The Top 8 Most Common Wide Belt Sanding Problems
...and How To Solve Them

From chatter and other visual defects to dust, high static, loading and more, this practical guide will help you diagnose the source of the issue and get you started on your way back to action, and better sanding.

A PRACTICAL GUIDE
FROM UNEEDA
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Conclusion
Wide belt sanding is anything but simple, so when you’re experiencing problems it can be complicated to isolate and identify the source of the issue.

Whether you’re seeing visual defects on the workpiece, problems inside the machine or issues with your belts, that can definitely be frustrating. ...Especially when your wide belt sander is a key part of the manufacturing process and workflow.

Our wide belt technicians see several common issues, from chatter and other surface faults, or burned belts and too much dust, and they help our customers to get their sander back up and running and improving the overall process and results.

**Overall, three common themes arise for the sources of the most common issues:**
1. machine maintenance issues,
2. incorrect sanding procedures/techniques/settings for your application,
3. problems with the belt.

This in-depth guide goes into the different sanding flaws and machine maintenance issues that will most likely be the source of your issues. Print this guide and keep it with your sander as a practical tool when trying to identify the source of an issue.
PART 1

VISIBLE SANDING DEFECTS

1. CHATTER
2. WAVES
3. RIDGES
4. GROOVES
**WHAT IS CHATTER?**

Chatter refers to the consistent, even lines that may appear across the workpiece when something is wrong. While it would be easy to assume the problem is with the abrasive, in reality, the problem is often in the machine. When troubleshooting chatter marks, check the above areas for issues.

**CONTACT ROLLER**

You may be using the wrong type of roller for your application - metal or hard durometer rollers are for stock removal purposes only. Your roller may be worn out/out of round or out of balance.

**TENSION PRESSURE**

Check to see that your tension pressure is set correctly, based on the following standards:
- paper belt – 45-55 psi
- cloth belt – 55-65 psi
- polyester belt – 65-85 psi

**BELT JOINT**

You may be using the incorrect belt joint style for your application. Check to make sure that your belt has the proper joint and ensure that the tape isn’t too thick for your needs.

**BEARINGS**

The bearings on your contact or idler roller may be worn out. Not that this typically reveals itself on one side only.

**CONVEYOR BELT**

When your conveyor is worn or slick that may cause this issue. If this is the case, dress the conveyor or apply a cleaner to remove excess dust/debris.

**HOLD DOWN ROLLERS**

Check to make sure that the hold down rollers are adjusted correctly based on your application and workpiece thickness.

**GRIT SEQUENCE**

If using a multiple head machine, proper grit sequence and stock removal rate should be checked. Make sure not to skip more than one grit in the sequence.

**FORMULAS**

Use the following formulas to determine if the chatter is from the joint or roller. Results should be compared to actual distance between the chatter marks:

**JOINT:**

\[
\frac{\text{(belt length mm)} \times \text{(feed speed, m/min)}}{\text{(belt speed m/s)} \times 60 \times \text{(number of joints)}} = \text{Distance between fault marks in mm}
\]

**ROLLER:**

\[
\frac{\text{(circumference of roller, mm)} \times \text{(feed speed, m/min)}}{\text{(belt speed, m/s)} \times 60} = \text{Distance between fault marks in mm}
\]
WHAT ARE WAVES?

If your workpiece comes out of the sander with a wavy surface, as seen in the image, with consistent peaks and valleys, this could be coming from the machine or the sandpaper. Check the above areas to ensure proper maintenance and sanding technique.

CONTACT ROLLER

Wavy surfaces can result from using too soft of a roller for your application, a damaged roller, incorrect grit choice for application, or too high of a feed speed.

PAD (PLATEN)

Platens are typically used for finish sanding, so if you are attempting to remove too much stock in relation to grit choice on this section of the machine you may get a wavy surface. Additionally, if you have too high sanding pressure or too flexible of a pad, a wavy surface may come about.

BELT CHANGE

If your belt is too loaded, or you’ve had a long interval between belt changes, this could be the source of the problem.

GRIT COMBINATION

If you are trying to remove too much material or you skip to many grits, you may have an unsuitable grit combination in the following ranges #80-150 and #100-180. Review the grit choices and test other options. Uneeda recommends never skipping more than 1 grit in a sequence.
**WHAT ARE RIDGES?**

Raised lines on the work piece can show up in a few different patterns. Identifying the pattern can help determine and isolate the source of the problem. Some of the problems are related to the sanding action, technique and machine settings, while others are more maintenance related.
Grooves, or scratches, are the opposite of raised lines. They can also show up in a few different patterns on the work piece. Similarly, identifying the pattern can help determine the source of the problem. Typically, the problem will be related to maintenance issues on the machine or maintenance issues on the belt.
PART 2
SANDER & BELT ISSUES

5. DUST & STATIC

6. BURNED BELT & LOADING

7. BELT BREAKING

8. OFF-TRACKING
DUST WRECKS HAVOC

If the inside of your sander has a lot of dust, such as in the photo above, or you’re experiencing finishing issues like lines on the work piece; premature wear of the belt; or burning, you may have high static electricity, low airflow (CFM) in your machine, or a faulty dust extraction system, all leading to dust build-up.

