

CMT ORANGE TOOLS 284.120.20P

CMT Orange Tools 284.120.20P - Circular Saw Blade for Aluminum User Manual

Model: 284.120.20P | Brand: CMT ORANGE TOOLS

1. INTRODUCTION

This user manual provides essential information for the safe and effective use of the CMT Orange Tools 284.120.20P Circular Saw Blade, specifically designed for cutting aluminum. Please read this manual thoroughly before installation, operation, or maintenance to ensure optimal performance and safety.

2. SAFETY INFORMATION

Always prioritize safety when working with power tools and cutting accessories. Failure to follow these safety guidelines may result in serious injury or damage to the equipment.

- **Personal Protective Equipment (PPE):** Always wear appropriate PPE, including safety glasses, hearing protection, and gloves, when operating machinery with the saw blade.
- **Power Disconnection:** Ensure the power tool is disconnected from the power source before installing, removing, or performing any maintenance on the saw blade.
- **Blade Inspection:** Before each use, inspect the saw blade for any signs of damage, cracks, missing teeth, or excessive wear. Do not use a damaged blade.
- **Correct Blade for Material:** Use only saw blades specifically designed for the material being cut. This blade is designed for aluminum.
- **Proper Mounting:** Ensure the saw blade is correctly mounted and securely fastened to the saw arbor, with the rotation direction matching the saw's direction.
- **Workpiece Securement:** Always secure the workpiece firmly to prevent movement during cutting.
- **Maintain Sharpness:** A dull blade can cause kickback and excessive heat. Have blades professionally sharpened when necessary.
- **Ventilation:** Ensure adequate ventilation in the work area, especially when cutting aluminum, to dissipate heat and fumes.

3. PRODUCT OVERVIEW

The CMT Orange Tools 284.120.20P is a high-quality circular saw blade engineered for precision cutting of aluminum. It features a specific tooth geometry (TCG - Triple Chip Grind) and a high tooth count (120 teeth) for clean, burr-free cuts in non-ferrous metals.



Figure 3.1: Front view of the CMT Orange Tools 284.120.20P Circular Saw Blade, showing the brand, model number, dimensions, and tooth count. Note the "Low Noise" and "CMT XTREME BALANCING" indicators.

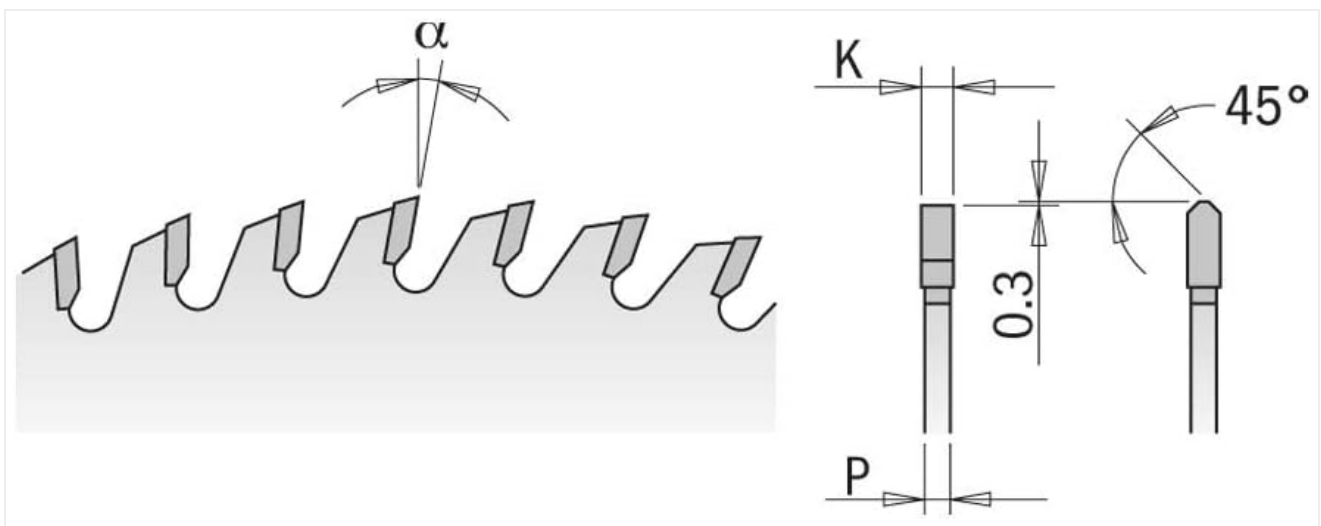


Figure 3.2: Detailed diagram illustrating the Triple Chip Grind (TCG) tooth geometry and key dimensions (K, P, 0.3, 45 degrees) of the saw blade teeth, optimized for cutting aluminum.

4. SPECIFICATIONS

Specification	Value
Manufacturer	CMT ORANGE TOOLS
Part Number	284.120.20P
Blade Diameter	500 mm
Bore Diameter	32 mm
Kerf Thickness	4 mm
Number of Teeth	120
Tooth Geometry	TCG (Triple Chip Grind)
Hook Angle	5 degrees
Compatible Material	Aluminum
Material	Aluminum (Blade body)
Item Weight	5.28 kg

5. SETUP AND INSTALLATION

Follow these steps to safely install the circular saw blade onto your compatible sawing machine:

- 1. Disconnect Power:** Ensure the sawing machine is unplugged or its power source is completely disconnected.
- 2. Access Arbor:** Open the blade guard or access panel to expose the saw arbor. Refer to your saw machine's manual for specific instructions.
- 3. Clean Arbor and Flanges:** Thoroughly clean the saw arbor and both inner and outer blade flanges to remove any dust, debris, or rust. A clean surface ensures proper blade seating.

4. **Position Blade:** Place the CMT 284.120.20P blade onto the arbor, ensuring the rotation arrow on the blade matches the rotation direction of your saw. The blade's bore (32mm) must fit snugly onto the arbor.
5. **Secure Blade:** Place the outer flange and tighten the arbor nut securely. Use the appropriate wrench and ensure the nut is tightened to the manufacturer's specifications for your saw machine. Do not overtighten.
6. **Check for Wobble:** Manually rotate the blade to check for any wobble or misalignment. The blade should spin freely and true.
7. **Reassemble Guards:** Close all blade guards and access panels before reconnecting power.
8. **Test Run:** Perform a brief test run without a workpiece to ensure the blade runs smoothly and quietly.

6. OPERATING INSTRUCTIONS

This blade is specifically designed for cutting aluminum. Adhere to the following guidelines for optimal performance and safety:

- **Material Compatibility:** Use this blade exclusively for cutting aluminum and other non-ferrous metals as specified by CMT. Do not use for wood, steel, or other materials.
- **RPM Settings:** Ensure your sawing machine's RPM (Revolutions Per Minute) is within the recommended range for this blade and for cutting aluminum. Refer to the blade's markings (e.g., MAX RPM 3000) and your machine's manual.
- **Feed Rate:** Apply a consistent and moderate feed rate. Too fast a feed rate can lead to poor cut quality, excessive heat, and premature blade wear. Too slow can also generate excessive heat.
- **Coolant/Lubricant:** For best results and to extend blade life when cutting aluminum, use a suitable cutting fluid or lubricant. This helps to reduce friction, dissipate heat, and prevent chip welding.
- **Workpiece Support:** Always ensure the workpiece is fully supported throughout the cut to prevent binding or kickback.
- **Cleanliness:** Keep the work area and the saw machine clean of aluminum chips and dust.

7. MAINTENANCE

Regular maintenance will prolong the life and performance of your CMT saw blade:

- **Cleaning:** After each use, clean the blade to remove accumulated aluminum chips and resin. Use a suitable blade cleaner and a stiff brush. Ensure the blade is dry before storage.
- **Inspection:** Periodically inspect the blade for signs of wear, damage, or dullness. Pay close attention to the carbide tips for chipping or cracking.
- **Sharpening:** When the blade becomes dull, have it professionally sharpened by a qualified service. Do not attempt to sharpen carbide-tipped blades yourself unless you have specialized equipment and training.
- **Storage:** Store the blade in a dry, clean place, preferably in its original packaging or a protective case, to prevent damage to the teeth and corrosion.

8. TROUBLESHOOTING

Refer to the table below for common issues and their potential solutions:

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Poor cut quality (rough edges, burrs)	Dull blade, incorrect feed rate, improper coolant, blade wobble.	Sharpen or replace blade, adjust feed rate, apply coolant, check blade mounting.
Excessive heat generation	Dull blade, incorrect feed rate, insufficient coolant, wrong RPM.	Sharpen or replace blade, adjust feed rate, ensure proper coolant application, verify RPM.
Blade binding or kickback	Workpiece not secured, dull blade, incorrect feed rate, misaligned fence.	Secure workpiece, sharpen blade, adjust feed rate, check fence alignment.
Excessive noise or vibration	Loose blade, damaged blade, dirty arbor/flanges, worn machine bearings.	Check blade mounting, inspect blade for damage, clean arbor/flanges, service saw machine.

9. WARRANTY INFORMATION

Specific warranty details for the CMT Orange Tools 284.120.20P Circular Saw Blade are not provided in this manual. For information regarding warranty coverage, terms, and conditions, please refer to the documentation included with your purchase or contact CMT ORANGE TOOLS directly through their official website or customer service channels.

10. SUPPORT

If you encounter issues not covered in this troubleshooting section or require further assistance, please contact CMT ORANGE TOOLS customer support. You can typically find contact information on their official website or on the product packaging.

For general inquiries or to find authorized service centers, visit the official CMT ORANGE TOOLS website: www.cmtorangetools.com