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?

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 and After.

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.

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

SBM-GS diagram. Four bolts on top side and four bolts 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 de-flashing machine.

Manual de-slaging with special design belt grinders.

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

Inside the friction deburring machine.

Wide belt deburring machine with one head.

Diagram of wide belt 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 bolt, single head deburring machine.

Narrow bolt 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.

To receive more information on any of the products shown visit www.surtech.co.uk
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 or rounaing 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 rotary duty portable machine with milling cutters to produce radii from 2mm to 5mm.

A deburring and radiusing machine with oscillating abrasive belt heads. For long parts.

7. Full radius edges
Full radii can only be produced with portable or stationary machines using radius milling cutters. 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 edge

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 / beveling machine. Max bevel 40mm.

This is only a small selection from our range of beveling 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.

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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 infinrative.

**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.

**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.

**Cross Disc Machines with Reciprocating Discs**
**Shortest part size 20 x 20mm.**

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

**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.

**Long Belt Deburring Machines**
**Shortest part size approx. 30mm against stop**

When parts are laid against a stop or jigged sizes as small as 60mm 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.

**Swing Grinder Deburring Machines**
**Shortest part size approx. 50mm x 50mm**

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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 or a friction deburrer.
Rotating drum de-slagging machine. Working 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.

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Mirror Finish
We refer to a mirror finish when the surface is silken smooth 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.

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 beveling machine with vertically arranged milling cutters.
These machines will leave a finish with chatter marks.

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.

Smooth Bevel Finish
Smooth bevels can only be produced with beveling machines with abrasive discs or horizontal milling cutters.

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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.

**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

**Model Series SBM-M**
With four belts. Two at the top, two at the bottom.

**Model Series SBM-XL**
With eight belts. Four at the top, four at the bottom.

**Model Series SBM-L**
With six belts. Three at the top, three at the bottom.

**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.

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**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

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**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

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**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)

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.

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**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.

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

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To receive more information on any of the products shown visit www.surtech.co.uk

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 dub 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 ??

A wide belt machine with two abrasive belt heads and two brush heads

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.
Model M6R
Single Belt.
600mm working width
7.5 kW Motor
Belt size 635 x 1525mm

Model M6RR
Twin Belt.
600mm working width
2 x 7.5 kW Motor
Belt size 635 x 1525mm

Model M9RR
Twin Belt. width.
900mm working width
2 x 10 kW Motor
Belt size 940 x 1525mm

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.


To receive more information on any of the products shown visit www.surtech.co.uk
Model Range G
Wide Belt Grinding, Deburring, Graining & Finishing Machines

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

The Machines

- **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
- Available with a combination of up to three belt heads, up to two rotary brush heads and up to one planetary brush head.
- Operator Panel
- Abrasive Belt 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

To receive more information on any of the products shown visit [www.surtech.co.uk](http://www.surtech.co.uk)
**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.

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, i.e. 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

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>SG 150 K</th>
<th>SG 150 KK</th>
<th>SG 300 K</th>
<th>SG 300 KK</th>
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<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Min/Max part thickness in mm</td>
<td>0.5 - 150</td>
<td>0.5 - 150</td>
<td>0.5 - 150</td>
<td>0.5 - 150</td>
</tr>
<tr>
<td>Abrasive belt size in mm</td>
<td>2000 x 150</td>
<td>2000 x 150</td>
<td>3000 x 300</td>
<td>3000 x 300</td>
</tr>
<tr>
<td>Motor. Voltage</td>
<td>4 KW</td>
<td>2 x 4KW</td>
<td>7.5 KW</td>
<td>2 x 7.5 KW</td>
</tr>
<tr>
<td>Ammeter for control of contact pressure</td>
<td>yes</td>
<td>yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Variable converter speed from 1-10m/min</td>
<td>yes</td>
<td>yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Coolant tray with 120mm diameter drain</td>
<td>yes</td>
<td>yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Machine fully plumbed for coolant</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>No. of coolant nozzles</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

FEATURES (continued)

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

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, i.e. 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.
The optional wet operation model is supplied with a coolant tank with paper filter, a pump, 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.

