

How to Use an Abrasive Chop Saw

These types of power tools use abrasive, friction discs or wheels to cut through metal. This means the cut will not be as accurate, there will be swarf thrown around the site some of which is hot and may cause a fire risk and the cut pieces of steel will be very hot (i.e. too hot to handle immediately after cutting). The discs or wheels gradually wear down as you are using them, until they are too small to cut.

Steps to follow

1. Using the correct set up for different metal forms

Flat bar

When cutting flat bar, set it in the clamp vertical, i.e. cutting through the thin profile of the metal. It is hard for the cutting disc to clear the swarf, when it is cutting across the wider flat surface of the bar.

Angle bar

With angle steel, set it like it so that the right angle of the steel is pointing upwards so there is no flat to cut through.

2. Set the metal in the correct position for cutting.

To get a really accurate cut, mark the material with a fine pencil. Set it in position with the clamp nipped up lightly. If your mark is not fine enough or hard to see, you can put your tape measure on the end of the material and bring it under the disk. Lower the disk almost to the tape and sight down the face of the disk to the tape. Sight down the surface of the disk that is going to do the cut.



If the piece that you want is on the right of the disk, you should sight along the right side of the abrasive blade.

3. Secure the metal using the tool's vice.

For heavy material that is hard to move, nip the clamp lightly, adjust the metal to be cut by tapping the end of the material with a hammer until the cutting mark is accurately set.



3. **Setting up**

Many times with an abrasive chop saw, you will have to work with the saw on the ground. This is one advantage of this power tool – being able to be taken to work sites outside of workshops.

If working on the ground put something flat and solid under the saw and then use packing materials (e.g. lengths of timber) to support the metal lengths being cut.



Check the setup. Use a square to test that the face of the abrasive disc is square off the steel just in case the ground is sloping or the packing materials are wrong. Don't worry if the packing material to the right of the saw is a bit low. This will allow the cut to open slightly as the abrasive disc cuts through the metal. Never set up the packing material, or a work bench that allows the metal to sag in the middle; this could cause the chop saw to bind, then jam and even perhaps the abrasive disc to shatter.

4. **Click trigger on handle and with slight pressure lower the cutting disc onto the metal.**

Warning: If you are putting too much pressure on the cutting disc you will see dust coming off the blade. Ease off the pressure - you are wasting the blade and could jam the disc during cutting. What you should see is plenty of bright sparks coming out the back. The machine should not make much more noise while cutting that it would when first started at free idle speed.



5. **Beware of your work environment**

Be aware of the damage the sparks can make. These may range from spot fires on a work site through to discoloured concrete and wall damage. Take the necessary precautions such as a setting up in safe areas, having a fire extinguisher close by or using other materials such as ply to protection floor and wall surfaces.



6. **Safety Warning**

Always take note of the warnings on the abrasive discs. These power tools are generally 'slow speed' machines (4200 rpm). Do not put a worn down abrasive disc from one of these saws in a disk grinder that revs at 6600 rpm. It will probably shatter!

Use PPE. Protective goggles or a face visor, stout shoes or boots, ear protection, sensible clothes and gloves to handle the hot, cut metal.



7. **Maintenance**

After an abrasive chop saw has been in use for some time, metal and disk residue builds up on the inside of the steel guard and on the working surfaces of the tool. You can see it when you are changing the disc.



It is especially important to remove this from the guard area as you do not want to risk it flying off at speed when cutting.

Having the working surfaces covered with residue means that your measurements may not be accurate as the metal will not lie flat.

To remove the residue, give the outside of the guard a hit with a hammer to dislodge the build-up or remove with a scrapper.