

CARBOCHIM

CLUJ
ABRAZIVE PROFESSIONALE

CUT-OFF AND DEBURRING WHEELS



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General recommendations

Operation Processed material	Cutting		Deburring	
	General Use	Professional Use	General Use	Professional Use
Medium hardness steel	11A80QBF 11A60QBF 11A30QBF	11A80QBFZ 11A60QBFZ 11A30QBFZ	11A30QBF	11A30QBFZ 11A24SBFZ
Construction high alloyed steel	11A80QBF 11A60QBF 11A30QBF	11A80QBFZ 11A60QBFZ 11A30QBFZ	11A30QBF	11A30QBFZ 11A24SBFZ
Rails, steel profiles with wide sections		11A30QBF-RZ		
Wide sections bars of special steel		33A24PBF 82AZ2 4QBFZRU		
Steel plate, thin profiles	11A80QBF	11A80QBFZ	11A30QBF	11A30QBFZ
Stainless steel, rapid steel	50A80QBF 50A60QBF 50A36QBF	50A80QBF 50A60QBF 50A36QBF	50A30QBF	50A30QBF
Stainless steel plate and thin profiles	50A80QBF 50A60QBF 50A36QBF	50A80QBF 50A60QBF 50A36QBF	50A30QBF	50A30QBF
Construction materials, natural stone	21C30QPBF	21C30QPBF	21C30QPBF	21C30QPBF
Cast-iron	54AC30QBF	54AC30QBF	54AC30QBF	54AC30QBF
Aluminum , bronze, copper, brass	33A36PBF	33A36PBF	33A46PBF	33A46PBF

Marking

Abrasive discs are high productivity cut-off wheels and deburring tools that are able to work at high peripheral speeds and that are used on hand power tools or stationary machines.

Carbochim's discs trade marks Carbodeb® are recognized by high efficiency, short time and minimum effort during cutting/deburring process.

Safety is the main objective and in this reason Carbochim cut-off and deburring wheels are in compliance with international requirements regarding safety work : EN 12413 and FEPA.

Carbochim's abrasive discs are suitable for a wide range of applications and are recommended based on operation type (cutting or deburring process), machine type, work material (steel, stainless steel, aluminium, stone, cast iron) and also based on required parameters in cutting and deburring process .



1. Trade mark
2. Material to be processed
3. Maximum rotations per minute (RPM)
4. Pictograms, tips on use and safety
5. Shape and dimensions
6. Cut-off and deburring wheels specifications
7. Certifications, standards
8. Maximum rotation speed permissible (m/sec)
9. Color strip that is corresponding to maximum rotation speed permissible
 - blue - 50m/s
 - yellow - 63m/s
 - red - 80m/s
 - green - 100m/s
10. Bar code (EAN - 13)

For an adequate selection of discs specification based on processed material, Carbodeb® discs are marked in different colors, as follows:



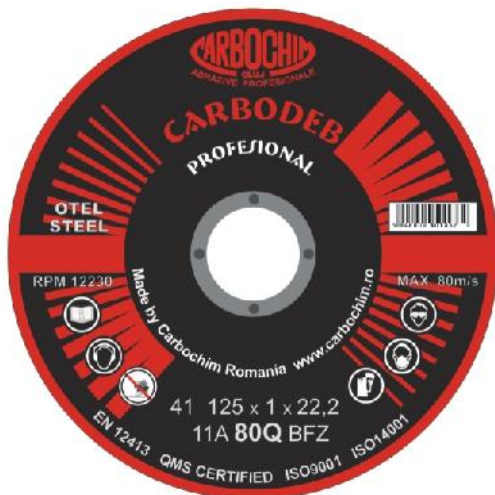
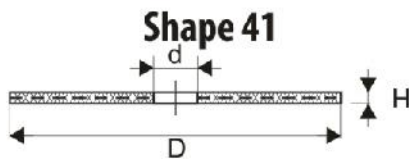
1. Cut-off and deburring wheels for steel

Quality is an important parameter of processes and of products, and in this reason Carbochim S.A. apply modern methods of production and a rigorous control of raw materials. By selection and combination of high quality raw materials, the Carbochim's cut-off and deburring wheels offer high endurance and rapid power feed. The consistent look for efficiency, the careful control of final product as well as an exemplary technical assistance recommend these products to be the optimum solution for the most exacting cut-off and deburring processes.

