REPAIR MANUAL

ARTICULATED DUMP TRUCK

335
340
TIER 3
335B
340B

87694079 NA
Replaces 87562009 NA

Revised 01Jan 08
Issued 01June 06

Order the manual at mid-west-tech.com >

TABLE OF CONTENTS

SECTIONS

GENERAL 1

ENGINES 2

ELECTRICAL 4

STEERING 5

POWER TRAIN 6

BRAKES 7

HYDRAULICS 8

MOUNTED EQUIPMENT 9

MidWestTech | Case 335, 340, 335B, 340B Articulated Dump Truck Service Manual | Publi... Order the manual at mid-west-tech.com >

CHAPTER 1
CONDITIONS OF USE AND SAFETY INSTRUCTIONS
TABLE OF CONTENTS

CONDITIONS OF USE 1-3
INFORMATION ON THIS HANDBOOK 1-3
- Definitions 1-3
- Contents 1-3
- Symbols 1-3
- Purpose of this handbook 1-4
- To whom this handbook is addressed 1-4
- Safekeeping of this handbook 1-4
- Updates to this handbook 1-4
- Units of measure 1-4

SCHEDULED USE 1-5
VEHICLE DRIVERS 1-5
WASTE DISPOSAL 1-6
WARRANTY AND LIABILITY OF THE MANUFACTURER 1-7
- Warranty conditions 1-7
- Liability 1-7

SERVICE 1-7
- After sales service 1-7
- Spare parts 1-7

GENERAL OPERATION RULES 1-8
- Pre-disassembly preparation 1-8
- During disassembly 1-8
- Disconnecting hydraulic lines 1-9
- After disassembly 1-9
- During assembly 1-9
- Screw and nut tightening 1-10
- Connecting hydraulic lines 1-10
- Interchangeable parts 1-11
- Welding on the chassis 1-13

INTRODUCTION 1-14
- Safety information and symbols 1-14
- General instructions 1-15

preventing fires 1-16

ROLLOVER ACCIDENTS 1-18
- Prevention 1-18
- What to do if the vehicle rolls over 1-18
- Structure of the cab 1-19

instructions for use 1-20
- Cab 1-20
- Starting and stopping 1-21
- Driving the vehicle 1-22
- Working the vehicle 1-23
- Towing the vehicle 1-25
- Replacing the wheel 1-25

MAINTENANCE 1-26
- General 1-26
- Electrical power disconnection 1-27
- Emergency switch 1-28
- Safety locks 1-29

MidWestTech | Case 335, 340, 335B, 340B Articulated Dump Truck Service Manual | Publi... Order the manual at mid-west-tech.com >

CHAPTER 2
TECHNICAL DATA
TABLE OF CONTENTS

VEHICLE COMPOSITION 2-5
DIMENSIONS (EMPTY VEHICLE) 2-6
DIMENSIONS WITH BODY RAISED 2-8
WEIGHTS 2-9
CENTER OF GRAVITY (HORIZONTAL POSITION) 2-10
PERFORMANCE 2-11
PERFORMANCE ALIGNMENT CHART 2-12
- Using the alignment chart 2-12

MAIN TECHNICAL SPECIFICATIONS 2-14
- Chassis number 2-14
- CASE PIN plate 2-15

POSITION OF IDENTIFICATION DATA ON MAIN GROUPS 2-16
- Cab 2-16
- Chassis 2-16
- Engine 2-16
- Automatic transmission 2-16
- Drive axles 2-17
- Dump cylinders 2-17
- Steering cylinders 2-17
- Front suspension cylinders 2-17

MAIN TECHNICAL SPECIFICATIONS 2-18
- Engine 2-18
- Automatic transmission 2-18
- Front drive axle 2-19
- Intermediate and rear drive axles 2-19
- Suspension 2-19
- Brakes 2-19
- Wheels and tires 2-19
- Hydraulic system 2-20
- Electrical system 2-20
- Chassis 2-20
- Drive cab 2-20
- Body 2-20

