ML 48T
ALL-WHEEL-STEER LOADER

SERVICE MANUAL

PART #918139

Revision A - 09/05

Mustang Manufacturing Company, Inc.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Table of contents

Operation
- Important information on this service manual ... 1-1
- Type decals and component numbers ... 1-2
- Machine overview ... 1-4
- Cab overview ... 1-5
- Instrument panel, multifunctional lever and drive lever: overview ... 1-6

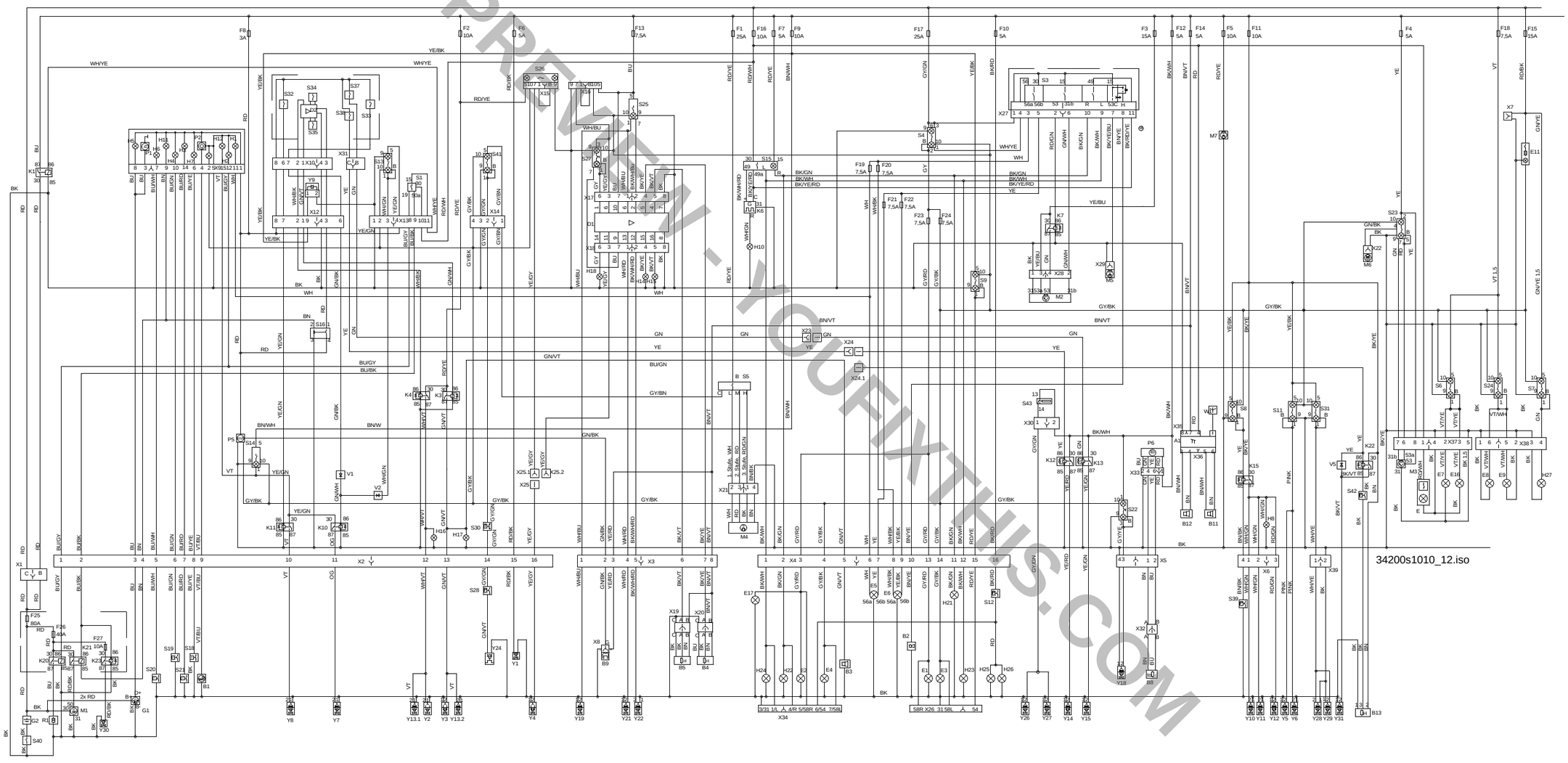
Specifications
- Frame ... 2-1
- Engine ... 2-1
- Power train ... 2-2
- Axles ... 2-3
- Brakes ... 2-3
- Steering ... 2-4
- Work hydraulics ... 2-4
- Pilot control ... 2-4
- Loader unit ... 2-5
- Electrical system ... 2-6
  - Fuse box on left and right of steering column ... 2-6
  - Main fuse box with relays ... 2-7
  - Relays ... 2-7
- Tires ... 2-8
- Weights ... 2-8
- Sound levels ... 2-8
- Vibration ... 2-8
- Tightening torques ... 2-9
  - General tightening torques ... 2-9
  - Specific tightening torques ... 2-9
- Dimensions ... 2-10

