

OPTIONS FOR MELT INDEX MEASUREMENT



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Introduction

The GÖTTFERT Melt Flow Indexers are already equipped with a large number of basic functions. Our extensive option program provides a more detailed characterization of the test materials as well as supplementing accessories to the completion of the basic equipment. The options can be added also to the test devices of the previous models, the following table shows the compatibility.

Note:

All options without device names („only valid for...“) are selectable for all Melt Flow Indexer.

Machine options

Note: You can click on the respective checkmark in the matrix. This will take you directly to the desired product. To return to the desired matrix, click the icon at the end of each page.

Look for the following legend:



Click on the checkmark to get to the desired product.



Clicking on this symbol returns you to the corresponding matrix.

Option	mi2.1	mi2.2	mi2.3	MI-3	MI-4	mi40	MI-ROBO
Melt cutting unit, manually				✓	✓		
Melt cutting unit, automatically	✓	✓	✓	✓	✓	✓	
Die swell measurement				✓	✓	✓	
Capillary plug, manually	✓	✓	✓	✓	✓	✓	
Capillary plug, automatically				✓	✓	✓	
Capillary plug, heatable	✓	✓	✓	✓	✓	✓	
Pneum. material ejection unit				✓	✓		
Nitrogen purge	✓	✓	✓	✓	✓	✓	✓*
Gas aspiration	✓	✓	✓	✓	✓	✓	
PC + printer	✓	✓	✓	✓	✓	✓	✓
Operating Software „miCONNECT“	✓	✓	✓	✓	✓	✓	
Balances	✓	✓	✓	✓	✓	✓	
Uninterrupted power supply (UPS)	✓	✓	✓	✓	✓	✓	
Semi-automatic cleaning unit						✓	





Additional tools

Option	mi2.1	mi2.2	mi2.3	MI-3	MI-4	mi40	MI-ROBO
Capillary (Die)	✓	✓	✓	✓	✓	✓	✓*
Plug gauge	✓	✓	✓	✓	✓	✓	✓
Test piston (as spare part)	✓	✓	✓	✓	✓	✓	✓
Fixing units	✓	✓	✓	✓	✓		
Feeding units	✓	✓	✓	✓	✓	✓	
Accu-/Pneum. cleaning device	✓	✓	✓	✓	✓	✓	
Temperature control	✓	✓	✓	✓	✓	✓	✓
Machine table	✓	✓	✓	✓	✓	✓	✓*
Factory calibration certificate -Basic Plus-	✓	✓	✓	✓	✓	✓	✓
Barcode Scanner	✓	✓	✓	✓	✓	✓	✓
Hardened die holder	✓	✓	✓	✓	✓	✓	
Additional Accessories	✓	✓	✓	✓	✓	✓	✓

* Please take the following order information from the separate product descriptions.

Order Information

Machine Options

Melt cutting unit

Melt Cutting unit - manually

Cutting the strand is done by a tool mounted close to the die. The cutter is operated manually by the user. The cutting device has been proven to operate with a number of polymers over a wide MFR/MVR range.

Nevertheless, some polymers cannot be cut properly because of their material characteristics (e.g. sticky, adhesive materials, or rheological complex materials). For such materials it is not possible to guarantee that the cutting device will operate properly. Please ask for details.

Only valid for MI-3, MI-4

Order number..... on request

Melt Cutting unit – motor powered

Cutting the strand is done by a motor powered tool mounted close to the die. The cutter is activated via program control. The cutting device has been proven to operate with a number of polymers over a wide MFR/MVR range.

Nevertheless, some polymers cannot be cut properly because of their material characteristics (e.g. sticky, adhesive materials, or rheological complex materials). For such materials it is not possible to guarantee that the cutting device will operate properly. The triggering of the melt cutting process is carried out via the operating program. Please ask for details.

Only valid for mi2-series

Order number..... 5.71.1088

Only valid for MI-3, MI-4, mi40

Order number..... 5.71.5425



Die swell measurement

Note: The die swell unit cannot be operated simultaneously with a balance and/or a capillary plug.

Die Swell Tester - standard resolution

to measure the diameter of the extruded strand and for determination of static and dynamic die swell (fixed measuring position). Laser diode class 1 (780 nm), measuring range 0,014 to 28 mm, the power supply and data acquisition are controlled by the instrument.

The delivery consists of:

- Laser measuring head
- Connection cable and electronic unit (I/O module)

Only valid for MI-3, MI-4

Order number..... 5.07.470

Only valid for mi40

Order number..... 5.71.529

Die Swell Tester - high resolution

to determine the static and dynamic die swell by measuring the diameter of the extruded strand about 40 mm below the capillary end, installed below the test chamber. Laser unit class 2 (630-680 nm, power < 1 mW), resolution 0,1 µm, measuring range 0,2 up to 32 mm, repeatability ± 0,2 µm, the power supply and data acquisition are controlled by the instrument.

The delivery consists of:

- Laser measuring head
- Swivelling arm with adjustable height for reception of laser measuring head and melt cutting unit, Adjustment range: approx. 80 mm

Only valid for MI-3, MI-4

Order number..... 5.07.430

Only valid for mi40

Order number..... 5.71.530

Distance from Capillary-lower edge to measuring plane:

mi40:

- Without melt cutting unit and gas-discharge min. 50 mm to max. 130 mm.
- With melt cutting unit (5.07.251) min. 100 mm to max. 130 mm.
- With gas-discharge (5.71.519) min. 80 mm to max. 130 mm.

