



STAINLESS STEEL FINISHING GUIDE

Step-by-step

 **WALTER**
Surface Technologies
Only the best.™



HELPING CUSTOMERS WORK BETTER **THAT'S WHAT WE DO**

Walter Surface Technologies has provided high-productivity abrasives, power tools, tooling, chemical tools, and environmental solutions to the metalworking industry since 1952. With a focus on helping our customers work better, we promote industry best practices and improve safety and productivity in the workplace.

PRODUCTS WITH EXCLUSIVE TECHNOLOGY **THAT HELP YOU WORK BETTER DAY AFTER DAY**

Innovations that maximize performance and contribute to your success: this has been our passion throughout our history. Our award-winning products and industry-leading support services have transformed thousands of workplaces. At Walter, we're united in our efforts to continuously improve our customer support capabilities so you can strengthen your operations and business results.

STAINLESS STEEL FINISHING GUIDE

Step-by-step



INTRODUCTION

Stainless steel is one of the most widely used metals in manufacturing. Its corrosion resistance and other great properties make it a perfect choice for construction, food and beverage, and pharmaceutical industry uses.

After stainless steel is cut, welded, and shaped into its final form, it must undergo a finishing process to restore parts of the surface that were altered. Walter Surface Technologies is dedicated to making this process more efficient and effective. Our finishing solutions are designed to help operators blend stainless steel surfaces in just a few easy steps, achieve uniform finishes, and create tough, long-lasting products that resist wear and tear.

We've written this step-by-step guide with simplicity in mind. Our goal is to make it easy for you to:

- Locate the operation you're performing
- Identify the material(s) you'll need for the job
- Find your start and end points in the process
- Follow all necessary steps to achieve the desired finish

You'll also learn the basics about stainless steel, the advantages and challenges of working with it, and what you need to know to finish it properly and safely. With this guide, you'll have everything you need to get the finishing results you want and get the most use out of your final product.

Need more information?

Download the Walter Abrasives Selector app to your mobile device, or access our step-by-step instructional videos at www.youtube.com/TheWalterNetwork.

Want a live demo?

It's what our professionals do best, and they're ready to help. Contact your local Walter representative to schedule an on-site demonstration.

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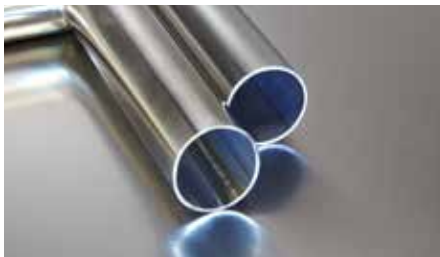
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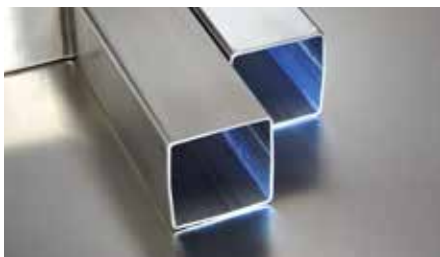
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STAINLESS STEEL

THE BASICS

Stainless steel is a low-carbon steel whose chromium content (at least 11% by weight) is key to its durability and versatility. An invisible layer of chromium oxide adheres to the steel surface to protect the metal against corrosion and, in the event of chemical or mechanical damage, is self-healing where oxygen is present. Elements such as molybdenum, nickel, and nitrogen further enhance stainless steel's unique properties.

Most common types of stainless steel

<h3>304</h3> <p>304 is the basic chromium-nickel austenitic stainless steel and has been found suitable for the widest range of applications in all kinds of architectural work. It is the most readily available in a variety of forms. This type is easy to form and fabricate with excellent resistance to corrosion from exposure to weather. It is the grade which is normally used for exterior architectural applications.</p>	<h3>316</h3> <p>316 offers more corrosion resistance through the addition of molybdenum. This type is desirable where severe corrosion conditions exist, such as heavy industrial atmospheres and marine environments.</p>	<h3>430</h3> <p>430 is a chromium ferritic stainless steel with lower corrosion resistance than the 300 series. It is principally employed for interior use.</p>
<h3>304L</h3> <p>304L is a low carbon variation of 304 with slightly higher corrosion resistance. It is sometimes specified where extensive welding of heavy sections will be done.</p>	<h3>316L</h3> <p>316L is a low carbon variation of 316. It is sometimes specified where extensive welding of heavy sections will be done.</p>	<h3>305-410</h3> <p>305 and 410 are used for bolts, nuts, screws, and other fasteners.</p>

	Austenitic*	Ferritic	Ferritic-Austenitic	Martensitic
Characteristics	<ul style="list-style-type: none"> • Most widely used • Chromium 17-25% • Nickel 8-25% • AISI 304, AISI 316 	<ul style="list-style-type: none"> • Chromium 12-18% • Low carbon • AISI 430 	<ul style="list-style-type: none"> • Properties of both ferritic and austenitic steel (example: 3RE60 grade) 	<ul style="list-style-type: none"> • Chromium 12-18% • AISI 410
Advantages	<ul style="list-style-type: none"> • Withstands extreme temperatures • Nonmagnetic properties • Good weld ability 	<ul style="list-style-type: none"> • Similar to mild steel, but superior corrosion resistance 	<ul style="list-style-type: none"> • Duplex structure delivers both strength and ductility 	<ul style="list-style-type: none"> • Resists moderately corrosive conditions • Magnetic
Applications	<ul style="list-style-type: none"> • Housewares, containers • Industrial piping vessels • Architecture and construction • Food equipment • Chemical equipment 	<ul style="list-style-type: none"> • Structural applications • 17% of all in-house wares, boilers, washing machines • Appliance trim • Cooking utensils 	<ul style="list-style-type: none"> • Petrochemical • Paper, pulp • Shipbuilding • Pipelines • Pressure vessels • Shafting 	<ul style="list-style-type: none"> • Turbine blades • Knives • Fasteners • Pump shafts

* **This finishing guide focuses on austenitic stainless steel (300 series)** due to the importance of eliminating roughness or achieving an aesthetic look in specific applications and industries. Examples include architectural structures, chemical equipment, and food and beverage manufacturing.

Types of finishes

Unpolished "Mill" Finishes	Mechanically Brushed or Polished Finishes
<p>#1 is a dull finish achieved by hot rolling to a specified (rolled) thickness, annealing, and descaling.</p> <p>#2D is a dull finish achieved by cold rolling to a specified (rolled) thickness, annealing, and descaling; a final light roll pass on dull rolls can achieve the same effect.</p> <p>#2B is a bright, mirror-like reflective finish resulting from the #2D process plus final light cold roll pass on polished rolls. General purpose cold-rolled finish that's more readily polished than #1 or #2D. Most widely used for surface finishing and as a basis for polished and brushed finishes. Commonly used in architectural applications.</p>	<p>#3 is an intermediate polished finish used for additional finishing operations after fabrication.</p> <p>#4 is a general purpose bright linear finish produced by a fine abrasive after initial grinding with coarser abrasives.</p> <p>#8 is the most reflective finish commonly available, achieved by polishing with successively finer abrasives and buffing with a very fine compound to remove virtually all "grit" lines. It's commonly called mirror finish.</p>
<ul style="list-style-type: none"> • Basic supply condition for flat products • Used for subsequent finishing processes to meet more demanding requirements • Acid cleaned ("pickled") during the production process to maximize corrosion resistance 	<ul style="list-style-type: none"> • Produced by mechanically abrading the surface • Smoothest polished finishes are buffed after mechanical polishing to produce mirror-like appearance • #4 is the most popular finish

Special Finishes

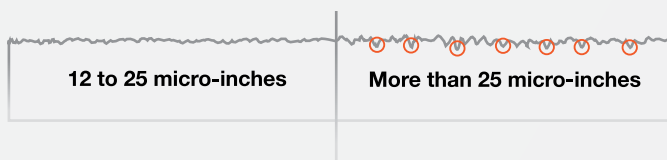
- Used when aesthetic appearance is a priority and for specialized industrial applications
- A wide range of coated, coined, colored, embossed, engraved, patterned, polished, and textured finishes exist
- Examples include nondirectional scratch patterns, swirls, and ground circles

Measuring roughness

To measure roughness, a meter is used to scan the stainless steel surface and deliver a reading. The most popular parameter is roughness average (Ra), which is the average height between surface peaks and valleys. The Ra is typically measured in micro-inches.

For high-purity industries (food and beverage, pharmaceutical, etc.), surface roughness is a critical factor. The Ra must be within 12–25 micro-inches to prevent bacteria from lodging in valleys.

By following the steps in this guide and using Walter abrasives, you're guaranteed to achieve the roughness of a #4 brushed finish or #8 mirror finish in compliance with industry requirements.



Working with stainless steel

The advantages

Corrosion Resistance

The higher the alloy, the greater the corrosion resistance. Low-alloy grades hold up well in atmospheric and pure water environments, while high-alloy grades can safely be exposed to most acids, alkaline solutions, and chlorine-bearing environments typically found in process plants.

Fire and Heat Resistance

Even in extreme temperatures, special high-chromium and nickel-alloy grades resist scaling and retain their strength.

Cleanliness

Stainless steel is easy to keep clean, making it the first choice for hospitals, kitchens, food processing plants, and other facilities with strict hygiene conditions.

Aesthetic Appeal

Its bright, easily maintained surface gives stainless steel a modern and attractive appearance.

Strength-to-Weight Advantage

Thanks to the work-hardening property of austenitic-grade stainless steel, cold-working alone significantly strengthens the material. High-strength duplex grades require less material thickness than conventional grades, resulting in significant cost savings.

