



70Z6

SHOP MANUAL

Disassembly & Reassembly

93208-00831



93208-00831
October 2018

SHOP MANUAL

WHEEL LOADER

70Z6

Disassembly & Reassembly

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CONTENTS

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SAFETY

Use Handrails and Steps

- Falling is one of the major causes of personal injury.
 - When you get on and off the machine, always face the machine and maintain a three-point contact with the steps and handrails.
 - Do not use any controls as handholds.
 - Never jump on or off the machine. Never mount or dismount a moving machine.
 - Be careful of slippery conditions on platforms, steps, and handrails when leaving the machine.
 - Never get on and off the machine with tools in your hands.



SA-439

Never Ride Attachment

- Never allow anyone to ride attachment or the load. This is an extremely dangerous practice.

Adjust Operator's Seat

- A poorly adjusted seat for either the operator or the work at hand may quickly fatigue the operator leading to misoperations.
 - The seat should be adjusted whenever changing the operator for the machine.
 - The operator should be able to fully depress the pedals and to correctly operate the control levers with his back against the seat back.
 - If not, move the seat forward or backward, and check again.
 - Adjust the rear view mirror position so that the best rear visibility is obtained from the operator's seat. If the mirror is broken, immediately replace it with a new one.



SA-462

SAFETY

Avoid Accidents from Backing Up and Turning

- Make sure no one is working under or close to the machine before backing up or turning the machine to avoid personal injury and / or death by being run over or entangled in the machine.
- Keep all personnel away from the machine by sounding the horn and / or using hand signals. Use extra care to be sure no one is in from the articulation area before turning the machine.
- Keep windows, mirrors, and lights in good condition.
- Reduce travel speed when dust, heavy rain, fog, etc., reduce the visibility.
- In case good visibility is not obtained, use a signal person to guide you.



SA-383

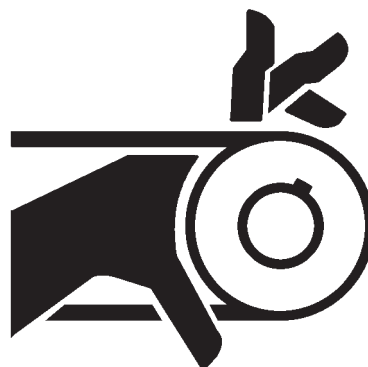


SA-312

SAFETY

Stay Clear of Moving Parts

- Entanglement in moving parts can cause serious injury.
- To prevent accidents, care should be taken to ensure that hands, feet, clothing, jewelry and hair do not become entangled when working around rotating parts.



SA-026

Support Maintenance Properly

- Explosive separation of a tire and rim parts can cause serious injury or death.
- Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job. Have it done by your authorized dealer or a qualified repair service.
- Always maintain the correct tire pressure. DO NOT inflate tire above the recommended pressure.
- When inflating tires, use a chip-on chuck and extension hose long enough to allow you to stand to one side and not in front of or over the tire assembly. Use a safety cage if available.
- Inspect tires and wheels daily. Do not operate with low pressure, cuts bubbles, damaged rims, or missing lug bolts and nuts.
- Never cut or weld on an inflated tire or rim assembly. Heat from welding could cause an increase in pressure and may result in tire explosion.



SA-249

SAFETY

Precautions for Communication Terminal

Electrical wave transmitted from the communication terminal may cause malfunction of other electronic devices. Inquire the device manufacturer for electrical wave disturbance upon using an electronic device near the communication terminal.

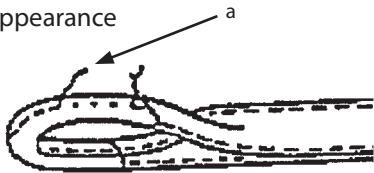
SECTION 1 GENERAL

Group 1 Precautions for Disassembling and Assembling

⚠ CAUTION: If a load is lifted with a damaged nylon sling, serious personal injury may result. Be sure to visually check the nylon sling for any damage before using.

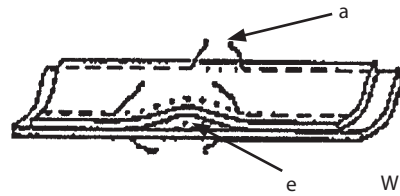
2. Before using a nylon sling, visually check the nylon sling for any damage corresponding to examples shown to the right. If any damage is found, cut and discard the sling. Even if no damage is found, do not use slings older than 7 years.

Damaged Appearance



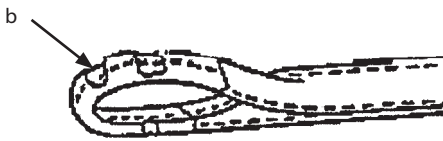
W162-01-01-002

a - Broken Sewing Thread



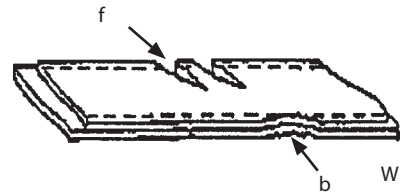
W162-01-01-006

a - Broken Sewing Thread e - Separation of Belt



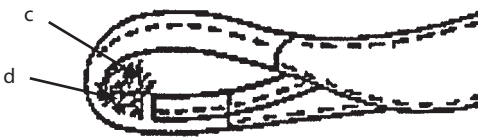
W162-01-01-003

b - Scuffing



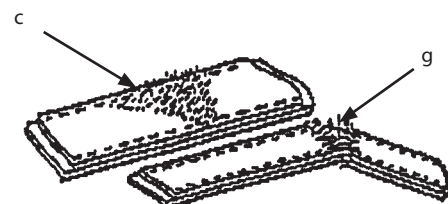
W162-01-01-007

b - Scuffing f - Scoring



W162-01-01-004

c - Fuzz d - Broken Sewing Thread



W162-01-01-008

c - Fuzz g - Broken Warp



W162-01-01-005

a - Broken Sewing Thread

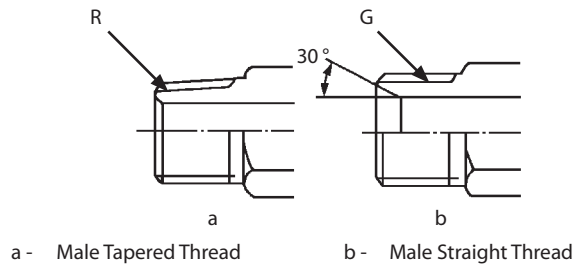
SECTION 1 GENERAL

Group 2 Tightening

Screw-In Connection

Depending on types of screw and sealing, different types of screw-in connection are used.

IMPORTANT: Check that the thread pitch and thread type (tapered or straight) are the correct type before using any screw-in connection. (In general, the screw-in connection of male tapered thread (a) is used except for measurement purpose.)



W105-01-01-018

2013/09

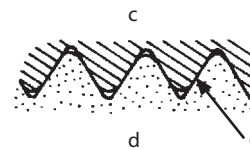
Wrench Size mm	Tightening Torque	
	Cast iron	Structural rolled steel
19	15 (11)	35 (26)
22	30 (22)	50 (37)
27	50 (37)	95 (70)
36	70 (52)	160 (118)
41	110 (81)	200 (148)
50	160 (118)	330 (245)
60	200 (148)	

Seal Tape Application

Seal tape is used in order to seal clearances between male (d) and female (c) threads so that any leaks between threads may be prevented. Therefore, apply just enough seal tape to fill up thread clearances (e). Do not overwrap.

• Application Procedure
Check that the thread surface is clean and, free of dirt or damage. Apply the seal tape around threads in order to leave one to two pitch threads uncovered. Wrap the seal tape in the same direction as the threads.

NOTE: Unit: N·m (lbf·ft)



W105-01-01-019

c - Internal Thread
d - External Thread

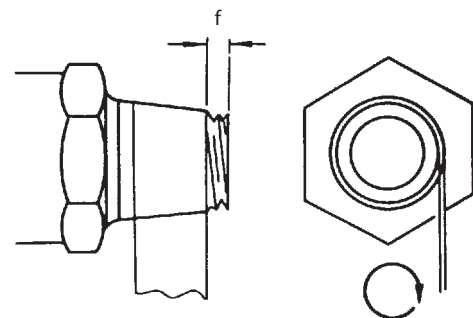
e - Clearance

Low-Pressure-Hose Clamp Tightening

Low-pressure-hose clamp tightening torque differs depending on the type of clamp.

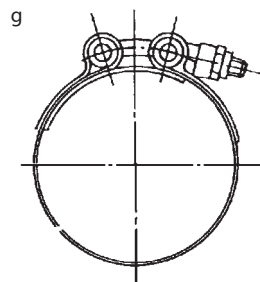
T-Bolt Type Band Clamp (g):
4.5 N·m (3.3 lbf·ft)

Worm Gear Type Band Clamp (h):
6 to 7 N·m (4.4 to 5.2 lbf·ft)

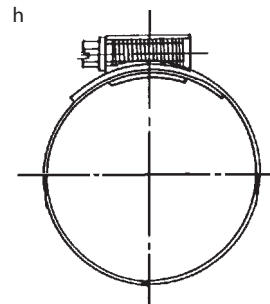


f - Leave one to two pitch threads uncovered

M114-07-041



WDAA-01-02-012



M114-07-043

g - T-Bolt Type Band Clamp

h - Worm Gear Type Band Clamp

SECTION 1 GENERAL
Group 3 Painting

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SECTION 1 GENERAL
Group 5 Releasing Pressure

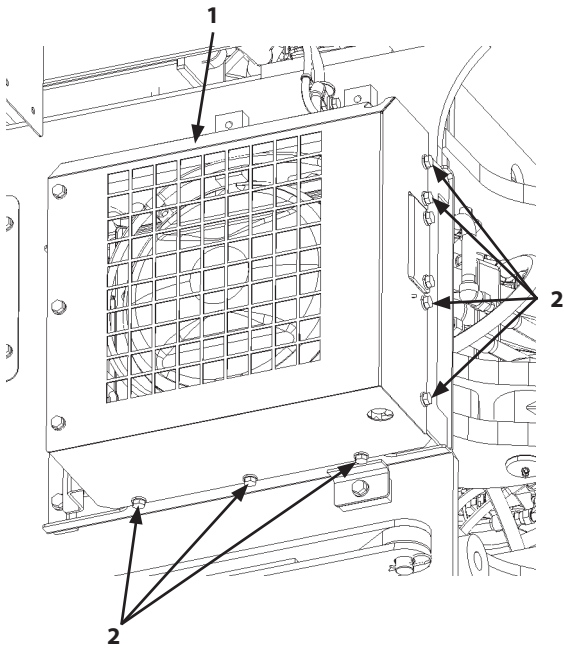
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SECTION 2 MAINTENANCE STANDARD
Group 2 Front Attachment

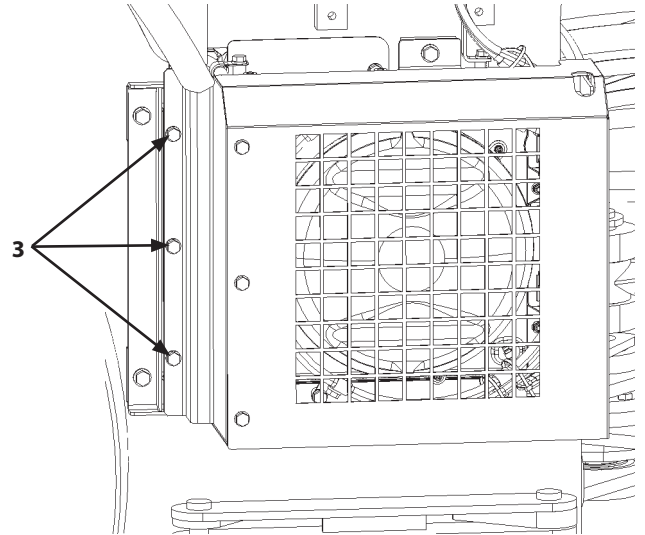
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SECTION 3 BODY

Group 1 Cab




WNDJ-03-14-001

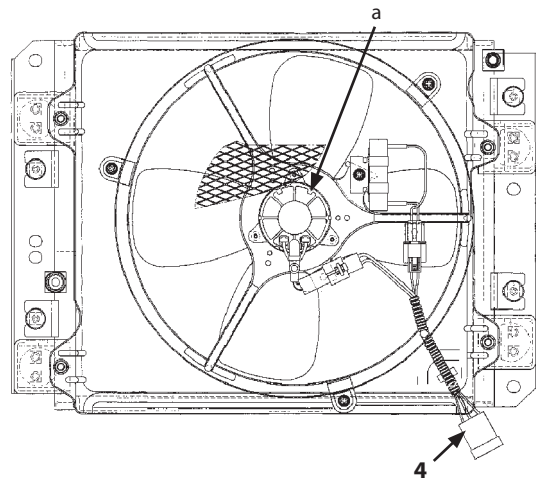


WNDJ-03-14-002

13. Remove bolts, washers (2) (7 used) and bolts, washers (3) (3 used). Remove cover (1).

 : 17 mm

14. Disconnect connector (4).

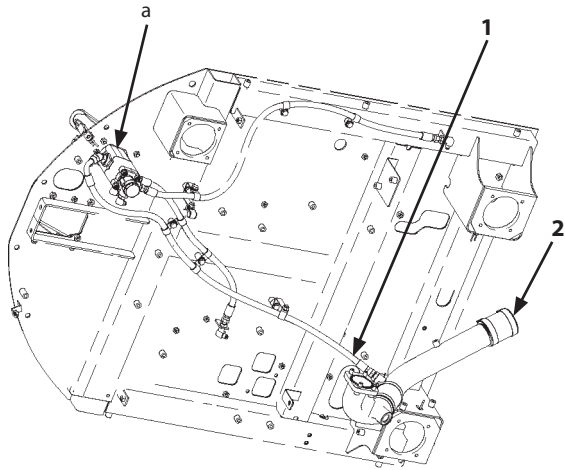


a- Electric Fan Motor

WNDJ-03-14-003

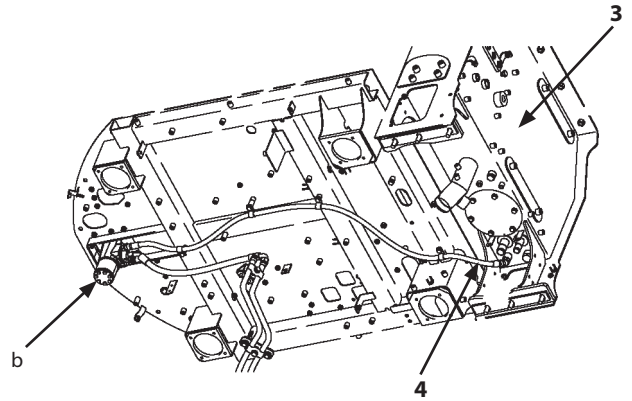
SECTION 3 BODY

Group 1 Cab



WNEJ-03-01-117


a- Brake Valve




b- Steering Valve

WNDJ-03-01-011


51. Disconnect the suction pipe (2) side of hose (1).

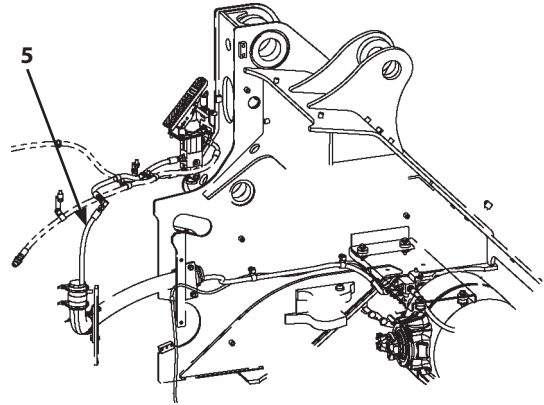
 : 27 mm

52. Disconnect the hydraulic oil tank (3) side of hose (4).

 : 27 mm

53. Disconnect hose (5).

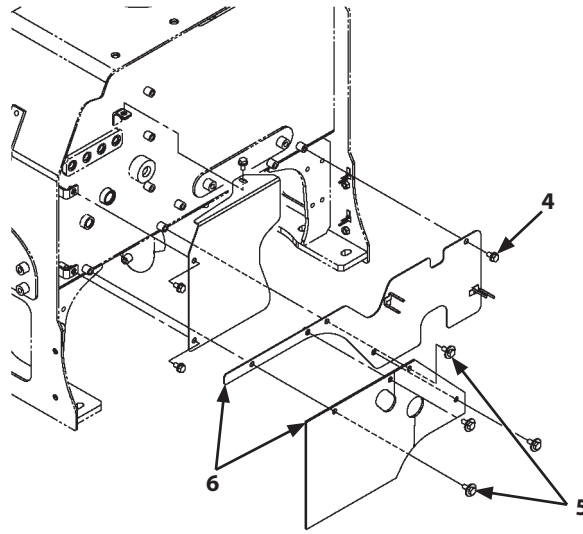
 : 22 mm



WNDJ-03-01-009


SECTION 3 BODY


Group 1 Cab



WNDB-03-06-006

26. Install the cover (6) assembly with bolts, washers (5) (2 used) and bolt, washer (4). Install the wire harnesses to all clips of the cover (6) assembly.