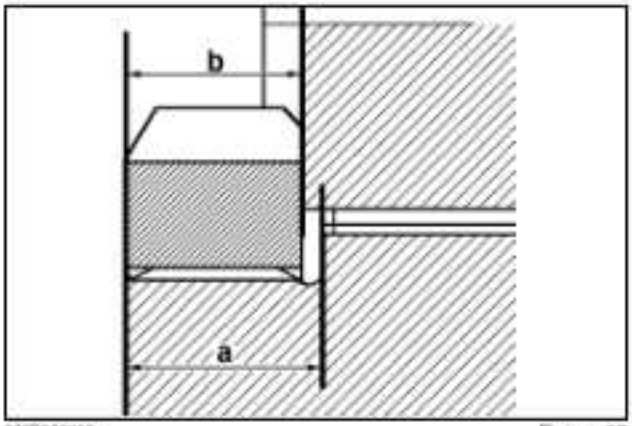
LIST OF BULBS 2-21
CAPACITIES 2-22
TIRE PRESSURE TABLE 2-23
ANTIFREEZE CONCENTRATION IN ENGINE COOLANT 2-23
ANTIFREEZE CONCENTRATION IN WINDSHIELD WASHER FLUID 2-23
BATTERY ELECTROLYTE DENSITY TABLE 2-23
TIGHTENING TORQUE 2-24
PLATES APPLIED TO THE VEHICLE 2-25
EUROPEAN VERSION 2-26
- INSIDE ENGINE HOOD PLATE 2-29
- INSIDE CAB PLATE 2-30

U.S.A. VERSION 2-32

MidWestTech | Case 335, 340, 335B, 340B Articulated Dump Truck Service Manual | Publi... Order the manual at mid-west-tech.com >

Warning light	Display	Fault code	Meaning of the fault code	Reaction of the system
	 MUX CODE 118	MUX 118	HEAD ERRORS	The system cuts-off power to users involved
 	  MUX CODE 119	MUX 119	STOP LIGHTS COMMAND PRESSURE SWITCH NOT FUNCTIONINGORBRAKE PEDAL NOT PRESSED AFTER ENGINE START	If electrical power enabled with brake pedal pressed switch off and on again without pressing brake pedal
	 MUX CODE 120	MUX 120	GAP BETWEEN ENGINE COOLANT AND BRAKE COOLING FLUID > SET VALUE BRAKE COOLING TEMPERATURE SENSOR AND ENGINE COOLANT SENSOR BOTH FAULT	
	 MUX CODE 121	MUX 121	GAP BETWEEN ENGINE COOLANT AND RADIATOR COOLANT TEMPERATURES > SET VALUE HEAD WATER TEMPERATURE SENSOR AND EDC WATER TEMPERATURE SENSOR BOTH FAULT	
	 MUX CODE 122	MUX 122	FRONT AND REAR BRAKE COOLING SYSTEM PRESSURE SWITCHES NOT FUNCTIONING	Brake cooling circuit pump rate reduced to minimum Selectable gear limited (1_{st} and 2_{nd}) Engine with reduced performance
	 MUX CODE 123	MUX 123	DISPLAY BIOS ERROR	RD only
	 MUX CODE 125	MUX 125	OIL FILTER BRAKE CLOGGED	RD only
	 MUX CODE 126	MUX 126	OIL FILTER STEERING CLOGGED	RD only
	 MUX CODE 127	MUX 127	JOYSTICK RETARDER BROKEN	RD only
	 MUX CODE 128	MUX 128	BODY ANGLE CONGRUENCE	RD only
	 MUX CODE 136	MUX 136	BODY JOYSTICK FAULT	RD only

MidWestTech | Case 335, 340, 335B, 340B Articulated Dump Truck Service Manual | Publi... Order the manual at mid-west-tech.com >



