245 and 255 Tractor
Service Manual

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Section
1010

General Specifications

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SPECIFICATIONS

Tractor model					245	245-4WD	255	255-4WD
Type					2-wheel drive	4-wheel drive	2-wheel drive	4-wheel drive
Body structure					Monocoque type		Monocoque type	
Dimensions	Overall length	To end of rear tire		mm (in.)	2600 (102-3/8)		2620 (103-5/32)	
	Overall width				1120 (44-3/32)	1180 (46-15/32)	1190 (46-27/32)	1275 (50-3/16)
	Overall height	To top of steering wheel			1355 (53-11/32)		1380 (54-11/32)	
	Wheelbase				1525 (60-1/32)		1525 (60-1/32)	
	Ground clearance				345 (13-19/32)	275 (10-13/16)	360 (14-3/16)	285 (11-7/32)
	Gross weight (with 3-point linkage)			kg (lb)	780 (1720)	840 (1852)	880 (1940)	925 (2040)
	Load distribution (without load)		Front axle		335 (739)	385 (849)	390 (860)	432 (953)
			Rear axle		445 (981)	455 (1003)	490 (1080)	493 (1087)
	Turning radius (with brakes)			mm (in.)	2250 (88-19/32)		2450 (96-15/32)	2400 (94-1/2)
Engine	Model				MITSUBISHI K3D		MITSIBISHI K3H	
	Type				Vertical, 4-stroke cycle, water cooled, overhead valve, in line, diesel		Vertical, 4-stroke cycle, water cooled, overhead valve, in-line, diesel	
	Number of cylinders				3		3	
	Combustion chamber type				Swirl combustion chamber with preheater		Swirl combustion chamber with preheater	
	Cylinder liner				Non-liner		Non-liner	
	Bore and stroke			mm (in.)	73 X 78 (2.87 X 3.07)		78 X 90 (3.07 X 3.54)	
	Piston displacement			cc (cu in.)	979 (59.7)		1290 (78.7)	
	Compression ratio				23 : 1		23 : 1	
	Firing order				1 – 3 – 2		1 – 3 – 2	
	Rated rpm			rpm	2700		2700	
	Max. rpm				2900		2900	
	Idling rpm				900		900	
	Max. bare HP (SAE)			HP/rpm	21/2700		25/2700	
	Max. output			PS/rpm	20.3/2700		23.5/2700	

Tractor model				245	245-4WD	255	255-4WD
Max. torque			N·m/rpm (lb-ft/rpm)	56/1900 (41.2/1900)		74.5/1900 (54.9/1900)	
Engine	Compression pressure		kg/cm² (psi)/rpm	32 (455.1)/280		32 (455.1)/260	
	Number of piston rings			3 compression rings and 1 oil ring		2 compression rings and 1 oil ring	
	Intake valves	Open	deg	At 18° before TDC		At 20° before TDC	
		Close		At 46° after BDC		At 44° after BDC	
	Exhaust valves	Open		At 46° before BDC		At 44° before BDC	
		Close		At 18° after TDC		At 20° after TDC	
	Injection timing			At 23° before TDC		At 21° before TDC	
	Valve clearance	Intake valves	mm (in.)	0.25 (0.01) (cold)		0.25 (0.01) (cold)	
		Exhaust valves		0.25 (0.01) (cold)		0.25 (0.01) (cold)	
	Fuel consumption		g/HP/h (lb/HP/h)	225 (0.496)		210 (0.463)	
	Direction of rotation			Clockwise (as viewed from front)		Clockwise (as viewed from ftont)	
	Weight, dry		kg (lb)	130 (287)		152 (335)	
Cooling system	Radiator fin			Corrugate type		Corrugate type	
	Radiator cap pressure		kg/cm² (psi)	0.9 (13)		0.9 (13)	
	Thermostat	Type		Wax pellet type		Wax pellet type	
		Begins to open	°C (°F)	82 (180)		82 (180)	
		Full open		95 (203)		95 (203)	
		Lift	mm (in.)	8 (0.3) at 95°C (203°F)		8 (0.3) at 95°C (203°F)	
	Water pump	Type		Centrifugal impeller type		Centrifugal impeller type	
		Feeding capacity		70 liters (18.5 U.S. gal)/2700 rpm		80 liters (21.1 U.S. gal)/2700 rpm	
	Cooling fan	Diameter	mm (in.)	325 (12-25/32)		340 (13-3/8)	
		Number of blades		6		5	
		Blade material		Plastic		Plastic	
	Pulley ratio of fan and crankshaft pulley			1.32		1.46	
	Drive system			"V" type belt		"V" type belt	

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Fuel system	Fuel			Bruns grade No. 2-D fuel oil (ASTM specifications)	Burns grade No. 2-D fuel oil (ASTM specifications)
	Fuel injection pump	Type		Bosch "M" plunger in-line	Bosch "M" plunger in-line
		Model		NIPPONDENSO ND-PFR 3M	NIPPONDENSO ND-PFR 3M
		Diameter of plunger	mm (in.)	5.5 (0.22)	6.0 (0.24)
		Cam lift		7 (0.3)	7 (0.3)
	Fuel injection nozzles	Type		Throttle type	Throttle type
		Model		NIPPONDENSO ND-DN4SD24	NIPPONDENSO ND-DN4SD24
		Injection pressure	kg/cm^2 (psi)	120 (1706)	160 (2275)
	Fuel filter			Paper element type	Paper element type
Lubrication system	Oil pump	Type		Trochoid pump	Trochoid pump
		Feeding capacity		20 liters (5.28 U.S. gal)/min/2700 rpm	20 liters (5.28 U.S. gal)/min/2700 rpm
	Oil filter			Full flow paper element filter cartridge type	Full flow paper element filter cartridge type
	Relief valve setting		kg/cm^2 (psi)	4 (56.9)	4 (56.9)
Air cleaner	Type			Cyclone dry air cleaner	Cyclone dry air cleaner
	Filter			Dry paper element cartridge type	Dry paper element cartridge type
	Cleaning efficiency			More than 99.9%	More than 99.9%
	Dust holding		kg (lb)	0.095 (0.2094)	0.095 (0.2094)
Governor system	Type			Centrifugal weight type	Centrifugal weight type
	Speed control		rpm	900 ~ 2900	900 ~ 2900
Electrical system	Generator	Type		Alternator type	Alternator type
		Model		MITSUBISHI AH2053M4	MITSUBISHI AH2035M4
		Voltage	V	12	12
		Capacity	A	35	35
	Starter motor	Type		Magnet type	Magnet type
		Model		MITSUBISHI M002T50381	MITSUBISHI M2T56271
		Voltage	V	12	12
		Output	kW	1.6	2.0

Tractor model				245	245-4WD	255	255-4WD
Electrical system	Regulator	Type		Tirrill type		Tirrill type	
		Model		MITSUBISHI RLB 2220Az		MITSUBISHI RLB 2220Az	
		Regulator voltage (no load)	V	14 ~ 15		14 ~ 15	
		Warning lamp lighting on voltage		0.5 ~ 3		0.5 ~ 3	
		Warning lamp lighting off voltage		4.2 ~ 5.2		4.2 ~ 5.2	
	Glow plugs	Type		Speed heating sheathed type		Speed heating sheathed type	
		Rated voltage	V	10.5		10.5	
		Rated current	A	9.7		9.7	
	Glow lamp	Type		Red heat type		Red heat type	
Clutch system	Type			Dry single disc plate diaphragm spring type		Dry single disc plate diaphragm spring type	
	Clutch disc diameter (outer/inner)		mm (in.)	200 X 140 (7-7/8 X 5-1/2)		200 X 140 (7-7/8 X 5-1/2)	
	Lining thickness			8.6 (0.34)		8.6 (0.34)	
	Torque capacity		kg-m (ft-lb)	17.6 (127)		17.6 (127)	
	Spring pressure		kg (lb)	380(838.0)		380 (838.0)	
Transmission	Number of shift levers			2		2	
	Speeds			9-forward, 3-reverse		9-forward, 3-reverse	
	Speed change method			Synchromesh gear type		Synchromesh gear type	
	Differential			Bevel gear type with differential lock		Bevel gear type with differential lock	
	Differential lock			Foot pedal (right side of transmission case)		Foot pedal (right side of transmission case)	

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Travel speeds

245 (2-WD and 4-WD)
(at engine speed 2700 rpm)

Tire size: 9.5–2.4 tire

Speed	Lever Position	km/hr	mile/hr
F-1	L-1	1.28	0.79
F-2	L-2	1.84	1.14
F-3	L-3	2.70	1.68
F-4	M-1	3.82	2.37
F-5	M-2	5.50	3.42
F-6	M-3	8.05	5.00
F-7	H-1	8.91	5.53
F-8	H-2	12.86	7.99
F-9	H-3	20.25	12.58
R-1	L-R	1.81	1.12
R-2	M-R	5.40	3.35
R-3	H-R	12.63	7.84

255 (2-WD and 4-WD)
(at engine speed 2700 rpm)

Tire size: 11.2–24 tire

Speed	Lever Position	km/hr	mile/hr
F-1	L-1	1.34	0.83
F-2	L-2	1.93	1.20
F-3	L-3	2.83	1.76
F-4	M-1	4.00	2.48
F-5	M-2	5.77	3.58
F-6	M-3	8.45	5.25
F-7	H-1	9.37	5.82
F-8	H-2	13.50	8.38
F-9	H-3	20.80	12.93
R-1	L-R	1.90	1.18
R-2	M-R	5.68	3.52
R-3	H-R	13.26	8.23

Tractor model					245	245-4WD	255	255-4WD
Final reduction	Final reduction gear				Spur gear		Spur gear	
	Reduction ratio				11 : 68		11 : 68	
	Type of rear axle				1/2 floating type		1/2 floating type	
Power take-off	Power take-off step				2-step		2-step	
	Power take-off HP			HP/rpm	18/2700		21/2700	
	Power take-off shaft				1-3/8 in. 6-spline SAE standard		1-3/8 in. 6-spline SAE standard	
	Power take-off rpm	Low		rpm	588/2700 engine rpm		588/2700 engine rpm	
		High			1239/2700 engine rpm		1239/2700 engine rpm	
	Standard power take-off	Shift position	Low		540/2479 engine rpm		540/2479 engine rpm	
			High		1000/2180 engine rpm		1000/2180 engine rpm	
	Direction of rotation				Clockwise as viewed from the rear		Clockwise as viewed from the rear	
Steering	Steering system				Ackerman jant method		Ackerman jant method	
	Axle center				Center pivot type		Center pivot type	
	Steering knuckle arrangement				Lemoine type	Reverse Elliott type	Lemoine type	Reverse Elliott type
	Tread adjustment				Not adjustable		Adjustable	Not adjustable
	Axle center swing angle			deg	8		8	
	Kingpin angle				8	10	8	10
	Camber				2.5		2.5	
	Caster				2	0	2	0
	Toe-in			mm (in.)	4 ~ 8 (5/32 ~ 5/16)	0 ~ 5 (0 ~ 3/16)	4 ~ 8 (5/32 ~ 5/16)	0 ~ 5 (0 ~ 3/16)
	Steering angle			deg	55	53	55	53
	Steering gear box				Ball screw type		Ball screw type	
	Gear ratio				15.1 : 1		15.1 : 1	
	Steering wheel diameter			mm (in.)	403 (15-29/32)		403 (15-29/32)	
Power assisted (optional)	Type				Integral		Integral	
	Pressure source				Gear pump		Gear pump	

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