

# *Ray Foster*<sup>®</sup>

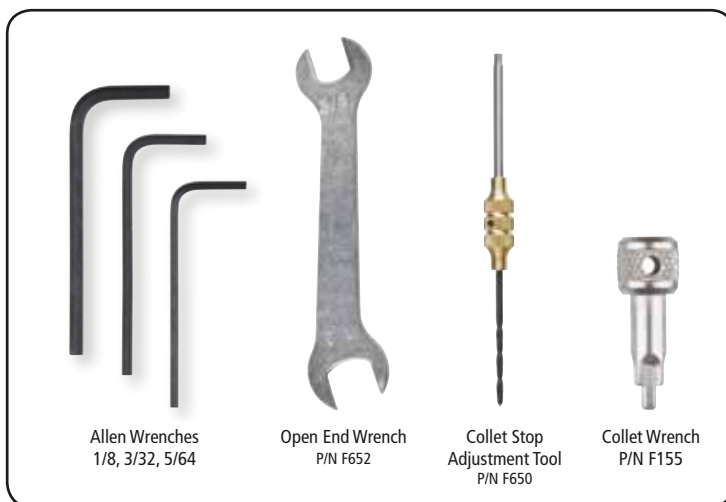
DENTAL EQUIPMENT

## High Speed Automatic Spindle User's Manual



**READ AND UNDERSTAND ALL INSTRUCTIONS  
BEFORE PROCEEDING**

### Tools included with the High Speed Spindle



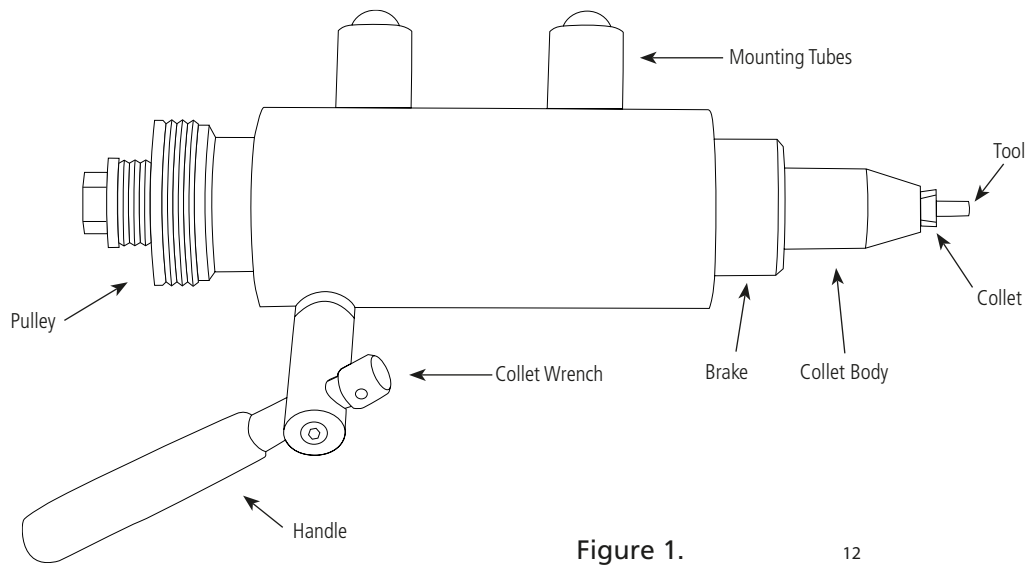
### Optional



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## Spindle Features



Operation – To open the collet and change tools, move the clutch handle counterclockwise to the right. This will disengage the clutch, stop the rotation of the tool, and open the collet. Tools can now be removed and replaced while the machine is running.

See figure 1

## Removing, Adjusting, or Changing the Collet

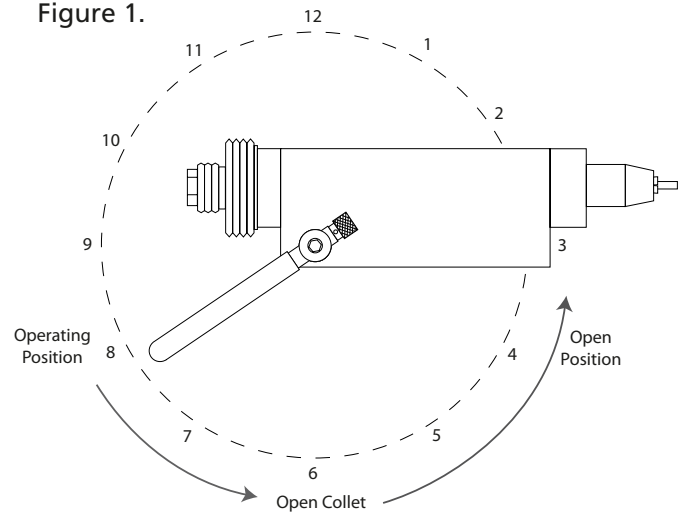
The collet (p/n F106) will wear under normal spindle operation. The most common symptom of a worn out collet is the tool slipping because it is not being gripped firmly by the collet. A worn collet may also bind the spindle so that it will not turn freely. This will cause overheating and slippage of the clutch.

To adjust the existing collet or install a new collet:

1. Move the clutch handle to the open position. (see figure 1). Remove the tool.
2. Remove the collet wrench from the end of the handle (see figure 2). It may be necessary to loosen the set screw that secures the handle with a 3/32" hex wrench in order to remove the tool.
4. Insert the collet wrench into the open jaws of the collet and unscrew counterclockwise. For added leverage you may insert a bur shank into the hole of the collet wrench to create a "T" handle. Remove the collet completely.
5. Behind the collet is the collet stop adjustment screw (see Illustration 1). To adjust a worn collet for additional wear, turn the collet stop adjustment screw clockwise to allow the collet to retreat farther into the collet body to grip the tool shank. Use the hex end of the Collet Stop Adjusting Tool (see Illustration 4) to turn the Collet Stop Screw.
6. Turn the Collet Stop Screw approximately 1/4 turn, reinstall the Collet, insert a tool and check the fit. It may be necessary to adjust a few times to get the fit just right. The collet needs to open just enough to allow the tool to be easily inserted and removed.

See figure 3 for position and fit of collet.

Figure 1.



**Caution:** NEVER close the collet without a tool inserted. This will cause the spindle to bind and stop and could damage the spindle.

Figure 2.

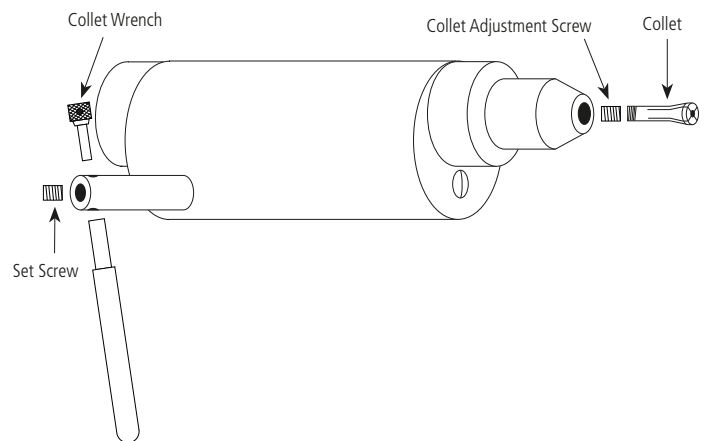
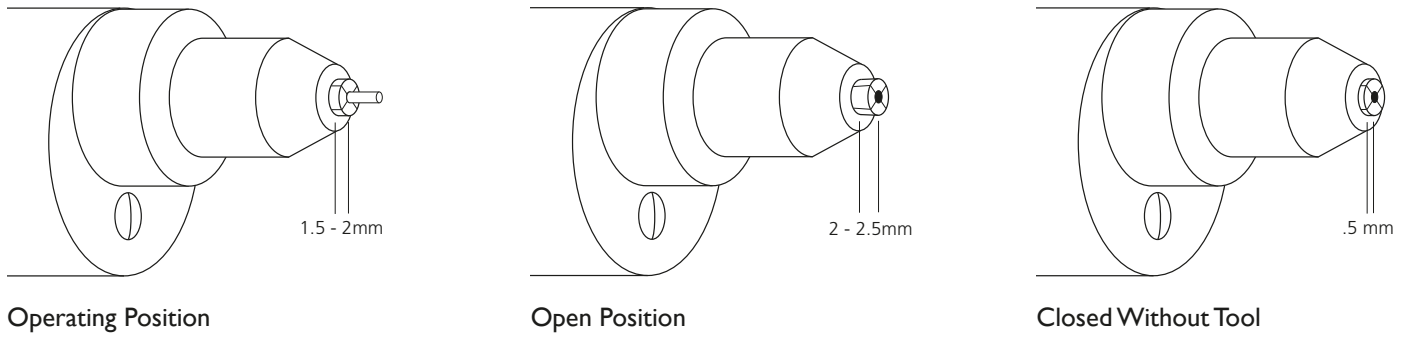


Illustration 1. (cut-away view)



Figure 3.