MI-3/MI-4:

- Standard resolution: without melt cutting unit: min. 50 mm to max. 125 mm
With melt cutting unit: min. 100 mm to max. 125 mm
- High resolution: Without melt cutting unit: min. 60 mm to max. 120 mm
With melt cutting unit: 120 mm



Capillary plug

Capillary plug, manually

To manually close the die while system is filled and material melted. Recommended for certain high flow materials (with clamping lever).

Only valid for mi2-series

Order number..... 5.71.086

Only valid for MI-3, MI-4

Order number..... 5.70.010

Only valid for mi40

Order number..... 5.71.533

Capillary plug, automatically

Before feeding, the pneumatic die locking avoids, that the test material flows out of the test barrel too fast. When the melting time is over and after releasing the test weight, the die locking opens automatically when the weight drive has reached the lower end position.

A compressed air connection from 5 to 8 bar is necessary (water and oil free).

Only valid for MI-3, MI-4

Order number..... 5.70.600

Only valid for mi40

Order number..... 5.71.538

Capillary plug, heated

- For manually closing of the capillary bore during the filling procedure and melting time when measuring certain high flow materials.
- Especially this option is recommended to fulfill the standards of the
- DIN EN ISO 1133-2:2011. Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 2:
- Method for materials sensitive to time-temperature history and/or moisture.
- Here a procedure for determining the melt mass-flow rate (MFR) as well as
- the melt volume flow rate (MVR) of moisture sensitive thermoplastics is fixed, which show a high rheological sensitivity against a time- or temperature depending previous history by which the sample was treated during the test.

Only valid for mi2-series

Order number..... 5.71.191

Only valid for MI-3, MI-4

Order number..... 5.07.160

Only valid for mi40

Order number..... 5.71.547



Pneumatic material ejection unit

Ejection force with up to 50 kg

For timesaving pre-loading or pressing through of viscous materials. Maximum press through force of 50 kg together with the test weight of 21.6 kg. Required is a compressed air supply, 5-8 bar, water- and oil-free.



Picture 1: Pneumatic press through device

Only valid for MI-3, MI-4

Order-number 5.70.515

Ejection force with up to 100 kg

For timesaving pre-loading or pressing through of viscous materials. Maximum press through force of 100 kg together with the test weight of 21.6 kg. Required is a compressed air supply, 5-8 bar, water- and oil-free.

Only valid for MI-3, MI-4

Order-number 5.70.517

Note: The release device can be retrofitted on site. The retrofitting may only be done by a GÖTTFERT service engineer. Please specify while ordering, if you plan to retrofit the device at a later time. We will prepare an opening in the hood to make the retrofitting process easier.



Nitrogen purge device

For certain test samples the residual moisture has a huge influence to the test result. In this case we recommend to use a drying oven. It is possible that during the filling process further moisture can be absorbed onto the surface of the testing material again. Here the option "nitrogen purging" helps to reduce the moisture absorption.

Please note that the nitrogen pipe has to be provided by the customer. The pressure should be about 2 bar.

Nitrogen purge

- To be connected to the charging opening of the test chamber. Consisting of die ring with connection for the nitrogen gas.
- Material must be appropriately conditioned by user and carefully loaded.