Ease of Fabrication

Stainless can be cut, welded, formed, machined, and fabricated as readily as traditional steels with the use of modern steel-making techniques.

Impact Resistance

The 300 series' austenitic microstructure provides extreme toughness in both high-temperature and below-freezing conditions, making these steels particularly suited to cryogenic applications.

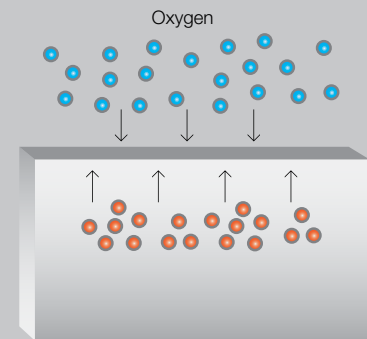
PASSIVATION

Protecting and healing the surface

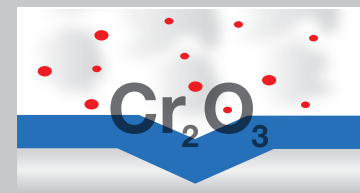
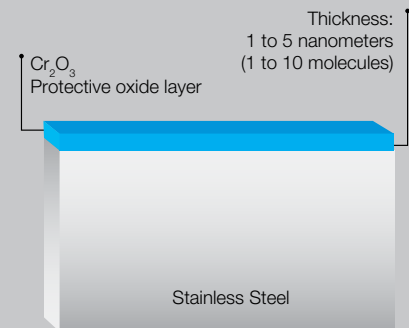
The secret to stainless steel's corrosion resistance is passivation, or the formation of a chromium oxide layer on the metal surface. This passive layer acts as a protective barrier that guards against the effects of corrosive conditions.

Passivation is triggered by a chemical reaction between the chromium content of stainless steel and oxygen in the surrounding air. If the chromium oxide layer is damaged, ambient oxygen allows it to heal itself.

Beginning of passivation process



End of passivation process



Overcoming the challenges

There are significant advantages to working with stainless steel, but it's not without its challenges. Here's what you can do to optimize your finishing process and work product.

Stainless is three times more expensive than steel.

Special care should be taken when working with stainless.

Finishing takes significant time and requires more skilled labor.

This makes working with stainless even more expensive, therefore reducing the number of steps in the finishing process is crucial. Workers should be equipped with the proper tools and kept up to speed on the latest technologies.

Stainless is more difficult to machine.

Powerful tools and industry-leading abrasive technologies are a must, as they can help ease the process.

It reacts poorly to high temperatures.

Stainless steel is a poor thermal conductor, and it discolors when heated. The right combination of sharp and self-sharpening abrasive grains and bond will allow cooler cutting ability and prevent overheating of tools and material.

It can complicate loading.

The chromium in stainless steel produces buildup on tools and abrasives. By combining the right abrasive with the right speed and pressure, you can keep buildup to a minimum.

It oxidizes under certain conditions.

The protective chromium oxide layer breaks down when exposed to heat and acids. To keep the passive layer intact, clean and protect the surface and use iron-free certified abrasives. If damage occurs, allow the layer to reform in a carbon-, acid-, and salt-free environment.

It's prone to galling and seizing.

Lubrication can reduce friction.

Stainless and steel don't mix.

Traditional steel contaminates stainless. We recommend storing and working with stainless and steel in separate enclosed areas. To prevent cross contamination, avoid using the same abrasive on both materials.



FINISHING STAINLESS STEEL

THE 10 ESSENTIALS

To achieve a precise finish, maximize efficiency and cost savings, and ensure worker safety, be sure to follow these 10 best practices.

1. Clean before you start

Always clean your workpiece before starting any finishing job to remove contaminants on the surface. By doing so, you'll avoid smearing grease on the surface, clogging the abrasives, and making deeper scratches that will require more work to fix.

2. Start at the finish

Determine the desired finish before you begin the finishing process. This will allow you to map out the process, determine exactly what you'll need at each step, and avoid any unnecessary steps (for example, repairing deep scratch patterns because the original abrasive was too coarse).

3. Choose the right abrasive

When removing a weld bead from the surface, choose your abrasive carefully. An abrasive that's too coarse could gouge the surface, making a smooth blend impossible and ruining your workpiece.

Starting with a too rough abrasive

Starting with the right abrasive

Too deep scratches, workpiece is ruined



4. Watch your grit sizes

To go from a coarse finish to a finer one, we do not recommend skipping more than three grit sizes at a time. If you need to combine steps, Walter has solutions that can help you do that.

5. Practice cross grinding

Cross grinding is a technique used in finishing and polishing that involves blending in a direction that's perpendicular to the previous step. Cross grinding is important because it highlights areas where the previous scratch pattern needs to be blended.

1st work step

2nd work step



6. Pay close attention to pressure and angle

Getting the pressure and angle right when grinding is a must. As a general rule, you should apply more pressure when removing material (taking down a weld, for example) versus polishing. Applying the right pressure and angle keeps the material from overheating and prevents discoloration, surface gouges and warping.

7. Use the recommended RPM

All finishing power tools have variable speed, and each abrasive is recommended for use at a specific speed. It's important to respect those recommendations so you can achieve a better, faster finish and a guaranteed perfect result without the need for rework. The abrasives will last longer as well: they won't wear down prematurely, and they won't glaze or lose their efficiency due to running too slowly.

8. Select the right power tool for the job

The geometric shape of the workpiece is an important consideration because it imposes certain constraints. You need to match the power tool to the shape to do the job effectively. For example, a pipe sander would be best for working on a straight circular tube, but getting to an inside corner will require a fillet weld grinder. Most importantly, you need a variable speed grinder to achieve the best results.

9. Follow standard safety practices

When it comes to metalworking with power tools and abrasive products, safety is the most important aspect of the job. Taking the necessary safety precautions not only prevents accidents, injuries, fatalities, and downtime, but also enhances employees' health, well-being, productivity, and work quality.

The following Personal Protective Equipment (PPE) items are essential:

- Eye and face protection (face shield, safety glasses)
- Hearing protection (earmuffs, ear plugs)
- Hand protection (proper work gloves)
- Respiratory protection (dust mask, air systems)
- Body and foot protection (safety boots)

When working with a finishing power tool, a safety guard must be in place to protect the operator from the moving abrasive surface and to deflect flying fragments from the workpiece or the abrasive product itself.

Finally, we strongly recommend unplugging the power tool:

1) prior to mounting the abrasive product; and 2) between steps while operators switch products.

10. Finish the process with care

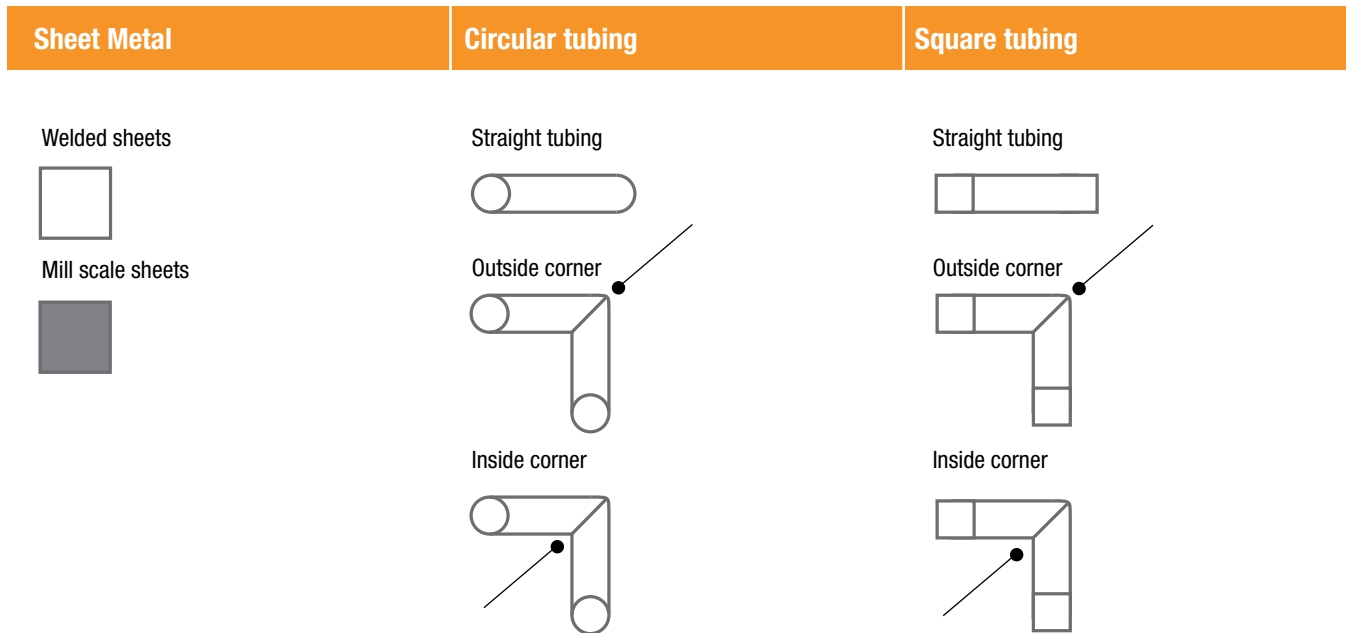
Once you've achieved the desired finish and a passive surface, it's important to remove any dirt, dust, fingerprints, handling marks, and oils and to protect the surface. Our E-Nox Shine™ is ideal for cleaning, brightening, and protecting food processing equipment, pharmaceutical equipment, and all other types of stainless steel products.



E-Nox Shine™
Order no. 53-G 403

How it works

Eight typical stainless steel profiles are covered in this guide:



This guide is designed to follow a step-by-step process to achieve the required finish for each of the types of stainless listed, which shows the flexibility of Walter products. As you will see in this guide, each of the eight types can be finished in #4 or #8!

