

MASSEY FERGUSON[®]

**1165 / 1445
TRACTORS**

(Manual / Power Shuttle)

Workshop Service Manual

NOTE TO THE RECIPIENT - This packet is one component, of two or more components, required to comprise a complete publication. The following item(s), shipped under separate part number, are used with this publication:

- *2" Storage Binder (Inserts for binder provided in this packet)*

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**1165 / 1445
SERVICE MANUAL
1449572M1**

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INTRODUCTION

The purpose of this manual is to assist dealers and distributors in the efficient repair and maintenance of farm machinery. Carrying out the procedures as detailed, together with the use of special tools where appropriate will enable the operations to be completed within the time stated in the repair time schedule.

NOTE: To assist with location information, each division of the manual is preceded by a contents page listing the operations in numerical order.

Each instruction within an operation has a sequence number, and to complete the operation in the minimum time it is essential that these instructions are performed in numerical sequence commencing at 1 unless otherwise stated. When applicable, these sequence numbers identify the components in the appropriate illustration. Where performance of an operation requires the use of a special tool. The tool is called out in that operation.

INDEXING

For convenience, the manual is divided into parts, sections and sub-sections with each page number bearing the part and section number. Page numbers are located at top outside of each page. Beneath the page number is written title of manual division

Page number example: 7A-15

Part 7 section A, page 15

This simplifies cross-referencing and enables the subject to be found easily.

NOTE: Page numbers will be consecutive within each sub-section. A void of page numbers may be used between these sub-sections in order to provide space for future amendments and also to indicate the beginning/end of adjustments and also to indicate the beginning/end of adjacent sub-sections.

SPECIAL TOOLS

Where the use of a special tool is specified in an operation, the tool will be called out for, 1.

The use of the special tools mentioned in the text contributes to a safe, efficient and profitable repair. Some operations are impracticable without their use.

Make certain proper tools are available when starting the job.

REPAIR & REPLACEMENTS

When service parts are required, it is essential that only genuine AGCO replacements are used.

- Attention is particularly drawn to the following points concerning repairs and the fitting of replacement parts accessories:
- Safety features embodied in the tractor may be impaired if other than genuine parts are fitted.
- In certain territories, legislation prohibits the fitting of parts not to the tractor manufacturer's specification.
- Torque wrench setting figures given in the Workshop manual must be strictly adhered to.
- Locking devices where specified must be fitted. If the efficiency of a locking device is impaired during removal it must be renewed.
- The tractor warranty may be invalidated by the fitting of other than genuine AGCO parts. All replacements have the full backing of the manufacturers warranty. AGCO Distributors and Dealers are obliged to supply only genuine service parts.

REPAIR TIME SCHEDULE

The operation listed in the Repair Time Schedule refer to those described in this manual. The time set against each operation in the schedule is established by performing the actual operation in the schedule is established by performing the actual operations on standard machines using special tools where applicable. The Repair Time Schedule for use with this manual is issued as a separate publication.

NOTE: Repair Time Schedules are issued to AGCO Distributors and Dealers only and are not for general publication.

AMENDMENTS

Under normal conditions, revised pages issued carry the same number as the existing pages requiring amendment. The new pages are inserted in place of the existing ones. The old pages should then be discarded.

In some cases additional pages or completely new sections may be issued. These pages are to be inserted immediately following the page carrying the next lowest page number, or section number as appropriate.

Where new pages are required to be positioned between existing pages, the new page numbers will contain a suffix letter.

Example New Page Number: 7A-16a.

This page is inserted after existing page number 7A-16 and before page number 7A-17. Correspondingly a further new page numbered 7A-16b would be positioned after 7A-16a but 7A-17.

NOTE: Service bulletins and Amendments Sheets are issued to the AGCO Distributors and Dealers only and are not for general publication.

SAFETY PRECAUTIONS

- Make sure that all persons are in a safe position before starting the engine, or operating ANY of the controls.
- Always stop the engine before leaving the operator's platform.
- Wait for all moving parts to stop COMPLETELY before starting any work on the tractor.
- Before starting service procedures, attached equipment should be resting on the ground and all hydraulic control levers operated back and forth several times with engine stopped.
- If it becomes necessary to go under raised attachment (i.e.: to perform adjustments, etc.), safety stands must be used to support the attachment.
- Make sure the battery ground cable is disconnected before working on or near the electrical system of electrical system components.
- Keep hands, feet and clothing a safe distance away from moving belts, pulleys and other moving parts. Make sure all safety shields are installed.
- Be extra careful when performing any checks, inspections, adjustments or tests that require operating the engine, the hydraulic controls, OR with the machine in motion.
- Make sure dependable jacks of adequate lifting capacity AND suitable stands (or wooden blocking) are used to securely block up the machine when removing any of the wheels or axles.
- Before any attempt is made to disconnect or remove any hydraulic component, make sure the hydraulic pressure within the system is relieved and the engine is stopped.

- Carry out the repair procedures in a "common sense" manner. Safety procedures cannot be overemphasized when working on, or around machinery, especially when working on engine driven and /or hydraulically actuated equipment.
- Safety also depends upon the skill of the serviceman in the use of tools and other shop equipment while performing the recommended service procedures.
- Exercise extreme caution when testing hydraulic or fuel system components as fluid ejected under high pressure can easily penetrate skin causing serious infection.
- When it is necessary to remove hoods, shields, ROPS, etc. to conduct repair operation, all items must be reinstalled to unit and secured in original fashion.
- Do not bend, drill holes, or weld on the ROPS structure, if the ROPS is damaged in any way it must be replaced.

Personal injury may result if these precautions are not followed.



Look for this symbol to point out important safety precautions. It means: ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.

TRACTOR IDENTIFICATION

Model / Serial Numbers

Each tractor is identified by means of Tractor model and serial numbers. As a further identification, engine and chassis are provided with identification numbers

To assist the parts department in ordering parts, list the tractor model and serial numbers on the parts order form.

