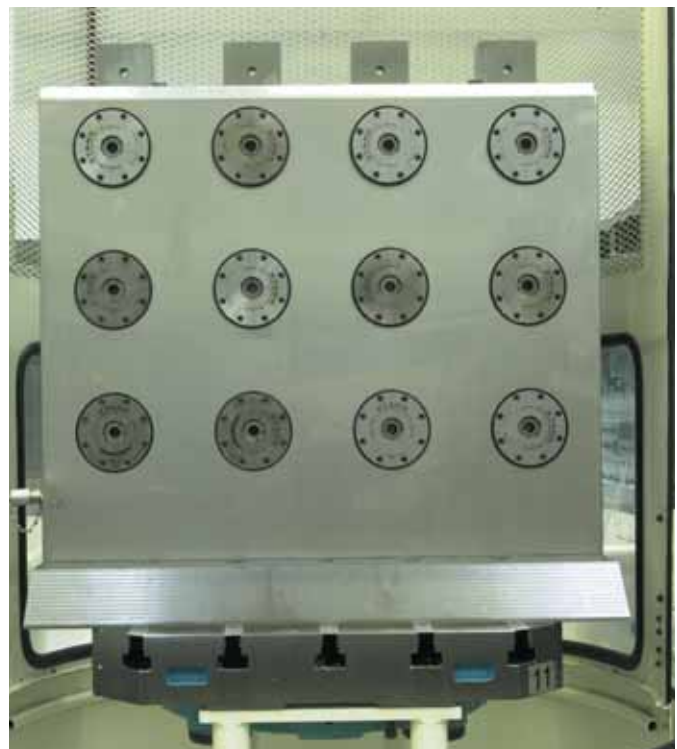
SPEEDY 2000 round	SPEEDY 2000 square	SPEEDY Twister 2000 round	SPEEDY 3000 round	SPEEDY 3000 square
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INSERTION FORCE	20000 N	20000 N	20000 N	30000 N	30000 N	
CLAMPING CYCLES* **	40000	40000	40000	40000	40000	
EXTRACTION FORCE	10000 N	10000 N	10000 N	15000 N	15000 N	
SIDE FORCES max.permitted	9000 N	9000 N	9000 N	10500 N	10500 N	
PULL OUT TORQUE *	1000 Nm	1000 Nm	1000 Nm	2000 Nm	2000 Nm	
TWISTING TORQUE *	---	800 Nm	---	---	2000 Nm	
OPERATING PRESSURE	40 bar	40 bar	40 bar	30 bar	30 bar	
<b>max. OPERATING PRESSURE</b>	<b>40 bar</b>	<b>40 bar</b>	<b>40 bar</b>	<b>30 bar</b>	<b>30 bar</b>	
OIL VOLUME	38 cm <sup>3</sup>	38 cm <sup>3</sup>	38 cm <sup>3</sup>	124 cm <sup>3</sup>	124 cm <sup>3</sup>	
WEIGHT	~ 5 kg	~ 5 kg	~ 5 kg	13 kg	13 kg	
OPERATING TEMPERATURE	10°C to 80°C		10°C to 80°C		10°C to 80°C	
CLAMPING TIME	~ 2 sec.		~ 2 sec.		~ 2 sec.	
RELEASE TIME	~ 2 sec.		~ 2 sec.		~ 2 sec.	
PREPOSITIONING	±2.5 mm		±2.5 mm		±4 mm	
REPEATED ACCURACY	< 0,01		< 0,01		< 0,01	

\* other specifications upon request

\*\* when a certain amount of clamping cycles is reached, the plate spring must be changed

Set SPEEDY Record 1000 with cover



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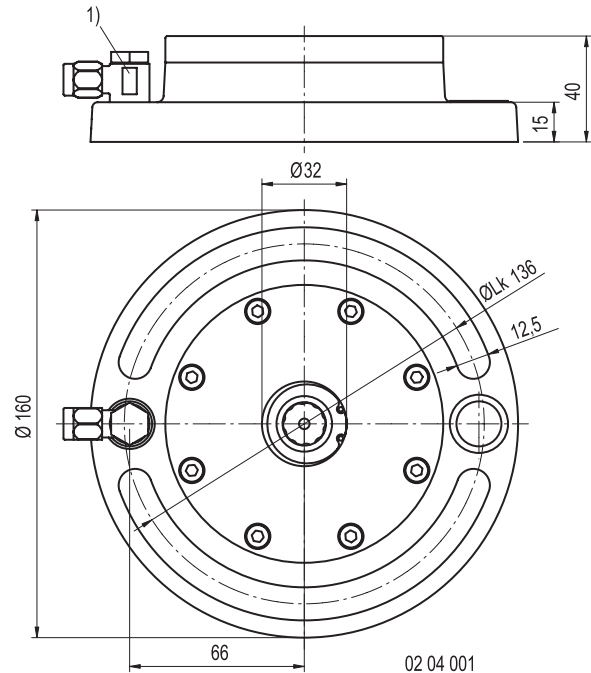
# SPEEDY fast closing clamp



# STARK

4

## SPEEDY *Record* 1000 round

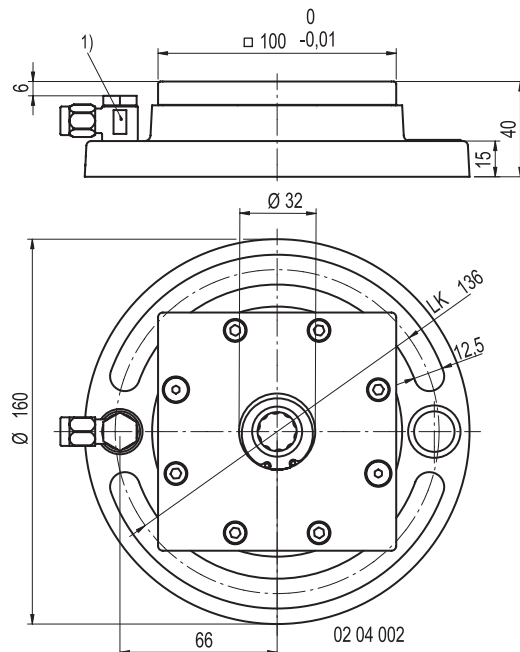


1) Hydraulic connection

Order no.	Description
<b>804 604</b>	SPEEDY <i>Record</i> 1000 round

Total height:	40 mm
Standard retractable force:	6.722 N
Max. axis load:	5.000 kg
Thread connection:	1 x G1/8"
Release hydraulic pressure:	40 bar

## SPEEDY *Record* 1000 square



1) Hydraulic connection

Order no.	Description
<b>804 605</b>	SPEEDY <i>Record</i> 1000 square

Total height:	40 mm
Standard retractable force:	6.722 N
Max. axis load:	5.000 kg
Thread connection:	1 x G1/8"
Release hydraulic pressure:	40 bar

Suitable for single mounting (with only one insertion nipple) and in combination with the round *Record* 1000.

# SPEEDY fast closing clamp



# STARK

## SPEEDY Record 1000 set

### Set A/B SPEEDY Record 1000



4

Order no.	Description
<b>804 600 Set A</b>	SPEEDY Record 4 fold
<b>804 601 Set B</b>	SPEEDY Record 4 fold without pressure booster

Amount [pcs]	Order no.	Description
1	<b>804 411</b>	Pressure booster
4	<b>804 604</b>	Fast closing clamp SPEEDY Record 1000
8	<b>804 226</b>	Retractable nipple
1	<b>804 370</b>	Connection block
1	<b>804 254</b>	Retractable nipple key
incl. piping and union pieces		Gauge for bore holes 200 mm
Option, for further length		<b>804 398</b> Set of tubes 1000 mm (Standard retractable force 6722 N)

### Set D/E SPEEDY Record 1000



Order no.	Description
<b>804 602 Set D</b>	SPEEDY Record 6 fold
<b>804 603 Set E</b>	SPEEDY Record 6 fold without pressure booster

Amount [pcs]	Order no.	Description
1	<b>804 411</b>	Pressure booster
6	<b>804 604</b>	Fast closing clamp SPEEDY Record 1000
12	<b>804 226</b>	Retractable nipple
1	<b>804 370</b>	Connection block
1	<b>804 254</b>	Retractable nipple key
incl. piping and union pieces		Gauge for bore holes 200 mm
Option, for further length		<b>804 398</b> Set of tubes 1000 mm (Standard retractable force 6722 N)

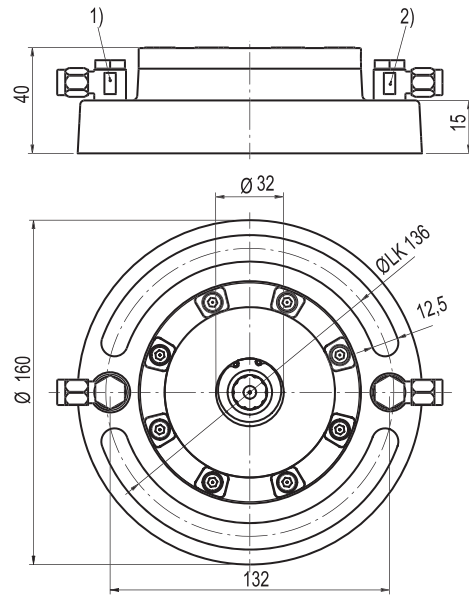
# SPEEDY fast closing clamp



# STARK

## SPEEDY *Record* 1000 blow out round

4



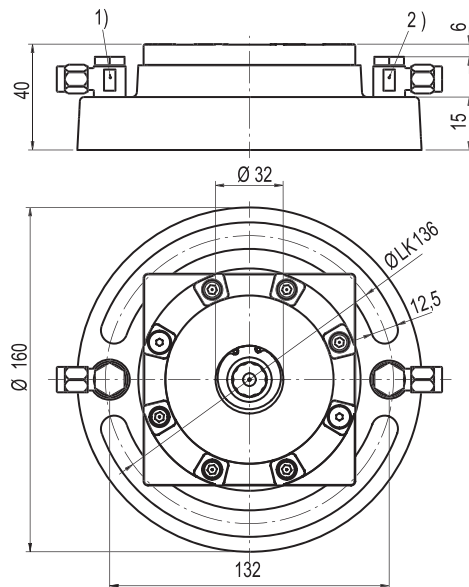
02 04 003

1) Hydraulic connection, 2) Pneumatic connection

Order no.	Description
<b>804 616</b>	SPEEDY <i>Record</i> 1000 round blow out

Standard insertion force:	6.722 N
Max. axis load:	5.000 kg
Thread connection:	2 x G1/8"
Release hydraulic pressure:	40 bar

## SPEEDY *Record* 1000 blow out square



02 04 004

1) Hydraulic connection, 2) Pneumatic connection

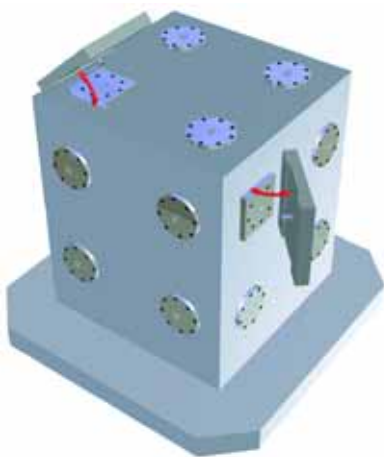
Order no.	Description
<b>804 618</b>	SPEEDY <i>Record</i> 1000 square blow out

Standard insertion force:	6.722 N
Max. axis load:	5.000 kg
Thread connection:	2 x G1/8"
Release hydraulic pressure:	40 bar





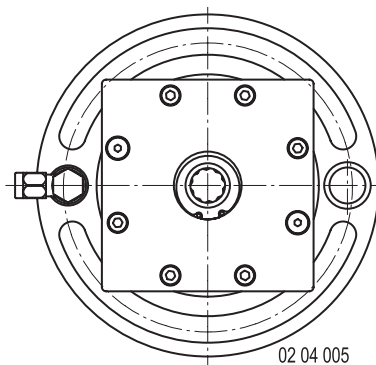
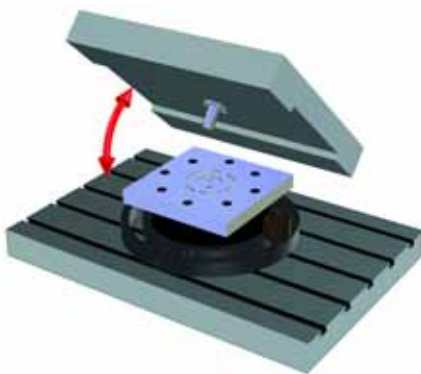
Square and round SPEEDY fast closing clamps, combined on a cube.



### Properties:

- Suitable for the production of small workpieces
- With one fast closing clamp the pallet is warp-proof already
- Pallet can be rotated and positioned each 90°
- With special pallets any angle is possible
- Especially suitable for turning

4



Single square fast closing clamp for milling.



Machine pallet with a combined assembly of round and square SPEEDY clamps for central mounting.

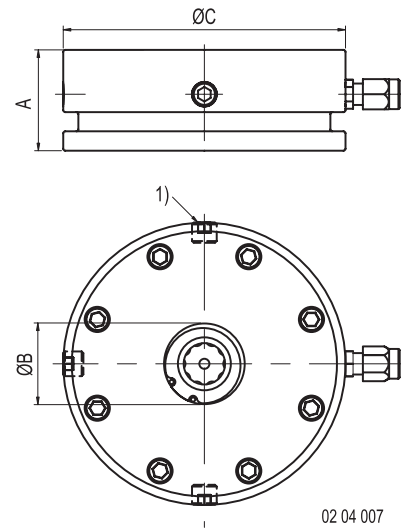
# SPEEDY fast closing clamp



# STARK

## SPEEDY 1000 round

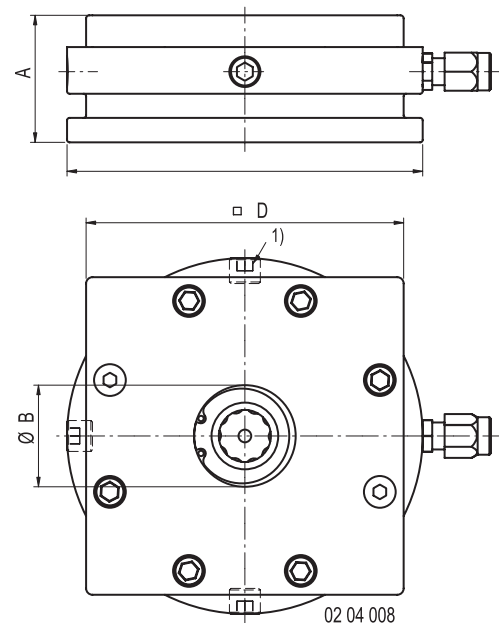
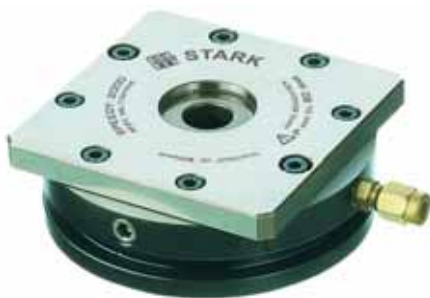
4



1) Hydraulic thread connection

Order no.	A	ØB	ØC	Insertion force [N]	Max. axis load [kg]	Thread connection	Release hydr. pressure [bar]
<b>804 333</b>	40	32	112	6.722	5.000	G1/8" 4 x à 90°	40
<b>804 351</b>	40	32	112	10.000	5.000	G1/8" 4 x à 90°	80

## SPEEDY 1000 square



Suitable for single pallets (pallets with one retractable nipple).

1) Hydraulic thread connection

Order no.	A	ØB	ØC	∇ D	Insertion force [N]	Max. axis load [kg]	Thread connection	Release hydr. pressure [bar]
<b>804 332</b>	40	32	112	100	6.722	5.000	G1/8" 4 x à 90°	40
<b>804 353</b>	40	32	112	100	10.000	5.000	G1/8" 4 x à 90°	80

01/2007

# SPEEDY fast closing clamp



# STARK

## SPEEDY 1000 set

### SPEEDY 1000 set 4-fold



4

Order no.	Description
<b>804 360</b>	SPEEDY 1000 set A 4-fold
<b>804 361</b>	SPEEDY 1000 set B 4-fold without pressure booster

Amount [pcs.]	Order no.	Description
1	<b>804 411</b>	Pressure booster
4	<b>804 333</b>	Fast closing clamp SPEEDY 1000
8	<b>804 354</b>	Mounting bracket
8	<b>804 226</b>	Retractable nipple
1	<b>804 370</b>	Connection block
1	<b>804 254</b>	Retractable nipple key
incl. piping and union pieces		Gauge for bore holes 200mm
Option, for further length		<b>804 398</b> Set of tubes 1000mm (Standard retractable force 6722 N)

### SPEEDY 1000 set 6-fold



Order no.	Description
<b>804 366</b>	SPEEDY 1000 set D 6-fold
<b>804 367</b>	SPEEDY 1000 set E 6-fold without pressure booster

Amount [pcs.]	Order no.	Description
1	<b>804 411</b>	Pressure booster
6	<b>804 333</b>	Fast closing clamp SPEEDY 1000
12	<b>804 354</b>	Mounting bracket
12	<b>804 226</b>	Retractable nipple
1	<b>804 370</b>	Connection block
1	<b>804 254</b>	Retractable nipple key
incl. piping and union pieces		Gauge for bore holes 200mm
Option, for further length		<b>804 398</b> Set of tubes 1000mm (Standard retractable force 6722 N)



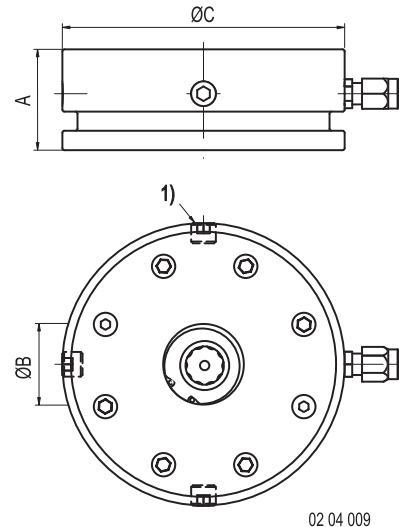
# SPEEDY fast closing clamp



# STARK

4

## SPEEDY 2000 round

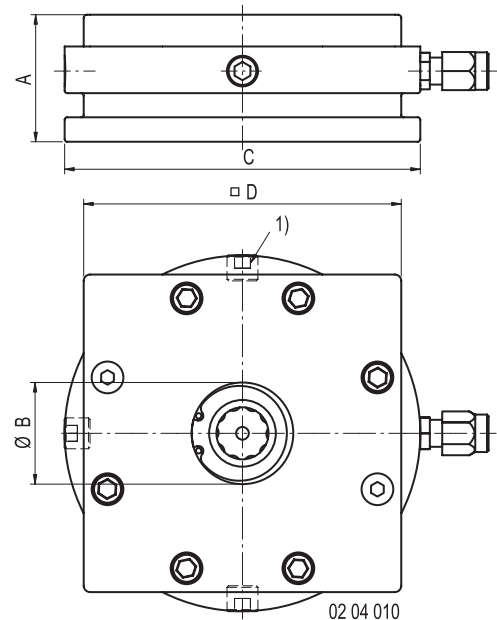


02 04 009

1) Hydraulic thread connection

Order no.	A	ØB	ØC	Insertion force [N]	Max. axis load [kg]	Thread connection	Release hydr. pressure [bar]
<b>804 450</b>	40	47	150	20.000	20.000	G1/8" 4 x à 90°	40

## SPEEDY 2000 square



02 04 010

Suitable for single pallets (pallets with one retractable nipple).

1) Hydraulic thread connection

Order no.	A	ØB	ØC	∅ D	Insertion force [N]	Max. axis load [kg]	Thread connection	Release hydr. pressure [bar]
<b>804 451</b>	40	47	150	130	20.000	20.000	G1/8" 4 x à 90°	40

# SPEEDY fast closing clamp



# STARK

## SPEEDY 2000 set

### SPEEDY 2000 set 4-fold



4

Order no.	Description
<b>804 446</b>	SPEEDY 2000 set A 4-fold
<b>804 447</b>	SPEEDY 2000 set B 4 fold without pressure booster

Amount (pcs)	Order no.	Description
1	<b>804 411</b>	Pressure booster
4	<b>804 450</b>	Fast closing clamp SPEEDY 2000
8	<b>804 456</b>	Mounting bracket
8	<b>804 470</b>	Retractable nipple
1	<b>804 385</b>	Connection block
incl. piping and union pieces		Gauge for bore holes 320mm
Option, for further length		<b>804 399</b> Set of tubes 1500mm
(Standard retractable force 20.000 N)		

### SPEEDY 2000 set 6-fold



Order no.	Description
<b>804 448</b>	SPEEDY 2000 set D 6-fold
<b>804 449</b>	SPEEDY 2000 set E 6-fold without pressure booster

Amount (pcs)	Order no.	Description
1	<b>804 411</b>	Pressure booster
6	<b>804 450</b>	Fast closing clamp SPEEDY 2000
12	<b>804 456</b>	Mounting bracket
12	<b>804 470</b>	Retractable nipple
1	<b>804 385</b>	Anschlussblock
incl. piping and union pieces		Gauge for bore holes 320 mm
Option, for further length		<b>804 399</b> Set of tubes 1500mm
(Standard retractable force 20.000 N)		

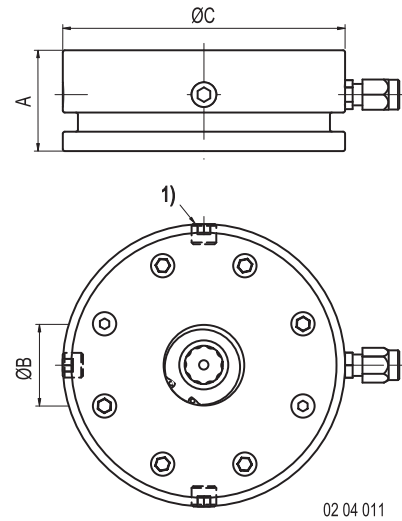
# SPEEDY fast closing clamp



# STARK

4

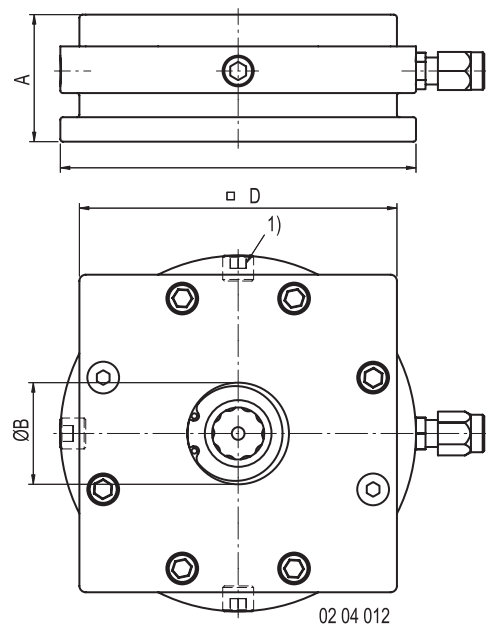
## SPEEDY 3000 round



1) Hydraulic thread connection

Order no.	A	ØB	ØC	Insertion force [N]	Max. axis load [kg]	Thread connection	Release hydr. pressure [bar]
<b>804 346</b>	65	65	190	30.000	30.000	G1/4" 8 x à 45°	30

## SPEEDY 3000 square



Suitable for single pallets (pallets with one retractable nipple).

1) Hydraulic thread connection

Order no.	A	ØB	ØC	ØD	Insertion force [N]	Max. axis load [kg]	Thread connection	Release hydr. pressure [bar]
<b>804 345</b>	65	65	190	170	30.000	30.000	G1/4" 4 x à 90°	30

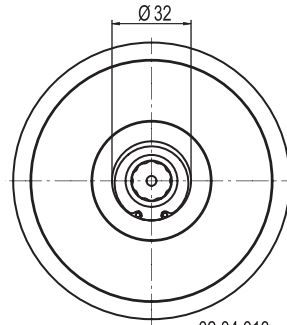
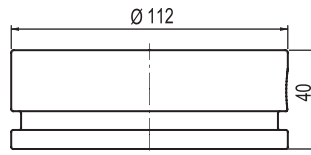


# SPEEDY fast closing clamp

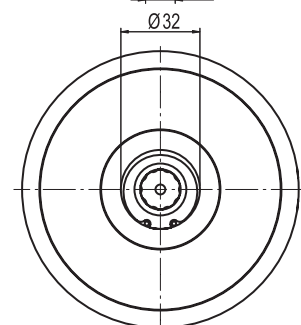
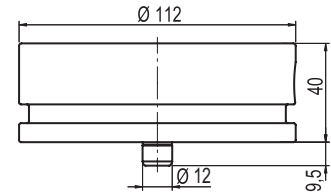


# STARK

## SPEEDY *Gigant* 1000, 2000, 3000 round



without centring shank



with centring shank

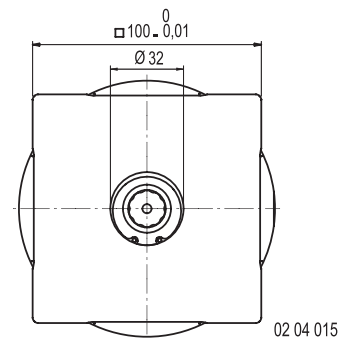
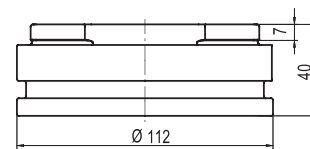
SPEEDY *Gigant* with centring shank

To erode, stainless steel available upon request.