To receive more information on any of the products shown visit www.surtech.co.uk
**LARGER MACHINES**

- Optional 200mm wide belts. For max. 195mm working width. With 200mm wide conveyor. Other specifications as above.
- Optional 300mm wide belts. For max. 295mm working width. With 300mm wide conveyor. Other specifications as above.
- Common guard for multthead 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 m/min 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 multthead 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 dub edges.

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

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**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**

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 graining the feed rate has to be speeded up to eliminate wavy lines from the belt oscillation or the oscillation can be switched off.

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To receive more information on any of the products shown visit www.surtech.co.uk
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

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

To receive more information on any of the products shown visit www.surtech.co.uk
**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 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 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.

**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 . . . ??
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:

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

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

To receive more information on any of the products shown visit www.surtech.co.uk
Narrow Belt Throughfeed Machines

For Graining, Deburring & Polishing

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

**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.

**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 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.

To receive more information on any of the products shown visit www.surtech.co.uk
**WIDE THROUGHFEED SHEET METAL DEBURRING AND EDGE ROUNDBRIND 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.

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

For heavy deburring.

---

**NARROW THROUGHFEED SHEET METAL DEBURRING AND EDGE ROUNDBRIND 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

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 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

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.

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.

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

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

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
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.

GROBI is a Norwegian Company with a highly specialised range of abrasive belt machines for finishing corners and edges of plate.

The machines were originally developed in 1994 and since then more than 35 installations have been sold to leading manufacturers worldwide.

Further information is available from SURTECH or from Grobi’s website, www.grobi.no

Some of the edge preparations Grobi machines can carry out:
- Plates
- Beams
- Thermal Cut Blanks
- Bars

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

To receive more information on any of the products shown visit www.surtech.co.uk
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
• Finishing 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: 1400mm
Table width: 600mm

Table length and width does not mean max. working dimensions. These also depend on the contact pad and/or contact wheel 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, please state in your order.

Vertical table travel: Approx. 500mm

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

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

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 your 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 also 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 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.: 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.
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.

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

**ALUMINIUM OXIDE BELTS**
For general purpose work. Suitable for all metals. Grit range:

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

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

**POLISHING HEAD FOR BUFFS AND WHEELS**
**CONTACT WHEEL HEAD FOR ABRASIVE BELTS**

**ABRASIVE IMPREGNATED NYLON BELTS**

**CONSUMABLES CATALOGUE**

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.

For the complete range of abrasive belts see our CONSUMABLES CATALOGUE.
MODEL FAB / LS90
GRINDING & FINISHING
MACHINE

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.

**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).*

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**

To receive more information on any of the products shown visit www.surtech.co.uk
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

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.

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

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.

Grind and grain with contact wheel (optional)
Polish with brushes and buffs (optional)
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

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

Polish fabricated parts

Longitudinal polishing of tubular parts

Polish flat parts

To receive more information on any of the products shown visit www.surtech.co.uk
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 grain 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 grain sheet but they could also grind plate and thus were more versatile and for many stock holders made more economic sense.

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.

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 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-slagged 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-slagging, grinding and finishing.

Vertical belt for extra heavy duty de-slagging.

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

Single Abrasive Belt machine
With Contact Platen or Contact Wheel
Optional Parts Manipulator.

Single Abrasive Belt machine
With three Contact Units:
Platen or Contact wheel, Buffing Head and Vertical Belt Head. Optional Parts Manipulator.

Twin Abrasive Belt machine
With Pneumatic Belt Tensioning, Pneumatic Pressure Assist Contact Unit and Second Table
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

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.

To receive more information on any of the products shown visit www.surtech.co.uk
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

To receive more information on any of the products shown visit www.surtech.co.uk
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 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

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 motting 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.
- Cotton buff for use with colouring compound.
- Automatic gun for applying liquid polishing compound from a pressure pot.

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.

Automatic application of liquid polishing compounds

Ask for detailed list!

