

# 10



Winkel  
Winkelmesser  
Gradmesser  
Richtwaagen  
Wasserwaagen

Squares  
Bevel protractors  
Protractors  
Engineer's levels  
Spirit levels

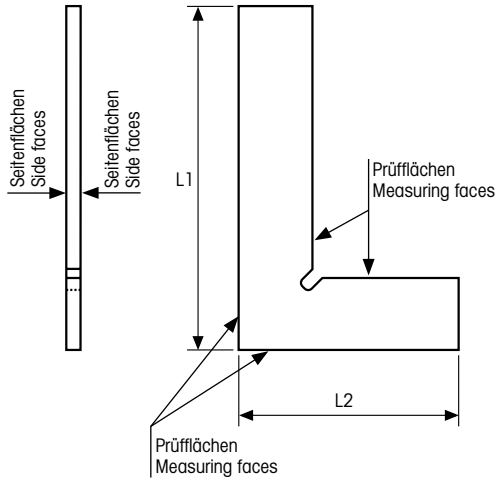
- 1
- 2
- 3
- 4
- 5
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- 10**
- 11
- 12
- 13
- 14
- 15

## Winkel nach DIN 875

Diese Norm gilt für Flachwinkel (Form A), Anschlagwinkel (Form B) und Haarwinkel (Form C), aus Stahl mit einem Winkel von 90° und einer Schenkellänge bis 1500mm.

### Winkeltoleranzen

Die Berechnung erfolgt nach den in der Tabelle angegebenen Formeln, die Toleranzen sind gerundet. Für die Parallelität der Messflächen zueinander gelten die gleichen Werte.

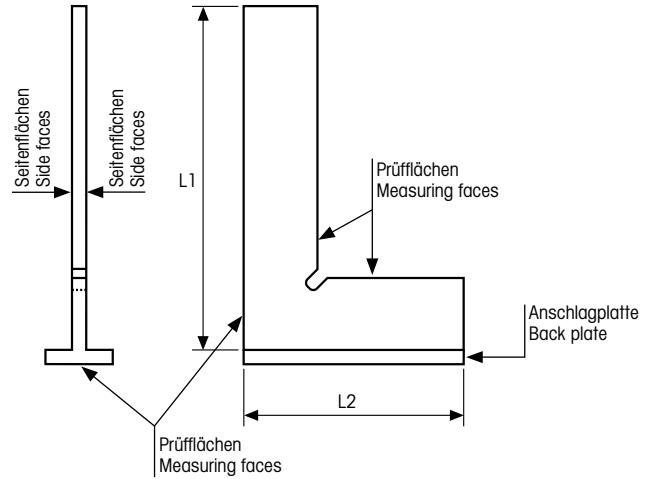


## Squares according to DIN 875

This standard is valid for flat squares (design A), back squares (design B) and bevel edge squares (design C), of steel with a 90° angle and a leg length up to 1500 mm.

### Angle tolerances

The calculation is done according to the formulas given in the table; the tolerances are rounded off. Equal values are applicable for the parallelism of the measuring surfaces to one another.



L = Schenkellänge L1 oder L2

| Länge / Length<br>L = mm | 00<br>(2 + L/100)μ | 0<br>(5 + L/50)μ | 1<br>(10 + L/20)μ | 2<br>(20 + L/10)μ |
|--------------------------|--------------------|------------------|-------------------|-------------------|
| 50                       | 3                  | -                | -                 | -                 |
| 75                       | 3                  | 7                | 14                | 28                |
| 100                      | 3                  | 7                | 15                | 30                |
| 150                      | 4                  | 8                | 18                | 35                |
| 200                      | 4                  | 9                | 20                | 40                |
| 250                      | 5                  | 10               | 23                | 45                |
| 300                      | 5                  | 11               | 25                | 50                |
| 400                      | -                  | 13               | 30                | 60                |
| 500                      | -                  | 15               | 35                | 70                |
| 600                      | -                  | 17               | 40                | 80                |
| 750                      | -                  | 20               | 43                | 85                |
| 1000                     | -                  | 25               | 60                | 120               |
| 1500                     | -                  | 35               | 85                | 170               |

L = Leg lengths L1 or L2

### Ebenheitstoleranzen

Die Ebenheit der Prüfflächen bzw. Geradheit der Haarmesskanten wird mit folgenden Formeln errechnet:

L = Schenkellänge L1 oder L2

| 00 | Formel       |
|----|--------------|
| 00 | (2 + L/250)μ |
| 0  | (2 + L/100)μ |
| 1  | (4 + L/50)μ  |
| 2  | (8 + L/25)μ  |

### Flatness tolerances

The flatness of the test surfaces and/or straightness of the bevelled edge are calculated using the following formulas:

L = Leg lengths L1 or L2

| 00 | Formula      |
|----|--------------|
| 00 | (2 + L/250)μ |
| 0  | (2 + L/100)μ |
| 1  | (4 + L/50)μ  |
| 2  | (8 + L/25)μ  |

### Kalibrierung:

Für alle Winkel können, Werkskalibrierscheine erstellt werden. Bitte beachten Sie hierzu unsere Nettopreisliste für die Erstellung von Prüfberichten.

Weitere Informationen erhalten Sie unter:

[www.ultra-germany.com](http://www.ultra-germany.com) > Service > Prüfmittelüberwachung

### Calibration:

Works calibration certificates are issued for all squares. Please check our net price list for the issue of inspection reports.

More information can be had at:

[www.ultra-germany.com](http://www.ultra-germany.com) > Service > Inspection service

## Messwinkelsatz

## Measuring square sets



- ▶ DIN 875
- ▶ Spezialstahl gehärtet
- ▶ Lieferung im Holzetui

- ▶ DIN 875
- ▶ Special steel hardened
- ▶ Delivered in a wooden case

Inhalt:

- ▶ Haarwinkel 25 x 20mm
- ▶ Haarwinkel 40 x 28mm
- ▶ Haarwinkel 75 x 50mm
- ▶ Haarlineal 100mm
- ▶ Anreißspitze 60mm

Contents:

- ▶ Die maker's square 25 x 20mm
- ▶ Die maker's square 40 x 28mm
- ▶ Bevel edge square 75 x 50mm
- ▶ Knife straightedge 100mm
- ▶ Scriber 60mm

| Stück<br>Pieces | ⚖<br>kg | Nº       |
|-----------------|---------|----------|
| 5               | 0,25    | 1952 101 |



No. 1952 101

## Schnittmacherwinkel gehärtet

## Die maker's squares, hardened



- ▶ DIN 875
- ▶ rostfreier Stahl, gehärtet
- ▶ Haarmesskante innen 90°
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875
- ▶ Hardened stainless steel
- ▶ Inside bevel edge 90°
- ▶ Delivered in individual packages

| L<br>mm | ⚖<br>kg | Nº       |
|---------|---------|----------|
| 25 x 20 | 0,005   | 1959 101 |
| 40 x 28 | 0,005   | 1959 102 |



No. 1959 101

## Schnittmacherwinkel-Satz gehärtet

## Die maker's square sets, hardened



- ▶ DIN 875
- ▶ Spezialstahl gehärtet
- ▶ Haarmesskante innen
- ▶ Lieferung im Holzetui

- ▶ DIN 875
- ▶ Hardened special steel
- ▶ Inside bevel edge
- ▶ Delivered in a wooden case

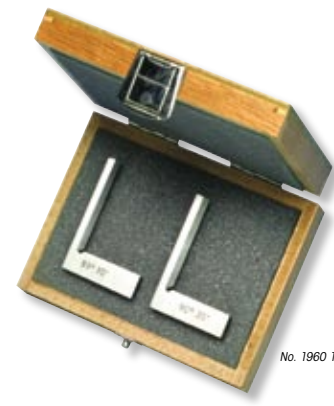
Inhalt :

- ▶ Haarwinkel 89° 30'
- ▶ Haarwinkel 90° 30'

Contents:

- ▶ Bevel edge square 89° 30'
- ▶ Bevel edge square 90° 30'

| L<br>mm | ⚖<br>kg | Nº       |
|---------|---------|----------|
| 40 x 28 | 0,05    | 1960 101 |



No. 1960 101

## Haarwinkel verstellbar

## Bevel edge squares, adjustable



- ▶ Werknorm
- ▶ Spezialstahl, gehärtet
- ▶ Lineal mit Spitze 45°, verschiebbar
- ▶ 2 Haarmesskanten
- ▶ Lieferung in Etui

- ▶ Works standard
- ▶ Hardened special steel
- ▶ Movable straightedge with 45° bevel
- ▶ 2 bevel edges
- ▶ Delivered in a case

| L<br>mm | ⚖<br>kg | Nº       |
|---------|---------|----------|
| 40 x 60 | 0,1     | 1953 201 |



No. 1953 201

**Haarwinkel verstellbar mit Feinverstellung**

**Bevel edge squares, adjustable with fine adjustment**



- ▶ Werksnorm
- ▶ Spezialstahl, gehärtet
- ▶ Verstellbereich +/- 5°
- ▶ Lineale verschiebbar
- ▶ 2 Haarmesskanten
- ▶ Lieferung in Etui

- ▶ Works standard
- ▶ Hardened special steel
- ▶ Adjustable range +/- 5°
- ▶ Movable straightedges
- ▶ 2 bevel edges
- ▶ Delivered in a case

**1956 101 :** Lineal mit Spitze 45° **1956 101 :** Straightedge with 45° bevel

**1957 101 :** Lineal mit Spitze abgesetzt ø 2,5mm **1957 101 :** Straightedge with reduced bevel ø 2.5mm

| L<br>mm  | ⚖<br>kg | Nº       |
|----------|---------|----------|
| 60 x 100 | 0,25    | 1956 101 |
| 60 x 100 | 0,25    | 1957 101 |



No. 1957 101

No. 1956 101

**Haarwinkel gehärtet**

**Bevel edge squares, hardened**



- ▶ DIN 875 / 00
- ▶ 2 Haarmesskanten
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875 / 00
- ▶ 2 bevel edges
- ▶ Delivered in individual packages

**1961 1.. :** Normalstahl gehärtet **1961 1.. :** Hardened normal steel

**INOX 1966 1.. :** rostfreier Stahl gehärtet **1966 1.. :** Hardened stainless steel

**1971 1.. :** Holzetui **1971 1.. :** Wooden box

| L<br>mm   | ⚖<br>kg | Nº       | Nº       | Nº       |
|-----------|---------|----------|----------|----------|
| 50 x 40   | 0,04    | 1961 101 | 1966 101 | 1971 101 |
| 75 x 50   | 0,05    | 1961 102 | 1966 102 | 1971 102 |
| 100 x 70  | 0,10    | 1961 103 | 1966 103 | 1971 103 |
| 150 x 100 | 0,26    | 1961 104 | 1966 104 | 1971 104 |
| 200 x 130 | 0,43    | 1961 105 | 1966 105 | 1971 105 |
| 300 x 200 | 0,95    | 1961 106 | 1966 106 | 1971 107 |