 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

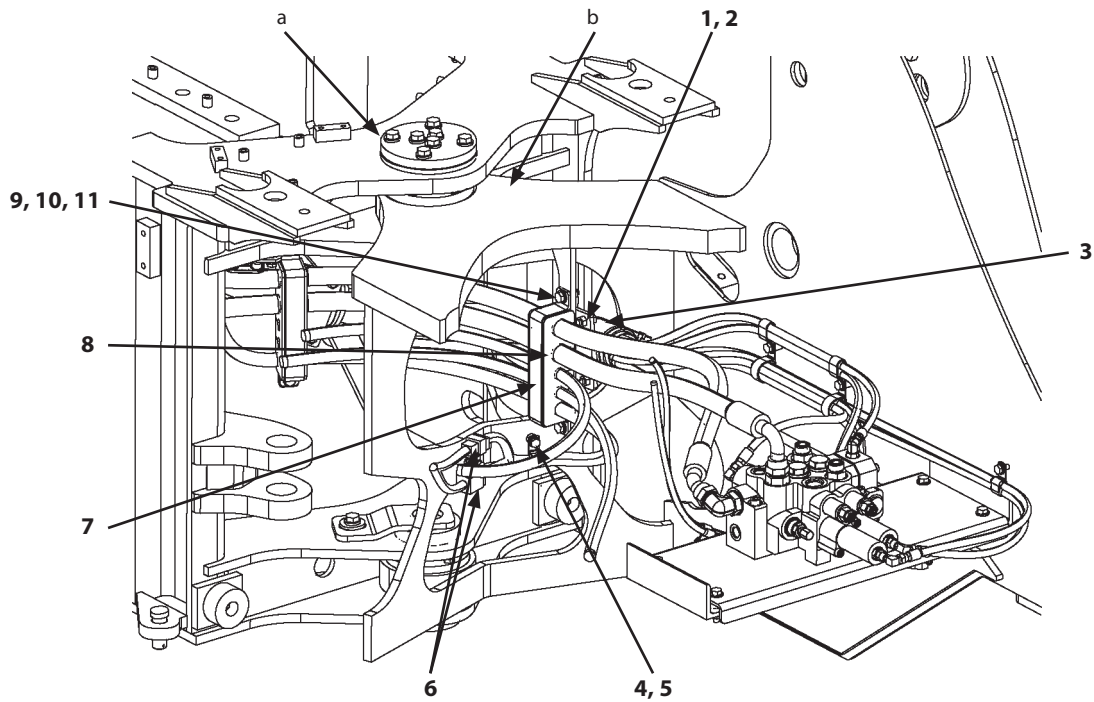
SECTION 3 BODY

Group 1 Cab

(Blank)

SECTION 3 BODY

Group 3 Center Hinge




WNDB-03-03-003

a- Rear Frame


b- Front Frame

13. Remove bolt, washer (4) and clip (5).


 : 17 mm

14. Disconnect connectors (6) (2 used).

15. Remove bolts, washers (9) (2 used), washers (10) (2 used), and nuts (11) (2 used). Remove plate (7) and clamp (8).

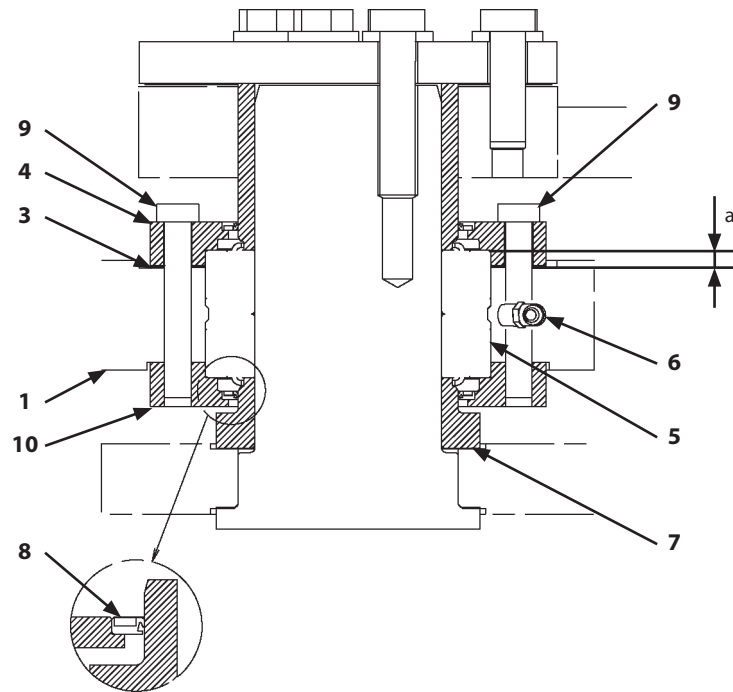
 : 19 mm

16. Remove bolts, washers (1) (2 used) and nuts (2) (2 used). Remove clamp (3).

 : 19 mm

SECTION 3 BODY

Group 3 Center Hinge



a- 8 mm (0.32 in)

WNDB-03-03-006

- Upper Hinge Side


CAUTION: Metal fragments may fly off when a hammer is used. Wear necessary protection, such as goggles, hard hat, etc. in order to prevent personal injury.

6. Install bearing (5) to front frame (1) by using a copper hammer.

IMPORTANT: Face the end of grease fitting (6) to the left side of vehicle body.


7. Install grease fitting (6). Apply grease.


 : 10 mm

 : 4 N·m (0.4 kgf·m, 3 lbf·ft)

8. Apply LOCTITE #263 or equivalent onto the outer circumference of dust seals (8) (2 used). Install dust seals (8) (2 used) to caps (4, 10) by using a plastic hammer. Crimp caps (4, 10) (2 places for each) by using a punch. Therefore, dust seals (8) (2 used) are secured.

9. Apply LOCTITE #263 or equivalent onto bolts (9) (6 used). Install caps (10, 4) and shim (3) to front frame (1) with bolts (9) (6 used).

 : 19 mm

 : 90 N·m (9 kgf·m, 66 lbf·ft)

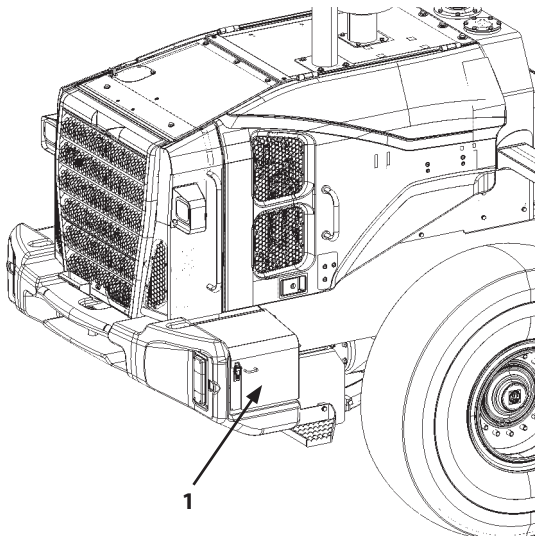
CAUTION: Metal fragments may fly off when a hammer is used. Wear necessary protection, such as goggles, hard hat, etc. in order to prevent personal injury.

IMPORTANT: Check the position to install bearing (5).

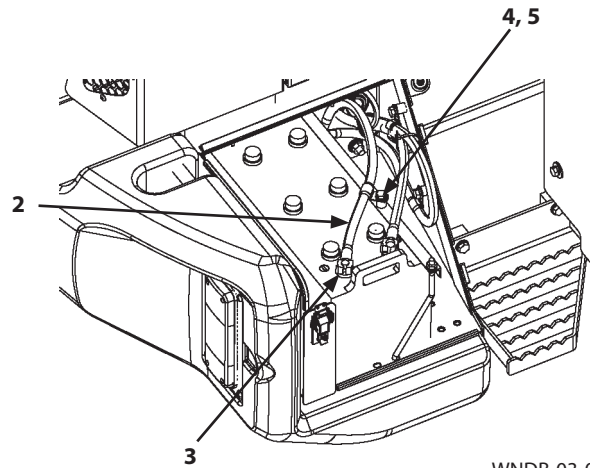
10. Install busing (7) to the position where it comes in contact with bearing (5) by using a copper hammer.

SECTION 3 BODY

Group 4 Engine




WNDJ-03-04-010




WNDB-03-01-001

4. Open the cover of battery box (1).
5. Remove bolt, washer (4). Remove clip (5).

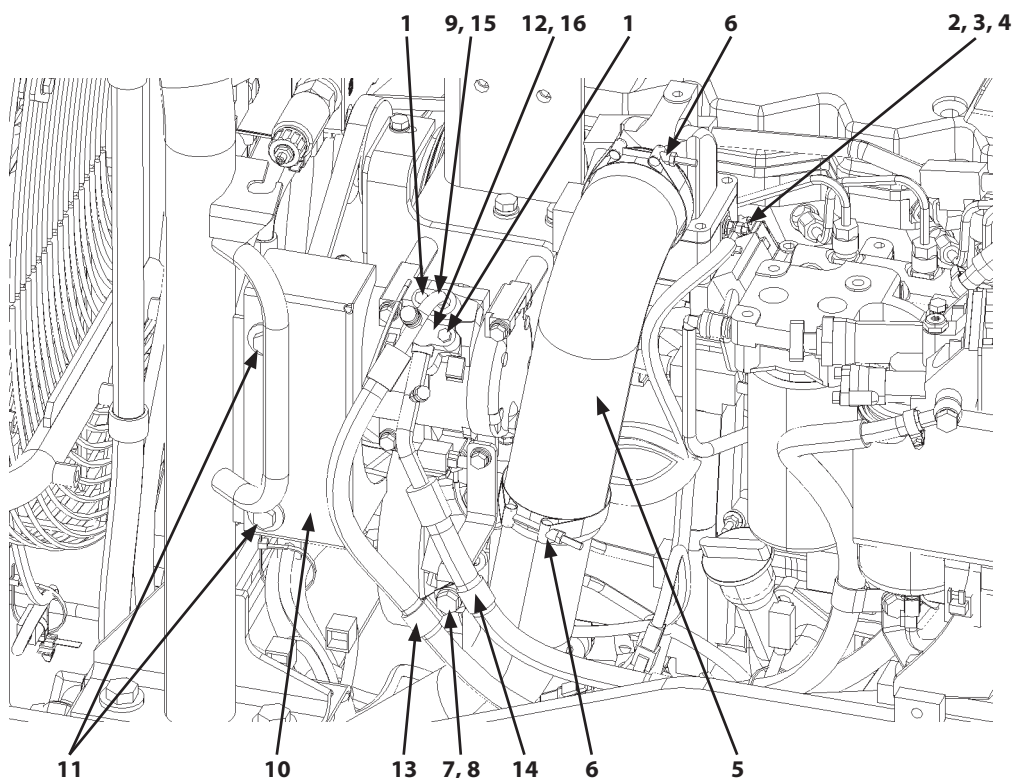
 : 17 mm

6. Loosen nut (3). Disconnect ground (2).

 : 10 mm


SECTION 3 BODY

Group 4 Engine




WNDJ-03-04-018


47. Remove bolts, washers (11) (2 used). Remove cover (10).

 : 17 mm


48. Remove bolt, washer (7) and nut (8). Remove clips (13, 14).

 : 17 mm


49. Remove bolts (1) (2 used). Disconnect hoses (9, 12). Remove O-rings (15, 16) from hoses (9, 12).

 : 10 mm

50. Remove clamps (6) (2 used). Disconnect the both ends of hose (5).

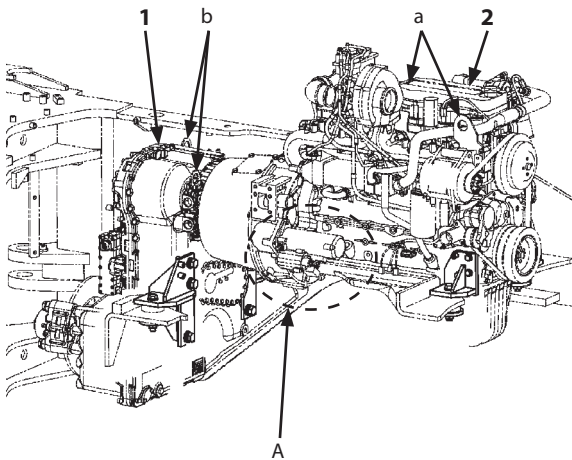
 : 11 mm

51. Remove nut (2) and washer (3). Disconnect terminal (4).

 : 10 mm

SECTION 3 BODY

Group 4 Engine

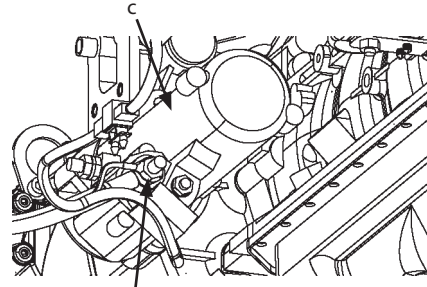


WNEE-03-04-041

a- Lifting Bracket (Engine)

b- Lifting Bracket (Drive Unit)

Detail A



3, 4, 5, 6

c- Starter

WNDB-03-04-024


Installation


1. Install all removed adapters to engine (2).
2. Install drive unit (1) to engine (2). (Refer to W4-2-1.)
3. Install the pump device to drive unit (1). (Refer to W3-8-1.)

CAUTION: The engine (2) assembly weight: 1160 kg (2560 lb)

4. Install shackles (4 used) to lifting brackets (a, b) (2 places for each) of engine (2) and drive unit (1). Attach nylon slings onto the shackles (4 used). Hoist the engine (2) assembly.

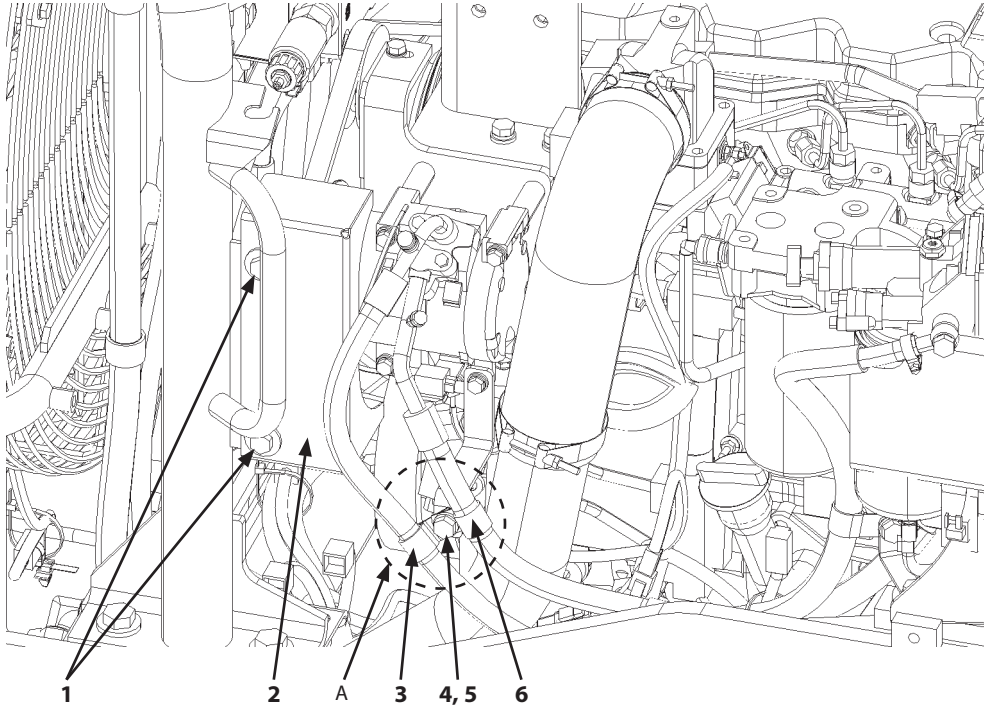
5. Lower the engine (2) assembly so that terminals (5, 6) can be connected.
6. Connect terminals (5, 6) with washer (4) and nut (3).

 : 19 mm

 : 35 N·m (3.5 kgf·m, 26 lbf·ft)

SECTION 3 BODY


Group 4 Engine




WNDJ-03-04-018


IMPORTANT: Check the angle to install clips (3, 6).


38. Install clips (3, 6) with nut (5) and bolt, washer (4).

 : 17 mm

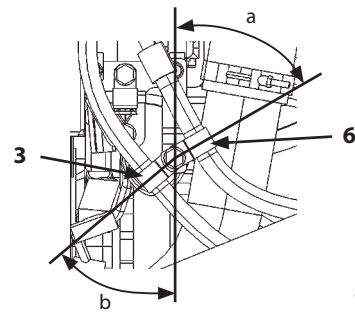
 : 50 N·m (5 kgf·m, 37 lbf·ft)

39. Install cover (2) with bolts, washers (1) (2 used).

 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

Detail A



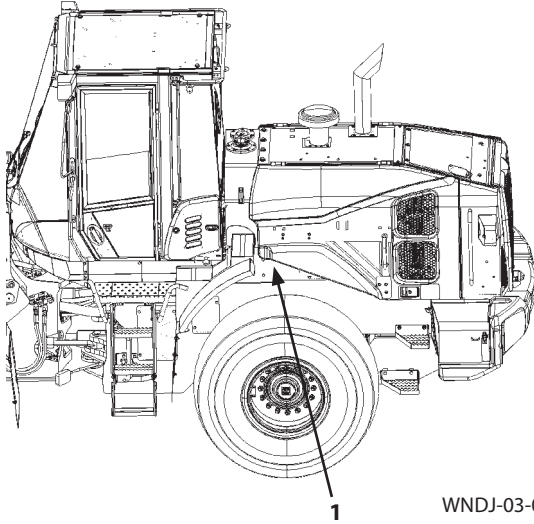
WNDJ-03-04-019

a- 60°

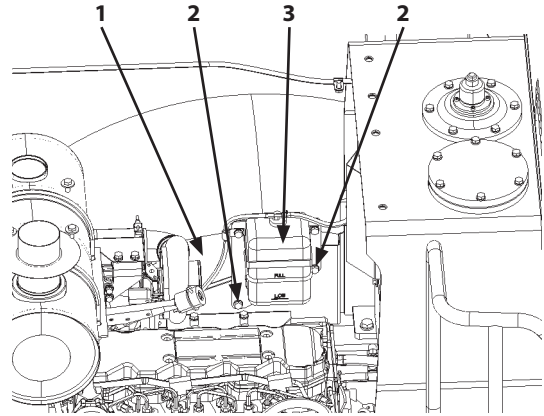
b- 50°

SECTION 3 BODY

Group 4 Engine



WNDJ-03-04-011





WNEJ-03-04-128

72. Install the following parts at the right and left sides.
(Refer to W3-4-2.)

- Cover (Lower) (1)

73. Install the radiator coolant reservoir (3) assembly
with bolts, washers (2) (2 used).

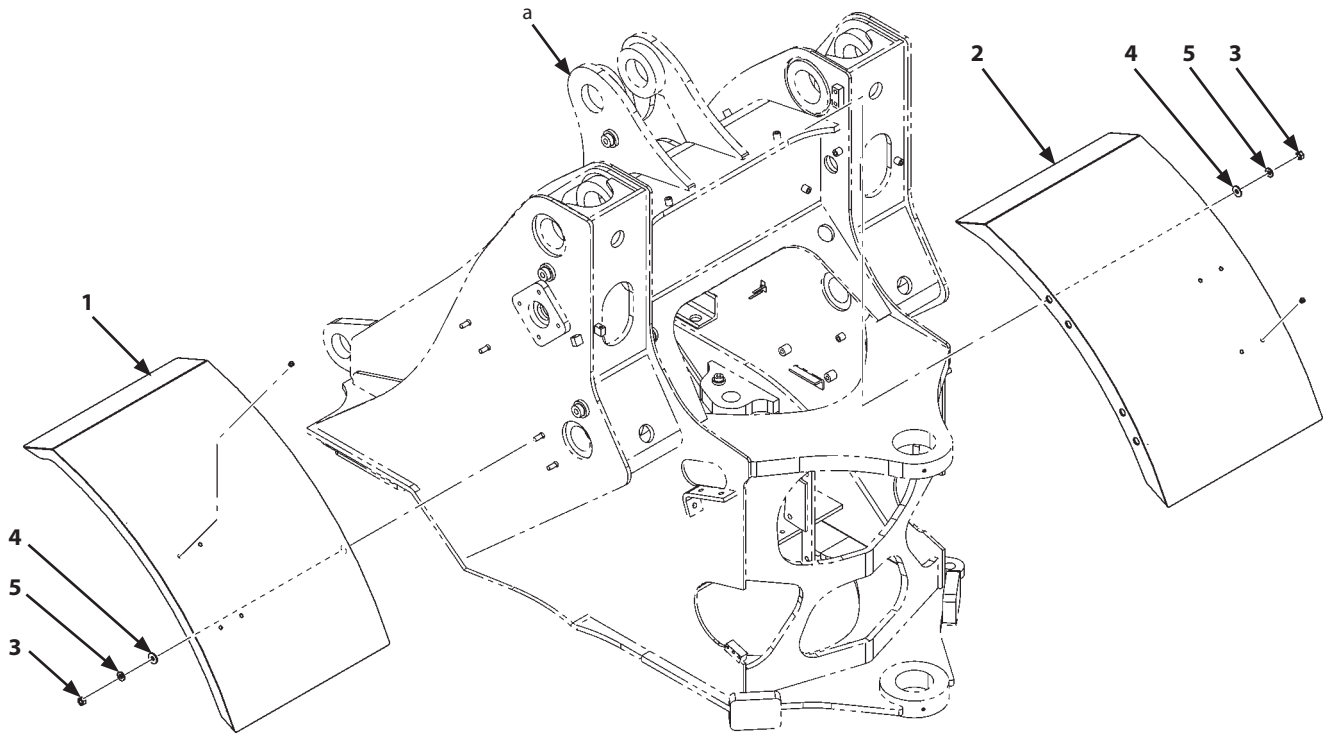
 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

