FR140.2

EFF. S/N 535-UP

WHEEL LOADER

OPERATION AND MAINTENANCE

INSTRUCTION MANUAL

THIS MANUAL MAY NOT BE REPRINTED OR REPRODUCED, EITHER IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION OF FIATALLIS.

The information in this manual was current at the time of publication. It is our policy to constantly improve our product and to make available additional optional items. These changes may affect procedures outlined in this manual. If variances are observed, verify the information thougth your Dealer.

ONE MANUAL IS SUPPLIED WITH EACH MACHINE

MACHINE - SERIAL NUMBER _____

1st EDITION - FORM FA 75314953

(MARCH 1998)

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SAFETY RULES

This symbol is your safety alert sign. It **MEANS ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.**

Read and heed all safety instructions carrying the signal words **WARNING** and **DANGER**.

STUDY THE OPERATION AND MAINTENANCE INSTRUCTION MANUAL THROUGHLY BEFORE STARTING, OPERATING, MAINTAINING, FUELING OR SERVICING THIS MACHINE.

Machine mounted safety signs have been color coded yellow with black borders and lettering for warning and red with white borders and lettering for danger points.



MOST ACCIDENTS ARE CAUSED BY FAILURE OF SOME INDIVIDUAL TO FOLLOW SIMPLE AND FUNDAMENTAL SAFETY RULES OR PRECAUTION. FOR THIS REASON MOST ACCIDENTS CAN BE PREVENTED BY RECOGNIZING THE REAL CAUSE AND DOING SOMETHING ABOUT IT BEFORE ACCIDENT OCCURS. REGARDLESS OF THE CARE USED IN THE DESIGN AND CONSTRUCTION OF ANY TYPE OF EQUIPMENT THERE ARE MANY CONDITIONS THAT CANNOT BE COMPLETELY SAFEGUARDED AGAINST WITHOUT INTERFERING WITH REASONABLE ACCESSIBILITY AND EFFICIENT OPERATION.



"live with it"

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SAFETY RULES

OPERATING

Do not run the engine of this machine in closed area without proper ventilation to remove deadly exhaust gases.

Roll over protective structures are required on wheel loaders, dozer tractors, track type loaders, graders and scrapers by local or national requirements. **DO NOT** operate this machine without a roll over protective structure.

Keep operator's compartment clear of loose objects. Do not use machine to carry loose objects by means other than attachments designed for such objects.

DO NOT CARRY RIDERS unless the machine is equipped for carrying people to reduce personal exposure to being thrown off.

Observe and know the mechanics of alternate exit routes.

Seat belt are required to be provided with roll over protective structures or roll protection cabs by OSHA. Keep the safety belt fastened around you during operation.

For your personal protection, do not attempt to climb on or off machine while machine is in motion.

Be sure exposed personnel in the area of operation are clear of the unit before moving the machine or its attachments. Sound horn. Obey flagman, safety signals and signs.

NEVER COAST the machine down grades and slopes with the transmission in neutral machines.

To reduce the danger of an uncontrolled machine choose a gear speed before proceeding down grade that will hold machine to proper speeds for conditions.

Operate at speeds slow enough to insure complete control at all times. Travel slowly over rough ground, on slopes or near dropoffs, in congested areas or on ice or slippery surfaces. When backing, always look to where the machine is to be moved. Be alert to the position of exposed personnel. **DO NOT OPERATE** if exposed personnel enter the immediate work area.

Maintain a safe distance from other machines. Provide sufficient clearance for ground and visibility conditions. Yield right-of-way to loaded machines.

Maintain clear vision of all areas of travel or work. Keep cab windows clean and repaired. Carry blade low for maximum visibility while traveling. Obtain and use fan blast deflectors where tractors are used as pusher tractors in tandem.

When pulling or towing through a cable or chain, do not start suddenly at full throttle. Take up slack carefully. Guard against kinking chains or cables. Inspect carefully for flaws before using. Do not pull through a kinked chain or cable due to the high stresses and possibility of failure of the kinked area. Always wear heavy gloves when handling chain or cable.

Be sure cables are anchored and the anchor oint is strong enough to handle the expected load. Keep exposed personnel clear of anchor point and cable or chain. **DO NOT PULL OR TOW UNLESS OPERATORS COMPARTMENTS OF MACHINES INVOLVED ARE GUARDED AGAINST POTENTIAL CABLE OR CHAIN BACKLASH.**

Be alert to soft ground conditions close to newly coned walls. The fill material and weight of machine may cause the wall to collapse under the machine.