1.1. Professional cut-off wheels

For hand power tools

- shape 41 flat **cut-off wheels** reinforced with glass fiber inserts
- manufactured by special abrasives combination, they have the advantages of rapid and clean cuttings, without burrs, less noise and dust
- recommended for steel profiles, pipes, bars, metallic plates, building materials etc.
- Maximum rotation speed permissible 80 m/s.



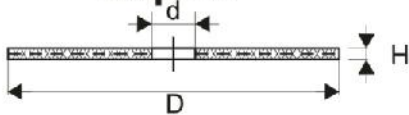
D (mm)	H(mm)	d(mm)	Specifications	Package unit (Pcs./box)
115	1	22,2	11A80QBFZ	25
115	1,5	22,2	11A60QBFZ	25
115	2; 2,5; 3	22,2	11A30QBFZ	25
125	1	22,2	11A80QBFZ	25
125	1,5	22,2	11A60QBFZ	25
125	2; 2,5; 3	22,2	11A30QBFZ	25
150	1	22,2	11A80QBFZ	25
150	1,5	22,2	11A60QBFZ	25
150	2; 2,5; 3	22,2	11A30QBFZ	25
180	1	22,2	11A80QBFZ	25
180	1,5	22,2	11A60QBFZ	25
180	2; 2,5; 3	22,2	11A30QBFZ	25
230	1,5	22,2	11A60QBFZ	25
230	2; 2,5; 3	22,2	11A30QBFZ	25

1. Cut-off and deburring wheels for steel

For stationary machines:

- shape 41 flat **cut-off wheels** reinforced with glass fiber inserts
- professional cut-off wheels that grant the quality exactingness required by cutting process
- the high efficiency and aggresiveness recommend these cut-off wheels to be the optimum solution for professional use
- recommended for cutting of castings, billets, forged pieces, rails, bars and pipes of large sections
- maximum rotation speed permissible 80 m/s -100 m/sec.

Shape 41



D (mm)	H (mm)	d (mm)	Profiles and large sections cutting	Rails Cutting	Forged pieces cutting	Laboratory Samples Cutting	Package Unit (Pcs./box)
300	3; 3,5; 4	25,4	11A30QBF	11A30QBF-RZ			35
350	3; 3,5; 4	25,4	11A30QBF	11A30QBF-RZ			35
400	2,8	50,8	50A46QBF				20
400	3; 3,5; 4	25,4; 40	11A30QBF	11A30QBF-RZ			20
500	4	25,4; 40	11A30QBF 33A36QBF		33A46QBF		4
500	4,5; 5	25,4; 40	11A30QBF		50A30QBF	33A24PBF	4
600	5; 7	60				33A24PBF	2
800	8	100			82AZ24QBF RU		2

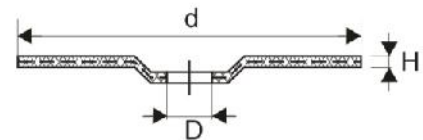
For hand power tools:

- shape 27 - depressed center **deburring wheels** reinforced with glass fiber inserts

These wheels are efficiently used in applications where a big quantity of added processing material is required to be removed, like: cleaning and deburring of forged and cast-on pieces, casting defects elimination, welding adjustments

- Maximum rotation speed permissible 80 m/sec.

