



A step-by-step guide
to choosing your sheet, plate,
hollow section, flat bar, deburring,
graining and finishing system



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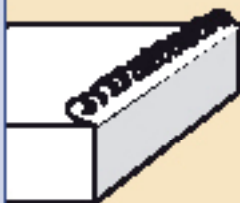


What Edge? What Size? What Finish?

A short guide to
sheet metal
deburring equipment




What Edge?



1. Removing dross from flame cutting

Manual dross removal is a dirty and noisy job with some Health and Safety implications. The following machines considerably improve working conditions.



Before After



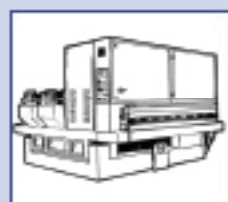
Model SBM-GS
Dross removal with belt belts. Top and bottom simultaneously. The belt belt acts like dozens of chipping hammers but fully automatic. With throughfeed conveyor.



SBM-GS diagram.
Four belts on top side and four belts for bottom side.



Semi automatic dross removal machine suitable for small batches.



Dross removal with special design wide belt machines. Should have at least two heads or combination of belt heads and brush heads.



Diagram of wide belt deburring machine.



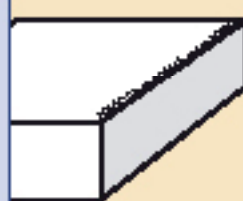
Manual de-slugging with special design belt grinder.



Friction Deburring
Rotating drum de-slugging machine. 600kg capacity. 20 min cycle time. Will process mixed parts of all sizes.

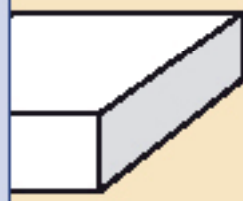


Inside the friction deburring machine.



2. Removing burrs from laser cutting, guillotining, sawing and punching

With modern cutting equipment burrs are relatively light but still have to be removed for safety and technical reasons. Automatic deburring machines are available to produce a variety of edge configurations.



3. Burr removed but corners still sharp

Single head wide belt machines have been the most widely used method to remove burrs from sheet metal and plate over the last 25 years. They do, however, leave sharp edges and cannot produce the rounded edges demanded today.



Wide belt deburring machine with one head.



Diagram of wide belt deburring machine with one head.

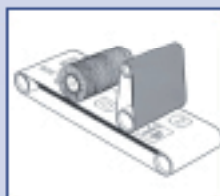


Diagram of a wide belt deburring machine with an abrasive belt head and one or two brush heads. Will produce better edge finish but still not the same rounded corners as dedicated machines.



Narrow belt, single head deburring machine.

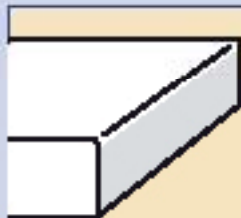


Narrow belt machines are available with up to three heads.



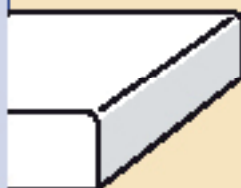
For the occasional sheet deburring, consider using a portable abrasive power tool with a special cranked arm.





4. Burrs removed, leaving rounded edges

Rounded edges are the preferred choice of sheet metal product producers and more and more are now demanding such edges from their subcontractors.



5. Burrs removed, leaving radiused edges

The small radius edges are slightly more rounded than the rounded edges. This can only be achieved with abrasive planetary discs or rotary brushes combined with a planetary drive. The number of heads determines the amount of rounding or radiusing.



Model SBM-S
Special deburring machine with four counter rotating brush belts. With two cross belts for the top side and two cross belts for the bottom side.



Diagram of the four counter rotating brush belts in Model SBM-S.



A typical disc brush as used on models DiscMaster, CrossMaster and Swing Grinder.



Model DiscMaster 4TD
Abrasive disc deburrer. For one sided deburring only.

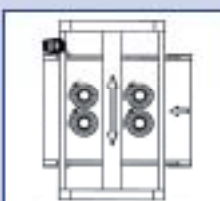
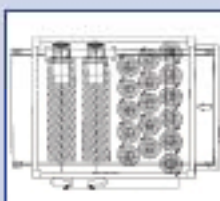
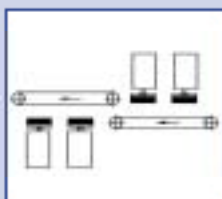


Diagram of disc deburrer. Two pairs of disc brushes move across the width of the sheet. 1000mm or 1500mm wide.



The ultimate deburring machine. Three rows of planetary brushes and two rotary brushes.



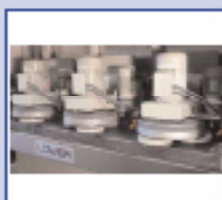
Model CrossMaster
1, 2 or 3 disc brushes on top, 1, 2 or 3 disc brushes on bottom. Brushes are fixed. 200mm working width only.



Model Swing Grinder
Semi automatic deburring machine. Removes burrs and round corners. Ideal for small batch work.



Diagram of a planetary brush head with eight rotary abrasive brushes.



Multi-head planetary drive disc brush deburring machine.



DiscMaster P, with two rows of planetary brushes.

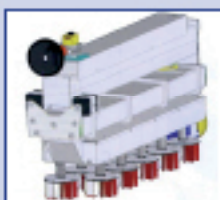
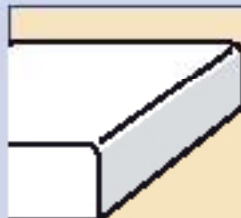


Diagram of a planetary brush head with two banks of abrasive disc brushes.



6. Half radius edges with 2 - 5mm radius

To produce a 2 - 5mm radius requires a machine with radius milling cutters or a dedicated machine with oscillating abrasive belt heads. Milled radii are not as smooth as belt ground radii.



A portable radiusing machine with milling cutters to produce 2mm to 5mm radius.



An extra heavy duty portable machine with milling cutters to produce radii from 2mm to 5mm.



Deburring and radiusing machine with oscillating belt heads. For long parts.



7. Full radius edges

Full radii can only be produced with portable or stationary machines using radius milling corners. For long parts it is possible to use special machines with oscillating abrasive belt heads. Milled radii are not as smooth as belt ground radii.



Fully automated machine for chamfering and radiusing of long parts.



Typical parts for edge chamfering and radiusing using machine on left.



An extra heavy duty portable radiusing machine with radius milling cutters.



Extra heavy duty pedestal chamfering / bevelling machine.



Special design abrasive belt head with oscillating contact rollers for producing a radius.

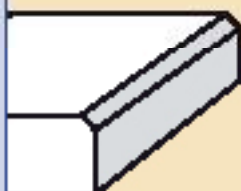
The Surtech method of describing Bevel sizes and Bevel angles

Please adhere to these descriptions to avoid confusion and mistakes.



1. Material thickness
2. Land
3. Bevel height

4. Bevel width
5. Bevel angle



8. Chamfered or bevelled edges

Edges can be chamfered or bevelled with a wide range of portable, bench or pedestal machines, all using milling cutters. For high production, full automation and very hard metals we can offer dedicated abrasive belt machines. Milled chamfers are not as smooth as belt ground chamfers.



Extra heavy duty self propelling chamfering machine. With milling cutters. Max bevel 20mm.



Bench model chamfering machine. With milling cutters. Max bevel 7mm.



Portable chamfering machine. With milling cutters. Max bevel 12mm.



Pedestal chamfering machine. With milling cutters. Max bevel 20mm.



Abrasive belt chamfering / bevelling machine. Max bevel 40mm.

This is only a small selection from our range of bevelling machines. Once we know your requirements, we can offer the best suitable model.



9. Oxide removal from edges

If you cut mild steel using oxygen, you will often have to remove the black oxide film left by this method. Most users of plate now insist that their subcontractors supply oxide free edges. Our dedicated machines are used by leading Companies.

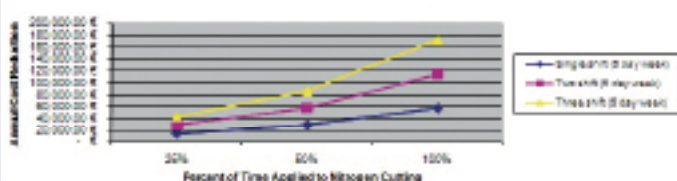


Model SBM-8 Dedicated wire brush belt machine. For removing oxide film from edges.



Special wire brush belt used in the oxide removal machine on the left.

Cost Reduction Oxygen Assist Gas versus Nitrogen



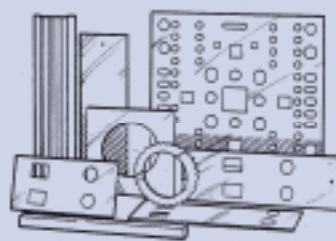
Cutting with oxygen gas can be considerably cheaper than cutting with nitrogen gas, even if afterwards the blackened edges have to be cleaned with our Model SBM-8.

Ask for a copy of our Cost Comparison.

What Size?

What is the shortest part size a machine can handle?

Part sizes are an important factor in the choice of machine. Small parts are often the most labour intensive to deburr but unfortunately manufacturers do not state the smallest parts that can be processed and when they do the figure is often not a true one or one that is only achievable with jigs, vacuum or magnets and not really suitable for industrial production.



Some rules of thumb governing the minimum sizes of parts that can be processed:

Narrow and Wide Belt Throughfeed Machines

Shortest part size 180 - 280mm without jigs, vacuum or magnets. Approx 30mm with jigs, vacuum or magnets.



Wide belt machine.

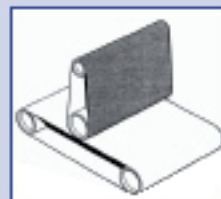


Diagram of a wide belt machine.



Narrow belt machine.



Diagram of a narrow belt machine.

With narrow belt or wide belt machines it is the distance between the centre of the hold down roller before the contact wheel and the centre of the hold down roller after the contact wheel.

We consider narrow belt machines as having 160mm, 200mm or 300mm wide belts and wide belt machines as having 600mm, 900mm, 1100mm, 1300mm and 1500mm wide belts.



Narrow belt throughfeed machine showing contact wheel and two hold down rollers.

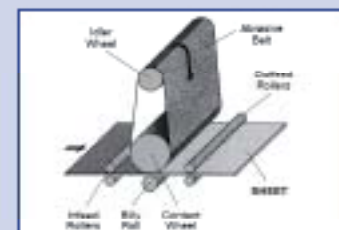


Diagram of a wide belt throughfeed machine showing contact wheel and two hold down rollers, in this case called infeed and outfeed rollers.

Depending on the machine and the diameter of the contact wheel, the shortest parts that can be processed is from 180mm to 280mm. In some cases shorter parts will work with a special grade conveyor belt, low contact pressure and a clean environment. Dust on the conveyor belt will reduce friction and parts will not be held safely.

If you want to process parts that are shorter than the distance between the two hold down rollers you will need a jig, magnet or vacuum, but not all machines offer the optional magnet or vacuum.

Narrow belt machines with a magnet can handle parts as short as 30mm. Wide belt machines normally do not have an optional

vacuum table over their entire width but only one narrow strip on the side.

With both narrow and wide belt machines the width is no problem. The max. parts width should always be approx. 10mm narrower than the abrasive belt width. Length is virtually infinite.

Cross Belt Machines

Shortest part size approx. 160mm

With cross belt machines, the abrasive belts run crosswise to the conveyor, across the width of the part. There are cross belt machines which only deburr one side and machines which deburr top and bottom side of parts in one pass.



A single sided cross belt deburring machine.



A top and bottom deburring machine.



Diagram of a top and bottom cross belt machine.

Disc Machines

Inline Disc Machines

Shortest part size approx. 50mm

Some of the deburring discs used on both the in-line machines and machines with planetary disc drives:



Disc used for rounding corners on thin sheet metal.



Disc used for rounding corners of sheet and plate with min. thickness of 5mm.



Disc used for removing surface contamination, oxide, scale, coatings, etc.

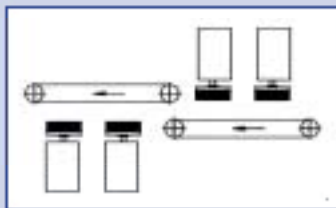


Diagram of Model CrossMaster with between one and three top and bottom disc brushes.

Cross Disc Machines with Reciprocating Discs

Shortest part size 20 x 20mm.

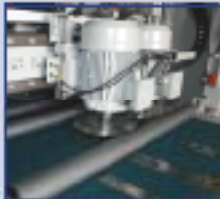
Widest parts as per max. working width of ????. Longest part virtually infinite.



Model DiscMaster 4TD.



Diagram of DiscMaster with four disc brushes.



Showing the two disc heads running across the conveyor direction.

Planetary Rotary Brush Machines

Shortest part size approx. 50mm

With planetary rotary brush machines, each brush rotates in a vertical position to the conveyor and all brushes rotate together in a horizontal position.

This is the most effective way of deburring sheet with the most rounded corners.



Diagram of planetary drive rotary brush machine.



The type of abrasive rotary brush used in planetary rotary brush machines. Consists of slashed abrasive cloth.

Long Belt Deburring Machines

Shortest part size approx. 30mm against stop

When parts are laid against a stop or jigged sizes as small as 50mm x 20mm can be processed. Part length depends on the table size of the machine. Up to 4000mm is standard, over 4000mm to order only. Max. width is between 700mm and 1000mm.



A single and a twin belt machine. With standard belt run and with triangular belt run.



Diagram of a standard long belt machine with drive and idler wheel and with contact wheel or platen.

Swing Grinder Deburring Machines

Shortest part size approx. 50mm x 50mm



Model Swing Grinder. Manually operated deburring machine.



The Swing Grinder uses the same disc deburring tools as the other disc machines.

Heavy Plate and Beam Edge Preparation Machines

For extra long parts only.

Shortest part: approx. 1 metre. Longest part: No limit

These machines are for the steel construction industry, bridge builders and ship builders. Heavy, long plates.



Parts can be radiused, chamfered or bevelled.

Friction Deburring Machines

Shortest part size approx. 20mm

Friction Deburring machines are most effective on flame cut blanks with scale and dross..



Diagram of the hexagonal drum of a friction deburrer.



Rotating drum de-slagging machine. 600kg capacity. 20 min cycle time. Will process mixed parts of all sizes.

Marbling Machines

Shortest part size 500mm.

Minimum 150mm long. With jigs, magnets or vacuum. Maximum width 1500mm.



Model



Close up of the marbling head.



Gritty says . . .

Machines with abrasive brush belts and/or abrasive disc brushes are replacing traditional wide belt machines for deburring because most Companies now demand round corners.

What Finish?

Grained Finish

Achieved with abrasive belts between grit 80 and 240.

A grained finish has a straight in-line scratch pattern, more or less pronounced by the abrasive belt grit size used.

The 'colour' of the grained finish is determined by the abrasive belt grade used: aluminium oxide, ceramic or silicon carbide.

Professional wide belt graining machines have a billy roll which standard wide belt machines do not have.

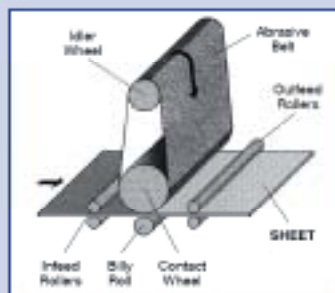


Diagram of a 'billy' roll graining machine.



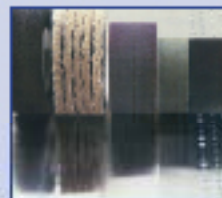
Brushed Finish

Achieved with abrasive cloth brushes.

The brushed finish is similar to the grained finish but the scratch pattern is not straight in-line but at random and finer.



Model FBR. Reciprocating table brushing machine.



Some of the brushes used for a brushed finish.



Model LS90 Buffer.

Swirl Finish

Left by planetary abrasive discs.

Planetary abrasive discs and brushes are excellent tools for deburring, because they reach all edges on holes and cut outs. However, they leave a swirl finish and not an in-line grained finish.



Model DiscMaster 4TD Abrasive disc deburrer. For one sided deburring only.



Two examples of planetary disc heads with multiple brushes.



Mirror Finish

We refer to a mirror finish when the surface is blemish free and reflective.

A full 'No.8' mirror finish can only be produced with dedicated machines and is expensive.

Often, a 'commercial' mirror finish is acceptable. It can be produced with cheaper machines and in a shorter time.

With structured abrasive belts, extremely fine finishes can be achieved but reflectivity is low and a buffing operation must follow.



Model RON. Top class mirror polishing machine, either with reciprocating table or head.



Model FBRL. Budget mirror polishing machine with reciprocating table.



Manual mirror polishing machine.

Deburring of sheet covered with protective tape

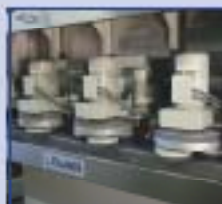
Several of our machines will deburr without damaging the tape as long as the tape is of good quality.



Model SBM-S is the best machine for deburring sheet covered with protective tape or for plated sheet.

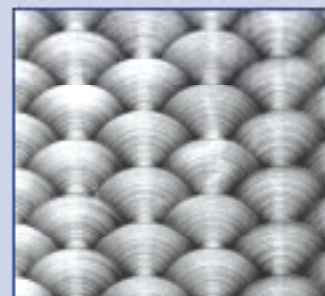


Planetary disc machines will also not damage the tape.



Marble Finish

Produced with special design dedicated marbling machine and abrasive discs.

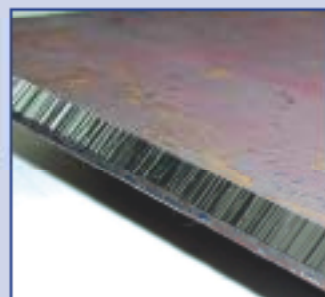


Model Combi III. For automatic marbling and application of protective tape.

Uneven Bevel Finish

Produced with bevelling machine with vertically arranged milling cutters.

These machines will leave a finish with chatter marks.



Model SKE. Portable bevelling machine.



Model 650. Bench chamfering machine with milling cutters.



Model CHP12. Self propelling bevelling machine with rotary shear cutter.

Smooth Bevel Finish

Smooth bevels can only be produced with bevelling machines with abrasive discs or horizontal milling cutters.



Model ASD 850 Bench chamfering machine with grinding wheel or special horizontal cutter.



Model KMJ Abrasive belt edge bevelling machine.



Model AC43 Bench chamfering machine with abrasive disc.

Features common to all models:

- 1000mm or 1500mm max. working width
- Throughfeed rubber conveyor belt
- Insulation class IP42
- Individually adjustable heads
- Feed speed: 0-4m/min
- Motorised thickness setting

Over 300
machines
sold
worldwide



Model Series SBM-M

With four belts. Two at the top, two at the bottom.



Model Series SBM-L

With six belts. Three at the top, three at the bottom.



Model Series SBM-XL

With eight belts. Four at the top, four at the bottom.

Model Range SBM Sheet and Plate Deburring Machines

Deburring, edge rounding, de-slagging and oxide removal on both sides in a single pass.
Up to 60% time savings.

SBM-M series machines are available in the following configurations:

Model **SBM-M S2** with 4 abrasive flap belts for deburring, blending and edge rounding

Model **SBM-M B2** with 4 wire brushing belts for oxide removal

Model series **SBM-M** with 4 belts. Two at the top, two at the bottom.

Model **SBM-M D2** with 4 power pin belts for slag removal.



SBM-L series machines are available in the following configurations:

Model **SBM-L G1S2** with 2 abrasive cloth belts for removing heavy upstanding burrs and 4 abrasive flap belts for deburring, blending and rounding of all edges.

Model series **SBM-L** with six belts. Three at the top and three at the bottom.



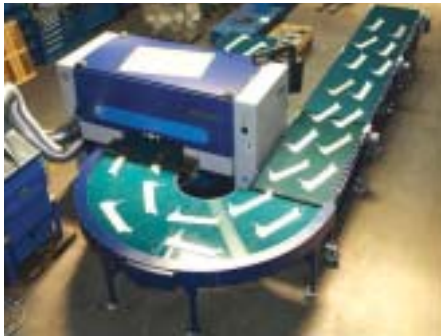
SBM-XL series machines are designed for plasma or oxy fuel cut parts up to 120 mm thick and are available in the following configurations:

Model **SBM-XL G2S2** with 4 abrasive cloth belts for removing heavy upstanding burrs and 4 abrasive flap belts for deburring, blending and rounding of all edges.

