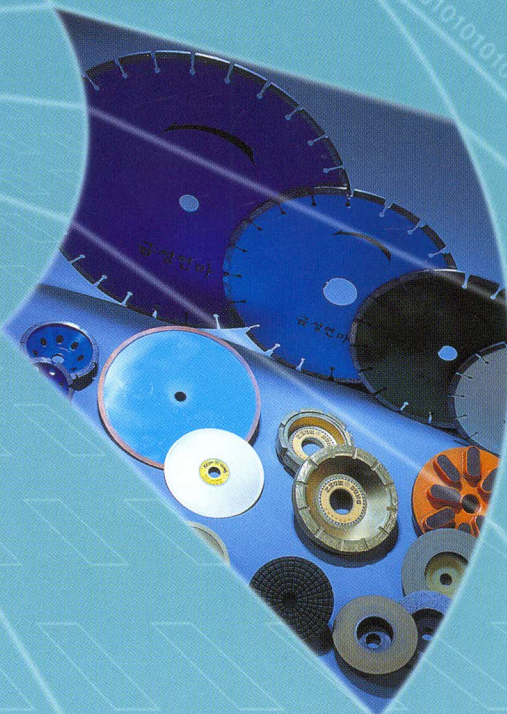
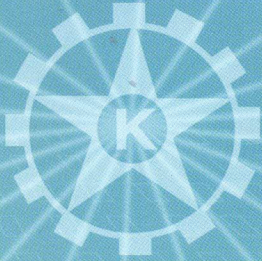


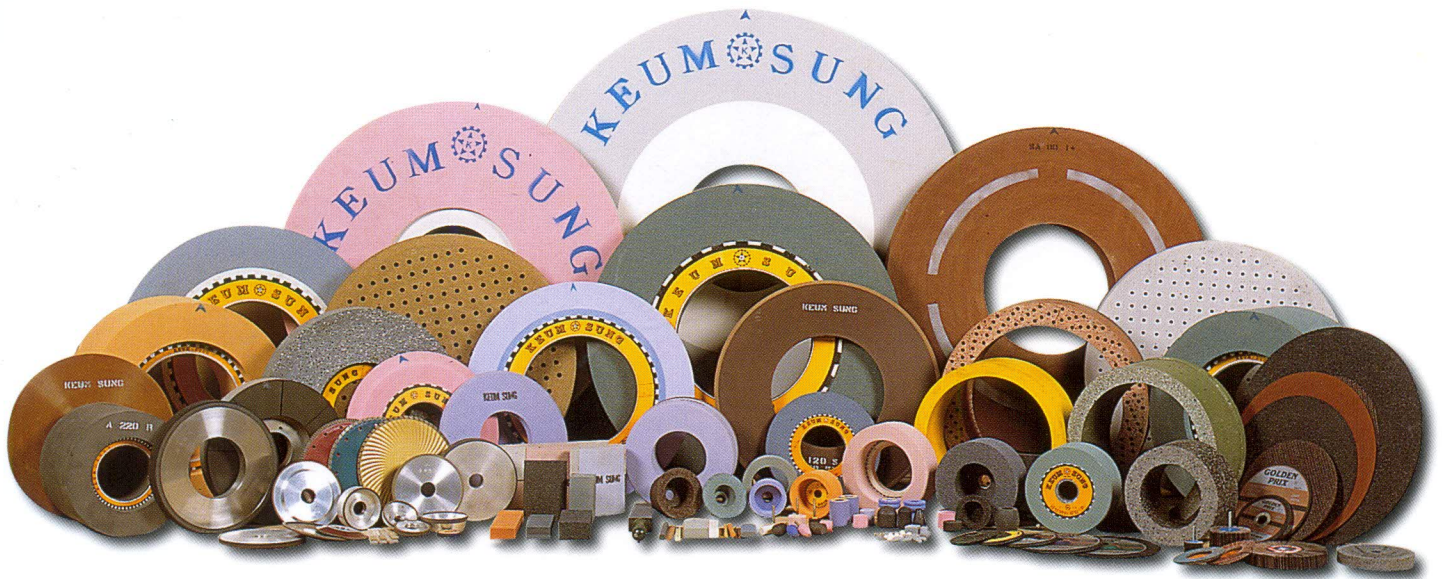
Ⓚ KSL 6212
KSL 6501
KSL 6504
KSL 6505

KEUM SUNG GRINDING WHEEL



KEUM SUNG GRINDING WHEEL CO., LTD.

WE WILL SERVE YOU AS TOP-NOTCH MAKER OF HIGH QUALITY



Keum Sung manufactures all type of grinding wheels based on Vitrified bond, Resinoid bond, rubber bond, epoxy & magnesia bond, CBN & diamond grinding wheels and many more for every industrial field's requirements



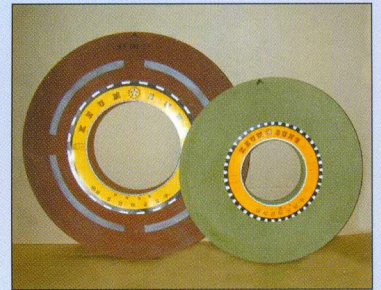
Bench grinding wheel



Depressed center wheel



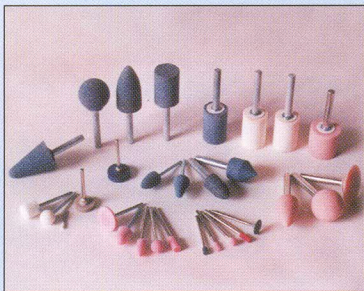
Cut-off wheel



Roll grinding wheel



Flap disc



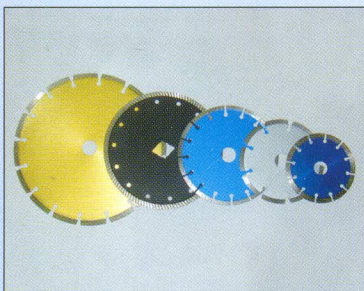
Mounted point



Mg(Epoxy) wheel



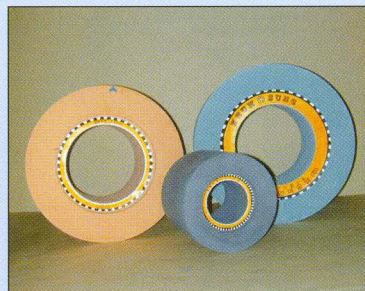
Tool grinding wheel



Diamond cutter



Internal grinding wheel



Centerless & rubber wheel



CBN & diamond wheel

1 DEPRESSED CENTER WHEELS

- Aluminum Oxide (A) : for metal/steel
- Silicon carbide (C) : for masonry/stone
- white aluminum (WA) : for stainless & hardened steel
- Zirconia aluminum (AZ) : Heavy duty & long life for metal/steel



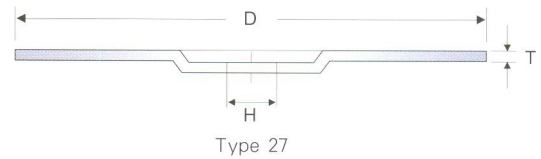
■ For cutting

| SIZE DIAMETER×THICKNESS×HOLE | MAX. SPEED (r.p.m) | APPLICATION |
|--------------------------------------|--------------------|-----------------------------------|
| 3×1/8×3/8 (75×3×10) | 20,000 | A24Q : Fast cutting for metal. |
| 4×1/8, 3/32×5/8 (100×3, 2, 5×16) | 15,200 | A30R : General purpose for metal. |
| 4 1/2×1/4, 3/32×7/8 (115×2, 5, 6×22) | 13,300 | A46P : Non-ferrous (Brass-etc). |
| 5×1/8×7/8 (125×3×22) | 12,200 | ZA24(30) : Heavy duty grinding. |
| 6×1/8×7/8 (150×3×22) | 10,000 | WA30 : Stainless steel. |
| 7×1/8×7/8 (180×3×22) | 8,500 | C24R : Fast cutting for stone. |
| 9×1/8×7/8 (230×3×22) | 6,600 | C30R : General purpose for stone. |