2785082055 Figure 67

- measure the dimension a;
- remove the operating bush, then measure the dimension b;
- determine the thickness of the adjustment spacer to be used as follows:

$$S = a - b$$

where

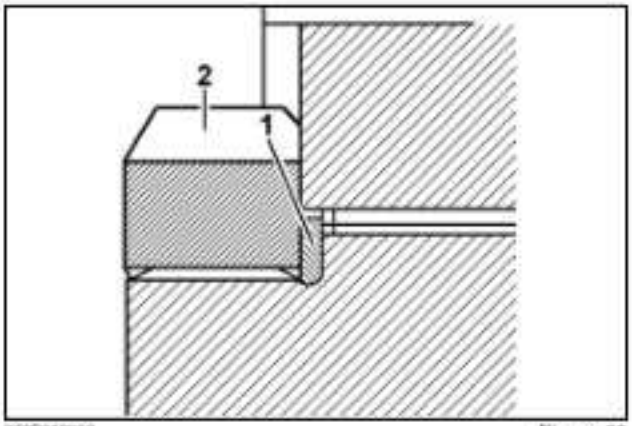
a = distance between operating bush surface and hub surface
b = operating bush thickness
S = adjustment spacer thickness

Example:

dimension a 17.40 mm (0.685 in)

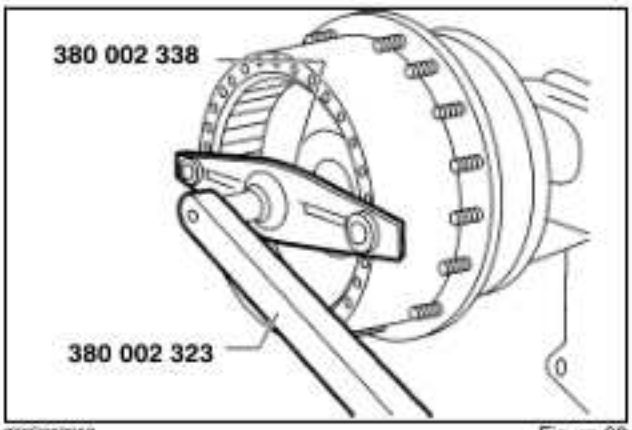
dimension b 16.00 mm (0.630 in)

Thickness S = (a – b) = 1.40 mm (0.055 in).



2785082056 Figure 68

- mount the spacer (1) having thickness S determined previously;
- mount the retaining bush (2);



2785082057 Figure 69

- using the tools 380 002 323 and 380 002 338, tighten the internally toothed crown wheel retaining bush to the prescribed torque;

ATTENTION: *During the locking, rotate the hub back and forth by striking it with a plastic hammer to settle the bearings;*

- using appropriate equipment, check that the rolling torque of the bearings is within the prescribed values:

Bearing rolling torque

(with sealing ring): 20-30 Nm (15--22 lb ft)

