ME6003

COMPACT EXCAVATOR

SERVICE MANUAL

Revision A - 06/05

PART #918175

PREVIEW - YOUFIXTHIS.COM

Mustang Manufacturing Company, Inc.

Download full manual at youfixthis.com

Table of Contents

Operation

Important information about this service manual 1-1
Abbreviations/symbols 1-1
Identification of warnings and hazards 1-2
Designated use and exemption from liability 1-2
Type labels and component numbers 1-3
Machine: overview 1-5
Cab Equipment and Controls 1-6
Instrument panel, switches and indicators 1-8
Engine compartment 1-10
Chassis: overview 1-11
SAE/ISO operating controls selector valve 1-12
Tilting the cab 1-13
SAE operating controls (standard) 1-14
ISO operating controls (selectable) 1-15
Boom slew/auxiliary hydraulics pedal 1-16
Dozer blade 1-17
Throttle lever 1-17
Operator's seat adjustments 1-18
Ventilation 1-19
Cab door latch release 1-20
Interior light 1-21
Tool kit and cab jack handle 1-21
Cab heat control 1-21
Recirculated air mode 1-22
Hydraulics/swiveling and boom rotation pedal adjustment 1-22
Battery master switch 1-22

Specifications

Chassis 2-1
Engine 2-1
Capacities 2-2
Engine Tightening Torques 2-2
Hydraulic system 2-3
Auxiliary hydraulics oil flow* 2-3
Screwable hose burst valve 2-3
Undercarriage/swivel unit 2-4
Dozer blade 2-4
Electrical system 2-4
Sound levels 2-6
Fluid capacities 2-7
Coolant compound table 2-7
Specific tightening torques 2-7
General tightening torques 2-8
Dimensions 2-10
Lift Capacities 2-11
Geometry 2-15

