TQG005B

PRO-CUT On-Car Brake Lathe Guide

TECHNICAL TRAINING

Start

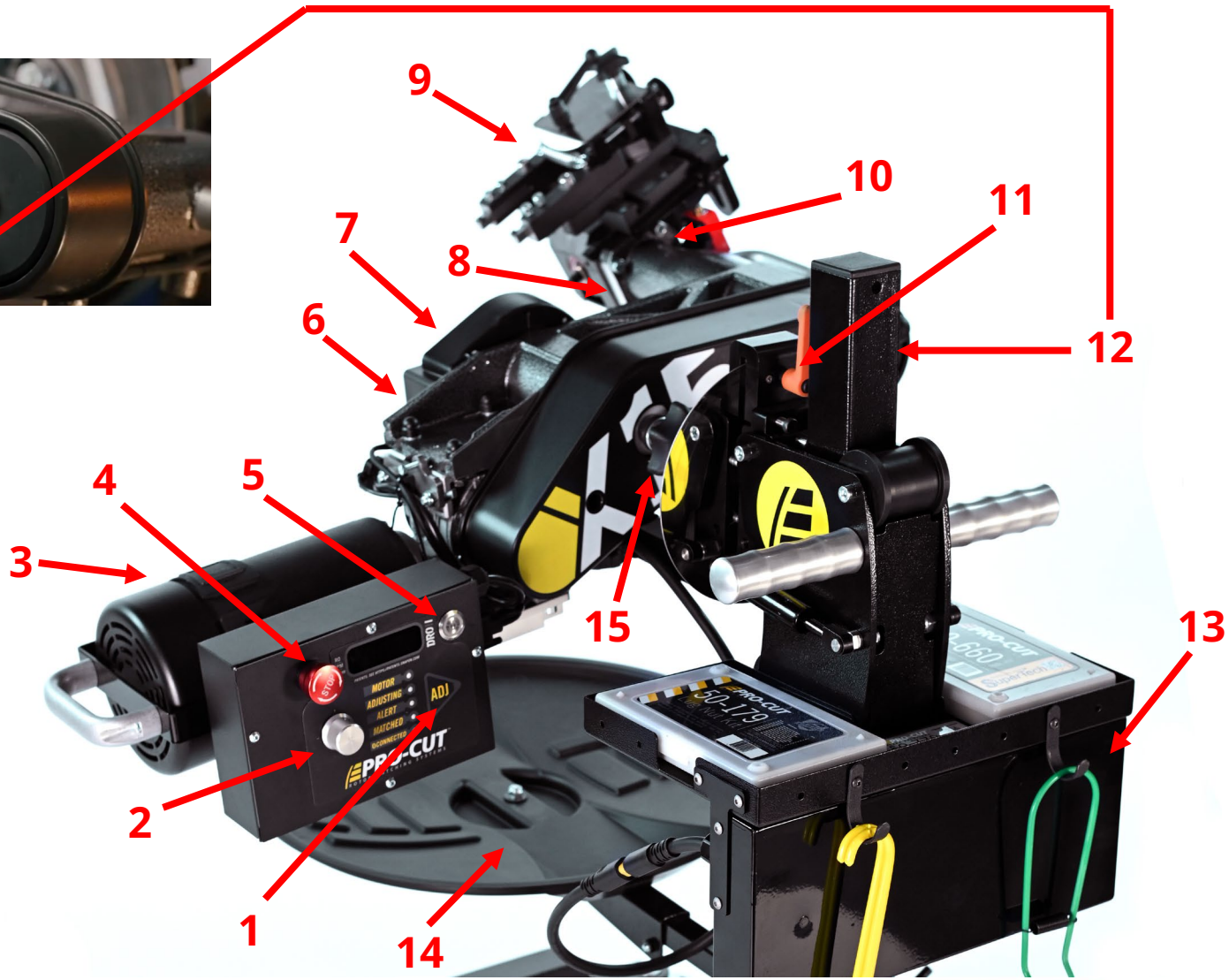
Images and video courtesy of PRO-CUT International

