

## D1 INDIRECT DRIVE SPINDLE SPINDLE REBUILD INSTRUCTIONS

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DOC #15-2018

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**WARRANTY + SERVICE** 888.960.0364  
**PARTS** 888.960.0361



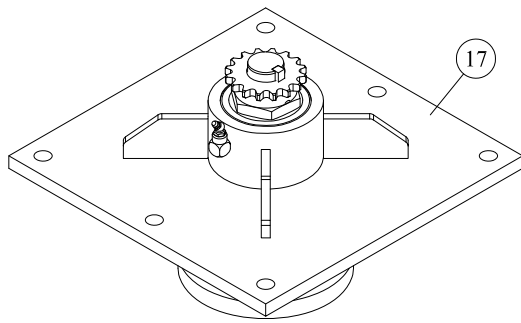
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# SPINDLE REBUILD INSTRUCTIONS

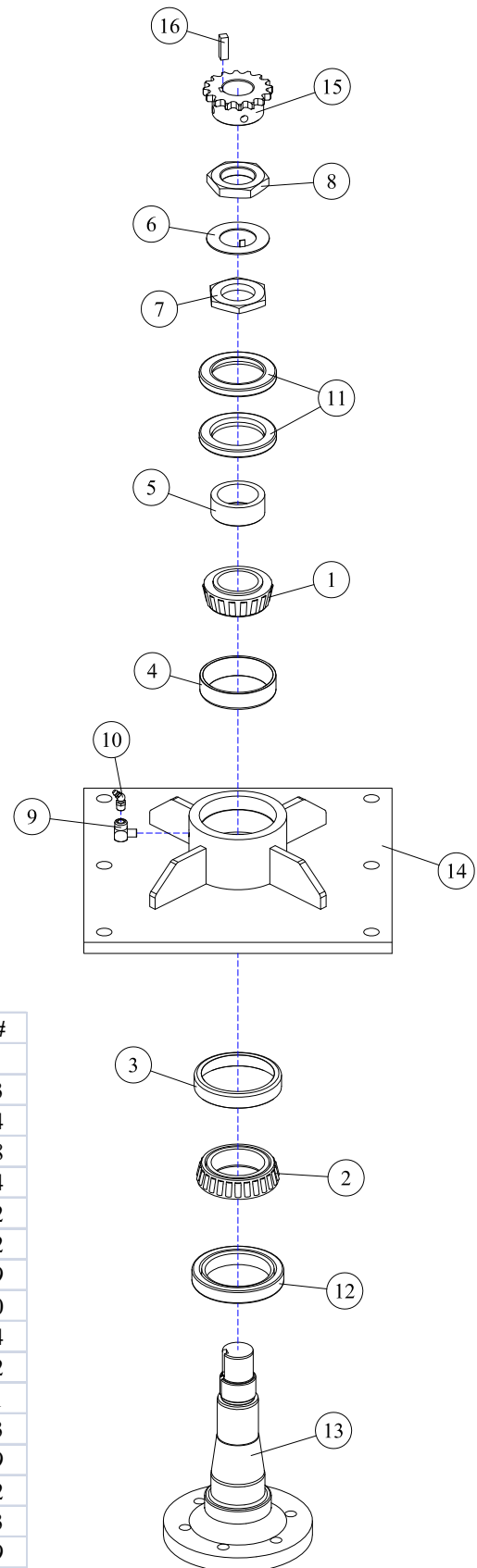
## D1 SPINDLE PARTS BREAKOUT



\* Complete spindle assemblies also available.  
Diamond Part #35-0010

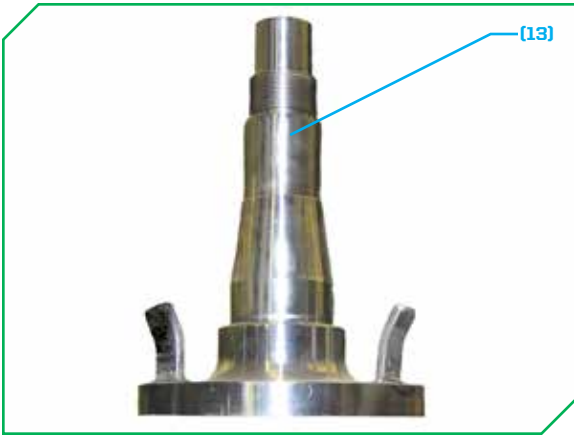
\*\*Do not use #2 heavy-duty grease on spindle assembly. Use Diamond spindle grease parts #23-0001

