

*SWATY COMET*

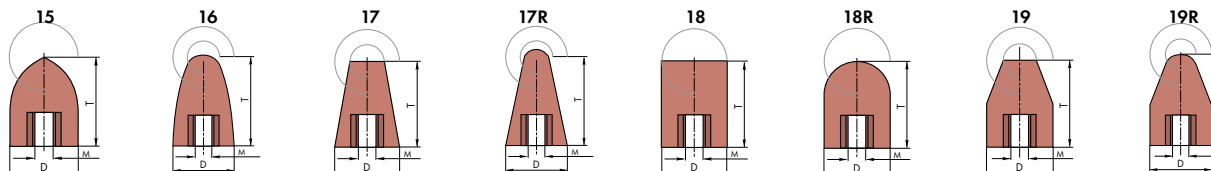


# Industrial Grinding Tools

13. FOUNDRY GRINDING WHEELS AND STEEL INDUSTRY







Intended for the CLEANING and GRINDING of casts and metal parts.

The selected grain size depends on the grinding cone diameter:

| Application                         | Quality class/Specification |         |
|-------------------------------------|-----------------------------|---------|
|                                     | STANDARD                    | EXTRA   |
| Steel                               | 52A20NB                     | 100     |
| Gray, nodular and malleable casting | 3A20OB, 9C16PB              | *ZA20PB |

\*Only types 18, 18R

| Specification | Hardness | Material                 | Quality class |  |  |
|---------------|----------|--------------------------|---------------|--|--|
| 3A20-36N-Q4B  | R        | Metals, steel            | Standard      |  |  |
| 53C16-24L-Q4B | R        | Stainless steel, casting | Special       |  |  |

| Type | Dimensions<br>D x T x thread<br>mm | Peripheral<br>speed<br>m/s | RPM<br>1/min | Packaging<br>units<br>pcs. |
|------|------------------------------------|----------------------------|--------------|----------------------------|
| 15   | 40 x 63 x M                        | 50                         | 23900        | 25                         |
| 15   | 50 x 80 x M                        |                            | 19100        |                            |
| 15   | 63 x 80 x M                        |                            | 15200        |                            |
| 16   | 40 x 63 x M                        |                            | 23900        |                            |
| 16   | 50 x 80 x M                        |                            | 19100        |                            |
| 16   | 63 x 80 x M                        |                            | 15200        |                            |
| 17   | 32 x 60 x M                        |                            | 30000        |                            |
| 17   | 40 x 63 x M                        |                            | 30000        |                            |
| 17   | 40 x 90 x M                        |                            | 23900        |                            |
| 17   | 50 x 100 x M                       |                            | 19100        |                            |
| 17R  | 50 x 50 x M                        |                            | 19100        |                            |
| 17R  | 63 x 80 x M                        |                            | 15200        |                            |
| 17R  | 80 x 100 x M                       |                            | 12000        |                            |
| 18   | 32 x 50 x M                        |                            | 30000        |                            |
| 18   | 40 x 60 x M                        |                            | 23900        |                            |
| 18   | 40 x 80 x M                        |                            | 23900        |                            |
| 18   | 50 x 50 x M                        |                            | 23900        |                            |
| 18   | 50 x 100 x M                       |                            | 19100        |                            |
| 18R  | 40 x 60 x M                        |                            | 23900        |                            |
| 18R  | 50 x 50 x M                        |                            | 19100        |                            |
| 18R  | 50 x 80 x M                        |                            | 19100        |                            |
| 18R  | 50 x 100 x M                       |                            | 19100        |                            |
| 19   | 40 x 50 x M                        |                            | 23900        |                            |
| 19   | 50 x 80 x M                        |                            | 19100        |                            |

\* On customer request these cones can also be produced with the following threads (M):

**M10 (3/8"), M12 (1/2"), M14 (5/8"), M16 (3/4")**



The SPECIAL grinding wheels are intended for specific industry applications.