**Note:** One symptom of a worn collet is it will begin to recede back into the spindle collet body.

### Collet Stop Adjustment Tool

The Collet Stop Adjustment Tool (P/N F650) was designed to adjust and clear grinding debris from the collet stop screw. The hex end can be inserted into the stop screw while it's still in the shaft so that adjustments can be made. The drill end is used to clear grinding debris that has built up in the hex socket. See Illustrations 3.



Collet Stop Adjustment Tool (P/N F650)

These cut-away illustrations demonstrate the location and adjustment of the collet stop screw.

Illustration 2. Location of Collet Stop Screw



Illustration 3. Showing adjustment tool removing debris



Illustration 4. Showing adjustment tool in Collet Stop screw

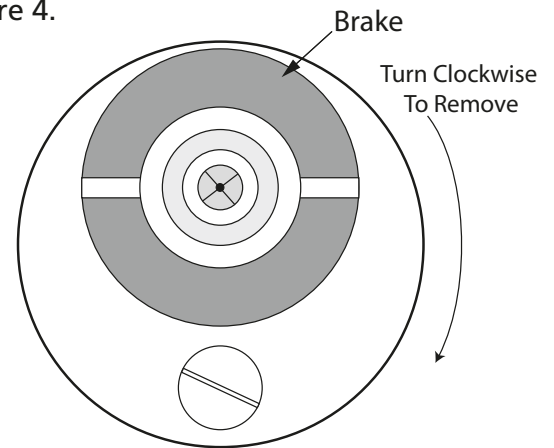


### Removing The Spindle Brake

If the collet stop screw becomes stuck in the shaft it will be necessary to hold the shaft to turn the screw. Follow these steps:

1. With the collet removed and the handle in the closed position, using the spanner tool (optional P/N F651), remove the brake by unscrewing clockwise. See figure 4.
2. With the brake removed, slip off the collet body and compression spring which is located inside the collet body.
3. Hold the shaft with the 3/8" end of the Open End Wrench and loosen the Collet Stop Screw with the Collet Stop Adjustment Tool. If needed, insert a 3/32" tool shank into the hole of the adjustment tool to create a "T" handle.

Figure 4.



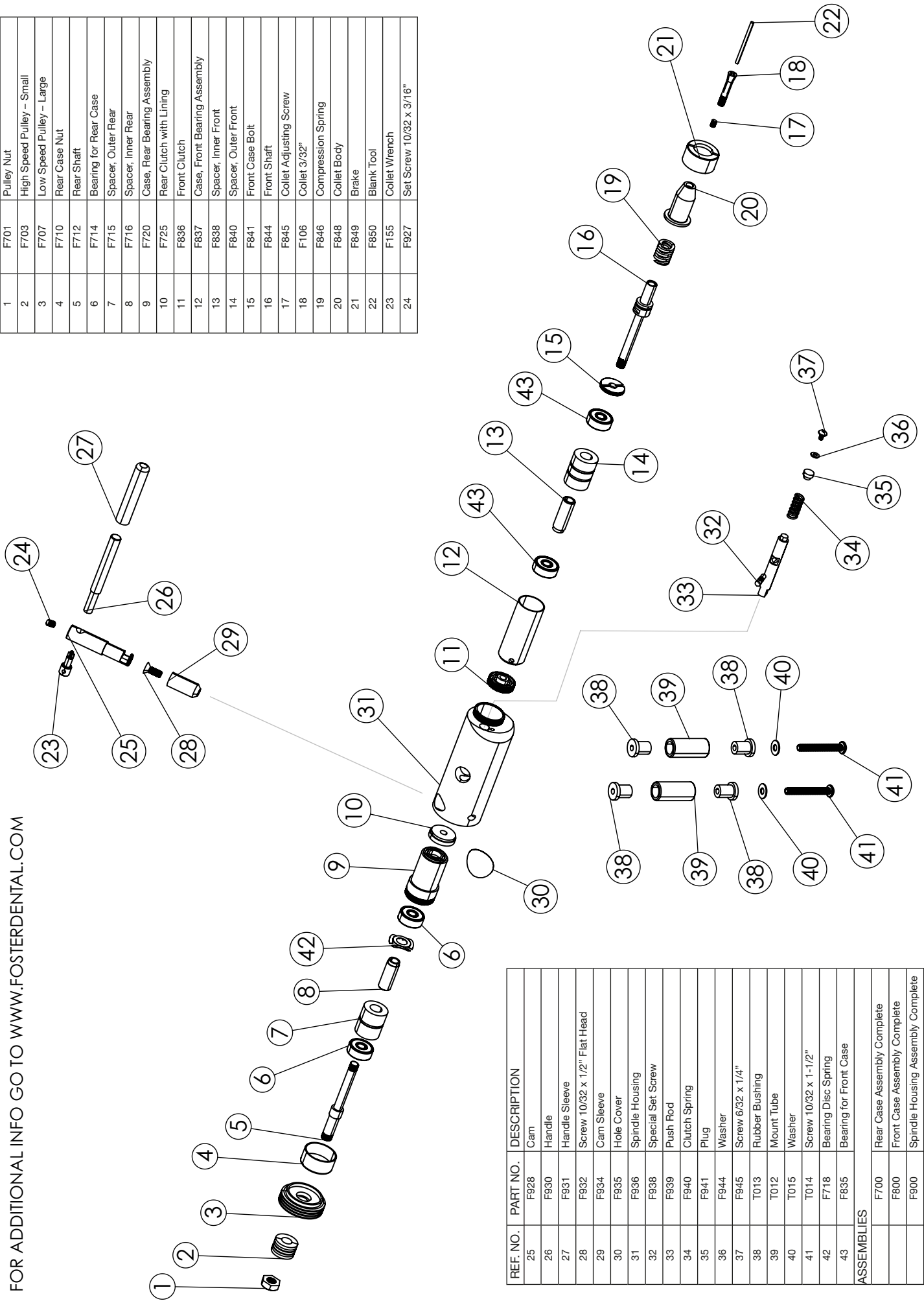
### Collet Maintenance

The collet should be removed and cleaned on a weekly basis to prevent it from becoming stuck. Once removed you may use solvent to clean the collet, but be sure to dry the collet of solvent and apply grease or Vaseline on the threads of the collet before reinstalling. Do not use oil on the collet. NEVER oil any part of the spindle.

# HIGH SPEED SPINDLE ASSEMBLY - EXPLODED VIEW

FOR ADDITIONAL INFO GO TO [WWW.FOSTERDENTAL.COM](http://WWW.FOSTERDENTAL.COM)

REF. NO.	PART NO.	DESCRIPTION
1	F701	Pulley Nut
2	F703	High Speed Pulley - Small
3	F707	Low Speed Pulley - Large
4	F710	Rear Case Nut
5	F712	Rear Shaft
6	F714	Bearing for Rear Case
7	F715	Spacer, Outer Rear
8	F716	Spacer, Inner Rear
9	F720	Case, Rear Bearing Assembly
10	F725	Rear Clutch with Lining
11	F836	Front Clutch
12	F837	Case, Front Bearing Assembly
13	F838	Spacer, Inner Front
14	F840	Spacer, Outer Front
15	F841	Front Case Bolt
16	F844	Front Shaft
17	F845	Collet Adjusting Screw
18	F106	Collet 3/32"
19	F846	Compression Spring
20	F848	Collet Body
21	F849	Brake
22	F850	Blank Tool
23	F155	Collet Wrench
24	F927	Set Screw 10/32 x 3/16"



REF. NO.	PART NO.	DESCRIPTION
25	F928	Cam
26	F930	Handle
27	F931	Handle Sleeve
28	F932	Screw 10/32 x 1/2" Flat Head
29	F934	Cam Sleeve
30	F935	Hole Cover
31	F936	Spindle Housing
32	F938	Special Set Screw
33	F939	Push Rod
34	F940	Clutch Spring
35	F941	Plug
36	F944	Washer
37	F945	Screw 6/32 x 1/4"
38	T013	Rubber Bushing
39	T012	Mount Tube
40	T015	Washer
41	T014	Screw 10/32 x 1-1/2"
42	F718	Bearing Disc Spring
43	F835	Bearing for Front Case
<b>ASSEMBLIES</b>		
	F700	Rear Case Assembly Complete
	F800	Front Case Assembly Complete
	F900	Spindle Housing Assembly Complete
	T011	Mount Tube Assembly Complete