Maintenance
- Fluids and lubricants ... 3-1
- Maintenance decal ... 3-2
  - Explanation of symbols on maintenance decal ... 3-2
- Maintenance schedule Model 480T (overview) ... 3-4
- Maintenance items ... 3-7
- Introduction ... 3-7
- Fuel system ... 3-8
  - Specific safety instructions ... 3-8
  - Refuelling ... 3-8
  - Stationary fuel pumps ... 3-8
  - Diesel fuel specification ... 3-8
  - Bleeding the fuel system ... 3-9
  - Replacing the fuel filter ... 3-9
  - Cleaning the fuel pump screen filter ... 3-9
- Engine lubrication system ... 3-11
  - Checking and filling up the oil level ... 3-11
  - Changing engine oil ... 3-12
  - Replacing the engine oil filter cartridge ... 3-13
- Engine and hydraulic cooling system ... 3-14
  - Specific safety instructions ... 3-14
  - Cleaning the oil cooler ... 3-14

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

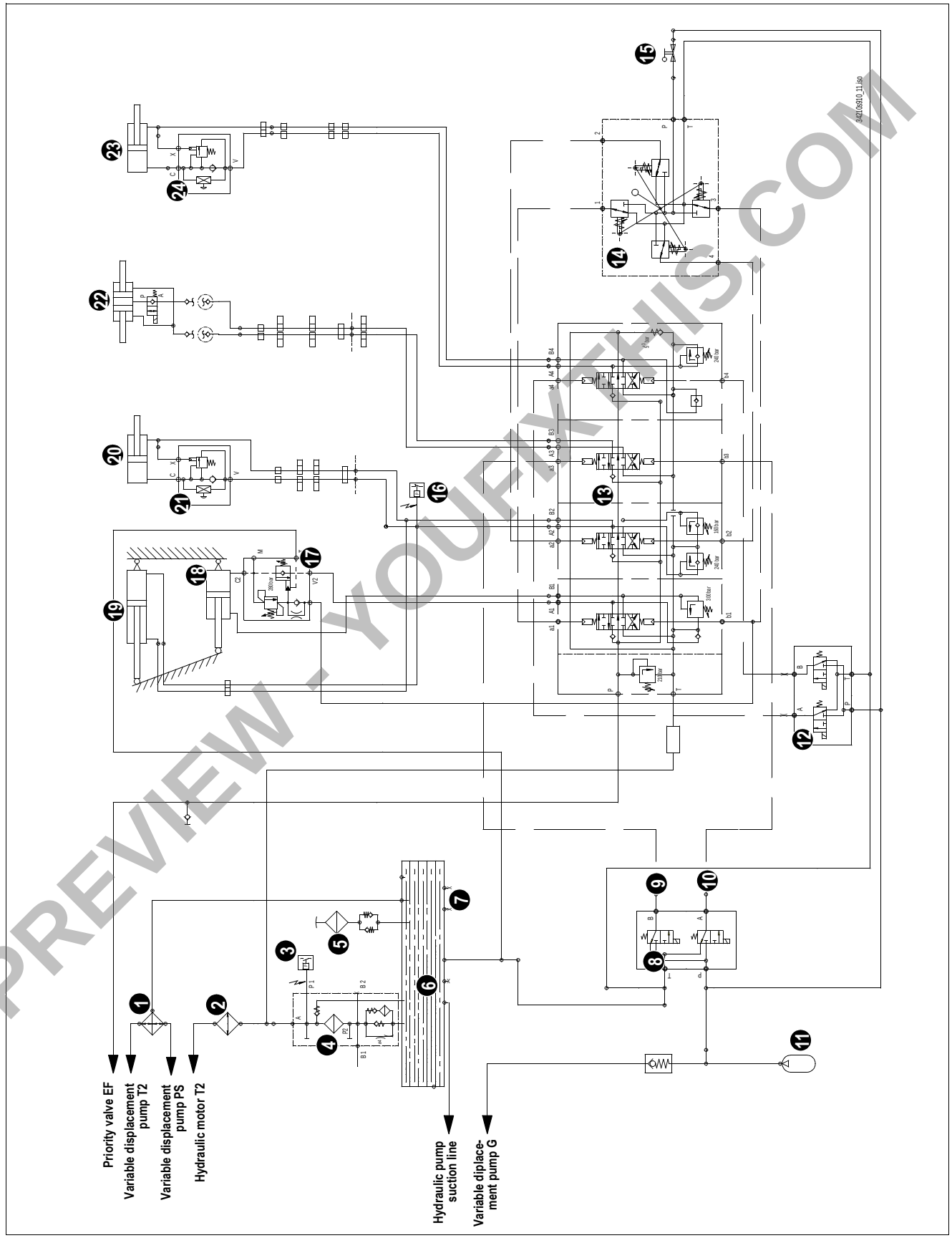
10.2 Wiring diagram



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

9.16 Work hydraulics diagram



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Brake cylinder – front axle

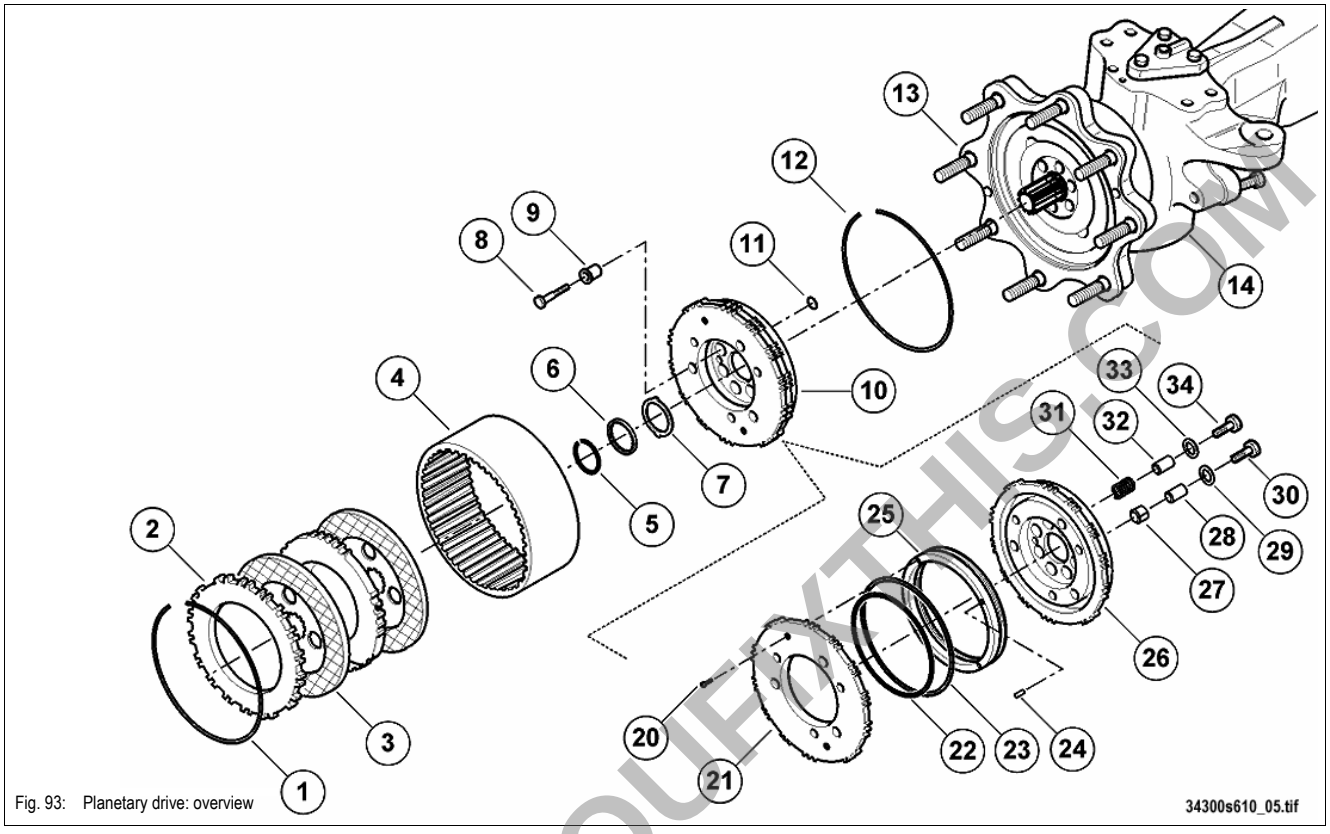


Fig. 93: Planetary drive: overview

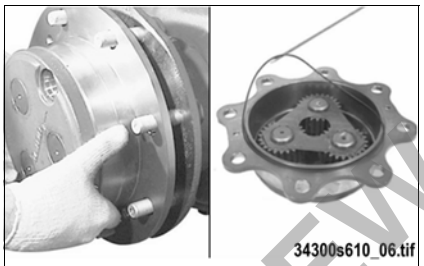