Polishing Compo

CONSUMABLES FOR ABRASIVE BELT FLOOR GRINDERS

ZIRCONIA BELTS

CERAMIC BELTS

CONSUMABLES FOR 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

With Abrasive Belt Floor Grinders

CONSUMABLES FOR ABRASIVE BELT FLOOR GRINDERS

ZIRCONIA BELTS

CERAMIC BELTS

For the complete range of abrasive belts see our CONSUMABLES CATALOGUE

To receive more information on any of the products shown visit www.surtech.co.uk
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

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

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.

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 holes. Suitable for removal of tags left after nibbling.

To receive more information on any of the products shown visit www.surtech.co.uk
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.

Model SURTX J T
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

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.

To receive more information on any of the products shown visit www.surtech.co.uk
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.

**Specifications:**
- 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**
- 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.

**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
- 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-SatAir 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 . . .

To receive more information on any of the products shown visit www.surtech.co.uk
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.

ROTOFLAP - FLEECE A/O
Coloured cotton stitched mop with tapered bore.
Size: 100mm x 50mm or 100mm x 25mm. Fit tapered spindle.

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

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
100mm OD x 50mm wide
Grits: 40 - 240.
Bore: 19mm keyway or 25mm round. Fits on to extension spindles.

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

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

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.

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.

Gritty says . . .
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.

Smoothy says . . .
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.
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.

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.

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.

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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.

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.

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.

For the complete range of consumables see our CONSUMABLES CATALOGUE
• Coated Abrasives
• Nylon Abrasives
• Speciality Abrasives
• Polishing Mops
• Polishing Buffs
• Polishing Compounds
• Polishing Belts

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.

FLEXIBLE SHAFT MACHINES

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.
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

### 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.

### 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 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

### FLEXIBLE SHAFTS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>S 7/3</td>
<td>Light duty</td>
<td></td>
</tr>
<tr>
<td>S 10/4</td>
<td>Medium duty</td>
<td></td>
</tr>
<tr>
<td>S 12/3</td>
<td>Heavy duty</td>
<td></td>
</tr>
<tr>
<td>S 15/3</td>
<td>Extra heavy duty</td>
<td></td>
</tr>
</tbody>
</table>

Recommended standard length 2000mm.

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

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**
- **ALUMINIUM OXIDE DISCS**
- **ZIRCONIA DISCS**
- **CERAMIC DISCS**
- **NYLON DISCS**

For use with angled head piece:

- **SHAFT MOUNTED FLAP WHEEL**
- **SHAFT MOUNTED MINI FLAP WHEEL**
- **SHAFT MOUNTED NYLON WHEEL**

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**

For the complete range of consumables see our CONSUMABLES CATALOGUE.
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.

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

To receive more information on any of the products shown visit [www.surtech.co.uk](http://www.surtech.co.uk)
RECOMMENDED CONSUMABLES FOR BELT FILES

**ALUMINIUM OXIDE BELTS**
For general purpose grinding and deburring.
Grit range: 40 - 400

**ZIRCONIA BELTS**
For grinding and deburring stainless steel.
Grit range: 40 - 120

**NYLON BELTS**
For light deburring and finishing.
Grit range: Fine, medium, coarse.

**COTTON BELTS**
For mirror polishing.

**STRUCTURED BELTS**
For fine grinding and polishing.
Grit range: A300 - A6 (80 - 2500). Equivalent to traditional grit sizes 80 - 2500.

**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.
Cotton backing grit 180 - 240.
Zirconia mineral belts are recommended 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 recommended for stainless steel.
Zirconia mineral is tougher than aluminium oxide and therefore better suited for stainless steel.

**VCER1**
Ceramic mineral with top size to keep cool.
Grit 24 - 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.

**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**
For more detailed descriptions see our abrasive belt catalogue.
INTRODUCTION

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

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

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 composites. 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

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

To receive more information on any of the products shown visit www.surtech.co.uk
Chamfering, Bevelling & Radiusing Machines

We can offer the largest range of chamfering and bevelling 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 Bevelling machines with milling cutters**
- **Model 2014**
  - 1.5 KW, 0 - 5mm chamfer
- **Model 2023**
  - 2.6 KW, 0 - 10mm chamfer
- **Model 760**
  - 1 KW, 0 - 15mm chamfer
- **Model KaKi 2014-42**
  - 1.4 KW, 0.5 - 6mm radii

**Portable Radiusing machine**
- **Model 43**
  - 0 - 3mm chamfer
- **Model 61**
  - 0 - 6mm chamfer
- **Model 650**
  - 0 - 10mm chamfer
  - (horizontal cutting head)

**Pedestal and Bench Chamfering machine with abrasive discs**
- **Model 43**
  - 0 - 3mm chamfer
- **Model 61**
  - 0 - 6mm chamfer
- **Model 650**
  - 0 - 10mm chamfer
  - (horizontal cutting head)

**Pedestal and Bench Chamfering machines with milling cutters**
- **Model 2014**
  - 1.5 KW, 0 - 5mm chamfer
- **Model 2023**
  - 2.6 KW, 0 - 10mm chamfer
- **Model 760**
  - 1 KW, 0 - 15mm chamfer
- **Model KaKi 2014-42**
  - 1.4 KW, 0.5 - 6mm radii

**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
- Bevelling
- 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.

To receive more information on any of the products shown visit www.surtech.co.uk
INTRODUCTION

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

Model ASO 313
Portable Milling Machine

For bevels up to 3mm, at angles from 15° to 45°. For straight & contoured edges only. Also for radii up to 4mm.

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

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 760/2
Portable Beveling Tool

Although weighing 14kg, Model 760/2 can be classed as a portable beveling 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.

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.

To receive more information on any of the products shown visit www.surtech.co.uk
INTRODUCTION

Abrasives 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.

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.

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.

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.

To receive more information on any of the products shown visit www.surtech.co.uk
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 machines can also bevel tubes and small plates.

<table>
<thead>
<tr>
<th>MILLING CUTTERS</th>
<th>CHP 6</th>
<th>CHP 12</th>
<th>CHP 12-G</th>
<th>CHP 12-G REV</th>
<th>CHP 21-G</th>
<th>CHP 21-G REV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1026</td>
<td>for carbon sheets</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1026-1</td>
<td>for stainless steel</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1026-F</td>
<td>for aluminium</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003-A</td>
<td>for carbon &amp; stainless steel</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bevel angles</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 6</td>
</tr>
<tr>
<td>Motor Power</td>
</tr>
<tr>
<td>Approx Feed Speed per minute</td>
</tr>
<tr>
<td>on mild steel</td>
</tr>
<tr>
<td>on stainless steel</td>
</tr>
<tr>
<td>Max bevel width on mild steel</td>
</tr>
<tr>
<td>on stainless steel</td>
</tr>
<tr>
<td>Bevel angle</td>
</tr>
<tr>
<td>Plate thickness</td>
</tr>
<tr>
<td>Approx weight</td>
</tr>
</tbody>
</table>

To receive more information on any of the products shown visit www.surtech.co.uk
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.

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 jigging system do you use at present?

To receive more information on any of the products shown visit www.surtech.co.uk
Friction De-Slagging Machines

- 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.

**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.

<table>
<thead>
<tr>
<th></th>
<th>Lima 400</th>
<th>Lima 600</th>
<th>Lima 800</th>
<th>Lima 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drum size in litres</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
</tr>
<tr>
<td>Drum capacity in litres</td>
<td>250</td>
<td>400</td>
<td>600</td>
<td>800</td>
</tr>
<tr>
<td>Approx. filling weight</td>
<td>500 kg</td>
<td>1000 kg</td>
<td>1000 kg</td>
<td>1300 kg</td>
</tr>
<tr>
<td>Variable drum rotation</td>
<td>4 - 18 rpm</td>
<td>4 - 18 rpm</td>
<td>4 - 18 rpm</td>
<td>4 - 18 rpm</td>
</tr>
<tr>
<td>Size W x D x H in mm</td>
<td>3000 x 1500 x 2000</td>
<td>3000 x 1500 x 2000</td>
<td>3000 x 1500 x 2000</td>
<td>3000 x 1500 x 2000</td>
</tr>
</tbody>
</table>

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