TOYOTA

250731

BRAKE LATHE COMPONENTS

1. Compensation Adjust Button
2. Spindle Speed Select Knob
3. 48v DC Motor
4. Emergency Stop
5. Spindle Start/Stop
6. Adjustment Solenoid
7. Belt Cover
8. LED Task Lamp
9. Cutting Head
10. Microswitch
11. Disc Lock Lever
12. Feed Clutch (see inset photo)
13. DC Power Supply
14. Chip Tray
15. Draw Bar Knob



TOOL KIT / LUG NUT KIT

50-660
Tool Kit
All the tools to use any Pro-Cut model. Includes 6mm T-handle, 2.0mm allen for gib adjustment, tip screws, 5mm allen for adjusting tool arms, chip brush, indexing crayon, 6mm / 8mm wrench.

Used for Lathe Maintenance

Standard Kit to Mount Adapters

50-179
Nut and Bolt Kit
Includes 5 nuts each of 1/2"x20, 12mmx1.25, 12mmx1.5, 9/16x18, 14mmx1.5, and 30-687 Studs

50-1022 and 50-174 work well together

50-1022 Asian Vehicle High Hat Adapter

Optional Kit to Mount Adapters

50-174
Flat Rate Speed Nut Kit w/Holster
Speed nut kit allows the use of a 12V or less impact gun to install adapters. Drastically reduces adapter installation time! Comes with holster that attaches to 50-2192, 50-2193, or 50-2195 trolleys.

CHIP DEFLECTOR / SILENCERS

50-703
Standard Chip Deflector
For use on standard size vented rotors. Custom- cut to ride securely over the Pro-Cut cutting on 220, 238, and 1330 cutting heads.

50-744
Large Rotor Chip Deflector
For use on larger vented rotors up through medium duty trucks. Custom-cut to ride securely over the Pro-Cut 220, 238, and 1330 cutting heads.

50-754
Double-thick Disc Silencer
For thin, solid rear rotors. Provides increased vibration dampening. For 220, 238 and 1330 cutting heads.

Most Popular

CUTTING TIPS

The cutting tips are one of the most critical components of the machine. It is vital that they are in good condition and properly attached to the cutting head.

1. Before mounting the lathe to the vehicle, check the cutting tips and make sure they are ready for use.

- The correctly installed tip is wider on the top and has a groove, or dots, facing up. A tip mounted upside down will produce a surface finish that looks like a vinyl record surface
- Each cutting tip has three corners which may be used
- At least 7 cuts per corner can be expected- tip life is affected by variables such as rust or ridges

2. To determine when to rotate tips, monitor disc finish. If the rotor finish begins to look inconsistent, or feels rough to the touch, tips should be rotated

- Tips that are chipped or cracked should never be used
- Be sure that the tip pocket is clean before positioning the tip
- Any foreign material pinched under the tip could cause problems

Hint! **Start with dot 1 facing out when installing new tips!**

Toyota Tools and Equipment for PRO-CUT Tools / Accessories

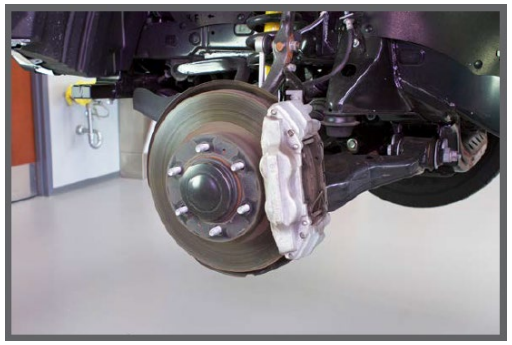
VEHICLE SETUP

Before beginning a machining process, confirm the following items:

- Place the transmission in neutral
- Disable traction control system if equipped
- Disengage parking brake when cutting rear discs
- Turn ignition off
- Raise the vehicle until the center of the wheel hub is waist high (32” – 40”)
- Ensure the vehicle lift is set onto the safety locks
- Check for any looseness or excessive play in the wheel bearings by manually rocking the tire laterally (side to side) and vertically (up and down)
- Remove both front and/or rear tires
- Remove the brake calipers and hang them with supplied “S” hooks to the suspension system (spring, control arm etc.) away from the brake disc