Order no. without centring shank	Order no. with centring shank	Insertion force [N]	Max. axis load [kg]	Release hydr. pressure [bar]	Description
<b>804 820</b>	<b>804 821</b>	6.722	5.000	40	SPEEDY <i>Gigant</i> 1000
<b>804 822</b>	<b>804 823</b>	10.000	5.000	80	SPEEDY <i>Gigant</i> 1000
<b>806 001</b>	<b>806 010</b>	20.000	20.000	40	SPEEDY <i>Gigant</i> 2000
<b>807 100</b>	<b>807 101</b>	30.000	30.000	30	SPEEDY <i>Gigant</i> 3000

Dimensions for all SPEEDY *Gigant* 1000. Dimensions for SPEEDY *Gigant* 2000, 3000 round available on request.

## SPEEDY *Gigant* 1000, 2000, 3000 square



02 04 015

Order no. without centring shank	Order no. with centring shank	Insertion force [N]	Max. axis load [kg]	Release hydr. pressure [bar]	Description
<b>804 850</b>	<b>804 851</b>	6.722	5.000	40	SPEEDY <i>Gigant</i> 1000
<b>804 852</b>	<b>804 853</b>	10.000	5.000	80	SPEEDY <i>Gigant</i> 1000
<b>806 040</b>	<b>806 041</b>	20.000	20.000	40	SPEEDY <i>Gigant</i> 2000
<b>807 200</b>	<b>807 201</b>	30.000	30.000	30	SPEEDY <i>Gigant</i> 3000

### Blow out

<b>804 860</b>	<b>804 861</b>	6.722	5.000	40	SPEEDY <i>Gigant</i> 1000 blow out
<b>804 862</b>	<b>804 863</b>	10.000	5.000	80	SPEEDY <i>Gigant</i> 1000 blow out
<b>806 050</b>	<b>806 051</b>	20.000	20.000	40	SPEEDY <i>Gigant</i> 2000 blow out
<b>807 120</b>	<b>807 121</b>	30.000	30.000	30	SPEEDY <i>Gigant</i> 3000 blow out

Dimensions for all SPEEDY *Gigant* 1000. Dimensions for SPEEDY *Gigant* 2000, 3000 square available on request.

01/2007



## Mounting brackets for the fast closing clamps

To mount the fast closing clamps on the machine table, there are several combinations of mounting brackets available.

5



Mounting bracket  
Form 1



Mounting bracket  
Form 2



Mounting bracket  
Form 3



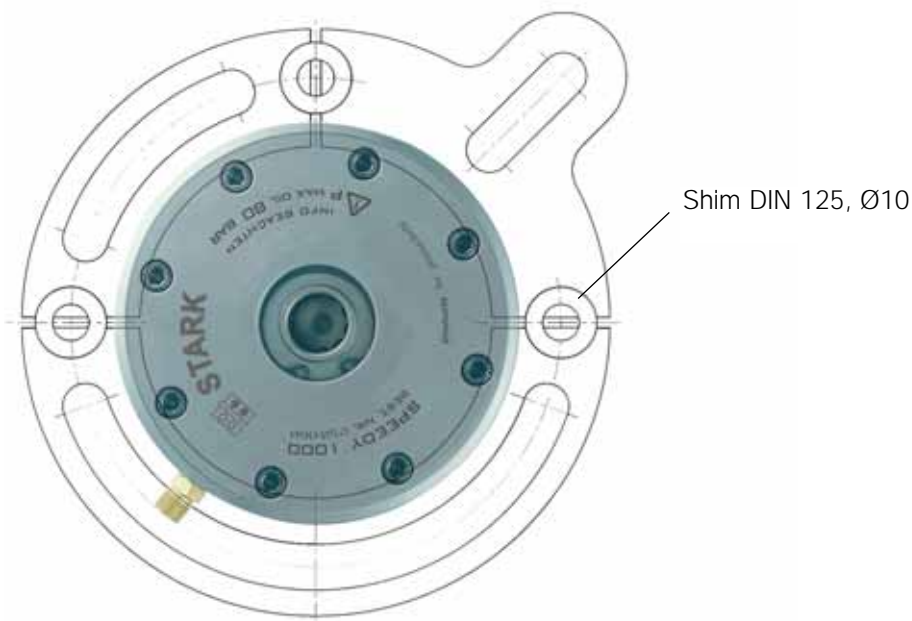
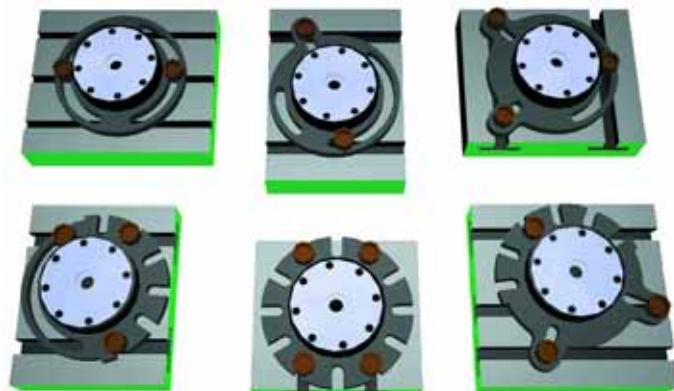
Mounting bracket  
Form 4



Mounting bracket  
for clamping on  
perforated grid

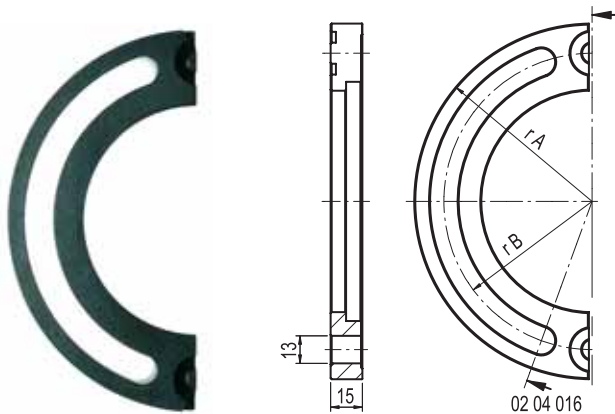
## Some possible combinations of mounting brackets

Due to the ingenious forms of the mounting brackets it is possible to fasten the fast closing clamps onto the T-groove table without any problems.



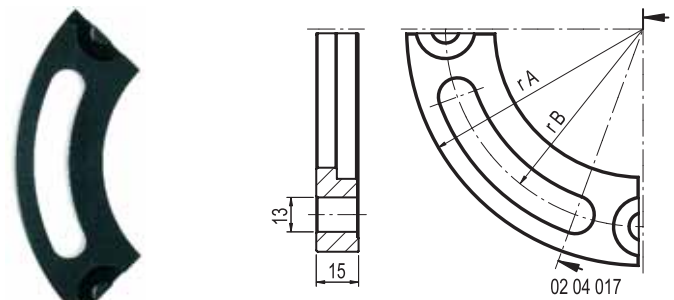


## Mounting bracket form 1



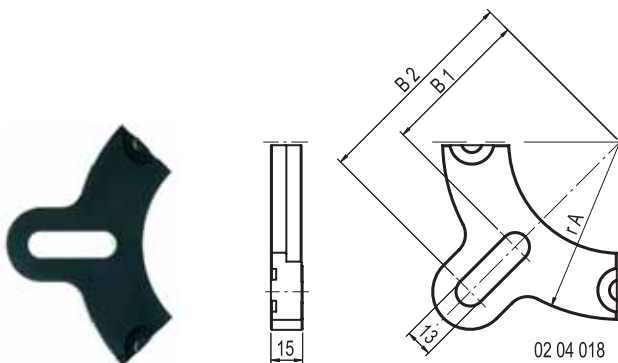
Order no.	suitable for:	r A	r B
<b>804 354</b>	SPEEDY 1000	84	70
<b>804 456</b>	SPEEDY 2000	104	90
<b>804 340</b>	SPEEDY 3000	123	109

## Mounting bracket form 2



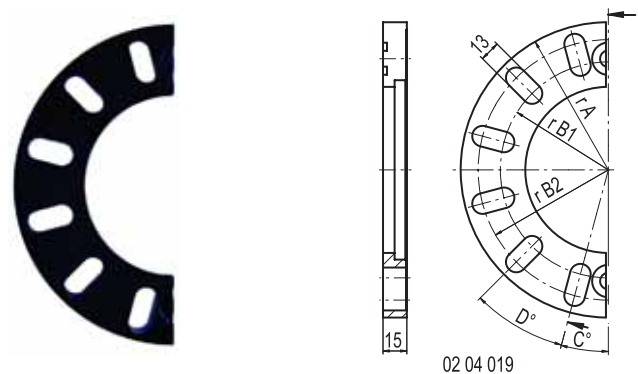
Order no.	suitable for:	r A	r B
<b>804 355</b>	SPEEDY 1000	84	70
<b>804 457</b>	SPEEDY 2000	104	90
<b>804 341</b>	SPEEDY 3000	123	109

## Mounting bracket form 3



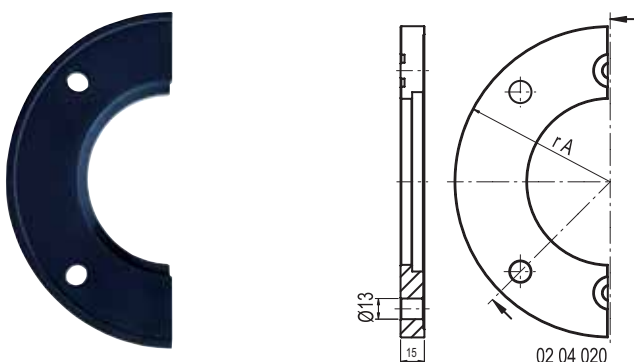
Order no.	suitable for:	r A	B1	B2
<b>804 356</b>	SPEEDY 1000	84	70	100
<b>804 458</b>	SPEEDY 2000	104	90	125
<b>804 342</b>	SPEEDY 3000	123	109	150

## Mounting bracket form 4

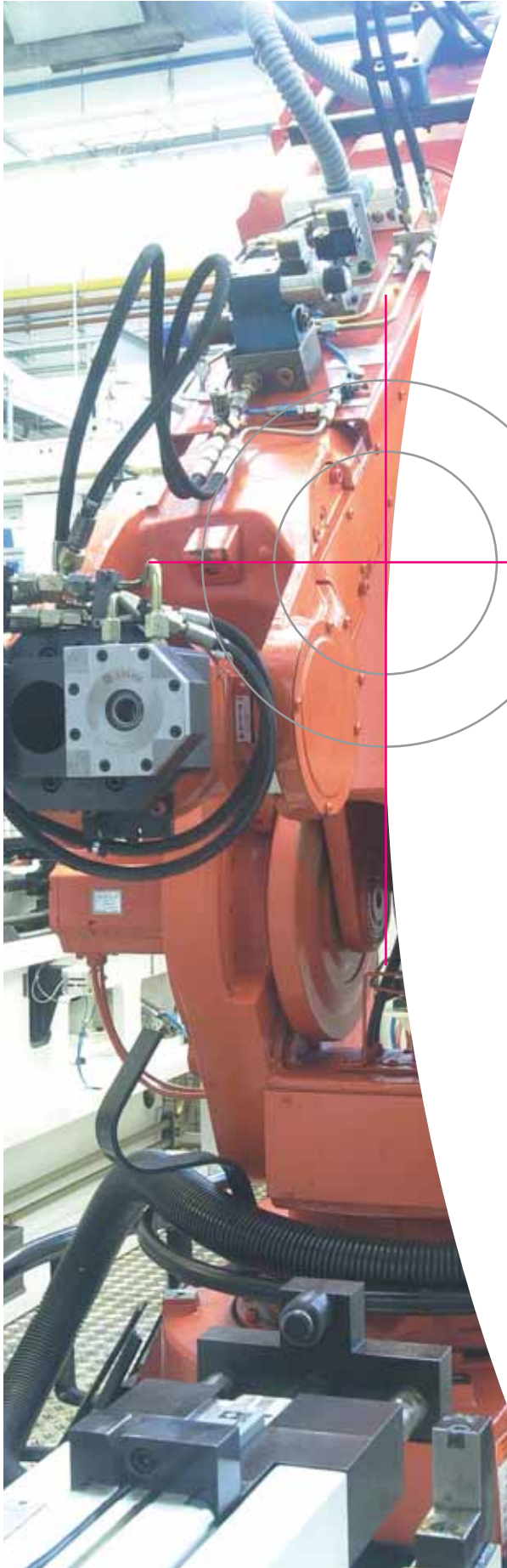


Order no.	suitable for:	r A	rB1	rB2	C	D
<b>804 357</b>	SPEEDY 1000	89	70	80	15°	30°
<b>804 459</b>	SPEEDY 2000	120	87	108	15°	30°
<b>804 343</b>	SPEEDY 3000	142	107	130	11,5°	22,5°

## Mounting bracket for clamping on perforated grid (40 mm matrix dimension)



Order no.	suitable for:	r A
<b>804 364</b>	SPEEDY 1000	89
<b>804 463</b>	SPEEDY 2000	104
<b>804 349</b>	SPEEDY 3000	127

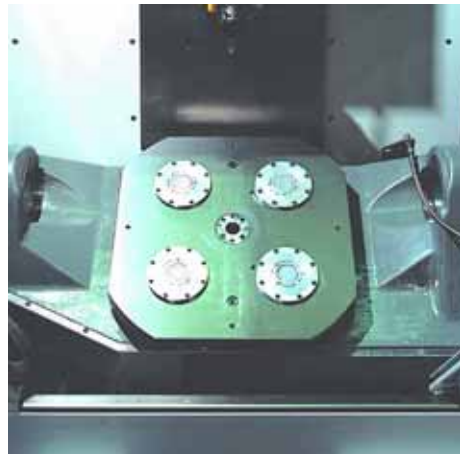


## Increase the productivity of your machines

... by increasing the spindle operating time with the STARK zero point clamp system, optimize down-time by setting up outside of the machine – whether you are milling or turning.



Applications of clamp systems in automated production lines.



Applying the SPEEDY Sweeper in automated production.

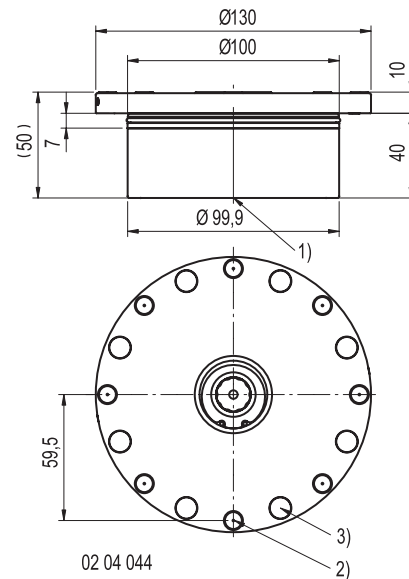


Application on lathes with locking controls.





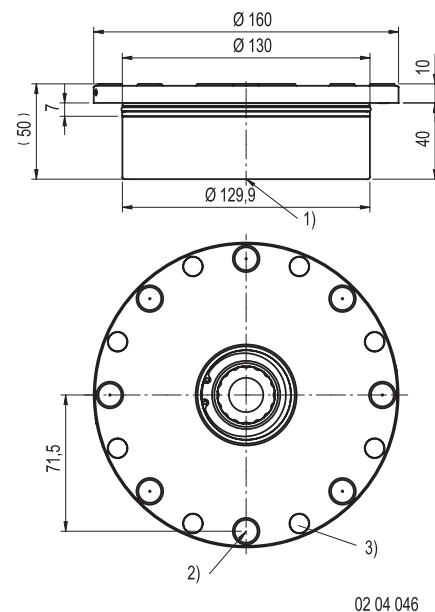
## SPEEDY Tornado 1000 assembly module with raised supports and blow out ducts



Order no.	Insertion force [N]	Release hydr. pressure [bar]
<b>808 100</b>	6.722	40
<b>808 110</b>	10.000	80

- 1) Hydraulic connection selection through floor or flange
- 2) 8x raised supports  $\varnothing$  8 mm with blow out ducts
- 3) 8x cap head screws M5x14

## SPEEDY Tornado 2000 assembly module with raised supports and blow out ducts



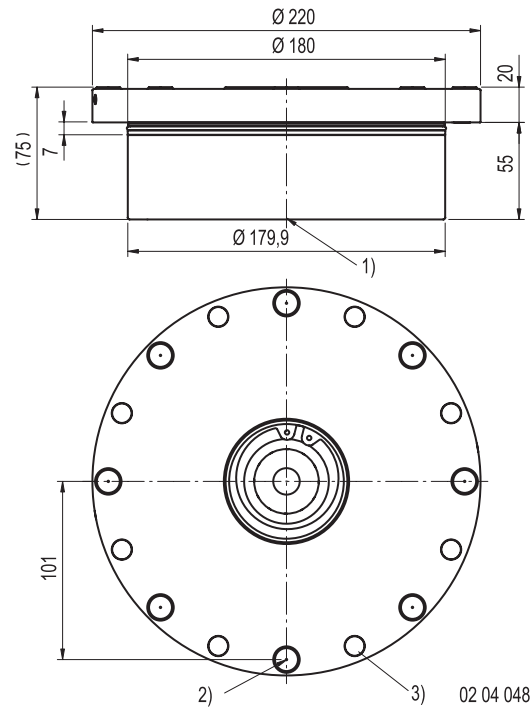
Order no.	Insertion force [N]	Release hydr. pressure [bar]
<b>808 200</b>	20.000	40

- 1) Hydraulic connection selection through floor or flange
- 2) 8x raised supports  $\varnothing$  12 mm with blow out ducts
- 3) 8x cap head screws M6x14



## SPEEDY *Tornado* 3000 assembly module with raised supports and blow out ducts

6



Order no.	Insertion force [N]	Release hydr. pressure [bar]
<b>808 300</b>	30.000	30

- 1) Hydraulic connection selection through floor or flange
- 2) 8x raised supports  $\varnothing$  13 mm with blow out ducts
- 3) 8x cap head screws M6x 25

## Practical example



SPEEDY *Tornado* 1000/2000/3000 assembly module installable in all machine tables.

Advantages:

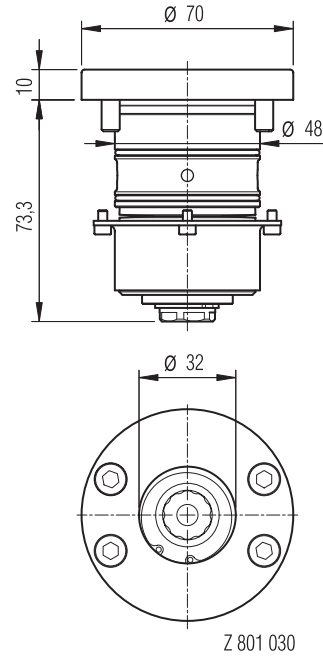
- Small built-in size
- One interface
- Install protruding or flush
- Torque is absorbed by the assembly module

Palette DIN 55201 with assembly module

Ask us or the machine manufacturer about the layout of the machine table.



## SPEEDY Compact 1000 assembly

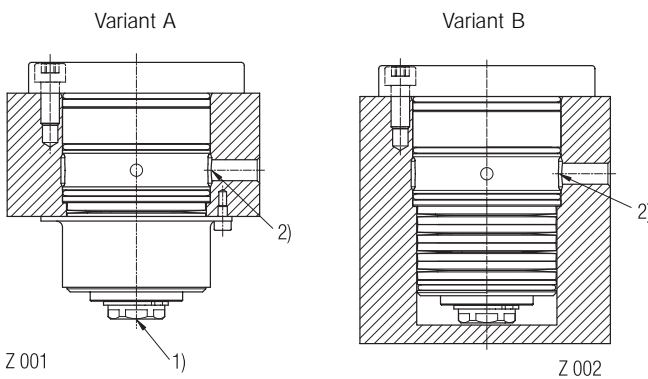


Order no.	Insertion force [N]	Release hydr. pressure [bar]
<b>801 030</b>	6.500	180

Z 801 030

7

## Mounting examples



- 1) Hydraulic thread connection G1/8"
- 2) Hydraulic connection by deep holes



Planslice with SPEEDY Compact 1000

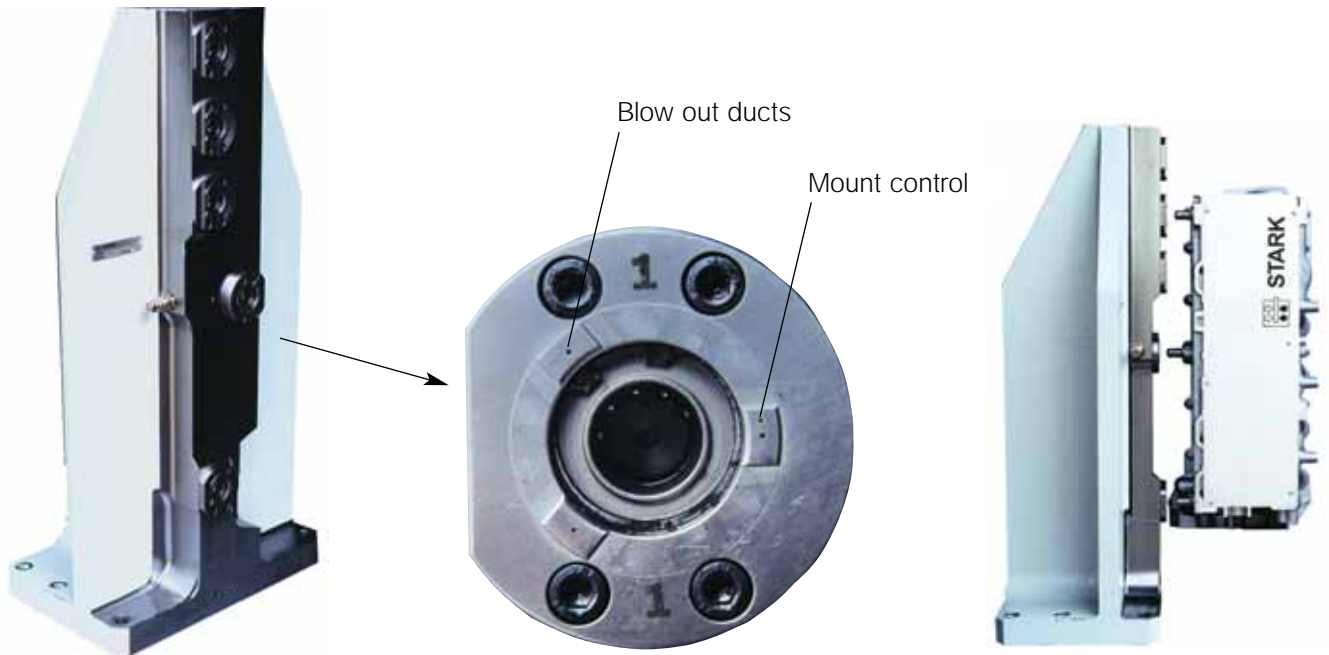
### Advantages:

- small layout pattern
- at limited distance to edge of plate
- completely retractable
- can also be applied with small material thickness



## SPEEDY Compact 1000 assembly with blow out ducts and mount control

7



Customized: with blow out ducts and mount control



Mount retractable nipples (direct clamping of workpiece)

The retractable nipples are tightened with a torque wrench







## SPEEDY 1000 plate set, 4-fold



Order no.	Dimensions	Stitch length	Description
<b>804 700</b>	396 x 396	200 x 200	Set A 4-fold
<b>804 701</b>	396 x 396	200 x 200	Set B 4-fold without pressure booster
<b>804 702</b>	396 x 396	240 x 240	Set A 4-fold
<b>804 703</b>	396 x 396	240 x 240	Set B 4-fold without pressure booster
<b>804 704</b>	396 x 396	250 x 250	Set A 4-fold
<b>804 705</b>	396 x 396	250 x 250	Set B 4-fold without pressure booster

Seperate parts:

Amount [pcs]	Order no.	Description
1	<b>804 411</b>	Pressure booster
1		Fast closing clamp 4-fold
8	<b>804 226</b>	Retractable nipple
1	<b>804 254</b>	Retractable nipple key

