TOOL MAINTENANCE

- · Installation tools should be periodically inspected for damage or wear. Tools should be kept clean so that foreign objects and debris (chips, oil, and dirt) will not clog the tool, and preventing the drive contour from fully engaging the insert. Operator misuse can contribute to premature wear and/or damage to the mandrel.
- · Lubricate the front and rear prewinder assembly threads, the adapter drive sleeve, and key-way with minimal amount of grease for smoother operation and longer tool life.
- Use the lowest torque that will install the insert. This will also prolong the life of the tool.

SAFETY

Always wear eye protection when working with KATO tools.

PARTS REPLACEMENT

Replacement Mandrels are available from KATO (see part list below).



INSTRUCTIONS FOR USING KATO TANGED COILTHREAD® INSERT TOOLS

THE FOLLOWING INSTRUCTIONS ARE APPLICABLE TO THE KATO TANGED PREWINDER ELECTRIC INSTALLATION TOOL (KPE Series)



|--|

Figure 2

PARTS LIST		
REPLACEMENT PARTS	KATO PART NUMBER	
Mandrel	KPE <mark>X-XX</mark> M	
Spacer Set	KPEX-XXS	
X-XX Signifies Thread Type & Size Designation. For example, KPEC-04M		



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BEFORE YOU BEGIN PLEASE REVIEW:

- Proper hole preparation procedures.
- The KFS-20 (CT5420) instructions prior to use.
- The KATO Linear Arm (2KLRM-1) to reduce operator fatigue and injury.

IMPORTANT NOTES

- A step by step instructional video can be found in the KATOpedia section of the KATO website <u>www.katofastening.com</u>.
- Low torque range spring (blue) is for installing insert sizes 2-56 thru 6-32 and M2.5 thru M4.
- High torque range spring (light silver) is for installing insert sizes 6-32 thru 1/4" and M4 thru M6.
- The KATO prewinder electric tool Front End Assembly (FEA) is designed to install 1D, 1.5D and 2D inserts only.
- · CT5420-PA and CT5408-PA Prewinder Adapters are interchangeable.

REQUIRED COMPONENTS

The KATO Prewinder Electric Installation System requires:

CT5420: KFS-20 Brushless Electric Diver & T-45BL Power Transformer

CT5420-PA: KATO Prewinder Adapter

KPE Series: KATO Prewinder Electric FEA (one for each thread size) 2KLRM-1: KATO Linear Torque Arm (recommended)

COMPONENTS LIST

The KPE Series Front End Assembly includes the following parts:

- 1 Prewinder
- 1 Mandrel
- 3 Spacers (1D, 1.5D, 2D)
- 4 Shims (three thin shims and one thick shim)

1 Dampening Cushion (see Figure 2)

DEPTH ADJUSTMENT & COMPLETE ASSEMBLY

- 1. Thread the Mandrel completely out of the Prewinder. Slide the appropriate depth control Spacer over the Mandrel for the insert length to be installed. Use the tallest spacer for a 1D insert, the medium spacer for a 1.5D insert, and the shortest spacer for a 2D insert.
- 2. Thread the Mandrel back into the Prewinder. If needed, shims of various sizes are included to fine tune the installation depth. For size 2-56 only add the Large Shim to the back of the prewinder. Also, add the Dampening Cushion into the CT5420 Hex Sleeve. Please see Figure 2 for details. Note: Inserts can vary ± 1/4 coil. KATO recommends that the installation depth of each lot be tested using a sample tapped hole prior to installing the inserts into a production part.
- 3. The KATO KFS-20 brushless electric driver is a versatile tool that can be used with several different KATO installation systems. However, before the KFS-20 driver can be used with the KPE Series FEA's for the first time, a magnet located inside the hex sleeve must be removed (*for detailed instructions please review the KFS-20 Brushless Electric Driver instructions*).
- 4. Thread the Magnet Removal Screw into the magnet (located inside the Hex Sleeve) and pull the magnet out. Place the magnet in a safe place to prevent loss.
- 5. Ensure size appropriate Spring is installed into the KFS-20 driver (see Important Notes or the CT5420 instructions).
- Place the Dampening Cushion into the Hex Sleeve. This will prevent metal to metal contact between internal components when the Mandrel is fully retracted. CAUTION: The Cushion simply drops into the sleeve, be careful not to lose the Cushion when assembling or disassembling the KPE Series FEA.
- 7. Thread the Prewinder Adapter onto the KFS-20 driver. Note that the threads on the adapter and the electric driver are left hand threads. A good hand tightening is all that's needed.
- 8. Loosen the Retainer Nut on the end of the Adapter (also left-hand threads) and slide the FEA Mandrel into the Hex Sleeve of the electric driver. You may need to rotate the Mandrel before it will slide completely into the Hex Sleeve.