## Advantages:

- high level of quality
- high durability
- no fly-offs during grinding
- exceptional grinding properties
- aggressive material removal
- complies with EN12413, OSA , FEPA

## SKORPIO SPECIAL 3STARS SPECIAL

| Specification                                                                              | Material                        | Quality class | Abrasive grain        |
|--------------------------------------------------------------------------------------------|---------------------------------|---------------|-----------------------|
|  ZA24R-BF | Steel, Stainless steel, Casting | Special       | ZA                    |
| ZA24S-BF                                                                                   | Steel, Stainless steel, Casting | Special       | ZA                    |
| EZA24S-BF                                                                                  | Steel, Stainless steel, Casting | Special       | ZA + sintered alumina |



| Type    | Dimensions<br>D x T x H<br>mm                                                                      | Peripheral<br>speed<br>m/s | RPM<br>1/min | Packaging<br>units<br>pcs. |
|---------|----------------------------------------------------------------------------------------------------|----------------------------|--------------|----------------------------|
| 27      |  100 x 4 x 16     | 80                         | 15300        | 10                         |
| 27      | 100 x 7 x 16                                                                                       |                            | 15300        |                            |
| 27      | 115 x 4 x 22,23                                                                                    |                            | 13300        |                            |
| 27      | 115 x 7 x 22,23                                                                                    |                            | 13300        |                            |
| 27      | 125 x 4 x 22,23                                                                                    |                            | 12250        |                            |
| 27      | 125 x 7 x 22,23                                                                                    |                            | 12250        |                            |
| 27      | 150 x 4 x 22,23                                                                                    |                            | 10200        |                            |
| 27      | 150 x 7 x 22,23                                                                                    |                            | 10200        |                            |
| 27      | 180 x 4 x 22,23                                                                                    |                            | 8500         |                            |
| 27      | 180 x 7 x 22,23                                                                                    |                            | 8500         |                            |
| 27 (28) |  180 x 8 x 22,23 |                            | 8500         |                            |
| 27      | 180 x 10 x 22,23                                                                                   |                            | 8500         |                            |
| 27      | 230 x 4 x 22,23                                                                                    |                            | 6650         |                            |
| 27      | 230 x 7 x 22,23                                                                                    |                            | 6650         |                            |
| 27 (28) | 230 x 8 x 22,23                                                                                    |                            | 6650         |                            |
| 27      | 230 x 10 x 22,23                                                                                   |                            | 6650         |                            |

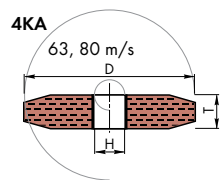
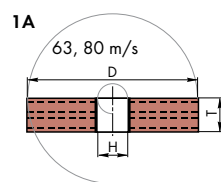
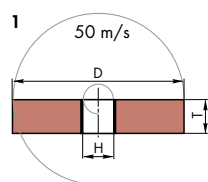


On customer request, grinding wheels can also be produced as type 27-GR and 1AF.



We also manufacture double layer grinding wheels with a thickness (T) of 7 mm.





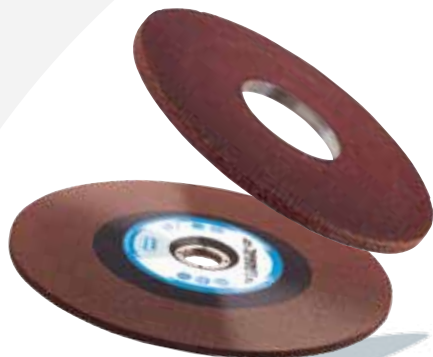
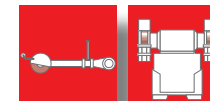
| Specification  | Hardness | Material        | Quality class |
|----------------|----------|-----------------|---------------|
| 3A20-36N-Q4BF  | P-R      | Steel           | Standard      |
| 2ZA16-24N-R4BF | P-Q      | Cast iron steel | Standard      |
| 53C20-36N-R4BF | Q-R      | Stainless steel | Special       |
| 51C16-240-R4BF | Q-R      | Grey cast       | Standard      |



