



# Specification dimension tester

Operating Manual

WM-020-349-22-de BA Kontrollmaß-Prüfer

**precise, fast and powerful**



## Specification dimension tester

### STARK.classic

Art. no.: 504 021 STARK.classic 1 & 1 NG & compact  
Art. no.: 504 022 STARK.classic 2 & 2 NG  
Art. no.: 504 023 STARK.classic 3 & 3 NG

### STARK.classic DHF

Art. no.: 504 031 STARK.classic 1 & 1 NG & compact  
Art. no.: 504 032 STARK.classic 2 & 2 NG  
Art. no.: 504 033 STARK.classic 3 & 3 NG

### STARK.balance

Art. no.: 504 029 STARK.balance 2

### STARK.balance DHF

Art. no.: 504 036 STARK.balance 2

### STARK.sweeper & hydratec

Art. no.: 504 122 STARK.sweeper & hydratec

### STARK.classic 1 & 2 NG Twister

Art. no.: 504 038 STARK.classic 1 NG Twister  
Art. no.: 504 037 STARK.classic 2 NG Twister



STARK.classic, STARK.balance,  
STARK.compact



STARK.sweeper, STARK.hydratec



STARK.classic 1 & 2 NG Twister

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## 2. Identification of the partly completed machinery

Product:	Specification dimension tester
Function:	For checking the specification dimension A, the specification dimension B and the DHF (third hand function) position dimension in the clamping elements
Product group:	Specification dimension tester (accessory)
Article number:	504 021 / 504 022 / 504 023 / 504 029 / 504 031 / 504 032 / 504 033 / 504 036 / 504 122 / 504 037 / 504 038
Trade name:	Corresponds to product group, see above
applicable for:	STARK.classic 1 / 2 / 3 & STARK.classic 1 NG / 2 NG / 3 NG STARK.balance 2 STARK.compact STARK.sweeper & hydratec

## 3. User Instructions

### 3.1 Presentation of safety instructions

Safety instructions are identified by a pictogram and a signal word. The signal word describes the severity of the impending risk.



#### **DANGER**

**Immediate** imminent risk to life and health of persons (serious injury or death). Be sure to follow these instructions and the procedures described!



#### **CAUTION**

**Potentially** hazardous situation (minor injury or material damage). Be sure to follow these instructions and the procedures described!



#### **INFORMATION**

Tips for use and particularly useful information.



#### **INSTRUCTION**

Obligation to follow the described procedure or method for the safe use of the machine.




## 4. Fundamental safety instructions

### 4.1 Purpose of the document

This operating manual

- describes the function, operation and maintenance of the fast clamping device
- gives important instructions for safe and efficient use of the fast clamping device


### 4.2 Intended use

 The specification dimension tester is used to check the specification dimension A according to the Operating Manual WM-020-082-xx-x, WM-020-184-xx-x, WM-020-205-xx-x, WM-020-253-xx-x, WM-020-321-xx-x, of the specification dimension B and to check the DHF position, as well as for the function check of the clamping elements themselves.

Intended use also presupposes:

- compliance with all the instructions in the operating manual
- observance of the inspection and maintenance intervals
- use of only OEM parts

### 4.3 Foreseeable misuse

 Any use other than that specified under "Intended use" or use beyond this is considered improper.

Risks can arise if the device is not used for its intended purpose. Improper uses include e.g.:

- exceeding the technical values specified for normal operation

The operating company bears sole responsibility for any injury or damage resulting from such improper use. The manufacturer assumes no liability.

### 4.4 Modifications or alterations



Unauthorised modifications or alterations of the specification dimension tester will void any liability and warranty on the part of the manufacturer!

Therefore do not make any modifications or alterations to the fast clamping lock without consultation with and the written approval of the manufacturer.

