

# TITAN LOW-SPEED Star 16:1 ENDODONTIC MOTOR TO ANGLE ADAPTOR

NON-STERILE

Rx ONLY MD

## DENTALEZ

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063232 Rev H Date of Issue 2023-01-30 ©2023 DENTALEZ, Inc.

### DO NOT USE FOR ORAL SURGERY

Before operating the angle, carefully read and follow all of these instructions. Save these instructions for future reference and observe all warnings and cautions.

### INDICATIONS FOR USE

The motor to angle adaptor is used with a low speed motor which is used intraorally by trained dental professionals for drilling and preparation of dental cavities for restoration, such as fillings. The system is also used for grinding, trimming, denture work, crown and bridge adjustment, disking, cavity and crown preps, polishing, endodontics, post and pin drilling and pin setting.

**Rx ONLY** Caution: U.S. Federal law restricts this device to sale by or on the order of a licensed physician.

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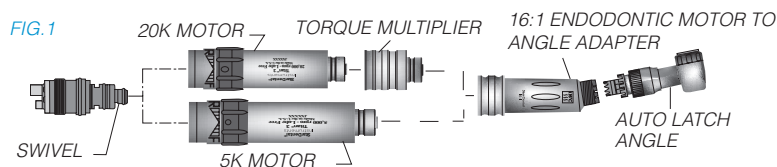
### FEATURES

- Titan® 16:1 Endodontic Motor to Angle Adapter, StarDental Part Number 263230
- Speed reduced by a factor of 16
  - 360° Rotation
  - Easy maintenance
  - Designed for rotary filings with StarDental Latch Angles
  - Capable of operating with all Titan-T and Titan 3 Latch Angles

136°C  
555 Sterilizable up to 135°C



You have just acquired an excellent investment for the endodontic side of your dental office. The Titan 16:1 Endodontic Motor to Angle Adapter is designed for rotary filing, offering a constant high torque output recommended for rotary filing of root canal. The Titan 16:1 Endodontic Motor to Angle Adapter is designed to be connected to the Titan-T 5K Motor or the Titan 3 5K Motor with a resulting output of 300 rpm. It can also be used with the Titan-T 20K Motor and Torque Multiplier or the Titan 3 20K Motor and Torque Multiplier to obtain the same 300 rpm output. (FIG. 1)



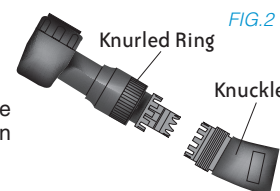
The Titan 16:1 Endodontic Motor to Angle Adapter can be used in combination with any Titan-T or Titan 3 latch angles, see Application Guide for a list.

**Note:** The removal of the knuckle from the latch angle is required, see Angle Installation.

### ANGLE INSTALLATION

In order to connect the angle to the 16:1 Endodontic Motor to Angle Adapter, the removal of the knuckle from the angle is required - see FIG.2 below.

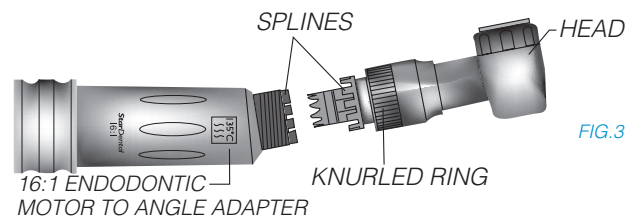
1. Unthread knurled ring.
2. Pull knurled ring enough to show splines.



**NOTE:** Save the knuckle in a safe place. You will need the knuckle to use the angle with other Titan-T or Titan 3 attachments.

3. Insert transmission gear into Adapter; align to desired position - see illustration below.
4. Carefully mesh the splines on the angle with the splines of the Adapter.

**NOTICE** When the splines from the angle do not mesh with those of the 16:1 Endodontic Motor to Angle Adapter, remove angle and spin Adapter drive gear. Then, repeat steps 3 and 4 above.

