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Focus on precision digital after 0.000mm.

## 精密塊規 Gauge Block





## ■ 塊規概述 Gauge Block Overview

### 定義:

塊規是橫截面為矩形，一對相互平行的測量面間具有準確尺寸的測量器具。

是用國際先進的測長儀檢測針規的精度。

### 特點:

形狀簡單、量值穩定、耐磨性好、使用方便。除每塊可單獨作為特定的量值使用外，還可以組合成所需的各種不同尺寸使用。

### 材質:

白鋼、鎢鋼、陶瓷等材質。

### 名稱:

塊規、量規、滑規、塊規，塊規。

### Definition:

Gauge block is rectangular cross section, between a pair of parallel measurement on the accurate size of the measuring apparatus.

Use the international advanced instrument to measure the accuracy of gauge.

### Features:

Simple shape, size stability, good wear resistance and easy to use. Besides each used independently as a specific value, also can be assembled to use as various different sizes.

### Material:

Stainless steel, tungsten carbide steel, ceramic and etc.

### Name:

Gauge Block, Slip Gauge, Slide Gauge, Gage Block Set, Rectangular Gauge Block, Angle Block Gauge, Calibration Block Gauge, Inspection Block Gauge.



## ■ 用途 Application

- 作為標準件，用比較法測量工件尺寸，或用來校準、調整測量器具的零位；
- 用于直接測量零件尺寸；
- 用于精密機床的調整和機械加工中精密劃綫；
- 作為長度標準，傳遞尺寸量值；
- 用于檢定測量口齒的示值誤差。
- As standard part, using comparison method to measure the size, or used for calibration and adjustment of measurement instrument;
- Used for measure size directly;
- Used in the adjustment of precision machines and precision mark during machining;
- As length standard, passing the measurement of size;
- Used for inspecting the error of instrument.

## ■ 等級與應用 Level & Application

|                  | 應用 Application  | 等級 Level |
|------------------|---|----------|
| 車間使用 Workshop    | 安裝工具和刀具<br>Installation tools and cutting tools             | 2        |
|                  | 生產計量器<br>Production Counter                                 | 1 or 2   |
|                  | 校準儀器<br>Calibration instrument                              |          |
| 檢驗使用 Inspection  | 檢驗機械零件、工具等<br>Inspection of mechanical parts, tools and etc | 1 or 2   |
|                  | 檢查計量儀器精度<br>Check accuracy of measurement instrument        | 0 or 1   |
|                  | 校準儀器<br>Calibration instrument                              |          |
| 校準使用 Calibration | 檢查車間用量塊精度<br>Check accuracy of block gauge in workshop      | k or 0   |
|                  | 檢查檢驗量塊精度<br>Inspect block gauge                             |          |
|                  | 檢查儀器精度<br>Check the instrument accuracy                     |          |
| 基準使用 Benchmark   | 檢查校準量塊精度<br>Calibration block gauge                         | k        |
|                  | 用于學術研究<br>Academic research                                 |          |

### 等級2:

這類量塊在車間中使用，用于調整或校驗夾具或精密儀器。

### 等級1:

這類量塊在檢驗區域使用，用于驗證快速計量器精度或調整電子測量裝置。

### 等級0:

這類高精度量塊在受控環境中由高級檢驗員使用，主要作為調整高精度測量設備和校準低等級量塊的基準。

### 等級k:

這類精度的量塊在溫度受控的檢驗室或校準實驗室使用，主要用作校準規，通過比較來校準其它量塊。

### Level 2:

This kind of block gauge used in the workshop, used to adjust or check fixture or calibrate precision instruments.

### Level 1:

This kind of block gauge used in the inspection area, used to validate or adjust the precision measurement instruments quickly.

### Level 0:

This kind of high precision block gauge used by senior inspector in a controlled environment, mainly as the adjustment of high precision measuring equipment and calibration the benchmark of lower level gauge block.

### Level k:

This kind of gauge block used in temperature controlled Checkout room or calibration laboratory, mainly used as calibration gauges, to calibrate other block gauge by comparing.

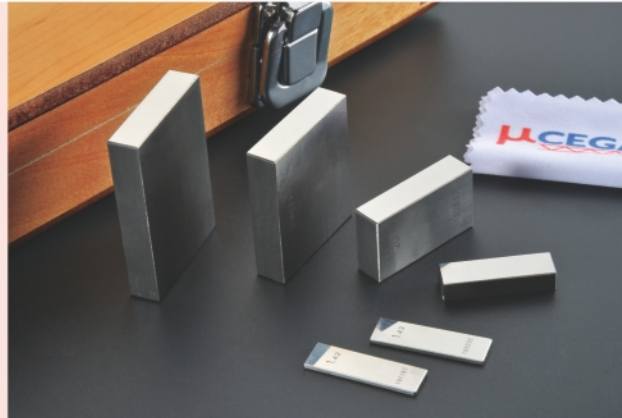
# 80010

YK-516 白鋼塊規



## GAUGES BLOCK METAL

- Features 材質: Metal 工具鋼
- Proportion 比重: 7.8
- Hardness 硬度: HRC62-64°C
- Thermal expansion degree 膨脹: 11.5



### ■ 特點 Characteristic

- 塊規為線性測量的基本工具。可用來調整、檢查或檢測量具和精密工件。
- 塊規可以個別或結合數 放在一起使用。表面硬度HRC62-64°C。
- 塊規有經過脫磁處理及特別熱處理以穩定塊規的尺寸精度。
- Gauge is frequently-used tool for linear measurement. Used to adjust, inspect precision products and instrument.
- Gauge can be used individually or combined, hardness is HRC62-64°C.
- Gauge is non-magnetic and with special heat treatment to stabilize the size.

### ■ 選型參數表 Parameter

| 訂購編號<br>Order No. | 型號<br>Model   | 套裝數量<br>Blocks Qty. | 精度等級<br>Precision Grade | 尺寸 (mm)<br>Nominal dimensions | 間隔 (mm)<br>Dimensional Increment | 塊數<br>Qty. of Each |
|-------------------|---------------|---------------------|-------------------------|-------------------------------|----------------------------------|--------------------|
| 80010-32-0        | YK-516-32-H0  | 32                  | 0                       | 1.005                         | /                                | 1                  |
| 80010-32-1        | YK-516-32-H1  | 32                  | 1                       | 1.01~1.09                     | 0.01                             | 9                  |
| 80010-32-2        | YK-516-32-H2  | 32                  | 2                       | 1.1~1.9                       | 0.1                              | 9                  |
|                   |               |                     |                         | 1~10                          | 1                                | 10                 |
|                   |               |                     |                         | 20,30,50                      | /                                | 3                  |
| 80010-38-0        | YK-516-38-H0  | 38                  | 0                       | 1.005                         | /                                | 1                  |
| 80010-38-1        | YK-516-38-H1  | 38                  | 1                       | 1.01~1.09                     | 0.01                             | 9                  |
| 80010-38-2        | YK-516-38-H2  | 38                  | 2                       | 1.1~1.9                       | 0.1                              | 9                  |
|                   |               |                     |                         | 1~10                          | 1                                | 10                 |
|                   |               |                     |                         | 20~100                        | 10                               | 9                  |
| 80010-47-0        | YK-516-47-H0  | 47                  | 0                       | 1.005                         | /                                | 1                  |
| 80010-47-1        | YK-516-47-H1  | 47                  | 1                       | 1.01~1.19                     | 0.01                             | 19                 |
| 80010-47-2        | YK-516-47-H2  | 47                  | 2                       | 1.2~1.9                       | 0.1                              | 8                  |
|                   |               |                     |                         | 1~10                          | 1                                | 10                 |
|                   |               |                     |                         | 20~100                        | 10                               | 9                  |
| 80010-87-0        | YK-516-87-H0  | 87                  | 0                       | 1.001~1.009                   | 0.001                            | 9                  |
| 80010-87-1        | YK-516-87-H1  | 87                  | 1                       | 1.01~1.49                     | 0.01                             | 49                 |
| 80010-87-2        | YK-516-87-H2  | 87                  | 2                       | 0.5~9.5                       | 0.5                              | 19                 |
|                   |               |                     |                         | 10~100                        | 10                               | 10                 |
| 80010-103-0       | YK-516-103-H0 | 103                 | 0                       | 1.005                         | /                                | 1                  |
| 80010-103-1       | YK-516-103-H1 | 103                 | 1                       | 1.01~1.49                     | 0.01                             | 49                 |
| 80010-103-2       | YK-516-103-H2 | 103                 | 2                       | 0.5~24.5                      | 0.5                              | 49                 |
|                   |               |                     |                         | 25~100                        | 25                               | 4                  |
| 80010-112-0       | YK-516-112-H0 | 112                 | 0                       | 1.005                         | /                                | 1                  |
| 80010-112-1       | YK-516-112-H1 | 112                 | 1                       | 1.001~1.009                   | 0.001                            | 9                  |
| 80010-112-2       | YK-516-112-H2 | 112                 | 2                       | 1.01~1.49                     | 0.01                             | 49                 |
|                   |               |                     |                         | 0.5~24.5                      | 0.5                              | 49                 |
|                   |               |                     |                         | 25~100                        | 25                               | 4                  |

# 80020

YK-516 鎢鋼塊規



## GAUGE BLOCK TUNGSTEN CARBIDE

- Features 材質: Tungsten Carbide 鎢鋼
- Proportion 比重: 15.0
- Hardness 硬度: HRA91
- Thermal expansion degree 膨脹: 5.5



### ■ 特點 Characteristic

- 塊規為線性測量的基本工具。可用來調整、檢查或檢測量具和精密工件。
- 塊規可以個別或結合數 規在一起使用。
- 塊規本身是鎢鋼材料制成，經過特殊熱處理，硬度HRA91。
- 具有很高的硬度和耐磨性，不容易變形，精密度非常的高。
- Gauge is frequently-used tool for linear measurement. Used to adjust, inspect precision products and instrument.
- Gauge can be used individually or combined.
- Gauge is made from tungsten steel material, through special processing, hardness HRA91
- High hardness and wear resistance, not easy deformation and high precision .

### ■ 選型參數表 Parameter

| 訂購編號<br>Order No. | 型號<br>Model   | 套裝數量<br>Blocks Qty. | 精度等級<br>Precision Grade | 尺寸 (mm)<br>Nominal dimensions | 間隔 (mm)<br>Dimensional Increment | 塊數<br>Qty. of Each |
|-------------------|---------------|---------------------|-------------------------|-------------------------------|----------------------------------|--------------------|
| 80020-32-0        | YK-516-32-C0  | 32                  | 0                       | 1.005                         | /                                | 1                  |
| 80020-32-1        | YK-516-32-C1  | 32                  | 1                       | 1.01~1.09                     | 0.01                             | 9                  |
| 80020-32-2        | YK-516-32-C2  | 32                  | 2                       | 1.1~1.9                       | 0.1                              | 9                  |
|                   |               |                     |                         | 1~10                          | 1                                | 10                 |
|                   |               |                     |                         | 20,30,50                      | /                                | 3                  |
| 80020-38-0        | YK-516-38-C0  | 38                  | 0                       | 1.005                         | /                                | 1                  |
| 80020-38-1        | YK-516-38-C1  | 38                  | 1                       | 1.01~1.09                     | 0.01                             | 9                  |
| 80020-38-2        | YK-516-38-C2  | 38                  | 2                       | 1.1~1.9                       | 0.1                              | 9                  |
|                   |               |                     |                         | 1~10                          | 1                                | 10                 |
|                   |               |                     |                         | 20~100                        | 10                               | 9                  |
| 80020-47-0        | YK-516-47-C0  | 47                  | 0                       | 1.005                         | /                                | 1                  |
| 80020-47-1        | YK-516-47-C1  | 47                  | 1                       | 1.01~1.19                     | 0.01                             | 19                 |
| 80020-47-2        | YK-516-47-C2  | 47                  | 2                       | 1.2~1.9                       | 0.1                              | 8                  |
|                   |               |                     |                         | 1~10                          | 1                                | 10                 |
|                   |               |                     |                         | 20~100                        | 10                               | 9                  |
| 80020-87-0        | YK-516-87-C0  | 87                  | 0                       | 1.001~1.009                   | 0.001                            | 9                  |
| 80020-87-1        | YK-516-87-C1  | 87                  | 1                       | 1.01~1.49                     | 0.01                             | 49                 |
| 80020-87-2        | YK-516-87-C2  | 87                  | 2                       | 0.5~9.5                       | 0.5                              | 19                 |
|                   |               |                     |                         | 10~100                        | 10                               | 10                 |
| 80020-103-0       | YK-516-103-C0 | 103                 | 0                       | 1.005                         | /                                | 1                  |
| 80020-103-1       | YK-516-103-C1 | 103                 | 1                       | 1.01~1.49                     | 0.01                             | 49                 |
| 80020-103-2       | YK-516-103-C2 | 103                 | 2                       | 0.5~24.5                      | 0.5                              | 49                 |
|                   |               |                     |                         | 25~100                        | 25                               | 4                  |
| 80020-112-0       | YK-516-112-C0 | 112                 | 0                       | 1.005                         | /                                | 1                  |
| 80020-112-1       | YK-516-112-C1 | 112                 | 1                       | 1.001~1.009                   | 0.001                            | 9                  |
| 80020-112-2       | YK-516-112-C2 | 112                 | 2                       | 1.01~1.49                     | 0.01                             | 49                 |
|                   |               |                     |                         | 0.5~24.5                      | 0.5                              | 49                 |
|                   |               |                     |                         | 25~100                        | 25                               | 4                  |

# 80030

YK-516 陶瓷塊規



## GAUGES BLOCK CERAMIC

- Features 材質: Ceramic 陶瓷
- Proportion 比重: 6.0
- Hardness 硬度: HV1200
- Thermal expansion degree 膨脹: 11



### ■ 特點 Characteristic

- 具有非常高的耐磨性，使用壽命是鋼的5~10倍。
- 具有非常強的抗腐蝕性，在使用中沒有特別的保護和較少的維護。可用於長時間的精確測量。
- 微晶材料製成，經過超精密的表面處理，確保穩定性。受溫度系數的影響極小，是其獨特的優點。
- High wear resistance, service life is 5 ~ 10 times of steel.
- Strong corrosion resistance, no special protection in using and less maintenance. Long service time for precision measurement.
- Microcrystalline materials, Surface with the ultra-precision processing to ensure stability. Tiny affected by temperature, it's unique advantage.

### ■ 選型參數表 Parameter

| 訂購編號<br>Order No. | 型號<br>Model   | 套裝數量<br>Blocks Qty. | 精度等級<br>Precision Grade | 尺寸 (mm)<br>Nominal dimensions   | 間隔 (mm)<br>Dimensional Increment | 塊數<br>Qty. of Each |
|-------------------|---------------|---------------------|-------------------------|---------------------------------|----------------------------------|--------------------|
| 80030-32-0        | YK-516-32-D0  | 32                  | 0                       | 1.005<br>1.01~1.09              | /<br>0.01                        | 1<br>9             |
| 80030-32-1        | YK-516-32-D1  | 32                  | 1                       | 1.1~1.9<br>1~10<br>20,30,50     | 0.1<br>1<br>/                    | 9<br>10<br>3       |
| 80030-38-0        | YK-516-38-D0  | 38                  | 0                       | 1.005<br>1.01~1.09              | /<br>0.01                        | 1<br>9             |
| 80030-38-1        | YK-516-38-D1  | 38                  | 1                       | 1.1~1.9<br>1~10<br>20~100       | 0.1<br>1<br>10                   | 9<br>10<br>9       |
| 80030-47-0        | YK-516-47-D0  | 47                  | 0                       | 1.005<br>1.01~1.19              | /<br>0.01                        | 1<br>19            |
| 80030-47-1        | YK-516-47-D1  | 47                  | 1                       | 1.2~1.9<br>1~10<br>20~100       | 0.1<br>1<br>10                   | 8<br>10<br>9       |
| 80030-87-0        | YK-516-87-D0  | 87                  | 0                       | 1.001~1.009<br>1.01~1.49        | 0.001<br>0.01                    | 9<br>49            |
| 80030-87-1        | YK-516-87-D1  | 87                  | 1                       | 0.5~9.5<br>10~100               | 0.5<br>10                        | 19<br>10           |
| 80030-103-0       | YK-516-103-D0 | 103                 | 0                       | 1.005<br>1.01~1.49              | /<br>0.01                        | 1<br>49            |
| 80030-103-1       | YK-516-103-D1 | 103                 | 1                       | 0.5~24.5<br>25~100              | 0.5<br>25                        | 49<br>4            |
| 80030-112-0       | YK-516-112-D0 | 112                 | 0                       | 1.005<br>1.001~1.009            | /<br>0.001                       | 1<br>9             |
| 80030-112-1       | YK-516-112-D1 | 112                 | 1                       | 1.01~1.49<br>0.5~24.5<br>25~100 | 0.01<br>0.5<br>25                | 49<br>49<br>4      |

### ■ 塊規的特點 Block Gauge Feature

- 使用中心孔可使量塊完全鎖緊  
方形量塊研合後，可用可選連接杆穿過中心孔并用螺母鎖緊。
- 可簡單制作高度基準  
可用平頭量爪和量塊底座等附件很簡單的制作一個高精度高度基準。
- 可簡單制作專用檢測夾具  
可簡單、方便的制作用於儀器反復檢測的專用檢測夾具。
- 可測量斷面尺寸達 (24.1×24.1mm) 的表面  
方形量塊能保持穩定的橫向和縱向定位，因此可實現多種應用，如切削刀具的定位，和用正弦杆一起使用測量角度，和滾筒一起使用測量錐度以及校驗深度千分尺。
- Lock Gauges With Center Holes  
Use connecting rod through center holes and nuts to lock block gauges.
- Set Height Datum  
Using flat measurement claw and gauges to make precise height datum simply.
- Make Measurement Clamp  
Make special clamp simply for repeated measurement instrument.
- Can measure section size (Max 24.1\*24.1)  
Block gauge and keep location of crosswise and lengthway. There are many applications such as location of cutting tools, measure angle combined with sine rod, inspect taper combined with roller as well as calibration of Measurement micrometer.

### ■ 塊規級別公差表 Tolerance Table of Block Gauge

精度規範: GB6093-2003(中國)20°C時的精度(μm) Precision Standard: GB6093-2003(China)20°C Accuracy(μm)  
 精度規範: DIN 861-1980(德國)20°C時的精度(μm) Precision Standard: DIN861-1980(Germany)20°C Accuracy(μm)



| 公稱長度<br>Nominal length (μinch) | 等級Lever K***               | 等級Lever 0 | 等級Lever 1 | 等級Lever 2 |
|--------------------------------|----------------------------|-----------|-----------|-----------|
|                                | 極限公差Limit of Tolerance (±) |           |           |           |
| 0.5~10                         | 0.20                       | 0.12      | 0.20      | 0.45      |
| 10~25                          | 0.30                       | 0.14      | 0.30      | 0.60      |
| 25~50                          | 0.40                       | 0.20      | 0.40      | 0.80      |
| 50~75                          | 0.50                       | 0.25      | 0.50      | 1.00      |
| 75~100                         | 0.60                       | 0.30      | 0.60      | 1.20      |
| 100~150                        | 0.80                       | 0.40      | 0.80      | 1.60      |
| 150~200                        | 1.00                       | 0.50      | 1.00      | 2.00      |
| 200~250                        | 1.20                       | 0.60      | 1.20      | 2.40      |
| 250~300                        | 1.40                       | 0.70      | 1.40      | 2.80      |
| 300~400                        | 1.80                       | 0.90      | 1.80      | 3.60      |
| 400~500                        | 2.20                       | 1.10      | 2.20      | 4.40      |
| 500~600                        | 2.60                       | 1.30      | 2.60      | 5.00      |
| 600~700                        | 3.00                       | 1.50      | 3.00      | 6.00      |
| 700~800                        | 3.40                       | 1.70      | 3.40      | 6.50      |
| 800~900                        | 3.80                       | 1.90      | 3.80      | 7.50      |
| 900~1000                       | 4.20                       | 2.00      | 4.20      | 8.00      |

精度規範: BS 4311(英國)20°C時的精度(μ inch) Precision Standard: DIN861-1980(Germany)20°C Accuracy(μm)



| 公稱長度<br>Nominal length (μinch) | 等級K***                     | 等級0   | 等級1   | 等級2   |
|--------------------------------|----------------------------|-------|-------|-------|
|                                | 極限公差Limit of Tolerance (±) |       |       |       |
| 0.5~10                         | ±0.12                      | ±0.12 | ±0.25 | ±0.50 |
| 10~25                          | ±0.15                      | ±0.15 | ±0.30 | ±0.60 |
| 25~50                          | ±0.20                      | ±0.20 | ±0.40 | ±0.80 |
| 50~75                          | ±0.25                      | ±0.25 | ±0.50 | ±1.00 |
| 75~100                         | ±0.30                      | ±0.30 | ±0.60 | ±1.20 |

精度規範: ASME(美國)20°C時的精度(μ inch) Precision Standard: DIN861-1980(Germany)20°C Accuracy(μm)



| 公稱長度<br>Nominal length (μinch) | 等級K***                     | 等級0   | 等級1   | 等級2   |
|--------------------------------|----------------------------|-------|-------|-------|
|                                | 極限公差Limit of Tolerance (±) |       |       |       |
| 0.5~10                         | ±0.05                      | ±0.1  | ±0.15 | ±0.25 |
| 01"~2"                         | ±2                         | ±4    | ±6    | ±10   |
| 50~150mm                       | ±0.05                      | ±0.10 | ±0.15 | ±0.25 |
| 2"~6"                          | ±2                         | ±4    | ±6    | ±10   |
| 150~500mm                      | 0.1                        | 0.15  | 0.18  | 0.25  |
| 6"~20"                         | ±4                         | ±6    | ±7    | ±10   |
| 500~1000mm                     | ±0.15                      | ±0.18 | ±0.20 | ±0.25 |
| 20"~40"                        | ±6                         | ±7    | ±8    | ±10   |