In darkness, check area of operation carefully before moving in with machine. Use all lights provided. Do not move into areas of restricted visibility.

If engine has a tendency to stall for any reason under load or idle, report this for adjustment to a proper maintenance authority immediately. Do not continue to operate machine until condition has been corrected.

On machines equipped with suction radiator fans, be sure to periodically check all engine exhaust parts for leaks as exhaust gases are dangerous to the operator. Keep a vent open to outside air at times when operating within a closed cab.

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SPECIFICATIONS

Boom lower 2,1
Bucket dump 1,1
Bucket roll back 1,0

FRAME

Articulated consisting of upper and lower sealed articulation joints.
The upper articulation joint consists of a pin and bushing.
The lower articulation joint consists of 2 self-compensating bearings, pin, and bushing.

ELECTRICAL SYSTEM

Tension ..... 24 V
Alternator ..... 45 A
Starter ..... 5,5 kW
Batteries 2
Capacity ..... 142 Ah

WHEELS AND TIRES

Rims ..... 17 "
Tires :
20,5 x 25 - 12 PR tubeless, L3 ..... Standard
20,5 x 25 - 16 PR, L3 ..... Optional
20,5 x 25 - 16 PR, L5 ..... Optional

CAPACITIES

	litres	US gallons
Cooling system	38,0	10,0
Crankcase	20,0	5,28
Fuel tank	180,0	47,52
Front/rear axles,differentials and wheel hubs	72,0	19,0
Torque converter and transmission	27,0	7,1
Hydraulic system	100,0	26,4

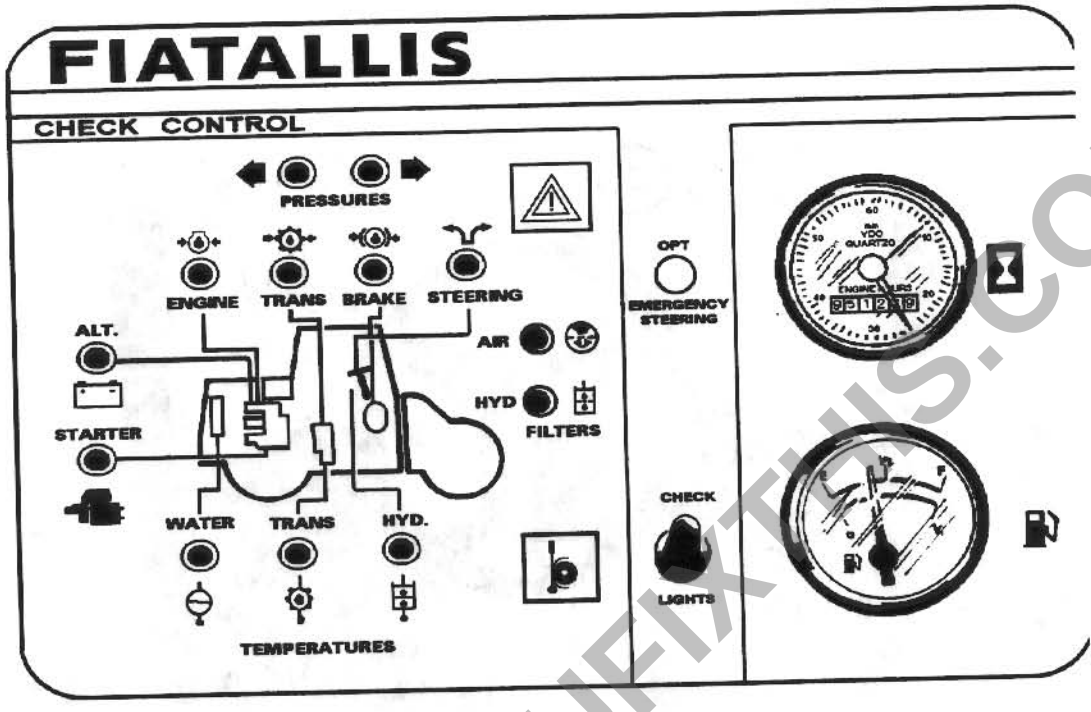
OPTIONAL EQUIPMENT

Some of the equipment items described and illustrated are supplied to certain markets to meet specific requirements.Other special devices and attachments are also available as optional equipment. Check with your FIATALLIS dealer.

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INSTRUMENT PANEL



1- CHECK CONTROL

This control panel for the machine indicates any problem in machine function.
For easy identification, the signals are transmitted with LED'S.
Machines equipped with the Check Control permit the operator to better control all the machine functions from his work station.