SECTION 3 BODY

Group 4 Engine

Removal and Installation of Front Fenders (1, 2)



WNDJ-03-04-005

a- Front Frame

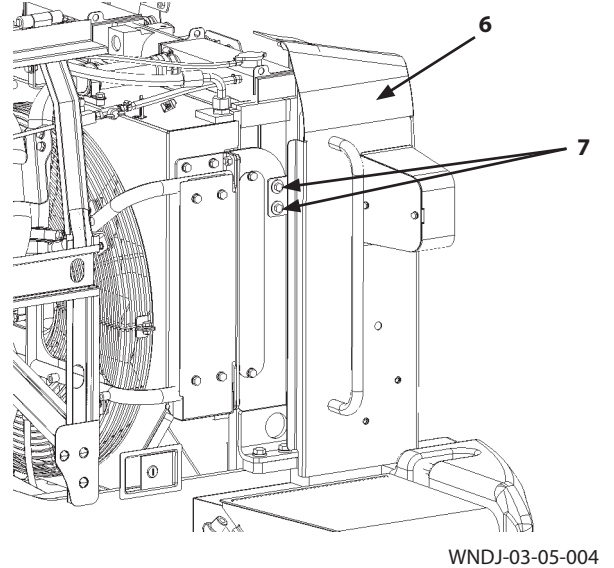
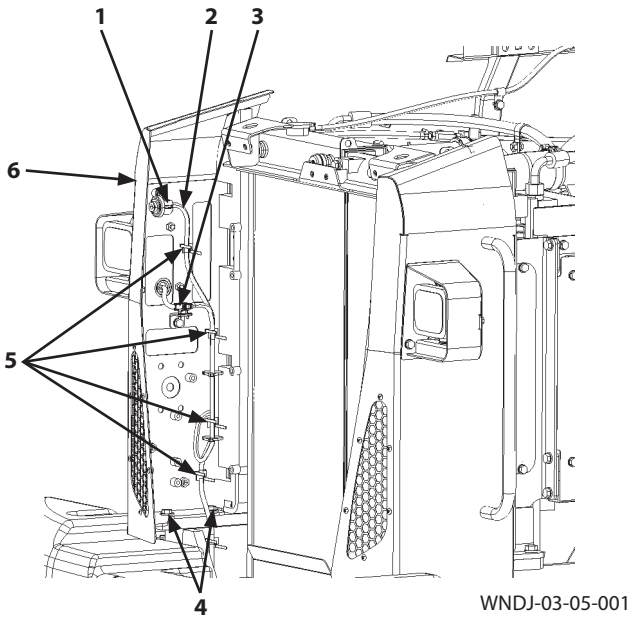
No.	Part Name	Q'ty	Wrench Size (mm)	Tightening Torque			Weight	
				N·m	kgf·m	lbf·ft	kg	lb
1	Front Fender (Left)	1					20	45
2	Front Fender (Right)	1					20	45
3	Nut	8	: 19	35	3.5	26		
4	Washer	8						
5	Washer	8						

⚠ CAUTION: When removing and installing the following parts, hoist and hold them by using nylon slings.


- Front fenders (1, 2) weight: 20 kg (45 lb)

SECTION 3 BODY

Group 5 Radiator Assembly




14. Disconnect connectors (1, 3).
15. Remove wire harness (2) from clips (5) (4 used).
16. Remove bolts, washers (4) (2 used).

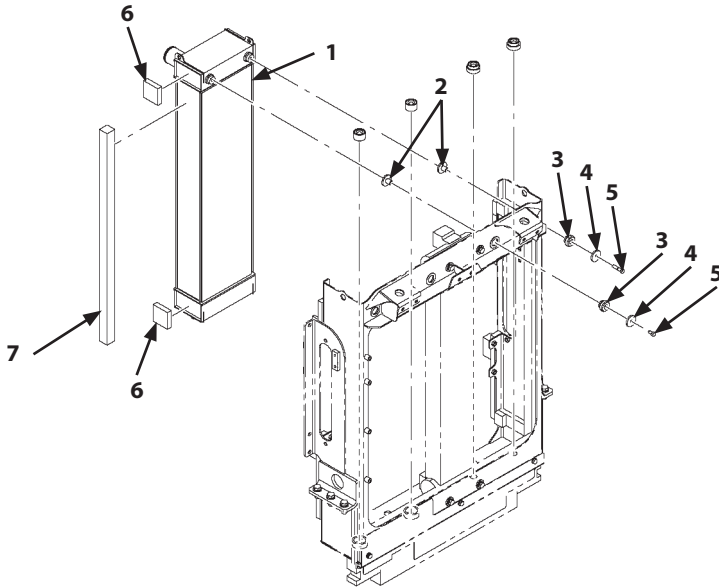
 : 19 mm

⚠ CAUTION: The rear side cover (6) assembly weight: 22 kg (49 lb)

17. Attach nylon slings onto the rear side cover (6) assembly. Hoist and hold the rear side cover (6) assembly.
18. Remove bolts, washers (7) (2 used). Remove the rear side cover (6) assembly.


 : 17 mm

SECTION 3 BODY
Group 5 Radiator Assembly



WNDJ-03-05-103

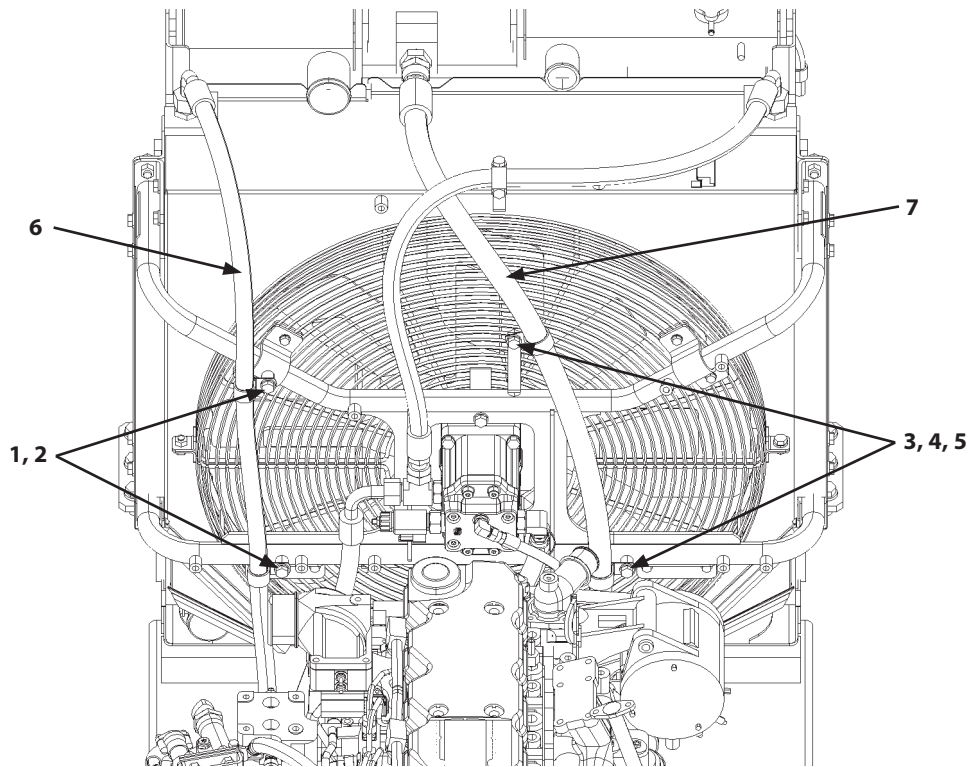
- 51. Remove bolts (5) (2 used), washers (4) (2 used), cushions (2) (2 used), and collars (3) (2 used). Remove intercooler (1).

 : 13 mm

- 52. Remove rubber seals (6) (2 used) and rubber seal (7) from intercooler (1).


SECTION 3 BODY


Group 5 Radiator Assembly




WNDJ-03-05-010


29. Secure hose (7) with clips (5) (2 used), nuts (4) (2 used), and bolts, washers (3) (2 used).

 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

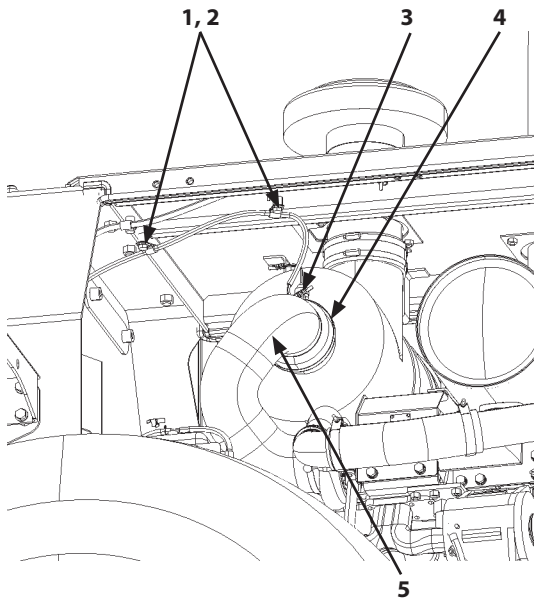
30. Secure hose (6) with clips (2) (2 used) and bolts, washers (1) (2 used).

 : 17 mm

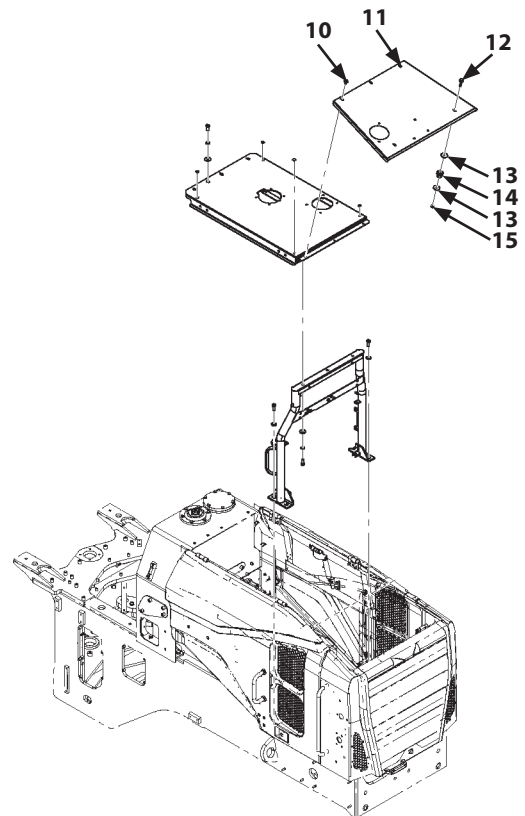
 : 50 N·m (5 kgf·m, 37 lbf·ft)

SECTION 3 BODY

Group 6 Hydraulic Oil Tank




WNEJ-03-06-115



WNEJ-03-06-114

9. Remove bolts, washers (1) (2 used) and clips (2) (2 used).


 : 17 mm

10. Disconnect connectors (3) (2 used).


11. Remove clamp (4). Disconnect hose (5).

 : 7 mm

12. Remove bolts, washers (10) (3 used).

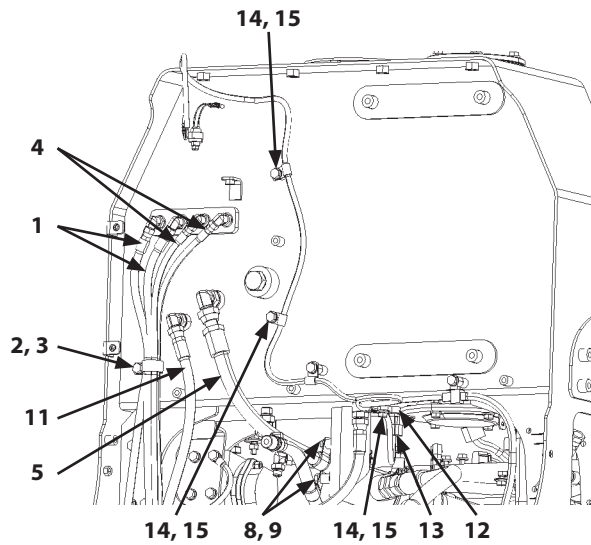
 : 17 mm

13. Remove bolts, washers (12) (2 used), nuts (15) (2 used), washers (13) (4 used), and rubbers (14) (2 used). Remove rear cover (11).

 : 19 mm


SECTION 3 BODY


Group 6 Hydraulic Oil Tank




WNDJ-03-06-004


13. Connect hose (5).

 : 36 mm


 : 180 N·m (18 kgf·m, 133 lbf·ft)


14. Install clips (9) (2 used) with bolts, washers (8) (2 used).

 : 17 mm


 : 50 N·m (5 kgf·m, 37 lbf·ft)


15. Connect hose (11).

 : 27 mm

 : 80 N·m (8 kgf·m, 59 lbf·ft)


16. Connect hoses (4) (2 used).

 : 17 mm


 : 25 N·m (2.5 kgf·m, 18.5 lbf·ft)


17. Connect hoses (1) (2 used).

 : 19 mm

 : 30 N·m (3 kgf·m, 22 lbf·ft)

18. Install clip (3) with bolt, washer (2).


 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

19. Connect connector (13) of hydraulic oil temperature sensor (12).

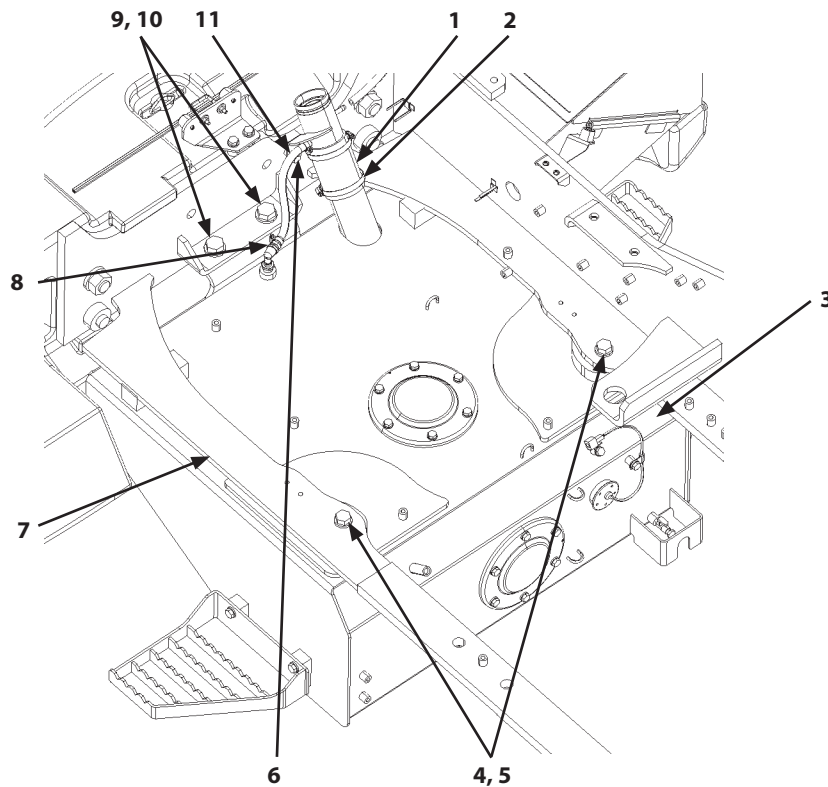
20. Install clips (15) (3 used) with bolts, washers (14) (3 used).

 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

SECTION 3 BODY

Group 7 Fuel Tank




WNDJ-03-07-004

Installation


CAUTION: Fuel tank (3) weight: 180 kg (400 lb)


1. Install fuel tank (3) to rear frame (7) by using a hydraulic jack and the wooden blocks.
2. Install washers (5) (2 used) and bolts (4) (2 used).

 : 30 mm

 : 452 N·m (45 kgf·m, 330 lbf·ft)


3. Install washers (10) (2 used) and bolts (9) (2 used).

 : 36 mm


 : 782 N·m (78 kgf·m, 580 lbf·ft)


4. Connect the fuel filler port (1) assembly with clamp (2).

 : 7 mm

 : 7 N·m (0.7 kgf·m, 5.2 lbf·ft)


5. Install bolt, washer (6).

 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

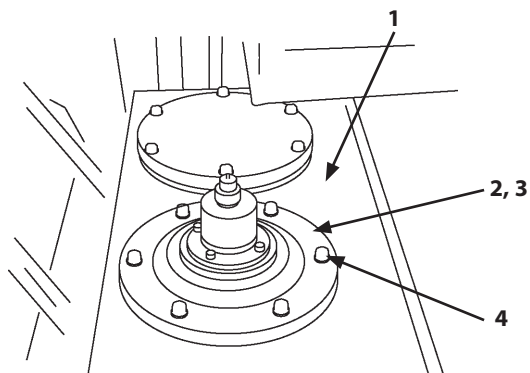
6. Connect hose (11) with clamp (8).

 : 7 mm

 : 4 N·m (0.4 kgf·m, 3 lbf·ft)


SECTION 3 BODY

Group 8 Pump Device





M4GB-07-044

21. Install the cab assembly. (Refer to W3-1-1.)
22. Fill hydraulic oil tank (1) with hydraulic oil.

 **NOTE:** Total oil amount of hydraulic oil tank (1): 140 L
(37 US gal)

23. Install O-ring (3).
24. Install the cover (2) assembly with bolts, washers (4)
(6 used).

 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

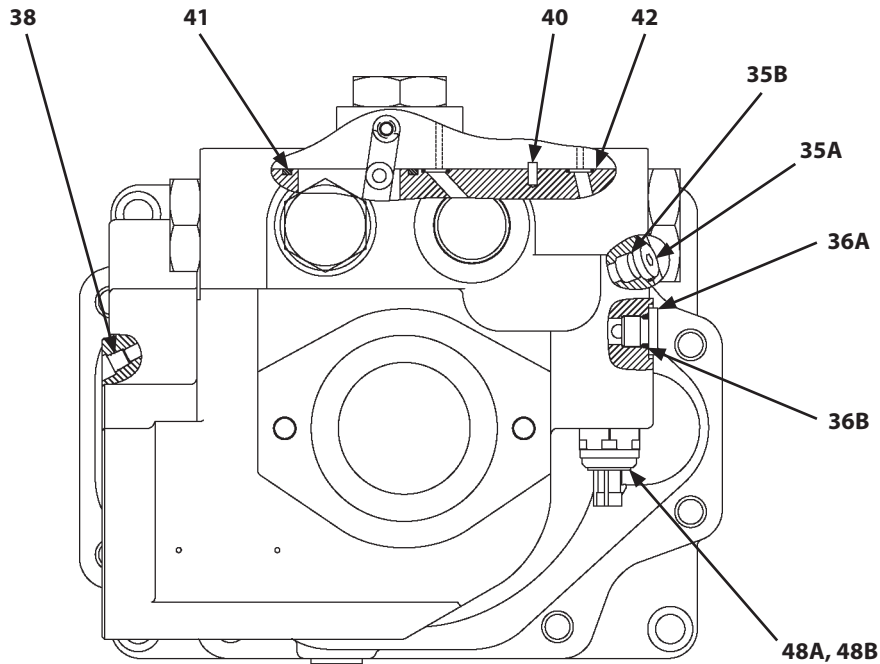
25. Bleed air from the hydraulic system. (Refer to W1-4-1.)