Fig. 94: Removing the planetary carrier

Environment!

Collect the drained oil in a suitable container and dispose of it in a manner consistent with environmental laws!

☞ *Remove the planetary carrier*

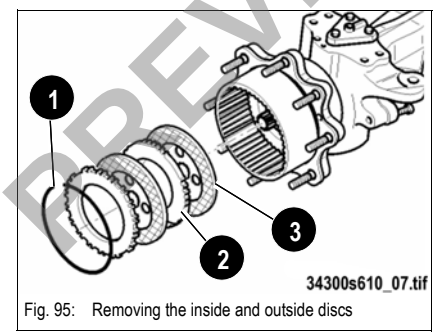


Fig. 95: Removing the inside and outside discs

☞ *Remove circlip* **1**

☞ *Remove inside and outside discs* **2** *and* **3**

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2.15 Tightening torques

General tightening torques

Cap screw dimensions	Torques in lb.-ft. (Nm)[1]		
	Grade 7 (8.8)	Grade 8 (10.9)	Grade 10 (12.9)
M4	2 (3)	3 (4)	4 (5)
M5	4 (5.5)	6 (8)	7 (10)
M6	7 (10)	10 (14)	12 (16)
M8	17 (23)	25 (34)	30 (40)
M10	34 (46)	49 (67)	58 (79)
M12	58 (79)	85 (115)	100 (135)
M14	92 (125)	136 (185)	162 (220)
M16	144 (195)	214 (290)	251 (340)
M18	207 (280)	295 (400)	347 (470)
M20	291 (395)	413 (560)	487 (660)
M22	398 (540)	561 (760)	656 (890)
M24	502 (680)	715 (970)	848 (1150)
M27	738 (1000)	1069 (1450)	1254 (1700)
M30	996 (1350)	1438 (1950)	1696 (2300)

1. These values are valid for cap screws with untreated, non-lubricated surfaces

Specific tightening torques

Description	Torque
Wheel nut	295 ±15 lb.-ft. (400 ±20 Nm)