■ For Grinding

| SIZE DIAMETER×THICKNESS×HOLE | MAX. SPEED (r.p.m) | APPLICATION |
|-----------------------------------|--------------------|------------------------------------|
| 3×1/4×3/8 (75×6×10) | 20,000 | A24Q : Fast grinding for metal. |
| 4×1/4, 5/32×5/8 (100×6, 4×16) | 15,200 | A30R : General purpose for metal. |
| 4 1/2×1/4, 5/32×7/8 (115×6, 4×22) | 13,300 | A46P : Non-ferrous (Brass-etc). |
| 5×1/4, 5/32×7/8 (125×6, 4×22) | 12,200 | ZA24(30) : Heavy duty grinding. |
| 6×1/4×7/8 (150×6×22) | 10,000 | WA30 : Stainless steel. |
| 7×1/4, 5/16×7/8 (180×6, 8×22) | 8,500 | C24R : Fast grinding for stone. |
| 9×1/4, 5/16×7/8 (230×6, 8×22) | 6,600 | C46S : Natural & Artificial stone. |

Reinforced with fiber glass (2 or 2 1/2 ply)



2 FLEXIBLE DISC

■ STANDARD SELECTION

ABRASIVE :

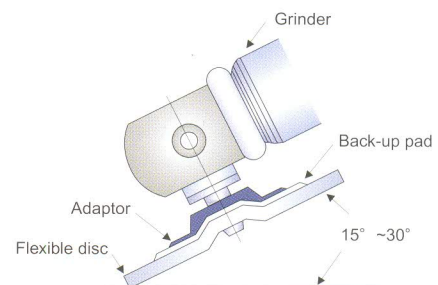
- AC General purpose for metal & masonry
- WA For stainless steel & tool steel
- GC For masonry & glass

GRIT : Coarse Medium Fine
#36,46 60,80 100,120

■ STANDARD SIZE

| WHEEL SIZE (D×T×H) | MAX×RPM |
|--------------------|----------------------|
| 4" | 100×2×15.88mm 13,700 |
| 4 | 100×3×15.88 13,700 |
| 4 1/2 | 115×3×22.23 11,900 |
| 5 | 125×3×22.23 11,000 |
| 7 | 180×3×22.23 7,600 |

Please use Flexible Disc with the back-up pad for efficient operation.



3 CUT OFF WHEELS

- **Aluminum Oxide (A)** : for metal/steel
- **Silicon carbide (C)** : for masonry/stone
- **white aluminum (WA)** : for stainless & hardened steel
- **Zirconia aluminum (AZ)** : Heavy duty & long life for metal/steel
- Reinforcement

Resinforced Cut-off Wheels are built with the high strength glass fiber reinforcement along with the specific properties required.



F1(single reinforced)



F2(external reinforced)



F1H2(center & hub reinforced)



| SIZE DIAMETER×THICKNESS×HOLE | MAX. SPEED | | APPLICATION |
|--------------------------------------------------------------------------|------------|--------|-------------------------------------------------------------------------------------------------------------|
| | SINGLE | DOUBLE | |
| 1 1/2×1/16, 1/8×H3 1/2 (38×1.6, 3.2×H ⁺) | 36,000 | 40,200 | A24Q Fast cutting for metal. A36P Fast and efficient cutting of metals on chop saws |
| 2×1/16, 1/8×H ⁺ (50×1.6, 3.2×H ⁺) | 27,400 | 30,500 | A30S General purpose for steel and ferrous metal |
| 3×1/16, 1/8, 3/16×H ⁺ (75×1.6, 3.2, 4.8×H ⁺) | 18,300 | 20,100 | A46P Non-ferrous metal (Brass, Bronze, Copper etc.) |
| 4×1/16, 1/8, 3/16×H ⁺ (100×1.6, 3.2, 4.8×H ⁺) | 13,700 | 15,200 | A46s Long life for pipe. A46s Long life for pipe, cast steel & graphite iron. |
| 4 1/2×1/16, 1/8, 3/16×H ⁺ (115×1.6, 3.2, 4.8×H ⁺) | 11,900 | 13,300 | WA36R Mild steel, Stainless steel. WA36Q For stainless steel and hardened steel |
| 5×1/16, 1/8, 3/16×H ⁺ (125×1.6, 3.2, 4.8×H ⁺) | 11,000 | 12,200 | 19A36R Stainless steel. |
| 6×1/16, 1/8, 3/16×H ⁺ (150×1.6, 3.2, 4.8×H ⁺) | 9,100 | 10,000 | C16T Asphalt/Concrete on road and street saws |
| 7×3/32, 1/8×H ⁺ (180×2.4, 3.2×H ⁺) | 7,600 | 8,500 | C24R Fast cutting for stone. C24R General purpose for concrete, stone and masonry products |
| 8×3/32, 1/8×H ⁺ (205×2.4, 3.2×H ⁺) | 6,700 | 7,500 | C30R General purpose for stone. C36S Artificial & natural stone, concrete etc. |
| 9×3/32, 1/8×H ⁺ (230×2.4, 3.2×H ⁺) | 5,900 | 6,600 | |
| 10×3/32, 1/8×H ⁺ (255×2.4, 3.2×H ⁺) | 5,400 | 6,100 | |
| 12×3/32, 1/8, 5/32×H ⁺ (305×2.4, 3.2, 4×H ⁺) | 4,500 | 5,100 | |
| 14×3/32, 1/8×H ⁺ (355×2.4, 3.2, 4×H ⁺) | 3,800 | 4,400 | |
| 16×1/8, 5/32, 3/16×H ⁺ (405×3.2, 4, 4.8×H ⁺) | 3,400 | 3,800 | |
| 18×1/8, 5/32, 3/16×H ⁺ (455×3.2, 4, 4.8×H ⁺) | 3,000 | 3,400 | |
| 20×1/8, 5/32, 3/16×H ⁺ (510×3.2, 4, 4.8×H ⁺) | 2,700 | 3,100 | |
| 24×3/16, 1/4×H ⁺ (610×4.8, 6.4×H ⁺) | 2,250 | 2,500 | |

H⁺ : Hole size and shape in changeable by customer's round or diamond (drive-pin) hole.



■ **Non-reinforced cut-off wheels (for precision operation)**

A60PB General purpose for steel

WA60PB For alloy steel, tool steel

GC120LB For tungsten carbide, quartz

| SIZE DIAMETER×THICKNESS×HOLE | GRAIN SIZE | APPLICATION |
|---------------------------------------------------|------------|---------------------------------------------------|
| 4×1/16, 1/8×1/2 (100×1.6, 3.2×12.7) | 46 60 80 | For high speed machine & quick cutting for metal. |
| 6×1/16, 1/8×1/2, 5/8 (180×1.6, 3.2×12.7, 15.88) | 46 60 80 | |
| 7×1/16, 1/8×1, 11/4 (180×1.6, 3.2×25.4, 31.75) | 46 60 80 | |
| 8×1/16, 1/8×5/8, 11/4 (205×1.6, 3.2×12.7, 31.75) | 46 60 80 | |
| 10×3/32, 1/8×5/8, 11/4 (255×2.4, 3.2×12.7, 31.75) | 46 60 80 | |
| 12×3/32×3/5, 11/4 (305×2.4, 3.2×19.05, 31.75) | 46 60 80 | |

4 Flap wheel discs

■ **Mounted Flap wheel**

<Specifications>

| D(mm) | T(mm) | | | MAX RPM |
|-------|-------|----|-------|---------|
| 25 | 10 | 15 | 25 | 30,000 |
| 30 | 10 | 15 | 25 | 30,000 |
| 40 | 10 | 15 | 25 | 30,000 |
| 50 | 10 | 15 | 25 | 25,000 |
| 60 | 10 | 15 | 25 | 25,000 |
| 75 | 10 | 15 | 25 | 20,000 |
| 80 | 10 | 15 | 25 30 | 25,000 |

Available Grit Range : 40-400
Shaft size : 6mm(1/4")



■ **Un-mounted Flap wheel**

<Specifications>

| Diameter(inch) | Face width(inch) | MAX RPM |
|----------------|------------------|---------|
| 4 | 1, 1.1/2&2 | 13,000 |
| 5 | 1, 1.1/2&2 | 11,000 |
| 6 | 1, 1.1/2&2 | 6,000 |
| 8 | 1, 1.1/2&2 | 4,500 |
| 10 | 1, 1.1/2&2 | 4,000 |
| 12 | 1, 1.1/2&2 | 4,000 |