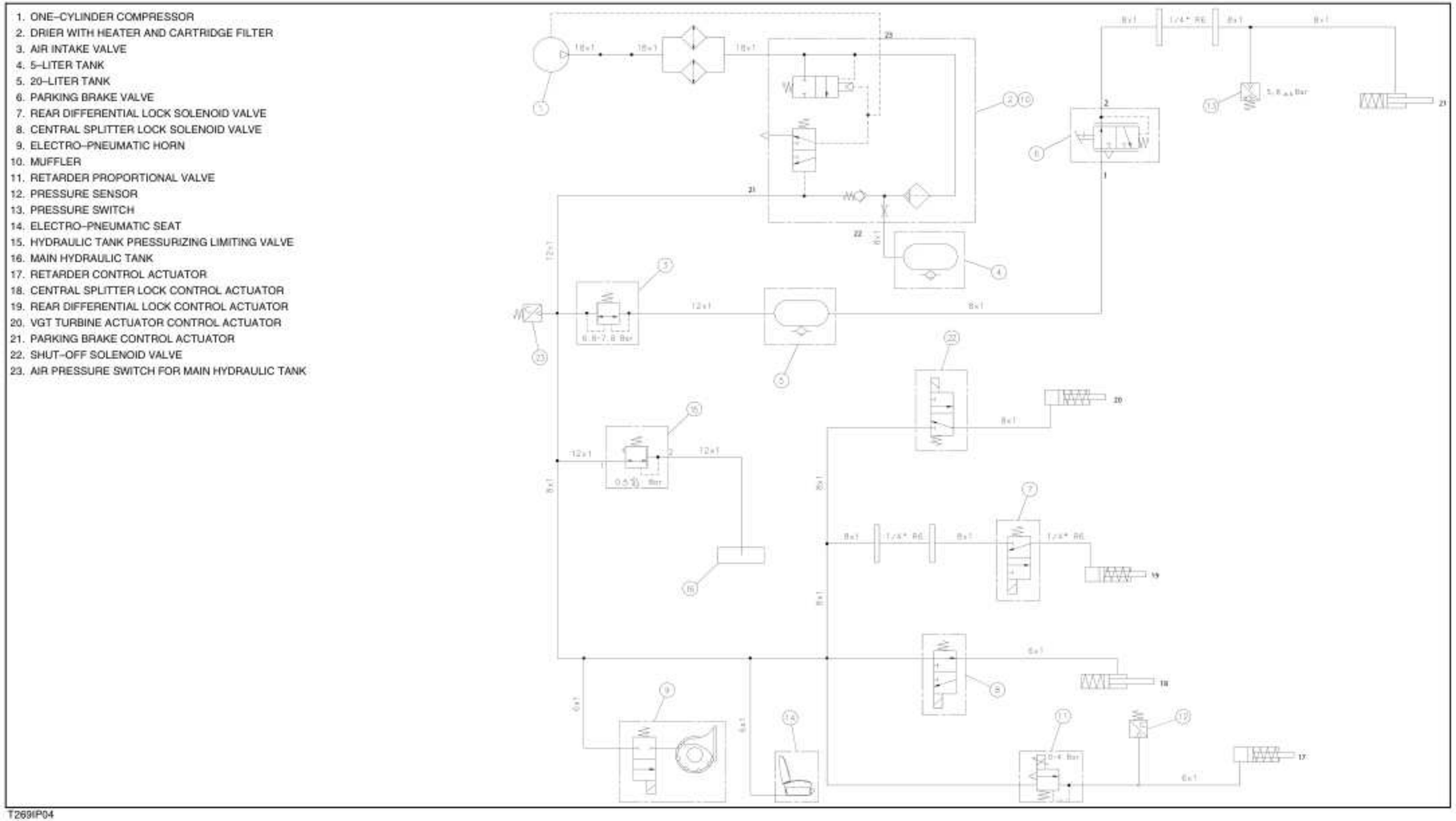
- otherwise correct the rolling resistance by using a spacer with a different thickness;
- In particular:
  - increase the thickness to reduce the torque
  - reduce the thickness to increase the torque;

MidWestTech | Case 335, 340, 335B, 340B Articulated Dump Truck Service Manual | Publi... Order the manual at mid-west-tech.com >

SECTION 9 - MOUNTED EQUIPMENT
CHAPTER 2 - PNEUMATIC SYSTEM

PNEUMATIC SCHEMATIC (335 tier 3 & 340 tier 3)

1. ONE–CYLINDER COMPRESSOR
2. DRIER WITH HEATER AND CARTRIDGE FILTER
3. AIR INTAKE VALVE
4. 5–LITER TANK
5. 20–LITER TANK
6. PARKING BRAKE VALVE
7. REAR DIFFERENTIAL LOCK SOLENOID VALVE
8. CENTRAL SPLITTER LOCK SOLENOID VALVE
9. ELECTRO–PNEUMATIC HORN
10. MUFFLER
11. RETARDER PROPORTIONAL VALVE
12. PRESSURE SENSOR
13. PRESSURE SWITCH
14. ELECTRO–PNEUMATIC SEAT
15. HYDRAULIC TANK PRESSURIZING LIMITING VALVE
16. MAIN HYDRAULIC TANK
17. RETARDER CONTROL ACTUATOR
18. CENTRAL SPLITTER LOCK CONTROL ACTUATOR
19. REAR DIFFERENTIAL LOCK CONTROL ACTUATOR
20. VGT TURBINE ACTUATOR CONTROL ACTUATOR
21. PARKING BRAKE CONTROL ACTUATOR
22. SHUT–OFF SOLENOID VALVE
23. AIR PRESSURE SWITCH FOR MAIN HYDRAULIC TANK



T269IP04

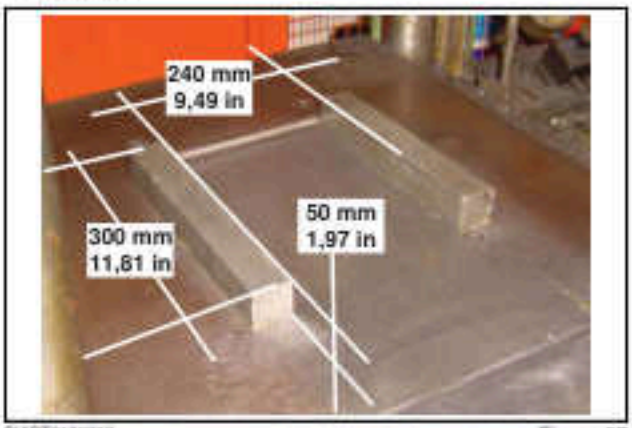
MidWestTech | Case 335, 340, 335B, 340B Articulated Dump Truck Service Manual | Publication 87694079

Order the manual at mid-west-tech.com >



SIADT0130606 Figure 66

- Apply some lubricant into the bushing armrest housing.



SIADT0130607 Figure 67

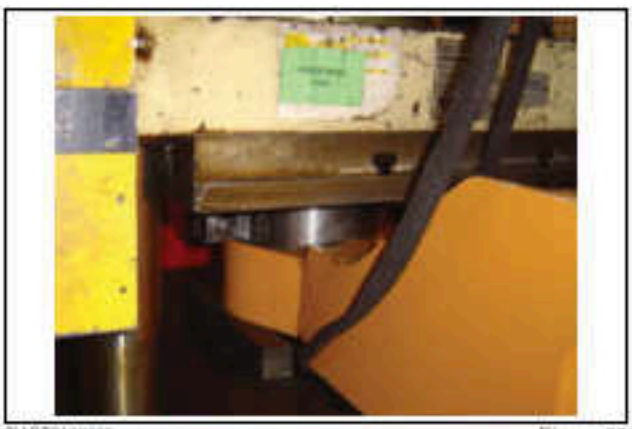
- Arrange a suitable support for the armrest to avoid the contact between the bushing and the press plane during the assembly.



SIADT0130608 Figure 68

Install the armrest on the support.
Install the bushing-special tool assembly on the armrest housing.

ATTENTION: *The modified special tool below profile must be connected with the armrest reinforcement bracket (arrows).*



SIADT0130609 Figure 69

ATTENTION: *Use a 40 ton hydraulic press to perform a correct installation.*

- Press with caution the bushing into the housing till the below profile of the tool meets the armrest.

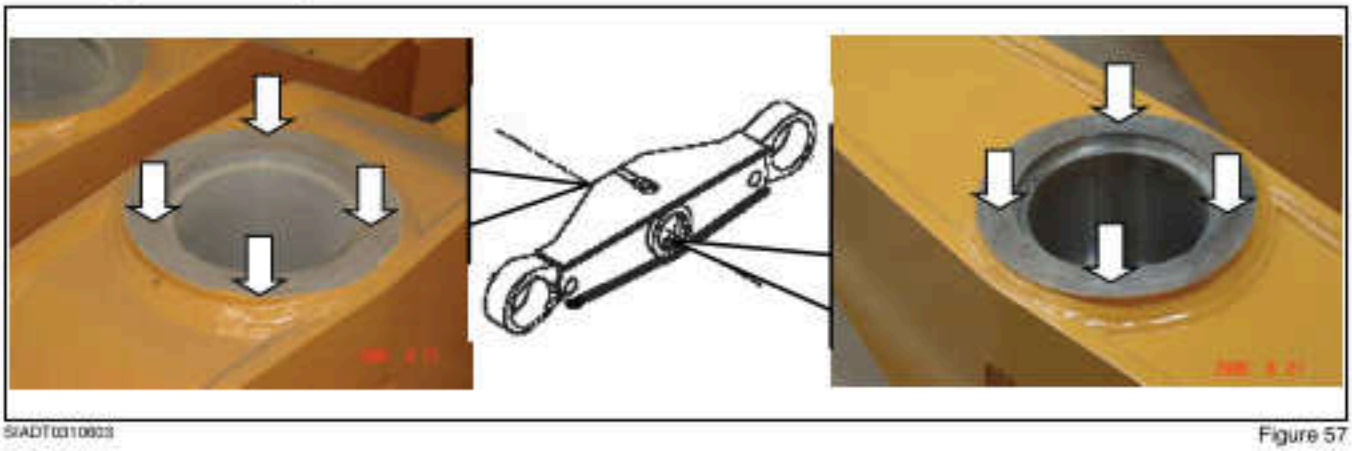
ATTENTION: *Pay attention to avoid conctacts between bushing and support during the assembly.*