STATIC ELECTRICITY

Because the action of sanding is based in friction, or the constant rubbing together of two surfaces, the natural results are heat and static. In the case of sanding, the activity produces dust and debris from the cutting action. In a high static environment, the dust will stick to various surfaces inside the machine and collect over time, leading to various problems. You can use a static meter to check the static discharge. If the reading is more than +/- .01, the sander will need grounding.

GROUND YOUR SANDER

One solution to static issues is to ground the sander by literally using a metal screw and rod from the conveyor bed into concrete floor and several feet into the ground below. If the sander is not on the ground floor, look for options to connect to metal support beams that are in the concrete/foundation. If in doubt, consult with an expert before making changes. For more information about how to properly ground the sander, click here.

CHECK YOUR CLIMATE

Did you ever notice in the winter, you’re more likely to experience a static “shock”? That’s because the winter has low humidity, which is an environment more conducive to static electricity. If you have excessive static problems, review your climate, the temperature and humidity levels in your shop and locale, as you may need to amend the climate controls in your shop.

DUST EXTRACTION SYSTEM

It is critical that your air flow and dust extraction system function correctly in removing debris from the machine, as stray particles on the work piece, abrasives or laser eye, will likely cause the other problems in this guide, such as lines, loaded belts, broken belts, and tracking issues. First, inspect the elements of the system and check to make sure the system is not clogged.

LOW SUCTION / AIR FLOW

If dust is collecting in your machine, you may have problems with the suction/air flow from the dust extraction system. Use an air flow meter and calculator to check the CFM (cubic feet per minute) for your dust extraction system, and make sure that it is operating to the manufacturer’s specification. If the reading is off from the recommended rating, there may be a problem with the system itself, so contact your manufacturer for repair assistance.
Burning & loading

GOING THROUGH BELTS?

Replacing belts often due to loading can become very costly, very quickly. Whether your belts are over-loading, burning or leaving black lines on the work piece, believe it or not, there may be some technical and proocess aspects to optimize that will improve the life of your belts and cut down on your replacement intervals.

REMOVAL RATE

You may be trying to remove too much in one pass. Each grit is designed to remove a certain amount. We recommend not skipping more than one grit in a sequence. When in doubt, refer to the following to check that you are in the correct grit range for your application:

1) abrasive planing (24-40 grit),
2) heavy stock removal (50-80 grit),
3) cutting/surfacing (100-150 grit) and
4) finishing (180-320).

WORK PIECE MATERIAL

What material are you sanding, and what type of belt are you using? Soft woods, like pine, are more prone to loading, as these woods have more resin. Check to make sure you are using the right type of belt (cloth, paper, open/close coat, etc) based on the wood. If you’re unsure, contact your UNEEDA rep to determine if you might be better served with a different product.

OVERCOMPENSATING FOR MACHINE PROBLEMS

If you are trying to compensate for issues with the machine, such as a damaged contact roller/pad, poor alignment between sanding unit and feed system, damaged or worn feed system (feed belt or rolls), or faulty extraction system, this can cause problems with your belts, and cause burning. Instead, check these areas for problems and address them.

QUALITY OF WORK PIECES

Check for inconsistencies in the quality of your work pieces – both before and after sanding. If the wood is poorly dried, has glue penetrations, or the edge milling was insufficient, these things can lead to burnt belts or loading.

SANDING LOCATION ON BELT

If you continually sand in one place on the belt, this can lead to loading and belt burning. Make sure to vary your entry point on the machine to better utilize the full width of the wide belt.

RESIN ON WORK PIECE

You may have glue or resin built up on the work piece itself, leading to additional residue getting caught up on the belt, as a result of the heat produced from the sanding action (friction).

IMPROPER BELT STORAGE

Storing belts improperly can lead to many issues. If belts are stored on the floor, they will absorb moisture and become out of round, leading to many issues. Belts should always be hung, preferably on a round rod, to maintain their shape.
Belt breaking

IMPROPER TRACKING

One common issue that can lead to broken belts is tracking. If the belt is not tracking properly in the machine, it can cause tears in the material.

DAMAGED IN TRANSIT OR STORAGE

Pay careful attention when packing or unpacking your belts from shipping or storage, as well as during loading and unloading from the sander. Make sure the belts have been hung prior to inserting them into the machine and always verify the quality of the belt prior to loading. When loading or unloading, pay careful attention to correct placement and not catching the belt anywhere it shouldn’t be.

EXCESSIVE LOADING

Your belt may break as a result of too much loading. If this is the case, you may have one of the following problems: too high removal rate of a removal rate, large thickness variations of work pieces, or foreign particles in the sanding machine or on the work surface. Check to make sure you are using the proper grit sequence for your application and that your work pieces are the same thickness and clear of dirt or other residue.

WRONG BACKING FOR APPLICATION

Choosing the right backing for your belts is key to avoiding sanding problems, and broken belts. While paper belts may lead to a better finish, if your application requires a more durable or flexible abrasive, cloth may be a better fit – so as to avoid breakage, tears and creases. If you’re unsure about which backing is best for your applications, check with our sales or tech teams to get personalized recommendations.

BAD JOINT

If your belt is old or well used, the structural integrity may have weakened over time, and the most common place for it to break would be in the joint. On a rare occasion, a belt joint may be faulty in manufacturing, leading them to pop or separate under pressure. Lastly, certain types of joints are reversible – i.e. they can run in both directions on the machine. Verify whether your belt joint type is uni – or bi directional.

KEEP BELTS IN ONE PIECE

If you’ve got a damaged belt, whether from frayed edges, broken joints, tears or snapping, something is amiss. The above areas provide a starting point for determining the cause of the breakage. Some are deeper problems also covered in this guide, such as over loading, storage and tracking issues. See those areas for further information.
Off-tracking

**TENSION PRESSURE**
Check to see that your tension pressure is set correctly, based on the following standards: for paper – 45-55 psi, cloth – 55-65 psi and polyester – 65-85 psi.

**LASER EYE**
The laser eye might be covered in dust. Check if this is the case and clean it. Check to ensure proper functioning of the eye.

**BELT CUT**
In some cases, the belt may have been cut improperly. Check to make sure the belt is of acceptable quality.

**REMOVAL RATE**
You may be trying to remove too much in one pass, which could cause the belt to become dislodged.

**IMPROPER BELT STORAGE**
Belts should be hung – not stored on concrete floor, as they absorb moisture and become out of round. This can lead to the belt not functioning properly in the machine, including improper tracking.

**ROLLERS NOT PARALLEL OR UNEVENLY WORN**
If your rollers have worn down unevenly or are not parallel, for whatever reason, this can cause the belt to track improperly.

If the rollers are not parallel (see photo below), using a digital indicator, such as the ones our wide belt technicians use during client visits, will help to reset the machine with precision.

If the rollers are worn unevenly, they need to be removed, flattened or recoated then reinstalled. Always make sure to keep your machine well maintained and replace parts that are worn out.

**KEEP IT ON TRACK**
If your belt is not tracking properly on the machine, that means it the belt may actually be coming off of the rollers, or is otherwise mis-aligned while in action. As you might imagine, this can cause all sorts of issues, some of which have been mentioned previously – like belt breaking. See above for possible problem areas.
1. Damaged contact roller will cause issues on the work piece, such as scratches.

2. Heavily worn graphite on the platen was from dust build-up behind the plate. Solve by blowing out dust when replacing the graphite.

3. Proper belt storage - hang over a rounded rod - this example shows a normal wooden shelf with a half PVC pipe over. Hanging on wood directly will lead to creases.

4. Use a Static Meter to check the static charge.

5. A digital indicator is used to level the components of the machine with precision.

6. The tool kit our techs bring to each wide belt service visit, including digital indicators, precision measurement tools, static, air flow and feed speed meters, and more.

7. Make sure to check springs and other components, such as bearings, for wear and proper functioning/maintenance.
Conclusion

With all the moving parts and variables associated with wide belt sanding, any number of things can easily go wrong.

If anything is certain, the most important areas to focus your energies to avoid future issues are:

1. Maintaining your machine properly

2. Following wide belt sanding best practices for technique and proper product selections for your application

3. Maintaining quality control for your belts – such as changing them at appropriate intervals and checking the overall quality of the belt before inserting it into the machine.

If you need help with your wide belt sanding process, and you’re a Uneeda Customer, get in touch to set up an appointment with our technicians. Uneeda has two full time wide belt technicians that make site visits to our customers to help address these issues and get you set up for success and achieving the best finish for the most effective and efficient price and process possible.
ABOUT THE TECH PROGRAM

OUR GOAL
At UNEEDA, our number one objective is to help our customers get the best results from their sanding processes. That means getting the best finish, for the lowest price and in the fastest time possible, while using the highest quality abrasives on the market.

TRAVELING TECHS
UNEEDA offers 2 full time wide belt technicians - Tony and Chris - who visit our customers year round to help them set up their wide belt sanders, identify issues, tune up the machines and streamline the overall sanding process.

WHAT THEY BRING
Each technician comes with a full tool kit with specialty and precision tools to get the job done. Some tools include digital indicators, air flow meters, feed speed meters, static meter, and more...

WHAT THEY DO
They will check your stock removal, tension pressure, level the rollers and internal components, and check areas of common issues. They will go through your entire wide belt sanding program and optimize your results to get you going as quickly as possible.
For more info, please visit us at

www.uneeda.com

Facebook: Uneeda Enterprizes  |  Instagram: @Uneedalnc

Or contact our sales representatives at sales@uneeda.com
ABOUT UNEEDA

Uneeda is a family owned and operated business with locations across the United States. For over 50 years, Uneeda has been providing the highest quality abrasives and sanding tools on the market.

We serve large-scale industrial manufacturers as well as small, independent woodworkers, and finishers and as well as the metalworking, automotive, marine and solid surfaces industries.

OUR PRODUCTS

WIDE BELTS
NARROW BELTS
SANDING DISCS
SANDING SHEETS
SANDING SPONGES
ORBITAL SANDERS
DUST COLLECTION SYSTEMS
& MORE...