Available Grit Range : 40-400

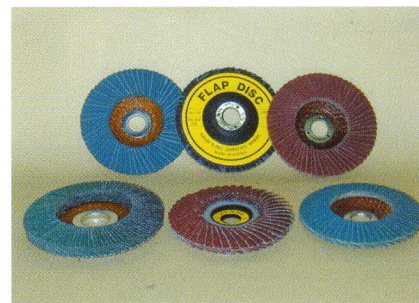


■ **Flap disc(glass fiber backing)**

<Specifications>

| Diameter mm(inch) | Hole size mm(inch) | MAX RPM |
|-------------------|--------------------|---------|
| 100(4") | 16(5/8") | 15,500 |
| 115(4.5") | 22(7/8") | 13,500 |
| 125(5") | 22(7/8") | 12,000 |
| 180(7") | 22(7/8") | 9,500 |

Regular Aluminum Oxide for general purpose on ferrous metals,
Zirconium for stainless, plastics and non-ferrous metals,
Available Grit Range : 40-400
T-27 & T-29 both available



5 RESIN FIBER DISCS for Grinding, Sanding, Polishing & Cleaning

STANDARD SELECTION



ABRASIVE :

AA Aluminum Oxide
for welded seams in steel fabrication, auto body, steel plate, ship building etc.

CC Silicon Carbide
for non-ferrous metal, stone, concrete, wood, glass, FRP, etc..

GRIT : #14, 16, 24, 30, 36, 40, 50, 60, 80, 100, 120, 150, 180, 220

STANDARD SIZE

| DISC SIZE(D×H) | | Shapes of Hole |
|----------------|-----------|---------------------------------------------------------------------------------------------------|
| inch | mm | |
| 4×5/8 | 100×15,88 | plain round  |
| 4 1/2×7/8 | 115×22,23 | |
| 5×7/8 | 125×22,23 | 4 cross cuts  |
| 6×7/8 | 150×22,23 | |
| 7×7/8 | 180×22,23 | |
| 8×7/8 | 200×22,23 | |
| 9×7/8 | 230×22,23 | |

ABRASIVE NET WHEELS

Non-loading multi-purpose disc for cutting and sanding plastic, FRP, bakelite, rubber, leather, hardboard, asbestos, carbon, wood, aluminum, etc..



STANDARD SELECTION

ABRASIVE :

A Aluminum Oxide for metal
C Silicon Carbide for non-metal

GRIT : #46, 60, 80, 100, 120

STANDARD SIZE (Type 27, Type 1)

| WHEEL SIZE(D×H) | | MAX.RPM |
|-----------------|-----------|---------|
| inch | mm | |
| 4×5/8 | 100×15,88 | 13,700 |
| 4 1/2×7/8 | 115×22,23 | 11,900 |
| 5×7/8 | 125×22,23 | 11,000 |
| 6×7/8 | 150×22,23 | 9,100 |
| 7×7/8 | 180×22,23 | 7,600 |
| 8×7/8 | 200×22,23 | 6,700 |

Depressed center shape(T-27) and Flat shape(T-1) available as ordered.

6 Flute wheel

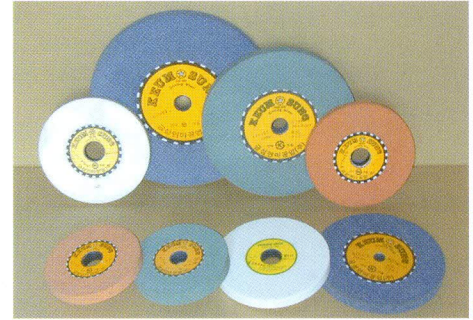


This product is developed to be used for flute grinding operation of tool products as like drill, tap, endmill etc. By its excellent strong bonding cohesion and low-flexibility, high structure, this product bring excellent grinding efficiency result without any burning reaction on grinding process specially modified Resinoid binder and heat-controlled press system, manufacturing method of our own company is used practically for improving operation effect with up-grading quality.

| D (mm) | T (Thickness) | | | | | | | | H (Hole Size) | | Operating Speeds | |
|--------|---------------|-------|----|----|----|----|----|----|---------------|-------|------------------|--------|
| | M.P.M | R.P.M | | | | | | | | | | |
| 150 | 3 | 4 | 5 | 6 | 7 | | | | 44,45 | | 4,800 | 10,100 |
| 180 | 3 | 4 | 5 | 6 | 7 | | | | 44,45 | | 4,800 | 8,400 |
| 205 | 3 | 4 | 5 | 6 | 7 | | | | 50,8 | | 4,800 | 7,400 |
| 255 | 6 | 7 | 9 | 10 | 11 | 13 | 15 | 17 | 50,8 | 76,2 | 4,800 | 5,900 |
| 305 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 76,2 | 203,2 | 4,800 | 4,900 |
| 355 | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 203,2 | | 4,800 | 4,200 |
| 385 | 3 | 4 | 5 | 7 | 9 | 10 | 12 | 14 | 203,2 | | 4,800 | 3,900 |
| 405 | 3 | 4 | 5 | 7 | 9 | 10 | 12 | 14 | 203,2 | | 4,800 | 3,700 |
| 455 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 203,2 | | 4,800 | 3,300 |
| 510 | 8 | 9 | 10 | 12 | 14 | 15 | 17 | 19 | 254 | | 4,800 | 3,000 |

7 BENCH & PEDESTAL GRINDING WHEELS

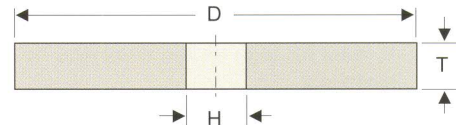
- Type 1 (Straight)
- **Vitrified bonded-Max.op.speed** : 34M/sec.
- **Aluminum oxide(28A)** : general tool room work.
- **Green Silicon carbide(74C)** : tool cutting & fine finishing.
- Supplied in coarse, medium, fine by grit 16-150 mesh size.



STANDARD SIZE

| WHEEL SIZE(D×T×H) | | MAX.RPM |
|-------------------|--------------|---------|
| inch | mm | |
| 4 × 1/2 × H | 100 × 13 × H | 6, 110 |
| 4 × 3/4 × H | 100 × 20 × H | 6, 110 |
| 4 × 1 × H | 100 × 25 × H | 6, 110 |
| 5 × 1/2 × H | 125 × 13 × H | 4, 890 |
| 5 × 3/4 × H | 125 × 20 × H | 4, 890 |
| 5 × 1 × H | 125 × 25 × H | 4, 890 |
| 6 × 5/8 × H | 150 × 16 × H | 4, 070 |
| 6 × 3/4 × H | 150 × 20 × H | 4, 070 |
| 6 × 1 × H | 150 × 25 × H | 4, 070 |
| 7 × 3/4 × H | 180 × 20 × H | 3, 400 |
| 7 × 1 × H | 180 × 25 × H | 3, 400 |
| 8 × 3/4 × H | 205 × 20 × H | 3, 060 |
| 8 × 1 × H | 205 × 25 × H | 3, 060 |
| 8 × 1 1/4 × H | 205 × 32 × H | 3, 060 |
| 10 × 1 × H | 255 × 25 × H | 2, 440 |
| 10 × 1 1/4 × H | 255 × 32 × H | 2, 440 |
| 10 × 1 1/2 × H | 255 × 40 × H | 2, 440 |
| 10 × 2 × H | 255 × 50 × H | 2, 440 |
| 12 × 1 × H | 305 × 25 × H | 2, 040 |
| 12 × 1 1/4 × H | 305 × 32 × H | 2, 040 |
| 12 × 1 1/2 × H | 305 × 40 × H | 2, 040 |
| 12 × 2 × H | 305 × 50 × H | 2, 040 |
| 14 × 1 × H | 355 × 25 × H | 1, 750 |
| 14 × 1 1/4 × H | 355 × 32 × H | 1, 750 |
| 14 × 1 1/2 × H | 355 × 40 × H | 1, 750 |
| 14 × 2 × H | 355 × 50 × H | 1, 750 |
| 16 × 1 × H | 405 × 25 × H | 1, 530 |
| 16 × 1 1/4 × H | 405 × 32 × H | 1, 530 |
| 16 × 1 1/2 × H | 405 × 40 × H | 1, 530 |
| 16 × 2 × H | 405 × 50 × H | 1, 530 |
| 16 × 3 × H | 405 × 75 × H | 1, 530 |

| ALUMINUM OXID SPEC. | GREEN SIC SPEC. |
|-------------------------------------|-------------------------------|
| • GRAIN SIZE : 16 - 150 | • GRAIN SIZE : |
| • HARDNESS : L, M, N, O, P, Q, R | • HARDNESS : G, H, I, J, K |
| • STRUCTURE : 5 - 13 | • STRUCTURE : 5 - 13 |