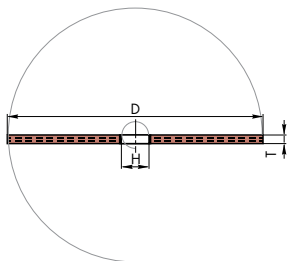
| Type | Dimensions<br>D x T x H<br>mm | Peripheral<br>speed<br>m/s | RPM<br>1/min |
|------|-------------------------------|----------------------------|--------------|
| 1A   | 50 x 4 - 12 x H               | 63, 80                     | 24060/30560  |
| 1A   | 60 x 4 - 12 x H               | 63, 80                     | 19100/25500  |
| 1A   | 65 x 6 - 12 x H               | 63, 80                     | 18510/23500  |
| 1A   | 70 x 6 - 12 x H               | 63, 80                     | 16040/21800  |
| 1    | 75 x 20 - 25 x H              | 50                         | 12750        |
| 1A   | 75 x 6 - 25 x H               | 63, 80                     | 16100/20400  |
| 4KA  | 75 x 20 - 25 x H              | 80                         | 20400        |
| 1    | 80 x 20 - 25 x H              | 50                         | 12000        |
| 1A   | 80 x 4 - 25 x H               | 63, 80                     | 15100/19100  |
| 4KA  | 80 x 20 - 25 x H              | 80                         | 19100        |
| 1    | 100 x 15 - 25 x H             | 50                         | 9550         |
| 1A   | 100 x 6 - 25 x H              | 63, 80                     | 12100/15300  |
| 4KA  | 100 x 15 - 25 x H             | 80                         | 15300        |
| 1    | 125 x 15 - 25 x H             | 50                         | 7650         |
| 1A   | 125 x 15 - 25 x H             | 63, 80                     | 9650/12250   |
| 4KA  | 125 x 15 - 25 x H             | 80                         | 12250        |
| 1    | 150 x 20 - 30 x H             | 50                         | 6400         |
| 1A   | 150 x 20 - 30 x H             | 63, 80                     | 8050/10200   |
| 4KA  | 150 x 20 - 30 x H             | 80                         | 10200        |
| 1    | 200 x 15 - 30 x H             | 50                         | 4800         |
| 1A   | 200 x 15 - 30 x H             | 63, 80                     | 6050/7650    |
| 4KA  | 200 x 15 - 30 x H             | 80                         | 7650         |
| 1    | 250 x 20 - 25 x H             | 50                         | 3850         |
| 1A   | 250 x 20 - 25 x H             | 63, 80                     | 4850/6150    |
| 4KA  | 250 x 20 - 25 x H             | 80                         | 6150         |

| mm |   |    |    |    |       |    |    |
|----|---|----|----|----|-------|----|----|
| H  | 6 | 10 | 16 | 20 | 22.23 | 25 | 32 |

Products of other dimensions can be made to special order.



These grinding wheels are intended for use in various branches of industry for manual CLEANING OF CASTS on stable grinding machines.



| Specification    | Hardness | Material                 | Quality class |
|------------------|----------|--------------------------|---------------|
| 3A20-36N-R3-4BF  | Q-R      | Steels                   | Standard      |
| 2ZA16-24N-R3-4BF | Q-R      | Alloy steels             | Special       |
| 53C20-36N-R3-4BF | Q-R      | Stainless steels         | Special       |
| 51C16-24N-R3-4BF | Q-R      | Gray alloy               | Standard      |
| 2ZA16-24N-R3-4BF | Q-R      | Nodular alloy            | Standard      |
| 9C16-24O-R3-4BF  | P-Q      | Aluminium, colour metals | Standard      |