## SPEEDY 1000 plate set, 6-fold



Order no.	Dimensions	Stitch length	Description
<b>804 710</b>	646 x 396	200 x 200	Set D 6-fold
<b>804 711</b>	646 x 396	200 x 200	Set E 6-fold without pressure booster
<b>804 712</b>	646 x 396	240 x 240	Set D 6-fold
<b>804 713</b>	646 x 396	240 x 240	Set E 6-fold without pressure booster
<b>804 714</b>	646 x 396	250 x 250	Set D 6-fold
<b>804 715</b>	646 x 396	250 x 250	Set E 6-fold without pressure booster

Seperate parts:

Amount [pcs]	Order no.	Description
1	<b>804 411</b>	Pressure booster
1		Fast closing clamp 6-fold
12	<b>804 226</b>	Retractable nipple
1	<b>804 254</b>	Retractable nipple key

## SPEEDY 1000 plate set, 8-fold



Order no.	Dimensions	Stitch length	Description
<b>804 720</b>	870 x 396	200 x 200	Set F 8-fold
<b>804 721</b>	870 x 396	200 x 200	Set G 8-fold without pressure booster
<b>804 722</b>	870 x 396	240 x 240	Set F 8-fold
<b>804 723</b>	870 x 396	240 x 240	Set G 8-fold without pressure booster
<b>804 724</b>	870 x 396	250 x 250	Set F 8-fold
<b>804 725</b>	870 x 396	250 x 250	Set G 8-fold without pressure booster

Seperate parts:

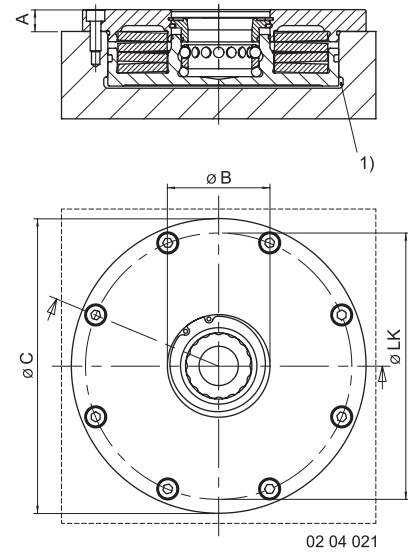
Amount [pcs]	Order no.	Description
1	<b>804 411</b>	Pressure booster
1		Fast closing clamp 8-fold
16	<b>804 226</b>	Retractable nipple
1	<b>804 254</b>	Retractable nipple key



## SPEEDY assembly 1000, 2000, 3000 round



Example: Angle with  
8 SPEEDY 1000 round and  
4 SPEEDY 1000 square



1) Hydraulic supply

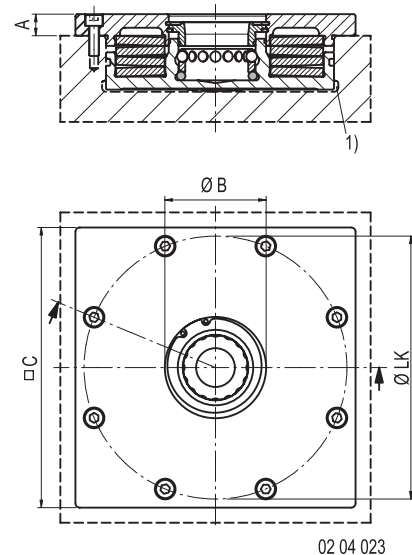
9

Order no.	Description	A	ØB	ØC	ØLK	Insertion force [N]	Release hydr. pressure [bar]
<b>804 331</b>	SPEEDY 1000	10	32	105	92	6.722	40
<b>804 348</b>	SPEEDY 1000	10	32	105	92	10.000	80
<b>804 452</b>	SPEEDY 2000	10	47	135	122	20.000	40
<b>804 339</b>	SPEEDY 3000	19	65	176	160	30.000	30

## SPEEDY assembly 1000, 2000, 3000 square



Example: Angle with  
9 SPEEDY 1000 square



1) Hydraulic supply

Order no.	Description	A	ØB	ØC	ØLK	Insertion force [N]	Release hydr. pressure [bar]
<b>804 330</b>	SPEEDY 1000	10	32	100	92	6.722	40
<b>804 347</b>	SPEEDY 1000	10	32	100	92	10.000	80
<b>804 453</b>	SPEEDY 2000	10	47	130	122	20.000	40
<b>804 338</b>	SPEEDY 3000	19	65	170	160	30.000	30

Also suited for pallets with only one retractable nipple.



9

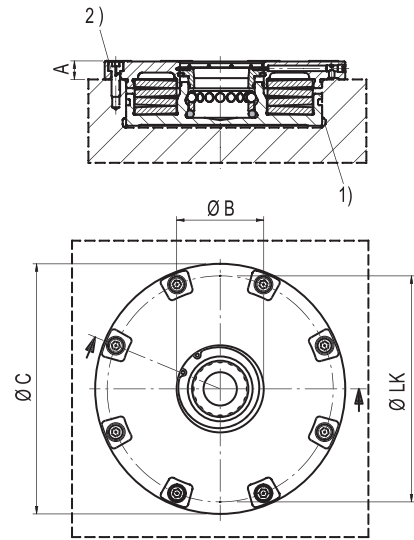
Pallet station with mounting towers, SPEEDY 1000 tubular set up and SPEEDY 1000 assembly



Mounting tower with SPEEDY 1000 round on the top side SPEEDY 1000 squared for central mounting



## SPEEDY *Tornado* 1000, 2000, 3000 round assembly module with raised supports and blow out ducts



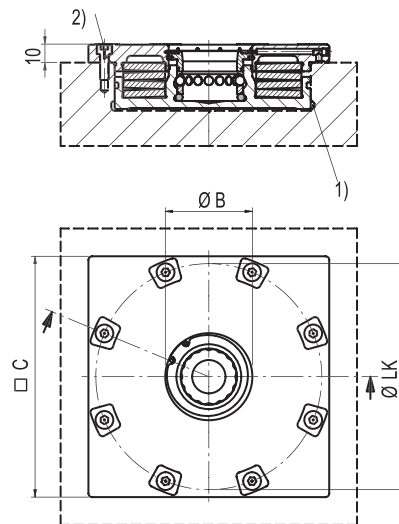
02 04 027

- 1) Hydraulic supply
- 2) Bolt with blow out

9

Order no.	Description	A	ØB	ØC	ØD	Insertion force [N]	Release hydr. pressure [bar]
<b>804 620</b>	SPEEDY <i>Tornado</i> 1000	10	32	105	92	6.722	40
<b>804 622</b>	SPEEDY <i>Tornado</i> 1000	10	32	105	92	10.000	80
<b>806 020</b>	SPEEDY <i>Tornado</i> 2000	10	47	135	122	20.000	40
<b>807 020</b>	SPEEDY <i>Tornado</i> 3000	19	65	176	160	30.000	30

## SPEEDY *Tornado* 1000, 2000, 3000 square assembly module with raised supports and blow out ducts



02 04 029

- 1) Hydraulic supply
- 2) Bolt with blow out

Order no.	Description	A	ØB	ØC	ØD	Insertion force [N]	Release hydr. pressure [bar]
<b>804 621</b>	SPEEDY <i>Tornado</i> 1000	10	32	100	92	6.722	40
<b>804 623</b>	SPEEDY <i>Tornado</i> 1000	10	32	100	92	10.000	80
<b>806 021</b>	SPEEDY <i>Tornado</i> 2000	10	47	130	122	20.000	40
<b>807 021</b>	SPEEDY <i>Tornado</i> 2000	19	65	170	160	30.000	30

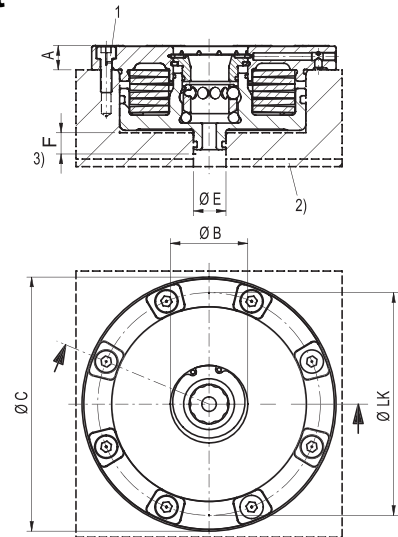




## SPEEDY *Tornado* 1000, 2000, 3000 round assembly module with raised supports, blow out ducts and drainage of coolant



- 1) Bolt with blow out
- 2) When laying the fast closing clamps flat on the machine table, the drainage of coolant must be assured by drilling groves or holes.
- 3) min. fitting length F



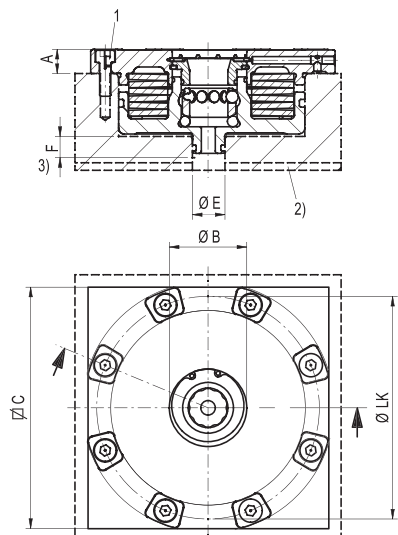
02 04 033

Order no.	Description	A	ØB	ØC	ØLK	ØE	F	Insertion force [N]	Release hydr. pressure [bar]
<b>804 630</b>	SPEEDY <i>Tornado</i> 1000	10	32	105	92	14	9	6.722	40
<b>804 632</b>	SPEEDY <i>Tornado</i> 1000	10	32	105	92	14	9	10.000	80
<b>806 022</b>	SPEEDY <i>Tornado</i> 2000	10	47	135	122	26	9	20.000	40
<b>807 030</b>	SPEEDY <i>Tornado</i> 3000	19	65	176	160	30	17	30.000	30

## SPEEDY *Tornado* 1000, 2000, 3000 square assembly module with raised supports, blow out ducts and drainage of coolant



- 1) Bolt with blow out
- 2) When laying the fast closing clamps flat on the machine table, the drainage of coolant must be assured by drilling groves or holes.
- 3) min. fitting length F

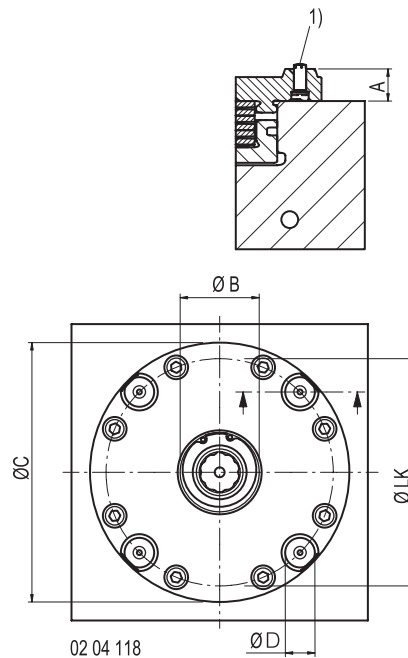


02 04 034

Order no.	Description	A	ØB	ØC	ØLK	ØE	F	Insertion force [N]	Release hydr. pressure [bar]
<b>804 631</b>	SPEEDY <i>Tornado</i> 1000	10	32	100	92	14	9	6.722	40
<b>804 633</b>	SPEEDY <i>Tornado</i> 1000	10	32	100	92	14	9	10.000	80
<b>806 023</b>	SPEEDY <i>Tornado</i> 2000	10	47	130	122	26	9	20.000	40
<b>807 031</b>	SPEEDY <i>Tornado</i> 3000	19	65	170	160	30	17	30.000	30



## SPEEDY *Twister* 1000, 2000 round assembly module with raised supports and blow out ducts

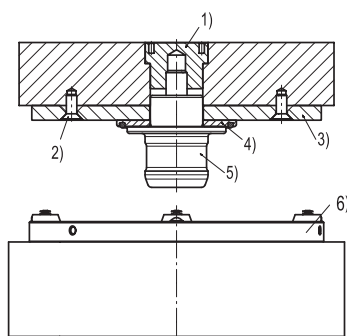


1) Blow out nozzle

9

Order no.	Description	A	ØB	ØC	ØD	Insertion force [N]	ØLK
<b>804 500</b>	SPEEDY <i>Twister</i> 1000	13	32	105	10	6.722	92
<b>804 540</b>	SPEEDY <i>Twister</i> 2000	13	47	140	12	20.000	122

## Sample application: SPEEDY *Twister* 1000, 2000



02 04 119

- 1) Nipple attachment
- 2) Screw DIN 7991
- 3) Hardened bearing face
- 4) Distance washer
- 5) Retractable nipple
- 6) SPEEDY *Twister*

SPEEDY *Twister* 1000, 2000 for permanent automatic operations.

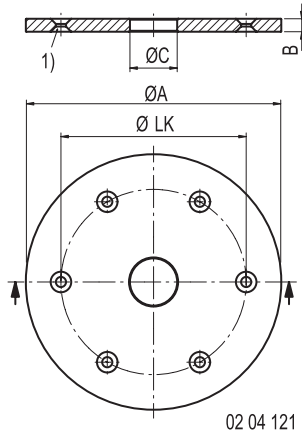
Retractable nipple with distance washer and hardened bearing face.

Advantages:

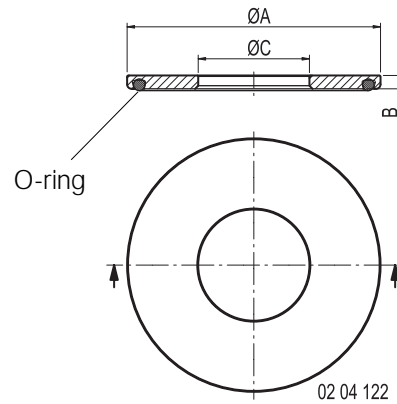
- reliable surface blow off
- no wear
- surface check via differential pressure, air barrier seals are possible



## Hardened bearing face



## Distance ring



1) Reduction for bolt DIN 7991

Order no.	suitable for	ØA	ØLK	B	ØC	1)
<b>804 510</b>	SPEEDY <i>Twister</i> 1000	105	70	5	25	M5
<b>804 272</b>	SPEEDY <i>Twister</i> 1000	105	70	5	16	M5
<b>804 281</b>	SPEEDY <i>Twister</i> 2000	138	100	7	25	M5

Order no.	suitable for	ØA	B	ØC
<b>804 269</b>	SPEEDY <i>Twister</i> 1000	42	3	25
<b>804 271</b>	SPEEDY <i>Twister</i> 1000	42	3	16
<b>804 280</b>	SPEEDY <i>Twister</i> 2000	57	3	25



Example: SPEEDY *Twister* 1000 special solution for a tight stitch length.



Raised support with blow out ducts

The SPEEDY *Twister* with raised blowers is used in the automation technology.

Practical advantages:

- Intelligent blow out and blow off technologies for the mounting points and the bolt hole
- Applications in automated palletizing systems.
- Support check with differential pressure, air-to-lock possible



Practical example: Layout 4/5 axis table with SPEEDY 1000 square.

9



Fast closing clamp plate with 4 pcs of flushed SPEEDY assembly round 1000.



Norm pallet with built-in fast closing clamps and flushed SPEEDY assembly 1000 round.



Fast closing clamp plate with SPEEDY assembly 3000 square for 4/5 axis machines.



Fast closing clamp plate for 5 axis table with sealing frame and SPEEDY assembly 1000 round.



Fast closing clamp plate with SPEEDY assembly 1000 round with mounting holes for machine table.



Fast closing clamp plate with SPEEDY assembly 2000, flushed.

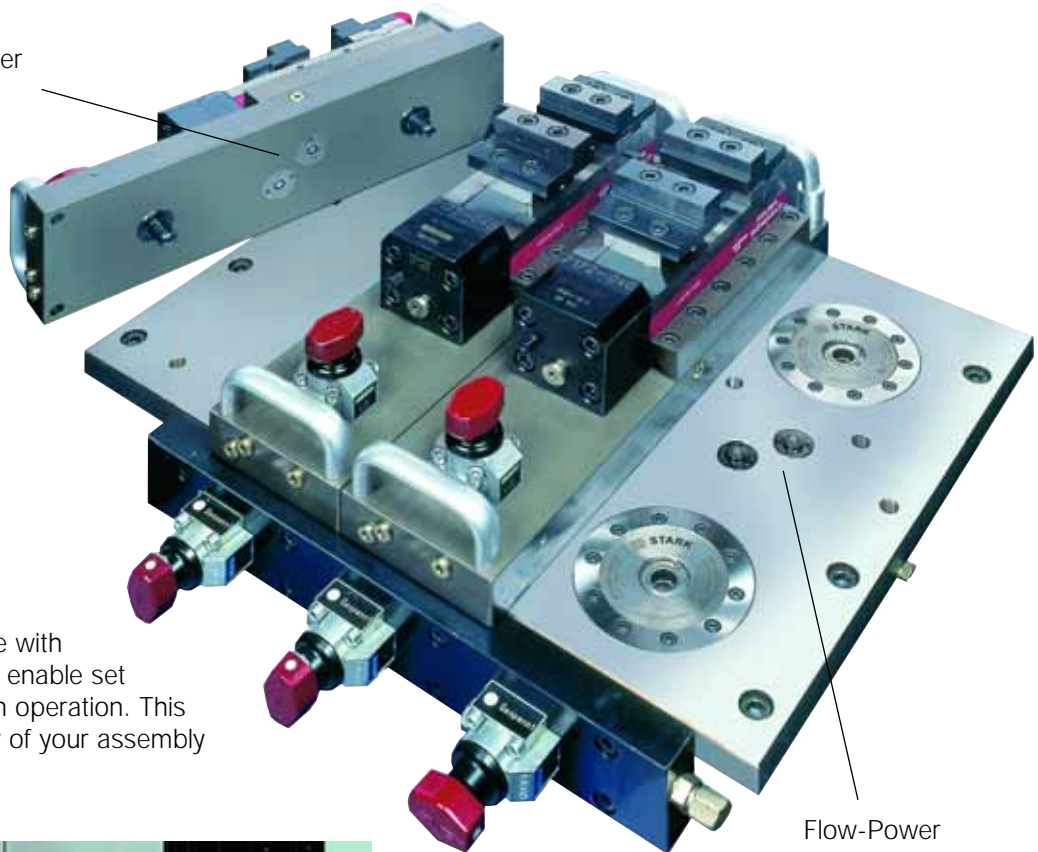




Flow-Power

Set up external of the machine

Hydraulic universal-device with zero point clamp system, enable set up while the machine is in operation. This increases the productivity of your assembly line.



Flow-Power

9



Using the machine.



Rotation clamp device with 4 compact clamps. The compact built enables set up without collisions.



## SPEEDY Sweeper 2000



STARK Zero Point clamping system with blow off and integrated mount control for automated production and manual applications.

### Free of swarf for automated production lines

Swarf and refuse always place obstacles in the way of palletizing equipment. STARK's new *Sweeper* solves this problem. The blow off system, the central lock and bearing face blow off, maximize the level of production safety.

- Fully automatic mounting
- Safe automatic operations
- Protected against dirt build up with the blow out and blow off of bearing faces. Central lock blow off, readied for bearing face sad lock checks.

### With integrated mount control

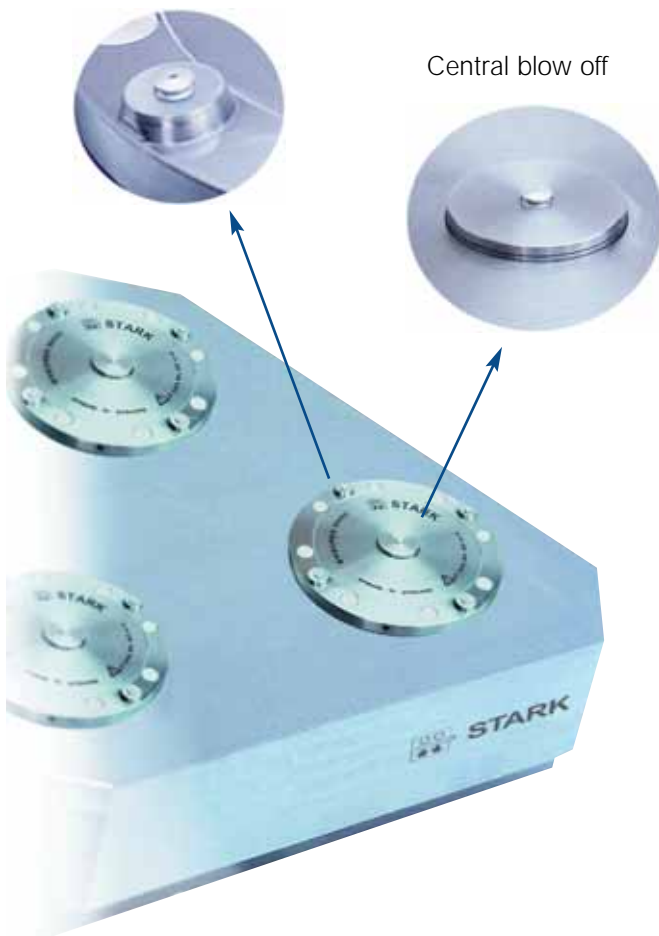
The newly designed SPEEDY *Sweeper* has an additional advantage. The air escaping through the nozzles can be gauged with a differential pressure switch. This enables an exact control of the mount pressure.

Another technical masterpiece feature of this system is its jam-free handling. The clamps are opened wide under pressure and lifted off from their fittings. This makes the equipment easy to mount or remove.

Sample application:

Mount with blow off nozzle

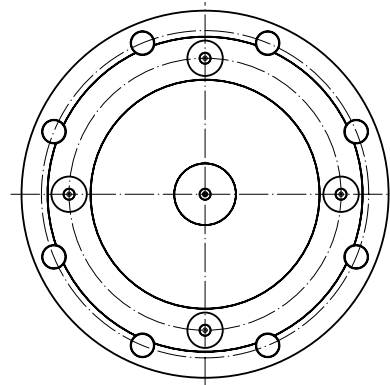
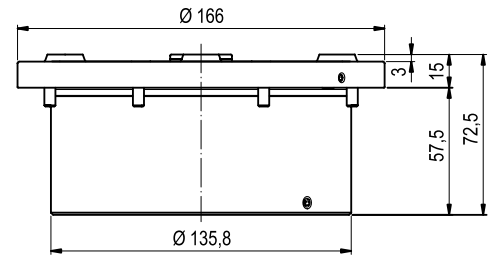
Central blow off





## SPEEDY Sweeper 2000

Clamping module with central lock and raised face blow off



Order no.	Insertion force [N]	Release hydr. pressure [bar]	Min. pressure for blow out [bar]
<b>809 100</b>	20'000	50	6

- Flange connections
- Retractable nipples see page 54

9

Further system sizes upon request, also available with media ducts.



Sweeper 2000 in a practical application

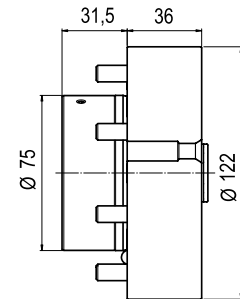
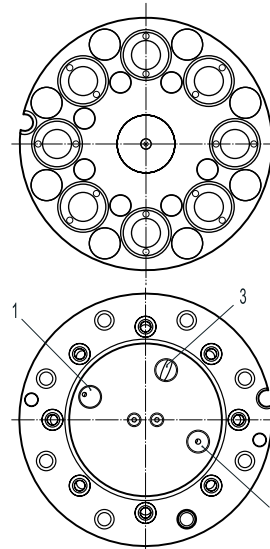




## SPEEDY Sweeper – multiple coupling

### Coupling support plate

The hydraulic, double acting coupling support plate is equipped with a central lock and prevents dirt from entering. At the same time, swarf is blown off from the coupling support plate. The coupling support plate can be decoupled under pressure.



- 1) Clamping oil connection
- 2) Releasing oil connection
- 3) Air connection

9

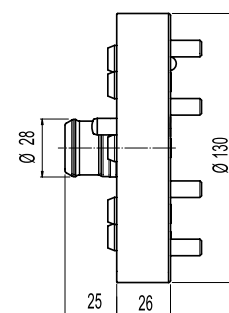
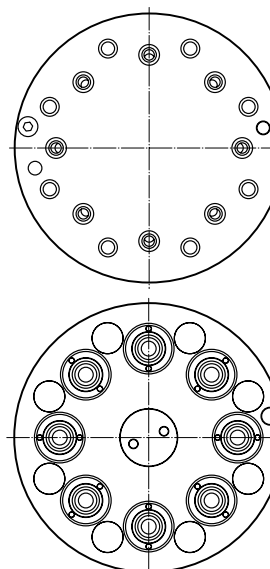
Order no.	Description	Insertion force at 300 bar [N]	max. operating pressure for clamping/releasing [bar]	min. pressure for blow off [bar]	max. pressure at 4x NW 5 [bar]
<b>809 200</b>	with 8 ducts NW 5	max. 20'000	300	6	300
<b>809 204</b>	with 4 ducts NW 5	max. 20'000	300	6	300

Coupling force  $F [N] = 15,4 \times p [\text{bar}] \times n$

Depending on the coupling force and the application, the operating pressure should be reduced to the minimum necessary. Stark will give you the required advice.

n = Number of lines under pressure when coupled

### Nipple support plate



Order no.	Description	max. operating pressure for clamping/releasing [bar]	max. pressure at 4x NW 5 [bar]
<b>809 220</b>	with 8 ducts NW 5	300	300
<b>809 224</b>	with 4 ducts NW 5	300	300

Sweeper couplings can be combined with the Sweeper fast closing clamp.