Model series **SBM-XL** with 8 belts. Four at the top and 4 at the bottom.

Model **SBM-XL S2B2** with 4 abrasive flap belts for blending and rounding all edges and 4 wire brush belts for oxide removal.





All machines are available with standard or individually designed handling systems.



View inside a machine, clearly showing the top and bottom belt heads and access doors for simple and fast belt changes and general maintenance.



View of the inside of one of the belt heads, in this case the wire belt.

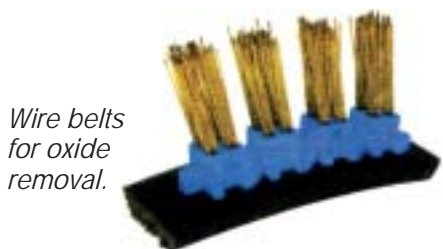
The Tools



Abrasive flap belts for deburring, blending and rounding of all edges. Available in aluminium oxide or silicon carbide.



Abrasive cloth belts for removing heavy burrs. Available in aluminium oxide or silicon carbide.



Wire belts for oxide removal.

Power pin belts for de-slagging



Short Parts ?

SBM machines like most throughfeed machines have limits on the lengths of parts they can handle. In the case of SBM models it is around 160mm.

For shorter parts you have 3 choices:

1. Leave parts tagged
2. Place parts in a simple jig (You will lose the ability to deburr both sides in one pass)
3. Buy a manually operated Swing Grinder.



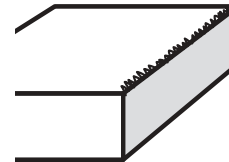
Swing grinder with 2 deburring heads. 1400 x 800mm table. Variable speed. Can handle parts as small as 50 x 50mm.



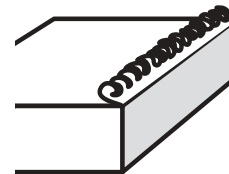
The swing grinder uses brushes to deburr and round edges.

The Edges

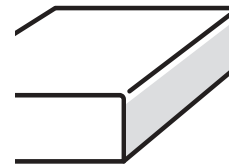
The positive effects of rounded edges and oxide free surfaces
Removing oxide and rounding edges increases the adherence of liquid paint and powder coat and significantly reduces the risk of corrosion. Salt spray tests have shown dramatically improved results compared with untreated parts.



Punched and laser cut with burrs



Plasma and oxy fuel cut with slag



Edges deburred and rounded

Dust Extractors

We can offer approved dust extractors for all applications. UK or Continental made models. Dry or wet. For non-hazardous and hazardous dusts.



WIDE BELT GRINDING, DEBURRING, GRAINING AND FINISHING MACHINES WITH 600mm TO 1600mm WORKING WIDTH CAPACITY

INTRODUCTION

We classify throughfeed machines with a width capacity between 600mm and 1600mm as wide belt and machines with a width capacity between 150mm and 300mm as narrow belt.

WHAT TYPE OF MACHINE ?

There are 5 basic wide belt machine designs, each with numerous optional extras:

- 1. Dry Operation machines with rise and fall conveyor tables and fixed heads.**
To adjust for part thickness the conveyor table moves up and down. This is the standard design for wide belt machines. Machines with rise and fall conveyors are cheaper than machines with rise and fall heads. Machines with rise and fall conveyors can only accept parts weighing a max. of 500 kg.
- 2. Dry Operation machines with rise and fall heads and fixed conveyor tables**
To adjust for part thickness the heads move up and down. The conveyor stays at a fixed height. This is the design to choose for machines that work in-line with other machines. No need to adjust the height of conveyors. Machines with rise and fall heads are more expensive than machines with rise and fall conveyor. Machines with rise and fall heads and fixed conveyor can accept parts weighing up to 2000 kg. Surtech offer only machines with rise and fall tables.

WHAT WIDTH ?

The cost of a 600mm wide machine is only marginally lower than the cost for a 900mm or even 1100mm wide machine. 900mm wide and 1100mm wide machines are more versatile, more effective and more economical to run. They are the preferred sizes since 2005.

Sheets can be fed through the wider machine straight or at an angle. Feeding straight will eventually wear lines in the abrasive belt and lead to a "tramline finish". Feeding at an angle will wear the belt evenly over its width. Belt life will be greatly extended and finishes improved.

1100mm wide machines are now the preferred European size. They allow standard 1000mm sheet to be processed.

HOW MANY HEADS ?

Single head machines

Machines with a single abrasive belt head can only remove upstanding burrs.

They leave a relatively sharp edge. When equipped with a hard contact wheel edges are square, when equipped with a soft contact wheel edges are slightly dubbed.

Twin head machines

Machines with an abrasive belt head and a brush head remove upstanding burrs and blend edges.

Depending on brush rotation, either leading or trailing edges are finished better. Two head machines produce edges considerably less sharp than single head machines.

Three head machines

Machines with an abrasive belt head and two brush heads, counter rotating, remove upstanding burrs and blend all edges.

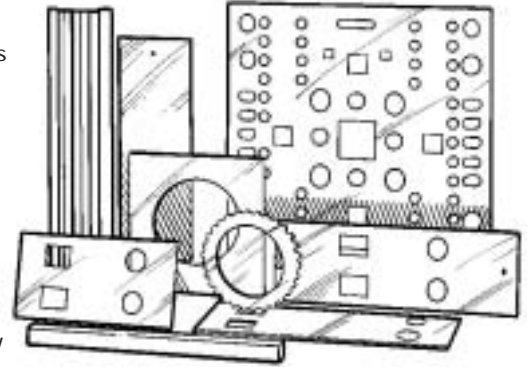
Machines with three heads produce the best results with all edges deburred to a uniform standard. However, even machines with one belt head and two brushes cannot round corners. For that you need dedicated machines described in a separate catalogue.



WIDE BELT DEBURRING AND GRAINING IN ONE OPERATION

Deburring and graining are two distinctly different operations.

Standard wide belt deburring machines can deburr and grain, however, the graining results are not as good as those from a dedicated graining machine used by stockholders and mills.



Dedicated graining machines have billy rolls instead of the rubber conveyor on standard wide belt machines.

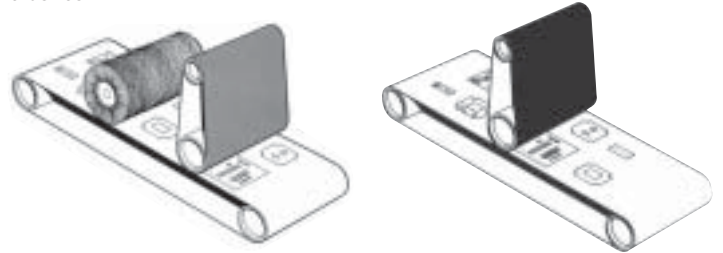
Dedicated graining machines are used for graining only. The abrasive belt is kept in perfect condition and is not damaged by burrs or uneven wear.

WIDE BELT DEBURRING ONLY

A single abrasive belt head machine can remove upstanding burrs and if equipped with a soft contact wheel it can also dub edges. It does, however, leave edges relatively sharp.

If sharp edges are not acceptable then a brush head has to be added to the belt head.

A single brush head will blend either the leading or trailing edges better than other edges, depending on the direction in which the brush runs. To blend all edges evenly it is necessary to have two counter rotating brushes.



Wide belt machines do not round corners. See corner rounding machines described on page ??.

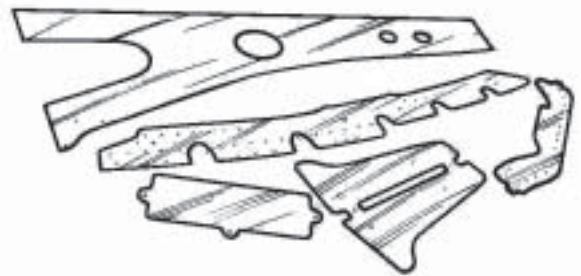
WIDE BELT DEBURRING OF ALUMINIUM SHEET

Aluminium is considered a hazardous material. Aluminium dust can cause fires and explosions.

Any grinding, deburring or polishing operation involving aluminium requires special specification dust extraction equipment.

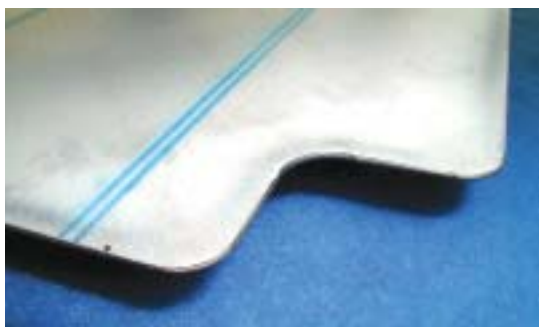
Ideally aluminium should be finished under a flow of coolant.

If that is not possible then a wet dust extractor suitable for aluminium dust must be installed.



Gritty says . . .

Regrettably, Surtech cannot offer a billy roll graining machine at present.



Edge deburring without removal of protective tape.

WIDE BELT DEBURRING OF ZINC PLATED AND ALUMINIUM CLAD SHEET

SHEET COVERED WITH PROTECTIVE TAPE

This operation, particularly if carried out dry, requires an extremely sturdy machine with perfectly balanced contact wheels and idler wheels.

Most wide belt machines are not designed to such high standards and they will therefore struggle to achieve the desired results in a production environment.

Deburring plated, clad and coated sheet is easier with dedicated machine as described on page ??.

OPTIONAL EXTRAS FOR WIDE BELT MACHINES

- Vacuum conveyor tables
- Magnetic conveyor tables
- Extended conveyor tables
- Return conveyor tables
- Floating conveyor tables
- Floating heads
- Dust extractors and ducting
- Machines for wet operation
- Bottom abrasive belt and brush units.

WIDE BELT DEBURRING OF THERMAL CUT BLANKS

Thermal cut blanks covers flame cut, plasma cut and laser cut blanks.

The choice of machine depends on the size of the burr and the quality of finish required.

Generally flame cut blanks have the heaviest and laser cut blanks the lightest burrs.

WHAT MAKES A THERMAL BLANKS DEBURRING MACHINE?

The machine specification depends on the amount of dross and scale that has to be removed.

Dross and burrs on plasma cut blanks are harder to remove. Due to the higher temperature involved they tend to be welded to the parent metal.

HEAVY BURRS

For heavy burrs it is necessary to have at least 2 abrasive belt heads. These two abrasive belt heads will remove all upstanding burrs and slightly deb the edges. They will, however, leave the edges relatively sharp.

If sharp edges are not acceptable the machine will have to be equipped with an additional one or two brushing heads.

Brushing heads blend trailing or leading edges more, depending on the rotation of the brush.

If all edges need to be blended to the same standard then two brushing heads are necessary, each equipped with oscillation.

LIGHT BURRS

For minor burrs single abrasive belt head machines are sufficient for removing upstanding burrs.

SHEET

Most flame, plasma or laser cut blanks can be deburred with standard machines provided they are equipped with the correct contact wheel



and the correct belt grade. If only the upstanding burr needs to be removed a single belt head is sufficient. If the upstanding burr has to be removed and all edges slightly blended a machine with a belt head and a brush head is necessary.

PLATE

Flame or plasma cut plate blanks usually have much heavier burrs than sheet blanks. They therefore need specially designed machines, called slag grinders.

These machines are of extra heavy duty construction, have motors of between 30 and 75 HP and up to 2 abrasive belt heads and 2 wire brush heads.

HOW MANY HEADS ?

A single abrasive belt head machine will remove small amounts of upstanding burrs, but will leave sharp edges.

A machine with a belt head and a brush head will remove small amounts of burrs and blend edges.

A machine with 2 abrasive belt heads will remove large burrs but leave sharp edges.

A machine with 2 abrasive belt heads and one brush head will remove large amounts of burrs and blend edges, depending on the rotation of the brush either leading or trailing edges.

A machine with 2 abrasive belt heads and 2 counter rotating brush heads removes all burrs and blends all edges evenly. As a rule of thumb a single abrasive belt head can remove 1 - 2mm of upstanding burr.

There is no magic about this. No make of wide belt machine can perform significantly better with a lesser specification.

FOR FRICTION DE-SLAGGING MACHINES SEE PAGE ??



Gritty says . . .

Some standard wide belt machines are suitable for deburring thermal cut blanks.

MODEL G11 fixed head. See page 3.

For light burrs. Available with rise and fall table only, not with floating table

Max. carrying capacity of table 500 kg.

Contact wheel diameter	200mm
Brush diameter	200mm
Working widths	1100mm and 1300mm

MODEL G13 fixed table. See page 3.

For medium to heavy burrs. With floating table.

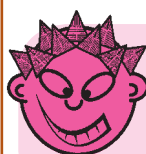
Contact wheel diameter	250mm
Brush diameter	250mm
Working widths	1100mm and 1300mm

MODEL G16 fixed table. See page 3.

For medium to heavy burrs.

With rise and fall heads and fixed table

Constant working height	
Contact wheel diameter	250mm
Brush diameter	250mm
Max. carrying capacity of table	2000 kg
Working widths	1100mm and 1300mm



Gritty says . . .

If you process a lot of thermal cut blanks, you should install a dedicated deburring / deslagging machine as described in a separate catalogue. Please ask for a copy.



Wide Belt Machines

For Deburring, Graining & Finishing



Model M6R

Model M6R

Single Belt.
600mm working width
7.5 kW Motor
Belt size 635 x 1525mm



Model M6RR

Model M6RR

Twin Belt.
600mm working width
2 x 7.5 kW Motor
Belt size 635 x 1525mm



Model M9RR

Model M9RR

Twin Belt. width.
900mm working width
2 x 10 kW Motor
Belt size 940 x 1525mm



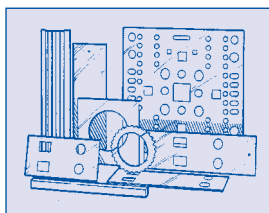
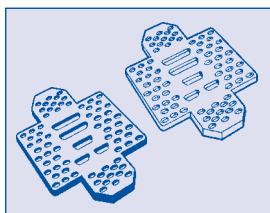
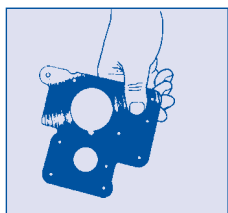
Machine front with operator's panel



Manual thickness setting



Simple and tidy Electrical Control Cabinet



Suitable for punched, laser cut, guillotined sheet metal parts. Also for many other parts with flat surfaces, like hollow sections and bars. Most materials, steel, stainless steel, aluminium, brass, copper, etc. Laminates, composites, etc.



Aluminium Oxide Belts for general grinding and Deburring. Zirconia Belts for stainless steel. Silicon Carbide Belts for finishing. Nylon Belts for cleaning and satinizing.

Model Range G Wide Belt Grinding, Deburring, Graining & Finishing Machines

The Machines

- 600mm, 1100mm, 1300mm and 1600mm working width
- Single, twin or three abrasive heads
- Single or twin planetary brushes



Model G 6
600mm wide



Model G 11
1100mm wide



Model G 13
1300mm wide



Model G 16
1650mm wide

The Features



Automatic thickness setting



Automatic conveyor
belt tracking

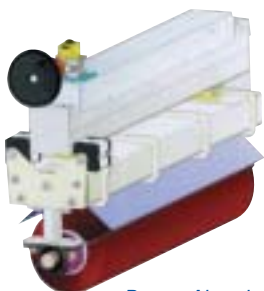


Operator Panel



Abrasive
Belt Head

Available with a
combination of up
to three belt heads,
up to two rotary
brush heads and
up to one planetary
brush head.

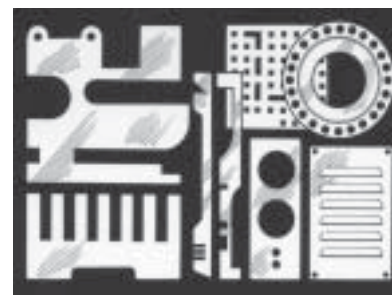


Rotary Abrasive or
Wire Brush Head

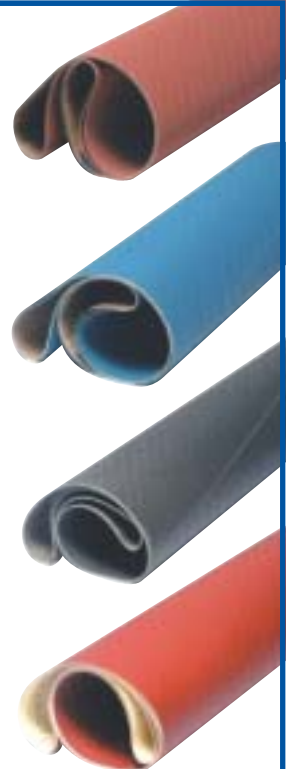


Planetary
Brush Head

The Applications



Deburring of thermal cut blanks and
punched sheet metal parts. Graining of
stainless steel.



Aluminium Oxide,
Zirconia, Ceramic and
Non-woven Belts, Rotary
and Planetary Brushes

CONSUMABLES FOR WIDE BELT MACHINES



ALUMINIUM OXIDE WIDE BELTS

For general purpose grinding, deburring and finishing of all metals.



ZIRCONIA WIDE BELTS

For grinding, deburring and finishing of stainless steel and most other metals.



SILICON CARBIDE WIDE BELTS

For finishing of stainless steel and most other metals. Produces a brighter finish than other belts.



ABRASIVE IMPREGNATED NON-WOVEN WIDE BELTS

For satin finishing of all metals.

We can offer speciality belts for most finishes:

Compact grain belts
Structured abrasive belts
Diamond belts

Please ask for details.



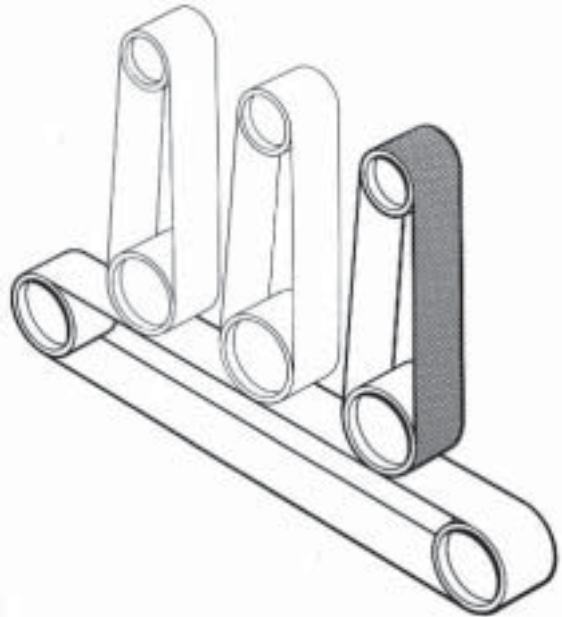
ABRASIVE BRUSHES

The most commonly used brushes on wide belt machines are:

1. **Wire brushes**
Standard steel
Stainless steel
2. **Non woven brushes**
Coarse
Medium
Fine
3. **Abrasive cloth strip brushes**
In a range of grits

GRINDING, DEBURRING, GRAINING AND FINISHING MACHINES WITH 150mm TO 300mm WORKING WIDTH CAPACITY

With Narrow Belt Throughfeed machines



INTRODUCTION

We classify machines with working widths of 150mm, 200mm, 300mm as narrow belt throughfeed machines and machines with working widths of 600mm, 900mm, 1100mm 1350mm and 1600mm as wide belt machines.

Each machine type and size is available in different configurations:

1. For deburring
2. For graining
3. For de-slagging
4. For polishing

Machines for grinding, finishing and polishing flat parts are usually made to order and to suit individual requirements.

There is a vast choice of features and options; No. of heads, type of heads, motor sizes, working widths, conveyor types, dry or wet operation, degree of automation, handling equipment, etc, etc.

We can advise you on the best machine specification for you.

Throughfeed machines consist of a continuous conveyor, abrasive belt drive motor and abrasive belt heads or brush heads.

With standard machines most settings are manual but optional motorised controls are available.

