COMPACT EXCAVATORS

ME2503/3003/ 3503/3703

Compact Excavators

SERVICE MANUAL

Form No. 918149
Revision A

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PRODUCT HISTORY

This overall lists the main technical modifications of the excavator type

ME2503

Step	Model	Serial No.	Update/Description
Production Start	2503 RD	AB00001	Rear counterweight opening mechanism
		AB00806	Ignition lock diode
			Dozer function relay
		AC00307	Lower windshield seal modification
		AC00351	Plastic fuel tank
		AC00901	New swivel unit
Version	2503 AD	AD00001	Yanmar diesel engine
			Joystick control short (IV)
			Joystick console (IV) hardening cover
			Sticker design
			Wiring and instrument panel changed
			Diesel engine maintenance intervals extension possible
		AD00029	Fuel tank ventilation filter

Mustang ME3003

Step	Model	Serial No.	Update/Description
Production Start	3003 RD	AB00001	Rear counterweight opening mechanism
		AB00806	Ignition lock diode
			Dozer blade function relays
		AC00307	Lower windshield seal modification
		AC00351	Plastic fuel tank
		AC00901	New swivel unit
Version	3003 AD	AD00001	Yanmar diesel engine
			Joystick console short (IV)
			Joystick console (IV) hardening cover
			Sticker design
			Wiring and instrument panel changed
			Diesel engine maintenance intervals extension possible
		AD00029	Fuel tank ventilation filter

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Dimensions

		253	303	353	373
Starting with Serial No.		AB00001			
Dimensions (H x W x L)		7' 9" x 5' 6" x 10' 0" (2370 x 1370 x 3050 mm)	9" 10" x 4' 10" x 10" 4" (2400 x 1480 x 3150 mm)	7" 11" x 6' 10" x 11' 0" (2405 x 1620 x 3360 mm)	8' 3" x 6' 10" x 11' 0" (2520 x 1620 x 3360 mm)
Transport length		14' 6" (4410 mm)	15' 4" (4695 mm)	16' 11-1/2" (5170 mm)	16' 11-1/2" (5170 mm)
Boom swing angle	Left/Right	80°/45°	80°/45°	80°/45°	80°/45°
Front boom swing radius	Minimum	4' 5-1/2" (1360 mm)	4' 7" (1390 mm)	4' 10" (1470 mm)	4' 10" (1470 mm)
Tilt angle uppercarriage		N/A	N/A	N/A	15°
Ground clearance	Maximum	10.6" (270 mm)	10.8" (275 mm)	11" (280 mm)	11" (280 mm)
Undercarriage width		5' 6" (1370 mm)	4' 10" (1480 mm)	5' 4" (1620 mm)	5' 4" (1620 mm)