No. 1966 103

**Haarwinkel gehärtet mit starkem und schwachem Schenkel**

**Bevel edge squares, hardened with heavy base and thin blade**



- ▶ DIN 875 / 00
- ▶ 2 Haarmesskanten
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875 / 00
- ▶ 2 bevel edges
- ▶ Delivered in individual packages

**1962 1.. :** Normalstahl gehärtet **1962 1.. :** Hardened normal steel

**INOX 1967 1.. :** rostfreier Stahl gehärtet **1967 1.. :** Hardened stainless steel

**1971 1.. / 1971 2.. :** Holzetui **1971 1.. / 1971 2.. :** Wooden box

| L<br>mm   | ⚖<br>kg | Nº       | Nº       | Nº       |
|-----------|---------|----------|----------|----------|
| 50 x 40   | 0,04    | 1962 101 | 1967 101 | 1971 101 |
| 75 x 50   | 0,05    | 1962 102 | 1967 102 | 1971 102 |
| 100 x 70  | 0,12    | 1962 103 | 1967 103 | 1971 103 |
| 150 x 100 | 0,32    | 1962 104 | 1967 104 | 1971 204 |
| 200 x 130 | 0,65    | 1962 105 | 1967 105 | 1971 205 |
| 300 x 200 | 1,6     | 1962 106 | 1967 106 | 1971 207 |



No. 1962 103



## Flachwinkel gehärtet

## Flat squares, hardened



- ▶ DIN 875 / 0
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875 / 0
- ▶ Delivered in individual packages

**1963 1.. :**  
Normalstahl gehärtet

**1963 1.. :**  
Hardened normal steel



**1968 1.. :**  
rostfreier Stahl gehärtet

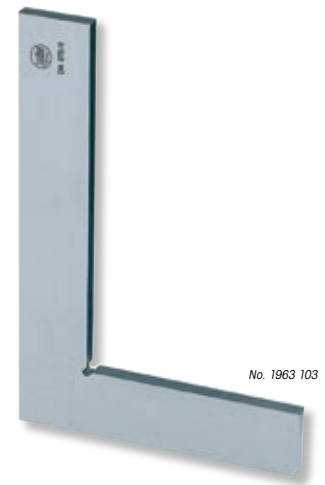
**1968 1.. :**  
Hardened stainless steel



**1971 1.. :**  
Holzetui

**1971 1.. :**  
Wooden box

| L<br>mm   | kg   | Nº       | Nº       | Nº       |
|-----------|------|----------|----------|----------|
| 50 x 40   | 0,04 | 1963 101 | 1968 101 | 1971 101 |
| 75 x 50   | 0,05 | 1963 102 | 1968 102 | 1971 102 |
| 100 x 70  | 0,12 | 1963 103 | 1968 103 | 1971 103 |
| 150 x 100 | 0,30 | 1963 104 | 1968 104 | 1971 104 |
| 200 x 130 | 0,60 | 1963 105 | 1968 105 | 1971 105 |
| 300 x 200 | 1,5  | 1963 106 | 1968 106 | 1971 107 |



No. 1963 103

## Anschlagwinkel gehärtet

## Back squares, hardened



- ▶ DIN 875 / 0
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875 / 0
- ▶ Delivered in individual packages

**1964 1.. :**  
Normalstahl gehärtet

**1964 1.. :**  
Hardened normal steel



**1969 1.. :**  
rostfreier Stahl gehärtet

**1969 1.. :**  
Hardened stainless steel



**1971 1.. / 1971 2.. :**  
Holzetui

**1971 1.. / 1971 2.. :**  
Wooden box

| L<br>mm   | kg   | Nº       | Nº       | Nº       |
|-----------|------|----------|----------|----------|
| 50 x 40   | 0,04 | 1964 101 | 1969 101 | 1971 101 |
| 75 x 50   | 0,08 | 1964 102 | 1969 102 | 1971 102 |
| 100 x 70  | 0,20 | 1964 103 | 1969 103 | 1971 103 |
| 150 x 100 | 0,46 | 1964 104 | 1969 104 | 1971 204 |
| 200 x 130 | 0,75 | 1964 105 | 1969 105 | 1971 205 |
| 300 x 200 | 1,68 | 1964 106 | 1969 106 | 1971 207 |



No. 1964 103

## Anschlagwinkel gehärtet mit starkem und schwachem Schenkel

## Try squares, hardened with heavy base and thin blade



- ▶ DIN 875 / 0
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875 / 0
- ▶ Delivered in individual packages

**1965 1.. :**  
Normalstahl gehärtet

**1965 1.. :**  
Hardened normal steel



**1970 1.. :**  
rostfreier Stahl gehärtet

**1970 1.. :**  
Hardened stainless steel



**1971 1.. / 1971 2.. :**  
Holzetui

**1971 1.. / 1971 2.. :**  
Wooden box

| L<br>mm   | kg   | Nº       | Nº       | Nº       |
|-----------|------|----------|----------|----------|
| 50 x 40   | 0,04 | 1965 101 | 1970 101 | 1971 101 |
| 75 x 50   | 0,05 | 1965 102 | 1970 102 | 1971 102 |
| 100 x 70  | 0,12 | 1965 103 | 1970 103 | 1971 103 |
| 150 x 100 | 0,32 | 1965 104 | 1970 104 | 1971 204 |
| 200 x 130 | 0,65 | 1965 105 | 1970 105 | 1971 205 |
| 300 x 200 | 1,6  | 1965 106 | 1970 106 | 1971 207 |



No. 1965 103

**DIN**

- ▶ DIN 875
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875
- ▶ Delivered in individual packages

**1977 1.. :**  
Güte 0 Normalstahl

**1977 1.. :**  
Grade 0 Normal steel

**INOX**

**1981 1.. :**  
Güte 0 rostfreier Stahl

**1981 1.. :**  
Grade 0 Stainless steel

**1979 1.. :**  
Güte 1 Normalstahl

**1979 1.. :**  
Grade 1 Normal steel

**INOX**

**1983 1.. :**  
Güte 1 rostfreier Stahl

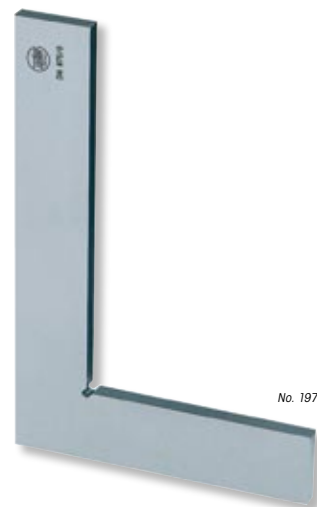
**1983 1.. :**  
Grade 1 Stainless steel

**Holz**

**1971 1.. :**  
Holzetui

**1971 1.. :**  
Wooden box

| L<br>mm    | kg    | 0<br>Nº  | 0<br>Nº  | 1<br>Nº  | 1<br>Nº  | Nº       |
|------------|-------|----------|----------|----------|----------|----------|
| 75 x 50    | 0,06  | 1977 101 | 1981 101 | 1979 101 | 1983 101 | 1971 102 |
| 100 x 70   | 0,08  | 1977 102 | 1981 102 | 1979 102 | 1983 102 | 1971 103 |
| 150 x 100  | 0,25  | 1977 103 | 1981 103 | 1979 103 | 1983 103 | 1971 104 |
| 200 x 130  | 0,50  | 1977 104 | 1981 104 | 1979 104 | 1983 104 | 1971 105 |
| 250 x 165  | 0,90  | 1977 105 | 1981 105 | 1979 105 | 1983 105 | 1971 106 |
| 300 x 200  | 1,10  | 1977 106 | 1981 106 | 1979 106 | 1983 106 | 1971 107 |
| 400 x 265  | 1,70  | 1977 107 | 1981 107 | 1979 107 | 1983 107 | 1971 108 |
| 500 x 330  | 2,80  | 1977 108 | 1981 108 | 1979 108 | 1983 108 | 1971 109 |
| 600 x 400  | 3,30  | 1977 109 | 1981 109 | 1979 109 | 1983 109 | 1971 110 |
| 750 x 500  | 6,40  | 1977 110 | 1981 110 | 1979 110 | 1983 110 | 1971 111 |
| 1000 x 660 | 13,00 | 1977 111 | 1981 111 | 1979 111 | 1983 111 | 1971 112 |



No. 1977 102

**DIN**

- ▶ DIN 875
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875
- ▶ Delivered in individual packages

**1978 1.. :**  
Güte 0 Normalstahl

**1978 1.. :**  
Grade 0 Normal steel

**INOX**

**1982 1.. :**  
Güte 0 rostfreier Stahl

**1982 1.. :**  
Grade 0 Stainless steel

**1980 1.. :**  
Güte 1 Normalstahl

**1980 1.. :**  
Grade 1 Normal steel

**INOX**

**1984 1.. :**  
Güte 1 rostfreier Stahl

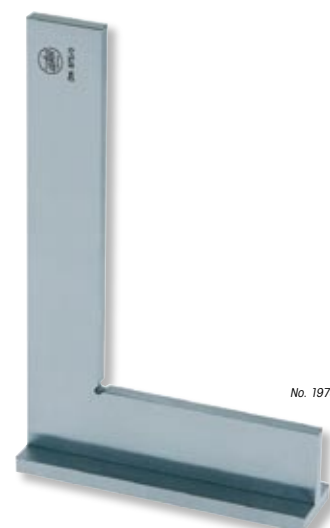
**1984 1.. :**  
Grade 1 Stainless steel

**Holz**

**1971 1.. / 1971 2.. :**  
Holzetui

**1971 1.. / 1971 2.. :**  
Wooden box

| L<br>mm    | kg    | 0<br>Nº  | 0<br>Nº  | 1<br>Nº  | 1<br>Nº  | Nº       |
|------------|-------|----------|----------|----------|----------|----------|
| 75 x 50    | 0,10  | 1978 101 | 1982 101 | 1980 101 | 1984 101 | 1971 102 |
| 100 x 70   | 0,15  | 1978 102 | 1982 102 | 1980 102 | 1984 102 | 1971 103 |
| 150 x 100  | 0,40  | 1978 103 | 1982 103 | 1980 103 | 1984 103 | 1971 204 |
| 200 x 130  | 0,70  | 1978 104 | 1982 104 | 1980 104 | 1984 104 | 1971 205 |
| 250 x 165  | 1,00  | 1978 105 | 1982 105 | 1980 105 | 1984 105 | 1971 206 |
| 300 x 200  | 1,60  | 1978 106 | 1982 106 | 1980 106 | 1984 106 | 1971 207 |
| 400 x 265  | 2,70  | 1978 107 | 1982 107 | 1980 107 | 1984 107 | 1971 208 |
| 500 x 330  | 4,40  | 1978 108 | 1982 108 | 1980 108 | 1984 108 | 1971 209 |
| 600 x 400  | 5,00  | 1978 109 | 1982 109 | 1980 109 | 1984 109 | 1971 210 |
| 750 x 500  | 8,90  | 1978 110 | 1982 110 | 1980 110 | 1984 110 | 1971 211 |
| 1000 x 660 | 15,80 | 1978 111 | 1982 111 | 1980 111 | 1984 111 | 1971 212 |



No. 1978 102

## Flachwinkel

## Flat squares

### DIN

- ▶ DIN 875/2
- ▶ Normalstahl
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875 / 2
- ▶ Normal steel
- ▶ Delivered in individual packages

**1985 1.. :**  
Flachwinkel

**1985 1.. :**  
Flat squares



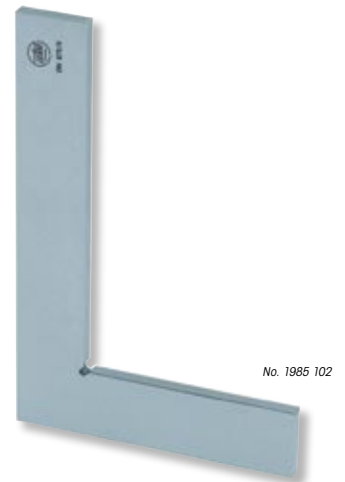
**1971 1.. :**  
Holzetui

**1971 1.. :**  
Wooden box

1 Winkel aus rostfreiem Stahl auf Anfrage.

1 Stainless steel squares on request.

| L<br>mm   | kg   | Nº       | Nº       | L<br>mm     | kg    | Nº       | Nº       |
|-----------|------|----------|----------|-------------|-------|----------|----------|
| 75 x 50   | 0,08 | 1985 101 | 1971 102 | 500 x 250   | 1,60  | 1985 108 | 1971 109 |
| 100 x 70  | 0,10 | 1985 102 | 1971 103 | 600 x 300   | 2,00  | 1985 109 | 1971 110 |
| 150 x 100 | 0,24 | 1985 103 | 1971 104 | 750 x 375   | 3,50  | 1985 110 | 1971 111 |
| 200 x 130 | 0,45 | 1985 104 | 1971 105 | 1000 x 500  | 6,00  | 1985 111 | 1971 112 |
| 250 x 165 | 0,55 | 1985 105 | 1971 106 | 1500 x 750  | 10,50 | 1985 112 | 1971 113 |
| 300 x 175 | 0,80 | 1985 106 | 1971 107 | 2000 x 1000 | 15,00 | 1985 113 | 1971 114 |
| 400 x 200 | 1,10 | 1985 107 | 1971 108 |             |       |          |          |



## Anschlagwinkel

## Back squares

### DIN

- ▶ DIN 875/2
- ▶ Normalstahl
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875 / 2
- ▶ Normal steel
- ▶ Delivered in individual packages

**1987 1.. :**  
Anschlagwinkel

**1987 1.. :**  
Back squares



**1971 1.. / 1971 2.. :**  
Holzetui

**1971 1.. / 1971 2.. :**  
Wooden box

1 Winkel aus rostfreiem Stahl auf Anfrage.

1 Stainless steel squares on request.

| L<br>mm   | kg   | Nº       | Nº       | L<br>mm     | kg    | Nº       | Nº       |
|-----------|------|----------|----------|-------------|-------|----------|----------|
| 75 x 50   | 0,10 | 1987 101 | 1971 102 | 500 x 250   | 2,30  | 1987 108 | 1971 209 |
| 100 x 70  | 0,15 | 1987 102 | 1971 103 | 600 x 300   | 2,70  | 1987 109 | 1971 210 |
| 150 x 100 | 0,30 | 1987 103 | 1971 204 | 750 x 375   | 5,00  | 1987 110 | 1971 211 |
| 200 x 130 | 0,65 | 1987 104 | 1971 205 | 1000 x 500  | 7,50  | 1987 111 | 1971 212 |
| 250 x 165 | 0,75 | 1987 105 | 1971 206 | 1500 x 750  | 14,00 | 1987 112 | 1971 213 |
| 300 x 175 | 1,58 | 1987 106 | 1971 207 | 2000 x 1000 | 21,00 | 1987 113 | 1971 214 |
| 400 x 200 | 1,88 | 1987 107 | 1971 208 |             |       |          |          |



## Anschlagwinkel mit starkem und schwachem Schenkel

## Try squares with heavy base and thin blade

### DIN

- ▶ DIN 875/1
- ▶ Normalstahl
- ▶ Lieferung einzeln verpackt

- ▶ DIN 875/1
- ▶ Normal steel
- ▶ Delivered in individual packages

**1989 1.. :**  
Anschlagwinkel

**1989 1.. :**  
Try squares



**1971 1.. / 1971 2.. :**  
Holzetui

**1971 1.. / 1971 2.. :**  
Wooden box

| L<br>mm   | kg   | Nº       | Nº       | L<br>mm   | kg   | Nº       | Nº       |
|-----------|------|----------|----------|-----------|------|----------|----------|
| 75 x 50   | 0,06 | 1989 101 | 1971 102 | 200 x 130 | 0,30 | 1989 104 | 1971 205 |
| 100 x 70  | 0,10 | 1989 102 | 1971 103 | 250 x 160 | 0,70 | 1989 105 | 1971 206 |
| 150 x 100 | 0,20 | 1989 103 | 1971 204 | 300 x 200 | 1,00 | 1989 106 | 1971 207 |



**Spitzwinkel 45° / 60°**

**Acute angle squares 45° / 60°**



- ▶ Werksnorm
- ▶ Normalstahl
- ▶ Lieferung einzeln verpackt

- ▶ Works standard
- ▶ Normal steel
- ▶ Delivered in individual packages

**1991 1.. / 1992 1.. :**  
ohne Anschlag

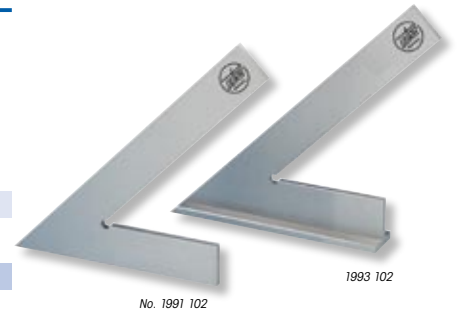
**1991 1.. / 1992 1.. :**  
Without base

**1993 1.. / 1994 1.. :**  
mit Anschlag

**1993 1.. / 1994 1.. :**  
With base

| L<br>mm   | █<br>kg | ∠   | Nº       | Nº       |
|-----------|---------|-----|----------|----------|
| 120 x 80  | 0,20    | 45° | 1991 101 | 1993 101 |
| 150 x 100 | 0,30    | 45° | 1991 102 | 1993 102 |
| 200 x 130 | 0,50    | 45° | 1991 103 | 1993 103 |

| L<br>mm   | █<br>kg | ∠   | Nº       | Nº       |
|-----------|---------|-----|----------|----------|
| 120 x 180 | 0,20    | 60° | 1992 101 | 1994 101 |
| 150 x 100 | 0,30    | 60° | 1992 102 | 1994 102 |
| 200 x 130 | 0,50    | 60° | 1992 103 | 1994 103 |



No. 1991 102

1993 102

**Sechskantwinkel 120°  
Achtkantwinkel 135°**

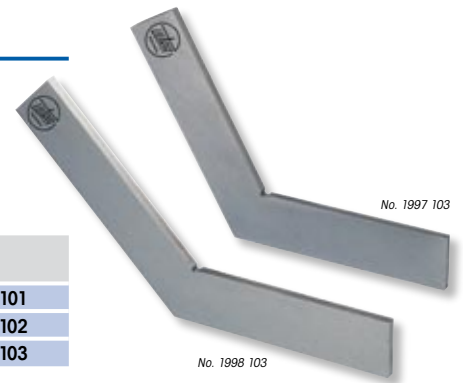
**Hexagon squares 120°  
Octagon squares 135°**



- ▶ Werksnorm
- ▶ Normalstahl
- ▶ Lieferung einzeln verpackt

- ▶ Works standard
- ▶ Normal steel
- ▶ Delivered in individual packages

| L<br>mm   | █<br>kg | ∠    | Nº       | ∠    | Nº       |
|-----------|---------|------|----------|------|----------|
| 50 x 50   | 0,03    | 120° | 1997 101 | 135° | 1998 101 |
| 75 x 75   | 0,08    | 120° | 1997 102 | 135° | 1998 102 |
| 100 x 100 | 0,13    | 120° | 1997 103 | 135° | 1998 103 |



No. 1997 103

No. 1998 103

**Gehrungswinkel 135°**

**Mitre squares 135°**



- ▶ Werksnorm
- ▶ Normalstahl
- ▶ mit Anschlag
- ▶ Lieferung einzeln verpackt

- ▶ Works standard
- ▶ Normal steel
- ▶ with base
- ▶ Delivered in individual packages

| L<br>mm   | █<br>kg | ∠    | Nº       |
|-----------|---------|------|----------|
| 120 x 80  | 0,20    | 135° | 1998 202 |
| 150 x 100 | 0,30    | 135° | 1998 203 |
| 200 x 130 | 0,50    | 135° | 1998 204 |



No. 1998 203

**Zentrierwinkel**

**Centre squares**



- ▶ Werksnorm
- ▶ Normalstahl, mattiert
- ▶ mm Teilung
- ▶ Lieferung einzeln verpackt

- ▶ Works standard
- ▶ Normal steel, satin finish
- ▶ mm graduation
- ▶ Delivered in individual packages

| L<br>mm   | Wellen / Shaft<br>max. Ø mm | █<br>kg | Nº       | L<br>mm   | Wellen / Shaft<br>max. Ø mm | █<br>kg | Nº       |
|-----------|-----------------------------|---------|----------|-----------|-----------------------------|---------|----------|
| 100 x 70  | 90                          | 0,15    | 1999 101 | 300 x 180 | 280                         | 0,76    | 1999 105 |
| 150 x 130 | 190                         | 0,45    | 1999 102 | 400 x 250 | 380                         | 2,40    | 1999 106 |
| 200 x 150 | 220                         | 0,58    | 1999 103 | 500 x 330 | 530                         | 3,50    | 1999 107 |
| 250 x 160 | 230                         | 0,69    | 1999 104 |           |                             |         |          |



No. 1999 102



## Schlosserwinkel

## Simple squares

- ▶ Normalstahl verzinkt
- ▶ Lieferung einzeln verpackt

- ▶ Galvanised normal steel
- ▶ Delivered in individual packages

### 5188 1.. :

Flachwinkel

### 5188 1.. :

Flat squares

### 5188 2.. :

Anschlagwinkel

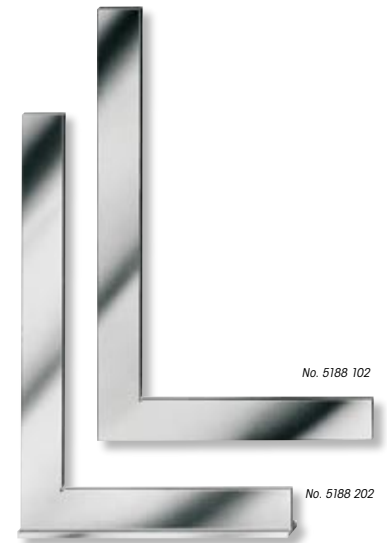
### 5188 2.. :

Back squares

! Größere Abmessungen auf Anfrage.

! Larger dimensions on request.

| L<br>mm    | kg   | Nº       | kg   | Nº       |
|------------|------|----------|------|----------|
| 100 x 70   | 0,12 | 5188 101 | 0,17 | 5188 201 |
| 150 x 100  | 0,18 | 5188 102 | 0,26 | 5188 202 |
| 200 x 130  | 0,24 | 5188 103 | 0,35 | 5188 203 |
| 250 x 160  | 0,38 | 5188 104 | 0,48 | 5188 204 |
| 300 x 180  | 0,45 | 5188 105 | 0,56 | 5188 205 |
| 400 x 230  | 0,59 | 5188 106 | 0,69 | 5188 206 |
| 500 x 280  | 0,74 | 5188 107 | 0,88 | 5188 207 |
| 600 x 330  | 1,06 | 5188 108 | 1,40 | 5188 208 |
| 750 x 375  | 1,29 | 5188 109 | 1,68 | 5188 209 |
| 1000 x 500 | 1,74 | 5188 110 | 2,25 | 5188 210 |



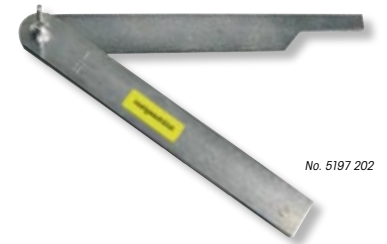
## Stellwinkel Stahlschmiege

## Sliding T bevels Steel sliding bevel

- ▶ Normalstahl verzinkt
- ▶ 3-teilig mit Schraubscharnier
- ▶ Lieferung einzeln verpackt

- ▶ Galvanised normal steel
- ▶ 3 parts hinged
- ▶ Delivered in individual packages

| L<br>mm | kg   | Nº       | L<br>mm | kg   | Nº       |
|---------|------|----------|---------|------|----------|
| 150     | 0,22 | 5197 202 | 300     | 0,50 | 5197 205 |
| 200     | 0,27 | 5197 203 | 400     | 0,67 | 5197 206 |
| 250     | 0,41 | 5197 204 | 500     | 0,80 | 5197 207 |



## Zimmermannswinkel

## Carpenter's squares

- ▶ Normalstahl verzinkt
- ▶ Lieferung einzeln verpackt

- ▶ Galvanised normal steel
- ▶ Delivered in individual packages

### 5201 1.. :

ohne Anreißlöcher

### 5201 1.. :

Without marking holes

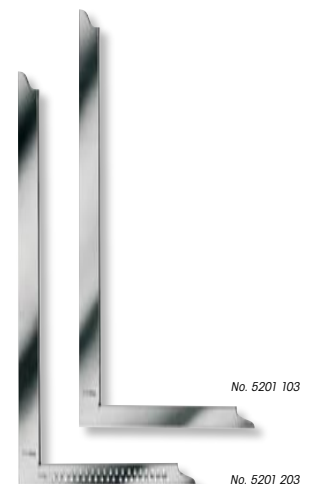
### 5201 2.. :

mit Anreißlöcher

### 5201 2.. :

With marking holes

| L<br>mm    | kg   | Nº       | kg   | Nº       |
|------------|------|----------|------|----------|
| 500 x 260  | 0,34 | 5201 101 | 0,31 | 5201 201 |
| 600 x 280  | 0,39 | 5201 102 | 0,36 | 5201 202 |
| 700 x 300  | 0,46 | 5201 103 | 0,43 | 5201 203 |
| 800 x 320  | 0,51 | 5201 104 | 0,48 | 5201 204 |
| 1000 x 380 | 0,70 | 5201 106 | 0,67 | 5201 206 |



## Flanschenwinkel

## Flange squares

- ▶ Normalstahl verzinkt
- ▶ Lieferung einzeln verpackt

- ▶ Galvanised normal steel
- ▶ Delivered in individual packages

| L<br>mm   | kg   | Nº       | L<br>mm   | kg   | Nº       |
|-----------|------|----------|-----------|------|----------|
| 300 x 300 | 0,67 | 5198 201 | 600 x 500 | 1,60 | 5198 204 |
| 400 x 400 | 1,20 | 5198 202 | 800 x 500 | 2,1  | 5198 205 |
| 500 x 500 | 1,35 | 5198 203 |           |      |          |



**Schreinerwinkel**

**Joiner's squares**

- ▶ Druckgusschenkel mit Gehrung
- ▶ Stahlzunge
- ▶ Lieferung einzeln verpackt

- ▶ Die cast blade with mitre
- ▶ steel blade
- ▶ Delivered in individual packages

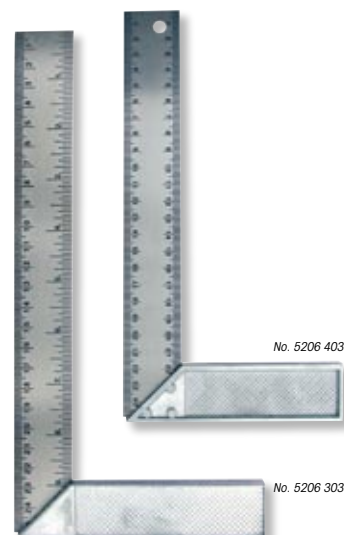
**5206 3.. :**  
Stahlzunge 30mm, Teilung mm/inch

**5206 3.. :**  
Steel blade 30mm, mm/inch graduation

**5206 4.. :**  
Stahlzunge 35mm, schwere Ausführung, Teilung mm/mm

**5206 4.. :**  
Steel blade 35mm, solid model, mm/mm graduation

| l<br>mm | g<br>kg | Nº       | g<br>kg | Nº       |
|---------|---------|----------|---------|----------|
| 150     | 0,06    | 5206 301 | 0,14    | 5206 401 |
| 200     | 0,08    | 5206 302 | 0,16    | 5206 402 |
| 250     | 0,10    | 5206 303 | 0,19    | 5206 403 |
| 300     | 0,11    | 5206 304 | 0,21    | 5206 404 |
| 400     | 0,13    | 5206 305 | 0,23    | 5206 405 |



**Stellwinkel  
Schreinerschmiege**

**Sliding T bevels  
Joiner's sliding bevel**

- ▶ Druckgusschenkel
- ▶ Stahlzunge
- ▶ Lieferung einzeln verpackt

- ▶ Die cast blade
- ▶ Steel blade
- ▶ Delivered in individual packages

| l<br>mm | g<br>kg | Nº       |
|---------|---------|----------|
| 200     | 0,16    | 5211 201 |
| 250     | 0,19    | 5211 202 |
| 300     | 0,21    | 5211 203 |



**Schreinerwinkel**

**Joiner's squares**

- ▶ Buchenholzchenkel mit Gehrung und Messingbeschlag
- ▶ blaue Stahlzunge Teilung mm/mm
- ▶ Lieferung einzeln verpackt

- ▶ Beech wood base with mitre and brass inlay
- ▶ mm/mm graduation on blue steel blade
- ▶ Delivered in individual packages

| l<br>mm | g<br>kg | Nº       |
|---------|---------|----------|
| 150     | 0,10    | 5205 201 |
| 200     | 0,13    | 5205 202 |
| 250     | 0,16    | 5205 203 |
| 300     | 0,19    | 5205 204 |
| 400     | 0,23    | 5205 205 |



**Stellwinkel  
Schreinerschmiege**

**Sliding T bevels  
Joiner's sliding bevel**

- ▶ Buchenholzchenkel mit Messingbeschlag
- ▶ blaue Stahlzunge
- ▶ Lieferung einzeln verpackt

- ▶ Beech wood base with brass inlay
- ▶ Blue steel blade
- ▶ Delivered in individual packages

| l<br>mm | g<br>kg | Nº       |
|---------|---------|----------|
| 200     | 0,16    | 5211 101 |
| 250     | 0,19    | 5211 102 |
| 300     | 0,21    | 5211 103 |



## Digital-Winkelmesser



- ▶ Werksnorm
- ▶ rostfreier Stahl gehärtet
- ▶ Feineinstellung
- ▶ Klemmung, Schiene verschiebbar
- ▶ großes LCD Display
- ▶ Ablesung 1' / 0,01°
- ▶ Genauigkeit +/- 3'
- ▶ Messbereiche 360° / 180° / 90°
- ▶ Lieferung im Etui

Funktion:

- ▶ Ein/Aus
- ▶ 1' / 0,01° Umschaltung
- ▶ Messbereichwahl
- ▶ O-Punkt an jeder Position
- ▶ Reset
- ▶ Datenausgang Opto RS 232

## Digital bevel protractors

- ▶ Works standard
- ▶ Hardened stainless steel
- ▶ Fine adjustment
- ▶ Clamping and movable rule
- ▶ Large LCD display
- ▶ Reading 1' / 0.01°
- ▶ Accuracy +/- 3'
- ▶ Measuring range 360° / 180° / 90°
- ▶ Delivered in a case

Function:

- ▶ On/Off
- ▶ 1' / 0.01° Switchover
- ▶ Measuring range select
- ▶ Zero setting at any position
- ▶ Reset
- ▶ Data output Opto RS 232



|                       |                           |
|-----------------------|---------------------------|
| <b>2000 1 .. :</b>    | <b>2000 1 .. :</b>        |
| Digitale Winkelmesser | Digital bevel protractors |

|                   |                   |
|-------------------|-------------------|
| <b>1850 203 :</b> | <b>1850 203 :</b> |
| Datenkabel 2m     | Data cable 2m     |

| L-H<br>mm | W<br>kg | Nº       |
|-----------|---------|----------|
| 150       | 0,36    | 2000 101 |
| 200       | 0,37    | 2000 102 |
| 300       | 0,38    | 2000 103 |
| 500       | 0,39    | 2000 104 |

## Digital-Winkelmesser STANDARD



- ▶ Werksnorm
- ▶ rostfreier Stahl gehärtet
- ▶ Feineinstellung
- ▶ Klemmung, Schiene verschiebbar
- ▶ großes LCD Display
- ▶ Ablesung 1' / 0,01°
- ▶ Genauigkeit +/- 5'
- ▶ Messbereiche 360° / 180° / 90°
- ▶ Lieferung im Etui

Funktion:

- ▶ Ein/Aus
- ▶ 1' / 0,01° Umschaltung
- ▶ Messbereichwahl
- ▶ O-Punkt an jeder Position
- ▶ Reset

## Digital bevel protractors STANDARD

- ▶ Works standard
- ▶ Hardened stainless steel
- ▶ Fine adjustment
- ▶ Clamping and movable rule
- ▶ Large LCD display
- ▶ Reading 1' / 0.01°
- ▶ Accuracy +/- 5'
- ▶ Measuring range 360° / 180° / 90°
- ▶ Delivered in a case

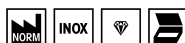
Function:

- ▶ On/Off
- ▶ 1' / 0.01° Switchover
- ▶ Measuring range select
- ▶ Zero setting at any position
- ▶ Reset



| L-H<br>mm       | W<br>kg | Nº        |
|-----------------|---------|-----------|
| 150 / 200 / 300 | 0,37    | 2000 101s |

## Winkelmesser mit Uhrablesung



- ▶ Werksnorm
- ▶ rostfreier Stahl gehärtet
- ▶ Klemmung, Schiene verschiebbar
- ▶ Ablesung 5' 1/12°
- ▶ Messbereich 4x90°
- ▶ Lieferung im Etui

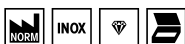
## Bevel protractors with dial reading

- ▶ Works standard
- ▶ Hardened stainless steel
- ▶ Clamping and movable rule
- ▶ Reading 5' 1/12°
- ▶ Measuring range 4x90°
- ▶ Delivered in a case



| L-H<br>mm       | W<br>kg | Nº       |
|-----------------|---------|----------|
| 150 / 200 / 300 | 0,5     | 2004 101 |

## Universal Winkelmesser mit Feineinstellung



- ▶ Werknorm
- ▶ rostfreier Stahl gehärtet
- ▶ Klemmung, Schiene verschiebbar
- ▶ Ablesung parallaxfrei 5° / 1/12°
- ▶ Ableselupe
- ▶ Messbereich 4x90°
- ▶ Lieferung im Etui

## Universal bevel protractors with fine adjustment

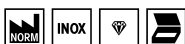
- ▶ Works standard
- ▶ Hardened stainless steel
- ▶ Clamping and movable rule
- ▶ Parallax free reading 5° / 1/12°
- ▶ Magnifying glass
- ▶ Measuring range 4x90°
- ▶ Delivered in a case



No. 2006 102

| l-l<br>mm | ⚖<br>kg | Nº       |
|-----------|---------|----------|
| 150       | 0,26    | 2006 101 |
| 200       | 0,27    | 2006 102 |
| 300       | 0,28    | 2006 103 |
| 500       | 0,30    | 2006 104 |

## Universal Winkelmesser STANDARD mit Feineinstellung



- ▶ Werknorm
- ▶ rostfreier Stahl gehärtet
- ▶ Klemmung, Schiene verschiebbar
- ▶ Ablesung parallaxfrei 5° / 1/12°
- ▶ Ableselupe
- ▶ Messbereich 4x90°
- ▶ Lieferung im Etui

## Universal bevel protractors, STANDARD with fine adjustment

- ▶ Works standard
- ▶ Hardened stainless steel
- ▶ Clamping and movable rule
- ▶ Parallax free reading 5° / 1/12°
- ▶ Magnifying glass
- ▶ Measuring range 4x90°
- ▶ Delivered in a case



No. 5223 203

| l-l<br>mm       | ⚖<br>kg | Nº       |
|-----------------|---------|----------|
| 150 / 200 / 300 | 0,5     | 5223 203 |

## Zubehör für Universal Winkelmesser

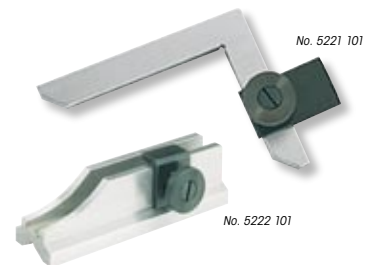


- ▶ Passend für Modelle Nr. 2000 1.. und Nr. 2006 1..
- ▶ Lieferung einzeln verpackt

## Accessories for universal bevel protractors

- ▶ Suitable for models No. 2000 1... and No. 2006 1...
- ▶ Delivered in individual packages

| Typ<br>Type                         | l-l<br>mm | ⚖<br>kg | Nº       |
|-------------------------------------|-----------|---------|----------|
| Winkelanschlag<br>Attachment square | 75        | 0,09    | 5221 101 |
| Fuß mit Prisma<br>V base            | -         | 0,23    | 5222 101 |



No. 5221 101

No. 5222 101

## Kombinations-Winkelmesser



- ▶ Verwendbar als Winkelmesser, Lineal, Maßstab, Anschlag-, Zentrier- und Gehrungswinkel sowie als Richtwaage.
- ▶ Winkelmesser 2x90°
- ▶ Schiene mit Teilung 1/1mm 1/2mm 1/64° 1/32°
- ▶ Lieferung einzeln verpackt

## Combination squares

- ▶ Usable as bevel protractor, straightedge, rule, back, centres and mitre squares and as spirit level.
- ▶ Bevel protractor 2 x 90°
- ▶ Rule with graduation 1/1mm 1/2mm 1/64° 1/32°
- ▶ Delivered in individual packages



No. 5229 402

**5229 402 :**  
Kombinations-Winkelmesser

**5229 402 :**  
Combination squares

**5231 102 :**  
Holzetui

**5231 102 :**  
Wooden box

| l-l<br>mm | ⚖<br>kg | Nº       | Nº       |
|-----------|---------|----------|----------|
| 300       | 0,80    | 5229 402 | 5231 102 |



## Gradmesser

- ▶ Normalstahl mattverchromt
- ▶ Feststellschraube
- ▶ Ablesung 1°
- ▶ Messbereich 0–180°
- ▶ Lieferung einzeln verpackt

| ∅-mm | l-mm | kg   | Nº       |
|------|------|------|----------|
| 80   | 120  | 0,06 | 5226 201 |
| 120  | 150  | 0,13 | 5226 202 |
| 150  | 200  | 0,19 | 5226 203 |
| 200  | 300  | 0,34 | 5226 204 |

## Protractors

- ▶ Satin chrome normal steel
- ▶ Locking screw
- ▶ Reading 1°
- ▶ Measuring range 0–180°
- ▶ Delivered in individual packages



## Gradmesser amerikanische Bauart

- ▶ Normalstahl mattverchromt
- ▶ Feststellschraube
- ▶ Ablesung 1°
- ▶ Messbereich 0-180°
- ▶ Lieferung einzeln verpackt

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>5227 201 :</b><br>Gradbogen rund  | <b>5227 201 :</b><br>Graduated arc, round   |
| <b>5227 202 :</b><br>Gradbogen eckig | <b>5227 202 :</b><br>Graduated arc, angular |

| ∅-mm | l-mm | kg   | Nº       |
|------|------|------|----------|
| 85   | 150  | 0,08 | 5227 201 |
| 85   | 150  | 0,09 | 5227 202 |

## Protractors American design

- ▶ Satin chrome normal steel
- ▶ Locking screw
- ▶ Reading 1°
- ▶ Measuring range 0-180°
- ▶ Delivered in individual packages



## Gradmesser mit verschiebbarer Schiene

- ▶ Normalstahl mattverchromt
- ▶ Feststellschraube
- ▶ Ablesung 1°
- ▶ Messbereich 10-170°
- ▶ Lieferung einzeln verpackt

| ∅-mm | l-mm | kg   | Nº       |
|------|------|------|----------|
| 100  | 150  | 0,11 | 5228 201 |
| 150  | 300  | 0,25 | 5228 202 |
| 200  | 400  | 0,42 | 5228 203 |
| 250  | 500  | 1,00 | 5228 204 |
| 300  | 600  | 1,35 | 5228 205 |

## Protractors with movable rule

- ▶ Satin chrome normal steel
- ▶ Locking screw
- ▶ Reading 1°
- ▶ Measuring range 10-170°
- ▶ Delivered in individual packages



## Dosenlibellen und Präzisionslibellen

- ▶ verschiedene Empfindlichkeiten
- ▶ aus Glas oder Acryl
- ▶ in Metall oder Kunststoffgehäuse
- ▶ mit oder ohne Befestigungsbohrungen

! Bitte separates Prospekt anfordern.

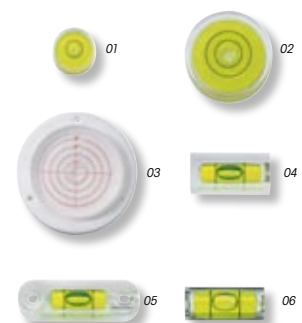
**5255 1.. :**  
Dosenlibellen und Präzisionslibellen auf Anfrage.

## Circular levels and precision vials

- ▶ Wide range of sensitivities
- ▶ Glass and acrylic models
- ▶ Metal or plastic housing
- ▶ With or without fixture holes

! Please ask for separate brochure.

**5255 1.. :**  
Circular levels and precision vials on request.



**MICROLEVEL Richtwaagen**  
**Horizontalmodell**



- ▶ Werksnorm
- ▶ Basis aus Spezialguss
- ▶ Handwärmeschutz
- ▶ 1 prismatische Sohle
- ▶ Querlibelle
- ▶ großes LCD Display
- ▶ Lieferung im Holzetui

Funktion:

- ▶ Ein/Aus
- ▶ Empfindlichkeit wählbar L1 oder L2 (nicht Nr. 1701 101)
- ▶ Ablesung umschaltbar
- ▶ O-Punkt an jeder Position
- ▶ Datenausgang

! Modelle mit flacher Sohle und Magneten auf Anfrage.

| A<br>mm | B<br>mm | L1<br>mm/m | L2<br>mm/m | h<br>kg | Nº       |
|---------|---------|------------|------------|---------|----------|
| 200     | 44      | 0,1        | 0,01       | 2,3     | 1701 101 |
| 200     | 44      | 0,01       | 0,001      | 2,3     | 1701 102 |
| 200     | 44      | 0,05       | 0,005      | 2,3     | 1701 103 |

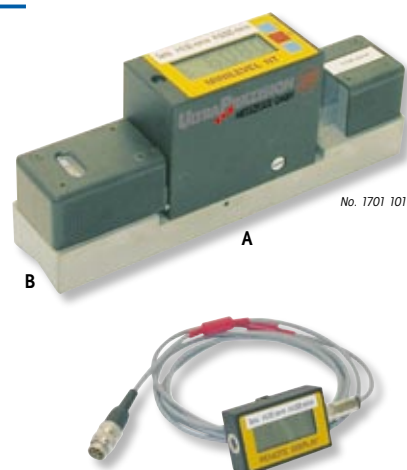
**MICROLEVEL precision levels**  
**Horizontal model**

- ▶ Works standard
- ▶ Special cast iron base
- ▶ Insulated pads
- ▶ 1 V base
- ▶ Lateral vial
- ▶ Large LCD display
- ▶ Delivered in a wooden case

Funktion:

- ▶ On/Off
- ▶ Selectable sensitivity L1 or L2 (not No. 1701 101)
- ▶ Reversible reading
- ▶ Zero setting at any position
- ▶ Data output

! Models with flat bases and magnets on request.



Option: Separates Display zum Messen an schwer zugänglichen Stellen.  
Option: Separate display for measuring on difficult reachable places.

**MICROLEVEL Richtwaagen**  
**Winkelmodell**



- ▶ Werksnorm
- ▶ Rahmen aus Spezialguss
- ▶ Handwärmeschutz
- ▶ 2 prismatische Flächen
- ▶ Querlibelle
- ▶ großes LCD Display
- ▶ Lieferung im Holzetui

Funktion:

- ▶ siehe Horizontalmodell Nr. 1701 1..

! Modelle mit flachen Seiten und Magneten auf Anfrage.

| A<br>mm   | B<br>mm | L1<br>mm/m | L2<br>mm/m | h<br>kg | Nº       |
|-----------|---------|------------|------------|---------|----------|
| 200 x 200 | 42      | 0,1        | 0,01       | 4,0     | 1702 101 |
| 200 x 200 | 42      | 0,01       | 0,001      | 4,0     | 1702 102 |
| 200 x 200 | 42      | 0,05       | 0,005      | 4,0     | 1702 103 |

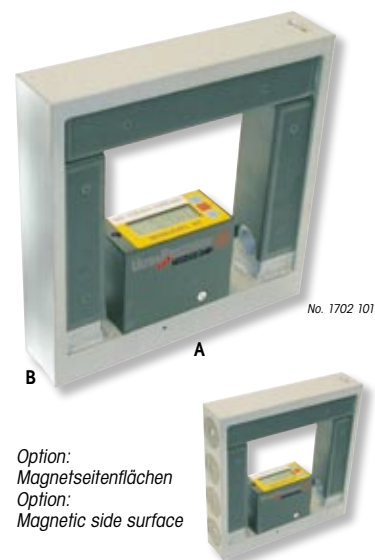
**MICROLEVEL precision levels**  
**Square model**

- ▶ Works standard
- ▶ Special cast iron frame
- ▶ Insulated pads
- ▶ 2 V faces
- ▶ Lateral vial
- ▶ Large LCD display
- ▶ Delivered in a wooden case

Funktion:

- ▶ See horizontal model No. 1701 1..

! Models with flat sides and magnets on request.



Option: Magnetseitenflächen  
Option: Magnetic side surface

**Richtwaagen mit Feinverstellung**  
**Horizontalmodell**



- ▶ DIN 877
- ▶ Basis aus Spezialguss, gehärtet
- ▶ 1 prismatische Sohle
- ▶ Längs- und Querlibelle
- ▶ Verstellbereich +/- 10mm/m
- ▶ Ablesung 0,05mm/m
- ▶ Lieferung im Holzetui

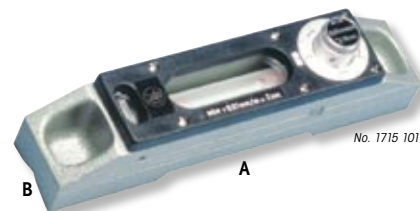
<math>\leq</math> = Empfindlichkeit mm/m

| A<br>mm | B<br>mm | h<br>kg | <math>\leq 0,01</math><br>Nº | <math>\leq 0,02</math><br>Nº |
|---------|---------|---------|------------------------------|------------------------------|
| 140     | 40      | 1,2     | 1715 101                     | 1715 201                     |
| 200     | 40      | 1,7     | 1715 102                     | 1715 202                     |
| 300     | 40      | 2,7     | 1715 103                     | 1715 203                     |

**Engineer's levels with fine adjustment**  
**Horizontal model**

- ▶ DIN 877
- ▶ Hardened special cast-iron base
- ▶ 1 V base
- ▶ Longitudinal and lateral vials
- ▶ Adjustment range +/- 10mm/m
- ▶ Reading 0.05mm/m
- ▶ Delivered in a wooden case

<math>\leq</math> = Sensitivity mm/m



Feinverstellung  
Fine adjustment



## Richtwaagen mit Feinverstellung Winkelmodell

## Engineer's levels with fine adjustment Square frame



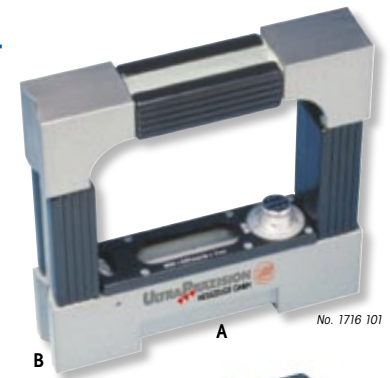
- ▶ DIN 877
- ▶ Rahmen aus Spezialguss, gehärtet
- ▶ Handwärmeschutz
- ▶ 4 Messflächen, 2 mit Prisma
- ▶ Längs- und Querlibelle
- ▶ Verstellbereich +/- 10mm/m
- ▶ Ablesung 0,05mm/m
- ▶ Lieferung im Holzetui

- ▶ DIN 877
- ▶ Hardened special cast-iron frame
- ▶ Insulated pads
- ▶ 4 measuring faces, 2 with V-grooves
- ▶ Longitudinal and lateral vials
- ▶ Adjustment range +/- 10mm/m
- ▶ Reading 0.05mm/m
- ▶ Delivered in a wooden case

$\leq \epsilon$  = Empfindlichkeit mm/m

$\leq \epsilon$  = Sensitivity mm/m

| A<br>mm | B<br>mm | h<br>kg | $\leq \epsilon$ 0,01<br>Nº | $\leq \epsilon$ 0,02<br>Nº |
|---------|---------|---------|----------------------------|----------------------------|
| 200x200 | 40      | 4,0     | 1716 101                   | 1716 201                   |
| 300x300 | 40      | 8,8     | 1716 102                   | 1716 202                   |



Feinverstellung  
Fine adjustment



## Digital-Neigungsmesser

## Digital protractor (clinometer)



- ▶ Werksnorm
- ▶ Aluminiumgehäuse
- ▶ großes LCD-Display
- ▶ 1 prismatische Sohle
- ▶ Messbereich 360° (4x90°)
- ▶ Lieferung im Holzetui

- ▶ Works standard
- ▶ Aluminium housing
- ▶ Large LCD display
- ▶ 1 V base
- ▶ Measuring range 360° (4x90°)
- ▶ Delivered in a wooden case

Funktion:

- ▶ 0-Punkt an jeder Position
- ▶ HOLD Funktion
- ▶ RESET und Eigenkalibriermodus

Funktion:

- ▶ Zero setting at any position
- ▶ HOLD function
- ▶ RESET and self calibration mode

1704 1.. :

Ablesung 0,1°

1704 1.. :

Reading 0.1°

1704 2.. :

Ablesung 0,01° mit Datenausgang

1704 2.. :

Reading 0.01° with data output

| L<br>mm   | $\leq \epsilon$ | ∠                     | ∠                                                           | h<br>kg | Nº       |
|-----------|-----------------|-----------------------|-------------------------------------------------------------|---------|----------|
| 150x30x54 | 0,1°            | 0 – 90°               | 0 – 10° / ± 0,1°<br>10 – 80° / ± 0,2°<br>80 – 90° / ± 0,1°  | 0,3     | 1704 101 |
| 150x30x54 | 0,01°<br>0,1°   | 0 – 9,99°<br>10 – 90° | 0 – 10° / ± 0,05°<br>10 – 80° / ± 0,2°<br>80 – 90° / ± 0,1° | 0,3     | 1704 201 |



No. 1704 101

## Clinometer mit Feinverstellung

## Clinometer with fine adjustment



- ▶ Werksnorm
- ▶ Meßfläche gehärtet, mit Prisma
- ▶ Skaleneinstellung +/- 180°
- ▶ Skalenableitung 1°, Mikrometerablesung 1'
- ▶ Empfindlichkeit 0,3mm/m
- ▶ Lieferung im Holzetui

- ▶ Works standard
- ▶ Hardened measuring face with V
- ▶ Scale adjustment +/- 180°
- ▶ Scale reading 1°, Micrometer reading 1'
- ▶ Sensitivity 0.3mm/m
- ▶ Delivered in a wooden case

1 magnetische Sohle 120x30mm sowie Einspannschaft auf Anfrage.

1 Magnetic base 120 x 30mm and clamping shaft on request.

| L<br>mm    | h<br>kg | Nº       |
|------------|---------|----------|
| 150x30x124 | 2,0     | 1730 101 |



Feinverstellung  
Fine adjustment



## Richtwaagen Horizontalmodell



- ▶ DIN 877
- ▶ Basis aus Spezialguss, gehärtet
- ▶ 1 prismatische Sohle
- ▶ Längs- und Querlibelle
- ▶ Lieferung im Holzetui

$\leq$  = Empfindlichkeit mm/m

! Richtwaagen für große Wellen-Ø auf Anfrage.

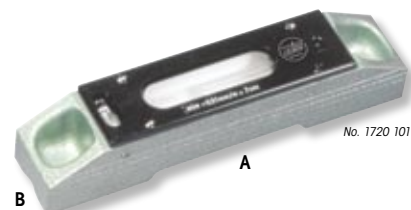
| A<br>mm | B<br>mm | kg  | $\leq 0,1$<br>Nº | $\leq 0,05$<br>Nº | $\leq 0,04$<br>Nº | $\leq 0,02$<br>Nº | $\leq 0,01$<br>Nº |
|---------|---------|-----|------------------|-------------------|-------------------|-------------------|-------------------|
| 140     | 40      | 1,2 | 1720 101         | 1721 101          | 1722 101          | 1723 101          | 1724 101          |
| 200     | 40      | 1,5 | 1720 102         | 1721 102          | 1722 102          | 1723 102          | 1724 102          |
| 300     | 40      | 2,4 | 1720 103         | 1721 103          | 1722 103          | 1723 103          | 1724 103          |
| 500     | 40      | 4,3 | 1720 104         | 1721 104          | 1722 104          | 1723 104          | 1724 104          |

## Engineer's levels Horizontal model

- ▶ DIN 877
- ▶ Hardened special cast-iron base
- ▶ 1 V base
- ▶ Longitudinal and lateral vials
- ▶ Delivered in a wooden case

$\leq$  = Sensitivity mm/m

! Levels for large shaft-Ø on request.



## Richtwaagen Winkelmodell



- ▶ DIN 877
- ▶ Rahmen aus Spezialguss, gehärtet
- ▶ Handwärmeschutz
- ▶ 4 Messflächen, 2 mit Prisma
- ▶ Längs- und Querlibelle
- ▶ Lieferung im Holzetui

$\leq$  = Empfindlichkeit mm/m

! Richtwaagen für große Wellen-Ø auf Anfrage.

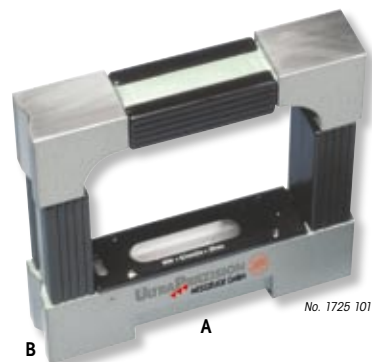
| A<br>mm | B<br>mm | kg  | $\leq 0,1$<br>Nº | $\leq 0,05$<br>Nº | $\leq 0,04$<br>Nº | $\leq 0,02$<br>Nº | $\leq 0,01$<br>Nº |
|---------|---------|-----|------------------|-------------------|-------------------|-------------------|-------------------|
| 200x200 | 40      | 3,8 | 1725 101         | 1726 101          | 1727 101          | 1728 101          | 1729 101          |
| 300x300 | 40      | 8,5 | -                | 1726 102          | 1727 102          | 1728 102          | 1729 102          |

## Engineer's levels Square frame

- ▶ DIN 877
- ▶ Hardened special cast-iron frame
- ▶ Insulated pads
- ▶ 4 measuring faces, 2 with V-grooves
- ▶ Longitudinal and lateral vials
- ▶ Delivered in a wooden case

$\leq$  = Sensitivity mm/m

! Levels for large shaft-Ø on request.



## Richtwaagen für Kurbelzapfen



- ▶ DIN 877
- ▶ Basis aus Spezialguss
- ▶ Handwärmeschutz
- ▶ Messfläche mit Längs- und Querprisma
- ▶ Längs- und Querlibelle
- ▶ Lieferung einzeln verpackt

$\leq$  = Empfindlichkeit mm/m

1760 1.. :  
Holzetui

! Andere Empfindlichkeiten auf Anfrage.

| A<br>mm | B<br>mm | kg  | $\leq 0,4$<br>Nº | $\leq 0,1$<br>Nº | Nº       |
|---------|---------|-----|------------------|------------------|----------|
| 60      | 40      | 0,4 | 1756 101         | 1758 101         | 1760 101 |
| 90      | 40      | 0,6 | 1756 102         | 1758 102         | 1760 102 |
| 120     | 40      | 0,8 | 1756 103         | 1758 103         | 1760 103 |

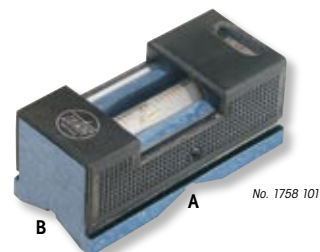
## Crankpin levels

- ▶ DIN 877
- ▶ Special cast-iron base
- ▶ Insulated pads
- ▶ Measuring faces with longitudinal and lateral V-s
- ▶ Longitudinal and lateral vials
- ▶ Delivered in individual packages

$\leq$  = Sensitivity mm/m

1760 1.. :  
Wooden box

! Other sensitivities on request.





## Richtwaagen STANDARD Horizontalmodell

## Engineer's levels, STANDARD Horizontal model

DIN

- ▶ DIN 877
- ▶ Basis aus Spezialguss
- ▶ Handwärmeschutz
- ▶ 1 prismatische Sohle
- ▶ Längs- und Querlibelle
- ▶ Lieferung einzeln verpackt

$\leq \epsilon$  = Empfindlichkeit mm/m

- ▶ DIN 877
- ▶ Special cast-iron base
- ▶ Insulated pads
- ▶ 1 V base
- ▶ Longitudinal and lateral vials
- ▶ Delivered in individual packages

$\leq \epsilon$  = Sensitivity mm/m



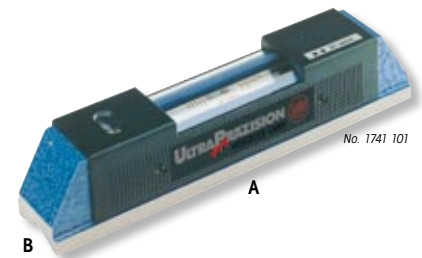
1750 1.. :  
Holzetui

1750 1.. :  
Wooden box

! Richtwaagen für große Wellen-Ø oder mit magnetischen Flächen auf Anfrage.

! Levels for large shaft-Ø or with magnetic surfaces on request.

| A mm | B mm | kg  | $\leq \epsilon$ 0,3 N° | $\leq \epsilon$ 0,1 N° | $\leq \epsilon$ 0,04 N° | $\leq \epsilon$ 0,02 N° | $\leq \epsilon$ 0,01 N° | N°       |
|------|------|-----|------------------------|------------------------|-------------------------|-------------------------|-------------------------|----------|
| 160  | 42   | 1,1 | 1740 101               | 1741 101               | 1742 101                | 1743 101                | 1744 101                | 1750 101 |
| 200  | 42   | 1,4 | 1740 102               | 1741 102               | 1742 102                | 1743 102                | 1744 102                | 1750 102 |
| 250  | 42   | 1,7 | 1740 103               | 1741 103               | 1742 103                | 1743 103                | 1744 103                | 1750 103 |
| 300  | 51   | 2,3 | 1740 104               | 1741 104               | 1742 104                | 1743 104                | 1744 104                | 1750 104 |
| 500  | 51   | 4,9 | 1740 105               | 1741 105               | 1742 105                | 1743 105                | 1744 105                | 1750 105 |



No. 1750 101

## Richtwaagen STANDARD Winkelmodell

## Engineer's levels, STANDARD Square frame

DIN

- ▶ DIN 877
- ▶ Rahmen aus Spezialguss
- ▶ Handwärmeschutz
- ▶ 4 Messflächen, 3 mit Prisma
- ▶ Längs- und Querlibelle
- ▶ Lieferung einzeln verpackt

$\leq \epsilon$  = Empfindlichkeit mm/m

- ▶ DIN 877
- ▶ Special cast-iron frame
- ▶ Insulated pads
- ▶ 4 measuring faces, 3 with V grooves
- ▶ Longitudinal and lateral vials
- ▶ Delivered in a case

$\leq \epsilon$  = Sensitivity mm/m



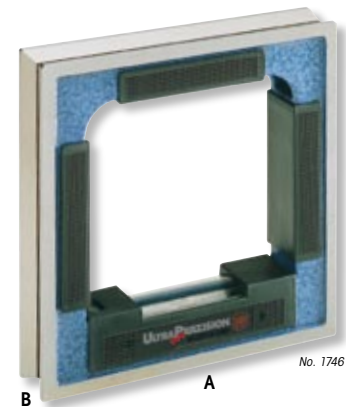
1751 1.. :  
Holzetui

1751 1.. :  
Wooden box

! Richtwaagen für große Wellen-Ø oder mit magnetischen Flächen auf Anfrage.

! Levels for large shaft-Ø or with magnetic faces on request.

| A mm    | B mm | kg  | $\leq \epsilon$ 0,3 N° | $\leq \epsilon$ 0,1 N° | $\leq \epsilon$ 0,04 N° | $\leq \epsilon$ 0,02 N° | $\leq \epsilon$ 0,01 N° | N°       |
|---------|------|-----|------------------------|------------------------|-------------------------|-------------------------|-------------------------|----------|
| 100x100 | 27   | 0,8 | 1745 101               | 1746 101               | 1747 101                | -                       | -                       | 1751 101 |
| 150x150 | 35   | 2   | 1745 102               | 1746 102               | 1747 102                | 1748 102                | 1749 102                | 1751 102 |
| 200x200 | 40   | 3,8 | 1745 103               | 1746 103               | 1747 103                | 1748 103                | 1749 103                | 1751 103 |
| 300x300 | 55   | 7,9 | 1745 104               | 1746 104               | 1747 104                | 1748 104                | 1749 104                | 1751 104 |



No. 1746 101



No. 1751 102

## Richtwaagen aus Aluminium

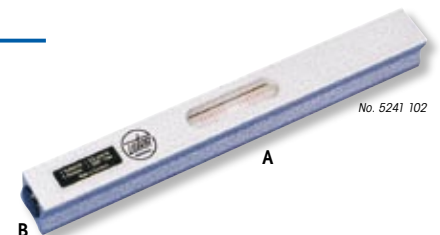
## Aluminium levels



- ▶ Werksnorm
- ▶ 1 prismatische Sohle
- ▶ 1 Längslibelle
- ▶ Empfindlichkeit 0,6mm/m
- ▶ Lieferung einzeln verpackt

- ▶ Works standard
- ▶ 1 V base
- ▶ 1 longitudinal vial
- ▶ Sensitivity 0.6mm/m
- ▶ Delivered in individual packages

| A mm | B mm | kg   | N°       | A mm | B mm | kg   | N°       |
|------|------|------|----------|------|------|------|----------|
| 150  | 27   | 0,12 | 5241 102 | 250  | 27   | 0,21 | 5241 104 |
| 200  | 27   | 0,16 | 5241 103 | 300  | 27   | 0,24 | 5241 105 |



No. 5241 102

## Winkel-Richtwaagen

## Angle finder levels



- ▶ Werksnorm
- ▶ Rahmen aus Spezialguss
- ▶ 2 Messflächen mit Prisma
- ▶ 1 Längslibelle
- ▶ Empfindlichkeit 0,3mm/m
- ▶ mattverchromte Skala 0-90°
- ▶ Noniusablesung 10'
- ▶ Feineinstellung
- ▶ Lieferung im Holzetui

- ▶ Works standard
- ▶ Special cast-iron frame
- ▶ 2 measuring faces with V-groove
- ▶ 1 longitudinal vial
- ▶ Sensitivity 0.3mm/m
- ▶ Satin chrome scale 0-90°
- ▶ Vernier reading 10'
- ▶ Fine adjustment
- ▶ Delivered in a wooden case



No. 5243 101

**5243 1.. :**  
2 prismatische Messflächen

**5243 1.. :**  
2 V measuring faces

**5243 2.. :**  
2 flache magnetische Messflächen

**5243 2.. :**  
2 flat magnetic measuring faces

| L<br>mm    | h<br>kg | Nº       |
|------------|---------|----------|
| 150x150x39 | 1,85    | 5243 101 |
| 150x150x39 | 1,85    | 5243 201 |

## Winkellehre magnetisch

## Angle finder, magnetic



- ▶ Werksnorm
- ▶ mit Mittelpunktkörner
- ▶ magnetischer Basis 90°
- ▶ Skala 360°
- ▶ Lieferung im einzeln verpackt

- ▶ Works standard
- ▶ With centre punch
- ▶ Magnetic base 90°
- ▶ Scale 360°
- ▶ Delivered in individual packages



No. 5204 101

| h<br>kg | Nº       |
|---------|----------|
| 0,8     | 5204 101 |

## Gradwasserwaage

## Angle finder levels



- ▶ Werksnorm
- ▶ flache Sohle mit 2 Befestigungsbohrungen
- ▶ drehbare runde Skala mit Libelle
- ▶ Messbereich 4x90°
- ▶ Genauigkeit 1°
- ▶ Lieferung im Holzetui

- ▶ Works standard
- ▶ Flat base with 2 fixture holes
- ▶ Turnable round scale with vial
- ▶ Measuring range 4 x 90°
- ▶ Accuracy 1°
- ▶ Delivered in a wooden case



No. 5244 101

| L<br>mm  | ∅<br>mm | h<br>kg | Nº       |
|----------|---------|---------|----------|
| 300 x 25 | 70      | 1,1     | 5244 101 |

## Neigungs-Richtwaage

## Angle finder levels



- ▶ aus Aluminium-Druckguss
- ▶ 1 prismatische Sohle
- ▶ drehbarer Libellenträger
- ▶ Lieferung im Holzetui

- ▶ Aluminium die cast
- ▶ 1 V base
- ▶ Turnable vial holder
- ▶ Delivered in a wooden case



No. 5246 101

| L<br>mm  | ∅<br>mm         | ∠<br>°   | h<br>kg | Nº       |
|----------|-----------------|----------|---------|----------|
| 500 x 27 | 2x90°<br>2x100% | 1°<br>5% | 1,47    | 5246 101 |

## Digital-Wasserwaagen

## Digital spirit levels



- ▶ Aluprofil pulverbeschichtet
- ▶ großes LCD-Display
- ▶ Horizontal- und Vertikallibelle
- ▶ Lieferung einzeln verpackt

- Funktionen:
- ▶ Ein/Aus
  - ▶ Ablesung umschaltbar 0,1° / 0,1% / 0,1mm/m
  - ▶ HOLD Funktion
  - ▶ zuschaltbares akustisches Signal bei 0°- oder 90°

- ▶ Powder-coated aluminium profile
- ▶ Large LCD display
- ▶ Horizontal and vertical vials
- ▶ Delivered in individual packages

- Functions:
- ▶ On/Off
  - ▶ Reversible reading 0.1° / 0.1% / 0.1mm/m
  - ▶ HOLD function
  - ▶ Switchable audible signal at 0° or 90°



No. 5258 102

! Ausführung mit Lasermodul auf Anfrage.

! Version with laser module on request.

| l-l<br>cm | ☺                                                                         | ⚖<br>kg | Nº       |
|-----------|---------------------------------------------------------------------------|---------|----------|
| 60        | bei / at 0° und / and 90° +/-0,05°<br>bei / at 1° bis / up to 89° +/-0,3° | 1,22    | 5258 101 |
| 80        |                                                                           | 1,3     | 5258 102 |
| 120       |                                                                           | 1,5     | 5258 103 |

## Wasserwaagen

## Spirit levels

- ▶ stabiles Aluprofil
- ▶ bruchsichere Horizontal- und Vertikallibelle
- ▶ Lieferung einzeln verpackt

- ▶ Stable aluminium profile
- ▶ Break-proof horizontal and vertical vials
- ▶ Delivered in individual packages



No. 5264 301

5264 3.. :  
Standard

5264 3.. :  
Standard

5264 4.. :  
mit Haftmagneten

5264 4.. :  
With magnets

Mit Haftmagneten  
With magnets



No. 5264 4..

| l-l<br>cm | ⚖<br>kg | Nº       | Nº       |
|-----------|---------|----------|----------|
| 40        | 0,38    | 5264 301 | 5264 401 |
| 50        | 0,44    | 5264 302 | 5264 402 |
| 60        | 0,52    | 5264 303 | 5264 403 |
| 80        | 0,7     | 5264 304 | 5264 404 |
| 100       | 0,85    | 5264 305 | 5264 405 |
| 120       | 1,0     | 5264 306 | 5264 406 |
| 150       | 1,5     | 5264 307 | 5264 407 |
| 200       | 1,9     | 5264 308 | 5264 408 |

## Wasserwaagen in Trapezform

## Spirit levels in trapezoidal shape

- ▶ Aluminium-Druckguss
- ▶ bruchsichere Horizontal- und Vertikallibelle
- ▶ Lieferung einzeln verpackt

- ▶ Aluminium die cast
- ▶ Break-proof horizontal and vertical vials
- ▶ Delivered in individual packages



No. 5265 103

| l-l<br>cm | ⚖<br>kg | Nº       |
|-----------|---------|----------|
| 40        | 0,4     | 5265 101 |
| 50        | 0,52    | 5265 102 |
| 60        | 0,65    | 5265 103 |
| 80        | 0,9     | 5265 104 |

## Torpedo-Wasserwaagen

- ▶ ABS Kunststoffgehäuse
- ▶ bruch sichere Libellen 0° / 45° / 90°
- ▶ magnetische Unterseite
- ▶ Lieferung einzeln verpackt

## Torpedo spirit levels

- ▶ ABS plastic housing
- ▶ Break-proof vials 0° / 45° / 90°
- ▶ Magnetic back
- ▶ Delivered in individual packages



No. 5250 101

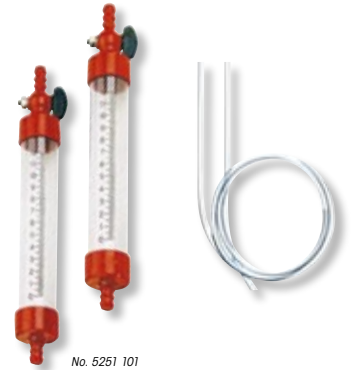
| l-l<br>mm | h<br>kg | Nº       |
|-----------|---------|----------|
| 220       | 0,2     | 5250 101 |

## Schlauch-Wasserwaagen

- ▶ 2 Plexiglasröhren mit 1/2cm Teilung
- ▶ robuste Kunststoffarmatur
- ▶ Lieferung inkl. 10m Schlauch

## Water level kit

- ▶ 2 plexiglas tubes with 1/2cm graduation
- ▶ Sturdy plastic fitting
- ▶ Delivery incl. 10m tube



No. 5251 101

| l-l<br>mm | Ø<br>mm | h<br>kg | Nº       |
|-----------|---------|---------|----------|
| 200       | 20      | 0,3     | 5251 101 |

## Nivelliertaster MODUS



- ▶ Einmannbedienung
- ▶ Nivellieren, Meterriess und Messen
- ▶ Wände, Ecken oder Säulen sind keine Hindernisse
- ▶ Messbereich ±20cm
- ▶ Ablesung millimetergenau
- ▶ Flüssigkeit verbleibt im Gerät
- ▶ Frostschutz bis -15°C
- ▶ Bauteile aus Edelstahl, Alu, Messing oder Kunststoff, dadurch korrosionsbeständig
- ▶ Lieferung im Transportkoffer, inkl. Schlauch, Messflüssigkeit 100ml und 500ml, Anreißwinkel

## Levelling devices MODUS

- ▶ One-man operation
- ▶ Levelling, marking and measuring
- ▶ Walls, corners or columns are no obstacles
- ▶ Measuring range ±20cm
- ▶ Millimetre-precise reading
- ▶ Liquid remains in the device
- ▶ Frost protection up to -15°C
- ▶ Corrosion-free due to stainless steel, aluminium, brass or plastic components,
- ▶ Delivered in transportation box incl. tube, measuring liquid 100ml and 500ml and marking square

**5405 101 :**  
Nivelliertaster Standard

**5405 101 :**  
Levelling device, standard

**5405 102 :**  
Nivelliertaster für Decken

**5405 102 :**  
Levelling device for ceilings

**5405 501 :**  
Verlängerungsstäbe (Satz 4 Stück) Gesamtlänge 2,2m

**5405 501 :**  
Extension rods (set, 4 pieces) total length 2,2m

! Messflüssigkeit sowie Ersatzteile auf Anfrage.

! Measuring liquid and spare parts on request.

| Stativhöhe<br>Stand height<br>m | Aktionsradius<br>Operating range<br>m | Schlauchlänge<br>Tube length<br>m | h<br>kg | Nº       |
|---------------------------------|---------------------------------------|-----------------------------------|---------|----------|
| 1,4                             | 40                                    | 20                                | 13      | 5405 101 |
| 3,8                             | 66                                    | 33                                | 25      | 5405 102 |



No. 5405 101