To begin

- 1 Locate the End Point (finish you require).
- 2 Identify your Starting Point (Weld type, initial surface finish)

Between those 2 points are the steps indicated with an arrow



The recommended power tools, products, and technical tips are shown for each step of each process.

In order to help you visually check if result matches the desired finish, pictures of each piece of stainless steel are provided before during, and after each step.

To standardize the process, the most common grade of stainless steel was used in this guide (type 304 in 2B finish) for sheets and raw extruded tubes.

THE WALTER ABRASIVES SELECTOR APP IS HERE.

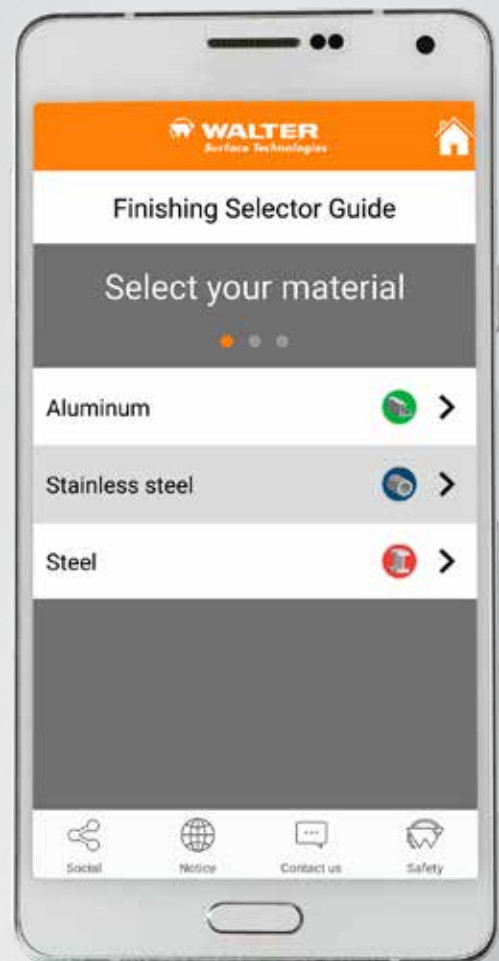
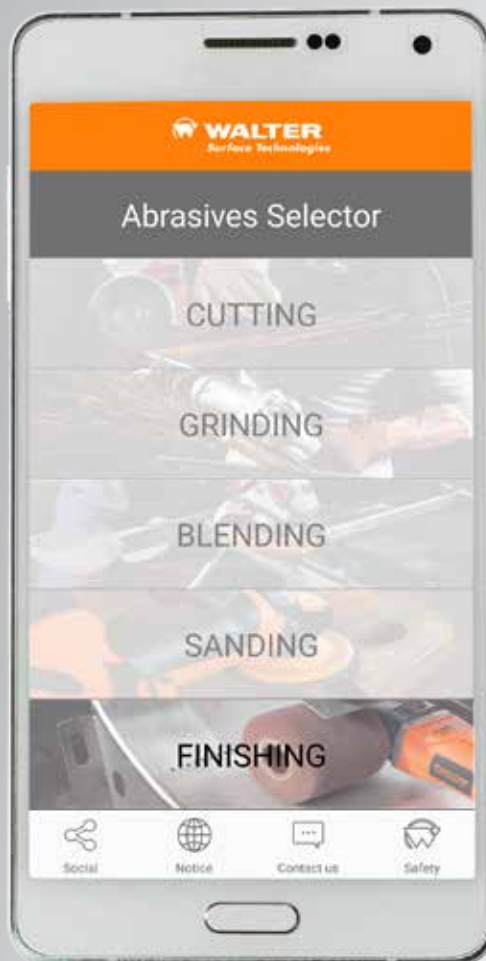
The finishing solutions you need,
right at your fingertips.

The Walter Abrasives Selector app will help you find the right finishing solution in just a few clicks.

- Keep track of your preferred solutions by saving, emailing, or sharing product summaries in PDF format.
- Improve your finishing results by watching our step-by-step videos packed with expert tips.

Find the perfect solution for every job, and learn how to achieve the perfect finish, all in one place.

Download the Walter Abrasives Selector app today.





STAINLESS STEEL
FINISHING GUIDE

Step-by-step

02

**SHEET
METAL**

WHAT YOU WILL NEED



Quick-Step Big-Buff III Finishing Tool

No. 30-A 265

The Quick-Step Big-Buff III is a variable speed tool designed to provide operators with the power and versatility to tackle any job that requires sanding, buffing or polishing. The ergonomic design reduces operator fatigue and ensures smooth operation during the most demanding jobs.



Enduro-Flex 2-in-1 Turbo *(Always use with flange 30-B 017)*

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	15-I 451	4,000 to 6,000	13,300	10	40



Enduro-Flex 2-in-1

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	15-I 453	4,000 to 6,000	13,300	10	40



Quick-Step Line-Mate III

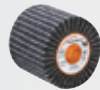
No. 30-A 268

The Line-Mate III is a versatile variable speed tool that allows you to quickly and easily apply a wide range of linear finishes to metal surfaces. Its powerful motor will help you complete even the toughest jobs with ease. RPM remains constant under load for a consistent and uniform finish every time. When you have a project that requires a linear scratch pattern applied to the surface, trust Line-Mate to get the job done quickly and efficiently.



Blendex Drum (Fine)

Dia.	Width	Arbor	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
4-1/2"	4"	5/8"-11	07-M 444	2,000	3,800	1	10



Two-in-One Drum *(For a #4 brushed finish)*

Dia.	Width	Arbor	Grit	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
4-1/2"	4"	5/8"-11	80	07-K 442	2,000	3,800	1	10



Instant Polish Drum Belt *(For a #8 mirror finish)*

Width	Length	Dia.	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
5-3/8"	11-5/8"	3-1/2"	07-T 536	2,000	3,800	1	10



Pneumatic Drum

Width	Dia.	Arbor	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
5-3/8"	3-1/2"	5/8"-11	07-F 051	2,000	3,800	1	1



High Polish Drum Belt

Width	Length	Dia.	Color	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
5-3/8"	11-5/8"	3-1/2"	Yellow	07-T 534	2,000	3,800	1	10





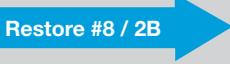



Surfox Pre-Weld

No. 54-A 073

Formulated for preparing and degreasing metal surfaces prior to welding. Use to cool down the surface to avoid warping.

SHEET METAL WELDED AT A GLANCE

Starting point	Steps	End point
	 Step 1 MIG (GMAW) Weld Blending	
↓		
	 Step 2 Blending Deep Scratches or TIG (GTAW) Weld Blending	
↓		
	 Step 3 Surface Conditioning or Applying a #4 Brushed Finish	 #4 Finish
↓		
	 Step 4 Mirror Polishing	 #8 Finish

Step 1 | MIG (GMAW) Weld Blending

DIRECTIONS

Remove the MIG (GMAW) weld with the Enduro-Flex 2-in-1 Turbo using the Big-Buff III (30-A 265).



TECHNICAL TIPS

As a good practice, it is recommended to clean your workpiece of any contaminant with Surfox Pre-Weld (54-A 073) before starting operations. Keep disc angle between 5°-10° to use the full flap and avoid gouging.



Ø	Description	Product #	Optimal Speed
4-1/2"	Enduro-Flex 2-in-1 Turbo	15-I 451	4,000 - 6,000 RPM

Step 2 | Blending Deep Scratches or TIG (GTAW) Weld Blending

DIRECTIONS

Blend deep scratches or remove the TIG (GTAW) weld with the Enduro-Flex 2 in1 using the Big-buff III (30-A 265).



TECHNICAL TIPS

Keep disc angle between 5°-10° to use the full flap and avoid gouging.

Ensure the rotation direction of the disc is applied in same direction of the final linear finish so the deep scratches can blend in the final pattern.

For deep scratches, work at a 90° angle to the scratch, as this helps reveal any deep scratches left on the surface. Then, blend back in original direction.

Ø	Description	Product #	Optimal Speed
4-1/2"	Enduro-Flex 2-in-1	15-I 453	4,000 - 6,000 RPM



Step 3 | Surface Conditioning or Applying a #4 Brushed Finish

DIRECTIONS

Blend the entire sheet with the Blendex Drum Fine with the Line-Mate III (30-A 268) in order to apply a #4 brushed finish, which will meet sanitary requirements and prepare for polishing if needed.



TECHNICAL TIPS

Keep consistent pressure and steady movement to obtain a straight and consistent linear finish. Line-Mate requires a quick pulling motion toward operator. After initial pass, return to starting point (pushing away from body without contacting surface). Keeping product and workpiece cool is important if working with thin gauge material to avoid warping. You can use Surfox Pre-Weld (54-A 073) to cool down the surface. If you wish to achieve a #4 brushed finish, use the two-in-one drum (07-K 442).

Ø	Width	Description	Product #	Optimal Speed
4-1/2"	4"	Blendex Drum Fine	07-M 444	2,000 RPM



Step 4 | Mirror Polishing

DIRECTIONS

For mirror polishing, use the Instant Polish Drum Belt on the corresponding Pneumatic drum with the Line-Mate III (30-A 268).



TECHNICAL TIPS

Once you are done polishing, use a Surfox Powercloth (54-B 090) to remove any extra paste left on the surface. To achieve the mirror finish, buff the surface with a high polish drum belt (07-T 534) with the pneumatic drum.