OPERATION

1. Set gap between contact wheel (abrasive belt) and conveyor.
2. Start conveyor and abrasive belt motor
3. Place part on conveyor
4. Part will move along the conveyor and underneath the belt/brush head to be finished. The abrasive belt grade determines the type of finish from rough ground to grained and fine finished.

HOLLOW SECTIONS - BAR

Hollow sections and bar are also rarely flat enough for standard throughfeed machines, but because they are usually no wider than 200mm they can be finished on special narrow belt throughfeed machines which are available with floating heads and adjustable constant contact pressure.

SMART GRINDER - WET - 150mm SMART GRINDER - WET - 300mm

Wet operation abrasive belt through-feed grinding, graining, deburring, finishing and polishing machines.

These are through-feed machines, equipped with all features that are necessary for trouble free operations, excellent finishes and suitable for industrial shift work.

The wet operation eliminates the need for a dust extractor (a saving of between £1500 and £2500) and allows you to mix metals, ie: steel, stainless, aluminium.

A coolant additive prevents corrosion longer than if parts were ground dry. Wet operation prolongs abrasive belt life and improves finishes.

The SMART GRINDER comes in 150mm max. working width and 300mm max. working width and either with one or up to 3 heads. Single head machines can easily be retrofitted with more heads.

SMART GRINDERS are the best equipped throughfeed grinding, deburring and finishing machines at the most competitive price.

The basic design of the Wide Belt machines is the same as for Narrow Belt machines. They are just wider and have a few more features.

Some 20 years ago, wide belt machines with a max. width capacity of 600mm were the most popular. Then the 600mm machines were replaced by 900mm machines. Today the standard size is 1100mm and 1300mm for machines for deburring and finishing punched parts and 1600mm for professional graining machines.

Other machine in this category are for polishing sheet and other flat parts, either with reciprocating tables or reciprocating heads. Polishing is not possible with throughfeed machines as it requires considerably more time than graining or deburring.



FEATURES	SG 150 K	SG 150 KK	SG 300 K	SG 300 KK
Max. working width	150mm	150mm	300mm	300mm
No. of abrasive belt heads. Each individually adjustable	1	2	1	2
Contact wheels interchangeable with brushes	yes	yes	yes	yes
Designed for retrofitting heads	yes	yes	yes	yes
Min/Max part thickness in mm	0,5 - 150	0,5 - 150	0,5 - 150	0,5 - 150
Abrasive belt size in mm	2000 x 150	2000 x 150	3000 x 300	3000 x 300
Motor. Voltage 400 V, 3 ph	4 KW	2 x 4KW	7.5 KW	2 x 7.5 KW
Ammeter for control of contact pressure	yes	yes	Yes	Yes
Variable conveyor speed from 1-10m/min	yes	yes	Yes	Yes
Coolant tray with 120mm diameter drain	yes	yes	Yes	Yes
Machine fully plumbed for coolant	yes	yes	yes	yes
No. of coolant nozzles	2	4	2	4

FEATURES (continued)

	SG 150 K	SG 150 KK	SG 300 K	SG 300 KK
Rubber contact wheel, serrated. Dia. in mm	150	150	150	150
Contact wheel hardness in shore	65	2 x 65	65	2 x 65
Knurled idler wheels for better belt tracking, both on abrasive belt head and conveyor table	yes	yes	yes	yes
Manual thickness setting via hand wheel and digital readout	yes	yes	yes	yes
Infeed safety bar with automatic conveyor stop	yes	yes	yes	yes
Spring loaded abrasive belt tensioning	yes	yes		
Pneumatic belt tensioning			yes	yes
2 off spring loaded hold down rollers on each abrasive belt head. To prevent parts being thrown out.	yes	yes	yes	yes
Coolant sediment tank with pump	yes	yes	yes	yes
Approx. length x width x height, in mm.				
Both models	1200 x 900 x 1900		1700 x 900 x 2400	
Approx. weight in kg	650	750	685	785

OPTIONAL EXTRAS

Coolant tank with paper filter. Filter roll can be wound by hand. (The standard coolant tank does not have a paper filter.)

Special conveyor belt with stop strips for short parts.

Pneumatic head float control. Necessary for parts that are not entirely flat, ie most hollow sections and bar.

CONSUMABLES

Standard abrasive belts for general grinding.

Ceramic abrasive belts for stainless steel.

Agglomerate belts for finishing

Superfinishing belts for satin finishing.

Engineered belts for fine finishing and polishing.

Abrasive impregnated nylon belts for satin finishing.

Abrasive brushes for improved deburring after grinding.

OTHER SMART GRINDER MACHINES

Model SG 150 KKB

With 150mm working width, 2 belt heads and 1 brush head.

Model SG 300 KKB

With 300mm working width, 2 belt heads and 1 brush head.

Model SG 150 KKK

With 150mm working width and 3 belt heads.

Model SG 300 KKK

With 300mm working width and 3 belt heads.

FST RANGE OF NARROW BELT THROUGHFEED MACHINES

Top of the range

- 150mm, 200mm or 300mm max. working width.
- 1 to 4 heads.
- For dry or wet operation.

If you need a machine with a max. working width of 150mm which you can run non stop on shift work for many years there is no better choice than an FTS model.

FTS machines are built to individual requirements. You will find below a vast choice of how to make up the machine that best suits your requirements.

In the appendix we have tried to explain the benefits of the many features and we hope it will help you to decide.

Our sales engineers are available to give further and more detailed advice.

FEATURES

BASIC SPECIFICATION

Abrasive belt drive motor: 4 KW. 2850 rpm
Built in ammeter on each head.

Abrasive belt size: 2500mm x 150mm

Abrasive belt tensioning: Manual, spring

Max. working width: 145mm for machines with 150mm wide belts
195mm for machines with 200mm wide belts
290mm for machines with 300mm wide belts

Max. opening: 150mm with 150mm dia. contact wheels
Conveyor feedspeed: 2 speed, 2,5 and 5 m/min

Thickness control: Manual. With digital readout
Constant working height.

The conveyor table is fixed, the abrasive belt head moves up and down.

Contact wheel size: 150mm dia. x 150mm, 200mm, 300mm wide

Other contact wheel diameters available, however, with smaller contact wheels the max. opening will increase and with larger contact wheel diameters the max. opening will decrease.

Contact wheel shore hardness: From approx. 25 shore super soft to approx. 95 shore very hard

Hold down rollers: Rubber covered. 1 each in front and behind each contact wheel.

Wet or dry operation: The standard model is designed for dry operation and needs a suitable dust extractor.

supplied pump, The optional wet operation model is with a coolant tank with paper filter, a hoses and all necessary fittings and controls.

OPTIONAL EXTRAS

Variable speed conveyor: 1 - 10 m/min

Wet system: With coolant tank, pump, tray, nozzles and all electrical and mechanical fittings

Coolant tank built into the base of the machine.

Upgrade from sediment tank to coolant tank with paper filter.

Magnet under each head: Demagnetising unit:

Extended conveyor table: Optional 500mm extension input.
Optional 500mm extension Output

200mm dia contact wheel.

Guard door interlock: 1 per head

2 speed belt motor 5,5 KW 4,5 KW, 1450 rpm/2900 rpm

Motorised vertical travel of heads, with individual Controls

Pneumatic belt tensioning.

Grinding pad instead of contact wheel. The pad produces a finish with long scratch patterns.



Model FST with single pad grinding head.



Brushing heads instead of abrasive belt heads. For brushes 120 - 200mm dia.

Model FST with 1 off brushing head and 1 off belt head.



Model FST with planetary deburring heads.

Planetary brushing heads. For precision deburring of punched or laser cut sheet

Consists of 3 off 200mm dia Cup brushes. For 300mm wide machine only.

Floating heads for parts with uneven surface, ie hollow sections and some bar and plate.



Model FST with one guard for all heads

LARGER MACHINES

- Optional 200mm wide belts. For max. 195mm working width. With 200mm wide conveyor. Other specifications as above.
- Optional 300 mm wide belts For max. 295 mm working width. With 300mm wide conveyor. Other specifications as above.
- Common guard for multihead machines, instead of individual guards for each head.
- Individual guards in stainless steel.
- Coolant tray in stainless steel.

Where possible all parts plated to delay corrosion.

APPENDIX

Detailed explanations of the above features

Size of belt drive motor

The standard single speed 4 KW is sufficient for deburring and finishing. Upgrading to the 2 speed 5.5 KW motor gives you a wider choice of finishes and a wider choice of settings for different materials and different sizes of burrs.

Ammeter

For us an ammeter is essential. It allows you to monitor contact pressure. Correct contact pressure keeps temperatures down and prolongs belt life.

Max. working width

Machines with 150mm, 200mm and 300mm wide belts cannot really finish parts of the same width. It is impossible to pass through parts that accurately and the abrasive belt always moves a few mm. Realistically the max. working width is about 5mm less than the abrasive belt width. You may be able to squeeze a few more mm out of the max. working width by using belts 160mm, 210mm, 310mm wide.

Conveyor feed speed

The 2 speed conveyor with 2,5 m/min or 5 min/m feed speed is acceptable for simple operations. You must carry out tests to determine if these 2 speeds will suit your work.

An infinitely variable feed speed gives you a much greater choice of finishes and will improve efficiency.

Contact wheel size

As a rule of thumb the larger the wheel the better and the more consistent the finish.

The smaller the contact wheel the more aggressive the cutting action but at the cost of the finish and the consistency.

Wet operation

Unless there are compelling technical reasons we always recommend wet operation. It keeps parts cool, improves finishes, prolongs belt life and does not need an extractor.

You can also grind materials that produce hot sparks and you can mix metals.

There is a general reluctance to go for wet operations. It is considered messy and parts are prone to corrosion.

That is not true. The heat created by the grinding operation will make the coolant evaporate if set to the correct level. Parts will come off moist rather than dripping wet.

The coolant must be mixed with a corrosion inhibitor which also contains some lubricants.

Parts thus ground will show signs of corrosion several days later than parts ground dry. Dry ground parts will absorb the moisture in the air and corrode quicker.

If you are using a multihead machine with more than 2 heads a wet system becomes essential.

A dry operation will produce enough heat after the third head to distort the part or to heat damage it. Your only choice would be to reduce the contact pressure and to increase the feed rate and that will seriously reduce efficiency.

Variable speed conveyor Wet system

Grinding pad

A grinding pad produces a finish with long scratch patterns. A contact wheel produces a finish with short scratch patterns. Unlike contact wheels a grinding pad will not deburr edges.

The construction of a grinding pad head is complicated and therefore expensive. It needs a drive roller, 2 idler rollers and the pad.

Planetary brushing heads

Planetary brushing heads are ideal for deburring punched and laser cut parts. They consist of 3 off cup brushes, 200 mm dia. Integrated into a planetary drive. This means that each of the 3 brushes rotates individually and the 3 brushes rotate together. As a result burrs are abraded in all directions

Floating heads

Throughfeed machines have a steel bed over which a rubber conveyor runs and an abrasive belt head which can be set to the thickness of the part. Whatever gap is set for the thickness is fairly rigid and will not allow more than a mm or two out of tolerance. This is too little for hollow sections, flat bars and plate. Most of these parts vary in thickness along their length but also in thickness along their width. A floating head will follow unevenness along the length by up to 5mm., (Carry out tests).

NARROW BELT MODEL STN 300

- Max. 300mm working width.
- Dry operation only.
- Available with up to 3 abrasive belt heads or brush heads or combination of belt and brush heads.

FOR DRY OPERATION

Max. working width: 290mm, with 300mm wide abrasive belt
300mm, with 310mm wide belt

Abrasive belt drive motor:

7.5 KW (10 HP).

The abrasive belt drive motor on Model STN 300 is independent, ie the motor is connected to the contact wheel via a V-belt.

This arrangement allows a more precise contact wheel performance and a change in the abrasive belt cutting speed without investing in the far more expensive inverter system.

Star delta motor controls

Standard equipment on STN machines. A soft start system for the abrasive belt motors. Essential for 7.5 KW motors. Reduces motor wear, prolongs motor life.

Most machines on the market have direct on line controls which are cheaper. Optional star delta controls typically cost £ 210.00

Conveyor drive motor: 0,55 KW (0.72 HP)

Variable conveyor belt speed included as standard on all STN machines.

Most other machines are offered with single speed or twin speed conveyors. This severely limits the machine's ability for stock removal and for types of finishes.

You may have to pass parts through the machine twice to achieve the same results as a properly set infinitely variable conveyor. Where variable speed conveyors are available as optional extras they cost around £ 1,500.00.

Voltage: 400 V, 3 phase, 50 Hz

Ammeter for contact pressure control:

Standard on Model STN 300

Optional extra on most other machines at a cost of approx. £125.00 per abrasive belt head.

Ammeters are essential for serious work. They tell you the contact pressure. The contact pressure has a great influence on the stock removal rate and the type of finish.

Setting the correct contact pressure also prolongs abrasive belt life and cools down the work piece.

Abrasive belt size: 1800mm long x 300mm wide.

Pneumatically controlled belt tracking and oscillation:

Standard on Model STN 300

The pneumatic belt tracking control makes tracking easier and the oscillation improves deburring. It makes the machine easier to use and gives you more settings. For straight line grinding the feed rate has to be speeded up to eliminate wavy lines from the belt oscillation or the oscillation can be switched off.



Mechanical spring operated tensioning has only one tensioning pressure. Pneumatic belt tensioning can be varied.

Where pneumatic belt tensioning is available as optional extra it costs typically around £400.00.

Contact wheel size: 150mm dia. x 300mm wide.

The contact wheel diameter is important for performance. A smaller contact wheel may be more aggressive but it also leaves a less even finish and is prone to leave chatter marks..

Conveyor table length: 1000mm.

Thickness setting:

Manual via hand wheel. The transport belt stays at a fixed height. The heads move up and down for the thickness settings.

Max. opening: 120mm.

Thickness readout:

Mechanical to 1/10 mm. Including in the price of the machine.

Other machines offer mechanical thickness readouts as optional extras. Costing typically around £320.00.

Extraction spigot: 140mm for each head.

Air supply: 6 bar.

Weight: approx. 650 kg for single head machine.

Dimensions for single head machine: 1200 x 900 x 1900mm.

These machines are designed for non stop industrial production and specified " fully loaded". Ammeter, variable conveyor speed, pneumatic belt tensioning, pneumatic belt tracking, etc.

BRUSH HEAD SPECIFICATION

4 KW drive motor

300mm working width

For brushes up to 170mm dia.

With separate electrical and mechanical controls.

MOTORISED THICKNESS SETTING

Only recommended if you regularly have to change from very thick to very thin material, or vice versa.

DUST EXTRACTION

SURTECH can advise and supply.

The choice very much depends on the materials that are ground or finished on the machine and the amount of dust that is created. There are non hazardous dusts and hazardous dusts.

Dust extraction systems have to comply with current Health and Safety Regulations.

CONTACT WHEELS

Model STN 300 can be fitted with contact wheels from 30 shore to 90 shore hardness, plain or serrated.



Model ST 300 K

Single abrasive belt head.

Model ST 300 KK

Twin abrasive belt head.

Model ST 300 KB

One belt head and one brush head.

Model ST 300 KBB

One abrasive belt head and two brush heads.

Model ST 300 KKB

Two abrasive belt heads and one brush head.

Model Range G3 Narrow Belt Throughfeed machines

- For graining, deburring & finishing
- Maximum 300mm working width
- Dry and wet operation



Dry operation Model G3

Available with 1 or 2 abrasive belt heads.
Optional rotary or planetary brush heads



Rotary Brush Head



Planetary
Brush Head

Serrated
Contact Wheel
of Abrasive
Belt Head



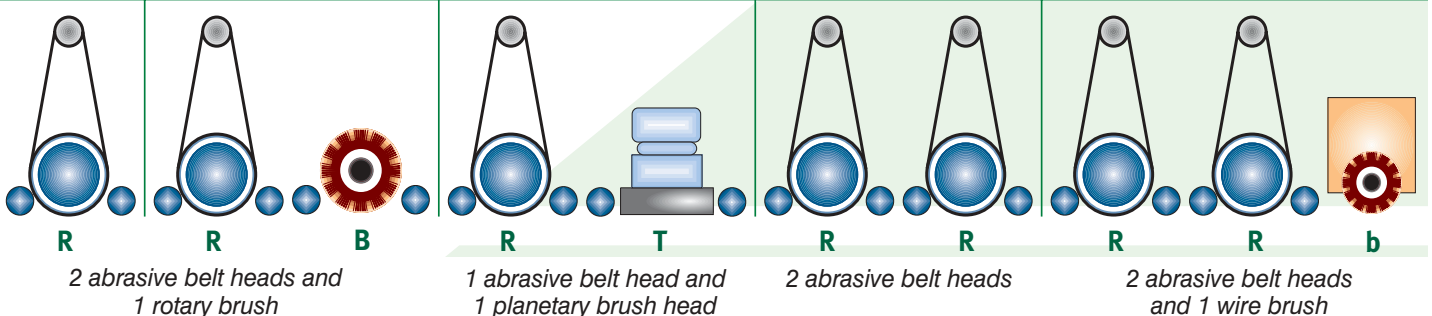
Wet operation Model G3

Available with 1 or 2 abrasive belt heads.
Optional rotary or planetary brush heads.

Technical Data

Max. working width	300mm
Abrasive belt head motor	4 kW
Brush head motor	3 kW
Abrasive belt size	1900 x 300mm
Min/max part thickness	0.8 - 160mm
Brush diameter	200mm
Contact wheel size	125mm OD
Motor brake	Yes
Feed speed	Variable

Some Configurations



EXTRA HEAVY DUTY FLATBED THROUGHFEED CONVEYOR GRINDING, DEBURRING AND FINISHING MACHINES

Model Range SP

Model SP single head

- With single abrasive belt head.
- For dry or wet operation

Working width: 300mm
Abrasive belt size: 300 x 3000mm
Contact wheel dia: 250mm
Min/max parts thickness: 2 - 100mm
Motor size on demand.

Model SPP single head

- With single abrasive belt head which can be converted to buff head
- Model SP single head fully enclosed
- For dry or wet operation

Working width: 300mm
Abrasive belt size: 300 x 3000mm
Buff dia: 250mm
Contact wheel dia: 250mm
Min/max parts thickness: 2 - 100mm
Motor size on demand.



Model SP single head, fully enclosed

Model SP multi head

- With up to 10 abrasive belt heads
- Wet operation
- With PLC controls
- SP multi head models are built to customers' requirements.
- With a long list of design features and optional extras.

Working width: 200 - 500mm
Abrasive belt size: 220 - 520 x 3000mm
Contact wheel dia: 250mm
Min/max parts thickness: 2 - 100mm
Motor size on demand.



Model SP single head without enclosure



Model SP multi head with 4 abrasive belt heads and PLC control

Model Range SPX

Our most advanced machine for heavy duty grinding and polishing of long flat surfaces, like flat bar and square hollow sections

Available in many configurations. For single sided, two sided or even four sided work in one pass.

- Multi head
- Wet operation
- Automatic loading and unloading
- Optional wrapping of finished parts

SPX machines are designed and built to individual requirements. With a long list of design features and optional extras.



A 4 head SPX machine with automatic loading and unloading

GRINDING, GRAINING AND FINISHING TOP AND BOTTOM OF HOLLOW SECTIONS AND FLAT BAR IN ONE PASS

Top and bottom finishing machines are based on the design of standard narrow belt throughfeed machines with upside down heads added.

The upper and lower heads are offset and a coolant supply is added to prevent overheating and distortion of parts.



GRINDING, GRAINING AND FINISHING FOUR SIDES OF HOLLOW SECTIONS AND FLAT BAR IN ONE PASS

The four sided finishing machines consist of two main units. One is equipped with a number of heads for top and bottom finishing, basically the same as the top and bottom machine described above.

The other unit houses a number of heads for finishing both side surfaces. In other words, the top and bottom heads are vertical, the side heads are horizontal.

Again, all heads are supplied with coolant to prevent overheating and distortion of parts.

Both the two sided and the four sided finishing machines described above are only used by companies with very high production rates. These companies will also want automatic loading and unloading.

We can provide dedicated handling equipment. It consists of a magazine, a loading table, a separation unit that lets only one part to enter, and a loading unit that lifts the part from the loading table on to the machine's conveyor. The unloading handling consists of a unit that lifts parts off the machine's conveyor and on to an unloading table from where parts can be moved to automatic or manual machines.