- Repeat the process for the opposite side suspension armrest.

MidWestTech | Case 335, 340, 335B, 340B Articulated Dump Truck Service Manual | Publi... Order the manual at mid-west-tech.com >

Operative instructions

- Operate the rear suspension armrest removal from both sides as indicated in SECTION 8 of the Workshop Manual.
- Drive out bushing from the suspension armrest housing with a suitable punch.



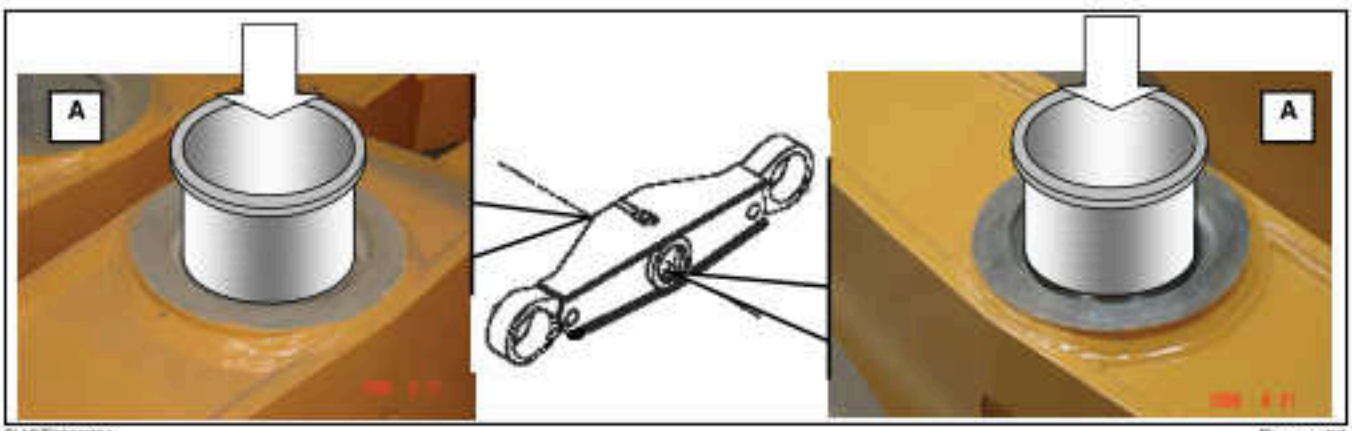
SIADT0310603

Figure 57

- Check each side of the bushing housing for wear and damage (arrows).

> **WARNING:** *Wear protective goggles with a side guard and a mask to prevent injury by dust.*
> *Use a suitable vacuum cleaner to remove dusty residues.*

- Remove dust, oil and paint from the rework areas.