## Flow-Power assembly variations



1-fold



2-fold



3-fold



4-fold

SPEEDY fast closing clamp with flow-power to switch within seconds hydraulic devices with media feeds for oil, air, water ...

The media ducts can be freely positioned on the SPEEDY.

## Examples



Assembly example with comparison of media feed size.



Flow-Power NW4

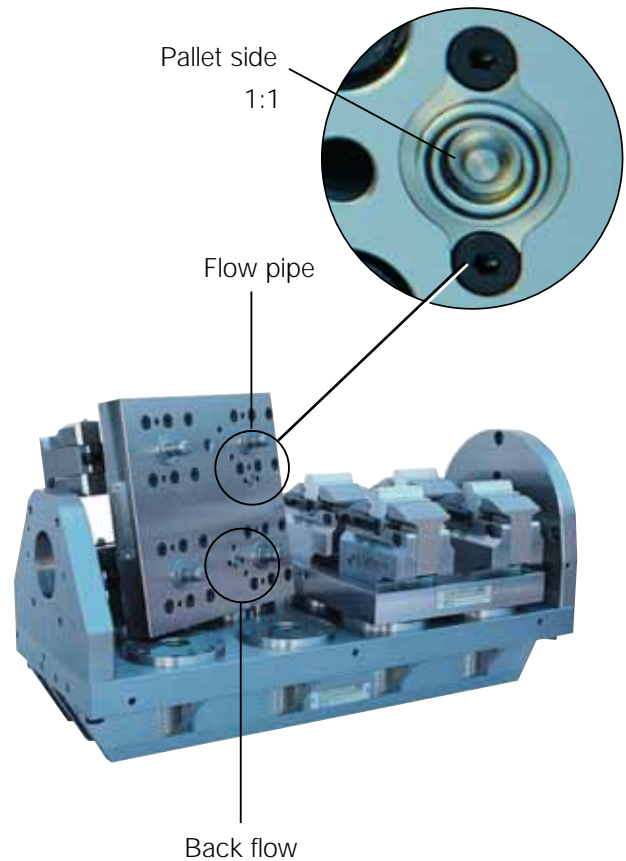


HILMA Mini-Clamp, equipped with a retractable nipple for clamping to the Stark-fast mount system incl. Flow-Power ducts.

## 4-axis worktable

Equipped with Flow-power for hydraulic clamping.

For additional rotation and slewing, the mounting devices are expandable to process 5 - 6 - 7 axis.



Closing the fast clamping cylinders, SPEEDY automatically positions the Flow-Power ducts. No additional work step has to be taken.



## Technical Data



SPEEDY side

Pallet side

The Flow-Power may only be positioned without any pressure being applied.

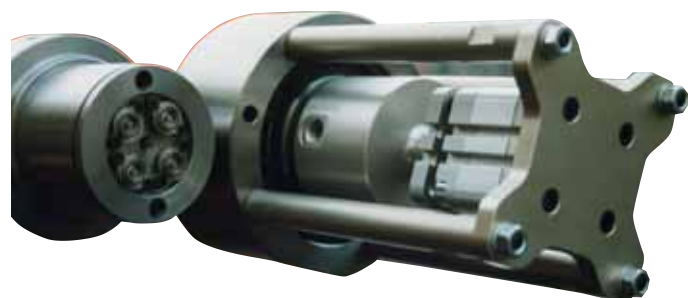
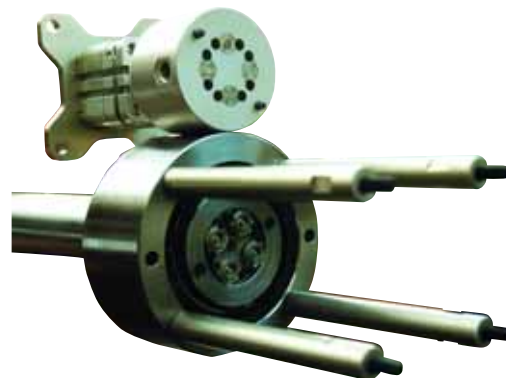
**Attention:** Pallets equipped with Flow-power (pallet-side) may not be put under pressure if not coupled.

A concentric prepositioning of  $\varnothing 0.2$  mm is required.

Both Flow-power devices are closed when decoupled

Min. coupling force	250 N
Max. permitted pressure	200 bar
Max. flow rate	28 l/min.
using HP 46 hydraulic oil	

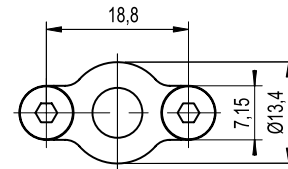
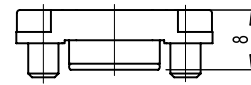
10



Practical example: Coupling unit



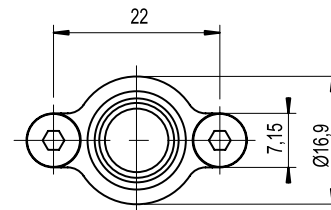
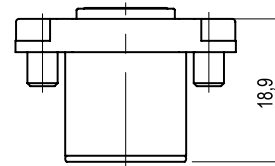
## Flow-Power NW4 SPEEDY-side



02 04 042

Order no.	Description
<b>704 200</b>	Flow-Power NW4, SPEEDY-side

## Flow-Power NW4 pallet-side

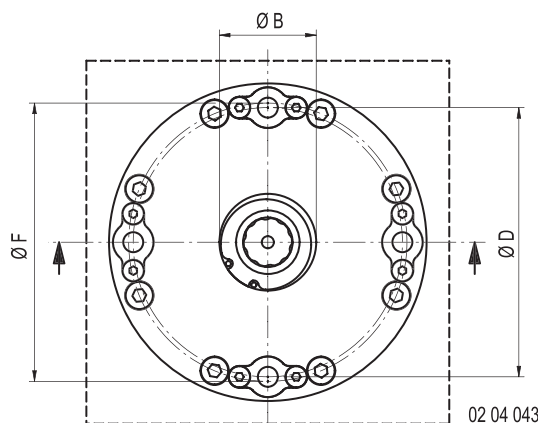
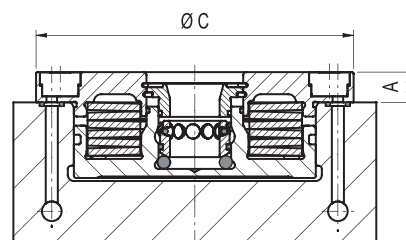


02 04 041

Order no.	Description
<b>704 201</b>	Flow-Power NW4, pallet-side



## SPEEDY 1000, 2000 round with up to 4 Flow-Power ducts NW4



10

Order no.	A	ØB	ØC	ØD	ØF	Insertion force [N]	Description	Flow-Power ducts
<b>704 301</b>	10	32	105	89	92	6.722	SPEEDY 1000 round	1
<b>704 302</b>	10	32	105	89	92	6.722	SPEEDY 1000 round	2
<b>704 303</b>	10	32	105	89	92	6.722	SPEEDY 1000 round	3
<b>704 304</b>	10	32	105	89	92	6.722	SPEEDY 1000 round	4
<b>704 305</b>	10	32	105	89	92	10.000	SPEEDY 1000 round	1
<b>704 306</b>	10	32	105	89	92	10.000	SPEEDY 1000 round	2
<b>704 307</b>	10	32	105	89	92	10.000	SPEEDY 1000 round	3
<b>704 308</b>	10	32	105	89	92	10.000	SPEEDY 1000 round	4
<b>704 321</b>	10	47	135	119	122	20.000	SPEEDY 2000 round	1
<b>704 322</b>	10	47	135	119	122	20.000	SPEEDY 2000 round	2
<b>704 323</b>	10	47	135	119	122	20.000	SPEEDY 2000 round	3
<b>704 324</b>	10	47	135	119	122	20.000	SPEEDY 2000 round	4





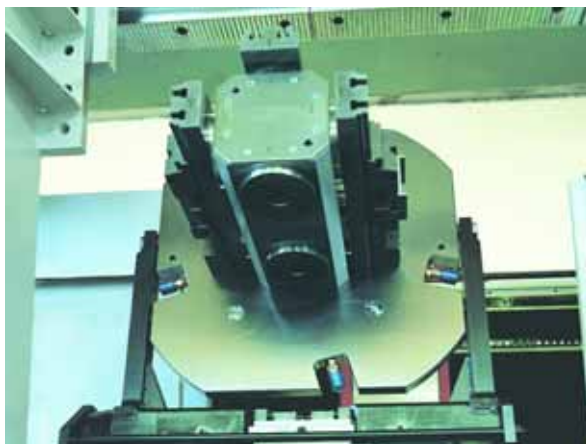
Stark develops and manufactures mounting towers according to your specifications or dimensioned drawings.

Advantages for you:

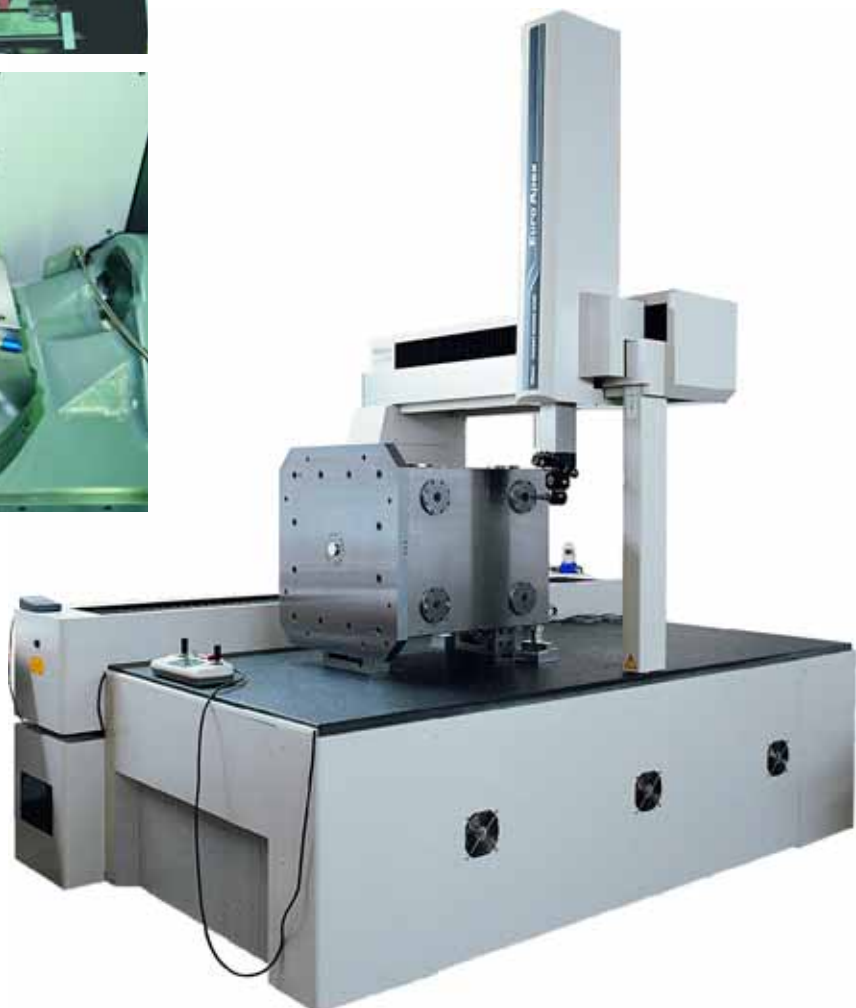
- Compatible with your CAD-data
- A single partner for the total development process
- In-house engineering
- QM-protocol on delivery for your quality management
- Air-conditioned measuring room with modern measuring equipment



Mounting tower with 16 SPEEDY 1000.



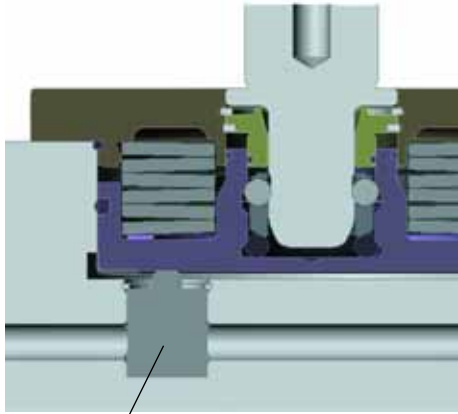
Example:  
Measuring a clamping cube, equipped with SPEEDY 1000.



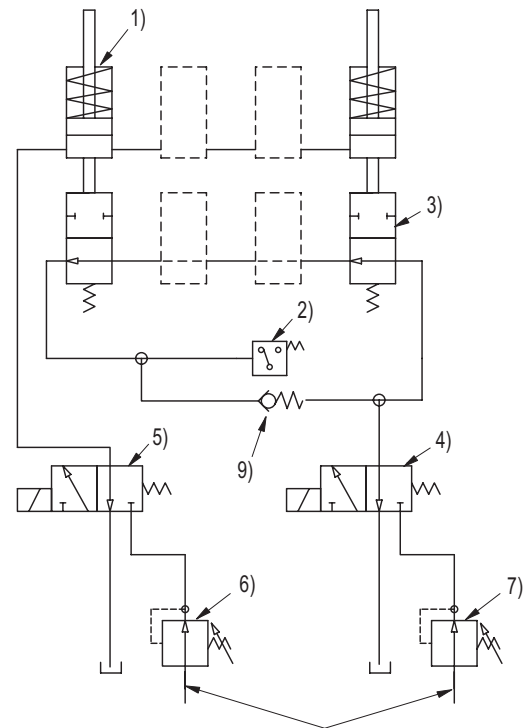


## Locking controls

### Mechanical locking control valves



Locking control valve



02 04 114

8)

- 1) SPEEDY
- 2) Pressure switch for clamp signal
- 3) Clamp control valve
- 4) Hydraulic valve for clamp control
- 5) Hydraulic valve to release SPEEDY
- 6) Pressure limiting valve, 40 bar
- 7) Pressure limiting valve, 8 bar
- 8) Lubrication from the machine
- 9) Check valve (bypass)

11

Order no.	Description
<b>704 210</b>	Locking control valve

Further check variations upon request.



Clamp control is mandatory for all rotation machines according to DIN-regulations.

Surface plate with SPEEDY 2000 and clamp control valve.

# Shut-off valve



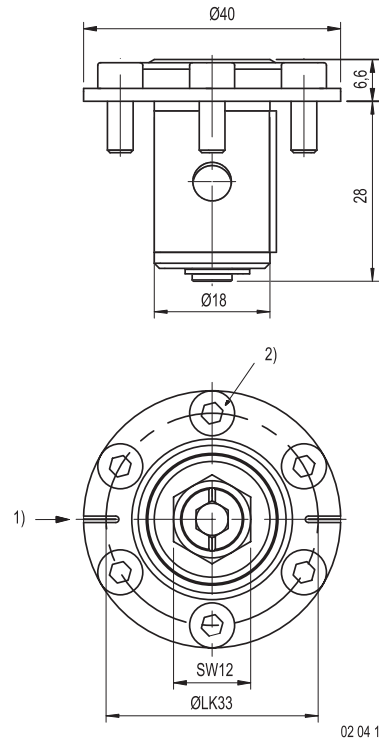
**STARK**

## Shut-off valve for installation in fast closing clamp-plates



Shut-off valve for installation in fast closing clamp-plates to shut off individual clamping circuits.

Order no.	Description
<b>804 799</b>	Shut-off valve
	Key included



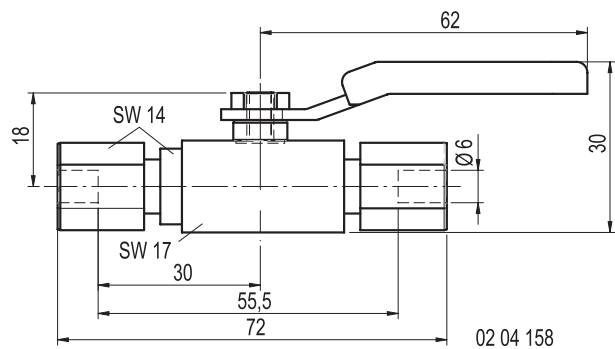
- 1) Mark for flow
- 2) Fillister-head screws M4

11

## Control valve with ball valve to piping ø 6/4



Order no.	Description
<b>999 104</b>	Control valve with ball valve to piping



SPEEDY 1000 assembly, 8-fold with pipe system and shut off valve to shut off clamping circuits.

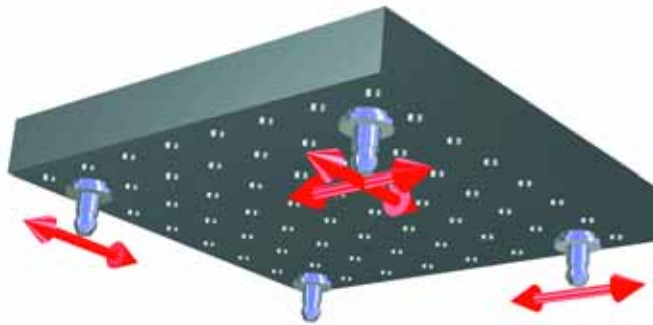


The critical contrasts between "stable clamping" and the required "flexibility for heat expansion" have been ideally solved with the Stark zero point mounting system.

There are 3 different retraction nipples:

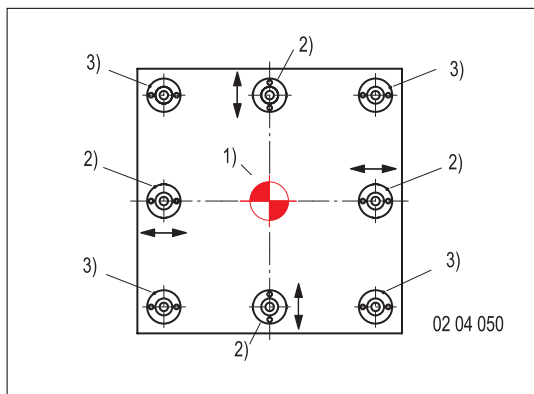
- a) Retraction nipple with zero point
- b) Retraction nipple with equalizer
- c) Retractable nipple without centering that can solve this problem.

Independent of the size of the pallet during the processing there is always the same zero point. The position of the retraction nipple with the zero point can be determined by yourself.

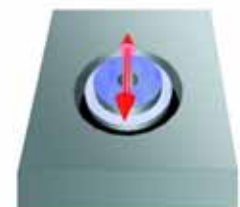
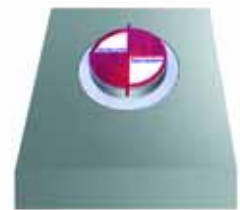


## Examples:

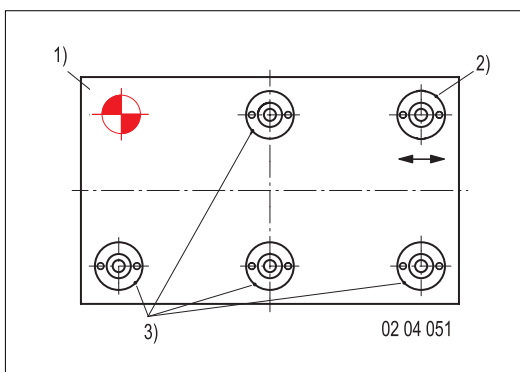
Here the retraction nipple with the zero point is in the middle of the pallet.



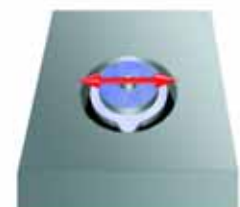
- 1) Retractable nipple with centering
- 2) Retractable nipple with equalizer
- 3) Retractable nipple without centering



Here the retraction nipple with the zero point is in the upper left corner of the pallet.



- 1) Retractable nipple with centering
- 2) Retractable nipple with equalizer
- 3) Retractable nipple without centering



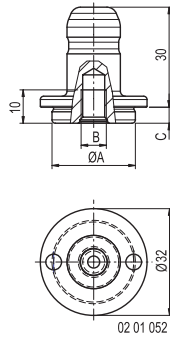


# Retractable nipples



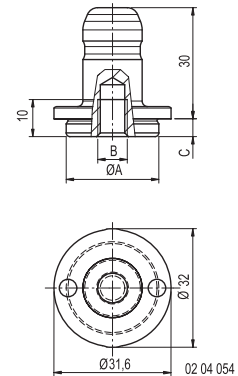
# STARK

## Retractable nipple with zero point for SPEEDY 1000



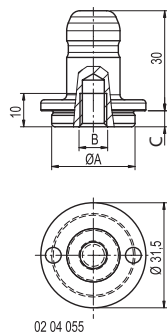
Order no.	ØA	B	C
<b>804 209</b>	25	M 8	4,8
<b>804 219</b>	16	M 8	4,8
<b>804 226</b>	25	M 8	19,8
<b>804 228</b>	16	M 8	19,8

## Retractable nipple with equalizer for SPEEDY 1000



Order no.	ØA	B	C
<b>804 230</b>	25	M8	4,8
<b>804 232</b>	16	M8	4,8
<b>804 234</b>	25	M8	19,8
<b>804 236</b>	16	M8	19,8

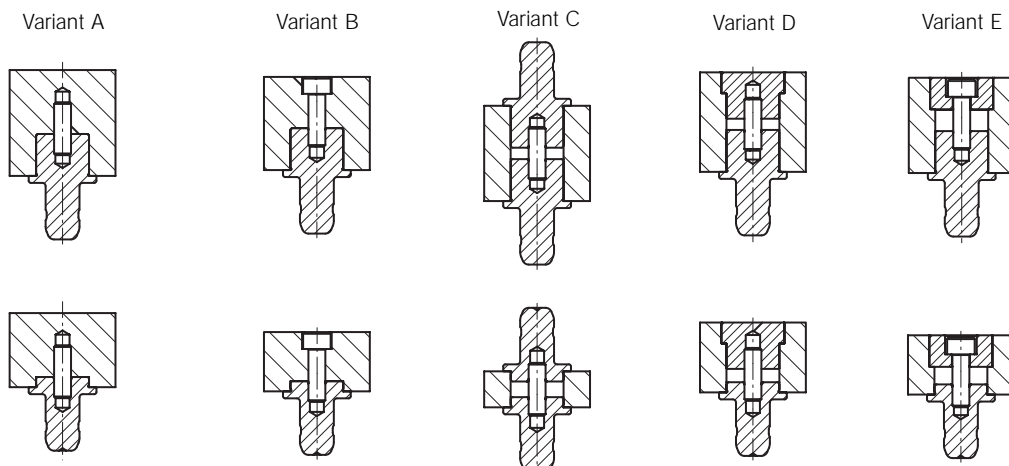
## Retractable nipple without centering for SPEEDY 1000



Order no.	ØA	B	C
<b>804 238</b>	25	M8	4,8
<b>804 240</b>	16	M8	4,8
<b>804 242</b>	25	M8	19,8
<b>804 244</b>	16	M8	19,8

12

## Mounting examples



A and C are not possible with compensating variants.

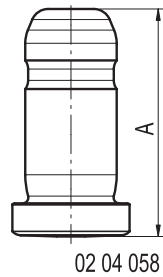
# Retractable nipples



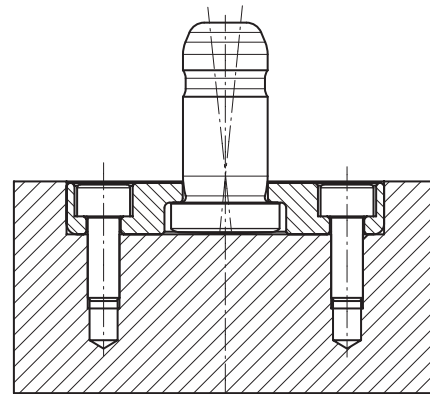
**STARK**

## Retractable nipple for SPEEDY 1000 with flange

## Mounting example - retractable nipple with flange



02 04 058



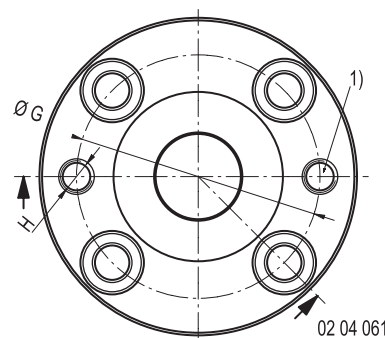
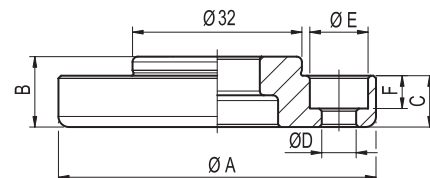
02 04 057

Order no.	A	suitable for
<b>801 004</b>	39,8	Flange $\varnothing$ 60 SPEEDY 1000
<b>801 009</b>	44,8	Flange $\varnothing$ 68 SPEEDY 1000

The retractable nipple is mounted flexibly to prevent jamming during a change of pallet (especially for heavy work pieces and large pallettes). It is used for the retraction phase of the pallet or workpiece only. Positioning and centering are done through zero point and equalization flange.