Ø	Width	Description	Product #	Optimal Speed
3-1/2"	5-3/8"	Instant Polish Drum Belt	07-T 536	2,000 RPM
3-1/2"	5-3/8"	Pneumatic Drum	07-F 051	2,000 RPM

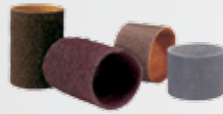


WHAT YOU WILL NEED



Quick-Step Line Mate III No. 30-A 268

The Line-Mate III is a versatile variable speed tool that allows you to quickly and easily apply a wide range of linear finishes to metal surfaces. Its powerful motor will help you complete even the toughest jobs with ease. RPM remains constant under load for a consistent and uniform finish every time. When you have a project that requires a linear scratch pattern applied to the surface, trust Line-Mate to get the job done quickly and efficiently.



Blendex Drum Belts

Dia.	Width	Grit	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
3-1/2"	5-3/8"	Coarse	07-H 502	2,000	3,800	1	10
3-1/2"	5-3/8"	Medium	07-H 503	2,000	3,800	1	10
3-1/2"	5-3/8"	Fine	07-H 504	2,000	3,800	1	10



Pneumatic Drum

Width	Dia.	Arbor	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
5-3/8"	3-1/2"	5/8"-11	07-F 051	2,000	3,800	1	1



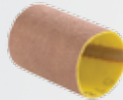
Blendex Drum (For a #4 brushed finish)

Dia.	Width	Grit	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
4-1/2"	4"	Fine	07-M 444	2,000	3,800	1	10



Two-in-One Drum (For a #4 brushed finish)

Dia.	Width	Grit	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
4-1/2"	4"	80	07-K 442	2,000	3,800	1	10



Instant Polish Drum Belt (For a #8 mirror finish)

Width	Length	Dia.	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
3-1/2"	5-3/8"	3-1/2"	07-T 536	2,000	3,800	1	10



High Polish Drum Belt

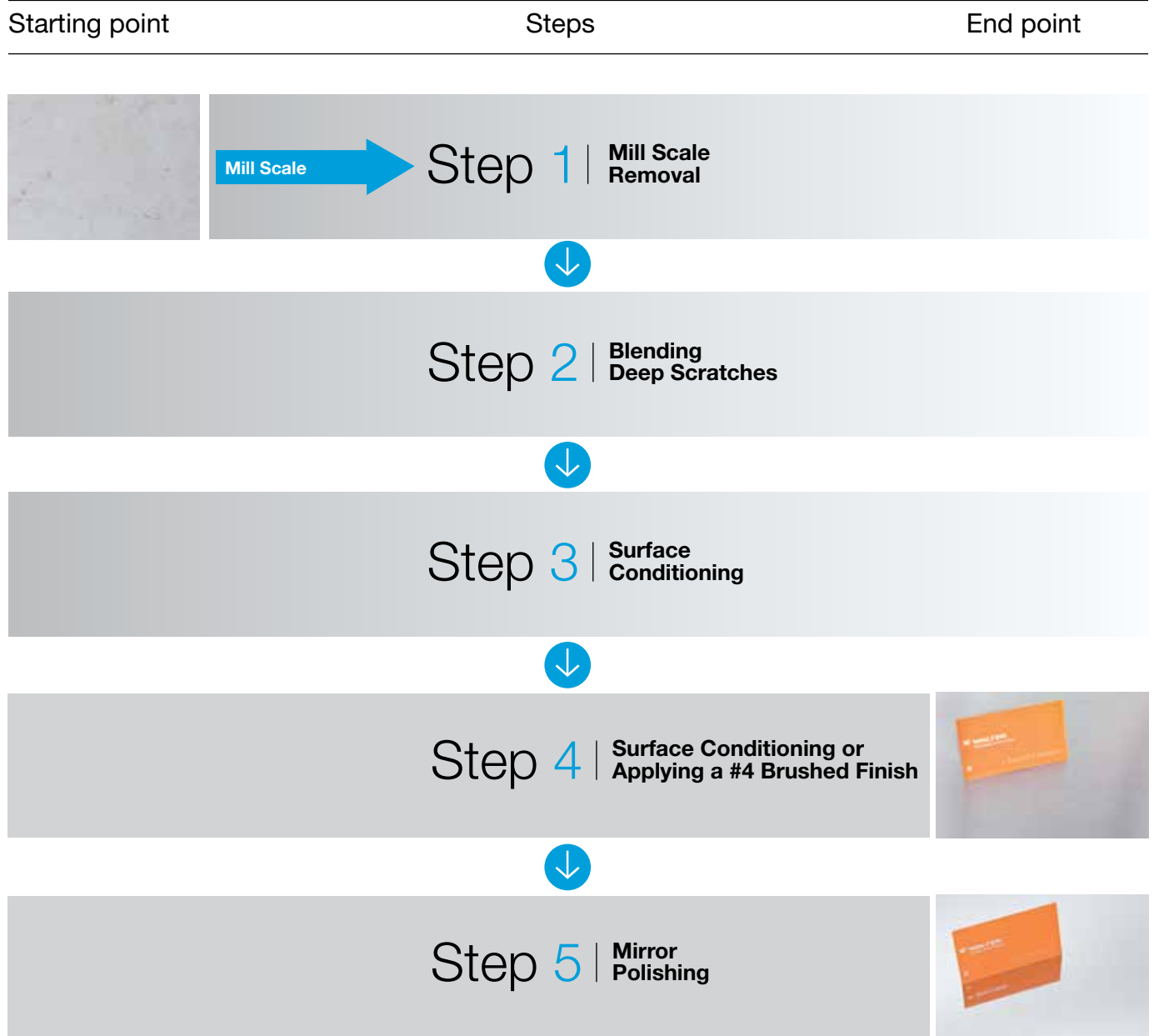
Width	Length	Dia.	Color	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
5-3/8"	11-5/8"	3-1/2"	Yellow	07-T 534	2,000	3,800	1	10



Surfox Pre-Weld No. 54-A 073

Formulated for preparing and degreasing metal surfaces prior to welding. Use to cool down the surface to avoid warping.

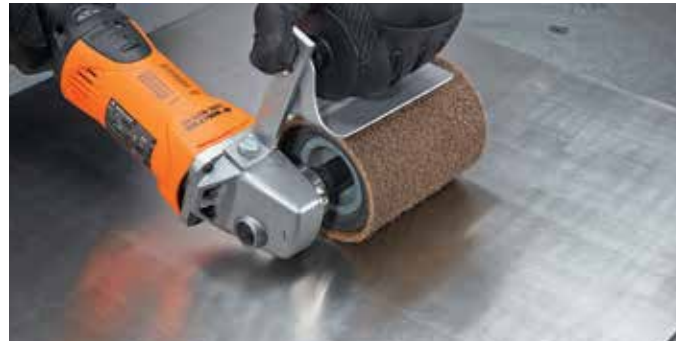
SHEET METAL MILL SCALE AT A GLANCE



Step 1 | Mill Scale Removal

DIRECTIONS

Remove Mill Scale using the Blendex coarse drum belt on the corresponding pneumatic drum with the Line-Mate III (30-A 268).



TECHNICAL TIPS

As a good practice, it is recommended to clean your surface with Surfox Pre-Weld (54-A 073) before starting operations.

For best results, pull the Line-Mate towards you instead of pushing to avoid gouging.

Ø	Width	Description	Product #	Optimal Speed
3-1/2"	5-3/8"	Blendex Coarse Drum Belt	07-H 502	2,000 RPM
3-1/2"	5-3/8"	Pneumatic Drum	07-F 051	2,000 RPM



Step 2 | Blending Deep Scratches

DIRECTIONS

After the Mill Scale is removed, use the Medium Blendex drum belt to blend deep scratches from previous step.



TECHNICAL TIPS

Keep consistent pressure and steady movement to obtain a straight and consistent linear finish. Line-Mate requires a quick pulling motion toward operator.

After initial pass, return to starting point (pushing away from body without contacting surface).

Keeping product and workpiece cool is important if working with thin gauge material to avoid warping. You can use Surfox Pre-Weld (54-A 073) to cool down the surface.

Ø	Width	Description	Product #	Optimal Speed
3-1/2"	5-3/8"	Blendex Medium Drum Belt	07-H 503	2,000 RPM
3-1/2"	5-3/8"	Pneumatic Drum	07-F 051	2,000 RPM



Step 3 | Surface Conditioning

DIRECTIONS

Once the deep scratches are blended, reduce the roughness of the surface in order to prepare the surface for the next steps.



TECHNICAL TIPS

Keep consistent pressure and steady movement to obtain a straight and consistent linear finish. Line-Mate requires a quick pulling motion toward operator.

After initial pass return to starting point (pushing away from body without contacting surface).

Keeping product and work piece cool is important if working with thin gauge material to avoid warping. You can use Surfox Pre-Weld (54-A 073) to cool down the surface.

Ø	Width	Description	Product #	Optimal Speed
3-1/2"	5-3/8"	Blendex Fine Drum Belt	07-H 504	2,000 RPM
3-1/2"	5-3/8"	Pneumatic Drum	07-F 051	2,000 RPM



Step 4 | Surface Conditioning or Applying a #4 brushed finish

DIRECTIONS

Blend the entire sheet with the Blendex Drum Fine and the Line-Mate III (30-A 268) in order to apply a #4 brushed finish, which will meet any sanitary requirements and prepare for polishing if needed.



TECHNICAL TIPS

Keep consistent pressure and steady movement to obtain a straight and consistent linear finish. Line-Mate requires a quick pulling motion toward operator. After initial pass return to starting point (pushing away from body without contacting surface).

Keeping product and work piece cool is important if working with thin gauge material to avoid warping. You can use Surfox Pre-Weld (54-A 073) to cool down the surface.

If you wish to achieve a #4 brushed finish, use the two-in-one drum for best results.

Ø	Width	Description	Product #	Optimal Speed
4-1/2"	4"	Blendex Drum Fine	07-M 444	2,000 RPM



02 Step 5 | Mirror Polishing

DIRECTIONS

For mirror polishing, use the Instant Polish Drum Belt on the corresponding Pneumatic drum with the Line-Mate III (30-A 268).



TECHNICAL TIPS

Once you are done polishing, use a Surfox Powercloth (54-B 090) to remove any extra paste left on the surface.

To achieve the mirror finish, buff the surface with a high polish drum belt (07-T 534) with the corresponding pneumatic drum.

Ø	Width	Description	Product #	Optimal Speed
3-1/2"	5-3/8"	Instant Polish Drum Belt	07-T 536	2,000 RPM
3-1/2"	5-3/8"	Pneumatic Drum	07-F 051	2,000 RPM

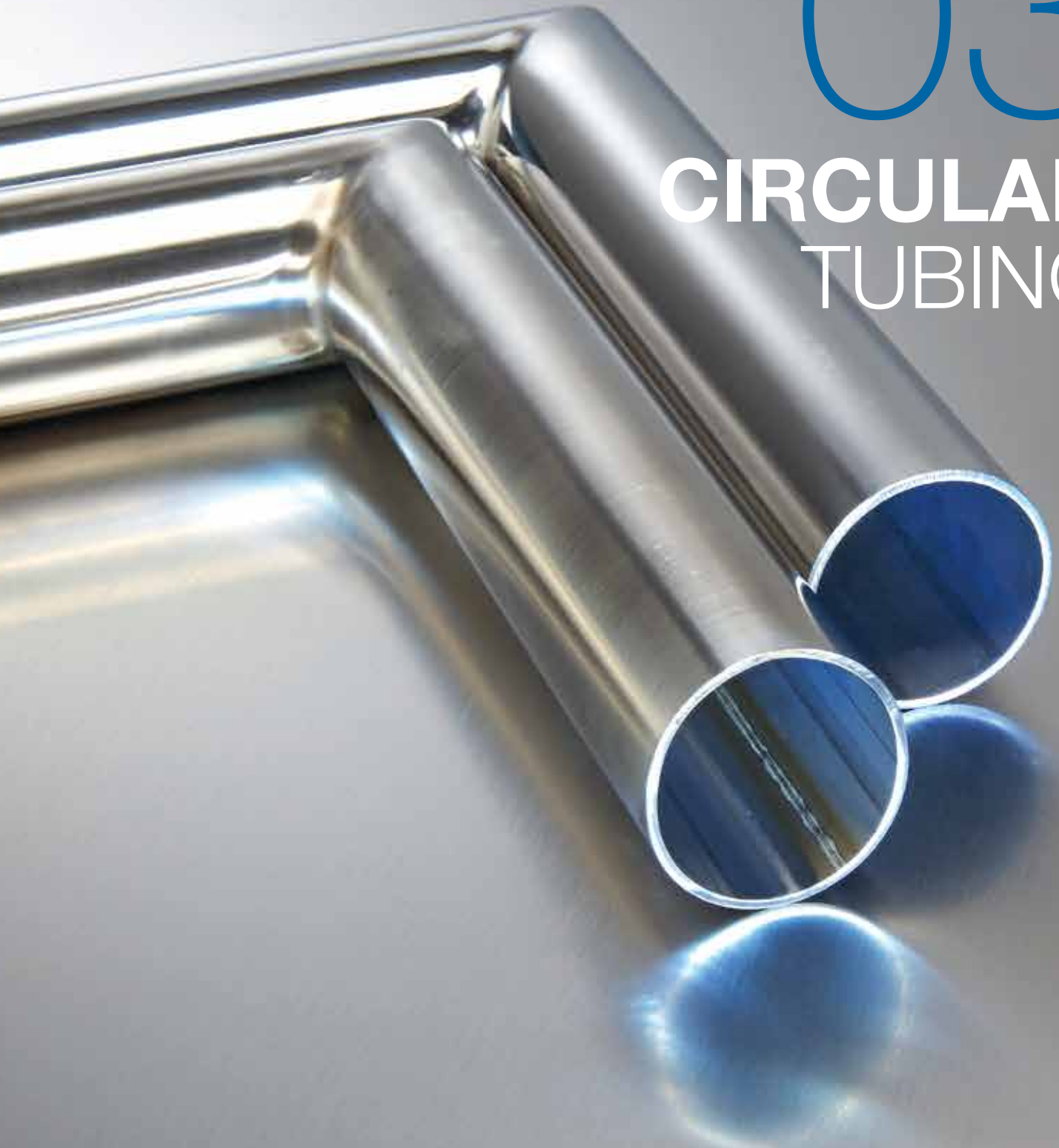


STAINLESS STEEL
FINISHING GUIDE

Step-by-step

03

**CIRCULAR
TUBING**



WHAT YOU WILL NEED



Rail-Mate Tube/Pipe Sander
No. 30-A 289

This power tool allows you to use our premium abrasive belt products to finish pipes, tubes and railings. This powerful finishing tool features Soft-Start technology to avoid kickback when starting the tool, Dialspeed™ variable speed control and Dynamax™ RPM Monitoring to maintain consistent speed under load.



Coolcut XX Belt

Width	Length	Grit	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
1-1/2"	30"	120	14-X 162	2,900	3,200	1	10



Blendex Belt

Width	Length	Description	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
1-1/2"	30"	Medium Belt	07-D 153	2,500	3,200	5	100
1-1/2"	30"	Fine Belt	07-D 154	2,500	3,200	5	100



High Polish Belt (For a #8 mirror finish)

Width	Length	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
1-1/2"	30"	07-T 220	1,600	3,200	5	20



Instant Polish Paste








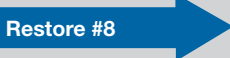

Width	Length	Order No.	Std Pkg.	Std Ctn.
N/A	N/A	07-T 907	1	5



Surfox Pre-Weld
No. 54-A 073

Formulated for preparing and degreasing metal surfaces prior to welding. Use to cool down the surface to avoid warping.

CIRCULAR TUBING STRAIGHT TUBE AT A GLANCE

Starting point	Steps	End point
	  <p>Step 1 MIG (GMAW) or TIG (GTAW) Weld Blending</p>	
	<p>Step 2 Blending Deep Scratches</p>	
	 <p>Step 3 Surface Conditioning or Applying a #4 Brushed Finish</p>	 <p>#4 Finish</p>
	 <p>Step 4 Mirror Polishing</p>	 <p>#8 Finish</p>

Step 1 | MIG (GMAW) or TIG (GTAW) Weld Blending

DIRECTIONS

Blend the MIG (GMAW) or TIG (GTAW) weld using a Coolcut XX belt (grit 120) with the Rail-Mate (30-A 289).



TECHNICAL TIPS

Keep the power tool perpendicular to the tube's longitudinal axis to avoid gouging the workpiece with belt's edges.

If necessary, use the Inox Tape (07-T 100) to protect the surface from being gouged.

Keep a close eye on the piece and stop as soon as the weld is blended to avoid gouging the workpiece.

Move the tool around the piece to blend the entire tube.

Ø	Length	Description	Product #	Optimal Speed
1-1/2"	30"	Coolcut XX Belt - grit 120	14-X 162	2,900 RPM



Step 2 | Blending Deep Scratches

DIRECTIONS

Blend deep scratches with the Medium Blendex belt using the Rail-Mate (30-A 289).



TECHNICAL TIPS

Keep the power tool perpendicular to the tube's longitudinal axis to avoid gouging the workpiece with belt's edges.

Move the tool around the piece to blend the entire tube.

Ø	Length	Description	Product #	Optimal Speed
1-1/2"	30"	Medium Blendex Belt	07-D 153	2,500 RPM



Step 3 | Surface Conditioning or Applying a #4 Brushed Finish

DIRECTIONS

Apply a #4 sanitary finish or prepare the surface for polishing using the Blendex belt fine with the Rail-Mate (30-A 289).



TECHNICAL TIPS

Keep the power tool perpendicular to the tube's longitudinal axis to avoid gouging the workpiece with belt's edges.

Move the tool around the piece to blend the entire tube.

Ø	Length	Description	Product #	Optimal Speed
1-1/2"	30"	Fine Blendex Belt	07-D 154	2,500 RPM



Step 4 | Mirror Polishing

DIRECTIONS

Obtain a mirror finish by applying the instant polish paste to the high polish belt using the Rail-Mate (30-A 289).



TECHNICAL TIPS

Keep the power tool perpendicular to the tube's longitudinal axis to avoid gouging the workpiece with belt's edges. Move the tool around the piece to blend the entire tube.

Once the paste is applied, use a Surfox Powercloth (54-B 090) to remove any extra paste left on the surface.

To achieve the mirror finish, buff the surface with a clean, high-polish belt (07-T 220).

Ø	Length	Description	Product #	Optimal Speed
1-1/2"	30"	High Polish Belt	07-T 220	1,600 RPM
N/A	N/A	Instant Polish Paste	07-T 907	N/A



WHAT YOU WILL NEED



Quick-Step Big-Buff III Finishing Tool

No. 30-A 265

The Quick-Step Big-Buff III is a variable speed tool designed to provide operators with the power and versatility to tackle any job that requires sanding, buffing or polishing. The ergonomic design reduces operator fatigue and ensures smooth operation during the most demanding jobs.