SIADT0310604

Figure 58

A. Steel bushing (P/N 89500421000, q.ty 2x2)

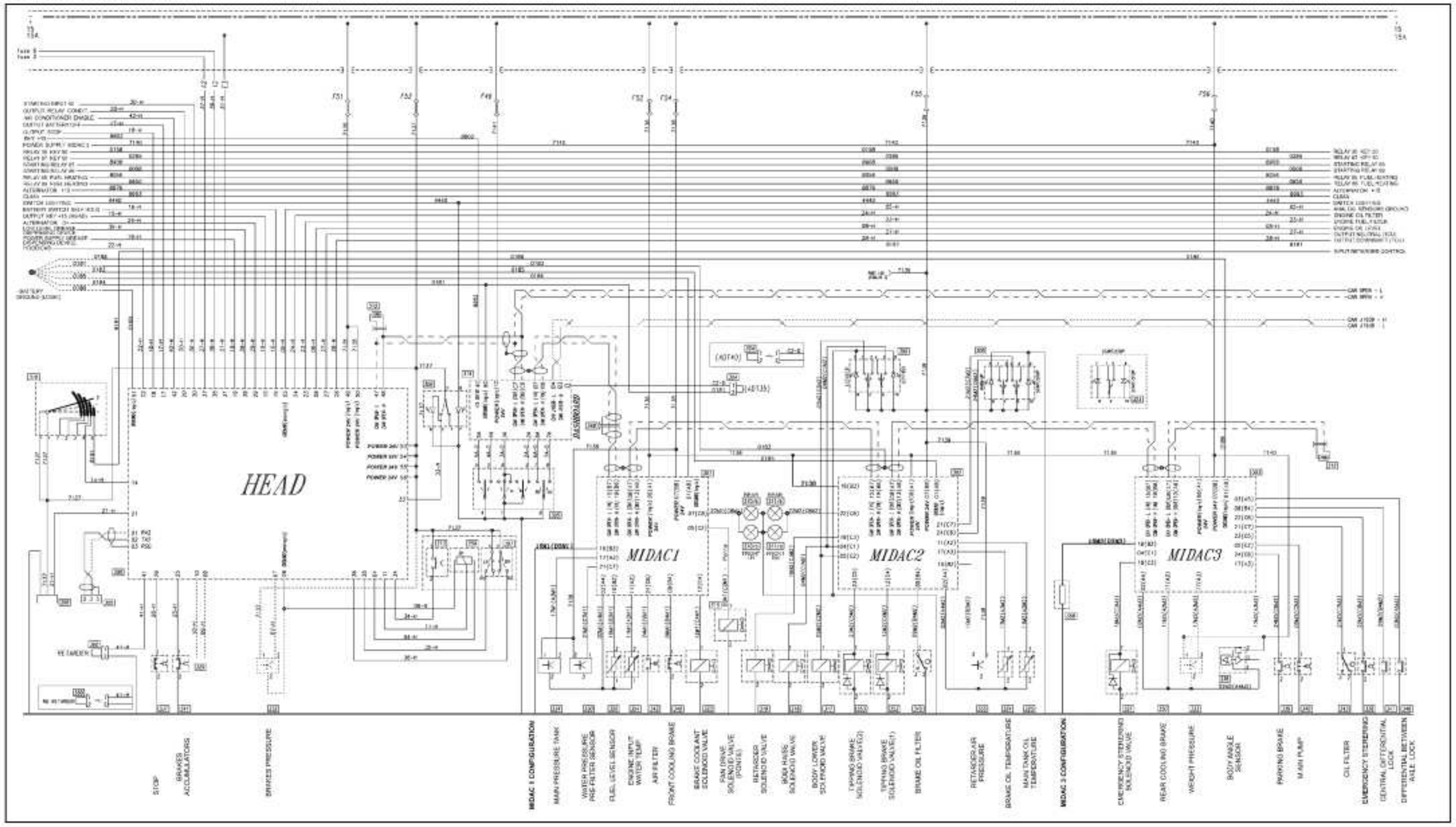
- Insert each steel bushing (A) into its housing with some small hammer-stroke.
- Connect the welder ground to the armrest.

> **ATTENTION:** *All field welding must be done according to current American Welding Society Standards.*

MidWestTech | Case 335, 340, 335B, 340B Articulated Dump Truck Service Manual | Publi... Order the manual at mid-west-tech.com >

SECTION 4 - ELECTRICAL
CHAPTER 1 - ELECTRICAL SYSTEM

Layout electrical system (3/5)



MidWestTech | Case 335, 340, 335B, 340B Articulated Dump Truck Service Manual | Publication 87694079

Order the manual at mid-west-tech.com >