Only valid for mi2-series

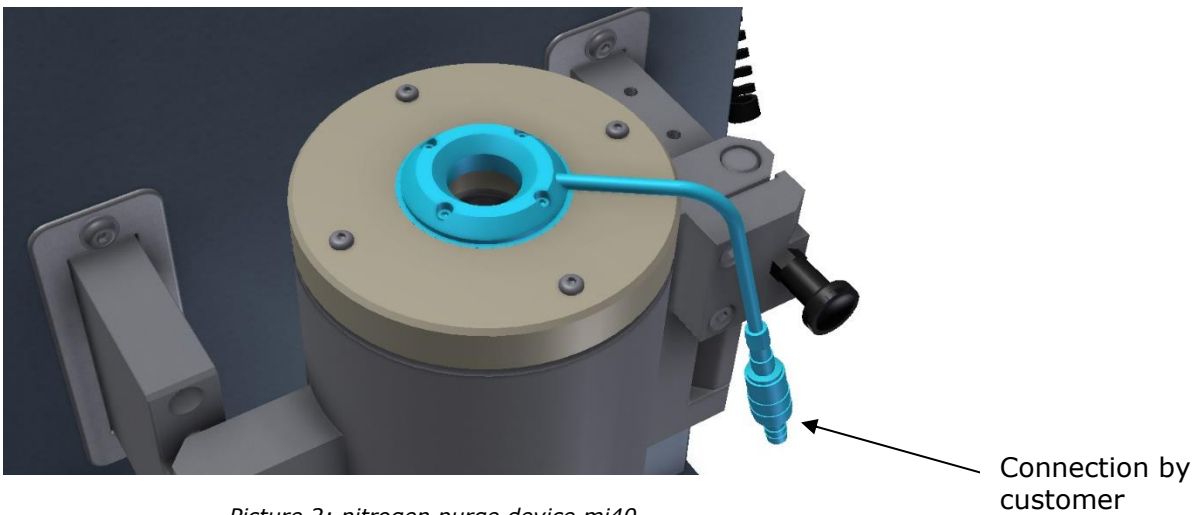
Order number..... 5.71.037

Only valid for MI-3, MI-4

Order number..... 5.07.416

Only valid for mi40

Order number..... 5.71.518



Picture 2: nitrogen purge device mi40

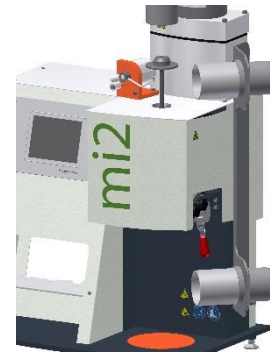


Gas aspiration

For external aspiration of gases, smokes etc. in the test chamber area.

Gas aspiration above and below the test chamber area

The connecting tube is right above and below the test chamber.
The connection diameter is 70 mm.



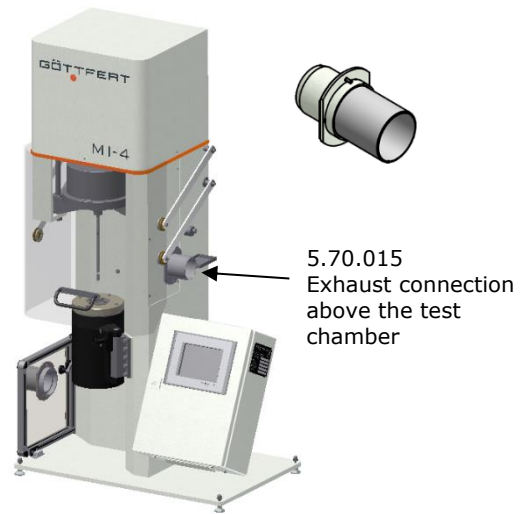
Picture 3: Gas aspiration mi2.x

Only valid for mi2-series

Order number..... 5.71.197

Exhaust connection above the test chamber

The connecting tube is right above the test chamber,
connection diameter 70 mm, length 95 mm.



Picture 4: Exhaust connection above

Only valid for MI-3, MI-4

Order number..... 5.70.015



Exhaust connection below the test chamber

The connecting tube is left below the test chamber, connection diameter 70 mm, length 95 mm.

5.70.180
Exhaust connection
below the test chamber



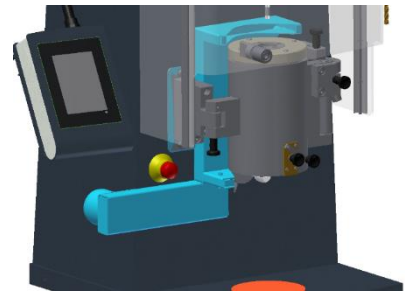
Picture 5: Exhaust connection below

Only valid for MI-3, MI-4

Order number..... 5.70.180

Gas aspiration above and below the test chamber area

The connecting tube is on the left side, below the mount for the control unit. The connection diameter is 70 mm.



Picture 6: Gas aspiration above and below (mi40)

Only valid for mi40

Order number..... 5.71.5003

Gas aspiration above the test chamber area

Only valid for mi40

Order number..... 5.71.763

Mobile exhaust system

with Filter for exhaust and filtration of the vapors, including tube connections for setting up the system in a maximum distance of 5 m.
For the installation of the system, the option "Gas aspiration" must be selected first.

Only valid for mi2-series, MI-3, MI-4, mi40

Order number..... 5.70.556



PC and printer

PC

For details and closer information please see the separate product description "PC Specifications for GÖTTFERT systems".

Printer

Laserjet printer (network capable)

for a direct printout of the test results.

According to current market offer and technical conditions, with USB and integrated 10/100 Ethernet interface.

Supported HP compatible printer language: at least PCL 5

For the exact compatibility to the MI-3 and MI-4 please get in contact with us.

If the printer is supplied by the customer itself or by a third party, first a function check must be performed by us.

The delivery includes:

- 1 Printer cartridge, black
- 1 Mains cable (power supply 100-240 V / 50-60 Hz)
- 1 Operating manual

Order number..... 8.94.058

Printer network cable

Network cable RJ45, Cat.5, blue, length 3,0 m

Order number..... 8.90.952

Operating Software "miCONNECT"

For details and closer information please see the separate product description „miCONNECT“.



Balances

Electronic Analytical Balance Mettler-Toledo MS104

Readability: 0.1 mg

Maximum capacity: 0...120 g

Technical specifications:

- Metal housing - robust, durable and resistant to chemicals
- Weighing scale made of stainless steel and overload protection
- Glass windscreen – very easily to demount and suitable for a quick cleaning
- HCD - display for an easy and accurate readability of the values
- FACT (fully automatic calibration and adjustment) with built-in weight
- 8 application programs as per percent weighing, formulation, statistics, etc.
- USB and RS232c interface
- Protective cover
- Dimensions: 204 mm x 347 mm x 345 mm (WxDxH)

Only valid for mi2-series, MI-3, MI-4, mi40

Order number..... 5.70.952

Precision Balance Kern EW 220-3NM,

including data interface RS232 and interface cable

Readability: 0.001 g

Maximum Capacity: 0.02...220 g

- Verification value 0.01 g
- Reproducibility 0.001 g
- Calibration weight 50 g
- Ambient temperature 10-30 °C

Only valid for mi2-series, MI-3, MI-4

Order number..... 5.70.951

Only valid for mi40

Order number..... 5.71.761



Uninterrupted Power Supply (UPS)

UPS buffering system, used for bridging power fails in the main supply to save measurement values and controlled shut down the software of the test device.