FIGS. 0-01 & 0-02: Tractor identification plate, 1, located below operator's seat on left-hand side of vertical floor panel. Contains model number, machine series number and weight in addition to Tractor serial number.

Tractor Model	(M.S.N.)
Tractor Serial Number	
Engine Model Number	
Engine Serial Number	

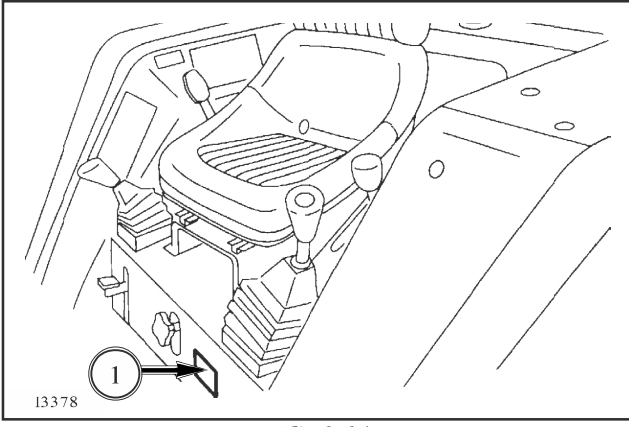


FIG. 0-01

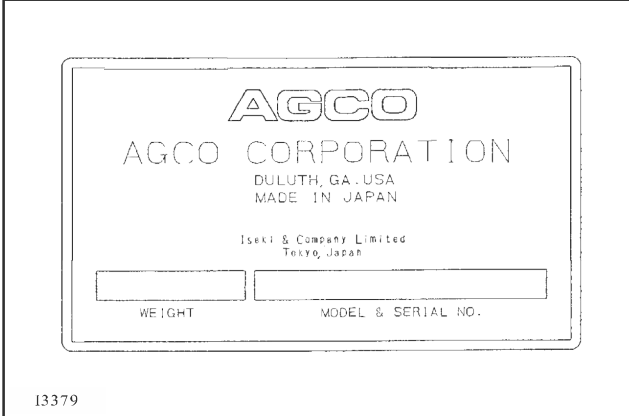


FIG. 0-02

FIG. 0-03: Engine model number, 1, is cast on left side of engine block, below the injection pump.

Engine serial number, 2, is stamped into cylinder block, above engine model number.

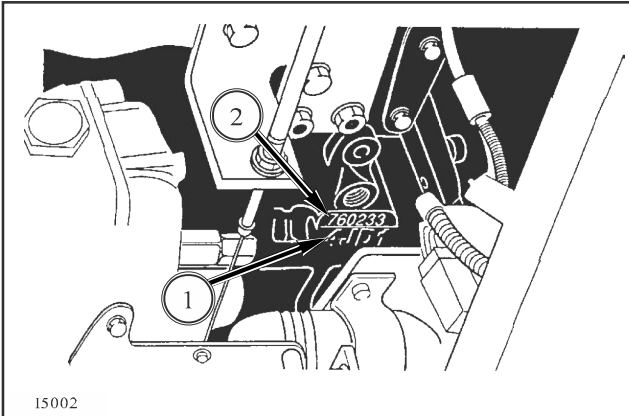


FIG. 0-03

FIG. 0-04: Chassis number, 1, is stamped in right side of front frame.

NOTE: Reference to left-hand and right hand, uses throughout this book, refers to the position when seated in operator's seat and facing forwards.

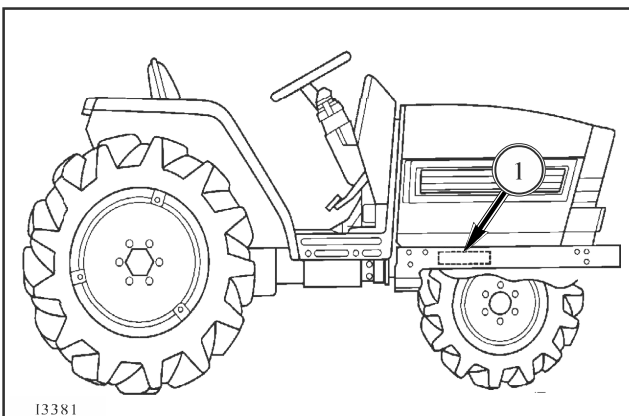




FIG. 0-04

SPECIAL TORQUES (1165, 1445, ST45, MT295)

Front Axle - 4wd (1165 1445, ST45, MT295)		
Description	Bolt and nut (Hardness)	Torque Nm (ft.-lbs.)
Axle bracket – engine-bolt torque	M14 (7T)	127 - 147 (94 - 109)
Front pivot casting (support) -bolt torque	M12 (7T)	88 - 108 (65 – 80)
Rear pivot casting (support) -bolt torque	M18 (7T)	119 - 136 (88 – 101)
Front axle final drive - bolt torque	M12 (7T)	88 - 108 (65 – 80)
Bearing cover – bolt torque	M8 (7T)	24 - 33 (18 – 25)
Wheel shaft cover – bolt torque	M10 (7T)	54 - 69 (40 – 51)
Front wheel – bolt torque	M16 (7T)	157 - 176 (116 - 130)
Bevel gear case – bolt torque	M8	12 - 17 (9 – 13)
Differential support - bolt torque	M8	12 - 17 (9 – 13)
Rear gear – differential support-bolt torque	M8	12 - 17 (9 – 13)
Bevel pinion lock nut	See torque procedure-part 6A	
Transmission (1165, 1445, ST45, MT295)		
Description	Bolt and nut (Hardness)	Torque Nm Nm (ft.-lbs.)
Front transmission to engine bolt nuts	M12 (7T)	88 - 108 (65 - 80)
Front transmission to spacer transmission – bolts and nuts	M12 (7T)	88 - 108 (65 - 80)
Spacer transmission to differential housing – bolt and nuts	M12 (7T)	88 - 108 (65 - 80)
Input housing – bolts and nuts	M12 (7T)	88 - 108 (65 - 80)
Drive pinion housing – bolts	M10 (7T)	54 - 69 (40 - 51)
Drive pinion nut	See torque procedure part 5-A	
Differential case – bolts	M12	48 - 68 (36 - 51)
Differential case – ring gear nuts	M12 (7T)	88 - 108 (65 - 80)
Rear Axle (1165, 1445, ST45, MT295)		
Rear axle to differential housing bolts	M10 (7T)	54 - 69 (40 - 51)
Brake housing – bolts	M10 (7T)	54 - 69 (40 - 51)
Rear wheel - bolts and nuts	M22	363 - 382 (268 - 282)
Cylinder cover and other (1165, 1445, ST45, MT295)		
Hydraulic cylinder cover to differential Housing bolts and nuts	M10 (7T)	54 - 69 (40 - 51)
Hydraulic cylinder head bolts	M12 (7T)	88 - 108 (65 - 80)
Hydraulic control valve bolts	M8	12 - 17 (9 - 13)
Lower link bracket bolts and nuts	M14	69 - 78 (51 - 58)