IMPORTANT: Check the hydraulic oil level. Start the engine. Check for any oil leaks.

SECTION 3 BODY

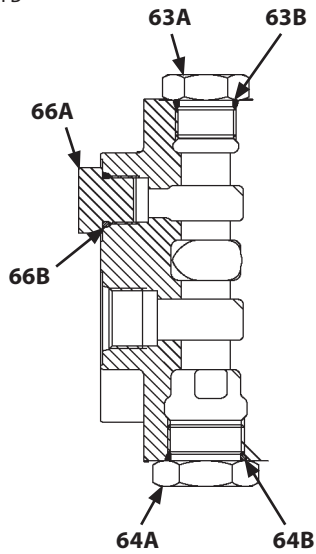
Group 8 Pump Device

View C



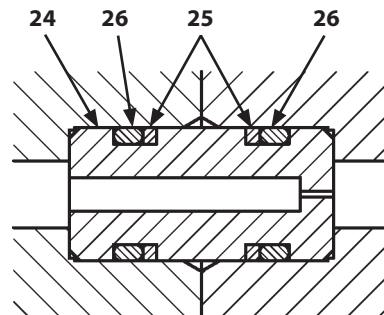
WNDB-03-08-009

Section B



WNDB-03-08-011

Detail a




WNDB-03-08-010

- | | | | |
|-----------------------------|---------------------------|--------------------------|----------------------|
| 00- Front Casing | 17- O-Ring | 32- Spring Pin | 45- Retaining Ring |
| 01- Drive Shaft | 18- Pump Casing | 33- Socket Bolt (8 Used) | 46- Piston (7 Used) |
| 02- Inner Race | 19- Needle Bearing | 35A- Plug (2 Used) | 48A- Pressure Sensor |
| 03- Retaining Ring | 20- Knock Pin | 35B- O-Ring (2 Used) | 48B- O-Ring |
| 04- Roller Bearing | 22- Servo Piston (3 Used) | 36A- Plug | 49- Cam Plate |
| 05- Retaining Ring (2 Used) | 23- Knock Pin | 36B- O-Ring | 50A- Valve Plate |
| 06- Knock Pin | 24- Restrictor Pin | 37A- Plug | 50B- Rotor |
| 07- Cradle Plate | 25- Backup Ring (2 Used) | 37B- O-Ring | 63A- Plug (2 Used) |
| 08- Socket Bolt (4 Used) | 26- O-Ring (2 Used) | 38- Plug (4 Used) | 63B- O-Ring (2 Used) |
| 09- Swash Plate | 27- Pin | 40- Spring Pin (2 Used) | 64A- Plug |
| 11- Knock Pin | 28- Feedback Link | 41- O-Ring | 64B- O-Ring |
| 13- Spring (7 Used) | 29- Link Pin | 42- O-Ring (5 Used) | 66A- Plug |
| 14- Bushing | 30- Pin | 43- O-Ring | 66B- O-Ring |
| 15- Retainer | 31- Spring Pin | 44- Oil Seal | |

SECTION 3 BODY

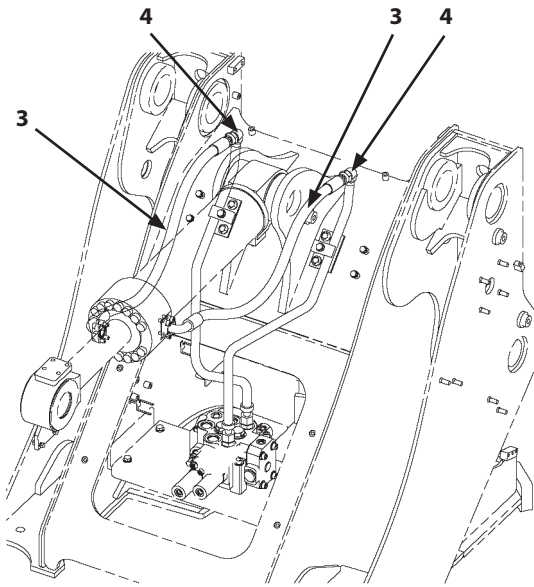
Group 8 Pump Device

IMPORTANT: The housing is made of aluminum. Do not damage the housing. Take extreme care in order to control the tightening torque.

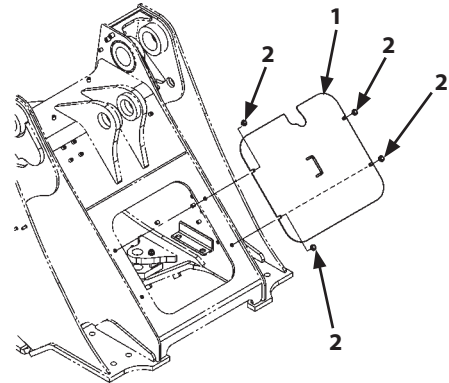
No.	Part Name	Q'ty	Wrench Size (mm)	Tightening Torque			Remark
				N·m	kgf·m	lbf·ft	
2	Flange	1					
3	Oil Seal	1					Apply grease onto the lip when assembling.
5	Retaining Ring	1					
6	Seal	2					Apply grease onto the lip when assembling.
7	Cover	1					
9	Backup Ring	2					Apply grease onto the lip when assembling.
10	Key	2					
12	O-Ring	2					Apply grease onto the lip when assembling.
13	Gear	1					
14	Gear	1					
15	Washer	4					
26	Bushing	2					Apply hydraulic oil when assembling.
27	Bushing	2					Apply hydraulic oil when assembling.
28	Knock Pin	2					
29	Bolt	4	 : 17	39 to 44	4 to 4.5	28.5 to 32.5	
41	Housing	1					

SECTION 3 BODY

Group 9 Control Valve



WNDB-05-02-001



WNEC-04-08-003

16. Connect the pipe (4) side of hoses (3) (2 used).
🔧 : 36 mm
🔩 : 180 N·m (18 kgf·m, 133 lbf·ft)
17. Lower the lift arm. Set the machine position for inspection and maintenance. (Refer to W1-6-1.)
18. Bleed air from the hydraulic system. (Refer to W1-4-1.)

IMPORTANT: Check the hydraulic oil level. Start the engine and check for any oil leaks.

19. Set the machine position (lift arm raise) for inspection and maintenance. (Refer to W1-6-1.)
20. Install cover (1) with bolts, washers (2) (4 used).
🔧 : 17 mm
🔩 : 50 N·m (5 kgf·m, 37 lbf·ft)

SECTION 3 BODY


Group 9 Control Valve


- Assembly of Overload Relief Valve (Bucket: Rod Side) (l)

IMPORTANT: If the overload relief valve has been disassembled, pressure should be adjusted. (Refer to TROUBLESHOOTING / Operational Performance Test in the separated volume, T/M.)

IMPORTANT: Attach a spanner onto the hexagonal part of the relief valve case.


17. Install O-ring (50) to relief valve (29). Install relief valve (29) to housing (31).


 : 32 mm

 : 85 to 90 N·m (8.5 to 9 kgf·m, 63 to 66 lbf·ft)


- Assembly of Low-Pressure Relief Valve (f)


18. Install poppet (15) and spring (14) to housing (31). Install O-ring (4) to plug (13). Install plug (13) to housing (31).

 : 36 mm

 : 180 to 210 N·m (18 to 21 kgf·m, 133 to 155 lbf·ft)

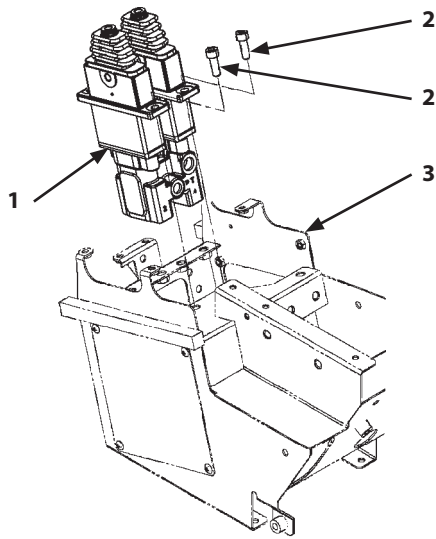
19. Install O-ring (48) to plug (10). Install plug (10) to housing (31).

 : 17 mm

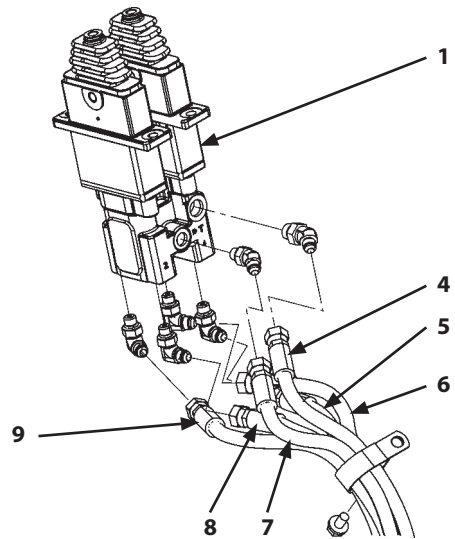
 : 180 to 210 N·m (18 to 21 kgf·m, 133 to 155 lbf·ft)

SECTION 3 BODY

Group 10 Pilot Valve




WNEC-03-10-016




WNEC-03-10-014


Installation


1. Install all removed adapters to pilot valve (1).
2. Install pilot valve (1) to frame (3) with socket bolts (2) (4 used).

 : 8 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

3. Connect hoses (4, 5, 6, 7, 8, and 9).

 : 19 mm

 : 30 N·m (3 kgf·m, 22 lbf·ft)

SECTION 3 BODY
Group 10 Pilot Valve


(Blank)


SECTION 3 BODY

Group 10 Pilot Valve

8. Apply grease onto top and bottom of push rods (12) (2 used), the sliding surface of lever (4) side surface, and the sliding surface of cam shaft (8). Secure cover (9) in a vise. Install lever (4) and cam shaft (8) to cover (9).

9. Apply LOCTITE #241 onto lock plug (6). Install lock plug (6) to lever (4).

 : 3 mm

 : 7 N·m (0.7 kgf·m, 5.2 lbf·ft)

IMPORTANT: Engage the rubber bushing of the lead wire passage position into the detent casing (20) groove.

10. Check the position before disassembling and install solenoids (42, 43) to detent casing (20).


IMPORTANT: Check the direction to install detent casing (20).

11. Install shims (51) (2 used) and detent casing (20) to push rods (12) (2 used) of the cover (9) assembly.


12. Apply grease onto the mounting surface of spring of spring guides (21) (2 used). Check the position before disassembling and install spring (22) (2 used) and spring guides (21) (2 used) to plate (23).


 **CAUTION: Take care that spring (22) (2 used) do not fly out when installing the cover (9) assembly.**

13. Install the cover (9) assembly and detent casing (20) to plate (23). Temporarily tighten socket bolts (1) (2 used) to the shallower mounting part of cover (9).

 : 5 mm

14. Secure plate (23) in a vise. Tighten socket bolts (1) (2 used) to cover (9) to the specified torque. Spray anti-rust oil to the spring chamber of detent casing (20).

 : 5 mm

 : 9 N·m (0.9 kgf·m, 6.6 lbf·ft)

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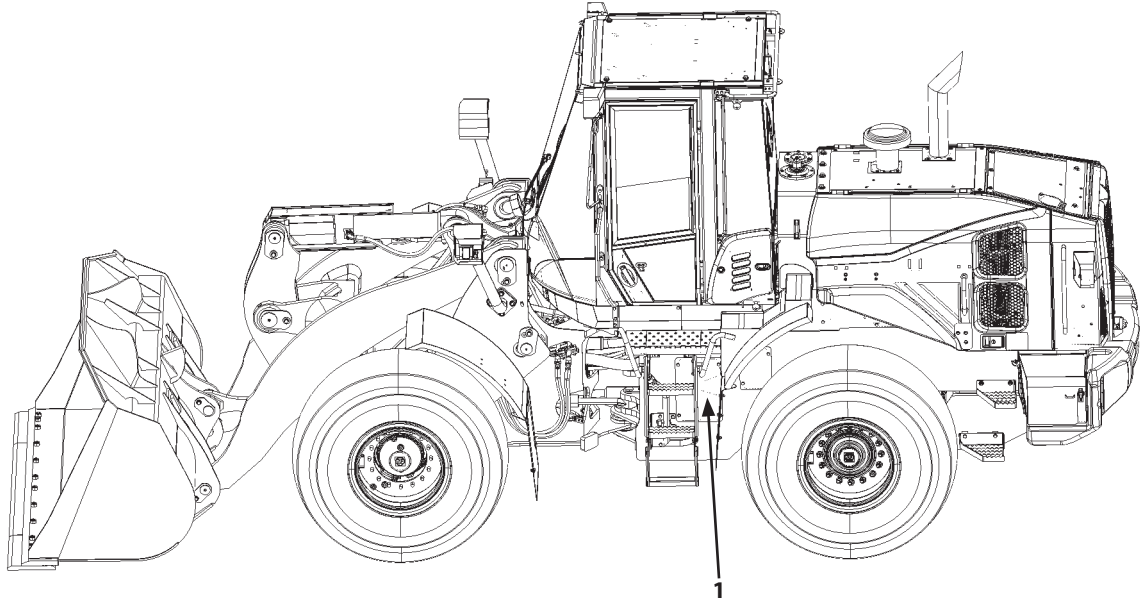


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SECTION 3 BODY

Group 11 Brake Charge Valve



WNDJ-03-04-001

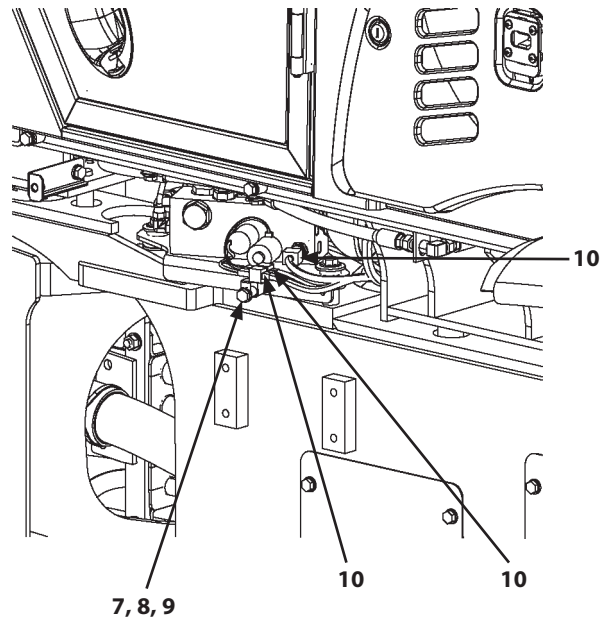
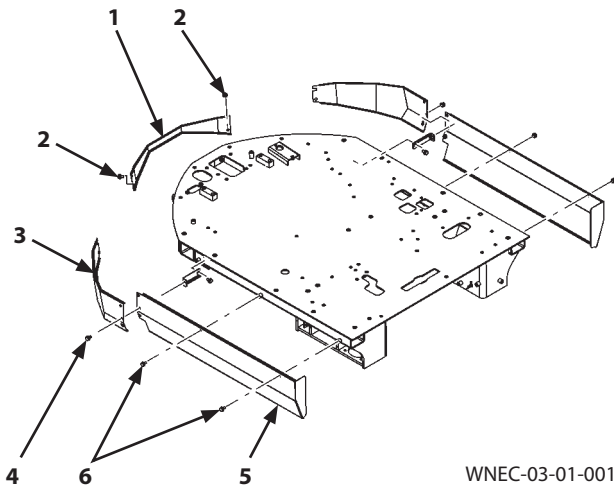
14. Bleed air from the hydraulic system and brake (axle).
(Refer to W1-4-1.)

IMPORTANT: Check the hydraulic oil level. Start the engine and check for any oil leaks.


15. Install cover (1). (Refer to W3-4-2.)

SECTION 3 BODY


Group 12 Manifold Valve



3. Remove bolts, washers (2) (4 used). Remove cover (1).

 : 17 mm


4. Remove bolts, washers (4) (3 used). Remove cover (3).

 : 17 mm

5. Remove bolts, washers (6) (2 used). Remove cover (5).

 : 17 mm

6. Remove bolt, washer (7), brackets (8) (2 used), and tube (9).

 : 17 mm

7. Disconnect connectors (10) (3 used).


SECTION 3 BODY

Group 12 Manifold Valve

Disassembly of Manifold Valve


IMPORTANT: Keep the disassembled parts together by each port in order not to confuse.

1. Remove plug (01) from body (22). Remove O-ring (37) from plug (01).


 : 36 mm

IMPORTANT: The quantity and kind of shims (02, 05) have been determined for each manifold valve. Do not lose shims (02, 05).

2. Remove spring (04), shims (05, 02), and poppet (03) from body (22).
3. Remove plug (09) from body (22). Remove O-ring (34) from plug (09).

 : 6 mm

4. Remove spring (07) and plunger (06) from body (22).
5. Remove socket bolts (28) (2 used) from solenoid (17). Remove solenoid (17) from body (22). Remove O-ring (41) from solenoid (17).


 : 4 mm


IMPORTANT: Replace sleeve (43A) and spool (43B) as an assembly.

6. Remove the sleeve (43A) assembly and spring (20) from body (22). Remove spool (43B) and O-rings (38, 39, 40) from sleeve (43A).

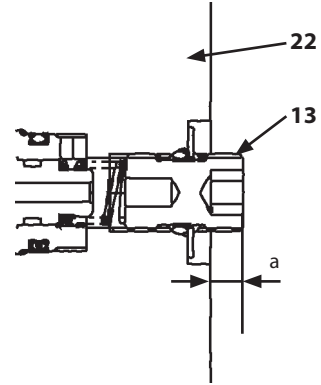
IMPORTANT: Remove nut (30) while securing screw (13) by using a hexagonal wrench in order not to turn them.

7. Remove nut (30) from screw (13).

 : 17 mm

 : 6 mm


8. Measure and record mounting dimension (a) before removing screw (13). Put the matching marks onto body (22) and screw (13).




WNEC-03-12-005

a- Mounting Dimension

9. Remove screw (13) from body (22). Remove O-ring (34) from screw (13).

 : 6 mm

10. Remove socket bolts (28) (2 used) from solenoid (21). Remove solenoid (21) from body (22). Remove O-ring (32) from solenoid (21).