Shape 27



D (mm)	H(mm)	d(mm)	Specifications		Package Unit (Pcs./box)
115	4; 6; 8	22,2	11A30QBFZ	11A24SBFZ	10
125	4; 6; 8	22,2	11A30QBFZ	11A24SBFZ	10
150	4; 6; 8	22,2	11A30QBFZ	11A24SBFZ	10
180	4; 6; 8; 10	22,2	11A30QBFZ	11A24SBFZ	10
230	4; 6; 8; 10	22,2	11A30QBFZ	11A24SBFZ	10



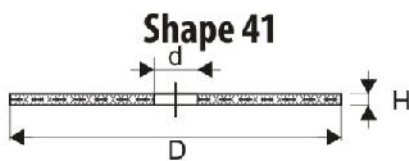
1. Cut-off and deburring wheels for steel

1.2 General cut-off and deburring wheels

- for general use with advantage of optimum quality/ price ratio
- recommended for cutting and deburring angle bars, pipes, bars, metallic plate, building materials etc. with hand power tools. Optimum quality / price ratio.
- Maximum rotation speed permissible 80 m/sec.

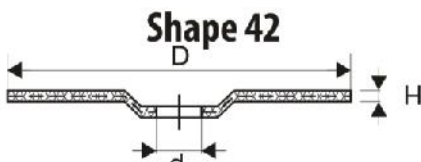
For hand power tools:

- shape 41 flat **cut-off wheels** reinforced with glass fiber inserts



D (mm)	H(mm)	d(mm)	Specifications	Package unit (Pcs./box)
115	1	22,2	11A80QBF	25
115	1,5	22,2	11A60QBF	25
115	2; 2,5; 3	22,2	11A30QBF	25
125	1	22,2	11A80QBF	25
125	1,5	22,2	11A60QBF	25
125	2; 2,5; 3	22,2	11A30QBF	25
150	1	22,2	11A80QBF	25
150	1,5	22,2	11A60QBF	25
150	2; 2,5; 3	22,2	11A30QBF	25
180	1	22,2	11A80QBF	25
180	1,5	22,2	11A60QBF	25
180	2; 2,5; 3	22,2	11A30QBF	25
230	1,5	22,2	11A60QBF	25
230	2; 2,5; 3	22,2	11A30QBF	25

- shape 42 depressed centre **cut-off wheels** reinforced with glass fiber inserts



D (mm)	H(mm)	d(mm)	Specifications	Package unit (Pcs./box)
115	1,5	22,2	11A60QBF	25
115	2; 2,5; 3	22,2	11A30QBF	25
125	1,5	22,2	11A60QBF	25
125	2; 2,5; 3	22,2	11A30QBF	25
150	1,5	22,2	11A60QBF	25
150	2; 2,5; 3	22,2	11A30QBF	25
180	1,5	22,2	11A60QBF	25
180	2; 2,5; 3	22,2	11A30QBF	25
230	1,5	22,2	11A60QBF	25
230	2; 2,5; 3	22,2	11A30QBF	25

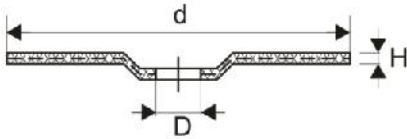
1. Cut-off and deburring wheels for steel

- shape 27 depressed centre **deburring wheels** reinforced with glass fiber inserts

These discs are efficiently used in applications where a big quantity of added processing material is required to be removed; like: cleaning and deburring of forged and cast-on pieces, casting defects elimination, welding adjustments.

Optimum quality/price ratio.

Shape 27



D (mm)	H (mm)	d (mm)	Specifications	Package unit (Pcs./box)
115	4; 6; 8	22,2	11A30QBF	10
125	4; 6; 8	22,2	11A30QBF	10
150	4; 6; 8	22,2	11A30QBF	10
180	4; 6; 8; 10	22,2	11A30QBF	10
230	4; 6; 8; 10	22,2	11A30QBF	10



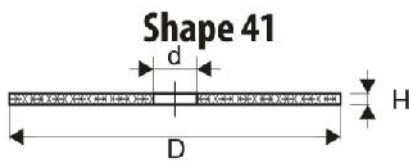
2. Cut-off and deburring wheels for stainless steel (inox)

Cut-off and deburring wheels that grant the following advantages for cutting and grinding process: clean and rapid operating with low effort, very accurate, noiseless, without dust and without color return or burrs.