DISC / PREPARATION

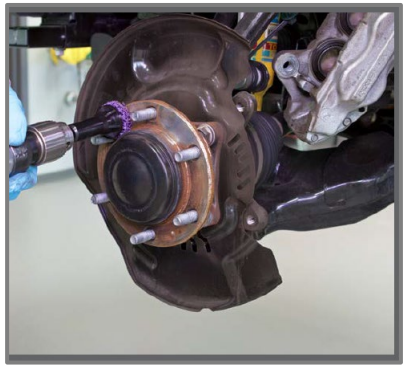
1. Start on the side of the vehicle with the brake caliper on the right when viewing the brake disc. This allows the lathe to be positioned right side up, making it easier to set up the lathe.



- When machining the opposite side disc, the lathe is flipped up-side-down, and no adjustments are necessary (except for cutting depth) since they were already made on the previous disc

2. Remove the caliper and hang it away from the brake disc with the S-hooks provided.

3. Make an index mark on the disc and hub then remove the disc. (index mark used to re-install disc in same location)
4. Inspect the disc and hub for dirt or rust. If necessary, clean the mating surfaces with an abrasive pad or abrasive paper.



	Hint!	**The goal in machining is to achieve a lateral runout of less that 0.05 mm (.002”) which is less than half the thickness of a dollar bill. A small flake of rust or dirt could make this impossible to achieve.**

5. Reinstall the disc using the index mark and secure using at least two lug nuts or lug bolts.

DISC THICKNESS CHECK BEFORE MACHINING

1. Use a disc brake micrometer and verify the thickness is within tolerance for machining.

Example:
- Disc thickness was measured at several locations, and the lowest measurement was 26.67 mm (1.05”)
- Machining will typically remove 0.10 to 0.15 mm (0.004” to 0.006” from each side of the disc or 0.20 to 0.30 mm (0.008” to 0.012”) total
- Subtracting the thickness lost to machining from the current thickness yields an estimated finished thickness of 26.37 mm (1.038”)

26.67 Currently (1.050 in.)
- 0.30 To be cut (0.012 in.)

26.37 After cut (1.038 in)

Hint!

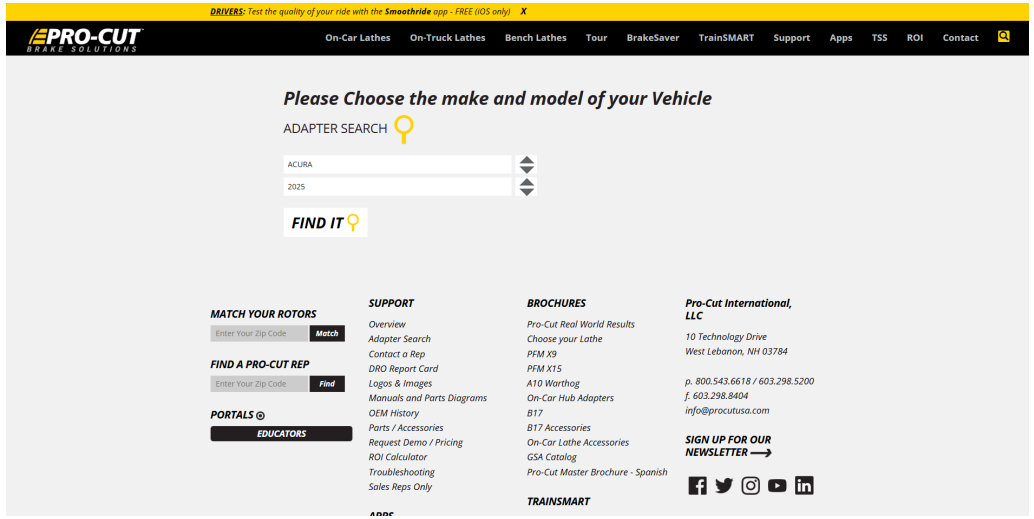
Standard and Minimum disc thickness specifications can be found in the following TIS menus