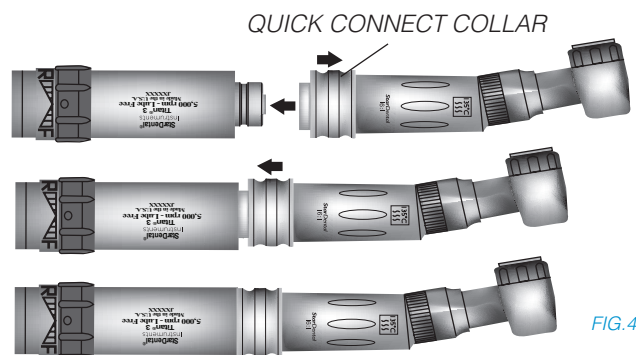


5. Once the splines are aligned correctly, tighten knurled ring onto Adapter threads until snug (FIG. 3).

### MOTOR INSTALLATION

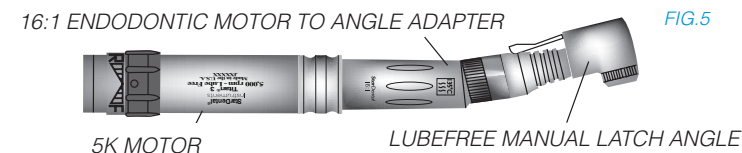
1. Assemble Titan 16:1 Endodontic Motor to Angle Adapter to motor by retracting the quick connect collar on the Adapter and placing it onto the motor. Release quick connect collar (FIG. 4) once the Adapter is installed.
2. To remove the Titan 16:1 Endodontic Motor to Angle Adapter, reverse the assembly procedure (in step 1).

**NOTE:** Never use force to connect or disconnect the Titan 16:1 Endodontic Motor to Angle Adapter or Torque Multiplier.



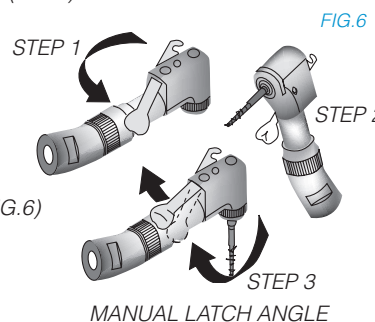
### ENDODONTIC FILE INSTALLATION

**NOTE:** Before loading the endodontic file, make sure that the motor, the Titan 16:1 Endodontic Motor to Angle Adapter and latch angle are connected together (FIG. 5).



### INSTALLATION INTO MANUAL LATCH ANGLE (FIG. 6)

1. Open latch.
2. Load endodontic file into chuck - make sure it is in all the way and is seated in the locking mechanism.
3. Lock latch and tug on endodontic file to verify proper seating and retention.



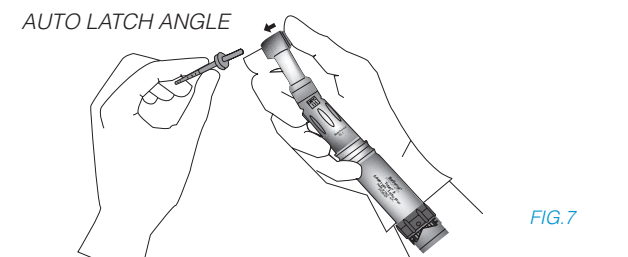
### REMOVAL FROM MANUAL LATCH ANGLE (FIG. 6)

1. Open latch.
2. Pull endodontic file straight out.

### INSTALLATION INTO AUTO LATCH ANGLE

**WARNING**

1. Grasp handpiece firmly so your thumb touches the end cap and push it.
2. Insert endodontic file fully into chuck until it stops (FIG. 7), release cap.
3. Tug on endodontic file to confirm that it is secured in chuck.



### REMOVAL FROM AUTO LATCH ANGLE

1. To Remove, grasp handpiece firmly so your thumb touches the end cap and push it until a slight 'click' sound is noticed.
2. Pull endodontic file straight out.
3. Release end cap.

**CAUTION**

Never depress the auto latch angle's autochuck end cap button or rest the end cap against any part of the oral anatomy during handpiece operation. Depressing the end cap while an endodontic file is rotating can activate the chuck mechanism and result in end cap heating and/or loss of endodontic file retention.

### SAFETY INSTRUCTIONS

**WARNING**

TO MINIMIZE RISK OF SERIOUS INJURY:

1. Always tug on the endodontic file after installation to confirm that the endodontic file is secured.
2. Before use, verify concentric rotation by operating the angle in a safe place outside of the oral cavity. Do not use endodontic files that do not run concentrically, or if angle produces excessive noise.