Track width	Standard	9.8" (250 mm)	11.8" (300 mm)	11.8" (300 mm)	11.8" (300 mm)
Maximum dump height	Standard	7' 7" (2925 mm)	10' 4" (3150 mm)	11' 10" (3620 mm)	12' 3" (3735 mm)
Maximum dump height/Option	Dipperstick long	10' 2" (3090 mm)	10' 11" (3325 mm)	12' 6" (3820 mm)	12' 11" (3935 mm)
Maximum dig height	Standard	13' 6" (4125 mm)	14' 8" (4470 mm)	16' 1" (4910 mm)	16' 6" (5020 mm)
Maximum dig height/Option	Dipperstick long	14' 0" (4260 mm)	15' 3" (4635 mm)	16' 9" (5110 mm)	17' 2" (5220 mm)
Maximum dig radius	Standard	14' 10" (4515 mm)	15' 9" (4800 mm)		
Maximum vertical dig depth	Standard	5' 11" (1810 mm)	6' 3" (1990 mm)	7' 3" (2220 mm)	6' 11' (2110 mm)
Maximum dig depth	Standard	8" 7" (2620 mm)	9' 1" (2770 mm)	10' 7" (3230 mm)	10' 3" (3120 mm)
Minimum tail swing radius		4' 1" (1240 mm)	4' 2" (1260 mm)	4' 7" (1400 mm)	4' 7" (1400 mm)
Dozer blade dimensions (W x H)	Standard	5' 6" x 13.4" (1370 x 340 mm)	4' 10" x 14.6" (1480 x 370 mm)	5' 4" x 14.6" (1620 x 370 mm)	5' 4" x 14.6" (1620 x 370 mm)
Dozer blade dimensions (W x H)	Extension	N/A	N/A	N/A	N/A
Dozer blade maximum lift ... Ground	Above/Below	15.35"/16.34" (390/415 mm)	15.75"/17.71" (400/450 mm)	16.14"/19.30" (410/490 mm)	16.14"/19.30" (410/490 mm)
Track rollers/Guide rollers	Pieces per side	3 / 1	4 / 1	4 / 1	4 / 1
Operation weight with	Cab	5732 lb. (2600 kg)	6878 lb. (3120 kg)	7716 lb. (3500 kg)	8214 lb. (3726 kg)
Operation weight with	Canopy	5567 lb. (2525 kg)	6669 lb. (3025 kg)	7507 lb. (3405 kg)	8005 lb. (3631 kg)
Ground pressure	Standard	4.7 psi (0.33 kg/cm²)	4.5 psi (0.32 kg/cm²)	4.7 psi (0.33 kg/cm²)	5.0 psi (0.35 kg/cm²)
Gradability		30°/58%	30°/58%	30°/58%	30°/58%
Noise level	LWA	94 dB (A)	95 dB (A)	95 dB (A)	95 dB (A)
Noise level	LPA	74 dB (A)	76 dB (A)	74 dB (A)	74 dB (A)
Travel speed	Drive	1.4/2.7 mph (2,2/4,3 km/h)	1.5/2.7 mph (2,4/4,7 km/h)	1.6/3.1 mph (2,5/5,0 km/h)	1.6/3.1 mph (2,5/5,0 km/h)
Tear out force per	Bucket tooth	4343 lbf (1970 kp)	5953 lbf (2700 kp)	6570 lbf (2980 kp)	6570 lbf (2980 kp)
Maximum dipper stick tear out force	Standard	2809 lbf (1270 kp)	3506 lbf (1590 kp)	4453 lbf (2020 kp)	4453 lbf (2020 kp)
Slew (swivel) speed	Uppercarriage	9 rpm	10 rpm	10 rpm	10 rpm

Explaination:

O = Optional

N/A = Not Available/Not Applicable

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7. TIGHTENING TORQUES

Tightening torque
for hydraulic joints and dry assembling

Metric hose joints for hydraulic assembling

Light version (DKOL)				
DN	RA	Screw	Tool	Torque
05	6L	M12 x 1,5	SW 14	11 lb-ft. (15 Nm)
06	8L	M14 x 1,5	SW 17	15 lb-ft. (20 Nm)
08	10L	M16 x 1,5	SW 19	30 lb-ft. (40 Nm)
10	12L	M18 x 1,5	SW 22	37 lb-ft. (50 Nm)
12	15L	M22 x 1,5	SW 27	55 lb-ft. (75 Nm)
16	18L	M26 x 1,5	SW 32	63 lb-ft. (85 Nm)
20	22L	M30 x 2	SW 36	74 lb-ft. (100 Nm)
25	28L	M36 x 2	SW 41	133 lb-ft. (180 Nm)
32	35L	M45 x 2	SW 55	162 lb-ft. (220 Nm)

Heavy type (DKOS)				
DN	RA	Screw	Tool	Torque
05	8S	M16 x 1,5	SW 19	30 lb-ft (40 Nm)
06	10S	M18 x 1,5	SW 22	37 lb-ft (50 Nm)
08	12S	M20 x 1,5	SW 24	44 lb-ft. (60 Nm)
10	14S	M22 x 1,5	SW 27	55 lb-ft. (75 Nm)
12	16S	M24 x 1,5	SW 30	66 lb-ft. (90 Nm)
16	20S	M30 x 2	SW 36	74 lb-ft. (100 Nm)
20	25S	M36 x 2	SW 41	133 lb-ft. (180 Nm)
25	30S	M42 x 2	SW 50	199 lb-ft. (270 Nm)
32	38S	M52 x 2	SW 60	295 lb-ft (400 Nm)

Surface galvanic coated and dry (O-Ring oiled). Tolerance torque -10 %

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1. **Maintenance Schedule** Mustang **ME2503 - 3703**

Servicing activity component	every 10 h (daily)	every 50 h (w eekly)	every 250 h (6 months)	every 500 h (12 months)	every 1000 h (18 months)	annually
ENGINE						
Oil level	O					
Fuel level	O					
Leakage	O					
Visual check	O					
Air filter	O/X			<>		<>
Seating of mounting bolts		O				
Coolant	O					
Engine speed regulation			O			
Exhaust system			O			
Engine oil	O	<>(1)	<>			<>
Oil filter		<>(1)	<>			<>
V-belt: condition and tension		O				
Cooler fins		X				
Valve clearance		O			O	
Alternator, starter					O	
Fuel tank					X	
Water pump					O	
Fuel filter		O	<>			<>
Cooling system and hoses				O		
Electrical connections				O		
Glow plug system				O		
Coolant thermostat				O		
Battery fluid		O				

O - Check
X - Clean
<> Change/Replace
<> (1) -Change/Replace the first time

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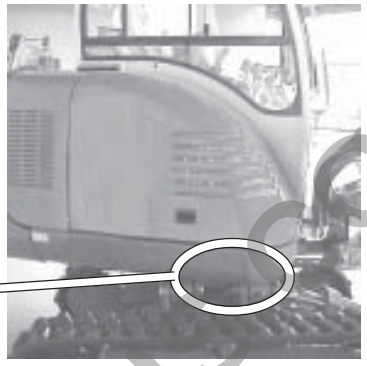
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9. HYDRAULIC OIL TANK

HYDRAULIC OIL CHANGE

The hydraulic oil should be changed only when warm (approximately 104°F [40°C]).

Before changing the oil, retract all hydraulic cylinders. Turn uppercarriage 90°.



1) Open breather filter (width across 1-7/16“ [36 mm]) to depressurize tank (tank pressurized).
2) Open drain hose of oil tank carefully (access from below - chassis floor).
3) Drain oil into a suitable container.
4) Check hydraulic oil tank for contamination and clean it, if necessary.
5) Replace filter according to maintenance instructions.
6) Close screw plug of drain hose.
7) And clean hydraulic oil at filter station (filtering 10 µm).
8) Vent hydraulic pump (see Hydraulic Pump chapter).
9) Close hydraulic oil tank.
10) Let machine run at idle for several minutes.
11) Dispose of old oil as required by environmental laws.

10. DIESEL ENGINE Type: **Yanmar**

NOTE:

Change:	Diesel engine maintenance intervals
Solution:	Extension possible (Yanmar)

Maintenance Intervals “500”

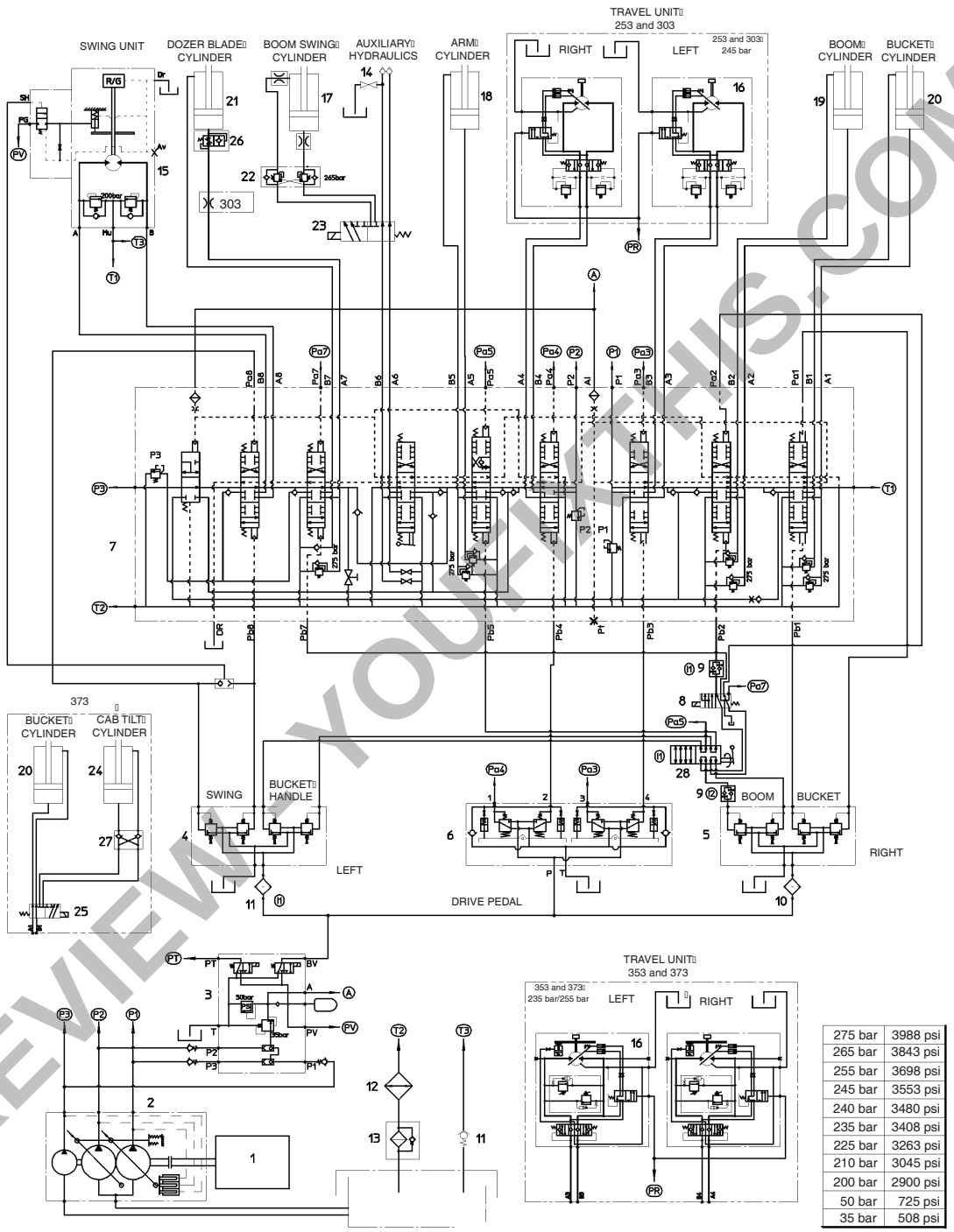
> Affected parts:Engine oil/filter
> Affected excavators: Only possible if the following points are fullfilled:

To save costs - Mustang can offer an extension for the maintenance interals of the excavator diesel engine oil and oil filter up to 500 work hours !
The customer can choose between the standard and the extended interval solution.

		First Change --->	then every
Standard:	Engine oil/filter	50 hrs.	125 - 250 hrs.
NEW - “500 hrs“	Engine oil/filter	50 hrs.	500 hrs.

Notice the following qualifications for the interval extension:

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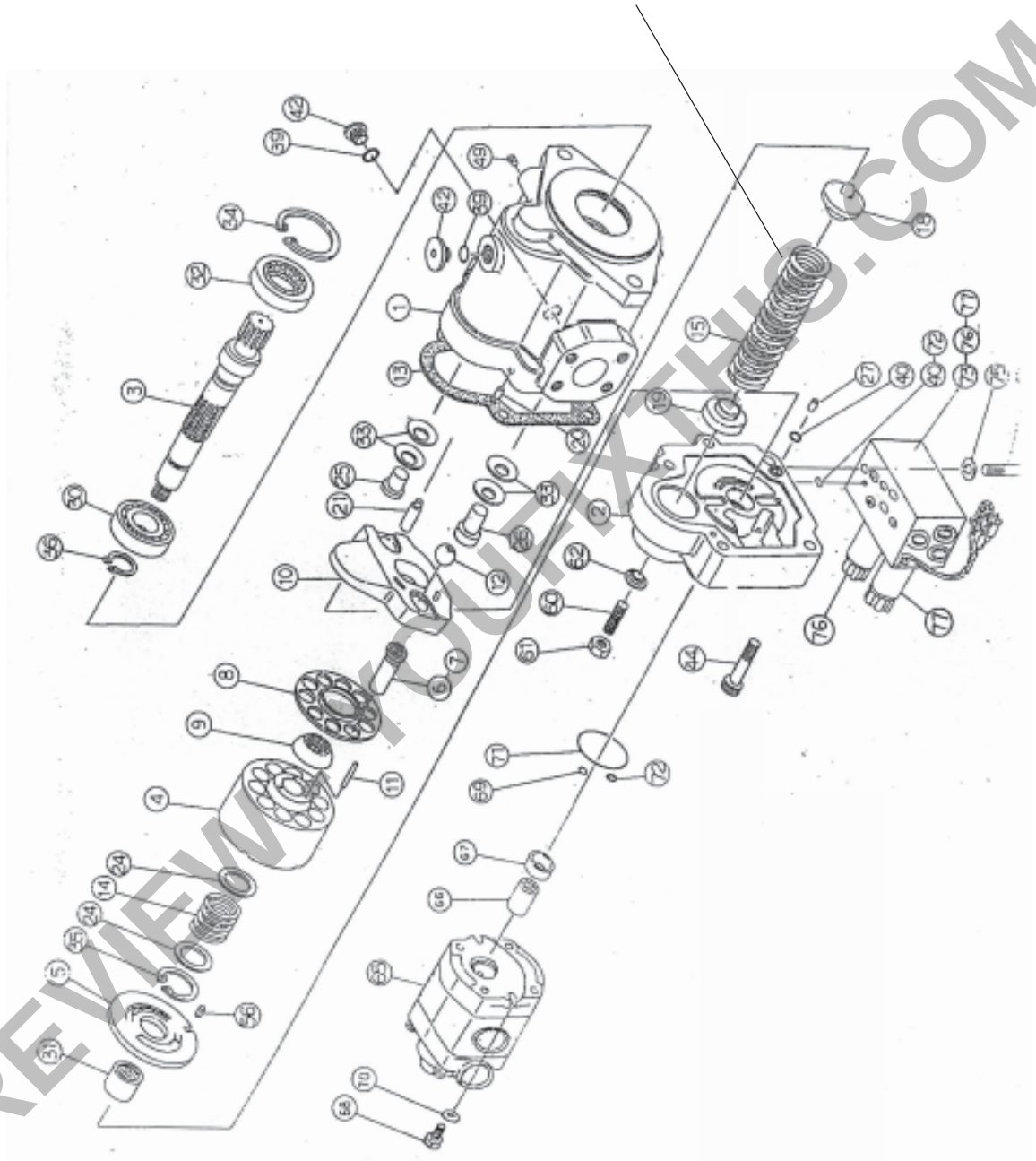


275 bar	3988 psi
265 bar	3843 psi
255 bar	3698 psi
245 bar	3553 psi
240 bar	3480 psi
235 bar	3408 psi
225 bar	3263 psi
210 bar	3045 psi
200 bar	2900 psi
50 bar	725 psi
35 bar	508 psi

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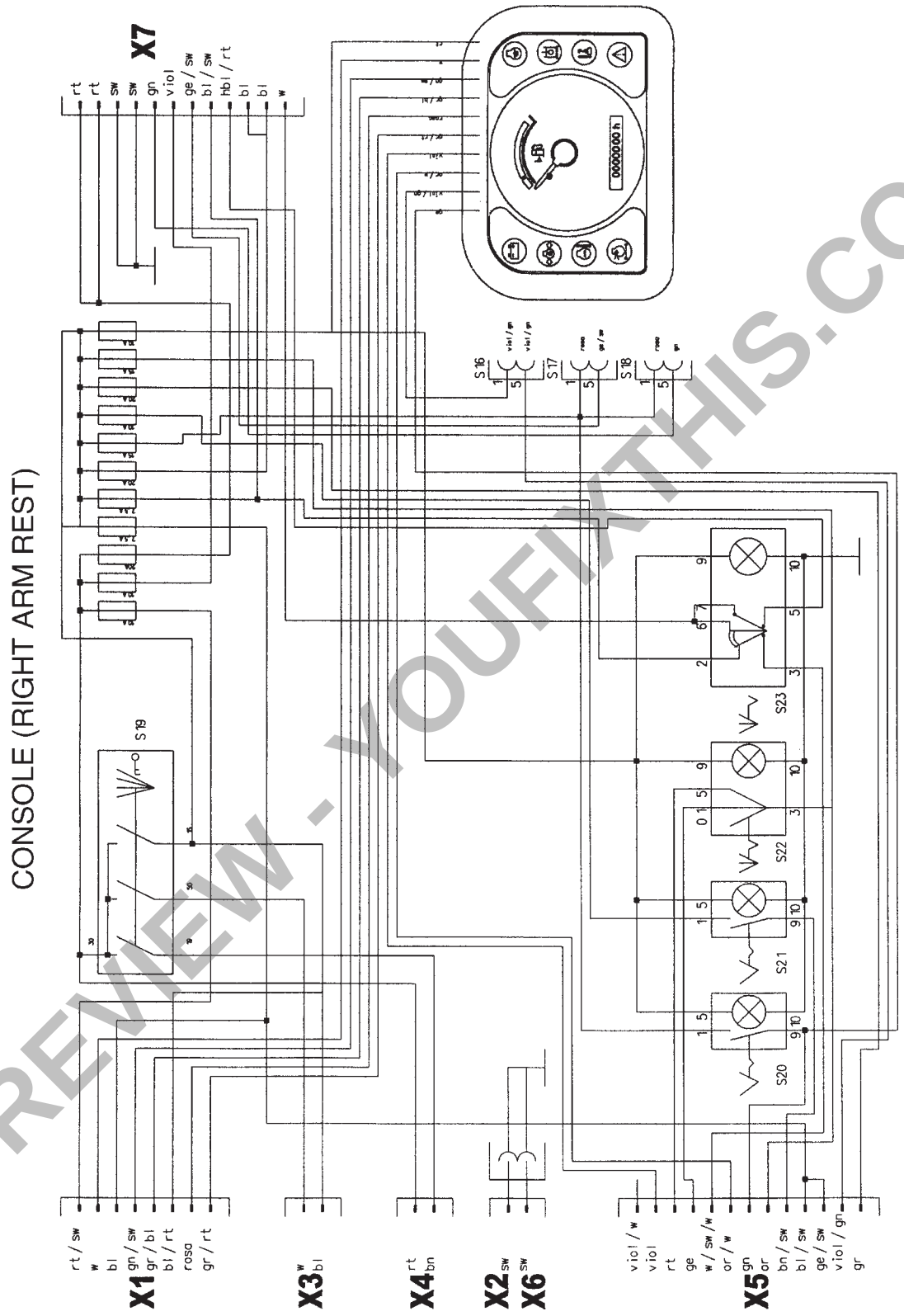
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Fig.: Exploded View - Double Axial and Gear Pump ME2503
Feature: 1 Governing Spring - Linear Pump Regulation