Enduro-Flex 2-in-1 Turbo *(Always use with flange 30-B 017)*

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	15-I 451	4,000 to 6,000	13,300	10	40



Enduro-Flex 2-in-1

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	15-I 453	4,000 to 6,000	13,300	10	40



Quick-Step Instant Polish Disc

Dia.	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	07-T 456	2,000 to 3,000	7,300	10	100



Quick-Step Mega Grip Backing Pad

Dia.	Thread	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	07-Q 149	2,000 to 3,000	13,300	1	10



Quick-Step Interface Pad

Dia.	Arbor	Order No.	Std Pkg.	Std Ctn.
4-1/2"	3/8"	07-Q 045	1	10



Quick-Step Felt Disc

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	3/8"	07-T 450	2,000 to 3,000	7,300	5	40



Quick-Step High Polish Disc

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	3/8"	07-T 454	2,000 to 3,000	7,300	10	100



Surfox Pre-Weld

No. 54-A 073

Formulated for preparing and degreasing metal surfaces prior to welding. Use to cool down the surface to avoid warping.



Rail-Mate Tube/Pipe Sander

No. 30-A 289




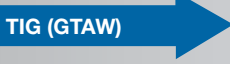






This power tool allows you to use our premium abrasive belt products to finish pipes, tubes and railings. This powerful finishing tool features Soft-Start technology to avoid kickback when starting the tool, Dialspeed™ variable speed control and Dynamax™ RPM monitoring to maintain consistent speed under load.



Blendex Belt

Width	Length	Description	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
1-1/2"	30"	Fine Belt	07-D 154	2,500	3,200	5	100

CIRCULAR TUBING OUTSIDE CORNER AT A GLANCE

Starting point	Steps	End point
	 Step 1 MIG (GMAW) Weld Blending	
	 Step 2 Deep Scratches Blending or TIG (GTAW) Weld Blending	
	 Step 3 Surface Conditioning or Applying a #4 Brushed Finish	 #4 Finish
	 Step 4 Mirror Polishing	 #8 Finish

Step 1 | MIG (GMAW) Weld Blending

DIRECTIONS

Remove the MIG (GMAW) weld with the Enduro-Flex 2-in-1 Turbo using the Quick-Step Big-Buff III Finishing Tool (30-A 265).



TECHNICAL TIPS

As a best practice, it is recommended to clean your workpiece of any contaminants with Surfox Pre-Weld (54-A 073) before starting operations.

Use light pressure to remove weld by 'shaving' until close to tube surface.

Avoid the contact with unwelded tubing surface to prevent unnecessary scratches.

Ø	Description	Product #	Optimal Speed
4-1/2"	Enduro-Flex 2-in-1 Turbo	15-I 451	4,000 - 6,000 RPM



Step 2 | Blending Deep Scratches or TIG (GTAW) Weld Blending

DIRECTIONS

Blend deep scratches or remove the TIG (GTAW) weld with the Enduro-Flex 2-in-1 using the Quick-Step Big-Buff III Finishing Tool (30-A 265).



TECHNICAL TIPS

Keep disc angle between 5°-10°.

Ensure the rotation direction of the disc is in the same direction that the brush lines are required.

For deep scratches, work at a 90° angle to the scratch to avoid deepening it. Blend deep scratches before completing the entire surface (as above). Then blend back in original direction as above tip if proceeding to #4.

Ø	Description	Product #	Optimal Speed
4-1/2"	Enduro-Flex 2-in-1	15-I 453	4,000 - 6,000 RPM



Step 3 | Surface Conditioning or Applying a #4 Brushed Finish

DIRECTIONS

Apply a #4 sanitary finish or prepare surface for polishing using the Blendex belt fine with the Rail-Mate (30-A 289).



TECHNICAL TIPS

Move the tool around the piece to blend the entire tube.

Ø	Length	Description	Product #	Optimal Speed
1-1/2"	30"	Blendex Belt Fine	07-D 154	2,500 RPM



Step 4 | Mirror Polishing

DIRECTIONS

For final step polishing use the Big-Buff III (30-A 265) with the Quick Step Instant Polish Disc.



TECHNICAL TIPS

The interface pad gives the workpiece a soft touch, reducing the risk of scratches from the polishing tool.

Once you are done polishing, use a Surfox Powercloth (54-B 090) to remove any extra paste left on the surface.

To achieve the mirror finish, buff the surface with a Quick-Step felt disc (07-T 450) or high polish disc (07-T 454).

Ø	Description	Product #	Optimal Speed
4-1/2"	Quick Step Instant Polish Disc	07-T 456	2,000 - 3,000 RPM
4-1/2"	Quick-Step Mega Grip Backing Pad	07-Q 149	2,000 - 3,000 RPM
4-1/2"	Quick-Step Interface Pad	07-Q 045	2,000 - 3,000 RPM



WHAT YOU WILL NEED



Ulti-Mate Fillet Weld Grinder
No. 30-A 287

A variable speed fillet weld grinder and finishing tool designed to work in tight corners that other tools have a difficult time reaching. By combining this tool and our range of quality abrasives, you can go from a rough weld all the way to a mirror finish in just minutes.



Blendex U Turbo

Dia.	Thick.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
6"	5/32"	7/8"	07-U 615	5,500	8,000	6	60



Blendex U (6AM)

Dia.	Thick.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
6"	1/4"	1"	07-U 623	5,500	7,500	5	40



Quick-Step Line-Mate III
No. 30-A 268

The Line-Mate III is a versatile variable speed tool that allows you to quickly and easily apply a wide range of linear finishes to metal surfaces. Its powerful motor will help you complete even the toughest jobs with ease. RPM remains constant under load for a consistent and uniform finish every time. When you have a project that requires a linear scratch pattern applied to the surface, trust Line-Mate to get the job done quickly and efficiently.



Blendex T-Lock Belt (Fine)

Dia.	Length	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
1-3/16"	24"	07-H 244	3,800	6,000	3	48



Belt Drive Roller

Dimensions	Order No.	Std Pkg.	Std Ctn.
3 1/4" x 2 3/4" x 5/8"-11	07-F 002	1	1



Quick-Step Interface Pad

Dia.	Order No.	Std Pkg.	Std Ctn.
4-1/2"	07-Q 045	1	10



Quick-Step Felt Disc

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
6"	3/8"	07-T 602	2,000	7,300	5	40



Instant Polish Paste

Order No.	Std Pkg.	Std Ctn.
07-T 907	1	5



Quick-Step Big-Buff III Finishing Tool
No. 30-A 265

The Quick-Step Big-Buff III is a variable speed tool designed to provide operators with the power and versatility to tackle any job that requires sanding, buffing or polishing. The ergonomic design reduces operator fatigue and ensures smooth operation during the most demanding jobs.



Quick-Step Instant Polish Disc

Dia.	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	07-T 456	2,000 to 3,000	7,300	10	100



Quick-Step Mega Grip Backing Pad












Dia.	Thread	Order No.	Opt. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	07-Q 149	2,000 to 3,000	1	10



Surfox Pre-Weld
No. 54-A 073

Formulated for preparing and degreasing metal surfaces prior to welding. Use to cool down the surface to avoid warping.

CIRCULAR TUBING INSIDE CORNER AT A GLANCE

Starting point	Steps	End point
	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">   </div> <div style="text-align: center;"> <h2>Step 1</h2> </div> <div style="margin-left: 10px;"> <p>MIG (GMAW) or TIG (GTAW) Weld Blending</p> </div> </div>	
		
	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">  </div> <div style="text-align: center;"> <h2>Step 2</h2> </div> <div style="margin-left: 10px;"> <p>Surface Conditioning or Applying a #4 Brushed Finish</p> </div> </div>	 <p>#4 Finish</p>
		
	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">  </div> <div style="text-align: center;"> <h2>Step 3</h2> </div> <div style="margin-left: 10px;"> <p>Mirror polishing</p> </div> </div>	 <p>#8 Finish</p>

Step 1 | MIG (GMAW) or TIG (GTAW) Weld Blending

DIRECTIONS

Remove the inside MIG (GMAW) or TIG (GTAW) weld with the Blendex U Turbo wheel with the Ulti-Mate (30-A 287).



MIG



TIG



TECHNICAL TIPS

The back flange can accommodate 7/8" and 1" arbor. Make sure to use the 7/8" side.

Ø	Thick.	Arbor	Description	Product #	Optimal Speed
6"	5/32"	7/8"	Blendex U Turbo	07-U 615	5,500 RPM



After

Step 2 | Surface Conditioning or Applying a #4 Sanitary Finish

DIRECTIONS

Apply a #4 sanitary finish on the inside corner using the Blendex U wheel (6AM) with the Ulti-Mate (30-A 287).



Before



TECHNICAL TIPS

The back flange can accommodate 7/8" and 1" arbor. Be sure to use the 1" side.
Use a T-lock belt fine (07-H 244) with the belt drive roller (07-F 002) installed on a Line-Mate (30-A 268) to complete the #4 sanitary finish around the inside corner.

Ø	Thick.	Arbor	Description	Product #	Optimal Speed
6"	1/4"	1"	Blendex U (6AM)	07-U 623	5,500 RPM



After

Step 3 | Mirror Polishing

DIRECTIONS

Polish the inside corner to a mirror finish with the Felt wheel and the Instant Polish Paste using the Ulti-Mate (30-A 287).



Before



TECHNICAL TIPS

Move tool around the piece to blend the whole tube circumference.
 The back flange can accommodate 7/8" and 1" arbor. Be sure to use the 7/8" side.
 Once you are done polishing, use a Surfox Powercloth (54-B 090) to remove any extra paste left on the surface.
 To achieve the mirror finish, buff the surface with a clean felt wheel (07-T 602).
 Use a Quick-Step Instant Polish disc (07-T 456) on a Mega-Grip backing pad (07-Q 049) with an interface pad (07-Q 045) in to polish area around the inside corner faster.