## APPLICATION GUIDE

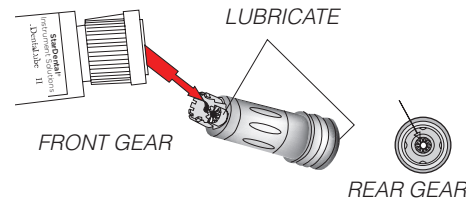
### PROCEDURE: ROOT CANAL

SYSTEMS CONFIGURATION OPTIONS	STAR DENTAL PART#	OPERATING RPM
20K LubeFree Motor	Titan-T 263941	
	Titan 3 262262	
+Torque Multiplier	Titan-T 263944	
	Titan 3 258443	
+16:1 Endodontic Motor to Angle Adapter	Titan 263230	
OR		
5K LubeFree Motor	Titan-T 263940	
	Titan 3 262261	
+16:1 Endodontic Motor to Angle Adapter	Titan 263230	
+Latch Angle:		
LubeFree Ball Bearing Auto Latch	Titan 3 264146	300
LubeFree Ball Bearing Manual Latch	Titan 3 262738	300
	Titan 3 264182	300
Lubricated Ball Bearing Manual Latch	Titan 3 259005	300

## LUBRICATING

Lubricate the Transmission Gear daily or prior to each sterilization (FIG. 8).

- To lubricate transmission, disassemble 16:1 Endodontic Motor to Angle Adapter from angle and motor (or torque multiplier).
- Place a drop of DentaLube II, StarDental Part #262539 on each gear of the 16:1 Endodontic Motor to Angle Adapter. Let the lubricant penetrate into bearings. **FIG. 8**
- Place a drop of DentaLube II at both ends of the transmission gear and a third drop in the center hole of the transmission gear. Rotate the gears to allow the lubricant to work into the bearings. Apply a light coat of lubricant to the gear teeth.
- To reassemble the latch angle, insert transmission gear assembly into angle head. Carefully mesh the splines on the knuckle with the splines of the head.
- Tighten knurled ring onto knuckle threads until snug.
- Run handpiece for 20 seconds.



## CLEANING AND STERILIZATION

<b>CAUTION</b>	It is the responsibility of the user to use only FDA compliant sterilizing equipment and accessories that are capable of meeting the manufacturers recommendations below.
<b>CAUTION</b>	Do not exceed 135°C <u>Do not use:</u> <ul style="list-style-type: none"> <li>dry heat sterilizer</li> <li>immersion techniques</li> <li>detergents</li> <li>chemical disinfectors</li> <li>cold sterilizers</li> <li>sterilizer bags containing disinfectants</li> <li>surface wipes</li> <li>hand soaps</li> <li>ultrasonic cleaners</li> <li>surface sprays</li> <li>surgical milk</li> </ul>
LIMITS ON REPROCESSING	Repeated processing has minimal effect on these Adapters. End of life is normally determined by wear and damage due to use.
INSTRUCTIONS	
<b>WARNING</b>	The adapter must be cleaned and sterilized before first use and between patient use.
CONTAINMENT AND TRANSPORTATION:	It is recommended that Adapters are reprocessed as soon as is reasonably practical following use.
PREPARATION FOR CLEANING:	Remove angle adapter from motor

CLEANING AUTOMATED:	Washer-disinfectors are not recommended.
CLEANING MANUAL:	<p>For cleaning and lubricating latch angle, see angle's instruction manual. Clean all external surfaces using a small brush and isopropyl alcohol.</p> <ol style="list-style-type: none"> <li>Wear puncture resistant gloves to prepare the 16:1 Endodontic Motor to Angle Adapter, latch angle attachment, for sterilization.</li> <li>Remove endodontic file from latch angle.</li> <li>Unthread and un-attach latch angle from 16:1 Endodontic Motor to Angle Adapter.</li> <li>Lubricate 16:1 (FIG.9) Endodontic Motor to Angle Adapter as described in Cleaning &amp; Lubricating.</li> </ol> <ol style="list-style-type: none"> <li>Place 16:1 Endodontic Motor to Angle Adapter and angle on motor, connect to handpiece tubing; insert endodontic file into chuck and operate for 20 seconds to evenly distribute the lubricant.</li> <li>Remove endodontic file, disconnect angle from 16:1 Endodontic Motor to Angle Adapter, then motor.</li> <li>Clean all external surfaces with a cotton swab soaked in isopropyl alcohol.</li> <li>Dry thoroughly with a soft clean cloth.</li> <li>Place the 16:1 Endodontic Motor to Angle Adapter in a sterilization bag.</li> </ol>
LUBRICATION:	See 'Lubrication' instruction section
DISINFECTION:	Use steam sterilization exclusively for complete sterility as outlined below.
MAINTENANCE:	Angle should be routinely maintained, checked for corrosion, worn parts, etc. and should be replaced on an as needed basis.
INSPECTION & FUNCTION TESTING:	See Installation, Operating Recommendations, and/or Troubleshooting sections of this manual.
PACKAGING:	Single: A standard sterilization packaging material must be used. Ensure that the pack is large enough to contain the item without stressing the seals.
INSTRUMENT STERILIZATION:	<p>A wrapped Adapter should be steam sterilized at 132° C for a minimum of 10 minutes or at 121° C for a minimum of 50 minutes. Do not exceed 135° C.</p> <p>An unwrapped Adapter should be steam sterilized at 132° C for a minimum of 8 minutes or at 121° C for a minimum of 30 minutes. Do not exceed 135° C. Note: An unwrapped Adapter needs to be used immediately or sterility is not maintained.</p>
DRYING:	Always use complete dry cycle of sterilizer. Always allow product to cool in bag to room temperature prior to using. Contact your sterilizer manufacturer if moisture remains inside bag and on product after drying.
STORAGE:	Store in bag after sterilization until ready to use.
ADDITIONAL INFORMATION:	Do not exceed the sterilizer manufacturer's guidelines for load capacity. Use only paper or paper/plastic bags.
MANUFACTURER CONTACT:	See first or last panels of this manual.