## Zero point flange for SPEEDY 1000

12



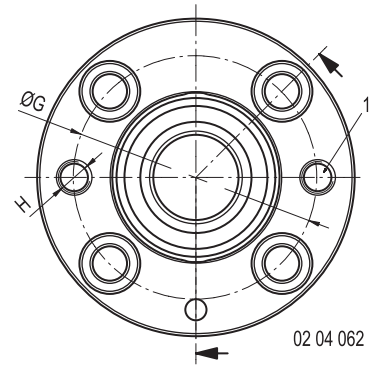
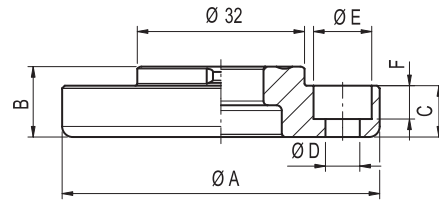
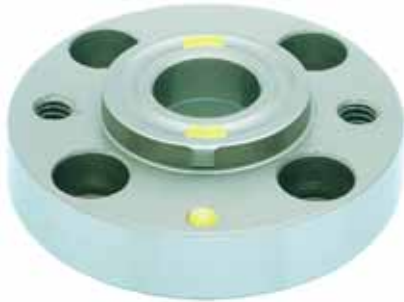
02 04 061

1) Tapped holes for extracting the press fit flange

Order no.	$\varnothing$ A	B	C	$\varnothing$ D	$\varnothing$ E	F	$\varnothing$ G	H	suitable for
<b>801 006</b>	60	13,3	9,7	6,5	11	6,3	46	M6	SPEEDY 1000
<b>801 010</b>	68	18,3	14,7	8,5	13,5	8,2	50	M8	SPEEDY 1000



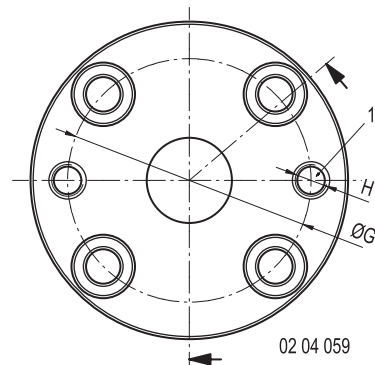
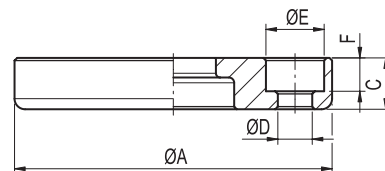
## Equalizing flange for SPEEDY 1000



1) Tapped holes for extracting the press fit flange

Order no.	ØA	B	C	ØD	ØE	F	ØG	H	suitable for
<b>801 007</b>	60	13,3	9,7	6,5	11	6,3	46	M6	SPEEDY 1000
<b>801 011</b>	68	18,3	14,7	8,5	13,5	8,2	50	M8	SPEEDY 1000

## Retraction flange for SPEEDY 1000

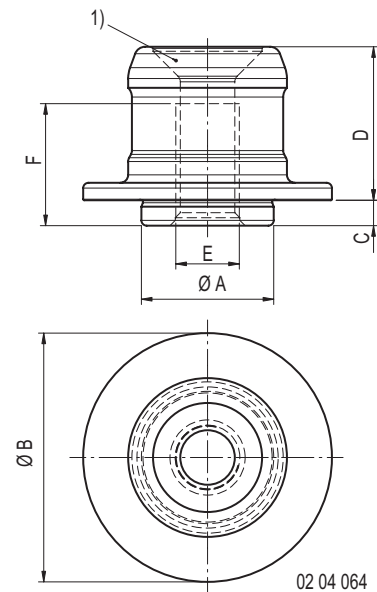


1) Tapped holes for extracting the press fit flange

Order no.	ØA	C	ØD	ØE	F	ØG	H	suitable for
<b>801 008</b>	60	9,7	6,5	11	6,3	46	M6	SPEEDY 1000
<b>801 012</b>	68	14,7	8,5	13,5	8,2	50	M8	SPEEDY 1000



## Retractable nipple with zero point for SPEEDY 2000, 3000



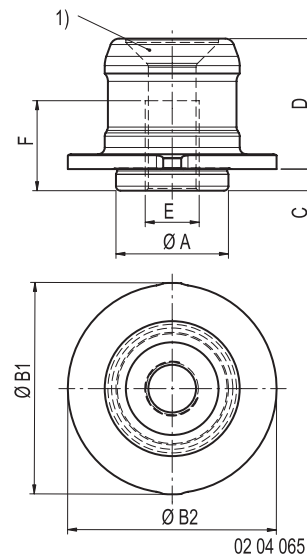
1) Recess for countersunk bolt DIN 7991

Order no.	ØA	ØB	C	D	E	F	Hexagon socket screw	Tightening torque [Nm]	suitable for
<b>804 470</b>	25	47	4,8	29	M12	20	M10 DIN 7991 / 10.9	45	SPEEDY 2000
<b>804 474</b>	25	47	14,8	29	M12	20	M10 DIN 7991 / 10.9	45	SPEEDY 2000
<b>804 290</b>	32	65	7,8	46	M16	25	M12 DIN 7991 / 10.9	75	SPEEDY 3000
<b>804 291</b>	25	65	7,8	46	M16	25	M12 DIN 7991 / 10.9	75	SPEEDY 3000

Other diameters (Ø A) upon request.

12

## Retractable nipple with equalizer for SPEEDY 2000, 3000



1) Recess for countersunk bolt DIN 7991

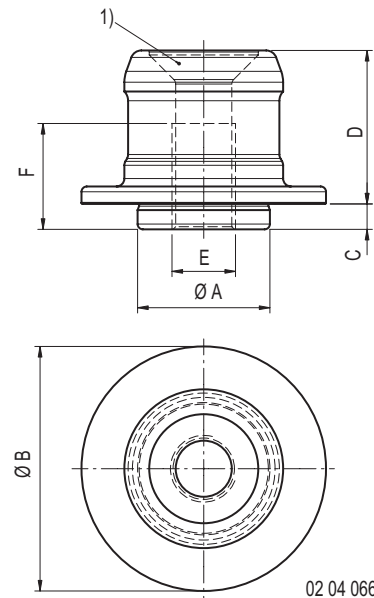
Order no.	ØA	ØB1	ØB2	C	D	E	F	Hexagon socket screw	Tightening torque [Nm]	suitable for
<b>804 471</b>	25	47	46,4	4,8	29	M12	20	M10 DIN 7991 / 10.9	45	SPEEDY 2000
<b>804 476</b>	25	47	46,4	14,8	29	M12	20	M10 DIN 7991 / 10.9	45	SPEEDY 2000
<b>804 292</b>	32	65	64,2	7,8	46	M16	25	M12 DIN 7991 / 10.9	75	SPEEDY 3000
<b>804 293</b>	25	65	64,2	7,8	46	M16	25	M12 DIN 7991 / 10.9	75	SPEEDY 3000

Other diameters (Ø A) upon request.





## Retractable nipple without centering for SPEEDY 2000, 3000



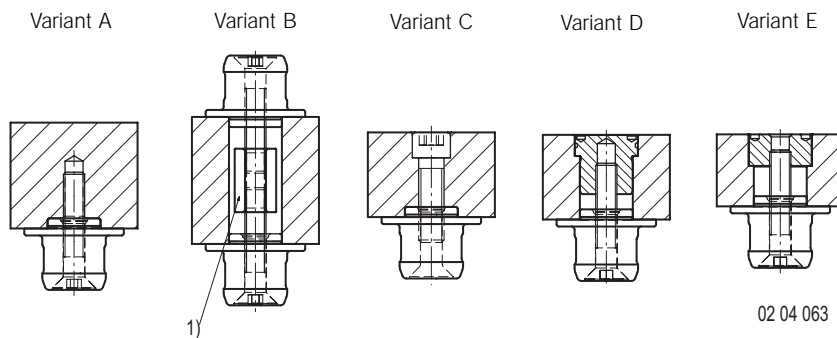
02 04 066

1) Recess for countersunk bolt DIN 7991

Order no.	ØA	ØB	C	D	E	F	Hexagon socket screw	Tightening torque [Nm]		suitable for
								A,B,D,E	C	
<b>804 472</b>	25	46,2	4,8	29	M12	20	M10 DIN 7991 / 10.9	45	55	SPEEDY 2000
<b>804 478</b>	25	46,2	14,8	29	M12	20	M10 DIN 7991 / 10.9	45	55	SPEEDY 2000
<b>804 294</b>	32	64	7,8	46	M16	25	M12 DIN 7991 / 10.9	75	110	SPEEDY 3000
<b>804 295</b>	25	64	7,8	46	M16	25	M12 DIN 7991 / 10.9	75	110	SPEEDY 3000

Other diameters (Ø A) upon request.

## Mounting examples



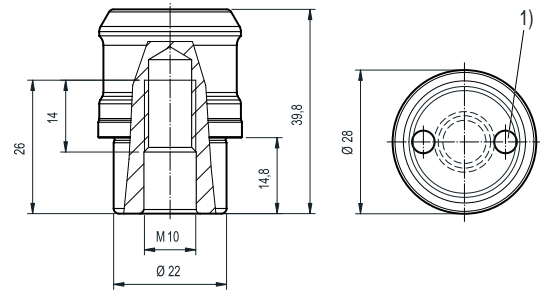
1) Nut DIN 6334

## Retractable nipples



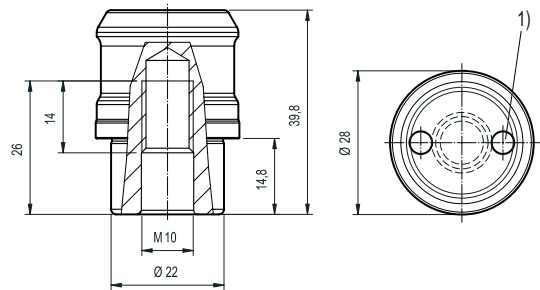
**STARK**

### Retractable nipple with zero point for SPEEDY Sweeper 2000



Order no.	Description
<b>804 490</b>	Retractable nipple with zero point

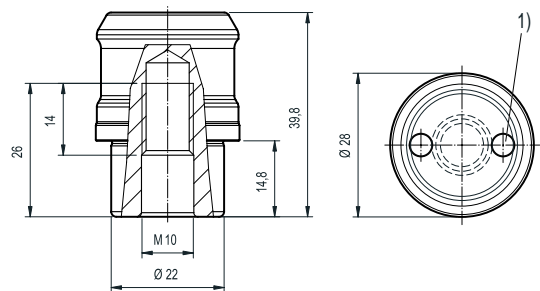
### Retractable nipple with equalizer for SPEEDY Sweeper 2000



Order no.	Description
<b>804 495</b>	Retractable nipple with equalizer

12

### Retractable nipple without centering for SPEEDY Sweeper 2000



Order no.	Description
<b>804 485</b>	Retractable nipple without centering

1) For insertion, use the retractable nipple key!  
Tightening torque 75 Nm

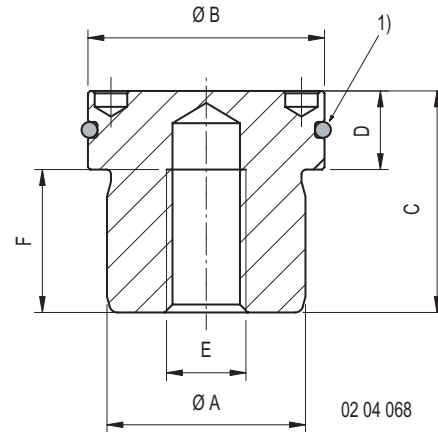
### Retractable nipple key

Order no.	Description
<b>804 247</b>	Retractable nipple key to tighten the <i>Sweeper</i> nipples





## Nipple fastening for variant D



1) O-ring

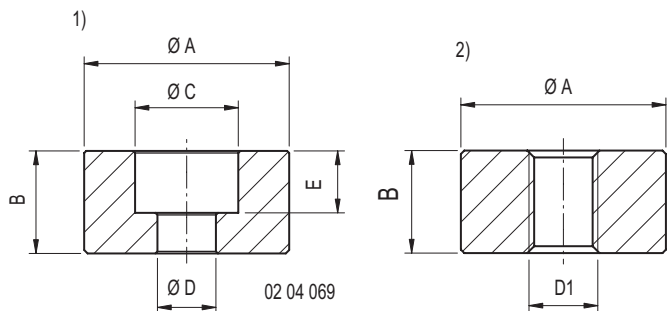
Order no.	ØA	ØB	C	D	E	F	suitable for
<b>804 252</b>	25	29,8	21,9	9,9	M8	13	SPEEDY 1000
<b>804 253</b>	16	19,8	21,9	9,9	M8	13	SPEEDY 1000
<b>804 267</b>	25	29,8	21,9	9,9	M10	13	SPEEDY 2000
<b>804 262</b>	32	37,8	27,9	9,9	M12	18	SPEEDY 3000
<b>804 263</b>	25	29,8	27,9	9,9	M12	18	SPEEDY 3000

## Nipple fastening for variant E



1) for Speedy 1000

2) for Speedy 2000 and 3000



Order no.	ØA	B	ØC	ØD	F	suitable for
<b>804 250</b>	29,8	14,9	15	8,5	9	SPEEDY 1000
<b>804 251</b>	19,8	14,9	15	8,5	9	SPEEDY 1000
<b>804 249</b>	34,8	14,9	15	8,5	9	SPEEDY 1000
<b>804 266</b>	29,8	14,9	-	M10	-	SPEEDY 2000
<b>804 264</b>	37,8	17,9	-	M12	-	SPEEDY 3000
<b>804 265</b>	29,8	17,9	-	M12	-	SPEEDY 3000



The pressure booster converts air pressure into hydraulic pressure for all ranges between 30 and 110 bar.

The pressure booster is available with or without "third hand" function (DHF). A hydraulic hose of 1,5 m length is included in the delivery (other hose length available on request).

## Pressure booster with "third hand" function (DHF) - click on, release and clamping

Pressure boosters with "third hand" function (DHF) keep the workpiece or pallet 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 can be performed more rapidly and more safely.

Existing pressure boosters without "third hand" function (DHF) can be rapidly and straightforwardly upgraded using a conversion kit. The upgrade can be performed on your premises or in our service centre.

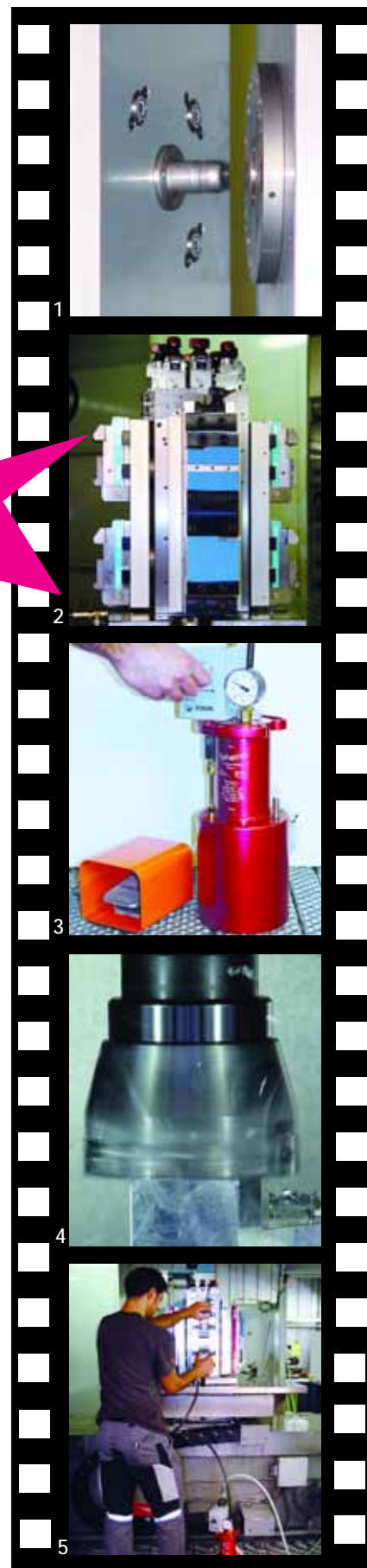


### Outstanding advantages on vertical, horizontal and "overhead" clamping

- Can be upgraded to all systems
- Increased safety during clamping
- Secures pallets and jigs against falling out
- Simple depositing of pallets or workpiece clamping using robots: move in - engage - release
- Overhead workpiece clamping possible
- Pre-adjustable retention and clamping pressure
- User-friendly
- Not necessary to apply force when removing the jig
- Can also be realised using the machine functions

### Mounting made easy

- 1 Click on the pallette
- 2 Release the pallette
- 3 Clamp
- 4 Process the workpiece
- 5 Change the pallette



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**Pressure booster 30 - 110 bar**



**Pressure booster RECORD 40 bar (oil volume 0,31 l)**

Order no.	releases max. [pcs]	system pressure [bar]	air pressure [bar]
<b>804 411</b>	14 SPEEDY, 6.722 N	40	6
	7 SPEEDY, 20.000 N	40	6
<b>804 418</b>	14 SPEEDY, 6.722 N, with DHF	40	6
	7 SPEEDY, 20.000 N, with DHF	40	6



**Pressure booster RECORD 80 bar (oil volume 0,148 l)**

Order no.	releases max. [pcs]	system pressure [bar]	air pressure [bar]
<b>804 412</b>	7 SPEEDY, 10.000 N	80	6
<b>804 429</b>	7 SPEEDY, 10.000 N, with DHF	80	6



**Pressure booster KOLOSS 40 bar (oil volume 0,8 l)**

Order no.	releases max. [pcs]	system pressure [bar]	air pressure [bar]
<b>804 413</b>	36 SPEEDY, 6.722 N	40	6
	18 SPEEDY, 20.000 N	40	6
	6 SPEEDY, 30.000 N	30	4,5
<b>804 431</b>	36 SPEEDY, 6.722 N, with DHF	40	6
	18 SPEEDY, 20.000 N, with DHF	40	6
	6 SPEEDY, 30.000 N, with DHF	30	4,5



**Pressure booster KOLOSS 110 bar (oil volume 0,29 l)**

Order no.	releases max. [pcs]	system pressure [bar]	air pressure [bar]
<b>804 414</b>	12 SPEEDY, 10.000 N	80	6
<b>804 430</b>	12 SPEEDY, 10.000 N, with DHF	80	6

For SPEEDY 1000 mit 10.000 N retraction force should be reduced to 4,6 bars. This results in a hydraulic pressure of 80 bars.



**Treadle to pressure booster (replaces manual operation)**

Order no.	Description
<b>804 419</b>	Treadle to pressure booster incl. pneumatic hose and connections

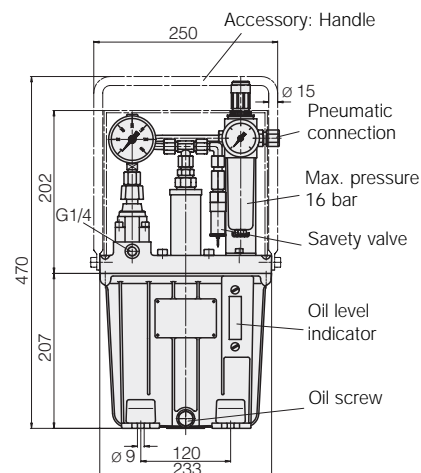
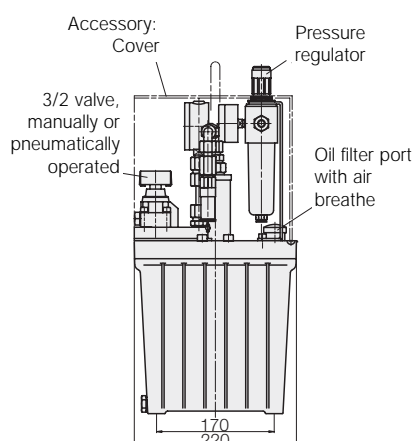


**Third Hand function controls**

Order no.	Description
<b>804 428</b>	The Third Hand function controls are in the housing with the ratchet foot pedal incl. pneumatic hose



## Hydraulic clamping pump



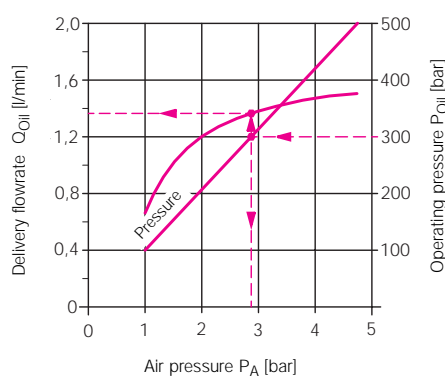
### Application

The hydraulic clamping pump is particularly suitable for small to medium-sized clamping and mounting devices having single-acting cylinders which operate primarily by intermittence (pressure build-up and pressure holding). As the power supplied is compressed air, they can be used without restriction in hazardous surroundings.

### Description

The tandem plunger pump is built into the oil reservoir in a space-saving manner. It operates with oscillating movements and automatic stroke reversal control by a pilot-operated 4/2 valve. The stroke frequency, and consequently the delivery flow rate depend on the air pressure and the hydraulic counterpressure.

Delivery flow rate without counterpressure



### Example:

To get the operating pressure  $P_{Oil} = 300$  bar, an air pressure of  $P_A = 2.8$  bar is set on the pressure regulator. The delivery flow rate  $Q_{Oil}$  without counterpressure is 1.35 l/min.

### Control variants

#### Hand-operated 3/2 valve

This valve is equipped with a turning handle for direct operation on the unit.

#### Pneumatically operated 3/2 valve

This valve is mounted on the unit allowing for pneumatic remote control which, however, requires an additional pilot valve (accessory). According to the length of the pneumatic piping between both valves, there is a longer or shorter time delay for the clamping and unclamping operation.

#### Without valve (for remote control)

This type is designed for external valve control connected with a pressure and return line each. The clamping pump keeps the set pressure constant.

A valve must never be used for depressurized circulation as the pump only serves for intermittent operation

### Technical data

Max. delivery flow rate	[cm <sup>3</sup> /s]	25
	[l/min]	1,5
Max. operating pressure	[bar]	500
Min. operating pressure	[bar]	100
Max. air pressure	[bar]	4,7
Min. air pressure	[bar]	1,0
Transmission ratio		1:108
Max. air consumption	[l/min]	1200
Min. control pressure for pneumatic valve	[bar]	3
Max. charge	[l]	4,0
Usable oil volume	[l]	1,8
Viscosity range	[m <sup>2</sup> /s]	10...500
Recomm. viscosity grade as per DIN 51519		ISO VG 22
Recomm. hydraulic oil as per DIN 51524		HLP 22
Noise level	[dBA]	78
Weight	[kg]	20

### Delivery circuit

The units are delivered complete and ready for connection. On the pneumatic side there is a service unit with pressure reducer, filter and oiler. An additional pressure relief valve prevents increase of pressure over 4.8 bar, and thus operating pressures over 500 bar on the hydraulic side.

Order no.