Gritty says . . .

Machines for top and bottom finishing of flat bar or hollow sections are tailor made to individual requirements.



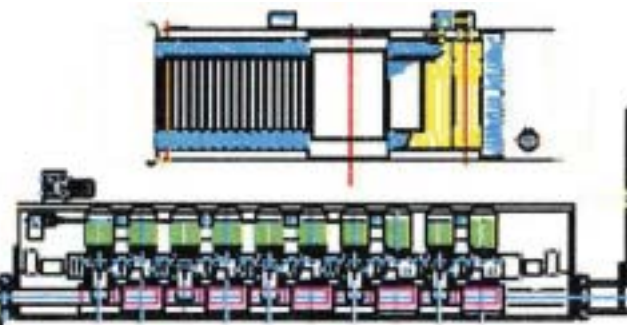
Gritty says . . .

Machines for finishing four sides of hollow sections are suitable for . . . ??

5 twin sided heads

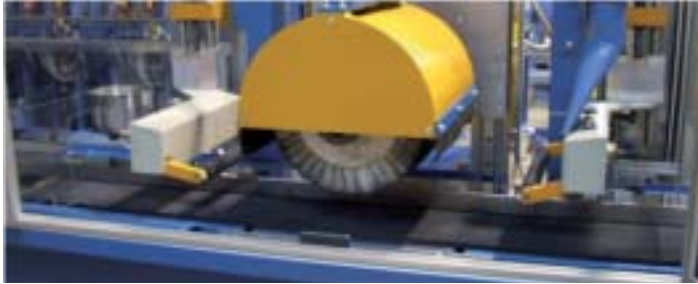


5 top and bottom heads



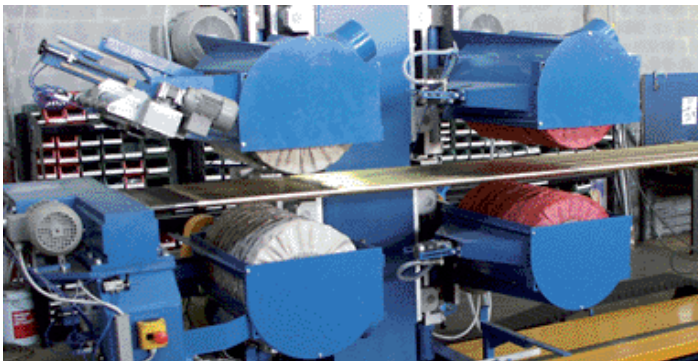
A diagram of our most sophisticated grinding and finishing machine for four sides in one pass.

Model Range PPR



- Single head mirror polishing machine for flat parts.
- With 300mm wide reciprocating belt conveyor
- With programmable polishing cycle
- Ideal for small to medium production runs
- 300mm dia polishing buffs
- Automatic polishing composition application

Model Range STL



Model STL with 2 top and 2 bottom polishing heads, each 500mm dia.

- Longitudinal mirror polishing machine
- Simultaneously mirror polishes two sides of flat hollow sections.
- Also mirror polishes tubes.
- From 20 x 20mm to 80 x 80mm.
- Polishes several parts at a time.
- Sisal or cotton polishing buffs 500mm dia. up to 600mm wide
- Automatic polishing composition application.

Model Range SPA

- Flatbed reciprocating polishing machine
- Suitable for long sheet, flat bar and square tubes
- For shorter parts with reciprocating table and for longer parts
- With reciprocating head
- Built to customers' requirements



Model SPA with reciprocating table

CONSUMABLES FOR NARROW BELT THROUGHFEED MACHINES



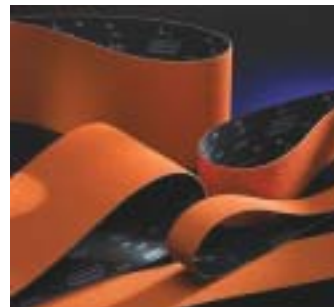
ALUMINIUM OXIDE BELTS

For general purpose grinding and graining of all metals.
Grit range:



ZIRCONIA BELTS

For grinding and graining of stainless steel.
Grit range:



CERAMIC BELTS

For grinding and graining of alloyed steel, but also suitable for all other metals. You need to carry out tests to find out if the higher price compensates for better performance.
Grit range:



SILICON CARBIDE BELTS

For producing a bright, even, grained finish on stainless steel. A finish preferred by many to the finish produced by aluminium, zirconia or ceramic belts.
Grit range:



ABRASIVE IMPREGNATED NYLON BELTS

For matt and fine finishing of all metals. Leaves a smoother finish than abrasive belts. Often used after abrasive belts to achieve a special effect of rough surface but smooth finish.
Grit range:



DIAMOND BELTS

For hard steel alloys where normal abrasive belts do not cut or do not last long. Must be used wet.
Grit range:

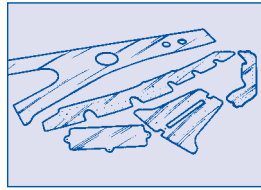
Narrow Belt Throughfeed Machines

For Graining, Deburring & Polishing

- 150mm and 300mm max. working width
- Dry and wet operation



Smart Grinder with 1 abrasive belt head.



Punched and laser cut parts



Smart Grinder with 2 abrasive belt heads.

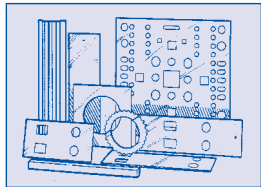
◀ SMART GRINDER 56150 - 56300

Max. 150mm or 300mm working width. Industrial standard budget machine with a wide range of standard and optional features.

Wet operation recommended (saves cost of extractor approx £2000), but dry operation models are available.

Single belt head, twin belt head or belt head plus brush head. Single head machines can be retrofitted with second head.

Our recommendations: For short, flat parts choose fixed heads. For long bars and hollow sections choose floating heads.



Punched and nibbled parts

Model FST ▶

Standard max. working width 150mm or 200mm. Optional up to 300mm.

Heavy duty wet operation machine suitable for shift work.

Wet operation cools parts and prolongs belt life.

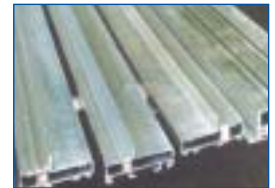
No need for a dust extractor which would add up to £3000 to the cost.

From 1 to 4 heads, either all belt heads or all brush heads or any combination belt and brush heads.

Our recommendations: For short, flat parts choose fixed heads. For long bars and hollow sections choose floating heads.



Model FST with 1 abrasive belt head.



Extrusions



Model FST with 2 abrasive belt heads and 1 brush head.



Model STN 300 with 1 abrasive belt head.



Model STN 300 with 2 abrasive belt heads.

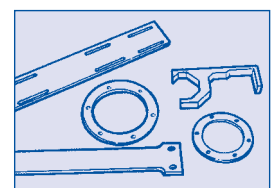
◀ Model STN 300

Max. 300mm working width.

Heavy duty dry operation only machine.

With many standard and optional features. Available with single abrasive belt head or twin abrasive belt head or twin belt head plus brush head.

Fixed heads only, therefore recommended only for parts with an overall flat surface. For long bars and hollow sections see models **FST** and **SMART GRINDER** with floating heads.



Punched & laser cut parts

WIDE THROUGHFEED SHEET METAL DEBURRING AND EDGE ROUNDING MACHINES WITH ABRASIVE DISC BRUSHES

Model DiscMaster 4TD

1000mm or 1500 mm wide.

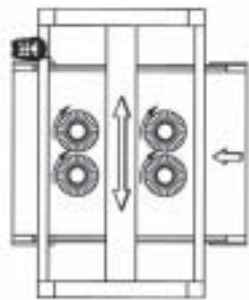
Can deburr parts 25mm x 25mm wide and from 1mm to 100mm thick.

For deburring and edge rounding of all edges on one side of the sheet in a single pass.

Unlike rotary brushes the reciprocating disc brushes wear evenly regardless of parts widths.

How does it work?

Parts are placed on the conveyor belt and move under 2 sets of reciprocating discs. The first set consists of SOFT-DISCS for removing upstanding burrs. The second set consists of FLAP-DISCS which round all edges.



Two reciprocating heads, each with two large disc brushes which rotate and reciprocate across the conveyor belt.



Close up of one of the two reciprocating heads.

The DiscMaster is available 1000mm or 1500mm wide. It can handle parts as small as 25mm x 25mm without the need for jigs and parts thicknesses from 1mm to 100mm. The reciprocating speed is variable. An optional variable disc rotation speed is available. Four spring loaded pinch rollers hold parts firmly in place. The conveyor belt is automatically tracked. Thickness settings are either manual or optionally electrical, both with digital readout.

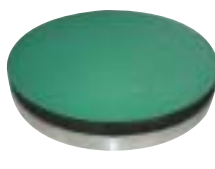
Three of the most popular disc brushes used with DiscMaster 4TD



For light deburring and edge rounding.



For light deburring and edge rounding of parts with a min. 5mm thickness.



For heavy deburring.

NARROW THROUGHFEED SHEET METAL DEBURRING AND EDGE ROUNDING MACHINES USING ABRASIVE DISC BRUSHES

Model CrossMaster DDX2

for top and bottom deburring in a single pass

Model CrossMaster DX2

for single sided deburring

1000mm or 1500mm wide.

Single sided or top and bottom deburring in a single pass

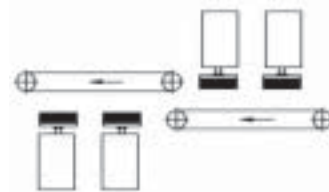
Smallest part size 25mm x 25mm
Parts thickness from 1 - 100mm



Model CrossMaster DDX2-200 with guard open.



Close up of the two heads and conveyors.



With two disc brushes for the top and two disc brushes for the bottom side.

The CrossMaster DDX2-200 is available with a max. working width of 200mm and for parts thicknesses from 1mm to 100mm.

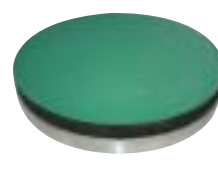
Three of the most popular disc brushes used with CrossMaster



For light deburring and edge rounding.



For light deburring and edge rounding of parts with a min. 5mm thickness.



For heavy deburring.

Swing Grinder

For deburring and edge rounding of laser or plasma cut and punched parts

New



The SWING GRINDER bridges the gap between the labour intensive portable power tools and the expensive throughfeed machines.

Parts are placed on the 1400 x 800mm table, kept firmly in place by the perforated polyurethane mat and then manually deburred by slowly moving the deburring head in all directions over the parts.

The deburring head is equipped with 2 different discs and can be tilted 180° in seconds to always use the most effective disc.

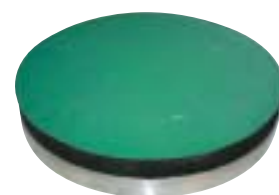
Since pressure is applied from above even small parts stay in position. The machine can handle smaller parts than most other deburring machines.



The tilting deburring head with 2 discs



Parts as small as 50 x 50mm are firmly held in position. Perforated polyurethane mat facilitates dust extraction



Use Soft Discs for removing upstanding burrs



Use Medium Discs for rounding corners



Use Smart-Flex-Discs for rounding corners of parts with min. 5mm thickness

STANDARD FEATURES

- Motor size: 0.75 KW, 400 V, 3 phase.
- Tilting head with two deburring discs. Change in seconds from deburring to edge rounding.
- Table size: 1400 x 800mm, covered with self gripping mat perforated for dust extraction.
- Weight balanced swing arm.

OPTIONAL EXTRAS

- Inverter for variable spindle speed. 300 - 1100 rpm.
- Dry or wet dust extractor.
- Range of discs and brushes for all metals and for all deburring requirements.



Swing grinder with weight balanced arm, tilting deburring head and large table

Corner & Edge Preparations

Machines for grinding, bevelling, profiling and radiusing

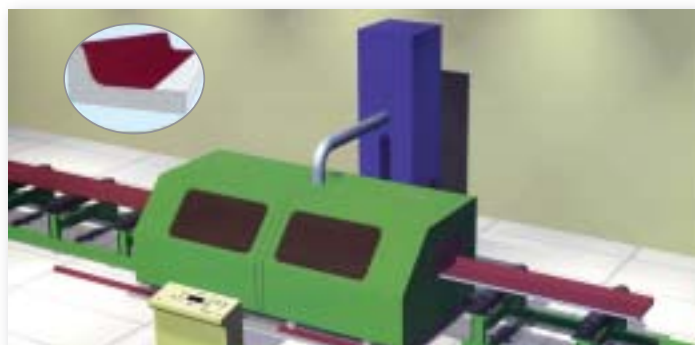
- Plates
- Beams
- Thermal Cut Blanks
- Bars

As used for offshore construction, shipbuilding, bridge building, structural steelwork, etc.

Some of the edge preparations grobi machines can carry out



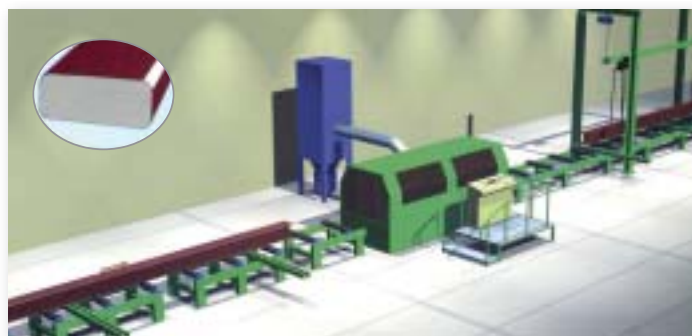
Straight edge grinding at 1-5 m/min. Radiusing at 2-5 m/min



Straight edge grinding at 3-5 m/min one side only or two sides simultaneously



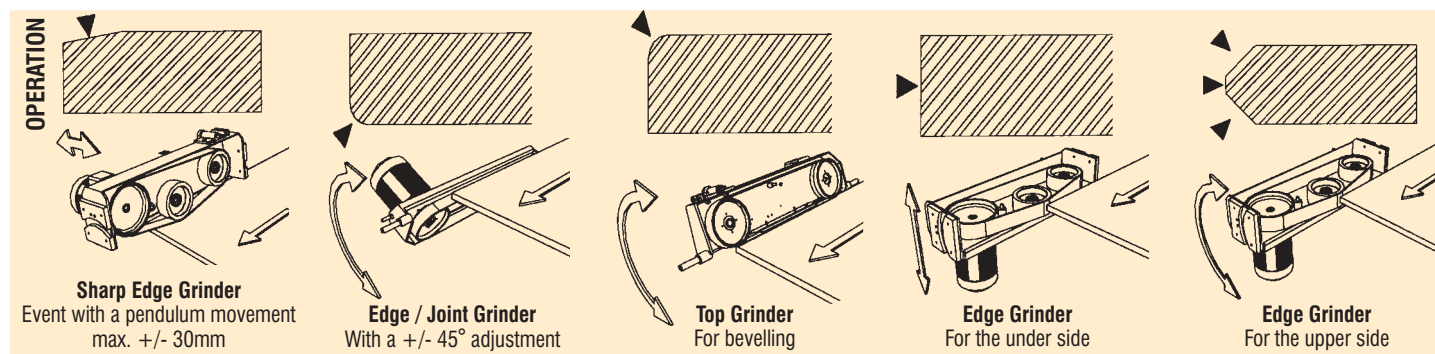
Radiusing of beams at 2-5 m/min



Radiusing at 2-5 m/min



Straight edge grinding at 1-5 m/min, Bevelling at 0.5-2 m/min, Radiusing at 2-5 m/min



Some of the abrasive belt heads used on Grobi machines

GRINDING, DEBURRING, GRAINING, FINISHING AND POLISHING SHEET AND PLATE, HOLLOW SECTIONS, FLAT BAR, ETC.

MODELS L84, L85, LS90 ABRASIVE BELT PAD GRINDERS

DESCRIPTION

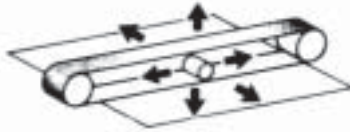
The horizontally arranged abrasive belt runs over the length of the table. The table moves up and down to adjust to the height/thickness of the workpiece. The table can also be moved back and forth.

A contact unit is manually moved over the abrasive belt. Contact pressure is applied manually via a lever connected to the contact unit. The contact unit can be fitted with a variety of contact pads or with contact wheels. (optional).

By moving the contact unit and by moving the table all parts of the workpiece up to the size of the table can be reached.

Principle of machine operation

1. Abrasive belt
2. Contact wheel moves left to right
3. Table moves back and forth
4. Table moves up and down



APPLICATIONS

- Grinding and finishing of sheet, plate, extrusions and other flat parts.
- Deburring of laser, plasma and flame cut blanks.
- Deburring of guillotined, sawn, nibbled and punched parts.
- Finishing of fabrications.
- Grinding and blending of welds.
- Grinding of castings
- Polishing of stainless steel.
- Sanding of wood, paint, plastics, etc.

MODEL L84

Overhead belt grinding, deburring and finishing machine with reciprocating table

TECHNICAL DETAILS

Table length: 1480mm
Table width: 600mm

Table length and width does not mean max. working dimensions. These also depend on the contact pad and/or contact roll assembly.

If this measurement is important to you, please state in your order.

Vertical table travel: 500mm.

!!! Vertical table travel does not mean max. opening between top of table and bottom of abrasive belt. The figure is only a general indication. Individual machines can vary.

If this measurement is important to you, ie because of the size of your parts, please state this in your order. We can then build the machine to comply.

Table height adjustment: Motorised
Abrasive belt drive motor: 2,5 - 3 HP, twin speed
Abrasive belt dimensions: Min. 3850mm to
Max. 3950mm long x 100mm wide

CAUTION ! Abrasive belt lengths can vary. Do not order belts until you have had confirmation of the belt length of your machine.

Pulley dia.: 150mm
Extraction flanges: 2 off
No volt control: Yes
Overload control: Yes
Approx. weight: 200 kg

OVERALL DIMENSIONS: Width 2.1m, Depth 1.2m, Height 1.5m

NOTE: Model L84 cannot be equipped with a buffing head.



MODEL L85

Overhead belt grinding, deburring and finishing machine with reciprocating table

TECHNICAL DETAILS

Table length: 1500mm to 2000mm
Table width: 700mm

These sizes are not max. working sizes. Max. working sizes also depend on the type and size of contact pad and/or contact wheel. If this measurement is important to you, please state in the order.

Vertical table travel: Approx. 500mm
Table height adjustment: Motorised

The vertical table travel does not indicate the max. height of part that can be finished on this machine. It is an indication only and it can vary for individual machines. If this size is important to you, please state in the order.

Abrasive belt drive motor: 3 - 4 HP, twin speed
Carriage tube: 60mm dia
Abrasive belt dimensions: 5500mm to 5600mm long x 150mm wide

CAUTION ! Abrasive belt lengths can vary. Do not order belts until you have had confirmation of the belt length of your machine.

Pulley dia.: 200mm
Extraction flanges: 2 off
No volt control: Yes
Overload control: Yes
Approx. weight: 320 kg

OVERALL DIMENSIONS:

Width: 1.5m + Table Width
Depth: 1.4m
Height: 1.6m



MODEL LS90

Overhead belt grinding, deburring and finishing machine with reciprocating table

*SANDING OF WOOD,
PAINT, PLASTICS, ETC.*

CONSUMABLES

For use with abrasive belts for grinding, deburring and blending.

For use with abrasive nylon belts for light deburring, satin finishing and blending.

For use with cork belts for polishing.

TECHNICAL DETAILS

Table length: 1500 to 5000mm
Table width: 800mm

These sizes do not mean max. working sizes. Max. working sizes depend on the type and size of the contact pad and/or contact wheel assembly. If this measurement is important to you, please state in your order.

Vertical table travel: 400mm
Table height adjustment: Motorised

The vertical table travel does not refer to the max. part height. It is an indication only. Individual machines can vary. If this size is important to you, please state in your order.

Abrasive belt drive motor: 6 - 7 HP, twin speed
Abrasive belt dimensions: 6000mm to 6200 mm long x 150 mm wide

CAUTION ! Abrasive belt lengths can vary. Do not order belts until you have had confirmation of the belt length of your machine.