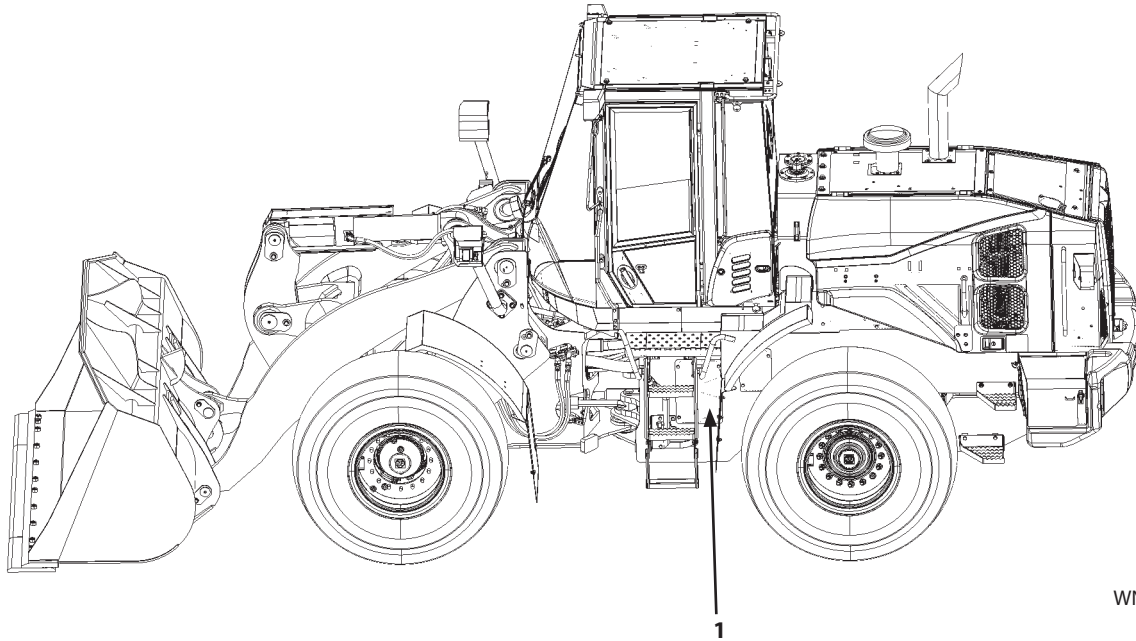
 : 4 mm

IMPORTANT: Replace the sleeve (10) assembly as the manifold valve assembly.

11. Remove the sleeve (10) assembly from body (22).

SECTION 3 BODY

Group 13 Solenoid Valve



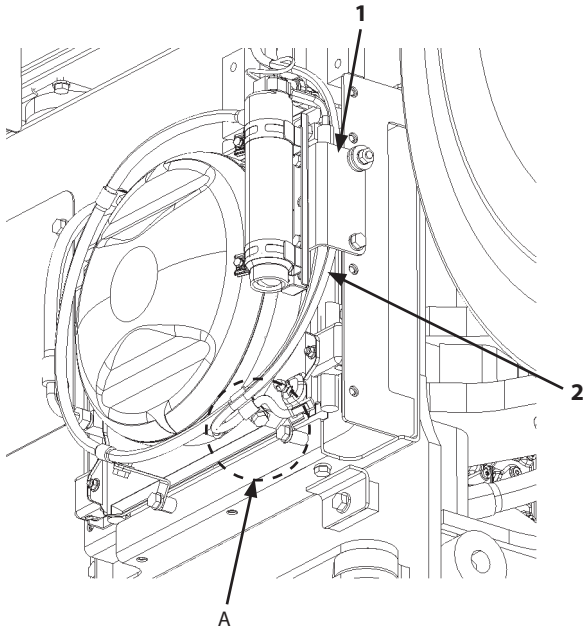
WNDJ-03-04-001

IMPORTANT: Check the hydraulic oil level. Start the engine and check for any oil leaks.

8. Bleed air from the hydraulic system. (Refer to W1-4-1.)
9. Install cover (1). (Refer to W3-4-2.)

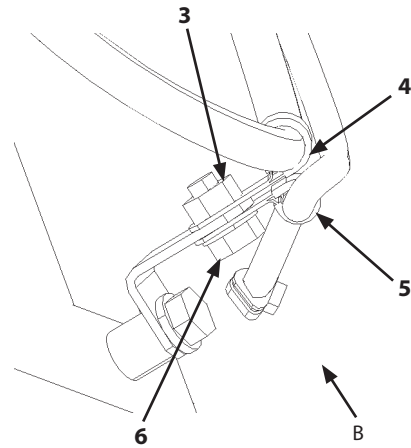
SECTION 3 BODY

Group 14 Priority Valve



WNDJ-03-14-005

Detail A



WNDJ-03-14-009


12. Add compressor oil. (Refer to T5-7 in the separated volume, Technical Manual.)

13. Install wire harness (2) to bracket (1).

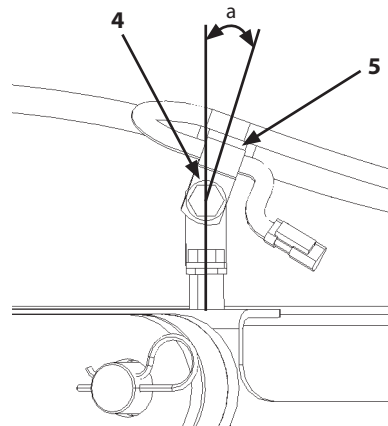
IMPORTANT: Check the angle to install clips (4, 5).

14. Install clips (4, 5) with bolt, washer (6) and nut (3).

 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)

View B

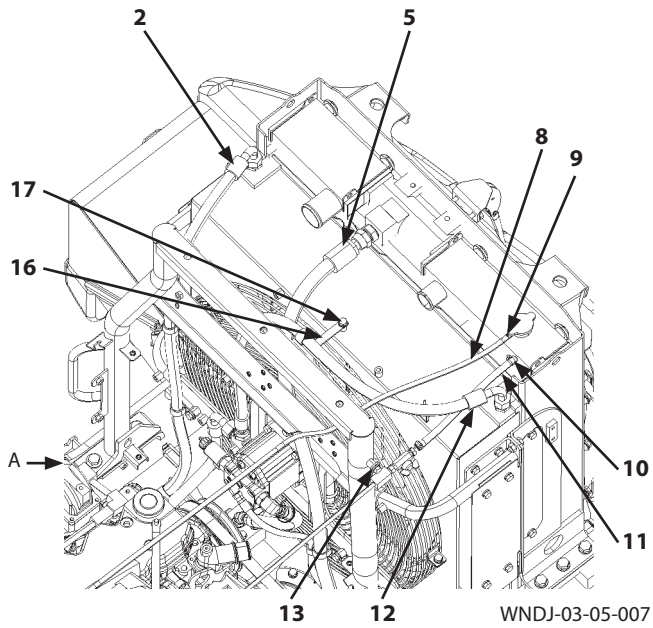


a- 20°

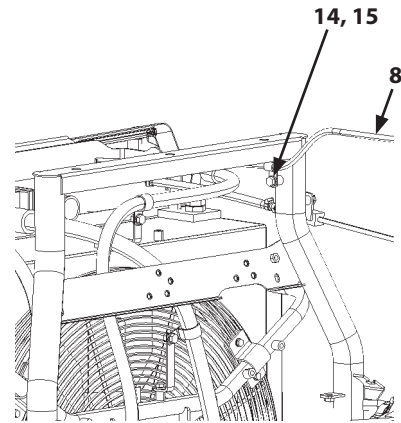
WNDJ-03-14-010

SECTION 3 BODY

Group 15 Cooling Fan System




View A




WNDJ-03-15-002


14. Remove bolt, washer (17) and bracket (16).

 : 17 mm


15. Disconnect hose (12).

 : 36 mm


16. Disconnect hose (2).

 : 36 mm


17. Disconnect hose (5).

 : 41 mm

18. Remove bolt, washer (14). Remove clip (15).

 : 17 mm

19. Remove bolt, washer (13).

 : 17 mm

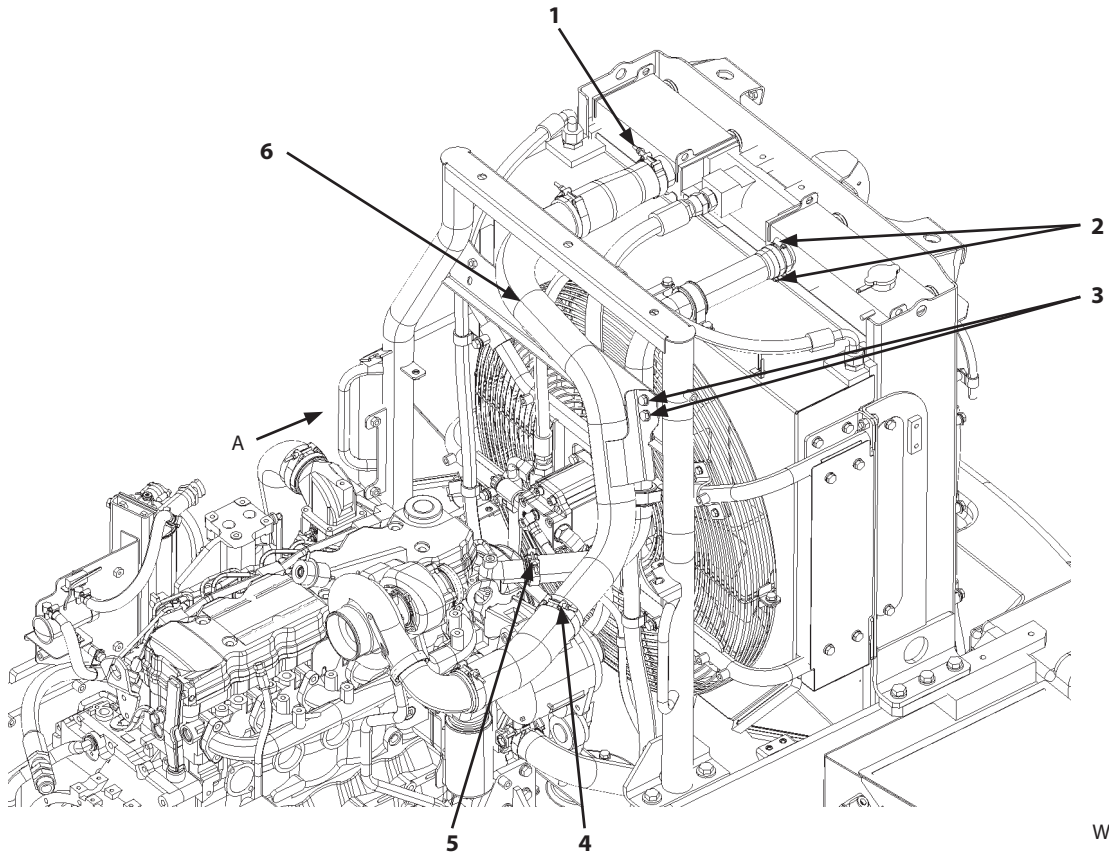
20. Remove clip (9). Disconnect hose (8).

21. Remove clamp (10). Disconnect hose (11).

 : 7 mm

SECTION 3 BODY


Group 15 Cooling Fan System




WNDJ-03-05-005


31. Tighten clamps (2) (2 used).

 : 7 mm

 : 6 ± 0.7 N·m (0.6 ± 0.07 kgf·m, 4.4 ± 0.5 lbf·ft)


32. Tighten clamp (5).


 : 11 mm

 : 9.8 ± 1 N·m (0.98 ± 0.1 kgf·m, 7.2 ± 0.7 lbf·ft)


33. Temporarily install the both ends of the pipe (6) assembly with clamps (1, 4).

34. Secure pipe (6) with bolts, washers (3) (4 used).

 : 17 mm

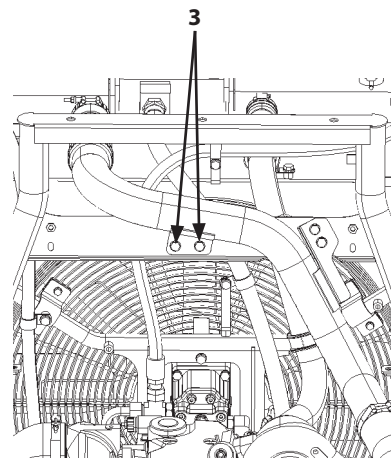
 : 50 N·m (5 kgf·m, 37 lbf·ft)

35. Tighten clamp (1).

 : 11 mm


 : 9.8 N·m (0.98 kgf·m, 7.2 lbf·ft)


View A



WNDJ-03-05-006

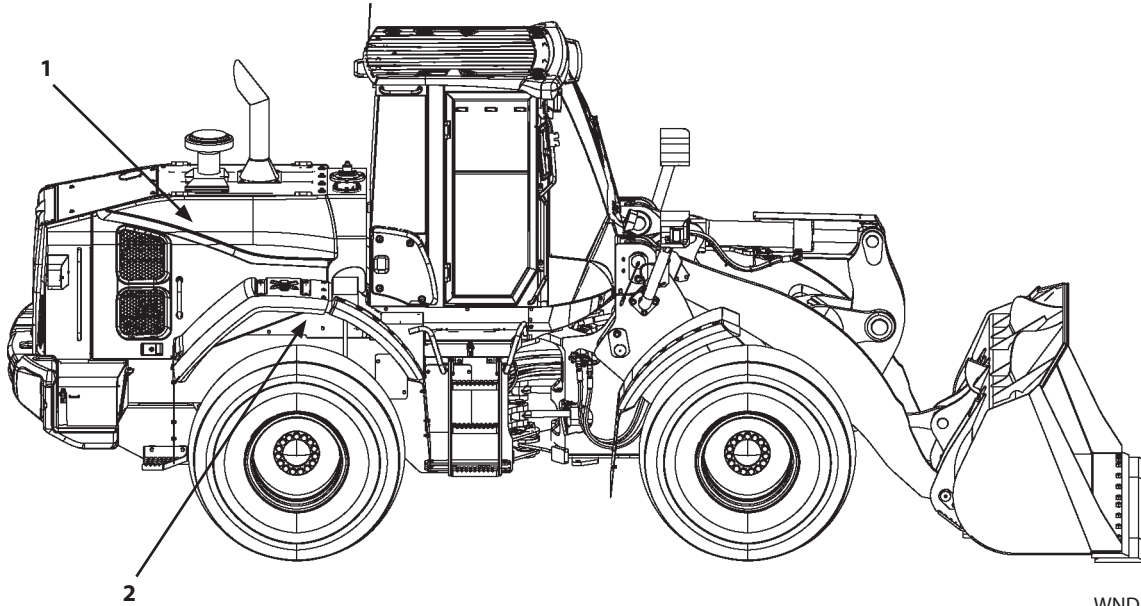
36. Tighten clamp (4).

 : 11 mm

 : 12 N·m (1.2 kgf·m, 8.9 lbf·ft)

SECTION 3 BODY

Group 15 Cooling Fan System



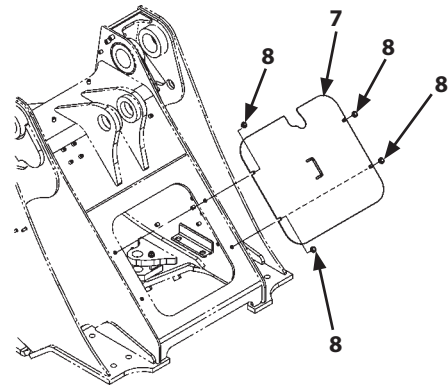
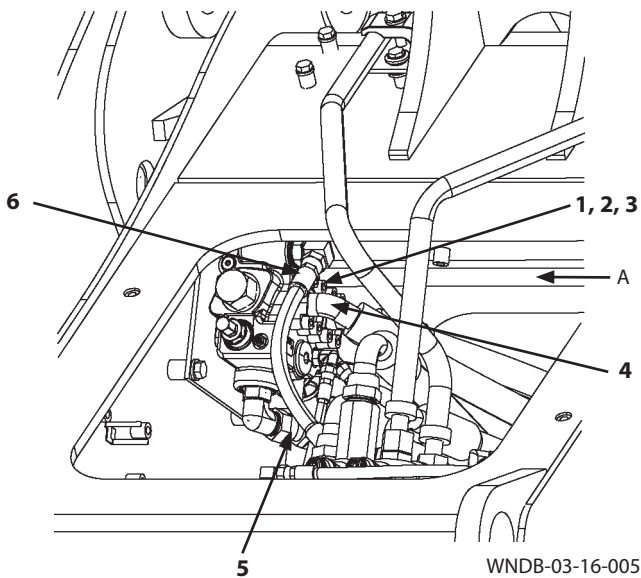
WNDB-03-14-001

IMPORTANT: Check the hydraulic oil level. Start the engine and check for any oil leaks.

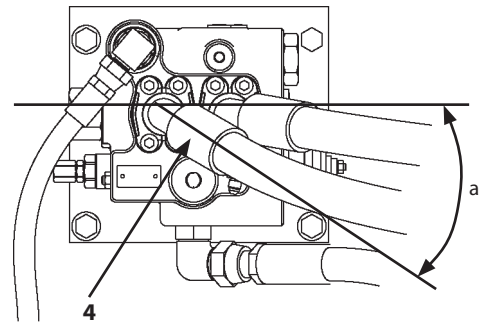
8. Install cover (lower) (2). (Refer to W3-4-2.)
9. Close side cover (front) (1).

SECTION 3 BODY

Group 16 Ride Control Device



View A



IMPORTANT: Check the angle to install hose (4).

7. Install O-ring (3). Install hose (4) with flanges (2) (2 used) and socket bolts (1) (4 used).

: 8 mm

: 50 N·m (5 kgf·m, 37 lbf·ft)

8. Connect hose (5).

: 36 mm

: 180 N·m (18 kgf·m, 133 lbf·ft)

9. Connect hose (6).

: 27 mm

: 80 N·m (8 kgf·m, 59 lbf·ft)

10. Lower the lift arm. Set the machine position for inspection and maintenance. (Refer to W1-6-1.)
11. Bleed air from the hydraulic system. (Refer to W1-4-1.)

IMPORTANT: Check the hydraulic oil level. Start the engine and check for any oil leaks.

12. Set the machine position (lift arm raise) for inspection and maintenance. (Refer to W1-6-1.)

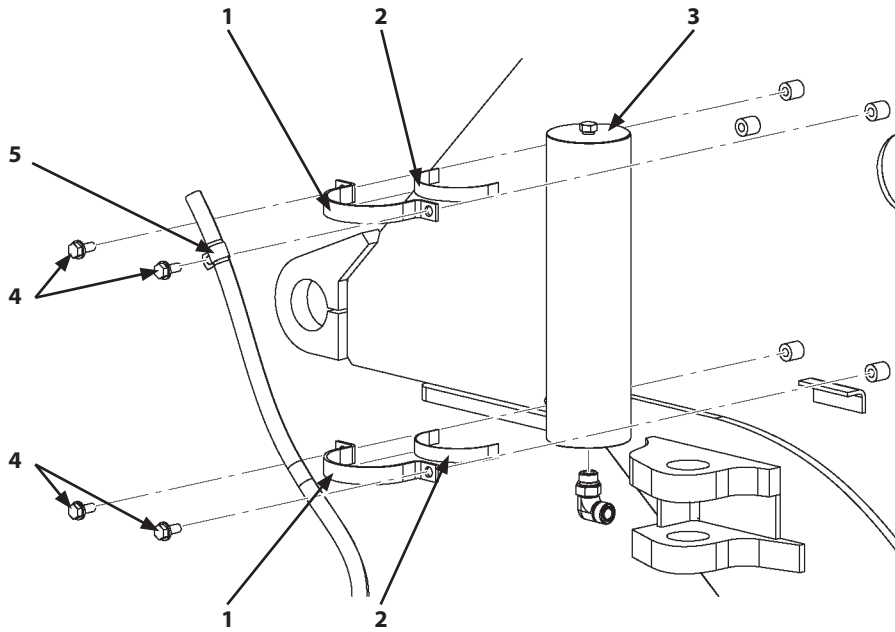
13. Install cover (7) with bolts, washers (8) (4 used).