Note: In this condition, the test device is not able to start or perform further measurements! Current measurements are aborted!

Please note that the UPS buffering system has a different lifetime depending on the ambient temperature.

Uninterrupted Power Supply (UPS) (30 minutes)

Battery life (approx.)

- at 20 °C 4 years
- at 30 °C 2 years
- at 40 °C 1 year
- at 50 °C 0,5 year

Order number..... 6.90.008

Battery life (approx.)

- at 20 °C 15 years
- at 30 °C 10 years
- at 40 °C 9 years
- at 50 °C 2 years

Order number..... 6.90.010

Important: For the mi2-series, a separate control cabinet is placed next to the test device to accommodate the UPS.

Control cabinet for UPS

Only valid for mi2-series

Order number..... 8.50.384



Semi-automatic cleaning unit

Semi automatic cleaning unit

For barrel cleaning without compressed air. The module is firmly mounted on the test device. In addition to the up/down movement the rotating cleaning piston guarantees a reliable and efficient cleaning of the test barrel. It includes the following cleaning tool with spin.



Picture 7: Semi-automatic cleaning unit

Only valid for mi40

Order number..... 5.71.510

Important

At least one cleaning tool in the corresponding steel grade must be selected for the semi-automatic cleaning module!

Cleaning tool with spin for 5.71.510

for cleaning the test barrel with the cleaning tape or the tape blanks.

Order number..... 5.71.5020

Cleaning tool with brash for 5.71.510

for cleaning the test barrel with a brush.

Order number..... 5.71.739

Cleaning tool with spin for 5.71.510 (only for steel grade 2)

for cleaning the test barrel with the cleaning tape or the tape blanks.

Order number..... 5.71.5021

Cleaning tool with brash for 5.71.510 (only for steel grade 2)

for cleaning the test barrel with a brush.

Order number..... 5.71.5022

Note: The semi-automatic cleaning unit cannot be used with a test barrel of steel grade 1S!



Additional tools

Capillaries (Dies)

Note: One capillary (4.23.000) is already included in the delivery of the basic MI test device (Only valid for mi2-series, MI-3, MI-4, mi40).

Standard capillary

2.095 ± 0.003 mm diameter, 8 ± 0.025 mm length, constructed from tungsten carbide.

Only valid for mi2-series, MI-3, MI-4, mi40

Order number..... 4.23.000

Standard Capillary in Corrosion Resistant Design

The capillary is resistant against corrosion and most of the acids.

2.095 mm diameter, length 8 mm, made of hardmetal with nickel as binder, with a serial number.

The maximum allowed cleaning temperature of 550 °C must not be exceeded!

The choice of cleaning compound depends on the used "test material", which flows through the capillary.

Please check with us, if your existing capillary is corrosion resistant!

Only valid for mi2-series, MI-3, MI-4, mi40

Order number..... 4.23.957

Test set "Half diameter / half length" according ISO 1133-1 or ASTM D 1238 method C

Capillary 1.05 ± 0.005 mm diameter, 4 ± 0.025 mm length, made of tungsten carbide.

The delivery for the mi2-series contains:

- Capillary (4.23.043)
- Test weight 0.325 kg for capillary length 4 mm (Procedure C)
- Hexagonal wrench SW 2.5

Only valid for mi2-series

Order number..... 5.02.586

The delivery for MI-3/MI-4 contains:

- Capillary (4.23.043)
- Special test piston to eliminate the length difference

Only valid for MI-3, MI-4

Order number..... 5.07.358

As replacement for the capillary of option ISO 1133 method C, article no. 5.02.586/5.07.358

Only valid for mi2-series, MI-3, MI-4

Order number.....4.23.043



Upgrade kit for measurement according to ASTM D 3364

consisting of:

- capillary L/D = 23.24/2.096 (total length 25.4 mm) with 120 degrees inlet angle
- test piston for capillary L = 25.4 mm
- with test weight 20 kg. The test weight is exchanged with the 21.6 kg test weight of the weight set I and II (Only at MI-4 or mi40)

Important: At MI-3 you can only choose between standard weight set/special weight set or ASTM weight set! Both are not possible!

"steel grade 5"

Only valid for mi2-series

Order number..... 5.71.079

Only valid for MI-3, MI-4, mi40

Order number..... 5.07.405

"steel grade 3" / corrosion resistant

Only valid for mi2-series

Order number..... 5.71.068

Only valid for MI-3, MI-4, mi40

Order number..... 5.70.179

"steel grade 2"

Only valid for mi2-series

Order number..... On request

Only valid for MI-3, MI-4, mi40

Order number..... 5.70.539

Capillary L/D = 4/1,05 – set

set consisting of:

- Capillary L/D=4/1,05 (Total length 4mm)
- Test piston 100g with test piston fixing (4mm longer) made of steel grade 5

Order number..... 5.70.1004

Further steel grades on request



Plug Gauge

Note: One plug gauge according to ISO 1133 is already included in the delivery of the basic MI test device.