INDICATOR LIGHTS:

A. LOW ENGINE OIL PRESSURE INDICATOR

When lit, it indicates insufficient pressure which may be due to:



* Use of oil with improper viscosity
* Low engine oil level
* Engine oil leak
* Problem in the engine oil circuit

If this occurs, make the necessary checks and take action as required. Should the persist, contact an authorized Service Center.

B. LOW TRANSMISSION OIL PRESSURE



When the light is on, this indicates insufficient oil pressure that may be caused by:

* Use of oil with improper viscosity
* Low transmission oil level
* Transmission oil leak
* Problem in the transmission oil circuit

Check and repair as required. If the trouble continues, contact an authorized FIATALLIS Dealer.

C. LOW BRAKE PRESSURE INDICATOR



When this light is on steadily it warns that the brake system pressure is inadequate. If this occurs, STOP THE MACHINE IMMEDIATELY.

The malfunction may be caused by:

* Brake oil leakage

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SERVICE AND LUBRICATION GUIDE

HOURS	SERVICE POINTS	*	Nº OF POINTS	LUBRICANT	APROX. CAPACITY
10 Hours or daily	1- Engine sump and filter	V	1	A	19,0L (5,016 GAL)
	2- Transmission oil level	V	1	E	27,0 L (7,128 GAL)
	3- Hydraulic tank and implement	V	1	C	123,0 L (32,472 GAL)
	4- Fuel filter (A) and (B)	C / D	2	-	
	5- Radiator coolant level	V	1	-	37,0L (9,768 GAL)
50 Hours or each 15 days	6- Differential and planetary oil level	V	2/4	B	78,0 L (20,592 GAL)
	7- Fuel tank	D	1	-	200,0L (52,8 GAL)
	8- Fuel sediment bowl filter	CL	1	-	
	9- Bucket linkage grease fittings	LU	4	D	
	10- Steering cylinders grease fittings	LU	4	D	
	11- Rear axle support grease fittings	LU	2	D	
	12- Drive shaft grease fittings	LU	7	D	
	13- Articulation joint grease fittings	LU	2	D	
100 Hours	14- Fuel filter	R	2	-	
	15- Boom and linkage grease fittings	LU	10	D	
	16- Lift cylinder grease fittings	LU	2	D	
	17- Dump cylinder grease fittings	LU	2	D	
	18- Batteries	V	6	-	
250 Hours	19- Engine sump and filter	R	1	A	19,0 L (5,016 GAL)
	20- Engine oil filter	R	1	-	
	21- Alternator and fan belt	V	1	-	
	22- Tire pressure	V	4	-	
	23- Brake line pressure filter	CL	1	-	
	24- Engine separator water filter	R	1	-	
	25- Breathers	CL	4	-	
500 Hours	26- Hydraulic system return oil filter	R	1	-	
	27- Transmission oil filter	R	1	-	
	28- Hydraulic suction line filter	CL	1	-	
	29- Hydraulic tank filler neck filter	CL	1	-	
1000 Hours	30- Transmission oil level	R	1	E	27,0 L (7,128 GAL)
	31- Hydraulic tank and implement	R	1	C	123,0 L (32,472 GAL)
	32- Differential and planetary oil level	R	2/4	B	78,0 L (20,592 GAL)
	33- Valve lash adjustment	V	12	-	
	34- Hydraulic tank filler neck filter	R	1	-	
	35- Radiator coolant level	R	1	-	37,0 (9,768 GAL)
	36- Transmission screen filter	CL	1	-	
	37- Fuel injection nozzles	V	6	-	
As required	38- Engine air filter	CL	1	-	
	39- Engine air filter	R	1	-	
	40- Brake system bleeding	V	2/4		-
	41- Engine separator water filter	D	1	-	

* *Symbols for service intervals: V= Check R= Change LU= Lubricate CL= Clean D= Drain*

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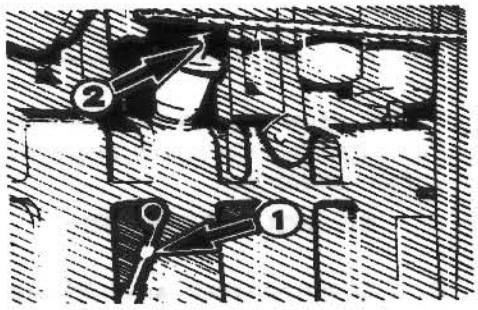
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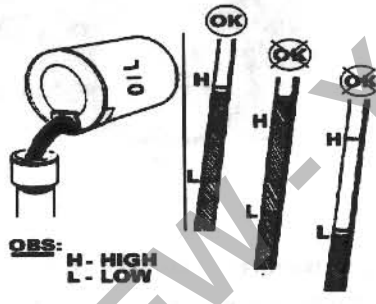
MAINTENANCE

10 HOUR SERVICES

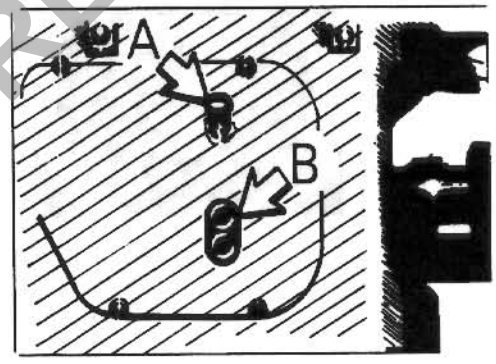
1. Engine Sump and Filter Check



Check oil shortly after engine has been stopped. The machine should be on level ground. Remove engine crankcase dipstick 1, and check oil level. If the oil level is below the low mark or above the high mark, do not operate engine. Add oil if necessary through the filler neck 2.

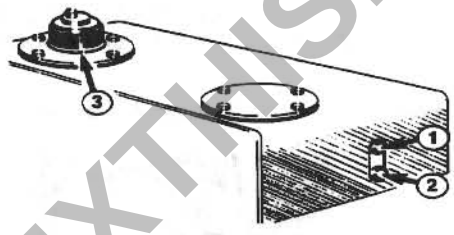


2. Transmission Oil Level Check



Check the transmission oil level when the oil is hot and the system charged. Place transmission in "NEUTRAL", engine at low idle and apply parking brake. Make sure oil level is above the lower indicator and below the upper one. Add oil as necessary to bring it to the proper level. Make sure the cap is tight (turn clockwise) in the filler neck after checking oil.

3. Hydraulic Tank and Implement Check



WARNING

Observe all start up and shut down procedures and warnings listed in the operation and maintenance instruction manual.

Always lower arm to the ground when making repairs, adjustments, or servicing machine.

Fluid under pressure. Turn cap slowly to relieve pressure before removing.

Check level with sight gauges **1** and **2**. Do this with machine level, implement resting firmly on ground and oil at ambient temperature. Upper sight gauge **1** indicates max oil level. When this level drops down to the lower sight gauge **2**, it must be topped-up using the specified grade of oil through filler **3**.



IMPORTANT: *Filler cap is provided with a safety pin. To remove the cap turn it counterclockwise making sure pin is in its unlock position.*

To install the cap, turn it clockwise with pin in its unlock position. If necessary, push the pin up and lock it with a padlock through its hole.To keep the cap from being opened.

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MAINTENANCE

The recommended pressure is a "cold" pressure. If 24 hour operation does not permit checking inflation pressure on completely cooled tires, a correction factor may be determined by experimenting.

Check as many times as possible when "cold" and again after two hours of operation. The average difference must be added to the recommended pressure when checking the tires during constant operation.

Continous operation of equipment builds up heat and accompanying higher pressure in the tire. These normal increases are allowed for in the tire design.

Normal inflation pressure (COLD)

20.5 x 25, 12 PR (tube less)

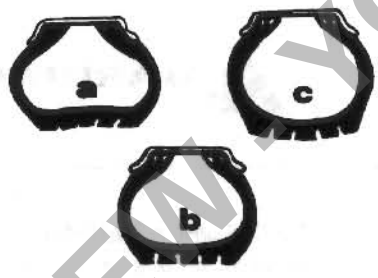
Work/Travel:

Front: 3,4 bar (50 psi)

Rear: 3,4 bar (50 psi)

Tire inflation pressure:

a. Under inflation



b. Correct inflation

c. Over inflation

Travel pressures are recommended to optimize the performance of the machine during long transfer trips on open roads with empty bucket.

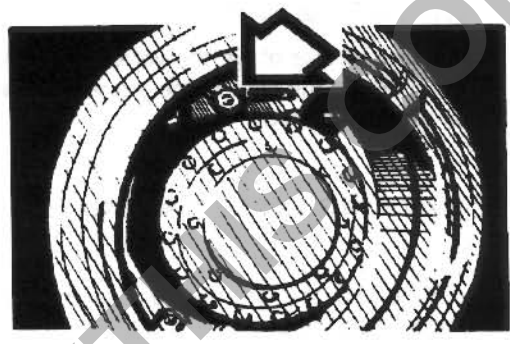
WARNING

Before putting the machine back to work, it is imperative to re-inflate the tires to work pressure to avoid damaging the tire walls.