9. Tighten the Retainer Nut to hold the FEA in place. Again, a good hand tightening is all that's needed.

CAUTION: Do not over tighten the Prewinder Adapter or the Retainer Nut.

TORQUE ADJUSTMENT & INSERT INSTALLATION

- Always use the minimum amount of torque that will install the insert. Start with a very low torque setting on the Electric Driver. To adjust the torque, pull back on the Torque Adjustment Knob while simultaneously turning through the window opening in the Prewinder Adapter. Tighten the Torque Adjustment Knob clockwise to increase torque and loosen counterclockwise to decrease torque. The Torque Adjusting Knob will lock into place every 180° (1/2 a turn).
- 2. Use the Manual Override Switch to place the driver in reverse and press the Trigger to retract the Mandrel back into the Prewinder.
- 3. Place a bulk insert into the well of the FEA or feed the plastic strip of inserts through the Prewinder slot.
- 4. Hold the Electric Driver perpendicular to the tapped hole. With the tool straight, press the Trigger to drive the FEA Mandrel forward, through the insert and into the tapped hole.
- Increase the torque setting if the driver reverses without fully installing the insert. Increase the torque by turning the Torque Adjusting Knob 180° and try again.
- 6. Once the insert is fully installed the driver will automatically reverse. Be sure to continue to hold down the Trigger until the Mandrel retracts far enough back to once again clear the Prewinder slot. Once the Trigger is released, the driver will reset and run forward again. If you accidentally release the Trigger prior to clearing the Prewinder Slot you can simply press the trigger again. The mandrel will re-enter the installed insert then retract, hold the Trigger until the Mandrel clears the Prewinder Slot. Alternatively, you can flip the manual switch to the Reverse position the press the trigger again. However, don't forget to return the switch to the Forward position once the Mandrel clears the slot and before attempting to install the next insert. Note: When the tool reverses, try not to allow the Mandrel to fully retract into the Hex Sleeve and make contact with the bottom of the Hex Shaft. You will hear a clicking sound if that occurs. This may cause the Mandrel to stick and may require you to tap the Trigger a few times to release it. With practice it will be possible to allow the Mandrel to retract far enough back to accept the insert without making contact with the back of the hex Sleeve.
- Verify the insert is installed to the correct depth (3/4 1 1/2 threads below the surface for a hole with a countersink, or 1/4 - 1/2 threads below the surface for a hole without a countersink). Any additional adjustments can be made by adding or removing Shims.

TANG REMOVAL

In accordance with NASM33537 Section 13.3 "The Tang should be removed from the insert after installation." For easy Tang removal use the KATO Tang Break-Off Tool (KTBT Series).

TO ELIMINATE THE TANG BREAK-OFF PROCESS COMPLETELY SWITCH TO KATO TANGLESS INSERTS!

TIPS & TRICKS

Having difficulty getting the insert started? Try one or more of these helpful tips:

- Do not apply any downward pressure on the tool during installation. Let the weight of the tool rest over the tapped hole.
- Try tapping the Trigger until the insert starts to enter the tapped hole, then hold the Trigger down.
- Dipping the insert in alcohol or other non-residual solution will provide lubrication and may help facilitate installation. CAUTION: USING ALCOHOL ON LOCKING INSERTS WILL CAUSE THE RED DYE TO BLEED