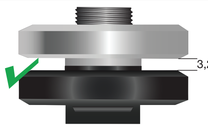
CUTTING AND GRINDING DISC SAFETY

GET TO KNOW YOUR DISCS



GRINDING

Correct flange assembly for grinding/cutting discs



Grinding disc mounting
Distance between flanges due to flange shoulders seating measures 3,2mm.
This is only suitable for grinding discs as most cutting discs are thinner and will not be clamped tight enough for cutting purposes.

Safety Flange

Standard flange diameters do not provide enough support for 230mm Cutting discs. For 230mm cutting discs it is recommended that 75mm Safety flange sets be utilised.

Standard Flange **Safety Flange**



Grinding disc dressing

Regular dressing of the periphery will prolong disc life and improve disc safety.



Recommended Grinding Angle

Maintain a minimum 30° angle with the workpiece.



CUTTING

Correct steel insert facing

Always mount a cutting disc with the steel insert facing the outer flange.



CORRECT CUTTING DIRECTION	INCORRECT CUTTING DIRECTION
Rotation forwards - sparks moving away from body. Note: contact position with workpiece - BEHIND disc center.	Rotation backwards - sparks moving into body. Note: contact position with workpiece - IN FRONT of disc center



Cutting disc mounting
Flanges seat correctly and are suitable for cutting disc applications. Mounted with outer flange locating lip facing outwards ensures a good grip on thinner cutting discs.

superflex®

DURABLE | DEPENDABLE | DIFFERENT

COMMON CAUSES OF DISC FAILURE

Cutting Discs

A



A PIECE OF DISC RIPPED OUT OF THE MATRIX

The cause of the problem is incorrect clamping, or a lack of clamping of the workpiece

With downward pressure the disc becomes trapped and damage is caused.

Near completion of the cut, the workpiece rotates and the disc is snagged and damaged.



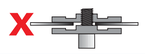
B



DISC IS NOT CONCENTRIC WITH THE BORE - DISC "RUNS OUT"

It is impossible to make a disc non-concentric to the bore!

The cause is incorrect mounting. Marks on disc insert will usually bear this out.



C



DISC BECOMES OCTAGONAL AND STARTS BREAKING UP

The cause is when cutting discs (thinner than 4mm) are used for grinding at an angle. Discs which are thinner than 4mm (Shape 41 or Shape 42) are designed for VERTICAL CUTTING and NOT for angle grinding.



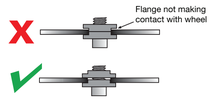
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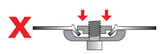
CENTRE OF DISC HAS BEEN RIPPED/ PUNCHED OUT

Some of the causes are:

1. Incorrect disc mounting where two flanges of equal diameter are used but the locating area is too deep. Disc slippage between the flanges damages the fiberglass reinforcement.



2. The disc is "twisted" in the cut.
3. The disc is "jammed" in the cut. The torque of the machine will twist the machine and break out the center of the disc.
4. The machine is fitted with a Standard Depressed Centre Angle Grinding disc mounting kit and being used with a straight (Shape 41) Cutting Disc.



E



DISC BREAKS IN HALF

This happens when the machine is dropped causing the fiberglass reinforcing to break. Make sure the machine has completely stopped before resting machine on workbench.

F



INSERT COMES AWAY FROM DISC

This is caused when the disc is forced onto the machine spindle. Do not force or alter the insert in any way. Replace with correct size disc bore. The outer flange should be tightened against the steel insert to prevent damage to both the flange and the discs fiberglass reinforcement.

G



EDGE OF DISC CLOGGING & BREAKING APART

This is caused when GRINDING or CUTTING discs are used on the incorrect materials. Check the disc for suitable material applications as indicated on the disc.

Grinding discs

A

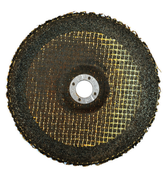


DISC "JUST BREAKS"

The cause is usually EXCESSIVE MACHINE OPERATING SPEED!

- **Air driven machines:** the air governors in pneumatic tools become stuck, break or are removed.
- **Electric machines:** the incorrect gears are replaced during repairs resulting in higher speeds.
- Guards of smaller diameter machines are removed and larger discs mounted.

B



ANGLE GRINDING DISCS ARE "OUT OF BALANCE" RUNNING OUT OR VIBRATING

The cause of the problem is dirt under the bottom flange, or the bottom flange being improperly located, causing the flange to be out of 90° to the spindle, or worn bearings all resulting in "Lateral run out". Uneven wear on the disc face will bear this out.

"Horizontal run out" occurs when the disc is not centrally located, due to the back flange locators being too shallow or worn.

C



CRACKS ON THE GRINDING SURFACE OF THE DISC

The cause is heat generation due to the angle of attack to the workpiece being too flat. The angle of attack should preferably be between 30° and 45°.



Safety Pictograms

- Observe the instructions
- Wear protective clothing
- Do not use damaged discs
- Off-hand and hand guided grinding not permitted
- Wear gloves
- Always use a guard
- Not permitted for wet grinding
- Not permitted for side grinding

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SAFETY RECOMMENDATIONS

- ALWAYS FOLLOW INSTRUCTIONS
- NEVER REMOVE GUARD
- POSITION GUARD CORRECTLY
- ENSURE CORRECT MOUNTING OF DISC
- REPLACE WORN BEARINGS & FLANGES
- REGULARLY CHECK THE SPEED OF GOVERNORS ON PNEUMATIC TOOLS
- SERVICE REGULARLY

DO always handle and store discs in a careful manner.
DO check the machine operating speed and make sure it does not exceed the speed marked on the disc, its blotter or packaging.
DO visually inspect all discs for cracks and other damage before mounting.
DO use mounting blotters when supplied with disc.
DO be sure the disc hole, threaded or unthreaded, fits machine arbor properly and that flanges are clean, flat and of the proper type for the disc you are mounting.
DO always use the safety guard that covers a minimum of one-half (1/2) of the abrasive disc.
DO allow newly mounted discs to run at operating speeds in a protected area for at least one minute before use.
DO always wear protective safety glasses or proper face shield.
DO always wear appropriate safety clothing such as a dust mask, gloves and ear protection.
DO always secure the workpiece firmly while it is being cut or ground. Ensure work rests are properly adjusted and secure.
DO always be sure the tool is disconnected from the power supply and switch is in "OFF" position before changing the disc.

DON'T use a cracked disc or one that has been dropped or has become damaged.
DON'T force a disc onto a machine or alter the size of the mounting hole. If the disc won't fit the machine, get one that will.
DON'T ever exceed the maximum operating speed recommended for the disc.
DON'T use mounting flanges on which the bearing surfaces are not clean, flat and free of burrs.
DON'T tighten the mounting nut excessively.
DON'T use any type of cutting disc for grinding.
DON'T use a disc on any machine that is not properly designed for the specific application of the disc.
DON'T start the machine until the disc guard is properly in place and secured.
DON'T stand directly in front of a grinding/cutting disc when a machine is in operation.
DON'T grind or cut material for which the disc was not designed.
DON'T start a machine with the disc touching the workpiece or any surface.
DON'T grind or cut directly on a concrete floor, shelves or pallets.
DON'T wear loose clothing, ties or jewelery.
DON'T apply excessive force or shock to the abrasive disc or let it overheat.