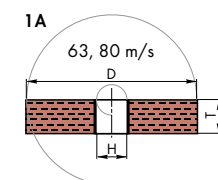
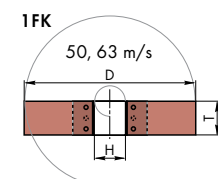
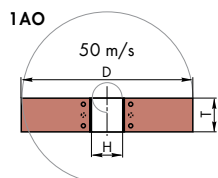
| Type | Dimensions<br>D x T x H<br>mm | Peripheral<br>speed<br>m/s | RPM<br>1/min |
|------|-------------------------------|----------------------------|--------------|
| 1A   | 300 x 6 x H                   | 80                         | 5100         |
| 1A   | 300 x 8 x H                   |                            | 5100         |
| 1A   | 300 x 10 x H                  |                            | 5100         |
| 1A   | 350 x 6 x H                   |                            | 4400         |
| 1A   | 350 x 8 x H                   |                            | 4400         |
| 1A   | 350 x 10 x H                  |                            | 4400         |
| 1A   | 350 x 12 x H                  | 63                         | 3450         |
| 1A   | 350 x 16 x H                  |                            | 3450         |
| 1A   | 350 x 20 x H                  |                            | 3450         |
| 1A   | 400 x 6 x H                   | 80                         | 3850         |
| 1A   | 400 x 8 x H                   |                            | 3850         |
| 1A   | 400 x 10 x H                  |                            | 3850         |
| 1A   | 400 x 12 x H                  | 63                         | 3050         |
| 1A   | 400 x 16 x H                  |                            | 3050         |
| 1A   | 400 x 20 x H                  |                            | 3050         |
| 1A   | 450 x 12 x H                  |                            | 2700         |
| 1A   | 450 x 16 x H                  |                            | 2700         |
| 1A   | 450 x 20 x H                  |                            | 2700         |
| 1A   | 500 x 12 x H                  |                            | 2450         |
| 1A   | 500 x 16 x H                  |                            | 2450         |
| 1A   | 500 x 20 x H                  |                            | 2450         |
| 1A   | 600 x 12 x H                  |                            | 2050         |
| 1A   | 600 x 16 x H                  |                            | 2050         |
| 1A   | 600 x 20 x H                  |                            | 2050         |

|   | mm                 |
|---|--------------------|
| H | 22.23 25 32 40 127 |

Products of other dimensions can be made to special order.



These grinding wheels are intended for use in various branches of industry for COARSE GRINDING on stable, manually operated suspended grinding machines and automatons.



| Specification      | Hardness | Material                          | Quality class |
|--------------------|----------|-----------------------------------|---------------|
| 3A14-24O-R3-4BF    | Q-S      | Non-alloy and low-alloy steels    | Standard      |
| 52A7A16-24O-R3-4BF | Q-R      | High-alloy steels                 | Standard      |
| 53C20-36N-R3-4BF   | O-R      | Stainless steel, high-alloy steel | Special       |
| 2ZA14-24N-R3-4BF   | Q-R      | Grey and nodular alloy            | Standard      |
| 3A14-24Q-R3-4BF    | Q-S      | Tempered alloy                    | Standard      |
| 9C16-24O-P3-4BF    | Q-R      | Aluminium and other colour metals | Standard      |
| 52A16-24O-R3-4BF   | Q-S      | Stainless steel, steel, casting   | Special       |

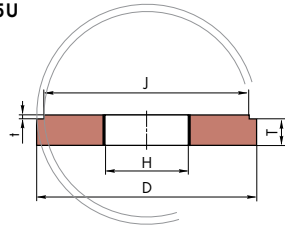
| Type | Dimensions<br>D x T x H<br>mm | Peripheral<br>speed<br>m/s | RPM<br>1/min |
|------|-------------------------------|----------------------------|--------------|
| 1A   | 300 x 12 - 60 x H             | 63, 80                     | 4010/5100    |
| 1FK  | 300 x 30 - 60 x H             | 50, 63                     | 3200/4050    |
| 1AO  | 300 x 30 - 60 x H             | 50                         | 3200         |
| 1A   | 350 x 25 - 60 x H             | 63, 80                     | 3440/4400    |
| 1FK  | 350 x 30 - 63 x H             | 50, 63                     | 2750/3450    |
| 1AO  | 350 x 30 - 100 x H            | 50                         | 2750         |
| 1A   | 400 x 30 - 60 x H             | 63, 80                     | 3010/3850    |
| 1FK  | 400 x 25 - 76 x H             | 50, 63                     | 2400/3050    |
| 1AO  | 400 x 30 - 60 x H             | 50                         | 2400         |
| 1A   | 450 x 25 - 60 x H             | 63, 80                     | 2670/3400    |
| 1FK  | 450 x 30 - 65 x H             | 50, 63                     | 2150/2700    |
| 1AO  | 450 x 40 - 65 x H             | 50                         | 2150         |
| 1A   | 500 x 50 - 60 x H             | 63, 80                     | 2410/3100    |
| 1FK  | 500 x 30 - 80 x H             | 50, 63                     | 1950/2450    |
| 1AO  | 500 x 40 - 76 x H             | 50                         | 1950         |
| 1A   | 600 x 40 - 80 x H             | 63, 80                     | 2000/2550    |
| 1FK  | 600 x 40 - 80 x H             | 50, 63                     | 1600/2050    |
| 1AO  | 600 x 50 - 100 x H            | 50                         | 1600         |
| 1FK  | 700 x 60 x H                  | 50, 63                     | 1360/1720    |
| 1FK  | 750 x 50 - 90 x H             | 50, 63                     | 1270/1300    |
| 1FK  | 800 x 60 - 100 x H            | 50, 63                     | 1190/1500    |

| D<br>mm | H<br>mm |    |    |    |    |    |      |      |     |                           |
|---------|---------|----|----|----|----|----|------|------|-----|---------------------------|
| 300     | 25,4    | 30 | 32 | 40 | 50 | 60 | 76.2 | 127  |     |                           |
| 350     |         |    | 32 | 40 | 50 | 60 | 76.2 | 127  |     |                           |
| 400     |         |    |    | 40 | 50 | 60 | 76.2 | 127  |     |                           |
| 450     |         |    |    |    | 40 | 50 | 60   | 76.2 | 127 | 150 152.4 200 203         |
| 500     |         |    |    |    |    | 50 | 60   | 76.2 | 127 | 150 152.4 200 203 250 305 |
| 600     |         |    |    |    |    |    | 60   | 76.2 | 127 | 150 152.4 200 203 250 305 |

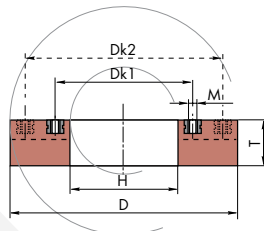


These grinding wheels are intended for use in various branches of industry for COARSE GRINDING on stable, manually operated suspended grinding machines and automatons. They are distinguished by a high grinding efficiency and appropriate durability.

35U



36



| Specification   | Hardness | Material                           | Quality class |
|-----------------|----------|------------------------------------|---------------|
| 52A36-60L-04-6B | G-J      | Non- and low-alloy steels, magnets | Standard      |
| 4A24-60L-04-6B  | L-N      | Casting and fast-cutting steels    | Standard      |
| 2A24-60L-04-6B  | Q-R      | Spring steel, low-alloy steels     | Standard      |
| 52A14-36N-Q4-5B | R-S      | Stainless steel, steel, casting    | Special       |
| 22A14-24N-Q4-5B | P-Q      | Grey and nodular casts             | Standard      |
| 9C16-36L-04-5B  | K-L      | Aluminium and other colour metals  | Standard      |
| 9C14-24L-04-6B  | M-O      | Lamellar and brake pads            | Standard      |

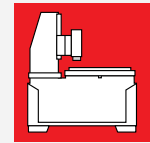
| Type | Dimensions<br>D x T x H<br>mm | Peripheral<br>speed<br>m/s | RPM<br>1/min | Dk1/<br>No. of nuts | Dk2/<br>No. of nuts | Thread |
|------|-------------------------------|----------------------------|--------------|---------------------|---------------------|--------|
| 35U  | 450 x 60 x 200/428 x 11       | 50                         | 2150         |                     |                     |        |
| 36   | 350 x 90 x 200                |                            | 2750         | 280/10              | /                   | M10    |
| 36   | 350 x 100 x 255               |                            | 2750         | 300/8               | /                   | M12    |
| 36   | 450 x 90 x 255                | 40                         | 1700         | 375/10              | /                   | M10    |
| 36   | 500 x 100 x 350               | 45                         | 1550         | 456/24              | /                   | M10    |
| 36   | 508 x 102 x 406               | 50                         | 1900         | 456/24              | /                   | M10    |
| 36   | 600 x 75 x 325                | 40                         | 1300         | 530/12              | 380/6               | M16    |
| 36   | 600 x 102 x 320               | 50                         | 1600         | 530/12              | 380/6               | M16    |
| 36   | 600 x 125 x 450               | 50                         | 1600         | 588.8/12            | 508/6               | M10    |





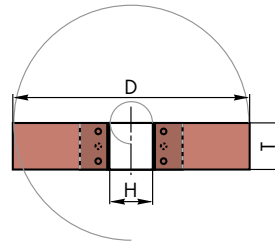
|  | Application           | Specification |            |          |           | Bond   |        |
|-----------------------------------------------------------------------------------|-----------------------|---------------|------------|----------|-----------|--------|--------|
|                                                                                   |                       | Grain         | Grain size | Hardness | Structure |        |        |
|  | Non-ferrous metals    |               |            |          |           | 50 m/s | 63 m/s |
|                                                                                   |                       | 9C            | 16 - 24    | O-P      | 4         | B04    | B05    |
|  | Steel                 |               |            |          |           |        |        |
|                                                                                   | Steel casts           | 52A, 3A, 7A   | 14 - 24    | O-R      | 3 - 4     | B04    | B69    |
|  | High-alloy steels     | 252A, 7A      | 16 - 24)   | O-R      | 4         | B04    | B05    |
|                                                                                   | Casts                 |               |            |          |           |        |        |
|                                                                                   | Grey alloy casts      | 2ZA, 53C      | 14 - 24    | O-R      | 3 - 5     | B13    | B18    |
|                                                                                   | Nodular alloy casts   | ZA, 52A       | 14 - 24    | NM       | 4         | B04    | B05    |
|                                                                                   | Tempered alloy casts: |               |            |          |           |        |        |
|                                                                                   | - before tempering    | 2ZA, 53C, 9C  | 16 - 24    | O-R      | 3 - 4     | B68    | B69    |
|                                                                                   | - after tempering     | 2ZA, 52A      | 16 - 24    | N        | 4         | B04    | B05    |





## Grinding wheels 1VS

D x T x H

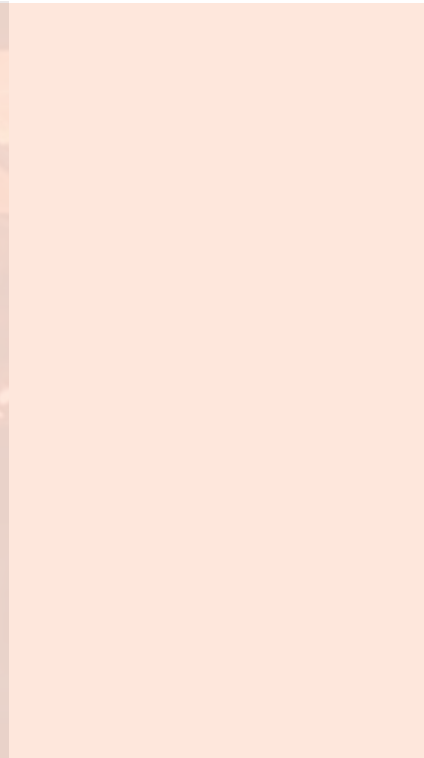
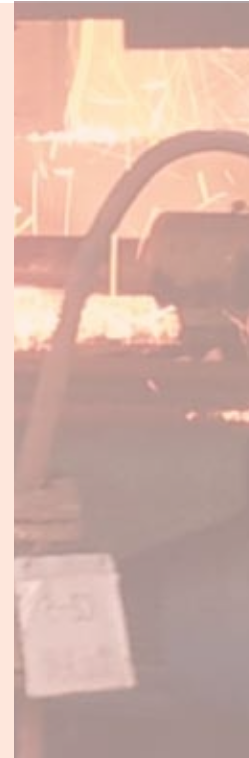


| Specification | Material                                         |
|---------------|--------------------------------------------------|
| XA 10 Z B80   | Carbon low-alloy steels                          |
| XA 16 Z B80   | General applications                             |
| EA 14 Y B91   | High-alloy steels (austenitic), stainless steels |
| EA 20 Y B91   | High-alloy steels with higher roughness required |
| WA 10 Z B80   | Machines with lower power ratings                |

Hot-pressed grinding wheels are used for removal of hard oxide crust in the process of steel manufacture (slabs, billets) and rough grinding.

Order printout sample:  
1VS 610x76x203.2  
EA 14 Y B91

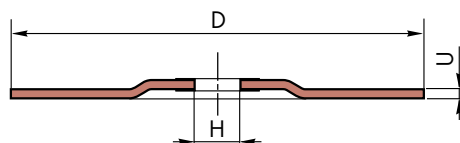
| Type | Dimensions<br>D x T x H<br>mm | Peripheral<br>speed<br>m/s | RPM<br>1/min |
|------|-------------------------------|----------------------------|--------------|
| 1VS  | 610 x 65 x 203.2              | 80                         | 2506         |
| 1VS  | 610 x 76 x 203.2, 304.8 (305) |                            | 2506         |
| 1VS  | 610 x 86 x 203.2              |                            | 2506         |
| 1VS  | 610 x 102 x 304.8 (305)       |                            | 2506         |
| 1VS  | 610 x 124 x 304.8 (305)       |                            | 2506         |
| 1VS  | 920 x 100, 125, 150 x 304.8   |                            | 1700         |
| 1VS  | 920 x 100, 125 x 400 or 406.4 |                            | 1700         |





## Cutting-off wheels 42

D x T x U



| D   | U     | H    |
|-----|-------|------|
| 500 | 5 - 6 | 76.2 |
| 600 | 6 - 7 | 76.2 |

Reinforced cutting-off wheels of large diameters are used for cutting products of large cross-sections in the manufacture of rolled profiles, forged pieces, pipes and rods.

Cutting on suspended and stable machines

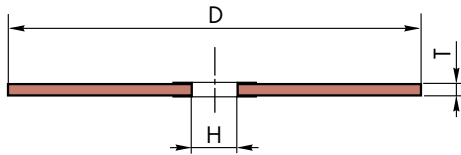
| Application                 | Specification | D/mm        |
|-----------------------------|---------------|-------------|
| Construction steel          | A24S1BF       | 450 - 600   |
| Stone, firebrick            | C30PB3BF      | 450 - 600   |
| Aluminium and colour metals | A24PSBF       | 450 - 600   |
| Stainless steel             | 4A30N6BF      | 450 - 500   |
| Stainless steel             | 7A24PBF       | 500 - 600   |
| Steel and other alloys      | WA24S1BF      | 500 - 600   |
| Cold cutting                | WA20/24RBF    | 800 - 1000  |
| Warm cutting                | WA20/24SBF    | 1000 - 1250 |
| Hot cutting                 | WA20/24QBF    | 1000 - 1250 |

Cutting of large cross-sections on stable machines



**Cutting-off wheels 41..**

D x T x H



Order printout sample:

41C3D2K 1030x12/11x100

5WA 20/2 S 7 BF83

| D    | T       | H                   |
|------|---------|---------------------|
| 450  | 4 - 4.5 | 25.4 (32) (40)      |
| 500  | 5 - 6   | 25.4 (32) (40)      |
| 600  | 6 - 7   | 40 (60) (76.2) (80) |
| 800  | 9/8.5*  | 80 (100) (152.4)    |
| 1000 | 12/11*  | 100 (152.4)         |
| 1250 | 14/13*  | 127 (152.4)         |

\* Conical reinforced cutting-off wheels

Please store in dry and well-ventilated premises without major temperature changes (temperatures between 10° and 30° C and max. 70 % relative humidity).

This will help preserve the physical properties of reinforced resin bonded grinding wheels for up to three years, up to two years for non-reinforced ones.

The storage premises should be as close to the place of use as possible in order to avoid mechanical damage to the wheels during transport, as well as moisture condensation while in transit on colder days.

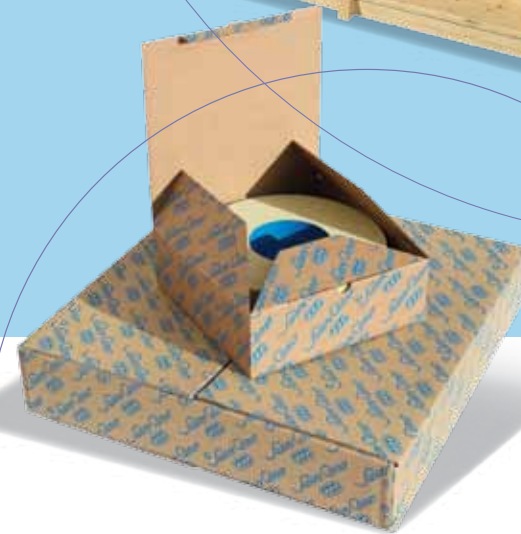
Please use appropriate stands, shelves, drawers and boxes for storing various types of grinding wheels.

- Store wide thin-section grinding wheels in a horizontal position on a flat surface or on a steel base.
- Place thinner resin bonded cutting-off wheels on a flat surface in order to prevent bending.
- Store small grinding wheels on upper shelves or in their original packaging.
- Store depressed-centre concave grinding wheels one on top of the other or in their original packaging, up to a stack height of 120 cm.
- Store grinding wheels and thick-section grinding rings of larger dimensions vertically on lower shelves, but transport them horizontally.

Vitrified bonded grinding wheels are not sensitive to atmospheric influences. Due to their fragility, they are however very sensitive to impact, because this causes cracks that are undetectable by the human eye, but may cause grinding wheel rupture at the beginning of work. Grinding wheels should be stored on wooden shelves that prevent rolling. The shelves need to be designed such that various grinding tool types can be arranged on them in a simple and safe manner.

Easy and safe removal of grinding tools from the shelves should also be ensured, while maintaining the stability of those remaining on the shelves. Grinding tool shelving should be positioned as close to the grinding machine as possible.

On the other hand, the quality of resin bonded grinding wheels gradually deteriorates. This process may be accelerated by unsuitable storage conditions. Resin bonded grinding wheels should not be allowed to freeze. The storage temperature should be between 10° and 30° C, and the relative humidity should not exceed 70%. Under such conditions, the physical properties of these grinding wheels remain unchanged for a year. After prolonged storage, however, the mechanical properties of the grinding wheels may change, therefore safety checks should be performed prior to their use.





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