\*\*\*Complete spindle repair kits available.  
These kits include 10-0003, 10-0004, 10-0008, 10-0014, 10-1002, 11-0002, 11-1009, 11-1010, 33-0001, 33-0003 & 37-0009. These can be purchased using part #44-0001



REF#	PARTS DESCRIPTION	REQ	PART #
1	BEARING CONE	1	10-0003
2	BEARING CONE	1	10-0004
3	BEARING CUP	1	10-0008
4	BEARING CUP	1	10-0014
5	BEARING ADJUSTMENT SLEEVE	1	10-1002
6	JAM WASHER	1	11-0002
7	ADJUSTMENT BEARING NUT	1	11-1009
8	ADJUSTMENT BEARING NUT	1	11-1010
9	1/8 X 90DEG ELBOW	1	21-1104
10	1/8" X 45 GREASE ZERK	1	23-0002
11	UPPER SEAL SET	1	33-0001
12	LOWER SEAL	1	33-0003
13	SPINDLE	1	35-0009
14	SPINDLE HOUSING	1	35-0012
15	SPROCKET	1	37-0003
16	SPINDLE KEY	1	37-0009
17*	SPINDLE ASSY COMPLETE	Avail	35-0010
18**	DIAMOND SPINDLE GREASE	Avail	23-0001
19***	SPINDLE REPAIR KIT	Avail	44-0001

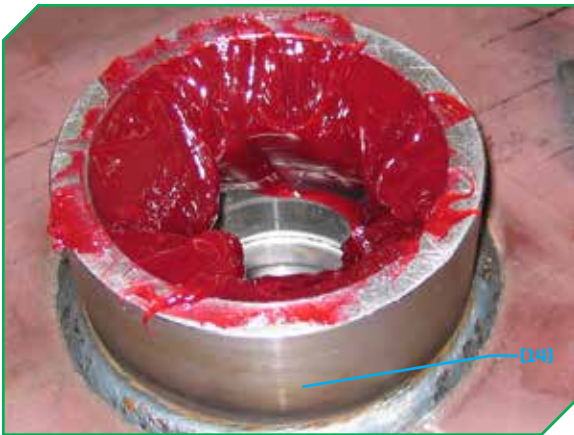
# SPINDLE REBUILD INSTRUCTIONS



- Position the spindle <sup>(13)</sup> on the work surface as illustrated.



- Position the spindle housing <sup>(14)</sup> upside down so the bottom of the spindle housing <sup>(14)</sup> is exposed, and insert the lower bearing cup <sup>(3)</sup>.

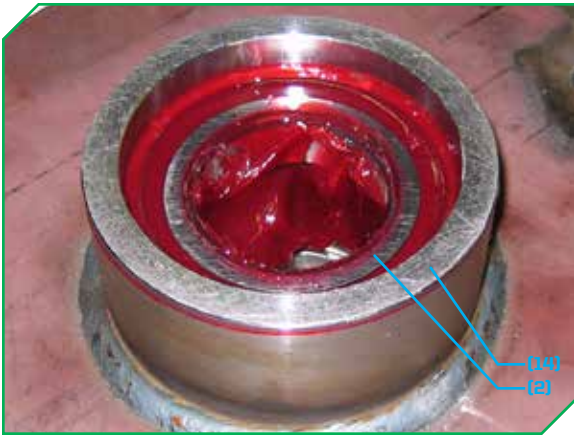


- Using Diamond spindle grease (part# 23-0001) or #1 lithium based grease, pack the inside of the spindle housing <sup>(14)</sup> as illustrated.
  - Use approximately  $\frac{1}{2}$  of a standard grease tube for quantity.



- Seat the lower bearing cone <sup>(2)</sup> into the greased bearing cup <sup>(3)</sup> in the spindle housing <sup>(14)</sup>.
  - Place the tapered end in first.

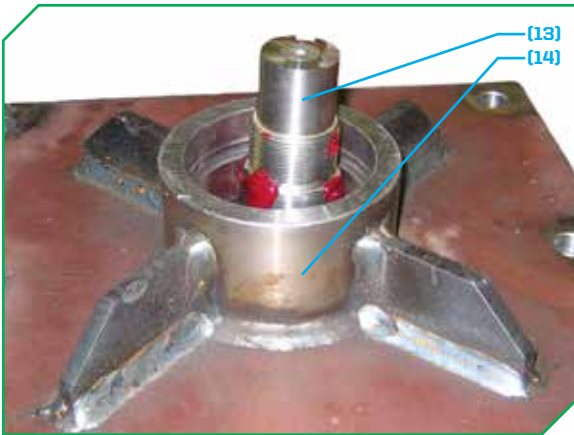
# SPINDLE REBUILD INSTRUCTIONS



- Smooth the grease on the inside of the spindle housing (14), and clean the excess grease off of the exterior surfaces of the spindle housing (14).
- Heavily grease the interior of the lower bearing cone (2) as illustrated.



- Gently tap the lower seal (12) into place in the spindle housing (14). The lettering on the lower seal should be facing towards the lower bearing cone (2) (not readable after insertion).

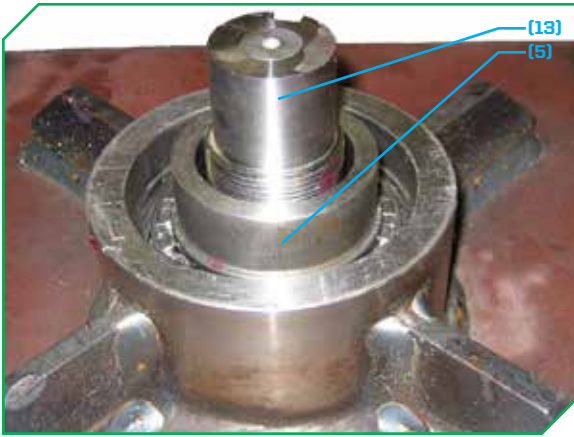


- Turn the spindle housing (14) over so the topside is up, and place it onto the spindle (13).
- Gently tap the spindle housing (14) in a criss-cross pattern to seat the housing (14) down onto the spindle (13).
  - The threaded portion of the spindle (13) should be higher than the top of the spindle housing (14).

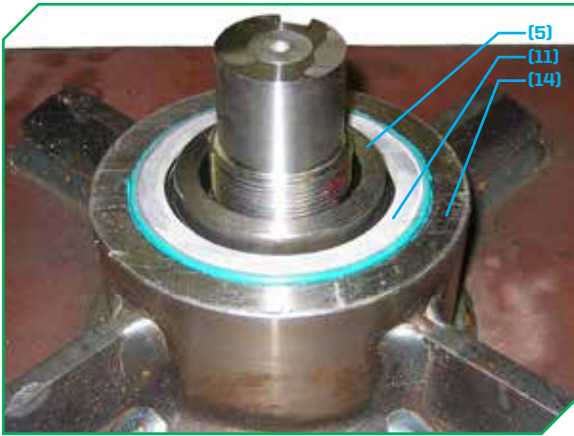


- Set the upper bearing cup (4) and upper bearing cone (11) around the spindle (13) and into the spindle housing (14).
  - Gently tap them in a criss-cross pattern until fully seated.

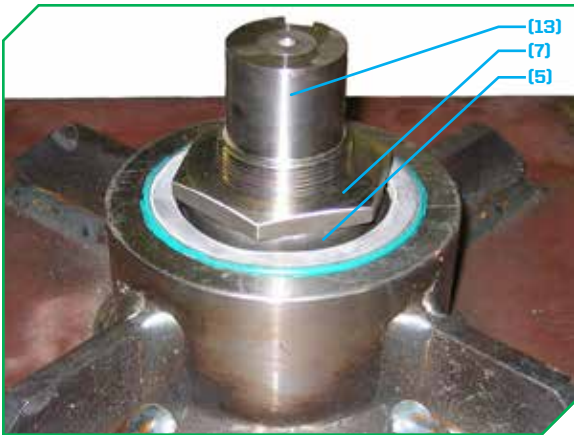
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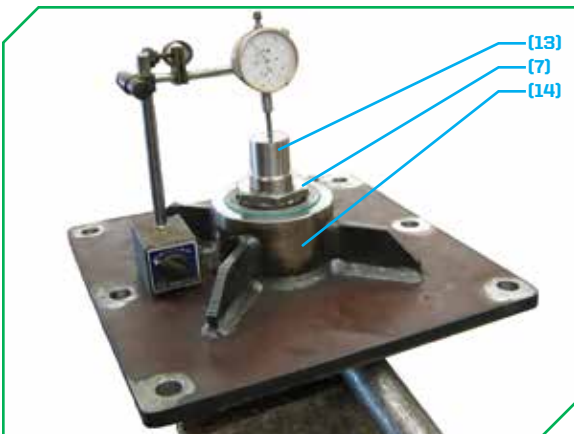
- Place the bearing adjustment sleeve<sup>(5)</sup> on top of the bearing cone and around the spindle<sup>(13)</sup>.



- Place the first upper seal<sup>(11)</sup> around the bearing adjustment sleeve<sup>(5)</sup> (letters facing down) and evenly tap it down into the spindle housing<sup>(14)</sup>.
  - Tap the first upper seal<sup>(11)</sup> below the top surface of the spindle housing<sup>(14)</sup>.
- Place the second upper seal<sup>(11)</sup> around the bearing adjustment sleeve<sup>(5)</sup> (letters facing down) and evenly tap it down into the spindle housing<sup>(14)</sup> until flush with the top surface of the spindle housing<sup>(14)</sup>.

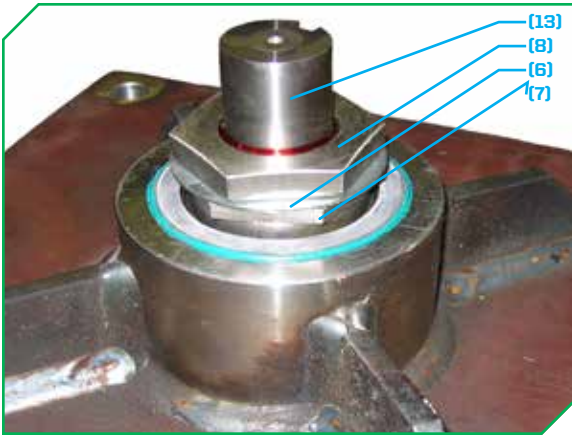


- Thread the first adjustment bearing nut<sup>(7)</sup> onto the spindle<sup>(13)</sup> threads.
- Tighten the adjustment bearing nut<sup>(7)</sup> down onto the bearing adjustment sleeve<sup>(5)</sup>.

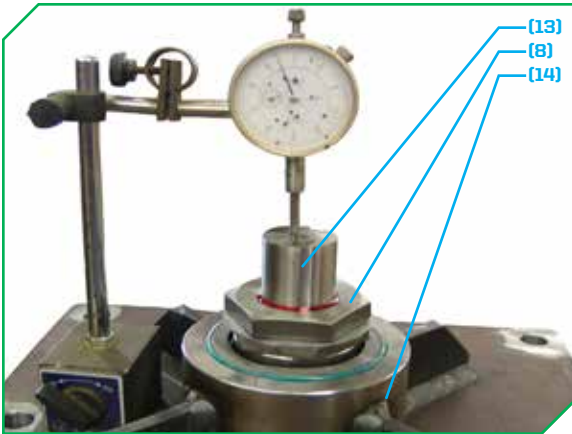


- Clamp the end of the spindle<sup>(13)</sup> (not the spindle housing<sup>(14)</sup>) in a vise so that the spindle housing<sup>(14)</sup> can turn freely.
- Position a dial indicator<sup>(7)</sup> on the flat mounting plate of the spindle housing<sup>(14)</sup> and set the needle end of the dial indicator on the flat end of the spindle<sup>(13)</sup>.
- Using a pry-bar, pry the spindle housing<sup>(14)</sup> upwards away from the vise jaws to check the endplay.
  - The endplay should be between .010 -.012".
  - Tighten or loosen the adjustment bearing nut<sup>(7)</sup> as needed.

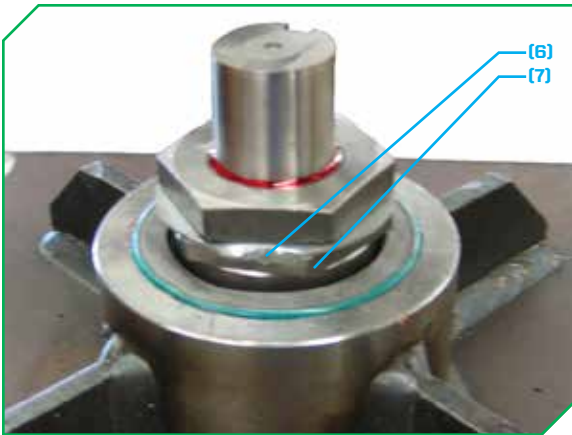
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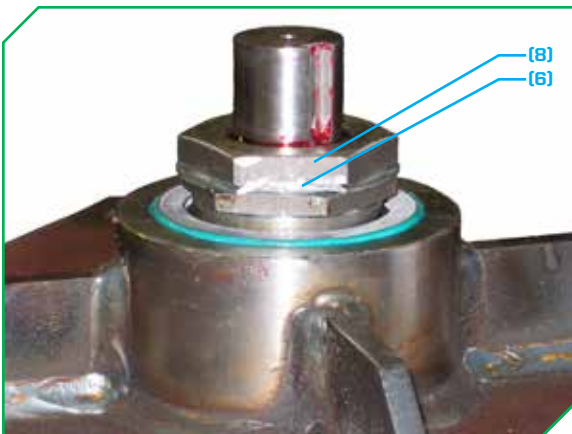
- Place the jam washer (6) on top of the first adjustment bearing nut (7).
- Thread the second adjustment-bearing nut (8) down onto the spindle (13) on top of the jam washer (6).
- Use loctite on the threads of the second adjustment bearing nut (8).
- Tighten the second adjustment bearing nut (8).



- Clamp the end of the spindle (13) (not the spindle housing (14)) in a vise so that the spindle housing (14) can turn freely.
- Position a dial indicator on the flat mounting plate of the spindle housing (14) and set the needle end of the dial indicator on the flat end of the spindle (13).
- Using a pry-bar, pry the spindle housing (14) upwards away from the vise jaws to check the endplay.
  - The endplay should be between .004 -.005".
  - Tighten or loosen the second adjustment bearing nut (8) as needed.

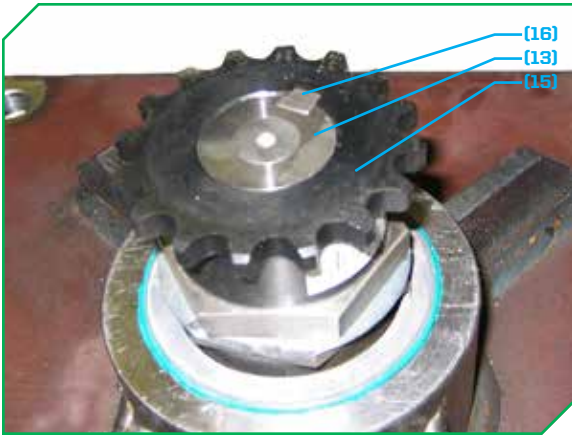


- Bend / hammer down one side of the jam washer (6) tight against the lower (first) adjustment bearing nut (7).

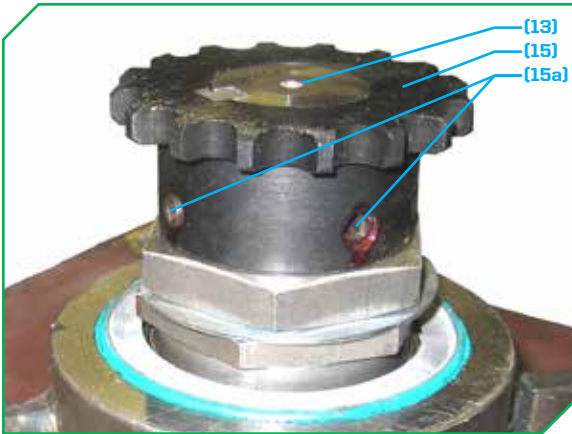


- Bend/hammer the opposite side of the jam washer (6) up tight against the upper (second) adjustment bearing nut (8).

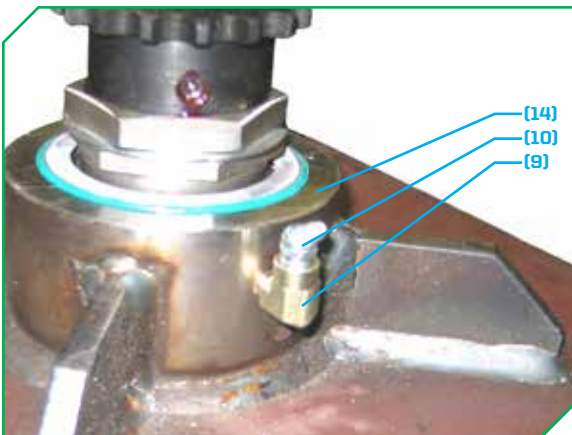
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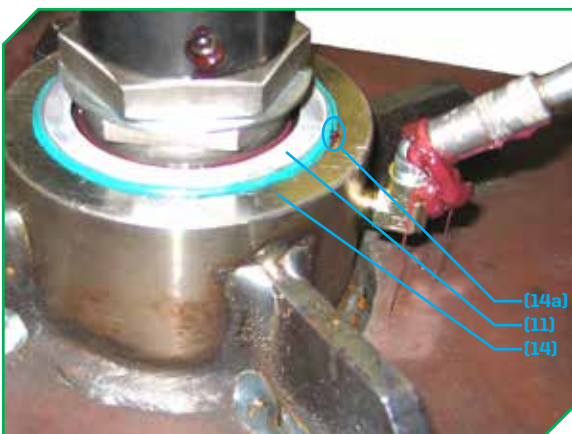
- Place the sprocket <sup>(16)</sup> onto the spindle <sup>(13)</sup> and orientate it until the interior cut slot matches the slot on the spindle <sup>(13)</sup>.
- Place the spindle key <sup>(16)</sup> into the slot, and tap it down until fully seated.



- Secure the sprocket <sup>(15)</sup> to the spindle <sup>(13)</sup> with the (2) set screws <sup>(15a)</sup>.
  - Use Loctite 262 on the set screw <sup>(15a)</sup>.
  - Tighten the set screws <sup>(15a)</sup>.



- Screw the 45° grease zerk <sup>(10)</sup> into the 90° elbow <sup>(9)</sup>.
- Screw the assembled grease zerk unit <sup>(9)(10)</sup> into the spindle housing <sup>(14)</sup> until tight.
  - Position the grease zerk <sup>(10)</sup> facing up and out as illustrated.



- Grease the assembled spindle unit with Diamond spindle grease (part# 23-0001) or #1 lithium based grease.
  - Apply enough grease until it begins to appear <sup>(14a)</sup> at the seams between the spindle housing <sup>(14)</sup> and the upper seal <sup>(11)</sup>.