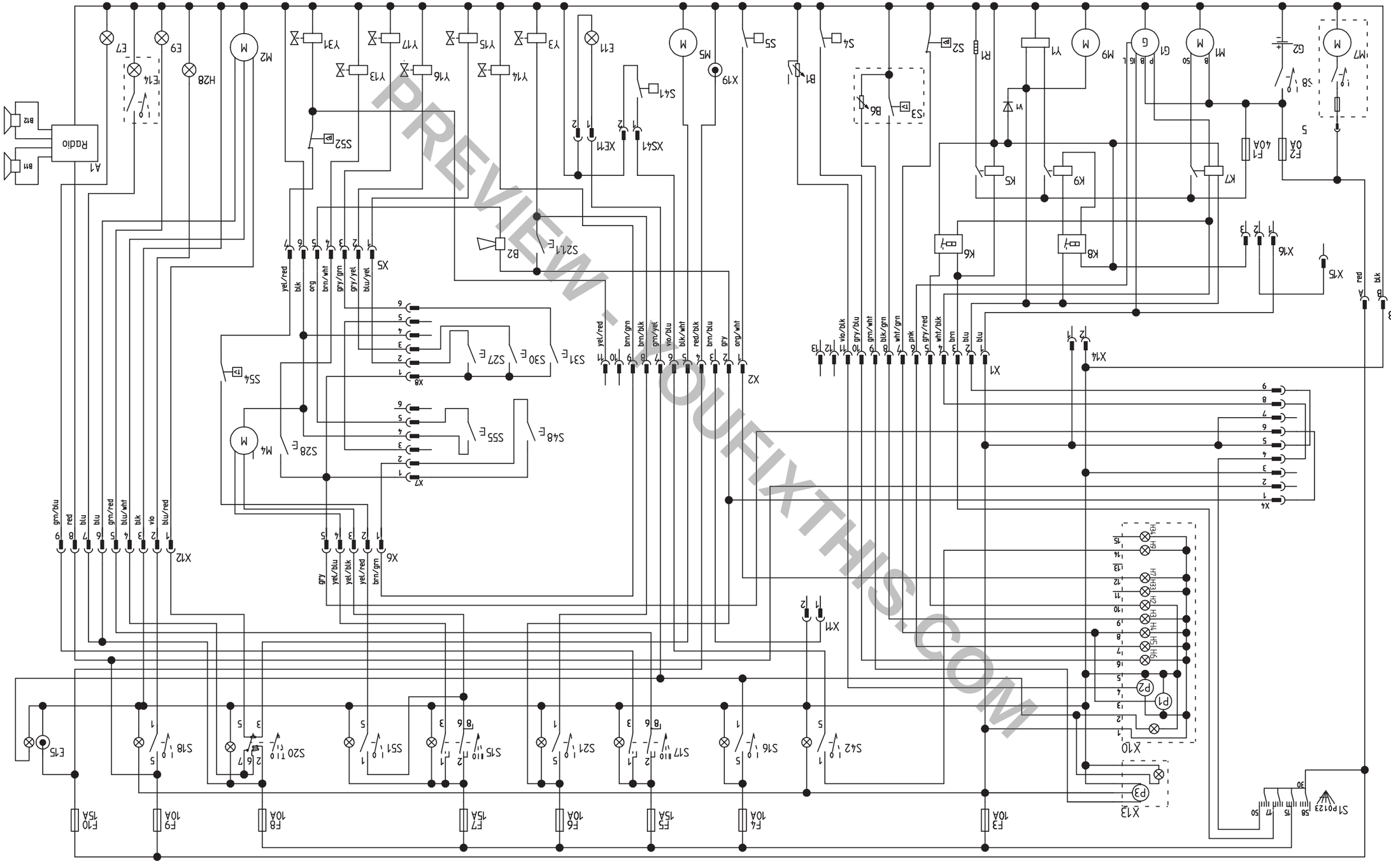
Maintenance

General information care and servicing 3-1
Maintenance decal symbols 3-3
Maintenance decal 3-4
Maintenance schedule 3-5
General Maintenance 3-7
Cab interior 3-8
Exterior of the machine 3-8