IMPORTANT: *Check the wheel nut tightening torque.*

Specified torque: 60 daNm (443 ft lbs).

OBS: Thread without lubricant.



NOTE *- Never exceed the maximum pressure stamped onto tire sidewalls.*

IMPORTANT : *When assemble the tires, check the direction of the self-cleaning ribs.*

INFLATING

- Keep the tire and wheel assembly with the wheel facing up.

- Remove the valve stem and attach air hose.

- Inflate the tire to 15 PSI.

If there is an air leak, put the tire and wheel assembly in the vertical position and press the center part of the tread to improve the bead seating on the rim.

- Remove the air hose, re-install the valve stem.

- Inflate the tire gradually up to the recommended pressure. Check to be certain that the bead is seated on the wheel flanges.

- Check to be sure that the tire and wheel are centered using the reference point near the tire bead.

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ELECTRICAL SYSTEM
SISTEMA ELECTRICO

SPEED	ENGAGED	VALVES	SOLENOID
F1	1ST, 2ST, 3T, 4T		F, 1, 2, 3
F2	1ST, 2ST, 3T		F, 2, 3
F3	1ST, 3T		F, 2
F4	1ST		F
N1	AS 4T, 3T 3T		-
R1	1T, 4T, 2T, 3T		R, 1, 2, 3
R2	1T, 2T, 3T		R, 2, 3
R3	1T, 3T		R, 3
R4	1T		R
N2	AS 2T 3T		2, 3
N3	AS 3T		3
N4	AS		-

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3.3.4.2 Reassembly of rear axle pinion group and setting

Prior to the installation of the bevel pinion, some dimensions must be measured to define the thickness of the adjusting shims.

Position a cylinder on the caps (refer to fig.3.42) then gauge in a precise manner the gap between the ring gear shaft central line and the bearing shoulder face under the head. This value must be added to the nominal radius of the differential bearing. Identify this value as **A**.

EXAMPLE:

A = 144.10 mm (dimension measured) + 62.50 mm (nominal radius of bearing).

A= 206.60 mm.

A = 5.673" (dimension measured) + 2.461" (nominal radius of bearing).
A= 8.134".

On the front of the pinion, a number with a + or - mark is etched (refer to fig. 3.43). This number, in tenth of millimeter, indicates the deviation from the theoretical dimension between pinion nose and bevel crown center line. Identify this value as B.

EXAMPLE:

- in this instance = -1 = -0.10 mm (0.004")

- theoretical dimension = 168.50 mm (6.634");

B = 168.50 - 0.10 = 168.40 mm
(6.634 - 0.004 = 6.630").

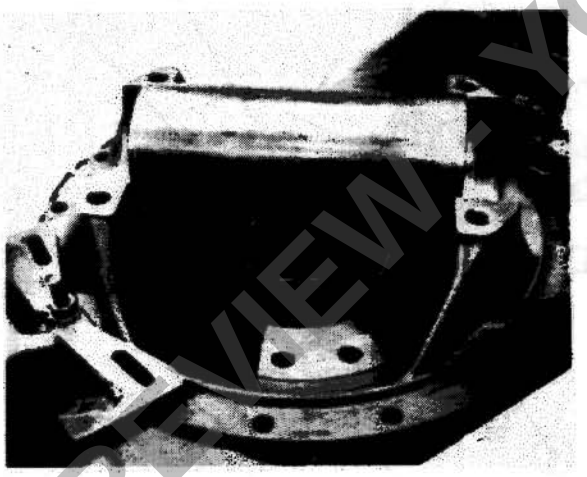


Fig. 3.42

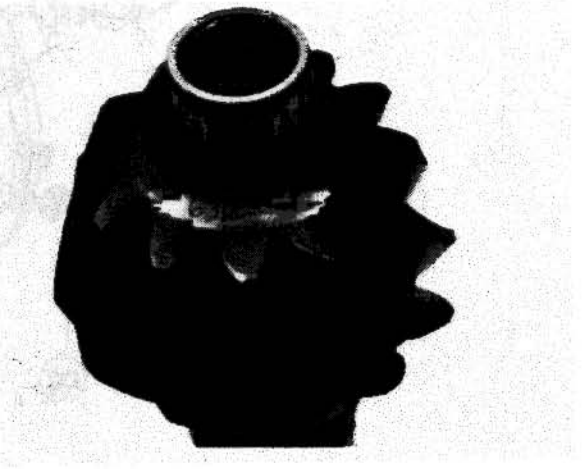


Fig. 3.43

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