Torque Chart

Torque Chart For Metric Fasteners (Zinc Coated)						
Normal size In mm	Strength class		Strength class		Strength class	
	ISO 4.6 (SAE1)		ISO 8.8 (SAE 5)		ISO 10.9 (SAE 8)	
	Torque Nm (lbf-ft.)		Torque Nm (lbf-ft.)		Torque Nm (lbf-ft.)	
	Min.	Max.	Min.	Max.	Min.	Max.
M3	0.5 (0.3)	0.7 (0.5)	1.3 (0.9)	1.7 (1.3)	1.8 (1.3)	2.4 (1.8)
M4	1.2 (0.9)	1.6 (1.2)	3.1 (2.3)	4.1 (3.0)	4.3 (3.2)	5.7 (4.2)
M5	2.2 (1.6)	3.0 (2.2)	6.0 (4.4)	8.0 (5.9)	8.5 (6.3)	11.5 (8.5)
M6	4.0 (2.9)	5.0 (3.7)	10 (7.4)	14 (10.3)	14 (10.3)	20 (14.8)
M8	9.5 (7.0)	12.5 (9.2)	25 (18.4)	35 (26)	36 (26)	46 (34)
M10	19 (14)	25 (18)	50 (37)	70 (52)	72 (53)	96 (71)
M12	33 (24)	43 (32)	90 (66)	120 (89)	120 (89)	160 (118)
M16	84 (62)	110 (81)	200 (148)	260 (192)	300 (221)	400 (295)
M20	160 (118)	210 (155)	420 (310)	560 (413)	600 (443)	800 (590)
M24	280 (207)	360 (266)	720 (531)	860 (634)	1000 (738)	1300 (959)
M30	540 (398)	720 (531)	1400 (1033)	1800 (1328)	2100 (1549)	2800 (2065)
M36	950 (700)	1250 (922)	2500 (1844)	3300 (2434)	3600 (2655)	4800 (3540)

Torque Chart For Inch Fasteners (Zinc Coated)						
Normal size	Strength class-below SAE 5 (plain head)		Strength class SAE 5 		Strength class-in inches SAE 8 	
	Torque Nm (lbf-ft.)		Torque Nm (lbf-ft.)		Torque Nm (lbf-ft.)	
	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.8 (5)	8.1 (6)	10.8 (8)	15 (11)	16.2 (12)	21.7 (16)
5/16	13.5 (10)	16.2	22 (16)	30 (22)	31 (23)	42 (31)
3/8	24 (18)	28 (21)	39 (29)	53 (39)	56 (41)	75 (55)
7/16	41 (30)	46 (34)	64 (47)	85 (63)	91 (67)	121 (89)
1/2	61 (45)	70 (52)	99 (73)	131 (97)	140 (103)	185 (137)
5/8	122 (90)	142 (105)	198(146)	263 (194)	279 (206)	371 (274)
3/4	217 (160)	250 (185)	350 (258)	464 (342)	495 (365)	658 (485)
7/8	--	--	569 (420)	800 (759)	800 (590)	1071 (790)
1	--	--	847 (635)	1119 (825)	1200 (885)	1580 (1165)
1-1/8	--	--	1051 (775)	1390 (1025)	1681 (1240)	2224 (1640)
1-1/4	--	--	1491 (1100)	1966 (1450)	2386 (1760)	3159 (2330)
1-1/2	--	--	2576 (1900)	3390 (2500)	4121 (3040)	5437 (4010)

NOTE: Above torques are for "rigid" joints or joints meeting the following conditions:

1. Damage will not occur to joined members of an assembly.
2. It is desirable to use a higher clamping force.
3. Fastener threads are not lubricated prior to assembly.

The following conditions will require a torque value different than stated above:

1. Reduced torque required: non-parallel clamping surfaces, thick or highly compressible gaskets are used. Or when a higher torque may damage joined assemblies.
2. Clip nuts, weld nuts, self-tapping hardware. Or any condition that causes reduced thread engagement will warrant a torque less than stated above.
3. Special torque values, stated in this manual, must be strictly adhered to as stated in the specific operation.

NOTE: A number of special torques are used in assembly of tractors. See list.

0-8 - INTRODUCTION

SPECIFICATIONS & CAPACITIES 1165, 1445, ST45, MT295

Engine Oil

Use AGCO Powerlube or equivalent in the appropriate SAE viscosity. Oil must meet or exceed MIL-L-46152 requirements, API Service "CC".

Capacity (Crankcase and Filter) 8.5 US qt. (8.0 liters)

Recommended Viscosity:

78° F (25° C) and Above SAE 30W, 10W-30

32°-78° F (0°-25° C) SAE 20W, 10W-30

Below 32° F (0° C) SAE 10W, 10W-30

Multiguard® 15W-40 may be used in ambient temperatures above 14° F (-10° C).