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

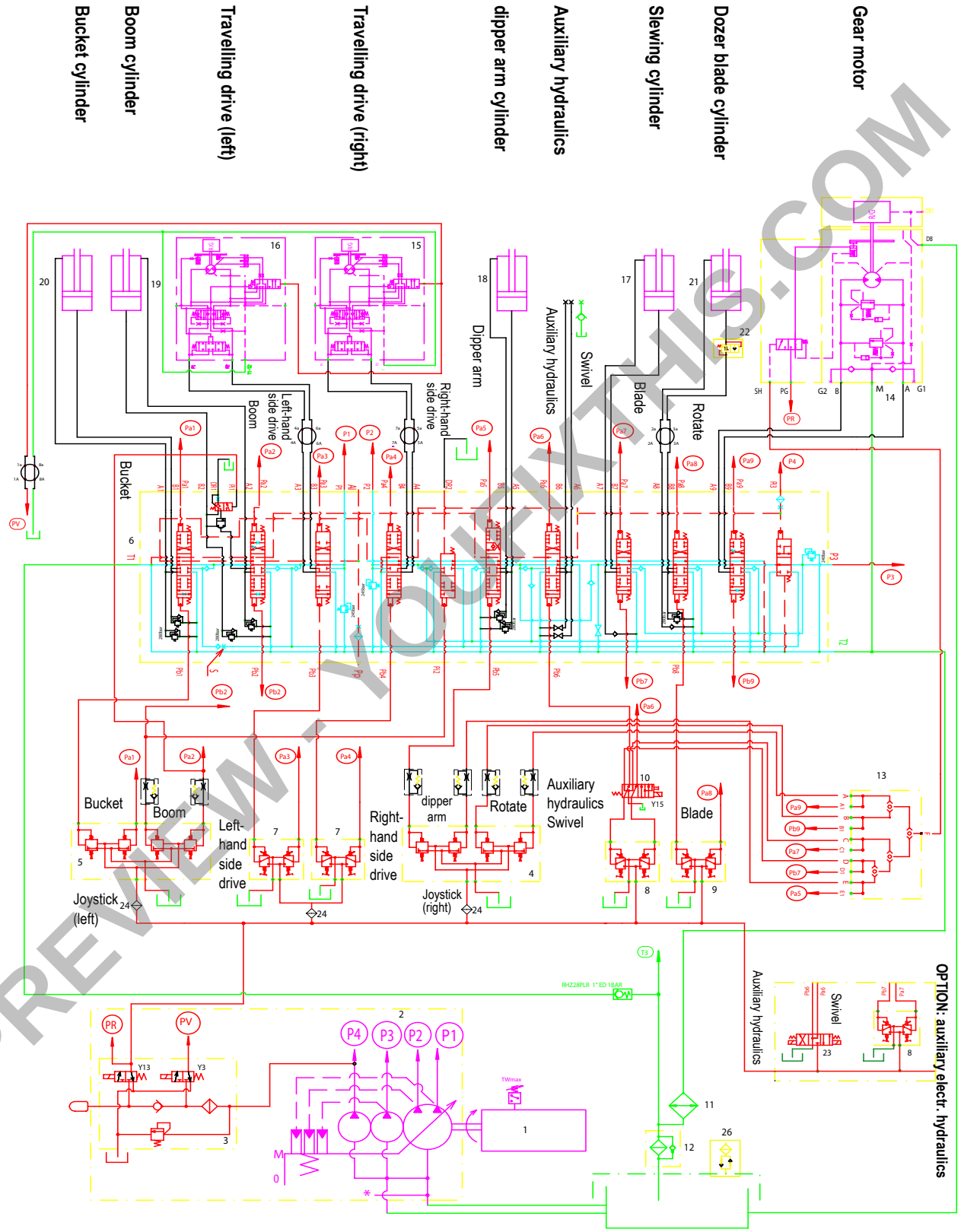
6.16 Wiring diagram version 1



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

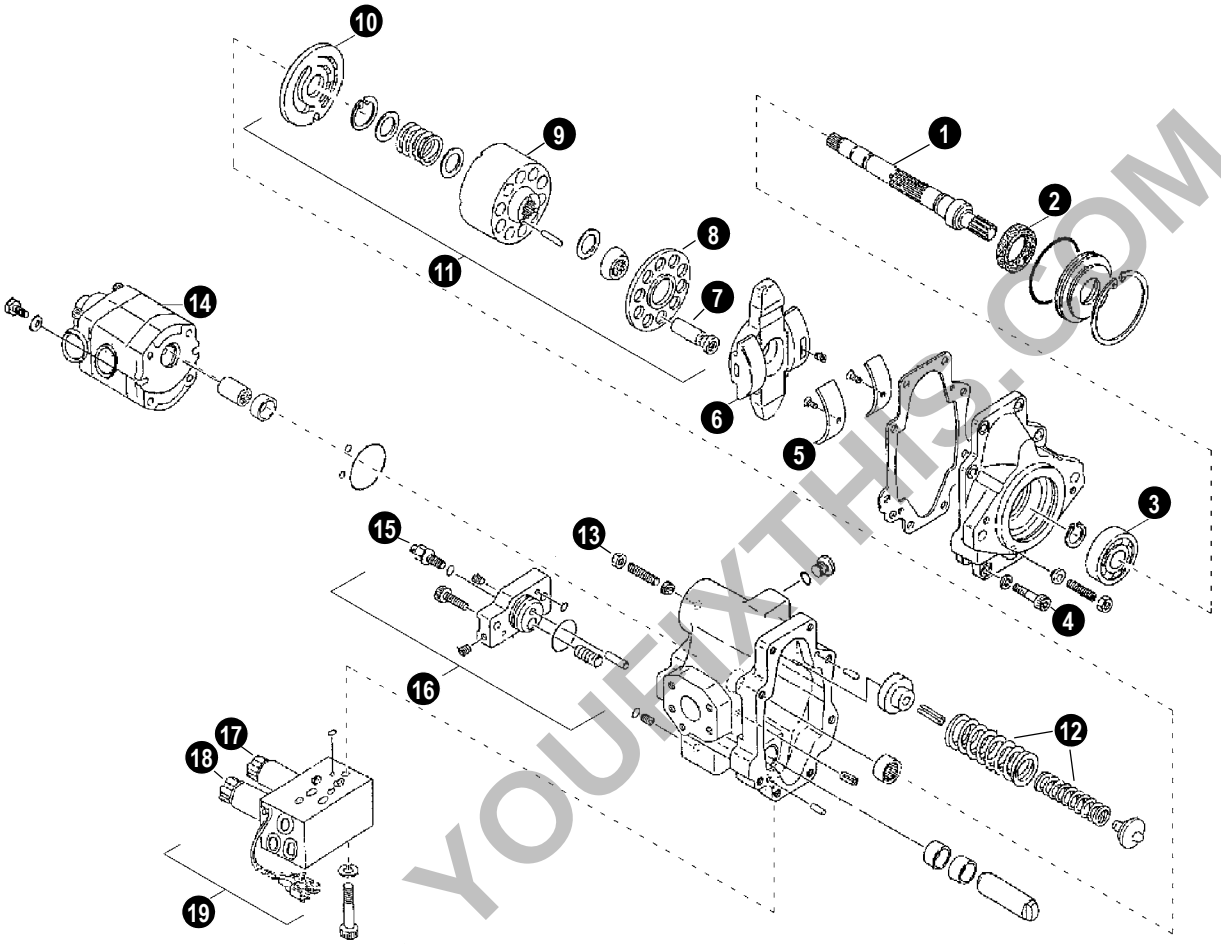
5.17 Hydraulics diagram A4



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Pump unit: exploded view



Ref.	Description
1	Input shaft
2	Shaft seal
3	Bearing
4	Set screw Q-min.
5	Bearing
6	Swash plate
7	Piston
8	Pressure plate
9	Cylinder drum
10	Control disc
11	Drive unit
12	Springs for control characteristics
13	Control initiation set screw
14	Gear pump
15	Set screw Q-max.
16	Governor housing
17	2nd speed range solenoid valve
18	Solenoid valve for safety valve
19	Control oil unit

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2.11 General tightening torques

Note: *Use these torque values when tightening hardware (excluding: locknuts and self-tapping, thread forming and sheet metal screws) unless specified otherwise.*

Hydraulic fittings with various seals (light application). All torque values are in lb.-ft. (Nm) unless marked otherwise.

Thread	Straight pipe fitting with thread and screwed plug (GE)			Non-return valve with elastic seal	Identification aid outside Ø
	Sealing washer	Elastic seal	O-ring		
M10X1.0	7 (9)	13 (18)	11 (15)	13 (18)	0.4 in. (10 mm)
M12X1.5	15 (20)	18 (25)	18 (25)	18 (25)	0.5 in. (12 mm)
M14X1.5	26 (35)	33 (45)	26 (35)	26 (35)	0.6 in. (14 mm)
M16X1.5	33 (45)	41 (55)	30 (40)	37 (50)	0.6 in. (16 mm)
M18X1.5	41 (55)	52 (70)	33 (45)	52 (70)	0.7 in. (18 mm)
M22X1.5	48 (65)	92 (125)	44 (60)	92 (125)	0.9 in. (22 mm)
M27X2.0	66 (90)	133 (180)	74 (100)	107 (145)	1.0 in. (27 mm)
M33X2.0	111 (150)	229 (310)	118 (160)	155 (210)	1.3 in. (33 mm)
M42X2.0	177 (240)	332 (450)	155 (210)	266 (360)	1.7 in. (42 mm)
M48X2.0	214 (290)	398 (540)	192 (260)	398 (540)	1.9 in. (48 mm)
G1/8A	7 (9)	13 (18)	11 (15)	13 (18)	0.4 in. (9.73 mm)
G1/4A	26 (35)	26 (35)	22 (30)	26 (35)	0.5 in. (13.16 mm)
G3/8A	33 (45)	52 (70)	33 (45)	37 (50)	0.7 in. (16.66 mm)
G1/2A	48 (65)	66 (90)	41 (55)	48 (65)	0.8 in. (20.96 mm)
G3/4A	66 (90)	133 (180)	74 (100)	103 (140)	1.0 in. (26.44 mm)
G1A	111 (150)	229 (310)	118 (160)	140 (190)	1.3 in. (33.25 mm)
G1 1/4A	177 (240)	332 (450)	155 (210)	266 (360)	1.7 in. (41.91 mm)
G1 1/2A	214 (290)	398 (540)	192 (260)	398 (540)	1.9 in. (47.80 mm)

Hydraulic fittings with various seals (heavy application). All torque values are in lb.-ft. (Nm) unless marked otherwise.