Track-rod end (steering cylinder)	148 lb.-ft. (200 Nm)
Piston rod (steering cylinder/track rod)	184 lb.-ft. (250 Nm)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Sealing the bleeder valve



Fig. 82: Bleeder valve

☞ *Remove the cover*
☞ *Clean the bleeder valve*
☞ *Mount a new O-ring*
☞ *Mount the cover*
➥ Tightening torque: **6.3 lb.-ft. (8.5 Nm)**

Intake/exhaust manifold



Fig. 83: Intake manifold seals

☞ *Mount new gaskets*
☞ *Mount the intake/exhaust manifold*

Tightening torque
➥ Intake manifold: **15.5 lb.-ft. (21 Nm)**
➥ Exhaust manifold **40.5 lb.-ft. (55 Nm)**

4.8 Engine trouble

Problem	Possible causes
Engine does not start or is not easy to start	Parking brake not applied
	Steering-column control lever not in neutral
	Engine starting temperature too low
	Wrong SAE grade of engine lubrication oil
	Fuel quality does not comply with specifications
	Battery defective or flat
	Loose or oxidized cable connections in starter circuit
	Starter defective, or pinion does not engage
	Wrong valve tip clearance
	Fuel injector defective
Engine starts, but does not run smoothly or faultless	Fuel quality does not comply with specifications
	Wrong valve tip clearance
	Injection line leaks
	Fuel injector defective

