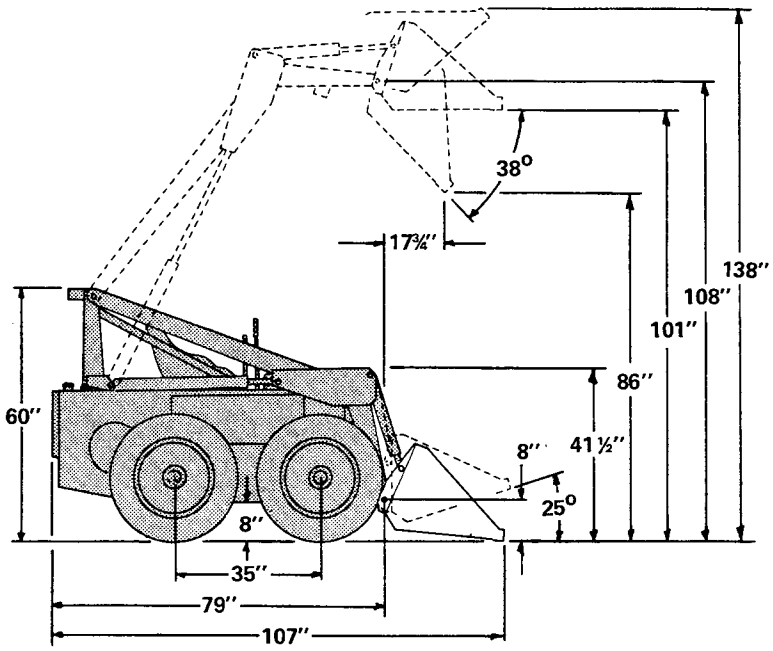
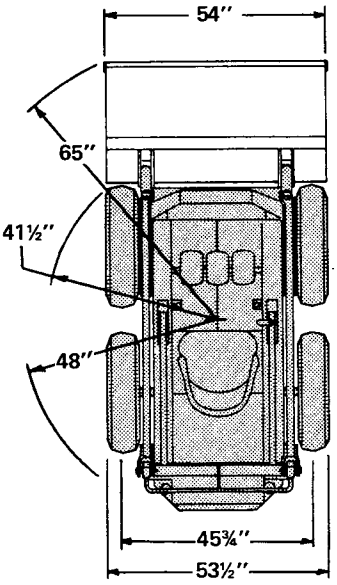
GENERAL SERVICE INFORMATION

LOADER SPECIFICATIONS

(Gasoline and L.P. Gas)





Dimensions are given for loader equipped with 3793-M dirt bucket and may vary with other bucket types.

Where applicable, specifications conform to IEMC & SAE standards and are subject to change without notice.

(M-600)

OPERATIONAL & PERFORMANCE

Operating Weight — (Gasoline) 3625 (LP Gas) 3695
Rated Operating Capacity ---------- 1000 lbs.
Lifting Capacity to Max. Height --- Gas 1700 lbs.
LP Gas 1700 lbs.
Tipping Load Gas 1880 lbs.; LP Gas 1990 lbs.

Hydraulic Function Time:
- Raise to Maximum Height ---------- 4.0 sec.
- Lower from Maximum Height ------- 2.5 sec.
- Dump Bucket ---------- 1.6 sec.
- Rollback Bucket ---------- 1.6 sec.

Travel Speed -------- Infinitely Variable to 5.7 MPH Forward & Reverse

Controls:
- Vehicle -------- Forward, reverse & steering functions controlled by two hand levers.
- Travel Speed ---------- Hand lever controlled, adjusted variable sheave
- Loader -------- Lift, tilt & auxiliary functions controlled by separate foot pedals .
- Engine ---------- Hand lever throttle, manual choke & key type ignition-starter switch

(Cont'd)

(M-500)

OPERATIONAL & PERFORMANCE

Operating Weight — (Gasoline) 3390 (LP Gas) 3465
Rated Operating Capacity ---------- 1000 lbs.
Lifting Capacity to Max. Height Gas 1540 lbs.
LP Gas 1640 lbs.
Tipping Load Gas 1540 lbs.; LP Gas 1640 lbs.

Hydraulic Function Time:
- Raise to Maximum Height ---------- 4.4 sec.
- Lower from Maximum Height -------- 2.7 sec.
- Dump Bucket ---------- 1.8 sec.
- Rollback Bucket ---------- 1.8 sec.

Travel Speed -------- Infinitely Variable to 5.7 MPH Forward & Reverse

Controls:
- Vehicle ---------- Forward, reverse & steering functions controlled by two hand levers.
- Travel Speed ---------- Hand lever controlled, hydraulically adjusted variable sheave
- Loader -------- Lift, tilt & auxiliary functions controlled by separate foot pedals.
- Engine --- Hand lever throttle, manual choke & key type ignition-starter switch

(Cont'd)

(M-444)

OPERATIONAL & PERFORMANCE

Operating Weight — (Gasoline) 3405 (LP Gas) 3465
Rated Operating Capacity ---------- 1000 lbs.
Lifting Capacity to Max. Height Gas 1540 lbs.
LP Gas 1620 lbs.
Tipping Load Gas 1540 lbs., LP Gas 1620 lbs.

Hydraulic Function Time:
- Raise to Maximum Height ---------- 4.4 sec.
- Lower from Maximum Height ------- 2.7 sec.
- Dump Bucket ---------- 1.8 sec.
- Rollback Bucket ---------- 1.8 sec.

Travel Speed -------- Infinitely Variable to 5.7 MPH Forward & Reverse

Controls:
- Vehicle ------- Forward, reverse & steering functions controlled by two hand levers.
- Travel Speed ---------- Hand lever controlled, hydraulically adjusted variable sheave
- Loader ------- Lift, tilt & auxiliary functions controlled by separate foot pedals.
- Engine --- Hand lever throttle, manual choke & key type ignition-starter switch.

(Cont'd)

(M-600 Cont'd)

ENGINE

Make ---------- Wisconsin
Model ---------- VF4D
Fuel ---------- Gasoline or LP Gas
Governed Flywheel Horsepower - 25 @ 2400 RPM
Maximum Torque -------- 57.5 ft. lbs. @ 1800 RPM
Number of Cylinders ---------- 4
Bore & Stroke ---------- 3-1/4 x 3-1/4
Displacement ---------- 107.7 cu. in.
Ignition ---------- 12 volt distributor
Cooling Medium ---------- Air
Lubrication ---------- Oil Spray
Lubricant Filtration ------ Replaceable element, full flow with bypass
Crankcase Ventilation ------Internal breathing with sealed carburetor
Air Cleaner -------- Replaceable dry cartridge type with condition indicator

LOADER HYDRAULICS

Pump ---------- Engine driven gear type
Minimum Pump Capacity - 9.5 GPM @ 2400 RPM
System Relief Setting ---------- 1700 PSI
Filtration ------ Full flow on suction port of pump with bypass, condition indicator & 33 micron replaceable paper element.
Cylinders -------- Doubleacting with Teflon seals & wear rings

Function	Lift	Tilt
Bore Diameter	2"	2"
Rod Diameter	1-1/4"	1"
Stroke	25"	16"

Valves —Open center type with float detent on lift
Fluid Lines ---------- SAE standard full flow tubes, hoses & fittings.