Thread	Straight pipe fitting with thread and screwed plug (GE)			Non-return valve with elastic seal	Identification aid outside Ø
	Sealing washer	Elastic seal	O-ring		
M12X1.5	15 (20)	26 (35)	26 (35)	26 (35)	0.5 in. (12 mm)
M14X1.5	26 (35)	41 (55)	33 (45)	33 (45)	0.6 in. (14 mm)
M16X1.5	33 (45)	52 (70)	41 (55)	41 (55)	0.6 in. (16 mm)
M18X1.5	41 (55)	66 (90)	52 (70)	52 (70)	0.7 in. (18 mm)
M20X1.5	41 (55)	92 (125)	59 (80)	74 (100)	0.8 in. (20 mm)
M22X1.5	48 (65)	100 (135)	74 (100)	92 (125)	0.9 in. (22 mm)
M27X2.0	66 (90)	133 (180)	125 (170)	100 (135)	1.0 in. (27 mm)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

1.12 Tilting the cab

Refer to 1-10 (Fig. 9) to safely complete the following procedure.

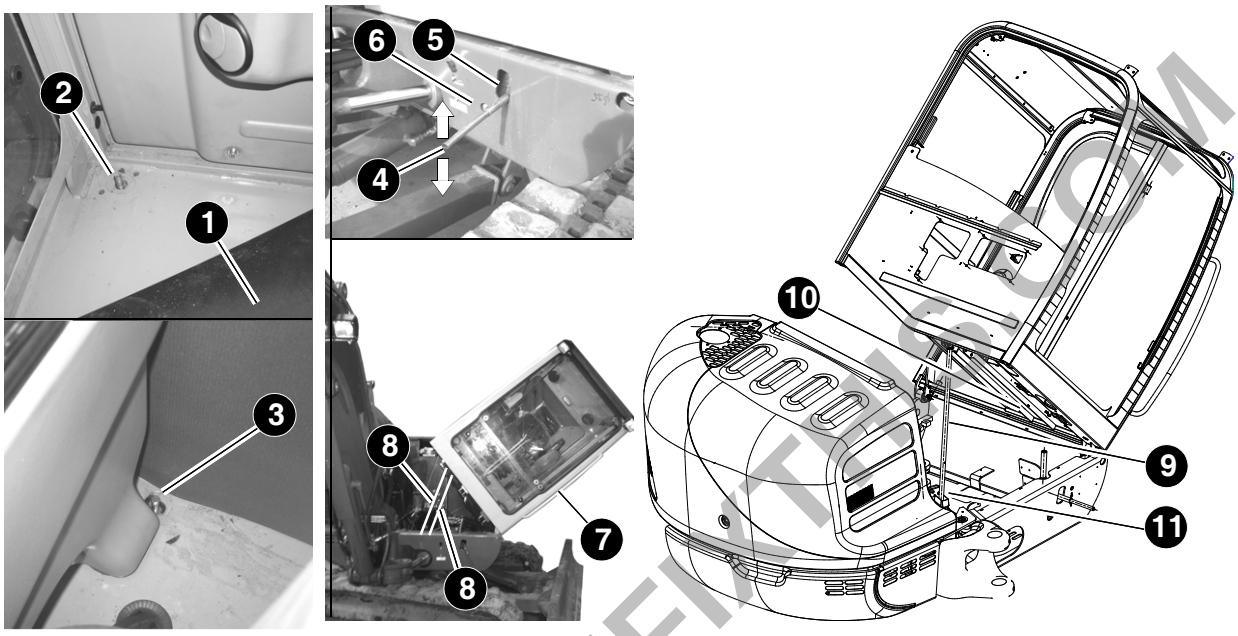


Fig. 9: Tilting the cab

Tilting the cab up:

1. Follow “Mandatory Safety Shutdown Procedure” in the "Safety" Chapter of the Operator’s Manual.
2. Raise the floor mat (1) on the right, front of the cab and remove cab lock-down nut (2). Remove cab lock-down nut (3) at the right rear of the cab.
3. Securely close the cab door.
4. Locate the jack handle tubes (4) from the tool kit in the engine compartment and insert into the jack (5) and jack to the limit. The cab will be raised as far as the jack (5) will travel.
5. Pull handle (7) until the cab is completely tilted and supported by safety cables (8).
6. Remove the tilt rod (9) from the storage bracket (10) and slide the tilt rod (9) into the guide bracket (11) and secure with the split pin.

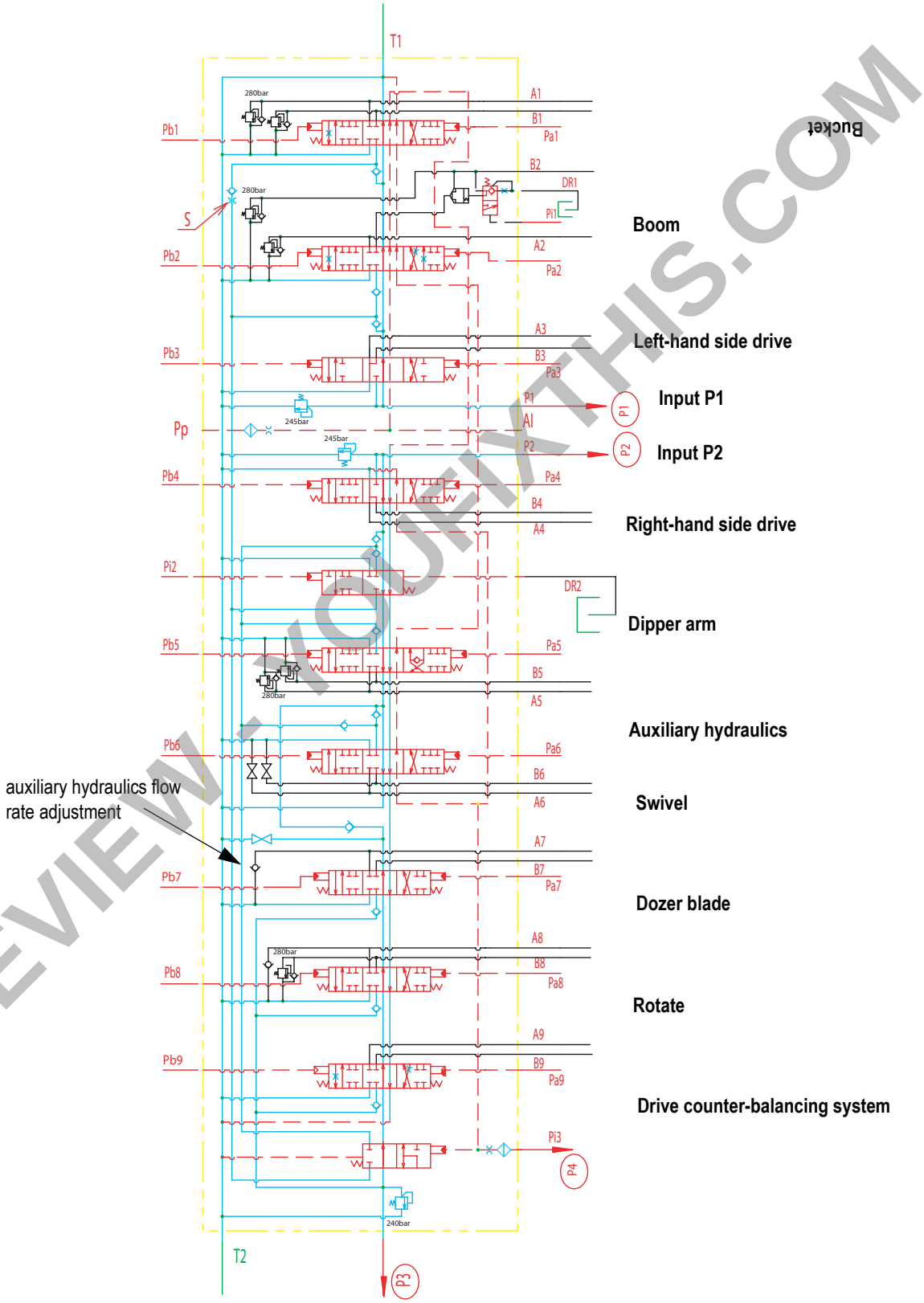
Tilting the cab down:

1. Remove the tilt rod (9) from the guide bracket (11) by removing the split pin and slide the tilt rod (10) out of the guide bracket (9) and secure with the split pin back in the storage bracket (10).
2. Use handle (7) to slowly lower the cab back onto the jack (5).
3. Remove jack handle tubes (4) from the jack (5) and insert the opposite end of the jack handle tubes (4) onto the release pin (6). Slowly turn release pin (6) counter-clockwise until the cab is lowered.
4. Turn the release pin (6) clockwise.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Main valve block diagram