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2 Specifications

2.1 Frame

Sturdy steel sheet frame, rubber-mounted engine

2.2 Engine

Engine	
Product	Deutz diesel engine
Model	F4M 2011
Type	In-line
No. of cylinders	4
Displacement	190 in.³ (3109 cm³)
Bore and stroke	3.7 x 4.4” (94 x 112 mm)
Compression ratio	19:1
Output (as per ISO 9249)	44 kW/59 DIN hp at 2400 rpm
Max. torque	144 lb.-ft. (195 Nm) at 1700 rpm
Specific minimum fuel consumption	298 g/hph (222 g/kWh)
Fuel injection system	Direct fuel injection
Firing order	1 – 3 – 4 – 2
Starting aid	Glow plug
Max. inclined position (engine no longer supplied with oil):	Max. lateral left/right inclination: 30/57% Max. uphill/downhill inclination: 30/57% **Follow tilting limit of the machine.**
Oil pressure	44 – 65 psi (3.0 – 4.5 bar) at 2300 rpm
Valve clearance (engine at cold temperature)	Intake valve 0.012" (0.3 mm) Exhaust valve 0.020" (0.5 mm)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

3. 3 Maintenance schedule Model 480T (overview)

Work description For service and maintenance work on the attachment, please refer to the Operator's and Maintenance Manual of the attachment manufacturer as well.	Maintenance schedule/service hours					
	Maintenance work (daily)	Delivery inspection	"A" every 50 hours (Weekly)k	1st Inspection[1] at 100 hours	"B"every 500 service hours[2] 2nd Inspection	"C"every 1500 service hours (Yearly)
Oil and filter changes (⟳):						
Perform the following oil and filter changes (check oil levels after test run):						
• Engine oil				●	●	●
• Engine oil filter				●	●	●
• Fuel filter				●	●	●
• Air filter insert [3, 4] replace safety cartridge every 3rd time the air filter insert is replaced					●	●
• Gearbox oil in front and rear axle differentials and in rear axle gearbox				●		●
• Gearbox oil in 25 mph (40 km/h) gearbox (Opt.)				●		●
• Gearbox oil in front and rear axle planetary drives (left and right)				●		●
• Hydraulic oil[5]						●
• Hydraulic oil filter insert				●		●
• Breather filter – hydraulic oil tank [4]						●
Inspection work (👁):						
Check the following material. Refill if necessary:						
• Engine oil	●	●	●			
• Hydraulic oil	●	●	●	●	●	●
• Gearbox oil in front and rear axle differentials and in rear axle gearbox		●			●	●
• Gearbox oil in front and rear axle planetary drives (left and right)		●			●	●
• Brake fluid[6]	●	●	●	●	●	●
Check cooler for engine and hydraulic oil for contamination. Clean if necessary[7]			●	●	●	●
When using biodegradable oil: Drain the condensation water in the hydraulic oil tank [5]					●	●
Clean dust valve on air filter housing [3]	●	●	●	●	●	●
V-belt: Check condition and pre-tension. Tighten or replace if necessary[8]		●	●	●	●	●
Check the fuel/water separator. Drain water if necessary			●	●	●	●
Clean filter insert on fuel pump, replace if necessary			●	●	●	●
Check valve tip clearance (engine timing). Set if necessary					●	●

