

# 900

SERIES 2

## OPERATOR'S MANUAL

42090003



VERMEER

1977

Reprinted

## VERSATILE WARRANTY

VERSATILE MANUFACTURING LTD. (VERSATILE) warrants each item of new Versatile equipment sold by it to be free from defects in material and workmanship under normal use and service. The sole obligation of Versatile to the Dealer under this warranty is limited to repairing or replacing, as Versatile may elect, any part or parts that prove in Versatile's judgment to be defective in material or workmanship within one year after delivery to the original purchaser, under normal farm use. Such a defective part or parts will be replaced or repaired ONLY TO THE ORIGINAL PURCHASER, such repair or replacement will be done at the location of the selling Versatile Dealer. Purchaser must give written notice to the Authorized Dealer from whom equipment was purchased of any claimed defect and the Dealer will have a reasonable time under the circumstances then existing to repair or replace said part or parts found to be defective. It is understood that if there is any delay in giving such written notice wherein it is possible that the alleged defective part may have caused damage or defects to other parts of the equipment, then this warranty shall not cover the repairs necessitated therein.

**NOTE: THE SOLE REMEDY OF THE PURCHASER FOR BREACH OF THIS WARRANTY IS THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS.**

This warranty does not extend to the engine or tires on Versatile tractors which are manufactured by others, and which carry separate warranties from said manufacturers. There are no representations, warranties, or conditions express or implied, statutory or otherwise, except those herein contained and no agreement collateral otherwise, except those herein contained and no agreement collateral hereto shall be binding upon either party unless in writing hereon or attached hereto, signed by purchaser and accepted by Versatile at its head office.

Versatile's liability under this warranty is limited to the repairing or replacing of parts, and Versatile shall in no event be liable to the Purchaser for consequential damages or loss of profits on crops sustained by it as a result of any defect in material or workmanship on any of the equipment covered by this warranty.

Versatile equipment is warranted for agricultural use only. This Warranty does not cover industrial application. ALTERING, MODIFYING OR ADDING ADDITIONAL EQUIPMENT WHICH IS NOT APPROVED FOR INSTALLATION ON VERSATILE EQUIPMENT BY THE COMPANY WILL VOID THE WARRANTY.

All Warranties are subject to the legislation of the state or province in which the machine is sold.

**\*THERE WILL BE NO DEVIATION FROM THE PROCEDURE AS OUTLINED\*.**

**NOTE: THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE BY VERSATILE OR ITS AUTHORIZED DEALER, REGARDING VERSATILE EQUIPMENT EXCEPT THE WARRANTY AGAINST DEFECTS IN MATERIAL OR WORKMANSHIP EXPRESSED HEREIN. NO PERSON IS AUTHORIZED TO BIND VERSATILE FOR ANY OTHER WARRANTY WHATSOEVER.**

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## INTRODUCTION

We at VERSATILE Manufacturing Ltd. are pleased that you have chosen a VERSATILE Four-Wheel Drive Tractor for your farming operation. The founders of VERSATILE have pioneered the development of the four-wheel drive tractor for agricultural use. It has evolved through the ideas and suggestions which have been submitted to us by customers such as yourself.

We ask that you study this manual and adopt the preventative maintenance program outlined in it. Preventative maintenance will provide you with trouble free service for years to come. The suggested schedule has been designed to meet most operating conditions. It may be necessary to adjust your maintenance program to suit your specific operating conditions and to perform the maintenance more often than outlined.

As the purchaser of VERSATILE Four-Wheel Drive Tractor you have also received a Cummins' Operation and Maintenance Manual. We would ask that for maintenance on the engine which is not covered by our tractor manual, you follow the instructions outlined in the Cummins manual. Before placing the tractor in service become familiar with all the procedures described in both the engine manual and the tractor manual.

Review with all operators on a regular basis during the year, the proper and safe way in operating and maintaining the tractor. Any new operators should know the tractor completely before beginning daily operation.

Your dealer is factory-trained to provide you with genuine parts and professional repair service. Consult him regarding your service needs. He is working for you.

# SERIAL NUMBER LOCATION

## IMPORTANT:

When ordering parts, state the serial number of the tractor and/or engine, whichever applies. The tractor serial number is stamped on the rear of the front frame section and also appears as a metal tag near Parking Brake Lever in the cab. The engine (Cummins) serial number is on a metal tag on engine's left-hand cylinder bank.

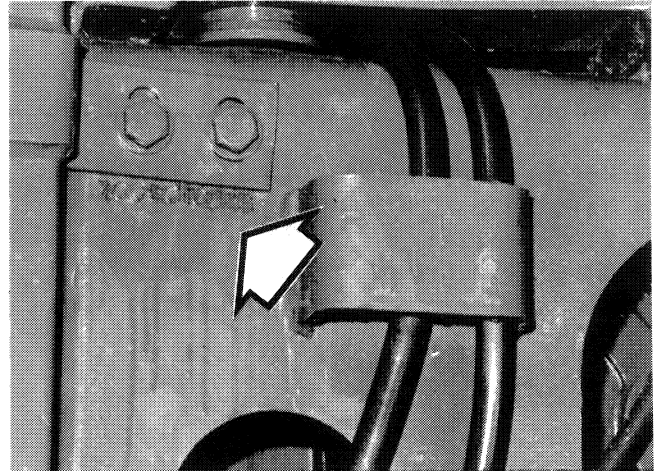
Write your model and serial number information here:

### TRACTOR

MODEL **900**  
SERIAL \_\_\_\_\_

### ENGINE

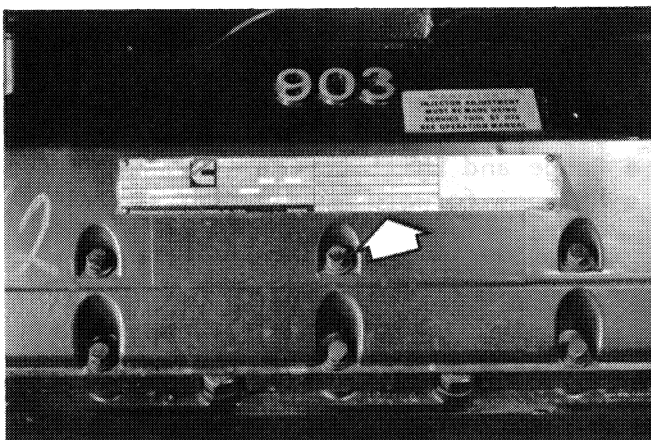
MAKE **CUMMINS**  
MODEL **V-903**  
SERIAL \_\_\_\_\_



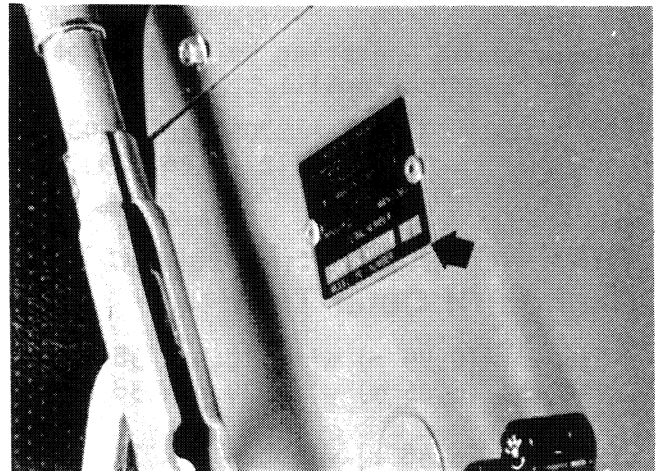
Frame Stamp

### FRAME

SERIAL \_\_\_\_\_



Engine Plate



Cab Plate

# SPECIFICATIONS

## DIMENSIONS:

- Wheel Base -- 130 in. (3,30 m)
- Length Overall -- 253 in. (6,43 m)
- Height Overall -- 141 in. (3,58 m)
  
- Height To Drawbar -- 18 in. (457 mm)
- Height To Differential -- 23 in. (584 mm)
- Height To Frame -- 22 in. (559 mm)
- Width -- See Tire Size

## WEIGHT:

- Approximate weight with various tire sizes:
  - 18.4 x 38 Duals -- 19,650 lbs. (8910kg)
  - 20.8 x 38 Duals -- 20,484 lbs. (9290kg)
  - 24.5 x 32 Duals -- 21,640 lbs. (9815kg)
  - 20.8 x 38 Singles -17,920 lbs. (8130kg)
  - 24.5 x 32 Singles -18,540 lbs. (8410kg)
  - 30.5 x 32 Singles -19,060 lbs. (8640kg)
  - 24.5 x 32 Rice & Cane Singles -- 18,735 lbs. (8500kg)
  - 30.5 x 32 Rice & Cane Singles -- 19,710 lbs. (8940kg)
- Recommended Operating Weights Range (most applications)
  - 27000 to 28500 lb (12250 to 12930 kg)

## TURNING RADIUS:(Measured To Outside Of Outer Tire)

- 236 in. (5,99 m) with 18.4 x 38 duals;  
239 in. (6,06 m) with 20.8 x 38 duals
- 216 in. (5,48 m) with 24.5 x 32 singles;  
222 in. (5,64 m) with 30.5 x 32 singles

## ENGINE: (Naturally Aspirated)

- Cummins V-903 V8 Diesel
- Engine maximum brake horsepower at 2400 rpm -- 295 (per SAE Standard J-816 a) (223.5 kW)
- Maximum Torque -- 706 ft. lb. @ 1800 rpm (957 N-m)
- Compression Ratio -- 16.5:1
- Bore, 5.50 (140 mm) x Stroke, 4.75 in. (121 mm)
- Displacement -- 903 cu. in. (14.8 ℓ)
- Idle Speed -- 1000 rpm
- Full-Load Governed Speed -- 2400 rpm
- Full-Throttle No-Load Speed -- 2550 to 2640 rpm
- Lubrication System - 34 U.S. quarts, 28.3 Imp. qts. (32, 2 ℓ)  
Full flow oil filter with by-pass oil conditioner and oil to water cooler.
- 30° angularity capability of oil pan
- Mounts -- Versatile design, fully rubber-mounted.

## TRANSMISSION:

- Completely rubber-mounted
- Tapered roller bearings 12-speed, fully constant mesh with sliding collars
- Four shafts, 3 in. (76,2 mm) diameter. Pressure lubricated (4 to 15 psi, 28 to 105 kPa).
- Range and Shift Levers
- Helical forward gears, spur reverse gears.
- Independent lubrication system with pump, 10 micron filter, cooler steel lines and wire braid hose, dash-mounted indicator light
- Oil capacity - 21.5 U.S. Qts. (18 Imp. Qts.) (20.3 ℓ)
- Speeds at 2400 rpm with 24.5 tires, 31.5 in. (800 mm) load radius tires.

RANGE	1	2	3	4
1st gear	2.5 mph	3.0 mph	3.3 mph	4.0 mph
2nd	4.5	5.4	6.0	7.2
3rd	8.8	10.5	11.7	14.1
Reverse	3.3	3.9	4.4	5.2

(km/h = mph x 1.6)

## CLUTCH:

- Dana Spicer® , 14 in. (356 mm), SELF-ADJUSTING two-plate dry type with ceramic button lining, spring-loaded cushion hub discs. Mechanically actuated by foot pedal.

## BRAKES:

- Road Brake -- drive-line mounted 15 in. (381 mm). SELF-ADJUSTING disc type. Independent of tractor hydraulic system.
- Parking Brake -- mechanically actuated caliper.

## AXLES:

- Spiral-bevel single reduction differentials with outboard planetary final drives.
- Ratios - 27.45 axle, 4.88 differential 5.625 planetary
- Differential mounted in ductile cast differential housing
- Oil capacity / axle 41 U.S. Qts. 34.0 Imp. Qts. (38,6 ℓ)

## COOLING SYSTEM:

- Capacity - 53 U.S. Qts., 44 Imp. Qts. (50,2 ℓ)
- Radiator (4 row core) rubber mounted - 930 sq. in. (6,000 cm. sq.)
- Independent surge tank
- Quick removable perforated metal grill screen
- Fan (6 blade sucker type) - 28 in. (711 mm) diameter

## EXHAUST SYSTEM:

- Two 8.5 in. (216 mm) diameter x 35.3 in. (900 mm) muffler
- Mufflers are rubber mounted
- Built-in spark arrestor (where mandatory)

## AIR CLEANER:

- Triphase dry type dual safety element, exhaust aspirated, restriction indicator gauge on instrument panel.

## STEERING:

- Articulated frame, 42° left or right. Fully hydrostatic actuation via two, 3 in. (76 mm) x 16.5 in. (419 mm) stroke cylinders.

## DRAWBAR:

- Swinging clevis type with wear block. One and one-half in. (38.1 mm) pin with locking lever. Replaceable bushings. Height -- 18 in. (457 mm) to top of main member.

## FUEL TANK:

- Capacity, 185 U.S. Gal., 155 Imp. Gal. (700 ℓ)
- Two saddle type low mounted tanks
- Mechanical fuel gauge near filler neck, duplicate electrical fuel gauge in cab.
- Remote breather 24 in. (610 mm) above tank

## ELECTRICAL:

- Two, 8D-900 Amp batteries. Negative ground. 12-Volt, 75-Amp brushless alternator with built-in voltage regulator. Automatic reset circuit breakers and replaceable fuses, 60-Watt working lamps, two red tail lamps and two warning flashers.

## FRAME:

- Articulated via two ball bushings between front and sub-frame
- Articulation capability --  $42^{\circ}$
- Oscillation capability --  $15^{\circ}$

## HYDRAULIC:

- Open center. Nominal 26.9 U.S., 22.7 Imp. gpm; (1,70 l/s) for steering. Nominal 8.0 to 26.9 U.S., 6.7 to 22.7 Imp. gpm, (0,50 to 1,70 l/s  $\pm$  10%) for implements (flow is adjustable from inside the cab).
- Filters -- reusable suction filter on suction line, one replaceable 33 micron filter on return oil line.
- Cooler -- mounted in front of radiator. Swings down for cleaning
- Implement Control -- built-in flow control. Relief valve (tank mounted) set at 2300 + 50 psi (15.86 MPa + 340 kPa). Two, four way self-cancelling spools set at 2100 psi  $\pm$  50 psi (14,48 MPa  $\pm$  0-690kPa). One four-way spool with float position.
- Couplers -- Pioneer 8200 Series, push-to-connect-under-pressure type. 7010-4 male gold colored tips.
- Capacity -- vented reservoir 74.5 U.S. Qts. 62 Imp. Qts. (70,5 l), dipstick oil level check and low level sight glass

## FLUID CAPACITIES:

- Fuel -- 185 U.S. Gal., 155 Imp. Gal. (700 l)
- Engine Lube Oil -- 34 U.S. Qts., 28.3 Imp. Qts. (32,2 l)
- Coolant -- 53 U.S. Qts., 44 Imp. Qts. (50, 2 l)
- Hydraulic System -- 74.5 U.S. Qts., 62 Imp. Qts. (70,5 l)
- Transmission -- 21.5 U.S. Qts., 17.9 Imp. Qts. (20,3 l)
- Axle with Planetaries -- 41 U.S. Qts. 34.0 Imp. Qts. (38, 6 l)

## CAB:

- Fully isolated module on rubber mounts. Roll Over Protective Structure (ROPS). Noise isolated. Pressurized and Air Conditioned. Tinted glass. Bostrom® Seat. Lap Type seat belts.
- Self-cleaning cab air filter allows for longer periods between servicing. The filter is removable (without tools) from outside the cab.

## INSTRUMENTS:

- Tachometer, hour meter, voltmeter, air restriction, fuel gauge, engine temperature gauge, oil pressure gauge, transmission oil light, key ignition, starter button, manual safety-switch, override button, hazard warning flasher with turn signals, light switch, wiper switch, warning lights for air conditioner and engine function, and ether starting aid.

## CAB PRESSURIZER:

- Roof-mounted pressurizer, three speed ceiling-mounted fan. Adjustable ceiling mounted louvers.
- Adjustable interior air selector.

## AIR CONDITIONER:

- Front-mounted Condensor. Engine-mounted Compressor. Ceiling mounted Evaporator. Temperature and Fan Speed controls. Self-cleaning OUTSIDE cab air filter ejects dust when cab door is closed firmly and by gravity.

## HEATER:

- Ceiling mounted core. Variable flow rate. Windshield defrosting Louver.



## **RADIO:**

- AM/FM Stereo with dual speakers
- Solid State. Five push buttons with volume and tone controls. Spring mounted telescoping antenna.

## **TIRE SIZE AND TRACTOR WIDTH:**

### 18.4 x 38 DUALS

- Between Tread Centers  
Inner Tires -- 72 in. (1,83 m)  
Outer Tires -- 118 in. (3,00 m)
- Tractor Width -- (outside of tires)  
Inner Tires -- 91,5 in. (2,30 m)  
Outer Tires -- 137 in. (3,48 m)

### 20.8 x 38 DUALS

- Between Tread Centers  
Inner Tires -- 72 in. (1,83 m)  
Outer Tires -- 122 in. (3,10 m)
- Tractor Width -- (outside of tires)  
Inner Tires -- 92.75 in. (2,36 m)  
Outer Tires -- 143 in. (3,63 m)

### 24.5 x 32 DUALS

- Between Tread Centers  
Inner Tires -- 72 in. (1,83 m)  
Outer Tires -- 129 in. (3,3 m)
- Tractor Width -- (outside of tires)  
Inner Tires -- 92.75 in. (2,47 m)  
Outer Tires -- 154.5 in. (3,86 m)

### 20.8 x 38 SINGLES

- Between Tread Center -- 72 in. (1,83 m)
- Tractor Width (outsides of tires) -- 92.75 in. (2,36 m)

### 24.5 x 32 SINGLES

- Between Tread Centers -- 72 in. (1,83 m)
- Tractor Width (outside of tires) -- 97.25 in. (2,47 m)

### 30.5 x 32 SINGLES

- Between Tread Centers -- 79.12 in. (2,01 m)
- Tractor Width (outside of tires) -- 109 in. (2,79 m)

## **OPTIONS:**

- Three Point Hitch (Category 111)
- Tire Sizes: 18.4 x 38, 20.8 x 38, and 24.5 x 32 Duals; 20.8 x 38, 24.5 x 32 and 30.5 x 32 Singles
- Rear Fenders
- No-Spin Differential front only
- No-Spin Differential front and rear
- Engine Coolant Heater
- Spark Arresting Exhaust

## **TRACTOR SAFETY**

Safety is an important part of the farming operation. In practise, safety helps avoid and prevent hurtful and costly accidents. It is the owner's responsibility to ensure all who operate the tractor read the owner's/operator's manual before working on machine. All operators should know the proper procedure to start and stop the tractor; be familiar with all instruments and controls; should know proper procedure to make adjustments; and know proper procedures for everyday use and maintenance. Review with all operators, on a regular basis during the year, the proper and safe way to operate and maintain the tractor. Any new operators should know the tractor completely before beginning daily operation.

The owner's/operator's should know their limitation and capabilities. Physical, physiological and psychological factors are important in preventing human error which can cause accidents and injury.

Safety is everybody's business. By using safe working practises accidents can be prevented. Co-operation by all members of the family and/or employees contributes to their own and other's safety. It is important to show concern for others by avoiding riders on tractors, keeping young children away from machines, staying clear of machines being operated by someone else, using hand signals to inform operator to stop or start the tractor, disengaging and shutting off all power-driven machinery, and wearing seat belts in tractor cab at all times.

Safety is doing things right - - not talking about it. Make safety a habit throughout the farming operation.

## SAFETY RULES

The farm accident statistics of the National Safety Council in effect state that many people die or suffer injury every year because of needless tractor accidents. Avoid becoming a victim by putting safety first in all farming operations. When operating your VERSATILE tractor, be sure that all operators are familiar with the following rules and regulations. Carefully study rules throughout book with all those who are operating the tractor.

- Be sure that every operator is familiar with the machine. Do not let any unauthorized driver at the controls.
- Mount a fire extinguisher on the tractor. Maintain it and be familiar with its use.
- Allow only one operator on the tractor when it is in use. Never allow anyone to ride on the drawbar or hitch or any other part of the tractor.
- Always fasten your seat belt before starting the engine.
- Never attempt to start or operate the tractor while it is in motion. Do not leave the engine running while the tractor or drawn equipment is being adjusted or repaired.
- Never operate the tractor engine in a closed garage or shed.
- When hitching any load to the tractor, always hitch to the drawbar or hitch points.
- When hitching drawn equipment to the drawbar, back the tractor past the clevis, then move forward so that, in making the connection, the tractor will be moving away from the equipment.
- Since loose clothes might catch in moving parts, always keep sleeves, jackets, or other clothing relatively tight and belted.
- When pulling heavy towed loads at road speeds, use extreme CAUTION. Avoid hard applications of the tractor brakes at high speeds.
- When transporting or driving the tractor on a road or a highway at night or during the day, use the hazard warning flasher. Implements should be provided with slow moving vehicle signs.
- Be sure the head lights are adjusted so that they will not blind the operator of an oncoming vehicle.
- The rate of tractor travel on hillsides, and curves should always be such that there is no danger of tipping. Avoid slopes which are too steep for safe operation.
- Always drive slowly over rough ground. Drive at speeds slow enough to ensure your safety.
- Where possible, do not drive near the edge of a gully or ditch.
- Avoid sharp uphill turns when operating on hillsides.

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