PREVIEW: YOUFIXTHIS.COM

Download full manual at youfixthis.com

4.15 Engine troubleshooting

Problem	Possible causes
Engine does not start or is not easy to start	Wrong SAE grade of engine lubrication oil
	Fuel grade incorrect
	Defective or dead battery
	Loose or oxidized cable connections in starter circuit
	Starter defective, or pinion does not engage
	Wrong valve tip clearance
	Fuel injector defective
	Starting relay defective
	Glow plug defective
	Solenoid switch defective
	Cut-off solenoid does not engage starter
	Cut-off solenoid without current
	High pressure in hydraulic system preventing engine starting.
Engine starts, but does not run smoothly	Fuel grade incorrect
	Wrong valve tip clearance
	Injection line leaks
	Fuel injector defective
Engine overheats. Temperature warning system responds	Oil level too low
	Oil level too high
	Dirty air filter
	Dirty oil cooler fins
	Fan defective, V-belt torn or loose
	Resistance in cooling system too high, flow capacity too low
	Fuel injector defective
Insufficient engine output	Oil level too high
	Fuel grade does not comply with specifications
	Dirty air filter
	Air filter maintenance switch or gauge defective
	Wrong valve tip clearance
	Injection line leaks
	Fuel injector defective
Engine does not run on all cylinders	Injection line leaks
	Fuel injector defective
Insufficient or no engine oil pressure	Oil level too low
	Machine inclination too steep (max. 15°)
	Wrong SAE grade of engine lubrication oil

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2 Specifications

2.1 Chassis

Sturdy steel sheet chassis, rubber-mounted engine

2.2 Engine

Engine Model	Yanmar 4TNV98-VNS EPA Tier II
Engine Type	Water-cooled 4 stroke diesel engine
No. of cylinders	4
Fuel injection system	Direct injection
Aspiration	Naturally aspirated
Cooling system	Water-cooled/aspirating fan
Lubrication system	Force-feed lubrication with trochoidal pump
Displacement	202 cu. in. (3.32 L)
Nominal bore and stroke	3.9 x 4.3 in. (98 x 110 mm)
Output	57 hp (42.5 kW) @ 2100 rpm
Max. torque	184 lb.-ft. (249 Nm) @ 1400 rpm
Max. engine speed without load	2275 +/- 50 rpm
Idling speed	1050 +/- 50 rpm
Valve tip clearance (intake = outlet)	0.006 – 0.010 in. (0.15 – 0.25 mm) (cold)
Injection pressure	3191 – 3336 psi (220 – 230 bar)
Compression	507 +/- 14.5 psi (35 +/- 1 bar) @ 250 rpm
Engine oil pressure	48 – 58 psi (3 – 4 bar)
Pressure switch for engine oil pump	7.25 +/- 0.1.5 psi (0.5 +/- 0.1 bar)
Opening temperature of thermostat	157 – 163 °F (69.5 – 72.5 °C)
Thermal switch	225 – 235 °F (107 – 113 °C)
Firing order	1 - 3 - 4 - 2 - 1
Direction of rotation	Counter-clockwise (as seen from the flywheel)
Starting aid	Intake manifold (pre-heating time 10 – 15 sec)
Max. inclined position (engine no longer supplied with oil):	25°/46% in all directions **NOTE:** this is exceeded by the machine's theoretical climbing ability (30°/58%)
Exhaust values according to	97/68/EC Tier II EPA Tier II

