TEN00470-00

Operation & Maintenance Manual

BULLDOZER

D31EX-22 D31PX-22
D37EX-22 D37PX-22

SERIAL NUMBERS 60541 and up

ecot3

WARNING

Unsafe use of this machine may cause serious injury or death. Operators and maintenance personnel must read this manual before operating or maintaining this machine. This manual should be kept near the machine for reference and periodically reviewed by all personnel who will come into contact with it.

NOTICE

Komatsu has Operation & Maintenance Manuals written in some other languages. If a foreign language manual is necessary, contact your local distributor for availability.

KOMATSU®

MidWestTech | Komatsu D31EX-22, D31PX-22, D37EX-22, D37PX-22 Bulldozer Operation... Order the manual at mid-west-tech.com >

CONTENTS

FOREWORD ---- 1- 1
BEFORE READING THIS MANUAL ---- 1- 2
IMPORTANT SAFETY INFORMATION ---- 1- 4
INTENDED USE ---- 1- 5
USE OF MACHINE ---- 1- 5
GENERAL VIEW AND DIRECTIONS OF MACHINE ---- 1- 5
VISIBILITY FROM OPERATOR'S SEAT ---- 1- 5
LOCATION OF PLATES, TABLE TO ENTER SERIAL NO. AND DISTRIBUTOR ---- 1- 6
PRODUCT IDENTIFICATION NUMBER (PIN)/MACHINE SERIAL NO. PLATE ---- 1- 6
EPA REGULATION, ENGINE SERIAL NO. PLATE ---- 1- 6
SERVICE METER POSITION ---- 1- 7
TABLE TO ENTER SERIAL NO. AND DISTRIBUTOR ---- 1- 7
SAFETY ---- 2- 1
SAFETY ---- 2- 2
SAFETY LABELS ---- 2- 5
POSITIONS OF SAFETY PICTOGRAMS ---- 2- 5
SAFETY LABELS ---- 2- 6
GENERAL PRECAUTIONS COMMON TO OPERATION AND MAINTENANCE ---- 2- 10
PRECAUTIONS BEFORE STARTING OPERATION ---- 2- 10
PREPARATIONS FOR SAFE OPERATION ---- 2- 10
FIRE PREVENTION ---- 2- 12
PRECAUTIONS WHEN GETTING ON OR OFF MACHINE ---- 2- 14
DO NOT GET CAUGHT IN WORK EQUIPMENT ---- 2- 16
PRECAUTIONS RELATED TO PROTECTIVE STRUCTURES ---- 2- 17
UNAUTHORIZED MODIFICATION ---- 2- 17
PRECAUTIONS RELATED TO ATTACHMENTS AND OPTIONS ---- 2- 17
PRECAUTIONS WHEN RUNNING ENGINE INSIDE BUILDING ---- 2- 18
PRECAUTIONS FOR OPERATION ---- 2- 19
PRECAUTIONS FOR JOBSITE ---- 2- 19
STARTING ENGINE ---- 2- 21
OPERATION ---- 2- 24
TRANSPORTATION ---- 2- 28
TOWING ---- 2- 29
PRECAUTIONS FOR MAINTENANCE ---- 2- 30
PRECAUTIONS BEFORE STARTING INSPECTION AND MAINTENANCE ---- 2- 30
PRECAUTIONS FOR INSPECTION AND MAINTENANCE ---- 2- 34
OPERATION ---- 3- 1
GENERAL VIEW ---- 3- 2
GENERAL VIEW OF MACHINE ---- 3- 2
GENERAL VIEW OF CONTROLS AND GAUGES ---- 3- 3
EXPLANATION OF COMPONENTS ---- 3- 6
FRONT PANEL ---- 3- 6
SWITCHES ---- 3- 33
CONTROL LEVERS AND PEDALS ---- 3- 37
FUSE ---- 3- 43
ELECTRIC POWER TAKE-OUT ADAPTER ---- 3- 45
DOOR - OPEN LOCK ---- 3- 46
SASH GLASS INTERMEDIATE LOCK ---- 3- 46
COVER, CAP WITH LOCK ---- 3- 47

MidWestTech | Komatsu D31EX-22, D31PX-22, D37EX-22, D37PX-22 Bulldozer Opera... Order the manual at mid-west-tech.com >

