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MINIMAX ULTRA

MiniMax ULTRA Drill Shear

OPERATOR, SAFETY & MAINTENANCE MANUAL



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MINIMAX ULTRA

Product and power system

MINIMAX ULTRA DRILL SHEAR / P020202

1 Product identification

The MiniMax ULTRA (MMU), PTM P020202, shears post-tension strand. The FLEX drill powers the shear, and the operator controls that power with the drill trigger.

2 Power system and case

COMPONENT	MANUFACTURER MODEL	PTM PART
MiniMax ULTRA	-	P020202
FLEX drill	FX1171	P012000
FLEX 5Ah battery (two)	FX0121-1	P012002
FLEX charger	FX0411-Z	P012010
FLEX STACK PACK case with custom foam	-	P010190

3 Cutting capability

Strand diameter: 1/2 inch (12.7 mm).

Bidirectional cutting uses both blade edges.

Up to 4,000 cuts per blade set*

*If used properly.



Case with custom foam | P010190

FLEX drill setup

DRILL SETTINGS FOR TENDON SHEARING

> **WARNING | NEVER USE HAMMER MODE**
>
> Never operate the MiniMax ULTRA in hammer mode, even for a performance check. If the supplied drill is out for repair, use the specified FLEX drill on page 1 as the replacement. Contact PTM if you need help sourcing a replacement.

4 Drill controls

With the drill stopped, set the speed selector to 2. Turn the adjustment collar all the way to the right, to the position shown.



Figure 1. Cutting setup photo supplied by PTM.

Before the first cut

Confirm the tendon has been tensioned and the Engineer of Record has approved cutting the tail. With the MiniMax seated, at least 12 inches of strand must extend past the rear of the Lightning Quick Clamp.

Wear eye protection with side protection. Follow the jobsite PPE requirements. Inspect the tool for damage, keep its guards in place, and keep hands clear of the nose and clamp while the tool runs.

Construction safety references: OSHA 29 CFR 1926.102(a) and 1926.300(a)-(b).

See page 5 for the separate no-strand performance check.

Cutting sequence

OPERATOR DEMONSTRATION

BEFORE SHEARING

Run the no-strand performance check on page 5 before each cutting session. Confirm the tendon is tensioned and the Engineer of Record has approved the cut. Use the Long nose only in deep angled pockets (page 7). Fully seat the nose and verify at least 12 inches of strand extend beyond the rear of the Lightning Quick Clamp.

5 Place, cut and remove the tail

01 Position the tool

Using the carry handle, lower the MiniMax over the exposed tendon tail.

02 Seat and align

Fully seat the nose against the anchor. Check the pocket for debris if the nose will not seat. Keep the strand straight through the nose and clamp. If the strand is angled or the clamp jams, stop. See page 6.

Watch strand placement

03 Make the cut

Cut in forward or reverse. Watch the arrows on the clamp housing. One full turn indicates a complete cut. Release the trigger. If the clamp stops short or the strand stays attached, see page 4.

04 Remove the sheared tail

After a complete cut, pull the sheared tail straight out the back of the clamp before moving to the next pocket. The tail should come out easily.



01 POSITION



02 SEAT AND ALIGN



04 REMOVE SHEARED TAIL

IF A SHEARED TAIL BINDS

Check the pocket for debris. If the nose was not fully seated, the cut may spread the strand wires and make the tail hard to remove. See page 4 for alternate removal of a fully sheared tail.

After the cutting session, repeat the no-strand performance check on page 5.

Maintenance & service

BLADES, LUBRICATION AND TROUBLESHOOTING

6 Blade inspection and replacement

Each cutting direction uses a different blade edge. Switch to the opposite direction after about 2,000 cuts on one edge, or if a fuse breaks after only a few cuts. If fuses break frequently, use the performance check on page 5.

Disconnect the drill from the MiniMax before changing blades. With a 1/4-inch Allen wrench, loosen the four bolts. Lift the retainer clip and exchange the blades. Match the rotating and fixed blades to the nose as shown on page 7. Lower the clip and tighten the four bolts in a star pattern. Run the no-strand performance check on page 5 before returning to cutting.

7 Faceplate and gear lubrication

At blade changes or every 4,000 cuts, contact PTM for the faceplate and gear inspection and lubrication procedure.

8 If the strand does not shear fully

If the clamp stops short of a full turn or the strand remains attached, release the trigger. Wait for motion to stop, disconnect the drill and check the fuse beneath the round drill input.