Type 1 Straight

STANDARD SELECTION

Aluminum Oxide Wheels

- Extra coarse** : A24
- Coarse** : A36, A46
- Medium** : A60, A80
- Fine** : A100, A120

Green Silicon Carbide Wheels

- Coarse** : GC46, GC60
- Medium** : GC80
- Fine** : GC100, GC120

WHEEL SHAPE



H⁺ : 1" Arbor hole, choice available(1", 7/8", 3/4", 5/8", 1/2")
Please specify hole size when ordering.



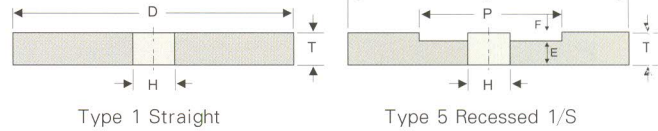
8 SURFACE & TOOL GRINDING WHEELS

- Type 1 (Straight)
- **Vitrified bonded-Max.op.speed** : 34M/sec.
- Special grinding operation-Ruby aluminum oxide. Single crystal aluminum oxide.
- In generally, white aluminum oxide(59A) and Green-Silicon carbide (74A) is used as abrasive.



Surface grinding and Tool & Cutter grinding are extensively used in all tool rooms and production shops including mold & die works. To cover applications range from heavy, rapid stock removal to precise dimension and finish requirements, grinding wheels, finishing stones, sharpening stone, superfinishing stones and honing stones are comprehensively provided.

WHEEL SHAPE



STANDARD SELECTION

ABRASIVE :

- WA** is most conventional for alloy steel, tool & die steel
- RA** is suitable for high alloy steel
- MA** is ideal for high speed steel and heat sensitive tool steel
- GC** is widely used for tungsten carbide tools, special cast iron

GRIT : #46, 54, 60, 80, 100, 120, 150, 180, 220 and finer grits

GRADE :

- F,G** very soft
- H,I** soft
- J,K** medium
- L,M,N** hard

STRUCTURE :

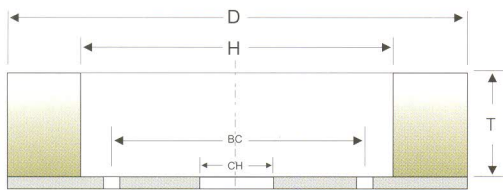
- 4,5** dense
- 6,7,8** medium
- 10,12** open

STANDARD SIZE

| WHEEL SIZE(D×T×H) | | MAX.RPM |
|-------------------|--------------|---------|
| inch | mm | |
| 6 × 1/4 × H | 150 × 6 × H | 4,240 |
| 6 × 1/2 × H | 150 × 13 × H | 4,240 |
| 6 × 3/4 × H | 150 × 20 × H | 4,240 |
| 7 × 1/4 × H | 180 × 6 × H | 3,530 |
| 7 × 3/8 × H | 180 × 10 × H | 3,530 |
| 7 × 1/2 × H | 180 × 13 × H | 3,530 |
| 7 × 5/8 × H | 180 × 16 × H | 3,530 |
| 7 × 3/4 × H | 180 × 20 × H | 3,530 |
| 7 × 1 × H | 180 × 25 × H | 3,530 |
| 7 × 1 1/4 × H | 180 × 32 × H | 3,530 |
| 8 × 1/4 × H | 205 × 6 × H | 3,100 |
| 8 × 3/8 × H | 205 × 10 × H | 3,100 |
| 8 × 1/2 × H | 205 × 13 × H | 3,100 |
| 8 × 5/8 × H | 205 × 16 × H | 3,100 |
| 8 × 3/4 × H | 205 × 20 × H | 3,100 |
| 8 × 1 × H | 205 × 25 × H | 3,100 |
| 8 × 1 1/4 × H | 205 × 32 × H | 3,100 |
| 10 × 3/4 × H | 255 × 20 × H | 2,490 |
| 10 × 1 × H | 255 × 25 × H | 2,490 |
| 10 × 1 1/4 × H | 255 × 32 × H | 2,490 |
| 10 × 1 1/2 × H | 255 × 38 × H | 2,490 |
| 12 × 1 × H | 305 × 25 × H | 2,080 |
| 12 × 1 1/4 × H | 305 × 32 × H | 2,080 |
| 12 × 1 1/2 × H | 305 × 38 × H | 2,080 |
| 12 × 2 × H | 305 × 50 × H | 2,080 |
| 14 × 1 1/4 × H | 355 × 32 × H | 1,790 |
| 14 × 1 1/2 × H | 355 × 38 × H | 1,790 |
| 14 × 2 × H | 355 × 50 × H | 1,790 |
| 16 × 1 1/4 × H | 405 × 32 × H | 1,570 |
| 16 × 1 1/2 × H | 405 × 38 × H | 1,570 |
| 16 × 2 × H | 405 × 50 × H | 1,570 |
| 18 × 1 1/4 × H | 455 × 32 × H | 1,390 |
| 18 × 1 1/2 × H | 455 × 38 × H | 1,390 |
| 18 × 2 × H | 455 × 50 × H | 1,390 |
| 20 × 1 1/4 × H | 510 × 32 × H | 1,240 |
| 20 × 1 1/2 × H | 510 × 38 × H | 1,240 |
| 20 × 2 × H | 510 × 50 × H | 1,240 |

PLATE MOUNTED WHEELS

WHEEL SHAPE



Type 50 Plate mounted

STANDARD SIZE

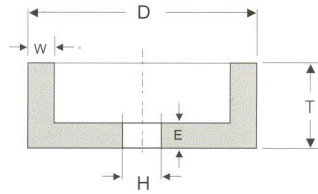
| WHEEL SIZE(D×T×H) | |
|-------------------|----------------|
| inch | mm |
| 6 × 1 × 4 | 150 × 25 × 100 |
| 6 × 1 1/2 × 4 | 150 × 38 × 100 |
| 7 × 1 × 5 | 180 × 25 × 127 |
| 7 × 1 1/2 × 5 | 180 × 38 × 127 |

Please specify (CH) center hole diameter, (BC) bolt circle diameter, number of holes and diameter of hole with hole shape.

Arbor hole(H) size as ordered.

STRAIGHT CUP WHEELS

WHEEL SHAPE



Type 6 Straight cup

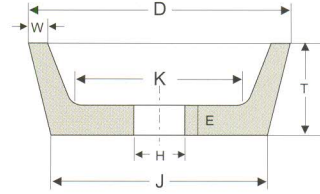
STANDARD SIZE

| WHEEL SIZE(D×T×H) | |
|-------------------|--------------|
| inch | mm |
| 3 × 11/2 × 1/2 | 80×40×12,7 |
| 4 × 2 × 3/4 | 100×50×19,05 |
| 5 × 11/2 × 11/4 | 125×40×31,75 |
| 5 × 2 × 11/4 | 125×50×31,75 |
| 6 × 11/2 × 11/4 | 150×40×31,75 |
| 6 × 2 × 11/4 | 150×50×31,75 |
| 7 × 11/2 × 11/4 | 180×40×31,75 |

Rim(W), back(E) and other arbor hole(H) size as ordered.