After

Ø	Thick.	Arbor	Description	Product #	Optimal Speed
6"	1/4"	7/8"	Felt Wheel	07-T 602	2,000 RPM
N/A	N/A	N/A	Instant Polish paste	07-T 907	N/A

FOR ALL OF YOUR FINISHING JOBS, WALTER HAS YOU COVERED.

Whether you sand, buff, or polish straight or curved surfaces, Walter's complete line of finishing solutions will help you achieve a uniform, top-quality finish in no time.

All of our tools feature the latest electronic safety controls, making them the smart choice for professionals looking to reduce cycle time and finishing costs.

✓ **DYNAMAX™ electronics**
Ensure that spindle RPM speeds remain constant even under load.

✓ **Powerguard™**
A temperature sensor is built into the electric motor to help protect the tool from burning out.

✓ **Variable DialSpeed™**
Electronic speed control at the back of the machine to adjust the speed for optimum performance.

Line-Mate III™ System
Order no. 30-A 269



Quick-Step Finisher™ System
Order no. 30-A 277



Ulti-Mate™ Fillet Weld Grinder System
Order no. 30-A 287



Straight Grinder Dialspeed™ 6145
Order no. 30-A 145



Rail-Mate™ Sander System
Order no. 30-A 289



Quick-Step Big-Buff III™ System
Order no. 30-A 267



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STAINLESS STEEL
FINISHING GUIDE

Step-by-step

04

**SQUARE
TUBING**



WHAT YOU WILL NEED



Quick-Step Big-Buff III Finishing Tool

No. 30-A 265

The Quick-Step Big-Buff III is a variable speed tool designed to provide operators with the power and versatility to tackle any job that requires sanding, buffing or polishing. The ergonomic design reduces operator fatigue and ensures smooth operation during the most demanding jobs.



Enduro-Flex 2-in-1 Turbo *(Always use with flange 30-B 017)*

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	15-I 451	4,000-6,000	13,300	10	40



Enduro-Flex 2-in-1

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	15-I 453	4,000-6,000	13,300	10	40



Quick-Step Line-Mate III

No. 30-A 268

The Line-Mate III is a versatile variable speed tool that allows you to quickly and easily apply a wide range of linear finishes to metal surfaces. Its powerful motor will help you complete even the toughest jobs with ease. RPM remains constant under load for a consistent and uniform finish every time. When you have a project that requires a linear scratch pattern applied to the surface, trust Line-Mate to get the job done quickly and efficiently.



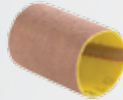
Blendex Drum (fine)

Dia.	Width	Arbor	Grit	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	2"	5/8"-11	Fine	07-M 424	2,000	3,800	1	10



Two-in-One Drum *(For a #4 brushed finish)*

Dia.	Width	Grit	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	2"	Coarse	07-K 422	2,000	3,800	1	10



Instant Polish Drum Belt

Dia.	Width	Length	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
5"	3-1/2"	5-1/2"	07-T 336	2,000	3,800	1	10



Pneumatic Drum *(To be used with extension 08-B 009)*

Dia.	Width	Arbor	Order No.	Opt. RPM	Max. RPM
5"	3-1/2"	5/8"-11	07-F 037	1,000	3,800



High Polish Drum Belt

Dia.	Width	Length	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
5"	5-3/8"	5-1/2"	07-T 334	2,000	3,800	1	10












Surfox Pre-Weld

No. 54-A 073

Formulated for preparing and degreasing metal surfaces prior to welding. Use to cool down the surface to avoid warping.

SQUARE TUBING STRAIGHT TUBE AT A GLANCE

Starting point	Steps	End point
	<p>MIG (GMAW) → Step 1 MIG (GMAW) Weld Blending</p>	
		
	<p>TIG (GTAW) → Step 2 Deep Scratches Blending or TIG (GTAW) Weld Blending</p>	
		
	<p>Restore #4 → Step 3 Surface Conditioning or Applying a #4 Brushed Finish</p>	 <p>#4 Finish</p>
		
	<p>Restore #8 → Step 4 Mirror Polishing</p>	 <p>#8 Finish</p>

Step 1 | MIG (GMAW) Weld Blending

DIRECTIONS

Remove the MIG (GMAW) weld with the Enduro-Flex 2-in-1 Turbo disc using the Quick-Step Big-Buff III Finishing Tool (30-A 265).



TECHNICAL TIPS

As a best practice, it is recommended to clean your workpiece of any contaminants with Surfox Pre-Weld (54-A 073) before starting operations.

Use light pressure to remove weld by 'shaving' until close to tube surface.

Avoid prolonged contact with unwelded tubing surface to prevent unnecessary scratches.

Ø	Description	Product #	Optimal Speed
4-1/2"	Enduro-Flex 2-in-1 Turbo	15-I 451	4,000 - 6,000 RPM



Step 2 | Blending Deep Scratches or TIG (GTAW) Weld Blending

DIRECTIONS

Blend deep scratches or remove the TIG (GTAW) weld with the Enduro-Flex 2-in-1 disc using the Quick-Step Big-Buff III Finishing Tool (30-A 265).



TECHNICAL TIPS

Keep disc angle between 5°-10°.

Ensure the rotation direction of the disc is in the same direction that the brush lines are required.

For deep scratches, work at a 90° angle to the scratch to avoid deepening it. Blend deep scratches first (as above). Then blend back in original direction as above tip if proceeding to #4.

Ø	Description	Product #	Optimal Speed
4-1/2"	Enduro-Flex 2-in-1	15-I 453	4,000 - 6,000 RPM



Step 3 | Surface Conditioning or Applying a #4 Brushed Finish

DIRECTIONS

Obtain a #4 brushed finish using the Blendex Drum Fine with the Line-Mate III (30-A 268) and prepare for polishing if needed.



TECHNICAL TIPS

Keep consistent pressure and steady movement to obtain a straight and consistent linear finish. Line-Mate requires a quick pulling motion toward operator.

After initial pass return to starting point (pushing away from body without contacting surface).

If you wish to achieve a #4 brushed finish, use the Two-in-One drum (07-K 422).

Ø	Width	Description	Product #	Optimal Speed
4-1/2"	2"	Blendex Drum Fine	07-M 424	2,000 RPM



Step 4 | Mirror Polishing

DIRECTIONS

For mirror polishing, use the Instant Polish Drum Belt with the Pneumatic drum with Line-Mate III (30-A 268).



TECHNICAL TIPS

Once you are done polishing, use a Surfox Powercloth (54-B 090) to remove any extra paste left on the surface.

To achieve the mirror finish, buff the surface with a High Polish Drum Belt (07-T 334) with the pneumatic drum above.

Ø	Width	Description	Product #	Optimal Speed
5"	3-1/2"	Instant Polish Drum Belt	07-T 336	2,000 RPM
5"	3-1/2"	Pneumatic Drum*	07-F 037	2,000 RPM

* Extension 08-B 009 necessary to run pneumatic drum 07-F 037



WHAT YOU WILL NEED



Quick-Step Big-Buff III Finishing Tool

No. 30-A 265

The Quick-Step Big-Buff III is a variable speed tool designed to provide operators with the power and versatility to tackle any job that requires sanding, buffing or polishing. The ergonomic design reduces operator fatigue and ensures smooth operation during the most demanding jobs.



Enduro-Flex 2-in-1 Turbo *(Always use with flange 30-B 017)*

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	15-I 451	4,000-6,000	13,300	10	40



Enduro-Flex 2-in-1

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	15-I 453	4,000-6,000	13,300	10	40



Quick-Step Line-Mate III

No. 30-A 268

The Line-Mate III is a versatile variable speed tool that allows you to quickly and easily apply a wide range of linear finishes to metal surfaces. Its powerful motor will help you complete even the toughest jobs with ease. RPM remains constant under load for a consistent and uniform finish every time. When you have a project that requires a linear scratch pattern applied to the surface, trust Line-Mate to get the job done quickly and efficiently.



Blendex Drum (Fine)

Dia.	Width	Arbor	Grit	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	2"	5/8"-11	Fine	07-M 424	2,000	3,200	1	10



Two-in-One Drum *(For a #4 brushed finish)*

Dia.	Width	Grit	Order No.	Opt. RPM	Max RPM	Std Pkg.	Std Ctn.
4-1/2"	2"	Coarse	07-K 422	2,000	3,200	1	10



Instant Polish Drum Belt

Dia.	Width	Length	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
5"	3-1/2"	5-1/2"	07-T 336	2,000	3,800	1	10



Pneumatic Drum *(To be used with extension 08-B 009)*

Dia.	Width	Arbor	Order No.	Max. RPM
5"	3-1/2"	5/8"-11	07-F 037	3,800



High Polish Drum Belt

Dia.	Width	Length	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
5"	5-3/8"	5-1/2"	07-T 334	2,000	3,800	1	10



Surfox Pre-Weld

No. 54-A 073

Formulated for preparing and degreasing metal surfaces prior to welding. Use to cool down the surface to avoid warping.












Inox Tape

No. 07-T 100

For a mitred corner finish.

SQUARE TUBING OUTSIDE CORNER AT A GLANCE

Starting point	Steps	End point
	<p>MIG (GMAW) → Step 1 MIG (GMAW) Weld Blending</p>	
		
	<p>TIG (GTAW) → Step 2 Deep Scratches Blending or TIG (GTAW) Weld Blending</p>	
		
	<p>Restore #4 → Step 3 Surface Conditioning or Applying a #4 Brushed Finish</p>	 <p>#4 Finish</p>
		
	<p>Restore #8 → Step 4 Mirror Polishing</p>	 <p>#8 Finish</p>

Step 1 | MIG (GMAW) Weld Blending

DIRECTIONS

Remove the MIG (GMAW) weld with the Enduro-Flex 2-in-1 Turbo disc using the Quick-Step Big-Buff III Finishing Tool (30-A 265).