Broken fuse. Pull it out by hand or use pliers if needed. Install a PTM P010120 fuse.

Intact fuse. Remove the MiniMax from the strand and run the no-strand performance check on page 5. If the tool fails the check, contact PTM.



Drill input and fuse housing
See item 1 on page 8.

9 If a sheared tail binds

Use this method only for a fully sheared tail. Once the LQCA completes a full 360° rotation, release the trigger, set the drill down and place the MiniMax on a flat surface clear of the pocket. Push the tail from the rear and pull it out through the nose.

10 If the tool jams

Stop. If the Lightning Quick Clamp jams and the tool is clear of the strand, follow page 6. If the tool is trapped on the strand, the jam persists, or another part jams, contact PTM.

PTM Support 817-MINIMAX (817-646-4629) | OPS@pt-mfg.com

Email PTM Support

Performance check

NO-STRAND DIAGNOSTIC SETTINGS

> **NOTICE | SEVERE TOOL DAMAGE**
>
> Never use tendon-shearing settings or hammer mode for this check. Set Speed 2 and start at Torque 1.
> Run the check with no strand in the MiniMax.

11 No-strand performance check

Run this check before and after every tendon-cutting session. Also run it after a blade change, when fuses break frequently, or after an incomplete cut with an intact fuse. Support the MiniMax on a flat surface.

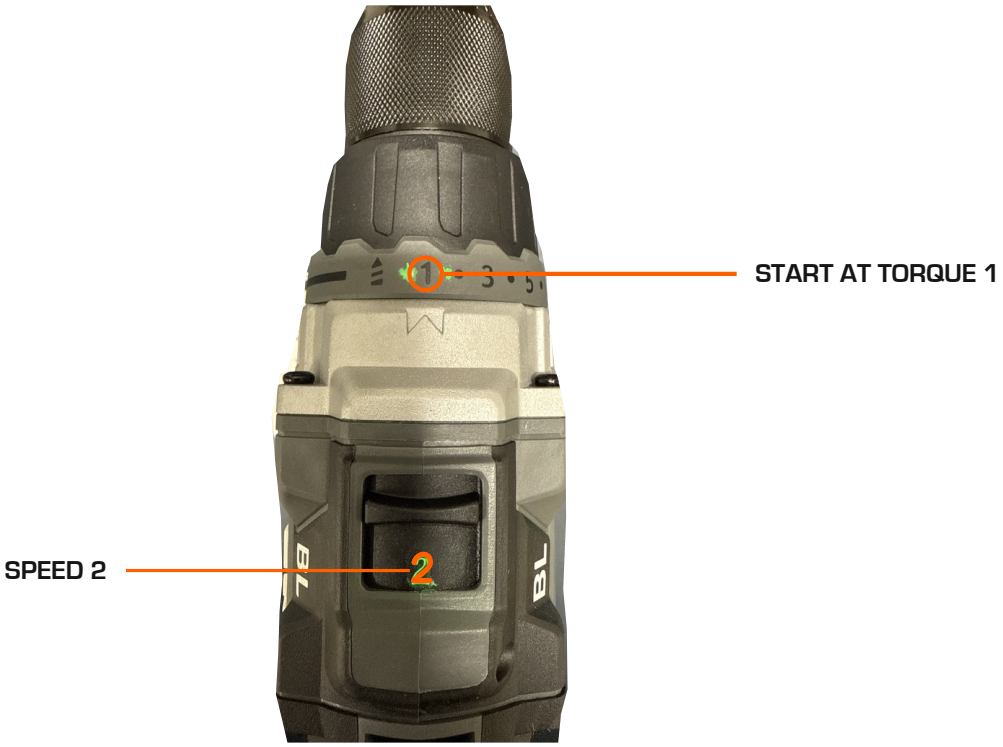


Figure 2. FLEX drill controls for the performance check.

Release the trigger before changing the torque setting.

1	Baseline operation
2-3	The machine may need cleaning
4	Briefly test, then stop. Do not increase the setting further.

If the MiniMax still does not turn at Torque 4, stop and contact PTM. See page 4 for support.

Lightning Quick Clamp

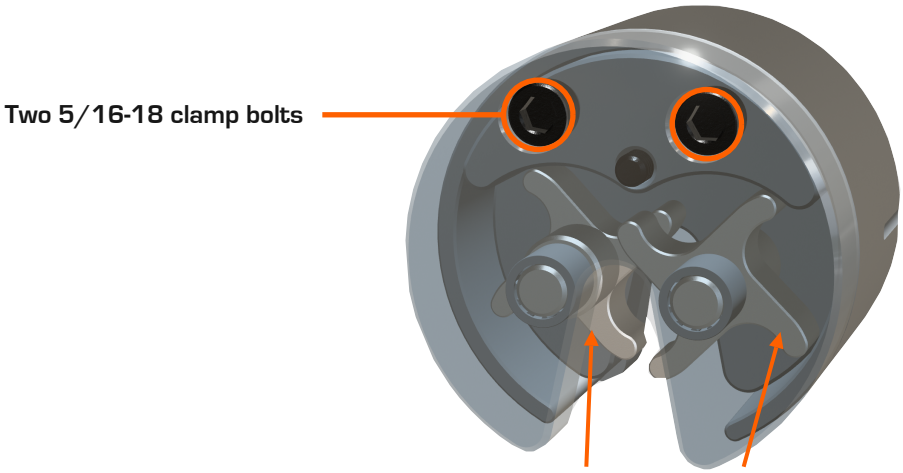
STRAND ALIGNMENT, CLEANING AND BLADE INSPECTION / P010197

The Lightning Quick Clamp (LQCA) keeps the strand straight during the cut.

12 Clean the clamp

Wipe the clamp clean before and after every shift.

If it jams, stop the drill, wait for motion to stop and disconnect the drill. With the MiniMax clear of the strand, loosen the two 5/16-18 bolts shown. Clean out the clamp with WD-40 Multi-Use Product or equivalent. Follow the cleaner label. Match both turnstyle clamps to the orientation shown before retightening the bolts.

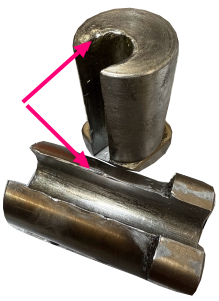


Installed turnstyle clamp orientation

> **NOTICE | KEEP THE STRAND STRAIGHT**
>
> Cutting at an angle can damage the MiniMax and require costly repairs. Stop if the strand is angled or the clamp cannot keep it straight. If the tool is trapped on the strand or the jam persists, contact PTM (page 4).

13 Inspect the rotating blade throat

Severe marring in the throat of the rotating blade is a sign of angled cutting. If you find damage like this, stop using the tool and contact PTM.



Arrows show throat marring.

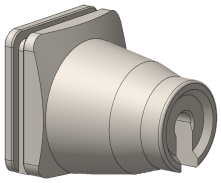
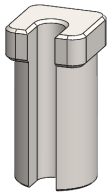
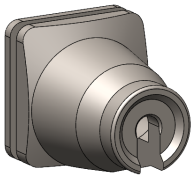
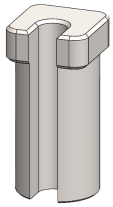
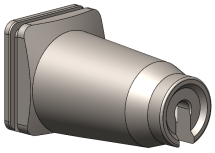
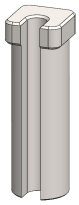


Close-up of a marred throat.

Nose and blade options

PART IDENTIFICATION / MATCH EACH NOSE TO ITS BLADE SET

The rotating and fixed blades shown below are paired by nose configuration.

CONFIGURATION	NOSE	ROTATING BLADE	FIXED BLADE
Standard	 P010138	 P010139	P004002
SOFLO	 P010116	 P010117	P004078
Long	 P010136	 P010137	P004002

NOTICE | LONG NOSE FOR DEEP ANGLED POCKETS ONLY

Using the Long nose in a standard pocket will severely damage the MiniMax. Keep the strand straight through the nose and clamp during every cut.

The earlier PTM options chart calls SOFLO “Miami.” This guide uses SOFLO for the P010116 nose and its matching blades.

Source: PTM MiniMax ULTRA options drawing, individual part renders and the Standard nose STEP.

Exploded assembly

STANDARD NOSE / LIGHTNING QUICK CLAMP



1. **Drill input and fuse assembly**
2. **Rear plate and handles**
3. **Planetary gearbox**
4. **Main housing and drive**
5. **Lightning Quick Clamp**
   P010197
6. **Nose retainer**
   P010179
7. **Rotating blade**
   P010139
8. **Fixed blade**
   P004002
9. **Standard nose**
   P010138

CAD geometry spaced for part identification. Fasteners are shown within their groups.