: 17 mm

: 50 N·m (5 kgf·m, 37 lbf·ft)


SECTION 3 BODY

Group 16 Ride Control Device



WNDB-03-16-010

4. Remove bolts, washers (4) (4 used), clip (5), clamps (1) (2 used), and rubbers stoppers (2) (2 used). Remove ride control accumulator (3).

 : 19 mm

5. Remove the adapters with ride control accumulator (3) attached if necessary.

SECTION 4 TRAVEL SYSTEM


Group 1 Tire

Installation

CAUTION: Tire (5) weight: 290 kg (640 lb)


IMPORTANT: Check the direction to install tire (5).
(Refer to Operator's Manual.)

1. Hoist and install tire (5) to rear axle (4).
2. Temporarily tighten tire (5) with washers (3) (16 used) and wheel nuts (2) (16 used).

 : 32 mm

CAUTION: Machine weight: 14470 kg (32000 lb)

3. Remove wooden blocks (b) and stand (a) from the machine. Lower the machine and place tire (5) onto the ground.
4. Tighten wheel nuts (2) (16 used) according to the order as illustrated.

 : 32 mm

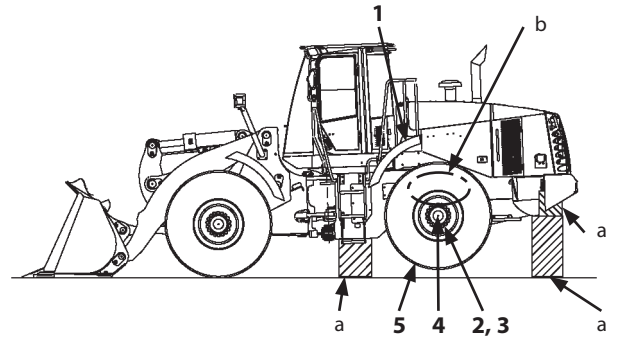
 : 600 N·m (60 kgf·m, 440 lbf·ft)

IMPORTANT: Check air pressure of the tires. Check for abnormal wear and damage of the tires.

 **NOTE:** Air Pressure of Tires (5):

Standard Tire Size	Standard Air Pressure
20.5-25-12PR	325 kPa (3.25 kgf/cm ² , 47.1 PSI)

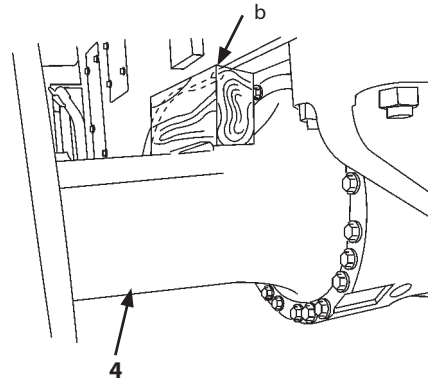
5. Install rear fender (1). (Refer to W3-4-2.)



W4GB-03-03-107

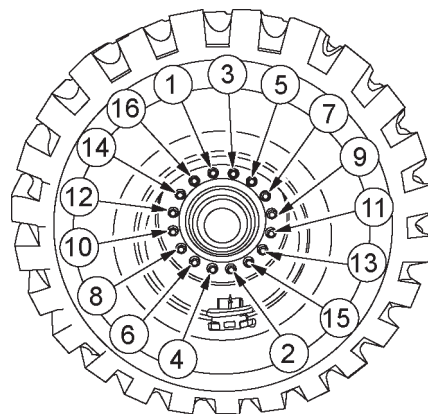
a- Stand

Detail B



W4FC-03-01-005

b- Wooden Block

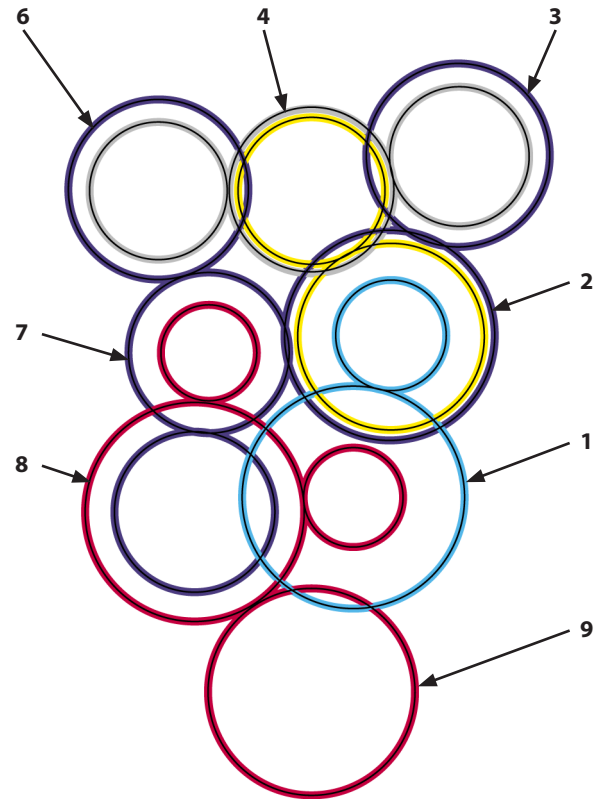
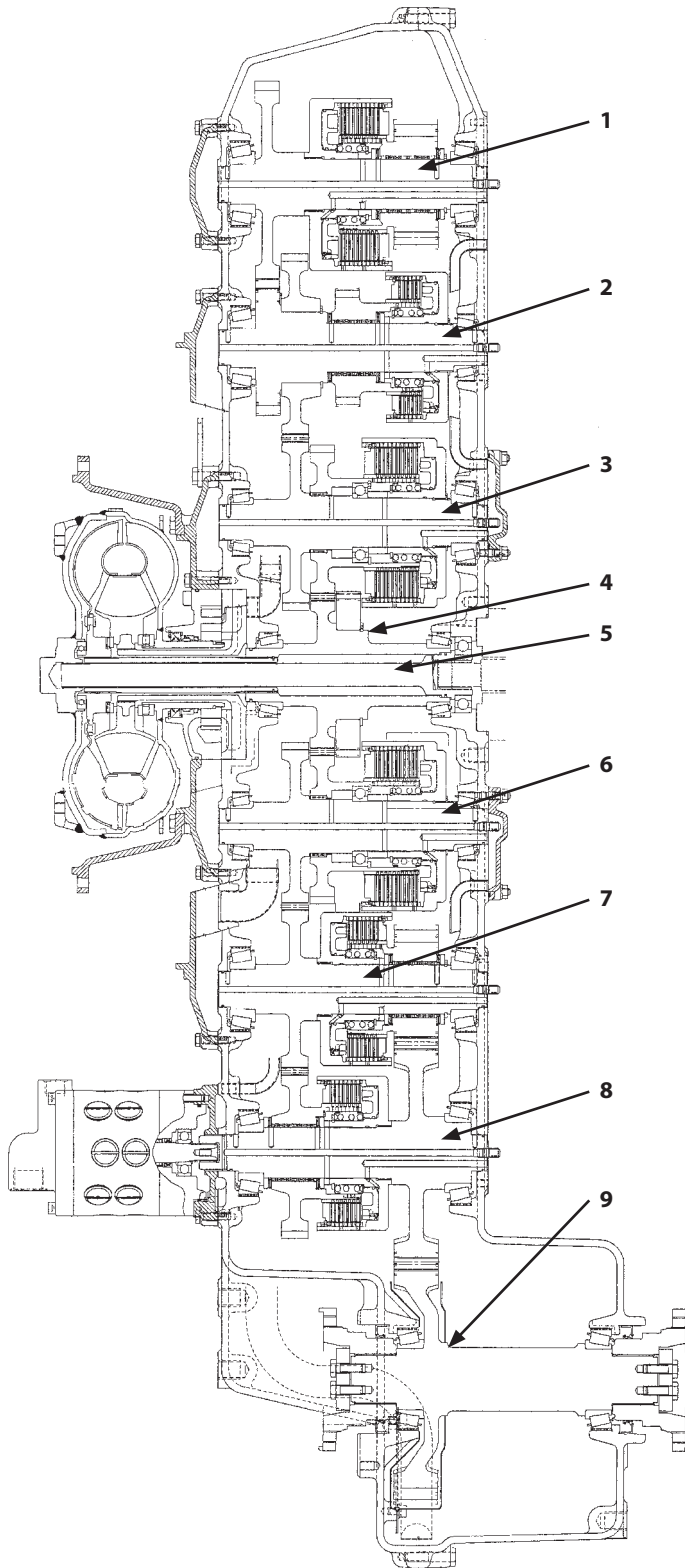


MNEJ-07-051

SECTION 4 TRAVEL SYSTEM

Group 2 Drive Unit

Detail of Transmission Assembly (2)



T106954

T4GB-03-09-004

- | | | | |
|-----------------------------------|-------------------------|-----------------------------------|----------------------------|
| 1- First Speed Clutch (K1) | 3- Reverse Clutch (KR) | 6- Slow-Speed Forward Clutch (KV) | 8- Third Speed Clutch (K3) |
| 2- Fast-Speed Forward Clutch (K4) | 4- Input Shaft (AN) | 7- Second Speed Clutch (K2) | 9- Output Shaft (AB) |
| | 5- Hydraulic Pump Drive | | |


SECTION 4 TRAVEL SYSTEM
Group 2 Drive Unit

(Blank)

SECTION 4 TRAVEL SYSTEM

Group 2 Drive Unit

17. Install plate (5) with socket bolts (4) (2 used).

 : 8 mm

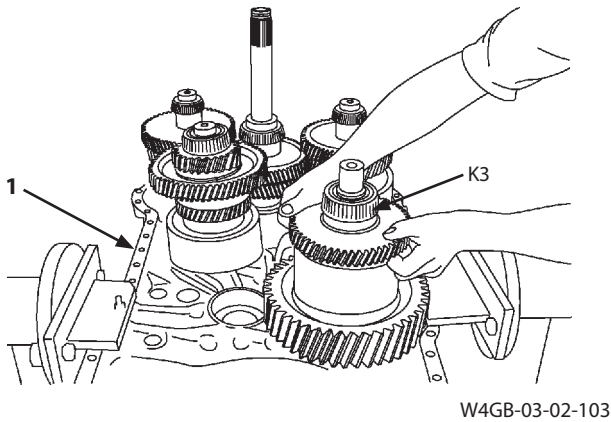
 : 46 N·m (4.6 kgf·m, 34 lbf·ft)

18. Remove special tools (a) (ZF No.: 5870 204 011) (2 used).

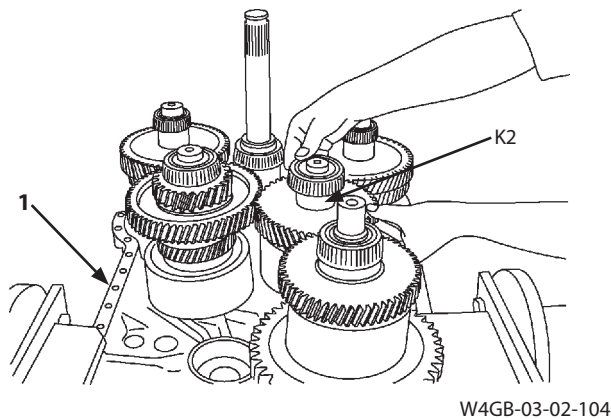
SECTION 4 TRAVEL SYSTEM

Group 2 Drive Unit

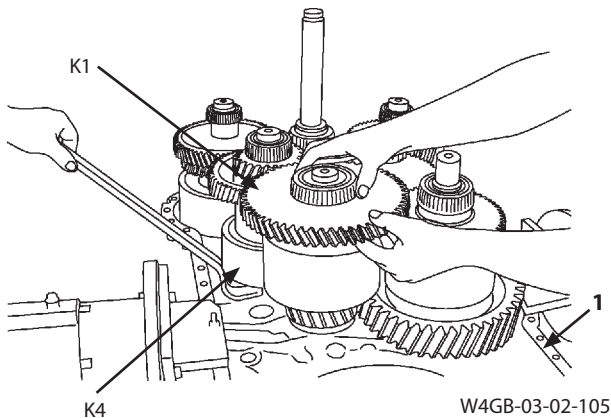
10. Install third speed clutch (K3) to transmission case cover (1).



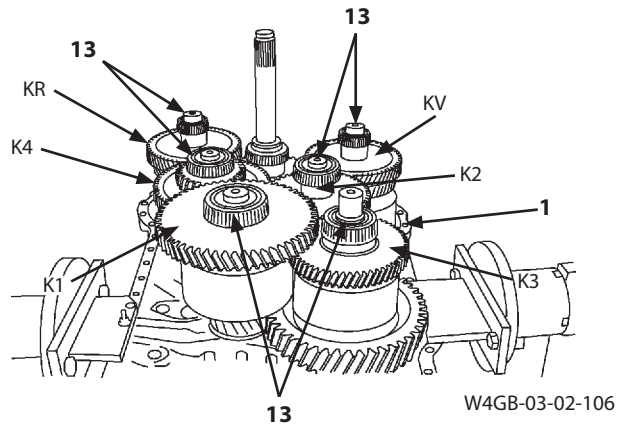
11. Install second speed clutch (K2) to transmission case cover (1).




12. Raise fast-speed forward clutch (K4) a little by using pry bars and install first speed clutch (K1) to transmission case cover (1).

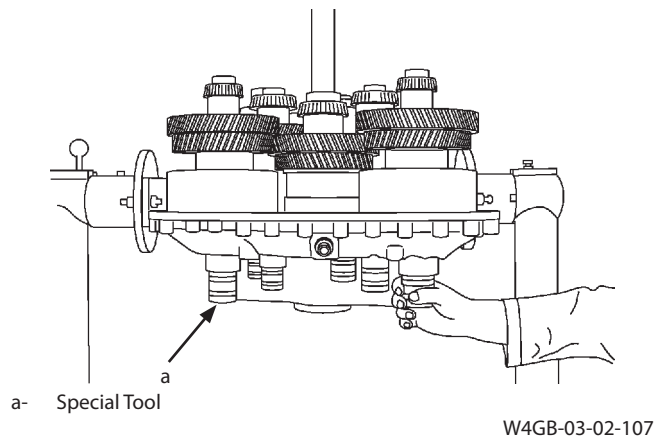


13. Check that each gear engages securely and that each clutch is installed in the correct position. Install piston rings (13) (6 used) to each clutch shaft. Apply grease onto piston rings (13) (6 used).



14. Install special tools (a) (ZF No.: 5870 260 010) to all clutch shafts.

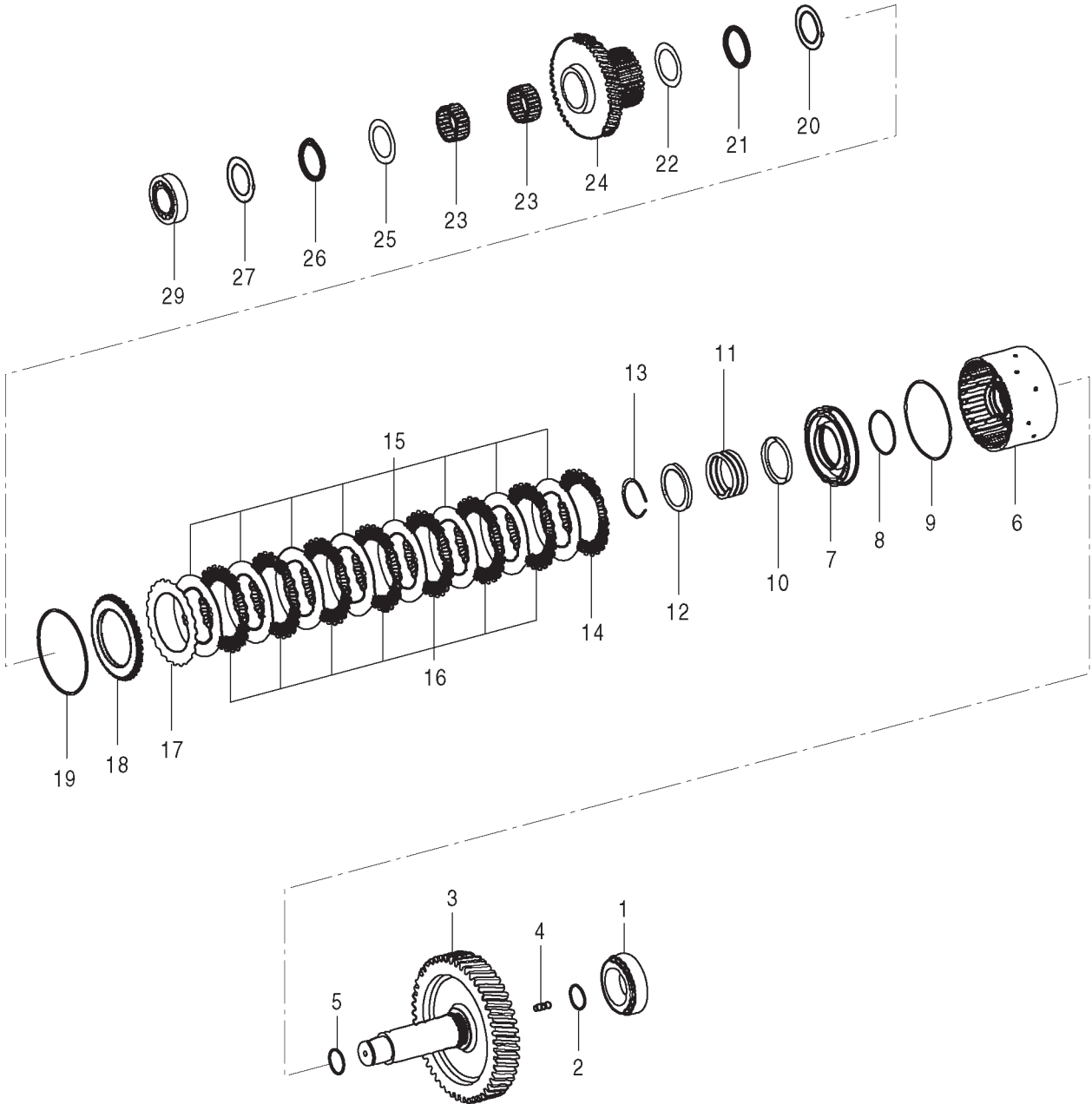
 **NOTE:** The flat washer and hexagon nut (M10) can be used in place of special tool (a) (ZF No.: 5870 260 010) as illustrated.