- Maximum rotation speed permissible 80 m/sec.

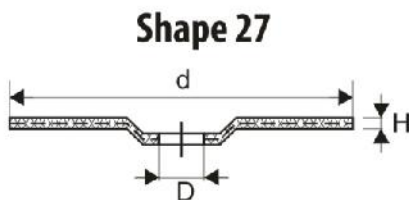
For hand power tools:

- shape 41 flat **cut-off wheels** reinforced with glass fiber inserts



D (mm)	H (mm)	d (mm)	Specifications	Package unit (Pcs./box)
115	1	22,2	50A80QBF	25
115	1,5	22,2	50A60QBF	25
115	2; 2,5; 3	22,2	50A36OBF	25
125	1	22,2	50A80QBF	25
125	1,5	22,2	50A60QBF	25
125	2; 2,5; 3	22,2	50A36OBF	25
150	1	22,2	50A80QBF	25
150	1,5	22,2	50A60QBF	25
150	2; 2,5; 3	22,2	50A36OBF	25
180	1	22,2	50A80QBF	25
180	1,5	22,2	50A60QBF	25
180	2; 2,5; 3	22,2	50A36OBF	25
230	1,5	22,2	50A60QBF	25
230	2; 2,5; 3	22,2	50A36OBF	25

- shape 27 depressed centre **deburring wheels** reinforced with glass fiber inserts



D (mm)	H (mm)	d (mm)	Specifications	Package unit (Pcs./box)
115	4; 6	22,2	50A30OBF	10
125	4; 6	22,2	50A30OBF	10
150	4; 6	22,2	50A30OBF	10
180	4; 6	22,2	50A30OBF	10
230	4; 6	22,2	50A30OBF	10

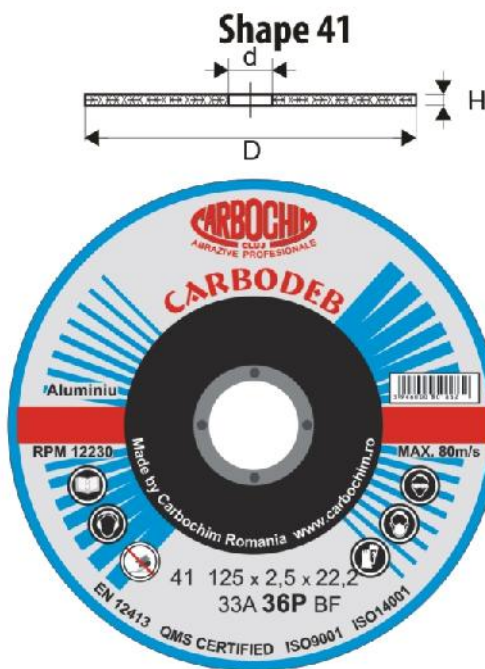
3. Cut-off and deburring wheels for aluminium

Cut-off and deburring wheels that grant the following advantages for cutting and grinding process: clean and rapid operating with low effort, very accurate, noiseless, without dust and without color return or burrs.

- Maximum rotation speed permissible 80 m/sec.

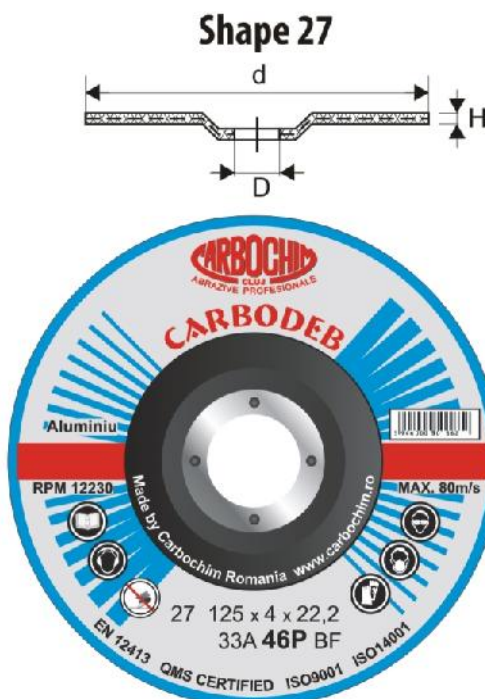
For hand power tools:

- shape 41 flat **cut-off wheels** reinforced with glass fiber inserts



D (mm)	H (mm)	d (mm)	Specifications	Package unit (Pcs./box)
115	2,5; 3	22,2	33A36PBF	25
125	2,5; 3	22,2	33A36PBF	25
150	2,5; 3	22,2	33A36PBF	25
180	2,5; 3	22,2	33A36PBF	25
230	2,5; 3	22,2	33A36PBF	25

- shape 27 depressed centre **deburring wheels** reinforced with glass fiber inserts



D (mm)	H (mm)	d (mm)	Specifications	Package unit (Pcs./box)
115	4; 6	22,2	33A46PBF	10
125	4; 6	22,2	33A46PBF	10
150	4; 6	22,2	33A46PBF	10
180	4; 6	22,2	33A46PBF	10
230	4; 6	22,2	33A46PBF	10

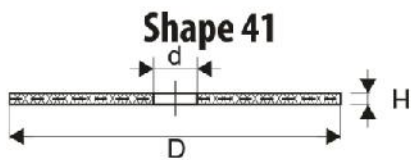
4. Cut-off and deburring wheels for cast iron

Cut-off and deburring wheels reinforced with glass fiber inserts , special made to grant a high efficiency in cast-iron processing.

- Maximum rotation speed permissible 80 m/sec.

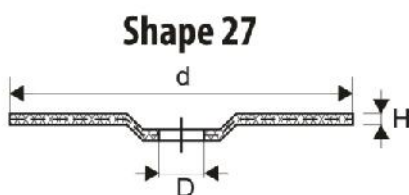
For hand power tools:

- shape 41 flat **cut-off wheels** reinforced with glass fiber inserts



D (mm)	H (mm)	d (mm)	Specifications	Package unit (Pcs./box)
115	2; 2,5; 3	22,2	54AC30QBF	25
125	2; 2,5; 3	22,2	54AC30QBF	25
150	2; 2,5; 3	22,2	54AC30QBF	25
180	2; 2,5; 3	22,2	54AC30QBF	25
230	2; 2,5; 3	22,2	54AC30QBF	25

- shape 27 depressed centre **deburring wheels** reinforced with glass fiber inserts



D (mm)	H (mm)	d (mm)	Specifications	Package unit (Pcs./box)
115	4; 6; 8	22,2	54AC30QBF	10
125	4; 6; 8	22,2	54AC30QBF	10
150	4; 6; 8	22,2	54AC30QBF	10
180	4; 6; 8	22,2	54AC30QBF	10
230	4; 6; 8	22,2	54AC30QBF	10

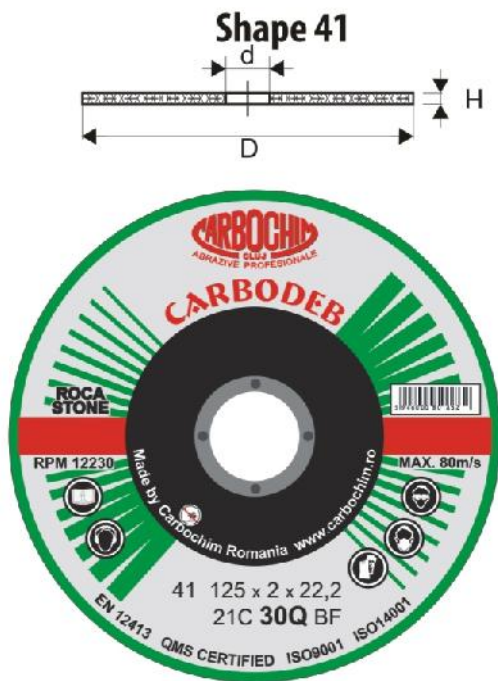
5. Cut-off and deburring wheels for stone

Cut-off and deburring wheels suitable for cutting and deburring natural stones or ceramics that are used in constructions: plates, bricks, tiles, concrete etc.

- Maximum rotation speed permissible 80 m/sec.

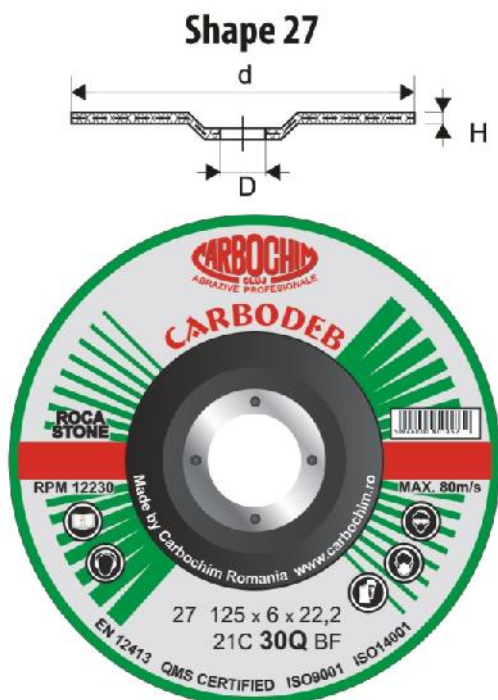
For hand power tools:

- shape 41 flat **cut-off wheels** reinforced with glass fiber inserts



D (mm)	H (mm)	d (mm)	Specifications	Package unit (Pcs./box)
115	1	22,2	21C80QBF	25
115	1,5	22,2	21C60QBF	25
115	2; 2,5; 3	22,2	21C30QBF	25
125	1	22,2	21C80QBF	25
125	1,5	22,2	21C60QBF	25
125	2; 2,5; 3	22,2	21C30QBF	25
150	2; 2,5; 3	22,2	21C30QBF	25
180	2; 2,5; 3	22,2	21C30QBF	25
230	2; 2,5; 3	22,2	21C30QBF	25

- shape 27 depressed centre **deburring wheels** reinforced with glass fiber inserts



D (mm)	H (mm)	d (mm)	Specifications	Package unit (Pcs./box)
115	4; 6	22,2	21C30QBF	10
125	4; 6	22,2	21C30QBF	10
150	4; 6	22,2	21C30QBF	10
180	4; 6	22,2	21C30QBF	10
230	4; 6	22,2	21C30QBF	10

6. Thin cut-off wheels for heat-sensitive materials

For stationary machines:

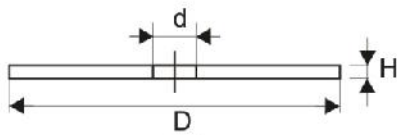
- shape 41 flat **cut-off wheels** without reinforcements

These cut-off wheels used for heat sensitive materials cutting are thin and extra-thin cut-off wheels of fine grit sizes which are manufactured in a wide range of specifications that grant high cutting parameters without structural modifications due to overheating or local deformations.

These cut-off wheels are recommended for cutting of pieces of different profiles(metalographic samples) and for special tools sharpening (saw strips, control cable conduit, canulaes, elastic bushing etc.) on stationary machines with maximum speed of 32-80 m/sec.

6.1. Cut-off wheels for metalography

Shape 41

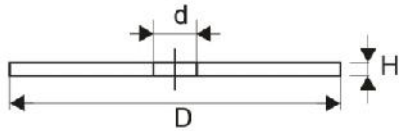


D (mm)	H (mm)	d (mm)	Specification	Work Speed (m/s)	Applications	Package Unit (Pcs./box)
235	1,5	32	11A70J4B-0	63	Steel cutting	25
	1,5	32	53A70G4B-0	50	Steel cutting	25
	1,6	32	21C60P4B-0	32-50	Titanium and titanium alloys cutting	25
250	2	32	11A70J4B-0	63	Steel cutting	25
	2	32	33A60N4B-2RU	80	Steel cutting	25
300	2	32	33A60N4B-2RU	80	Steel cutting	15
	2	32	33A80H4B-0	63	Complex welded sections cutting	15
350	2,5	32	90A80J4B-2RU	63	Complex welded sections cutting	15
	2,5	32	92A54K4B-2RU	63	Complex welded sections cutting Long life cutting disc	15
	2,5	32	33A60N4B2-RU	80	Complex welded sections cutting	15