## TROUBLESHOOTING

### Problem: Endodontic File Locks or Slips in Latch Angle Chuck

Cause: Debris build-up in chucking mechanism

Correction: Aerate with syringe air

Cause: File wrong size - Use of non-ISO endodontic file

Correction: Always use ISO endodontic files\*

Cause: Endodontic file not properly installed

Correction: Remove endodontic file from chuck and re-install.

See Endodontic File Installation

**WARNING** Follow instructions of endodontic file manufacturer.

\*NOTE: Always use ISO endodontic files to prevent locking and slipping of files in the latch angle. If a problem persists, contact dealer for further assistance or StarDental Customer Service at 1-866-DTE-INFO.

## REPLACEMENT PART NUMBERS

ALWAYS INSIST ON STAR DENTAL PARTS FOR BEST PERFORMANCE.

DESCRIPTION	ITEM NUMBER
Titan 16:1 Endodontic Motor to Angle Adapter .....	263230
Titan-T 5K Motor .....	263940
Titan-T 20K Motor .....	263941
Titan 3 5K Motor .....	262261
Titan 3 20K Motor .....	262262
Titan-T Torque Multiplier .....	263944
Titan 3 Torque Multiplier .....	258443
Latch Angles - See Application Guide section of this instruction manual	
DentaLube II .....	262539

## DENTALEZ

### IMPORTANT NOTICE ABOUT RETURNING PRODUCT TO DENTALEZ INC.

Anyone wishing to return any DENTALEZ Inc. product to a DENTALEZ facility MUST obtain the proper RETURN AUTHORIZATION NUMBER from the Customer Service Department. The RA Number must appear clearly marked on both the outside and inside of the returned product carton. When calling for a return authorization number you will be asked to provide the following information:

To Obtain A	1. Product Name, Model Number or Part Number
Return Authorization	2. Serial Number of Product
Number Call	3. Dealer Return Purchase Order Number
1-866-DTE-INFO	4. Reason For Return
	5. Copy of Invoice Showing Purchase

Items will be evaluated. Return Authorization Number is not a guarantee for credit. Your cooperation with this procedure will help us expedite processing of any returns.

FOR NEW PRODUCTS, MANUALS AND TECHNICAL INFORMATION, CALL 1-866-DTE-INFO OR VISIT OUR WEB SITE @ WWW.DENTALEZ.COM

### LIMITED WARRANTY

O-Rings and Seals are specifically excluded from this warranty.

DENTALEZ warrants the Titan 16:1 Endodontic Motor to Angle Adapter to be free of defects in material and workmanship, under normal usage, under the following terms:

StarDental Products: 16:1 Endodontic Motor to Angle Adapter	Warranty Period*: 6 Months from date of purchase
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Please note the following additional terms of our warranty and return policy:

- Warranty covers manufacturing defects only and does not cover defects resulting from abuse, accidents, misuse, improper handling, cleaning, care or maintenance or the failure to follow or observe our operating/use, maintenance and/or installation instructions. Damage resulting from the use of chemicals, cleaners, disinfectants or sterilization is not covered under this warranty nor is normal wear and tear. Failure to use authorized parts or an authorized repair facility voids this warranty.
- Liability is limited to repair or replacement of the defective part(s) or products at our sole discretion. All other liabilities, in particular liability for damages, including, without limitation, special, exemplary, consequential or incidental damages are excluded
- THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO EMPLOYEE, REPRESENTATIVE OR DEALER IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR TO GRANT ANY OTHER WARRANTY.

\*Provided conditions in warranty are met.

### WARRANTY REGISTRATION

Please visit the website below to register your StarDental product. This will ensure proper registration and prompt and accurate service should any of your purchases need evaluation or repair during the warranty period.

StarDental Products: WWW.DENTALEZ.com/warranty