Pump with hand-oper. valve	<b>8600-110</b>
Pump with pneumatic valve	<b>8600-111</b>
Pump without valve	<b>8600-112</b>

### Accessories

Handle	<b>0353-217</b>
Cover	<b>0353-714</b>

### Accessories for remote control of 8600-112

Hand lever valve with catch	<b>3812-005</b>
Sound absorber for hand lever valve	<b>3887-015</b>
Foot valve	<b>0381-206</b>
with catch incl.	
Air hose NW 6	<b>3890-059</b>
Screwed socket G1/4	<b>3890-071</b>
Hose clamp	<b>3890-076</b>

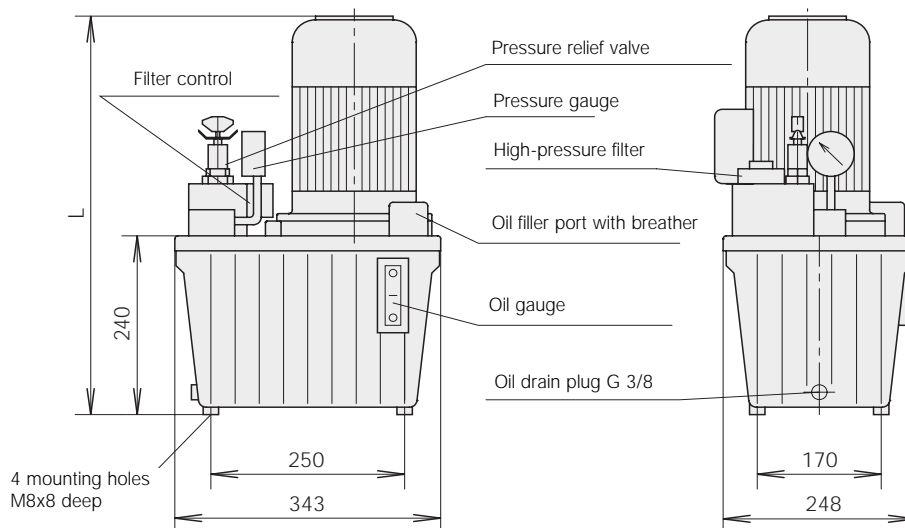
### Example for ordering



Pump with hand-operated valve	<b>8600-110</b>
Handle	<b>0353-217</b>
Cover	<b>0353-714</b>



## Pumping set, electric



### General characteristics

Design: 81XX-gear pump  
82XX-radial piston pump 8223-323  
two-stage hydraulic pump

Mounting: foot mounting

Porting: G1/4

Direction of rotation: radial piston pump - any gear pump - clockwise two-stage hydraulic pump - counterclockwise (viewed from above onto drive shaft)

Mounting position: upright

Reservoir volume:  $V = 11 \text{ l}$

Usable oil volume:  $V_n = 6 \text{ l}$

### Hydraulic characteristics

Vol. efficiency:  $h_{vol} = 85\text{-}95\%$  with gear pumps  
 $h_{vol} = 92\text{-}96\%$  with radial piston pumps

### Accessories

The power units can be supplied, on request, with solenoid operated directional control valves as per data sheet C 2.360 ND4 and C2.530 ND6, which are fixed to the power unit on a mounting plate.

**The valves have to be ordered separately. The mounting plate for the pressure switch as per catalogue is available on request.**

### Electrical characteristics

Nominal voltage: 230/400 V  
Power system: 3-phase AC, 50 Hz  
Degree of protection: IP 54  
Rel. duty cycle (ED): Depends on operating pressure. For details of 100% and 40% ED see table.

The calculation of the relative duty cycle is based on a cycle of 10 min. With 40% ED, e.g. the maximum load within the cycle should not exceed 4 min. During the remaining time the motor can carry a load of up to 50% of the nominal output and should run continuously.

Different types on request.

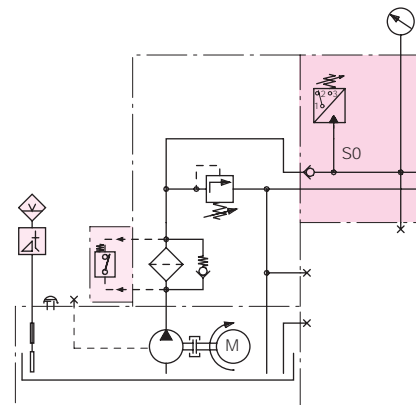
### Note on figure and hydraulic circuit diagram

The pressure switch, oil level and temperature control and filter control shown in the above figure are not supplied with the pumping set.

Oil level and temperature control

**Order no. 3822-008**

### Hydraulic circuit diagram



Flow rate	Operating pressure at		Nominal rating kW	L <sup>3</sup>	Weight kg	Order no. Basic	Order no. with filter control	
	100% ED <sup>1)</sup> bar	40% ED bar						
15	0,9	350	0,75	489	27	<b>8223-310</b>	<b>8223-910</b>	
25	1,5	150	0,75	489	27	<b>8122-300</b>	<b>8122-900</b>	
25	1,5	360	1,1	504	30	<b>8223-308</b>	<b>8223-908</b>	
86/12	5,2+0,7	100/500	0,75	489	29	<b>8223-323</b>	<b>8223-923</b>	
41	2,5	220	300	1,1	504	30	<b>8223-311</b>	<b>8223-911</b>
70	4,5	64	85	0,75	489	27	<b>8142-300</b>	<b>8142-900</b>
70	4,5	104	142	1,1	504	30	<b>8143-300</b>	<b>8143-900</b>
70	4,5	142	180	1,5	531	34	<b>8144-300</b>	<b>8144-900</b>
102	6,2	50	65	0,75	489	27	<b>8152-300</b>	<b>8152-900</b>
102	6,2	73	100	1,1	504	30	<b>8153-300</b>	<b>8153-900</b>
102	6,2	100	125	1,5	531	34	<b>8154-300</b>	<b>8154-900</b>

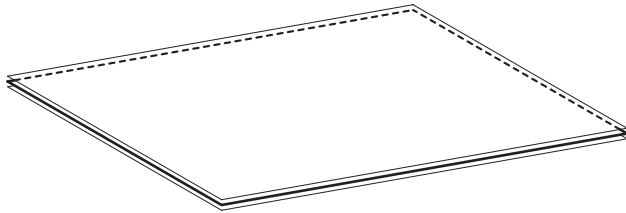
1) Applies to electric motor only. Running time of pump at max. pressure depends on unit power losses. It should be noted that the oil temperature should not exceed 70°C.

2) The mounting height (dimension L) of the power units depends on the type of motors used.



## Accuracy (standard)

### Pallet



04 02 071

Flatness of pallet

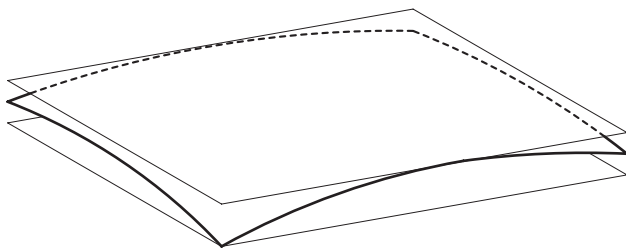
The tolerance of position of the nipple bores to the backing plates, T-grooves, vise mounts and jaws etc. is  $\pm 0.01$  mm.

Variant "E" is the standard nipple mount.

Flatness	0,02 mm / 300 mm	
Parallelism	0,02 mm / 500 mm	
Rectangularity	0,02 mm / 200 mm	
Surfaces are polished		
Material	Steel	CK 45
	Cast	GG 25
	Aluminium	Al 50

Other materials and tolerances on request.

### Plate



04 02 070

Flatness of plate

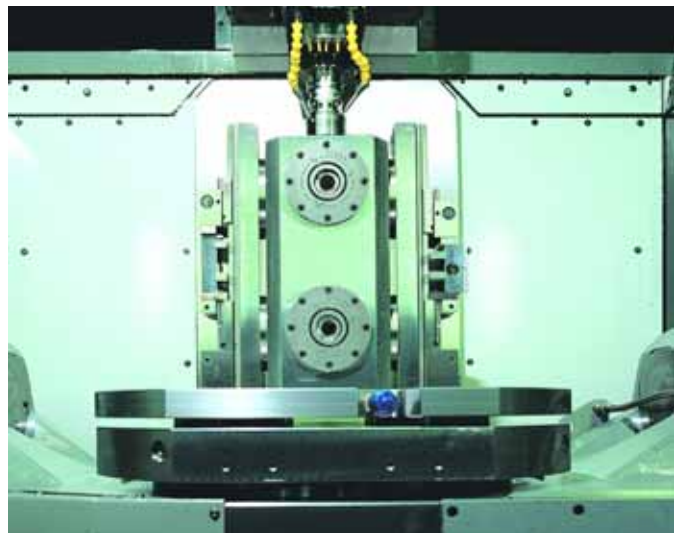
SDIN 74-Km  $\varnothing$  12 for recess of cylinder head bolts DIN 912-M12 to attach on T-grooves.

Other connections on request.

Flatness	0,05 mm / 300 mm	
Parallelism	0,02 mm / 500 mm	
Rectangularity	0,02 mm / 200 mm	
Surfaces are polished		
Material	Steel	CK 45
	Cast	GG 25
	Aluminium	Al 50

Other materials and tolerances on request.

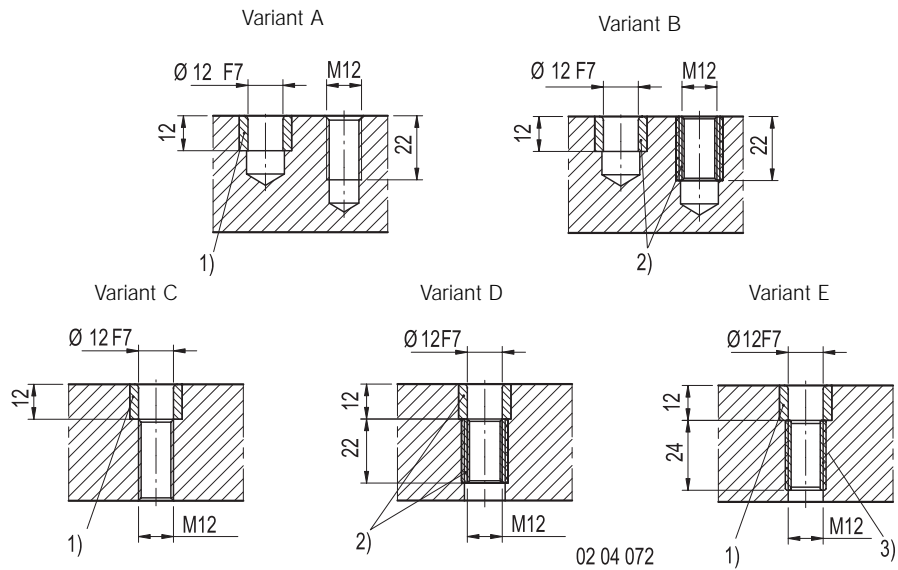
## Examples for application:







## Variations in perforated pallets and plates



- 1) Centering insert hardened
- 2) Centering insert and thread insert hardened
- 3) Wire thread insert stainless

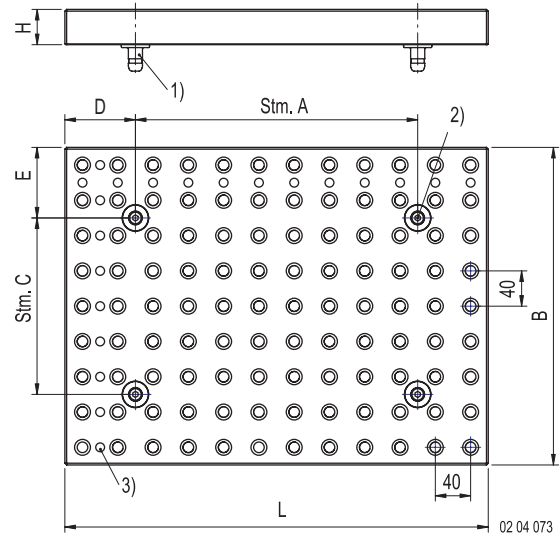
Other variations on request.



Perforated palette with deep drawing clamp



## Pallet perforated



- 1) Retractable nipple
- 2) Drill hole for retractable nipple
- 3) Alphanumerical scale

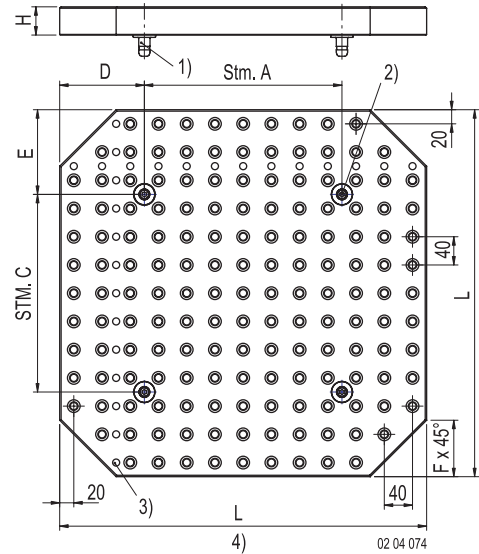
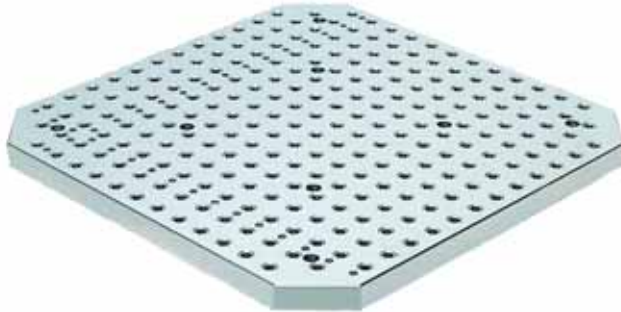
Order no.	L	B	H	No. of drill-holes	Weight [kg]
<b>104 102</b>	320	320	40	64	30
<b>104 104</b>	400	400	40	100	47
<b>104 106</b>	480	360	40	108	50
<b>104 108</b>	480	480	40	144	67
<b>104 110</b>	600	400	40	150	70
<b>104 112</b>	600	600	40	225	105
<b>104 114</b>	640	480	40	192	90
<b>104 116</b>	680	400	40	170	80
<b>104 118</b>	680	680	50	289	169
<b>104 120</b>	800	480	40	240	112
<b>104 122</b>	800	800	50	400	234
<b>104 123</b>	920	440	40	253	118
<b>104 124</b>	960	480	40	288	135
<b>104 126</b>	960	600	40	360	168
<b>104 128</b>	960	760	50	456	267

Stoppers (904 403) are included in delivery.

Dimensions A, C, D and E according to customer's wishes, other dimensions on request.



## Pallet perforated - square



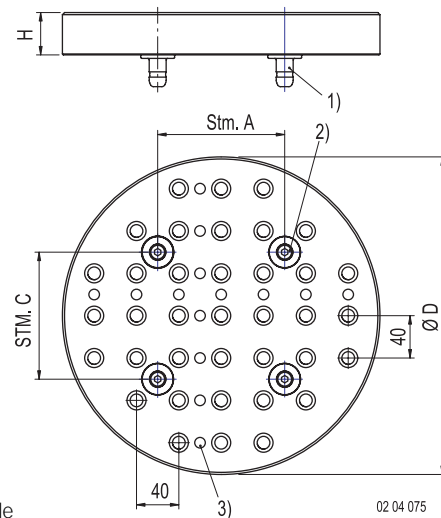
- 1) Retractable nipple
- 2) Drill hole for retractable nipple
- 3) Alphanumerical scale

Order no.	∅ L	H	F	No. of drill-holes	Weight [kg]
<b>104 551</b>	400	40	80	88	43
<b>104 553</b>	520	40	80	157	75
<b>104 555</b>	600	50	80	213	127
<b>104 557</b>	680	50	80	277	164
<b>104 559</b>	800	50	80	388	229

Stoppers (904 403) are included in delivery.

Dimensions A, C, D and E according to customer's wishes, other dimensions on request.

## Pallet perforated - round



- 1) Retractable nipple
- 2) Drill hole for retractable nipple
- 3) Alphanumerical scale

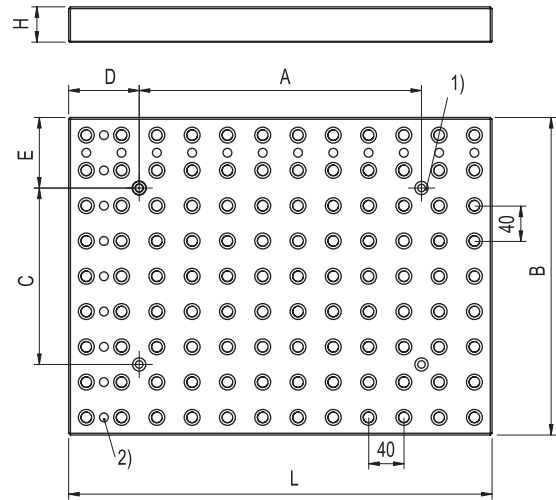
Order no.	∅ D	H	No. of drill-holes	Weight [kg]
<b>204 051</b>	300	40	37	21
<b>204 054</b>	400	40	68	37
<b>204 056</b>	500	40	112	57
<b>204 058</b>	600	40	162	83
<b>204 060</b>	700	40	222	113

Stoppers (904 403) are included in delivery.

Dimensions A and C according to customer's wishes, other dimensions on request.



## Plate perforated



02 04 106

- 1) Drill hole for retractable nipple
- 2) Alphanumerical scale

Order no.	L	B	H	No. of drill-holes	Weight [kg]
<b>104 002</b>	320	320	40	64	30
<b>104 004</b>	400	400	40	100	47
<b>104 006</b>	480	360	40	108	50
<b>104 008</b>	480	480	40	144	67
<b>104 010</b>	600	400	40	150	70
<b>104 012</b>	600	600	40	225	105
<b>104 014</b>	640	480	40	192	90
<b>104 016</b>	680	400	40	170	80
<b>104 018</b>	680	680	50	289	169
<b>104 020</b>	800	480	40	240	112
<b>104 022</b>	800	800	50	400	234
<b>104 023</b>	920	440	40	253	118
<b>104 024</b>	960	480	40	288	135
<b>104 026</b>	960	600	40	360	168
<b>104 028</b>	960	760	40	456	267
<b>104 030</b>	960	960	50	576	336
<b>104 031</b>	1120	400	40	280	131
<b>104 032</b>	1280	480	40	384	180
<b>104 034</b>	1280	600	40	480	224
<b>104 036</b>	1360	880	50	748	437

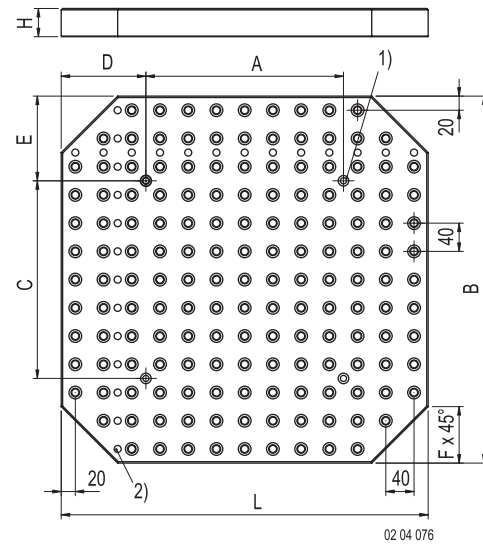
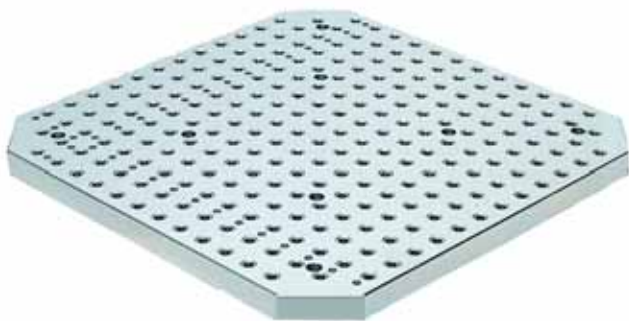
Stoppers (904 403) are included in delivery.

Dimensions A, C, D and E according to customer's wishes (T-slot distances), other dimensions on request.





## Plate perforated - square



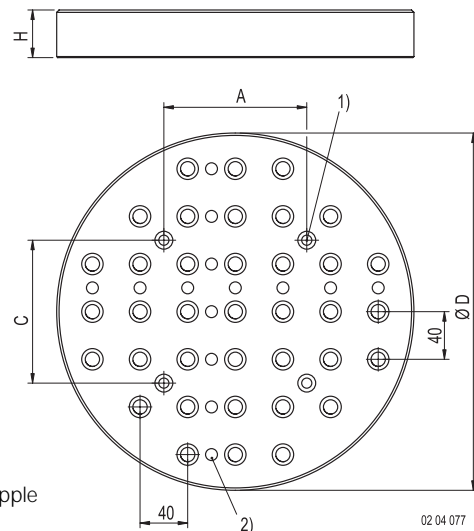
- 1) Drill hole for retractable nipple
- 2) Alphanumerical scale

Order no.	L	H	F	No. of drill-holes	Weight [kg]
<b>104 501</b>	400	40	80	88	43
<b>104 503</b>	520	40	80	157	75
<b>104 505</b>	600	50	80	213	127
<b>104 507</b>	680	50	80	277	164
<b>104 509</b>	800	50	80	388	226

Stoppers (904 403) are included in delivery.

Dimensions A, C, D and E according to customer's wishes (T-slot distances), other dimensions on request.

## Plate perforated - round



- 1) Drill hole for retractable nipple
- 2) Alphanumerical scale

Order no.	ØD	H	No. of drill-holes	Weight [kg]
<b>204 001</b>	300	40	37	21
<b>204 004</b>	400	40	68	37
<b>204 006</b>	500	40	112	57
<b>204 008</b>	600	40	162	83
<b>204 010</b>	700	40	222	113

Stoppers (904 403) are included in delivery.

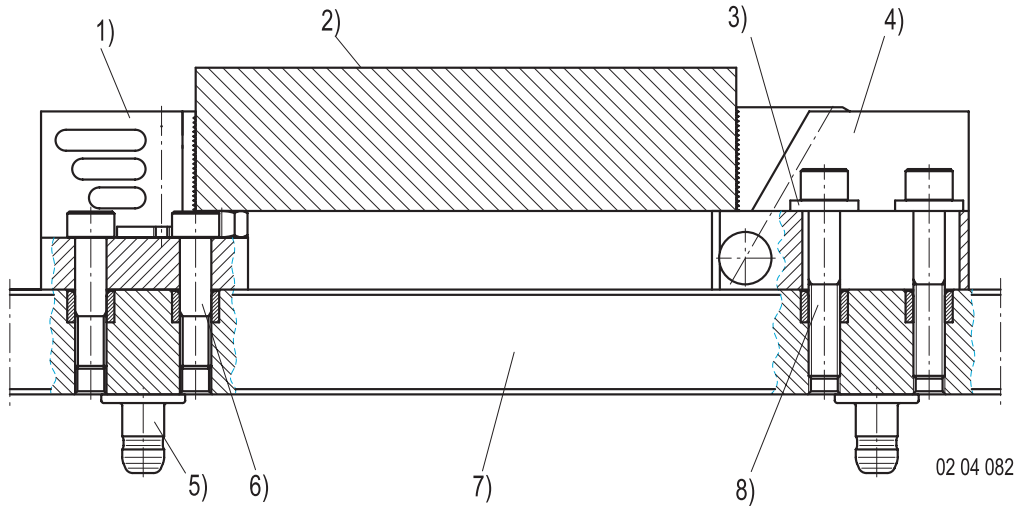
Dimensions A, C, D and E according to customer's wishes (T-slot distances), other dimensions on request.

01/2007



## Zero point reference also on down draw clamps

A fixed zero point reference on down draw clamps is self-evident in the STARK zero point mounting system. This zero point reference on down draw clamps is a definite must on external setting-up and palletting work.



- |   |                          |
|---|--------------------------|
| 1) Down draw clamp with zero point            | 5) Retractable nipple    |
| 2) The workpiece can be machined on all sides | 6) Precision collar bolt |
| 3) Washer                                     | 7) Perforated pallet     |
| 4) Down draw clamp                            | 8) Bolt DIN 912          |



## Guidelines for working with clamping devices

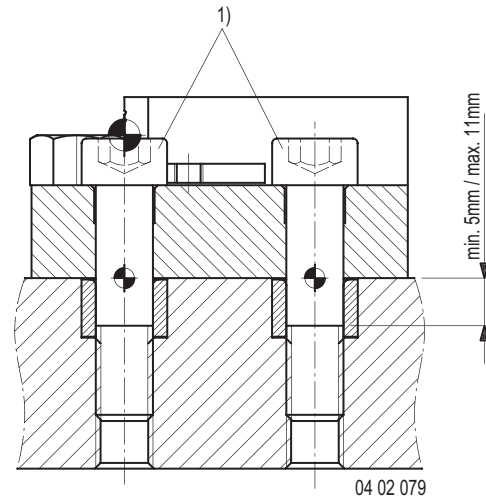
### Clamping devices for pegging out with zero point

To mount clamping devices only precision collar bolts of the property class 10.9 may be used. The bolts with adequate length have to be screwed into the plate to a depth of at least 12 mm.

Caution: Watch the length of the positioning socket!

Max. tightening torque

**M12 = 70 Nm**



1) Precision collar bolts

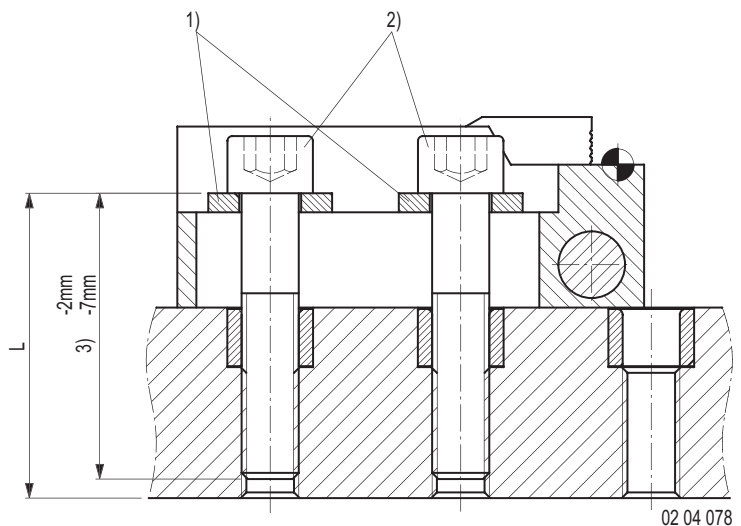
## Adjustable clamping devices

In attaching clamping devices, screws of the property class 10.9 or 12.9 and hardened washers must be used.

To assure the downtime of the plate the length of the screw must be as given in the illustration at the right.

Maximum tightening torque

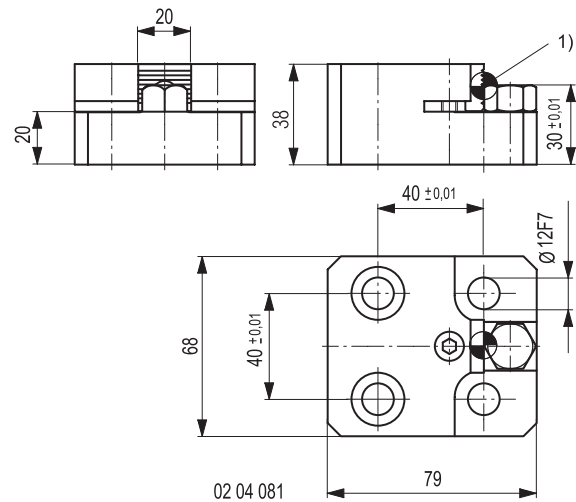
**M 12 = 94 Nm**



- 1) Washers
- 2) Bolts DIN 912
- 3) Length of screw (L - 2 mm to L - 7 mm)



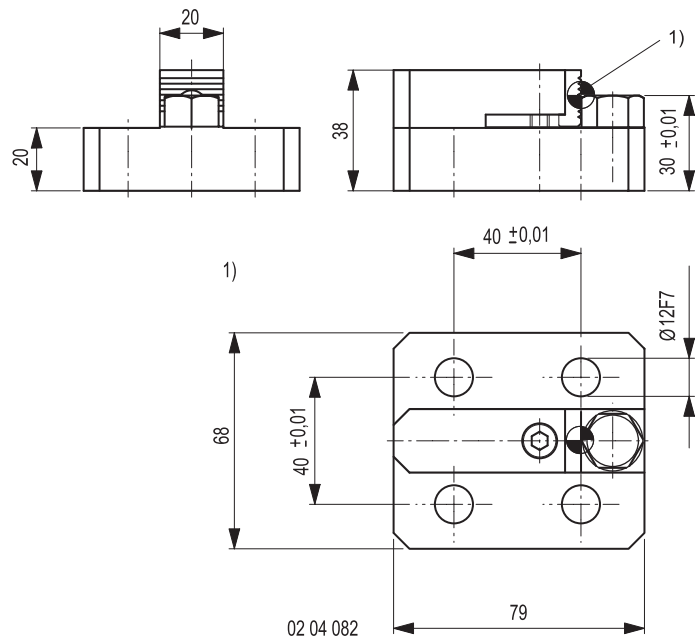
## Down draw clamp for pegging out zero point



1) Middle of the bore = End position of work piece  $\pm 0.01$

Order no.	Description
<b>804 011</b>	Down draw clamp
<b>704 054</b>	Precision collar bolt M12 10.9

## Down draw clamp for pegging out zero point, narrow edition



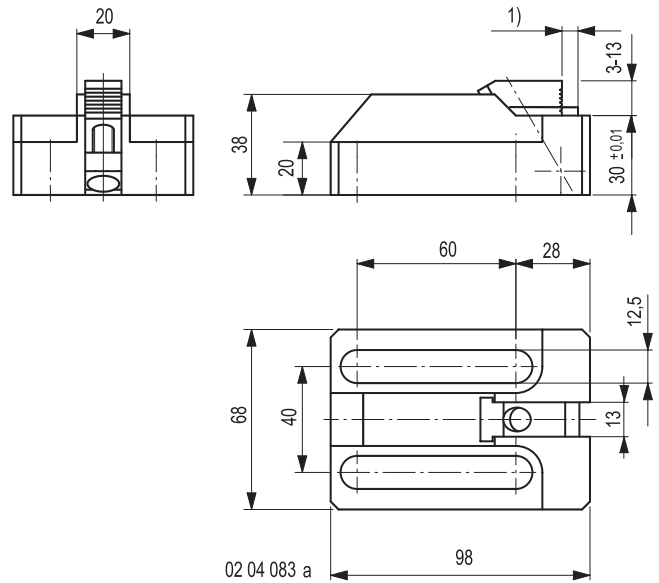
1) Middle of the bore = End position of work piece  $\pm 0.01$

Order no.	Description
<b>804 025</b>	Down draw clamp
<b>704 054</b>	Precision collar bolt M12 10.9 x L = 60mm





## Adjustable down draw clamp



We recommend using washers when mounting the clamps.

Order no.	Description
<b>804 009</b>	Down draw clamp
<b>931 065</b>	Bolt DIN 912, M12, 10.9, L = 60mm
<b>704 020</b>	Washer

1) Clamping distance



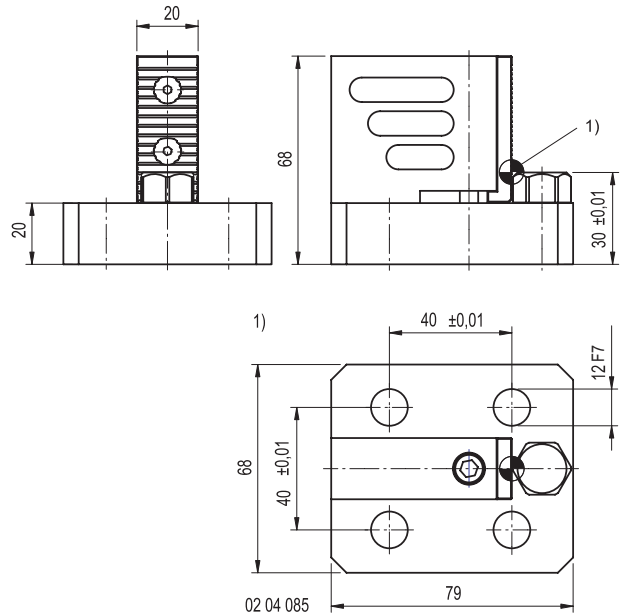
Down draw clamp for pegging out zero point



Down draw clamp in use



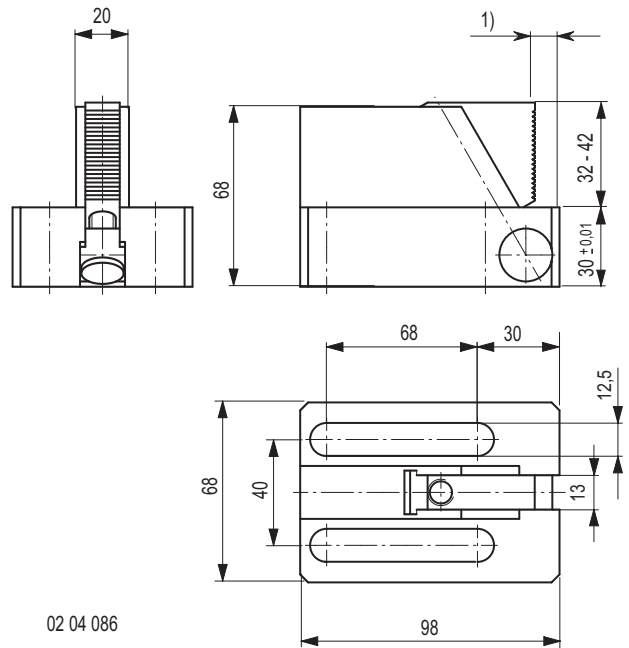
## Down draw clamp for pegging out - zero point reference - raised model



Order no.	Description
<b>804 019</b>	Down draw clamp
<b>704 054</b>	Precision collar bolt M12 10.9

1) Middle of the bore = End position of work piece  $\pm 0.01$

## Down draw clamp - adjustable - raised model



02 04 086

1) Clamping distance

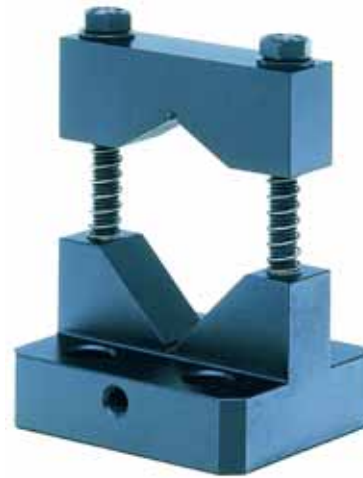
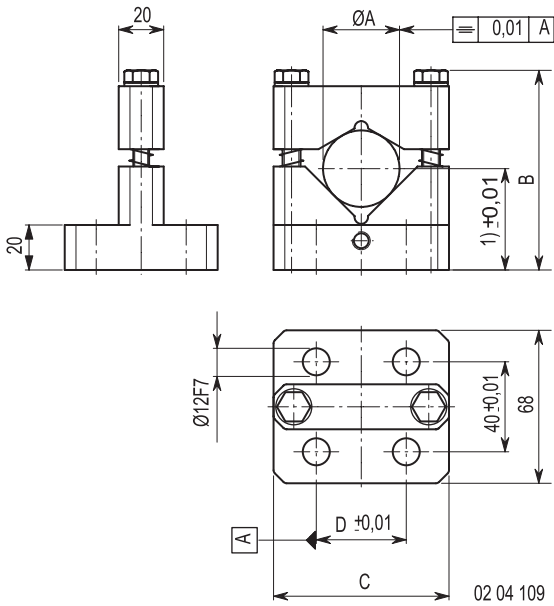
Max. torque	42 Nm
Max. clamp strength	62 000 N

We recommend using washers when mounting the clamps.

Order no.	Description
<b>804 017</b>	Down draw clamp
<b>931 068</b>	Bolt DIN 912, M12, 8.8, L = 70mm
<b>704 020</b>	Washer



## Simple prism clamp, as cover with zero point



Order no.	Description	ØA	B	C	D
<b>804 050</b>	Prism clamp	14-30	82-103	78	40
<b>804 052</b>	Prism clamp	29-50	82-110	78	40
<b>804 054</b>	Prism clamp	40-90	120-184	118	80
<b>704 054</b>	Precision collar bolt M12, 10.9				

1) Middle of the bore = End position of work piece  $\pm 0.01$

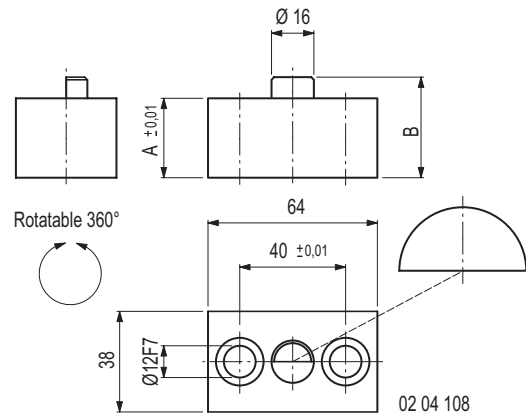
The clamp distance "B" can be extended by exchanging the clamping screws and the support screws.



Example: Prism clamp

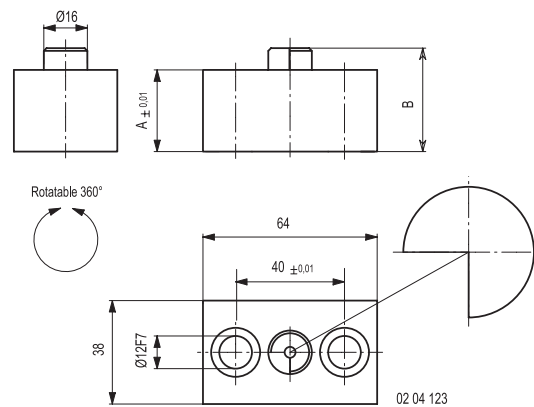


## Stop rotatable by 360°, with zero point, straight version



Order no.	Description	A	B
<b>904 404</b>	Stop, straight version	30	38
<b>904 405</b>	Stop, straight version	60	68
<b>704 054</b>	Precision collar bolt M12 10.9 for 904 404		
<b>704 058</b>	Precision collar bolt M12 10.9 for 904 405		

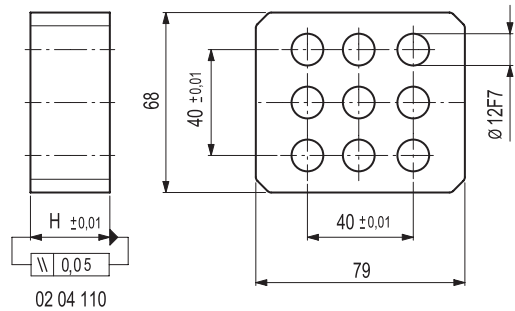
## Stop rotatable by 360°, with zero point, corner version



Order no.	Description	A	B
<b>904 406</b>	Stop, corner version	30	38
<b>904 407</b>	Stop, corner version	60	68
<b>704 054</b>	Precision collar bolt M12 10.9 for 904 406		
<b>704 058</b>	Precision collar bolt M12 10.9 for 904 407		

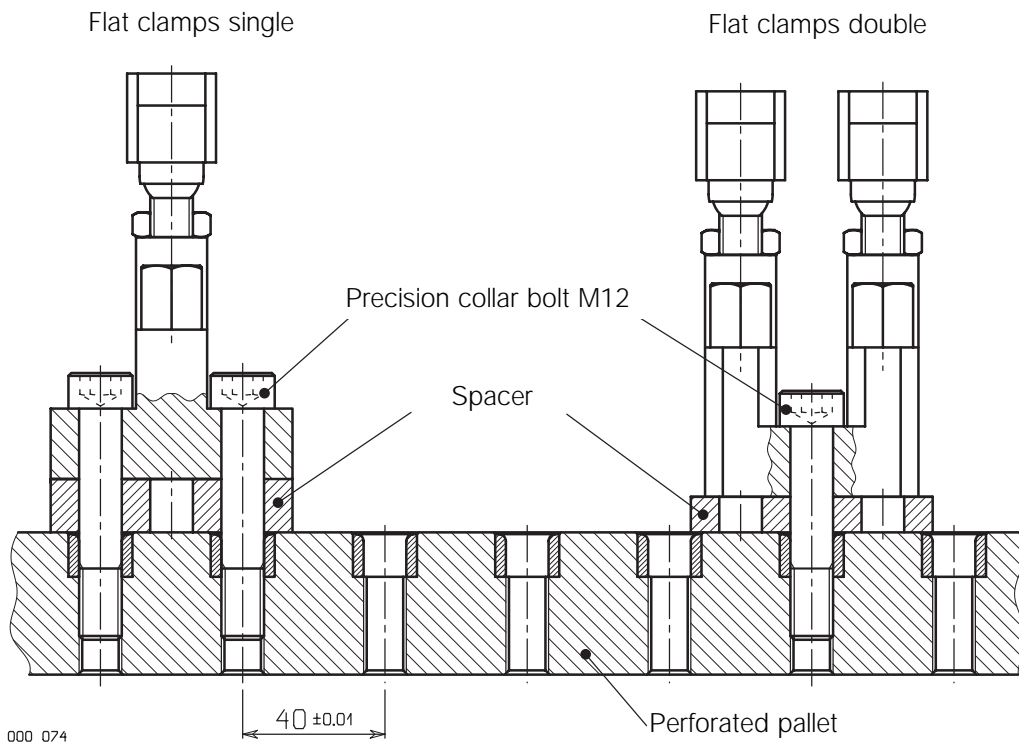


## Base for flat clamps, deep drawing clamps etc.



Order no.	Description	H
<b>704 100</b>	Base	2
<b>704 101</b>	Base	3
<b>704 102</b>	Base	4
<b>704 103</b>	Base	5
<b>704 104</b>	Base	10
<b>704 105</b>	Base	15
<b>704 106</b>	Base	20
<b>704 107</b>	Base	30
<b>704 108</b>	Base	40
<b>704 109</b>	Base	50

## Practical example

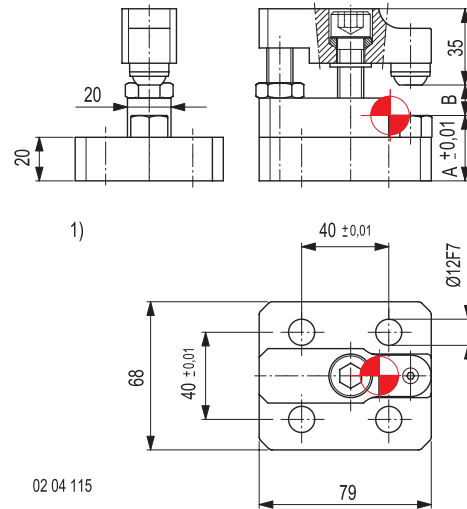


000 074





## Flat clamp single, for setting out with zero point

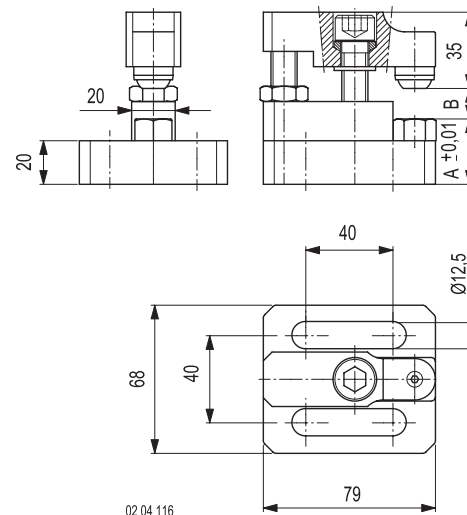


Order no.	Description	A	B
<b>904 010</b>	Flat clamp	30	4 - 26
<b>904 150</b>	Flat clamp	60	0 - 45
<b>704 054</b>	Precision collar bolt M12 10.9		

1) Middle of the bore = End position of work piece +/- 0.01

The clamp distance "B" can be extended by exchanging the clamping screws and the support screws.

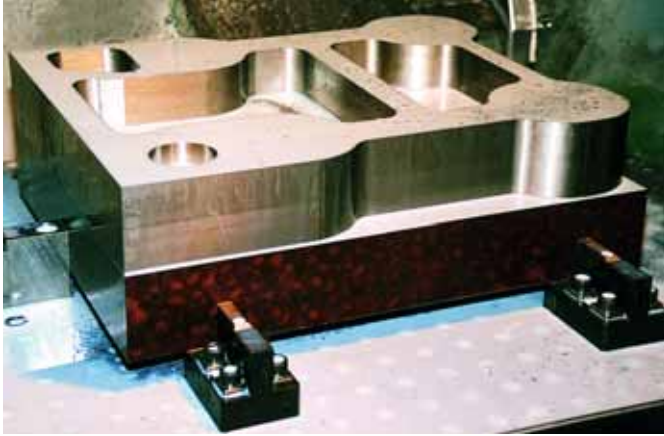
## Flat clamp single, for setting out



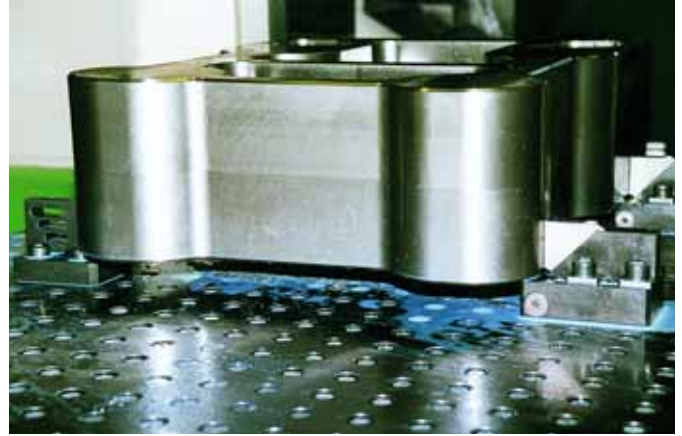
Order no.	Description	A	B
<b>904 110</b>	Flat clamp	30	4 - 26
<b>904 250</b>	Flat clamp	60	0 - 45
<b>931 065</b>	Bolt DIN 912, M12, 10.9, L = 60mm		

The clamp distance "B" can be extended by exchanging the clamping screws and the support screws.

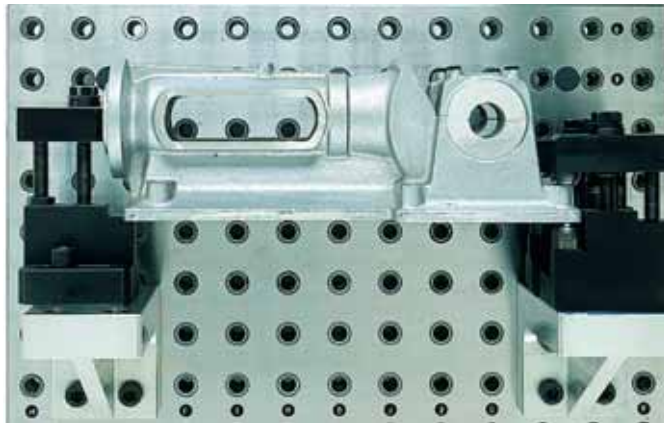
We recommend the use of washers (order no. 704 020) when bolting on clamping elements.



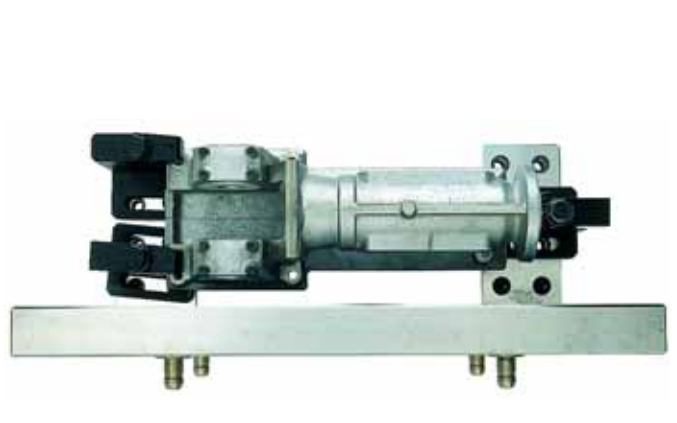
Raw work piece clamped with down draw clamp, raised model



Finished work piece clamped with down draw clamp, raised model



Workpiece with flat clamp



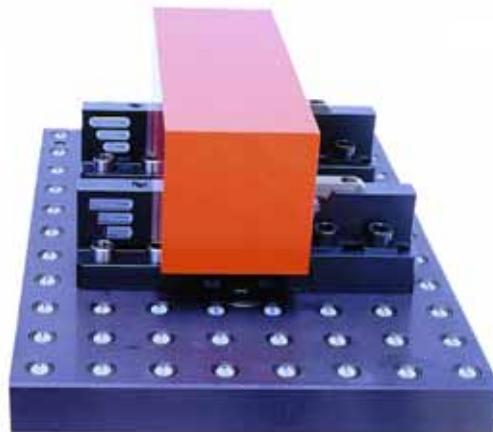
Perforated pallet with retractable nipple 1000



Down draw clamp for pegging the zero point

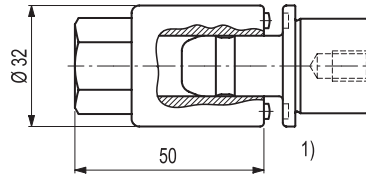
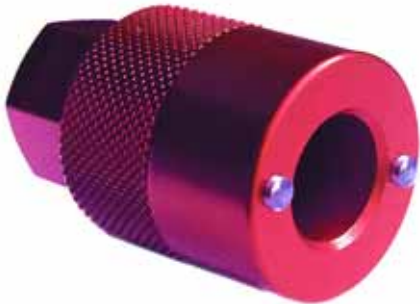


Adjustable down draw clamp





## Retractable nipple key for SPEEDY 1000



1) Tightening torque for retractable nipples M8/M10 = 20Nm

Order no.	Description
<b>804 254</b>	Retractable nipple key for retractable nipple 1000
<b>804 257</b>	Socket 3/8" SW22 for retractable nipple

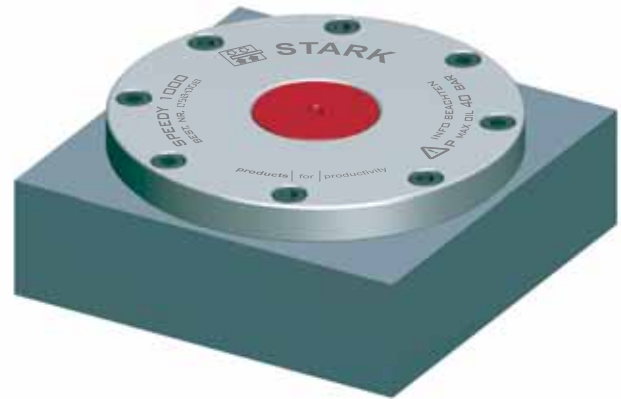
## Torque wrench



Order no.	Range [Nm]	Description
<b>804 255</b>	5 - 50	Allen head 3/8", SW 4, SW 5, SW 6
<b>804 256</b>	20 - 100	Allen head 1/2", SW 10
		Socket 1/2", SW 22

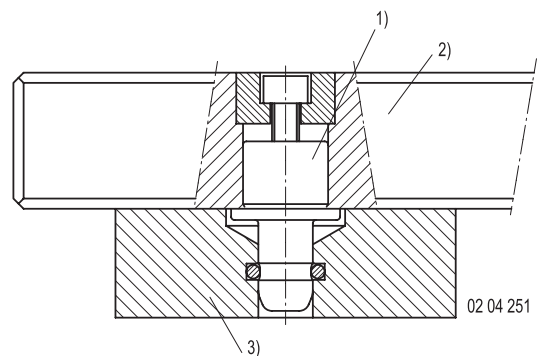


## SPEEDY sealing plug for fast closing clamps 1000, 2000, 3000



Order no.	suitable for
<b>704 094</b>	SPEEDY 1000
<b>704 095</b>	SPEEDY 2000
<b>704 096</b>	SPEEDY 3000
<b>Accessory</b>	<b>Wing handle</b>
Order no.	to pull off sealing plug for
<b>704 094-01</b>	SPEEDY 1000, 2000, 3000

## Protection during transport of retractible nipples in the pallet



- 1) Retraction nipple
- 2) Pallets
- 3) Transport and bearing protection

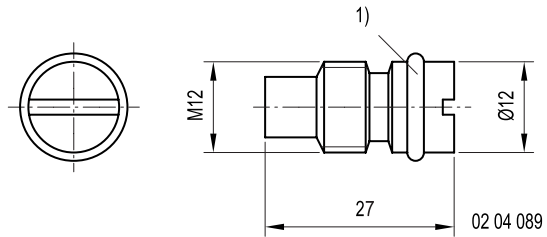
Order no.	suitable for
<b>704 130</b>	Nipple, SPEEDY 1000
<b>704 133</b>	Nipple, SPEEDY 2000
<b>704 131</b>	Nipple, SPEEDY 3000

Using transport protection caps safeguards the nipples and pallet surfaces during transportation and also makes the pallets stackable.

Material: Plastics



## Lock stopper for perforation variations C / D / E

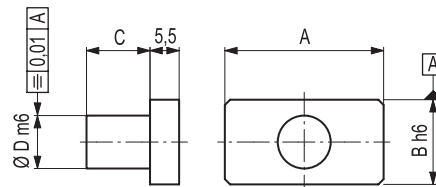
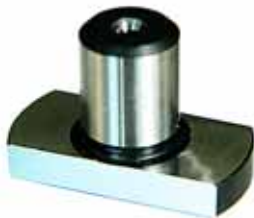


1) O-ring

02 04 089

Order no.	Description
<b>904 403</b>	Lock stopper for perforation variations C / D / E

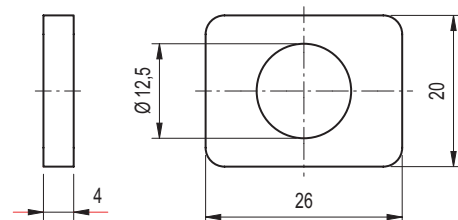
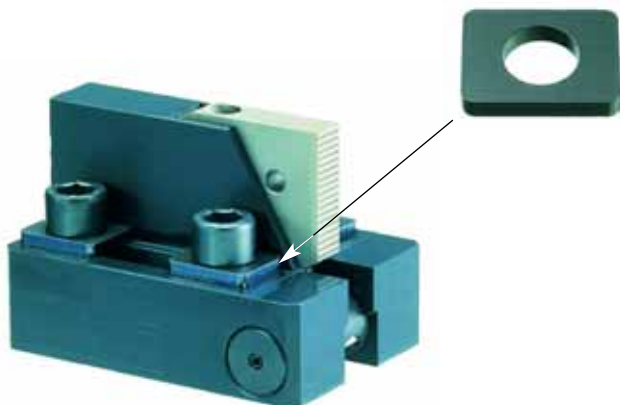
## Sliding block with pin (to position in the T-groove)



02 04 107

Order no.	A	B	C	ØD
<b>704 160</b>	20	12	9	6
<b>704 161</b>	30	14	12	10
<b>704 162</b>	40	14	15	12
<b>704 163</b>	50	18	19	16
<b>704 164</b>	20	14	9	6
<b>704 165</b>	30	20	15	10
<b>704 166</b>	30	20	18	12
<b>704 167</b>	30	20	24	16

## Washers for clamping devices



02 04 091

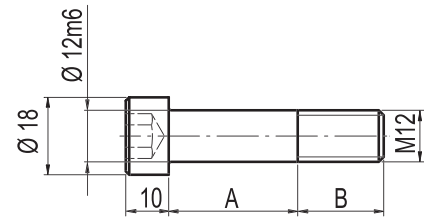
Order no.	Description
<b>704 020</b>	Washer for clamping devices

01/2007





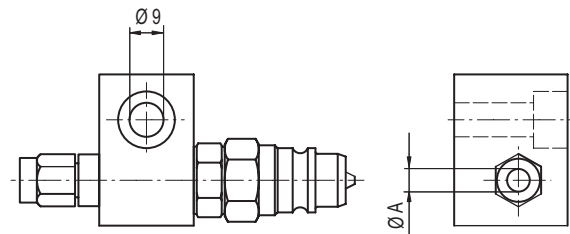
## Precision collar bolt



02 04 111

Order no.	A	B
<b>704 051</b>	15	20
<b>704 052</b>	20	20
<b>704 053</b>	25	20
<b>704 054</b>	30	20
<b>704 055</b>	35	20
<b>704 056</b>	40	20
<b>704 057</b>	45	20
<b>704 058</b>	50	20

## Connection block complete

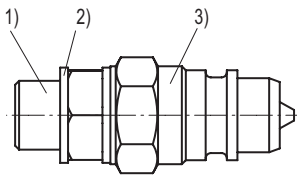


02 04 092

Order no.	ØA	suitable for
<b>804 370</b>	6	SPEEDY 1000 + 2000
<b>804 385</b>	8	SPEEDY 3000



## Coupling

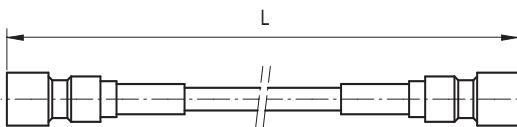


02 04 093

- 1) Double nipple
- 2) Sealing washer
- 3) Coupling

Order no.	Description
<b>804 371</b>	Hydraulic coupler, Gromelle HA 5012 VT
<b>804 372</b>	Dual steel nipple 1/4" - 1/4"
<b>804 395</b>	Aluminium protecting cap

## Hydraulic hose with couplings

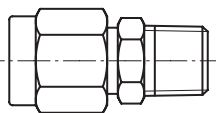


02 04 094

Order no.	L [m]	Description
<b>704 150</b>	1,5	Hydraulic couplers on both sides Gromelle HA 5011 MT

Other length upon request.

## Connecting parts together with screw-on nipple

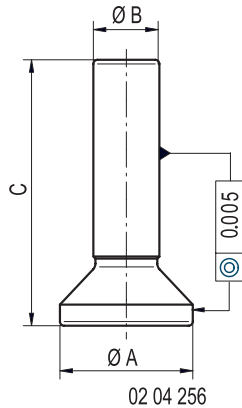


02 04 095

Order no.	Description	suitable for
<b>804 374</b>	SO 41121-8-1/4" with reduced brass clamping ring $\varnothing$ 6	SPEEDY 1000 + 2000
<b>804 375</b>	SO 41121-6-1/8"	SPEEDY 1000 + 2000
<b>804 386</b>	SO 41121-10-1/4" with reduced brass clamping ring $\varnothing$ 8	SPEEDY 3000
<b>804 387</b>	SO 41121-8-1/4"	SPEEDY 3000



## Positioning nipple

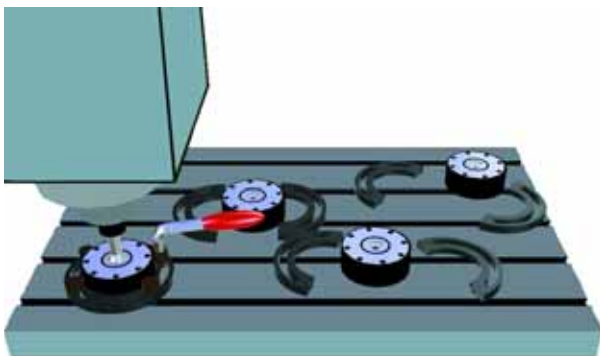


For a quick and precise positioning of the SPEEDY fast closing clamps on the machine table.

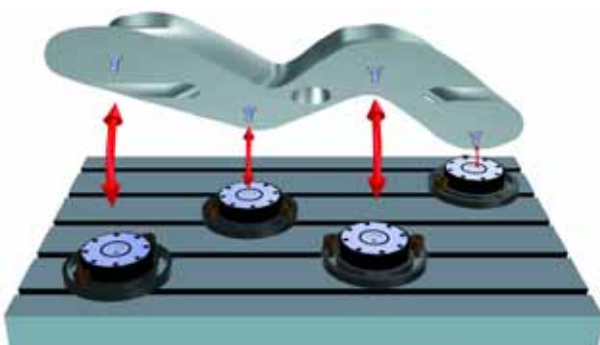
The positioning nipple is first set into the clamping jaws. Then the coordinate table is moved to the desired X/Y position and the positioning nipple is loosely inserted with " $\varnothing A$ " into the fast closing clamp on the machine table. This makes positioning the SPEEDY very precise.

Order no.	$\varnothing A$	$\varnothing B$	C	suitable for
<b>804 259</b>	32	16	64	SPEEDY 1000
<b>804 258</b>	47	25	82	SPEEDY 2000
<b>804 260</b>	65	32	100	SPEEDY 3000

## Example of use



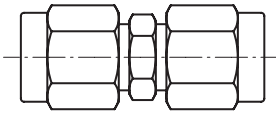
Position closing clamps and fasten them with the aid of the mounting brackets.



Mounting of the work piece.

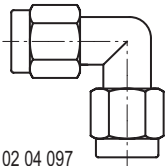


## Straight screw connection



Order no.	Description	suitable for
<b>804 379</b>	SO 41021-8 with reduced brass clamping ring $\varnothing$ 6	SPEEDY 1000 + 2000
<b>804 388</b>	SO 41021-10 with reduced brass clamping ring $\varnothing$ 8	SPEEDY 3000

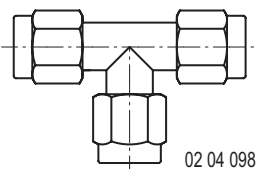
## 90° screw connection



02 04 097

Order no.	Description	suitable for
<b>804 380</b>	SO 42021-8 with reduced brass clamping ring $\varnothing$ 6	SPEEDY 1000 + 2000
<b>804 389</b>	SO 42021-10 with reduced brass clamping ring $\varnothing$ 8	SPEEDY 3000

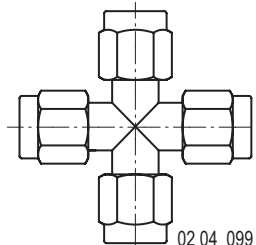
## T-screw connection



02 04 098

Order no.	Description	suitable for
<b>804 381</b>	SO 43021-8 with reduced brass clamping ring $\varnothing$ 6	SPEEDY 1000 + 2000
<b>804 390</b>	SO 43021-10 with reduced brass clamping ring $\varnothing$ 8	SPEEDY 3000

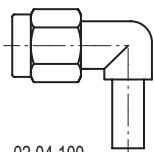
## Cross connection



02 04 099

Order no.	Description	suitable for
<b>804 382</b>	SO 44021-8 with reduced brass clamping ring $\varnothing$ 6	SPEEDY 1000 + 2000
<b>804 391</b>	SO 44021-10 with reduced brass clamping ring $\varnothing$ 8	SPEEDY 3000

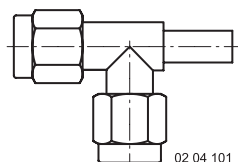
## Adjustable 90°



02 04 100

Order no.	Description	suitable for
<b>804 376</b>	SO 42621-6-A6	SPEEDY 1000 + 2000

## Adjustable-T

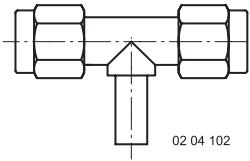


02 04 101

Order no.	Description	suitable for
<b>804 377</b>	SO 43621-A6-6-6	SPEEDY 1000 + 2000

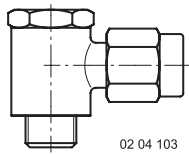


## Adjustable-T



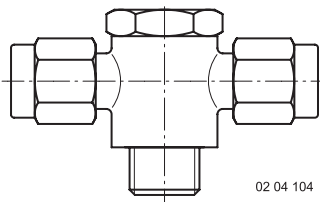
Order no.	Description	suitable for
<b>804 378</b>	SO 43621-6-A6-6	SPEEDY 1000 + 2000

## Swivel screw connector



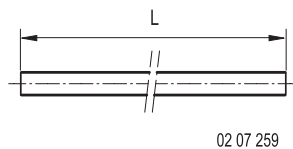
Order no.	Description	suitable for
<b>804 392</b>	SO 42824-8-1/4"	SPEEDY 3000

## T-Swivel screw connector



Order no.	Description	suitable for
<b>804 393</b>	SO 43824-8-1/4"	SPEEDY 3000

## Brass pipe for SPEEDY assembly (for a freely selectable bore hole gauge)



Order no.	Description	suitable for
<b>804 398</b>	Brass pipe ø 6/4mm, 1000 mm	SPEEDY 1000/2000

Order no.	Description	suitable for
<b>804 399</b>	Brass pipe ø 6/4mm, 1500 mm	SPEEDY 1000/2000

## Service - set (the set of seals includes all O-rings and sealing rings)

Order no.	Description	suitable for
<b>804 191</b>	1000	SPEEDY 1000
<b>804 192</b>	2000	SPEEDY 2000
<b>804 193</b>	3000	SPEEDY 3000

### Attention:

The fast closing clamp is always under spring pressure.

Basically, only authorized service technicians may perform any repair work at the fast closing clamps. During all work performed the required safety measures must be adhered to entirely and without exception.

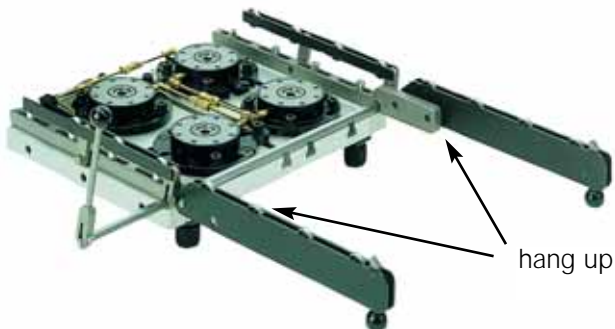
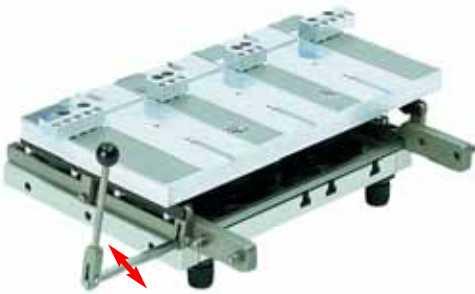
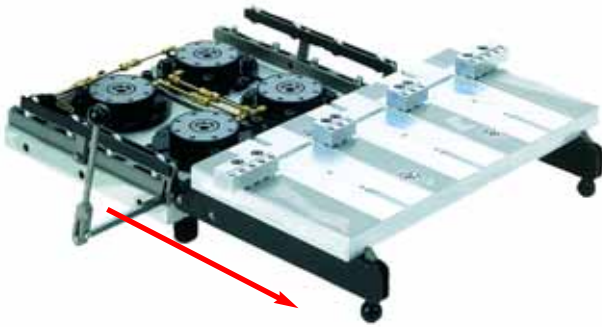




## Features:

No extension outside the machine required.

- Work is made easier as the pallet can be lifted in an ergonomically good position.
- Specially suited to machines that have a protective cover and that would thus make it impossible for a crane to be used.
- The lifting and lowering of the pallet is done in a parallel fashion and the likelihood of the pallets jamming is reduced.
- The extensions which jut out from the machine can be dismantled with a handle.
- Suited for a total pallet weight of 130 kg.
- Complex automatic changer systems on request.

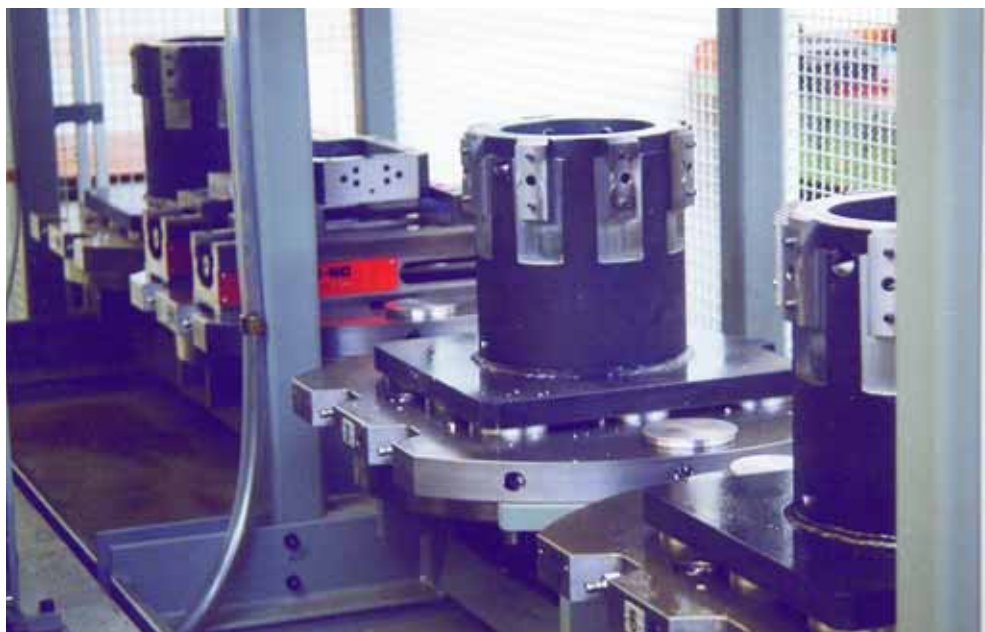




Robot handling system



Pallet loader



Pallet station

01/2007

# Order number index



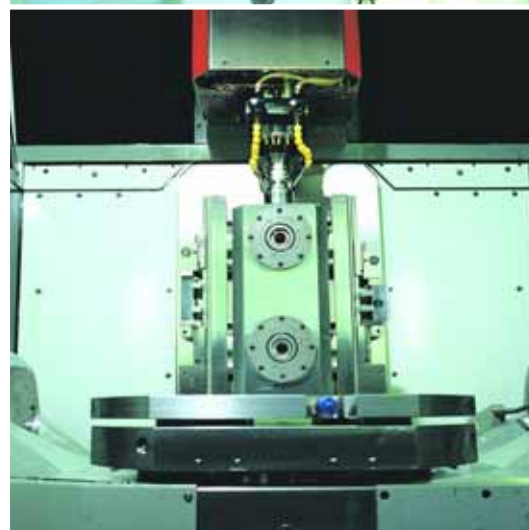
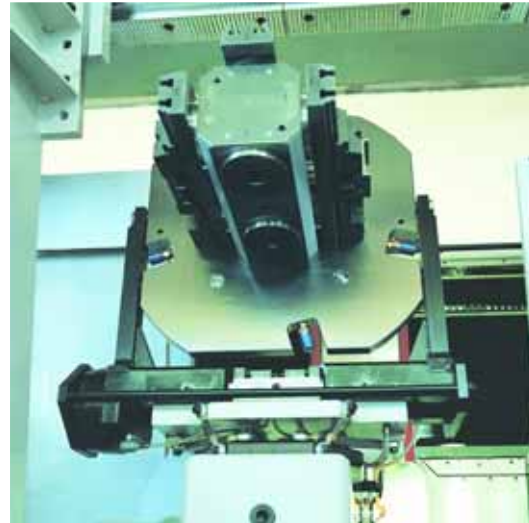
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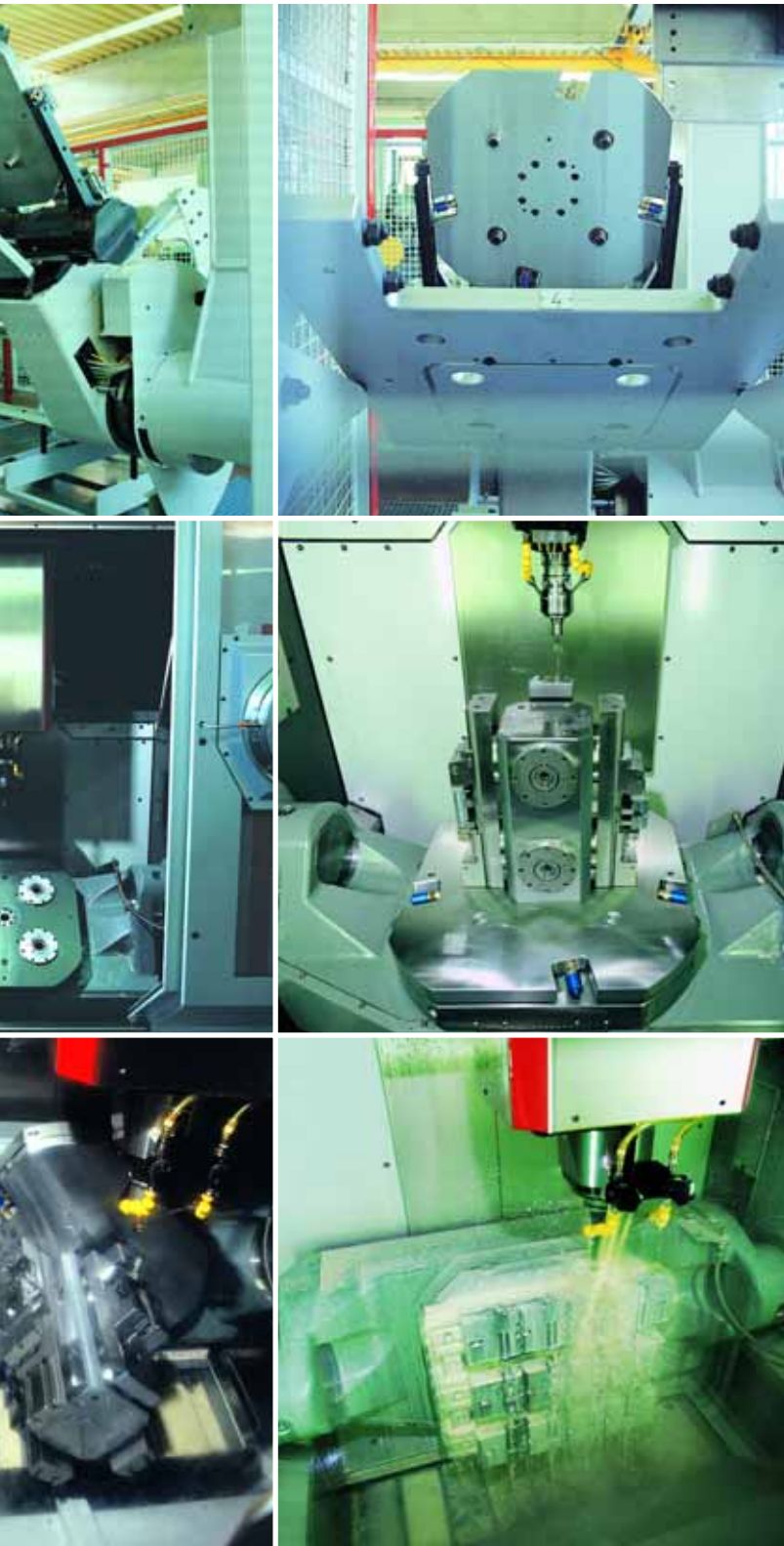




**20** Setting up a machine centre with mounting towers.

Process steps taken from retrieving the mounting tower to the pallet loader up to manufacturing.





Clamp to mount round work pieces.

The front and rear can be processed by rotating the clamping plate without reclamping the work-piece.





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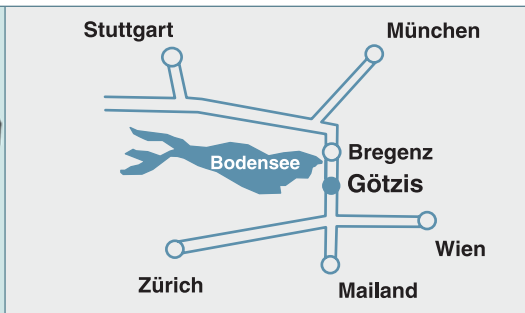
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E-mail: [verkauf@stark-inc.com](mailto:verkauf@stark-inc.com)  
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