Plug Gauge

Calibration pin for capillaries with D=2.095 according to GFT quality standards with test certificate.

Go-side: 2.092 -0.001

No-go: 2.098 +0.001



Picture 8: Plug gauge

Order number..... 4.56.079

Calibration pin for capillaries with D=2.095 according to ISO 1133 with test certificate.

Go-side: 2.090 -0.001

No-go: 2.100 +0.001

Order number..... 4.56.251

Test piston (as spare part)

Test piston

- For capillary length = 8 mm, the test piston shaft has rings as reference marks for the ISO and ASTM standard measurement zones

Only valid for mi2-series

Order number..... 5.02.579

Only valid for MI-3, MI-4

Order number..... 5.07.360

Only valid for mi40

Order number..... 5.07.443

Further on request



Picture 9: Test piston with piston fixing



Fixing Units

The fixing unit avoids, that low viscous material is pressed through the capillary already during the melting time due to the weight of the test piston.

Fixing unit

The fixing unit is clamped between test chamber and test weight, to hold the weight in front of the test range until the melting time is over. Afterwards it has to be removed and the weight released.



Picture 10: Fixing unit

Only valid for mi2-series

Order number..... 5.71.017

Test piston fixing

By a manually setting of the test piston fixing in the basic weight, the selection between loose and fix position can be chosen.

- Selection (setting) "loose": Test piston remains in the barrel after measurement and must be removed manually.
- Selection (setting) "fix": Test piston is removed from the barrel automatically after measurement.

Advantage: The piston can be moved to a defined position, so that the weight of the piston not already presses of the test material during pre-heating.

The delivery contains the 1.2 kg test weight, the optimized test piston fixing as well as the test piston (120 g).

Only valid for MI-3, MI-4

Order number..... 5.07.495



For a subsequent delivery the following article numbers are valid:

Basic weight 1.2 kg with locking

Order number..... 5.07.457

Test piston with twisting protection

Steel grade 5S (Standard), 120 g

Order number..... 5.07.443

Test piston with twisting protection

Steel grade 1S, 120 g

Order number..... On request

Test piston with twisting protection

Steel grade 2, 120 g

Order number..... On request

Test piston with twisting protection

Steel grade 3, 120 g

Order number..... On request

Test piston with twisting protection

Steel grade 4, 120 g

Order number..... On request



Picture 11: Test piston in optimized test piston fixing



Feeding Units

Feeding support for filling the test material into the test barrel

The feeding support comprises of a stainless steel hopper, that is used to fill the test barrel after being placed on the barrel entry. It prevents that the filling area gets dirty.



Picture 12: Feeding support

Only valid for mi2-series

Order number..... 5.71.116

Feeding tool for low viscous materials

For more comfortable feeding of the test barrel with low viscous materials.

Set consists of:

- Hopper PTFE
- Capillary plug
- Feeding piston (Vespel)



Picture 13: Feeding tool low viscous materials

Only valid for mi2-series

Order number..... 5.07.281

Only valid for MI-3, MI-4

Order number..... 5.07.417

Only valid for mi40

For version without nitrogen purge

Order number..... 5.71.534

Only valid for mi40

For version with nitrogen purge (5.71.518)

Order number..... 5.71.535



Accu-cleaning device / pneumatic cleaning device

With the following cleaning tools it might be much easier to clean the test barrel, especially for hard and sticky test materials.

Angled cleaning device (accu-driven)

For an easy cleaning of the test barrel. A coupling to attach the cleaning tools "Cleaning brush" 5.03.188 and/or "Cleaning piston" 5.03.189 (5.08.213) is integrated:

Technical data:

- 12 V nominal voltage
- 0-800 min-1 idling speed
- Torque 12 Nm
- Clock/counter clock wise rotation
- Overload protection
- Weight 1.1 kg



Picture 14: Accu-cleaning device

The delivery contains:

- 1 Accu charger 220-240 V
- 2 Spare accumulators 12 V; 1,5 Ah
- 1 Coupling

Only valid for mi2-series, MI-3, MI-4, mi40

Order number..... 5.11.180

Angled Cleaning device (accu-driven)

Identical with order number 5.11.180, but in 115 V design.

Only valid for mi2-series, MI-3, MI-4, mi40

Order number..... 5.11.181

Pneumatic cleaning device

Manually use, air driven rotary cleaning tool for quick and easy cleaning of the test barrel. The device needs a compressed air supply of 4-6 bar (oiled and water free).

Technical data: Idle speed 2000 rpm, Power 300 watt, weight 0.62 kg

Including air hose (about 1,5 m) and quick connect coupling

Only valid for mi2-series, MI-3, MI-4

Order number..... 5.11.082



Maintenance unit (for pneumatic cleaning device)

2-fold, consisting of 2 m compressed air tube with 1/4" thread connection, filter controller for pressure range from 0.5-12 bar and filter 40 ym with semi automated condensate drain, oiler with 90 cm³ filling volume and 2-fold coupling unit NW 7,2 for connecting 2 cleaning units, throughput: max. 1660 l/min, input pressure 0.8-14 bar, temperature range: -10 to +60 °C, medium: oiled and unoled compressed air, oil dosing: 1 to 2 drops/min at 1000 l/min

Only valid for mi2-series, MI-3, MI-4

Order number 5.21.180

Cleaning tools

Coupling part with steel brush

for the pre-cleaning of the test barrel, also with coupling part for the pneumatic cleaning device and the angled cleaning device (accu driven)



Picture 15: Coupling part with steel brush

Order number..... 5.03.188

Coupling part with brass brush for "Inconel" design

for the cleaning of the test barrel (Inconel design) with the cleaning tape, also with coupling part for the pneumatic cleaning device and the angled cleaning device (accu driven).

Order number..... 5.03.366

Coupling part with spin

Brass design, for cleaning the test barrel with the cleaning tape or the tape blanks, also with the coupling part for the pneumatic cleaning device and the angled cleaning device.



Picture 16: Coupling part with spin

Only valid for mi2-series

This unit is a bit longer than 5.03.189.

Order number..... 5.08.213

Only valid for MI-3, MI-4, mi40

Order number..... 5.03.189



Cleaning consumables

Tubular brush (steel)

Ø 9,5 mm, made of steel, which does not damage the test barrel, consumable material for 5.03.188

Order number..... 4.50.301



Picture 17: Tubular brush

Insert with spin

Ø 9,5 mm, complete made of brass material, cleaning tool for canvas cloths, consumable material for 5.03.189 und 5.08.213

Order number..... 5.03.143



Picture 18: Insert with spin

Cleaning tape

Canvas cloths, material: cotton, width 50 mm, length approx. 50 m

Order number..... 4.50.769



Picture 19: Cleaning tape

Cleaning tape blanks

Precut pieces, size 7 x 7 cm, material: canvas

Order number..... 4.50.762



Picture 20: Cleaning tape blanks

Cleaning tape (nature)

Recommended for all melt index test devices for cleaning of standard polymers.

- Material: 100 % cotton, nature, coil design
- Rough surface structure
- Width 50 mm, length 100 m
- Thickness approx. 0.4 mm
- Maximum temperature influence: 350 °C
- Maximum residence time at Tmax: 5 seconds

Order number..... 4.50.749



Picture 21: Cleaning tape roll

Spare-cleaning tool with spin for 5.71.510

Brass design, for cleaning the test barrel with the cleaning tape or the tape blanks.

Order number..... 5.71.601



Temperature control

Temperature calibration kit for test devices

Consisting of:

- Temperature measuring instrument with Pt100 (DKD)
- Measuring scale 150 mm
- Retaining ring

The temperature measuring instrument (6.88.016) is used to check the test channel temperature of the test device.

With DKD-certificate and 5 standard calibration base points or 5 customer specific base points (K):

Standard: K1: 190 °C
 K2: 230 °C
 K3: 275 °C
 K4: 300 °C
 K5: 500 °C

Further calibration base points on request.

The temperature measuring instrument consists of:

- Precision measuring instrument
- Special sensor Pt100
- Clamping sleeve
- Sensor tip
- Centering

Order number..... 5.71.5017



Picture 22: Temperature measuring instrument



Picture 23: Measuring scale

Measuring instrument (standard calibration base points) without measuring scale

This set consists of the following components:

- Precision measuring instrument
- Special sensor Pt100
- Clamping sleeve
- Sensor tip
- Centering

Order number..... 6.88.016

Measuring instrument (specific base points) without measuring scale

This set consists of the following components:

- Precision measuring instrument
- Special sensor Pt100
- Clamping sleeve
- Sensor tip
- Centering

The specific base points (max. 5) must be specified when ordering!

Order number..... 6.88.1002



Spare parts for temperature control

Clamping sleeve

Order number..... 5.46.011

Sensor tip

Order number..... 5.46.010

Centering

Order number..... 5.46.023

Precision measuring instrument

Order number..... 8.86.106

Special sensor Pt100

Order number..... 8.86.107

Important

If an existing precision measuring instrument with a new special sensor Pt100 is to be used, the precision measuring instrument must first be sent to us for recalibration. This also applies if an existing special sensor Pt100 is to be equipped with a new precision measuring instrument.

Recalibration of the precision measuring instrument

Recalibration for 5 calibration base points of the precision instrument

5 calibration base points:

standard: K1: 190 °C
 K2: 230 °C
 K3: 275 °C
 K4: 300 °C
 K5: 500 °C

For calibration the customer has to send the measuring instrument with special sensor Pt100 to GÖTTFERT free of charge:

GÖTTFERT Werkstoff-Prüfmaschinen GmbH
Siemensstraße 2
74722 Buchen (Odenwald)

The costs for return shipment have to be borne by customer.

Order number..... 6.88.020

Recalibration for 5 customer-specific calibration base points of the precision instrument

The specific base points (max. 5) must be specified when ordering!

Order number..... 6.88.1004



Calibration MI according to ISO 17025

Calibration of the melt flow index tester according to the requirements of ISO 17025 at final inspection of the device at GÖTTFERT

In order to meet the requirements of the ISO 17025 standard, the following parameters relevant for melt index measurement are checked/calibrated:

- Test weight
- Test piston
- Test barrel
- Test capillary
- Temperature
- Position measurement
- Time measurement

The inspection/calibration is carried out with traceable measuring equipment, indicating the smallest measurement uncertainty determined directly at the test device.

After successful conclusion a result report (verification report) is provided in accordance with the requirements of ISO 17025.

*Temperature profile

The temperature profile is determined at one temperature by default, other temperature profiles can be determined after consultation.
(Details on request)

*Test capillary, test piston, test barrels

According to the number, an additional effort for testing must be considered.
(Details on request)

Order number..... 5.07.1002



Machine table

For reception of the test device and the accessories. The table is made of anodized aluminum beams.

Machine table I

Width: 1100 mm, Depth: 750 mm, Height: 720 mm.

Only valid for mi2-series

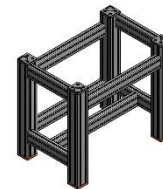
Order number..... 5.71.071

Machine table II

Width: 1600 mm, Depth: 750 mm, Height: 720 mm.

Only valid for mi2-series

Order number..... 5.71.072



Picture 24: Machine table

Machine table

Width: 720 mm, Depth: 470 mm, Height: 660 mm.

Only valid for MI-3, MI-4

Order number..... 5.07.090

Machine table

Width: 500 mm, Depth: 570 mm, Height: 650 mm.

Only valid for mi40

Order number..... 5.71.685

Adjusting and fastening bolts

Adjusting and fastening bolts to fix the MI device with a table top.

The adjusting and fastening bolts are designed for a table thickness of 18-32 mm.

Delivery quantity: 4 pieces

Only valid for mi2-series, MI-3, MI-4, mi40

Order number..... 5.70.128



Factory calibration certificate -Basic Plus-

Factory calibration certificate -Basic- incl. additional factory calibration certificates.

- GÖTTFERT test equipment listing including details of the current calibration number & DAkkS registration number
- DAkkS certificates of the test equipment in digital version (PDF)
- GÖTTFERT final acceptance report

Order number..... 6.95.1099

Barcode Scanner

For the quick read in of test sample information, like material type, charge, colour, production line,... from a barcode. The information can be set to specified parameter files to configure complete measuring packages for MFRHost (high time saving factor). Delivery with implemented Software.



Picture 25: Barcode Scanner

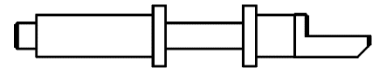
Only valid for mi2-series, MI-3, MI-4, mi40

Order number..... 5.70.953



Hardened die holder for particularly high stress

Recommended for permanent stress due to high ejection forces especially of viscous materials.



Picture 26: Hardened die holder

Only valid for mi2-series, MI-3, MI-4, mi40

Order number..... 5.70.966

Additional Accessories

Reference material

PE granules M80064 for checking and verification of the correct test data acquisition.

The delivery includes the specification for melt index testing devices as well as the one for the high pressure capillary rheometer.

The delivery contains 1 kg in a plastic bag.



Picture 27: Reference material

Order number..... 4.58.302

Heat protecting gloves; Size 7

Order number..... 1.44.218

Heat protecting gloves; Size 9

Order number..... 1.44.217

Safety glasses

Very comfortable to wear, good adaptability by multi adjustability, glass made from high-impact polycarbonate, color yellow/black

Order number..... 1.40.131



Service platform serviceCONNECT

serviceCONNECT is a platform for your GÖTTFERT testing instrument. The service solution enables our users to send service requests for the test equipment to the GÖTTFERT customer service quickly, easily and specifically.

After a simple registration you will have an insight into many service topics around your testing device and will benefit from our High Quality Service.

- Preferred service processing
- Quick and easy registration of your test device
- Easy and fast communication with chat and video function
- Direct line to our service experts
- Documents related to the device, e.g. operating manual, circuit diagrams, spare parts lists available for downloading

For more information about serviceCONNECT, please visit our homepage at <https://www.goettfert.com/services/serviceconnect>



The screenshot shows the GÖTTFERT logo at the top, followed by the text 'serviceCONNECT' in a large, bold font. Below this is an input field labeled 'E-Mail' with a red border. Underneath the input field is a red button with the text 'Weiter'. Below the button are two lines of text: 'Haben Sie Schwierigkeiten beim Anmelden?' and 'Kein Account? REGISTRIEREN'.

Note: In order to take advantage of the best possible and fast service from GÖTTFERT, we recommend immediate registration with serviceCONNECT when a test device is put into operation.

Note

PC hardware

GÖTTFERT GmbH provides full warranty for the function of machines that have been supplied as complete system that means with PC and printer by GÖTTFERT. PC means generally the complete system comprising of PC, monitor, keyboard, interfaces, mouse and if applicable joysticks.

Principally, we do not give a functioning guarantee for connecting externally supplied PCs and printers (non-GÖTTFERT supply).

If the customer provides the PC by himself, GÖTTFERT cannot guarantee the troublefree functioning of PC and GÖTTFERT unit. Service work, which will be essential due to appearing problems in regard to configuration, serial interfaces, connection cables, communication etc. do not belong to the warranty obligations and will therefore be invoiced on an actual expense basis.

The PC must be sent to GOETTERT prior to final inspection.

The final inspection test in house GOETTERT of the relevant rheometer will be performed only with the customer PC, which will be used onsite for operation, to guarantee a trouble-free operation of the total system. In order to being able to prepare the PC best possible for operation with the rheometer, please make sure that the PC is sent to GOETTERT on time.

Some GÖTTFERT devices require the application of PC extension cards. By default they are executed in full construction height, consequently the application of a mini Tower PC is necessary. If the customer provides a PC in „Small-Form-Factor“ format by himself, then low profile extension cards have to be used.

Please refer with the order if a PC with low profiles extension slots shall be used! GÖTTFERT is checking if low profile cards are available for the requested application and will offer these extension cards. Please specify the brand and type of the used PC when placing the order!

Due to the various printer executions that are available on the market, we do not give any function guarantee for printers not supplied by GÖTTFERT. Support for possible adjustments will be charged on an actual expense basis.

PC operating system and configuration

The PC with Microsoft Windows operating system is delivered by GÖTTFERT with Windows standard settings. The operator is responsible for the security settings (anti-virus, firewall, update, etc.) and their functionality and must ensure that they are properly set up. Please note that the PC can restart itself with the standard settings of the Windows Updates. This can interrupt a running measurement.

GÖTTFERT does not assume any liability for malfunctions caused by Windows security settings!

LAN configuration

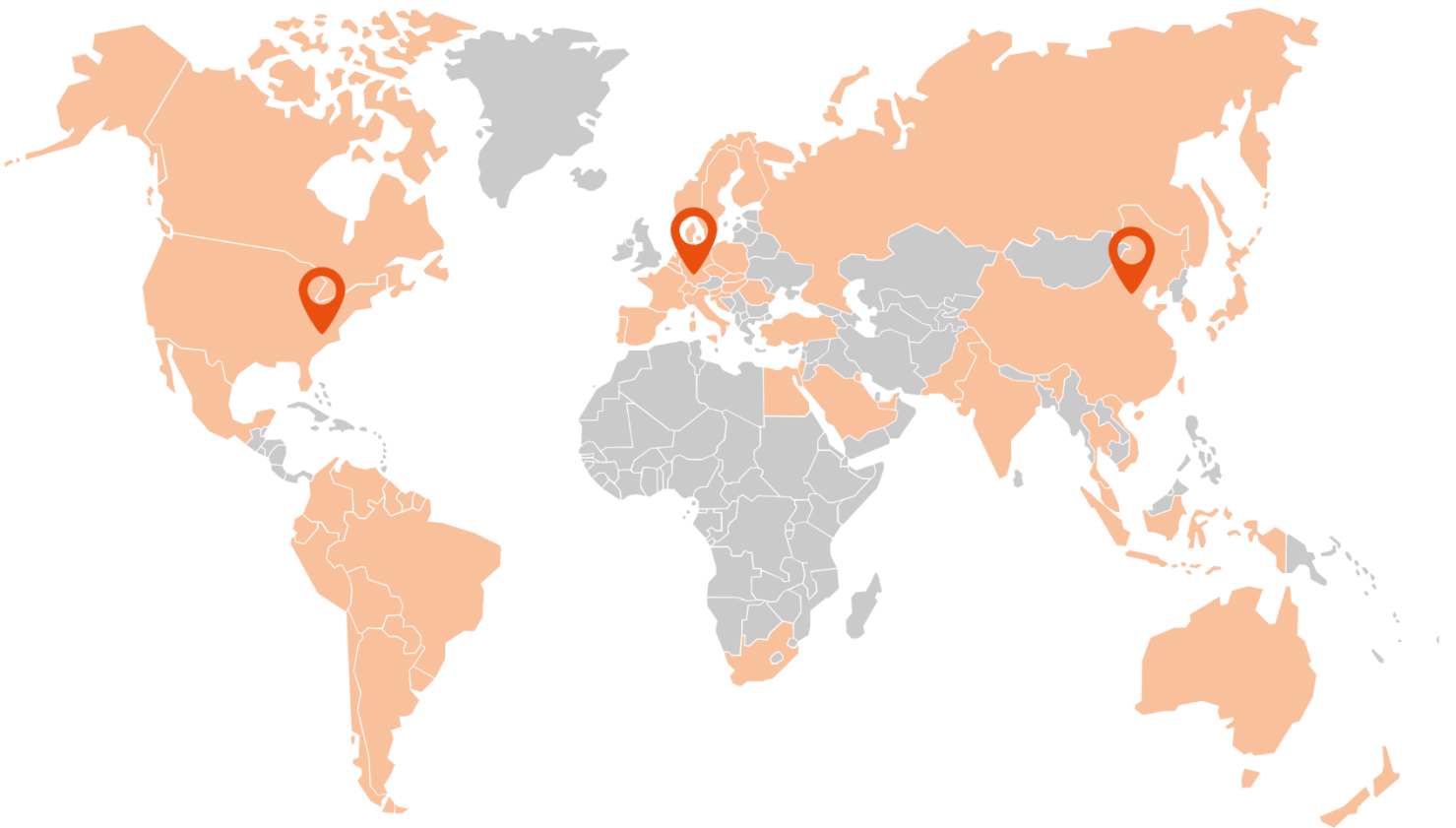
The required IP addresses have to be provided at the latest on the day of commissioning if you want to integrate the test machine, the PC or the printer into your network. Let your IT ensure that the network is configured accordingly.

All data are based on rated voltage and standard frequency as well as a surrounding temperature of +20 °C (+68 °F).

Subject to change due to technical developments.

Images may deviate from the original.

THIS IS RHEOLOGY



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