

## Components

- measuring systems
- in-line measurements

MF-System is a universal construction system based on components to quickly and easy build custom measuring fixtures.

The system has been developed by Schut Geometrical Metrology. The parts of the MF-System are made from high quality steel and colored, anodized aluminum.

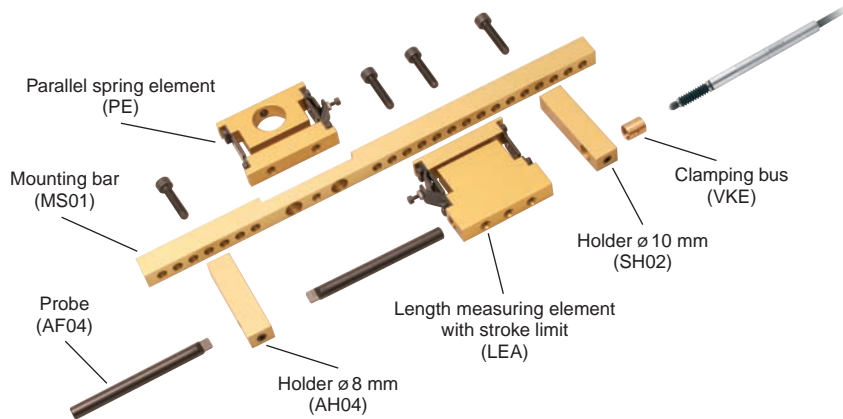
The system consists of, among other things, base plates, parallel spring elements, mounting bars, probe holders and probes. A stable product positioning is required for accurate measurements and because of the MF-System's sophisticated composition, it is possible to generate a complete measuring system with only a few parts. Ideal for repeating measurements.

The components of MF-System are based on both horizontal support or vertical clamping. The wide range and shapes of probes make the

system suitable for e.g. lathed parts but also for (more complicated) milling parts. All individual components are available separately, increasing flexibility of use.

The universal properties of MF-System result in a highly flexible construction system. The use of internationally applied units of fit for e.g. dial indicators and electronic probes make the MF-System's components widely applicable. With just some base elements it is very easy to create some individual measuring points on e.g. production machines.

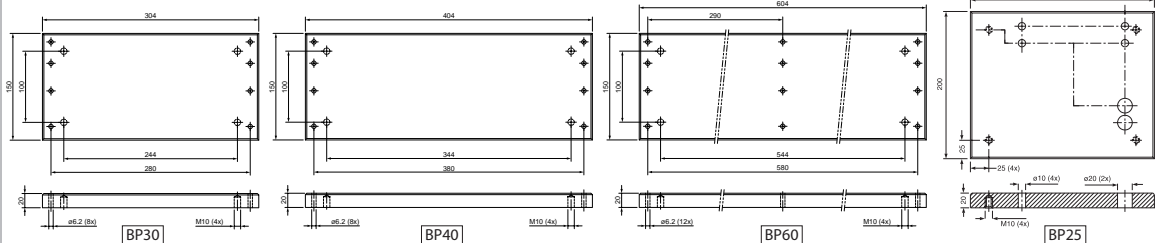
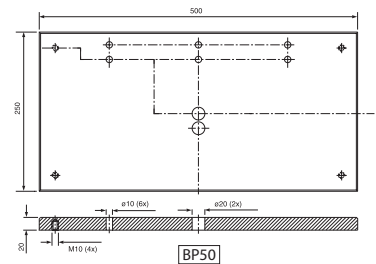
MF-System's high quality and low price make an ideal addition to existing measuring systems and can be applied in production plants. The easy assembly and modular setup make MF-System especially suitable for application in tailor-made and designed measuring systems.



## Steel base plates

### Item No. Type Steel base plates

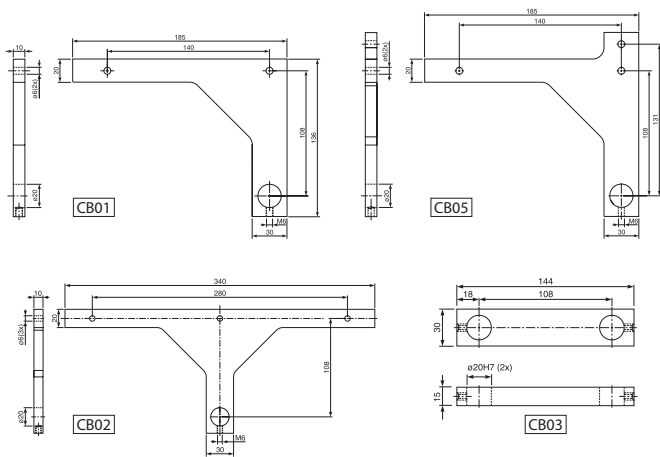
- 870.014 BP25 Base plate for vertical measuring systems 250 x 200 mm. Fitted with bores for quick and easy setup of measuring fixtures.
- 870.015 BP50 Base plate 500 x 250 mm for double vertical measuring systems. Larger base than type BP25 with two measuring positions. Fitted with bores for quick and easy setup of measuring fixtures.
- 870.087 BP30 Base plate for horizontal measuring systems, 304 x 150 mm. Fitted with bores for quick and easy setup of measuring fixtures.
- 870.088 BP40 Base plate for horizontal measuring systems, 404 x 150 mm.
- 870.202 BP60 Base plate, 604 x 150 mm. With bores for 3 mounting blocks MB01/02.
- 636.027 Adjustable foot for base plate.



## Connecting and mounting brackets (black anodized aluminum)

### Item No. Type Connecting brackets

- 870.020 CB01 For vertical measuring systems (like e.g. set 2).  
 870.080 CB05 For vertical measuring systems (like e.g. set 1).  
 870.021 CB02 Double version of type CB01 (for vertical measuring systems).  
 870.060 CB03 Can be used as center holder facing brackets CB01 or CB02.  
 870.084 CB04 Can be used as center holder facing bracket CB05.

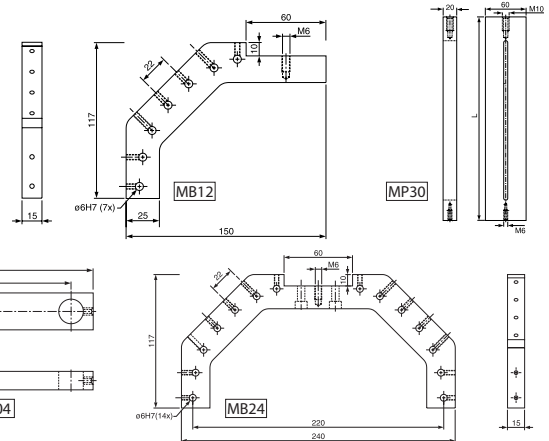


### Item No. Type Mounting brackets

- 870.099 MB12 Angle bar with 7 threads M4 and 7 bores  $\phi 6H7$ .  
 Recess for assembly to a mounting plate.  
 870.019 MB24 Angled bar with 14 threads M4 and 14 bores  $\phi 6H7$ .  
 Recess for assembly to a mounting plate.

### Item No. Type Mounting plates

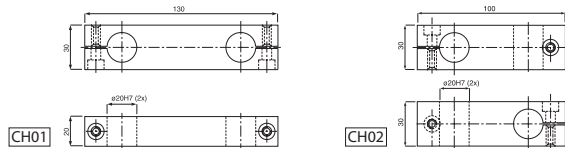
- Used to assemble mounting bars, mounting brackets, and measuring elements.  
 870.045 MP30 Length 300 mm.  
 870.081 MP40 Length 400 mm.



## Shaft holders / shafts / support for V-block

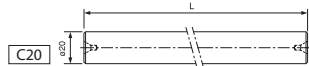
### Item No. Type Shaft holders

- 870.061 CH01 Used for constructing two parallel shafts.  
 870.062 CH02 Constructs two shafts at right angles.



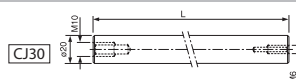
### Item No. Type Shafts with two center bores

- 870.003 C20 Length 200 mm.  
 870.004 C30 Length 300 mm.  
 870.093 C40 Length 400 mm.  
 870.077 R60 Length 600 mm.



### Item No. Type Tapped shafts

- 870.005 CJ30 Length 300 mm.  
 870.006 CJ40 Length 400 mm.

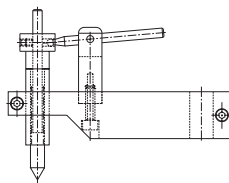


### Item No. Type Setup shafts for horizontal measuring systems

- 870.094 AS30 Length 300 mm,  $\phi 10$  mm.  
 870.095 AS40 Length 400 mm,  $\phi 10$  mm.  
 870.078 AS60 Length 600 mm,  $\phi 10$  mm.

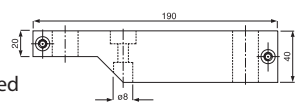
### Item No. Type Center unit with holder

- 871.002 CU Consists of:  
 - center holder CUH,  
 - center unit CUP,  
 - center lever CUL.



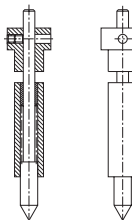
### Item No. Type Workpiece center holder

- 870.059 CUH Holder of fixed and moving centers to clamp objects to be measured. Black anodized aluminum.



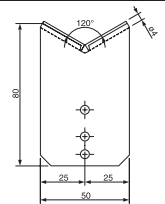
### Item No. Type Center unit

- 871.001 CUP Mobile center unit. The built-in spring presses the center point outwards.  
 Consists of:  
 - center point CUPS,  
 - lifting bush CUCS,  
 - guide bush.



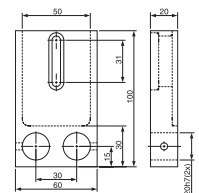
### Item No. Type Support for V-block

- 870.085 VB01 Support which is used together with V-block holder VS01.  
 Adjustable for a support diameter up to 80 mm.  
 Including two M5 bolts.  
 Nickel-coated carbide role.



### Item No. Type V-block holder

- 870.086 VS01 V-block holder for V-support VB01. Black anodized aluminum.



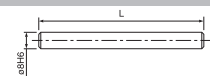
### Item No. Type Handle

- 871.014 H01 Lever used to turn a workpiece in the measuring system.



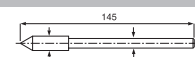
### Item No. Type Shafts (anvil)

- 870.007 S8 Length 80 mm,  $\phi 8h6$ .  
 870.008 S10 Length 100 mm,  $\phi 8h6$ .  
 870.009 S12 Length 120 mm,  $\phi 8h6$ .



### Item No. Type Center point with shaft

- 871.010 CUPS Part of the center unit.  
 Hardened steel.



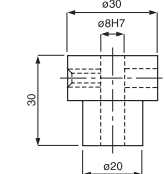
### Item No. Type Spring

- 870.065 CUCS To be used with center point with shaft.  
 Spring steel.



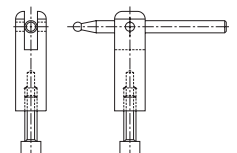
### Item No. Type Lifting bush

- 870.013 CULB By using the center lever the bush lifts the mobile center point. Gold anodized aluminum.



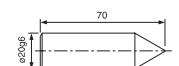
### Item No. Type Center lever

- 871.000 CUL To be installed on the center holder. Lifts the mobile center point from the object of measurement.



### Item No. Type Fixed center point

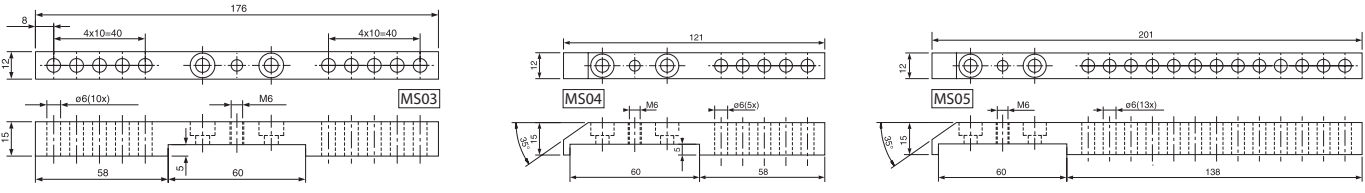
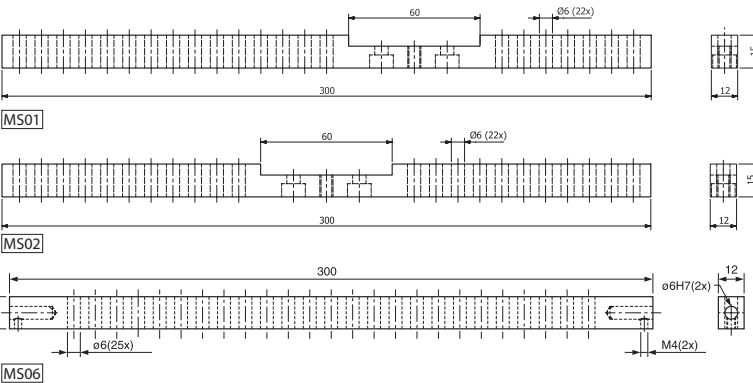
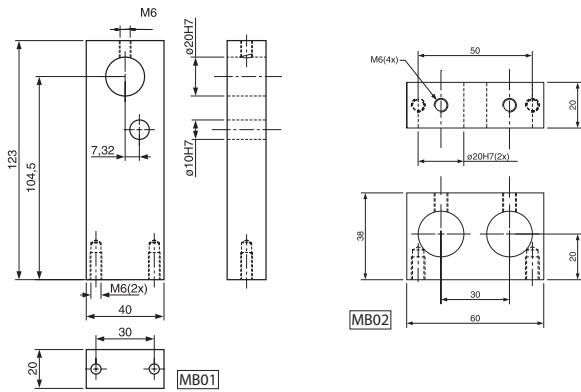
- 870.001 CP7 Designed to clamp objects to be measured and also to support a shaft with center bores.  
 Hardened steel.



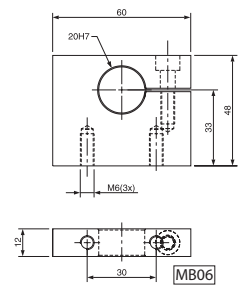
# Mounting bars / mounting blocks

- Item No. Type Mounting bars (gold anodized aluminum)**
- 870.057 MS01 Universal bar for the assembly of measuring components. Recess eccentric from the middle of the bar for assembly to a mounting plate or construction component.
  - 870.058 MS02 Universal bar for the assembly of measuring components. Recess in the middle of the bar for assembly to a mounting plate or construction component.
  - 870.091 MS03 Universal bar for assembly of measuring bracket without parallel measuring components. Recess in the middle for assembly to the mounting plate or constructing component.
  - 870.096 MS04 Space-saving and one-sided mounting bar, short model. Suitable for travel measurements.
  - 870.314 MS05 Space-saving and one-sided mounting bar, long model. Suitable for travel measurements.
  - 870.315 MS06 Mounting bar for vertical measuring systems (like set 2). Fitted with threads and bores for assembly to mounting bracket.

- Item No. Type Mounting blocks (black anodized aluminum)**
- 870.089 MB01 Mounting block for V-block connecting shafts.
  - 870.090 MB02 Mounting block for V-block connecting shafts.

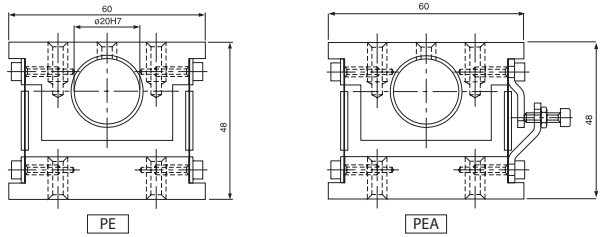


- Item No. Type Mounting block**
- 870.082 MB06 Measuring bracket connecting block. Suitable for double-sided measurements and travel measurements. Clamping shaft  $\varnothing 20$  mm. Gold anodized aluminum.

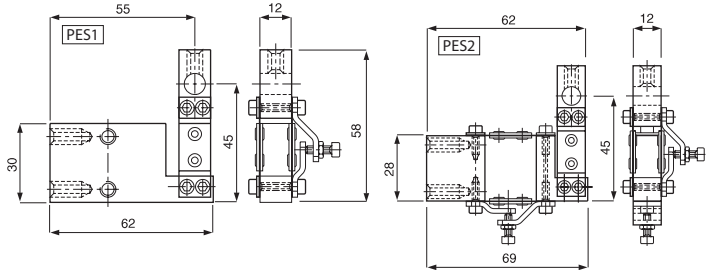


# Measuring elements

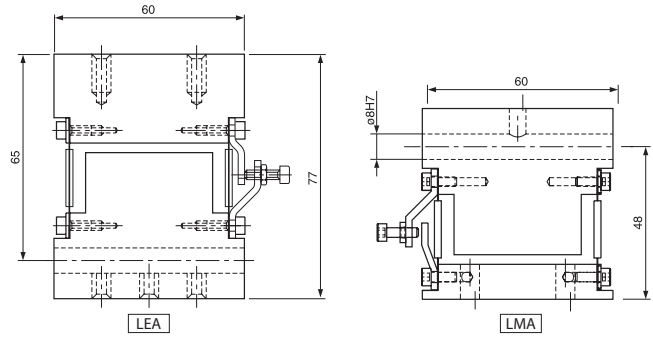
- Item No. Type Parallel spring elements (gold anodized aluminum)**
- Complete with parallel motion by means of leaf springs.
  - 871.005 PE Without stroke limit, clamping shaft:  $\varnothing 20$  mm.
  - 871.006 PEA With stroke limit, clamping shaft:  $\varnothing 20$  mm.



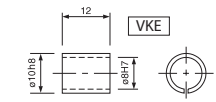
- Item No. Type Squared holders for anvil and attachment  $\varnothing 8$  mm**
- 871.008 PES1 Parallel guidance in measurement direction.
  - 871.009 PES2 Parallel guidance in measurement direction as well as perpendicular to measurement direction.



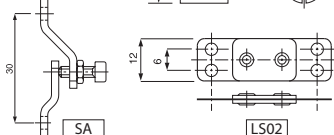
- Item No. Type Length measuring elements (gold anodized aluminum)**
- Complete with parallel motion by means of leaf springs. Especially for measuring systems like set 2.
  - 871.003 LE Without stroke limiter, long clamping shaft:  $\varnothing 8$  mm.
  - 871.004 LEA With stroke limiter, long clamping shaft:  $\varnothing 8$  mm. With parallel guidance by means of leaf springs.
  - 871.015 LM Without stroke limiter, long clamping shaft:  $\varnothing 8$  mm.
  - 871.016 LMA With stroke limiter, long clamping shaft:  $\varnothing 8$  mm.



- Item No. Type Clamping bush**
- 780.398 VKE External  $\varnothing 10h8$ , internal  $\varnothing 8H7$ . Used to clamp electronic probes and dial indicators.



- Item No. Type Leaf spring**
- 871.012 LS02 Spring thickness: 0.2 mm.



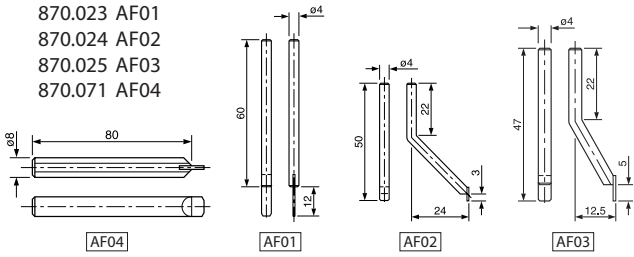
- Item No. Type Stroke limit**
- 871.007 SA Range: approx. 10 mm.



# Probes / probe holders

## Item No. Type Probes

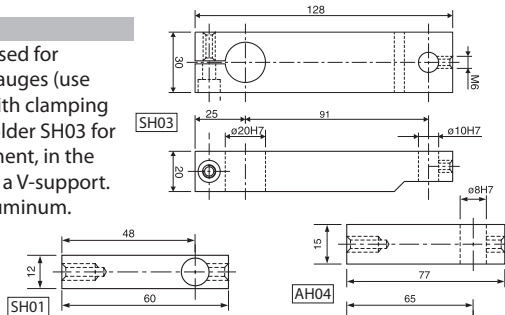
Probes AF01/02/03  $\phi$  4 mm, for mounting in probe holders. Complete with tungsten carbide tip. Probe AF04 can be placed directly in  $\phi$  8 mm holder. Complete with tungsten carbide tip.



## Item No. Type Holders

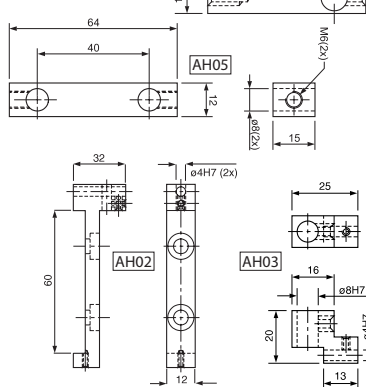
Holder SH01/02 used for probes and dial gauges (use in combination with clamping bush 780.398). Holder SH03 for probes or attachment, in the linear direction of a V-support. Gold anodized aluminum.

- 870.050 SH01 Length 60 mm
- 870.051 SH02 Length 77 mm
- 870.092 SH03 Length 128 mm



## Item No. Type Holders

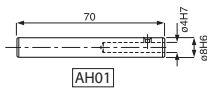
- 870.052 AH04 Length 77 mm. Used for anvils, various  $\phi$  8 mm shafts and probe holder 870.010.
- 870.297 AH05 Length 64 mm. Probe extension (used in set 1). Gold anodized aluminum.



## Item No. Type Probe holders

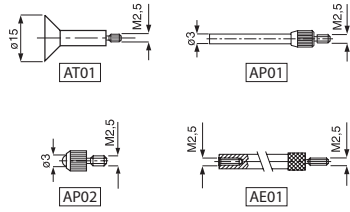
Suitable for  $\phi$  4 mm probes.

- 870.010 AH01
- 870.018 AH02
- 870.022 AH03



## Item No. Type Probes $\phi$ 4 mm

(with tungsten carbide spherical tip).  
 870.027 AR01 Ball  $\phi$  5 mm.  
 870.026 AR02 Ball  $\phi$  4 mm.  
 870.028 AR03 Ball  $\phi$  3 mm.  
 870.029 AR04 Ball  $\phi$  2 mm.  
 870.030 AR05 Ball  $\phi$  1,5 mm.



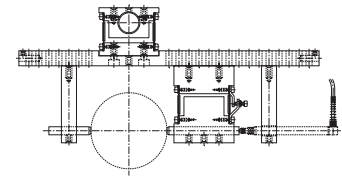
## Item No. Type Probes

(with M2.5 thread).  
 870.031 AT01 Flat,  $\phi$  15 mm.  
 870.032 AP01 Flat,  $\phi$  3 mm.  
 870.033 AP02 Ball,  $\phi$  3 mm.

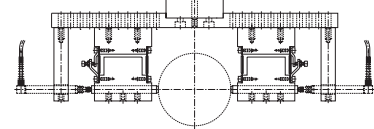
## Item No. Type Extensions

(with M2.5 thread).  
 870.034 AE01 Length 10 mm.  
 870.035 AE02 Length 20 mm.  
 870.036 AE03 Length 30 mm.  
 870.037 AE04 Length 40 mm.  
 870.038 AE05 Length 50 mm.  
 870.039 AE06 Length 60 mm.  
 870.040 AE07 Length 70 mm.  
 870.041 AE08 Length 80 mm.  
 870.042 AE09 Length 90 mm.

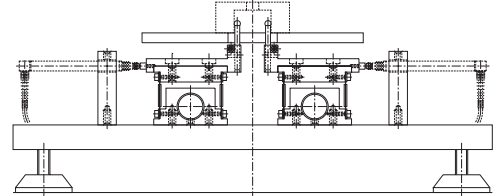
View from above: system for external measurements with 1 probe.



View from above: system for external measurements with 2 probes. Roundness can also be measured with this system.



Front view of a two-point bore measurement with 2 probes.



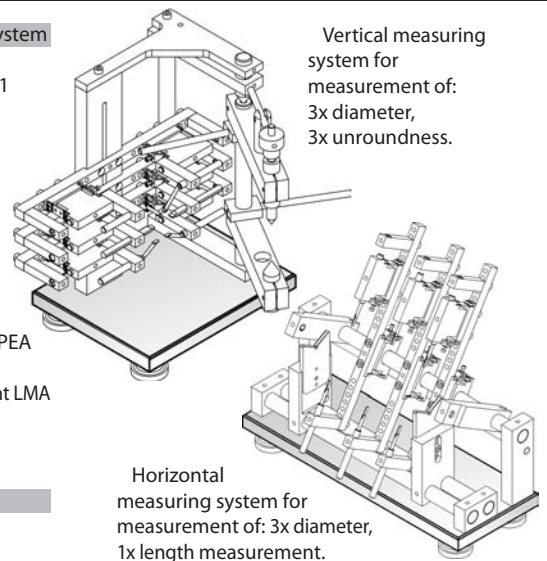
# Example vertical measuring system / horizontal measuring system with V-support

Item No.	Qty.	Vertical measuring system
871.002	1	Center unit with holder CU
870.001	3	Fixed center point CP7
870.003	1	Shaft C20
870.005	1	Shaft CJ30
780.398	6	Clamping bush
870.014	1	Base plate BP25
870.080	1	Connecting bracket CB05
870.045	1	Mounting plate MP30
870.050	6	Holder SH01
870.058	3	Mounting bar MS02
870.059	1	Workpiece center holder CUH
870.084	2	Connecting bracket CB04
871.016	6	Length measuring element LMA
871.014	2	Handle H01
870.297	6	Holder AH05
636.027	4	Adjustable foot
870.007	6	Shaft (anvil) S8

Item No. Description  
 872.000 Set (price incl. 3 measuring brackets, ex. probes and measuring probes).

Item No.	Qty.	Horizontal measuring system
870.085	2	V-block VB01
870.086	2	Support for V-block VS01
870.088	1	Base plate BP40
870.089	2	Shaft holder MB01
870.090	2	Shaft holder MB02
870.093	3	Shaft C40
870.057	3	Mounting bar MS01
870.092	2	Holder SH03
870.050	6	Holder SH01
780.398	8	Clamping bush
636.027	4	Adjustable foot
871.006	3	Parallel spring element PEA
870.095	1	Setting shaft AS40
871.016	3	Length measuring element LMA
870.010	1	Probe holder AH01
870.028	1	Probe AR03

Item No. Description  
 872.003 Set (excl. probes and measuring probes).



Vertical measuring system for measurement of: 3x diameter, 3x unroundness.

Horizontal measuring system for measurement of: 3x diameter, 1x length measurement.



ISO 9001

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