SECTION 4 TRAVEL SYSTEM

Group 2 Drive Unit

Third Speed Clutch (K3)



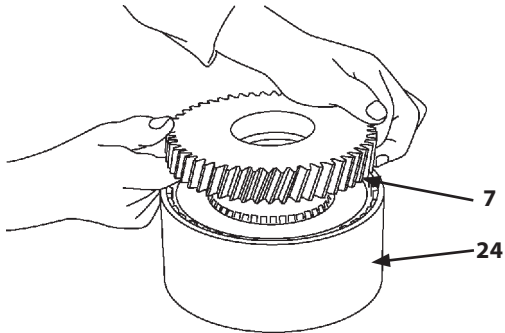
WNDB-04-02-009

- | | | | |
|-------------------------|-----------------|--------------------------------|--------------------------|
| 1- Taper Roller Bearing | 8- O-Ring | 15- Inner Clutch Disc (8 Used) | 22- Axial Washer |
| 2- Piston Ring | 9- O-Ring | 16- Outer Clutch Disc (7 Used) | 23- Needle Cage (2 Used) |
| 3- Shaft | 10- Washer | 17- Disc | 24- Idler |
| 4- Stud | 11- Coil Spring | 18- End Shim | 25- Axial Washer |
| 5- Piston Ring | 12- Guide Ring | 19- Snap Ring | 26- Axial Needle Cage |
| 6- Disc Carrier | 13- Snap Ring | 20- Running Disc | 27- Running Disc |
| 7- Piston | 14- Disc | 21- Axial Needle Cage | 29- Taper Roller Bearing |

SECTION 4 TRAVEL SYSTEM

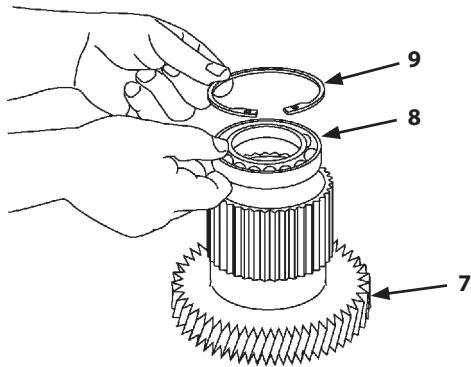
Group 2 Drive Unit

9. After adjustment of the disc clearance, remove all discs. Apply transmission oil onto each disc. Install them again.
10. Engage idler (7) with inner discs (15) (10 used) and install it to disc carrier (24) by turning it right and left. This work is done in order to arrange inner clutch disc (15) and outer clutch disc (14). After this work, remove idler (7).



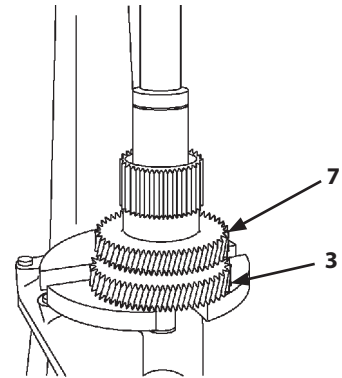
W4GB-03-02-148

11. Install the inner ring of taper roller bearing (1) to shaft (3) by using a press.
12. Install needle cage (6) to shaft (3).
13. Install ball bearing (8) to idler (7). Install snap ring (9) to idler (7).



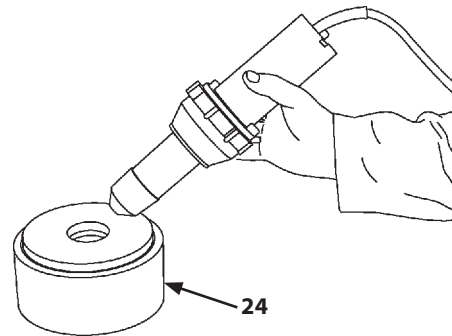
W4GB-03-02-151

14. Install idler (7) to shaft (3) by using a press.



W4GB-03-02-152

15. Heat the center of disc carrier (24) to about +120 °C (248 °F).



W4GB-03-02-153

SECTION 4 TRAVEL SYSTEM
Group 2 Drive Unit


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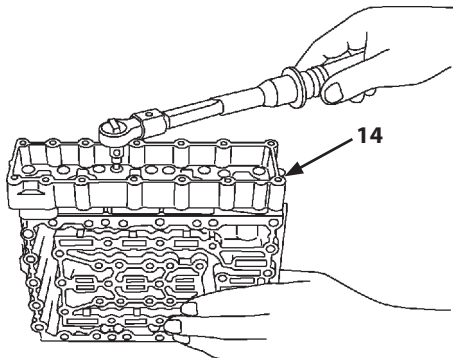
SECTION 4 TRAVEL SYSTEM

Group 2 Drive Unit

5. Install socket bolts (15) (16 used) to housing cover (14) by using a star key wrench. Remove special tools (c) (ZF No.: 5870 204 036) (2 used). Install socket bolts (15) (2 used) to the positions for removed special tools (c) (ZF No.: 5870 204 036) (2 used) by using a star key wrench.

 : T27 (Star Key Wrench)


 : 5.5 N·m (0.55 kgf·m, 4.1 lbf·ft)

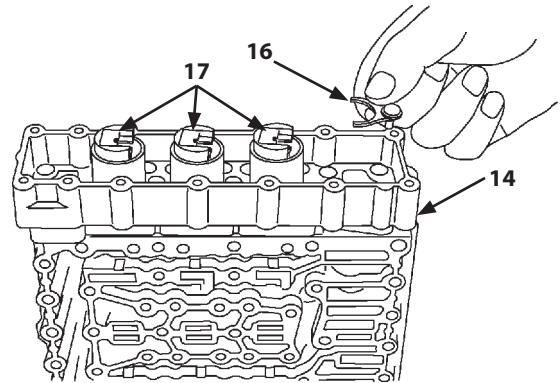


W4GB-03-02-025

7. Install pressure regulators (17) (3 used) to housing cover (14) in the direction as illustrated. Turn the claws of fixing plates (16) (3 used) down. Install fixing plates (16) (3 used) with socket bolts (23) (3 used) by using a star key wrench..

 : T27 (Star Key Wrench)

 : 5.5 N·m (0.55 kgf·m, 4.1 lbf·ft)



W4GB-03-02-026

6. Push pistons (12) (3 used). Remove pins (dia. 5 mm) (3 used) from housing (40).


SECTION 4 TRAVEL SYSTEM

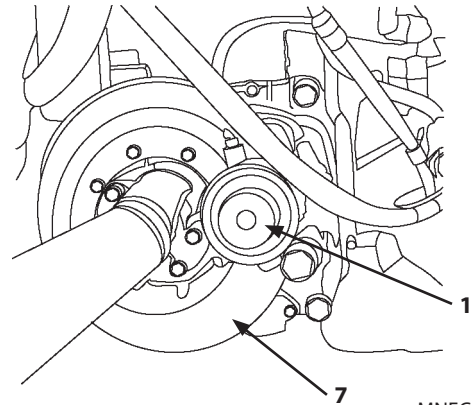
Group 2 Drive Unit

The manual release of the parking brake

CAUTION:


- The machine is no brake function after releasing the parking brake manually.
- Set the wheel stopper in order not to move the machine.
- Adjust the parking brake before reusing the machine.

 NOTE: Even if the parking brake is released, the service brake can be operated.




MNEC-06-003

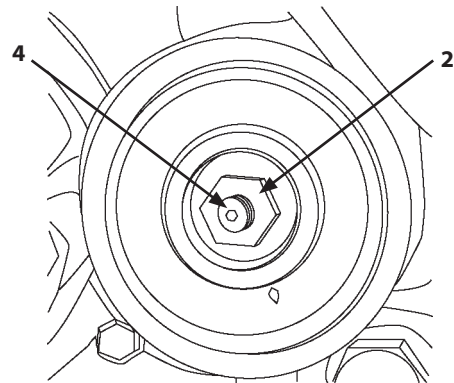
1. Remove cap (1).
2. Remove lock nut (2) by using a tool (3).

 : 24 mm

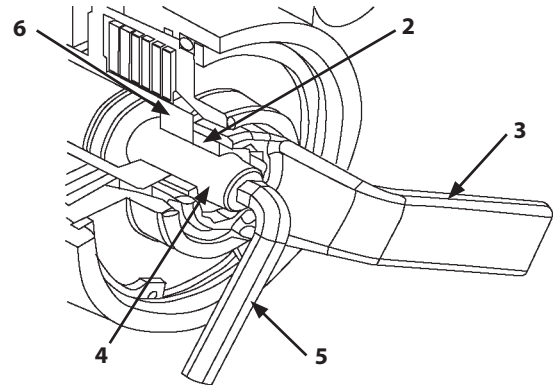
3. Turn set bolt (4) counterclockwise by using a hexagonal wrench (5). Push brake disc (7) until the brake disc (7) is completely released. At this time, the torque is 70 N·m (7 kgf·m, 52 lbf·ft) or more which make hexagonal wrench (5) rotate.

 : 8 mm

4. Install and lightly tighten lock nut (2) until it comes in contact with piston (6).
5. Install cap (1) in order to protect from dust.



MNEC-06-004

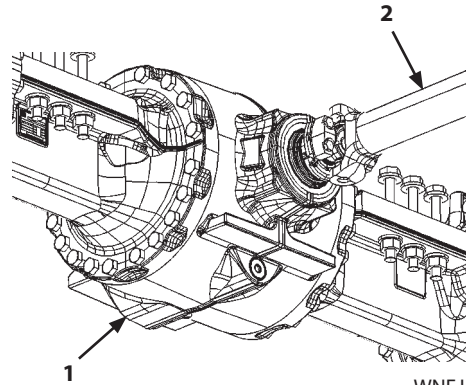


MNEC-06-005

SECTION 4 TRAVEL SYSTEM

Group 3 Axle

7. Install propeller shaft (2) to front axle (1). (Refer to W4-4-1.)



WNEJ-04-03-115

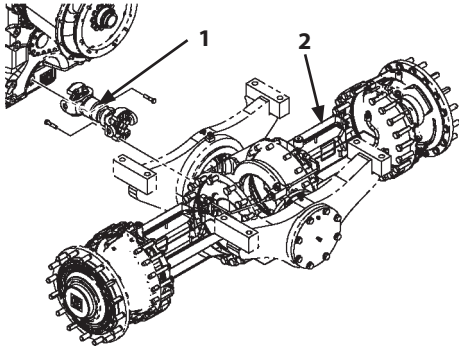
8. Install the front tires to front axle (1). (Refer to W4-1-1.)

IMPORTANT: Check the hydraulic oil level. Start the engine and check for any oil leaks.

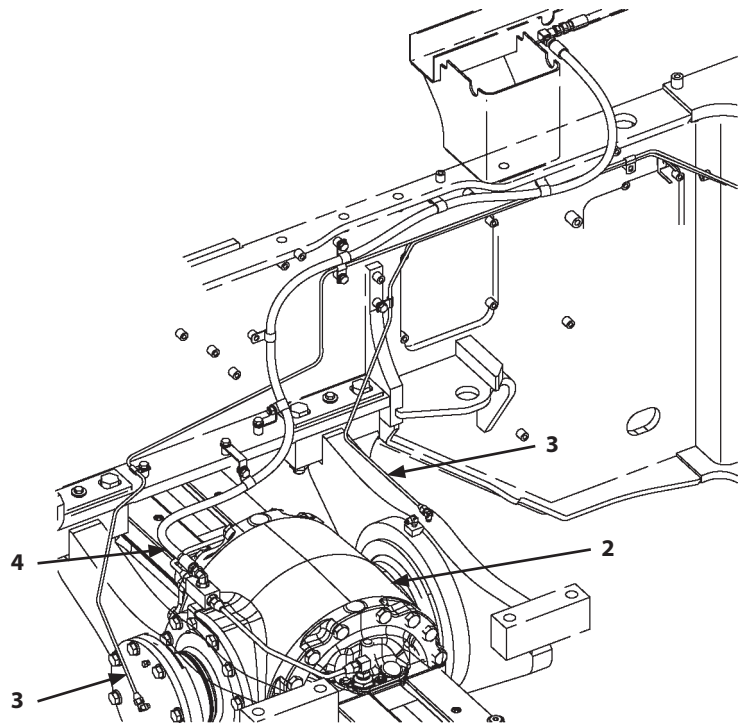
9. Bleed air from the brake (axle). (Refer to W1-4-1.)

SECTION 4 TRAVEL SYSTEM

Group 3 Axle





WNEJ-04-03-106




WNEJ-04-03-107


18. Connect the rear axle (2) side of pipes (3) (2 used).
Apply grease.

 : 17 mm

 : 25 N·m (2.5 kgf·m, 18.5 lbf·ft)

19. Connect hose (4).

 : 22 mm

 : 40 N·m (4 kgf·m, 29.5 lbf·ft)

20. Install propeller shaft (1). (Refer to W4-4-1.)

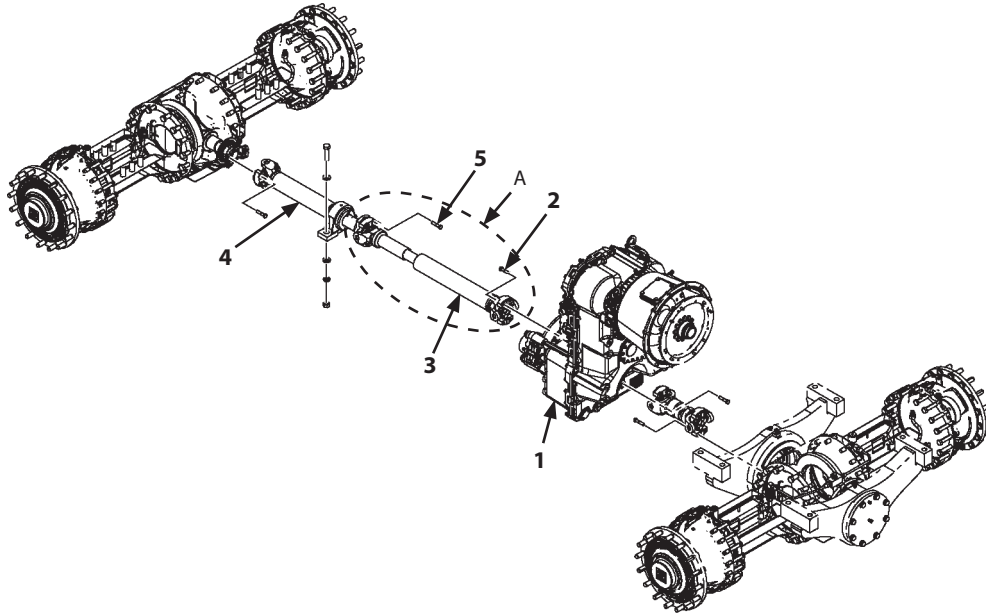
21. Install the rear tires to rear axle (2). (Refer to W4-1-2.)

IMPORTANT: Check the hydraulic oil level. Start the engine and check for any oil leaks.

22. Bleed air from the brake (axle). (Refer to W1-4-1.)

SECTION 4 TRAVEL SYSTEM

Group 4 Propeller Shaft




WNEJ-04-04-101


CAUTION: The propeller shaft (3) assembly weight: 26 kg (58 lb)

7. Set a stand and a jack under propeller shaft (3). Hold propeller shaft (3).

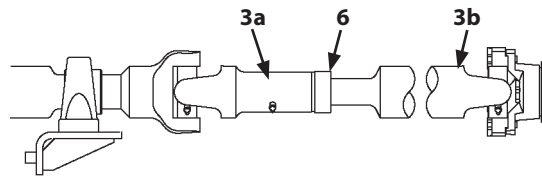
IMPORTANT: Propeller shaft (3) consists of two parts. If installing propeller shafts (3a, 3b) individually, spline seal (6) is damaged. Propeller shaft (3) should be installed as an assembly.

8. Apply LOCTITE #263 or equivalent to bolts (5) (4 used). Fit the matching marks made when removing and install propeller shaft (3) to propeller shaft (4) with bolts (5) (4 used).

 : 19 mm

 : 145 N·m (14.5 kgf·m, 107 lbf·ft)


Detail A



WNDJ-04-04-002

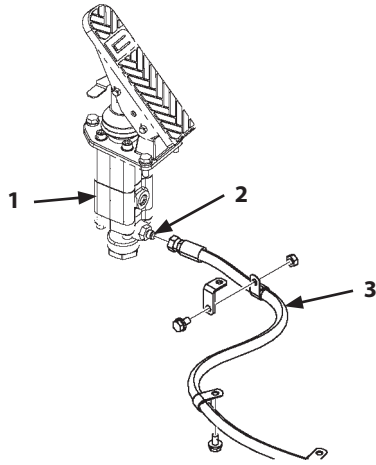
9. Apply LOCTITE #263 or equivalent to bolts (2) (4 used). Install the transmission (1) side of propeller shaft (3) with bolts (2) (4 used).

 : 3/4 in

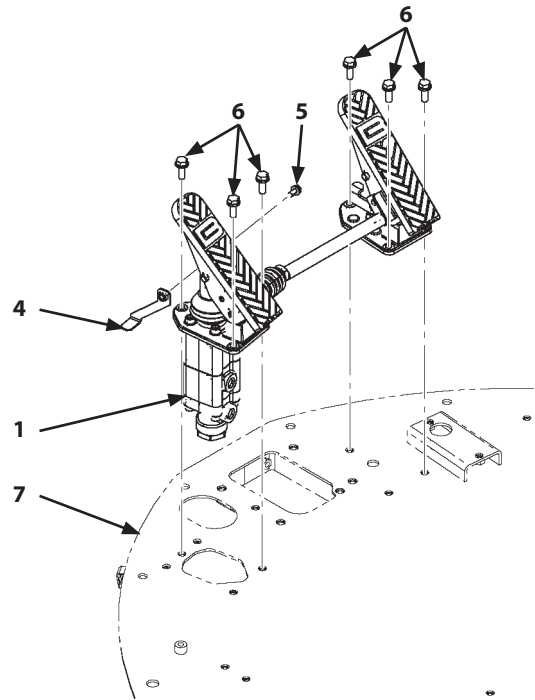
 : 145 N·m (14.5 kgf·m, 107 lbf·ft)

SECTION 4 TRAVEL SYSTEM






Group 5 Brake Valve

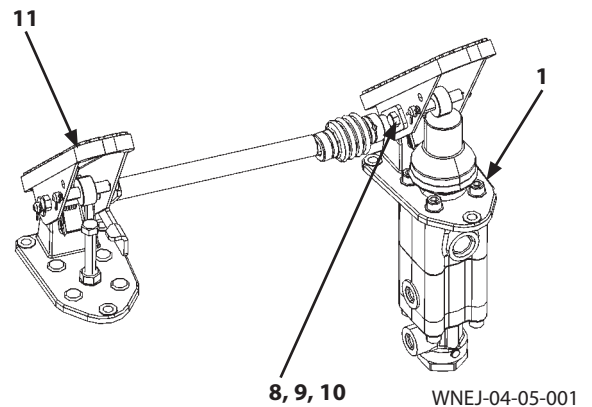


WNEJ-04-05-102



WNEJ-04-05-107

9. Disconnect hose (3) from brake valve (1).
 : 22 mm
10. Remove adapter (2) from brake valve (1).
 : 22 mm
11. Remove bolt, washer (5) from brake valve (1).
Remove bracket (4) from brake valve (1).
 : 13 mm
12. Remove bolts, washers (6) (6 used) from brake valve (1). Remove the brake valve (1) assembly from frame (7).
 : 17 mm
13. Remove bolt (8), washer (9), and nut (10). Remove the brake pedal (11) assembly from brake valve (1).
 : 17 mm



WNEJ-04-05-001

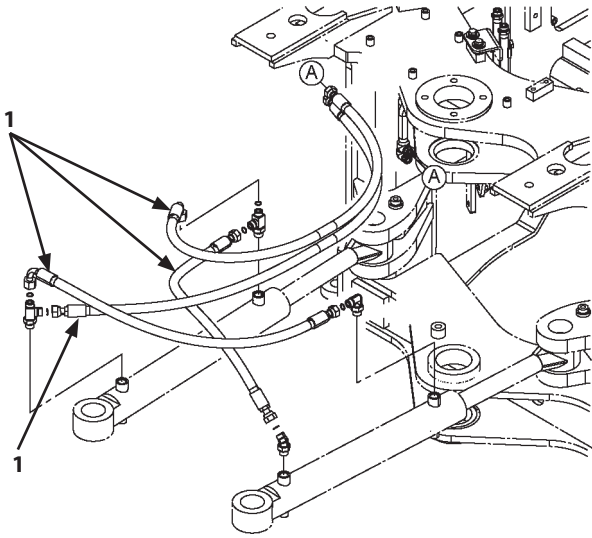
SECTION 4 TRAVEL SYSTEM

Group 5 Brake Valve

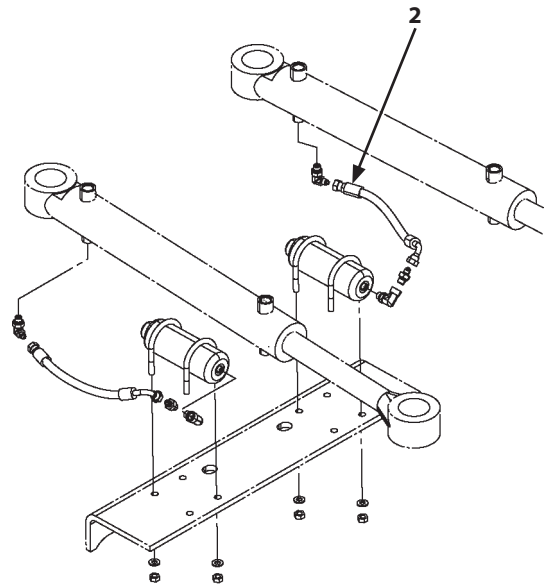
1- Pedal Cover	12- Flange	23- Spool (2 Used)	34- Boot
2- Brake Pedal	13- O-Ring (2 Used)	24- Spring	35- Stopper
3- Pin (2 Used)	14- Piston	25- Plunger (2 Used)	36- Seat
4- Pin (2 Used)	15- Spring Seat	26- Spring Seat (2 Used)	37- Pin (2 Used)
5- Collar (2 Used)	16- Spring	27- Retaining Ring (2 Used)	38- Nut
6- Bushing	17- Spring Seat	28- Spring (2 Used)	39- Socket Bolt
7- Roller	18- Spring	29- Orifice	
8- Bushing (2 Used)	19- Spring	30- Cylinder	
9- Bracket	20- Holder	31- O-Ring	
10- Socket Bolt (4 Used)	21- Rod	32- Plug	
11- Oil Seal	22- Cylinder	33- Socket Bolt (4 Used)	
a- T-Flange Assembly	b- P-Cylinder Assembly	c- S-Cylinder Assembly	

SECTION 4 TRAVEL SYSTEM

Group 6 Steering Device




WNDB-04-06-02




WNDB-04-06-022

Removal of Steering Cylinder (Right)

16. Disconnect hoses (1) (4 used).

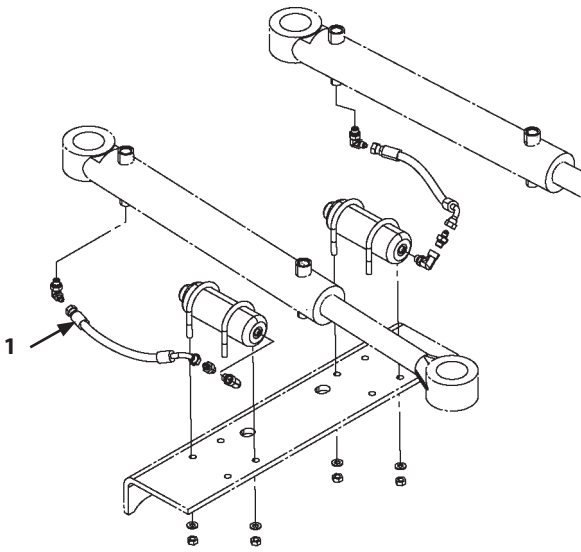
 : 27 mm

17. Disconnect hose (2).

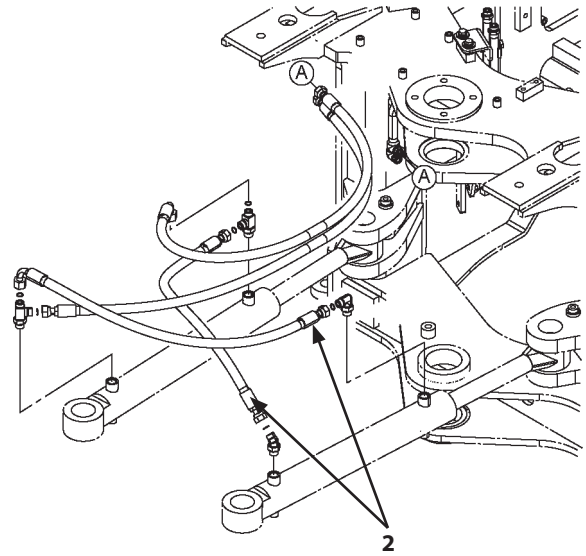
 : 19 mm

SECTION 4 TRAVEL SYSTEM

Group 6 Steering Device





WNDB-04-06-022




WNDB-04-06-021


29. Connect hose (1).

 : 19 mm

 : 30 N·m (3 kgf·m, 22 lbf·ft)


30. Connect hoses (2) (2 used).


 : 27 mm

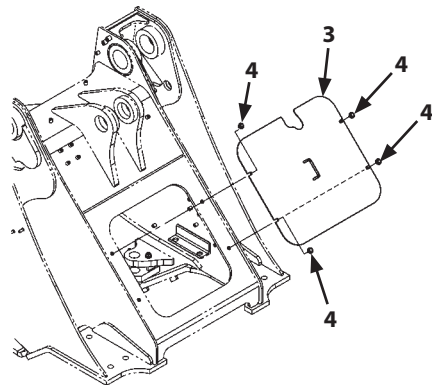
 : 95 N·m (9.5 kgf·m, 70 lbf·ft)

IMPORTANT: Check the hydraulic oil level. Start the engine. Operate the steering cylinder to the stroke end several times and check for any oil leaks.

31. Set the machine position (lift arm raise) for inspection and maintenance. (Refer to W1-6-1.)
32. Install cover (3) with bolts, washers (4) (4 used).

 : 17 mm

 : 50 N·m (5 kgf·m, 37 lbf·ft)



WNEC-04-08-003

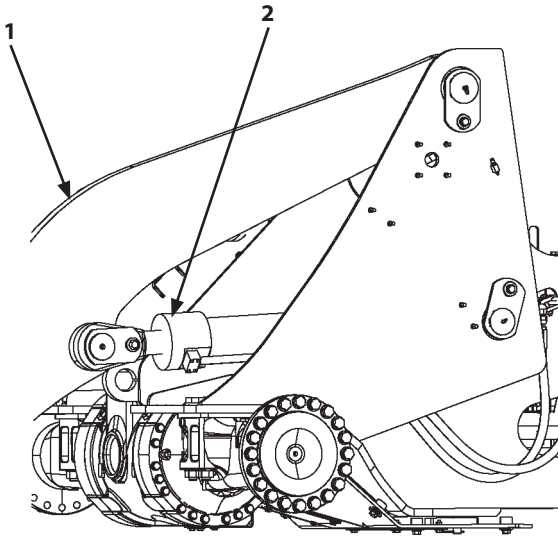
SECTION 4 TRAVEL SYSTEM
Group 6 Steering Device

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SECTION 5 FRONT ATTACHMENT

Group 1 Front Attachment

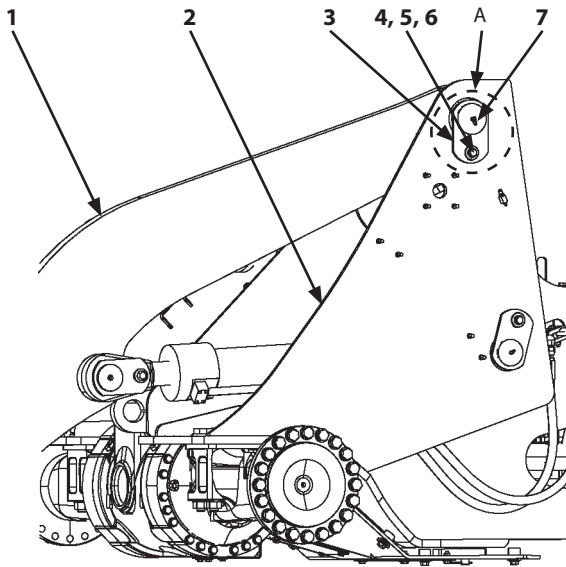


WNDB-05-01-008

12. Start the engine. Raise lift arm (1).
13. Stop the engine. Remove the stand from the end of lift arm (1) and the wooden blocks under lift arm cylinders (2) in right and left sides for the removal. Set the control lever lock switch to the lock position.

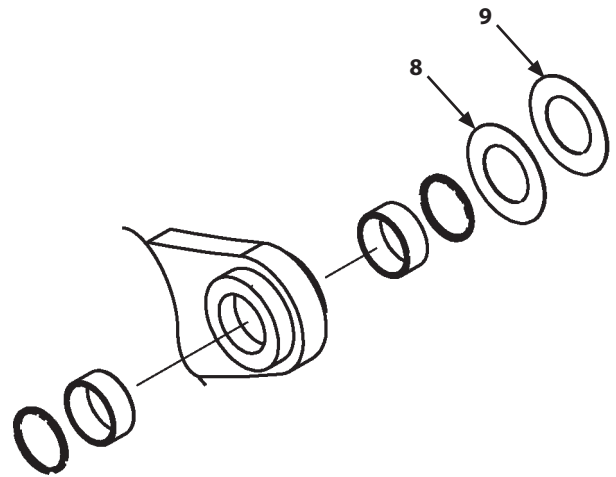
SECTION 5 FRONT ATTACHMENT

Group 1 Front Attachment




WNDB-05-01-008

Detail A




WNDJ-05-01-006

29. Remove grease fitting (7).

 : 10 mm

CAUTION: Metal fragments may fly off when a hammer is used. Wear necessary protection, such as goggles, hard hat, etc. in order to prevent personal injury.

30. Remove bolt (4) and washers (5, 6). Remove pin (3) from front frame (2) by using a round bar and a hammer.

 : 24 mm

31. Remove spacers (8, 9).

IMPORTANT: Move the machine back slowly. At this time, do not allow the front attachment assembly to come in contact with the front frame mounting part.

32. Start the engine. Move the machine back. Remove the front attachment assembly from front frame (2). Stop the engine.
33. Place the front attachment assembly onto wooden blocks.

SECTION 5 FRONT ATTACHMENT
Group 1 Front Attachment

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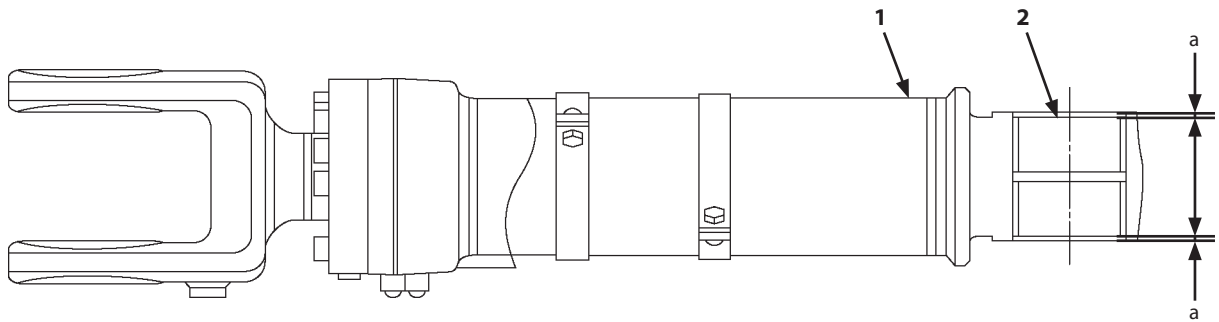
SECTION 5 FRONT ATTACHMENT
Group 1 Front Attachment

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SECTION 5 FRONT ATTACHMENT

Group 2 Cylinder

Position to Install (Lift Arm Cylinder)



WNEC-05-01-030

- 1- Lift Arm Cylinder
 - 2- Bushing
- a- 6.5 mm (0.26 in)

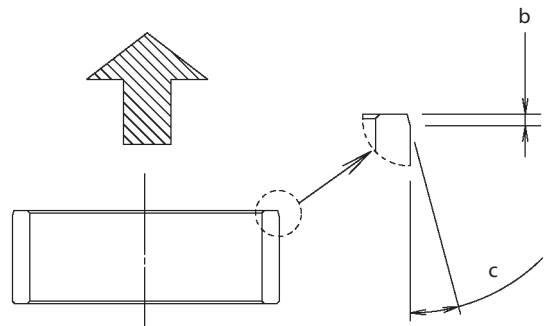
Installation

IMPORTANT: Check outer diameter, inner diameter, wear, and damage of all pins and bushings before installation. Replace them if there are some troubles. (Refer to W2-2-1.)

IMPORTANT: Apply grease onto the inner surface of bushings and dust seals when installing the pin. In addition, apply anti-rust oil onto the inner surface of the boss.

IMPORTANT: Refer to the illustration when installing the bushing of lift arm cylinder.

Direction to Install (Lift Arm Cylinder)



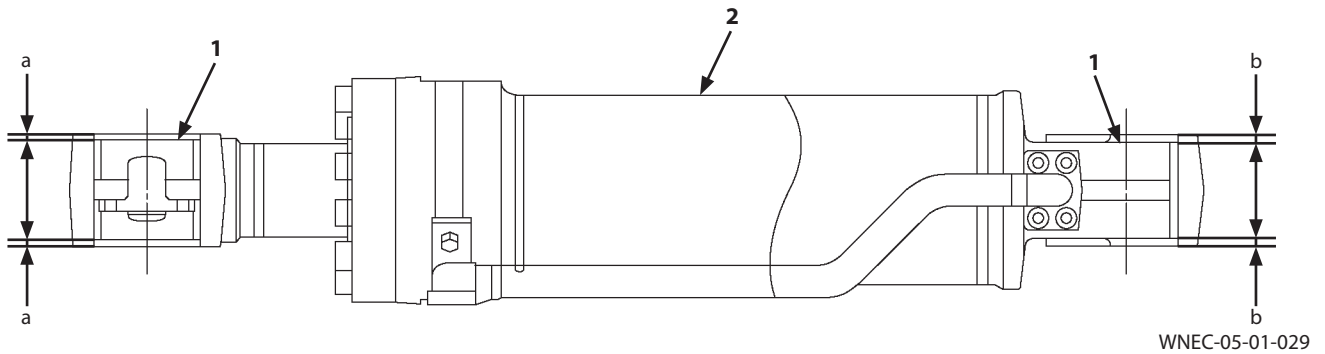
WNEC-05-01-028

- b- 2.5 mm (0.098 in) c- 15°

SECTION 5 FRONT ATTACHMENT

Group 2 Cylinder

Position to Install (Bucket Cylinder)



- | | |
|--------------------|---------------------|
| 1- Bushing | a- 6.5 mm (0.26 in) |
| 2- Bucket Cylinder | b- 6.5 mm (0.26 in) |

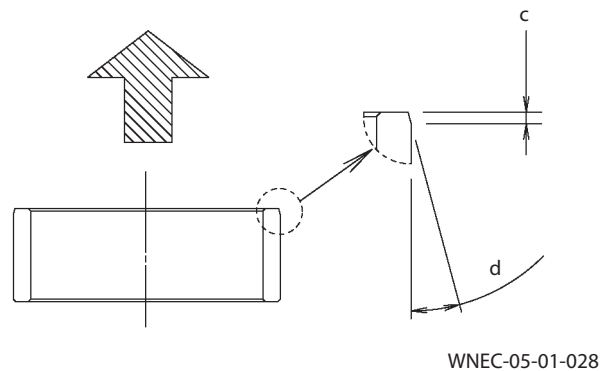
Installation

IMPORTANT: Check outer diameter, inner diameter, wear, and damage of all pins and bushins before installation. Replace them if there are some troubles. (Refer to W2-2-1.)

IMPORTANT: Apply grease onto the inner surface of bushings and dust seals when installing the pin. In addition, apply anti-rust oil onto the inner surface of the boss.

IMPORTANT: Refer to the illustration when installing the bushing of bucket cylinder.

Direction to Install (Bucket Cylinder)



- | | |
|----------------------|--------|
| c- 2.5 mm (0.098 in) | d- 15° |
|----------------------|--------|

SECTION 5 FRONT ATTACHMENT

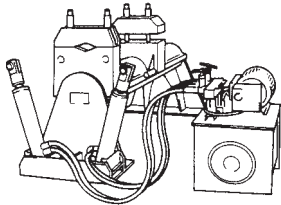
Group 2 Cylinder

6. Remove nut (19) by using the special tool (ST 5908) for cylinder and the special tool for nut.

Special Tool for Nut:

ST 3404: 87 mm (Lift Arm Cylinder)

ST 3403: 97 mm (Bucket Cylinder)



Special Tool for Cylinder: ST 5908

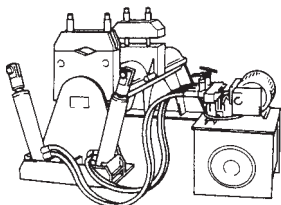
W158-04-02-022

7. Remove piston (17) by using the special tool (ST 5908) for cylinder and the special tool for piston.

Special Tool for Piston:

ST 3402: 96 mm (Lift Arm Cylinder)

ST 3401: 120 mm (Bucket Cylinder)



Special Tool for Cylinder: ST 5908

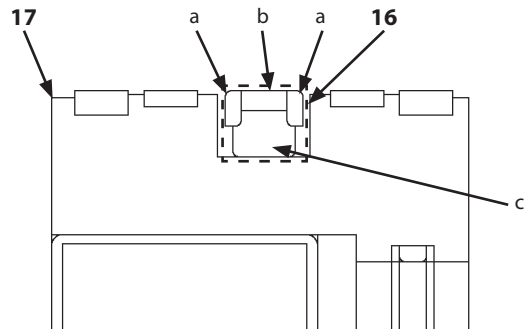
W158-04-02-022

8. Remove cylinder head (5) from cylinder rod (1) by using a plastic hammer.
9. Remove wear ring (18) and dust seals (15) (2 used) (lift arm cylinder: 1 used) from piston (17).

CAUTION: Metal fragments may fly off when a hammer is used. Wear necessary protection, such as goggles, helmets, etc in order to prevent personal injury.

IMPORTANT: Do not damage the seal groove.

10. Remove backup rings (16a) (2 used) from piston (17). Cut seal ring (16b) and ring (16c) by using a screwdriver and a hammer. Remove seal ring (16b) and ring (16c) from piston (17).



WDBE-05-02-006

a- Backup Ring
b- Seal Ring

c- Ring

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