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

3.4 Maintenance schedule

Check, clean or inspect

Service Activity	Daily	Every 50 Hours	Every 250 Hours	Every 500 Hours	Every 1000 Hours	Customer	Dealer
Engine oil level	x					x	
Engine coolant level	x					x	
Hydraulic oil level	x					x	
Gearbox oil level		x			x		x
Clean water ducts					x		x
Check engine/hydraulic oil radiator and air conditioning for contamination. Clean if necessary.	x		x			x	x
Check cooling system, heating and hoses for leaks and pressure (visual check)	x		x			x	x
Replace cab air filter for heating and air conditioning				x			x
Air filter (damage)	x					x	
Inspect water separator prefilter: drain water	x					x	
Clean water separator				x			x
Check V-belt condition and tension	x					x	
Check exhaust system for damage	x					x	
Check engine valve clearance, set if necessary					x		x
Fuel injection pump, injection and pressure, injection nozzles and valves					x		x
Empty diesel fuel tank				x			x
Check battery electrolyte. Fill with distilled water as necessary		x				x	
Check alternator, starter and electrical connections, bearing play and function				x			x
Preheating system and electrical connections				x			x
Air filter contamination gauge				x			x
Pressure check or primary pressure relief valves				x			x
Check tracks for cracks or cuts	x					x	
Check track tension. Adjust as necessary	x					x	
Bearing play on tread rollers, track carrier rollers and front idlers				x			x
Check cylinders piston rods for damage	x					x	
Check screws for tightness				x			x
Pin lock (bucket stick and attachment)	x					x	
Hydraulic line clamps	x					x	
Check indicator lights for correct function		x		x			x
Cab tilt lock components		x		x			x
Couplings, dirt build up on the hydraulic system dust caps	x					x	
Insulating mats in the engine compartment		x		x			x
Grease supply of the central lubrication system	x					x	
Warning decals and operation in place		x		x			x
Engine cover gas strut	x					x	

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

1.6 Machine: overview

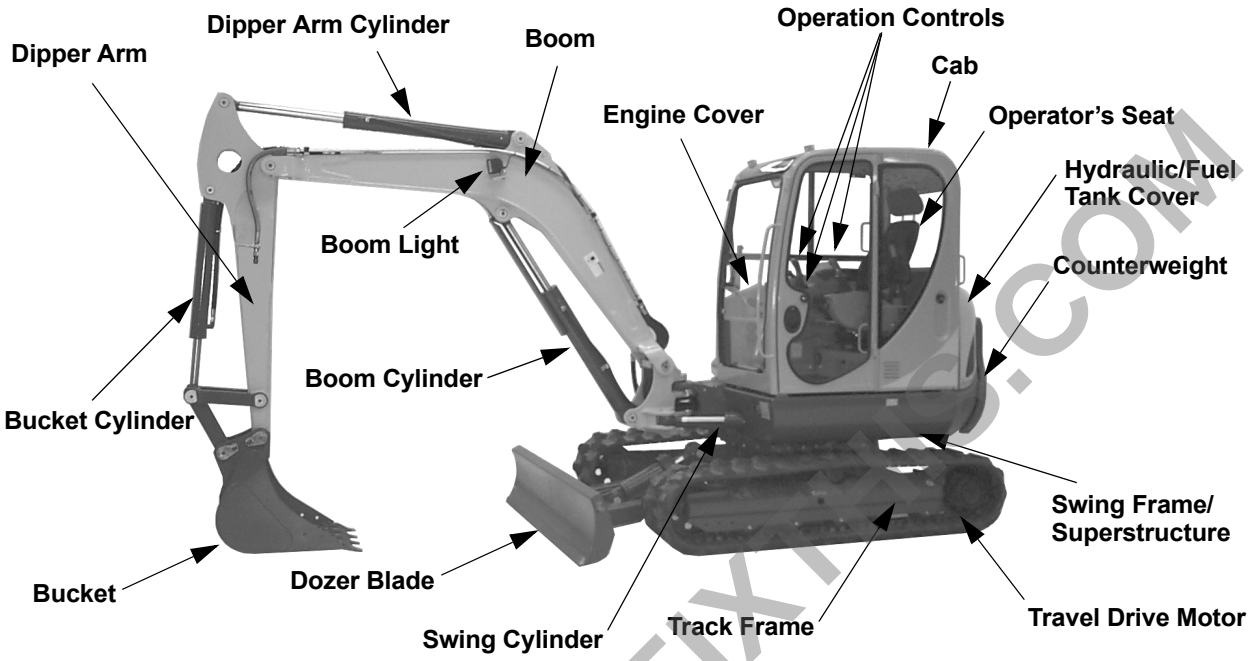


Fig. 7: Component Names

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 12 of 180 pages

The full manual includes:

- All 180 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Mustang ME6003 Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual