

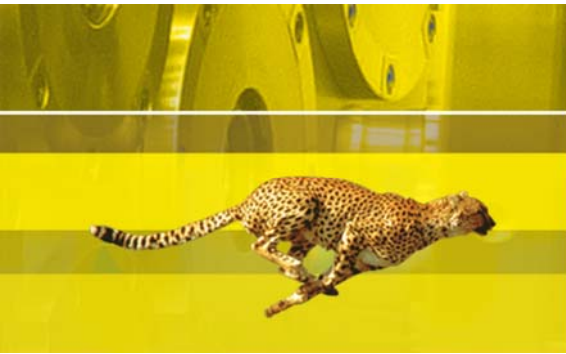


**ROEMHELD**  
HILMA ■ STARK

# Mechanical insertion force tester SPEEDY classic 1 / 2 / 3

**Operating instructions:**

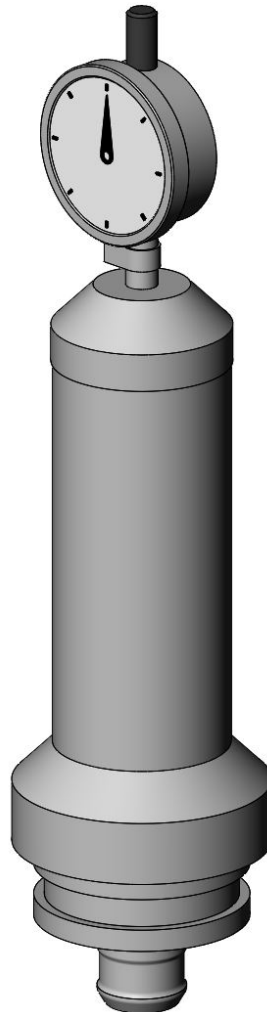
WM-020-133-10-en BA Mechanical-insertion-force-tester SPEEDY classic 1-2-3



**precise, fast and powerful**

## Mechanical insertion force tester

Art. no. 504 000



Manufacturer:

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## 2 Identification of the partly completed machinery

Product:	Mechanical insertion force tester
Function:	Checking the clamping force of the models SPEEDY classic 1/2/3
Product group:	Fast closing clamp / insertion force tester
Article number:	504 001, 504 002, 504 004
Trade name:	As per product group, see above

## 3 User information

### 3.1 Purpose of the document

These operating instructions

- Describe the function, the operation and the maintenance of the mechanical insertion force tester
- Provide important information for the safe and efficient usage of the mechanical insertion force tester

### 3.2 Depiction of safety instructions

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



#### **DANGER**

**Immediate** risk to life and health of personnel (serious injuries or fatality). It is imperative you follow these instructions and procedures!



#### **CAUTION**

**Possible** hazardous situation (minor injuries or damage). It is imperative you follow these instructions and procedures!



#### **INFORMATION**

Application tips and particularly useful information



#### **INSTRUCTION**

Obligation related to specific conduct or to take specific action for the safe use of the machine.



## 4 Essential safety instructions

### 4.1 Proper use



The insertion force tester is used to check the insertion force and the clamping force of the related fast closing clamping cylinder

- Proper use also includes:
- Following all instructions in these operating instructions
- Undertaking the inspection and maintenance work
- Using only genuine parts.

### 4.2 Reasonably foreseeable incorrect use



Use other than that defined in "Proper use" or use beyond that defined is considered improper use!

If used improperly, risks may arise. Improper use includes e.g.:

- Exceeding the specifications defined for normal operation

The operator/owner bears the sole responsibility for damage due to improper use. The manufacturer will not accept any liability whatsoever.

### 4.3 Modifications or changes



If the insertion force tester is modified or changed without authorisation, any liability or warranty on the part of the manufacturer will be rendered void!

For this reason do not make any changes or additions to the insertion force tester without consultation with and the written agreement of the manufacturer.

### 4.4 Spare parts, wear parts and auxiliary materials



The use of spare parts and wear parts from other manufacturers can result in risks. Only use genuine STARK parts or parts approved by the manufacturer. The manufacturer accepts no liability for damage resulting from the use of spare parts, wear parts or auxiliary materials not approved by the manufacturer.

### 4.5 Obligation by the operator/owner



- The operator/owner undertakes the obligation only to allow to work with the insertion force tester those personnel
- Who are familiar with the essential health and safety regulations
  - Who have been instructed on checking the clamping force and have read and understood these operating instructions.

The requirements of the EC directive on the usage of work equipment at work 2007/30/EC are to be met.

### 4.6 Residual risks



Attention is to be paid to the presence of mechanical and hydraulic residual energy at the fast closing clamping cylinder!

### 4.7 Hazard due to overpressure

Pipes or hoses bursting due to overpressure can place personnel at risk.

Action:

- Protect hydraulic lines with overpressure valves.
- Observe data on pressure limits
- Equalise pressure on closed systems if the temperature increases.



## 5 Description and function of the insertion force tester

### 5.1 Usage

The insertion force tester is used to check the clamping and insertion force of the SPEEDY clamping cylinder. The insertion force tester is used for the SPEEDY fast closing clamping cylinders classic 1, classic 2 and classic 3.

### 5.2 Principle of operation

The insertion force tester is a mechanical construction in which a metal bar is subjected to tensile stress during the clamping process. The stress that occurs in the tensile bar is converted and indicated on a dial gauge where it can be read directly. All parts are made of steel and change evenly if there are temperature changes. For service engineers, this aspect is ideal because they can measure on site immediately without needing to acclimatise the insertion force tester for the measurement first.

### 5.3 Application notes

While working with the insertion force tester, the intended nipples and bearing plates must be used (classic 1, 2, 3). During the first test, the dial gauge must be zeroed and is not allowed to be adjusted again, otherwise the measured result will be incorrect. The dial gauge is only allowed to be zeroed again after at least three hours in the unloaded state.

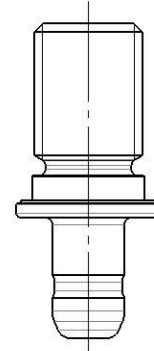
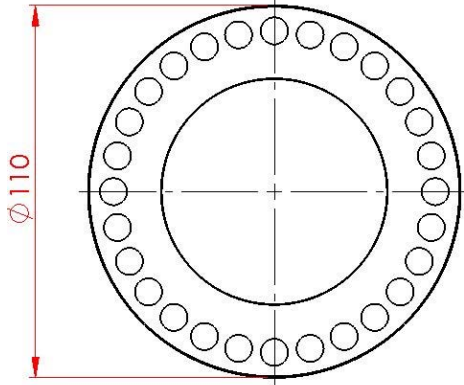
### 5.4 Procedure for clamping test

First the bearing plate or the raised supports must be cleaned and de-greased. Then the assembled insertion force tester is inserted in the clamping bore. During this action the clamping system must be in the released state; it is to be ensured that the nipple inserted first does not hit the bearing plate or the retaining ring because otherwise the adjustment of the very sensitive dial gauge may change. After insertion, the pressure is relieved and the clamping element changes to the clamped state. The exact insertion force can now be read on the dial gauge. The value is displayed in kN.



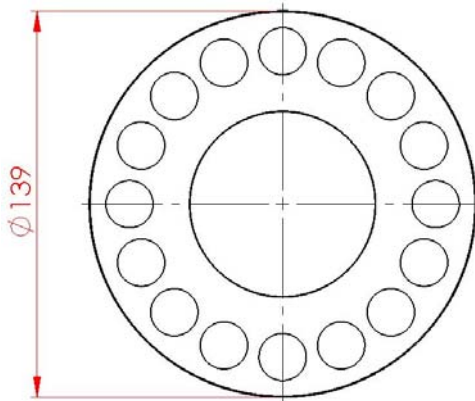
## 6 Parts of the insertion force tester

**For SPEEDY classic 1:**

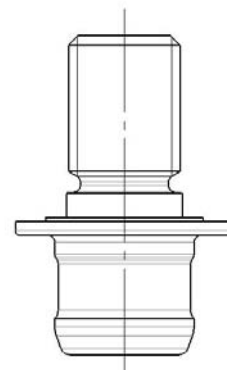


**Nipple 034-117**

**For SPEEDY classic 2:**

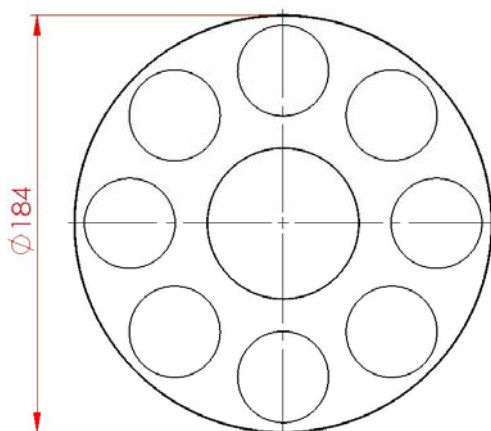


**Washer 034-113-05**

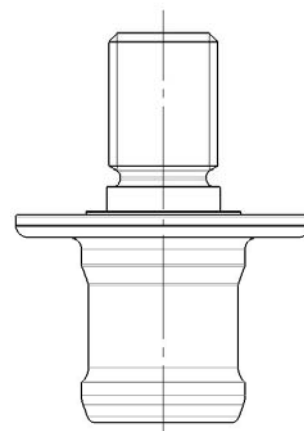


**Nipple 034-118**

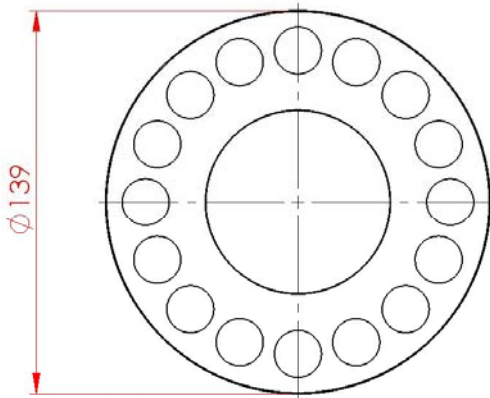
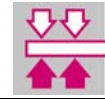
**For SPEEDY classic 3:**



**Washer 034-113-04**

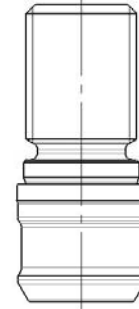


**Nipple 034-119**



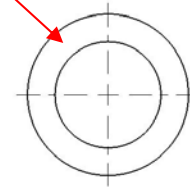
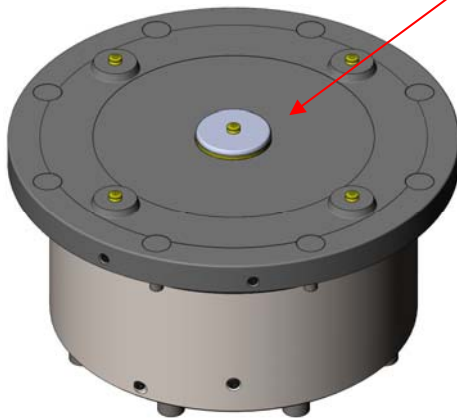
Washer 034-113-04

**For Sweeper:**

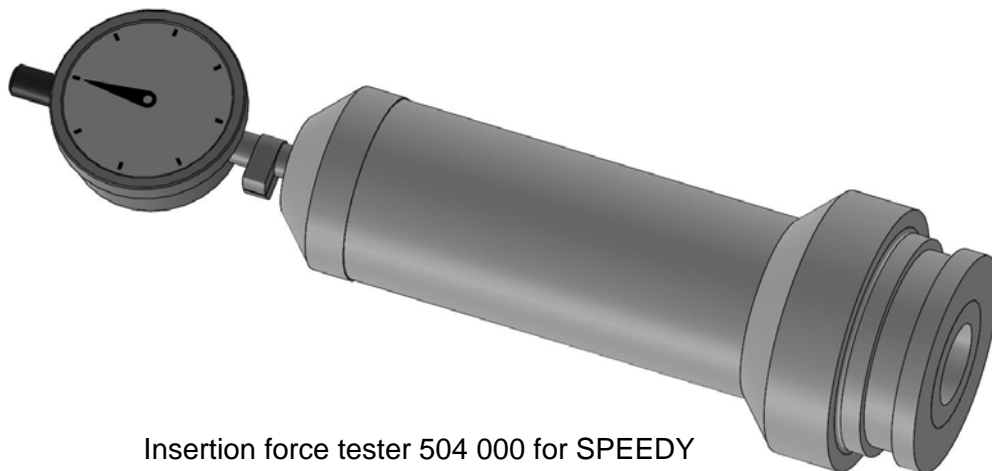


Nipple 034-129

Spacer washer is used with all elements with 3 mm raised supports.



Spacer washer 034-128




Insertion force tester 504 000 for SPEEDY  
1,2,3 and Sweeper elements



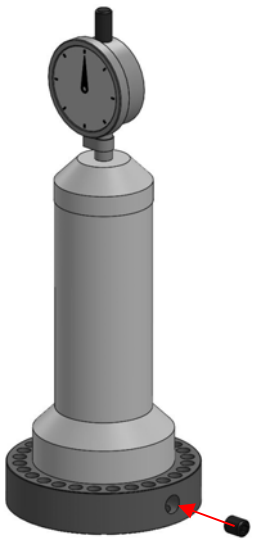
## 7 Assembly and test procedure

Assembly of the insertion force tester:

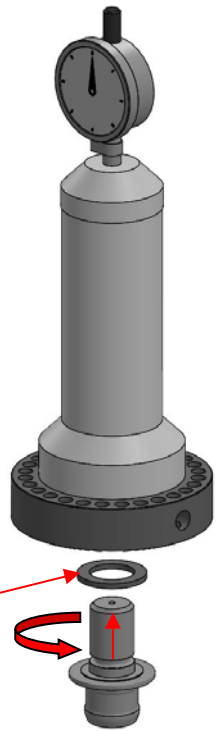
1.) Fit the washer



2.) Screw in the set-screw (only place in

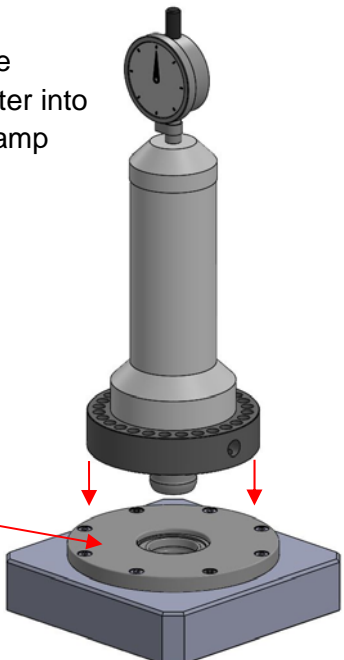


3.) Screw in the nipple by hand



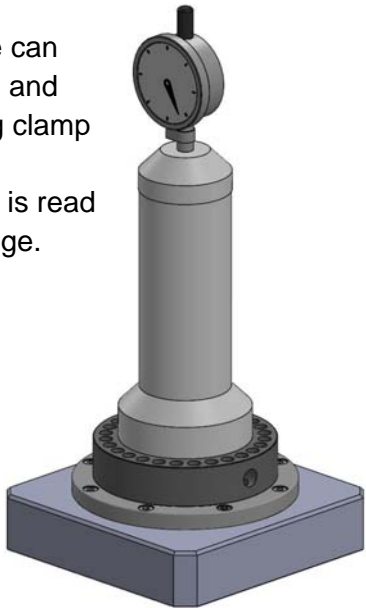
The spacer washer is only required for elements with 3 mm high supports.

4.) Carefully insert the insertion force tester into the fast closing clamp



!!Attention!! The fast closing clamp must be released.

5.) The dial gauge can now be zeroed and the fast closing clamp clamped. The clamping force is read on the dial gauge.







## 8 Putting into operation, operating and operation

### 8.1 Putting in operation for the first time:

On putting into operation for the first time, it must be checked whether all parts are in correct working order. It must be ensured the correct washer and the correct nipple for the related clamping system are used. The dial gauge is zeroed initially once the insertion force tester has been inserted into the fast closing clamp. Then the fast closing clamp is clamped and the clamping force read.

### 8.2 Checking

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

### 8.3 Maintenance

In principle, all parts of the insertion force tester must be stored in the plastic box provided. The metal parts must be lightly oiled to prevent corrosion.

### 8.4 Storage

#### Before first-time use:

If you do not use the insertion force tester immediately, please store it in the original plastic box so it is dry and not subjected to dust.

#### Extended storage after usage:

Before storing the insertion force tester, you should please take measures to protect against corrosion

#### After extended storage:

Have calibrated first after extended storage.

### 8.5 Recycling

All parts of the insertion force testers are to be separated by material and disposed of as per the local regulations and guidelines.



## 9 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: Einzugskraftprüfers No: 504 000**

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

2006/42/EG                      Machines, addendum II A / Maschinen, Anhang II A

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, am 27.09.2018

Martin Greif  
Managing director / Geschäftsführer