Recommended Change Interval:

Initial Oil and Filter Change 50 hours

Oil and Filter Change, Thereafter Every 100 hours

Engine Coolant

Freezing Protection (Original Factory Fill) -30° F (-34° C)

Recommended Coolant 50/50 mixture ethylene glycol and water

System Capacity 10.0 US qt. (9.5 liters)

Fuel Tank

Capacity 12.7 US gals. (48.0 liters)

Fuel Recommended, Above 39° F (4° C) No. 2 or No. 2-D

Fuel Recommended, Below 39° F (4° C) No. 1 or No. 1-D

Transmission & Differential Housing (Including Hydraulic System)

Capacity:

Manual Shuttle Models 8.7 US gals. (33.0 liters)

Power Shuttle Models 9.2 US gals. (35.0 liters)

Recommended Lubricant Permatran III / 821XL, or SAE 80 GL-4

Recommended Change Interval First 50 hours, every 300 hours thereafter

Front Axle (4-WD)

Capacity (Common Reservoir) 7.9 US qt. (7.5 liters)

Recommended Lubricant Permatran III / 821XL, or SAE 80 GL-4

Recommended Change Interval First 50 hours, every 600 hours thereafter

Grease Fittings

Grease Interval (All Fittings) Every 50 hours

Recommended Grease lithium base grease No. 2

NOTE: Change intervals stated above are for normal usage. Due to adverse operating conditions, that may be experienced (extremely dusty or muddy), change intervals may need to be more frequent.

PERIODIC MAINTENANCE SCHEDULE

Recommended Interval, Each:					Item To Check	Action Required
Day	50 hr	150 hr	300 hr	Year		
•					All controls, switches	Inspect and repair
•					All fasteners, hardware	Check and tighten
•					Hoses, fan belt, wiring	Inspect and repair
	•				Grease fittings	Lubricate
•					Engine oil level	Check and replenish
	(*)	•			Engine oil & filter	Replace
•					Transmission oil level	Check and replenish
	(*)		•		Transmission oil & filter	Replace and clean
•					Power steering oil Level	Check and replenish
	(*)		•		Power steering oil & filter	Replace and clean
			•		Front wheel bearings (2-WD)	Check and adjust
				•	Front wheel grease (2-WD)	Clean and repack
	•				Front axle oil level (4-WD)	Check and replenish
			•		Front axle oil (4-WD)	Replace
•					Air screens & radiator	Clean of debris
•					Radiator coolant level	Check and replenish
				•	Radiator coolant	Drain, flush & replace
•					Fan belt tension	Check and adjust
•					Air cleaner dust ejector	Clean
	•				Air cleaner elements	Inspect, clean or replace
•					Fuel tank level	Refill to full level
•					Fuel filter sediment bowl	Inspect and clean
			•		Fuel filter element	Replace and bleed
	•				Battery & cables	Check, clean & tighten
	•				Battery electrolyte level	Check and replenish
•					Lights, flashers & horn	Check and repair
•					Clutch pedal free-play	Check and adjust
•					Brake adjustment & balance	Check and adjust
•					Tire pressure & condition	Check and adjust
•					Wheel bolt torque	Check and tighten
			•		Front wheel alignment	Check and adjust
•					Steering free-play	Check and repair
			•		Front axle end-float (4-WD)	Check and adjust
				•	Clutch housing leaks	Remove plug & check

LUBRICATION / FILL POINTS
(1165, 1445, ST45, MT295)

FIG. 0-05: General layout of lubrication, fill and drain locations on Tractor:

Ref.	Description:	Type:
1	Crankcase	Engine Oil
2	Engine Radiator	Coolant
3	Radiator Overflow	Reservoir Coolant
4	Fuel Tank	Diesel Fuel
5	Rear Housing	Hydraulic Oil
6	4-WD Axle	Hydraulic Oil
7	Axle Pivots	(4-WD) Grease
8	Front Spindles	(4-WD) Grease
9	Tie Rod Ends	Grease
10	Clutch Shaft	Grease
11	Brake Pivots	Grease
12	Leveling Crank	Grease

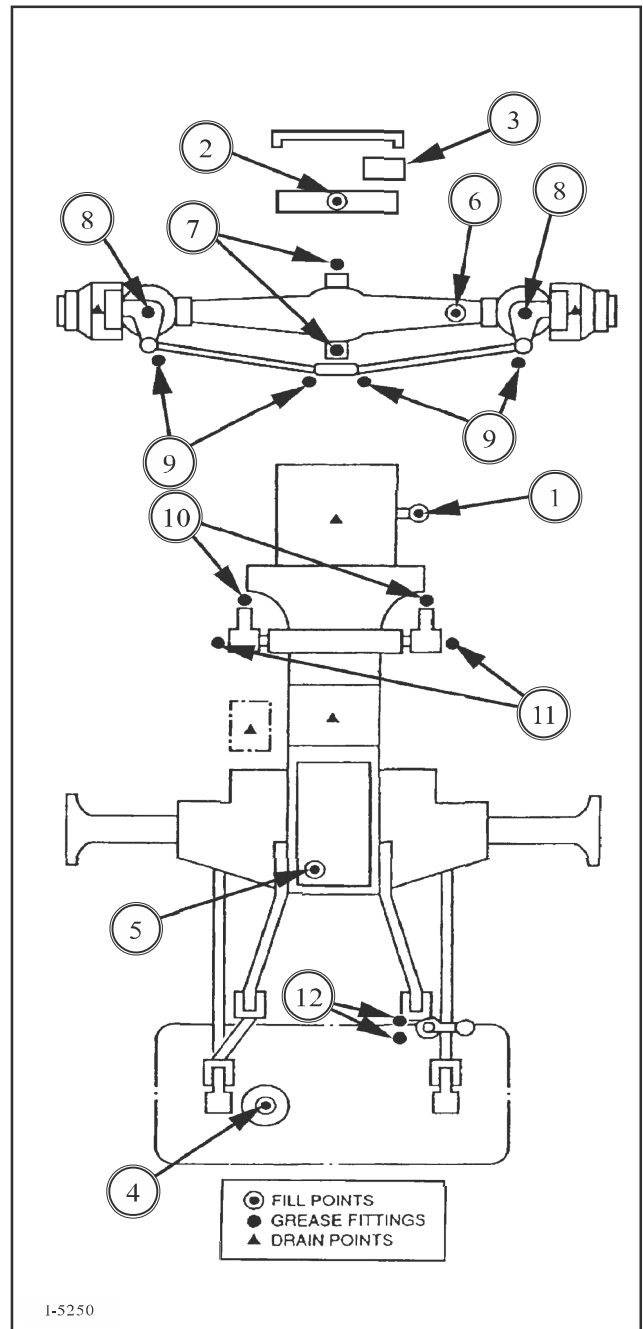


FIG. 0-05

MAJOR COMPONENTS (1165, 1445, ST45, MT295) PRIOR TO "M" S/N

FIG. 0-06a: Identification and terminology of major components, as given in this book are as follows:

- | | | |
|---------------------|----------------------------|---|
| 1. Front Wheels | 11. Reflector | 21. Headlight |
| 2. Fuel Tank Filler | 12. Exhaust Pipe | 22. Front Axle |
| 3. Check Chain | 13. Hood | 23. Front Axle Pivot |
| 4. Lift Rod | 14. Front Grille | 24. Lift Arm |
| 5. Lower Link | 15. Battery | 25. Rear Axle |
| 6. Rear Wheels | 16. Front Bumper | 26. Drawbar |
| 7. Operator's Seat | 17. Engine | 27. Turn/Hazard Light |
| 8. Instrument Panel | 18. Foot step | 28. Center Housing |
| 9. Steering Wheel | 19. Transmission | 29. Lower Link Strap |
| 10. Fender | 20. Front Axle Drive Shaft | 30. Roll-Over Protective Structure (ROPS) |

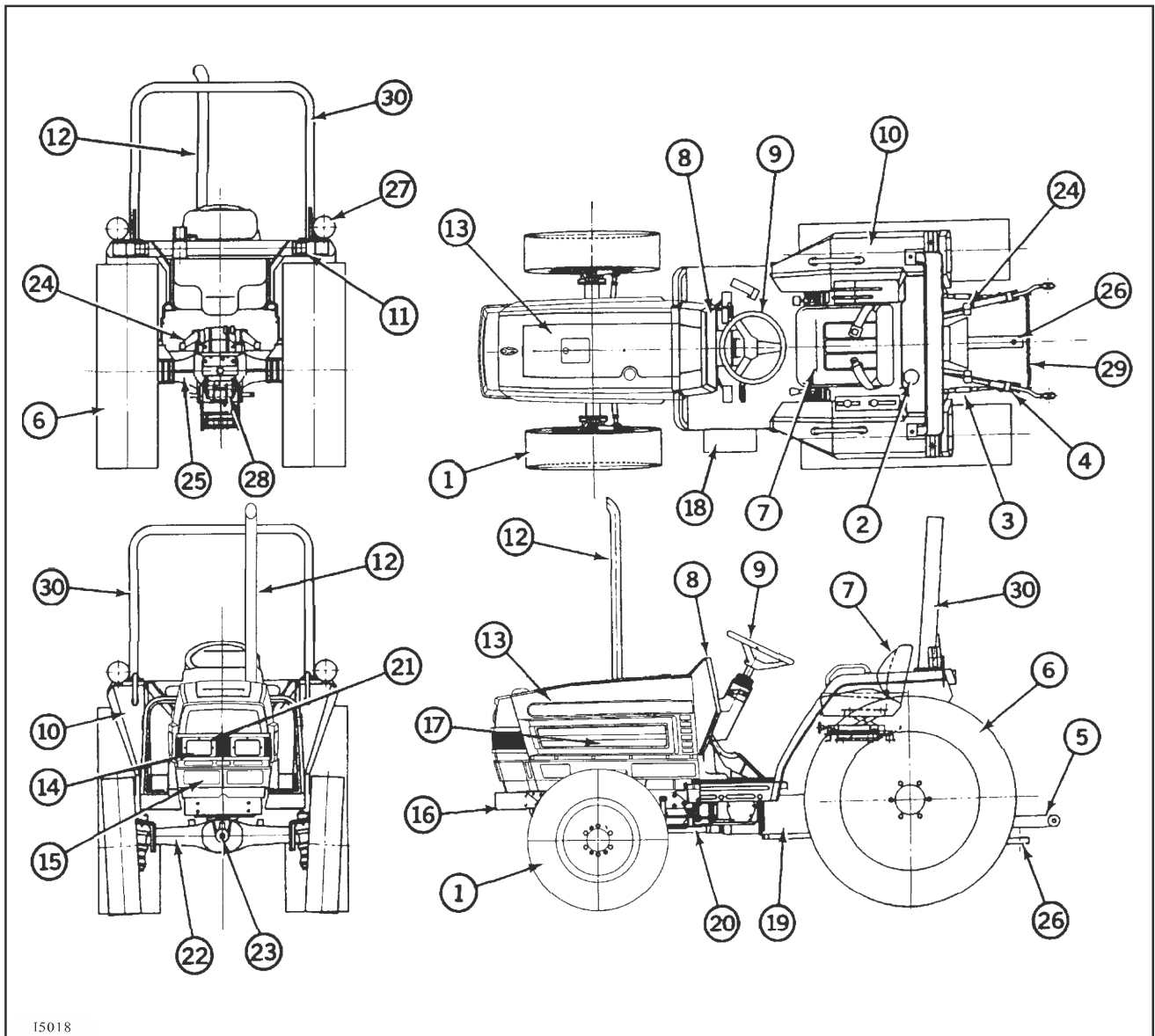


FIG. 0-06a

MAJOR COMPONENTS (1165, 1445, ST45, MT295) EFF. "M" S/N

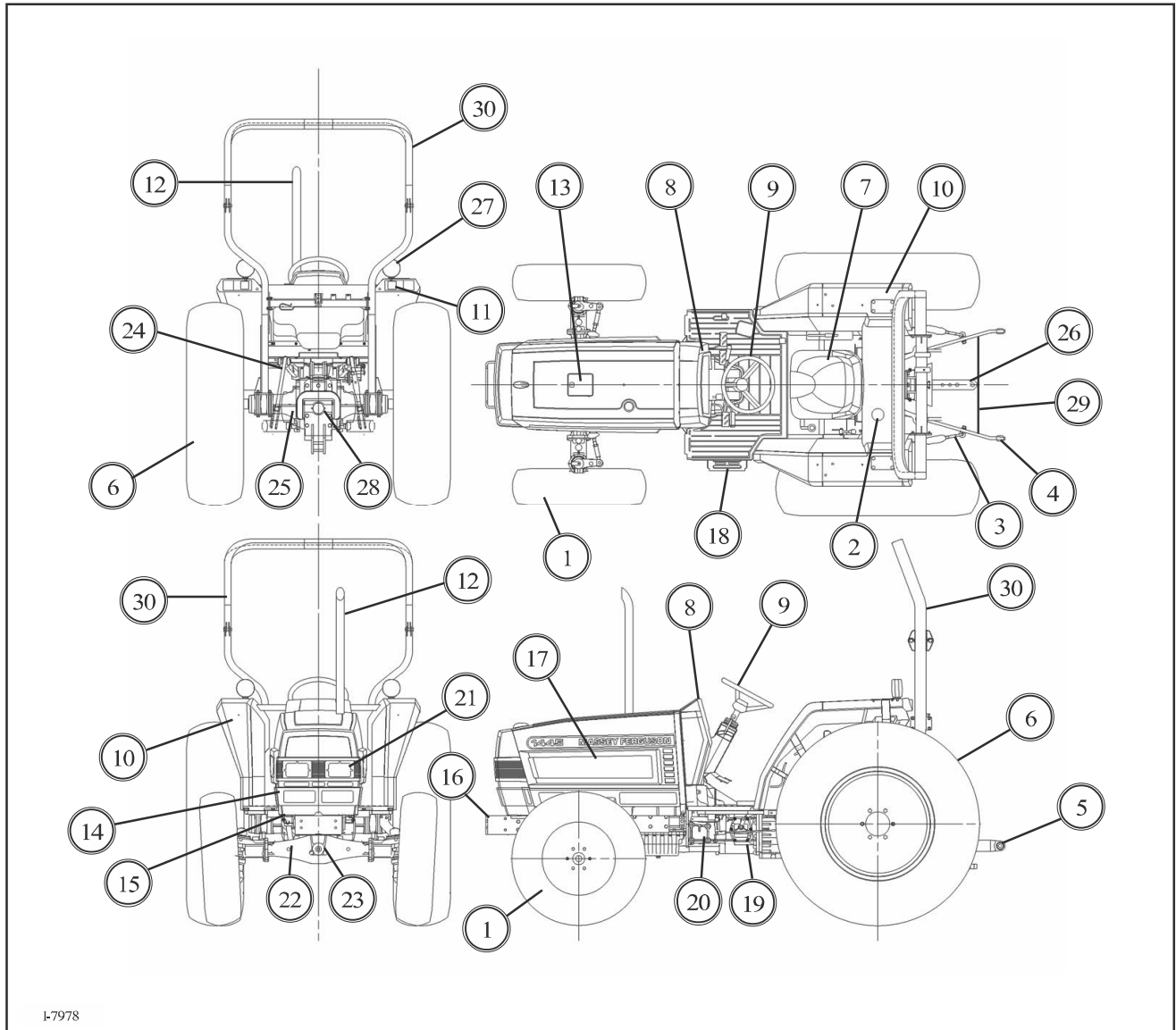


FIG. 0-06b

FIG. 0-06b: Identification and terminology of major components, as given in this book, are as follows:

- | | | |
|---------------------|------------------------------------|---|
| 1. Front Wheels | 11. Reflector/Tail Light | 21. Headlight |
| 2. Fuel Tank Filler | 12. Exhaust Pipe | 22. Front Axle |
| 3. Stabilizer | 13. Hood | 23. Front Axle Pivot |
| 4. Lift Rod | 14. Front Grille | 24. Lift Arm |
| 5. Lower Link | 15. Battery | 25. Rear Axle |
| 6. Rear Wheels | 16. Front Bumper | 26. Drawbar |
| 7. Operator's Seat | 17. Engine | 27. Turn/Hazard Light |
| 8. Instrument Panel | 18. Foot Step | 28. Center Housing |
| 9. Steering Wheel | 19. Transmission | 29. Lower Link Strap |
| 10. Fender | 20. Front Wheel-Drive Shaft (4-WD) | 30. Roll-Over Protective Structure (ROPS) |

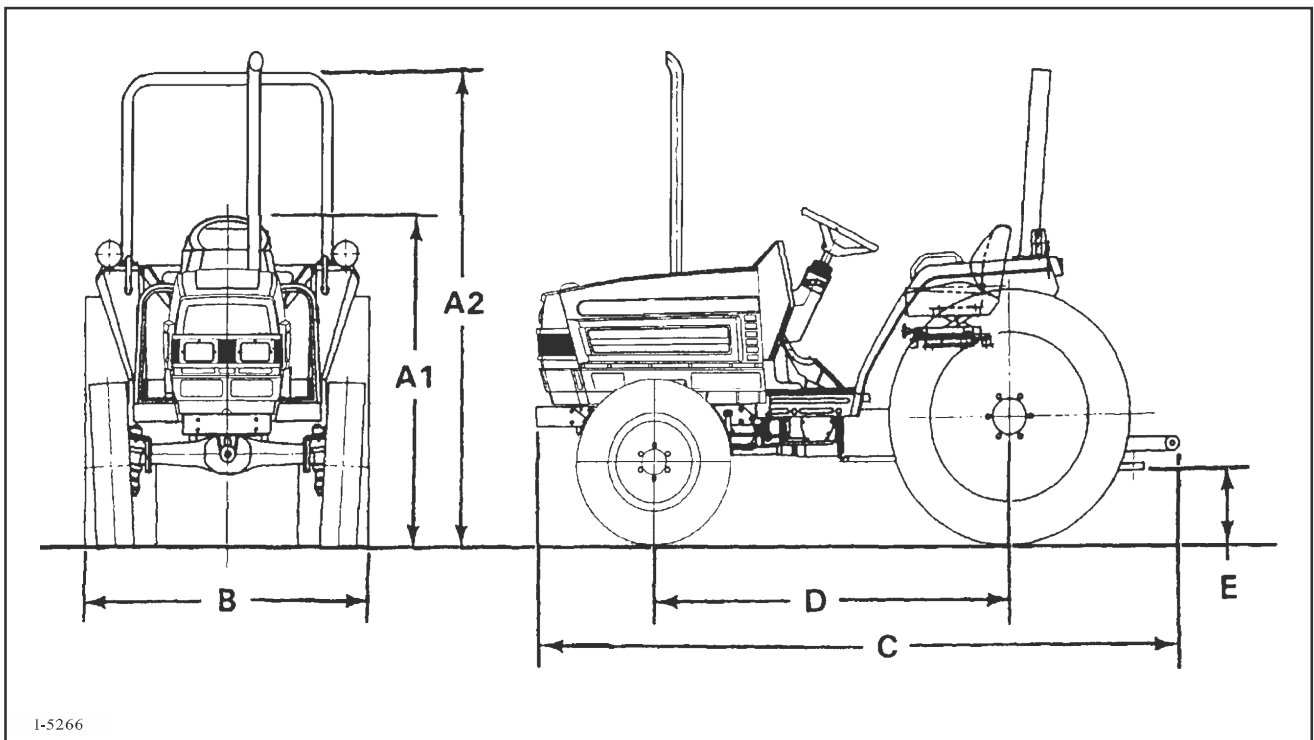


FIG. 0-07

FIG. 0-07: General dimensions and weights of 1165, 1445, ST45, MT295 Tractor are provided below:

	Ag. 4-WD	Turf 4-WD
A1	63.8" (1620 mm)	60.2" (1530 mm)
A2	89.0" (2261 mm)	86.2" (2190 mm)
B	58.7" (1490 mm)	72.0" (1830 mm)
C	140.0" (3555 mm)	140.0" (3555 mm)
D	73.0" (1855 mm)	173.0" (1855 mm)
E	12.0" (305 mm)	8.5" (215 mm)
--	129.9" (3300 mm)	129.9" (3300 mm)
--	102.4" (2600 mm)	102.4" (2600 mm)
--	3601 lbs. (1635 kg)	3491 lbs. (1585 kg)

SPECIFICATIONS

	1165, 1445, ST45, MT295
Engine	
Make	Iseki Diesel
Model	E4-CG
Type	Indirect injection Overhead valve
Aspiration	Natural
Displacement-cu. in. (cc)	134.1 (2197)
Number of Cylinder	4
Bore	3.43" (87 mm)
Stroke	3.64" (92.4 mm)
Engine Horsepower (Gross)	44.2 (33.0kw) @ 2500 rpm
(Net)	42.4 (31.6 kw) @ 2500 rpm
PTO Horsepower (Estimate)	37.0 @ 565 PTO rpm
Firing Order	1-3-4-2
Compression Ratio	21.8:1
Low Idle Speed	950 rpm
High Idle Speed	2750 rpm
Valve Clearance,(Cold); Intake	.014" (0.35 mm)
Exhaust	.014" (0.35 mm)
Air Cleaner	Dual stage, dry element
Engine Cooling	Liquid, forced circulation
Cold Starting Aid	Glow plugs (4)
Transmission	
Type Primary	4-speed partially synchronized, constant mesh
Range	4-speed constant mesh
Forward/Reverse Shuttle	Synchronized, 95% reverse reduction
Gear Speeds	16 gears forward, 16 reverse
Clutch	Split torque, single stage dry with: 10.2" (260 mm) disc
Brakes	Mechanically actuated sealed wet disc
Power-Take-Off (PTO):	
Type	Independent, engine driven
Control	Electro-hydraulic control
Clutch	Hydraulically engaged, multi-plate wet disc
Rear PTO; Shaft	1.375" (35 mm) diameter, six spline
Output	Clockwise rotation
Engine speed @ 540 rpm	2391

	1165, 1445, ST45, MT295
Hydraulics:	
Steering System; Type	Hydrostatic (power)
Gear Pump	Separate engine mounted
Maximum Output	5.2 US gal/min (19.8 l/min.)
Pressure Relief Valve Setting	2485 psi (17,134 kPa)
Main Hydraulic System-Pump	Engine mounted gear pump
Maximum Output	7.4 US gal/min (28 liters/min)
Pressure Relief Valve Setting	2321 psi (16003 kPa)
Rear Linkage, Type	Three-point hitch
Size	Category I
Control	Draft Position and Response
Draft Control	Top link sensing
Lift Capacity	3083 lbs. (1400 Kg) @ link ends
Electrical System	
System Voltage	12 volt, negative (-) ground
Battery CCA @ 0°F(-18°C)	622
Charging	45 Amp Alt (2.2 Kw) with internal regulator/rectifier
Capacities	
Engine Crankcase with Filter	8.5 U.S. qts. (8.0 liters)
Transmission and Hydraulic system	8.7 U.S. qts. (33.0 liters)
Fuel Tank	12.7 U.S. qts. (48.0 liters)
Cooling System	11.1 U.S. qts. (10.5 liters)
Front Drive Axle	6.9 U.S. qts. (6.5 liters)
Power Steering Reservoir	1.2 U.S. qts. (1.1 liters)

SPECIFICATIONS (CONTINUED)

Tread Width Setting	
4WD: Front-Ag Tires (Dished In Only)	51.8" (1315 mm)
Turf Tires (Dished In Only)	53.0" (1345 mm)
Rear 4WD: Ag Tires (mm)	45.7"(1160) 50.0"(1270) 53.5"(1360) 57.9"(1470)
Turf Tires (Dished Out only)	53.7" (1364 mm)
Maximum Axle Loading	
Front Axle	3967 lbs. (1800 Kg)
Rear Axle (All)	4631 lbs. (2100 Kg)

WHEELS & TIRES 1165, 1445, ST45, MT295

Examine wheels and tires periodically for correct inflation pressures, tight wheel bolts, and any physical damage that may be a detriment to tractor operation and operator safety. Correct condition prior to tractor operation.

Tire Inflation Pressures

Maintaining correct tire pressure will help insure tire long life. If tires have deep scratches, cuts or punctures, the respective tire should be repaired or replaced by qualified personnel as soon as possible.

IMPORTANT: *If necessary to replace any tire(s), ensure original tire size is used. This is particularly true on 4-WD models to ensure correct amount of front axle overspeed (or "lead") is maintained.*

Tractor	Type Tires	Tire Location/Size			Pressure PSI (KPA)
1165, 1445, ST45, MT295 4-WD	AG	Front	9.5-16	R1	31 (216)
		Rear	13.6-28 R1		20 (137)
	Turf	Front	29 x 12.00-15	R3	23 (157)
		Rear	475/65D-20	R3	11 (78)
	Industrial R4	Front	10 x 163.5	R4	30 (209)
		Rear	17.52-24	R4	20 (137)

Wheel Bolt Torque

FIG. 0-08: Periodically check all wheel bolt torques. Correct bolt torques:

- Front Wheel Bolts, 1 120 ft.-lbs.(163N.m)
- Rear Wheel Bolts, 2 120 ft.-lbs.(163N.m)
- Rear Wheel Center 120 ft.-lbs.(163N.m) to Rim

Bolts, 3 (Ag. Tires Only)



CAUTION: Correct wheel bolt torque must be maintained. Installation of front mounted implements (ex; loaders) impose increased loads and require frequent checking of wheel bolts.

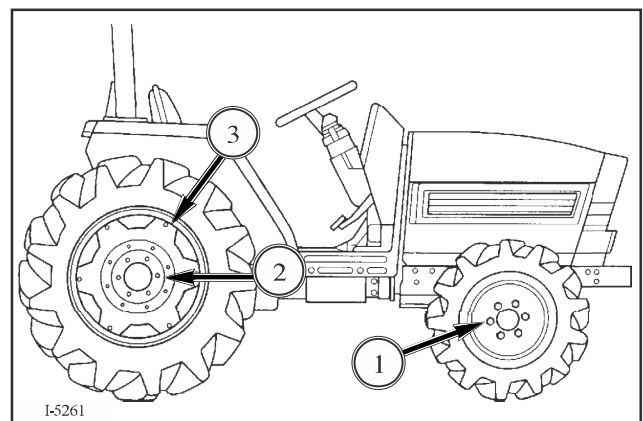


FIG. 0-08

TRANSMISSION SPEEDS

Arrangement of gears with appropriate ground speeds, in order from slow to fast, are shown in chart.

NOTE: 1165, 1445, ST45, MT295 Ground speed indicated at 2500 engine rpm with 13.6-28 agricultural-type rear tires and 475/65D-20 turf rear tires. Ground speeds will vary slightly with turf tires.

Lever Positions		Ground Speed MPH (KPH)	
Range	Gear	1165, 1445, ST45, MT295 (Agri.)	1165, 1445, ST45, MT295 (Turf)
FORWARD			
LL	1	1.11 (0.60)	0.95 (0.59)
	2	1.37 (0.85)	1.17 (0.73)
	3	1.56 (0.97)	1.34 (0.83)
	4	2.19 (1.36)	1.88 (1.17)
L	1	3.33 (2.07)	2.86 (1.78)
	2	4.10 (2.55)	3.52 (2.19)
	3	4.70 (2.92)	4.04 (2.51)
	4	6.61 (4.11)	5.70 (3.54)
M	1	9.16 (5.69)	7.87 (4.89)
	2	11.26 (7.00)	9.67 (6.01)
	3	12.90 (8.02)	11.09 (6.89)
	4	18.51 (11.28)	15.59 (9.69)
H	1	23.41 (14.55)	20.13 (12.51)
	2	28.80 (17.90)	24.76 (15.39)
	3	36.22 (22.51)	28.37 (17.63)
	4	46.44 (28.86)	39.90 (24.80)
REVERSE			
LL	1	1.01 (0.63)	0.87 (0.54)
	2	1.24 (0.77)	1.06 (0.66)
	3	1.42 (0.88)	1.22 (0.76)
	4	2.00 (1.24)	1.72 (1.07)
L	1	3.06 (1.90)	2.62 (1.63)
	2	3.75 (2.33)	3.22 (2.00)
	3	4.30 (2.67)	3.70 (2.30)
	4	6.05 (3.76)	5.20 (3.23)
M	1	9.16 (5.69)	7.87 (4.47)
	2	11.26 (7.00)	9.67 (5.50)
	3	12.90 (8.02)	11.09 (6.30)
	4	18.51 (11.28)	15.59 (8.86)
H	1	21.40 (13.30)	18.39 (11.43)
	2	26.32 (16.36)	22.62 (14.06)
	3	30.17 (18.75)	25.92 (16.11)
	4	42.43 (26.37)	36.48 (22.67)

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