TECHNICAL TIPS

As a best practice, it is recommended to clean your workpiece of any contaminants with Surfox Pre-Weld (54-A 073) before starting operations.

Keep disc angle between 5°-10° to use the full flap and avoid gouging.

Ø	Description	Product #	Optimal Speed
4-1/2"	Enduro-Flex 2-in-1 Turbo	15-I 451	4,000 - 6,000 RPM



Step 2 | Deep Scratches or TIG (GTAW) Weld Blending

DIRECTIONS

Blend deep scratches or remove the TIG (GTAW) weld with the Enduro-Flex 2-in-1 disc using the Big-buff III (30-A 265).



TECHNICAL TIPS

Keep disc angle between 5°-10° to use the full flap and avoid gouging.

Ensure the rotation direction of the disc is in the same direction of the final linear finish so the deep scratches can blend in the final pattern.

For deep scratches, work at a 90° angle to the scratch as this helps reveal deep scratches left on the surface. Then blend back in original direction.

If the tube is extruded, blend the extruded marks at this step to ease subsequent steps.

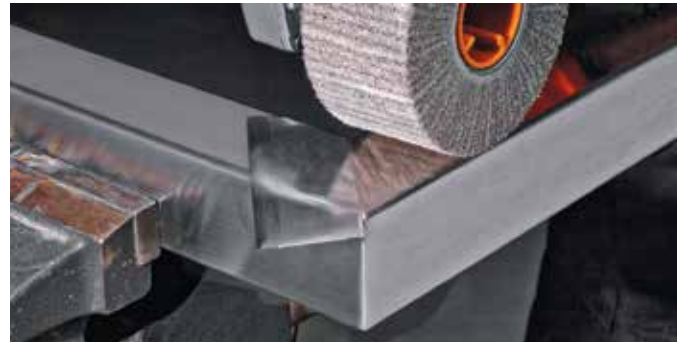
Ø	Description	Product #	Optimal Speed
4-1/2"	Enduro-Flex 2-in-1	15-I 453	4,000 - 6,000 RPM



Step 3 | Surface Conditioning or Applying a #4 Brushed Finish

DIRECTIONS

Obtain a #4 brushed finish using the Blendex Drum Fine with the Line-Mate III (30-A 268) and prepare for polishing if needed.



TECHNICAL TIPS

Keep consistent pressure and steady movement to obtain a straight and consistent linear finish. Line-Mate requires a quick pulling motion toward operator.

After initial pass, return to starting point (pushing away from body without contacting surface).

To prevent cross-scratch pattern at corners, apply Inox Tape at 45° along seam on the corner. After one section is complete remove the same piece of tape and use for other side of same corner.

If you wish to achieve a #4 brushed finish, use the Two-in-One drum (07-K 422).

Ø	Width	Description	Product #	Optimal Speed
4-1/2"	2"	Blendex Drum Fine	07-M 424	2,000 RPM
N/A	1-37/64"	Inox Tape	07-T 100	N/A

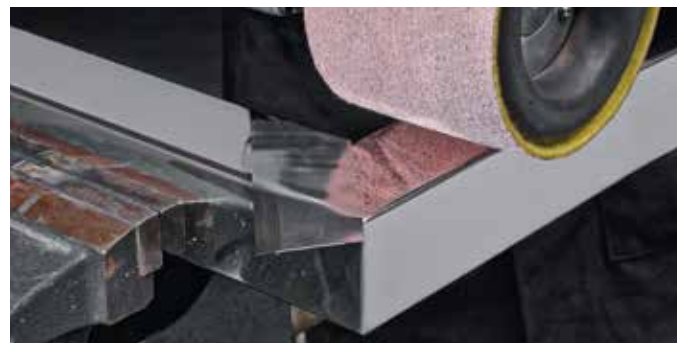


SQUARE TUBING OUTSIDE CORNER

Step 4 | Mirror Polishing

DIRECTIONS

For mirror polishing, use the Instant Polish Drum Belt on the Pneumatic drum with the Line-Mate III (30-A 268).



TECHNICAL TIPS

If necessary, use the Inox Tape (07-T 100) for a clean miter joint.

Once you are done polishing, use a Surfox Powercloth (54-B 090) to remove any extra paste left on the surface.

To achieve the mirror finish, buff the surface with a high polish drum belt (07-T 334) with the pneumatic drum above.

Ø	Width	Description	Product #	Optimal Speed
5"	3-1/2"	Instant Polish Drum Belt	07-T 336	2,000 RPM
5"	3-1/2"	Pneumatic Drum*	07-F 037	2,000 RPM

* Extension 08-B 009 necessary to run pneumatic drum 07-F 037



WHAT YOU WILL NEED



Ultri-Mate Fillet Weld Grinder
No. 30-A 287

A variable speed fillet weld grinder and finishing tool designed to work in tight corners that other tools have a difficult time reaching. By combining this tool and our range of quality abrasives, you can go from a rough weld all the way to a mirror finish in just minutes.



Blendex U Turbo

Dia.	Thick.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
6"	5/32"	7/8"	07-U 615	5,500	7,500	6	60



Blendex U (6AM)

Dia.	Thick.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
6"	1/4"	1"	07-U 623	5,500	7,500	5	40



Quick-Step Felt Disc

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
6"	3/8"	07-T 602	2,000	7,300	5	40



Instant Polish Paste

Order No.	Std Pkg.	Std Ctn.
07-T 907	1	5



Straight grinder
No. 30-A 145

Operates at a lower RPM range, making it the perfect companion for mounted flap wheels for finishing or polishing applications. This industrial power tool is built to last and also features a side handle for increased control in applications requiring a delicate touch.



Two-in-One Flap wheel (Medium)

Dia.	Width Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
3"	1-3/4"1/4"	15-E 162	5,600	8,000	1	10



Quick-Step Big-Buff III Finishing Tool
No. 30-A 265

The Quick-Step Big-Buff III is a variable speed tool designed to provide operators with the power and versatility to tackle any job that requires sanding, buffing or polishing. The ergonomic design reduces operator fatigue and ensures smooth operation during the most demanding jobs.



Quick-Step Instant Polish Disc

Dia.	Arbor	Order No.	Opt. RPM	Max. RPM	Std Pkg.	Std Ctn.
4-1/2"	3/8"	07-T 456	2,000 to 3,000	7,300	10	100



Quick-Step Backing Pad

Dia.	Thread	Order No.	Std Pkg.	Std Ctn.
4-1/2"	5/8"-11	07-Q 049	1	10



Quick-Step Interface Pad












Dia.	Arbor	Order No.	Std Pkg.	Std Ctn.
4-1/2"	3/8"	07-Q 045	1	10



Surfox Pre-Weld
No. 54-A 073

Formulated for preparing and degreasing metal surfaces prior to welding. Use to cool down the surface to avoid warping.

SQUARE TUBING INSIDE CORNER AT A GLANCE

Starting point	Steps	End point
	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>MIG (GMAW) </p> <p>TIG (GTAW) </p> </div> <div> <p>Step 1 MIG (GMAW) or TIG (GTAW) Weld Blending</p> </div> </div>	
		
	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>Restore #4 </p> </div> <div> <p>Step 2 Surface Conditioning or Applying a #4 Brushed Finish</p> </div> </div>	 <p>#4 Finish</p>
		
	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>Restore #8 </p> </div> <div> <p>Step 3 Mirror Polishing</p> </div> </div>	 <p>#8 Finish</p>

Step 1 | MIG (GMAW) or TIG (GTAW) Weld Blending

DIRECTIONS

Remove the inside MIG (GMAW) or TIG (GTAW) weld with the Blendex U Turbo wheel using the Ulti-Mate Weld Grinder (30-A 287).



TECHNICAL TIPS

The back flange can accommodate 7/8" and 1" arbors. Be sure to use the 7/8" side.

Ø	Thick.	Arbor	Description	Product #	Optimal Speed
6"	5/32"	7/8"	Blendex U Turbo	07-U 615	5,500 RPM



Step 2 | Surface Conditioning or Applying a #4 Brushed Finish

DIRECTIONS

Apply a #4 sanitary finish on the inside corner using the Blendex U wheel (6AM) with the Ulti-Mate Weld Grinder (30-A 287).



TECHNICAL TIPS

The back flange can accommodate 7/8" and 1" arbor. Be sure to use the 1" side.
The surface around the inside corner can be done with Walter 2-in-1 flap wheel (15-E 162) using a straight grinder (30-A 145).

Ø	Thick.	Arbor	Description	Product #	Optimal Speed
6"	1/4"	1"	Blendex U (6AM)	07-U 623	5,500 RPM



Step 3 | Mirror Polishing

DIRECTIONS

Polish the inside corner to a mirror finish with the Felt wheel and the Instant Polish Paste using the Ulti-Mate Weld Grinder (30-A 287).



TECHNICAL TIPS

The back flange can accommodate 7/8" and 1" arbors. Be sure to use the 7/8" side.

Once you are done polishing, use a Surfox Powercloth (54-B 090) to remove any extra paste left on the surface.

To achieve a mirror finish, buff the surface with a clean felt wheel (07-T 602).

Use a Quick-Step Instant Polish disc (07-T 456) on a Mega-Grip backing pad (07-Q 049) with an interface pad (07-Q 045) to polish the area around the inside corner.



Ø	Thick.	Arbor	Description	Product #	Optimal Speed
6"	1/4"	7/8"	Quick-Step Felt Disc	07-T 602	2,000 RPM
N/A	N/A	N/A	Instant Polish Paste	07-T 907	N/A

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