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BUCKET LIST 253

BUCKETS	Width	Volume	Part No.:	Usable for ...
BUCKET 253 **Advantage:** *more Bucket volume than the 02 model*	10.23" (260 mm)	1.3 cu. ft. (36 L)	2526025	**253** **192/222** (except 27.5" [700 mm])
	11.8" (300 mm)	1.5 cu. ft. (43 L)	2526001	
	15.7" (400 mm)	2.1 cu. ft. (59 L)	2526013	
	19.7" (500 mm)	2.6 cu. ft. (75 L)	2526009	
	23.6" (600 mm)	3.2 cu. ft. (91 L)	2526017	
	27.5" (700 mm)	3.8 cu. ft. (107 L)	2526018	
BUCKET 192/222	10.23" (260 mm)	1.2 cu. ft. (33 L)	2206053	**253** (but less bucket volume) **192/222**
	11.8" (300 mm)	1.4 cu. ft. (39 L)	2206054	
	15.7" (400 mm)	1.9 cu. ft. (54 L)	2206055	
	19.7" (500 mm)	2.4 cu. ft. (69 L)	2206056	
	23.6" (600 mm)	2.9 cu. ft. (84 L)	2206057	
BUCKET for quick hitch coupler 253 Advantage: *more bucket volume that the 02 model*	10.23" (260 mm)	1.3 cu. ft. (36 L)	2526037	**253** **192/222** (except 27.5" [700 mm])
	11.8" (300 mm)	1.5 cu. ft. (43 L)	2526036	
	15.7" (400 mm)	2.1 cu. ft. (59 L)	2526035	
	19.7" (500 mm)	2.6 cu. ft. (75 L)	2526034	
	23.6" (600 mm)	3.2 cu. ft. (91 L)	2526033	
	27.5" (700 mm)	3.8 cu. ft. (107 L)	2526032	
BUCKET for quick hitch coupler 192/222	10.23" (260 mm)	1.2 cu. ft. (33 L)	1706134	**253** (less bucket volume) **192/222**
	11.8" (300 mm)	1.4 cu. ft. (39 L)	1706135	
	15.7" (400 mm)	1.9 cu. ft. (54 L)	1706136	
	19.7" (500 mm)	2.4 cu. ft. (69 L)	1706137	
	23.6" (600 mm)	2.9 cu. ft. (84 L)	1706138	
QUICK HITCH COUPLER 192/222			1706149	**253** **192/222**
DITCHING BUCKET 192/222	33.5" (850 mm)	2.4 cu. ft. (69 L)	2206058	**253** **192/222**
	39.4" (1000 mm)	2.9 cu. ft. (82 L)	2206059	
DITCHING BUCKET for quick hitch coupler 192/222	33.5" (850 mm)	2.4 cu. ft. (68 L)	1706125	**253** **192/222**
	39.4" (1000 mm)	2.8 cu. ft. (80 L)	1706126	
TILTING BUCKET hydraulic 192/222	33.5" (850 mm)	2.6 cu. ft. (73 L)	2206060	**253** **192/222**
	39.4" (1000 mm)	3.1 cu. ft. (87 L)	2206061	
TILTING BUCKET hydraulic for quick hitch coupler 192/222	33.5" (850 mm)	2.6 cu. ft. (73 L)	1706147	**253** **192/222**
	39.4" (1000 mm)	3.1 cu. ft. (87 L)	1706148	

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2 Diagram (Yanmar Diesel Engine Starting at Serial No. AD00001) E8

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6 Tilting the Superstrucure F7

G Attachment
1 Bucket List G2

Abbreviations:

AP	...	Adjustment Point
MP	...	Measuring Point
PPLV	...	Primary - Pressure Limiting Valve
SPLV	...	Secondary - Pressure Limiting Valve
TT	...	Tightening Torque
Pb1	...	Port Code at the Hydraulic Diagram

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