FLARING CUP WHEELS

WHEEL SHAPE



Type 11 FLARING CUP

STANDARD SIZE

| WHEEL SIZE(D×T×H) | |
|---------------------|--------------|
| inch | mm |
| 3 × 11/4 × 3/4 | 80×32×19,05 |
| 3 1/2 × 11/2 × 11/4 | 90×40×31,75 |
| 4 × 11/2 × 11/4 | 100×40×31,75 |
| 4 1/2 × 11/2 × 11/4 | 115×40×31,75 |
| 5 × 2 × 11/4 | 125×50×31,75 |
| 6 × 2 × 11/2 | 150×50×38,1 |
| 7 × 2 × 11/2 | 180×50×38,1 |

W, E, J, K and other arbor hole(H) size as ordered.

9 CENTERLESS & CRANK SHAFT GRINDING WHEELS

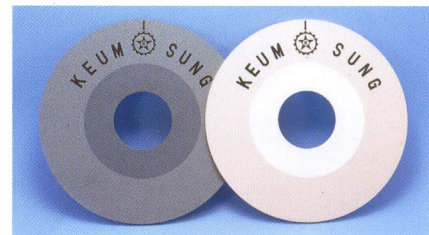
- Type 1 (Straight), Type 5 (Recessed one side), Type 7 (Recessed two sides)
- When ordering Type 5 and 7, please notify related one or two side recessed dimensions and correct drawings.
- **Available abrasive** : Aluminum oxide, Silicon carbide.
- Roll, Cam shaft, Cylinder wheels are applicable to the above.

unit: in (min)

| SIZE DIAMETER×THICKNESS×HOLE | MAX RPM |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10×1~14×1~14 (255×25,4~355×25,4~355) | <ul style="list-style-type: none"> • ABRASIVE : A, WA, C, GC • GRAIN SIZE : 46 - 240 • HARDNESS : J - P • STRUCTURE : 5 - 13 |
| 12×1~14×2~14 (305×25,4~355×25,4~355) | |
| 14×1~14×1~14 (355×25,4~355×25,4~355) | |
| 16×1~14×1~14 (405×25,4~355×25,4~355) | |
| 42×1~14×1~14 (1065×25,4~355×25,4~355) | |



(CENTERLESS)



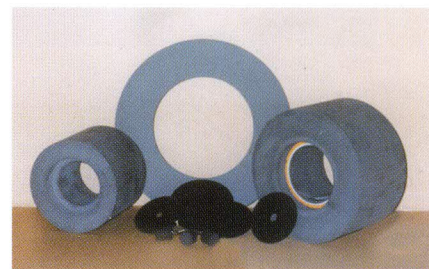
(CAM SHAFT CRANK SHAFT WHEELS)

10 RUBBER GRINDING WHEEL

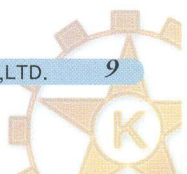
This rubber wheel is made by using natural synthetic rubber materials as a binder, is widely used as controller stone on centerless grinding operation due to its own characteristics-soft flexibility and elasticity, long life etc.

Besides, this product is suitable for the precision cutting and grinding operation with thin cutting wheel type and various type small wheel type, such as mounted points etc.

| DIAMETER | SIZE | | | | | | HOLE | | | |
|----------|-----------|-----|-----|-----|-----|-----|------|-------|-------|-----|
| | THICKNESS | | | | | | | | | |
| 205 | 25 | 40 | 80 | 100 | 127 | 150 | 205 | 101,6 | 115,5 | 127 |
| 255 | 50 | 80 | 100 | 127 | 150 | 205 | | 101,6 | 111,2 | 127 |
| 305 | 100 | 150 | 205 | 305 | | | | 127 | 203,2 | |
| 330 | 100 | 150 | 205 | 305 | | | | 127 | 203,2 | |
| 355 | 100 | 150 | 205 | 305 | | | | 127 | 203,2 | |

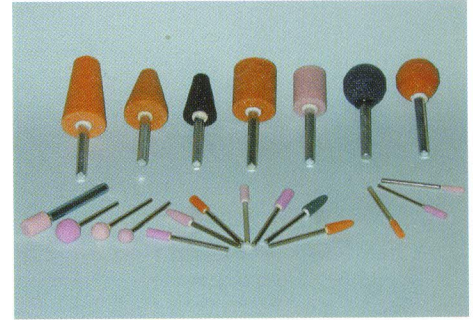


(RUBBER GRINDING WHEEL)



11 MOUNTED POINT

- Off-hand/Rough grinding
- Mold & Die finishing
- Chain saw resharpening
- Profile grinding
- Internal/Jig grinding
- Hand pieces for dental lab



STANDARD SELECTION

For steel / metal

RA (pink alum.oxide) is universal for working steel/cast iron.

WA (white alum.oxide) and **A**(regular alum. oxide) abrasives are also widely used.

For non-ferrous metal / stone

C/GC (black / green silicon carbide)

GRIT : (#24, 36, 46, 60, 80, 100, 120) is subject to mounted point's shapes and sizes as formulated.

Shapes & Specification (A & B shape)

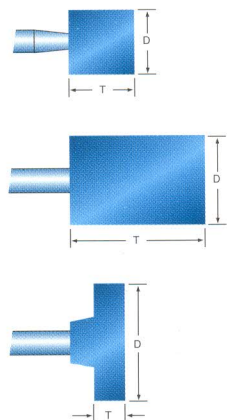
| NO | Shapes | S.T | S.C | NO | Shapes | S.T | S.C | NO | Shapes | S.T | S.C |
|-----|--------|-------|---------|-----|--------|-------|---------|------|--------|-------|---------|
| A1 | | 20×63 | PA60P5V | A26 | | ∅ 16 | PA60P5V | B52 | | 10×20 | PA60P5V |
| A3 | | 25×70 | PA46P5V | A31 | | 35×25 | PA46P5V | B53 | | 8×16 | PA80O5V |
| A4 | | 32×32 | PA46P5V | A32 | | 25×16 | PA60P5V | B61 | | 20× 8 | PA60P5V |
| A5 | | 20×29 | PA60P5V | A34 | | 38×10 | PA60P5V | B96 | | 3× 6 | PA80P5V |
| A11 | | 22×50 | PA60P5V | A35 | | 25×10 | PA60P5V | B101 | | 16×18 | PA60P5V |
| A12 | | 18×32 | PA60P5V | A36 | | 40×10 | PA60P5V | B103 | | 16× 5 | PA60P5V |
| A13 | | 32×32 | PA60P5V | A37 | | 32× 6 | PA60P5V | B104 | | 8×10 | PA60P5V |
| A14 | | 18×22 | PA60P5V | A38 | | 25×25 | PA60P5V | B121 | | ∅ 13 | PA60P5V |
| A15 | | 6×27 | PA80O5V | A39 | | 20×20 | PA60P5V | B123 | | ∅ 10 | PA60P5V |
| A21 | | 25×25 | PA60P5V | A41 | | 16×16 | PA60P5V | B123 | | ∅ 5 | PA80O5V |
| A23 | | 20×25 | PA60P5V | A42 | | 13×20 | PA60P5V | B124 | | ∅ 3 | PA80O5V |
| A24 | | 6×20 | PA60P5V | A43 | | 6× 8 | PA60P5V | B132 | | 10×13 | PA60P5V |
| A25 | | ∅ 25 | PA60P5V | A44 | | 6×10 | PA60P5V | B135 | | 6×13 | PA80O5V |

* S, T : Standard Size(D×T)

* S, C : Specification

Shapes & Specification (WA shape)

| NO | S.T | S.C | NO | S.T | S.C | NO | S.T | S.C |
|------|------|---------|------|-------|---------|------|-------|---------|
| W144 | 3× 6 | PA80O5V | W184 | 13×10 | PA60P5V | W215 | 25× 3 | PA80P5V |
| W145 | 3× 9 | PA80O5V | W185 | 13×13 | PA60P5V | W216 | 25× 6 | PA60P5V |
| W152 | 5× 6 | PA60P5V | W186 | 13×20 | PA60P5V | W217 | 25×10 | PA60P5V |
| W153 | 5×10 | PA60P5V | W187 | 13×25 | PA60P5V | W218 | 25×13 | PA60P5V |
| W158 | 5× 3 | PA80O5V | W188 | 13×40 | PA60P5V | W220 | 25×25 | PA46P5V |
| W160 | 6× 6 | PA60P5V | W189 | 13×50 | PA60P5V | W221 | 25×40 | PA46P5V |
| W162 | 6×10 | PA60P5V | W195 | 16×20 | PA60P5V | W222 | 25×50 | PA46P5V |
| W163 | 6×13 | PA60P5V | W196 | 16×25 | PA60P5V | W225 | 32× 6 | PA60P5V |
| W164 | 6×20 | PA60P5V | W197 | 16×50 | PA60P5V | W226 | 32×10 | PA60P5V |



12 FINISHING STICKS & HONING STONES

- Used in finishing, lapping, honing, etc.
- Supplied in coarse, medium, fine grit.
- **Available abraive** Aluminum oxide.
Silicon carbide.