### 4.5 Obligations of the operating company



The operating company is obliged to allow only persons to work on the specification dimension tester who

- are familiar with the fundamental occupational health & safety and accident prevention regulations.
- have been instructed in the use of the specification dimension tester and have read and understood this operating manual.

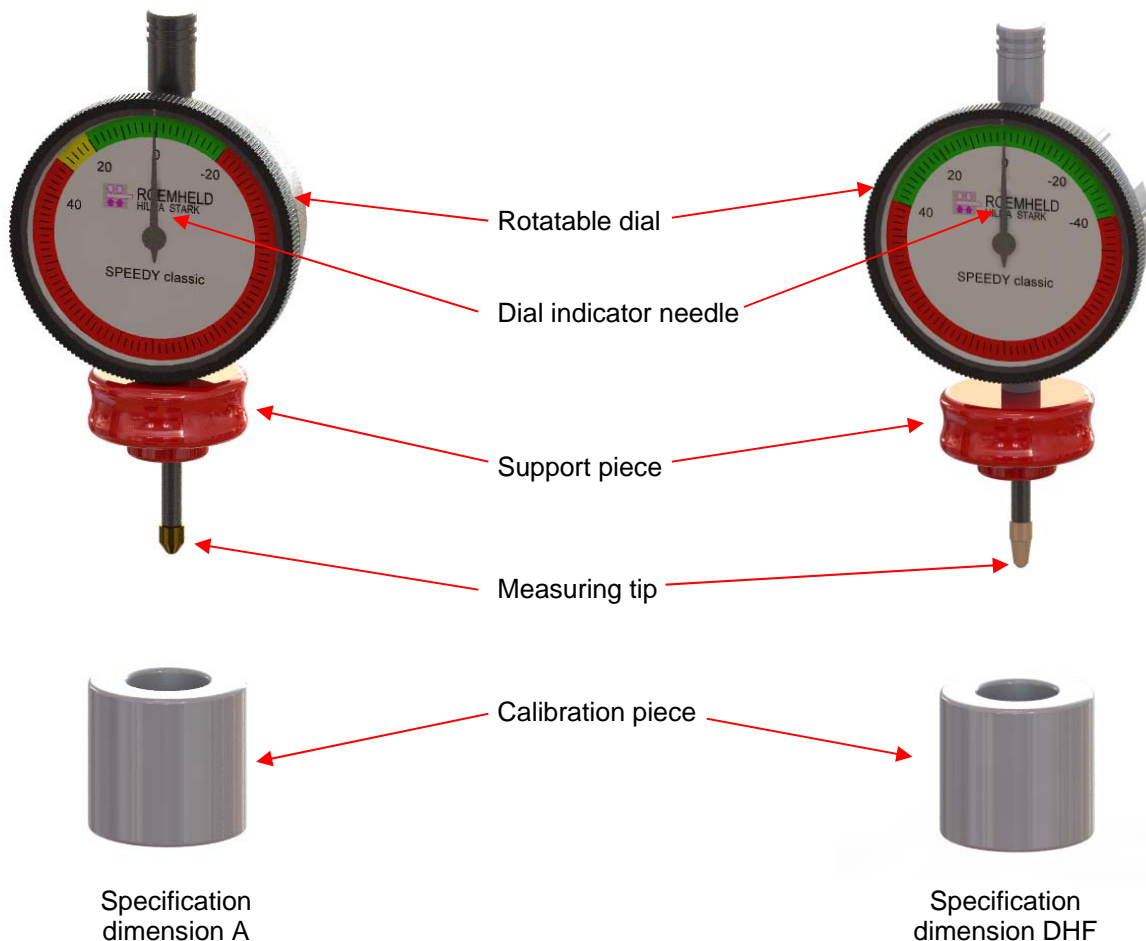
The requirements of EC Directive 2007/30/EC on the use of work equipment must be observed.