OPENING OR CLOSING REAR MASK ---- 3- 50
DOOR POCKET ---- 3- 51
ASHTRAY ---- 3- 51
LUNCHBOX HOLDER BELT ---- 3- 51
CUP HOLDER ---- 3- 52
TOOL BOX ---- 3- 52
GREASE PUMP HOLDER ---- 3- 52
CAR RADIO, HANDLING ---- 3- 53
AIR CONDITIONER, HANDLING ---- 3- 61
OPERATION ---- 3- 64
CHECK BEFORE STARTING ENGINE, ADJUST ---- 3- 64
STARTING ENGINE ---- 3- 84
OPERATIONS AND CHECKS AFTER STARTING ENGINE ---- 3- 89
STOPPING ENGINE ---- 3- 93
MACHINE OPERATION ---- 3- 94
SHIFTING GEARS ---- 3- 98
SHIFTING BETWEEN FORWARD AND REVERSE ---- 3- 99
STEERING MACHINE ---- 3-100
PRECAUTIONS FOR OPERATION ---- 3-102
WORK POSSIBLE USING BULLDOZER ---- 3-104
ADJUSTING POSTURE OF WORK EQUIPMENT ---- 3-106
PARKING MACHINE ---- 3-108
CHECK AFTER FINISHING WORK ---- 3-109
LOCKING ---- 3-109
TIPS FOR LONGER UNDERCARRIAGE LIFE ---- 3-111
TRANSPORTATION ---- 3-114
TRANSPORTATION MEANS ---- 3-114
REMOVING CAB ---- 3-114
PRECAUTIONS WHEN REMOVING WORK EQUIPMENT ---- 3-114
LOADING, UNLOADING WORK ---- 3-115
METHOD OF LIFTING MACHINE ---- 3-118
COLD WEATHER OPERATION ---- 3-120
PRECAUTIONS FOR LOW TEMPERATURE ---- 3-120
AFTER COMPLETION OF WORK ---- 3-121
AFTER COLD WEATHER ---- 3-121
LONG-TERM STORAGE ---- 3-122
BEFORE STORAGE ---- 3-122
DURING STORAGE ---- 3-122
AFTER STORAGE ---- 3-122
TROUBLESHOOTING ---- 3-123
AFTER RUNNING OUT OF FUEL ---- 3-123
METHOD OF TOWING MACHINE ---- 3-123
IF BATTERY IS DISCHARGED ---- 3-125
OTHER TROUBLE ---- 3-129
MAINTENANCE ---- 4- 1
GUIDE TO MAINTENANCE ---- 4- 2
OUTLINE OF SERVICE ---- 4- 5
HANDLING OIL, FUEL, COOLANT, AND PERFORMING OIL CLINIC ---- 4- 5
RELATING TO ELECTRIC SYSTEM ---- 4- 8
HANDLING HYDRAULIC SYSTEM ---- 4- 9

MidWestTech | Komatsu D31EX-22, D31PX-22, D37EX-22, D37PX-22 Bulldozer Opera... Order the manual at mid-west-tech.com >

WEAR PARTS LIST ---- 4- 10
WEAR PARTS LIST ---- 4- 11
RECOMMENDED FUEL, COOLANT, AND LUBRICANT ---- 4- 13
USE OF FUEL, COOLANT AND LUBRICANTS ACCORDING TO AMBIENT TEMPERATURE ---- 4- 14
RECOMMENDED BRANDS, RECOMMENDED QUALITY FOR PRODUCTS OTHER THAN KOMATSU GENUINE OIL ---- 4- 15
STANDARD TIGHTENING TORQUES FOR BOLTS AND NUTS ---- 4- 16
TORQUE LIST ---- 4- 16
PERIODIC REPLACEMENT OF SAFETY CRITICAL PARTS ---- 4- 17
SAFETY CRITICAL PARTS ---- 4- 18
MAINTENANCE SCHEDULE CHART ---- 4- 20
MAINTENANCE SCHEDULE CHART ---- 4- 20
SERVICE PROCEDURE ---- 4- 22
WHEN REQUIRED ---- 4- 22
CHECK BEFORE STARTING ---- 4- 48
EVERY 50 HOURS SERVICE ---- 4- 49
EVERY 250 HOURS SERVICE ---- 4- 51
EVERY 500 HOURS SERVICE ---- 4- 60
EVERY 1000 HOURS SERVICE ---- 4- 65
EVERY 2000 HOURS SERVICE ---- 4- 76
EVERY 4000 HOURS SERVICE ---- 4- 81
EVERY 8000 HOURS SERVICE ---- 4- 84
SPECIFICATIONS ---- 5- 1
SPECIFICATIONS ---- 5- 2
ATTACHMENTS, OPTIONS ---- 6- 1
GENERAL PRECAUTIONS ---- 6- 2
PRECAUTIONS RELATED TO SAFETY ---- 6- 2
AIR SUSPENSION SEAT ---- 6- 3
EQUIPPING FIRE EXTINGUISHER AND FIRST-AID KIT ---- 6- 5
HANDLING MACHINES EQUIPPED WITH KOMTRAX ---- 6- 6
BASIC PRECAUTIONS ---- 6- 6
INDEX ---- 7- 1