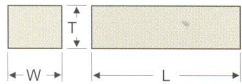
■ For finishing sticks basic type

- Square** :3"~4" × 1/4, 1/8, 3/8, 5/16, 1
- Triangle** :3"~4" × 1/4, 1/8, 3/8, 5/16, 1
- Round** :3"~4" × 1/4, 1/8, 3/8, 5/16, 1
- Half round** :3"~4" × 1/4, 1/8, 3/8, 5/16, 1

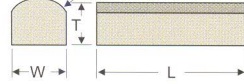
■ For honing stones

WHEEL SHAPE

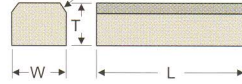
Shape 70



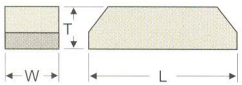
Shape 70-1



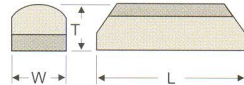
Shape 70-2



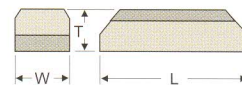
Shape 70-3



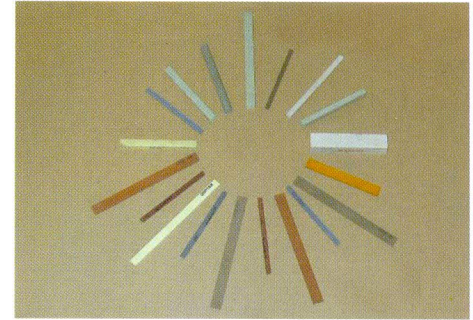
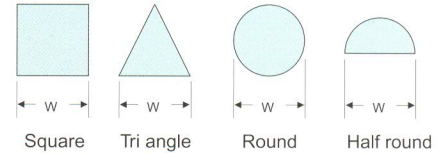
Shape 70-4



Shape 70-5

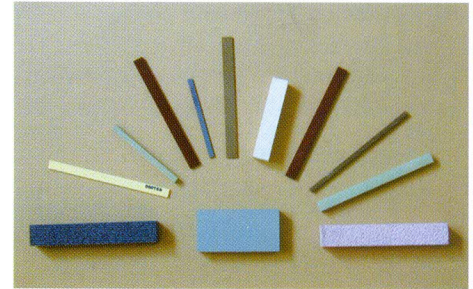


SHAPE



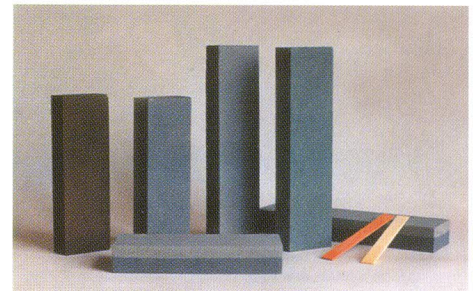
13 POLISHING STONES. & CARBING TOOL STONES

- Use kerosene with all stones.
- For general mold and die-polishing.
- Supplied in coarse, medium, fine etc.
- **Available abraive** Aluminum oxide.
Silicon carbide.
- **Color range** : white, orange, red, grey, ivory, blue etc.
- **Basic type.**
Square :4"~6" × 1/16~12



14 BENCH SHARPENING STONES

- For cutting & finishing tools, knives, metal products by manual operation
- **Available abraive** : Aluminum oxide.
: Silicon carbide.
- **According to uses** : single grit type.
Combination with double grits.



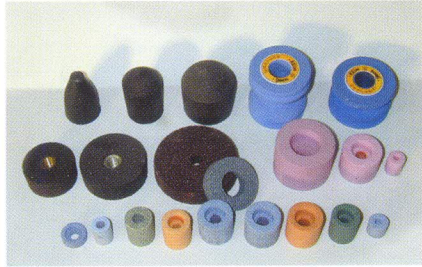
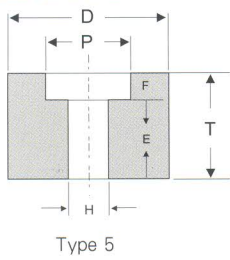
unit: in(min)

| DIAMETER × THICKNESS × HOLE | SIZE | GRIT | APPLICATION |
|-----------------------------|-----------------------|--------------------------|-----------------------------------------------------------------------------|
| 8 × 2 × 1 | (205 × 50, 8 × 25, 4) | FINE MEDIUM COARSE | By operation method, Wet process, Dry process, Oil Filled process. |
| 6 × 2 × 1 | (150 × 50, 8 × 25, 4) | | |
| 5 × 2 × 1 | (125 × 50, 8 × 25, 4) | | |
| 4 × 2 × 1 | (100 × 50, 8 × 25, 4) | | |



15 INTERNAL GRINDING WHEELS

WHEEL SHAPE



STANDARD SIZE (D×T×H)

| WHEEL SIZE(D×H) | | |
|-----------------|-----|----------------------------|
| Diameter(D) | | Thickness(T) |
| 3/8 | 10 | 6, 10, 13 |
| 1/2 | 13 | 6, 10, 13 |
| 5/8 | 16 | 6, 10, 13, 16, 19, 25 |
| 3/4 | 19 | 6, 10, 13, 16, 19, 25 |
| 7/8 | 22 | 6, 10, 13, 16, 19, 25 |
| 1 | 25 | 6, 10, 13, 16, 19, 25 |
| 1-1/8 | 28 | 6, 10, 13, 16, 19, 25, 32 |
| 1-1/4 | 32 | 6, 10, 13, 16, 19, 25, 32 |
| 1-1/2 | 38 | 10, 13, 16, 19, 25, 32, 38 |
| 1-3/4 | 45 | 10, 13, 16, 19, 25, 32, 38 |
| 2 | 50 | 10, 13, 16, 19, 25, 32, 38 |
| 2-1/2 | 65 | 10, 13, 16, 19, 25, 32, 38 |
| 3 | 75 | 10, 13, 16, 19, 25, 32, 38 |
| 3-1/2 | 90 | 13, 16, 19, 25, 32, 38, 50 |
| 4 | 100 | 13, 16, 19, 25, 32, 38, 50 |
| 4-1/2 | 115 | 13, 16, 19, 25, 32, 38, 50 |
| 5 | 125 | 13, 16, 19, 25, 32, 38, 50 |
| 6 | 150 | 13, 16, 19, 25, 32, 38, 50 |

STANDARD SELECTION

unit: in (min)

| APPLICATION (material) | HRC | WHEEL DIAMETER-mm | | | |
|------------------------|-----------|-------------------|---------|---------|---------|
| | | 10 - 20 | 21 - 40 | 41 - 80 | over 80 |
| Mild steel | HRC < 25 | FA80M | FA60L | FA54K | FA46K |
| | HRC > 25 | WA80L | WA60L | WA54K | WA46J |
| Alloy steel | HRC < 55 | RA80L | RA60K | RA54J | RA46J |
| | HRC > 55 | WA80L | WA60K | WA54K | WA46J |
| Tool steel | HRC < 60 | WA80L | WA60K | WA54J | WA46J |
| | HRC > 60 | WA80K | WA60J | WA54I | WA46I |
| Stainless steel | 300Series | GC60K | GC54K | GC46K | GC36J |
| | 400Series | WA80L | WA80K | WA46J | WA46I |
| Gray/chilled cast iron | general | GC60L | GC60L | GC46K | GC46J |
| | special | GC60K | GC60K | GC46J | GC46I |

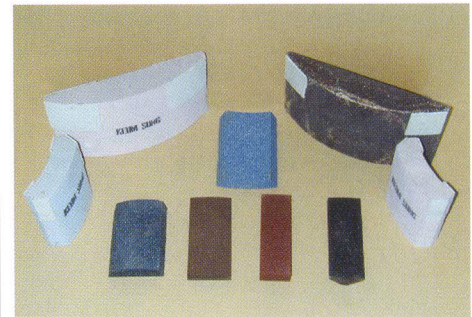
- Be sure to specify wheel shape and arbor hole(H) desired.
- Mounted wheels with plain/threaded shaft refer to Mounted Points in this catalogue.

16 SEGMENTS

- Vitrified & Resinoid bonded.
- Surface grinding for uniformity.
- Supplied in all ordering abrasive, grain, size, hardness, structure, shape and varying size.

Segments Shapes

| | | | | | |
|------------|------------------|------------------|-----------|------------|-------|
| | | | | | |
| A×B×C×A1×D | A×B×C×A1×B1×A2×D | A×B×C×A1×B1×A2×D | A×B×C×D×R | A×B×C×B1×D | A×B×C |
| SG 1 | SG 2 | SG 3 | SG 4 | SG 5 | SG 6 |



Recommendation

| Material | Standard | Free Cut | Long Life |
|-----------------|-------------|--------------|---------------|
| Cast Iron | C 30 J 8 V | C 24 H 8 V | WA 30 J 8 V |
| Soft Steel | WA 30 J 8 V | WA 24 I 8 V | 19 A 30 H 8 V |
| Hardened Steel | WA 36 H 8 V | WA 30 H 10 V | SA 36 I 8 V |
| Stainless Steel | WA 30 I 8 V | WA 30 H 10 V | WA 36 I 8 V |

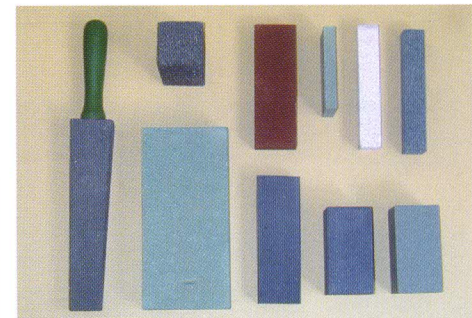
17 WHEEL DRESSING STICKS & RUBBING BRICKS

- Vitrified bonded.
- Silicon carbide only.
- Size is controlled by customers requirements
- C16-24S grade

Segments Shaps

| DRESSING STICK | | RUBBING BRICK | |
|----------------|-----------|---------------|-----------|
| 3×1/2×1/2 | 80×13×13 | 4×2×1 | 100×50×25 |
| 3×11/4×1/4 | 80×32×6 | 6×3×2 | 150×80×50 |
| 4×3/4×3/4 | 100×20×20 | 8×3×2 | 200×80×50 |
| 6×1/2×1/2 | 150×13×13 | 9×3×2 | 230×80×50 |
| 6×3/4×3/4 | 150×20×20 | | |

flute type available upon request



18 RESIN BONDED GRINDING WHEELS

BENCH SNAGGING GRINDING WHEELS

- Type 1,2,3,4,5,6,7 etc.
- **Max. operation speed** : 50M/sec.
- **Available abrasive** : Aluminum oxide (28A)
Silicon carbide besides GC (74C), SA etc.

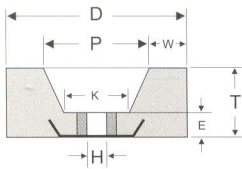
unit:in(min)

| SIZE | | OPERATION |
|-------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DIAMETER | THICKNESS HOLE | |
| 3×1/2×1/8 | (75×12, 7×3, 2) | <ul style="list-style-type: none"> • Cylindrical grinding m/c • Surface grinding m/c • Swing grinding m/c • Tool grinding m/c |
| 42×ANY SIZE | (1065×ANY SIZE) | <ul style="list-style-type: none"> • Portable grinding m/c |

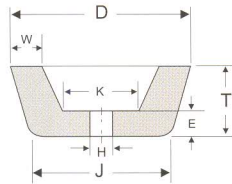


SNAGGING CUP WHEELS

WHEEL SHAPE



Type 6 Straight cup



Type 11 Flaring cup

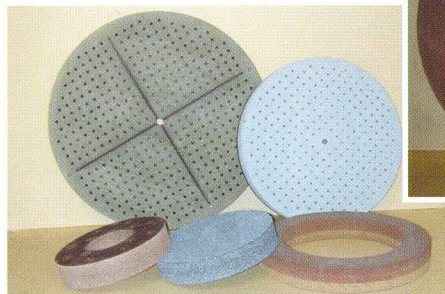


STANDARD SIZE

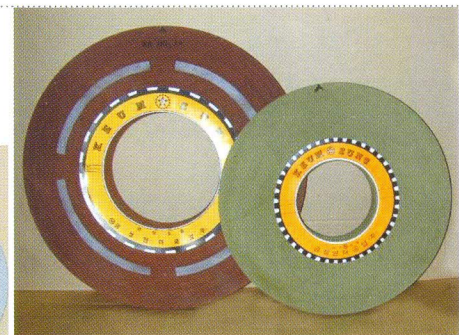
| WHEEL SIZE(D×T×H) | | MAX.RPM | APPLICATION |
|--------------------------------|---------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| inch | mm | | |
| 4×2×H rim:3/4, back:3/4 | 100/75×50×H rim:20, back:20 | 9,070 | <ul style="list-style-type: none"> • Type-11 • 5/8-11" Threaded hole • Available abrasive : Aluminum oxide, Silicon carbide |
| 4 1/2×2×H rim:3/4, back:3/4 | 115/95×50×H rim:20, back:20 | 8,060 | |
| 5×2×H rim:1", back:3/4 | 125/108×50×H rim:25, back:20 | 7,250 | |
| 6×2×H rim:1 1/2, back:3/4 | 150/113×50×H rim:40, back:20 | 6,040 | |

ROLL AND DISC GRINDING WHEELS

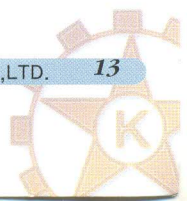
- Type 1 (Straight), Type 5 (Recessed one side)
- Type 7 (Recessed two sides)
- When ordering Type 5 and 7, please notify related one or two side recessed dimensions and correct drawings.
- **Available abrasive** : Aluminum oxide, Silicon carbide.
- Roll, Cam shaft, Cylinder wheels are applicable to the above.



(DISC GRINDING WHEEL)



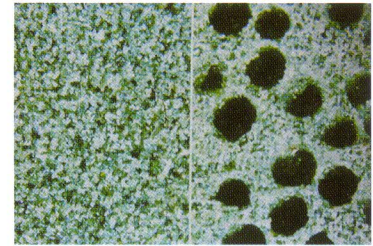
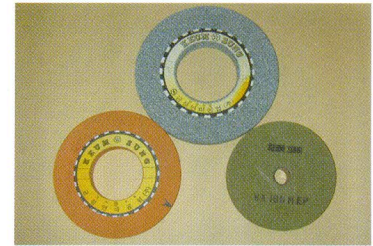
(Roll GRINDING WHEEL)



19 POROSITY GRINDING WHEELS

■ Standard Specifications

| Workpiece | Specifications | Workpiece | Specifications |
|--------------------|----------------|-----------------------|----------------|
| Urethane Rubber | GC36GH23V4PO | 11R (Buty Rubber) | GC46IJ23V4PO |
| - Copy Roll | GC46HH23V4PO | - Printer Roll | GC60IJ23V4PO |
| - Fax Roll | GC60HH23V4PO | - Heat Resistant Roll | GC80IJ23V4PO |
| - Paper Roll | GC80FG23V4PO | | GC100IJ23V4PO |
| - Printer Roll | GC100FG23V4PO | | |
| - Stainless Roll | | | |
| Fluorinated Rubber | GC46HI23V4PO | Silicon Rubber | GC46KH23V4PO |
| - Packing Roll | GC60HI23V4PO | - Copy Roll | GC60KK23V4PO |
| - Special Roll | GC80GH23V4PO | - Fax Roll | GC80JJ23V4PO |
| | GC100GH23V4PO | | GC100JJ23V4PO |



Porosity

Normal

20 EPOXY and MGO and MGCL₂ BONDED GRINDING WHEELS

- Type 1,2 & square.
- Epoxy and Mgo and Mgcl₂ bonded.
- **Characteristics in grinding operation :**
no-burning, no thermo-change,
high grinding efficiency,
fine finishing efficiency.
- **Uses :**
 - Stainless steel, Knife, scissors, etc.
 - Tool as like bench, spanner, saw etc.
 - Stone & glass etc.



21 SC(CERAMIC) GRINDING WHEELS

This ceramic abrasive grain is differently manufactured by sol-gel method comparing than ordinary abrasive grain, has a own crystal structure and many merits on grinding operation as like grit-self generation and long like, excellent grinding efficiency etc.

It is used generally in grinding of super-hand tool, bearing, various type steel of high hardness, high speed steel, special steel alloy, ceramics etc which are not easily solved by ordinary vitrified grinding wheel with A, WA, SA, GC grain. In recent time, Resinoid products with phenol and Epoxy resin is applied practically in many operation fields by using this ceramic grain due to it's own excellent characteristics.



22 BARREL STONES (Tumbling Stones)

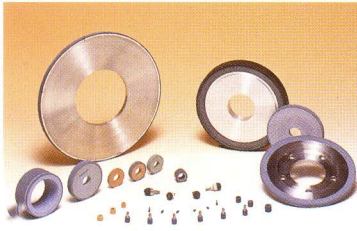
- Barrel finishing (Mass finishing) is a method of processing large quantities of parts together with media and compound in machine for improving surface finishing, deburring, burnishing and descaling.
- Kind of abrasive barrel chips.
 - Tringle · Diaper · Ball · Power · Round pole
 - Nuggets · Plastics



SELECTION OF BARREL STONE ACCORDING TO USAGE



23 CBN & DIAMOND GRINDING WHEELS



Vitrified wheels



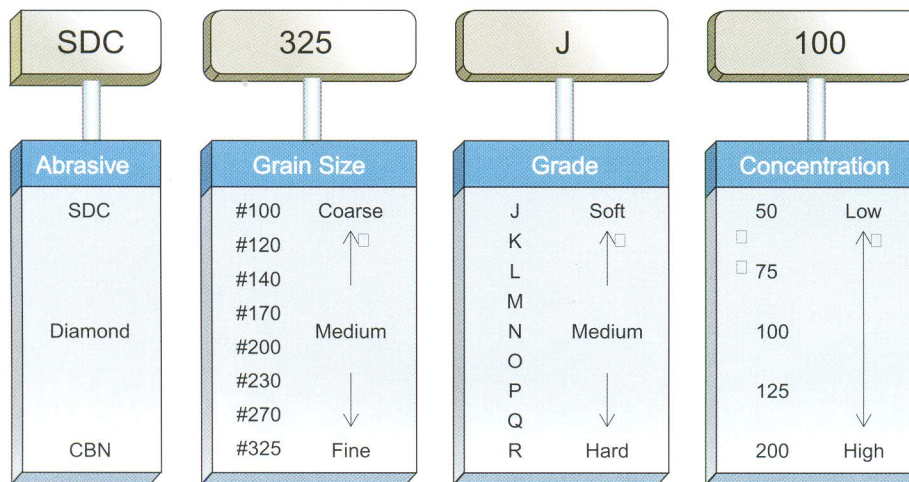
DIA & CBN wheels



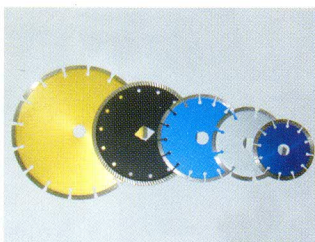
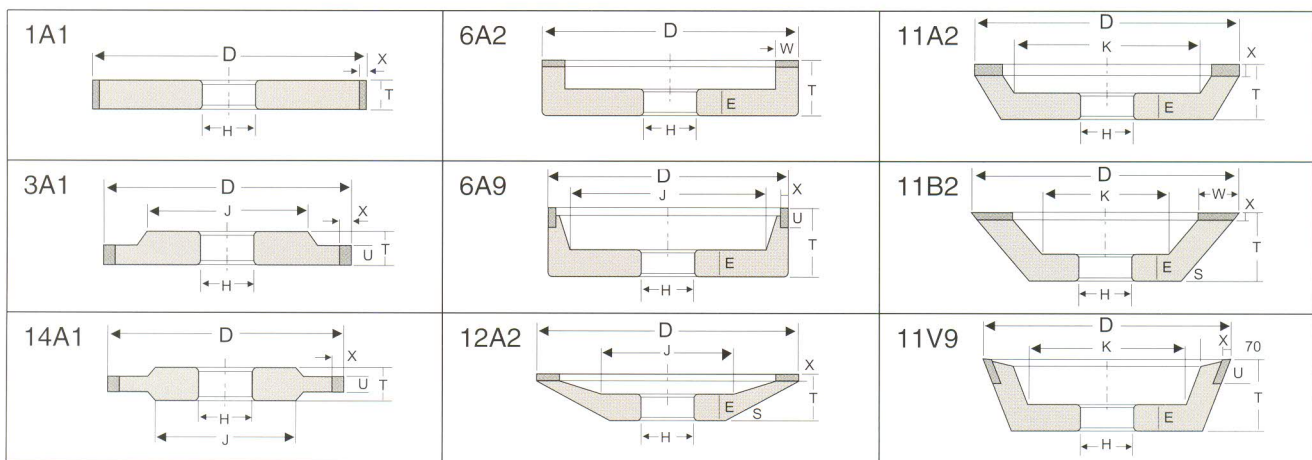
rosinoïd wheels

This product is a grinding wheel for the use of precision grinding process and grain and Diamond grain which are both super abrasives. It is used particularly in grinding of super-hard tool, glass, stone, ceramics, or alloy, tempered steel of high hardness which are not easily ground by ordinary

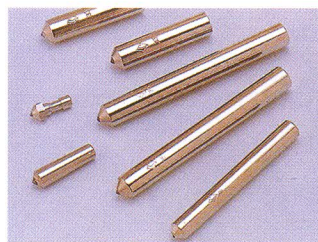
Standard Wheel Markings



Standard shape



diamond cutter



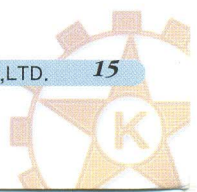
Single point dressers



cup wheels

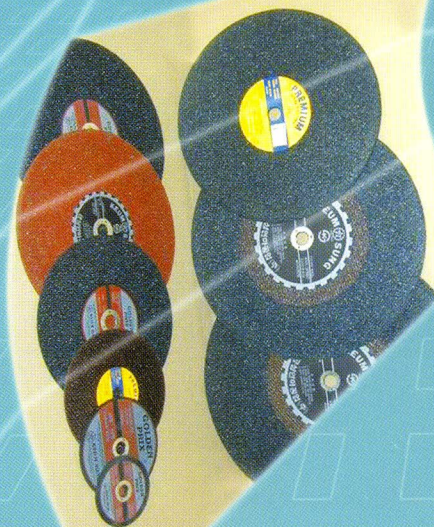


Electroplated cutters



ITEMS

- Depressed Center wheels
- Flexible disc
- Cut-off wheels
- Flap wheel discs
- Resin Fiber discs
- Flute wheel
- Bench & Pedestal grinding wheels
- Surface & Tool grinding wheels
- Centerless & Crank Shaft grinding wheels
- Rubber grinding wheel
- Mounted Point
- Finishing Sticks & Honing Stones
- Polishing Stones & Carbing Tool Stones
- Bench Sharpening Stones
- Internal grinding wheels
- Segments
- Wheel Dressing Sticks & Rubbing Bricks
- Resin Bonded grinding wheels
- Porosity grinding wheels
- Epoxy & mgo(oxychloride) grinding wheels
- SC(ceramic) grinding wheels
- Barrel Stones (Tumbling Stones)
- CBN & Diamond grinding wheels



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