ELECTRICAL

Alternator ---------- 22 amp. enclosed belt driven
Battery ----------70 amp.-hr. rating 12 volt
Starter ------Positive engagement dustproof 12 volt

POWER TRAIN

Transmission ---------- Variable sheave type
Clutches ------ 4 (2 each side) single disc pressure lubricated
Primary Reductions ---------- 3.00:1
Secondary Reductions ---------- 5.00:1
Final Drive — #60H roller chain running in sealed oil bath (2.92:1 ratio)
Total Engine to Wheel Reduction — Variable from 37.1 to 100:1

CAPACITIES

Fuel -------(Gasoline) 10 gallons (LP Gas) 33 lbs.
Engine Lubricant including Filter ---------- 4 quarts
Hydraulic Reservoir & Final Drive Case - 17 gallons
Hydraulic System ---------- 20 gallons

TIRES

Standard ---------- Melroe special bar 7:00 x 15-6 ply steel cap nylon

COUNTERWEIGHT

Standard Cast Grill ---------- 100 lbs.

MACHINE WEIGHT (Less Bucket)

Shipping (Gasoline) ---------- 3170 lbs.
Shipping (LP Gas) ----------3280 lbs.

(M-500 Cont'd)

ENGINE

Make ---------- Kohler
Model ---------- K-662
Fuel ---------- Gasoline or LP Gas
Governed Flywheel Horsepower -- 24 @ 3200 RPM
Maximum Torque ---------- 44.5 ft. lbs. @ 2300 RPM
Number of Cylinders ---------- 2
Bore & Stroke ---------- 3-5/8 x 3-1/4
Displacement ---------- 67.2 cu. in.
Ignition ---------- Distributor Magneto
Cooling Medium ---------- Air
Lubrication ---------- Pressure
Lubricant Filtration ---------- Replaceable element, full flow with bypass
Crankcase Ventilation ----- Internal breathing with sealed carburetor
Air Cleaner ---- Replaceable dry cartridge type with condition indicator

LOADER HYDRAULICS

Pump ---------- Engine driven gear type
Minimum Pump Capacity --- 7.5 GPM @ 3000 RPM
System Relief Setting ---------- 1700 PSI
Filtration ------- Full flow on suction port of pump with bypass, condition indicator & 33 micron replaceable paper element.
Cylinders ---------- Doubleacting with Teflon seals & wear rings

Function	Lift	Tilt
Bore Diameter	2"	2"
Rod Diameter	1-1/4"	1"
Stroke	25"	16"

Valves ---------- Open center type with float detent on lift.
Fluid Lines --------- SAE standard full flow tubes, hoses & fittings.

ELECTRICAL

Alternator --------- 30 amp. enclosed flywheel type
Battery ----------70 amp.-hr.rating 12 volt
Starter ------ Positive engagement dustproof 12 volt

POWER TRAIN

Transmission ----------Variable sheave type
Clutches ---------- 4 (2 each side) single disc pressure lubricated
Primary Reduction ---------- 3.00:1
Secondary Reduction ---------- 5.00:1
Final Drive --------#60H roller chain running in oil bath (2.92:1 ratio)
Total Engine to Wheel Reduction ----------Variable from 37.1 to 100:1

CAPACITIES

Fuel ------(Gasoline) 11 gallons (LP Gas) 33 lbs.
Engine Lubricant Including Filter ----------4 quarts
Hydraulic Reservoir & Final Drive Case --17 gallons
Hydraulic System ---------- 20 gallons

TIRES

Standard----------Melroe special bar 7:00 x 15-6 ply steel cap nylon

COUNTERWEIGHT

Standard Cast Grill ---------- 100 lbs.

MACHINE WEIGHT (Less Bucket)

Shipping (Gasoline) ---------- 2940 lbs.
Shipping (LP Gas) ----------3110 lbs.

(M-444 Cont'd)

ENGINE

Make ---------- Onan
Model ---------- Super CCK
Fuel ---------- Gasoline or LPG
Governed Flywheel Horsepower ------ 15.5 @ 3000 RPM
Maximum Torque -------- 29.0 ft. lbs. @ 1800 RPM
Number of Cylinders ---------- 2
Bore & Stroke ---------- 3-1/4 x 3
Displacement ----------49.8 cu. in.
Ignition ---------- 12 volt distributor
Cooling Medium ---------- Air
Lubrication ---------- Full pressure
Lubricant Filtration ------ Replaceable element, full flow with bypass
Crankcase Ventilation -------Internal breathing with with sealed carburetor
Air Cleaner ---- Replaceable dry cartridge type with condition indicator

LOADER HYDRAULICS

Pump ---------- Engine driven gear type
Minimum Pump Capacity ---7.5 GPM @ 3000 RPM
System Relief Setting ---------- 1700 PSI
Filtration ------- Full flow on suction port of pump with bypass, condition indicator & 33 micron replaceable paper element.
Cylinders ----Doubleacting with Teflon seals & wear rings

Function	Lift	Tilt
Bore Diameter	2"	2"
Rod Diameter	1-1/4"	1"
Stroke	25"	16"

Valves —Open center type with float detent on lift
Fluid Lines ---- SAE standard full flow tubes, hoses & fittings

ELECTRICAL

Generator ---------- 30 amp. dustproof
Battery ---------- 70 amp.-hr rating 12 volt
Starter ------ Positive engagement dustproof 12 volt

POWER TRAIN

Transmission---------- Variable sheave type
Clutches ---------- 4 (2 each side) single disc pressure lubricated
Primary Reduction ---------- 3.00:1
Secondary Reduction ---------- 5.00:1
Final Drive ---------#60H roller chain running in oil bath (2.92:1 ratio)
Total Engine to Wheel Reduction —— Variable from 37.1 to 100:1

CAPACITIES

Fuel --------(Gasoline) 12.4 gallons (LP Gas) 33 lbs.
Engine Lubricant including Filter ---------- 3 quarts
Hydraulic Reservoir & Final Drive Case --17 gallons
Hydraulic System ---------- 20 gallons

TIRES

Standard---Melroe special bar 7:00 x 15-6 ply nylon

COUNTERWEIGHT

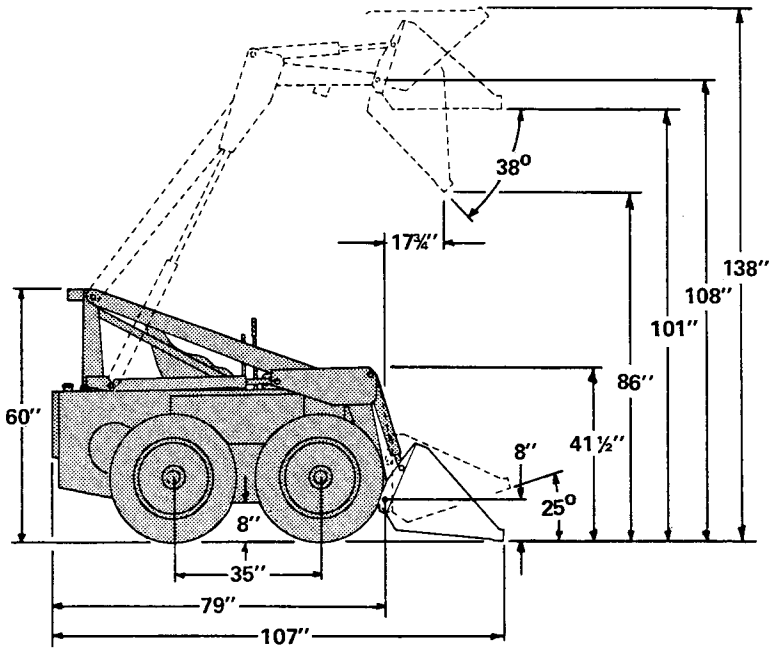
Standard Cast Grill---------- 172 lbs.

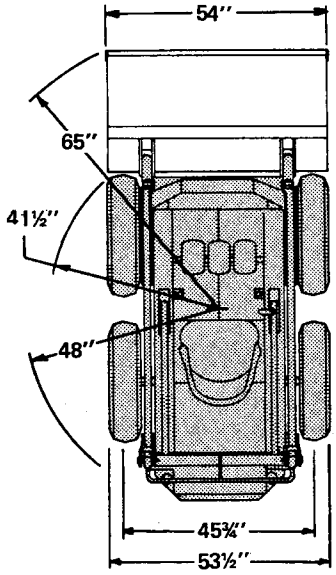
MACHINE WEIGHT (Less Bucket)

Shipping(Gasoline)---------- 2940 lbs.
Shipping(LP Gas)---------- 3110 lbs.

LOADER SPECIFICATIONS

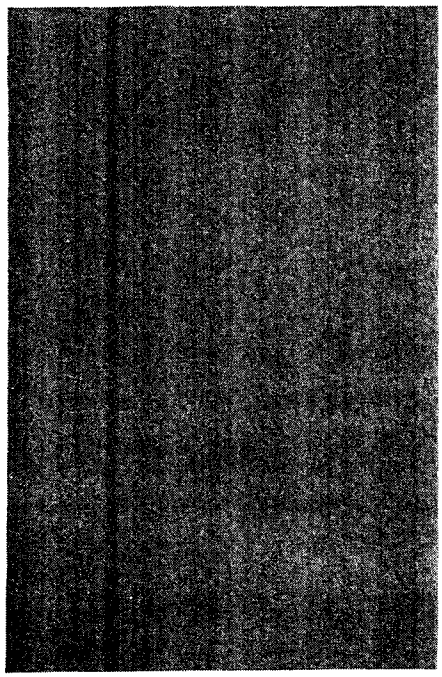
(Diesel)





Dimensions are given for loader equipped with 3793-M dirt bucket and may vary with other bucket types.

Where applicable, specifications conform to IEMC & SAE standards and are subject to change without notice.



(Deutz)

OPERATIONAL & PERFORMANCE

Operating Weight ---------- 4000 lbs.
US Bureau of Mines Approved ---- 3700 lbs.
Rated Operating Capacity ---------- 1000 lbs.
Lifting Capacity to Maximum Height ---- 1700 lbs.
Tipping Load ---------- 1830 lbs.
Hydraulic Function Time:
Raise to Maximum Height ---------- 4.1 sec.
Lower from Maximum Height ------ 2.6 sec.
Dump Bucket ---------- 1.6 sec.
Rollback Bucket ---------- 1.6 sec.
Travel Speed -------- Infinitely variable to 4.4 MPH forward & reverse
Controls:
Vehicle -------- Forward, reverse & steering functions controlled by two hand levers.
Travel Speed ------- Hand lever controlled, hydraulically adjusted variable sheave.
Loader-- Lift, tilt & auxiliary functions controlled by separate foot pedals.
Engine ---- Hand lever throttle, push button preheater & key type starter switch.

(Cont'd)

(Petter)

OPERATIONAL & PERFORMANCE

Operating Weight ---------- 4020 lbs.
Rated Operating Capacity ---------- 1000 lbs.
Lifting Capacity to Maximum Height ---- 1700 lbs.
Tipping Load ---------- 1830 lbs.
Hydraulic Function Time:
Raise to Maximum Height ---------- 4.3 sec.
Lower from Maximum Height ------ 2.7 sec.
Dump Bucket ---------- 1.7 sec.
Rollback Bucket ---------- 1.7 sec.
Travel Speed ------ Infinitely variable to 5.7 MPH forward & reverse
Controls:
Vehicle ---------- Forward, reverse & steering functions controlled by two hand levers.
Travel Speed ---------- Hand lever controlled hydraulically adjusted variable sheave
Loader -------- Lift, tilt & auxiliary functions controlled by separate foot pedals.
Engine -------- Hand lever throttle & key type starter switch.

(Cont'd)

(Deutz Cont'd)

ENGINE

Make ---------- Deutz
Model ---------- F2L410
Fuel ---------- No. 2 Diesel
Governed Flywheel Horsepower -- 24 @ 2700 RPM
Maximum Torque ---- 47.4 ft. lbs. @ 2200 RPM
Number of Cylinders ---------- 2
Bore & Stroke ---------- 3.59 x 3.94
Displacement ---------- 78 cu. in.
Cooling Medium ---------- Air
Lubrication ---------- Pressure
Lubrication Filtration ------- Replaceable element, full flow with bypass
Crnakcase Ventilation ---------- Filtered road vent
Air Cleaner ------- Replaceable dry cartridge type with condition indicator
Preheater ---------- Glow Plug

LOADER HYDRAULICS

Pump ---------- Engine driven gear type
Minimum Pump Capacity -- 9.2 GPM @ 2700 RPM
System Relief Setting ---------- 1700 PSI
Filtration ---- Full flow on suction port of pump with bypass, condition indicator & 33 micron replaceable paper element.
Cylinders ------- Doubleacting with Teflon seals & wear rings

Function	Lift	Tilt
Bore Diameter	2"	2"
Rod Diameter	1-1/4"	1"
Stroke	25"	16"

Valves -- Open center type with float detent on lift
Fluid Lines ------- SAE standard full flow tubes, hoses & fittings

ELECTRICAL

Alternator ---------- 22 amp. enclosed belt driven
Battery ---------- 70 amp.-hr. rating 12 volt
Starter ---- Positive engagement dustproof 12 volt

POWER TRAIN

Transmission ---------- Variable sheave type
Clutches ------ 4 (2 each side) single disc pressure lubricated
Primary Reduction ---------- 3.45:1
Secondary Reduction ---------- 5.00:1
Final Drive ---------- #60H roller chain running in sealed oil bath (2.92:1 ratio)
Total Engine to Wheel Reduction ---Variable from 41 to 110:1

CAPACITIES

Fuel ---------- 10.5 gallons
Engine Lubricant including Filter ---------- 4 quarts
Hydraulic Reservoir & Final Drive Case -17 gallons
Hydraulic System ---------- 20 gallons

TIRES

Standard ---------- Melroe special bar 7:00 x 15-6 ply nylon steel cap

COUNTERWEIGHT

Standard Cast Grill ---------- 100 lbs.

MACHINE WEIGHT (Less Bucket)

Shipping ---------- 3570 lbs.
Shipping US Bureau of Mines Approved - 3810 lbs.

(Petter Cont'd)

ENGINE

Make ---------- Petter
Model ---------- BA2R
Fuel ---------- No. 2 Diesel
Governed Flywheel Horsepower -- 25 @ 3000 RPM
Maximum Torque -------- 43 ft. lbs. @ 2400 RPM
Number of Cylinders ---------- 2
Bore & Stroke ---------- 3-1/2 x 3-5/8
Displacement ---------- 70 cu. in.
Cooling Medium ---------- Air
Lubrication ---------- Pressure
Lubrication Filtration -------- Replaceable element, full flow with bypass
Crankcase Ventilation ----------
Air Cleaner ---- Replaceable dry cartridge type with condition indicator

LOADER HYDRAULICS

Pump ---------- Belt driven gear type
Minimum Pump Capacity -- 8.7 GPM @ 3000 RPM
System Relief Setting ---------- 1700 PSI
Filtration ------ Full flow on suction port of pump with bypass, condition indicator & 33 micron replaceable paper element.
Cylinders ---------- Doubleacting with Teflon seals & wear rings.

Function	Lift	Tilt
Bore Diameter	2"	2"
Rod Diameter	1-1/4"	1"
Stroke	25"	16"

Valves ---------- Open center type with float detent on lift
Fluid Lines ---------- SAE standard full flow tubes, hoses & fittings

ELECTRICAL

Alternator ---------- 22 amp. enclosed belt driven
Battery ---------- 70 amp.-hr. rating 12 volt
Starter ------ Positive engagement dustproof 12 volt

POWER TRAIN

Transmission ---------- Variable sheave type
Clutches ---------- 4 (2 each side) single disc pressure lubricated
Primary Reduction ---------- 3.00:1
Secondary Reduction ---------- 5.00:1
Final Drive ------ #60H roller chain running in sealed oil bath (2.92:1 ratio)
Total Engine to Wheel Reduction ---------- Variable from 37.1 to 100:1

CAPACITIES

Fuel ---------- 11 gallons
Engine Lubricant including Filter ------ 10-1/2 pints
Hydraulic Reservoir & Final Drive Case -- 17 gallons
Hydraulic System ---------- 20 gallons

TIRES

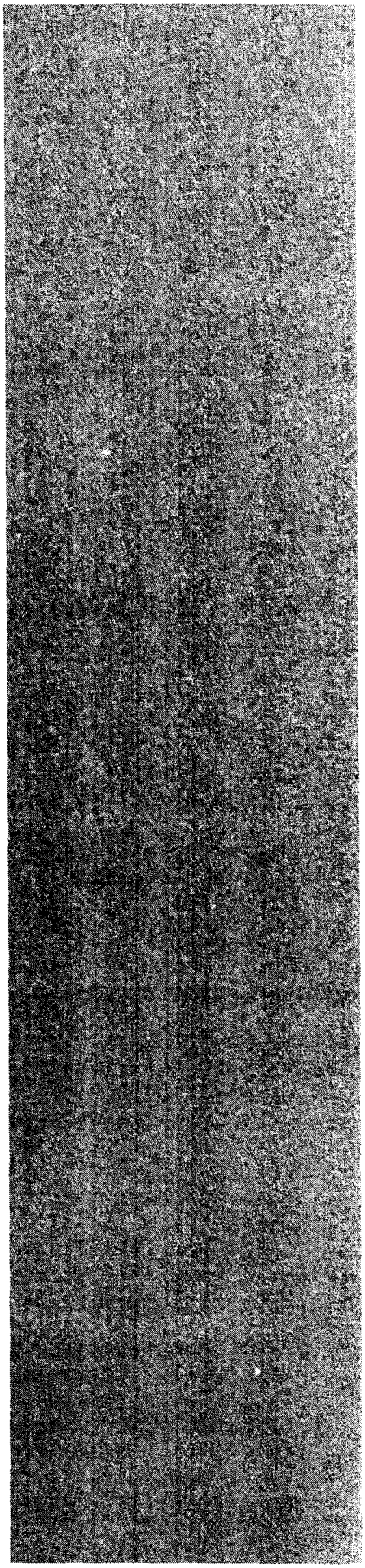
Standard ---------- Melroe special bar 7:00 x 15-6 ply nylon steel cap

COUNTERWEIGHT

Standard Cast Grill ---------- 100 lbs.

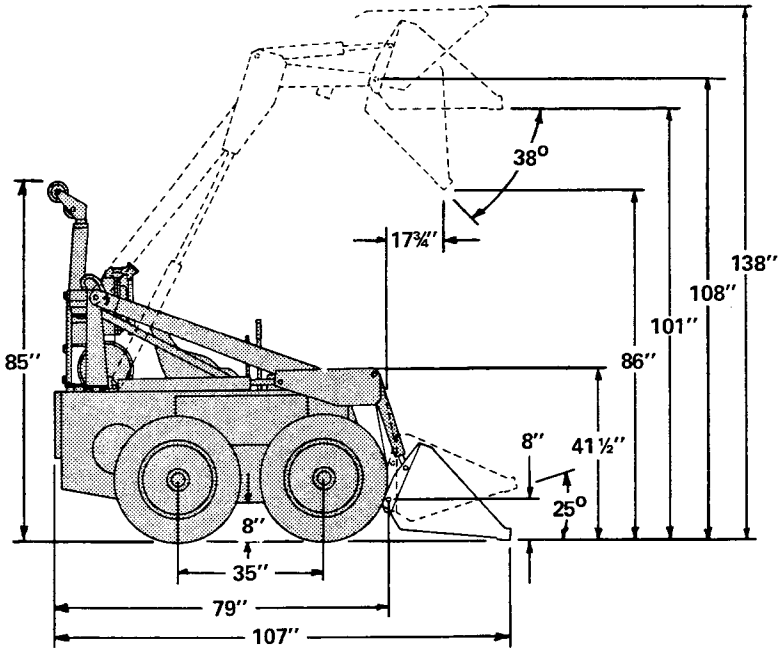
MACHINE WEIGHT (Less Bucket)

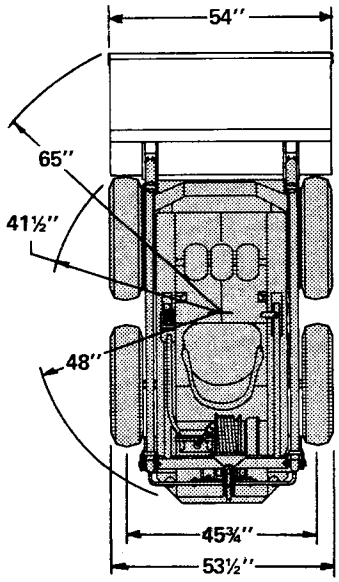
Shipping ---------- 3600 lbs.



LOADER SPECIFICATIONS

(Electric)





Dimensions are given for loader equipped with 3793-M dirt bucket and may vary with other bucket types.

Where applicable, specifications conform to IEMC & SAE standards and are subject to change without notice.

OPERATIONAL & PERFORMANCE

Operating Weight ---------- 3315 lbs.
Rated Operating Capacity ---------- 1000 lbs.
Lifting Capacity to Maximum Height ------ 1700 lbs.
Tipping Load ---------- 1840 lbs.
Hydraulic Function Time:
- Raise to Maximum Height ---------- 5.0 sec.
- Lower from Maximum Height ------- 3.0 sec.
- Dump Bucket ---------- 2.0 sec.
- Rollback Bucket ---------- 2.0 sec.

Travel Speed ---------- Infinitely variable to 3.6 MPH forward & reverse
Controls:
- Vehicle ---------- Forward, reverse & steering functions controlled by two hand levers.
- Travel Speed ---------- Hand lever controlled, hydraulically adjusted variable sheave.
- Loader --------- Lift, tilt & auxiliary functions controlled by separate foot pedals.
- Motor ------- Push button start & stop switch.

MOTOR

Make ---------- Reliance
Model ---------- TEFC-XP Explosion Proof Enclosure 254 T Frame
Rated Horsepower ---------- Continuous 15
Breakcown Torque --------- 200-250% @ 1740 RPM
Operating Voltage ---------- 440 (3 phase) 60 cycle
Motor Classification Rating -------- Class 1, Group D; Class 2, Groups F & G
Insulation ---------- NEMA "A" Class "F"
Cooling Medium ---------- Air
Cable Reel---Automatic retractable explosion proof
Rated Cable Capacity ---------- 50' of 10 gauge wire

LOADER HYDRAULICS

Pump ---------- Belt driven gear type
Minimum Pump Capacity -- 7.5 GPM @ 1750 RPM
System Relief Setting ---------- 1700 PSI
Filtration --------- Full flow on suction port of pump with bypass, condition indicator & 33 micron replaceable paper element.
Cylinders ---------- Doubleacting with Teflon seals & wear rings

Function	Lift	Tilt
Bore Diameter	2"	2"
Rod Diameter	1-1/4"	1"
Stroke	25"	16"

Valves --- Open center type with float detent on lift
Fluid Lines ---------- SAE standard full flow tubes, hoses & fittings

POWER TRAIN

Transmission ---------- Variable sheave type
Clutches ---------- 4 (2 each side) single disc pressure lubricated
Primary Reduction ---------- 3.00:1
Secondary Reduction ---------- 5.00:1
Final Drive -------- #60H roller chain running in sealed oil bath (2.92:1 ratio)
Total Motor to Wheel Reduction ----- Variable from 37.1 to 100:1

CAPACITIES

Hydraulic Reservoir & Final Drive Case -- 17 gallons
Hydraulic System ---------- 20 gallons

TIRES

Standard ---------- Melroe special bar 7:00 x 15-6 ply nylon steel cap

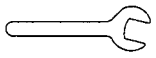
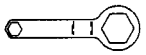
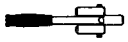
COUNTERWEIGHT

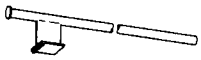
Standard Cast Grill ---------- 100 lbs.

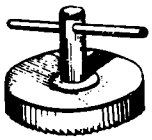
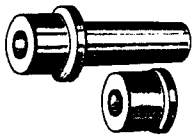
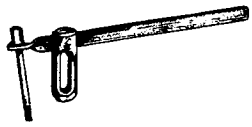
MACHINE WEIGHT (Less Bucket)

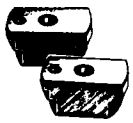
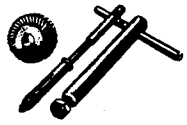
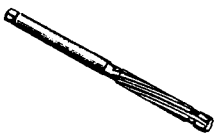
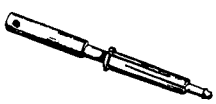
Shipping ---------- 2900 lbs.

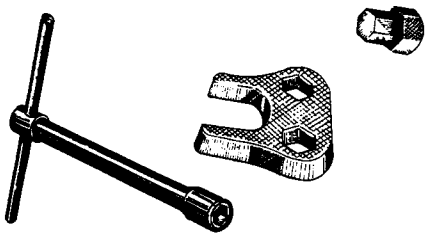
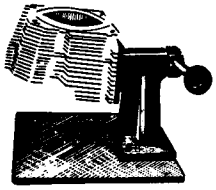
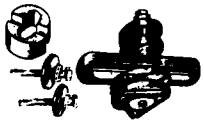
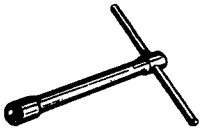
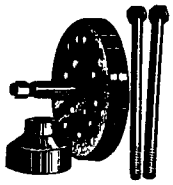
SPECIAL TOOLS

TOOL	PART NO.
 Axle Wrench. Used to loosen or tighten the axle sprocket holding nut on the axle.	Clark No. 6504947
 Clutch Wrench. Used to remove or retighten the protective clutch caps on the gearcase cover and is also used to adjust directional control lever travel.	Clark No. 6502465
 Overcenter Tank Spreader. Used to move the outer wall of the gearcase slightly away from the inner wall so the lower jackshaft can be removed and replaced easily.	Clark No. 6502465
 Spanner Wrench. Used to disassemble the hydraulic tilt and lift cylinders. Also M-600 Gasoline and Diesel variable speed, new style.	Clark No. 6505060
 Pump Aligning Hub. Mounted to the hydraulic pump mounting plate during pump alignment (used with Onan and Kohler engine powered Bobcats).	Clark No. 6505352
 Aligning shaft for Kohler Engine with Generator. Mounted to Kohler Engine flywheel during hydraulic pump alignment.	Clark No. 6505351
Aligning shaft for Kohler Engine with alternator. Mounted to Kohler Engine flywheel during hydraulic pump alignment.	Clark No. 6505357
 Aligning shaft for Onan Engine. Mounted to Onan Engine flywheel during hydraulic pump alignment.	Clark No. 6505353
 Cylinder Seal Tool. Used to protect hydraulic cylinder seals during reassembly.	Clark No. 6505365

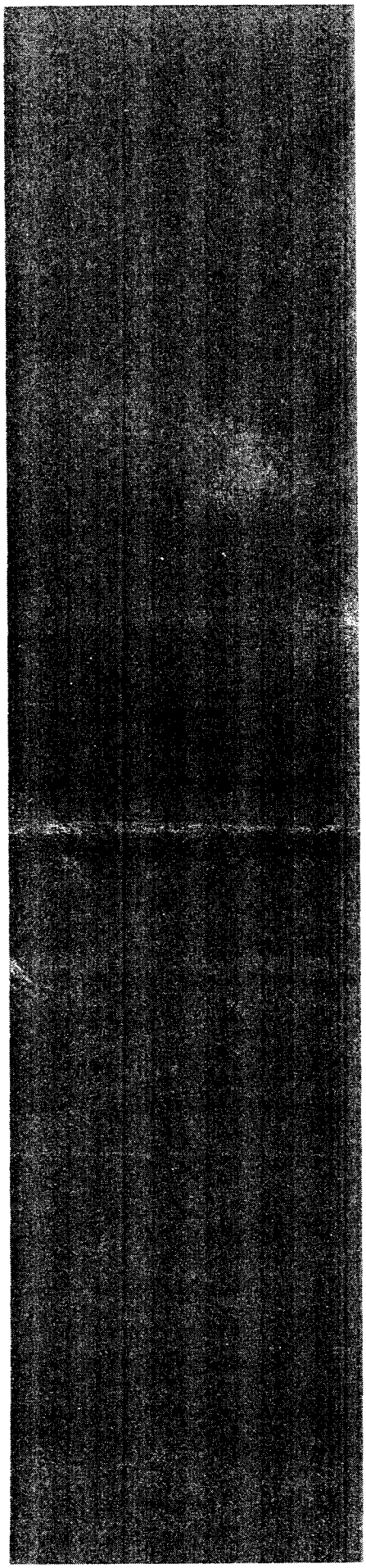
TOOL	PART NO.
Valve Seal Tool. Used to protect hydraulic control valve spool seals during reassembly.	Clark No. 6505350
 Chain Tightening Bar. Used to tighten the final drive chains.	See an Owner's Manual for instructions on making this tool.
Insert Puller. Used to remove inlet and exhaust valve seat inserts.	Wisconsin No. DF-66-A
Guide Driver. Used for replacing valve guides.	Wisconsin No. DF-72
Wrench. Removing fuel valve seat. (Wisconsin gasoline carburetor).	Zenith No. C161-82
Wrench. Removing fuel bowl drain plug. (Wisconsin gasoline carburetor).	Zenith No. C161-10
Main Jet Wrench. Removing and reinstalling main jet. (Wisconsin gasoline carburetor).	Zenith No. C161-1
Wrench. Removing main discharge jet. Removing choke shaft nut. Wisconsin gasoline carburetor.	Zenith No. C161-25
Bushing Driver. Inserting choke shaft packing. Inserting throttle shaft packing. (Wisconsin gasoline carburetor).	Zenith No. C161-72-1
Leaf Spring Gauge Set. Used for adjusting leaf spring lock screws in Final Regulator.	Zenith No. C161-189
Seat Wrench. Removing fuel valve seat. Installing main jet. (Kohler gasoline carburetor).	Zenith No. C161-85
Aligning Studs. Installing diaphragm assembly (Kohler LP carburetor).	Zenith No. C161-52
Main Jet Wrench. Removing main jet (Kohler LP carburetor).	Zenith No. C161-193
Fuel Valve Lever Gauge. Adjust-fuel valve lever. (Kohler LP carburetor).	Zenith No. C161-194
Carburetor Wrench. Making idle adjustment.	Onan No. 420B169

TOOL	PART NO.
Gear Pulling Ring. Removing crankshaft gear.	Onan No. 420A248
Seal Expander. Installing bearing plate oil seal.	Onan No. 420A181
 Mandrel for seat-rings of the inlet valves.	Deutz No. 1-410-01
 Mandrel for seat-rings of the exhaust valves.	Deutz No. 1-410-02
 Cutter for the sealing surfaces of the cylinder head.	Deutz No. 1-410-03
 Setting gauge for top dead center.	Deutz No. 1-410-04
 Ring Compressor	Deutz No. 1-410-05
 Mandrel for inserting and removing the camshaft bearing bushings.	Deutz No. 1-410-06
 Valve spring compressor.	Deutz No. 1-310-01
 Socket wrench for cylinder head bolts.	Deutz No. 1-310-02

TOOL	PART NO.
 Drilling jigs for valve seat rings. for inlet valve for exhaust valve	Deutz No. 1-310-05E 1-310-05A
 Valve seat milling device.	Deutz No. 1-310-08
 Drift punch for piston pin.	Deutz No. 1-310-12
 Drift punch for piston pin bushings.	Deutz No. 1-310-13
 Press-in device for camshaft cover plate at flywheel end.	Deutz No. 1-310-18
 Drift punch for valve guide.	Deutz No. 1-812-03
 Reamer for valve guides.	Deutz No. 1-812-04
 Guide mandrel with clamping sleeve for 1-310-05 and 1-310-08.	Deutz No. 1-812-05

TOOL	PART NO.
 Special wrench for removing and reinstalling nozzleholders.	Deutz No. 4605C 4605B 4605E
 Swivelling clamping stand for cylinder heads.	Deutz No. 4622
Clamping plate for 4622.	4622A
 Refacing device for cylinder seat face on crankcase.	Deutz No. 4663
 Cylinder retaining device.	Deutz No. 4671
 Socket spanner for big-end bolts.	Deutz No. 4672
 Pull-in/out device for main bearings.	Deutz No. 4679
 Pull-off device for end shield at flywheel end with 2 bolts and 2 washers also needed.	Deutz No. 4683

TOOL	PART NO.
 Gauge for reading tightening degrees.	Deutz No. 4689
 Piston ring plier for all sizes.	Deutz No. 8380



MACHINE TORQUES

ITEM	TORQUE FT. LBS.
Hydraulic Fluid Filter Container Nut	12
Split Jackshaft Connector Screws	20
Clutch Sprocket Screws	20
Upper Jackshaft Locking Collar Set Screws	25
Gearcase Cover Mounting Nuts	30
Tapered Bore Drive Sheave to Crankshaft	35
Lower Jackshaft (Large) Sprocket to Cluster Sprocket	55
Axle Hub Mounting Nuts	65
Upper Jackshaft Bearing Mounting Nuts	70
Upright Brace Mounting Nuts	80
1/2" Inside Clutch Chain Tightener Nuts	85
9/16" Inside Clutch Chain Tightener Nuts	110
Wheel Mounting Screws	110
Lower Jackshaft Mounting Screws	110
Variable Speed Drive Sheave Retaining Nut	130
Upright Mounting Screws	150
Clutch Pin Holding Nuts	225

SUGGESTED SERVICE TIME

DRIVE SYSTEM

	HRS.
Remove and Replace One Gearcase Cover	.50
Remove and Replace One Clutch and Clutch Pin	2.50
Remove and Replace Both Clutches and Clutch Pins on a Side	3.50
Remove a Clutch for Thrust Bearing Replacement	1.00
Remove a Clutch and Replace Needle Bearings	1.50
Replace All Thrust Bearings on a Side	3.00
Drive Belt Replacement (Split Jackshaft)	.50
Drive Belt Replacement (One Piece Jackshaft)	4.50
Driven Sheave Removal and Replacement (Split Jackshaft	3.00
Driven Sheave Removal and Replacement (One Piece Jackshaft)	4.50
Driven Sheave Disassembly (Split Jackshaft) and Reassembly	.50
Driven Sheave Disassembly (Straight Jackshaft) and Reassembly	.50
Upper Jackshaft Bearing Replacement	1.50
Remove and Replace Variable Speed Drive Sheave (Onan or Kohler)	1.00
Variable Speed Drive Sheave on Engine (Modification)	2.00
Remove and Replace an Axle (Front)	2.50
Remove and Replace an Axle (Rear)	3.50
Remove and Replace an Axle Sprocket (Front)	2.50
Remove and Replace an Axle Sprocket (Rear)	3.50
Remove and Replace a Lower Jackshaft	3.50
Remove and Replace a Final Drive Chain	3.00

HYDRAULIC SYSTEM

Replace Control Valve Seals on One Spool (Valve in Machine)	1.50
Replace Hydraulic Pump Shaft Seal	2.00
Hydraulic Pump Repair (Webster Pump)	2.00
Hydraulic Pump Repair (Cessna Pump)	2.00
Remove and Replace a Hydraulic Pump	2.00
Rebuild a Hydraulic Cylinder	1.00
Remove and Replace a Lift or Tilt Control Valve	3.00
Remove and Replace a Variable Speed Control Valve	.50
Hydraulic Pump Alignment (M-600 and M-500 Electric)	3.00

ENGINE

Remove and Replace Engine in Bobcat . . . . . 3.50 . . . . . Deutz Diesel	6.00
Grind Valves - Engine in Bobcat (Includes: Remove Heads, Reface, Reseat and Grind Valves, Check Springs, Clean Carbon, Adjust Tappets)	3.00
Grind Valves and Replace Piston Rings	8.50
Engine Tune-Up with Engine in Bobcat (Includes: Clean and Adjust Carburetor, Replace and Adjust Ignition Points, Replace Condensor when Necessary, Retime Engine, Replace Plugs)	2.25
Replace Rear Oil Seal (V.S. End) Engine in Bobcat (Includes: Removal of Variable Speed Assembly)	1.00
Replace Front Oil Seal (Hydraulic Pump End)	4.50
Engine Overhaul (Includes: Complete Overhaul Replacing All Worn Parts, Repair Carburetor, Fuel Pump and Starter)	16.00
Engine Overhaul Using New Short Block	10.50

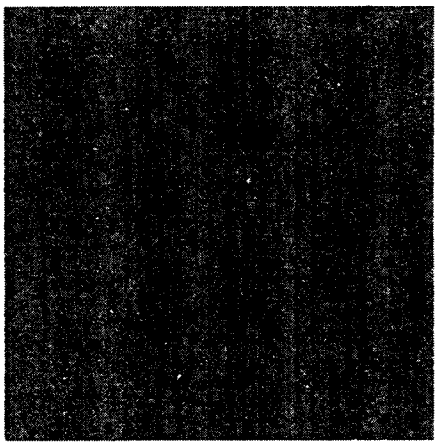
ENGINE (Cont'd)

	HRS.
Carburetor Overhaul	1.50
Remove Magneto, Install Points, Condensor, Replace and Retime	.75
Magneto Installation and Timing	.50
Check and Adjust Timing	.25
Replace Alternator Stator Assembly and Adjust	5.00
Remove and Replace and Adjust Governor (Kohler)	1.00
Remove and Replace Starter (Onan or Kohler)	1.00
Rebuild Starter (Onan, Kohler, Wisconsin)	.75
Replace Generator Belt (Onan)	1.00
Replace Generator Belt (Kohler) Using 270928 Segmented Belt	1.00
Adjust Tappets (Onan or Kohler) Includes Removal of Manifold with Engine in Bobcat	1.50
L.P. Vaporizer - Primary Regulator Service	1.50
L.P. Final Regulator Service	1.00
Electric Fuel Pump Service	1.00

FRAME

Steam Clean for Painting	2.00
Prime and Paint	1.00
Change Tire	1.00
Replace Cutting Edge of Dirt Bucket	3.00

50 HOUR CHECK



The 50 hour check list (Form No. TM-8387) and customer confirmation card (Form No. TM-8153 are sealed into a plastic bag and taped inside the boom upright cross member. The package is marked "Do Not Open Until 50 Hour Check".

At a time conveniently near 50 operating hours, Form No. TM-8387 will be filled out by the dealer service man as the 50 hour check is performed. The 50 hour check must be performed in the presence of the Bobcat owner or operator. When the service check is completed and the form filled, the form will be signed by both parties and dated.

The Bobcat owner or operator will complete the Form No. TM-8153 card and mail it to Melroe Division.

The Bobcat dealer should inform the new owner of the 50 hour check procedure at the time the new machine is delivered. The customer should be instructed to notify the dealer when 50 hours has been reached.

The 50 hour check should be performed in the dealer shop and whenever possible the customer should be persuaded to perform the necessary hauling.

Many dealers handle the 50 hour check in the following manner:

The dealer removes the spare hydraulic oil filter cartridge (15H624) from the Bobcat before delivery. He proposes this deal to the customer:

Dealer is to Supply

Free Service Check
Hydraulic Oil Filter
Engine Oil Filter
Engine Oil Change

Customer Responsibility

Make advance reservation for 50 hour check.
Hauls Bobcat to dealer shop and back.

A conscientiously performed 50 hour check can produce a wealth of benefits, such as:

1. Faulty maintenance and operating practices can be found out and corrected.
2. Proper adjustments and inspection after the initial wear in period can prevent future emergency service.
3. A 50 hour check demonstrates proper service procedures to the customer.
4. At the time of the 50 hour check, the dealer may display and demonstrate additional or new attachments.

PLEASE FILL OUT AND RETURN

DEALER'S NAME _____

Date _____

Loader S/N _____

OWNER'S NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Has Our Dealer Performed the 50 Hour Inspection? YES ☐ NO ☐

Are You Getting Prompt, Efficient Service? YES ☐ NO ☐

COMMENTS: _____

SIGNATURE _____ POSITION _____

TM-8153 (7-71)-5M-J Printed in U.S.A.

Customer Confirmation Card (Back)

Postage Will Be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY MAIL
First Class Permit No. 1, Gwinner, North Dakota

CLARK EQUIPMENT CO.
MELROE DIVISION
Gwinner, North Dakota - 58040

Customer Confirmation Card (Front)

CLARK EQUIPMENT

50-HOUR CHECK LIST

M-371, M-444, M-500 & M-600
MELROE BOBCAT LOADER

CLARK EQUIPMENT COMPANY
Melroe Division, Gwinner, North Dakota 58040

2456783	Machine Serial Number
0054.8	Hour Meter Reading
June 20, 1971	Date 50-Hour Check Performed

IMPORTANT: The following checks are to be performed with the operator and maintenance man present.

CHASSIS

1. (X) Pivot pins and retianing screws for tightness.
2. (X) Demonstrate and properly lubricate all fittings.
3. (X) Wheel lug bolts for tightness.
4. (X) Tire pressure. (Regular – 45 - 50 PSI; Flotation – 20 - 25 PSI).
5. (X) Tire diameter. (Same diameter tires on one side - Rotate if necessary).

DRIVE

1. (X) Drive chain tightness. (Demonstrate checking procedure by raising all four wheels off ground).
2. (X) Tightening drive chains. (Demonstrate proper chain tightening procedure).
3. (X) Clutch levers for distance of movement and equal travel. (Demonstrate proper adjustment).
4. (X) Gearcase for leaks.
5. (X) Gearcase oil level. (Add Dexron or ATF type "A" if needed).

ELECTRICAL

1. (X) Battery water level.
2. (X) Alternator/generator function.
3. (X) Alternator/generator belt tension. (Oil if applicable).

HYDRAULICS

1. (X) Change hydraulic oil filter cartridge.
2. (X) Hydraulic connections for leaks and cylinder glands for tightness. (Remove any nicks from cylinder rod).
3. (X) System relief pressure. (M-444, M-500 & M-600 – 1700 PSI ± 25 PSI) (M-371 – 1400 PSI ± 25 PSI).
4. (X) Variable speed hydraulic pressure. All except M-371. (400 PSI - Raising; 600 PSI - Holding).

ENGINE

1. (X) Air cleaner condition indicator and inlet system for leaks. (Change cartridge if condition indicator so reads).
2. (X) Change engine oil. (Use engine manufacturer's recommended oil).
3. (X) Change engine oil filter. (All except M-371).
4. (X) Engine tune up:
   - (X) Plugs
   - (X) Points
   - (X) Timing
   - (X) Adjust valve tappets
   - (X) Head bolts (Retorque)
   - (X) Inspect crankcase breather for proper functioning. (All except Petters).
   - (X) Engine RPM - High idle
     - 2400 RPM - Wisconsin
     - 2700 RPM - Deutz
     - 3000 RPM - Onan, Kohler & Petters
     - 3100 RPM - Kohler (M-371 Only)

The above service was performed with the operator and/or maintenance man present to insure his knowledge of the proper procedures.

This 50-Hour Check was performed by _____
Serviceman Signature

Dealer Name Bob's Bobcat Company
Address 2300 W. Sunset Drive
City West State N. D. Zip 590715

_____
Dealer Representative Signature

Customer Name P. Q. Public
Address 410 Oak Drive
City Notown State N. D. Zip 580751

_____
Owner/Operator Signature

TM-8387 (3-71)-6M-C

Printed in U.S.A.

CLARK EQUIPMENT

CLARK EQUIPMENT COMPANY
Melroe Division, Gwinner, North Dakota 58040

Machine Model M- 600
Machine Serial No. 2456783
Engine Serial No. 39503
Date Machine Delivered June 10, 1971

DELIVERY REPORT

Dealer Name Bob's Bobcat Company
Address 2300 W. Sunset Drive
City West State N. D. Zip 590715

Owner Name P. Q. Public
Address 410 Oak Drive
City Notown State N. D Zip 580751

Nature of Owner's Business Sand and Gravel Digging

Type of operation machine will be used for * Loading and leveling

If machine is used in Dealer Rental Fleet, please check here _____

Time spent on delivery 2 days

Upon Delivery the Following Were Explained and Checked:

- x Need for study of operator's manual.
- x All parts transactions are to be handled with distributor using machine serial number, part number and description.
- x Effect of overloading and improper counterweighting.
- x Lubrication of entire machine.
- x Care and adjustments of clutches and/or transmission.
- x Care and adjustments of operating linkages.
- _____ Demonstrate checking and adjustment of final drive chains.
- x Starting and stopping machine.
- _____ Care of hydraulic system and/or hydrostatic systems.
- x Safety precautions. I have had the option to purchase additional safety equipment (operator guards, warning lights, etc.)
- x Check if parts book operator's manual, engine manual, tools, and bucket pins were received.
- x Extra Gresen oil filter cartridge included (to be changed within first 50 hours). (M-444, M-500, and M-600 only).
- x Explain 50 hour check procedure.

I Feel Satisfied I Thoroughly Understand the Operation and Maintenance of the Machine.

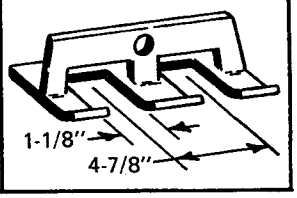
June 12, 1971 (Date) | P. Q. Public (Owner or Operator's Signature) | Bob Doe (Distributor Representative)

NOTE: A follow up call is to be made by the dealer after the first fifty hours of operation and perform services as outlined on the fifty hour check list.

Remarks: Neat and couresty service

* Please check the appropriate square on the back of this sheet.

TM-8151 (2-71)-6M-J Mail to Melroe Division, Clark Equipment Co., Gwinner, North Dakota 58040 Printed in U.S.A.

WISCONSIN	KOHLER	ONAN	DEUTZ	PETTER
REMOVE: Seat Engine cover Variable speed sheave Door, hinges & cross-member below door Engine mount screws Bellypan on pulpwood	**REMOVE:** Seat Engine cover Variable speed sheave Grill & crossmember below it Engine mount screws	**REMOVE:** Seat Engine cover Variable speed sheave Counterweight Engine mount screws	**REMOVE:** Seat Engine cover Variable speed sheave Counterweight Engine mount screws Engine oil filter mounting screws Bellypan	**REMOVE:** Seat Engine cover Variable speed sheave Counterweight & cross-member below it Engine mount screws Hydraulic pump drive belt
DISCONNECT: Fuel line Choke linkage Throttle linkage Air cleaner hose Wiring harness Hydraulic lines at pump	**DISCONNECT:** Fuel line Choke linkage Throttle linkage Air cleaner hose Battery cable Wiring from: Magneto Starter Fuel pump Regulator Sending units	**DISCONNECT:** Fuel line Choke linkage Throttle linkage Air cleaner hose Battery cable Wiring from Generator Distributor Sending unit Regulator	**DISCONNECT:** Fuel line Fuel shut-off linkage Throttle linkage Air cleaner hose Battery cable Wiring from Preheater solenoid Generator Starter Sending units Regulator Hydraulic lines at pump	**DISCONNECT:** Fuel line Fuel shut-off linkage Throttle linkage Air cleaner hose Battery cable Wiring from: Alternator Starter Sending unit Regulator
LOOSEN:	**LOOSEN:** Hydraulic pump adapter set screw	**LOOSEN:** Hydraulic pump adapter set screw	**LOOSEN:**	**LOOSEN:**
NOTE: Plug the hydraulic pump lines and tie away from engine.	**NOTE:** Slide the engine away from the pump on its mounts.	**NOTE:** Slide the engine away from the pump on its mounts.	**NOTE:** Turn the engine so the pump end is toward the rear. Plug the hydraulic pump lines.	**NOTE:**
LIFT AT: Manifold	**LIFT AT:** Manifold	**LIFT AT:** Manifold	**LIFT AT:**	**LIFT AT:** Oil Filler Caps
				Lifting Tool: 

WISCONSIN	KOHLER	ONAN	DEUTZ	PETTER
RECONNECT: Hydraulic lines at the pump Battery cable Wiring harness Air cleaner hose Throttle linkage Choke linkage Fuel line	**RECONNECT:** Wiring Battery cable Air cleaner hose Throttle linkage Choke linkage Fuel line	**RECONNECT:** Wiring Battery cable Air cleaner hose Throttle linkage Choke linkage Fuel line	**RECONNECT:** Hydraulic lines at pump Wiring Air cleaner hose Air cleaner hose Throttle linkage Fuel shut-off linkage fuel line Engine oil filter	**RECONNECT:** Wiring Battery cable Air cleaner hose Throttle linkage Fuel shut-off linkage Fuel line
REINSTALL: Engine mount screws Rear crossmember Variable speed sheave Engine cover Seat	**REINSTALL:** Engine mount screws Variable speed sheave Engine cover Seat Hydraulic pump adapter set screw	**REINSTALL:** Engine mount screws Variable speed sheave Engine cover Seat Hydraulic pump adapter set screw	**REINSTALL:** Engine mount screws Variable speed sheave Engine cover Seat	**REINSTALL:** Hydraulic pump drive Engine mount screws Variable speed sheave Engine cover Seat
CHECK: Variable speed belt alignment	**CHECK:** Variable speed belt alignment Hydraulic pump alignment	**CHECK:** Variable speed belt alignment Hydraulic pump alignment	**CHECK:** Variable speed belt alignment	**CHECK:** Variable speed belt alignment