

Product: MOTOR GRADER

Model: 12H MOTOR GRADER AMZ

Configuration: 12H Motor Grader AMZ00001-UP (MACHINE) POWERED BY C-9 Engine

## Disassembly and Assembly 12H, 140H and 160H Motor Graders Power Train

Media Number -REN4108-16

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i01973878

## Transmission - Disassemble

SMCS - 3002-015; 3030-015; 3159-015

## Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Bracket	1
B	154-6181	Forcing Screw	2
C	6V-5221	Bolt	1
D	4C-8156	Fixture	1
E	6V-3918	Bolt	1
F	4C-8157	Fixture	2
G	1U-6405	Three Jaw Puller	1
H	1U-6341	Threaded Rod	1
J	5P-7970	Nut	1
K	9U-7479	Compressing Tube	1
L	5B-0637	High Idle Nut	1
	5F-7353	Washer	1
	1B-4207	Full Nut	2
	5F-7369	Puller Leg	2
	3H-0465	Push-Puller Plate	2

	5F-7366	Screw	1
	5P-4808	Cap	2
	1U-9895	Crossblock	1
	9S-9151	Block	2
M	1B-4206	Nut	4
	8B-7552	Bolt	2
N	1U-6343	Threaded Rod	1
P	6V-8149	Nut	1
Q	2P-8312	Pliers	1
	1P-2326	Screw	1
	1P-2325	Head	1
R	3H-0462	Bolt and Nut	4
	8H-0709	Strap	4
	5F-7373	Jaw	3
S	3E-3882	Eyebolt	1

**Start By:**

- a. Remove the transmission control valve. Refer to Disassembly and Assembly, "Transmission Control Valve - Remove".
  - b. Remove the parking brake. Refer to Disassembly and Assembly, "Parking Brake - Remove".
  - c. Remove the transmission speed sensor.
  - d. Remove the transmission oil pump. Refer to Disassembly and Assembly, "Gear Pump (Transmission Charging and Scavenge) - Remove".
  - e. Remove the transmission magnetic screen base. Refer to Disassembly and Assembly, "Magnetic Screen - Remove and Install".
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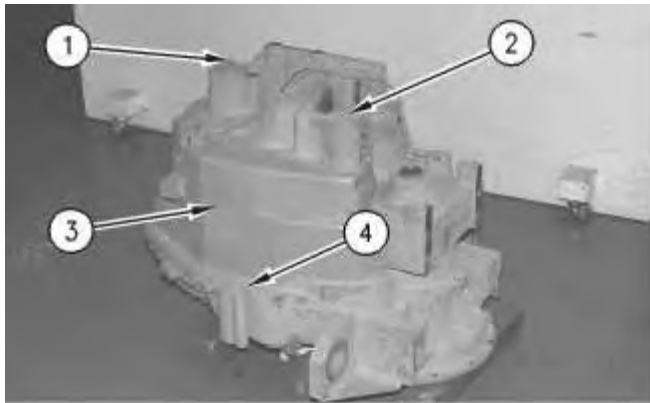


Illustration 1

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1. Place transmission (1) level on the floor.
2. Remove 12 bolts (2), four covers, and the O-ring seals from transmission case assembly (3).
3. Remove 41 bolts (4) from the transmission case assembly (3).



Illustration 2

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**Note:** Identify the location of seal carrier (5) in the transmission case assembly (3) for assembly purposes.

4. Remove two bolts (6) from seal carrier (5).
5. Install Tooling (A) (not shown) in seal carrier (5). Remove seal carrier (5) and the three ring seals from the transmission case assembly bore (7).
6. Repeat Step 4 through Step 5 on the three remaining seal carriers (5).

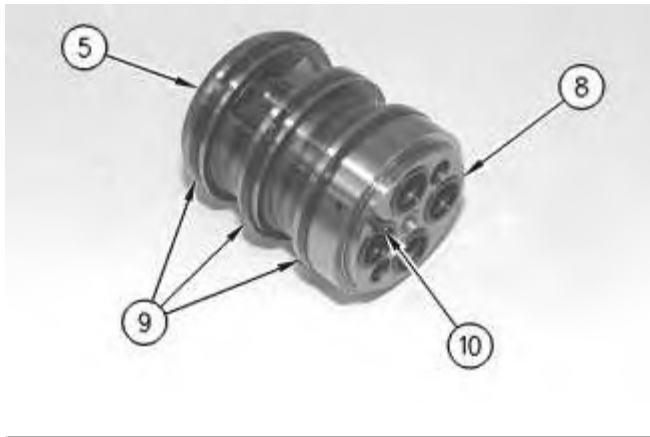


Illustration 3

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7. Remove seal rings (9) from seal carrier (5).
8. Remove three or four seals (8) from seal carrier (5).
9. Remove spring pin (10) from seal carrier (5).
10. Repeat Step 7 and Step 9 for the remaining three seal carriers (5).

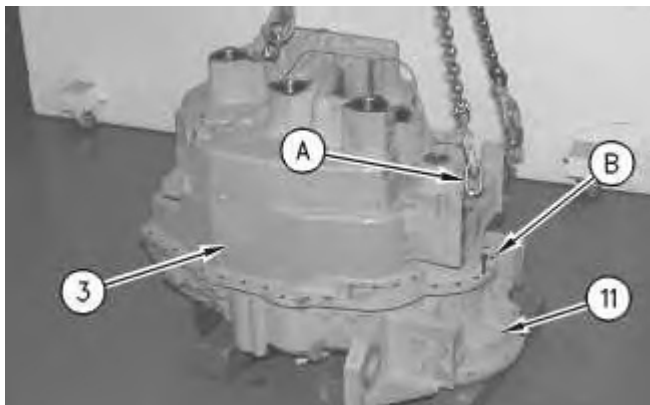


Illustration 4

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11. Install Tooling (B) in the transmission case assembly (3). Tighten Tooling (B) evenly to separate transmission case assembly (3) from transmission cover assembly (11).
12. Attach Tooling (A) to transmission case assembly (3). Position a lifting device to Tooling (A). Secure the lifting device to a hoist. Slowly raise the transmission case assembly (3) from the transmission cover assembly (11). Be careful not to bind the transmission case assembly (3) during separation.

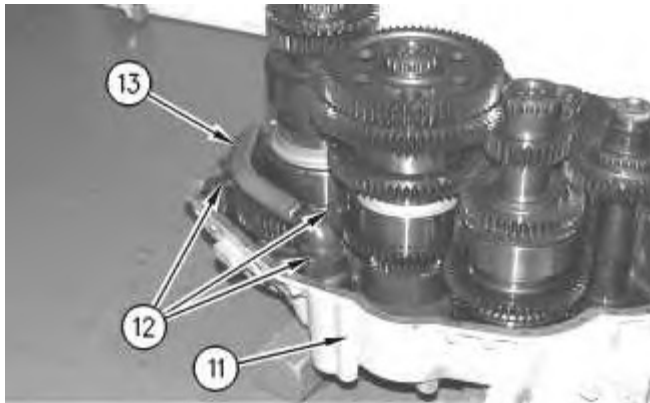


Illustration 5

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13. Remove three bolts (12) from tube assembly (13). Remove tube assembly (13) from the transmission cover assembly (11).
14. Remove the O-ring seal from tube assembly (13).



Illustration 6

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**Note:** First/Third shaft assembly (14) and High/Low shaft assembly (15) must be removed together.

15. Install Tooling (D) on First/Third shaft assembly (14) and High/Low shaft assembly (15). Use Tooling (C) and Tooling (E) in order to hold Tooling (D) on First/Third shaft assembly (14) and High/Low shaft assembly (15), as shown. First/Third shaft assembly (14) and High/Low shaft assembly (15) must be removed together.
16. Attach a suitable lifting device to Tooling (D). Carefully remove First/Third shaft assembly (14) and High/Low shaft assembly (15) from the transmission cover assembly (11). The weight of the two shaft assemblies is 177 kg (390 lb).

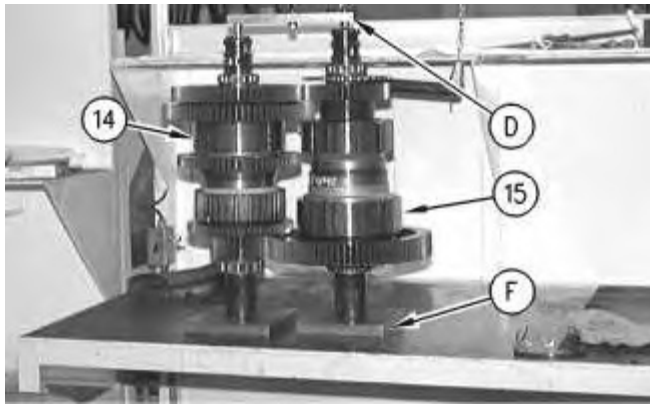


Illustration 7

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17. Place First/Third shaft assembly (14) and High/Low shaft assembly (15) on Tooling (F) or on blocks and remove Tooling (D). Carefully separate First/Third shaft assembly (14) and High/Low shaft assembly (15). The weight of each shaft assembly is 89 kg (195 lb).

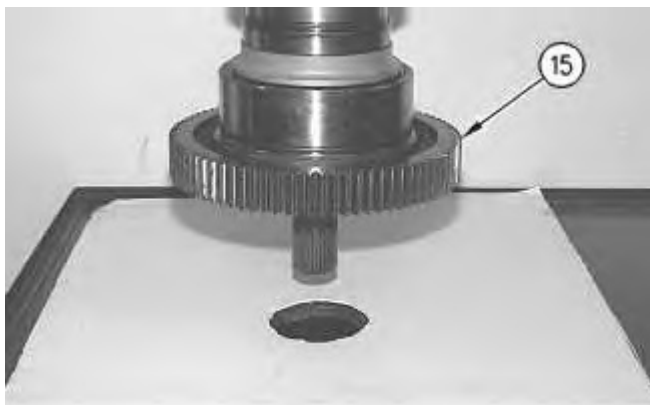


Illustration 8

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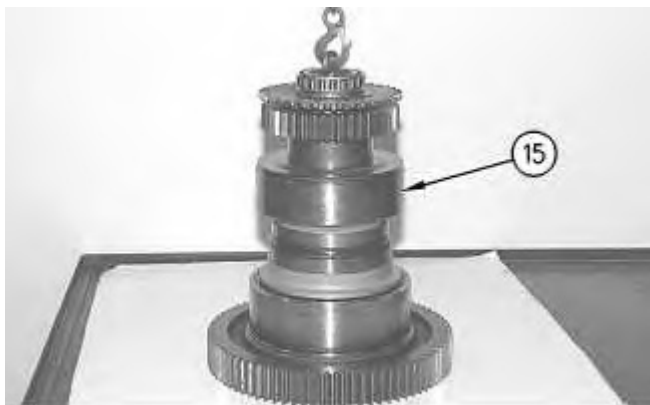


Illustration 9

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**Note:** Place High/Low shaft (15) in a modified work bench or on blocks. Modify a substantial workbench by cutting a  $116.0 \pm 2.0$  mm ( $4.60 \pm 0.08$  inch) clearance hole in the top of the bench.

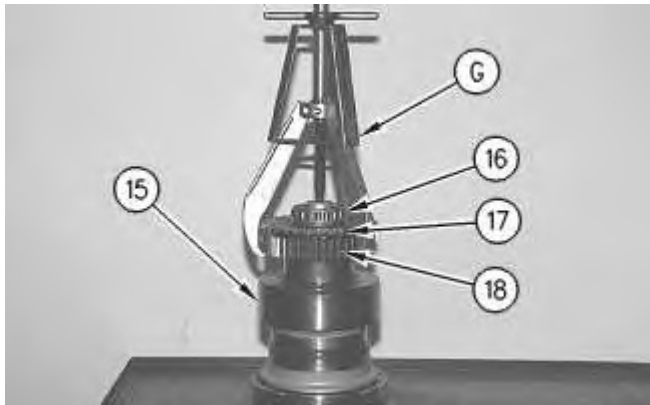


Illustration 10

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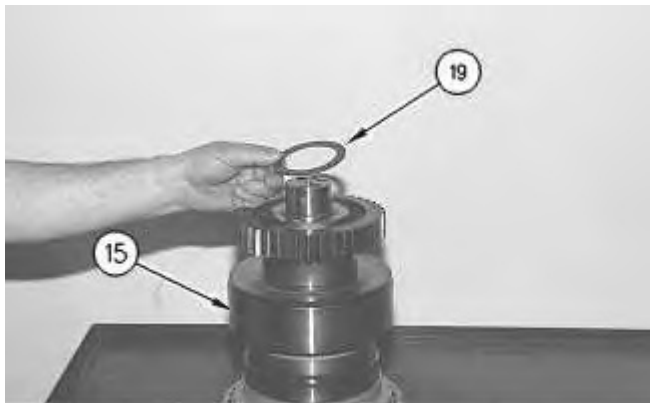
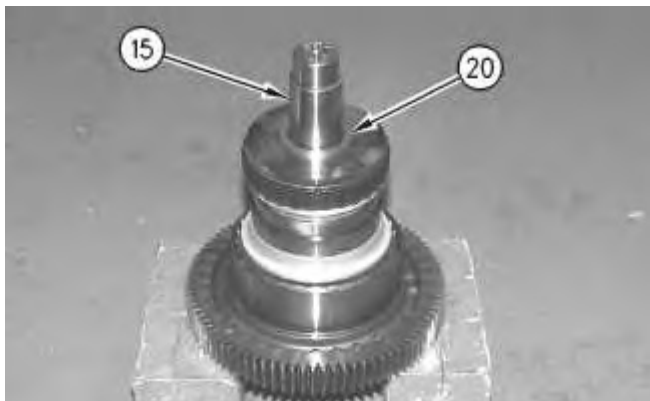


Illustration 11

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**Note:** Do not attach Tooling (G) to rotor (17). If pressure is applied to rotor (17) with Tooling (G), rotor (17) will brake. Attach the Tooling (G) to gear assembly (18).

18. With High/Low shaft assembly (15) on the modified work bench or on blocks, use Tooling (G) in order to remove race and bearing (16), rotor (17), gear assembly (18), and two sleeve bearings (not shown) from High/Low shaft assembly (15). Press fit Bearing (16) and rotor (17) on High/Low shaft assembly (15).
19. Remove bearing (16), rotor (17), thrust disc (19), and gear assembly (18) from High/Low shaft assembly (15). Attach Tooling (G) to gear assembly (18). Do not attach Tooling (G) to rotor (17).



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