MidWestTech | Komatsu D31EX-22, D31PX-22, D37EX-22, D37PX-22 Bulldozer Opera... Order the manual at mid-west-tech.com >

(1) Steering, forward-reverse, gear shift lever
(2) Blade control lever
(3) Lamp switch
(4) Fan operation confirmation switch
(5) Buzzer cancel switch
(6) Information switch
(7) Monitor panel
(8) Reverse travel speed setting switch
(9) Shift mode switch
(10) Foot heater switch
(Standard for machines equipped with cab)
(Optional for machines equipped with canopy)
(11) Starting switch
(12) Brake pedal
(13) Decelerator pedal
(14) Air conditioner mode selector switch
(machines equipped with cab)
(15) Blower selector switch
(machines equipped with cab)
(16) Temperature control switch
(machines equipped with cab)
(17) Accessory socket (machines equipped with cab)
(if equipped)
(18) Cigarette lighter (machines equipped with cab)
(19) Fuel control dial
(20) Horn switch
(21) Room lamp switch (machines equipped with cab)
(22) Wiper switch (machines equipped with cab)
(23) Car radio (machines equipped with cab)
(if equipped)
(24) Work equipment lock lever
(25) Parking brake lever
(26) Foot heater
(Standard for machines equipped with cab)
(Optional for machines equipped with canopy)

MidWestTech | Komatsu D31EX-22, D31PX-22, D37EX-22, D37PX-22 Bulldozer Opera... Order the manual at mid-west-tech.com >

In case of poor fuel arrangement specification

Item		Part No.	Part name	Weight (kg (lb))	Q'ty	Replacement frequency
Engine oil filter		600-211-2110	Cartridge	-	1	Every 500 hours service
Fuel pre-filter (*)		600-319-4110	Cartridge	-	1	
Fuel main filter (*)		600-319-3530	Cartridge	-	2	Every 1000 hours service
Fuel tank breather		421-60-35170	Element	-	1	
Hydraulic tank breather		421-60-35170	Element	-	1	
Hydraulic oil filter		113-60-43321	Cartridge	-	1	Every 2000 hours service
HST charge filter		11Y-60-28710	Cartridge	-	1	
Air cleaner		600-185-2500	Element Ass'y (Inner element, outer element)	-	1	-
Air conditioner	Fresh air filter	12Y-979-1171	Filter	-	1	
	Recirculated air filter	12Y-979-1181	Filter	-	1	
Blade	D31EX	12F-70-31261 11Y-72-31850 (02090-11050) (02290-11016)	Cutting edge End bit (each) (Bolt) (Nut)	16.4 (36) 6.4 (14) - -	2 2 20 20	
	D31PX	12F-70-31281 11Y-72-15220 (02090-11050) (02290-11016)	Cutting edge End bit (each) (Bolt) (Nut)	21.9 (48) 7.2 (16) - -	2 2 24 24	
	D31PX (Narrow blade)	12F-70-31261 12F-70-31281 112-946-1510 (02090-11050) (02290-11016)	Cutting edge Cutting edge End bit (each) (Bolt) (Nut)	16.4 (36) 21.9 (48) 6.8 (15) - -	1 1 2 22 22	
	D37EX	12F-70-31281 11Y-72-12330 112-946-1510 (02090-11050) (02290-11016)	Cutting edge Cutting edge End bit (each) (Bolt) (Nut)	21.9 (48) 13.0 (29) 6.8 (15) - -	1 1 2 21 21	
	D37PX	12F-70-31281 11Y-72-15220 (02090-11050) (02290-11016)	Cutting edge End bit (each) (Bolt) (Nut)	21.9 (48) 7.2 (16) - -	2 2 24 24	
	D37PX (Narrow blade)	12F-70-31261 12F-70-31281 112-946-1510 (02090-11050) (02290-11016)	Cutting edge Cutting edge End bit (each) (Bolt) (Nut)	16.4 (36) 21.9 (48) 6.8 (15) - -	1 1 2 22 22	