6. Thin cut-off wheels for heat-sensitive materials

6.2. Cut-off wheels for control cable conduit, canulaes cutting and for elastic bushing slotting.

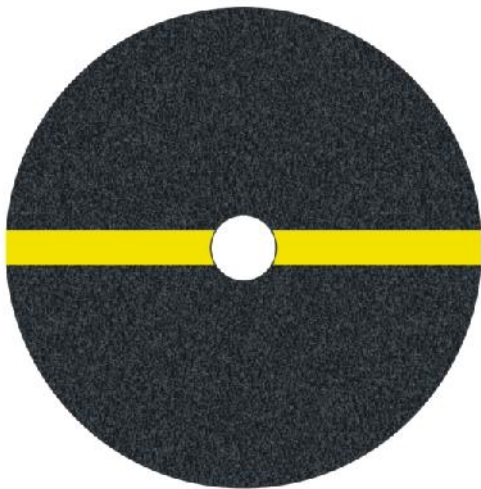
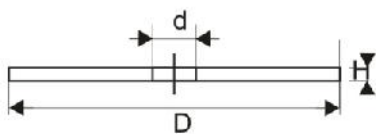
Shape 41



D (mm)	H (mm)	d (mm)	Specifications	Work Speed (m/s)	Applications	Package unit (Pcs./box)
150	0,5	13	66A180R4B-2	63	Cable conduit cutting	50
	0,8	20	11A150M4B-2E	63	Canuleas cutting	50
	1	12,7	50A54R4B-44	80	Cable conduit cutting	50
200	1	25,4	50A54R4B-44	63	Cable conduit cutting	50

6.3. Cut-off wheels for saw strips cutting and sharpening

Shape 41



D (mm)	H (mm)	d (mm)	Specifications	Work Speed (m/s)	Applications	Package unit (Pcs./box)
150	1	20	11A60Q4B-44	63	Saw strips	20
	2	20	11A60Q4B-44	63	Saw strips	50
200	2	20	11A60Q4B-44	63	Saw strips	50
	4	20	11A60Q4B-44	63	Saw strips	50

SAFETY RULES

Abrasive products improperly used can be very dangerous.

Always follow the instructions provided by the abrasive product and machine supplier.

Ensure that the abrasive product is suitable for its intended use. Examine all abrasive products for damage or defects before mounting.

Follow the correct procedures for handling and storage of abrasive products.

Be aware of the likely hazards during the use of abrasive products and observe the recommended precautions to be taken:

Bodily contact with the abrasive product at operating speed.

Injury resulting from product breakage during use.

Grinding debris, sparks, fumes and dust generated by the grinding process.

Noise.

Vibration.

Use only abrasive products conforming to the highest standards of safety. These products will bear the relevant EN standard number EN12413.

Never use a machine that is not in good working order or one with defective parts.

Employers should carry out a risk assessment on all individual abrasive processes to determine the appropriate protective measures necessary. They should ensure that their employees are suitably trained to carry out their duties.

PRECAUTIONS AGAINST LIKELY HAZARDS

Noise

Ear protection complying with EN352 is recommended for all applications where the workpiece or machine is hand-held, irrespective of the noise level.

Ensure that the correct abrasive product is selected. An unsuitable product can produce excessive noise.

Vibration

Processes where the workpiece or machine is hand-held can cause vibration injury.

Action needs to be taken if tingling, pins and needles or numbness is experienced after 10 minutes continuous use of the abrasive product.

The effects of vibration are more pronounced in cold conditions so keep the hands warm and exercise hands and fingers regularly. Use modern equipment with low vibration levels.

Maintain all equipment in good condition and stop the machine and have it checked if excessive vibration occurs.

Use good quality abrasive products and keep them in good condition during their life.

Maintain mounting flanges and back-up pads in good condition and replace if worn or distorted.

Do not grip the workpiece or machine too tightly and do not exert excessive pressure on the abrasive product.

Avoid continuous use of the abrasive product.

Use the correct product. An unsuitable product can produce excessive vibration.

Don't ignore the physical symptoms of vibration - seek medical advice.

Bodily contact with the abrasive product

Always take great care and attention when using abrasive products. Tie back long hair and do not wear loose clothing, ties and jewellery.

Prevent accidental start-up of the machine before mounting or changing an abrasive product.

Isolate machines from their power source where necessary.

Never remove guards from machines where fitted and ensure they are in good condition and properly adjusted before starting the machine.

Always use gloves and suitable clothing where the workpiece or machine is hand-held. For gloves, a minimum protection level of EN 388 Category 2 is recommended.

After switching off the machine, ensure the product has come to rest before leaving the machine unattended.

Injury caused by product breakage

Always handle abrasives with great care, they are easily damaged.

Examine all products for defects or damage before use.

Store abrasives in dry, frost-free conditions avoiding wide variations in temperature.

Ensure they are properly protected and supported to prevent damage and distortion.

Never use an abrasive product beyond its expiry date where marked.

Check abrasive product or package for any warnings or other safety information.

SAFETY RULES


Ensure that the correct abrasive product is selected. Never use a product if it cannot be properly identified.
 Follow the instructions provided by the abrasive product or machine supplier when mounting abrasive products.
 Observe any mounting indications marked on the product such as direction of run or mounting position.
 Never force the abrasive product onto the mounting fixture or modify it to fit.
 Never exceed the maximum operating speed where specified.
 Check that the correct mounting devices are used and that they are undistorted, clean and free from burrs.
 Use mounting blotters where supplied.
 Do not tighten the mounting device excessively.
 After mounting or re-mounting an abrasive product, conduct a trial run at operating speed with the guard in place for at least 30 seconds, standing clear of the machine before use.
 Never remove guards from machines where fitted and ensure they are in good condition and properly adjusted.
 Ensure that the workpiece is secure and properly supported. Ensure that work rests are properly adjusted and secure.
 Never start the machine with the workpiece in contact with the abrasive product.
 Never apply excessive force or shock to the abrasive product or let it overheat.
 Do not grind on the part of the product that is not designed for the operation.
 Avoid clogging and uneven wear to ensure that the abrasive product is working efficiently.
 Let the abrasive product stop naturally, not by applying pressure to its surface.
 Turn off and spin out excess coolant before stopping the machine.


Grinding debris sparks, dust and fumes


Exposure to dust generated from workpiece and/or abrasive materials can result in lung damage and/or other physical injury.
 All dry grinding processes should be provided with adequate extraction facilities.
 Do not use abrasive products near flammable materials.
 The use of respirators complying with EN149 is recommended for dry grinding processes even if extraction systems are provided.
 Guards where provided should be adjusted to deflect sparks and debris away from the operator.
 Take additional measures to protect people working nearby.
 Eye protection is recommended for all machine applications for abrasives


Disposal of abrasives


Used or defective abrasives should be disposed in accordance with local or national regulations.
 Further information can be obtained from material safety data sheets provided by the supplier.
 Be aware that the abrasive product may be contaminated with material from the workpiece or process after use.
 Disposed abrasive products should be damaged to prevent them from being taken from waste skips and reused


 Not permitted for hand-held or manually-guided grinding.


 Not permitted for wet grinding.


 Do not use if damaged.


 Not permitted for face grinding.


 Read the instructions


 Wear eye protection

 Wear hearing protection

 Wear a respirator

 Wear gloves

 Only permitted with a back-up pad



Over 60 years experience



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