## 5. Operation of the STARK.classic, balance & compact specification dimension tester

The specification dimension tester is used to check the specification dimension according to the operating manual of the respective element type and to set the DHF position. The specification dimension is decisive for the function and must comply with a certain dimension for proper function of the element. By using the specification dimension tester, compliance within the specified tolerance can be ensured. Since the specification dimension is different for each clamping element type, individual specification dimension testers are offered. If an element enables a third hand function, a suitable specification dimension tester is also available.

The scope of delivery of the specification dimension testers (for measuring the specification dimension A and B, as well as for measuring the specification dimension DHF) for the STARK.classic family and the STARK.balance and STARK.compact families consists of the following components.



It is important to ensure the correct pairing of the specification dimension testers according to the element type, as the specification dimensions vary from type to type (see title page).



## 5.1 Calibration procedure of the STARK.classic, balance & compact specification dimension tester

The calibration procedure is identical for the specification dimension tester for measuring the specification dimension A and B, and for measuring the specification dimension DHF. The dial has a different design, but both versions must be set to the zero position.

1. Insert the specification dimension tester with the support piece flat in the calibration piece. The measuring tip is pushed back by the calibration piece and the dial indicator needle is moved to a certain position.
2. Afterwards turn the rotating dial in this calibration position so that the zero position of the dial matches the stationary dial indicator needle.



**Important:** Ensure that the support piece is correctly seated in the calibration piece!



## 5.2 Dimension A control measurement

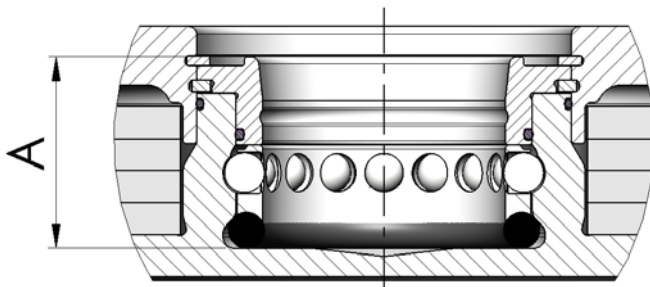
1. Insert the calibrated specification dimension tester with the support piece flat on the retaining ring of the **loosened** STARK.classic. The dial gauge pointer shows the deviation from the piston crown to the calibration piece on the scale.



1. Assessment by colour evaluation:
  - **green** = OK;
  - **yellow** = Service will soon be required;
  - **red** = Service absolutely required, do not continue working.



**Important:** Make sure that the support piece fits perfectly in the retaining ring of the STARK.classic and that the clamping element is clean inside!





## 5.1 Dimension DHF control measurement

2. Insert the calibrated specification dimension tester with DHF with the support piece flat on the retaining ring of the STARK.classic **in the DHF position** . The dial gauge pointer shows the deviation from the piston crown to the calibration piece on the scale.
3. Assessment by colour evaluation:
  - **green** = OK;
  - **red** = essential service required, do not continue working

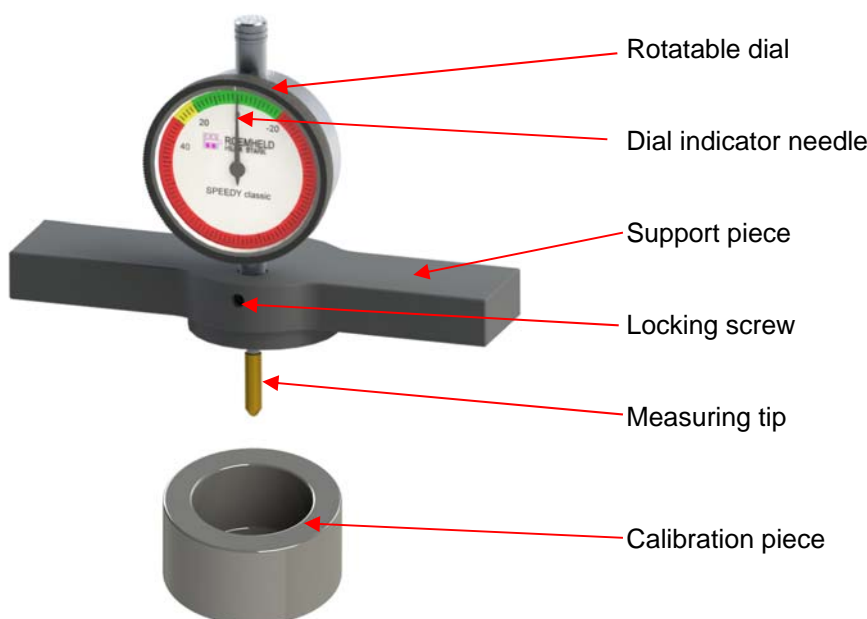


**Important:** Make sure that the support piece fits perfectly in the retaining ring of the STARK.classic and that the clamping element is clean inside!

## 6. Operation of the STARK.classic 1 & 2 NG Twister specification dimension tester

The specification dimension tester is used to check the specification dimension B of the STARK.classic 1 & 2 NG Twister clamping elements. The specification dimension B is decisive for the function and must comply with a specified dimension for proper function of the elements. By using the specification dimension tester, compliance within the specified tolerance can be ensured. The specification dimension B corresponds to the depths of the calibration pieces (033-720 & 033-720-01).

The scope of delivery of the specification dimension tester for the STARK.classic 1 & 2 NG Twister consists of the following components.



In contrast to the specification dimension tester for the classic family, the specification dimension tester for the STARK.classic 1 & 2 NG Twister has a support piece. This is used to measure the piston positions in relation to the support islands.

## 6.1 Calibration procedure of the STARK.classic 1 & 2 NG Twister specification dimension tester

1. Insert the specification dimension tester with the support piece into the bore of the calibration piece. With the locking screw loosened, change the position of the dial gauge so that the measuring path is approx.  $\pm 1$  mm. Then tighten the locking screw.
2. Afterwards turn the rotating dial in this calibration position until the zero position of the dial matches the stationary dial indicator needle.



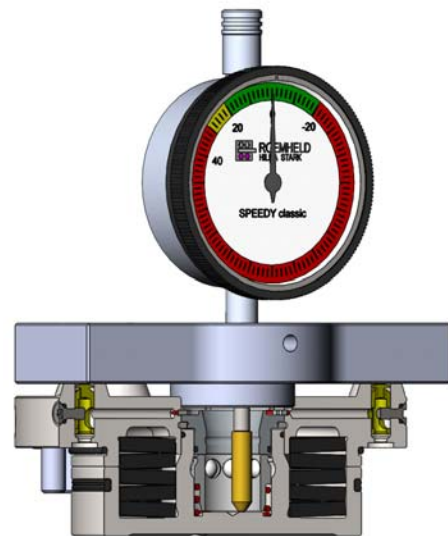
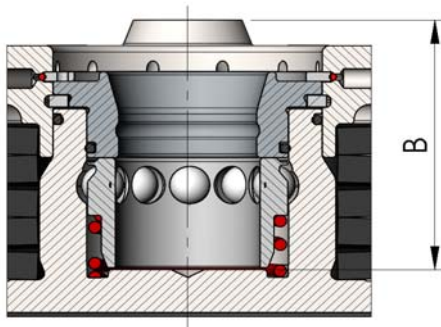
**Important:** Ensure that the support piece is correctly seated in the calibration piece!

## 6.2 Dimension B control measurement

1. Press the calibrated specification dimension tester with the support piece flat on the support islands of the **loosened SSV**. The dial gauge pointer shows the deviation from the piston crown to the calibration piece on the scale.
2. Assessment by colour evaluation:
  - **green** = OK
  - **yellow** = Service will soon be required
  - **red** = Service absolutely required, do not continue working.



**Important:** Make sure that the support piece fits perfectly and that the clamping element is clean inside!

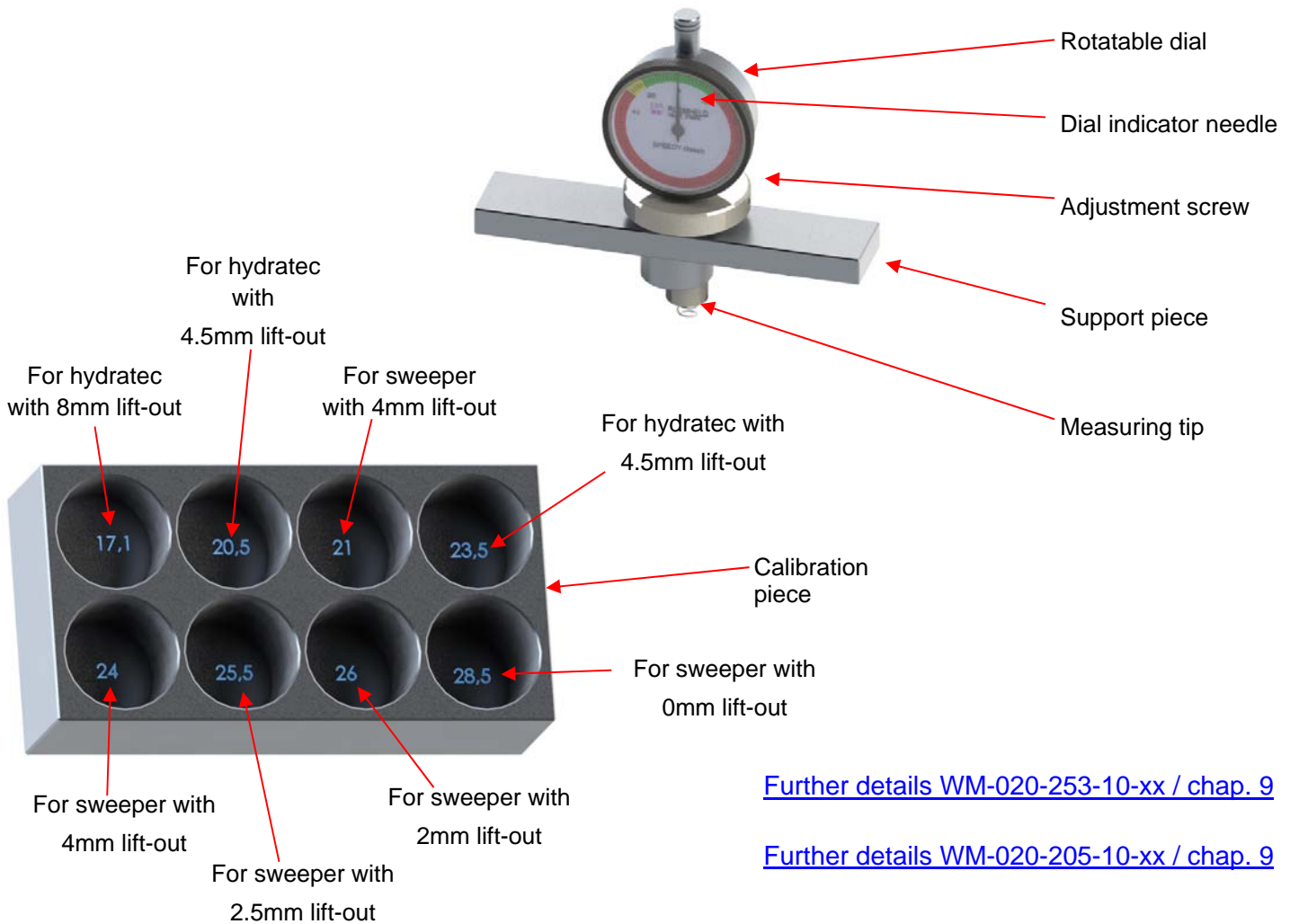




## 7. Operation of the STARK.sweeper & hydratec specification dimension tester

The specification dimension tester is used to check the specification dimension A according to the operating manual of the respective element type. The specification dimension A is decisive for the function and must comply with a specified dimension for proper function of the element. By using the specification dimension tester, compliance within the specified tolerance can be ensured.

The scope of delivery of the specification dimension testers for the STARK.sweeper and STARK.hydratec consists of the following components



Since different versions of the element disc exist within the STARK.sweeper and STARK.hydratec product families, different specification dimensions must be checked. Using the adjustment screw, the measurement can be adapted to the respective element type, as described in the following chapter.

In contrast to the specification dimension tester for the classic family, the specification dimension tester for the STARK.sweeper and STARK.hydratec has a support piece and an associated adjustment screw. This is used to measure the piston position in relation to the support islands.



## 7.1 Calibration procedure of the STARK.sweeper & hydratec specification dimension tester



The SSV type intended for this purpose can only be measured with the respective specification dimension in the calibration piece. The specification dimension to be used can be found in the associated operating manual of the corresponding clamping elements.

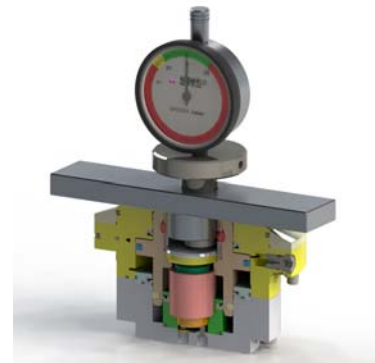
1. Insert the specification dimension tester with the support piece into the corresponding calibration bore, turning the adjustment screw with the dial gauge until the support piece lies flat on the calibration piece. Only screw in until the dial gauge has a measuring path of  $\pm 1\text{mm}$ . When pressing on and adjusting, the spring force must be overcome!
2. Afterwards turn the rotating dial in this calibration position until the zero position of the dial matches the stationary dial indicator needle.



**Important:** Ensure that the support piece is correctly seated in the calibration piece!

## 7.2 Dimension A control measurement

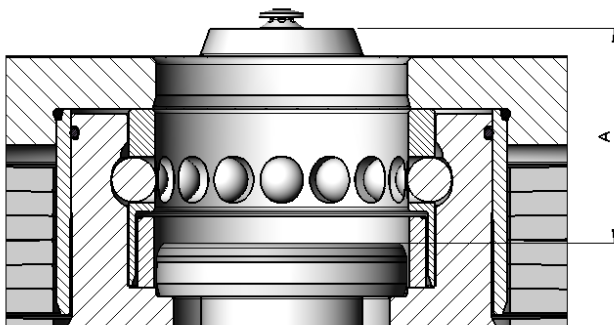
3. Press the calibrated specification dimension tester with the support piece flat on the supports of the **loosened** SSV. The dial gauge pointer shows the deviation from the piston crown to the calibration piece on the scale.



4. Assessment by colour evaluation:
  - **green** = OK
  - **yellow** = Service will soon be required
  - **red** = Service absolutely required, do not continue working.



**Important:** Make sure that the support piece fits perfectly in the retaining ring of the STARK.sweeper & hydratec and that the clamping element is clean inside!





## 8. Specification dimension and pressures

The following tables show the relationship between the article number of the specification dimension tester and the element to be tested with the respective release pressure and the specification dimension to be measured.

Article number specification dimension tester	System	Release pressure	Specification dimension A/B
504 021	STARK classic 1 ( 6.7 kN )	40 bar	25.3 ±0.2 mm
504 021	STARK classic 1 ( 10 kN )	80 bar	25.3 ±0.2 mm
504 021	STARK classic 1 NG	40 bar	25.3 ±0.2 mm
504 021	STARK Compact	180 bar	25.3 ±0.2 mm
504 022	STARK classic 2	40 bar	24 ±0.2 mm
504 022	STARK classic 2 NG	40 bar	24 ±0.2 mm
504 029	STARK classic 2 balance	60 bar	24 ±0.2 mm
504 023	STARK classic 3	30 bar	38.5 ±0.2 mm
504 023	STARK classic 3 NG	30 bar	38.5 ±0.2 mm
504 122	STARK sweeper ( <a href="#">see chapter 7</a> )	50 bar	21 to 28.5 ±0.2 mm
504 122	STARK hydratec ( <a href="#">see chapter 7</a> )	50bar	17.1 to 26 ±0.2 mm
504 038	STARK classic 1 NG TW	40 bar	32 ±0.2 mm
504 037	STARK classic 2 NG TW	40 bar	30.8 ±0.2 mm

Article number specification dimension tester	System	Holding pressure DHF*	Specification dimension DHF*
504 031	STARK classic 1 ( 6.7 kN )	17 bar	26.3 mm ±0.2 mm
504 031	STARK classic 1( 10 kN )	50 bar	26.3 mm ±0.2 mm
504 031	STARK classic 1 NG	35 bar	26.3 mm ±0.2 mm
504 041	STARK classic 1 NG TW	35 bar	33 mm ±0.2 mm
504 031	STARK Compact	90 bar	26.3 mm ±0.2 mm
504 032	STARK classic 2	25 bar	25.8 mm ±0.2 mm
504 032	STARK classic 2 NG	35 bar	25.8 mm ±0.2 mm
504 039	STARK classic 2 NG TW	35 bar	31.8 mm ±0.2 mm
504 036	STARK classic 2 balance	35 bar	38.7 mm ±0.2 mm
504 033	STARK classic 3	19 bar	40.8 mm ±0.2 mm
504 033	STARK classic 3 NG	19 bar	40.8 mm ±0.2 mm
504 122	STARK sweeper	~32 to 38 bar	22 to 29.5 ±0.2 mm

\*The holding pressure and specification dimension DHF are only guide values. DHF must be adapted individually to the system.



## 9. Technical data

### Specification dimension tester for measuring the specification dimension A for the STARK.classic, balance, compact

Designation:	STARK.classic 1 & 1 NG & compact	STARK.classic 2 & 2 NG	STARK.classic 3 & 3 NG	STARK.classic 2 balance
Article no.:	504 021	504 022	504 023	504 029
Measurement of	Specification dimension A	Specification dimension A	Specification dimension A	Specification dimension A
Size [LxWxH]	58x31.5x112 mm	58x46x112 mm	64x64x125 mm	58x46x125 mm
Weight:	175 g	221 g	303 g	270 g

### Specification dimension tester for measuring the specification dimension DHF for the STARK.classic, balance, compact

Designation:	STARK.classic 1 & 1 NG & compact	STARK.classic 2 & 2 NG	STARK.classic 3 & 3 NG	STARK.classic 2 balance
Article no.:	504 031	504 032	504 033	504 036
Measurement of	Specification dimension DHF	Specification dimension DHF	Specification dimension DHF	Specification dimension DHF
Size [LxWxH]	58x31.5x112 mm	58x46x112 mm	64x64x125 mm	58x46x125 mm
Weight:	175 g	221 g	303 g	270 g

### Specification dimension tester for measuring the specification dimension for the STARK.sweeper, hydratec

Designation:	STARK.sweeper & hydratec
Article no.:	504 122
Measurement of	Specification dimension A
Size [LxWxH]:	150 x 48 x 135 mm
Weight:	770 g

### Specification dimension tester for measuring the specification dimension for the STARK.classic 1 & 2 NG Twister

Designation:	STARK.classic 1 NG Twister	STARK.classic 2 NG Twister
Art. no.:	504 038	504 037
Measurement of	Specification dimension B	Specification dimension B
Size [LxWxH]:	110 x 50 x 125 mm	150 x 50 x 125 mm
Weight:	750 g	820 g

# 10. Maintenance and repair

## 10.1 Check

**Yearly or according to QA specifications:**

An inspection of measuring and control equipment must be carried out at regular intervals.

## 10.2 Cleaning



When cleaning, caution and care must be taken as for all measuring equipment.

### Damage to components!



Damaged parts must not be used as this leads to incorrect measurements and thus to an incorrect assessment.

The product may not be cleaned with:

- corrosive or caustic components or
- organic solvents such as halogenated or aromatic hydrocarbons and ketone (nitro thinner, acetone etc.), as this can render the dial gauge unusable.



## 10.3 Storage

If you do not use the specification dimension tester, please store it dry and dust-free in its original case.

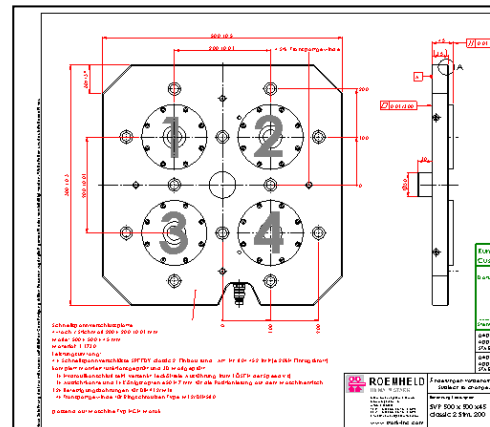
## 10.4 Disposal / recycling

All parts of the specification dimension tester must be separated according to type and disposed of in accordance with the local regulations and directives.

## 10.5 Suggestion for checking the specification dimension

Each clamping element is listed with date or calendar week and signature field (see example). In this way, all checks are permanently documented.

#	KW 01			KW 05			KW 09		
	Abweichung	OK	Unterschrift	Abweichung	OK	Unterschrift	Abweichung	OK	Unterschrift
SPEEDY 1	+1	✓		0	✓				
SPEEDY 2	-5	✓	<i>Johannes Stark</i>	-6	✓	<i>2013-02-01</i>			
SPEEDY 3	+3	✓	<i>2013-01-01</i>	+1	✓	<i>Johannes Stark</i>			
SPEEDY 4	0	✓		-2	✓				





# 11. Manufacturer's declaration

## Declaration of Conformity Konformitätserklärung

We / Wir

**STARK Spannsysteme GmbH**  
**Römergrund 14**  
**A-6830 Rankweil**  
**Austria**

declare under our sole responsibility that the product  
 erklären in alleiniger Verantwortung, dass das Produkt

**Type: Specification dimension tester**

**No.: 504 021 / 504 022 / 504 023 / 504 029 /**  
**504 031 / 504 032 / 504 033 / 504 036 /**  
**504 122 / 504 037 / 504 038 / 504 039 / 504 041**

to which this declaration relates, corresponds to the following standards  
 auf das sich diese Erklärung bezieht, mit den folgenden Normen übereinstimmt

2006/42/EC                      Machines, Addendum II A / Maschinen, Anhang II A

and the following standards were applied.  
 und dass die folgenden Normen zur Anwendung gelangten.

DIN EN ISO 4413              Safety of Machinery - Safety Requirements for Fluid Power Systems and Their  
    Components - Hydraulics  
    Sicherheit von Maschinen - Sicherheitstechnische Anforderungen an fluidtechnische  
    Systems and their components - Hydraulics

A technical documentation exists completely. The instruction manual for the product is available.  
 Eine technische Dokumentation ist vollständig vorhanden. Die zum Produkt gehörende Betriebsanleitung liegt vor.

STARK Spannsysteme GmbH

Rankweil, 12/05/2020

  
 Martin Greif  
 Managing Director / Geschäftsführer