SPECIFICATIONS: BRAKE (FRONT): SERVICE DATA
or
SPECIFICATIONS: BRAKE (REAR): SERVICE DATA

The result is well above the minimum disc / rotor thickness of 25.0 mm (0.98”) specified in the Repair Manual. **This is an example only - minimum disc thickness varies depending on model.**

PRO-CUT ADAPTER SEARCH-WEBPAGE

https://www.procutusa.com/adaptersearch.aspx



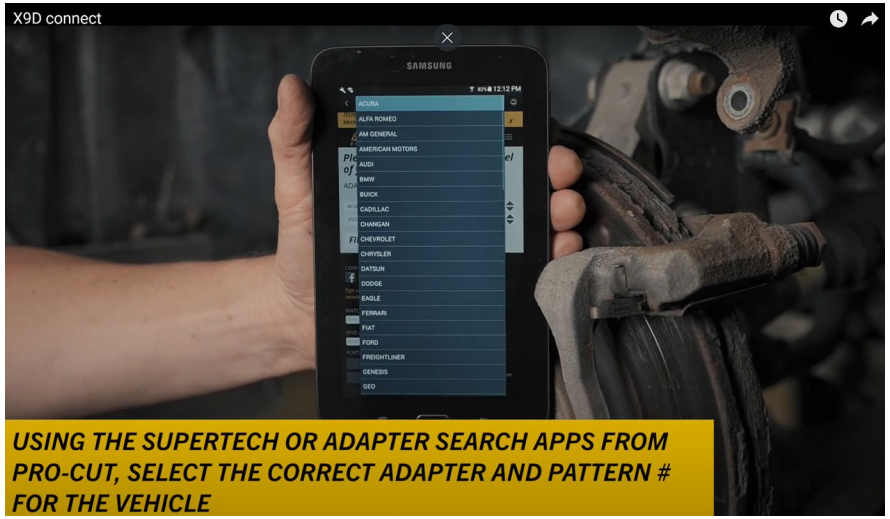
PRO-CUT ADAPTER SEARCH- APPS

ADAPTER SEARCH

Adapter Search · Android

ADAPTER SEARCH

Adapter Search · Apple



LATHE MOUNTING – “CONNECT”

PRO-CUT X15 Lathe shown for example

3C’s / Connect

QR Code opens a playlist. Select a video from the playlist that matches your PRO-CUT Lathe.

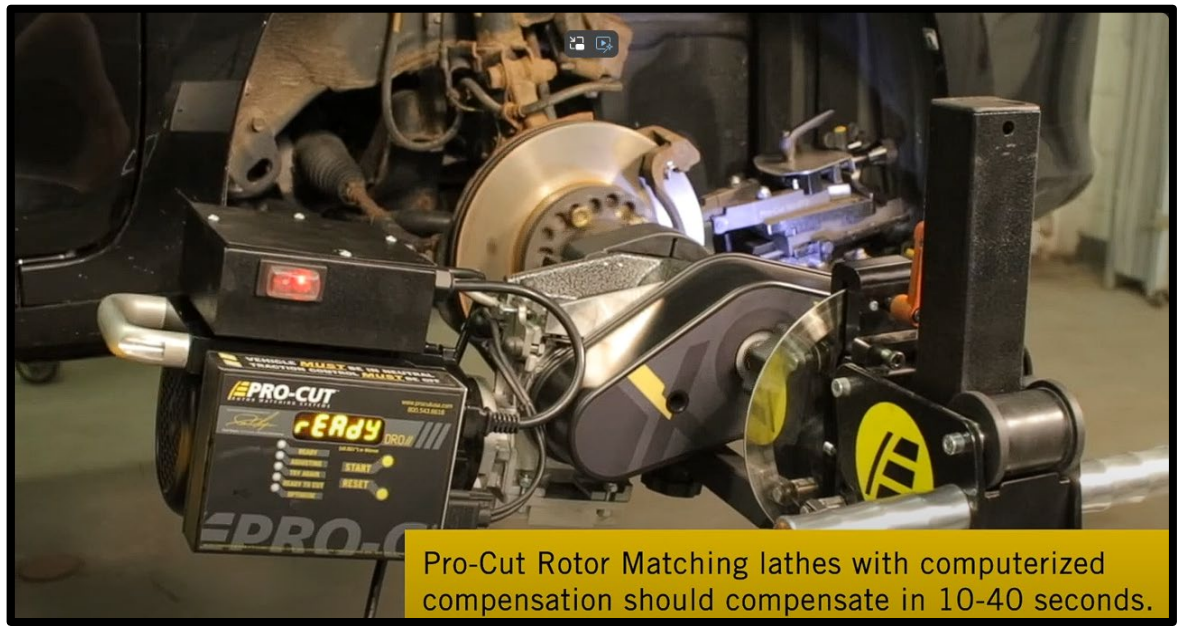
LATHE COMPENSATION – “COMPENSATE”

PRO-CUT X15 Lathe shown for example

3C’s / Compensate

QR Code opens a playlist. Select a video from the playlist that matches your PRO-CUT Lathe.

TROUBLESHOOTING COMPENSATION ISSUES



Pro-Cut Rotor Matching lathes with computerized compensation should compensate in 10-40 seconds.

Additional Tips

- Transmission must be in neutral
- Release E-brake for rear axle work
- Disengage Traction Control System
- Be sure to use the correct adapter
- Remove factory disc retaining washers

Possible-Causes

- Solenoid Issues
- Check wheel bearings for looseness
- Hub surface rust/corrosion issues
- Hub adapter issue
- Vehicle hub height from floor
- Adapter lug nut/bolt tightening
- Trolley binding
- Lathe within working range of shocks
- Drawbar hand tight

Compensation Issues

Scan the QR code to watch a comprehensive video on Troubleshooting Compensation Issues

CUTTING BRAKE DISCS – “CUT”

PRO-CUT X15 Lathe shown for example

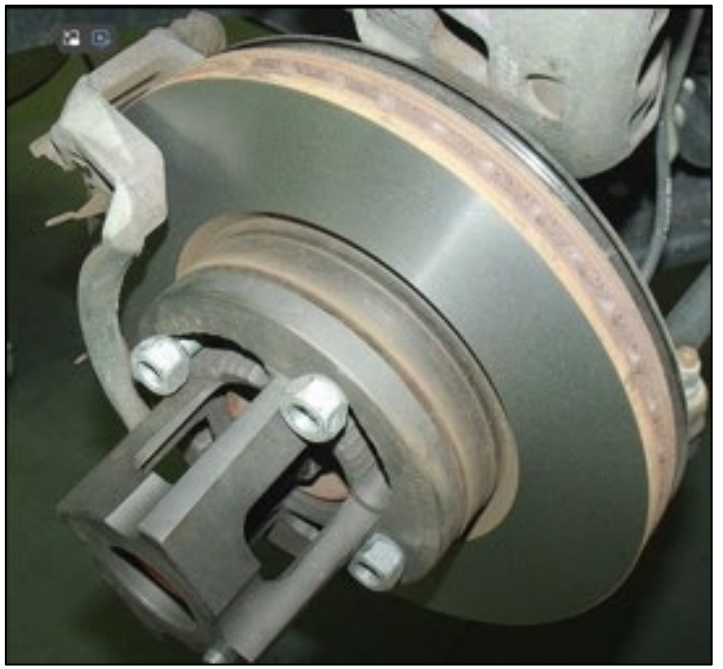
3C’s / Cut

QR Code opens a playlist. Select a video from the playlist that matches your PRO-CUT Lathe.

TIPS FOR A PERFECT CUT

4 Steps to a Perfect Cut

1. Properly adjusted gib.
2. Properly adjusted feed screw.
3. Clean and properly adjusted cutting head.
4. Correct Pro-Cut brand cutting tips and chip deflectors.



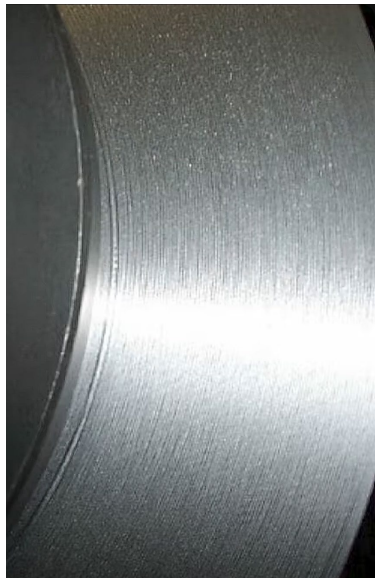
Additional Tips

- Always clean cutting tip pocket before installing or re-positioning a tip
- Cutting Tips-Always start on dot 1 and rotate clockwise during rotation
- Be sure to use correct wrench when attaching cutting tips
- Tighten draw bar firmly and by hand only

Surface Finish Issues

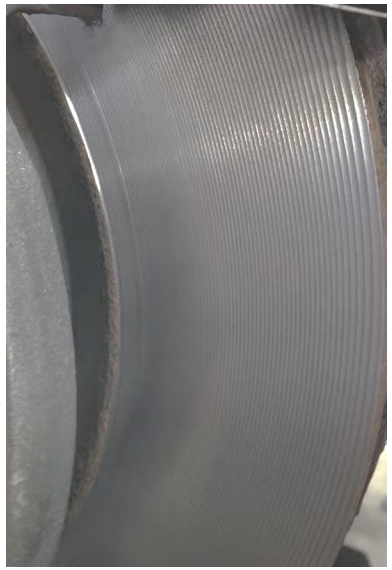
Scan the QR code to watch a comprehensive video on Troubleshooting Surface Issues

TROUBLESHOOTING SURFACE FINISH ISSUES



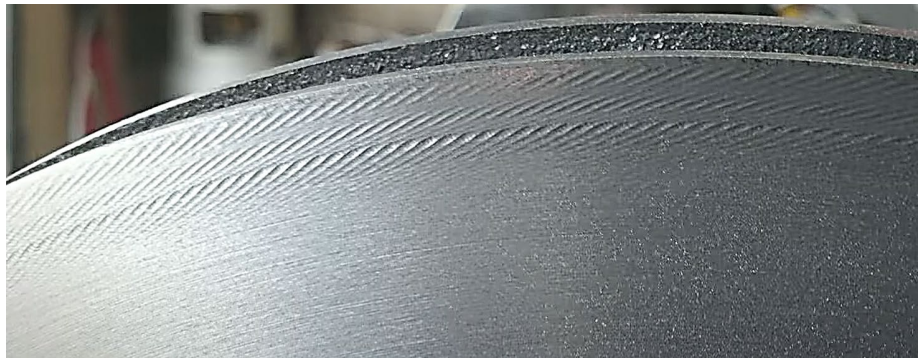
Mild Record Groove Cut-Causes

- Chipped cutting tips
- Incorrect cutting tips



Severe Record Groove Cut-Causes

- Loose draw bar during cut
- Cutting head not tight on slide plate
- Cutting arms not locked down



Chatter-Causes

- Looseness in Gib - adjustment required
- Missing chip deflector
- Damaged gear box

Concentric Rings-Causes

- Feed screw misalignment

DISMOUNT LATHE / FINAL DISC INSPECTION

After the final pass of the cut

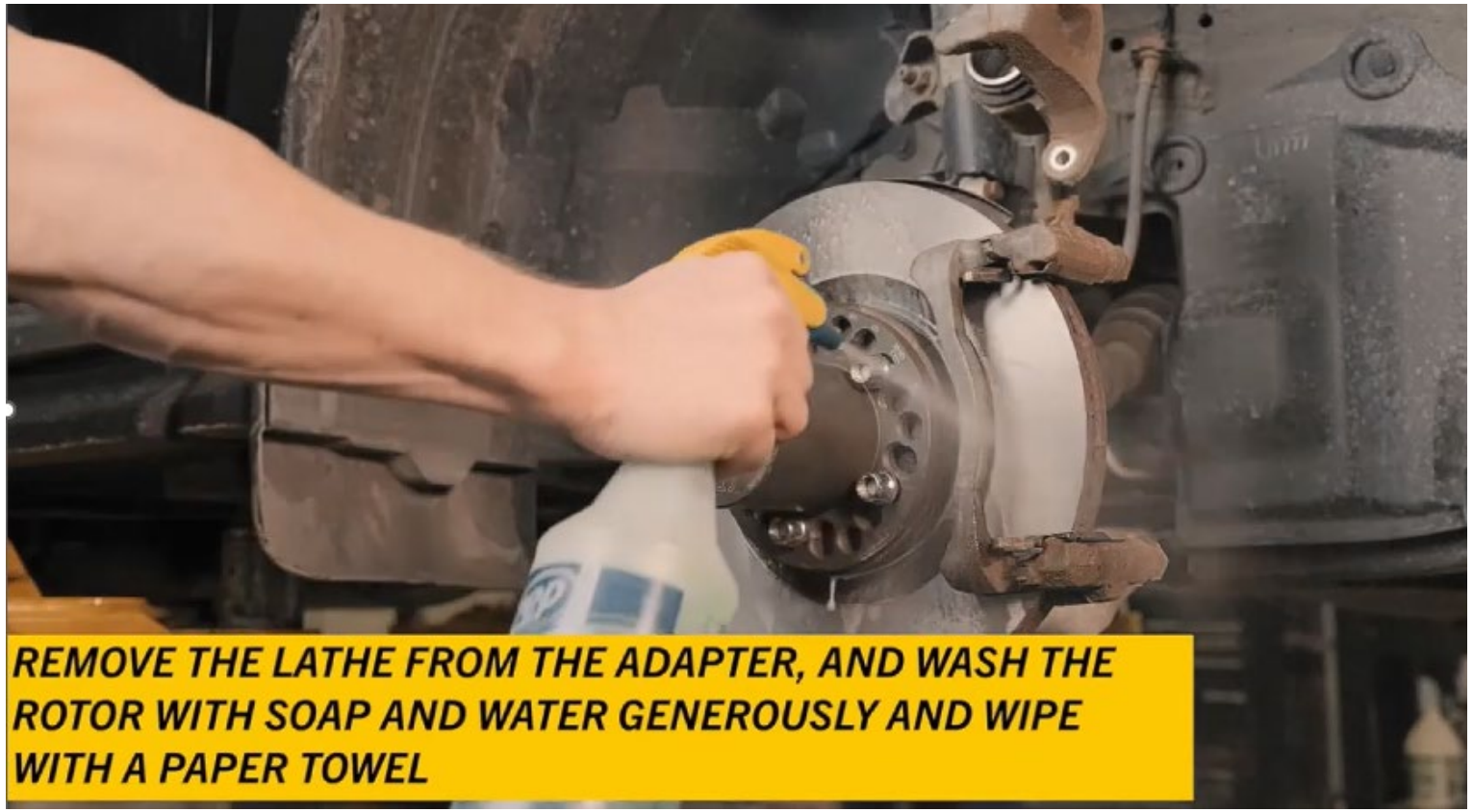
- Remove chip deflector/silencer
- Loosen the cutting arm lock lever
- Turn the depth adjustment knobs so the cutting tips clear the disc surface
- Loosen the draw bar knob and remove the lathe from the adapter (Do not bump the cutting tips into the disc)
- Using a brush or vacuum, clean machining debris from the hub, caliper bracket and speed sensor

Hint!

Standard and Minimum disc thickness specifications can be found in the following TIS menus

SPECIFICATIONS: BRAKE (FRONT): SERVICE DATA
Or
SPECIFICATIONS: BRAKE (REAR): SERVICE DATA

CLEAN THE DISC WITH SOAP AND WATER



- Only clean the disc with warm water with a few drops of liquid dish soap.
- Dry the surface with a paper towel
- Thoroughly cleaning the disc will help prevent contaminating new brake pads

Hint! Do NOT use aerosol brake cleaners or shop rags to clean the machined surface!

MAINTENANCE RESOURCES

OCL Lube Points

OCL Gib Adjustment

Contact Your Pro-Cut Rep

ADDITIONAL TRAINING RESOURCES

Virtual Training

TrainSmart Download