Pulley dia.: 300mm
 Extraction flanges: 2 off
 No volt control: Yes
 Overload control: Yes
 Approx. weight: 580 kg

OVERALL DIMENSIONS:

Width 1.5M + Table Width
 Depth 1.4M
 Height 1.6M

The considerable price increases for tables over 3000 mm is due to a different and much strengthened design and a heavier table which is necessary to prevent it sagging. 4000 mm table machines have to be strengthened even more and prices reflect this.

If you order a machine with both the contact pad carriage and the contact wheel carriage and you do not want to remove the carriage that is not in use you will have to add approx. 500 mm to the length of the table to be able to park one of the carriages.

If you order the contact wheel assembly then this is not necessary as it fits on the contact pad carriage and you do not need an additional carriage.

The contact wheel assembly has a smaller wheel and is intended for occasional use. If you intend to work mainly with a contact wheel then we recommend the contact wheel unit complete with carriage.

Model FAB OVERHEAD ABRASIVE BELT PAD GRINDER WITH ADDITIONAL POLISHING HEADS



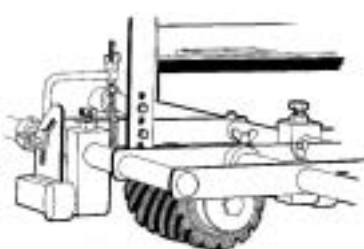
Based on Model LS90 as described above but with additional polishing head.

The polishing head runs on a separate rail and has its own motor and controls.

It can be removed in minutes. Suitable for use with cotton or sisal polishing buffs or with abrasive nylon brushes.



Polishing head
for buffs and wheels



Contact wheel head
for abrasive belts



Gritty says . . .

The L84, L85 and LS90 machines are the budget machines with limited features but considerably lower prices than LZ machines.

They are suitable for fabricators who do not use the more sophisticated features of the LZG machines on pages 19 - 20.

CONSUMABLES FOR OVERHEAD BELT GRINDING, DEBURRING, GRAINING, FINISHING AND POLISHING MACHINES



ALUMINIUM OXIDE BELTS

For general purpose work.
 Suitable for all metals.
 Grit range:



ABRASIVE IMPREGNATED NYLON BELTS



ZIRCONIA BELTS

Suitable for all metals but particularly recommended for stainless steel.
 Grit range:



FELT BELTS



CORK BELTS

Cork impregnated with aluminium oxide mineral. Produces very fine finishes close to commercial mirror finish.



For the complete range of
 abrasive belts see our
CONSUMABLES CATALOGUE

MODEL FAB / LS90 GRINDING & FINISHING MACHINE

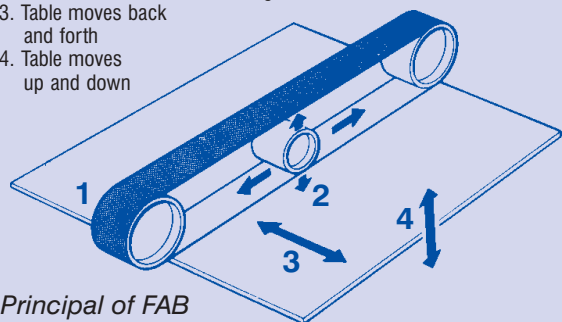


Your
abrasives
methods
man
We'll show you how!

For sheet, plate and fabrications

- For grinding, graining, finishing and polishing of sheet, plate and fabrications.
- For deburring of sheet, plate, strip, etc.
- For use with abrasive belts, cork belts, nylon belts, sisal buffs, cotton buffs, abrasive wheels, abrasive brushes.
- Simple and safe operation, suitable for unskilled operators.

1. Abrasive belt
2. Contact wheel moves left to right
3. Table moves back and forth
4. Table moves up and down



Principal of FAB
machine operation

SCOPE

The FAB Grinding and Finishing Machine is designed to facilitate the many grinding, deburring, finishing and polishing operations stainless steel fabricators have to carry out. It is equally suitable for other metals, wood and plastics.

APPLICATIONS

- Grind and descale plate.
- Grind and blend welds.
- Deburr guillotined, flamecut, nibbled, punched parts.
- Grain sheet and plate.
- Remove and blend surface imperfections.
- Finish sheet, plate and fabrications from grained to polished surface.
- Clean contaminated surfaces.

BENEFITS

Simple to use even by unskilled operators. Finishing tools like abrasive belts, buffs and brushes are guided and therefore rely less on the skill of the operator. Operator fatigue is reduced considerably. Fast, because the machine covers a larger area than traditional portable tools. Versatile, because a vast range of consumables can be used: abrasive belts, abrasive impregnated nylon belts, abrasive wheels and brushes, cotton and sisal buffs. (Some of these materials require optional extras).

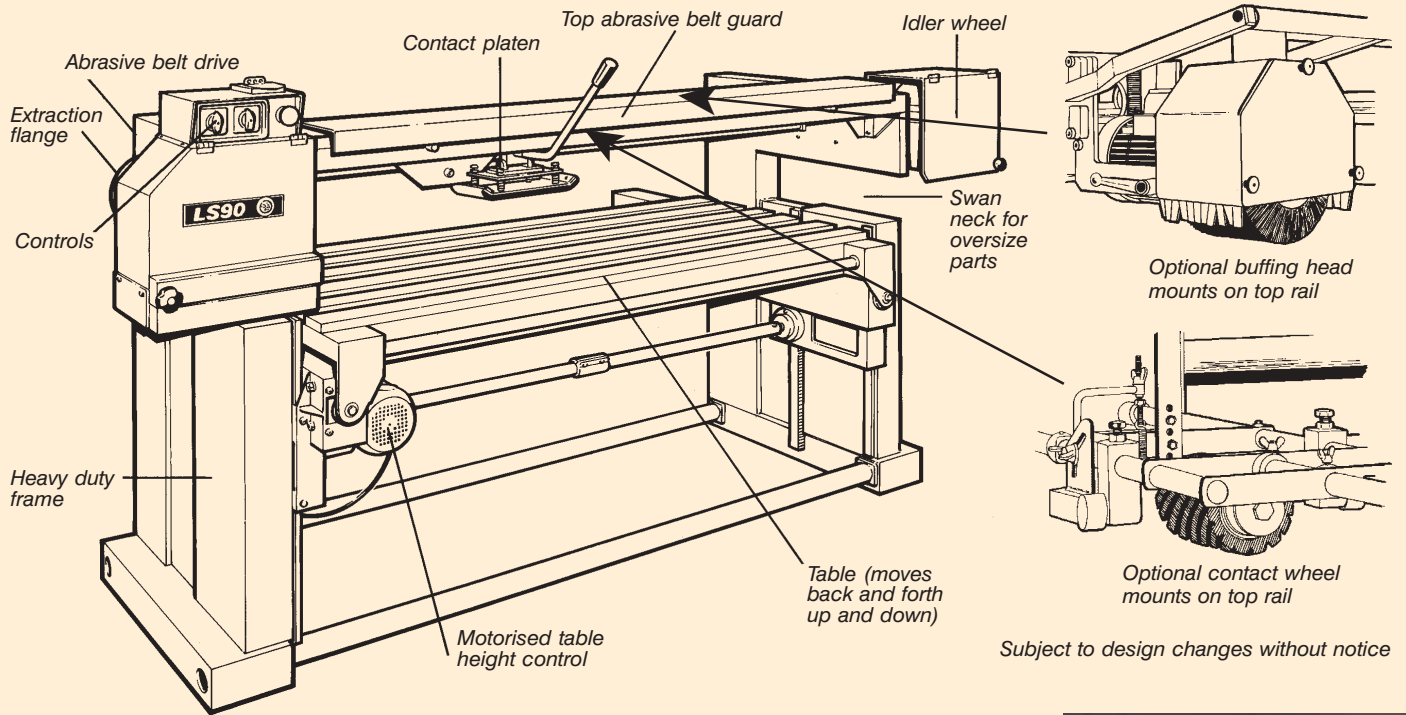


Blend and finish with contact platen
(standard)



Remove local imperfections with
hand pad (standard)

MODEL FAB / LS90 GRINDING & FINISHING MACHINE



OPERATION

1. Place sheet, plate or fabrication on table.
2. Select finishing tool and head. Abrasive belts, abrasive impregnated nylon belts run with contact platen (standard) or contact wheel (optional). Abrasive wheels and brushes, cotton and sisal buffs run with buff head (optional). Heads can be changed in minutes.
3. Move head across surface from left to right to finish length of component. Move table back and forth to finish width of component.

FEATURES

Table length: 1500, 2000, 2500mm

Table width: 800mm approx.

Abrasive belt length: Varies. Do not order belt until you have had confirmation of abrasive belt size for your machine.

Vertical table travel: 450mm

Belt drive motor: 5.5 HP, 420V, 3 phase, twin speed

Table drive motor: 0.5 HP

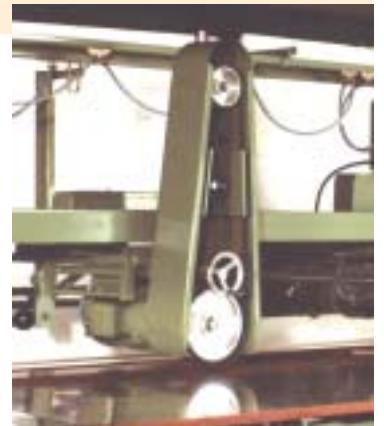
Abrasive belt width: 150mm

Abrasive belt speed: 28 and 14 m/sec

Weight: 600 kg

OPTIONAL EXTRAS

- Stand alone dust extractor
- Smaller or larger table
- Jig to suit part
- Contact wheel head
- Buff head
- Range of contact platens
- Vertical abrasive belt head
- Longer vertical travel
- Various working heights



Grind with vertical abrasive belt head (optional)

CONSUMABLES

1. Abrasive belts with contact platen - For grinding, graining and blending of flat surfaces, resulting in long scratch pattern.
2. Abrasive belts with contact wheel - For grinding, graining and blending of flat surfaces, resulting in short scratch pattern.



Grind and grain with contact wheel (optional)



Polish with brushes and buffs (optional)

3. Abrasive impregnated nylon belts with contact platen or contact wheel - For satin finishing, cleaning, conditioning, polishing.
4. Abrasive brushes with buff head - For deburring and cleaning.
5. Abrasive wheels with buff head - For cleaning, finishing, deburring.
6. Sisal and cotton buffs with buff head - For polishing.



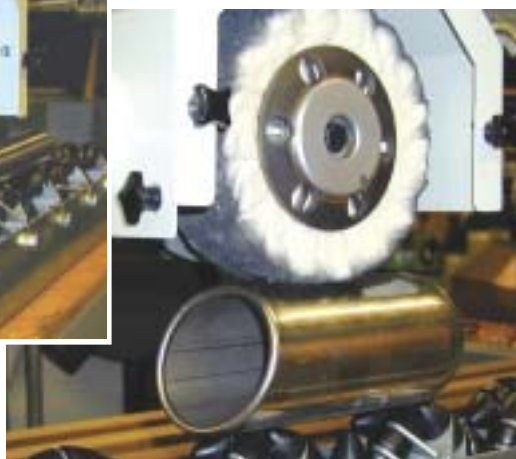
Ideal for finishing sheet, plate, extrusions, fabrications, tubes, hollow section, bar, etc.



Polish fabricated parts



Longitudinal polishing of tubular parts



Polish flat parts

For satin finishing and mirror polishing of flat, curved and tubular parts

- 1500, 2000, 2500 and 3000mm long
- Up to 800mm wide
- Max buff dia: 200mm (optional up to 350mm)
- Max buff width: 75mm (optional up to 150mm)
- Drive motor 1.5 kW standard (optional 2.2 kW or 3 kW)
- Optional variable speed
- Manual or motorised vertical table movement
- Max opening: Standard 400mm up to 600mm on some models. Larger to order

GRINDING, DEBURRING AND GRAINING LARGE AND HEAVY PLATE

PRE WIDE BELT GRAINING AND POLISHING

HISTORY

Before wide belt machines were developed and became widely available for sheet and plate finishing the only available machines were overhead belt grinders, very similar to pad sanders used in the wood industry, but with important new features to make them suitable for sheet and plate.

The leading and only manufacturer of such machines at the time was Johannsen. The first Company in the UK to invest in these machines was Cashmores in 1971. The Johannsen machines were supplied by SURTECH.

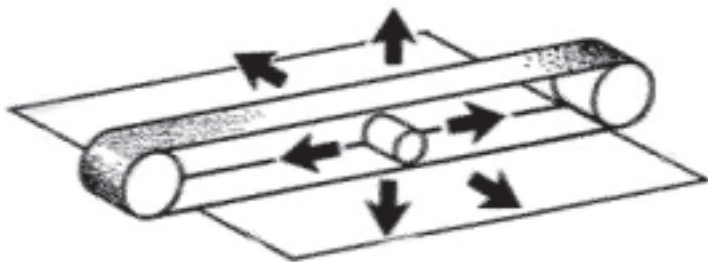
At the time there were only a very few US built wide belt machines in the UK. They were far superior to overhead belt machines for graining stainless steel sheet but they were less efficient for grinding plate, particularly hot rolled plate which was never entirely flat.

The Johannsen machines were much slower for graining sheet but they could also grind plate and thus were more versatile and for many stock holders made more economic sense.



The line up of graining and polishing machines at Cashmore's in 1971

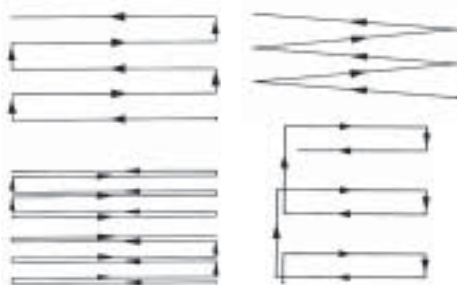
How the Overhead Belt machines work



The grinding unit starts and at the same time the contact roll is lowered to the belt. The sheet is ground over its length. The contact roll retracts and the table moves forward a distance fractionally less than the belt width. The contact wheel retracts, the table moves forward again and the sequence repeats until the surface of the sheet has been covered.

If the fabricator decides to polish mill finished sheet or plate in-house prior to fabrication, the finishing requirement depends upon the type of material supplied.

The overhead belt machines could be programmed to these grinding patterns.



Hot rolled sheet is mainly used in the manufacture of heavy fabrications and tanks. Usually, local defects have to be ground out before the whole plate is finished to obtain a clean metal surface and good visual appearance. The process usually starts with abrasive belts of grit 40 to remove surface imperfections, followed by progressively finer grit belts until the desired finish is produced.

ad was stationary and the table reciprocated. The table weight capacity Cold rolled sheet requires considerably less work as the mill finish is much better as supplied. Often, abrasive belts of grit 80 or 120 can be used for the first operation, followed by grit 180 or 220 for the final operation.

Bright annealed sheet can be finished in a single pass with abrasive belt grit 180 or 220.



Gritty says . . .

Despite the successful introduction of wide belt machines, there is still a considerable market for overhead belt grinders.

Model MSS 300/300

The machine on the right is possibly be the largest abrasive belt grinding and finishing machine ever built.

It is a Model MSS suitable for grinding plate 5m wide and 10m long. It has two abrasive belt heads with belt sizes of 300mm wide x 18m long.

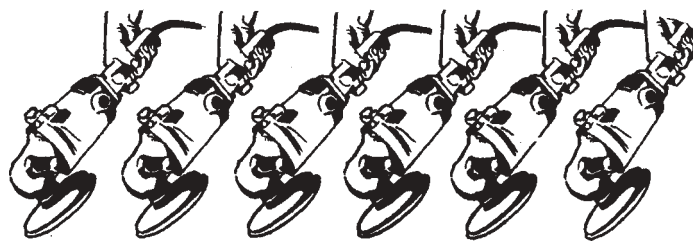


The machine is controlled from a gantry and can be programmed for spot grinding or overall grinding.

The abrasive belt head is stationary and the table reciprocates. The table weight capacity is around 20000 kg. It runs on rails very similar to those used by railways.



A dedicated abrasive belt plate grinding machine with fixed table and reciprocating belt head. For plate 3m wide and up to 10m long. Can be used for spot dressing or for grinding the whole surface.



Replace up to 6 angle grinders with the LS90 SLAG GRINDER

***Yes, you read correctly.
1 person using the LS90
de-slugged as many blanks as
6 people with angle grinders!***

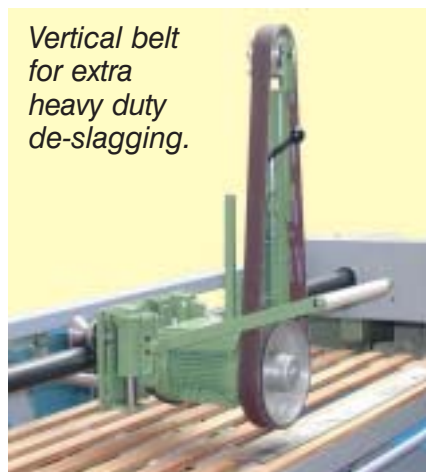
***For more information and a
demonstration ring***

0121 359 4322

Choice of 2 heads:



***Horizontal belt for general
purpose de-slugging, grinding
and finishing.***



***Vertical belt
for extra
heavy duty
de-slugging.***

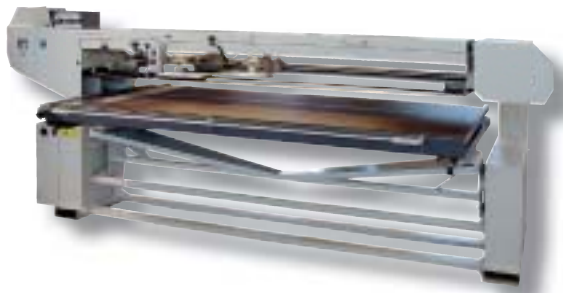


***Model LS90 has a
standard 800mm
deep table and is
available from 1500mm
to 3000mm long.***

Model Range LZG

Overhead Belt Grinding, Deburring, Graining & Finishing Machines

The Machines



Single Abrasive Belt machine

With Contact Platen or Contact Wheel
Optional Parts Manipulator.

INTRODUCTION

There are several descriptions of this type of machine: overhead belt grinders, pad grinders, twin belt grinders, etc.

They all have the following design features in common:

- **A single or twin horizontal abrasive belt head**
- **A large table underneath the abrasive belt head which can be moved back and forth in a horizontal position or up and down in a vertical position.**



Twin Abrasive Belt machine

With Pneumatic Belt Tensioning,
Pneumatic Pressure Assist Contact
Unit and Second Table
Optional Parts Manipulator.



Single Abrasive Belt machine

With three Contact Units:

Platen or Contact wheel, Buffing Head
and Vertical Belt Head.
Optional Parts Manipulator.

All machines feature:

- Large 350mm dia Drive and Idler Wheels.
- Manual or Pneumatic Belt Tensioning.
- In sizes to suit all parts.
- Wide choice of table sizes:
2000mm x 800mm, 3000mm x 1000mm,
4000mm x 1000mm, 5000mm x 1000mm.



The Optional Jigs



*Tailor made jigs
to suit all parts.*

With a pneumatically controlled ball head and a turning and swivelling cylinder. All operated by a foot control.

The Optional Tables

Tables are either integrated or separate. The separate tables can be moved out of the way and parked. Optional scissor table.



Small Secondary Table



Large Secondary Table



Table with cut out for tall parts

The Methods



Manual operation with hand sanding block



Manual operation with contact wheel. Optional pneumatic pressure assist



Manual operation with contact pad. Optional pneumatic pressure assist



Manual operation with polishing buff



Manual operation with deburring cup wheels



Multi-purpose design with contact pad, contact wheel, polishing head and vertical abrasive belt head



Combination belt and buff head

The Parts



Finishing large flat parts



Polishing frames



Graining boxes



Typical welded enclosures for blending welded corners and for graining all surfaces



Blending and graining enclosures



Deburring thermal cut blanks

And many more, like machine bases, containers, parts for food processing and the pharmaceutical industry. Hygienic and visual finishes.

The Consumables



Abrasive belts: Aluminium Oxide, Zirconia, Silicon Carbide, Conglomerate



Abrasive Cup Brushes



Structured Abrasive belts



Cotton and Sisal Polishing Buffs



Non Woven Nylon belts



Polishing Felt belts



Polishing Compo

RECIPROCATING TABLE AND RECIPROCATING HEAD POLISHING MACHINES WITH A MAX. WIDTH CAPACITY FROM 1300mm TO 1700mm

Model RH RECIPROCATING HEAD POLISHING MACHINE



DESCRIPTION AND APPLICATIONS

A heavy duty buffing machine for sheet, extrusions, flat bar, hollow sections, trim, etc. Because the head reciprocates you will need less space than for machines with reciprocating table.

FEATURES

- 37 KW main motor
- In standard size suitable for sheet up to 1500 mm wide and 3000 mm long.
- Feed speeds from 1 to 8 m/sec
- Buff diameter 450mm
- Automatic liquid compo application system

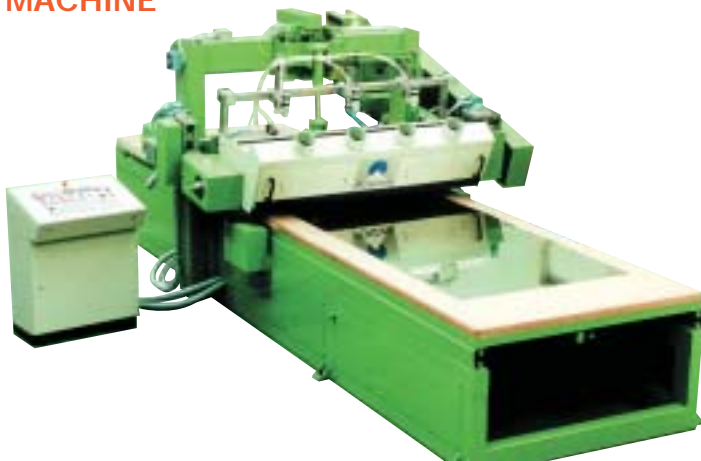
OPTIONAL EXTRAS

- Larger motors
- Up to 2000mm max. working width
- Up to 12500mm max. working length
- Dust extraction

BENEFITS

- Less space

Model RT RECIPROCATING TABLE POLISHING MACHINE



DESCRIPTION AND APPLICATIONS

A heavy duty buffing machine for sheet, extrusions, flat bar, hollow sections, trim, etc. Because the table reciprocates you will need space more than double the length of the table.

FEATURES

- 1 buffing head with 37 KW main motor
- In standard size suitable for sheet up to 1500mm wide and 3000mm long
- Feed speeds from 4 - 12 m/sec
- Buff diameter 450mm
- Automatic liquid compo application system

OPTIONAL EXTRAS

- 2 buffing head
- Larger motors
- Up to 2000mm working width
- Up to 6000mm working length
- Dust extraction

BENEFITS

Well proven traditional design with long life expectancy

MARBLING MACHINE

INTRODUCTION

Marbling machines produce a bird's eye effect finish on stainless steel and aluminium. The finish consists of overlapping circles applied with marbling points. Both the size and density of the circles can be set.

Marbling finished sheet has been very popular on the Continent for many years - for architectural use, on tanks, for catering equipment and for cladding sheets on trains and vehicles, and even for dashboards of sports cars.

Model F1 AUTOMATIC STAINLESS STEEL AND ALUMINIUM SHEET MARBLING MACHINE



DESCRIPTION AND APPLICATIONS

This is an automatic machine for producing marbling finishes on stainless steel sheets. Marbling is a finish of overlapping circles of varying sizes applied to sheets of stainless steel or aluminium.

With the most popular model the sheet passes under a stationary marbling head. A typical 2500mm x 1200mm sheet can be finished in a few minutes.

Available in 1000mm, 1600mm and 2000mm working widths.

FEATURES

- Model 100** - 1000mm wide for 0,2 mm - 15mm thick sheet
- 30 - 45 KW motor
- Model 160** - 1500mm wide for 0,2 - 15 mm thick sheet
- 55 - 90 KW motor
- Model 200** - 2000mm wide for 0,2 - 15 mm thick sheet
- 55 - 110 KW motor

OPTIONAL EXTRAS

- Built in protective tape applicator
- Dust extractor

BENEFITS

Best value for money marbling machine on the market.



Gritty says . . .

Ronzani marbling machines are the most effective, easiest to use and most economical available in Europe.

CONSUMABLES FOR MARBLING MACHINES

Marbling points, also called mottling points are available in 30, 40, 50 and 60mm dia.

A marbling point made of abrasive impregnated elastomer.



CONSUMABLES FOR RECIPROCATING TABLE POLISHING MACHINES



Sisal buff for use with cutting compound.

Manual application of liquid polishing compounds

Many users of sheet mirror polishing machines prefer to apply polishing compounds direct on to sheets with large brushes.

Polishing Compo

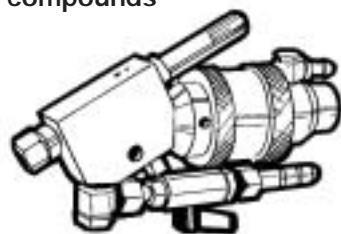


Ask for detailed list!



Cotton buff for use with colouring compound.

Automatic application of liquid polishing compounds



Automatic gun for applying liquid polishing compound from a pressure pot.

We can supply complete systems.



For the complete range of consumables see our CONSUMABLES CATALOGUE

FLOOR GRINDERS, BENCH AND PEDESTAL MACHINES FOR MANUAL AND AUTOMATIC SHEET DEBURRING

With Abrasive Belt Floor Grinders

Model 125 ABRASIVE BELT FLOOR GRINDER

This machine is used for grinding plate laying flat on the ground. The floor grinder comprises an abrasive belt head, control handle, wheels and an optional built-in dust extractor. The head can be angled to produce V, X and Y shaped weld preparations.

Abrasive belt widths range from 50mm to 100mm and drive motors from 1KW to 5KW, so floor grinders can be used to remove scale or strip protective lacquer and varnish. These machines will remove the heaviest surface imperfections faster and with a better finish than any other method.

FEATURES

4HP single speed motor.

With 24 V control voltage.

With long stem adjustable handle bar.

With 6 wheel carriage.

Abrasive belt size: 75mm x 2000mm.

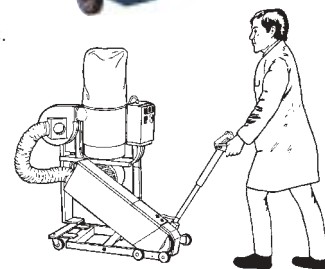
Abrasive belt cutting speed 30 m/sec.

Contact wheel size: 200mm dia x 75mm wide.

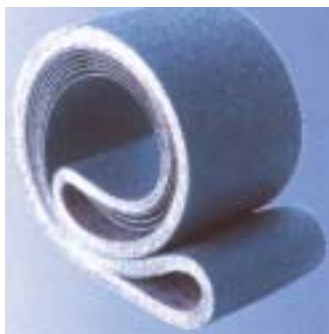
Dimensions: 600 mm x 1600mm x 1700mm high

Weight: 100 kg.

With built in dust extractor: 0.75 KW, 700 cbm/hr



CONSUMABLES FOR ABRASIVE BELT FLOOR GRINDERS



ZIRCONIA BELTS



CERAMIC BELTS

For the complete range of abrasive belts see our CONSUMABLES CATALOGUE



MODEL 420

For manual deburring of sheet metal parts on slack of belt.

A dedicated machine for fast and effective deburring.

TECHNICAL SPECIFICATION

400 V, 3 phase motors, single speed.

- With manual direct on line start.
- With overload and no volt controls.
- 3.5 HP
- Abrasive belt cutting speed: 24 m/sec
- Machines mounted on cabinet stands.
- Front and rear dust extraction spigots
- Hinged access door and magnetic catch.
- Abrasive belt size: 2000mm x 50mm, 25mm wide
- Machine dimensions: 650mm x 1100mm x 1250mm high
- Machine weights: 90 kg
- The abrasive belt can be angled in various positions to facilitate deburring.



MODEL 410 Smaller version of Model 420.

TECHNICAL SPECIFICATION

- 400 V, 3 phase motor, single speed
- With manual direct on line start
- With overload and no volt controls
- Motor size 0.75 HP
- Abrasive belt size: 1500mm long x 12mm, 25mm & max. 40mm wide
- Abrasive belt cutting speed 24 m/sec
- Mounted on cabinet stand with hinged door and storage shelf
- Front and rear extraction spigots
- Machine dimensions: 720 x 330 x 1150 mm high
- Machine weight: 40



Abrasive belt can be angled to facilitate deburring action



Gritty says . . .

Models 420 and 410 are the most efficient manual deburring machines for straight and contoured corners.

MODEL 623 ABRASIVE BELT PEDESTAL MACHINE

- 415/420 V, 3 phases, 2 speed motors for greater versatility
- Manual direct on line start
- Built in overload for motor protection
- No volt control for safety
- Hinged access door with magnetic catch and lock.
- Access for belt change.
- Mounted on column stand.
- Standard 50mm contact arm supplied with machine. Other contact arms available as optional extras.
- Large adjustable support table
- Rubber tyred drive wheel
- Weight Model 623: 97 kg

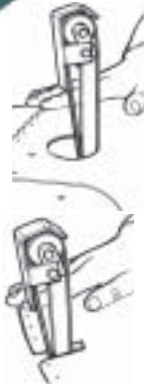


Motor HP: 3/2
Motor Speed: 2V
Abrasive belt size: 2000 x 6-75mm

The only machine suitable for both edge deburring and hole deburring.

Interchangeable contact arms for various hole sizes and for various belt widths. Round and flat contact platens.

Suitable for removal of tags left after nibbling.



MODEL 213 - 4 WHEEL VERTICAL ABRASIVE BELT GRINDER ON STANDARD PEDESTAL

By far the best designed, the most powerful motor and the most versatile machine of all the 3 and 4 wheel abrasive belt machines.

- 400 V, 3 phase, 2-speed motor for greater versatility
- With built in overload for motor protection.
- No volt control for safety
- Abrasive belt speed: 30 m/sec and 15 m/sec

Hinged access doors with magnetic catches.

It is a requirement of Health and Safety that access doors on guards cannot be opened without tools. All our machines have a simple lock, which is opened and closed with the help of an Allen key. Bottom dust extraction flange.

Rubber tyred drive wheel for better belt tracking. With standard flat steel platen behind abrasive belt. Large adjustable support table: 500mm x 450mm.

Machine body ready to accept wide range of accessories.

Machine dimensions: **Model 213:** 580mm x 750mm x 1480mm high.

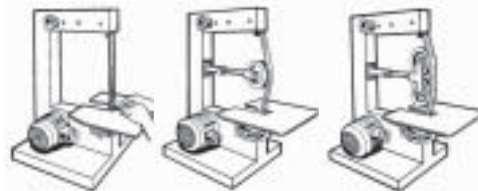
Model	Code	Motor HP	Motor Speed	Abrasive Belt Size
213	3186	3/2	2V	100 x 2000 mm

OPTIONAL EXTRAS

Stand alone dust extractors - more powerful than built in dust extractor. Dust extractors for hazardous materials.

Place sheet or plate on support table, adjust angle to suit, move sheet or plate across face of abrasive belt.

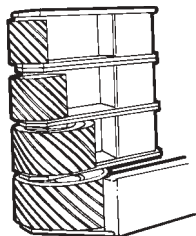
The abrasive belt can be set to slack operation for a slight radius or to platen operation for a chamfer. Large opening allows manipulation of shaped parts. Not suitable for removal of tags left after nibbling.



Model 127 BELT EDGE GRINDER

3.5 HP, 400V, 3 phase.
Abrasive belt size: 2000mm x 75mm.

The large table can be fitted in both directions and moved up and down to make use of the entire belt width. For grinding, deburring and chamfering edges on plate, flat bar, thermal cut blanks, hollow sections, castings, etc.



Range of quick change contact wheels from 25mm dia to 200mm dia



Smooth plate edges



Bevel prior to welding



Finish sides of flat bar and hollow sections



Deburr thermal cut blanks

MODEL SURTX 250 SHEET EDGE DEBURRER



Deburs top and bottom edge in one pass. 2 motors, counter rotating, each fitted with abrasive flap wheel. For sheet up to 10mm thick.

0.55 kW motor, 1400 rpm
Abrasive flap wheel size: 250 x 50mm
400V, 3 phase or 230V single phase.



MODEL SURTX JT TUBE END DEBURRER With V-Guide for tubes

- 3 phase, two speed motor
- Variable speed, 230V, 2 - 3 HP
- Wire wheel size: 250mm OD x 60mm wide
- 100mm Extraction spigot
- Approx. weight: 80 kg



With V-guide support for deburring internal and external tube ends



For general deburring, wire wheels are still the most popular and most economical tools.

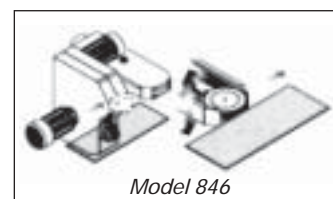
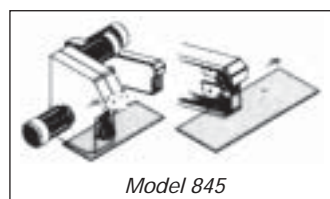
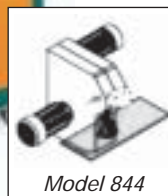
Model SURTX 24-45/P can be converted in seconds from deburring tube ends with a V-guide support to deburring sheet with an L-guide support. There are adjustments for wheel wear and settings for deburring the ID or OD of tubes.

Mild steel, stainless steel and abrasive impregnated nylon brush wheels are available to suit most materials and to produce most finishes.

MODEL 844 ABRASIVE BELT MACHINE with Conveyor - 2 Belts

MODEL 845 ABRASIVE BELT MACHINE with Conveyor - 3 Belts

MODEL 846 With Twin Abrasive Belt Head and additional Horizontal Head



The only machines to deburr edges of coated and plated sheet without touching the flat surface.

These machines will deburr or chamfer the top and bottom edges of sheet and plate from 0.5mm to 30mm thick.
The minimum sheet size is 90mm long x 15mm wide.

The machine works best in conjunction with a press or guillotine when the operator can put sheets straight on the deburrer without handling it twice.

They do not damage taped, coated, galvanized or zinc plated sheet. Each abrasive belt head is driven by a 0.35 HP motor.

Abrasive belt sizes:

900mm x 35mm for the twin belt head

1100mm x 25mm for the third head on Model 845 only.

The conveyor can be tilted to keep sheet running straight.

Variable speed conveyor.

With mains switch, on/off switch, variable speed dial and digital speed read out. Emergency button.

415/420 V, 3 phase

Abrasive belt motor: 0.35 HP

Conveyor motor: 0.5 HP

Extractor motor: 0.75 HP

Abrasive belt size: 900 x 35mm (2 off)

Cutting speed: 24 m/sec

Conveyor speed: 6-25 m/min

Overall dimension: 800 x 1500 x 1000mm

Weight: 277 kg

Suitable for thicknesses from 0,2 mm to 30 mm

Chamfers adjustable from 0,1 - 1 mm.

Model 845 is the same model as 844 but has an additional single belt head next to the twin belt head.

Model 846 is the same as Model 844 but with an additional horizontal belt head. This third head blends the edge of the sheet after deburring.

It Consists of a twin belt head and a variable speed conveyor. The twin belt head deburrs top and bottom edges on one side at a time.

Can be fed from a magazine or by hand. The perfect set up for the smaller operation.



Gritty says . . .

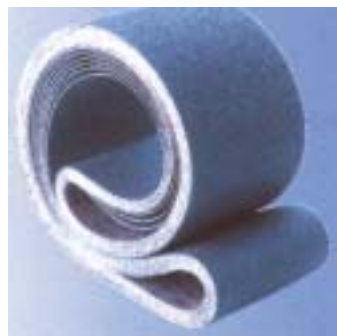
Model 8 Series machines deburr straight edges without touching top or bottom surfaces.

RECOMMENDED CONSUMABLES FOR MANUAL AND AUTOMATIC PEDESTAL MACHINES



Aluminium Oxide Belts

For general purpose deburring.
Grit range



Zirconia Belts

For deburring stainless steel.
Grit range: 40 - 120.



Abrasive Flap Wheels

For deburring all metals.
Grit range



Wire Wheels

Steel wire for general purpose deburring. Stainless steel wire for deburring stainless steel.

PORTABLE POWER TOOLS FOR DEBURRING, GRAINING AND POLISHING OF FLAT PARTS, SHEET, PLATE, HOLLOW SECTIONS, FLAT BAR, THERMAL CUT BLANKS, ETC.

INTRODUCTION

The ubiquitous angle grinder is slowly being replaced by dedicated portable abrasive power tools which are more versatile, more efficient, more economical and which produce more consistent results.

POWER SOURCES FOR PORTABLE ABRASIVE POWER TOOLS

The power source can be either electrical or pneumatic

Which power source you choose will depend on your individual circumstances.

For site work 110 V electrical tools are normally chosen.

For in house work it is either 230 V ,110 V or pneumatic.

Not all tools are available in both 110 V and 230 V. On the Continent 230 V is acceptable for both site work and in house work. As a result many tools are not available in 110 V.

In the UK 110 V is preferred for site work and most in house work.

Pneumatically powered tools are also needed when finishing is done inside containers, tanks, vessels, etc.

In these circumstances where it is not possible to provide a safe electrical earthing system pneumatically powered equipment is the safe alternative.



INTRODUCTION TO ROTO-SAT MACHINES

Roto-Sats are Surtech's portable abrasive power tools using abrasive belts, abrasive wheels, nylon wheels, abrasive impregnated elastomer wheels and polishing mops to produce virtually any finish from grained to mirror polish.

SURTECH can offer 3 Roto-Sat machines: Model Roto-Sat One and Model SURTX Roto-Sat. Both have electric motors. There is also a pneumatic version, the SURTX Roto-Sat/Air.

All Roto-Sat models can carry out exactly the same work, use the same consumables, but differ in their ergonomic design and price.

Model ROTO-SAT FX PORTABLE ABRASIVE FINISHING TOOL

The Roto-Sat-FX has a black, limited edition, traditional motor, sourced from Europe's most respected electric tool manufacturer, Messrs Flex.

FEATURES

- High torque variable speed motor from 1000 to 2700 rpm.
- 1.2 KW
- M14 Shaft
- Approx. 2.3 kg
- 19mm dia keywayed shaft.
- Abrasive wheel capacity: 100mm dia x 100mm wide.



Gritty says . . .

The SURTX Roto-Sat machines are presently the best value for money machines on the market.

Model SURTX ROTO-SAT-AIR

The Roto-Sat/Air has a pneumatic motor with a max. speed of 2000 rpm.

Air consumption: 18 SCFM = 8,5 L/SEC. Noise: 80 dBA. Weight: 1.5 kg.

The ROTO-SAT-AIR has been designed as a finishing machine. As such the power is sufficient for graining, satin finishing and blending, but not for heavy duty grinding.



Gritty says . . .

Roto-Sat portable abrasive power tools, equipped with abrasive belts, nylon belts, abrasive flap wheels, nylon flap wheels, elastomer wheels are ideal for grinding, graining and deburring of small quantities of flat parts: sheet, plate, hollow sections, flat bar, etc.



Smoothy says . . .

Roto-Sat portable abrasive power tools, equipped with structured abrasive belts, polishing belts or polishing buffs will mirror polish small quantities of flat parts: sheet, plate, hollow sections, flat bars, etc.

CONSUMABLES FOR ROTO-SAT PORTABLE ABRASIVE POWER TOOLS

GRINDING/COARSE GRAINING

These abrasives cut aggressively and remove material.



ROTOCUSHION 120

Pneumatic contact wheel.

Wheel size:

120mm OD x 80mm wide.

How to mount:

Screws straight on to M14 spindle.

Belt size: 90mm x 395mm.



ROTOCUSHION 90

Pneumatic contact wheel.

Wheel size:

90mm OD x 100mm wide.

How to mount:

Fits on to extension spindle.

Belt size: 100mm x 280mm.



ROTO-X-WHEELS

Expanding contact wheels.

Expanding contact wheels are available in one hardness only. Used with abrasive belts, they are the most aggressive tools for Roto-Sat machines.

Wheel size:

90mm OD x 100mm wide *or:*

100mm OD x 100mm wide

How to mount:

Fits on to extension spindle.

Belt size:

100mm x 280mm

(for 90mm x 100mm wheel)

100mm x 316mm

(for 100mm x 100mm wheel)



ALUMINIUM OXIDE BELTS

For general purpose applications.

Grits: 24 - 600 All metals.

For ROTOCUSHIONS

For ROTO-X-WHEELS



ZIRCONIA BELTS

For stainless steel.

Grit:

CERAMIC BELTS

For stainless steel. Even better and longer lasting than zirconia belts.

Grits: 24 - 120

For ROTOCUSHIONS

For ROTO-X-WHEELS



FLEECE SLEEVES

For Roto-Cushions and Roto-X-Wheels. Can be used instead of Roto-flap fleece wheels.

Grits: Coarse (beige), Medium (red), Fine (blue).



ROTOFELT

Felt sleeve for use on Roto-X-Wheel 100mm x 90mm

Size: 100mm x 280mm only.

BLENDING / FINE GRAINING / CLEANING



ABRASIVE CLOTH FLAP WHEELS

Can be used instead of belts.
Less aggressive.
100mm OD x 100mm wide
100mm OD x 50mm wide
Grits: 40 - 240.
Bore: 19mm keyway or 25mm round.

These abrasives remove very little material and leave a finely grained surface.



ROTO COMBI

Mixed abrasive non-woven and abrasive cloth.
100mm OD x 100mm wide
100mm OD x 50mm wide
Grits: 60, 80, 120, 180, 240.
Bore: 19mm keyway or 25mm round. Fits on to extension spindles.

These abrasives do not remove material but produce a fine satin finish or blend after abrasive cloth belts and abrasive cloth flap wheels.



ROTOFLAP - FLEECE A/O

Abrasive non-woven only.
Aluminium oxide.
100mm OD x 100mm wide
100mm OD x 50mm wide
Grits: Very fine, fine, medium, coarse.
Bore: 19mm keyway or 25mm round. Fits on to extension spindles.



ROTOFLAP - FLEECE SIC

Abrasive non-woven only. Silicon Carbide (leaves brighter finish than aluminium oxide).
100mm OD x 100mm wide
100mm OD x 50mm wide
Grits: Very fine, fine, medium.
Bore: 19mm keyway or 25mm round. Fits on to extension spindles.



ROTO - LASTIC

Abrasive impregnated elastomer. Elastomer wheels are made from rubber impregnated with silicon carbide mineral. Silicon carbide produces a pleasing, bright, finely grained finish on stainless steel.
100mm OD x 100mm wide
Grits: Coarse, medium, fine.
Bore: 19mm keyway.
Fits on to extension spindles.



TAPERED SPINDLE

With M14 bore. Screws straight on to the M14 spindle of the electric angle grinder.

These mops and felt sleeves are used with polishing compo to produce mirror polished surfaces. Use with No. 76 cut and colour bar compo or No. G300A mirror polish bar compo.



ROTOMOP COLOUR

Coloured cotton stitched mop with tapered bore.
Size: 100mm x 50mm or 100mm x 25mm. Fit tapered spindle.



ROTOMOP WHITE

White cotton stitched mop with tapered bore.
Size: 100mm x 50mm or 100mm x 25mm. Fit tapered spindle.



To eliminate swirl marks from the final mirror polishing operation, wet sheet with a damp cloth. Apply whiting (Vienna lime) and gently buff until swirls disappear.

One mop, one compo. Never mix different compo grades on the same mop.



To perfectly blend the grained surface produced with a Roto-Sat portable abrasive power tool, finish with a hook and loop pad covered with superfine silicon carbide sheet.

INTRODUCTION

It is difficult to produce a perfect in-line grained finish on a large sheet with a straight power tool. Straight power tools are however, perfectly suited for finishing and polishing hollow sections, flat bar and small sheets and plates providing they have enough power and the correct speeds.

The correct choice of straight tool depends on the type of abrasive or polishing consumables you want to use, the size of the tool and the amount of power that is needed to carry out the intended operation. efficiently and economically.

Each type and size of abrasive and polishing material has a different efficient and economical speed.

To get the best out of these consumables it is essential that you match them with the correct portable tool.

We can offer both electric and air powered models of varying sizes and motor powers and a wide variety of speeds.

The most versatile models are the electric ones with variable speed controls.

ROTO-BUFFER-R



Heavy duty portable electric straight polisher with the best value for money ratio of all our straight tools.

1.5 KW electric motor.
230 V only. 6800 rpm.

With single speed only and therefore limited for use with consumables with max. operating speeds up to 6800 rpm.

Weight approx. 5.1 kg
With ergonomic handle and long neck for better grip and more operator comfort.

With M14 shaft on to which a tapered spindle can be mounted.
Max. mop dia.: 115mm.

ROTO-VARIO 1-10/2051

Heavy duty portable
straight grinding
and polishing
machine



With variable speed 1 kW electric motor, 230 V or 110 V.
Speed range: 700 - 1600 rpm
Collet size: 12mm
Weight: 3.2 kg.

ROTO-VARIO USK

Heavy duty portable
straight grinding
and polishing
machine



With variable speed 1.5 kW electric motor, 230 V or 110 V.
USK-3R: 1400 - 3000 rpm
USK-15R: 6800 - 14000 rpm
Speed range: 700 - 1600 rpm
Collet size: 12mm
Weight: 3.1 kg.

ROTO-VARIO 15-6 R/TS

Heavy duty portable
straight grinding
and polishing
machine



With variable speed 1.5 kW electric motor,
230 V or 110 V. Speed range: 2800 - 5800 rpm
With tapered spindle. Weight: 3.0 kg.

DYNASTRAIGHT



The Dynastraight portable abrasive power tool with its wide range of accessories and consumable abrasive media provides a finishing system capable of producing any finish from grit 40 belt to a high polish. It has a high torque geared down air motor which can be operated at any speed up to 4700 rev/min and is virtually impossible to stall.

Equipped with side handle and operator guard, the Dynastraight employs either 150mm or 200mm diameter heavy duty impregnated nylon discs for weld conditioning, stripping rust, scale removal, metal graining, cleaning off weld spatter and producing metallurgically clean surfaces.

Heavy duty impregnated nylon material has a cutting action similar to that of an abrasive belt, does not affect the parent metal and gives a considerably finer surface finish. The nylon wheel retains its cutting ability throughout its working life, its open web preventing clogging even when removing heavy scale and rust. Thus, the Dynastraight is ideal for repair work. It will grind out localised faults or blend large areas. Its wide range of consumable discs enables the operator to produce any required finish.

Another prime feature of the Dynastraight is that it can be fitted with a Dynacushion pneumatic wheel upon which is carried an abrasive cloth or impregnated nylon belt. The wheel is 130mm diameter and 90mm wide and can be inflated to give a more aggressive cutting action or deflated for blending operations. Thus, particular abrasive consumables can be run at optimum cutting speeds and controlled for maximum efficiency and economy. Used with abrasive belts the Dynacushion gives a continuous in-line scratch pattern and is ideal for blending after weld dressing or for conditioning large flat surfaces.

The Dynastraight machine can also be equipped with sisal brushes or cotton buffs for use with polishing compounds to produce a reflective surface finish



Gritty says . . .

Make sure you choose the correct straight polishing machine. Speed, power, voltage.

CONSUMABLES FOR STRAIGHT POWER TOOLS

Some of the consumables that can be used on straight grinders and polishers:



SISAL AND COTTON POLISHING MOPS

Mostly with tapered bore to fit standard tapered spindles.

Recommended max. size for use on straight grinders with variable speed control is 150mm.



DOLLY MOPS

Small diameter cotton and sisal polishing mops. With tapered bore to fit thin tapered spindles.



NYLON LAP MOPS

With tapered bore to fit standard tapered spindles.



FLAP WHEELS

With parallel bore to fit parallel spindles.

Also available with tapered bore to fit standard spindles.



EXPANDING RUBBER WHEELS

For use with abrasive belts. Standard size 150mm dia. x 50mm wide. With parallel bore to fit parallel spindles.

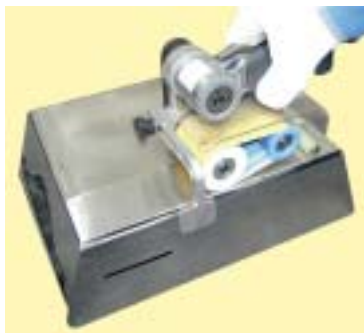


PNEUMATIC RUBBER WHEELS

For use with abrasive belts or nylon belts. Shown here on a straight tool.

Standard size 120mm dia. x 90mm wide. With 90mm x 395mm belts.

ROTO-LINER



This is a very handy air tool for all manufacturers of stainless steel fabrications.

It produces in line scratch patterns of various roughness levels, depending on the abrasive belt grade used.

- Abrasive Belt size: 260 x 60mm.
- Particularly recommended for use with engineered belts, nylon belts and agglomerate belts.



SURTEX ROTO-LINER shown blending in an outside corner weld and regrinding surrounding surface.



Before



After

Finishing of corners

FLEXIBLE SHAFT MACHINES

INTRODUCTION

Flexible shaft machines represent the most comprehensive mechanical finishing system available.

Flexible shaft machines have one drive unit only for more than 25 abrasive, deburring, finishing and polishing heads.

Since the following models are meant to be used for metal finishing we will concentrate on power ratings from 1.5 KW to 3 KW.

Each power rating has its own flexible shaft size. 7mm being the smallest we recommend for industrial use and 15mm for extra heavy duty use.

ROTO-FLEX

Variable speed flexible shaft machine.

Variable speeds from 1000 - 14000 rpm.

Over 25 quick change grinding, deburring and polishing heads.

Operates on industrial 240V single phase, 20A electrical supply.

Also available with 400V 3 phase motors. Foot control.

From 1.5 to 3 kW.



For the complete range of consumables see our
CONSUMABLES CATALOGUE

- Coated Abrasives
- Nylon Abrasives
- Speciality Abrasives
- Polishing Mops
- Polishing Buffs
- Polishing Compounds
- Polishing Belts





Roto-Flex in action graining hollow sections.



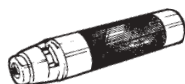
Roto-Flex in action polishing a wheel.



Also available mounted on wheeled undercarriage.

Flexible shaft machines are suitable for working in the factory and on site. They are initially more expensive than individual electric or air tools but they are significantly cheaper if used with several of the optional attachments.

Straight hand piece for all shaft mounted abrasives



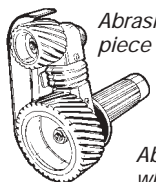
Angled hand piece for abrasive discs



Tapered spindle hand piece for polishing mops



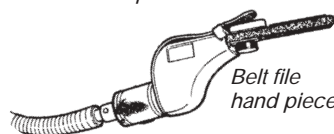
Abrasive belt hand piece



Abrasive wheel hand piece



Belt file hand piece



The ROTO-FLEX system comprises more than 25 tools which can be connected to a single power source with motors from 1.5 KW to 3 KW and with variable speeds from 1,000 rpm to 14,000 rpm.

FLEXIBLE SHAFTS



S 7/3 - Light duty
S 10/4 - Medium duty
S 12/3 - Heavy duty
S 15/3 - Extra heavy duty

Recommended standard length 2000mm.



Gritty says . . .

Flexible shaft machines offer the most comprehensive grinding, deburring, finishing and polishing system from a single power source.

ROTO-STAR FLEXIBLE SHAFT DRIVE UNIT

230/110V electric motor. 1.7 KW.
Mechanically variable speeds: 3000 rpm, 6000 rpm, 12000 rpm.
With DIN 10 connection.



Available as starter kit: ROTOSTAR motor with 3 speeds, 3m cable with plug, 1 off flexible shaft NA 10 x 2000mm DIN 10 / G28, tool holder FH 10 (straight hand piece) with 6mm collet, set of spanners. All packed in metal case.

ROTO-FERA FLEXIBLE SHAFT DRIVE UNIT

400V, 50 Hz. 1 KW.
Mechanically variable speeds: 850 rpm, 1600 rpm, 2100 rpm, 3200 rpm, 5700 rpm, 8000 rpm, 12000 rpm.

With DIN 10 connection.

Available as a starter kit.



HANDPIECES FOR ROTO-STAR AND ROTO-FERA



Straight and angled hand pieces.



Abrasive belt hand pieces.



Special design straight hand pieces.



Abrasive disc hand pieces



Gritty says . . .

Flexible shaft machines are by far the largest single drive grinding, deburring, finishing and polishing system available.



Smoothy says . . .

Polishing needs more power than grinding. Flexible shaft machines are the only portable system to offer this power.

CONSUMABLES FOR FLEXIBLE SHAFT MACHINES

For use with tapered spindle handpiece:



SISAL MOPS



COLOURED STITCHED MOPS



WHITE STITCHED MOPS



LOOSE LEAF MOPS

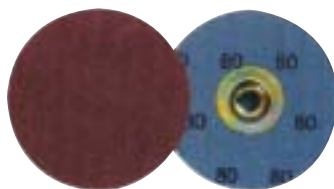
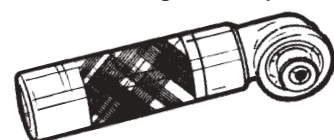


DOLLY MOPS



NYLON MOPS

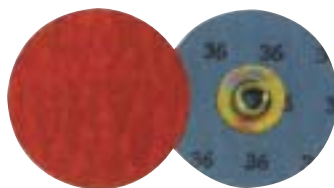
For use with angled head piece:



ALUMINIUM OXIDE DISCS



ZIRCONIA DISCS

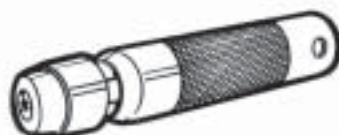


CERAMIC DISCS



NYLON DISCS

For use with straight head piece:



SHAFT MOUNTED FLAP WHEEL

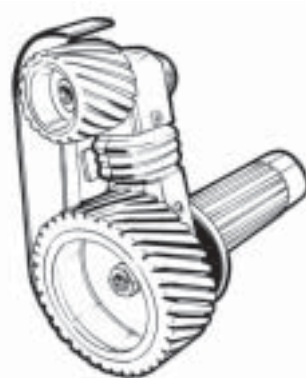


SHAFT MOUNTED MINI FLAP WHEEL



SHAFT MOUNTED NYLON WHEEL

For use with abrasive belt head:



ALUMINIUM OXIDE BELTS



ZIRCONIA BELTS



Portable Abrasive Belt Files

Belt files are designed to grind difficult to reach areas. Apart from the Roto-Belter they can all be used with quick change contact arms.

All belt files are suitable for abrasive cloth belts, structured belts, nylon belts and polishing belts, covering grinding, deburring, satinizing and mirror polishing.

Roto-File 24A and selection of contact arms



Roto-File 610A in action



Roto-File 710E in action



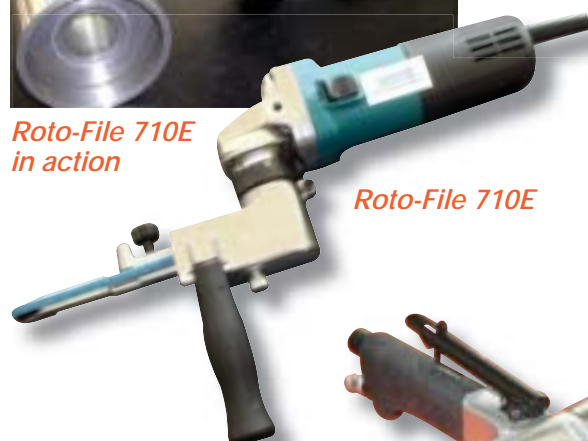
Roto-File 610A



Roto-File 610A in a set



A selection of contact arms



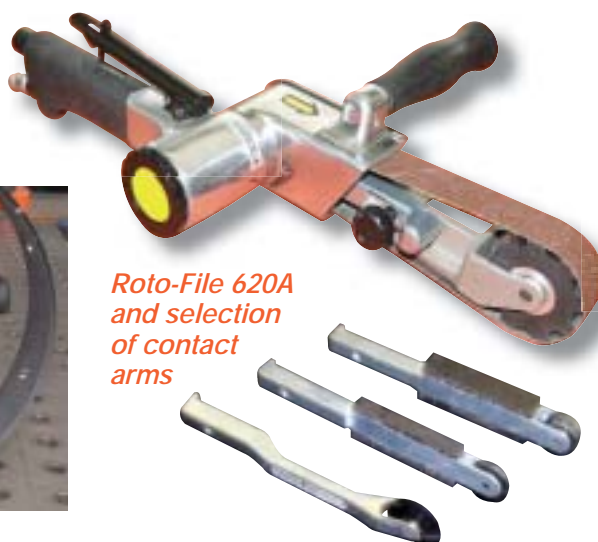
Roto-File 710E



Roto-Belter E



Roto-File 620A in action



Roto-File 620A and selection of contact arms



Roto-Belter E in action

Model	AIR Motor KW	ELECTRIC Motor KW	Belt Size mm	Contact Wheel dia mm	Weight Kg (approx)
Roto-File 24A	0.5 HP	-	610 x 3, 6 or 12mm	6 - 25mm	1.36
Roto-File 610A	0.37 HP	-	305 x 3, 6 or 12mm	6 - 25mm	1.0
Roto-File 620A	0.45 HP	-	457 or 610 x 3, 6, 13, 20 or 25mm	6 - 50mm	1.4
Roto-File 710E	-	0.7	457 or 610 x 3, 6 or 12mm	6 - 25mm	2.2
Roto-Belter E	-	1.2	620 x 40mm	80mm	4.2

RECOMMENDED CONSUMABLES FOR BELT FILES



ALUMINIUM OXIDE BELTS

For general purpose grinding and deburring.

Grit range: 40 - 400



NYLON BELTS

For light deburring and finishing.

Grit range: Fine, medium, coarse.



STRUCTURED BELTS

For fine grinding and polishing.

Grit range: A300 - A6 (80 - 2500).
Equivalent to traditional grit sizes
80 - 2500.



ZIRCONIA BELTS

For grinding and deburring stainless steel.

Grit range: 40 - 120



COTTON BELTS

For mirror polishing.



COMPACT GRAIN BELTS

For fine grinding and polishing.

Grit range: 80 - 400.



Abrasive Belts for Belt Grinders and Tube Grinders

VZ1

Zirconia mineral, open coated to prevent premature clogging.

Grit 24 - 240.

Polyester x-weight (stiff) backing
grit 24 - 150.

Cotton backing grit 180 - 240.

Zirconia mineral belts are the recommended belts for stainless steel.

Zirconia mineral is tougher than aluminium oxide mineral and therefore better suited for stainless steel.

VZ2

Zirconia mineral with top size to keep cool. High zirconia content.

Grit 24 - 80.

Polyester X-weight (stiff) backing

Zirconia mineral belts are the recommended belts for stainless steel.

Zirconia mineral is tougher than aluminium oxide and therefore better suited for stainless steel.

VCER2

Ceramic mineral with top size to keep cool.

Grit 36 - 80.

Polyester X-weight (stiff) backing

Next to diamonds and boron nitride minerals ceramics are the toughest available today. They are more expensive but should perform better and last longer than zirconia.

VCA1

Granulated aluminium oxide compact grain.

Grit 80 - 1200.

Polyester J-weight (flexible) backing.

Also called compact grain. A multilayer grain structure with self sharpening action. Compact grain belts are more consistent, last longer and can reduce the steps in a finishing sequence. Because of their wide grit range they are particularly well suited for finishing stainless steel

VNYL1

Abrasive impregnated non woven nylon. Coarse, Medium, Fine, Very fine

Not suitable for stock removal but best for finishing and blending. Ideal for satin finishes.

For more detailed descriptions see our abrasive belt catalogue.



Abrasive Belts for Belt Files

VA1

Aluminium Oxide. Very flexible.

Grit 60 - 800.

Polyester J-weight (flexible) backing. Aluminium belts are the basic grade for general grinding and blending.

VZ2

Zirconia mineral with top size to keep cool. High zirconia content..

Grit 24 - 80.

Polyester X-weight (stiff) backing

Zirconia mineral belts are the recommended belts for stainless steel. Zirconia is tougher than aluminium oxide and therefore better suited for stainless steel.

VCER1

Ceramic mineral with top size to keep cool.

Grit 24 - 120.

Polyester X-weight (stiff) backing.

Next to diamonds and boron nitride minerals ceramics are the toughest available today. They are more expensive but should perform better and last longer than zirconia.

VCER2

Ceramic mineral with top size to keep cool.

Grit 36 - 80.

Polyester X-weight (stiff) backing

Next to diamonds and boron nitride minerals ceramics are the toughest available today. They are more expensive but should perform better and last longer than zirconia.

VCA1

Granulated aluminium oxide compact grain.

Grit 80 - 1200.

Polyester J-weight (flexible) backing.

Also called compact grain. A multilayer grain structure with self sharpening action. Compact grain belts are more consistent, last longer and can reduce the steps in a finishing sequence. Because of their wide grit range they are particularly well suited for finishing stainless steel

VNYL1

Abrasive impregnated non woven nylon. Coarse, Medium, Fine, Very fine. Not suitable for stock removal but best for finishing and blending. Ideal for satin finishes.

For more detailed descriptions see our abrasive belt catalogue.

SIX OF THE BEST POLISHING COMPOS MONEY CAN BUY

INTRODUCTION

Polishing compos are available in three categories: Cutting, Cut and Colour, Colouring.

Cutting compos are the most aggressive. They should be used with sisal mops only, followed by cotton mops with a colouring compo.

Cut and Colour compos often produce the desired finish in a single operation with either a sisal or cotton mop.

For more detailed descriptions and a user guide, ask for our compo price list.



54 H

G300 A

70 Grey



1947 SV

76 white

SHG

54 H

A very special compo with the best combination of high cut and bright finish. Top quality grease ensures excellent lubrication and cooling without leaving smears. Long lasting and well worth its price for the discerning polisher. Suitable for all metals.

70 GREY

Top quality cut and colour compo with less cut than 54 H. Suitable for all metals but particularly well suited for stainless steel. Ideal for two stage polishing operations.

76 WHITE

The bench mark cut and colour compo for stainless steel for over 10 years. With top quality grease that lubricates and cools but leaves no residue. Often used for single stage polishing operations.

1947 SV

Its in the name - the leading tripoli compo since 1947. Re-formulated several times since then but still the benchmark that other tripolis have to beat. Very economical, low grease content, bright finish. Recommended for non ferrous metals only.

G 300 A

A very fine mirror polishing compo with low grease content. Produces the brightest finish of all standard mirror polishing compos. Recommended for all metals but particularly effective on stainless steel.

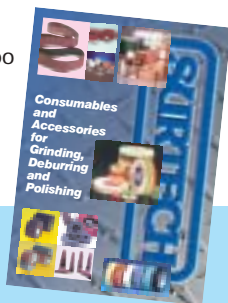
SHG

This is a rather special mirror polishing compo for special occasions or for top class work. Produces a super high gloss finish on stainless steel and precious metals. Expensive - but there is no better.



Gritty says . . .

You will have a job finding better polishing compo than these!



For the complete range of polishing compounds see our **CONSUMABLES CATALOGUE**



CLEANING, PROTECTING, LUBRICATING, REPAIRING



A range of amazingly useful products for stainless steel fabricators

MCT 201 T

This paste has no equal for the removal of severe discolourations, oxidation spots, rust attacks, etc. Will leave polished surfaces brilliantly clear. Ideal for cleaning badly contaminated stainless steel surfaces from exposure to the weather, ie bus shelters, hotel entrances, sculptures, street furniture, etc. Safe and simple use. Without the Health and Safety hazards of pickling paste.

330 g trial pack or 1 kg container.



MCT 800-S

MCT 800-F

We believe this to be the best stainless steel cleaner/protector on the market. Cleans thoroughly and with antibacteria action. Leaves protective film to prevent renewed contamination.

Recommended for both internal and external use.

MCT 800-S = 400 ml aerosol
MCT 800-F = 1 l bottle.



INOX CARE

A highly refined oil for the care and protection of stainless steel, aluminium and non ferrous metals. Leaves a soft gleaming protective film. Protects against finger prints and the influences of the weather.

500 ml spray bottle.



FINAL TOUCH

Cleans stainless steel leaving a residue free finish. Does not produce a protective film. Fast drying. Recommended for internal use. Ideal for cleaning stainless steel, aluminium, non ferrous, glass, etc. at exhibitions, in hotels, restaurants and at home.

500 ml spray bottle.



INOX CLEAN

Highly concentrated water based gel cleaner for stainless steel, aluminium and non ferrous metals. Removes surface corrosion, mineral deposits and contaminations.

Passivates stainless steel surfaces and produces new corrosion resistant layer. Recommended for both internal and external use.

1000 ml spray bottle.



INOX TOP

Cleans stainless steel. Removes finger prints. Leaves a shiny matt surface. Leaves a protective film. Recommended for internal use.

500 ml spray bottle.



Gritty says . . .

Having nicely polished your stainless steel parts, why not clean and protect them.

Chamfering, Beveling & RADIUSING Machines

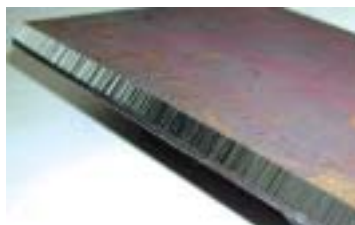
We can offer the largest range of chamfering and beveling machines in the UK. From light to extra heavy duty portable, bench or pedestal mounted. Special designs for heavy plate as used in ship and bridge building.

The machines shown here are a selection of our most popular models.

Bevel Finishes



Radiusing on one or both edges. 2 - 6mm radii.



The slightly rippled bevel finish from machines with milling cutters.



The smoothest finish produced by abrasive belts or discs.

Portable Beveling machines with milling cutters



1.5 KW, 0 - 5mm chamfer



2.6 KW, 0 - 10mm chamfer



1 KW, 0 - 15mm chamfer



1.4 KW, 0.5 - 6mm radii

Pedestal and Bench Chamfering machine with abrasive discs



0 - 3mm chamfer



0 - 6mm chamfer



0 - 10mm chamfer

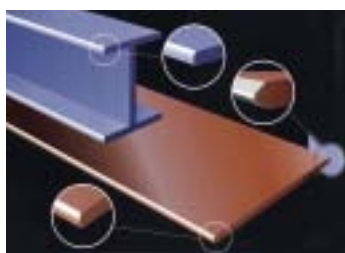


0 - 10mm chamfer (horizontal cutting head)

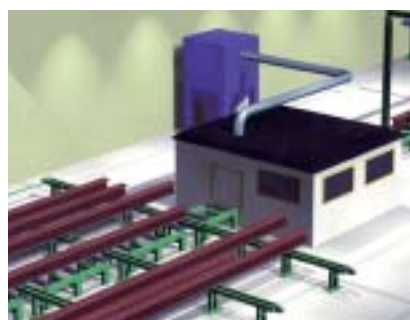
Pedestal and Bench Chamfering machines with milling cutters

Edge preparation for shipbuilders, bridgebuilders and the construction industry

These are our largest machines. For plate, flat bar, girders, bulb flats, etc. All of these machines use abrasive belts for faster stock removal and improved finish.



- Edge grinding
- Corner radiusing
- Beveling
- Removing primer and rust
- Removing hardened surface
- Straightening edges



A typical installation with infeed and outfeed handling. With multihead abrasive belt power grinders inside acoustic booth. With central control cabinet.

WELD PREPARATION AND FINISHING MACHINES

INTRODUCTION

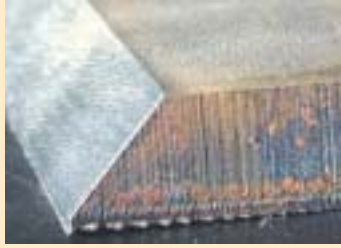
All our portable machines are available with milling heads either for bevelling or for radiusing. The smaller bevelling machines have heads with between 1 and 2 carbide inserts, the larger bevelling machines have 5 inserts.

Most carbide inserts have several cutting edges. Once one edge is worn the insert can be turned to a new edge.

Motors range from fractional HP to 2,6 HP. In each case the motor is carefully matched to provide ample power for the max. bevel width that can be produced with the machine. Our SMA and 760/2 models are the most powerful portable milling machines available today.

If you need larger bevels we can offer stationary bevelling machines with milling heads or at the top of the range Abrasive Belt Rapid Grinding Bevelling Machines which can produce bevels up to 40mm wide.

With the Abrasive Belt Rapid Grinding Bevelling Machines bevels are produced on straight edges of plates economically and with great precision. The repeatable highly accurate welding edges make it possible to achieve a very high degree of efficiency in the subsequent welding process and production of assemblies. Abrasive belts can bevel materials that are impossible or not economical to bevel with milling machines.



Up to 3mm wide bevels



Model ASO 314 Portable Milling Machine

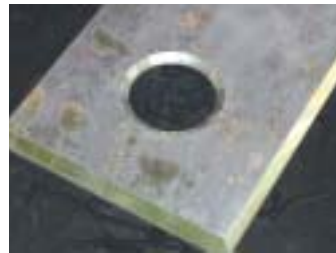
For bevels up to 3mm wide. 45° angle only. For straight & contoured edges. Also for radii up to 3mm.



Model ASO 313 Portable Milling Machine

For bevels up to 3mm. At angles from 15° to 45°. For straight edges only. Also for radii up to 4mm.

Carbide inserts for our portable bevelling machines. Each insert has 4 cutting edges



Our portable bevelling machines cannot only bevel straight and contoured edges but also holes

Up to 20mm wide bevels



Model 760/2 Portable Bevelling Tool

Although weighing 14kg, Model 760/2 can be classed as a portable bevelling tool. Once it is placed on the plate the weight is no longer felt. The V-guide helps to keep the machine accurately on the edge. Only suitable for straight edges. Can bevel up to 20mm wide. This is made possible by 2 milling heads with 9 inserts each. Motor 0.95kW, 220/380V. It has a built in angle setting from 15° - 45°. Also suitable for radiusing up to 4mm.

Up to 40mm wide bevels

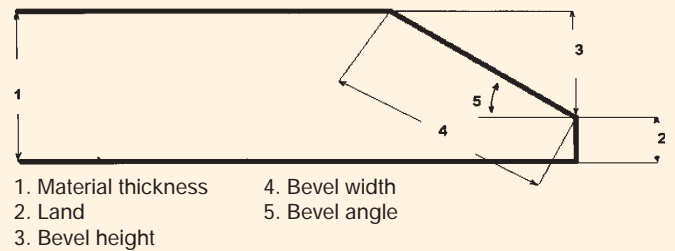


Model ASO 900 Semi-portable Milling Machine

For bevels up to 40mm. Can be used as stationary or portable machine. With automatic feed. For straight edges only.

DESCRIBING BEVEL SIZES & BEVEL ANGLES

Please adhere to these descriptions to avoid confusion and mistakes



Maximum Bevel Sizes

The figures given for maximum bevel sizes are not always for a single pass. Typically, mild steel can be bevelled up to approx. 6mm in a single pass, stainless steel up to approx. 3mm in a single pass. The machines can be adjusted for larger cuts for each pass until the required bevel size is reached.

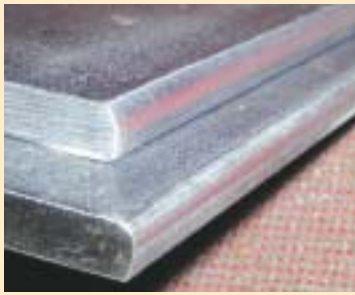
RADIUS MILLING MACHINES

INTRODUCTION

Edges are radiused either for decorative and safety purposes or for technical reasons.

For decorative and safety purposes small radii of between 1mm and 3mm suffice.

For technical reasons larger radii between 4mm and 6mm are required to form edges which prevent painted, enamelled and plated finishes from cracking and furthering corrosion.



Model SMA 40-R Radiusing Machine

Our most popular radiusing machine for radii up to 5mm.



The milling head for our top of the range radiusing machines. With 5 carbide inserts.



Model 2014-R Heavy Duty Portable Radiusing Machine

Our best value machine. 1.4kW motor, 110V & 240V. 2,000-11,000 rpm. For radiusing from 3mm to 5mm. *Bevelling and radiusing heads on models 2014 & 2014-R cannot be interchanged.*



The milling head for Model 2014-R milling machine with 3 carbide inserts.

ABRASIVE BELT RAPID BEVELLING SYSTEMS

INTRODUCTION

Abrasive belt bevellers are suitable for all materials, particularly those that are impossible or difficult to mill. Belts are faster, more economical and simpler to use.

The abrasive belt heads can be set for bevel angles from 0 to 90 degrees and unlike most milling machines these belt bevellers can produce knife edge bevels and bevels with a root.



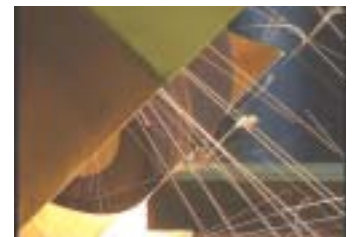
Model Rapid Belt 1 Abrasive Belt Beveller

This simple but effective machine is manually operated. Produces bevels up to 40mm wide. Max. bevel length 1000mm for the standard model, longer on request.



Model Rapid Belt 2 CNC Bevelling Machine

Our automatic CNC bevelling machine with Abrasive Belt Rapid Grinding Head. For straight edges only. The standard model has a stroke of 1000mm to 5000mm and is suitable for material thicknesses from 4mm to 40mm. Bevel angles are from 0° - 90°. The abrasive belt drive motor is 5.5 KW, the feed from 0 - 10 m/min and the abrasive belt size 50mm x 2000mm. Machines for other plate sizes are also available.



Bevelling Machines With Rotary Shear Cutters

- Model CHP 6
- Model CHP 12
- Model CHP 12-G
- Model CHP 12-G REV
- Model CHP 21-G
- Model CHP 21-G REV

All CHP bevelling machines use rotary shears for cutting. Rotary shears cut faster than milling cutters used in many other bevelling machines, however the finish is not as smooth as produced by milling cutters but has a rippled surface.

Model CHP 12 is the most popular machine. It covers nearly 80% of all bevelling operations with portable and transportable machines. Model CHP 12 as well as Model CHP 21 can be mounted on wheeled carriages so that the machines self propel along the length of the plate.



CHP 6



CHP 12







CHP 12-G



CHP machines can also bevel tubes and small plates



CHP 21-G

MILLING CUTTERS	CHP 6	CHP 12	CHP 12-G CHP 12-G REV	CHP 21-G CHP 21-G INV
 1026 for carbon sheets	X	X	X	
 1026-1 for stainless steel	X	X	X	
 1026-F for aluminium	X	X	X	
 2003-A for carbon & stainless steel				X



Bevel
angles

	CHP 6	CHP 12	CHP 12G CHP 12G REV	CHP 21G CHP 21G INV
Motor Power	0.75 HP	3 HP	3 HP	4 HP
Voltage	220/380 V	220/380 V	220/380 V	220/380 V
Approx Feed Speed per minute				
on mild steel	1.8m	2.6m	2.6m	1.7m
on stainless steel	0.9m	1.3m	1.3m	0.9m
Max bevel width				
on mild steel	6mm	12mm	12mm	20mm
on stainless steel	5mm	10mm	10mm	16mm
Bevel angle	30°	30°	20-45°	20-45°
Plate thickness	3-16mm	6-40mm	6-30mm	9-50mm
Approx weight	34 kg	65 kg	110 kg	370 kg

Essentials for Welders

New

Welding Tables

Modular 3-dimensional precision Welding Tables with ingenious clamping system

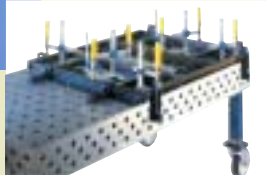
- Up to 40% time saving
- To a tolerance of 0.03mm
- In steel, stainless, Hardox or plasma nitrided
- Any size, any weight (up to 50 t)
- More than 100 clamps to suit plate, tube, pipe, fabrications, etc.



Tube and Pipe Fabricators



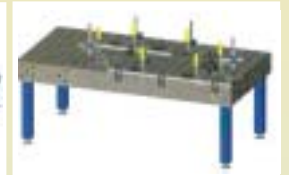
General Fabricators



Architectural Fabricators



Heavy Duty Fabricators



Balustraders

For more details click on www.siegmund.eu

Then click on **UK**, then click on **welding tables** in left column. Then click on **Service/Downloads**

Then click on any of the following, either **System 28** or **System 16**:

Tables • Table legs • Stops • Squares • Bolts • Clamps and accessories • Prisms • Supports • Fast clamping equipment • Magnetic clamping technology • Accessories • Sets • Connecting elements • Anti spatter.

For most first time buyers Tables, Table legs and Sets (=tool sets) are the most important sections.

For an explanation of "System 16" and "System 28" click on **Welding Tables** in second top line and then click on **System 28** or **System 16** in left column.

For a drawing of the System 16 or System 28 grid click on **System 28/System16 Grid** in left column

For choice of welding table materials click on **S4 surfaces** in left column.



This 384 page handbook with the complete product range, many application examples and general advice is available **FREE** to Companies with more than 5 welders.

Please fill in form and fax back to 0121 359 1817

Company Name

Company Address

Post code

Contact Name

Telephone

Mobile

E-mail

Company activity

No. of welders

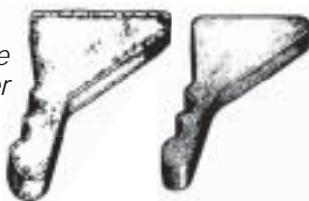
What jiggig system do you use at present?

Surtech

Friction De-Slagging Machines



Finish before and after



Doors open, drum shut



Built in dust extractor



With doors shut

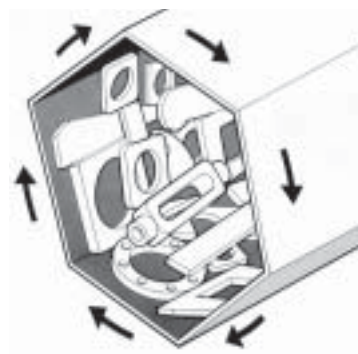


Doors and drum open

- For oxy fuel, plasma and laser cut blanks.
- For punched and sawn parts.
- A powerful de-slagging system that replaces hammers, angle grinders and abrasive belt grinders.
- Four ruggedly constructed models with a drum life in excess of ten years.

Operation

- Load parts into hexagonal drum.
- Set rotational speed and timer.
- Wait for 20 to 30 minutes for parts to be cleaned and have even the most stubborn slag removed on all edges.
- At the end of the cycle, the drum can be positioned over a pallet and automatically emptied.
- Friction cleaned parts are metallically clean and facilitate subsequent welding operations



Parts inside the drum

More than a thousand machines sold worldwide

Health and Safety

The dust and vibration problems associated with manual grinders are eliminated. Lima machines have elastomer coated drums behind access doors. This reduces noise to approx. 72 dBA and keeps operators away from any moving parts. Dust is extracted by a built in dust collection unit.

Savings

Compared with manual de-slagging, a saving of £100 or more for each loading.

	Lima 400	Lima 600	Lima 800	Lima 1000
Drum size in litres	400	600	800	1000
Drum capacity in litres	250	400	600	800
Approx. filling weight	500 kg	1000 kg	1000 kg	1300 kg
Variable drum rotation	4 - 18 rpm	4 - 18 rpm	4 - 18 rpm	4 - 18 rpm
Size W x D x H in mm	3000 x 1500 x 2000	3000 x 1500 x 2000	3000 x 1500 x 2000	3000 x 1500 x 2000



Dual Purpose



Bevelling Machines



Belt Grinders



Linishers



Robots



Throughfeed Finishing

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**For the
Largest range of
ABRASIVE GRINDING,
DEBURRING AND
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Dust Extraction



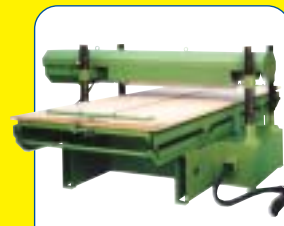
Planetary for
Polishing Bent Tube



Overhead Belt Grinders
and Polishers



Foundry Cutting
and Grinding



Sheet Polishers



Tool Post Grinders



Weld Cleaning



Sheet Deburrers



Tube Polishers



Portable

FAX BACK TO 0121 359 1817

For a free assessment of your grinding, deburring and polishing operations

Name _____ Telephone _____

Position _____ Email _____

Company Name _____

Address _____ Post Code _____