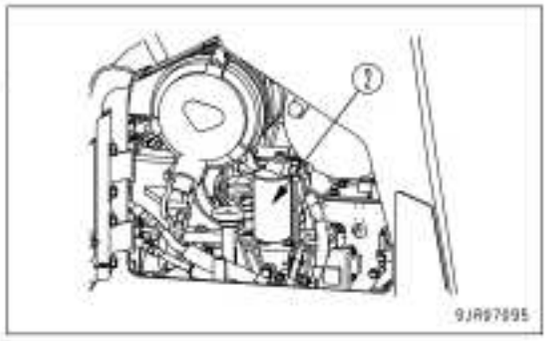
*: If the fuel filter gets clogged before its periodic replacement time is arrived at, replace both the fuel pre-filter and fuel main filter together.

NOTICE

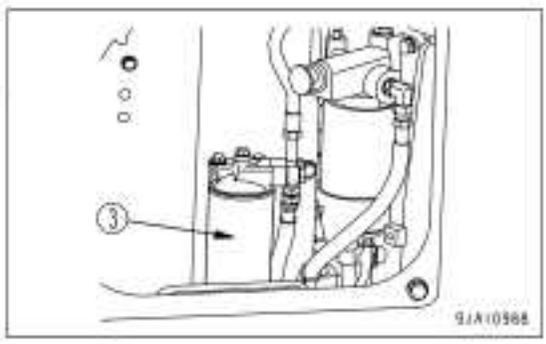
When handling parts that weigh more than 25 kg (55 lb), remember that they are heavy objects, and take the necessary care.

MidWestTech | Komatsu D31EX-22, D31PX-22, D37EX-22, D37PX-22 Bulldozer Opera... Order the manual at mid-west-tech.com >

3. Open engine side cover on the left side of machine.
4. Set the container to catch the fuel under the filter cartridge (2).
5. Using a filter wrench, turn filter cartridge (2) counterclockwise on remove it.



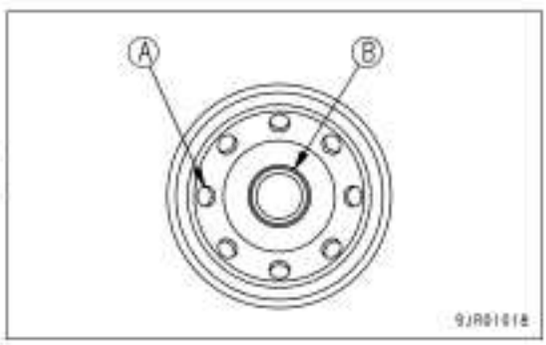
6. Remove the front cover at the front of the machine.
7. Set the container to catch the fuel under the filter cartridge (3).
8. Using a filter wrench, turn filter cartridge (3) counterclockwise to remove it.



NOTICE

- **Do not fill the new filter cartridge with fuel.**
- **Remove cap (B) and install the filter cartridge.**

9. Clean the filter holder, coat the packing surface of the new filter cartridge thinly with oil, then install the filter cartridge to the filter holder.



10. When installing, tighten until the packing surface contacts the seal surface of the filter holder, then tighten it 3/4 of a turn.
    If the filter cartridge is tightened too far, the packing will be damaged and this will lead to leakage of fuel. If the filter cartridge is too loose, fuel will also leak from the packing, so always tighten the correct amount.

REMARK

Step 9 and 10 should be carried out for each filter cartridge.

11. Open fuel supply valve (1).
12. After replacing filter cartridges (2) and (3), bleed the air from the fuel circuit as follows.
13. Fill the fuel tank with fuel (to the position where the float is at the highest position).

MidWestTech | Komatsu D31EX-22, D31PX-22, D37EX-22, D37PX-22 Bulldozer Opera... Order the manual at mid-west-tech.com >