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

1.3 Machine overview

1 Eye hook[1] for cab

2 Rearview mirror

3 Handle

4 Headlight with turn indicator

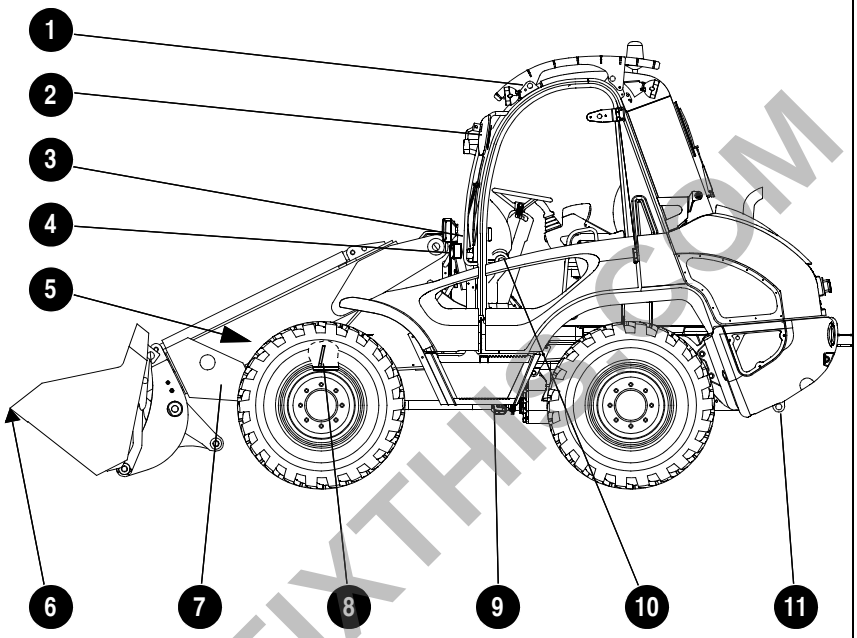
5 Tilt cylinder inside loader unit

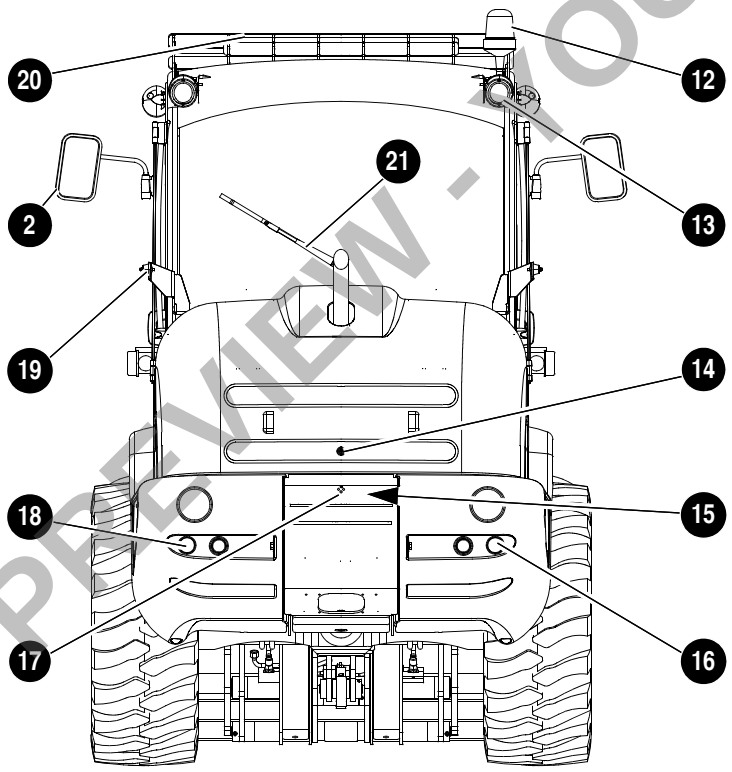
6 Front-edge protection

7 Loader unit

8 Front eye hook for tieing down the machine

9 Access





10 Door handle

11 Rear eye hook for tieing down the machine

12 Rotating beacon (Opt.)

13 Rear working light

14 Engine cover lock

15 Backup warning system

16 Reflectors

17 Tow away facility

18 Brake, rear and turn indicator lights

19 Door arrester

20 Protective FOPS screen

21 Rear wiper

1. Eye hooks are for removing the cab only, and may not be used for crane-lifting the machine

Fig. 9: Machine outside views

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Ref.No.	Description
	Instrument panel
35	Rock switch – quickhitch lock (option)
36	Rocker switch – rotating beacon (option)
37	Rocker switch – front working light (option)
38	Indicator (green) – right/left turn indicator for rear attachments
39	Indicator (red) – steering synchronization (25 mph [40 km/h] high speed option)
40	Switch – hazard warning system
41	Pressure indicator – hydraulic oil filter
42	Temperature gauge – hydraulic oil
43	Indicator (red) – alternator charge function
44	Indicator (red) – parking brake
45	Indicator (red) – engine oil pressure
46	Indicator (red) – diesel engine temperature
47	Socket/cigarette lighter
48	Indicator (green) – front axle steering (25 mph [40 km/h] high speed option)
49	Indicator (green) – four wheel steering (25 mph [40 km/h] high speed option)
50	Indicator (green) – Fwd.
51	Rocker switch – front socket for electrically operated attachments (option)
52	Tip switch – steering synchronization (25 mph [40 km/h] high speed option)
53	Rocker switch with lock – four wheel/front axle steering (25 mph [40 km/h] high speed option)
54	Rocker switch with lock – 3rd control circuit
55	Rocker switch – lights
56	Rocker switch – rear working light
57	Indicator (yellow) – hose burst valve[1] (option)
58	Indicator (green) – right/left turn indicator
59	Indicator (yellow) – cold starter
60	Indicator (blue) – high beam
61	Fuel level indicator
62	Indicator (red) – 3rd control circuit continuous operation
63	Speedometer – high speed (25 mph [40 km/h] high speed option)
64	Indicator (green) – Rev.
65	Rocker switch – load stabilizer (option)
66	Rocker switch – rear wiper with tip switch for wiper water
67	Rocker switch – speed selection (25 mph [40 km/h] high speed option)
	Multifunctional lever
68	Tip switch – horn
69	Rotary switch and tip switch – front wiper, washer pump
70	Lever – turn indicators, high beam, horn
	Control lever
71	Toggle switch – drive speed selection[2]
72	Tip switch – unlock 3rd control circuit (electrical operation)
73	Tip switch – lock 3rd control circuit (electrical operation)
74	Tip switch – unlock 3rd/4th electrically operated control circuit (option)
75	Tip switch – lock 3rd/4th electrically operated control circuit (option)
76	Tip switch – neutral drive speed[3]
	Control lever console
77	Rocker switch – air conditioning (option)
78	Rocker switch – additional control circuit (option)
79	Rocker switch – 3rd control circuit (continuous operation)
80	Lock – tilt cylinder (option)
81	Not assigned
82	Not assigned
83	Rotary switch – auxiliary heating (option)
	Left side console
84	Rotary switch – heater fan
85	Rotary switch – heater fan temperature regulation
86	Rotary switch – fresh air/recirculated air

1. Hose burst valve is not functional with the load stabilizer turned on (Indicator comes on)
2. Joystick can also be equipped with switch for selection of driving direction
3. Tip switch not fitted if joystick is equipped with switch (neutral position in switch) for selection of driving direction

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Air filter ... 3-15
Weekly check of air filter contamination ... 3-15
Weekly functional check of the dust valve ... 3-16
Replacing the filter cartridge ... 3-16
V-belt ... 3-17
Checking the V-belt tension ... 3-17
Re-tensioning the V-belt ... 3-17
Gearboxes and axles ... 3-18
Checking and filling up the gearbox oil level ... 3-18
Changing the gearbox oil ... 3-19
Checking the oil level in the rear axle differential ... 3-20
Filling up the oil level ... 3-20
Changing the oil ... 3-20
Checking the oil level in the front axle differential ... 3-21
Filling up the oil level ... 3-21
Changing the oil ... 3-21
Planetary drives: Checking and filling up the oil level ... 3-22
Changing the oil ... 3-22
Hydraulic system ... 3-23
Specific safety instructions ... 3-23
Checking the hydraulic oil level ... 3-24
Filling up the hydraulic oil ... 3-24
Monitoring the hydraulic oil return filter ... 3-25
Important information for the use of biodegradable oil ... 3-25
Specific safety instructions for pressure lines ... 3-26
Lubrication work ... 3-27
Lubricating the rear axle oscillation-type bearing ... 3-27
Lubricating the planetary drive bearing ... 3-27
Lubricating the pivots on the loader unit ... 3-28
Lubricating the loader unit ... 3-28
Checking the wear pads ... 3-28
Maintenance of attachments ... 3-29
Maintenance of the brake system ... 3-29
Specific safety instructions ... 3-29
Checking/filling up the brake fluid level ... 3-29
Tire maintenance ... 3-30
Daily checks ... 3-30
Weekly checks ... 3-30
Changing wheels ... 3-31
Disassembly ... 3-31
Fitting the wheels ... 3-31
Electrical system ... 3-32
Specific safety instructions ... 3-32
Service and maintenance work at regular intervals ... 3-33
Cables, bulbs and fuses ... 3-33
Alternator ... 3-33
Battery ... 3-33
General maintenance work ... 3-34
Cleaning ... 3-34
General instructions for all areas of the machine ... 3-34
Cleaning inside the cab ... 3-35
Cleaning the outside of the machine ... 3-35
Cleaning the engine compartment ... 3-35
Screw connections ... 3-35

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 12 of 208 pages

The full manual includes:

- All 208 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Mustang ML 48T Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual