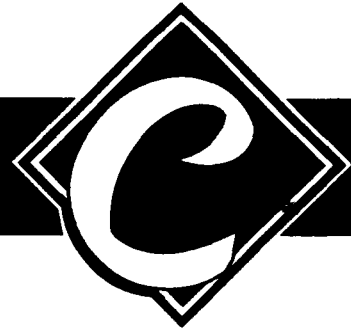




CUSHMAN®

PARTS & MAINTENANCE MANUAL

TURF-TRUCKS®

SUZUKI 660 LIQUID COOLED GASOLINE ENGINE

MODEL 898650 3-WHEEL
MODEL 898652 4-WHEEL
MODEL 898659 4-WHEEL ATM

SUZUKI 970 LIQUID COOLED GASOLINE ENGINE

MODEL 898662 4-WHEEL

PERKINS LIQUID COOLED DIESEL ENGINE

MODEL 898664 4-WHEEL
MODEL 898663 3-WHEEL
EC MODEL 898685 4-WHEEL
EC MODEL 898684 3-WHEEL



WARNING If incorrectly used this machine can cause severe injury. Those who use and maintain this machine should be trained in its proper use, warned of its dangers and should read the entire manual before attempting to set up, operate, adjust or service the machine

CUSHMAN

TEXTRON
TURF CARE AND SPECIALTY PRODUCTS

Always Think Safety!

Thank you for purchasing a Cushman, Textron product. You are one of our many customers who have voted their confidence in our company by purchasing our products.

This is one of the best designed and built pieces of commercial industrial and turf equipment available. Many safety features have been designed and built into this product. Please **DO NOT remove or defeat any safety features** as they were installed for your protection.

The useful life and good service you obtain from your vehicle depends to a large extent on the way it is **maintained and operated**.

Treat your equipment properly, lubricate and adjust it as instructed in this manual and it will give you many years of reliable service.

See your Cushman, Textron dealer for service and parts. He stocks genuine Cushman, Textron parts manufactured with the same precision and skill as the original parts.

Cushman Inc., A Textron Company, reserves the right to make changes at any time, without notice, in specifications and models and also to discontinue models and the accessories designed to be used on these models. The right is also reserved to change specifications or parts at any time without incurring any obligation to equip same on models manufactured prior to date of such change.

While the information contained in this parts manual is based on the latest product information available at the time of publication, the continuing accuracy of this parts manual cannot be guaranteed.



WARNING

- **When replacement parts are required, use genuine CUSHMAN parts or parts with equivalent characteristics including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or bystanders.**

Illustrations in this manual are a reference guide for parts identification only. Since these illustrations may not depict actual positioning of component parts, they should not be used as an assembly diagram. Doing so may result in improper assembly leading to sudden failure.

MODIFICATIONS AND ACCESSORIES

Factory installed modifications and accessories are available for use on this vehicle.

Read and understand all literature before attempting to operate this vehicle or any attached equipment.

NOTICE

- Some vehicles may be equipped with special options that are not serviced by Cushman Inc.
- The addition of accessories not of manufacturer's design may result in erratic vehicle operation, improper battery charging and discharging, and failure of vehicle components.

Direct any inquiries to:

Textron Turf Care & Specialty Products
Attn: Chief Engineer
P.O. Box 82409
Lincoln, NE 68501-2409 USA



WARNING

- Altering this equipment in any manner which adversely affects the equipments operation, performance, durability or use, may cause hazardous conditions.

IMPORTANT!

THIS EQUIPMENT SHOULD NOT BE MODIFIED OR ADDED
TO WITHOUT THE MANUFACTURER'S AUTHORIZATION.

SPECIFICATION INFORMATION

All information contained in this manual is the latest available at the time of printing. Ransomes Textron reserves the right to make changes at any time without notice.

NOTICE

- After you identify a part by the reference number and the six digit cushion part number, ***always read the description of the part to be sure it is what you want.***

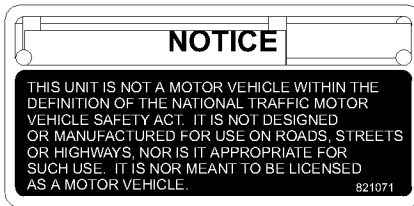
STANDARDS AND PUBLICATIONS

This product meets requirements of ANSI B56.8 and has been approved by Factory Mutual Research Corporation to meet all Powered Industrial Truck portions (classification D or G) of the OSHA requirements (as stated in section 1910.178). Approved powered trucks shall bear a label or some other identifying mark indicating approval by the testing laboratory. This product conforms to EC directives and amendments: 89/392 & 91/368.

Users, operators and service persons should be familiar with the following standards and publications:
(The material may be obtained from the addresses shown).

- Factory Mutual Approval Standard:
Class No's. 7811 & 7813; Gasoline or Diesel
Powered Trucks, Types G, GS, D or DS.
ADDRESS:
Factory Mutual Research Corp.
1151 Boston-Providence Highway
Norwood, Massachusetts 02062 U.S.A.
- National Fire Protection Association:
ANSI/NFPA #505; Powered Industrial Trucks.
ADDRESS:
National Fire Prevention Association
Batterymarch Park
Quincy, Massachusetts 02269 U.S.A.
- ANSI/ASME B56.8 Personnel Burden Carriers
ADDRESS:
American National Standards Institute, Inc.
1430 Broadway
New York, New York 10018 U.S.A.
- ANSI/UL 558; Internal Combustion Engine Powered
Industrial Trucks
ADDRESS:
American National Standards Institute, Inc.
1430 Broadway
New York, New York 10018 U.S.A.
OR
Underwriters Laboratories Inc.
333 Pfingsten Road
Northbrook, Illinois 60062 U.S.A.
- Flammable and Combustible Liquids Code:
ANSI/NFPA 30.
ADDRESS:
American National Standards Institute, Inc.
1430 Broadway
New York, New York 10018 U.S.A.
OR
National Fire Prevention Association
Batterymarch Park
Quincy, Massachusetts 02269 U.S.A.

OPERATION CONTROL SYMBOLS AND DECALS



Motor Vehicle Compliance

This decal lets the operator know that the vehicle is not defined as a motor vehicle and therefore should not be driven on streets, roads or highways



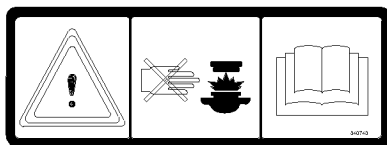
P.T.O. Warning

This decal warns the operator that an uncovered P.T.O. can cause entanglement of clothing and/or body parts.



Engine Oil Pressure Light

This light will come on when the ignition key is turned to the ON position and when the engine is started (it will shut off once the engine is running). **Its main function is to warn the operator if the oil pressure gets to low. If this light comes on during normal vehicle operation, stop the vehicle and check for problems**



Radiator Coolant Warning

This decal warns the operator not to remove the radiator cap when the engine is hot. Refer to the Cooling System Section in this manual for proper safety and operating instructions.



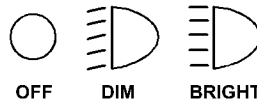
Park Brake Indicator Light

This light will come on when the park brake is applied.



Battery (Voltmeter) Charging

This symbol appears on the volt-meter gauge. This gauge indicates the charging of the battery.



Headlight Switch Positions

These symbols appear on the light switch. As indicated, each one represents the headlights functions.



Fuel Level Indicator

This symbol appears on the fuel gauge. The fuel gauge indicates the amount of fuel in the fuel tank



Water Temperature Gauge

This symbol appears on the water temperature gauge. This gauge warns the operator if the coolant system is overheating.



Engine RPM

This symbol indicates engine rpm's.



Electric Cooling Fan Warning

This decal warns the operator keep hands away from the cooling fan, the cooling fan can start at any time even with the ignition key in the OFF position.

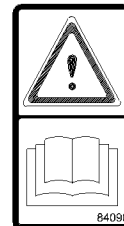


Park Brake Warning

This decal warns the operator that the park brake **is not** automatically applied.



This symbol indicates diesel fuel only



Read the Operator's Manual

This decal informs the operator to read and understand the Operator's manual. To prevent injury, they must be familiar with the operation of this product and be fully aware of **safe** operating procedures.



FAILURE TO HEED THESE WARNINGS MAY RESULT IN SERIOUS INJURY OR DEATH

1. READ AND UNDERSTAND ALL LABELS AND THE OPERATOR'S MANUAL.
2. DO NOT ALLOW UNTRAINED PERSONNEL TO OPERATE THIS VEHICLE.
3. DO NOT MODIFY THIS VEHICLE WITHOUT MANUFACTURER'S AUTHORIZATION.
4. PLACE LOADS FORWARD OF REAR AXLE.
5. TOP HEAVY LOADS CAN CAUSE UPSETTING. DO NOT EXCEED PAYLOAD CAPACITY.
6. DO NOT OPERATE IF REPAIRS ARE REQUIRED.
7. KEEP ALL SHIELDS IN PLACE.
8. SHIFT INTO NEUTRAL OR PARK BEFORE STARTING ENGINE.
9. ONLY CARRY PASSENGERS IN SEATS PROVIDED.
10. WHEN PARKING (LEAVING) VEHICLE, FOLLOW ALL INSTRUCTIONS IN OPERATOR'S MANUAL.
11. AVOID SUDDEN STARTS, STOPS AND SHARP TURNS ESPECIALLY ON SLOPES, OR WITH HEAVY LOADS
12. KEEP ALL LABELS AND INSTRUCTIONAL LITERATURE LEGIBLE AND INTACT.
13. KEEP ARMS AND LEGS WITHIN VEHICLE BODY.

845038

Vehicle Operation

This decal informs the operator of proper procedures for safely operating the vehicle. Read this manual completely to become aware of other safety issues and operating procedures which will help you operate this vehicle in a safe and responsible manner.

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VEHICLE IDENTIFICATION NUMBERS

VEHICLE IDENTIFICATION NUMBERS

This unit is not a motor vehicle within the definition of the national traffic motor vehicle safety act. It is not designed or manufactured for use on roads, streets or highways. It is not appropriate for such use.

This unit is not meant to be licensed as a motor vehicle.

IMPORTANT!

SPARK ARRESTERS ARE REQUIRED BY CALIFORNIA PUBLIC RESOURCES CODE, SECTIONS 4428–4442, WHEN OPERATING ANY INTERNAL COMBUSTION ENGINE ON HYDRO-CARBON FUELS, ON FOREST-, BRUSH-, OR GRASS-COVERED LANDS.

NOTICE

- Reference to the **front, rear, left** and **right** sides of the vehicle are always determined by the **operator's seated position**.

THE FOLLOWING IDENTIFICATION NUMBERS MUST APPEAR ON ALL CORRESPONDENCE CONCERNING THIS VEHICLE.

The Vehicle Identification Number (VIN), model number, and serial number are all printed on the Nameplate/Identification Decal attached to the crossmember under the dash (See Fig 1).

The serial number and model number are also stamped on the crossmember. It is located to the left of the model and serial no. decals (See Fig 2).

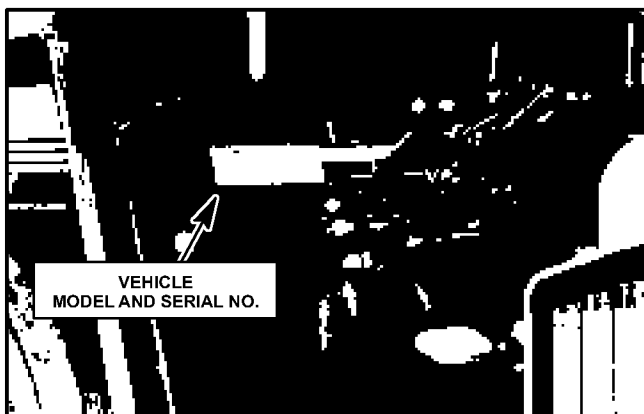


Figure 1
Nameplate / Identification Decal

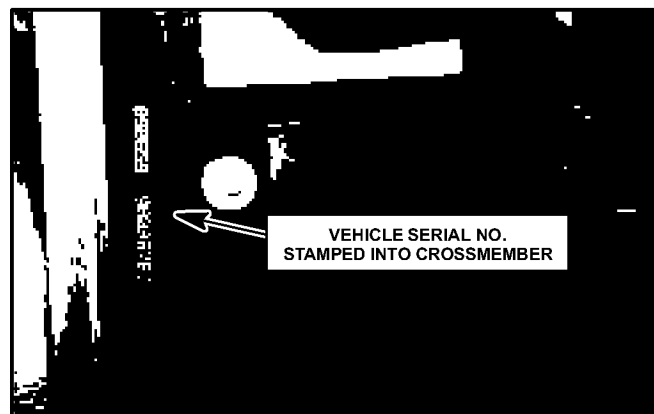


Figure 2
Serial Number And Model Number

ENGINE IDENTIFICATION NUMBERS

Your Cushman Turf-Truckster is equipped with one of three power sources.

A Suzuki 660 3-cylinder, 4-cycle, 12-valve, liquid-cooled gasoline powered engine,

a Suzuki 970 4-cylinder, 4-cycle, liquid-cooled gasoline powered engine,

or a

Perkins 103-10, 3-cylinder, 4-cycle liquid-cooled diesel powered engine.

Engine Identification Numbers (con't.)

Each engine has a serial number stamped onto the engine block. The Perkins diesel's serial no. is stamped on a metal plate which is attached to the engine block.

The Engine Serial No. for the Suzuki 660 engine is stamped onto the upper engine block on the left side of the engine.

It's located on top of the engine, beneath the governor bracket and may be partially hidden by the electrical convoluted tubing which passes through that area.

The engine serial no. is also hand printed on the engine cylinder cover (See Fig. 3).

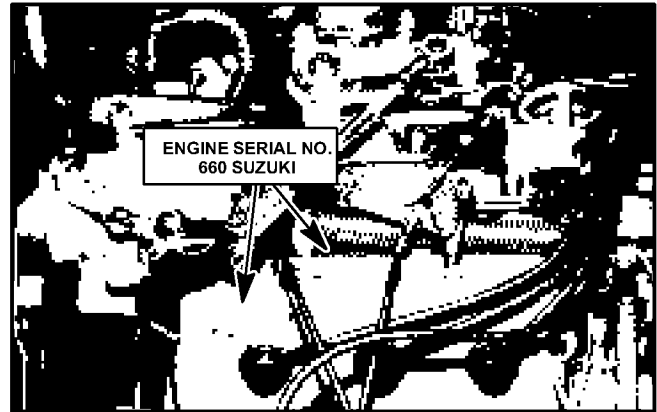


Figure 3
Suzuki 660 Engine Serial Number

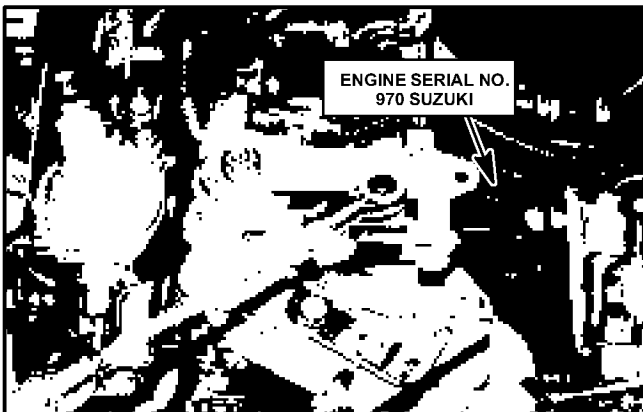


Figure 4
Suzuki 970 Engine Serial Number
(As Viewed From the Drivers Side of Vehicle)

The Engine Serial No. for the Suzuki 970 engine is stamped onto the lower engine block on the right side of the engine.

It's located on the lower engine block beneath the air cleaner.

The 970 engine serial no. is also hand printed on the engine cylinder cover.



Figure 5
Perkins Diesel Engine Serial Number

The Engine Serial No. for the Perkins Diesel engine is stamped onto a metal plate on the upper engine block on the left side of the engine.

SPECIFICATIONS

SPECIFICATIONS

Specifications subject to change without notice.

Rear Axles:	Models 898650, 898652 & 898659	14.21:1 2-speed hypoid differential
	Models 898662, 898663, 898664, 898684 & 898685	11.16:1 2-speed hypoid differential
Transmission:	Model 898659	3-speed automatic
	Models 898650, 898652 898662, 898663, 898664, 898684 & 898685	4-speed manual with low-low (creeper) 1st gear, synchronized in all forward speeds

All turf models are equipped with a 3 or 4-wheel hydraulic brake system, and a lever operated parking brake integral to the rear brake drums.

CAPACITIES

Fuel Tank 6.5 gal. (24.6 L)

Cooling System:

Suzuki 660	3.3 qts. (3.1 L)
Suzuki 970	3.3 qts. (3.1 L)
Perkins Diesel	5 qts. (4.7 L)

Crankcase (including filter):

Suzuki 660	3.3 qt. (3.1 L)
Suzuki 970	3.7 qt. (3.5 L)
Perkins Diesel	3.7qt. (3.5 L)

Transmission (660 manual) 1.05 qt. (1.0 L)
(970 & diesel manual) 1.35 qt. (1.28 L)
(automatic) 3.7 qt. (3.5 L)

Differential . (11.16:1) 5.2 Pints (2.46 L)
(14.21:1) 5.2 Pints (2.46 L)

Hydraulic System

Standard hydraulics	4 gal. (15.2 L)
Hi-Lo hydraulic accessory	7.6 gal. (28.8 L)

TIRES

Front 20 x 10.00-10 Multi-Rib
Rear 24 x 13.00-12 Titan Ultra Trac

BRAKE FLUID

Use type Dot 3

SUSPENSION

Front Double A-arm independent with two
spring-over-shock absorbers
Rear Heavy-duty multiple leaf springs
with shock absorbers

FUEL

Gasoline Engines Unleaded gasoline
87 Octane or higher

Diesel Engines No. 2-D (ASTM D975)
(see the Fuel Recommendation Section, Page 20)

LUBRICATION RECOMMENDATIONS

Transmission Fluid

(4-speed manual) SAE EP 80-90 Gear Lube
(automatic) Mercon/Dexron II

Hydraulic System Hyd Benz Bio 377

Differential Oil SAE EP 80-90 Gear Lube

Pressure Gun Grease Lithium Base

Power Steering Power Steering Fluid (GM)

BATTERY

Volts 12
BCI Group Size 24
Cold Cranking Amps (minimum) 420
Reserve Capacity Minutes (minimum) 70
Ground Terminal Polarity Negative

STEERING

14.1 ratio Saginaw power steering and a 14 inch
(355.6 mm) steering wheel

ENGINE SPECIFICATIONS

NOTICE

- The engine governor controls are preset to control engine and ground speeds to design limits.



WARNING

- To prevent premature engine failure and speeds greater than design limits, **NEVER** alter the governor controls in any manner to increase engine speed beyond recommended maximum R.P.M.

Sound Level (Perkins Diesel):

Pressure Level (right ear) dB(A) 79.2 LpA
 Pressure Level (left ear) dB(A) 79.2 LpA
 Sound power level dB(A) 95 LWA

Vibration Level (Perkins Diesel):

Whole Body (seat/buttocks) 0.0248 m/s²
 Whole Body (seat/back) 0.0257 m/s²
 Whole Body (floor/foot) 0.0671 m/s²
 Hand/arm (steering wheel/hand) 0.486 m/s²

Suzuki 970 Engine

Horsepower (SAE hp) 34
 Max. Engine Speed 3600 RPM
 Stroke 2.83" (72mm)
 Bore 2.58" (65.5mm)
 Displacement 59.2 cu in. (970 cm³)
 Compression Ratio 8.8:1
 Cylinder Compression 178 PSI (1,228 kPa)
 Engine Rotation
 (viewed from flywheel) Counterclockwise
 Valve Clearance (intake) .0031" cold (0.08 mm)
 (intake) .0047" hot (0.12 mm)
 (exhaust) .0039" cold (0.10 mm)
 (exhaust) .0047" hot (0.12 mm)
 Spark Plug Gap032-.035 (0.8-0.9 mm)
 Spark Plug Number NGK BP5ES
OR Denso W16EX-U
 Spark Plug Torque .. 18.5-21.5 lb. ft. (25-30 N·m)
 Breaker Point Gap008-.015 (0.2-0.4 mm)
 Ignition Timing 4-5° BTDC @ 950 RPM
 Idle Speed 950 ± 50 RPM

Suzuki 660 Engine

Horsepower (SAE hp) 31
 Max. Engine Speed 4450 RPM
 Stroke 2.60" (66mm)
 Bore 2.56" (65mm)
 Displacement 40.1 cu in. (657 cm³)
 Compression Ratio 10.5:1
 Cylinder Compression 178 PSI (1,228 kPa)
 Engine Rotation
 (viewed from flywheel) Counterclockwise
 Valve Clearance (intake) .0031" cold (0.08 mm)
 (intake) .0047" hot (0.12 mm)
 (exhaust) .0039" cold (0.10 mm)
 (exhaust) .0047" hot (0.12 mm)
 Spark Plug Gap032-.035 (0.8-0.9 mm)
 Spark Plug Number NGK DCPR7E
OR Denso XU22EPR-U
 Spark Plug Torque .. 18.5-21.5 lb. ft. (25-30 N·m)
 Ignition Timing 4-5° BTDC @ 950 RPM
 Idle Speed 950 ± 50 RPM

Perkins Model 103.10 - Spec KD70377

Horsepower (SAE hp) 22.3
 Max. Engine Speed 3000 RPM
 Stroke 2.83" (72mm)
 Bore 2.9" (75mm)
 Displacement 58.2 cu in. (954 cm³)
 Compression Ratio 23:1
 Cylinder Compression 425 PSI (2,932 kPa)
 Engine Rotation
 (viewed from flywheel) Counterclockwise
 Valve Clearance (intake) .008" cold (0.2 mm)
 (intake) .010" hot (.25 mm)
 (exhaust) .008" cold (0.2 mm)
 (exhaust) .012" hot (.30 mm)
 Spark Plug Gap NA
 Spark Plug Number NA
 Spark Plug Torque NA
 Breaker Point Gap NA
 Injection Timing 22° BTDC @ 1,000 RPM's
 Idle Speed 950 ± 50 RPM

GAUGES, WARNING LIGHTS and CONTROLS

The following pages contain information which will help you become more familiar with the different gauges and controls used while operating this vehicle.

TACHOMETER (1)

Indicates the engine speed (x 100) in revolutions per minute (See Fig. 6).

HOUR METER (2)

The hour meter (See Fig. 6) records the number of hours the engine has run. The hour meter runs when the key switch is **"ON"** *even if the engine is not running*.

FUEL GAUGE (3)

The fuel gauge (See Fig. 6) indicates the amount of fuel remaining in the fuel tank.

OIL PRESSURE WARNING LIGHT (4)

The **red** oil pressure light (See Fig. 6) indicates oil pressure is too low for engine operation.

VOLTMETER (5)

The voltmeter (See Fig. 6) indicates the voltage level of the battery. Under normal operation it will indicate 12 to 18 volts (meaning the battery is being properly charged). A reading below 12 volts indicates the battery is being drained, this may **indicate a malfunction in the charging system which should be checked immediately**.

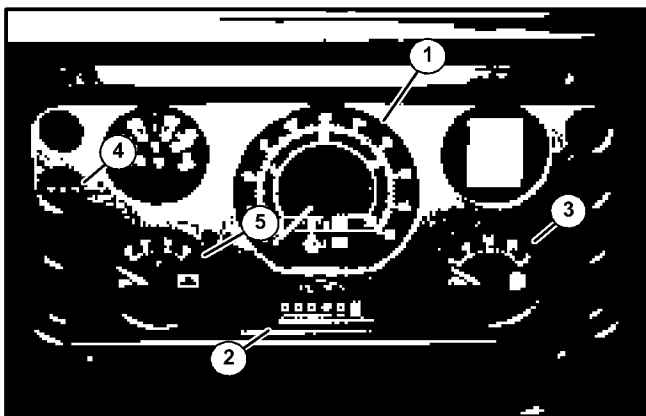


Figure 6
Dash Panel Identification (4 wheel shown)

GLOW PLUG INDICATOR (8) (DIESEL ONLY)

The glow plugs must be preheated before the engine can be started. The glow plug indicator is wired in the glow plug circuit and indicates when the glow plugs are being heated and when the engine is ready to start (See Fig. 7).

BRAKE FLUID LEVEL WARNING LIGHT (6)

This light (See Fig. 7) indicates the brake fluid level is low.

WATER TEMPERATURE GAUGE, AND OVERHEAT WARNING BUZZER (7)

The purpose of this system is to warn the operator if the engine temperature exceeds the normal operating range.

If the water temperature gauge (See Fig. 7) raises above the 230° F (110°C mark, a heat sensor is activated causing the overheat warning buzzer to sound.

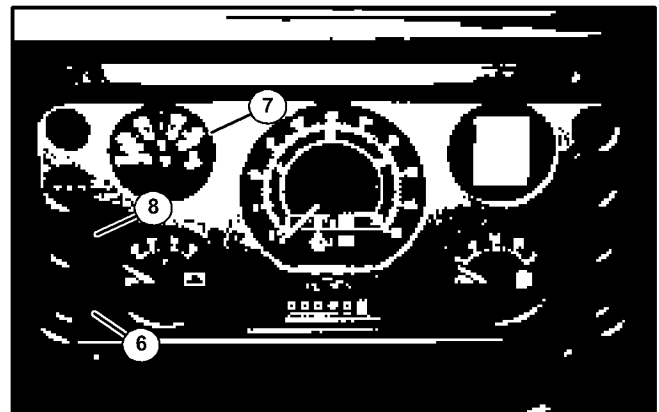


Figure 7
Dash Panel Identification (4 wheel shown)

ACCESSORY POWER PLUG

A power port is available for plugging in laptop computers, cellular phones and other accessory items which require a 12-volt plug-in (See Fig. 8).

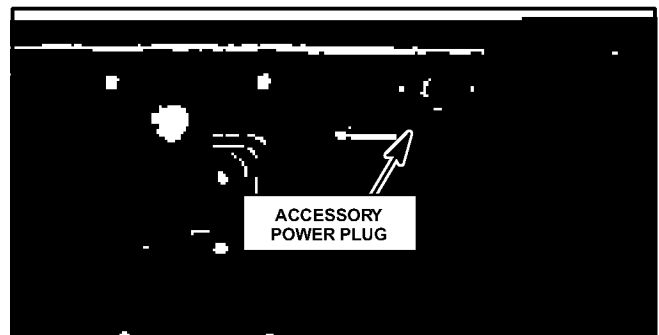


Figure 8
Accessory Power Plug

IGNITION SWITCH

1. **ACCESSORY POSITION** – Allows use of various instruments and accessories without causing ignition system damage.
2. **OFF POSITION** – Prevents function of all vehicle electrical power operated features except for the flasher (hazard) lights, and the radiator cooling fan. **Switch must be in OFF position for key removal.**
3. **ON POSITION** – Key is placed in this position for normal engine operation.
4. **START POSITION** – Hold key in start position to engage engine starter. Upon release, key will return to ON position automatically. **Key must be returned to the OFF position before the starter can be reactivated.**

NOTICE

- **DO NOT** turn key to START position with vehicle engine running. Damage to flywheel teeth may result.

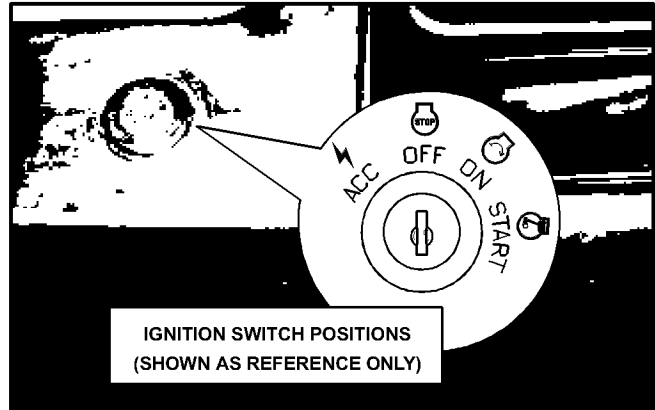


Figure 9
Four Position Ignition Switch



DANGER

- **Never** turn the key to the **START** position unless the clutch pedal is depressed (pushed down) or the gear selector is in neutral. If the vehicle is *in any gear other than neutral*, and the clutch pedal *is not* depressed when the engine is started, the vehicle may **lurch** forward or backward depending which gear the vehicle is in. This lurching could cause serious personal injury or death.
- If the engine **will** start **without depressing** the clutch pedal the clutch interlock system should be repaired **immediately** by your authorized Cushman dealer.

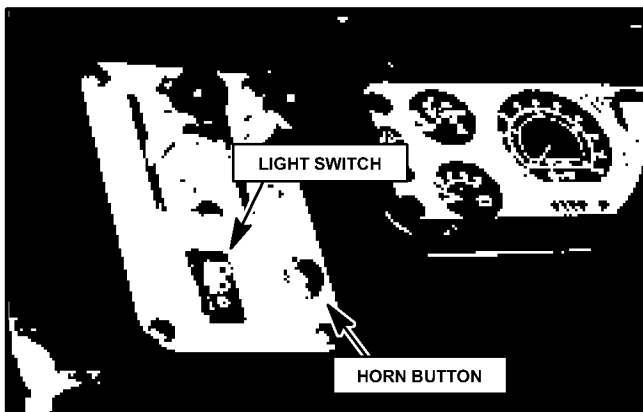


Figure 10
Horn Button and Light Switch Location

HORN BUTTON

The horn button is located to the left of the steering wheel, below the dash panel. Depress to sound horn. Horn will not sound when the ignition switch is in the **OFF** position.

LIGHT SWITCH

The light switch is used to turn the headlights and tail-lights on. The switch has three detents, **OFF**, **DIM**, and **BRIGHT**. Push switch up one detent for **DIM** or push switch up two detents for **BRIGHT**.

HEADLIGHT OPERATION SYMBOLS



CHOKE (Suzuki 970 engines Only)

The choke is used to assist the starting of a cold engine. Pull **up** on the choke knob **and hold** in the full or partially open position. When the engine has warmed up and is running smoothly release the choke knob (the choke knob is spring loaded in the open position, it will return to its normal position when released). (See Fig. 11)

PARKING BRAKE LEVER

- Parking brakes are not automatically applied. Make sure and set the park brake when leaving the vehicle.

The park brake lever is located to the left side of the drivers seat. To engage the brake, pull up on the lever until park brake is applied.

To release, while slightly pulling up on the handle, push the button at the end of the lever and while holding the button in, lower the lever to it's original position (See Fig. 11).

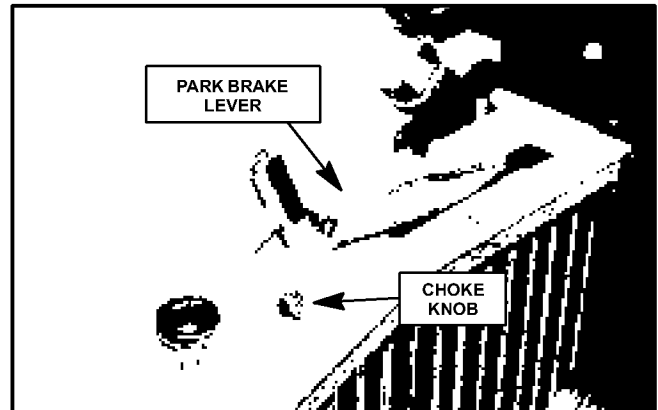


Figure 11
Park Brake Lever and Choke Knob

FOOT CONTROL PEDALS

CLUTCH PEDAL (Manual Transmission Only)

The clutch pedal has to be **depressed before** shifting into any of the gears. The clutch has a **Safety Feature** called a “**clutch interlock switch**”. This switch prevents the starter from operating unless the clutch is disengaged (the clutch pedal is depressed).

If the engine **will** start **without depressing** the clutch pedal:

- **DO NOT** operate the vehicle. The clutch interlock system should be repaired **immediately** by your authorized Cushman dealer.

The clutch pedal has to be **depressed**:

- before starting the vehicle
- before shifting into any of the gears and
- before coming to a complete stop

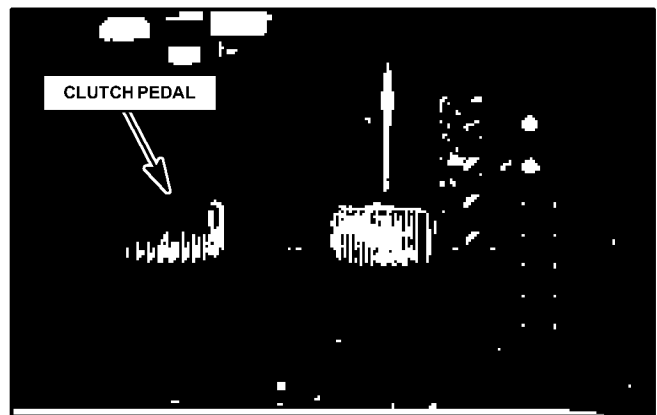


Figure 12
Clutch Pedal Location
(Manual Transmission Only)



DANGER

- **Never** start the engine unless the clutch pedal is depressed (pushed down). If the vehicle is *in any gear other than neutral*, with the clutch pedal *not* depressed and the engine is started, the vehicle will *lurch* forward or backward depending which gear the vehicle is in. This lurching could cause serious personal injury or death.

FOOT THROTTLE (ACCELERATOR) PEDAL

Push pedal down to open throttle (**increase speed**), release to return throttle to idle position (**decrease speed**).

SERVICE BRAKE PEDAL

Depress the pedal to slow or stop the vehicle.

If the brakes **DO NOT** stop the vehicle properly, the brakes must be adjusted or repaired.



CAUTION

- Improper maintenance of brake system can result in the operator losing control of vehicle.
- Loads not properly secured can quickly shift causing personal injury or vehicle damage if the brakes are applied too hard and fast.

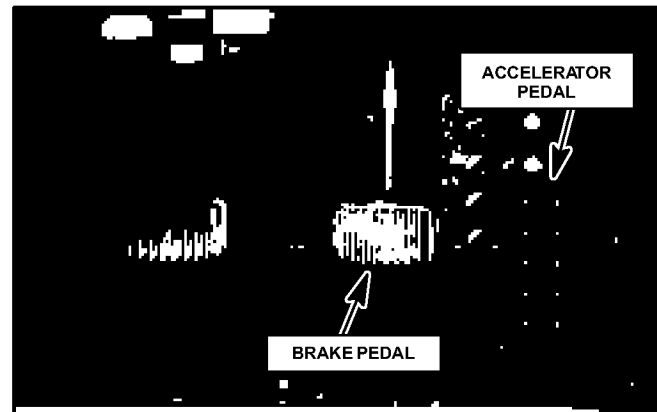


Figure 13
Foot Control Pedals
(Automatic Transmission Will Not Have a Clutch Pedal)

GEAR SELECTOR

Manual Transmission

The gear selector has an “H” pattern as shown in Figure 14. There is also a shift-pattern design molded into the top of the gear selector handle.

Remember, **before** shifting to **any** gear you have to **depress** the clutch pedal **before** you shift to that particular gear.

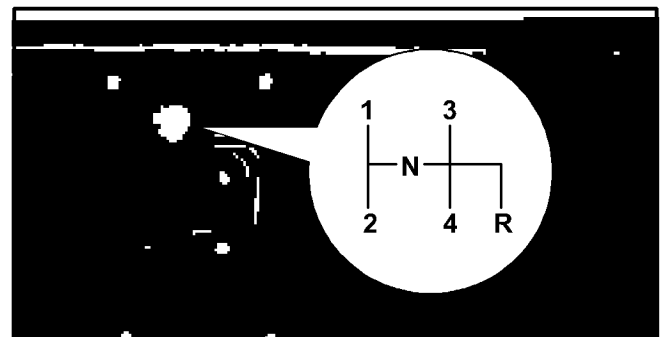


Figure 14
Shift Pattern (Manual Transmission)

Automatic Transmission

The gear selector has the gear selections listed on the left side of the shifter handle. **Some units may have the gear selections on the right side** as shown in Fig. 15.

Push in the selector lever button when shifting in or out of “P” Park, into “N” Neutral or when down shifting to “2” Second or “L” Low from “D” Drive.

It is not necessary to use the button when shifting up from **Low**, **Second** or **Drive** to **Neutral**, from **Reverse** (R) to **Neutral** or from **Neutral** to **Drive**.

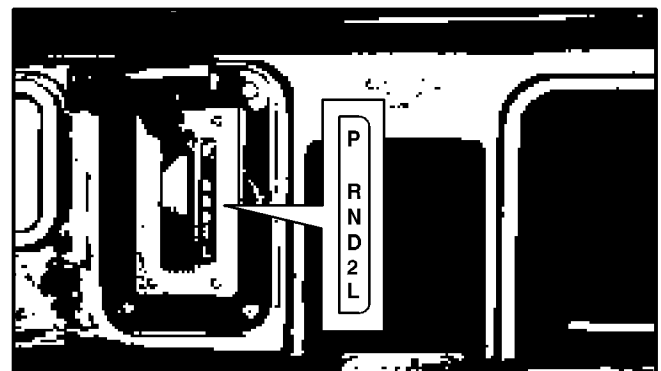


Figure 15
Automatic Transmission Gear Selector

SERVICE and MAINTENANCE

Think Ahead! Work Safely!



WARNING

- When replacement parts are required, use genuine Cushman parts or parts with equivalent characteristics including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or bystanders.
- Never attempt to perform service or maintenance functions on this vehicle if you are UNTRAINED or UNAUTHORIZED. Improper maintenance can cause hazardous conditions. See your authorized CUSHMAN dealer for necessary maintenance and service.
- Always replace any warning decal that becomes hard to read.
- To reduce risk of fire, always keep the engine free of excessive grease.

ENGINE MAINTENANCE

Keep your engine clean.

If dirt has accumulated on the engine, it should be washed with a non-flammable solvent or strong detergent.

When washing becomes necessary, it can be carried out simultaneously when servicing the vehicle.

In order to maintain reliable service from your engine, a regular check-up and maintenance schedule should be followed.

The following maintenance information covers basic engine service only.

For extensive service and repairs, we recommend contacting the authorized Cushman dealer nearest you.

Proper maintenance will prolong the engine's life and avoid premature overhaul.

ENGINE BREAK IN

The service life of your engine is dependent upon how your engine is operated during the first 50 hours of operation.

ALWAYS: • Use care not to overload your engine

- Maintain engine oil level
- Maintain cooling system



WARNING

- To prevent premature engine failure and speeds greater than design limits, **NEVER** alter the governor controls in any manner to increase engine speed beyond recommended maximum R.P.M.

ACCESS TO ENGINE

Never remove or install the engine cover while the engine is running. The engine cover is a ***machinery guard*** and its removal exposes you to moving parts. Keep hands, hair and clothing away from flywheel, radiator cooling fan, alternator fan, engine belts, pulleys and air intake.

For servicing the engine and related components, the engine cover can be tilted forward or removed.

To gain access to the engine, push the engine cover latch to the rear of the unit, tilt cover forward. The latch is located at the center rear on top of the engine cover (between the seat cushion(s) and backwall).

Access to Engine (con't.)

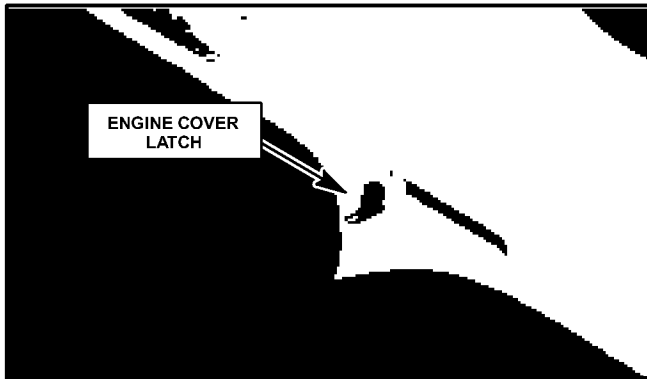


Figure 16
Engine Cover Latch

To gain access to the engine on a **CE compliant model**, insert the key into the locking handle located at the side of the engine cover latch, turn the key to allow the latch to be pushed back (the locking handle can also be used as an accessory on any of the other turf vehicles).

When replacing the engine cover, make sure the retaining tabs, located at the front corners of the engine cover, are inserted into the slots in the floorboard.

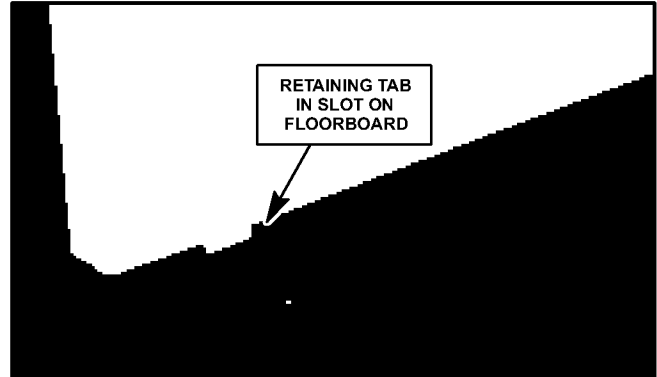


Figure 17
Engine Cover Retaining Tab



WARNING

- Failure to latch the seat properly can result in the engine cover tipping forward causing loss of control of the vehicle and possible personal injury.

PRE-STARTING CHECKLIST

Before starting your engine for the first time; after a prolonged shutdown; and before each days use, check the following:

1. Check the engine oil level.
2. Check the radiator coolant level and radiator intake screen.
3. Check the fuel level.
4. Check tire pressure.
5. Check brake fluid level.

If the diesel engine is being started for the first time or is being started after a prolonged shutdown it will be necessary to purge the fuel system (see Purging the Fuel System, Page 22).

ENGINE OIL LEVEL

Always turn the engine **off** when checking the oil level. **Oil level should be checked daily.**

NOTICE

- Make sure vehicle is on level surface and the park brake is applied.

Engine Oil Level (con't.)

Remove the dipstick and wipe with a clean rag, reinsert the dipstick until it contacts the oil tube, remove dipstick and read the oil level.

The oil level should always be between the **ADD** and **FULL** mark on the dipstick. **DO NOT OVER FILL.**

If the engine has recently been running, allow time (with the engine turned off) to let the oil settle to obtain a correct level reading.

If the oil level is below the add mark, add an **SAE 10W-30** oil to bring the level up between the marks (refer to the recommended oil weights in the chart for your particular climate range).

Remove the oil fill cap and add the appropriate amount of engine oil. Use the dip stick to check the level again, if oil level is sufficient, replace oil fill cap.

DO NOT OVERFILL

Engine Oil Capacity

Suzuki 660	3.3 qts. (3.1 L)
Suzuki 970	3.7 qts. (3.5 L)
Perkins Diesel	3.7 qts. (3.5 L)

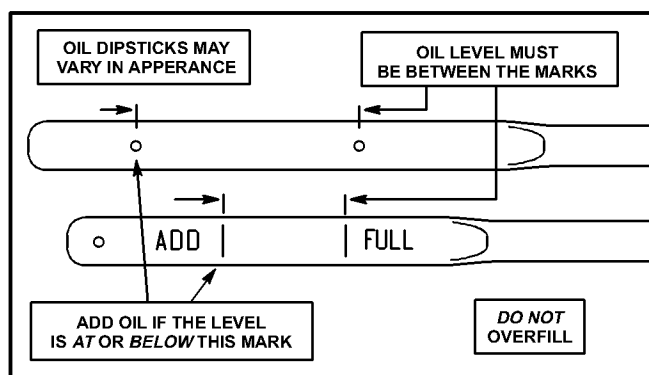
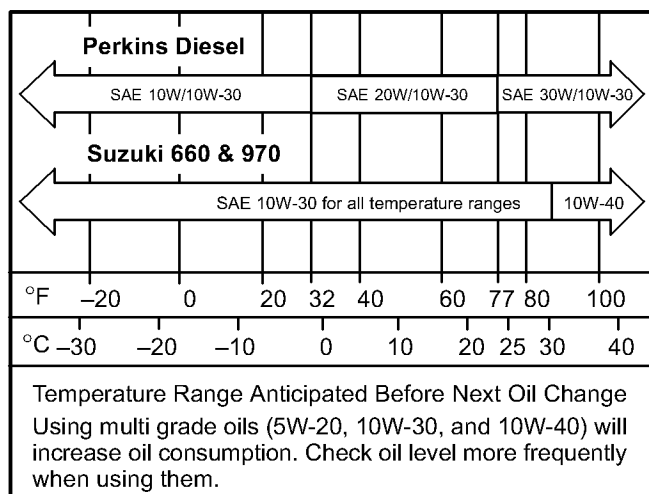


Figure 18
Oil Level Reading



NOTICE

- If you notice the **oil pressure warning light** coming on, **STOP** the vehicle and check for problems.



Figure 19 Oil Pressure Warning Light

Engine Oil Replacement Filters:

Suzuki 660 Order Part No. 16510-82703
Suzuki 970 Order Part No. 16510-82703
Perkins Diesel Order Part No. 842553



Figure 20
Dipstick Location, Perkins Diesel Engine

Engine Oil Level (con't.)

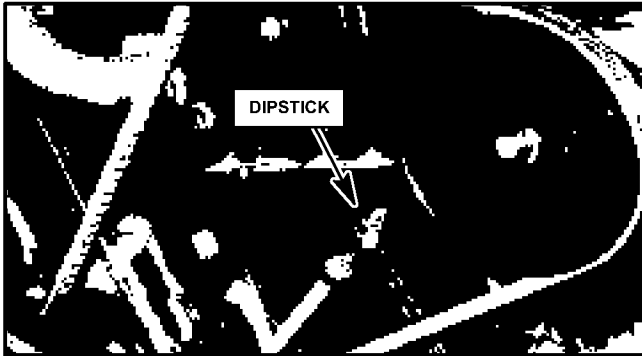


Figure 21
Dipstick Location, 660cc Suzuki Engine

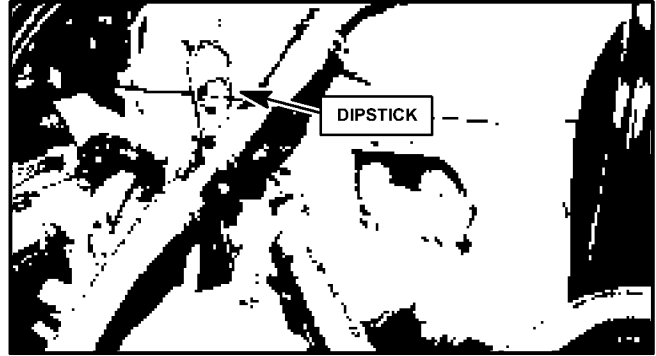


Figure 22
Dipstick Location, 970cc Suzuki Engine

WATER TEMPERATURE GAUGE, AND OVERHEAT WARNING BUZZER

The purpose of this system is to warn the operator if the engine temperature exceeds the normal operating range. If the water temperature gauge raises above the 230° mark, a heat sensor is activated causing the overheat warning buzzer to sound.



CAUTION

- Be careful when opening the engine cover, when raising the seat and when cleaning the chaff from around the intake screen. Parts that are metal may be *hot* to the touch.
- The vehicle seat is a machinery guard. To avoid injury, use extreme caution and **DO NOT** place hands or clothing near moving parts (belts, fan, etc.).

During operation (driving), if the water temperature gauge shows **230° F (110° C) or over**, and/or the overheat warning buzzer sounds, follow this procedure:

1. **STOP** the vehicle, **DO NOT STOP THE ENGINE**.
 2. **Immediately** disengage any accessories that are operating.
 3. Slow the engine to a "fast idle".
 4. Remove any dirt, chaff, debris, etc. from the radiator intake screen located on the right side of the engine cover (the intake screen and surrounding area will be hot, use caution when removing debris from this area).
- Failure to:
 - (1) heed the overheat warning and
 - (2) maintain cooling system, will cause permanent damage.

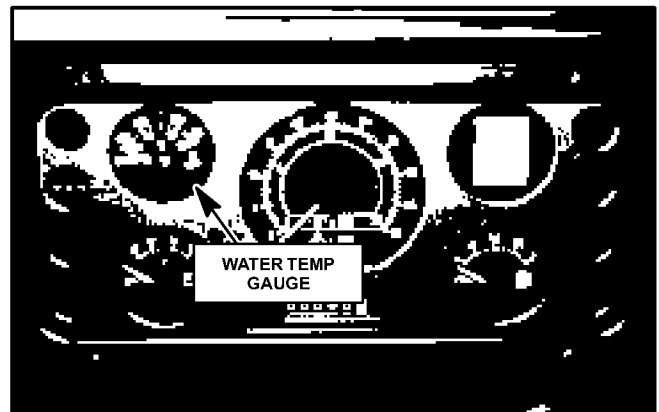


Figure 23
Water Temperature Gauge

SERVICE & MAINTENANCE

Water Temperature Gauge and Overheat Warning Buzzer (con't.)

The temperature indicator on the gauge should go down within approximately 30 seconds after the intake screen is cleaned. If the temperature **does not go down**, **STOP THE ENGINE** and check the following areas:



WARNING

- **ALWAYS** make sure the engine is stopped and cool before removing the radiator cap or before performing any service or maintenance on or around the engine area. To prevent scalding by hot water, **NEVER** remove the radiator cap while radiator is hot.
- The cooling system is under pressure, if a leak is present, be careful when raising the seat or when opening the engine cover. **Hot** coolant can be sprayed causing personal injury.

1. Raise vehicle seat and visually check to see if electric radiator fan is operating and check to determine if there may be a leak in the cooling system (allow ample time for the engine and surrounding area to cool before attempting to perform any service or maintenance).
2. Check the radiator fins and screen. If they are dirty, they **must** be cleaned. **Engines damaged due to overheating caused by plugged radiators WILL NOT be warranted.**
3. Check oil engine level.
4. Check radiator and coolant reservoir levels.

Also refer to page 37 for Dash Panel Bulb Replacement.

RADIATOR COOLANT LEVEL

The vehicle is equipped with a cooling radiator and an electric cooling fan.

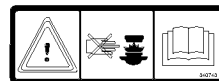


WARNING

- The cooling fan is thermostatically controlled and *may start at any time, even with the ignition key in the OFF position*, **DO NOT** attempt service without first disconnecting the negative (–) battery cable or without first removing the fan fuse.
- The cooling system is under pressure, if a leak is present, be careful when raising the seat or when opening the engine cover. **Hot** coolant can be sprayed causing personal injury.

To provide proper engine cooling it is important to keep the cooling system properly maintained. Part of maintaining the system involves making sure the intake screen, radiator fins and surrounding engine areas remain free of debris.

- **DO NOT** obstruct or cover the intake screen in front of the radiator. Keep the fins and radiator screens clean.
- If the radiator fins or intake screen become dirty, air cannot circulate well enough to cool the engine sufficiently, therefore you risk the chance of the engine overheating. **Engines damaged due to overheating caused by plugged radiators WILL NOT be warranted.**



Radiator Warning Decal



Fan Warning Decal

Radiator Coolant Level (con't.)

NOTICE

- Clean the radiator fins with compressed air. If water is used to clean the radiator, use compressed air to blow all the water from the fins. Water left between the fins will collect dirt and plug the radiator, this will reduce the amount of air flow to properly cool the engine. **Engines damaged due to overheating caused by plugged radiators WILL NOT be warranted.**

The cooling system level and the intake screen should be checked every day before vehicle operation.

Along with the daily pre-start list, you should also:

1. Check the radiator and coolant hoses for leaks and faulty connections, repair as necessary.
2. Inspect the engine belts for fraying or cracking and check the engine for loose hardware.
3. Check the coolant reservoir (there should be approximately four (4) inches (102 mm) of coolant in the reservoir).
4. Remove the radiator cap and check the coolant level, the coolant should be at, or with-in a 1/4" (6 mm) from the bottom of the filler port (if coolant is needed, add a 50/50 anti-freeze/water mixture following the procedures stated below).

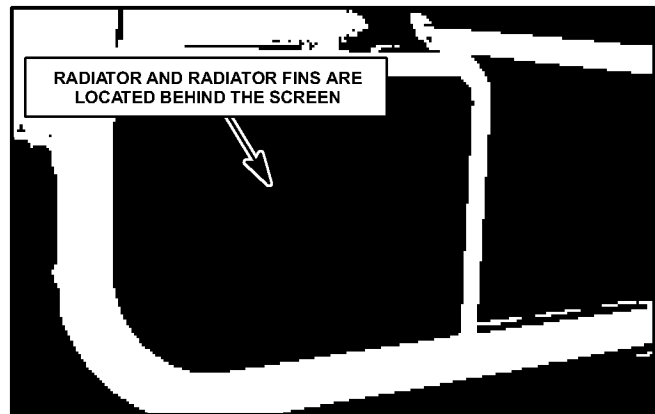


Figure 24
Intake Screen (Right Side of Vehicle)

ADDING ANTI-FREEZE TO THE COOLING SYSTEM

The cooling system should be drained and refilled every **400 hours** or **nine (9) months**.

Make a 50/50 mixture of anti-freeze and water in a separate container before adding coolant to the radiator. **Never** add straight anti-freeze to the radiator, the mixture **must never** be more than 50% anti-freeze.

Cooling System Capacity:

- Suzuki 660 Engine:** . . 3.3 qts. (3.1 L)
- Suzuki 970 Engine:** . . 3.3 qts. (3.1 L)
- Perkins Diesel:** 5.0 qts. (4.7 L)

Unless the radiator is very low, always add coolant to the overflow reservoir not to the radiator.

With the park brake applied and the gear selector in neutral or park (automatic transmissions), start the engine and let idle.

Remove the overflow reservoir cap, add the anti-freeze mixture to the overflow bottle until the coolant level reaches approximately 4" (102 mm) in the bottle, replace reservoir cap.

If the radiator level is very low, add the anti-freeze mixture directly to the radiator until it reaches approximately 1/4" (6 mm) from the bottom of the filler neck, then start the engine and add mixture to the overflow reservoir until proper level is reached.

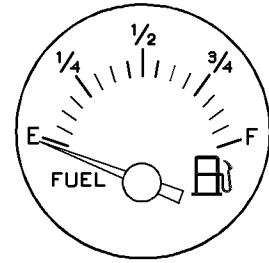


WARNING

- **ALWAYS** make sure the engine is stopped and cool before removing the radiator cap. To prevent scalding by hot water, **NEVER** remove cap while radiator is hot.

FUEL LEVEL

1. Check fuel level in fuel tank. Turn the ignition switch to the ON position, fuel level will be determined by how far the fuel gauge needle rises. The illustration below shows the various levels for reading the fuel gauge.
2. Fuel tank capacity is **6.5 gal. (24.6 L)**. Fill if necessary using the following fuel recommendations:
 - **Gasoline Engines** - Unleaded gasoline with an 87 or higher Octane reading.
 - **Diesel Engines** - Diesel Fuel No. 2-D (ASTM D975) **Do Not** use Aviation Fuel JP4



Fuel Tank Volume

The fuel tank is located on the right side of the vehicle in front of the rear tire.

For vehicles using diesel fuel, Use #1 diesel fuel (ASTM No. 1D) when temperature is 20° F (-7° C) or below: use #2 diesel fuel (ASTM No. 2D) when temperature is above 20° F (-7° C).

If No. 1D is not available, a **winterized** blend of No. 1D and No. 2D may be available. This blended fuel is usually called No. 2D and may be used in colder climates.

Never use No. 2D at temperatures below 20° F (-7° C) unless you are sure it has been **winterized**. Cold temperatures may cause it to thicken which will keep your vehicle from running.



WARNING

- Remove fuel cap slowly. Fuel may be under pressure. Spray may cause serious injury.
- Engine fuels are extremely flammable and highly explosive under certain conditions.
- **NEVER** remove the fuel tank cap or attempt to refuel the unit while the engine is running.
- **NEVER** refuel indoors. **NEVER** smoke while refueling.
- **ALWAYS** wipe up spilled fuel immediately.
- **NEVER** operate the unit without an approved cap on the fuel tank filler opening.

GASOLINE CONTAINING ALCOHOL

We **DO NOT** recommend the use of **ALCOHOL** bearing fuels in any of our products. The use of these fuels may create a potential safety hazard.



WARNING

- Gasoline containing **ALCOHOL** can cause deterioration of some non-metallic materials in the fuel system.
- Fuel hoses must be inspected frequently and replaced if excessive stiffness, deterioration or fuel leakage is found.
- Gasoline containing **ALCOHOL** will attract and hold moisture inside fuel tanks. Moisture may cause corrosion of metallic parts within the fuel system.
- Fuel leakage from a fuel system can occur while the system is in use, in transit, or in storage. Such leakage can contribute to an explosion or fire, causing serious bodily injury or death.

TIRE PRESSURE

1. Check all tires for proper inflation. Keep tires inflated to the specifications corresponding to that particular tire size. Air pressure needed is determined by the payload carried. Adjust pressure as required. Lower pressure will help avoid leaving tire marks in soft turf. Higher pressures may be required for heavy loads. **NEVER** exceed the maximum pressure indicated on the tire.

TIRE SIZE	TIRE PRESSURE
20-8.00 X 10 (4 PLY)	20 PSI (138 KPA)
20-10.00 X 10	20 PSI (138 KPA)
24-13.00 X 12	15 PSI (110 KPA)

NOTICE

- Improper inflation will shorten the life of your tires considerably. Fill tires with care. Use a pressure gauge before connecting an air hose to a partly inflated tire. **Due to the low air volume needed, over-inflation may be reached in a matter of two or three seconds.**

POWER STEERING (4-WHEEL MODELS)

The power steering reservoir is located on the right side of the engine, below and to the right of the alternator.

The level in the reservoir should be **checked after the first 35 hours** and then **again after another 35 hours**, after that the level should be **checked every 100 hours**. Use GM power steering fluid to maintain the correct fluid level.



Figure 25

Power Steering Reservoir (Suzuki 660 Engine Shown)

Remove the power steering reservoir cap. When checking the fluid level for the first time at the beginning of the day, the fluid level should be at the “cold” mark on the dipstick. When checking the fluid level after the engine has been running and the fluid is warm, the level should read between the “cold” and “hot” marks.



WARNING

- Before servicing or doing any maintenance work around the engine area, make sure the engine has had time to cool. Serious burns can result if the engine and surrounding area is hot.

STARTING THE ENGINE (Gasoline Engines)

Manual Transmission

1. Make sure the parking brake is applied (the parking brake should have been applied when the vehicle was last parked).
2. Turn the ignition key to the ON position and observe the warning lights and gages (some of the warning lights will remain on until the engine has started and is running).

Starting the Engine (manual transmission con't.)

3. Move the gear selector to "NEUTRAL".
4. Push clutch pedal down (**starter will not operate unless clutch pedal is pushed down**). The clutch interlock switch prevents the starter from operating unless the clutch is disengaged (the clutch pedal is depressed). If the engine **will** start **without depressing** the clutch pedal **DO NOT** operate the vehicle. The clutch interlock system should be repaired **immediately** by your authorized Cushman dealer.



DANGER

- **Never** turn the key to the START position unless the clutch pedal is depressed (pushed down) or the gear selector is in neutral. If the vehicle is *in any gear other than neutral*, and the clutch pedal is *not* depressed when the engine is started, the vehicle *may lurch* forward or backward depending which gear the vehicle is in. This lurching could cause serious personal injury or death.

5. Turn and hold ignition key in the START position to engage engine starter, release key when engine starts (upon release, the key will automatically return to the ON position).
 - If the engine does not start after operating starter for 10 seconds, stop the starter. Wait for 30 seconds, then try to start the engine again.
 - The starter motor should never be run for more than 30 seconds.
6. Allow engine to warm-up before driving the vehicle (always idle and warm-up the engine for at least one minute)

STARTING THE ENGINE (Gasoline Engines)

Automatic Transmission

1. Apply the park brake (the parking brake should have been applied when the vehicle was last parked).
2. Make sure the gear selector is in Park "P" (engine **will not** start if gear selector is in "R", "D", "2", or "L"). If the engine **will** start when the gear selector is in "R", "D", "2", or "L" **DO NOT** operate the vehicle. The vehicle should be repaired **immediately** by your authorized Cushman dealer.
3. Turn the ignition key to the ON position and observe the warning lights and gages (some of the warning lights will remain on until the engine has started and is running).



DANGER

- **Never** turn the key to the START position unless the gear selector is in "Park" or neutral. If the vehicle is *in any gear other than Park or neutral*, and the engine is started, the vehicle *may lurch* forward or backward depending which gear the vehicle is in. This lurching could cause serious personal injury or death.

4. Turn and hold ignition key in the START position to engage engine starter, release key when engine starts (upon release, the key will automatically return to the ON position).
 - If the engine does not start after operating starter for 10 seconds, stop the starter. Wait for 30 seconds, then try to start the engine again.
 - The starter motor should never be run for more than 30 seconds.
5. Allow engine to warm-up before driving the vehicle (always allow at least one minute for the engine to warm-up).

STARTING THE ENGINE (Diesel Engines)

Manual Transmission

The diesel engine uses glow plugs to pre-heat the combustion chamber and makes cold engines start easier. When starting a new diesel engine for the **first time**, or **after prolonged storage**, or **if the fuel tank is allowed to run dry**, the fuel system **must be purged** before attempting to start the engine (refer to Purging the Diesel Fuel System, Page 22 of this manual).

When starting the vehicle for the **first time during the day** or **when the engine has cooled**, you will need to pre-heat the glow plugs in order to start the engine.

If the engine has been running and is still hot, **it is not necessary** to pre-heat the glow plugs before starting the engine.

1. Apply the park brake (the parking brake should have been applied when the vehicle was last parked).
2. Move the gear selector to "NEUTRAL".
3. Push clutch pedal down (**starter will not operate unless clutch pedal is pushed down**). The clutch interlock switch prevents the starter from operating unless the clutch is disengaged (the clutch pedal is depressed). If the engine **will start without depressing** the clutch pedal **DO NOT** operate the vehicle. The clutch interlock system should be repaired **immediately** by your authorized Cushman dealer.



DANGER

- **Never** turn the key to the START position unless the clutch pedal is depressed (pushed down) or the gear selector is in neutral. If the vehicle is *in any gear other than neutral*, and the clutch pedal *is not* depressed when the engine is started, the vehicle *may lurch forward or backward* depending which gear the vehicle is in. This lurching could cause serious personal injury or death.

4. Turn the ignition key to the ON position. Note the pre-heat light at the lower left of the instrument panel.

The light will come on when the ignition switch is turned to the "ON" position. When the pre-heat light goes off, turn the ignition key to the "START" position.

Proper pre-heating time required is approximately 15 seconds. Pre-heating will take longer (approximately 30 seconds) when outside temperature falls below 32° F (0° C).

Preheating time should never last more than 2 minutes or the life of the glow plugs will be shortened.

5. Hold ignition key in the START position to engage engine starter, release key when engine starts (upon release, the key will automatically return to the ON position).

- If the engine does not start after operating starter for 10 seconds, stop the starter. Wait for 30 seconds, then try to start the engine again.
- The starter motor should never be run for more than 30 seconds.
- After the engine has started, make sure the oil pressure warning and service brake warning lights go off.



Figure 26
Pre-Heat Indicator Light (Diesel Models Only)

Starting the Diesel Engine (manual transmission con't.)

6. Allow engine to warm-up before driving the vehicle (always idle and warm-up the engine for at least one minute)

Check for abnormal noises such as knocking and excessive vibration

Knocking sounds will be heard while the engine is cold, during quick acceleration and while idling.

Knocking sounds **will not** be heard during normal operation.

Confirm the exhaust smoke is seen as follows:

While engine is cold: White smoke

When engine is warm and during normal operation: Almost smokeless

When engine is heavily loaded: Some black smoke

NOTICE

- **DO NOT** use ether or starting fluid with diesel engines. Severe engine damage will occur.

Starting under sub-freezing conditions:

- Make sure correct weight engine oil is used.
- Make sure the battery is fully charged.
- Pre-heat glow plugs for the correct length of time.
- Make sure cooling system is tested safe for the ambient temperature.

PURGING THE DIESEL FUEL SYSTEM

The fuel system **must be purged** when:

- Starting a new diesel engine for the first time
- After prolonged storage
- The fuel tank is allowed to run dry
- The fuel filter and/or fuel lines have been loosened, removed or replaced

Purge the fuel system using one of the procedures as follows:

PURGING FUEL SYSTEM USING A JUMPER WIRE

This method allows the fuel pump to run *continuously* when purging the system.

1. Turn the ignition key to the **off** position.
2. Disconnect the white/red wire from the starter coil.



WARNING

- Failure to remove this wire may result in the starter engaging causing the vehicle to move. This movement could result in personal injury and/or property damage.



Figure 27
Purging Diesel Fuel System

Purging the Diesel Fuel System (con't.)

- Clip one end of a jumper wire to the **EXC** terminal on the back of the alternator as shown in Figures 28 & 29 (this terminal will have a green wire connected to it).
- Clip the other end of the jumper wire to the "I" terminal on the starter solenoid (See Figs. 28 & 29).

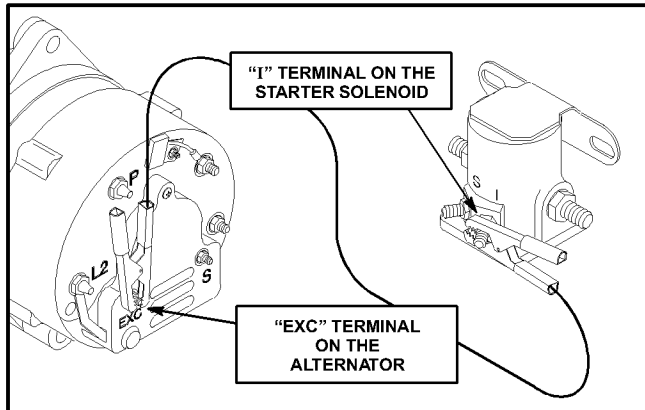


Figure 28
Connect Jumper Wire to Alternator & Solenoid

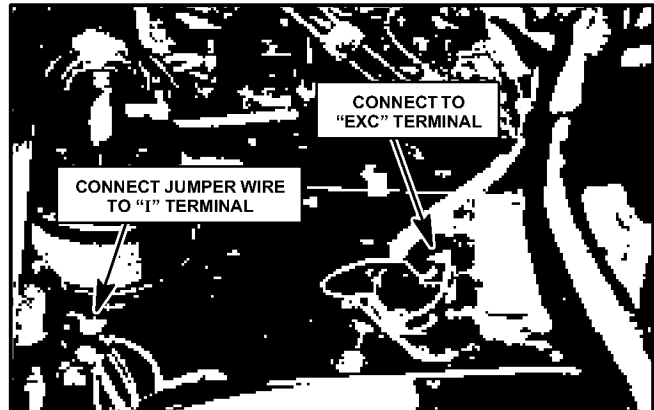


Figure 29
Terminal Locations

- Open the bleeder port located on top of the fuel injector (See Fig. 30).
- Turn the ignition key to the "ON" position (the fuel pump will begin to pump).

When the fuel pump is pumping fuel only, the "thumping" sound will become more of a "purring" sound, when this occurs tighten the bleeder port.

Turn the ignition key to the "OFF" position, remove the jumper wire and reconnect the white w/red wire onto the starter coil.

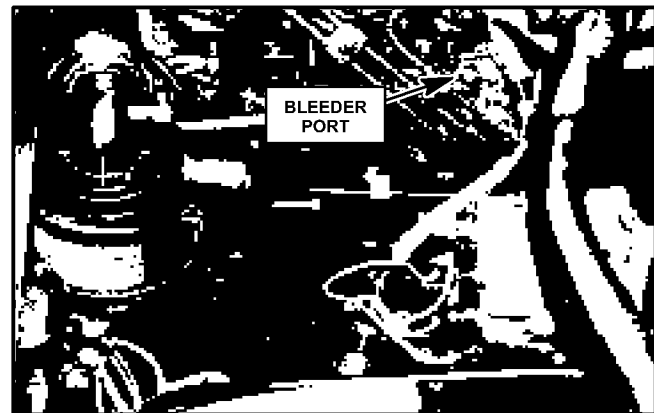


Figure 30
Bleeder Port Location

PURGING FUEL SYSTEM WITHOUT THE USE OF A JUMPER WIRE

Fuel system bleed may be accomplished using the glow plug timer if no jumper wire is available.

The fuel pump will energize for approximately 20 seconds during start-up from the glow plug pre-heat timer.

- Open the bleeder port on top of the fuel injector (See Fig. 30).

Turn the ignition key to the "ON" position. The fuel pump will be activated for about 20 seconds until the glow plug timer stops.

When the timer stops, turn the key to the "Off" position then turn it back to the "ON" position, the fuel pump will run again for approximately 20 seconds, when the glow plug timer stops, turn the key off again. Continue with this procedure until the system is purged. When the fuel pump is pumping fuel only, the "thumping" sound will be more of a "purring" sound, when this occurs, tighten the bleeder port.

BATTERY

The battery is located on the left side of the vehicle, directly behind the stopwall behind the drivers seat.

The battery is negative ground and if connected in the opposite polarity, damage to the alternator will occur. The same applies when connecting a booster battery to the system.

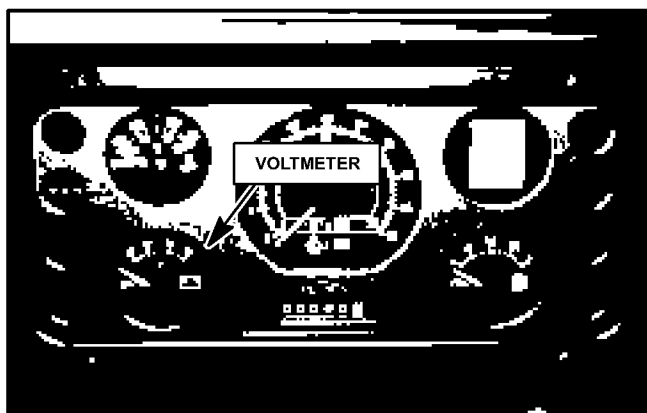


Figure 31
Voltmeter (Battery Charging System)

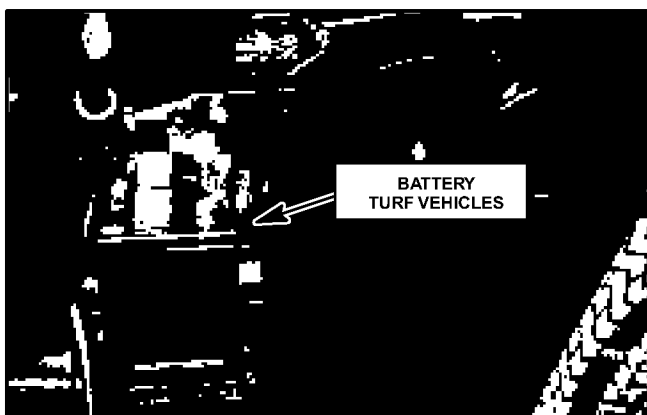


Figure 32
Battery Location For Turf Vehicles

The battery in this vehicle is “low maintenance”. Add distilled water as required.

The voltmeter indicates the voltage level of the battery. Under normal operation it will indicate 12 to 18 volts (meaning the battery is being properly charged). A reading below 12 volts indicates the battery is being drained, this may **indicate a malfunction in the charging system which should be checked immediately.**

NOTICE

- Keep top of battery clean and free of corrosion by washing with a solution of baking soda and water or ammonia and water. Rinse with clean water. Terminals with heavy corrosion should be removed and cleaned with solution. For best results clean both battery post and cable terminals until shiny. Replace terminals and tighten.



WARNING

- Untrained/Unauthorized persons should **NEVER** attempt to service or recharge the battery in this vehicle.
- Battery electrolyte is an acidic solution and should be handled with care. If electrolyte is spilled or splashed on any part of the body, immediately flush the exposed area with liberal amounts of water and obtain medical aid immediately.

JUMP STARTING WITH A BOOSTER BATTERY



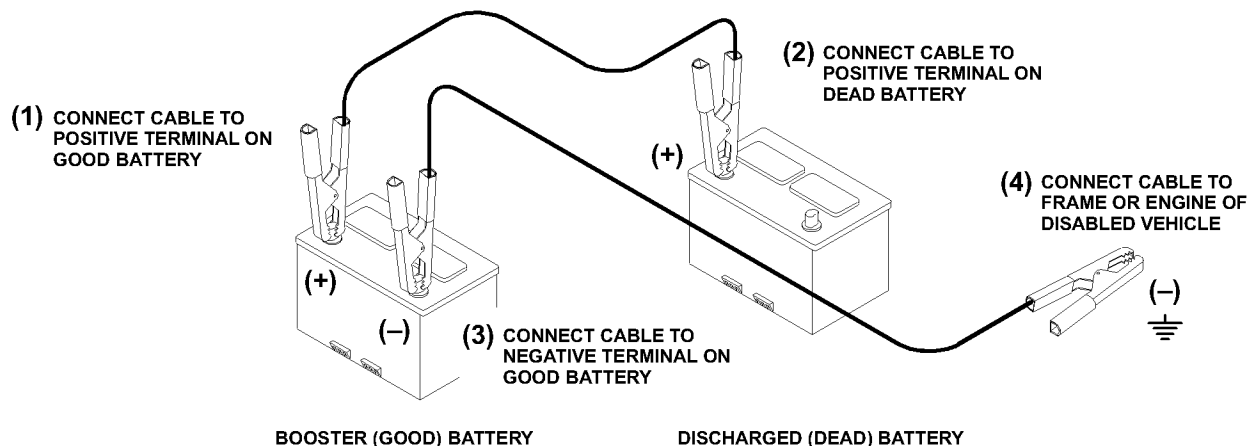
WARNING

- **DO NOT** allow open flames or sparks near a battery when connecting for jump starting or while recharging the battery with a charger.
- Hydrogen gas is produced during the charging process and can be explosive. Provide adequate ventilation to prevent possible explosion.

Jump Starting With a Booster Battery (con't.)

Both booster battery and discharged battery should be treated carefully when using jumper cables. Follow **exactly** the procedure outlined, being careful not to cause sparks.

1. Apply parking brake, put transmission in neutral and turn off all electrical loads.
2. Attach one end of one jumper cable to the positive (+) terminal of the booster battery and the other end to the positive (+) terminal of the discharged battery. **DO NOT** permit vehicles to touch each other.



3. Attach one end of remaining cable to the negative (–) terminal of the booster battery and the other end to a good ground on the vehicle or engine **away from the discharged battery**. **DO NOT** lean over the battery when making this connection.
4. Reverse this sequence **exactly** when removing the jumper cables.

NOTICE

- This is a negative ground wiring system, reversing battery connection will damage alternator rectifier.
- Booster batteries used for starting must be connected with proper polarity.
- Vehicle battery cables should be **disconnected** before using a “Fast Charger.”

TOWING THE VEHICLE

Manual Transmission

If for any reason the vehicle needs to be towed, follow the guidelines below to properly tow the vehicle.

If towing the vehicle with a tow-rope or a chain, an operator is required to steer the vehicle and to control the brakes.

Towing the Vehicle, Manual Transmission (con't.)

Attach a tow line only to the front vertical frame member on either side of vehicle as shown in Figure 33.

Make sure the drive transmission is in “**neutral**” (out of gear) and the park brake is released.

With the tow line attached, have the towing vehicle move forward until the tow line becomes tight.



WARNING

- **NEVER** tow the vehicle faster than 5 M.P.H. (8 km/h). Towing at excessive speed could cause either vehicle to lose proper steering control.

While towing, try to keep the tow line taught at all times. Be cautious going down inclines and while turning corners.

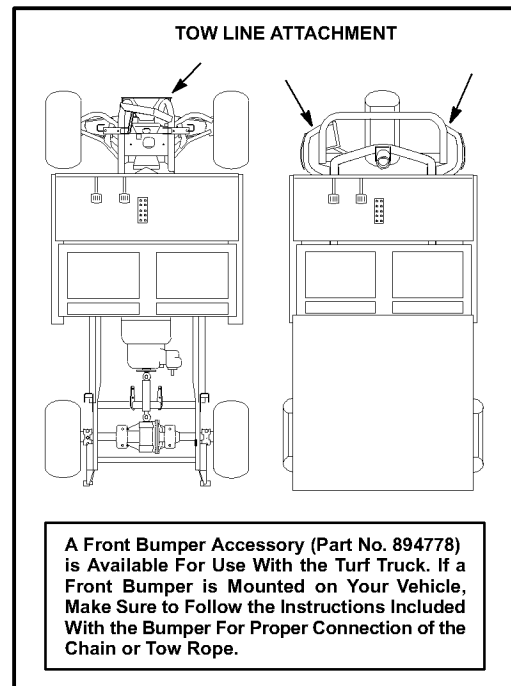


Figure 33
Tow Line Attachment Location

Automatic Transmission

When transporting the vehicle or when it is disabled, the **BEST** method of moving the vehicle is on a trailer. If that is not possible, the driveshaft **MUST** be removed before towing the vehicle.

If towing the vehicle with a tow-rope or a chain, an operator is required to steer the vehicle and to control the brakes.

Attach a tow line (tow line attaching locations are shown in Figure 33) only to the front vertical frame member of the vehicle.

Release the park brake and slowly move the towing vehicle forward until the tow line becomes tight.

Tow at a maximum speed of 5 m.p.h. (8 km/h).

While towing, try to keep the tow line taught at all times. Be cautious going down inclines and while turning corners.

If in an **EMERGENCY** and the vehicle must be towed **and** the drive shaft cannot be removed, attach a tow line to the front vertical frame member **ONLY**. Make sure the transmission is in “N” Neutral and the park brake is released. Tow at a maximum speed of 5 m.p.h. (8 km/h).

JACKS, JACKING LOCATIONS AND USING A HOIST

A scissors type jack or a floor jack with a 1 1/2 ton (minimum) capacity that can be lowered to 3 3/8” (86mm) height is required.

The jacking locations are shown in the chart illustration on the following page.

Put the gear selector in 1st gear (manual transmissions) or in “P” Park (for automatic transmissions). Apply the park brake. Raise the vehicle **ONLY** enough to perform maintenance required.

Jacks, Jacking Locations and Using a Hoist (con't.)

Place a jack in the appropriate location (See Fig. 34) and place a block behind (or in front) of the tire ***diagonally opposite*** the side which is being raised (See Illustration below).



WARNING

- **DO NOT** rely solely on hydraulic or mechanical jacks for support. Use appropriate jack stands or equivalent for supporting the vehicle. If using a hoist, raise vehicle to appropriate height and support using jack stands or equivalent support.
- **Never** place feet, hands or any part of your body under the vehicle when raising it with a hoist.

Jack the vehicle to the appropriate height and place jack stands or equivalent support beneath the frame near the jack. Lower the jack and allow the vehicle to rest on the jack stands.

NOTICE

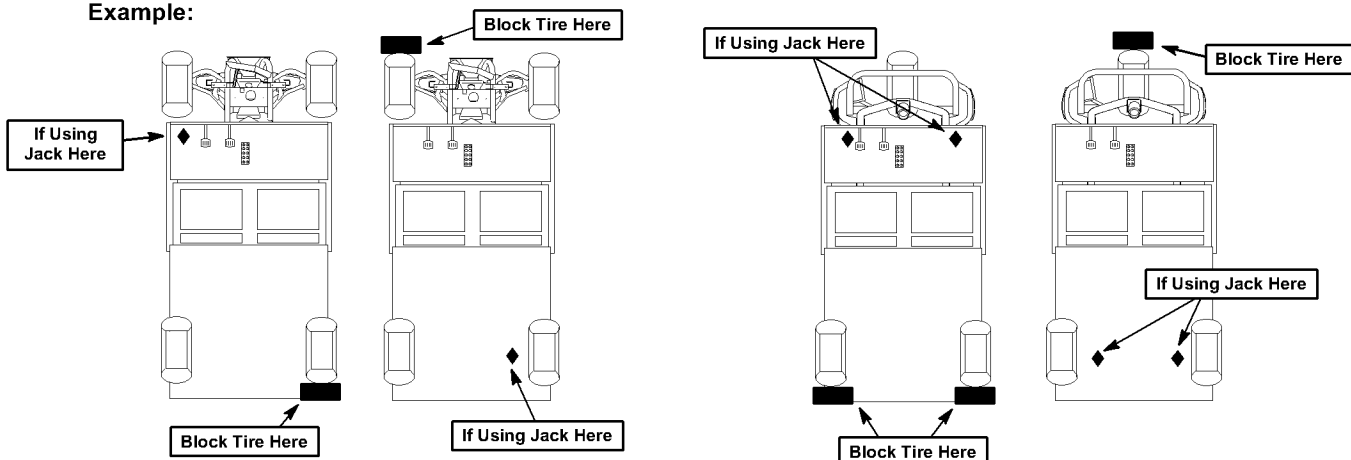
- Raise the vehicle only enough to perform the maintenance required.

When removing the front tire on the three-wheel vehicle, place blocks behind both rear tires, then jack one side of the vehicle to the appropriate height and place jack stands or equivalent support beneath the frame. Lower the jack and allow the vehicle to rest on the jack stands.

Raise the opposite side of the vehicle enough to allow the front tire to clear the ground. Place supports under the frame and lower the jack to allow the vehicle to rest on the jack stands.

Make sure to block the tire *diagonally opposite* of the side which is being raised.

Example:



The illustration shows the frame without the body in order to show the jacking locations more clearly.

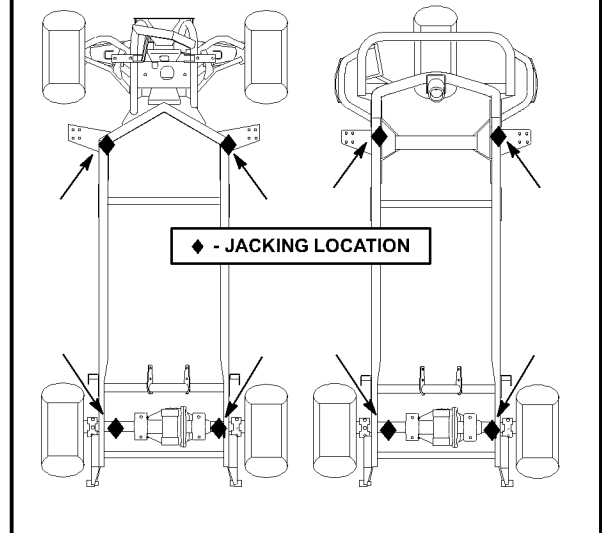


Figure 34
Jacking Locations

NOTICE

- When using a hoist to raise the vehicle, use the same procedure for supporting the frame and blocking the tires as you would when using a jack.
- To prevent damage to the vehicle or attached accessory, **NEVER** use a hoist to raise only **one corner** of the vehicle. **ALWAYS** raise **BOTH front or rear corners equally**.

TIRE REMOVAL

4-Wheel Front & Rear *and* 3-Wheel Rear

With the vehicle on a flat level surface (if possible), put the gear selector in first gear and apply the park brake.

Place a block in front of (or behind) the tire diagonally opposite the side which is being raised (**Refer to the “Jacks, Jacking Locations and Using a Hoist” section, Pages 26-27 in this manual**).

Raise the vehicle only enough to perform the maintenance required.

1. Remove the wheel retaining nuts (See Fig 35) and remove tire and wheel assembly from hub.
2. Install the tire and wheel by reversing the above sequence. Make sure valve stem (See Fig 35) is located toward the outside.
3. Tighten wheel retaining nuts to 70 to 100 ft. lbs. (95 to 140 N·m) torque.

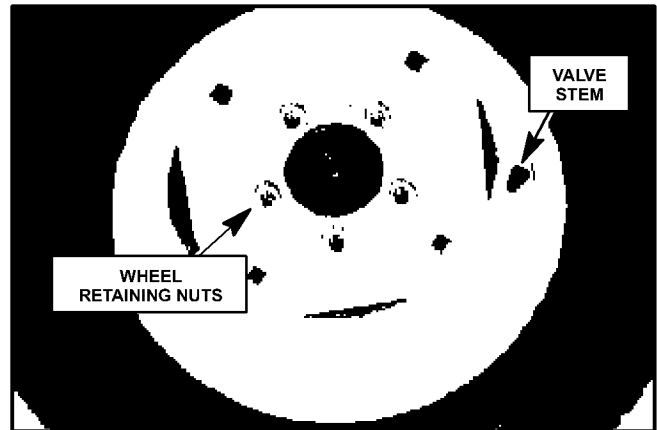


Figure 35
Wheel Retaining Nuts and Valve Stem



WARNING

- **DO NOT** rely solely on hydraulic or mechanical jacks for support. Use appropriate jack stands or equivalent for supporting the vehicle. *Never* place feet, hands or any part of your body under the vehicle when raising it.

TIRE REMOVAL 3-Wheel Front

Put the gear selector in 1st gear (manual transmissions) or in “P” Park (for automatic transmissions). Apply the park brake.

Place a block behind both rear wheels (**Refer to the “Jacks, Jacking Locations and Using a Hoist” section in this manual**).

Raise the vehicle only enough to perform the maintenance required.

With the vehicle raised and properly supported, remove the brake link anchor bolt and bushing. Retain hardware.

Loosen the axle nuts on each side of the front tire, loosen the nuts enough to allow the washer to slide out of the retaining slot (***the washers have a tab on them which fits into a slot on the axle support***).

Support the tire, slide the washers out and remove tire and axle assembly (it may be necessary to remove the brake hose clamp to allow the axle to clear the front fork). Remove the wheel retaining nuts and remove the tire from the axle.

Install the tire and wheel by reversing the above sequence.

Tighten the wheel retaining nuts to 70 to 100 ft. lbs. (95 to 140 N·m) torque.

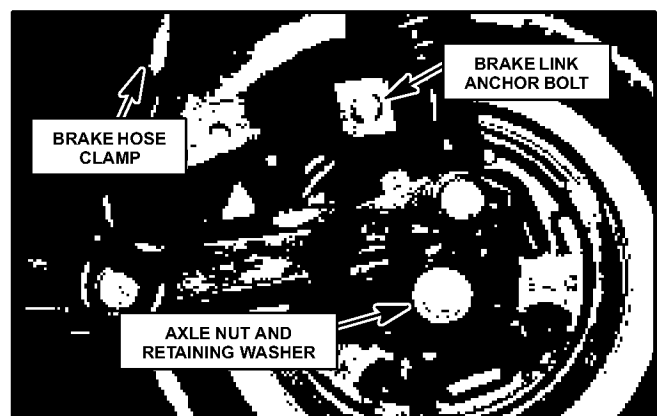


Figure 36
3-Wheel Front Tire Removal

SERVICING THE VEHICLE

AIR CLEANER ELEMENT

This is a large capacity dry type air cleaner with a replaceable element.

We recommend the filter element be **replaced** before engine performance is effected. This may occur at **250 hours** of service in very dirty operating conditions or at **500 hours** in normal operating conditions.

We **DO NOT** recommend cleaning the filter element because of the possibility of damaging the element.



WARNING

- Before servicing or doing any maintenance work around the engine area, make sure the engine has had time to cool. Serious burns can result if the engine or surrounding area is hot.

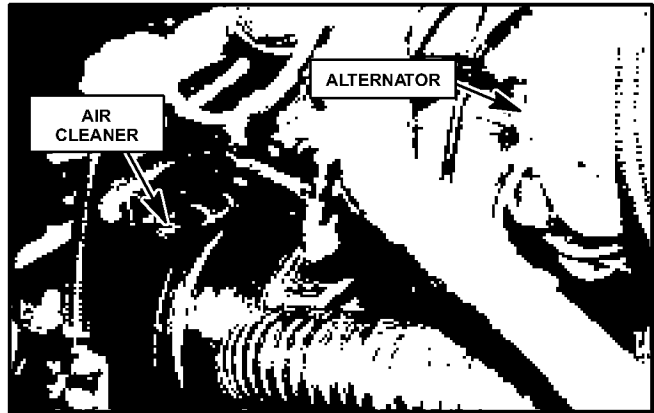


Figure 37
Air Cleaner Assembly

Air Cleaner Complete Part No. 892679

Air Cleaner Element Part No. 840352

Checking and Installing the Element

Tilt the engine cover forward and locate the air cleaner on the right rear of the engine (See Fig. 37).

To remove the air cleaner element release the latches securing the cover to the air cleaner assembly. Remove the filter element.

Check the element for damage, pin holes, etc. by placing a light source such as a flashlight inside.

Clean dust from inside of housing with damp cloth, making sure dust does **NOT** enter air intake.

Check all gaskets to be sure they are **NOT** damaged or loose.

Replace the element if it is damaged or is excessively clogged with dirt and/or debris.

Insert element in housing open end first.

Position the cover so that the collector is pointing down. Clamp cover into position with collector pointing down.

- **DO NOT** use bent or dented air cleaner assemblies.
- **DO NOT** use bent or damaged air cleaner element.
- The dust collector empties automatically when properly installed with collector down.

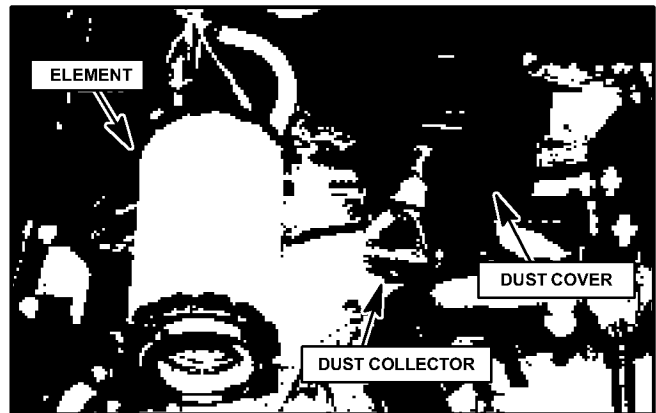


Figure 38
Air Cleaner Element and Dust Cover
(Shown Removed From the Housing)

A dirty, clogged or damaged air filter will cause the engine to start hard as well as run rough and sluggish. Don't forget to check the air cleaner element if the engine does not run smoothly and other problems cannot be found.

ACCESS PANELS

There are two access panels located under the front hood and one located in the middle of the floorboard.

Remove the screws securing the panel to the fire wall to gain access to the shifter linkage and some of the electrical wiring for the instrument panel.

Remove the screws securing the panel to the bottom of the front cowl to gain access to the front suspension.

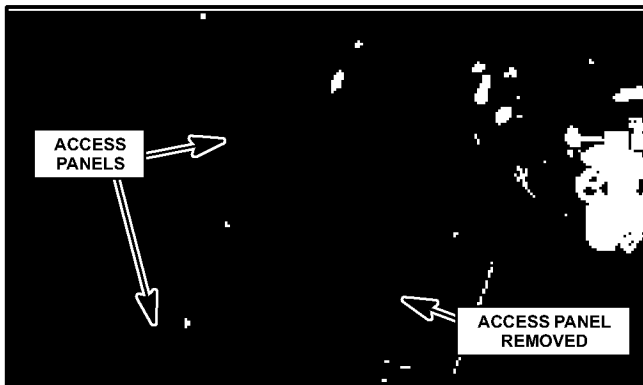


Figure 39
Access Panels Under Front Cowl
(4-Wheel Model Shown)

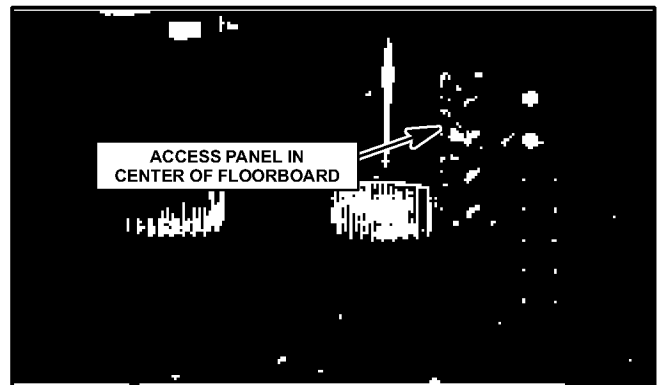


Figure 40
Access Panel on Floorboard

Remove the screws securing the panel to the floorboard. This will give you access to the throttle cable, linkage, electrical wire harness, as well as the brake lines which run to the master cylinder.

It will be necessary to remove the accelerator pedal in order to completely remove the center floorboard panel.

FRONT COWL ACCESS

The front cowl opens to gain access to the fuse panel, the horn, the master cylinder reservoir as well as various access panels which when removed, allow access to wiring for the dash panel, shifting lever linkage and the upper part of the front suspension.

To open the front cowl, locate the release lever at the upper left corner near the left side headlight.

Pull the lever to the right to release the front cowl latch and at the same time pull up on the front cowl.

Open the cowl allowing it to rest against the rops structure (if equipped) or the steering wheel.

The front cowl will not “spring up” when the release lever is pulled. The cowl will have to be raised when the latch is released.

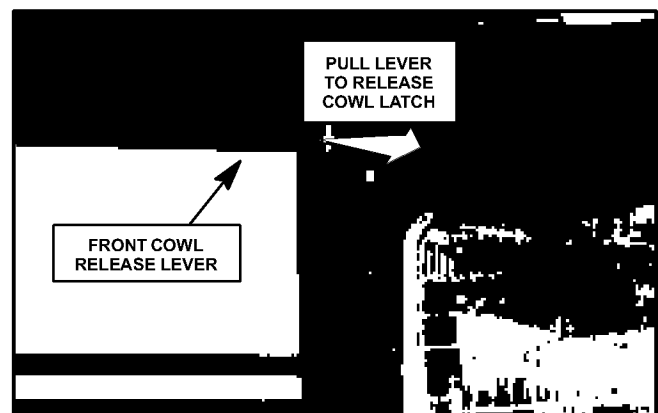


Figure 41
Release Lever For Front Cowl
(4-Wheel Model Shown)

LUBRICATION RECOMMENDATIONS

Transmission Fluid . SAE EP 80–90 Gear Lube

Automatic Transmission Fluid . Mercon/Dexron II

Differential Fluid ... SAE EP 80–90 Gear Lube

Hydraulic Fluid Ransomes Turf Protector Biodegradable (Hyd Benz Bio 377)

Power Steering Power Steering Fluid (GM)

Brake Fluid Dot 3

Pressure Gun Grease Lithium Base

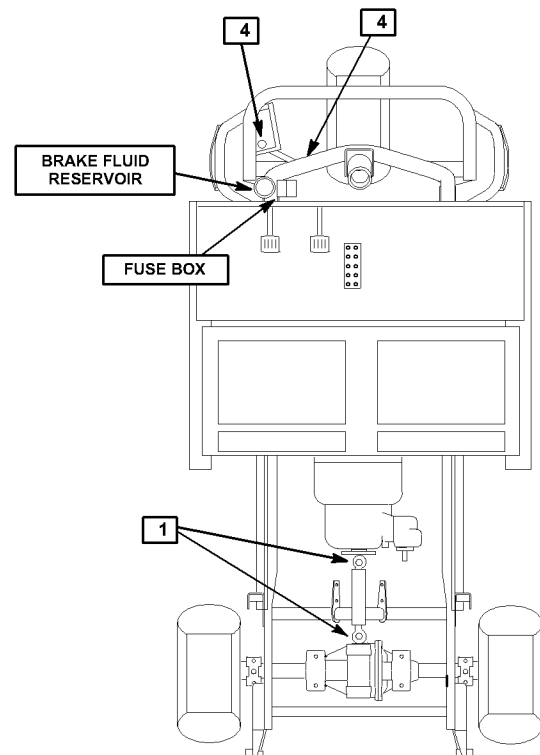
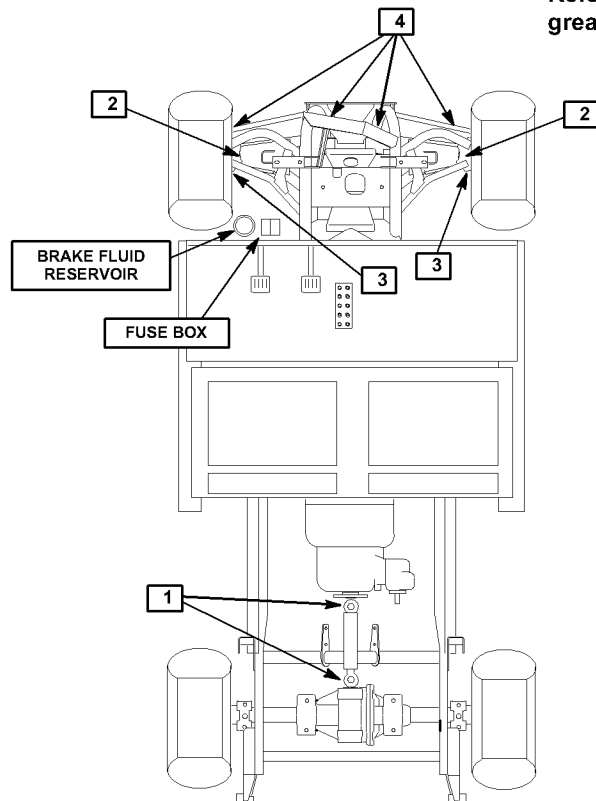
LUBRICATION CHART

Lubricate all chassis fittings with *lithium base* pressure gun grease every 100 hours or 1000 miles.

Ref. No.	Lubrication Area	Number Of Grease Fittings	Ref. No.	Lubrication Area	Number Of Grease Fittings
1	Drive shaft	2	4	Tie Rod Ends, 4-wheel	4
2	Upper Ball Joints	2		Tie Rod Ends, 3-wheel	2
3	Lower Ball Joint	2			

NOTICE

Reference to item 1, Too much grease can damage the seals.



FUSES

The fuse box is located under the front cowl (See Fig. 42).

The fuses protect the electrical lighting circuits and accessory circuits such as the windshield washers, turn signals etc.

When replacing fuses, be sure the replacement fuse is the same amp as the fuse being replaced.

Pull straight out to remove a fuse. To install a fuse, push the new fuse into the appropriate fuse slot.

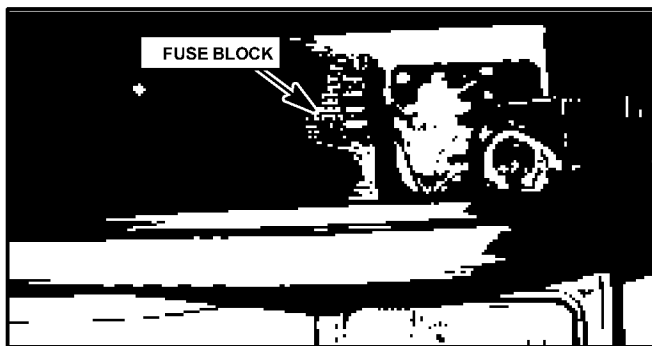


Figure 42
Fuse Block Located Under Front Cowl

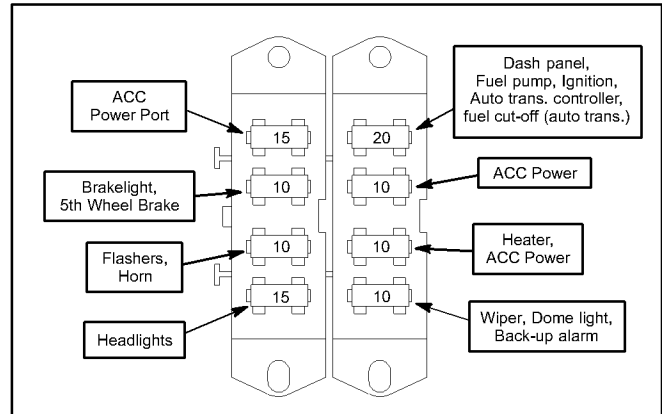


Figure 43
Fuse Box Panel



CAUTION

- Electrical failure and/or fire can result if the fuses are not the proper amperage.

BULBS, FUSES AND FLASHER

BULBS:	Voltmeter light	No. GE 658	
	Oil pressure warning light	No. C194	
	Tachometer	No. C161	
	Water temperature gauge light	No. GE 658	
	Fuel gauge light	No. GE 658	
	Hour Meter Light	No. GE 658	
	Turn signal(s), front (accessory)	32 CP	No. 1156
	Taillight(s)	32-4 CP	No. 1157
	Headlight(s)	65-45 Watt	No. H6545
			Part No. 837303
FUSES:		10 AMP	Part No. 836892
		15 AMP	Part No. 849983
		20 AMP	Part No. 826000
		30 AMP	Part No. 833038
FLASHER:	Turn signal (accessory)		Part No. 825501

MAINTENANCE GUIDE

The following maintenance charts have been compiled as a general guideline for service intervals, based on hours of operation. Refer to the Engine Owner's Manual for further service and maintenance schedules and intervals.

Maintenance Operation	Daily	First 35 Hrs	First 50 Hrs	Every 75 Hrs or 2 months	Every 100 Hrs or 3 months
Check engine oil level	●				
Check cooling system coolant level	● <i>f</i>				
Clean radiator intake screen	●				
Check water separator, drain as required (diesel only)	●				
Check fuel level	●				
Check engine for loose parts, damage and leaks	●				
Check exhaust color (diesel only)	●				
Check for engine noise; vibration	●				
Check tire pressure	●				
Change engine oil and filter (Suzuki only)			●		● *
Change engine oil (Perkins Diesel)		●		● *	
Change engine oil filter (Perkins)		●		● *	
Check valve clearance (to be done by authorized dealer)		●			
Check engine idle speed		●			
Check power steering fluid		●			●
Change fuel filter					●
Lubricate chassis (see lube chart)					●
Check governor oil level (Suzuki engines)					●
Check differential oil level					●
Check transmission fluid level					●
Check hydraulic tank fluid level					●
Check brake fluid (BF)					●
Check brake adjustment					●
Check clutch adjustment					●
Change differential oil					After first 100 hrs.

* Depending on operating conditions, the engine oil and engine filter may need more frequent replacement.

f If coolant level is low add a 50/50 mixture of water and anti-freeze, **NEVER** add straight anti-freeze to the coolant system

OIL FILTER:

Suzuki 660 - Part No. 16510-82703
 Suzuki 970 - Part No. 16510-82703
 Perkins Diesel - Part No. 842553

HYDRAULIC FLUID (Biodegradable):

2 1/2 gal. (9.5 L) - Part No. 65363
 5 gal. (19 L) - Part No. 65352
 55 gal. (208 L) - Part No. 65354

FUEL FILTER:

Suzuki 660 - Part No. 15410-50F00
 Suzuki 970 - Part No. 15410-50F00
 Perkins Diesel - Part No. 2208175

SERVICE & MAINTENANCE

Maintenance Guide (con't.)

Maintenance Operation	Every 200 Hrs or 6 months	Every 400 Hrs or 9 months	Every 600 Hrs or 12 months	Every 1500 Hrs	
Replace air cleaner element	● ‡				
Check valve clearance (See authorized dealer)	●				
Check fan belt and tension	●				
Inspect radiator hoses and clamps	●				
Change coolant		●			
Replace hydraulic system filter			●		
Change hydraulic system oil (tank only)			●		
Clean battery and terminals.			●		
Check alternator			●		
Repack front and rear wheel bearings			●		
Check starter motor brushes			●		
Check brake linings			●		
Change differential fluid			●		
Drain and replace radiator coolant			●		
Check engine idle speed			●		
Check glow plugs (diesel only)			●		
Check injection pump and timing (diesel only)			●		
Check fuel hoses and clamps			●		
Check all belts for tightness and cracking			●		
Adjust front brakes			●		
Replace timing belt (Suzuki engines)				●	
Change transmission fluid			●		
Check fuel hoses and clamps			●		
Check spark plugs for fouling (clean and gap as necessary)			●		

* Depending on operating conditions, the engine oil and engine filter may need more frequent replacement.

‡ Depending on operating conditions, the air filter element may require more frequent replacement.

SPARK PLUGS:

Suzuki 660:

Part No. 09482-00448 NGK DCPR7E

OR

Part No. 09482-00449 Denso XU22EPR-U
gap .032" - .035" (0.8 mm - 0.9 mm)

Suzuki 970:

Part No. 09482-00131 NGK BP5ES

OR

Part No. 09482-00123 Denso W16EX-U
gap .032" - .035" (0.8 mm - 0.9 mm)

AIR CLEANER ELEMENT:

All Models - Part No. 840352

TIMING BELT

Suzuki 660 - 11402-71D10

Suzuki 970 - 12761-78400

ENGINE BELTS, Perkins Diesel

4-Wheel

Part No. 844301 (alt, pwr strng)
48" (1219 mm)

Part No. 841966 (hyd. pump, gov)
29 1/2" (750 mm)

3-Wheel

Part No. 843998 (alt., wtr pmp.)
40" (1016 mm)

Part No. 841966 (hyd. pump)
29 1/2" (750 mm)

ENGINE BELTS, Suzuki 660:

4-Wheel

Part No. 841027 (gov, hyd pump)
53 1/4" (1352 mm)

Part No. 843998 (alt., pwr strng.)
40" (1016 mm)

3-Wheel

Part No. 841027 (gov, hyd pump)
53 1/4" (1352 mm)

Part No. 844037 (alt.) 34 1/2" (876 mm)

ENGINE BELTS, Suzuki 970:

Part No. 836854 (alt, pwr strng)
42" (1067 mm)

Part No. 844036 (gov, hyd pump)
51" (1295 mm)

BRAKES

Service Brakes



WARNING

- Improper maintenance of the brake system may result in loss of vehicle control by the operator. Losing control of the vehicle due to brake loss may cause vehicle damage and/or injury to the operator or bystanders.

This vehicle is equipped with either four wheel or two wheel (rear only) hydraulic brakes and a hand operated park brake lever.

Keep your brake system clean and properly maintained.

If the brakes **Do Not** stop the vehicle properly, they must be repaired before the vehicle is operated again.

The brake fluid master cylinder reservoir is located under the front cowl.

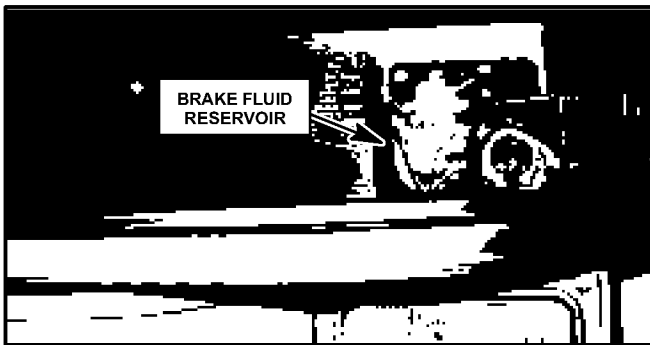


Figure 44

Brake Fluid Reservoir Located Under Front Cowl

The fluid level must be kept within the MIN (minimum) and MAX (maximum) levels as shown in Figure 45.

If the brake fluid level indicator light (See Fig. 46) comes on and remains on, check the brake fluid level in the reservoir.

When it is necessary to add fluid, use a **DOT 3 type** brake fluid.



Figure 45

Brake Fluid Level Reading

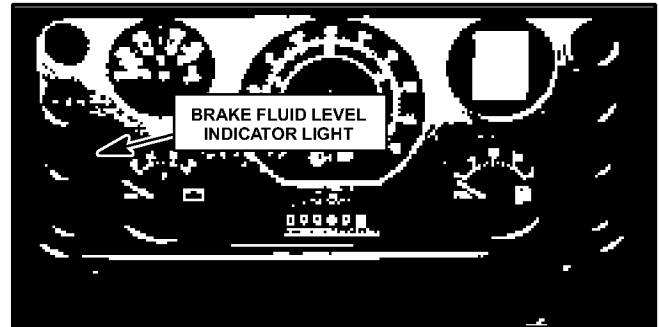


Figure 46

Brake Fluid Level Indicator Light

If the brakes do not hold properly, if they feel spongy **or** if the brake fluid reservoir is allowed to “run-dry”, it may be necessary to bleed the brake lines in order to get fluid back into the system. Follow the steps below to properly bleed the brake system.

3 & 4-Wheel Brakes

When bleeding the system with four wheel brakes, bleed the **left rear** brake first **then** the **right rear**, then the **right front** and finally the **left front**.

For **3-wheel brakes**, do the left rear, right rear, then the front.

Attach a hose to the bleeder screw on top of the left rear dust shield and place the other end of the hose in a container to catch the fluid run-off when bleeding the system.

*Most communities have a disposal system for this type of refuse. **Please dispose** of fluids properly.*

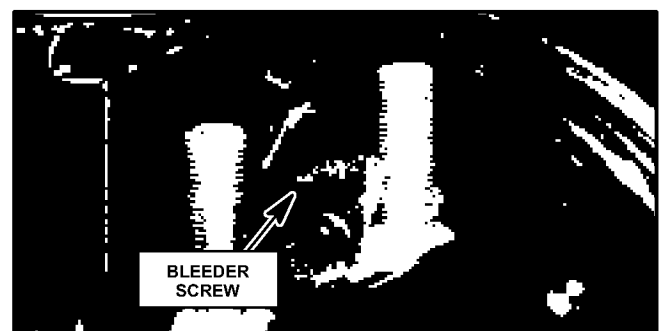


Figure 47

Bleeder Screw on Top of Dust Shield

Four Wheel Brakes (con't.)

Loosen the bleeder screw. Have an assistant push down on the brake pedal and hold pedal down. Tighten the bleeder screw and release the brake pedal. Loosen the bleeder screw again, press down on the brake pedal, hold pedal down and tighten the bleeder screw, release pedal. **Do Not** release the brake pedal until the bleeder screw is tightened otherwise air will be sucked back into the brake lines.

Continue this procedure until all air bubbles are purged from the system and a steady flow of fluid comes from the brake line. Repeat the procedure on the opposite side of the unit, then on the front.

Rear Wheel Only Brakes

Bleed the left rear brake first then the right rear.

Attach a hose to the bleeder screw on top of the dust shield and place the other end of the hose in a container to catch the run-off when bleeding the system.

Loosen the bleeder screw. Have an assistant push down on the brake pedal and hold pedal down. Tighten the bleeder screw and release the brake pedal. Loosen the bleeder screw again, press down on the brake pedal, hold pedal down and tighten the bleeder screw, release pedal. **Do Not** release the brake pedal until the bleeder screw is tightened otherwise air will be sucked back into the brake lines.

Continue this procedure until all air bubbles are purged from the system and a steady flow of fluid comes from the brake line. Repeat the procedure on the opposite side of the unit.

PARK BRAKE

The park brake applies the brakes to **both** rear wheels.

To engage the brake, pull up on the lever until park brake is applied (the park brake lever will be at an approximate 45° angle when applied).

To release, slightly pull up on the handle, push the button at the end of the lever and while holding the button in, lower the lever to it's original position.

Park Brake Adjustment

Raise the engine cover and locate the park brake cable and bracket beneath the console panel (See Fig. 49).

With the park brake released (brake lever down) tighten the adjustment nut a couple of turns and apply the park brake, continue adjustment until the brake lever is at an approximate 45° when the brake is applied.

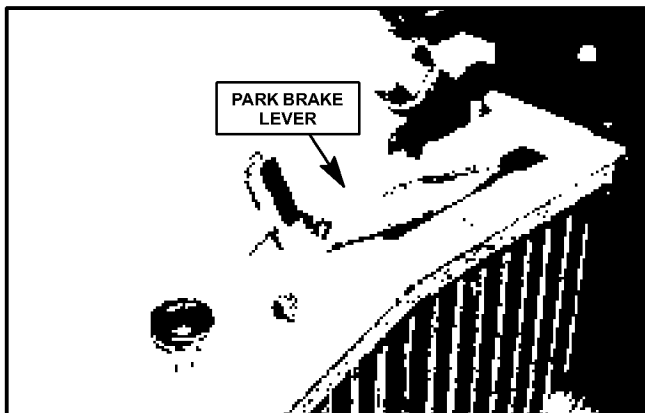


Figure 48
Park Brake Lever Location

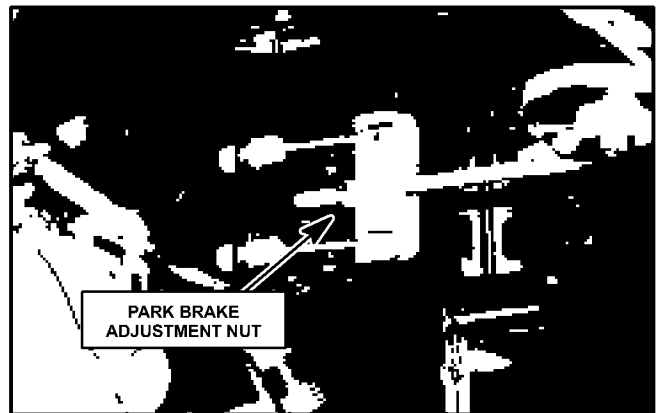


Figure 49
Park Brake Adjustment Nut

BULB REPLACEMENT, DASH PANEL

Remove the four (4) screws securing the instrument panel to the dash.

Pull the instrument panel out and tilt forward to gain access to the rear of the panel (See Fig. 50).

Determine which bulb will be replaced. Rotate the bulb holder 1/4 turn, pull up and remove holder and bulb. Remove the bulb from the holder and replace with the appropriate bulb. Reverse this sequence to install the bulb and holder.

Use the number printed on the bulb to obtain the correct replacement bulb, also refer to the chart on Page 29 for bulb specifications.

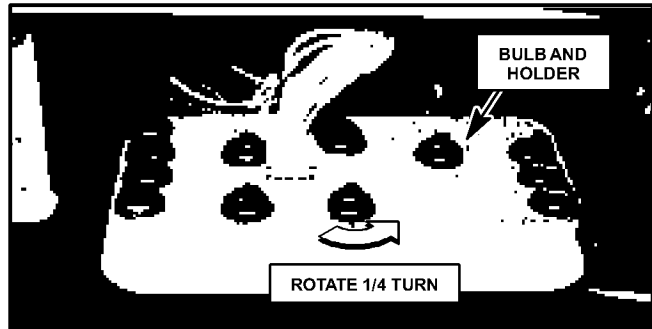


Figure 50
Dash Panel Bulb Removal

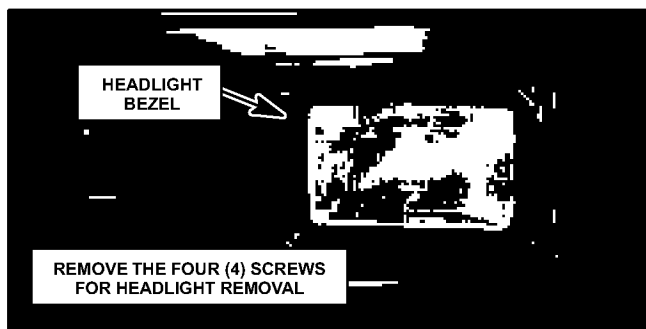


Figure 51
Headlight Removal

HEADLIGHT REPLACEMENT

Remove the four (4) screws securing the headlight bezel to the front cowl (See Fig. 51).

Pull the headlight and bezel from the front cowl opening. Disconnect the electrical connector from the rear of the headlight and remove the headlight from the bezel. Replace headlight and install in the reverse sequence used for removal.

Headlight Part No. 837303

Bezel Part No. 841428

Mounting Screws ... Part No. 800943

BULB REPLACEMENT, TAILLIGHT

Remove the two (2) screws securing the taillight lens to the taillight.

Remove the bulb and replace with a No. 1157 bulb. Replace the lens cover making sure the gasket is positioned correctly.

To remove the taillight from the vehicle, remove the two (2) nuts and shakeproof washers securing the taillight to the frame.

Taillight Assembly Part No. 893602

Bulb Part No. 822049

Lens Screws Part No. 312288

Lens and Gasket Part No. 829099

License Illuminator Lens ... Part No. 829099

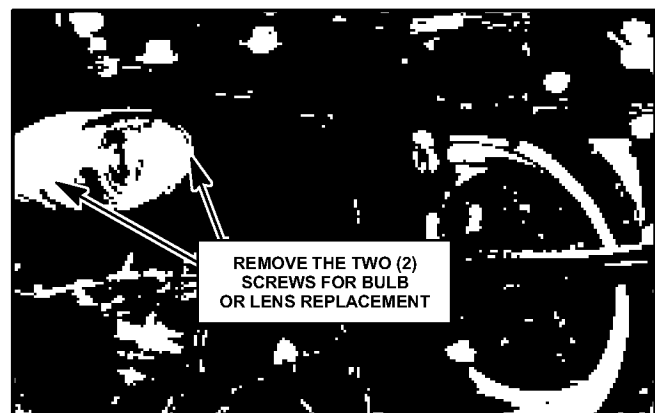


Figure 52
Taillight Bulb Replacement

GOVERNOR OIL LEVEL (Suzuki 660 & 970 Engines)

Check the oil level in the governor after **every 100 hours** of use. To check the level, remove the plug from the back side of the governor. Oil should be up to the level of the plug opening.

Governor Oil Capacity 1.5 oz. (44 ml)

Oil Type SAE 20W engine oil

If fluid level is low, add the recommended oil type.

Remove the plug from the rear side of the governor, remove the plug from the top of the governor and add an SAE 20W motor oil until the oil begins to leak from the rear port. Replace both plugs.

When replacing the plug, use Teflon tape or a Permatex 20 sealant (or equivalent pipe thread sealant) on the threads of the plug.

Torque the plugs to 95 ± 10 in.lb.

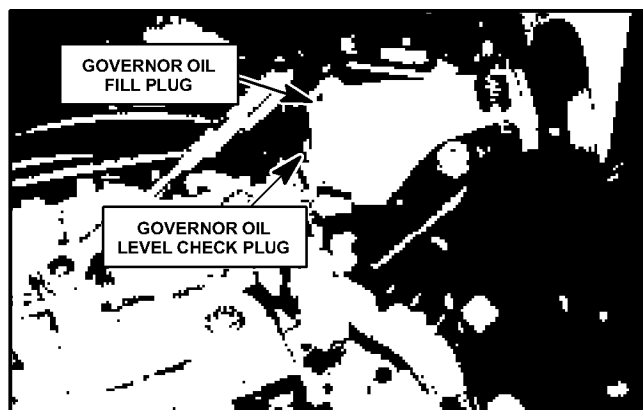


Figure 53
Governor Fill Plug (Suzuki Engines Only)

DIFFERENTIAL (11.16:1 and 14.21:1)

The differential fluid should be checked every **100 hours (or 3 months)** and **changed** after the first **100 hours**. After the first change at 100 hours the fluid should be **changed** every **600 hours (or 12 months)**.

Differential Fluid Capacity . 5.2 pints. (2.46 L)

Fluid Type SAE EP 80-90 Gear Lube

To check fluid level, remove the filler plug from the front of the differential.

Fluid should be level with the bottom of the filler hole. If level is low, add gear lube until the appropriate level is reached (fluid will begin to leak from the filler hole when full level is reached). Replace filler plug.

To drain the differential fluid, remove the drain plug from the bottom rear of the differential and drain. Replace drain plug and add fluid to the recommended level.

When draining and filling the differential, use a pipe thread sealant on the plug threads before replacing them.

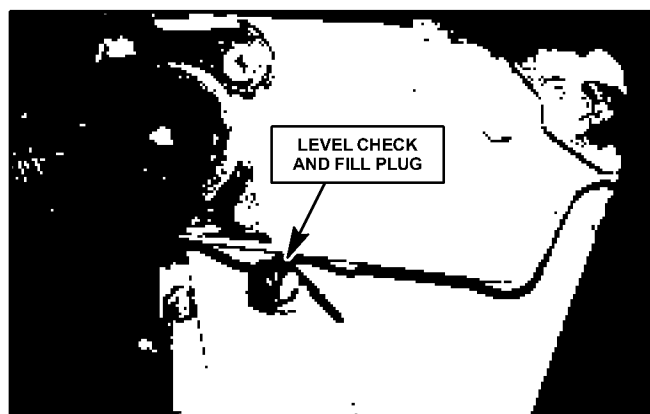


Figure 54
Differential Filler and Level Check Plug

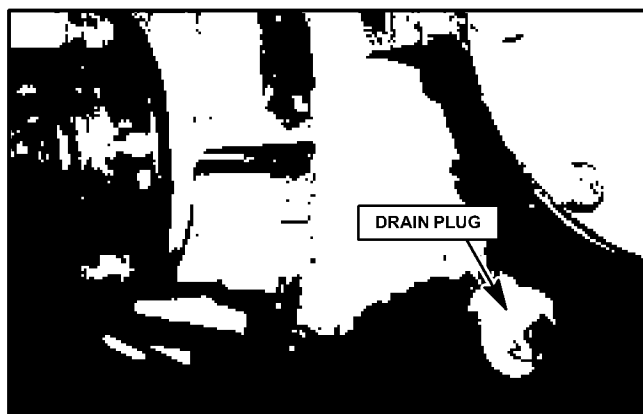


Figure 55
Differential Drain Plug

DRIVE TRANSMISSION

Maintaining proper lubrication level in the transmission is very important to the life of the gears and bearings.

Manual Transmission (Suzuki 660 Engine)

Check transmission fluid level every **100 hours (or 3 months)**.

Change transmission fluid every **600 hours or (12 months)**.

Transmission Capacity: 1.05 qts. (0.9 L)

Recommended Lubricant: SAE EP 80-90 Gear Lube

The filler plug is located on the right side of the transmission. When removed, the filler plug opening is used to determine proper fluid level.

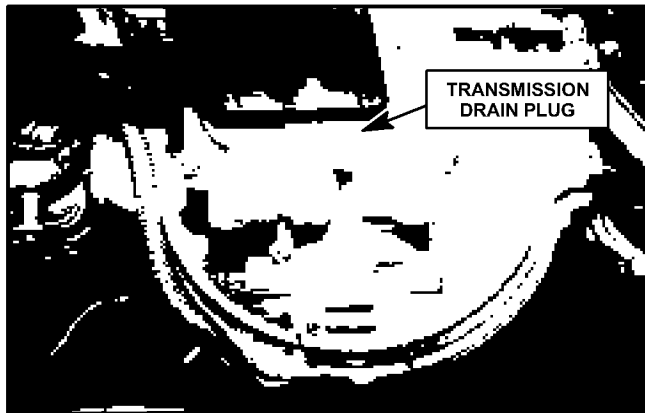


Figure 56
Transmission Drain Plug (Suzuki 660 Engine)

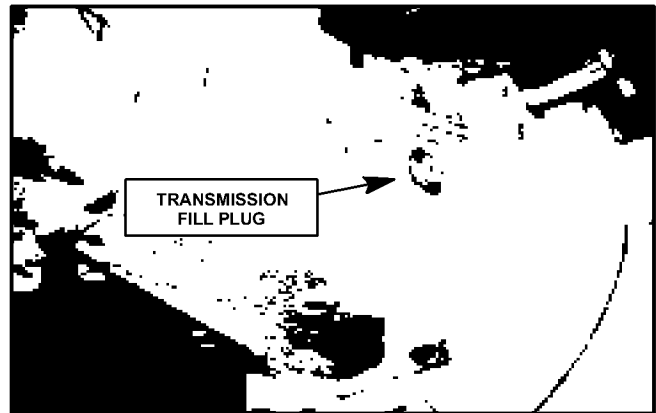


Figure 57
Transmission Filler Plug (Suzuki 660 Engine)

The fluid level must be level with the bottom of the filler plug hole.

If level is low, add fluid (through the filler hole) until it begins to flow from the filler hole. Reinstall the plug.

To drain the transmission fluid, remove the drain plug on the rear of the transmission.

When draining and filling the transmission, use a pipe thread sealant on the plug threads before replacing them.

Manual Transmission (Suzuki 970 & Perkins Diesel Engines)

Check transmission fluid level every **100 hours (or 3 months)**.

Change transmission fluid every **600 hours or (12 months)**.

Transmission Capacity: 1.35 qts. (1.28 L)

Recommended Lubricant: SAE EP 80-90 Gear Lube

The filler plug is located on the rear of the transmission. When removed, the filler plug opening is used to determine proper fluid level.

The fluid level must be level with the bottom of the filler plug hole.

If level is low, add fluid (through the filler hole) until it begins to flow from the filler hole. Reinstall the plug.

To drain the transmission fluid, remove the drain plug on the rear of the transmission.

When draining and filling the transmission, use a pipe thread sealant on the plug threads before replacing them.

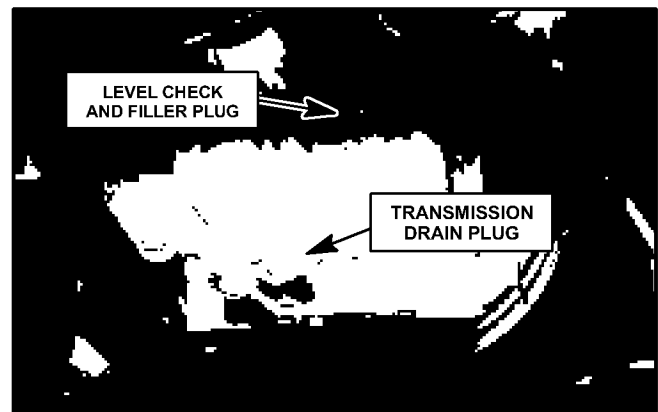


Figure 58
Transmission Drain & Fill Plugs

SERVICE & MAINTENANCE

Drive Transmission (con't.)

Automatic Transmission

Check transmission fluid level every **100 hours (or 3 months)**.

Change transmission fluid every **600 hours or (12 months)**.

Transmission Capacity: 3.7 qts. (4.2 L)

Recommended Lubricant: Mercon/Dexron II

To check the transmission fluid the engine must be running. Place the gear selector in "P" Park, apply the park brake and start the engine.

With the engine running, remove the dipstick and wipe it with a clean rag. Insert the dipstick into the extension tube until it contacts the tube. Remove the dipstick and read the fluid level.

Fluid must be kept between the two marks on the dipstick. If necessary, add fluid to obtain the proper level. **Do Not overfill.** Add fluid using the extension tube as the fill tube.

To drain the transmission fluid, remove the drain plug located on the bottom left, rear corner of the transmission pan.



Figure 59
Automatic Transmission Dip Stick

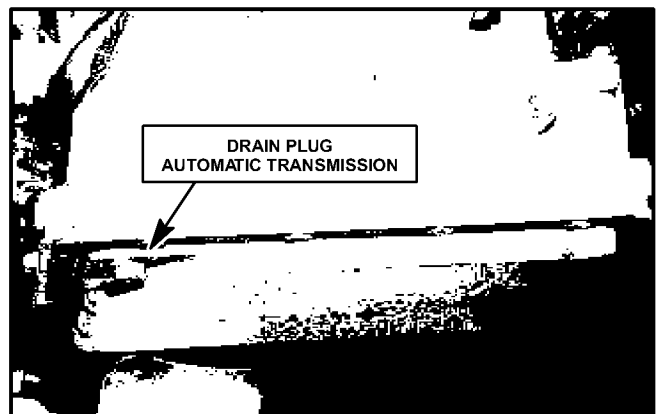


Figure 60
Automatic Transmission Drain Plug
(Suzuki 660 Engine)

NOTICE

- Most communities have special sites to dispose of used petroleum based products such as transmission fluid, engine oil and differential fluid. Please use an appropriate container to catch any fluids and dispose of properly.

ACCESSORIES, P.T.O. & HYDRAULIC ATTACHMENTS and 5th WHEEL IMPLEMENTS

There are numerous accessories, attachments and implements available for your vehicle.

Some accessories include:

High/Low Hydraulics System
Steel Cab Sets, Steel Door Sets
Heater/Defroster
Upper ROPS W/Seatbelt
Dump Boxes and Platform Beds

Also attachments and implements like:

the Quick Aerator, Core Harvester, TD 1500 & 2000 Top Dressers
the Vicon Spreader, Turf Master Sprayers, Seed & Fertilizer Spreaders and more

For information and availability on these accessories and others, contact your local Cushman Dealer.

TOWING A TRAILER (Trailer Hitch)



WARNING

- **NEVER** pull loads which may exceed the braking capacity of the vehicle. The operator must determine if the Cushman vehicle has adequate braking capacity to stop either a loaded or unloaded vehicle and the trailer on the type(s) of surface(s) and grade(s) on which the vehicle will be operated.
- Position the load on the trailer so that the tongue weight on the towing vehicle will not cause instability or affect steering control.
- **NEVER** make sudden stops, turns or accelerations when towing a trailer or equipment.

This vehicle is capable of pulling trailers and other equipment of greater weight than the vehicle itself, so **caution and good judgment** must be used to avoid losing control of the vehicle while braking or cornering.

Connect the equipment to be pulled to the trailer hitch on the rear of the vehicle. Secure using a tow pin or similar object. Be sure to secure the tow pin (or similar object) so it cannot fall out of the mounting hole.



Figure 61
Trailer Hitch

DASH PANEL DIPSWITCH SETTINGS

Remove the four (4) screws securing the instrument panel to the dash.

Pull the instrument panel out and tilt forward to gain access to the rear of the panel (See Fig. 62).

Using a small blade screwdriver or similar tool, push the switch levers either up or down using the following sequence codes (the top of the dash panel will be referenced as "position 1")

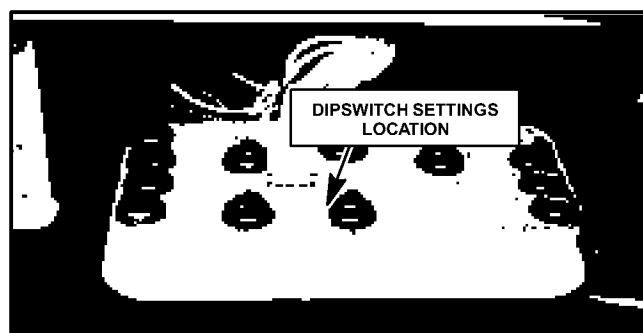
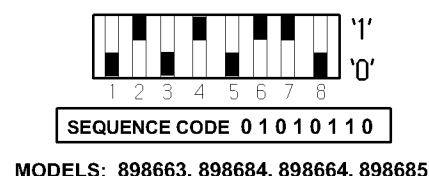
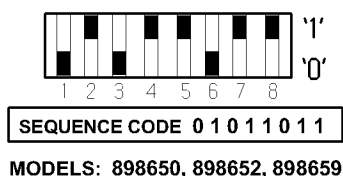
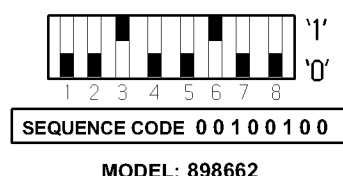


Figure 62
Dash Panel Dipswitch Location

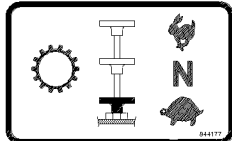


OPERATING REMOTE HYDRAULICS

EQUIPMENT

The following information will tell you about the different controls and functions used when operating the P.T.O. and hydraulics system. These features are used when operating the accessories and implements often used with this vehicle.

TWO-SPEED DIFFERENTIAL



The two-speed differential has a high and low operating range, as well as a neutral position.

Shift the two-speed differential **ONLY** when the vehicle is **stopped**. Pull the control handle all the way UP to operate in the high range, push it all the way DOWN to operate in the low range.

The two-speed differential control is located on the control panel to the left of the operator's seat (See Fig 62).

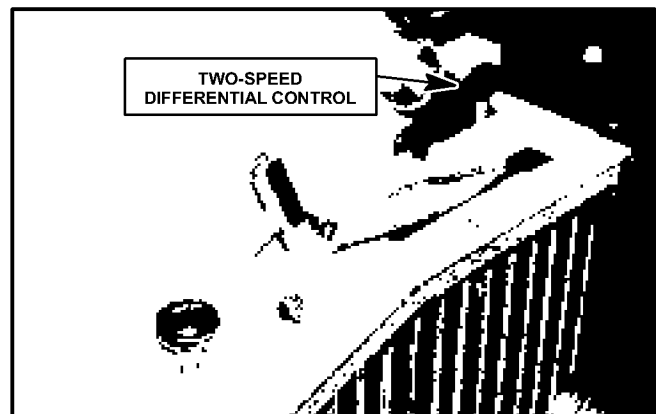


Figure 62
Two-speed Differential Control Handle

POWER HYDRAULIC LIFT SYSTEM

The power hydraulic lift system is referred to as a "live" system. This means the hydraulic pump operates whenever the engine is running.

The hydraulic lift control lever is located on the control panel to the left of the driver's seat (See Fig 63).

The hydraulic lift is used when the vehicle is equipped with a dump box or similar accessory.

Push the lever forward and to the right to latch it in the float position (the float position allows the accessory being used to follow the contour of the land, the accessory, when in the lowered position, will "float" over the ground even in undulating terrain).

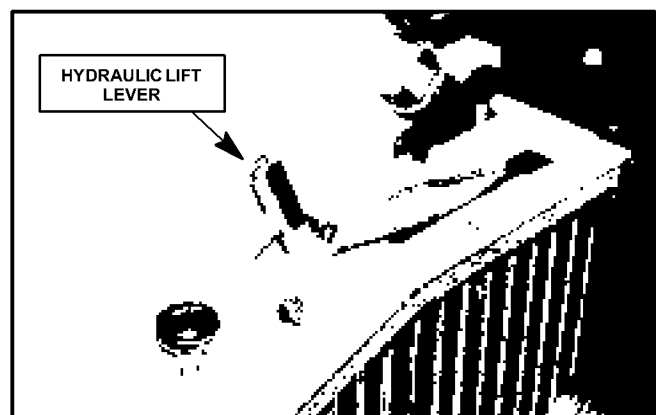
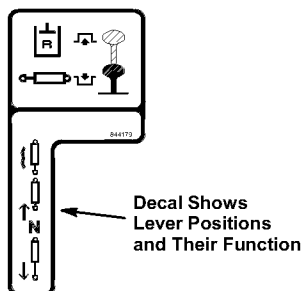
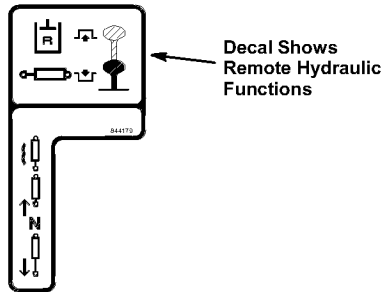


Figure 63
Hydraulic Lift Control Handle

Pull back on the lever to extend the hydraulic cylinder ram (raise the dump box) push forward on the lever to retract the hydraulic cylinder ram (lower the dump box).

REMOTE HYDRAULICS

The hydraulic system has a remote selector valve located at the front of the control panel, to operate accessories such as the Core Harvester™ or Top Dresser.



NOTICE

- The “DOWN” position directs hydraulic oil to the standard vehicle hydraulic lift system.
- The “UP” position directs hydraulic oil to the left side of the hydraulic panel for remote hydraulic system use.

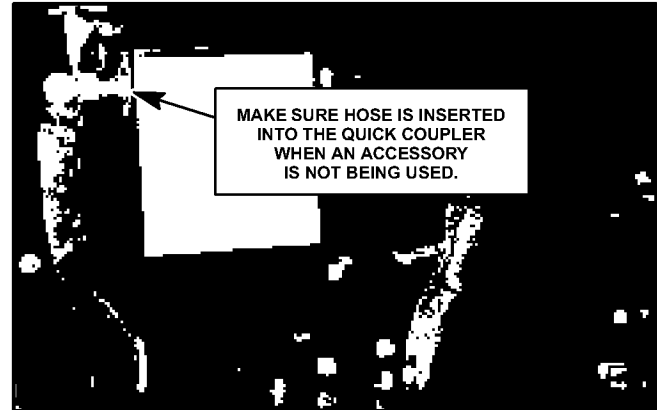


Figure 65
Remote Hydraulics Closed Loop Shown

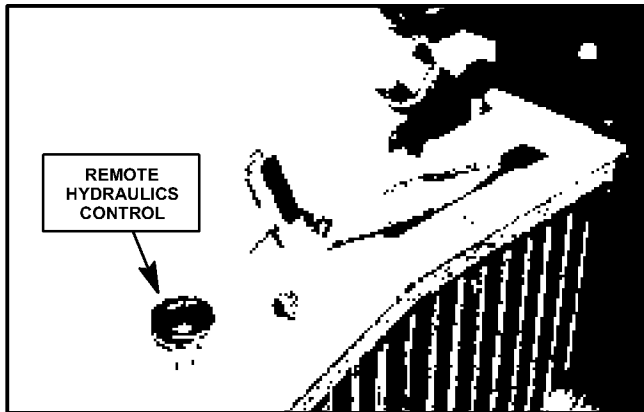
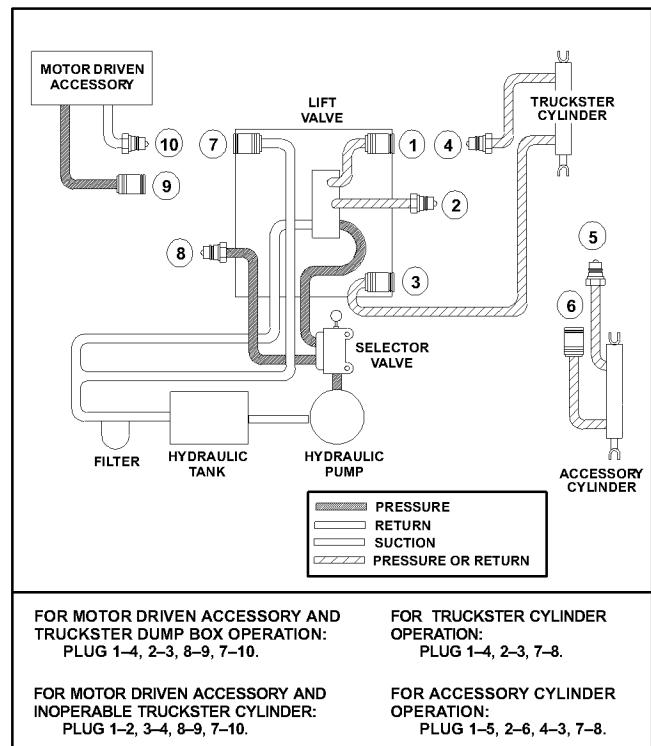


Figure 64
Remote Hydraulics Control Handle

When the remote hydraulics are not connected to equipment, the male and female quick connectors must be connected to form a closed loop (See Fig. 65).

It is **extremely important** that the hose nipple be inserted into the quick connector to form a closed loop as shown. This will prevent dirt from entering the system and prevent the hydraulic system from over-heating, leading to system failure if the remote selector knob is accidentally pulled up with the accessory removed.



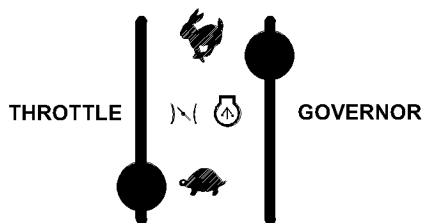
WARNING

- The vehicle is equipped with a hydraulic system to operate equipment. During operation, **ALWAYS** stay clear of moving parts to prevent injury.

OPERATING REMOTE HYDRAULICS

GOVERNOR CONTROL AND HAND THROTTLE

A manually set, variable governor control is included with the P.T.O. for regulation of P.T.O. or ground speed. The control lever is attached to the panel to the left of the instrument panel. The hand throttle lever is attached to the same panel.



The engine governor is preset to control engine (vehicle) ground speeds to design limits

The engine governor is preset to control engine ground (vehicle) speeds to design limits.

Normal mode:

- Hand throttle control lever in “DOWN” position.
- Variable governor control in “UP” position.

NOTICE

- **(Diesel Only)** In the NORMAL MODE, the foot pedal throttle retains full control of throttle lever position. An internal governor adjusts the injector pump to compensate for variations in power requirements (maintains R.P.M. dictated by position of foot pedal throttle).

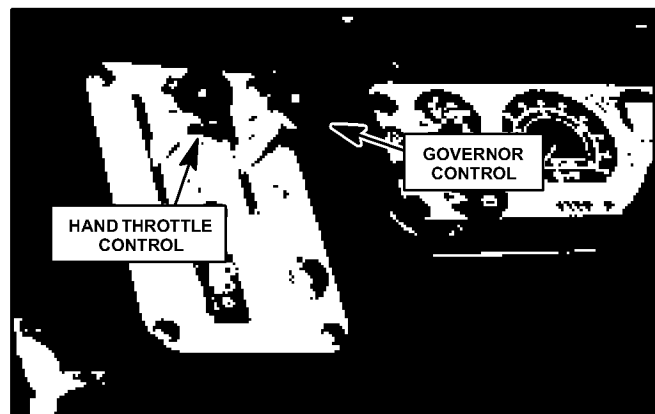


Figure 66
Governor and Hand Throttle Controls



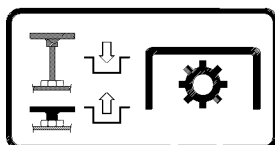
WARNING

- To prevent speeds greater than design limits, **NEVER** alter the governor controls in any manner to increase speed beyond the recommended maximum R.P.M. Over-speeding may result in engine failure and possible injury to operator and/or bystanders.

POWER TAKE OFF (Mechanical P.T.O.)

There is also an optional hydraulic powered P.T.O. system available. Refer to the section Power Take-Off (Hydraulic P.T.O.) for proper operating instructions.

The P.T.O. transmits power from the transmission to a splined shaft at the rear of the vehicle for easy hook-up to optional equipment.



The control handle is located on the control panel to the left of the operator's seat.



Figure 67
P.T.O. Control Handle Location
PULL UP to engage. – PUSH DOWN to disengage.

Power Take Off (Mechanical P.T.O.) con't.



WARNING

- When an attachment is not connected to the P.T.O. shaft, disengage drive to the P.T.O. by pushing control handle down.
- P.T.O. includes a spring loaded P.T.O. cover. This cover must remain on the vehicle and be used at all times. An uncovered rotating spline can catch clothing and result in serious injury or death. **ALWAYS** remain clear of the P.T.O. shaft and all moving parts.
- If you do not want the vehicle to move, **ALWAYS** make sure the transmission is out of gear and the park brake is applied when the clutch pedal is released to activate the P.T.O. shaft. Make sure the vehicle is in Park with the park brake applied for automatic transmissions.
- **ALWAYS** disengage the P.T.O. before attaching any equipment to the P.T.O. shaft.

NOTICE

- To engage P.T.O. **ALWAYS STOP** the vehicle. For vehicles with manual transmissions, stop the vehicle, push the clutch pedal in **THEN** pull the P.T.O. control knob upward.

For Use When The Vehicle Is Stationary

1. Make sure governor control is in the "UP" position.
2. Make sure differential is in either **HIGH** or **LOW** range, **NOT the NEUTRAL position**.
3. Set (engage) the parking brake.
4. Put transmission in neutral (out of gear) and engage the clutch (put automatic transmission in Park).
5. Push foot throttle pedal to floorboard.
6. Raise the hand throttle control lever to full engine R.P.M.
7. Move the governor control lever to desired engine R.P.M.

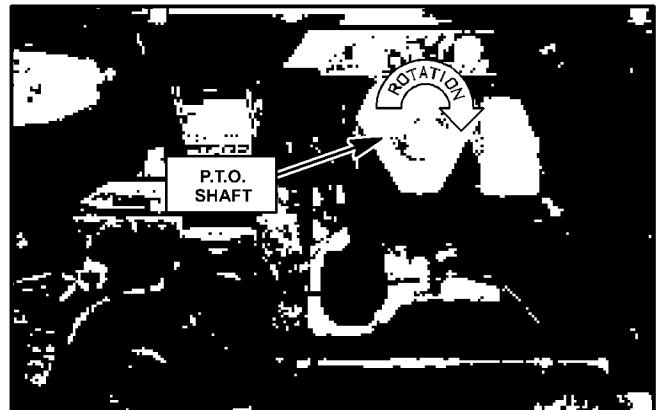


Figure 68
P.T.O. Shaft Location

For Use While Vehicle Is Moving

1. Refer to the Power Take-Off R.P.M./Vehicle Speed chart (see Page 50) to select the proper P.T.O. and ground speed combination for the accessory equipment being used, there is also a decal representing the P.T.O. and ground speed combinations located on the same panel as the P.T.O. control handle.
2. Make sure the governor control lever is all the way DOWN so that the engine is held at idle speed.
3. Push the foot throttle pedal to the floorboard.
4. Position the governor control lever to obtain engine R.P.M. corresponding to the desired P.T.O. and vehicle ground speed.
5. Put transmission in desired gear, engage clutch (for vehicles with manual transmissions) and depress foot throttle.

OPERATING REMOTE HYDRAULICS

Power Take Off (Mechanical P.T.O.) con't.

The P.T.O. may be stopped momentarily by pushing the clutch pedal in (on vehicles with manual transmissions). When the clutch pedal is released the P.T.O. will start again.

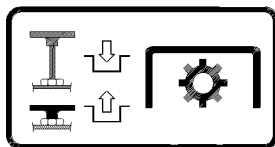


WARNING

- **NEVER** attempt to drive the vehicle with the engine speed increased by the hand throttle. The hand throttle also controls the foot throttle, so the foot throttle pedal cannot be used to reduce engine and vehicle speed. **FAILURE** to obey this warning may result in you, the operator, losing vehicle control.

POWER TAKE OFF (Hydraulic P.T.O.)

The hydraulic P.T.O. transmits power from the transmission to a splined shaft at the rear of the vehicle for easy hook-up to optional equipment.



The control handle is located on the control panel to the left of the operator's seat.



Figure 69

P.T.O. Control Handle Location

PULL UP to engage. – **PUSH DOWN** to disengage.

To activate the P.T.O., move the live hydraulic hose from the **upper coupler** on the left side of the hydraulic panel to the **lower coupler** on the left side of the panel.

Make sure the hydraulic P.T.O. control handle is in the **down** position (if the control handle **is not down** the P.T.O. shaft can start rotating).

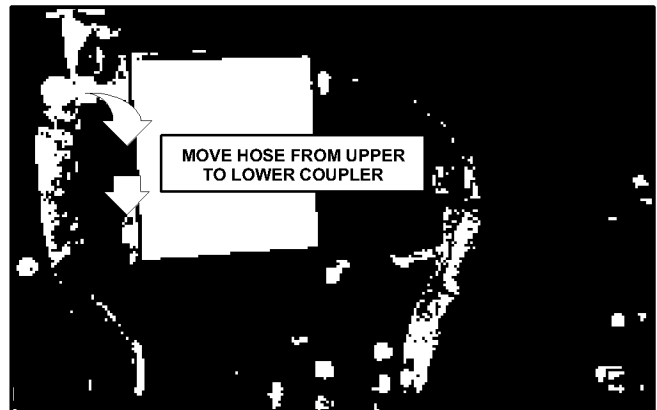


Figure 70

Moving Live Hydraulic Hose for Hydraulic P.T.O.



WARNING

- When an attachment is not connected to the P.T.O. shaft, disengage drive to the P.T.O. by pushing the hydraulic control handle down and replacing the live hydraulic hose in the **upper coupler**.
- The PTO runs when the control handle is **up**. Depressing the clutch pedal **Does Not** stop the PTO from running, the control handle must be in the down position for the PTO to stop.
- P.T.O. includes a spring loaded P.T.O. cover. This cover must remain on the vehicle and be used at all times. An uncovered rotating spline can catch clothing and result in serious injury or death.

Power Take Off (Hydraulic P.T.O.) con't.

NOTICE

- To engage P.T.O. **ALWAYS STOP** the vehicle. For vehicles with manual transmissions, stop the vehicle, push the clutch pedal in **THEN** pull the P.T.O. control knob upward.

For Use When The Vehicle Is Stationary

1. Make sure governor control is in "UP" position.
2. Set (engage) the parking brake.
3. Put transmission in neutral (out of gear) and engage the clutch (put automatic transmission in Park).
4. Push foot throttle pedal to floorboard.
5. Raise the hand throttle control lever to full engine R.P.M.
6. Move the governor control lever to desired engine R.P.M.



Figure 71
P.T.O. Shaft Location



WARNING

- If you do not want the vehicle to move, **ALWAYS** make sure the transmission is out of gear and the park brake is applied when the clutch pedal is released to activate the P.T.O. shaft. Make sure the vehicle is in Park with the park brake applied for automatic transmissions.
- **ALWAYS** disengage the P.T.O. before attaching any equipment to the P.T.O. shaft. **ALWAYS** remain clear of the P.T.O. shaft and all moving parts.

For Use While Vehicle Is Moving

1. Refer to the Power Take-Off R.P.M./Vehicle Speed chart (see Page 50) to select the proper P.T.O. and ground speed combination for the accessory equipment being used, there is also a decal representing the P.T.O. and ground speed combinations located on the same panel as the P.T.O. control handle.
2. Position the governor control lever to obtain engine R.P.M. corresponding to the desired P.T.O. and vehicle ground speed.
3. Put transmission in desired gear, engage clutch (for vehicles with manual transmissions) and depress foot throttle.
4. Pull up on the hydraulic P.T.O. control handle to start P.T.O. operation. ***The P.T.O. can only be stopped by pushing the control handle down.***



WARNING

- **NEVER** attempt to drive the vehicle with the engine speed increased by the hand throttle. The hand throttle also controls the foot throttle, so the foot throttle pedal cannot be used to reduce engine and vehicle speed. **FAILURE** to obey this warning may result in you, the operator, losing vehicle control.

OPERATING REMOTE HYDRAULICS

GROUND SPEED CHARTS

The following decal/charts show the vehicle's ground speed in relation to the P.T.O.'s rpm. Select the proper p.t.o. and ground speed combination for the accessory equipment being used.

The decals are applied to each of the appropriate turf models and are shown below with correct model identity. Please replace any decal which may become damaged and/or hard to read.

KPH			KPH			RPM	MPH			MPH		
1	2	3	1	2	3		1	2	3	1	2	3
2.3	4.0	6.1	7.2	13.5	19.7	2500	1.4	2.5	3.8	4.5	8.4	12.2
2.4	4.3	6.6	7.8	14.5	21.3	2700	1.5	2.7	4.1	4.9	9.0	13.2
2.6	4.6	7.1	8.4	15.6	22.9	2900	1.6	2.9	4.4	5.2	9.7	14.2
2.8	4.9	7.6	9.0	16.7	24.4	3100	1.7	3.1	4.7	5.6	10.4	15.2
3.0	5.3	8.1	9.5	17.8	26.0	3300	1.9	3.3	5.0	5.9	11.0	16.2
3.2	5.6	8.6	10.1	18.9	27.6	3500	2.0	3.5	5.3	6.3	11.7	17.1
3.3	5.9	9.1	10.7	19.9	29.2	3700	2.1	3.7	5.7	6.7	12.4	18.1
3.5	6.2	9.6	11.3	21.0	30.7	3900	2.2	3.9	6.0	7.0	13.1	19.1
3.7	6.5	10.1	11.9	22.1	32.3	4100	2.3	4.1	6.3	7.4	13.7	20.1
3.9	6.8	10.6	12.4	23.2	33.9	4300	2.4	4.3	6.6	7.7	14.4	21.1
4.1	7.2	11.1	13.0	24.2	35.5	4500	2.5	4.4	6.9	8.1	15.1	22.0

For use with Turf Model 898659
Suzuki 660
with automatic transmission

For use with Turf Models 898650
and 898652
Suzuki 660
with manual transmission

KPH				KPH				RPM	MPH				MPH			
1	2	3	4	1	2	3	4		1	2	3	4	1	2	3	4
1.5	2.6	4.2	6.1	4.9	8.4	13.5	19.7	2500	1.0	1.6	2.6	3.8	3.0	5.2	8.4	11.2
1.7	2.8	4.5	6.6	5.3	9.1	14.5	21.3	2700	1.0	1.8	2.8	4.1	3.3	5.6	9.0	13.2
1.8	3.0	4.8	7.1	5.7	9.8	15.6	22.9	2900	1.1	1.9	3.0	4.4	3.5	6.1	9.7	14.2
1.9	3.3	5.2	7.6	6.1	10.4	16.7	24.4	3100	1.2	2.0	3.2	4.7	3.8	6.5	10.4	15.2
2.0	3.5	5.5	8.1	6.4	11.1	17.8	26.0	3300	1.3	2.2	3.4	5.0	4.0	6.9	11.0	16.2
2.2	3.7	5.8	8.6	6.8	11.8	18.9	27.6	3500	1.3	2.3	3.6	5.3	4.2	7.3	11.7	17.1
2.3	3.9	6.2	9.1	7.2	12.4	19.9	29.2	3700	1.4	2.4	3.8	5.7	4.5	7.7	12.4	18.1
2.4	4.1	6.5	9.6	7.6	13.1	21.0	30.7	3900	1.5	2.5	4.0	6.0	4.7	8.2	13.1	19.1
2.5	4.3	6.8	10.1	8.0	13.8	22.1	32.3	4100	1.6	2.7	4.2	6.3	5.0	8.6	13.7	20.1
2.6	4.5	7.2	10.6	8.4	14.5	23.2	33.9	4300	1.6	2.8	4.4	6.6	5.2	9.0	14.4	21.1
2.8	4.7	7.5	11.1	8.8	15.1	24.2	35.5	4500	1.7	2.9	4.7	6.9	5.5	9.4	15.1	22.0

KPH				KPH				RPM	MPH				MPH			
1	2	3	4	1	2	3	4		1	2	3	4	1	2	3	4
1.4	2.6	3.5	5.1	4.4	8.3	11.3	16.1	1600	0.9	1.6	2.2	3.2	2.8	5.2	7.1	10.0
1.5	2.9	4.0	5.7	5.0	9.3	12.8	18.1	1800	1.0	1.8	2.5	3.5	3.1	5.8	7.9	11.3
1.7	3.2	4.4	6.3	5.5	10.4	14.2	20.1	2000	1.1	2.0	2.8	3.9	3.4	6.4	8.8	12.5
1.9	3.5	4.9	7.0	6.1	11.4	15.6	22.1	2200	1.2	2.2	3.0	4.3	3.8	7.1	9.7	13.8
2.1	3.9	5.3	7.6	6.6	12.4	17.0	24.1	2400	1.3	2.4	3.3	4.7	4.1	7.7	10.6	15.0
2.2	4.2	5.8	8.2	7.2	13.5	18.4	26.2	2600	1.4	2.6	3.6	5.1	4.5	8.4	11.5	16.3
2.4	4.5	6.2	8.9	7.7	14.5	19.9	28.2	2800	1.5	2.8	3.9	5.5	4.8	9.0	12.3	17.5
2.6	4.8	6.6	9.5	8.3	15.5	21.3	30.2	3000	1.6	3.0	4.1	5.9	5.2	9.7	13.2	18.8
2.7	5.1	7.1	10.1	8.9	16.6	22.7	32.2	3200	1.7	3.2	4.4	6.3	5.5	10.3	14.1	20.0
2.9	5.5	7.4	10.6	9.4	17.5	24.0	34.2	3400	1.8	3.4	4.6	6.6	5.9	10.9	14.9	21.3
3.1	5.8	7.9	11.3	10.0	18.5	25.4	36.2	3600	1.9	3.6	4.9	7.0	6.2	11.5	15.8	22.5

For use with Turf Model 898662
Suzuki 970 manual transmission

For use with Turf Models 898663, 898664
898684 and 898685
Perkins Diesel with manual transmission

KPH				KPH				RPM	MPH				MPH			
1	2	3	4	1	2	3	4		1	2	3	4	1	2	3	4
1.4	2.6	3.5	5.1	4.4	8.3	11.3	16.1	1600	0.9	1.6	2.2	3.2	2.8	5.2	7.1	10.0
1.5	2.9	4.0	5.7	5.0	9.3	12.8	18.1	1800	1.0	1.8	2.5	3.5	3.1	5.8	7.9	11.3
1.7	3.2	4.4	6.3	5.5	10.4	14.2	20.1	2000	1.1	2.0	2.8	3.9	3.4	6.4	8.8	12.5
1.9	3.5	4.9	7.0	6.1	11.4	15.6	22.1	2200	1.2	2.2	3.0	4.3	3.8	7.1	9.7	13.8
2.1	3.9	5.3	7.6	6.6	12.4	17.0	24.1	2400	1.3	2.4	3.3	4.7	4.1	7.7	10.6	15.0
2.2	4.2	5.8	8.2	7.2	13.5	18.4	26.2	2600	1.4	2.6	3.6	5.1	4.5	8.4	11.5	16.3
2.4	4.5	6.2	8.9	7.7	14.5	19.9	28.2	2800	1.5	2.8	3.9	5.5	4.8	9.0	12.3	17.5
2.6	4.8	6.6	9.5	8.3	15.5	21.3	30.2	3000	1.6	3.0	4.1	5.9	5.2	9.7	13.2	18.8
2.7	5.1	7.1	10.1	8.9	16.6	22.7	32.2	3200	1.7	3.2	4.4	6.3	5.5	10.3	14.1	20.0

HYDRAULIC RESERVOIR

Normally the hydraulic system will not need additional fluid. Sometimes a leak may develop causing the system to require repair and refilling. If you notice hydraulic fluid escaping when the system is being used or if a leak is suspected, **turn off all hydraulic functions and stop the engine.**

Check the hoses and fittings to determine where the fluid may be escaping from. If necessary, start the engine and using a piece of cardboard or similar material, check areas where the leak is suspected. Repair as needed.



WARNING

- Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious injury.
- After applying pressure to the system, use a piece of cardboard or wood, **NOT** your hands, to check for leaks.
- If injured by escaping fluid, see doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Periodically check the hydraulic fluid level (hydraulic level should be checked every **100 hours** of operation). Loss of fluid can signal a small leak before it becomes worse.

To check the hydraulic fluid level:

1. Place vehicle on level surface. Fully lower any accessory attachment, including dump box. Stop the vehicle engine.
2. Remove the dipstick/breather plug from the top of the tank (See Figs. 72 and 73). Wipe the dipstick, then place in tank with the threaded flange resting on the tank (do not screw in). Fluid should show on the knurled portion of the dipstick (See Fig 73). Add fluid as required.

If additional fluid is needed, add **Ransomes Turf Protector Biodegradable hydraulic fluid.**

3. Screw the dipstick/breather plug securely in place.

NOTE: Do Not overfill the hydraulic system. Severe damage may result.
Always reinstall the dipstick/breather plug.

Hydraulic System Capacity:

Standard Hydraulics 4 gal. (15.2 L)
Hi-Lo Hydraulics 7.6 gal. (28.8 L)

Hydraulic Fluid (Biodegradable):

2 1/2 gal. (9.5 L) Part No. 65363
5 gal. (19.0 L) Part No. 65352
55 gal. (208.0 L) Part No. 65354

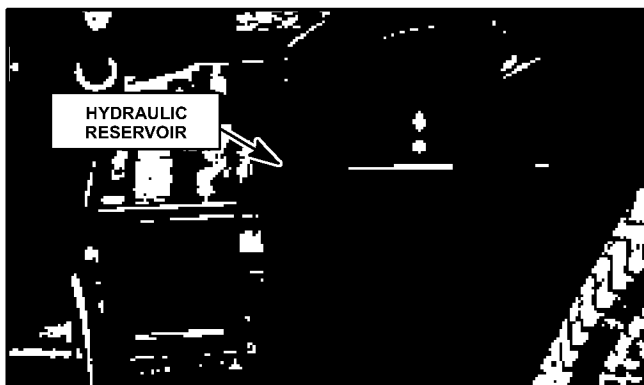


Figure 72
Hydraulic Reservoir Tank

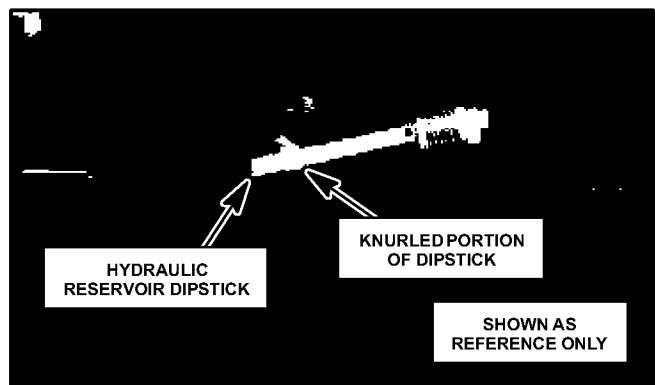
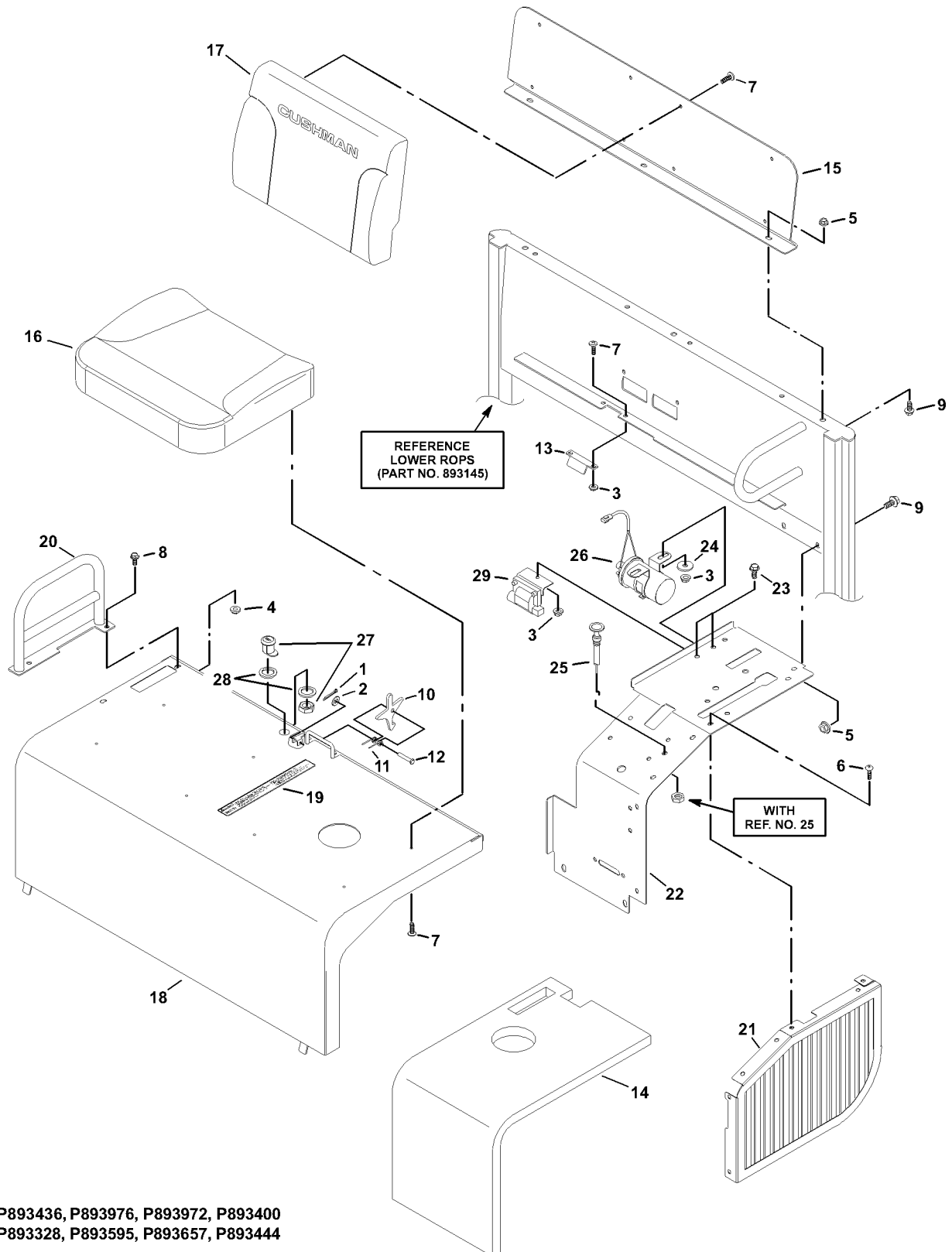


Figure 73
Hydraulic Tank Dipstick

ENGINE COVER
TURF MODELS 898650, 898652,
898659, 898662, 898663, 898664, 898684 and 898685



P893436, P893976, P893972, P893400
P893328, P893595, P893657, P893444

ENGINE COVER
TURF MODELS 898650, 898652,
898659, 898662, 898663, 898664, 898684 and 898685

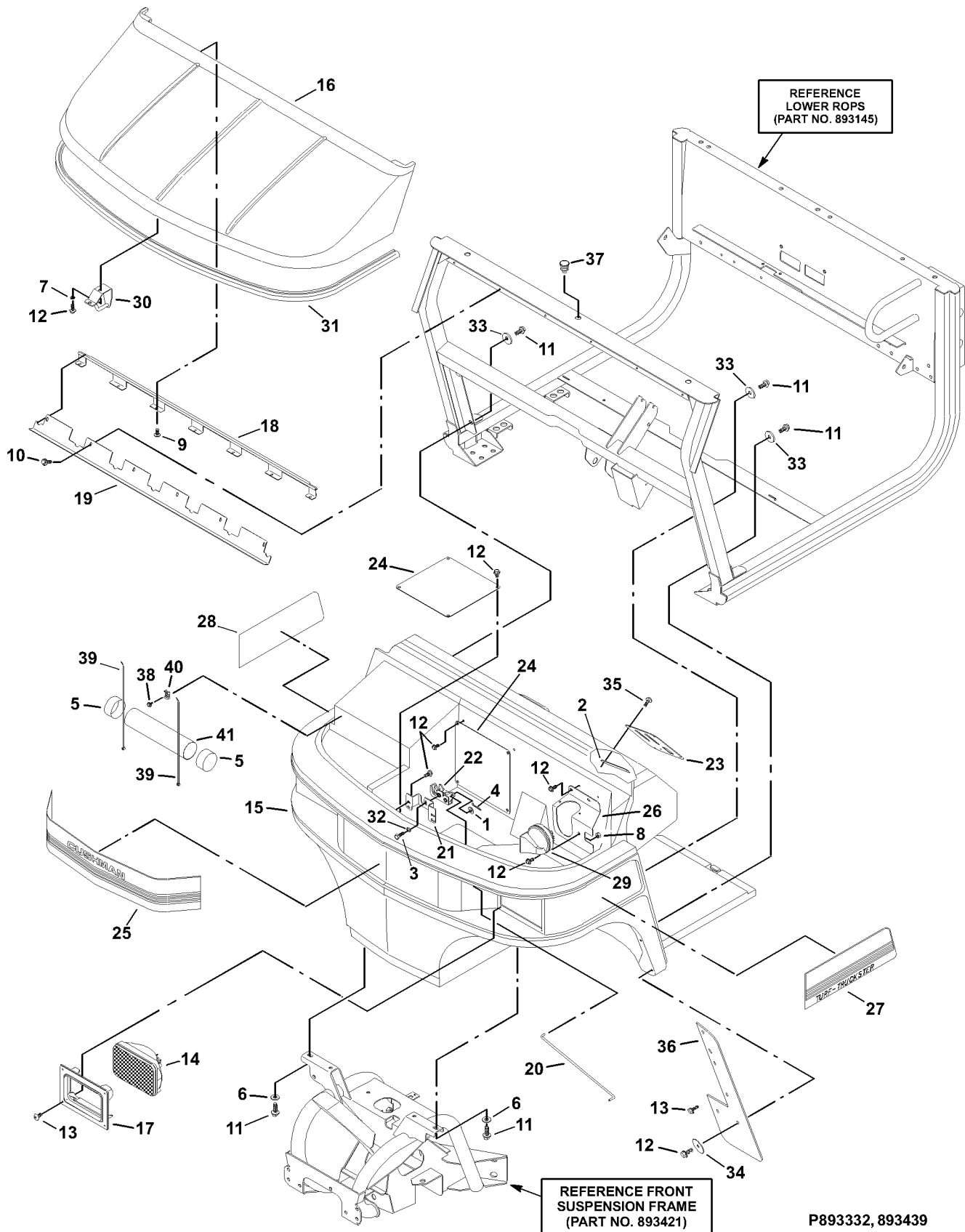
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	306328	Pin, cotter, .09 x .75	1	20	893541	Handhold (right side)	1
2	308090	Washer, 1/4	1	21	894232	Cover, left	1
3	450452	Nut, M6-1.00 (G10.9)	4	22	2700796	Panel, console w/decals (turf)	1
4	450453	Nut, M8-1.25 (G10.9)	2	*	822819	•Decal, Warning, Park Brake	1
5	450454	Nut, M10-1.50 (G10.9)	5	*	844177	•Decal, auxillary transmission	1
6	800026	Screw, 1/4-20 x 3/4	7	*	844179	•Decal, hydraulic controls	1
7	450541	Screw, M6-1.00 x 16	18	(22)	2700797	Panel, console (EC vehicles)	1
8	452388	Screw, M8-1.25 x 20 (8.8)	2	*	845185	•Decal, Warning, Park Brake (EC)	1
9	452398	Screw, M10-1.50 x 20	5	*	844177	•Decal, auxillary transmission	1
10	523085	Bracket	1	*	844179	•Decal, hydraulic controls	1
11	816401	Spring, torsion	1	23	800934	Screw, M6-1.00 x 16 (G10.9)	2
12	830784	Pin, clevis, .25 x 1.88	1	24	548175	Washer, 1/4 x 1 1/4 dia.	1
13	841789	Catch, engine cover latch	1	25	841813	Cable, choke (Suzuki 970)	1
14	841804	Insulation, engine cover	3	26	33410-85010	Coil, ignition (Suzuki 970)	1
15	842030	Mount, backrest	2	27 ♦	840436	Lock, handle	1
16	893321	Seat, base assembly	2	28 ♦	309488	Washer	2
17	894822	Seat, back assembly	2	29	33410-50F20	Coil, ignition (Suzuki 660)	1
18	2700789	Cover, engine w/decals	1				
19	845038	•Decal, Operation	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated.

♦ Although Item No's. 27 & 28 (handle lock and washers) are used on EC Models, they may be obtained for use on any of the models listed above.

BODY, HOOD, HEADLIGHTS
TURF 4-WHEEL MODELS 898652, 898659,
898662, 898664 and 898685



P893332, 893439

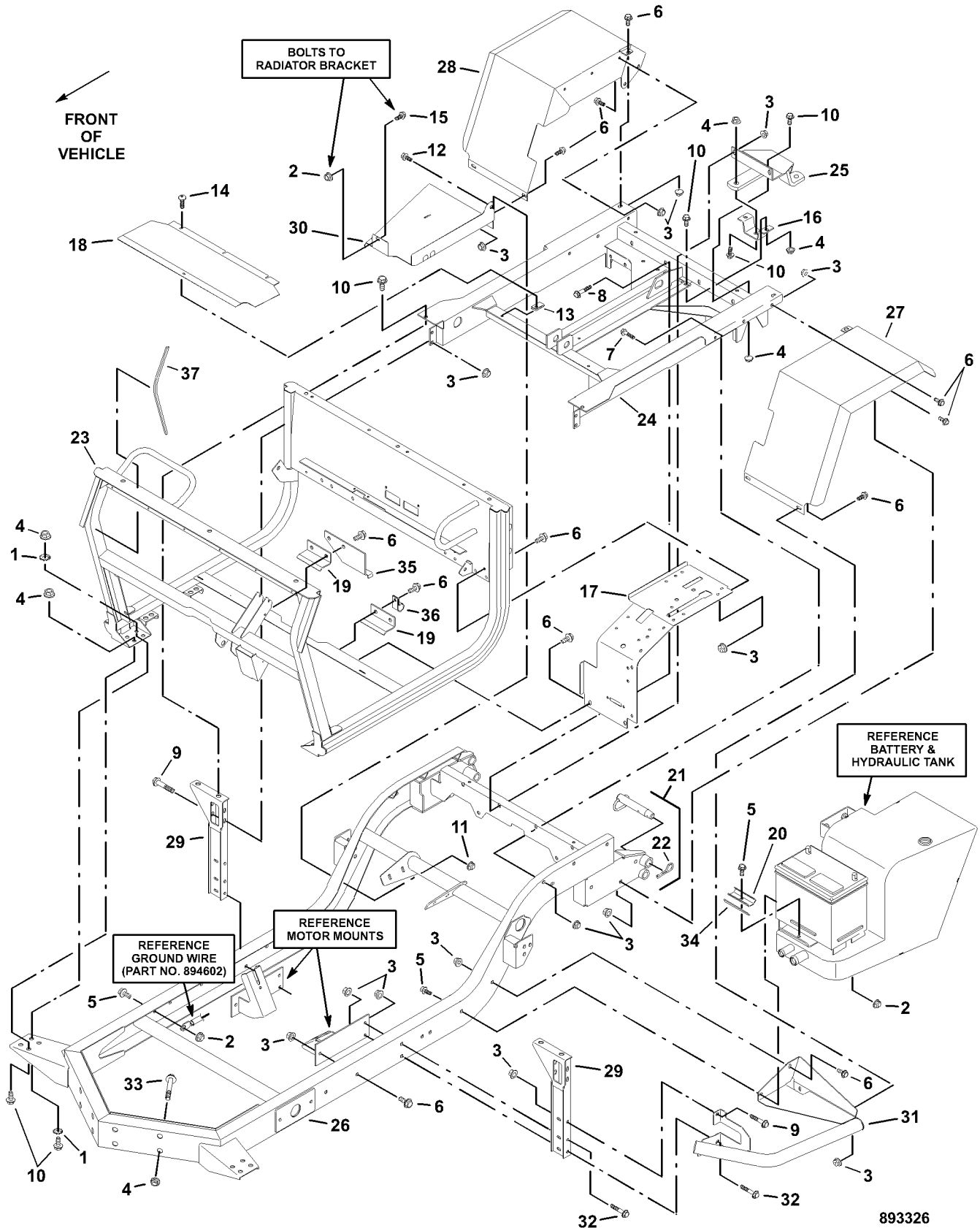
BODY, HOOD, HEADLIGHTS
TURF 4-WHEEL MODELS 898652, 898659,
898662, 898664 and 898685

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	303952	Washer, #10	1	21	841753	Bracket, hood latch	1
2	894743	Nut ay., double 1/4-20	2	22	841787	Latch, hood	1
3	306419	Screw, 1/4-20 x 1/2	2	23	841264	Panel, dash (left)	1
4	306463	Pin, cotter	1	*	844116	Decal, left dash panel, turf	1
5	38061A	Cap, vinyl	2	24	841913	Plate, access	2
6	450400	Washer, M8	2	25	844430	Decal, CUSHMAN	1
7	450410	Lockwasher, M6	2	26	844167	Bracket, horn/brake reservoir	1
8	450452	Nut, M6-1.00	1	27	844426	Decal, turf-truckster (left)	1
9	450541	Screw, M6-1.00 x 16 (RPH)	7	28	844427	Decal, turf-truckster (right)	1
10	452695	Screw, M6-1.00 x 20, taptite	6	29	886090	Horn	1
11	800930	Screw, M8-1.25 x 16 (8.8)	6	30	894030	Striker, hood	1
12	800934	Screw, M6-1.00 x 16 (8.8)	25	31	844669	Seal, weather	As Req'd.
13	800943	Screw, tap, #10-14	10	32	306488	Lockwasher, 1/4 shakeproof	2
14	837303	Headlight, rectangular	2	33	548159	Washer, 5/16 (1 1/4" diameter)	4
15	2700792	Clip, front	1	34	548175	Washer, 1/4 (1 1/4" diameter)	8
*	821071	•Decal, notice not motor vehicle	1	35	800582	Screw, 1/4-20 x 3/4	4
*	840901	•Decal, Warning read ops. manual	1	36	844049	Flap, mud	2
16	843854	Hood, turf (green)	1	37	844293	Plug	3
17	841428	Bezel, headlamp	2	38	800344	Screw, tapping, #10 type AB	2
18	841477	Hinge, hood	1	39	823549	Tie, cable, 15.5" (394 mm)	2
19	841637	Angle, front clip mount	1	40	840508	Mount, cable tie	2
20	841715	Rod, hood release	1	41	38541	Tube, document	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated.

FRAME, 4-WHEEL TURF MODELS **898652, 898659, 898662, 898664 and 898685**



893326

FRAME, 4-WHEEL TURF MODELS
898652, 898659, 898662, 898664 and 898685

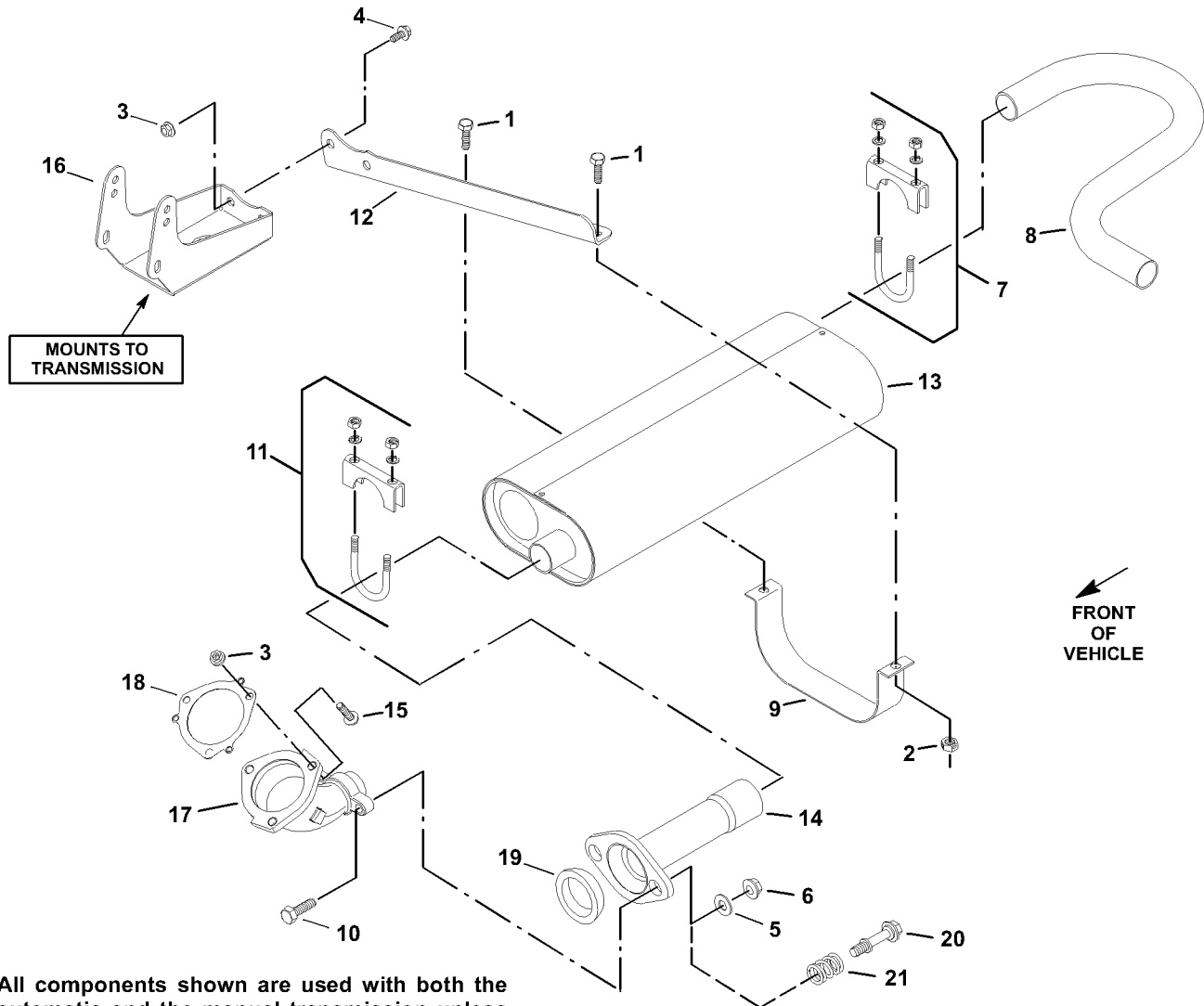
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	309067	Lockwasher, 1/2 shakeproof	2	18	841805	Panel, access	1
2	450453	Nut, M8-1.25 (G10.9)	3	19	842870	Angle, support	2
3	450454	Nut, M10-1.50 (G10.9)	40	20	844601	Bracket, battery clamp	1
4	450455	Nut, M12-1.75 (G10.9)	21	21	882971	Pin, disconnect	2
5	452389	Screw, M8-1.25 x 25 (8.8)	3	22	809265	•Pin, hair 25/32 x 2 11/16	1
6	452398	Screw, M10-1.50 x 20 (8.8)	27	23	893145	ROPS, lower	1
7	452402	Screw, M10-1.50 x 50 (8.8)	6	24	893199	Platform, turf	1
8	452403	Screw, M10-1.50 x 60 (8.8)	4	also	893199G	Platform, turf (galvanized)	1
9	452405	Screw, M10-1.50 x 80 (8.8)	5	25	893220	Drawbar, turf	1
10	452410	Screw, M12-1.75 x 30 (8.8)	17	26	893235	Frame, main (4-wheel)	1
11	548911	Nut, 5/16-18	1	also	893235G	Frame, main (4-wheel galv.)	1
12	800177	Screw, 5/16-18 x 3/4	1	27	893487	Fender (left)	1
13	800279	Nut, speed, 1/4-20	4	28	893488	Fender (right)	1
14	800582	Screw, 1/4-20 x 3/4	4	29	893525	Support, platform	2
15	800930	Screw, M8-1.25 x 16 (8.8)	1	30	893527	Support, fuel tank	1
16	841258	Bracket, drawbar	1	31	894711	Guard, hydraulic tank	1
17	2700796	Panel, console, (turf)	1	32	452406	Screw, M10-1.50 x 90 (8.8)	4
*	822819	•Decal, Warning Park Brake	1	33	452415	Screw, M12-1.75 x 80 (8.8)	8
*	844177	•Decal, auxillary transmission	1	34 ♦	844729	Spacer, battery hold-down	1
*	844179	•Decal, hydraulic controls	1	35	844647	Angle, hold-down	1
(17)	2700797	Panel, console, (turf)	1	36	810437	Clamp, tube (Suzuki 970)	1
*	845185	•Decal, Warning Park Brake (EC)	1	37	828382	Seal, foam	As Req'd.
*	844177	•Decal, auxillary transmission	1				
*	844177	•Decal, auxillary transmission	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated.

♦ Item No. 34 (Battery Hold-down Spacer, Part No. 844729) may not be used on all vehicles. If the battery clamp cannot be adjusted to properly secure the battery, this spacer will be required.

EXHAUST SYSTEM **SUZUKI 660 MODELS 898650, 898652 and 898659**



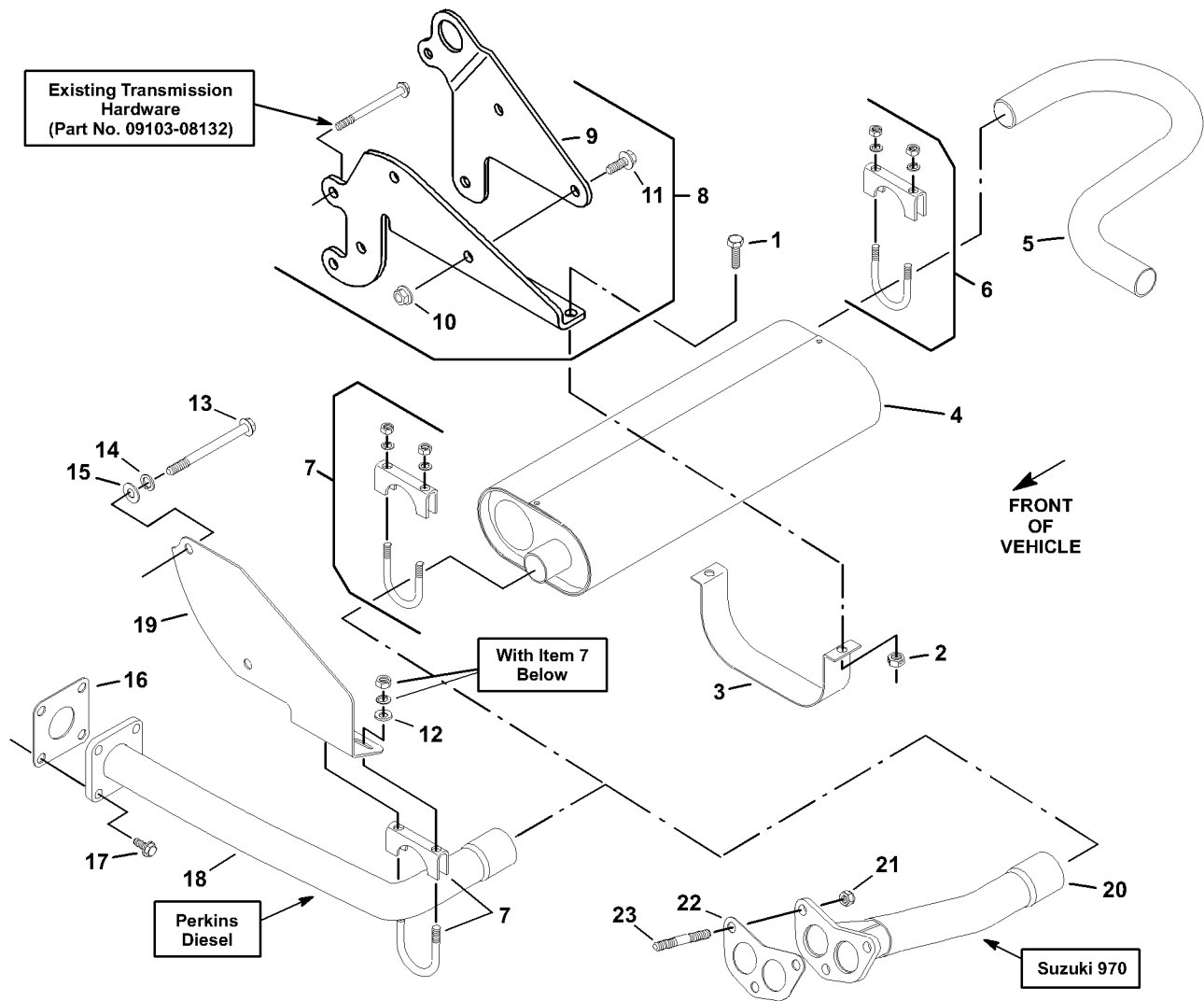
All components shown are used with both the automatic and the manual transmission unless otherwise noted in the parts list shown below.

Also refer to Engine Exhaust and Catalytic Converter, page 137.

894588, 894507, 894295, 894616

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	450193	Screw, M8-1.25 x 30	2	14	894296	Tube, exhaust inlet	1
2	450378	Locknut, M8-1.25 staytite	2	15	452401	Screw, M10-1.50 x 40 (8.8)	3
3	450454	Nut, M10-1.50 (G10.9)	5	16	839946	Bracket, muffler	1
4	452398	Screw, M10-1.50 x 20 (8.8)	2	17	843253	Adapter, manifold to muffler (manual transmission)	1
5	603620	Washer, 3/8 (manl. trans.)	2		14100-51881	Converter, catalytic (automatic transmission)	1
6	800821	Nut, M10-1.25 (manl. trans.)	2	18	14181-50F01	Gasket, exhaust	1
7	813688	Clamp, tubing (1 1/8")	1	19	14183-82050	Seal ring, muffler	1
8	833188	Tailpipe	1	20	09119-10039	Bolt, muffler flange (automatic transmission)	2
9	838295	Strap, muffler hanger	1	21	14492-82001	Spring, muffler flange (automatic transmission)	2
10	838602	Screw, M10-1.25 x 50 (8.8) (manual transmission)	2				
11	841982	Clamp, exhaust tube (1 1/2")	1				
12	843968	Support, muffler	1				
13	893381	Muffler	1				

EXHAUST SYSTEM SUZUKI 970 MODEL 898662 and PERKINS DIESEL MODELS 898663, 898664 898684 & 898685



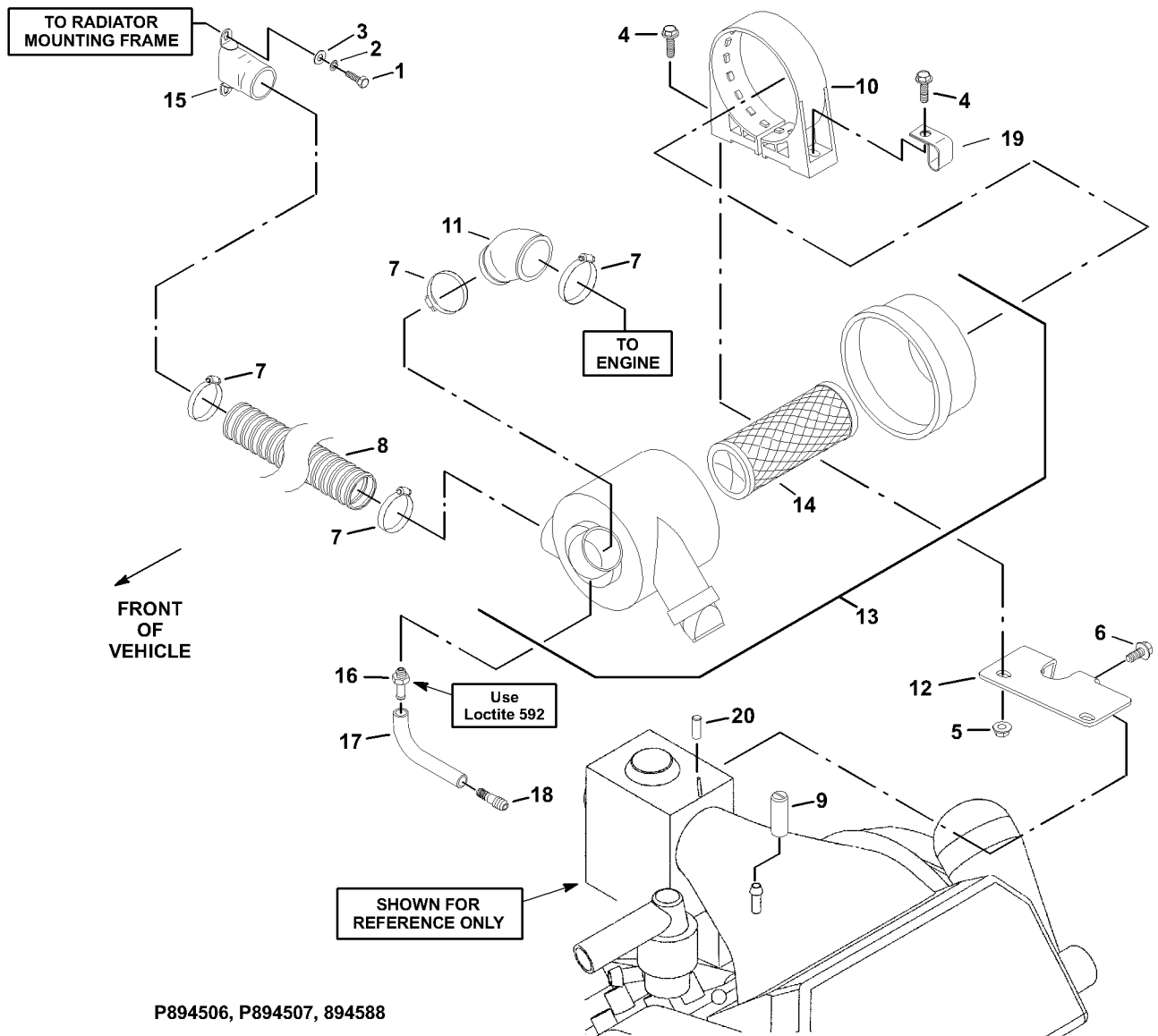
All components shown are used with both the Suzuki 970 and the Perkins diesel unless otherwise noted in the parts list shown below.

P892479, P893566, P894197, P894198

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	450193	Screw, M8-1.25 x 30	2	12	103867	Washer, 5/16	2
2	450378	Locknut, M8-1.25 staytite	2	13	548849	Screw, 3/8-16 x 4 3/4 (Perkins)	2
3	838295	Strap, muffler hanger	1	14	120177	Lockwasher, 3/8 (Perkins)	2
4	893381	Muffler	1	15	821702	Washer, 3/8 x 1" dia. (Perkins)	2
5	833188	Tailpipe	1	16	842555	Gasket, exhaust (Perkins)	1
6	813688	Clamp, tubing (1 1/8")	1	17	452389	Screw, M8-1.25 x 25 (8.8)	4
7	841982	Clamp, exhaust tube (1 1/2")	1			(Perkins)	
(7)	841982	Clamp, exhaust tube (1 1/2")	1	18	894619	Tube, exhaust (Perkins)	1
		(Suzuki 970)	1	19	844198	Cover, starter (Perkins)	1
		(Perkins Diesel)	2	20	894191	Tube, exhaust (Suzuki 970)	1
8	2700776	Kit, muffler bracket	1	21	800821	Nut, M10-1.25 (Suzuki 970)	3
9	2700214.8	•Bracket, muffler support	1	22	14181-85200	Gasket, exhaust	1
10	450453	•Nut, M8-1.25 (10.9)	3			(Suzuki 970)	1
11	450453	•Screw, M8-1.25 x 20 (8.8)	3	23	01411-10253	Stud bolt (Suzuki 970)	3

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY 59

AIR CLEANER, BRACKET and FILTER **SUZUKI 660 TURF MODELS 898650, 898652 & 898659**

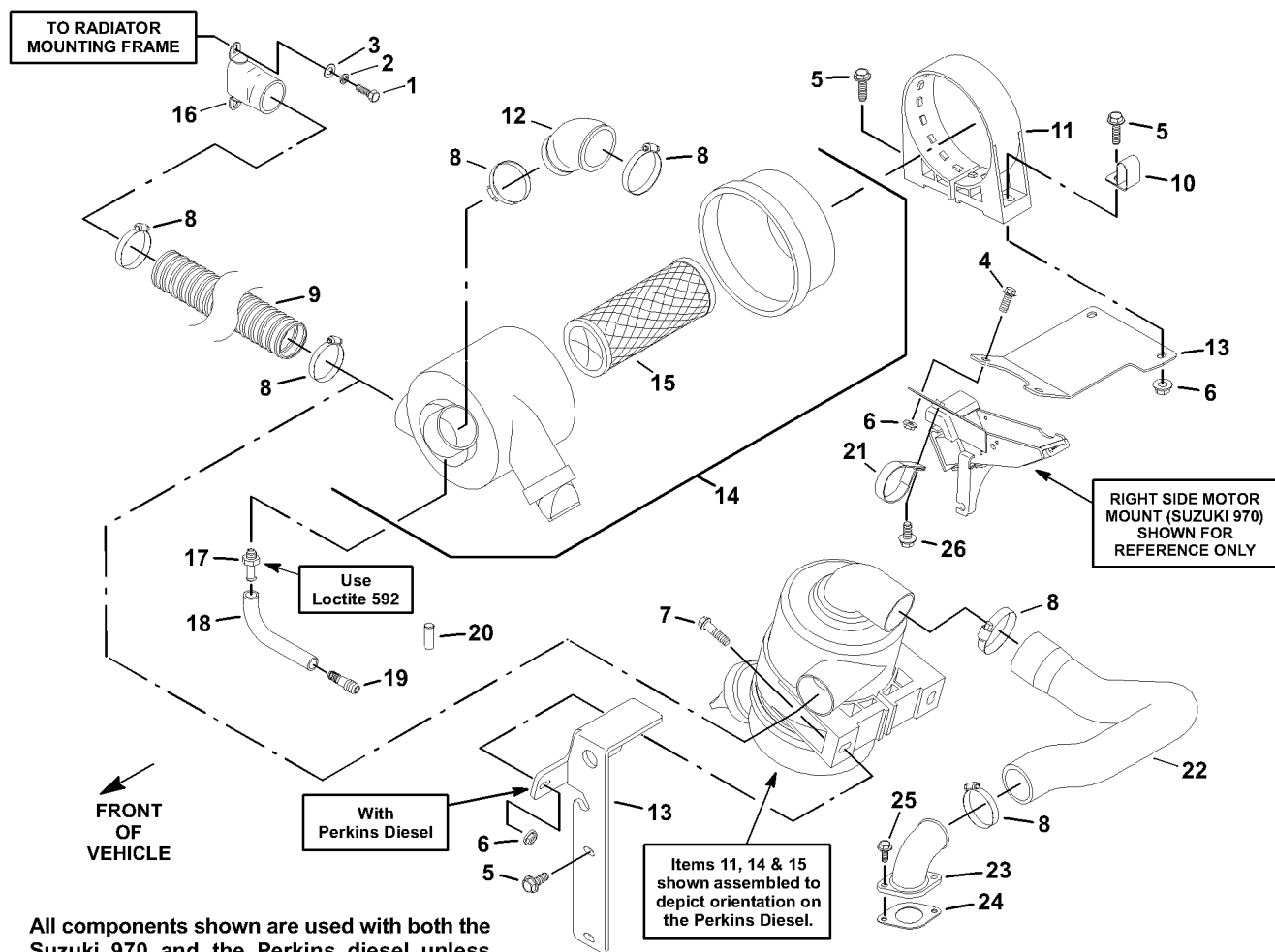


P894506, P894507, 894588

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	300646	Screw, 1/4-20 x 3/4	2	11	843666	Hose, air intake	1
2	306396	Lockwasher, 1/4	2	12	843371	Bracket, air cleaner	1
3	308090	Washer, 1/4	2	13	893182	Filter complete, air	1
4	452388	Screw, M8-1.25 x 20 (8.8)	2	14	840352	•Element, air cleaner	1
5	548911	Nut, 5/16-18	2	15	888549	Connector, hose (air cleaner)	1
6	800085	Bolt, carriage 5/16-18 x 1	2	16	841230	Connector, 3/8T x 1/8MP	1
7	825358	Clamp, worm-drive	4	17	832246	Hose, 3/8 heater	As Req'd.
8	825724	Hose, air cleaner	1	18	843831	Connector, hose 3/8 to 1/2	1
9	842998	Cap, 5/16 i.d. x 1	1	19	817320	Clamp	1
10	842915	Bracket, air filter	1	20	842997	Cap, 7/64 i.d. x 3/4	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

AIR CLEANER, BRACKET and FILTER
SUZUKI 970 MODEL 898662 and
PERKINS DIESEL MODELS, 898663, 898664, 898684 & 898685



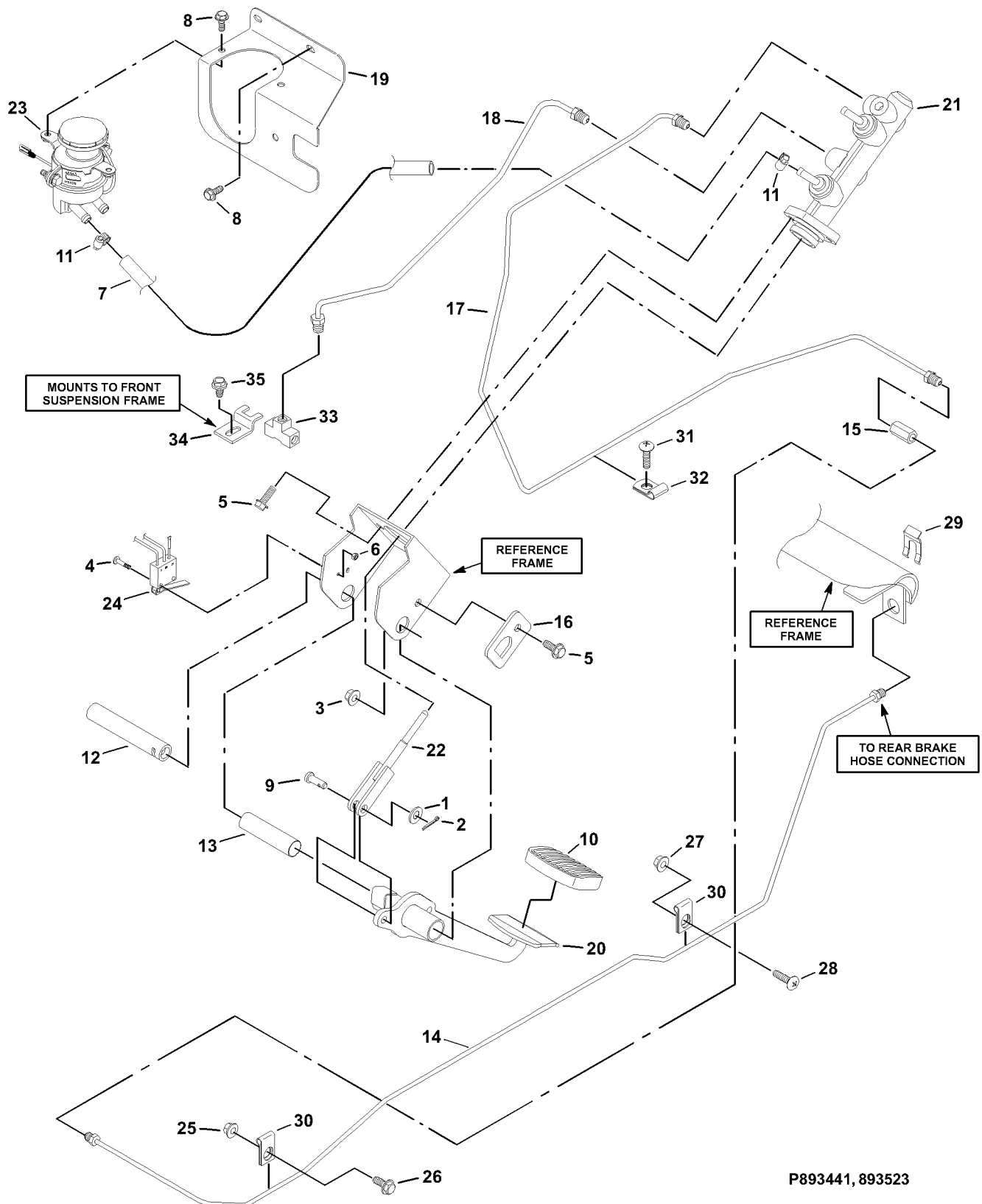
All components shown are used with both the Suzuki 970 and the Perkins diesel unless otherwise noted in the parts list shown below.

893444, 893594, 894197, 894198

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	300646	Screw, 1/4-20 x 3/4	2	(13)	844311	Bracket, air cleaner (Perkins)	1
2	306396	Lockwasher, 1/4	2	14	893182	Filter complete, air	1
3	308090	Washer, 1/4	2	15	840352	•Element, air cleaner	1
4	452388	Screw, M8-1.25 x 20 (8.8)	2	16	888549	Connector, hose (air cleaner)	1
5	452389	Screw, M8-1.25 x 25 (8.8)	2	17	841230	Connector (Suzuki 970)	1
6	450453	Nut, M8-1.25 (8.8) (Perkins)	2	18	832246	Hose, 3/8" heater (Suzuki 970)	As Req'd.
(6)	450453	Nut, M8-1.25 (8.8) (Suzuki 970)	4	19	843831	Connector, hose (Suzuki 970)	1
7	452390	Screw, M8-1.25 x 30 (8.8) (Perkins)	2	20	842997	Cap, 7/64 i.d. x 3/4 (Suzuki 970)	1
8	825358	Clamp, worm-drive	4	21	825884	Clamp, tube/wire (Suzuki 970)	1
9	825724	Hose, air cleaner	1	22	844313	Hose, intake (Perkins)	1
10	817320	Clamp	1	23	841943	Inlet, air (Perkins)	1
11	842915	Bracket, air filter	1	24	842235	Gasket, air inlet (Perkins)	1
12	843666	Hose, air intake	1	25	452378	Screw, M6-1.00 x 20 (Perkins)	1
13	843715	Bracket, air cleaner (Suzuki 970)	1	26	800934	Screw, M6-1.00 x 16 (970)	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

HYDRAULIC BRAKE LINES
4-WHEEL MODELS WITH FRONT BRAKES
TURF MODELS 898652, 898659, 898662, 898664 & 898685



HYDRAULIC BRAKE LINES
4-WHEEL MODELS WITH FRONT BRAKES
TURF MODELS 898652, 898659, 898662, 898664 & 898685

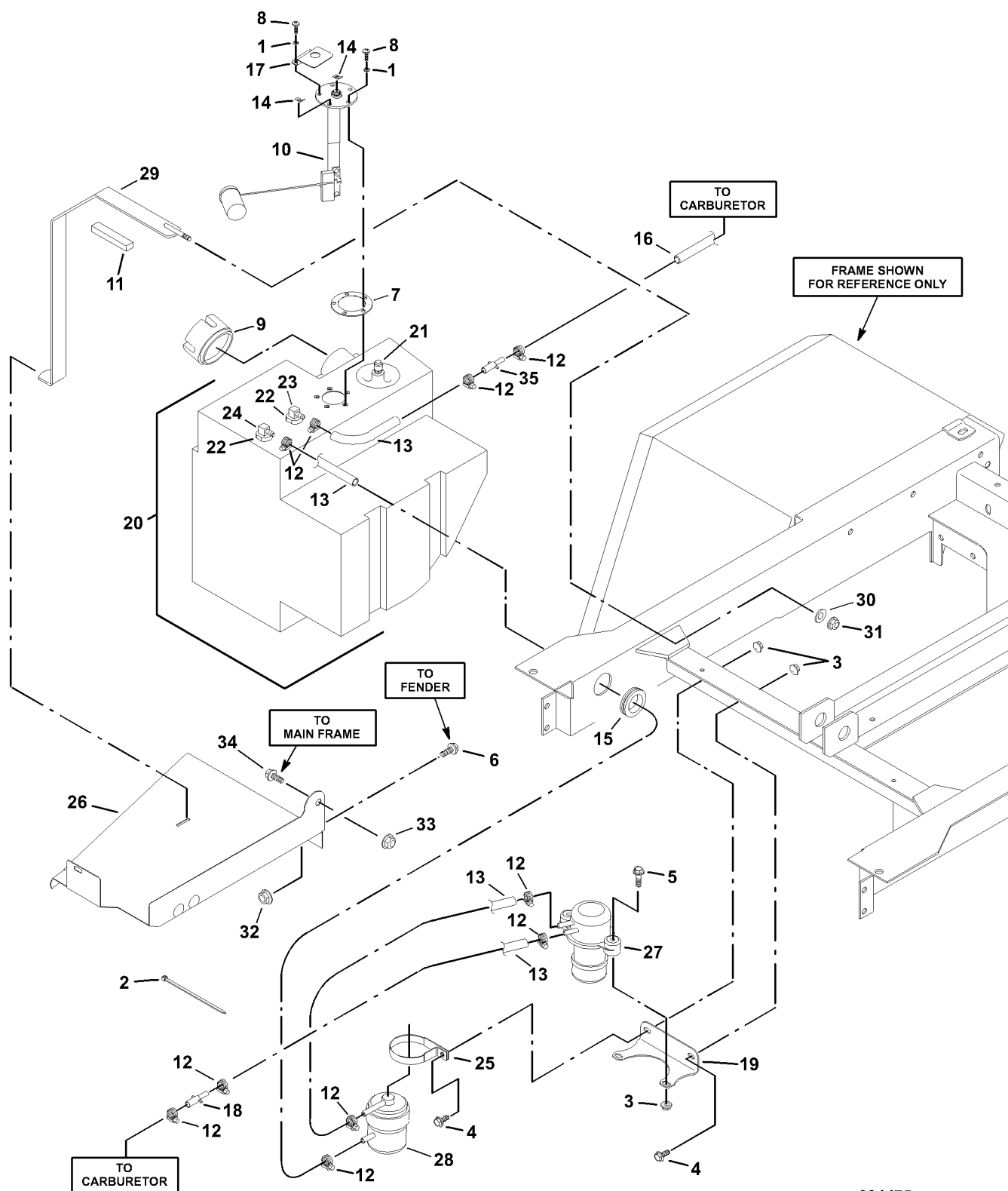
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 5/16	1	19	844167	Bracket, reservoir mounting	1
2	306328	Pin, cotter, 3/32 x 3/4	1	20	892921	Lever, brake	1
3	450453	Nut, M8-1.25 (G10.9)	1	21	895113	Cylinder, brake (dual)	1
4	450510	Screw, M3-.50 x 20 (G10.9)	2	22	894167	Rod, brake	1
5	452388	Screw, M8-1.25 x 20 (8.8)	3	23	894456	Reservoir, brake fluid	1
6	452424	Nut, M3-.50	2	24	890808	Switch, micro	1
7 ▼	845380	Hose, 5/16" brake	As Req'd.	25	450454	Nut, M10-1.50 (G10.9)	1
8	800934	Screw, M6-1.00 x 16 (8.8)	4	26	452398	Screw, M10-1.50 x 20 (8.8)	1
9	806714	Pin, clevis 5/16 x 15/16	1	27	548910	Nut, 1/4-20	1
10	810152	Cover, brake pedal	1	28	800026	Screw, 1/4-20 x 3/4	1
11	825624	Clamp, hose	4	29	809137	Clip	1
12	840725	Pin, brake pivot	1	30	810435	Clamp	2
13	840726	Bearing, brake pivot	1	31	800943	Screw, tap #10-14 x 5/8	1
14	842051	Tube, brake line rear	1	32	812445	Clamp, tube/wire	1
15	842103	Union, brake fitting (metric)	1	33	841842	Tee, M10-1.00	1
16	842935	Tab, locking	1	34	843418	Clamp, tee	1
17	843022	Tube, rear brake	1	35	452692	Screw, tap M6-1.00 x 12	1
18	843021	Tube, front brake	1				

▼ The brake hose (Part No. 845380) is serviced as a 6' (1,829 mm) length.

FUEL SYSTEM

SUZUKI 660 & 970 MODELS

898650, 898652, 898659 and 898662



894475

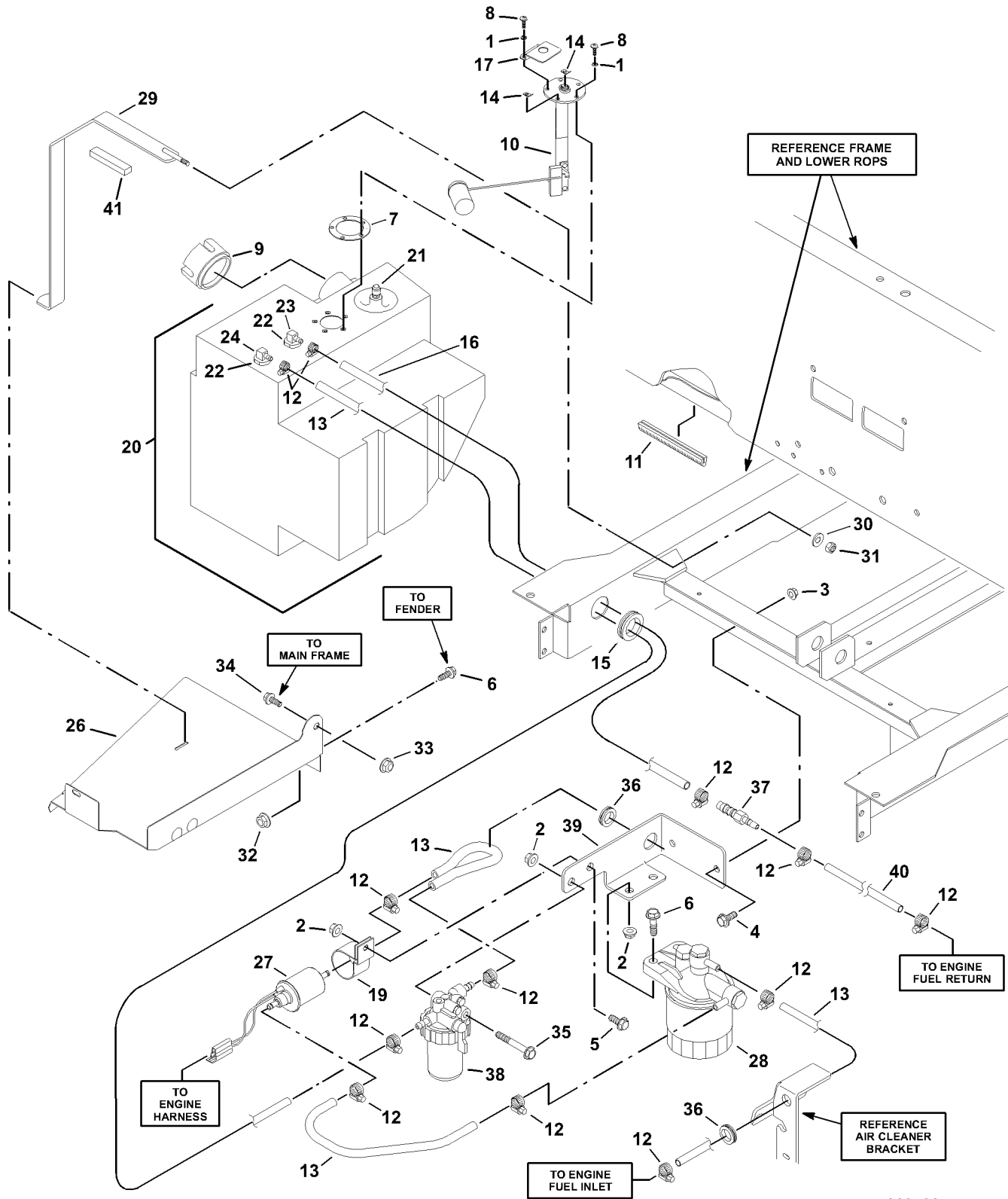
FUEL SYSTEM
SUZUKI 660 & 970 MODELS
898650, 898652, 898659 and 898662

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	120052	Lockwasher, #10	5	19	841769	Bracket, reservoir mounting	1
2	320107	Tie, cable, 7 1/2" (190.5 mm)	2	20	841969	Tank, fuel	1
3	450452	Nut, M6-1.00 (G10.9)	4	21	836852	•Breather	1
4	452378	Screw, M6-1.00 x 20	2	22	84310	•Grommet	2
5	452380	Screw, M6-1.00 x 30 (8.8)	2	23	843727	•Elbow, 90°	1
6	452398	Screw, M10-1.5 x 20 (8.8)	2	24	843726	•Tube, fuel pick-up	1
7	829954	Gasket	1	25	842800	Clamp, filter	1
8	800021	Screw, #10-32 x 1/2	5	26	893527	Support, fuel tank	1
9	843343	Cap fuel (unvented)	1	27	15100-53F03	Pump, fuel	1
10	843298	Sender, fuel	1	28	15410-50F00	Filter, fuel	1
11	833851	Seal, foam	As Req'd.	29	893555	Strap, fuel tank	1
12	825624	Clamp, hose	10	30	103867	Washer, 5/16	1
13	826590	Hose, fuel, 5/16 i.d.	As Req'd.	31	800221	Nut, crownlock, 5/16-24	1
14	829787	Terminal, 45° 1/4 male	2	32	450454	Nut, M10-1.50 (10.9)	2
15	829997	Grommet	1	33	548911	Nut, 5/16-18	1
16	830425	Hose, fuel, 1/4 i.d.	As Req'd.	34	800177	Screw, 5/16-18 x 3/4	1
17	833953	Cover, fuel sender	1	35	845189	Connector, hose	1
18	834037	Connector, hose	1				

• INDENTED PARTS NAME INDICATE THESE PARTS ARE INCLUDED WITH THE PRECEDING ASSEMBLY

FUEL SYSTEM

PERKINS DIESEL MODELS 898663, 898664, 898684 and 898685



893598

FUEL SYSTEM
PERKINS DIESEL MODELS 898663, 898664, 898684 and 898685

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	120052	Lockwasher, #10	5	22	84310	•Grommet	2
2	450453	Nut, M8-1.25 (G10.9)	4	23	843727	•Elbow, 90°	1
3	450452	Nut, M6-1.00 (G10.9)	2	24	843726	•Tube, fuel pick-up	1
4	452378	Screw, M6-1.00 x 20	2	25	842800	Clamp, filter	1
5	452389	Screw, M8-1.25 x 25 (8.8)	1	26	893527	Support, fuel tank	1
6	452390	Screw, M8-1.25 x 30 (8.8)	2	27	894638	Pump, fuel	1
7	829954	Gasket	1	28	2208175	Filter, fuel	1
8	800021	Screw, #10-32 x 1/2	5	29	893555	Strap, fuel tank	1
9	843343	Cap fuel (unvented)	1	30	103867	Washer, 5/16	1
10	843298	Sender, fuel	1	31	800697	Nut, crownlock, 5/16-18	1
11	821893	Trim, push-on	As Req'd.	32	450454	Nut, M10-1.50 (10.9)	2
12	825624	Clamp, hose	12	33	548911	Nut, 5/16-18	1
13	826590	Hose, fuel, 5/16 i.d.	As Req'd.	34	800177	Screw, 5/16-18 x 3/4	1
14	829787	Terminal, 45° 1/4 male	2	35	452394	Screw, M8-1.25 x 70 (8.8)	1
15	829997	Grommet	1	36	809231	Grommet	2
16	830425	Hose, fuel, 1/4 i.d.	As Req'd.	37	834036	Connector, hose	1
17	833953	Cover, fuel sender	1	38	130306180	Pre-filter, fuel	1
18	834037	Connector, hose	2	39	843534	Bracket, fuel filter	1
19	838154	Bracket, fuel pump mounting	1	40	831039	Hose, fuel 5/32 i.d.	As Req'd.
20	841969	Tank, fuel	1	41	833851	Seal, foam	As Req'd.
21	836852	•Breather	1				

• INDENTED PARTS NAME INDICATE THESE PARTS ARE INCLUDED WITH THE PRECEDING ASSEMBLY

Certain engine parts will need to be ordered directly from Perkins. Ref No. 38, Fuel Pre-filter, shows the Perkin's part number and is one of the parts which would be obtained from Perkin's.

When ordering from Perkin's be sure to include the Engine Model and Spec No's.

The model and specification numbers for the Perkins engine are as follows:

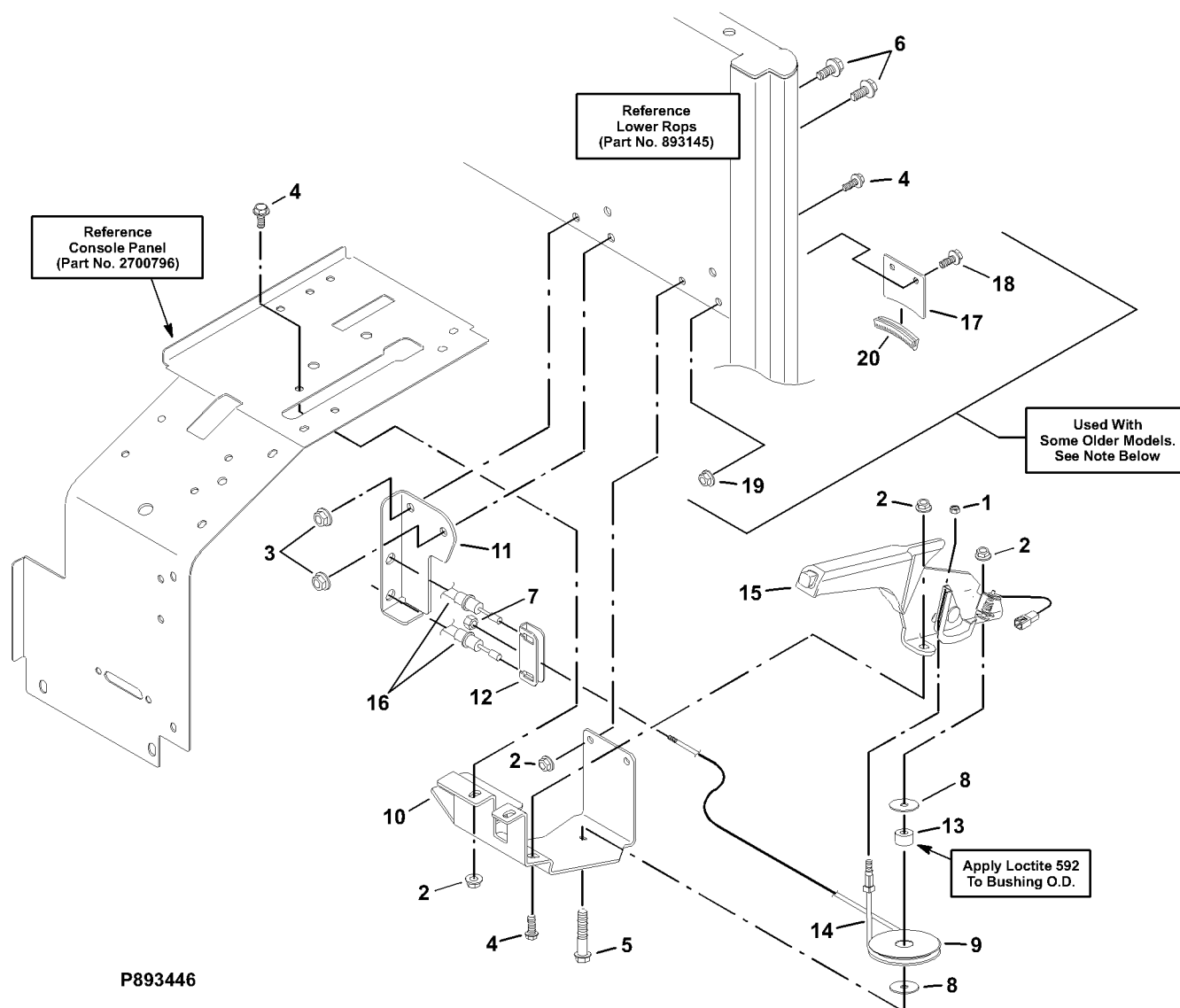
Model 103.10 - Spec. KD70377.

To locate the Perkin's Dealer nearest to you, please call: **1-888-737-5364**

The parts listed below can be ordered from the Cushman Parts Department.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	842553	Filter, oil	1	3	842235	Gasket, inlet	1
2	842555	Gasket, manifold	1	4	2208175	Filter, fuel	1

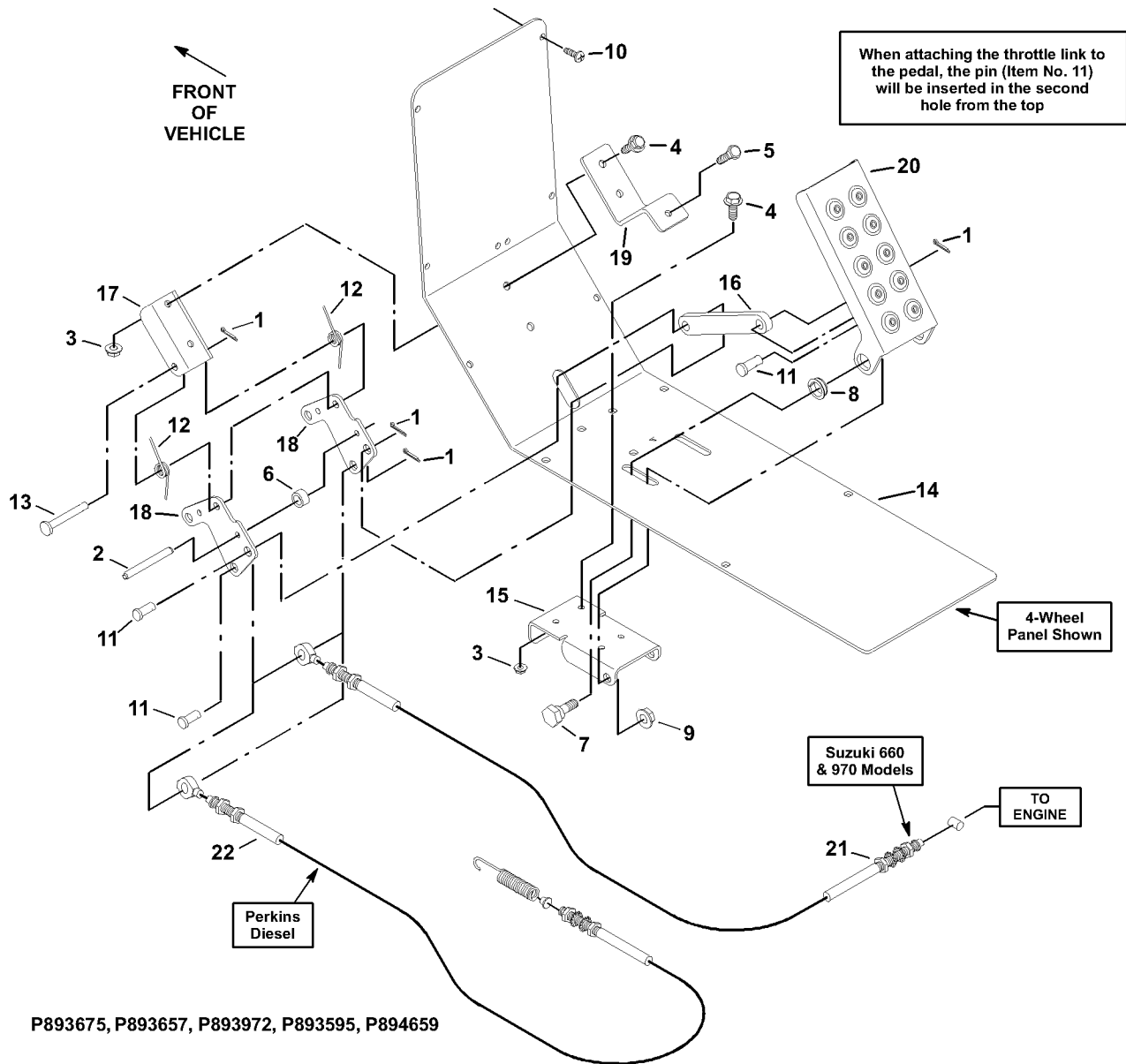
PARK BRAKE LEVER AND CABLE
TURF MODELS 898650, 898652, 898659,
898662, 898663, 898664, 898684 and 898685



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	450377	Nut, M6-1.00 staytite	1	11	843158	Bracket, park brake cable	1
2	450453	Nut, M8-1.25 (G10.9)	6	12	843356	Equalizer, park brake	1
3	450454	Nut, M10-1.50 (G10.9)	2	13	843359	Bushing, park brake	1
4	452388	Screw, M8-1.25 x 20 (8.8)	5	14	845133	Cable, park brake (brake lever) . . .	1
5	452391	Screw, M8-1.25 x 40 (8.8)	1	15	894317	Lever, park brake	1
6	452398	Screw, M10-1.50 x 20 (8.8)	2	16	893583	Cable, park brake (rear brakes) . .	2
7	800446	Locknut, 5/16-24	1	17	844454	Bracket, hose guide	1
8	809152	Washer, 5/16 x 1 3/16	2	18	800930	Screw, M8-1.25 x 16 (8.8)	2
9	827182	Pulley, 3" dia. (76 mm dia.)	1	19	450453	Nut, M8-1.25 (G10.9)	2
10	845134	Bracket, park brake lever	1	20	821893	Trim, push-on	As Req'd.

Item No. 17 (Part No. 844454) and its mounting hardware were used on some of the older vehicles. Because of the redesigned park brake bracket Ref. No. 17 is no longer needed. If a replacement part is required you have the option to reorder Item No. 17 **or** you can order the new park brake bracket Part No. 845134 (Ref. No. 10).

FOOT THROTTLE AND LINKAGE **TURF MODELS 898650, 898652, 898659, 898662,** **898663, 898684, 898664 and 898685**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	306328	Pin, cotter, 3/32 x 3/4	4	13	830784	Pin, clevis, 1/4 x 1 7/8	1
2	844224	Pin, roll 3/16 x 1 3/4"	2	14	841663	Panel, floor access (4-wheel)	1
3	450452	Nut, M6-1.00 (G10.9)	6		844445	Panel, floor access (3-wheel)	1
4	452378	Screw, M6-1.00 x 20	6	15	843360	Channel, mount	1
5	452695	Screw, M6-1.00 x 20, tap-tite	1	16	843561	Link, throttle	1
6	515268	Bushing	2	17	843562	Mount, channel	1
7	524633	Screw, shoulder 5/16-18 x 1	2	18	843563	Plate, pivot	2
8	524643	Bearing, split	2	19	843997	Bracket, stop	1
9	548911	Nut, 5/16-18	2	20	894159	Pedal, throttle	1
10	800943	Screw, tap, #10-14 x 5/8	10	21	894540	Cable, throttle (Suzuki Models)	1
11	806714	Pin, clevis, 5/16 x 3/4	3	22	894618	Cable, throttle (Perkins)	1
12	844223	Spring, torsion	2				

10 14 15 13 9 29 2 35 26 28 27 30 31 33 12 11 3 20 6 7 18 19 22 4 34 25 24 23 32 5 21 19 18 17 16 15 8 1

Also Reference Pulleys, Belts And Brackets On Pages 101, 102 & 103 (Suzuki 970 Bracket Shown)

REFERENCE FRONT CLIP

INCLUDED WITH REF. NO. 25

REFERENCE LOWER ROPS

70

**STEERING WHEEL, STEERING SHAFT, CONNECTING HOSES
POWER STEERING PUMP, AND STEERING GEAR
TURF MODELS 898652, 898659, 898662, 898664 and 898685**

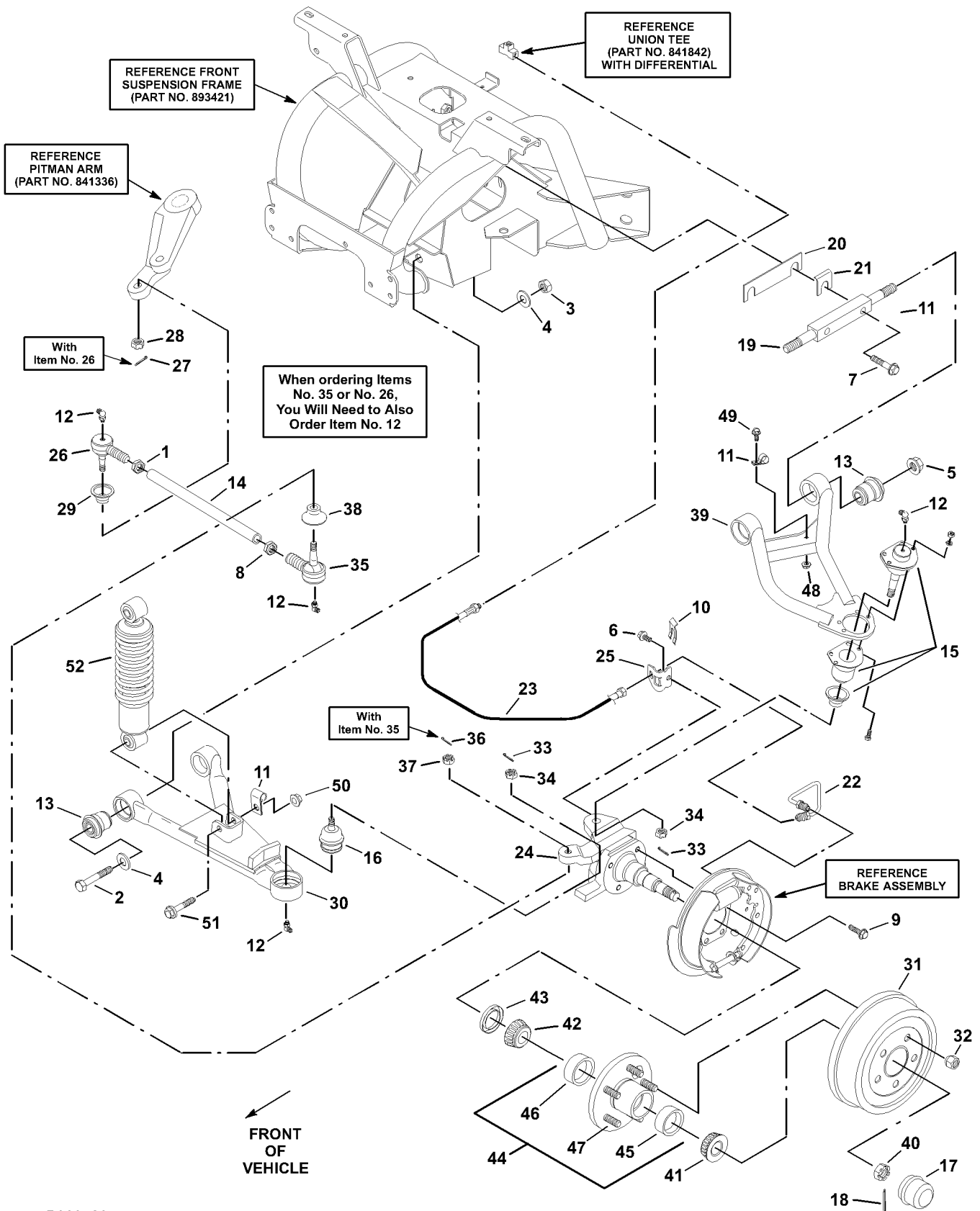
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	320107	Tie, cable, 7 1/2" (190 mm)	3	23	303269	Lockwasher, 7/16	3
2	450453	Nut, M8-1.25 (G10.9)	4	24	311392	Screw, 7/16-14 x 2	3
3	450457	Nut, M16-2.00	1	25	841336	Arm, pitman	1
4	800930	Screw, M8-1.25 x 16 (8.8)	2	26	843998	V-belt, 40" (1016 mm) Suzuki 660	1
5	450739	Screw, socket head M10-1.50 x 30 (8.8)	1	(26)	844301	V-belt, 48" (1219 mm) Perkins	1
6	2700453	Cover	1	(26)	836854	V-belt, 42" (1067 mm) Suzuki 970	1
7	819923	Collar, foam	2	27◇	892534	Pump, power steering	1
8	823549	Tie, cable, 15 1/2" (394 mm)	2	28	839907	•Pulley, steering pump	1
9	830930	Clamp	2	29	2700573	•Cap, steering pump reservoir	1
10	809092	Clamp, tube	2	30	452394	Screw, M8-1.25 x 70 (8.8)	2
11	892486	Cover, steering wheel center	1	31	452388	Screw, M8-1.25 x 20 (8.8)	4
12	839862	•Decal, steering wheel	1	32	841255	Gear, power steering	1
13	840222	Hose, 3/8 i.d. x 90° elbow	1	33▼	842988	Bracket, steering pump and alt. mounting (Suzuki 660)	1
14	843767	Hose, steering pressure	1	(33)	894362	Bracket, steering pump and alt. mounting (Suzuki 970)	1
15	111838	•O'-Ring	2	(33)	844268	Bracket, steering pump, rear (Perkins Diesel)	1
16	843768	Hose, steering return	1	also	844272	Mount, engine, right (Perkins Diesel)	1
17	111838	•O'-Ring	1	34	306799	Lockwasher, 5/16 external, shakeproof	2
18	808060	Bearing, needle	2	35	800943	Screw, tap, #10-24 x 5/8	1
19	828590	Housing, bearing	2				
20	892228	Wheel, steering (w/o horn)	1				
21	893344	Shaft, steering	1				
22	893571	Tube, steering mount	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEEDING ASSEMBLY.

◇ Service Parts for the pump are available at automotive centers. Refer to 1991-92 Buick Regal with a 3.8L V6 engine (Saginaw Pump #26025515).

▼ Also see Alternator, Engine Belts, Pulleys and Brackets, Pages 101, 102 & 103.

FRONT SUSPENSION (LEFT SIDE) and TIE RODS
4-WHEEL TURF MODELS
898652, 898659, 898662, 898664 and 898685



P893523

FRONT SUSPENSION (LEFT SIDE) and TIE RODS
4-WHEEL TURF MODELS
898652, 898659, 898662, 898664 and 898685

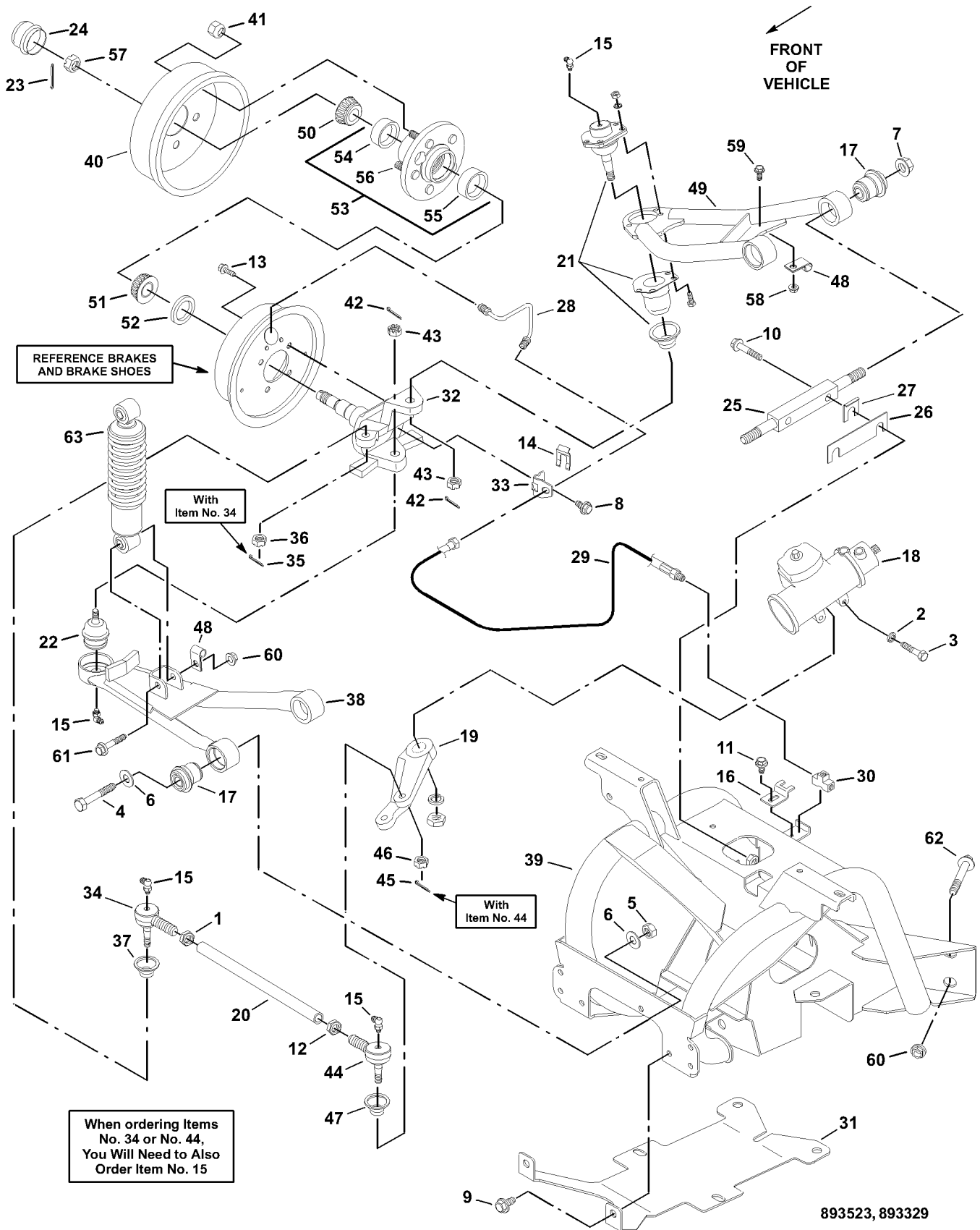
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	302944	Nut, jam, 9/16-18	1	*	548224	•Fitting, lubrication	1
2	450077	Bolt, M16-2.00 x 90	2	28	311537	Nut, castle 3/4-16	1
3	450382	Nut, M16-2.00, locking insert	2	29	816586	Retainer, grease	1
4	450393	Washer, M16	4	30	893233	Arm assembly, lower control	1
5	450457	Nut, M16-2.00, flange (G10.9)	2	31	841430	Drum, brake	1
6	452398	Screw, M10-1.5 x 20 (8.8)	1	32	800909	Nut, wheel retaining, M12-1.50	5
7	800945	Bolt, M12-1.75 x 60 (G10.9)	2	33	306328	Pin, cotter, 3/32 x 3/4	2
8	800485	Nut, 9/16-18, left-hand	1	34	306825	Nut, castle, 7/16-20	2
9	800919	Bolt, M10-1.5 x 30 (G10.9)	4	35	887750	End, tie rod (LH thread)	1
10	809137	Clip	1	36	306328	•Pin, cotter, 3/32 x 3/4	1
11	810437	Clamp	4	*	548224	•Fitting, lubrication	1
12	831405	Fitting, grease, 1/4-28 (90°)	4	37	311537	Nut, castle 3/4-16	1
13	841167	Bushing, silentbloc	4	38	816586	Retainer, grease	1
14	841404	Rod, tie	1	39	893266	Arm assembly, upper control	1
15	844148	Ball joint, upper	1	40	311537	Nut, castle 3/4-16	1
16	841429	Ball joint, lower	1	41	385174	Bearing, cone (outer)	1
17	817250	Cap, grease	1	42	815403	Bearing, cone (inner)	1
18	304636	Pin, cotter 1/8 x 1 1/8"	1	43	817928	Seal, grease	1
19	841630	Trunnion, control arm	1	44	893206	Hub assembly	1
20	841737	Shim, .060"	4	45	808088	•Cup, bearing (outer)	1
21	841738	Shim, .024"	2	46	814474	•Cup, bearing (inner)	1
22	841840	Tube, brake (left)	1	47	800908	•Screw, lug M12-1.50 x 42	5
23	841841	Hose, brake	1	48	450452	Nut, M6-1.00 (G10.9)	1
24	894573	Knuckle, steering (left)	1	49	452378	Screw, M6-1.00 x 20 (G10.9)	1
25	842104	Bracket, brake tube	1	50	450455	Nut, M12-1.75 (G10.9)	4
26	887512	End, tie rod (RH thread)	1	51	452413	Screw, M12-1.75 x 60	4
27	306328	•Pin, cotter, 3/32 x 3/4	1	52	894635	Strut ay, (shock & spring)	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated. Although this lubrication fitting is the standard fitting used with this tie rod, it is **not** used in this application. Use Ref. No. 12, Part No. 831405.

If ordering Ref. No's. 26 (887512) or 35 (887750) you will also need to order Ref. No. 12 (831405).

FRONT SUSPENSION (RIGHT SIDE) TIE RODS, and SKID PLATE
4-WHEEL TURF MODELS
898652, 898659, 898662, 898664 and 898685



FRONT SUSPENSION (RIGHT SIDE) TIE RODS, and SKID PLATE
4-WHEEL TURF MODELS
898652, 898659, 898662, 898664 and 898685

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	302944	Nut, jam, 9/16-18	1	34	887512	End, tie rod (RH thread)	1
2	303269	Lockwasher, 7/16	3	35	306328	•Pin, cotter, 3/32 x 3/4	1
3	311392	Screw, 7/16-14 x 2	3	*	548224	•Fitting, lubrication	1
4	450077	Bolt, M16-2.00 x 90	2	36	306825	Nut, castle, 7/16-20	1
5	450382	Nut, locking insert M16-2.00	2	37	816586	Retainer, grease	1
6	450393	Washer, M16	4	38	893234	Arm assembly, lower control	1
7	450457	Nut, M16-2.00, flange (G10.9) ...	2	39	893421	Frame assembly, front	1
8	452398	Screw, M10-1.5 x 20 (8.8)	1	40	841430	Drum, brake	1
9	452408	Screw, M10-1.75 x 20 (G10.9) ..	6	41	800909	Nut, wheel retaining, M12-1.50 ..	5
10	800945	Bolt, M12-1.75 x 60 (G10.9)	2	42	306328	Pin, cotter, 3/32 x 3/4	2
11	452692	Screw, M6-1.00 x 12	1	43	306825	Nut, castle, 7/16-20	2
12	800485	Nut, 9/16-18, left-hand	1	44	887750	End, tie rod (LH thread)	1
13	800919	Bolt, M10-1.5 x 30	4	45	306328	•Pin, cotter, 3/32 x 3/4	1
14	809137	Clip	1	*	548224	•Fitting, lubrication	1
15	831405	Fitting, grease 1/4-28 (90°)	4	46	306825	Nut, castle, 7/16-20	1
16	843418	Clamp, tee	1	47	816586	Retainer, grease	1
17	841167	Bushing, silentbloc	4	48	810437	Clamp	4
18	841255	Gear, power steering	1	49	893266	Arm assembly, upper control	1
19	841336	Arm, pitman	1	50	385174	Bearing, cone (outer)	1
20	841404	Rod, tie	1	51	815403	Bearing, cone (inner)	1
21	844148	Ball joint, upper	1	52	817928	Seal, grease	1
22	841429	Ball joint, lower	1	53	893206	Hub assembly	1
23	304636	Pin, cotter 1/8 x 1 1/8	1	54	808088	•Cup, bearing (outer)	1
24	817250	Cap, grease	1	55	814474	•Cup, bearing (inner)	1
25	841630	Trunnion, control arm	1	56	800908	•Screw, lug M12-1.50 x 42	5
26	841737	Shim, .060"	4	57	311537	Nut, castle 3/4-16	1
27	841738	Shim, .024"	2	58	450452	Nut, M6-1.00, flange (G10.9)	1
28	841839	Tube, brake (right)	1	59	452378	Screw, M6-1.00 x 20	1
29	841841	Hose, brake	1	60	450455	Nut, M12-1.75 (G10.9)	12
30	841842	Tee, union, M10-1.00 flare	1	61	452413	Screw, M12-1.75 x 60	4
31	842033	Plate, skid	1	62	452415	Screw, M12-1.75 x 80 (8.8)	8
32	894574	Knuckle, steering (right)	1	63	894635	Strut ay. (shock & spring)	2
33	842104	Bracket, brake tube	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated. Although this lubrication fitting is the standard fitting used with this tie rod, it is **not** used in this application. Use Ref. No. 15, Part No. 831405.

If ordering Ref. No's. 34 (887512) or 44 (887750) you will also need to order Ref. No. 15 (831405).

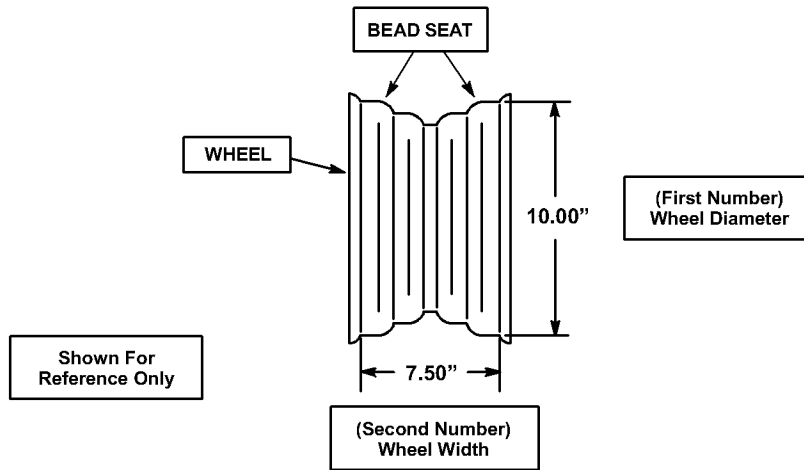
WHEEL SIZE MEASUREMENT

Wheel size is determined by measuring the wheel at the bead seat.

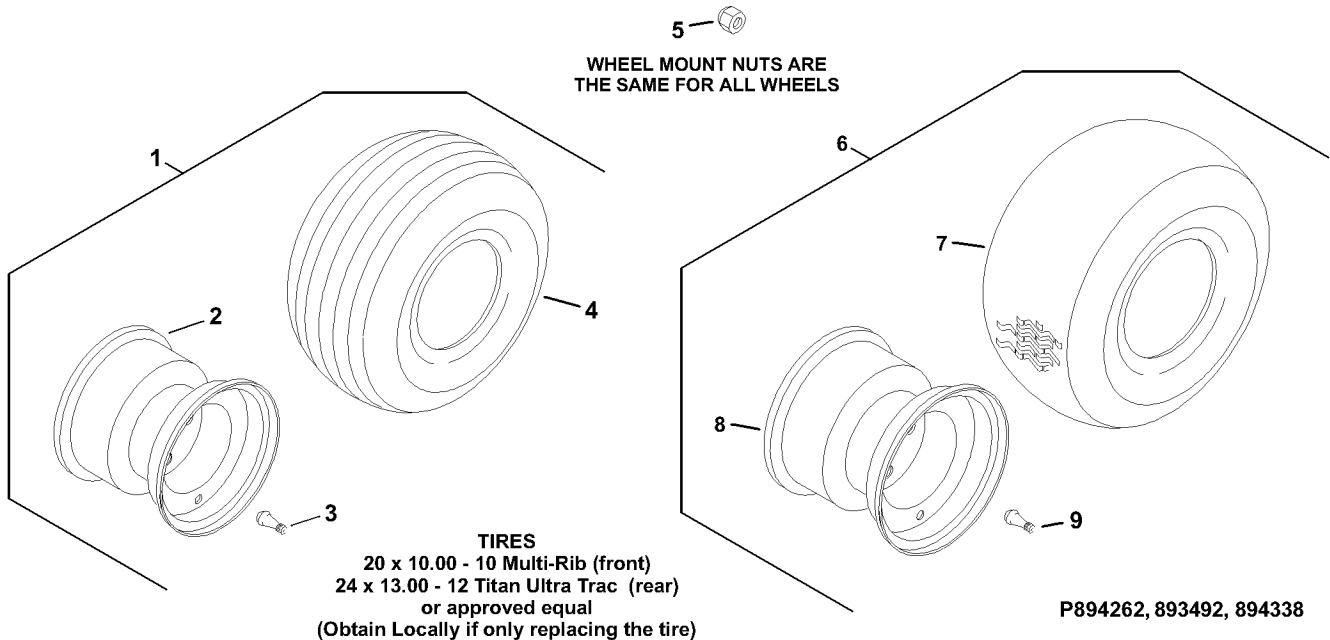
The **first number** is the **wheel diameter** measured at the bead seat.

The **second number** is the **wheel width** measured at the bead seat.

The illustration below shows an **example** of how to measure the wheel to determine tire size.



FRONT and REAR TIRES FOR TURF MODELS

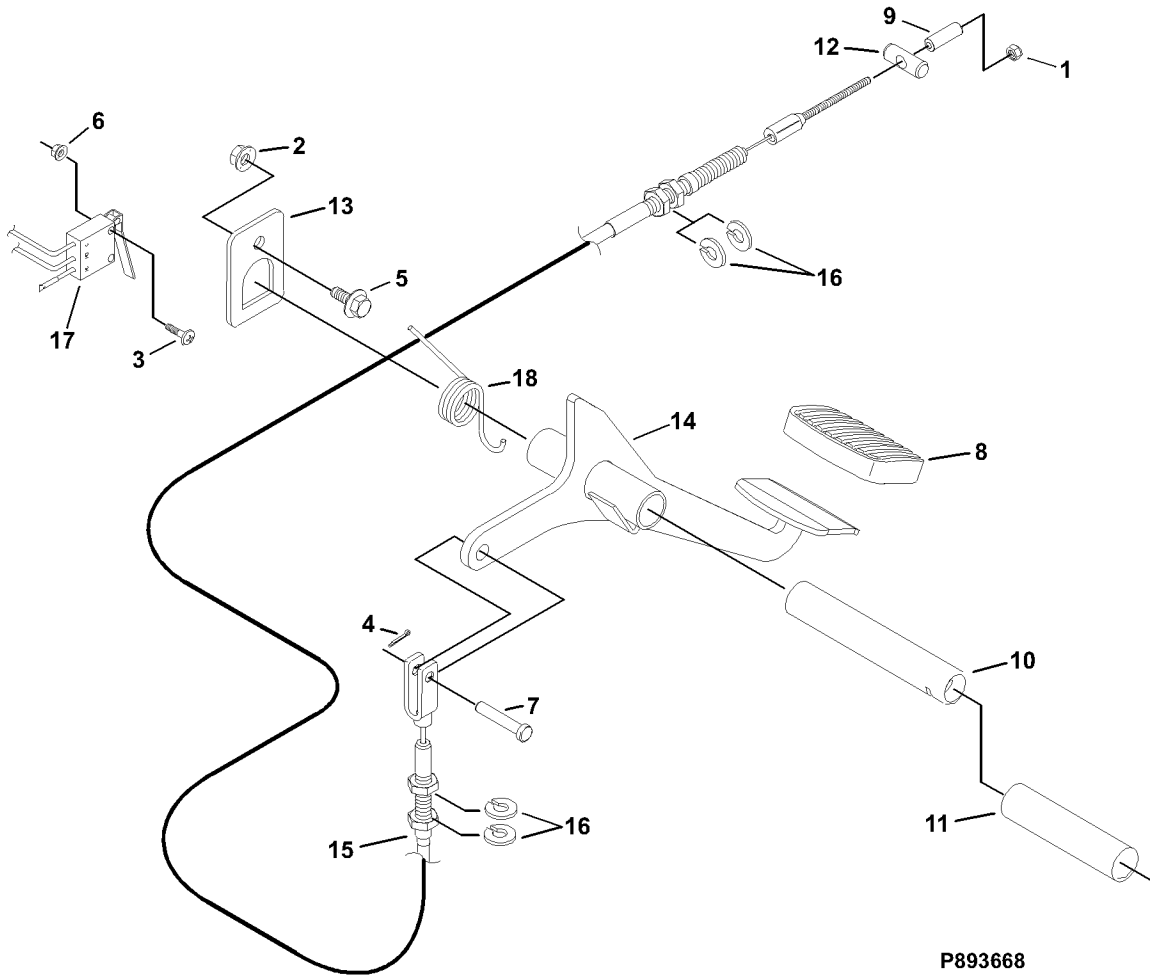


Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	894763	Tire and wheel (front) 4-wheel . . .	2	6	894762	Tire and wheel (rear)	
		Tire and wheel (front) 3-wheel . . .	1			3 and 4 wheel models	2
2	841433	•Wheel, 10.00 x 7.50, five bolt . .	1	7	◇◇	•Tire, 24 x 13.00 - 12, Titan ultra trac or approved equal (rear)	1
3	886735	•Stem, valve	1	8	841434	•Wheel, 12.00 x 10.50	1
4	◇◇	•Tire, 20 x 10.00 - 10, multi-rib . .	1	9	886735	•Stem, valve	1
5	800909	Nut, wheel mount	20				
	800909	Nut, wheel mount (3-wheel)	15				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN PRECEDING ASSEMBLY

◇◇ Obtain locally

CLUTCH LINKAGE
TURF MODELS 898650, 898652,
898662, 898663, 898664, 898684 and 898685



P893668

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	450377	Nut, M6-1.00, staytite	1	10	840725	Pin, brake pivot	1
2	450453	Nut, M8-1.25 (G10.9)	1	11	840726	Bearing, brake pivot	1
3	450510	Screw, M3-.50 x 20	2	12	842010	Bushing, clutch arm	1
4	306328	Pin, cotter, 3/32 x 3/4	1	13	842935	Tab, locking	1
5	452388	Screw, M8-1.25 x 20 (8.8)	1	14	892933	Lever, clutch	1
6	452424	Nut, flange M3-.50	2	15	894299	Cable, clutch	1
7	806714	Pin, clevis, 5/16 x 15/16	1	16	844202	Washer, slotted	4
8	810152	Cover, pedal	1	17	890808	Switch, clutch interlock	1
9	833273	Bushing	1	18	844611	Spring, torsion	1

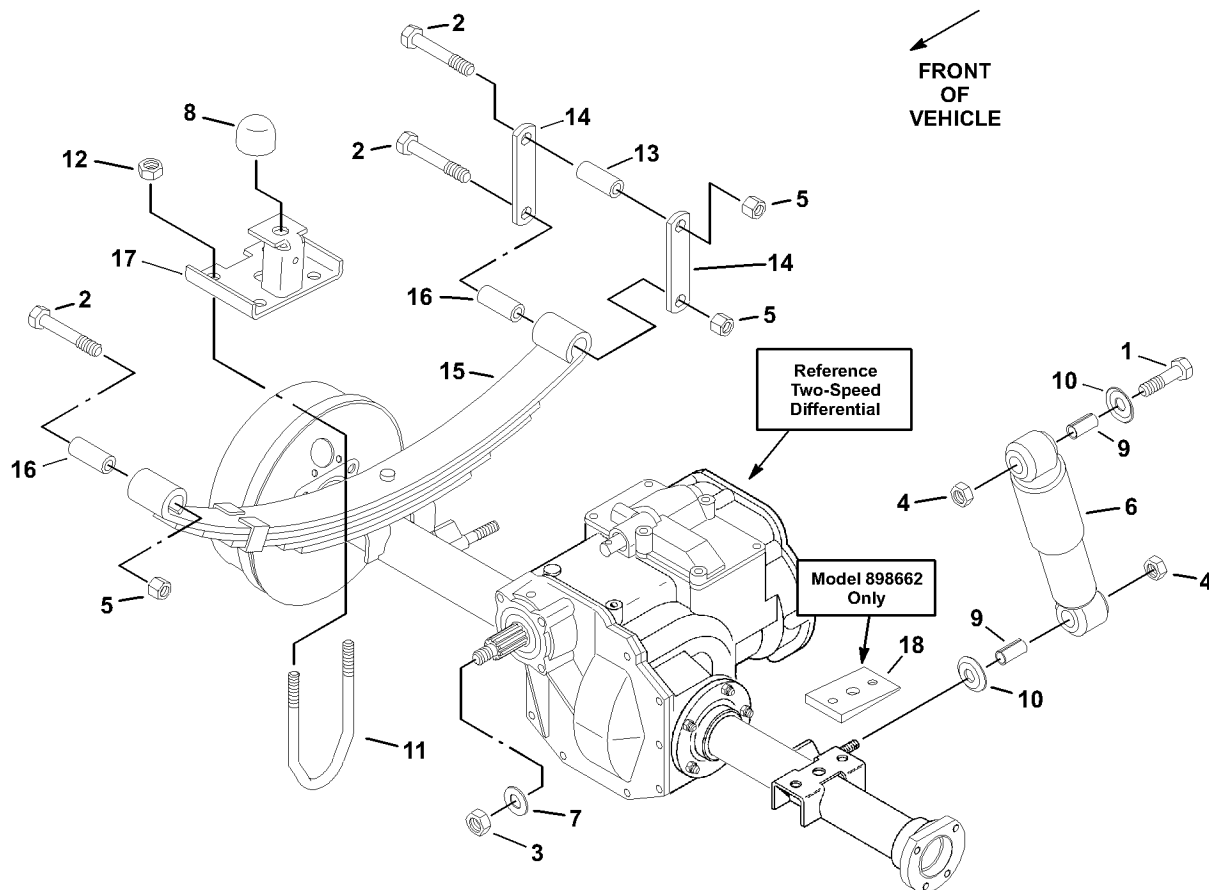
This technical diagram illustrates the exploded view of a mechanical assembly, likely a vehicle's rear suspension or steering component. The parts are numbered 1 through 29. The main components include a large metal housing (5) with a central rectangular opening, a multi-layered disc or plate (7), and a complex bracket (6). A cylindrical component (8) is shown attached to the housing. The assembly is mounted onto a frame (9) using various bolts (2, 4, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29), washers (1, 3), and a cotter pin (19). A cable or hose (25) is connected to a bracket (25) and a bolt (17). The diagram uses dashed lines to show the alignment and assembly sequence of the parts.

**SHIFTER and SHIFTER LINKAGE
TURF MODELS 898650, 898652,
898662, 898663, 898664, 898684 and 898685**

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	308090	Washer, 1/4	5	16	452400	•Screw, M10-1.50 x 30 (8.8)	1
2	452695	Screw, M6-1.00 x 20, taptite	6	17	452695	•Screw, M6-1.00 x 20, taptite	6
3	548175	Washer, 1/4 x 1.25	3	18	548008	•Screw, 1/2-20 x 1	1
4	800582	Screw, 1/4-20 x 3/4	4	19	842773	•Rod end, 1/2" (female)	1
5	841265	Panel, dash (right hand)	1	20	842774	•Ball joint, 1/4"	2
6	843792	Plate, shifter boot	1	21	843614	•Spring, torsion	1
7	28135-85503-5PK	Boot, shifter	1	22	843679	•Plate, wear	1
8	28113-70B01-5PK	Knob, shifter	1	23	843685	•Bushing, spring	1
9	893966	Shifter, complete	1	24	843686	•Tab, locating	1
10	300977	•Screw, 1/4-28 x 5/8	1	25	843724	•Clamp, cable	2
11	306396	•Lockwasher, 1/4	1	26	893967	•Selector, complete	1
12	306397	•Nut, 1/4-28	1	27	893968	•Mount, shifter	1
13	308090	•Washer, 1/4	1	28	894179	•Cable, shifter	2
14	308091	•Washer, 1/2	1	29	894743	Nut assembly, double (1/4-20)	1
15	450454	•Nut, M10-1.50 (G10.9)	1				

- INDENTED PARTS NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

**REAR SPRING, SHACKLES, U-BOLTS
and REAR SHOCK ABSORBERS
TURF MODELS**
898650, 898652, 898659, 898662, 898663, 898664, 898684 & 898685

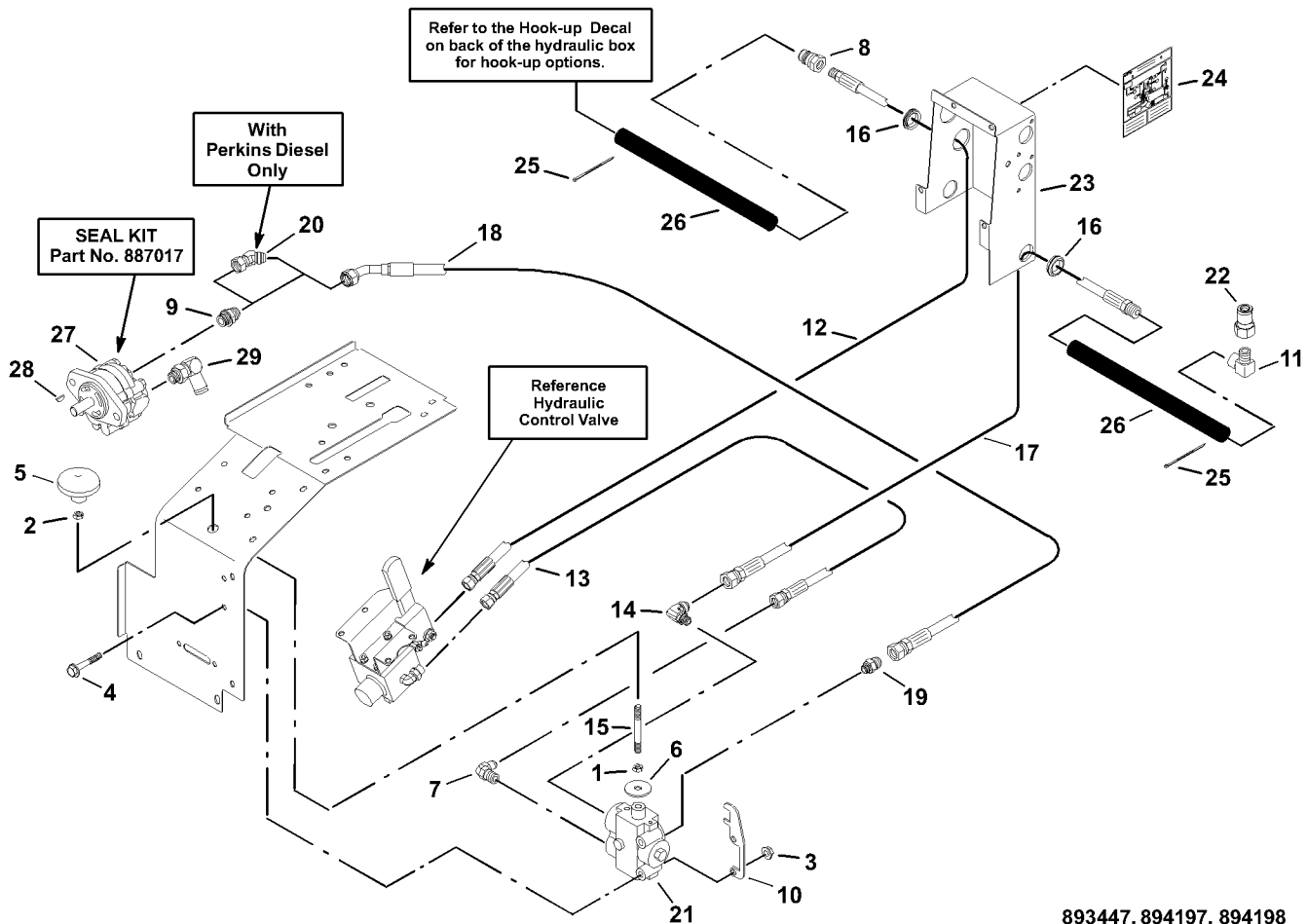


P894510, P893435, P2701117

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	311396	Screw, 7/16-14 x 2 1/4	2	10	825500	Washer, 3/8	4
2	311398	Screw, 1/2-13 x 3 1/2	6	11	887187	U-bolt, 2"	4
3	800198	Nut, 1/2-20 crownlock	1	12	548061	•Nut, 7/16-20 unitorg	2
4	800294	Nut, 7/16-14 crownlock	4	13	843238	Bushing, nylatron	2
5	800602	Nut, 1/2-13	6	14	843876	Shackle, rear spring	4
6	807332	Shock absorber	2	15	893355	Spring, leaf	2
7	809180	Washer, 7/16	1	16	843238	•Bushing, nylatron	2
8	813850	Bumper, rubber	2	17	893613	Upstop	2
9	823621	Bushing	4	18	838409	Spacer, leaf spring (970 only)	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEEDING ASSEMBLY.

HYDRAULIC CONTROL VALVE SYSTEM



893447, 894197, 894198

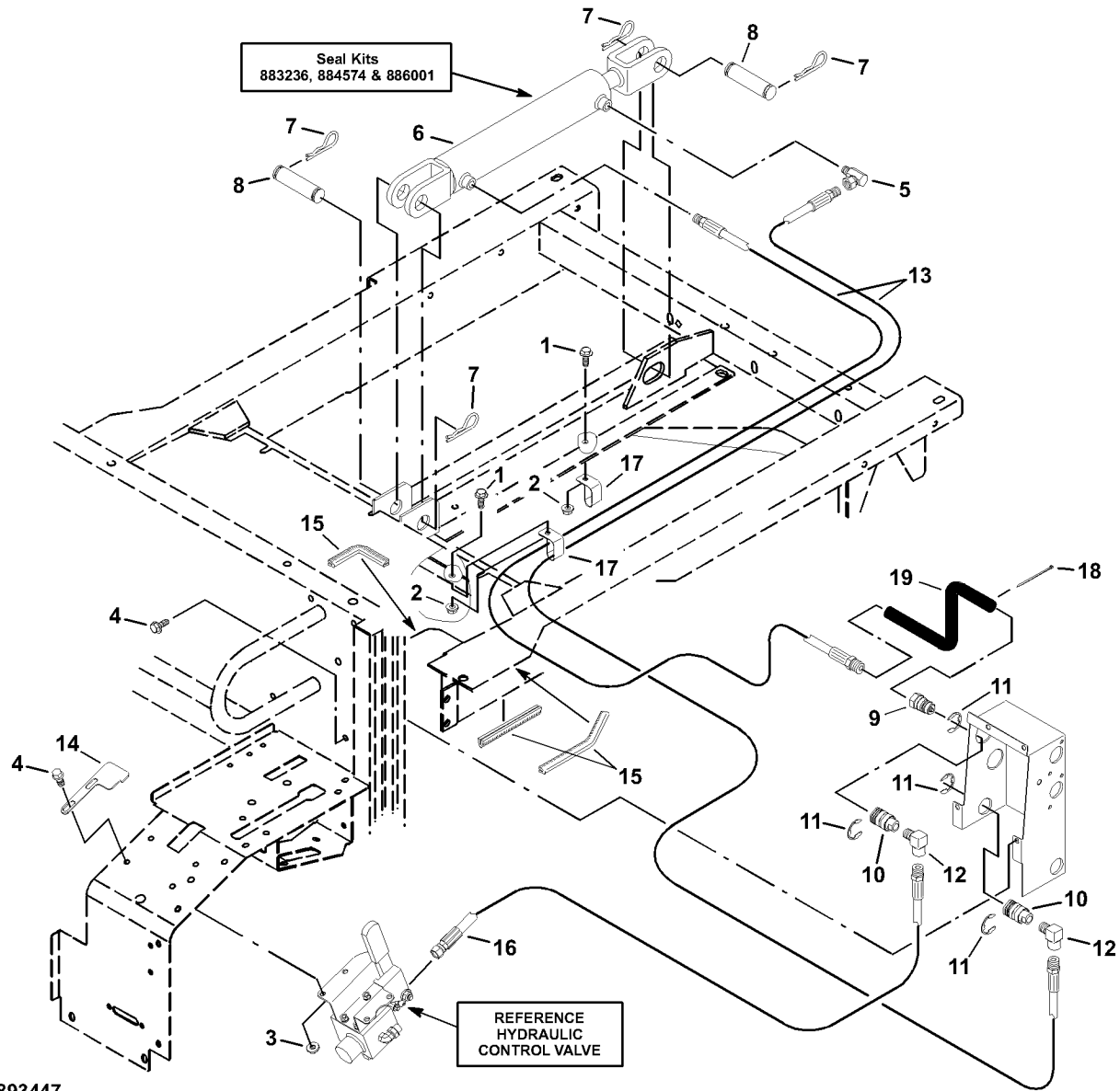
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	304632	Nut, jam 3/8-16	1	17	844600	Hose, hydraulic 1/2 x 39"	1
2	306388	Nut, jam 3/8-24	1	18	844628	Hose, hydraulic 3/8 x 18"	1
3	450453	Nut, M8-1.25 (G10.9)	2	19	844652	Adapter, straight	1
4	452392	Screw, M8-1.25 x 50 (8.8)	2	20	844517	Fitting, 45° swivel (Perkins only)	1
5	548171	Knob	1	21	894696	Valve, hydraulic selector	1
6	822419	Washer, flat (1.62 dia.)	1	22	894702	Nipple, hydraulic, dry seal	1
7	826558	Elbow, 90° w/o-ring	1	23	2700800	Cover, hydraulics w/decal	1
8	832408	Coupler, half (male)	1	24	837270	•Decal, hydraulic connections	1
9♦	844566	Fitting, hydraulic	1	(23)	2700801	Cover, hydraulics w/decal (EC)	1
10	832798	Plate, stop	1	*	840857	•Decal, remote hydraulics (EC)	1
11	835101	Fitting, hydraulic 90°	1	25	320107	Tie cable 7 1/2" (190 mm)	2
12	841892	Hose, hydraulic 1/4 x 42"	1	26	840877	Sleeve, nylon	2
13	844019	Hose, hydraulic 3/8 x 17"	2	27♦	888042	Pump, hydraulic	1
14	844571	Adapter, 90° elbow	1	28	306560	•Key, woodruff #5	1
15	844582	Rod, handle extension	1	*	887017	Kit, seal, hydraulic pump	1
16	844584	Bushing, flip-lok	2	29♦	844583	Fitting, 90° adapter	1

♦ INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated.

♦ Although Ref. No. 27 (hydraulic pump, Part No. 888042) is shipped with two hydraulic fittings, these fittings **are not** used in this application. When ordering Ref. No. 27 you will also need to order hydraulic fittings Ref. No's 9 & 29. These fittings are the correct fittings to use in this application.

HYDRAULIC LIFT SYSTEM



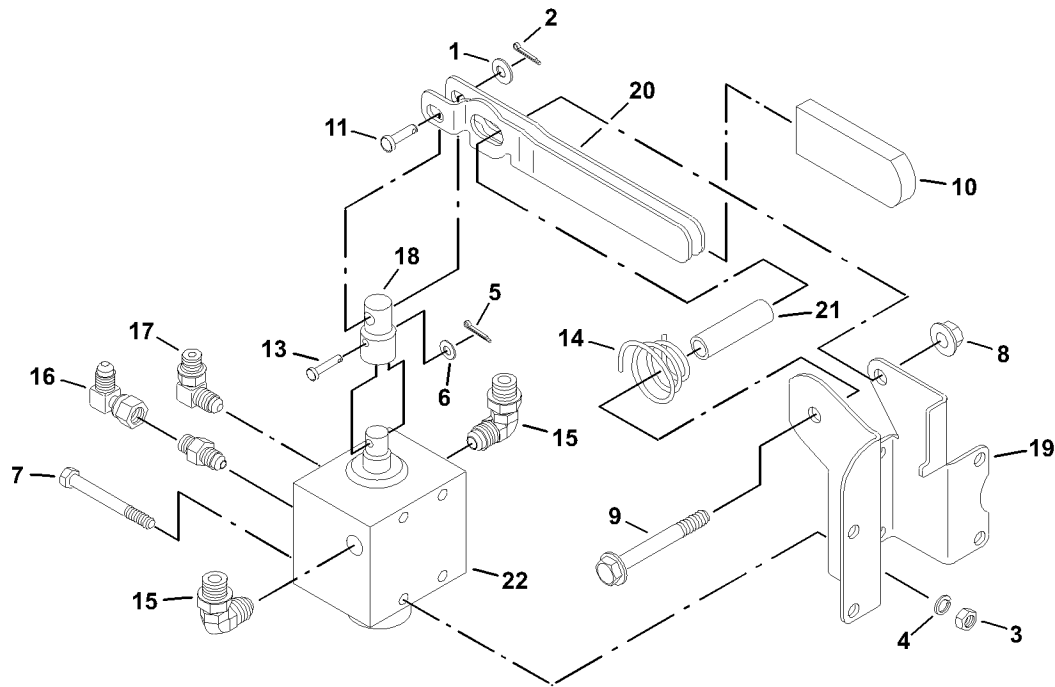
893447

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	452378	Screw, M6-1.00 x 20	2	9	832408	Coupler half, male	1
2	450452	Nut, M6-1.00 (G10.9)	2	10	832409	Coupler half, female	2
3	450453	Nut, M8-1.25 (G10.9)	4	11	832414	Ring, retaining	4
4	800930	Screw, M8-1.25 x 16 (8.8)	8	12	835101	Fitting, hydraulic 90°	2
5	823119	Adapter, 90°	1	13	832900	Hose, hydraulic, 1/4 x 38"	2
6	882993	Cylinder, lift	1	14	844051	Plate, float latch	1
7	809265	•Pin, hair	4	15	821893	Trim, push-on	As Req'd.
8	830810	•Pin, clevis	2	16	844598	Hose, hydraulic, 1/4 x 30"	1
*	883236	•Kit, seal	1	17	817320	Clamp, hose	2
*	884574	•Kit, seal	1	18	320107	Tie, cable 7 1/2" (190 mm)	2
*	886001	•Kit, seal	1	19	840877	Sleeve, nylon	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated.

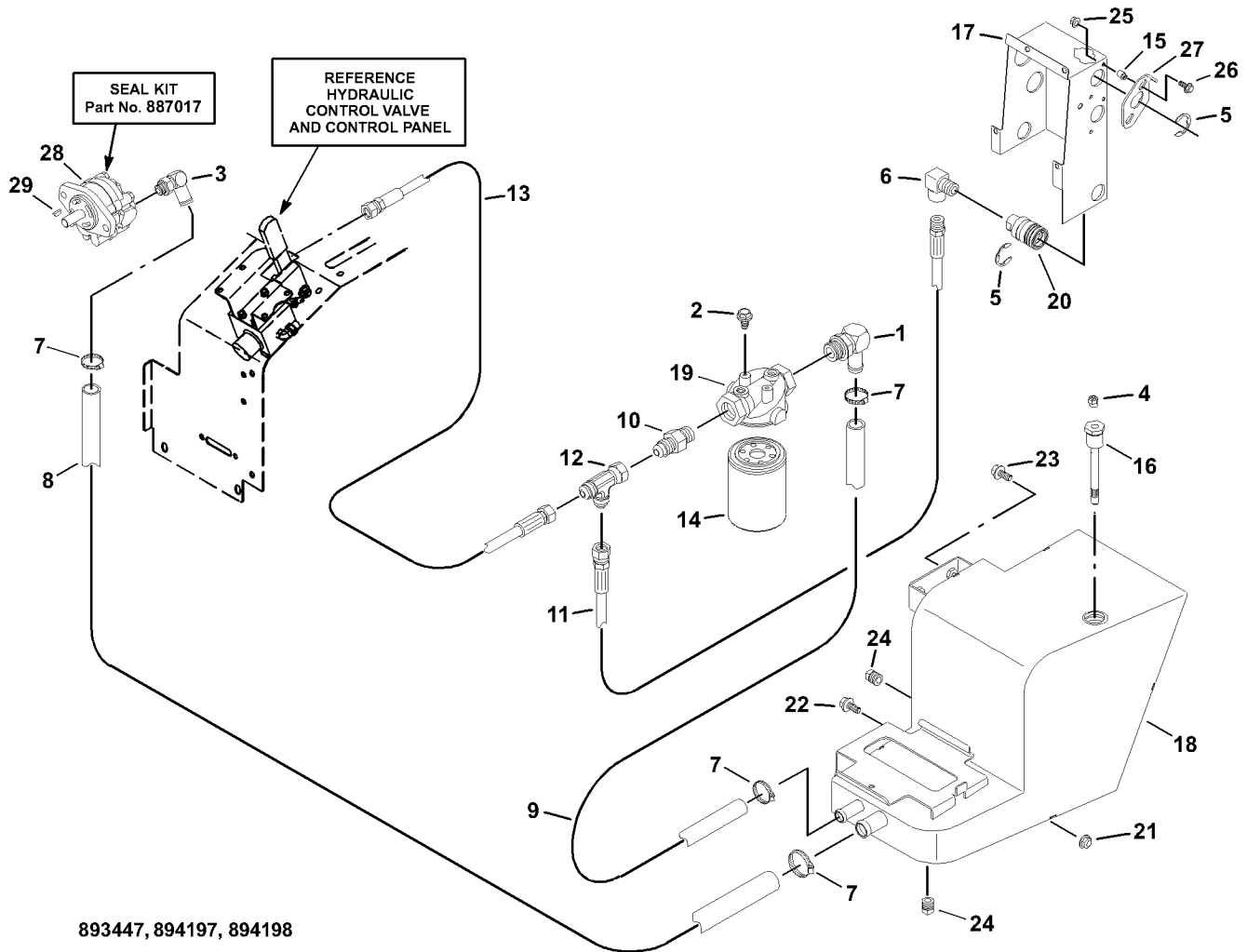
HYDRAULIC CONTROL VALVE



894233

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 5/16	1	12	823118	Fitting, hydraulic straight	1
2	306328	Pin, cotter 3/32 x 3/4	1	13	823225	Pin, clevis 3/16 x 1	1
3	306375	Nut, 1/4-20	4	14	825538	Spring, compression	1
4	306396	Lockwasher, 1/4	4	15	844454	Elbow, 90° w/o-ring	2
5	306463	Pin, cotter 1/16 x 1/2	1	16	828056	Fitting	1
6	308089	Washer, #10	1	17	828057	Fitting	1
7	316907	Screw, 1/4-20 x 2 3/4	4	18	839213	Connector, valve	1
8	450454	Nut, M10-1.50 (G10.9)	1	19	843355	Mount, control valve	1
9	452404	Screw, M10-1.50 x 70 (8.8)	1	20	843758	Handle, control valve	1
10	521144	Cover, handle	1	21	843759	Bushing, control valve	1
11	814079	Pin, clevis 5/16 x 1 1/8	1	22	886270	Valve, hydraulic	1

HYDRAULIC FILTER AND RESERVOIR

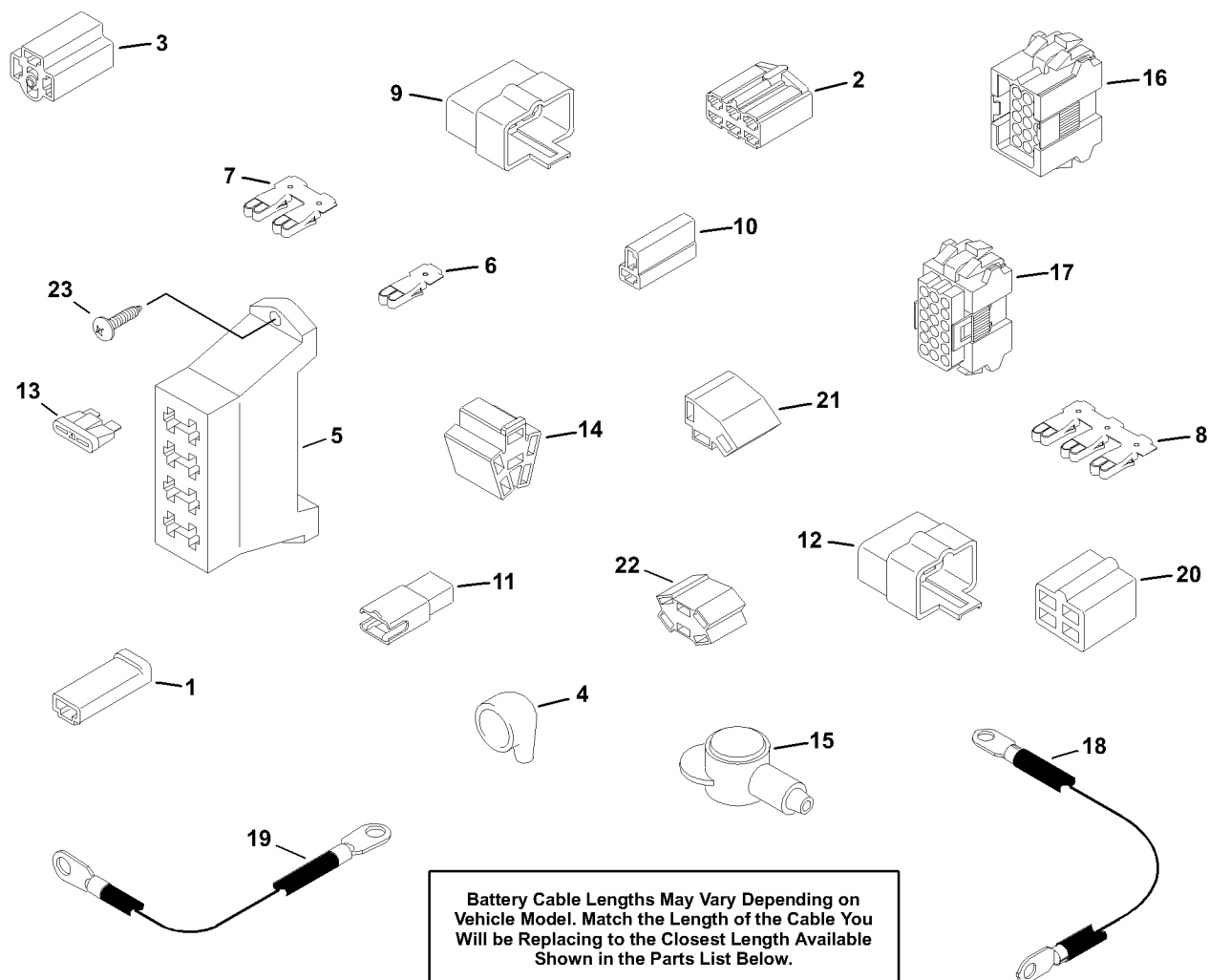


Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	523768	Adapter, 90° elbow	1	17	2700800	Cover, hydraulics w/decal	1
2	548827	Screw, 1/4-20 x 1/2	2	*	837270	•Decal, hydraulic connections	1
3	844583	Fitting, 90° adapter	1	(17)	2700801	Cover, hydraulics w/decal	1
4	827486	Valve, pressure relief	1	*	840857	•Decal, hydraulic connections	1
5	832414	Ring, retaining	2	18	894675	Tank, hydraulic	1
6	835101	Fitting, hydraulic 90°	1	19	894691	Head, filter	1
7	836206	Clamp, hose	4	20	894701	Coupler, hydraulic dryseal	1
8	844564	Hose, hydraulic, 1" x 26"	1	21	450453	Nut, M8-1.25 (G10.9)	2
9	844565	Hose, hydraulic, 3/4" x 16"	1	22	452388	Screw, M8-1.25 x 20 (G8.8)	2
10	844590	Adapter, straight	1	23	452399	Screw, M10-1.50 x 25 (8.8)	2
11	844600	Hose, hydraulic, 1/2" x 39"	1	24	800113	Plug	2
12	844627	Fitting, swivel tee	1	25	450452	Nut, M6-1.00 (10.9)	2
13	844630	Hose, hydraulic, 3/8 x 21"	1	26	452381	Screw, M6-1.00 x 40 (8.8)	2
14	885249	Element, filter	1	27	844937	Plate, coupler retainer	1
15	844973	Bushing	1	28	888042	Pump, hydraulic	1
16	893539	Dipstick, hydraulic tank	1	29	306560	•Key, woodruff #5	1
				*	887017	Kit, seal, hydraulic pump	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

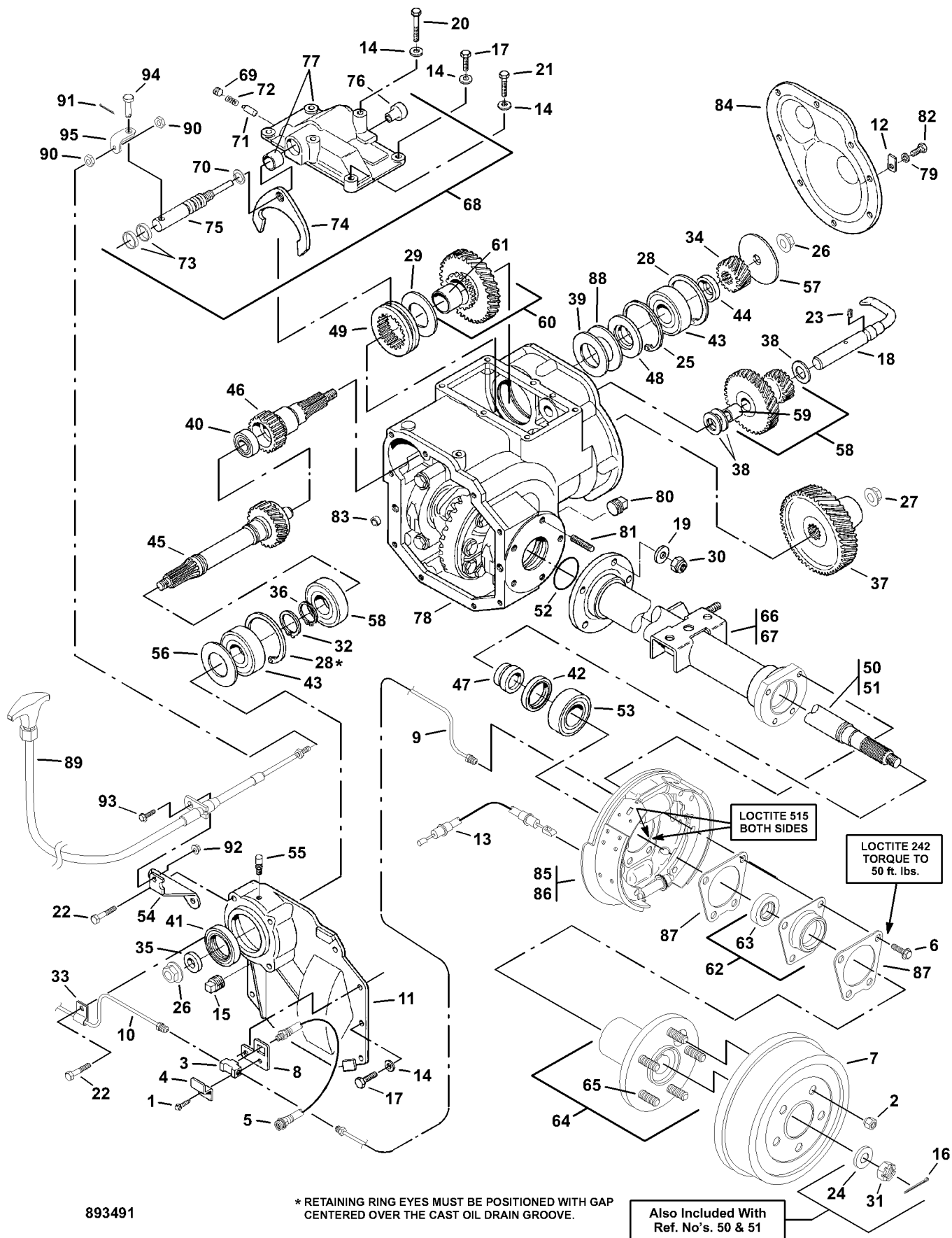
* Not Illustrated.

ELECTRICAL CONNECTORS



Ref. No.	Part No.	Description	No. Req'd.	Ref. No.	Part No.	Description	No. Req'd.
1	825880	Connector, female	As Req'd	15	841895	Cover, battery terminal	1
2	825877	Connector, female, 6-contact . . .	1	16	844013	Connector, 18-contact	1
3	825894	Connector, female, 3-contact . . .	1	17	843550	Connector, receptacle, 18-contact .	1
4	825970	Boot, terminal (solenoid)	2	18	894596	Cable, battery, red, 30" (762 mm)	1
(4)	825970	Boot, terminal (alternator)	3	(18)	894594	Cable, battery, red, 46" (1168 mm)	1
(4)	844328	Boot, terminal (alternator)	1	(18)	894603	Cable, battery, red, 17" (432 mm)	1
5	825996	Fuseholder	1	19	894602	Cable, battery, black, 32" (813 mm)	As Req'd.
6	825997	Terminal, fuse clip, 1-way 1 lead . .	4	(19)	892811	Cable, battery, black, 24" (607 mm)	As Req'd.
7	825998	Terminal, fuse clip, 1-way 2 lead . .	6	(19)	884513	Cable, battery, black, 46" (1168 mm)	As Req'd.
8	825999	Terminal, fuse clip, 3-way 1 lead . .	2	20	829630	Connector, male, 4-contact	1
9	825973	Connector, male, 6-contact	3	21	837301	Connector, head lamp	2
10	826005	Connector, male, 2-contact	1	22	843598	Connector, rocker switch	1
11	826726	Connector, male, 1-contact	1	23	800943	Screw, #10-14 x 5/8	2
12	829631	Connector, female, 4-contact . . .	2				
13	826000	Fuse, 20 amp.	As Req'd				
(13)	833038	Fuse, 30 amp.	As Req'd				
(13)	836892	Fuse, 10 amp.	As Req'd				
(13)	842983	Fuse, 15 amp.	As Req'd				
14	837296	Connector	1				

TWO-SPEED HYPOID DIFFERENTIAL (11.16:1)
TURF MODELS 898662, 898663, 898664, 898684 and 898685



893491

TWO-SPEED HYPOID DIFFERENTIAL (11.16:1)
TURF MODELS 898662, 898663, 898664, 898684 and 898685

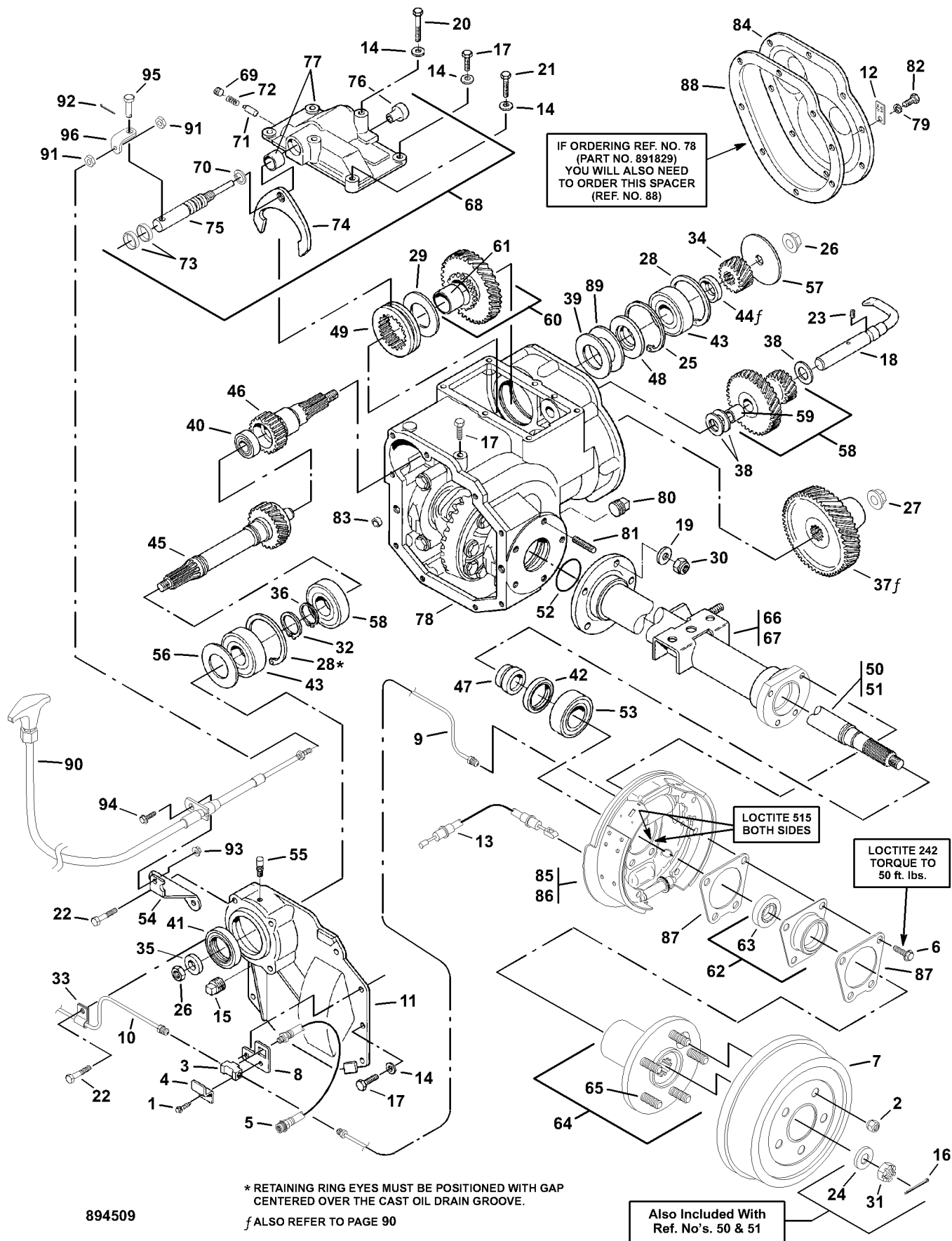
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	894825	Differential, 11.16:1	1	50 ▼	2700530	•Shaft assembly (left)	1
2	112050	•Screw, 1/4-20 x 5/8, tapping	1	(50)	2700514	••Shaft, axle (left) 23.27" (591.05 mm)	1
3	800909	•Nut, wheel retaining	10	51 ▼	2700531	•Shaft assembly (right)	1
4	841842	•Fitting, hydraulic brake tee	1	(51)	2700515	••Shaft, axle (right) 29.21" (741.93 mm)	1
5	832584	•Clamp, tee mount bracket	1	52	836694	•Seal, 'O' ring	2
6	841844	•Hose, hydraulic brake	1	53	836695	•Bearing, tapered roller	2
7	800944	•Screw, M10-1.50 x 25	8	54	836841	•Bracket	1
8	841430	•Drum, brake	2	55	836852	•Breather	1
9	836959	•Bracket, tee mounting	1	56	837020	•Baffle, vent	1
10	841838	•Tube, brake, (left)	1	57	836692	•Baffle, oil scoop	1
11	841837	•Tube, brake, (right)	1	58	894519	•Gear, cluster	1
12	836431	•Cover, front	1	59	844087	••Bushing	2
13	836439	•Tag, 11.16:1 ratio	1	60	894886	•Gear, driven	1
14	893583	•Cable, park brake	2	61	812006	••Bushing	2
15	103867	•Washer, 5/16	8	62	893519	•Retainer, complete w/seal	2
16	111074	•Plug	1	63	838539	••Seal, bearing	1
17	304636	•Pin, cotter, 1/8 x 1 1/8	2	64	893552	•Hub	2
18	306322	•Screw, 5/16-18 x 7/8	12	65	800908	••Screw, wheel retaining	5
19	891089	•Jackshaft	1	66	893588	•Housing, axle (left)	1
20	306405	•Washer, 3/8	10	67	893590	•Housing, axle (right)	1
21	306423	•Screw, 5/16-18 x 1 3/4	2	68	889780	•Cover ay., shift	1
22	306435	•Screw, 5/16-18 x 1 1/4	1	69	548204	••Set screw, 3/8-16 x 3/8	1
23	307776	•Screw, 3/8-16 x 2 3/4	3	70	548937	••Lockwasher	1
24	548201	•Screw, set, 5/16-18 x 5/16	1	71	807366	••Button, positioning	1
25	845356	•Washer	2	72	2700493	••Spring	1
26	548952	•Lockring	1	73	831099	••Seal	2
27	800559	•Nut, 1/2-20, crownlock	2	74	836657	••Fork, shift	1
28	800973	•Nut, 3/4-16, crownlock	1	75	836658	••Shaft, shift	1
29	800737	•Ring, retaining	2	76	836662	••Bushing, guide	1
30	844956	•Bearing, bronze thrust	1	77	889925	••Cover	1
31	805837	•Locknut, special	10	78	891829	•Housing, carrier w/gears	1
32	800743	•Nut, 3/4-16, slotted	2	79	103867	••Washer, 5/16	14
33	800695	•Ring, retaining	1	80	111074	••Plug	1
34	810435	•Clamp	1	81	111758	••Stud	10
35	836440	•Pinion, 18 tooth	1	82	306322	••Screw, 5/16-18 x 7/8	14
36	809180	•Washer, special	1	83	517226	••Bushing	2
37	809254	•Ring, retaining	1	84	836443	••Cover, rear	1
38	836441	•Gear, 49 tooth	1	85	◇	•Brake, rear complete, (right)	1
39	811992	•Shim, cluster gear	3	86	◇	•Brake, rear complete, (left)	1
40	811993	•Bearing, thrust	1	87	844813	•Ring, backing	4
41	812009	•Bearing, ball	1	88	844951	Shim, .003	1
42	812335	•Seal, oil	1		844952	Shim, .005	1
43	838539	•Seal, oil	2		844953	Shim, .010	1
44	836693	•Bearing, ball	3	89	893067	Cable, control (2 speed hi-low)	1
45	836420	•Spacer, pinion	1	90	132520	Nut, #10-32	2
46	836421	•Shaft, input	1	91	306328	Pin, cotter, 3/32 x 3/4	1
47	836422	•Shaft, main	1	92	450452	Nut, M6-1.00 (10.9)	1
48	836426	•Collar, axle bearing	2	93	452378	Screw, M6-1.00 x 20	1
49	845034	•Collar, thrust	1	94	806703	Pin, clevis, 5/16 x 29/32	1
	836429	•Collar, engaging	1	95	837043	Bracket	1

• INDENTED PARTS NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

◇ Refer to the parts breakdown for the brakes on Pages 92-93.

▼ Also includes Ref. No's. 16, 24 & 31.

TWO-SPEED HYPOID DIFFERENTIAL (14.21:1) **TURF MODELS 898650, 898652 and 898659**



TWO-SPEED HYPOID DIFFERENTIAL (14.21:1)
TURF MODELS 898650, 898652 and 898659

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	894826	Differential, 14.21:1	1	50 ▼	2700530	•Shaft assembly (left)	1
2	112050	•Screw, 1/4-20 x 5/8, tapping	1	(50)	2700514	••Shaft, axle (left) 23.27" (591.05 mm)	1
3	800909	•Nut, wheel retaining	10	51 ▼	2700531	•Shaft assembly (right)	1
4	841842	•Fitting, hydraulic brake tee	1	(51)	2700515	••Shaft, axle (right) 29.21" (741.93 mm)	1
5	832584	•Clamp, tee mount bracket	1	52	836694	•Seal, 'O' ring	2
6	841844	•Hose, hydraulic brake	1	53	836695	•Bearing, tapered roller	2
7	800944	•Screw, M10-1.50 x 25	8	54	836841	•Bracket	1
8	841430	•Drum, brake	2	55	836852	•Breather	1
9	836959	•Bracket, tee mounting	1	56	837020	•Baffle, vent	1
10	841838	•Tube, brake, (left)	1	57	836692	•Baffle, oil scoop	1
11	841837	•Tube, brake, (right)	1	58	894519	•Gear, cluster	1
12	836431	•Cover, front	1	59	844087	••Bushing	2
13	839948	•Tag, 14.21:1 ratio	1	60	894886	•Gear, driven	1
14	893583	•Cable, park brake	2	61	812006	••Bushing	2
15	103867	•Washer, 5/16	8	62	893519	•Retainer, complete w/seal	2
16	111074	•Plug	1	63	838539	••Seal, bearing	1
17	304636	•Pin, cotter, 1/8 x 1 1/8	2	64	893552	•Hub	2
18	306322	•Screw, 5/16-18 x 7/8	12	65	800908	••Screw, wheel retaining	5
19	891089	•Jackshaft	1	66	893588	•Housing, axle (left)	1
20	306405	•Washer, 3/8	10	67	893590	•Housing, axle (right)	1
21	306423	•Screw, 5/16-18 x 1 3/4	2	68	889780	•Cover ay., shift	1
22	306435	•Screw, 5/16-18 x 1 1/4	1	69	548204	••Set screw, 3/8-16 x 3/8	1
23	307776	•Screw, 3/8-16 x 2 3/4	3	70	548937	••Lockwasher	1
24	548201	•Screw, set, 5/16-18 x 5/16	1	71	807366	••Button, positioning	1
25	845356	•Washer	2	72	2700493	••Spring	1
26	548952	•Lockring	1	73	831099	••Seal	2
27	800559	•Nut, 1/2-20, crownlock	2	74	836657	••Fork, shift	1
28	800973	•Nut, 3/4-16, crownlock	1	75	836658	••Shaft, shift	1
29	800737	•Ring, retaining	2	76	836662	••Bushing, guide	1
30	844956	•Bearing, bronze thrust	1	77	889925	••Cover	1
31	805837	•Locknut, special	10	78	891829	•Housing, carrier w/gears	1
32	800743	•Nut, 3/4-16, slotted	2	79	103867	••Washer, 5/16	14
33	800695	•Ring, retaining	1	80	111074	••Plug	1
34	810435	•Clamp	1	81	111758	••Stud	10
35	842359	•Pinion, 15 tooth	1	82	306322	••Screw, 5/16-18 x 7/8	14
36	809180	•Washer, special	1	83	517226	••Bushing	2
37 f	809254	•Ring, retaining	1	84	836443	••Cover, rear	1
38	842360	•Gear, 52 tooth	1	85	◇	•Brake, rear complete, (right)	1
39	811992	•Shim, cluster gear	3	86	◇	•Brake, rear complete, (left)	1
40	811993	•Bearing, thrust	1	87	844813	•Ring, backing	4
41	812009	•Bearing, ball	1	88	841781	•Spacer, diff. cover (rear)	1
42	812335	•Seal, oil	1	89	844951	•Shim, .003	1
43	838539	•Seal, oil	2		844952	•Shim, .005	1
44 f	836693	•Bearing, ball	3		844953	•Shim, .010	1
45 or	836420	•Spacer, pinion, .625" (15.9 mm)	1	90	893067	Cable, control (2 speed hi-low)	1
46	844750	•Spacer, pinion, (19.0 mm)	1	91	132520	Nut, #10-32	2
47	836421	•Shaft, input	1	92	306328	Pin, cotter, 3/32 x 3/4	1
48	836422	•Shaft, main	1	93	450452	Nut, M6-1.00 (10.9)	1
49	836426	•Collar, axle bearing	2	94	452378	Screw, M6-1.00 x 20	1
	845034	•Collar, thrust	1	95	806703	Pin, clevis, 5/16 x 29/32	1
	836429	•Collar, engaging	1	96	837043	Bracket	1

• INDENTED PARTS NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

◇ Refer to the parts breakdown for the brakes on Pages 92-93.

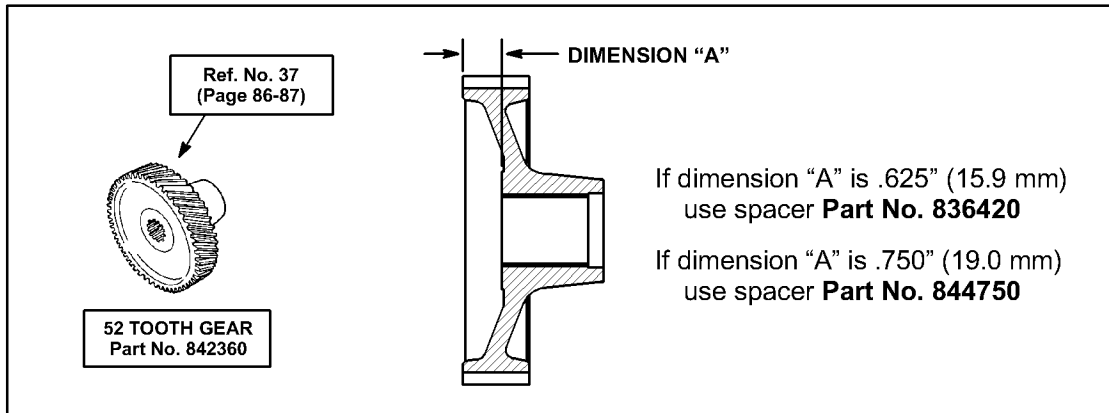
f Also refer to page 90.

▼ Also includes Ref. No's. 16, 24 & 31.

TWO-SPEED HYPOID DIFFERENTIAL 14.21:1 (con't.)

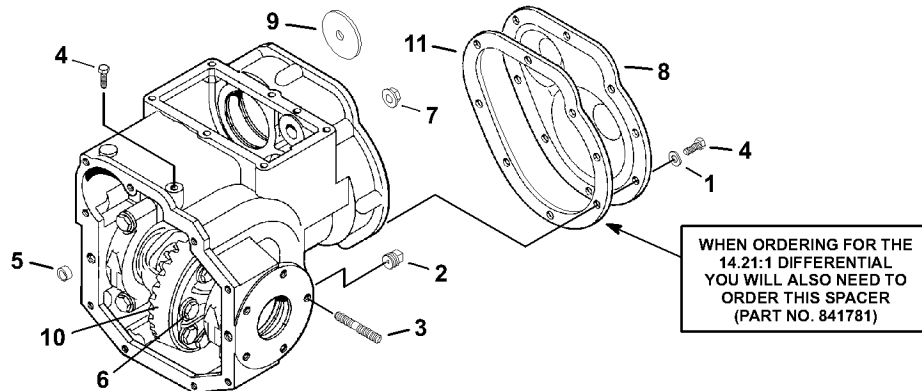
TURF MODELS 898650, 898652 and 898659

Two (2) different pinion spacers (Reference No. 44 on Pages 86-87) have been used in the 14.21:1 differential Part No. 894826. To determine which spacer is the correct one for your particular application, the 52-tooth gear, Part No. 842360 (Item No. 37 on Pages 86-87) must be measured as shown.



HOUSING and GEAR ASSEMBLY FOR 11.16:1 & 14.21:1 DIFFERENTIALS,

TURF MODELS 898650, 898652, 898659, 898662, 898663, 898664, 898684 and 898685

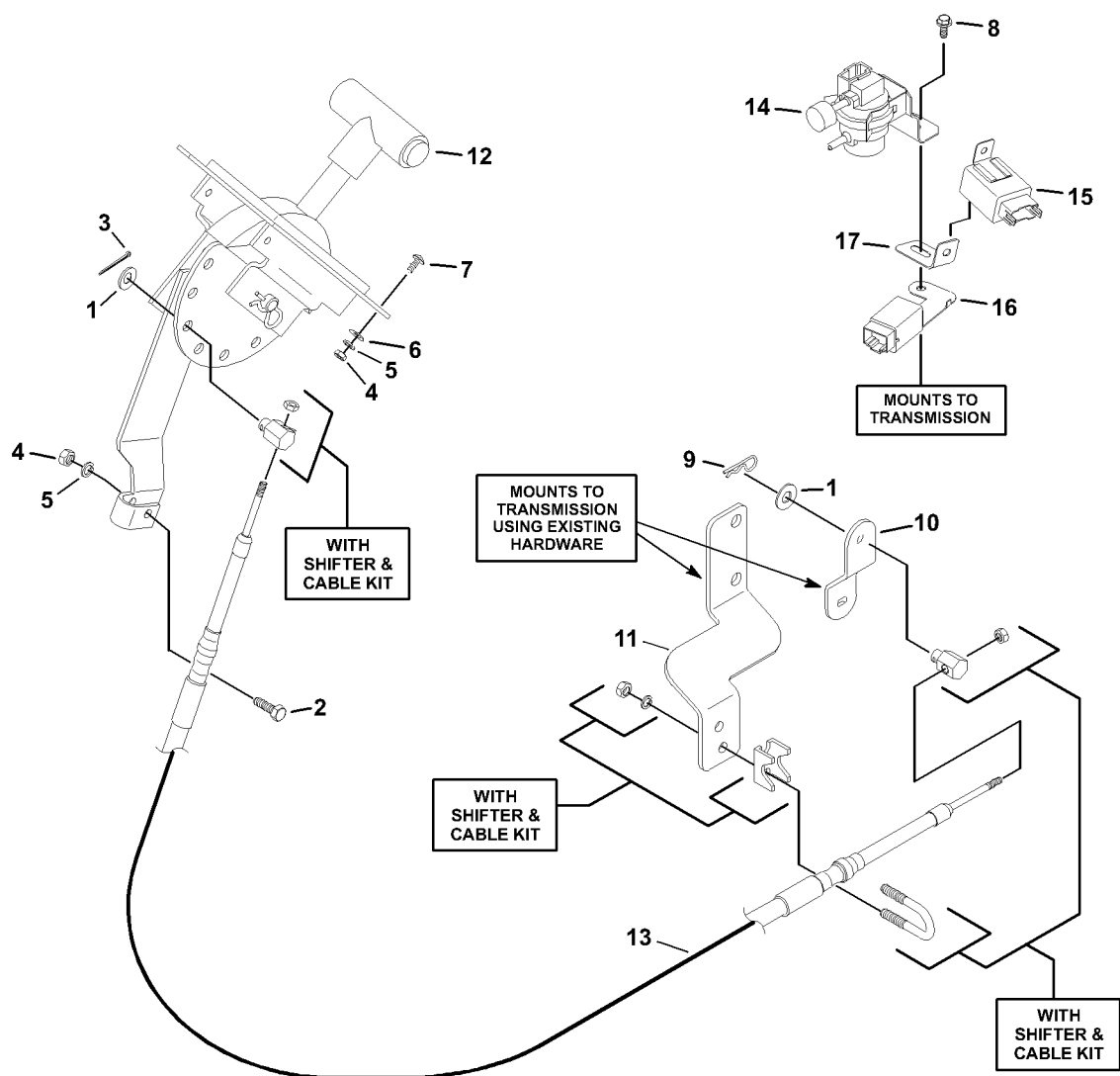


Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
	891829	Housing and gear assembly	1	9	836692	•Baffle, oil	1
1	103867	•Washer, 5/16	8	10	889870	•Gear set	1
2	111074	•Plug	1	*	836681	•Shim, .003	2
3	111758	•Stud	10	*	836682	•Shim, .005	2
4	306322	•Screw, 5/16-18 x 7/8	9	*	836683	•Shim, .010	2
5	517226	•Bushing	2	*	836684	•Shim, .030	3
6	800717	•Screw, 3/8-24 x 13/16	10	*	836685	•Shim, .003	1
7	800718	•Nut, 3/4-16 hex lock	1	*	836686	•Shim, .005	2
*	814476	•Cup, bearing (2.53 o.d.)	1	*	836687	•Shim, .010	4
8	836443	•Cover, rear	1	*	836688	•Shim, .003	1
*	836675	•Cup, bearing (2.89 o.d.)	2	*	836689	•Shim, .005	1
*	836676	•Cone, bearing (1.63 i.d.)	2	*	836690	•Shim, .010	2
*	836677	•Cup, bearing (2.84 o.d.)	1	*	836691	•Shim, .030	2
*	836678	•Cone, bearing (1.375 i.d.)	1	11	841781	Spacer, rear cover (14.21:1 only) .	1
*	836680	•Cone, bearing (1.125 i.d.)	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated.

AUTOMATIC TRANSMISSION SHIFTER SUZUKI 660 MODEL 898659

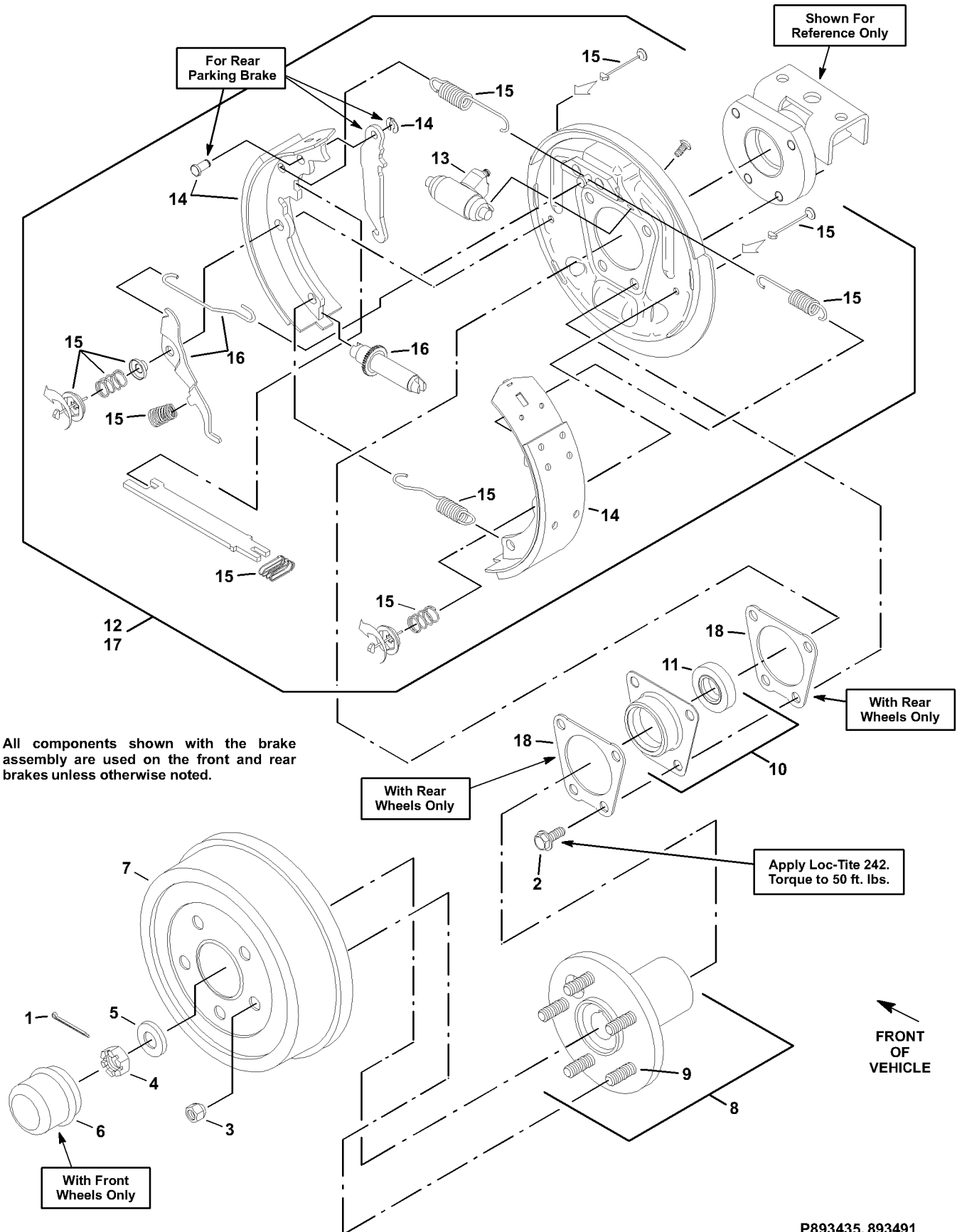


894516, 898589

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 5/16	2	10	844287	Lever, shifter	1
2	302030	Screw, 1/4-20 x 1 1/4	1	11	844288	Bracket, shifter cable mount	1
3	306372	Pin, cotter, 3/32 x 1/2	1	12	894584	Shifter ay. w/cable	1
4	306375	Nut, 1/4-20	5	13	894508	•Cable, shifter	1
5	306396	Lockwasher, 1/4	5	14	18570-84000	Switch set, vacuum	1
6	308090	Washer, 1/4	4	15	38850-50F41	Controller, idle up	1
7	800582	Screw, 1/4-20 x 3/4	4	16	38850-51F10	Controller, fuel	1
8	800934	Screw, M6-1.00 x 16 (8.8)	1	17	844834	Bracket, idle-up control	1
9	821164	Pin, hair 1/4 x 1 1/8	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

FRONT and REAR BRAKES & HUBS
TURF MODELS 898650, 898652,
898659, 898662, 898663, 898664, 898684 and 898685



P893435, 893491

FRONT and REAR BRAKES & HUBS
TURF MODELS 898650, 898652,
898659, 898662, 898663, 898664, 898684 and 898685

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	304636	Pin, cotter 1/8 x 1 1/8	2	11	838539	•Seal, bearing	1
2	800944	Screw, M10-1.50 x 25 (G10.9) . . .	8	12 ▼	893585	Brake, complete, front (LH)	1
3	800909	Nut, wheel retaining, M12-1.5 . . .	10	*	893586	Brake, complete, front (RH)	1
4	805843	Nut, castle, 5/8-18	2	13	894930	•Cylinder, wheel	1
5	809156	Washer, special	2	14	894932	Kit, brake shoe	1
6	817250	Cap, grease	2	15	894933	Kit, spring (LH)	1
7	841430	Drum, brake	2	*	894934	Kit, spring (RH)	1
8	893553	Hub assembly (rear)	2	16	894935	Kit, adjuster repair (LH)	1
9	800908	•Screw, lug, M12-1.50 x 45	10	*	894936	Kit, adjuster repair (RH)	1
*	893206	Hub assembly (front)	2	17	893581	Brake, complete w/lever, rear (LH)	1
*	808088	•Cup, bearing (outer)	1	*	893582	Brake, complete w/lever, rear (RH)	1
*	814474	•Cup, bearing (inner)	1	*	894931	Kit, cylinder repair	1
*	800908	•Screw, lug, M12-1.50 x 45	10	18	844813	Ring, retainer (rear only)	4
10	893519	Seal and retainer	2				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

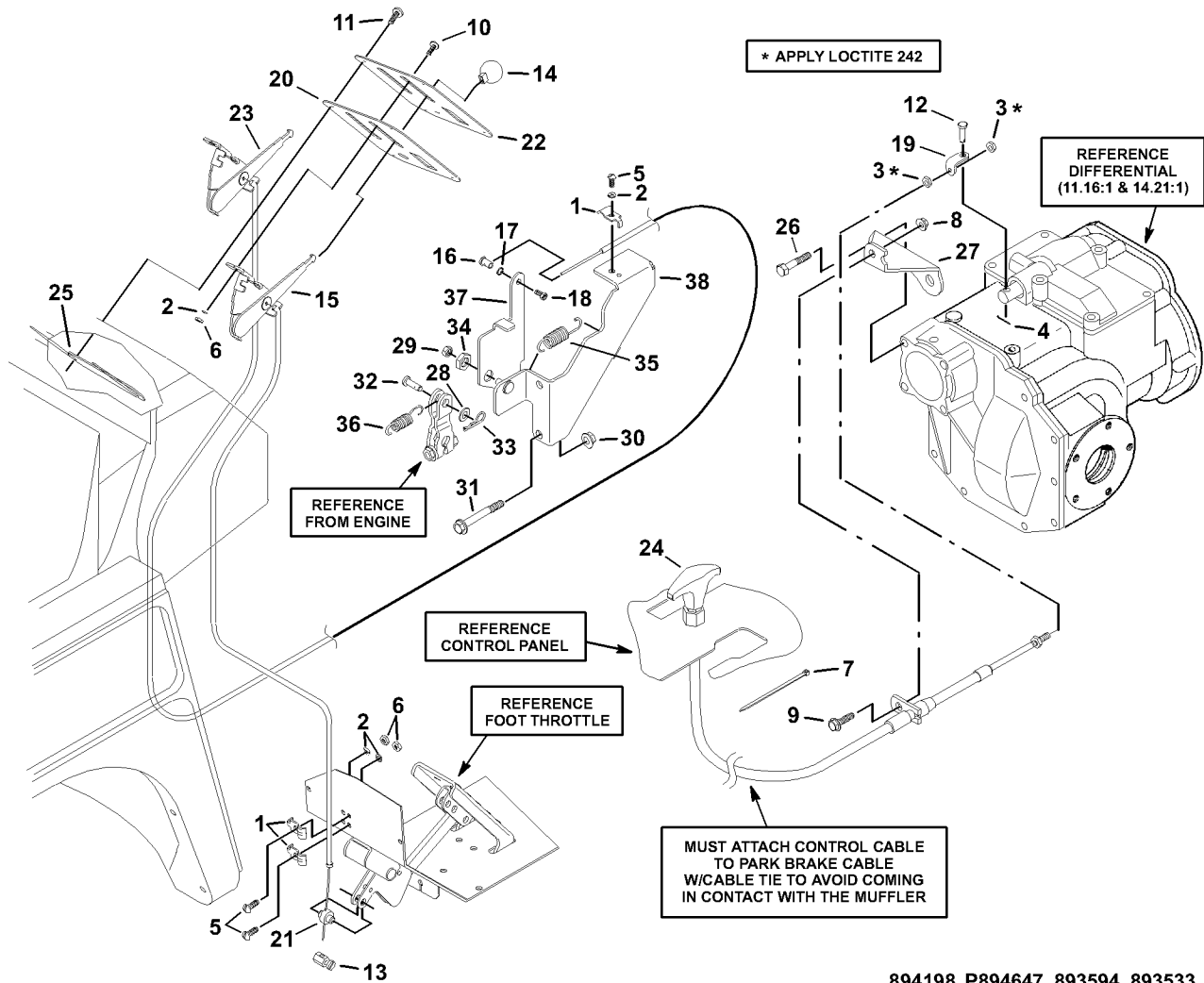
* Not Illustrated.

▼ When replacing the front brake assembly on Model 898650 (3-wheel),
order Ref. No. 14, front brake complete (LH), Part No. 893585.

When ordering the front or rear brake assemblies (Part No.'s. 893585, 893586, 893581 & 893582) all
components shown in the illustration with items No. 14 & 19 are included with the assemblies. If replace-
ment parts are required, the individual parts will be grouped into kits as stated in the above parts list.

GOVERNOR and THROTTLE HAND CONTROLS

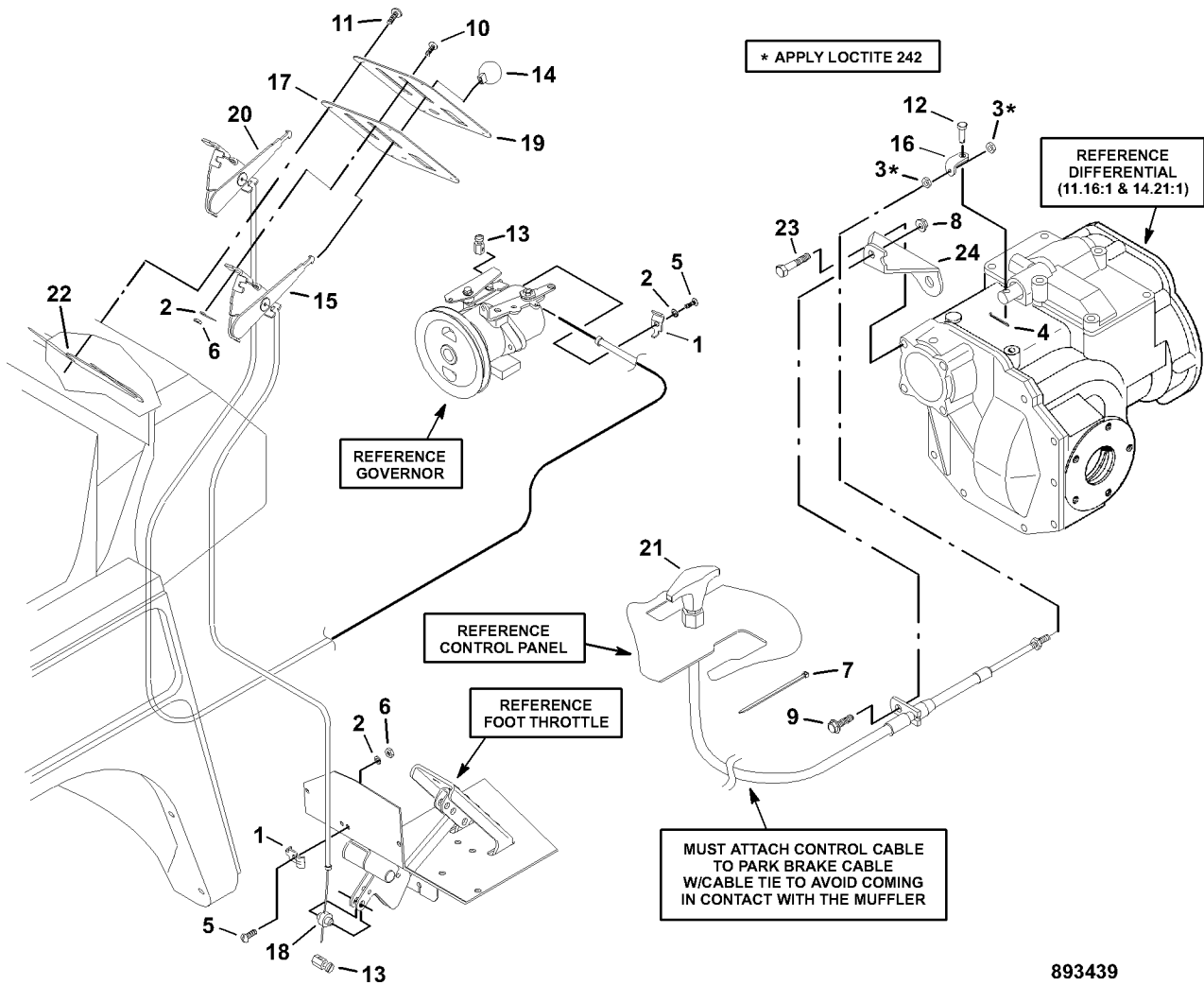
DIESEL TURF MODELS 898663, 898664, 898684 and 898685



894198, P894647, 893594, 893533

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	111898	Clamp, cable	3	20	841264	Panel, left hand, turf	1
2	120052	Lockwasher, #10	6	21	843607	Bushing, throttle cable	1
3	132520	Nut, #10-32	3	22	844116	Decal, left hand dash, turf	1
4	306328	Pin, cotter 29/32 x 3/4	1	23	844130	Cable, governor control	1
5	306514	Screw, #10-32 x 1/2	3	24	893067	Cable, control (hi-lo shift)	1
6	306531	Nut, #10-24	6	25	894743	Nut, double	2
7	320107	Tie, cable 7 1/2" (190.5 mm)	1	26	307776	Screw, 3/8-16 x 2 3/4	2
8	450452	Nut, M6-1.00 (G10.9)	1	27	836841	Bracket, hi-lo shift cable mount	1
9	452378	Screw, M6-1.00 x 20	1	28	103867	Washer, 5/16	1
10	800271	Screw, #10-24 x 1/2 (G5)	4	29	130728	Nut, 1/4-20 jam	1
11	800582	Screw, 1/4-20 x 3/4	4	30	450453	Nut, M8-1.25 (G10.9)	2
12	806703	Pin, clevis 5/16 x 31/32	1	31	452394	Screw, M8-1.25 x 70 (G8.8)	2
13	817104	Stop, wire	2	32	812444	Pin, clevis 5/16 x 3/4	1
14	827821	Knob	2	33	821164	Pin, hair	1
15	828049	Cable, control (hand throttle)	1	34	835271	Nut	1
16	831888	Swivel	1	35	840473	Spring, extension	1
17	831889	Washer, swivel	1	36	842785	Spring, idle return	1
18	831890	Screw, swivel throttle cable	1	37	844274	Lever, governor	1
19	837043	Bracket	1	38	894591	Bracket, throttle	1

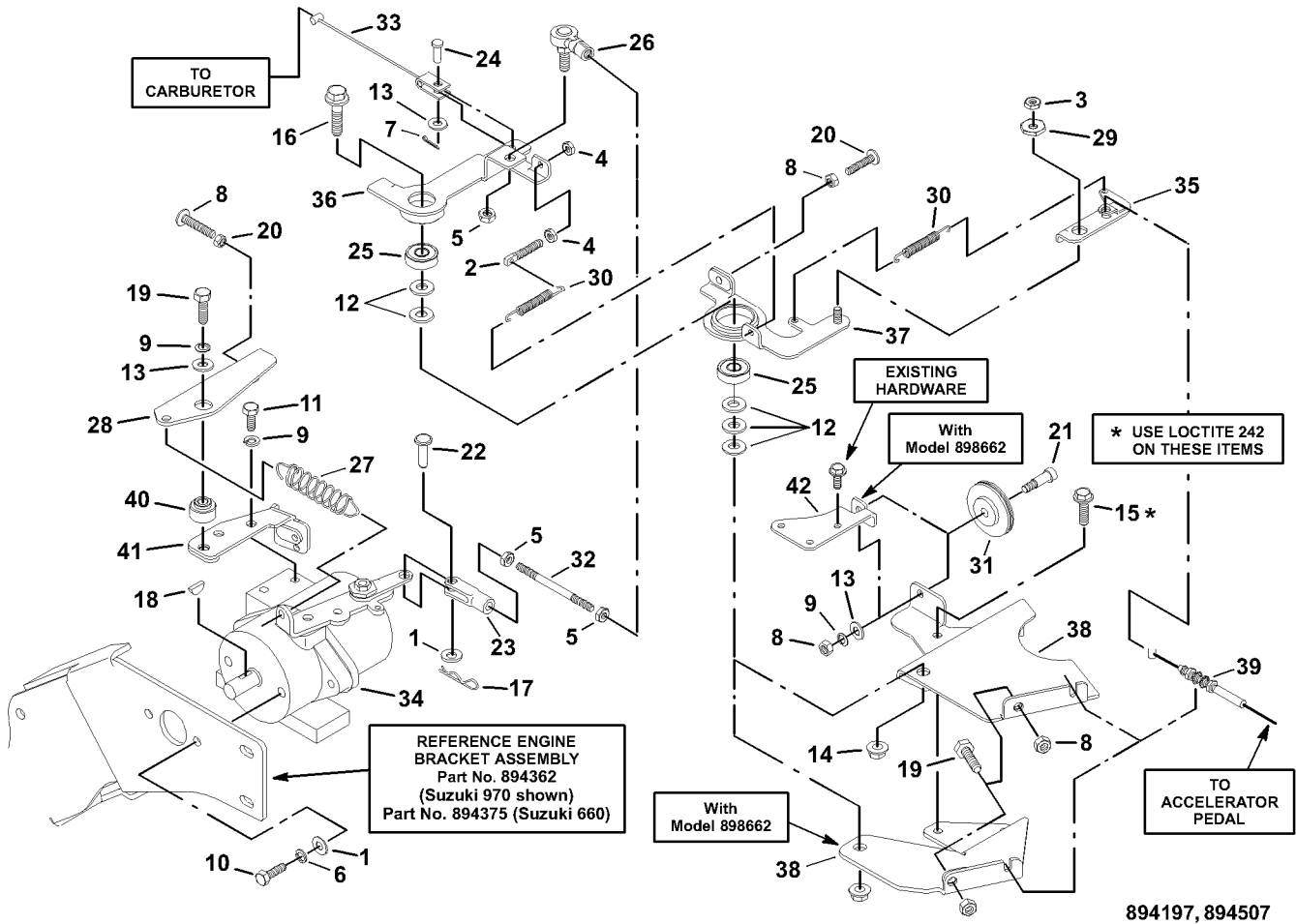
HAND CONTROLS, GOVERNOR and THROTTLE **SUZUKI TURF MODELS 898650, 898652, 898659 and 898662**



893439

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	111898	Clamp, cable	2	13	817104	Stop, wire	2
2	120052	Lockwasher, #10	6	14	827821	Knob	2
3	132520	Nut, #10-32	2	15	828049	Cable, control (hand throttle)	1
4	306328	Pin, cotter 29/32 x 3/4	1	16	837043	Bracket (cable to differential)	1
5	306514	Screw, #10-32 x 1/2	2	17	841264	Panel, left hand (turf)	1
6	306531	Nut, #10-24	5	18	843607	Bushing, throttle cable	1
7	320107	Tie, cable 7 1/2" (190.5 mm)	1	19	844116	Decal, left hand dash (turf)	1
8	450452	Nut, M6-1.00 (G10.9)	1	20	844130	Cable, governor control	1
9	452378	Screw, M6-1.00 x 20	1	21	893067	Cable, control (hi-lo shift)	1
10	800271	Screw, #10-24 x 1/2 (G5)	4	22	894743	Nut, double	2
11	800582	Screw, 1/4-20 x 3/4	4	23	307776	Screw, 3/8-16 x 2 3/4	2
12	806703	Pin, clevis 5/16 x 31/32	1	24	836841	Bracket, hi-lo shift cable mount	1

GOVERNOR AND THROTTLE LINKAGE TURF MODELS 898650, 898652, 898659 & 898662



894197, 894507

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 3/8	3	23	810722	Yoke	1
2	111893	Screw, special #10-32	1	24	813379	Pin, clevis 1/4 x 3/8	1
3	130728	Nut, 1/4-20	1	25	830140	Bearing, ball	2
4	132520	Nut, jam #10-32	2	26	831586	Ball joint	1
5	306320	Nut, 5/16-24	3	27	833101	Spring, extension	1
6	306325	Lockwasher, 5/16	2	28	894434	Arm assembly, governor	1
7	306372	Pin, cotter 3/32 x 1/2"	1	29	835271	Nut	1
8	306375	Nut, 1/4-20	4	30	840473	Spring, extension	2
9	306396	Lockwasher, 1/4	4	31	843013	Pulley, governor	1
10	306450	Screw, 5/16-18 x 3/4	2	32	843536	Rod, governor arm	1
11	306487	Screw, 1/4-20 x 5/8	2	33	843567	Cable, carburetor	1
12	306981	Washer, 3/8	5	34	894080	Governor, complete	1
13	308090	Washer, 1/4	3	35	894453	Arm, throttle	1
14	450454	Nut, M10-1.50 (G10)	1	36	894454	Arm, governor	1
15	452378	Screw, M6-1.00 x 20	2	37	894463	Lever	1
16	452401	Screw, M10-1.50 x 40 (8.8)	1	38	894464	Base, throttle (Suzuki 660)	1
17	548190	Pin, hair 11/16 x 1 7/8	1	(38)	894482	Base, throttle (Suzuki 970)	1
18	553046	Key, woodruff 1/4 x 1/2	1	39	894540	Cable, throttle	1
19	302288	Screw, 1/4-20 x 1	2	40	843866	Bushing, governor	1
20	800024	Screw, 1/4-20 x 1 1/2	2	41	894435	Bracket assembly, governor	1
21	800927	Screw, shoulder, 1/4-20 x 5/8	1	42	842753	Bracket, carburetor (Suzuki 970)	1
22	806773	Pin, clevis 5/16 x 1 1/8	1				

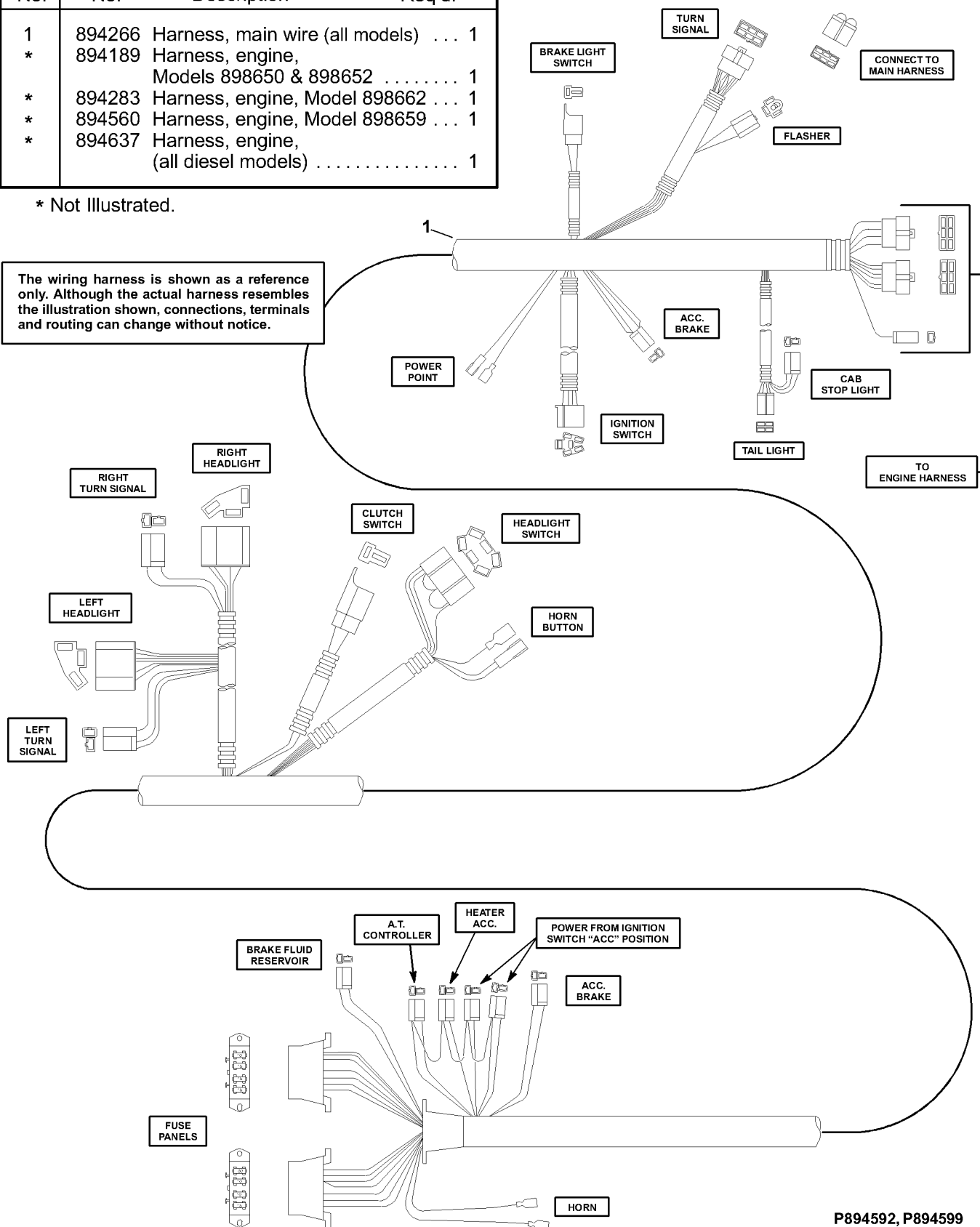
ENGINE & MAIN WIRE HARNESS

TURF MODELS 898650, 898652, 898659, 898662, 898663, 898664, 898684 & 898685

Ref No.	Part No.	Description	No. Req'd.
1	894266	Harness, main wire (all models) . . .	1
*	894189	Harness, engine, Models 898650 & 898652	1
*	894283	Harness, engine, Model 898662 . . .	1
*	894560	Harness, engine, Model 898659 . . .	1
*	894637	Harness, engine, (all diesel models)	1

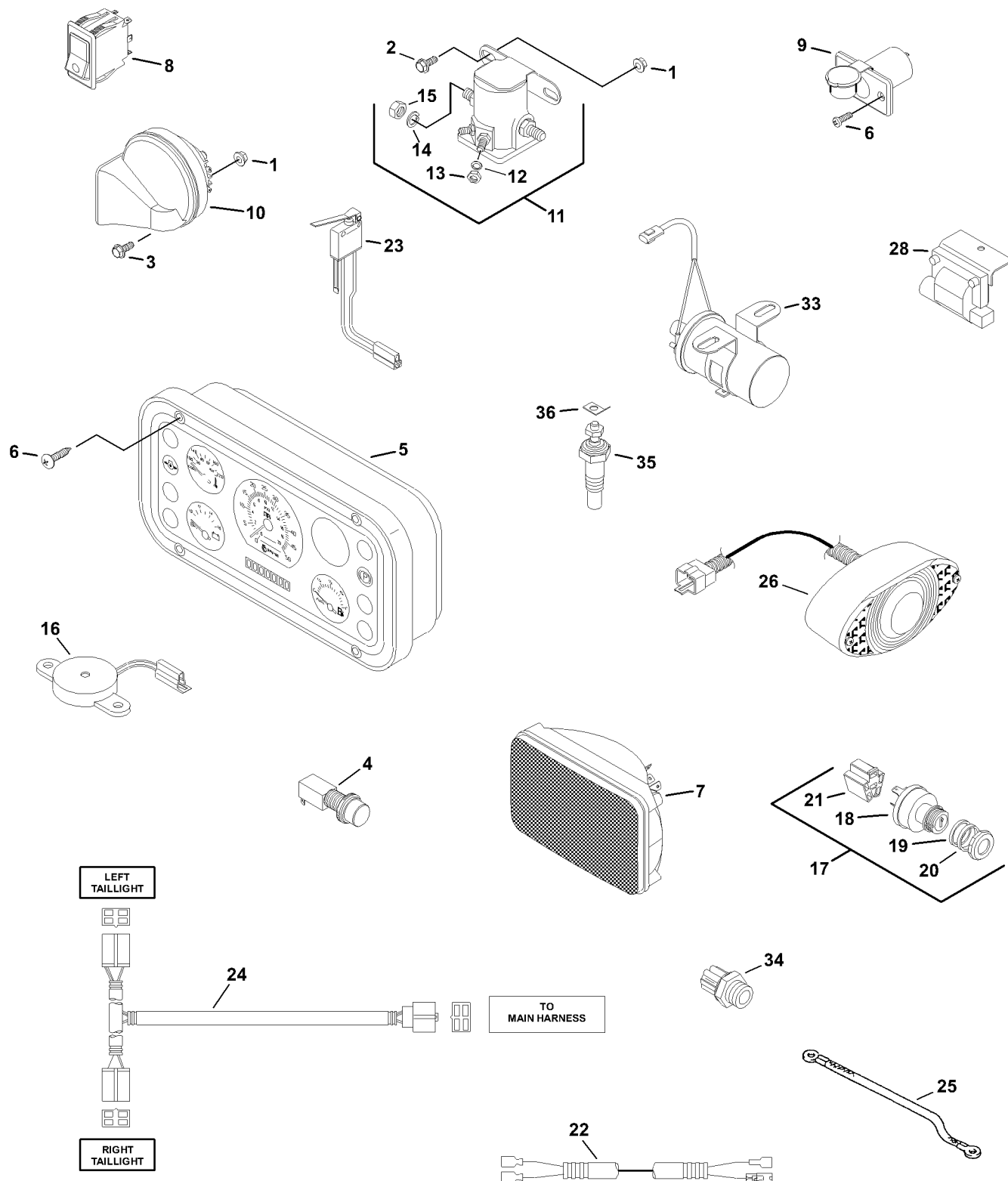
* Not Illustrated.

The wiring harness is shown as a reference only. Although the actual harness resembles the illustration shown, connections, terminals and routing can change without notice.



P894592, P894599

ELECTRICAL COMPONENTS and WIRING HARNESSES

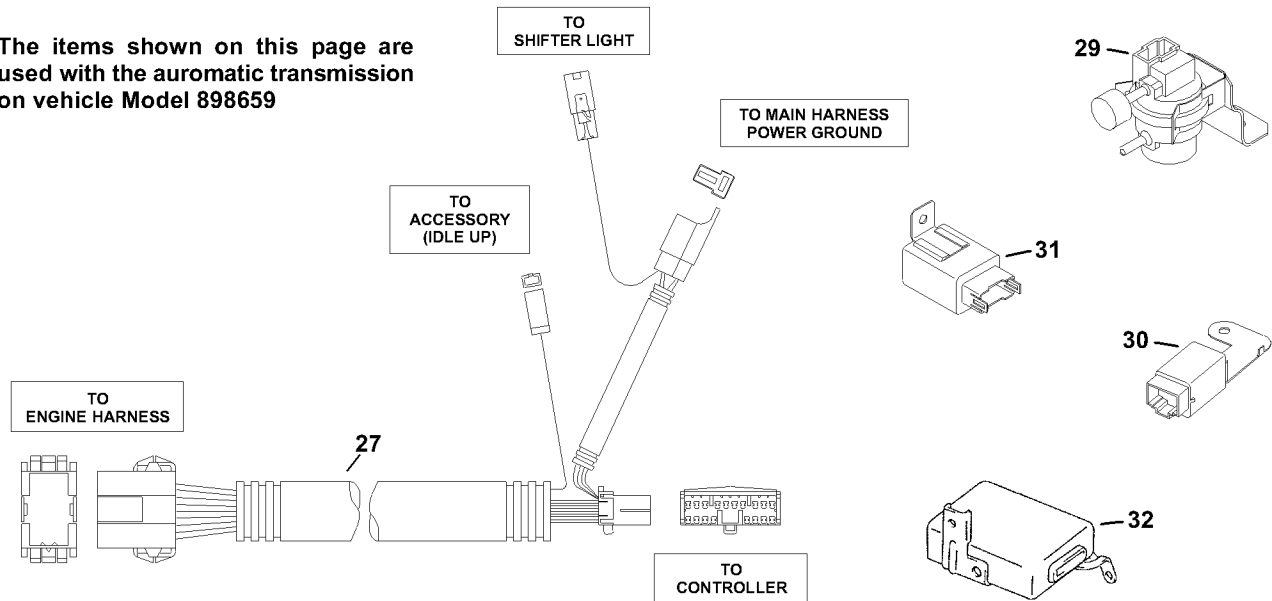


The wiring harnesses are shown as a reference only. Although the actual harness resembles the illustration shown, connections, terminals and routing can change without notice.

893442, 893448, 893972

ELECTRICAL COMPONENTS and WIRING HARNESSES

The items shown on this page are used with the automatic transmission on vehicle Model 898659



The convoluted tubing used on the wiring harnesses can be ordered in bulk length only. Cut off the required amount for your particular application. Order the tubing as follows:

Part No. 826190 .350 i.d. sold in 50' (15.2 m) lengths

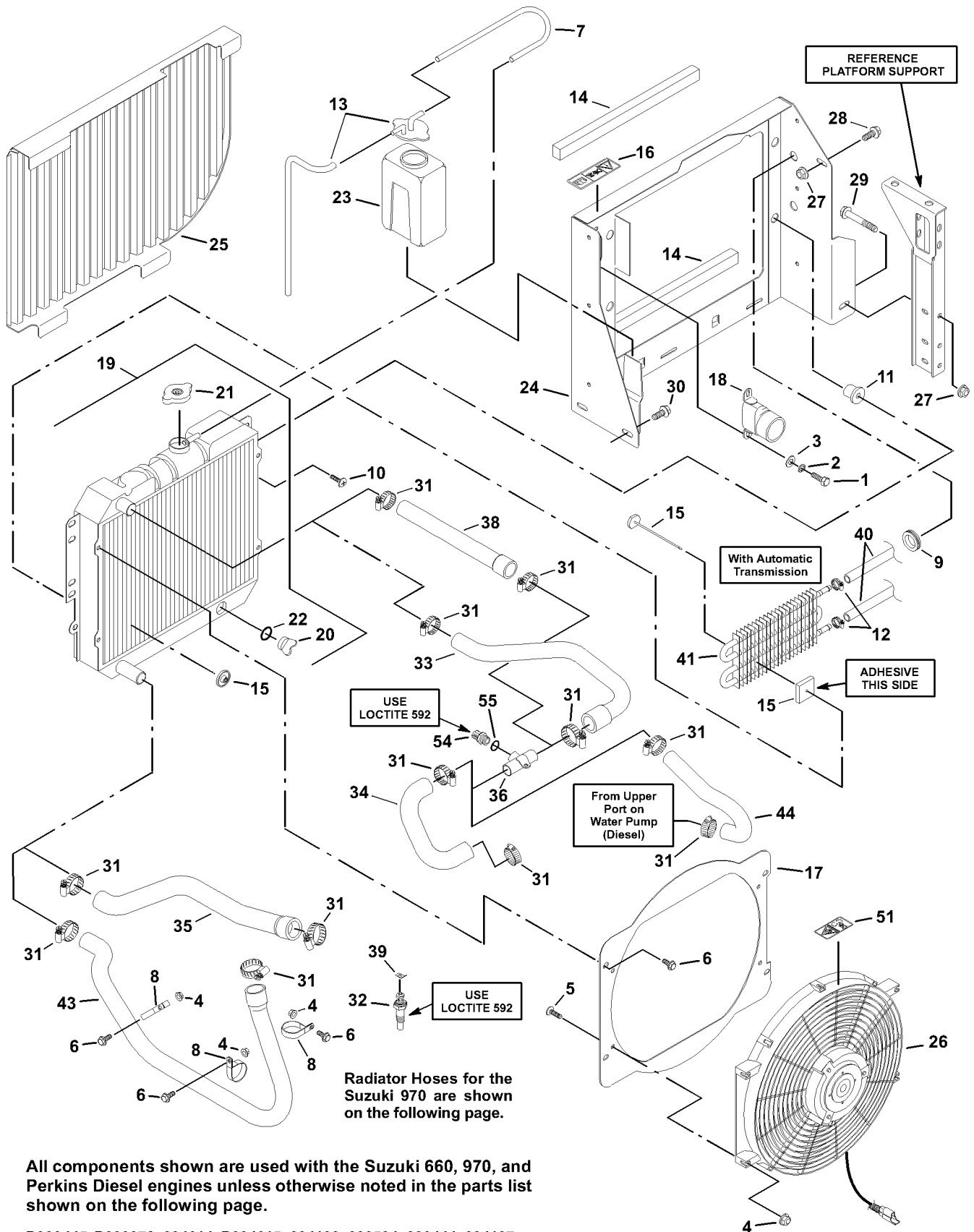
Part No. 826191 .500 i.d. sold in 25' (7.6 m) lengths

Ref. No.	Part No.	Description	No. Req'd.	Ref. No.	Part No.	Description	No. Req'd.
1	450452	Nut, M6-1.00 (G10)	3	20	837300	•Spacer	1
2	452378	Screw, M6-1.00 x 20	2	21	890158	•Connector and wire	1
3	800934	Screw, M6-1.00 x 16 (G10)	1	22	894201	Harness, wire, fuel tank	1
4	830366	Switch, push (horn button)	1	23	894308	Switch (normally open)	1
5	841636	Panel, instrument w/tach	1	24	894313	Harness, wire, taillight	1
6	800943	Screw, #10-14 x 5/8	4	25	39312-50F01	Wire, noise suppressor (Suzuki Models Only)	1
7	837303	Headlight, rectangular	2	26	893602	Taillight	1
8	843581	Switch, headlight	1	27	894531	Harness, ATM controller (Model 898659)	1
9	843942	Socket, 12V acc. plug	1	28	33410-50F20	Coil, ignition (Suzuki 660) .	1
10	886090	Horn	1	29	18570-84000	Switch set, vacuum	1
11	889673	Solenoid	1	30	38850-51F10	Controller, idle up	1
12	120052	•Lockwasher, #10	2	31	38850-50F41	Controller, fuel	1
13	132520	•Nut, #10-32	2	32	38880-51F13	Controller, auto. trans.	1
14	306325	•Lockwasher, 5/16	2	33	33410-85010	Coil, ignition (Suzuki 970) .	1
15	306932	•Nut, 5/16-18	2	34	17680-50F70	Switch, fan	1
16	890000	Buzzer assembly	1	35	843857	Sender, water temperature	1
17	890154	Switch, ignition, complete	1	36	829787	Terminal, 45° 1/4" male	1
18	837295	•Switch, ignition	1				
*	837296	•Connector	1				
19	837299	•Spacer	1				

• INDENTED PARTS NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated

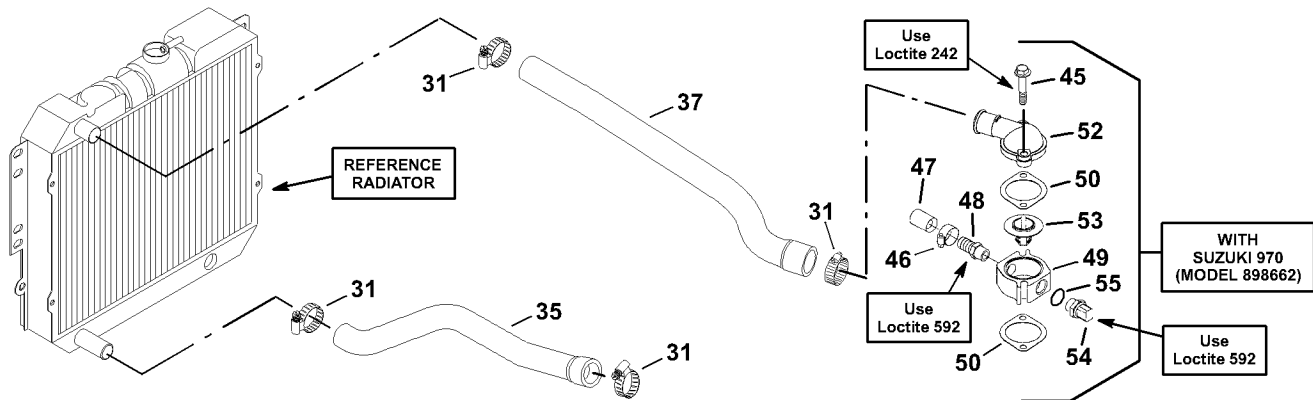
RADIATOR and COOLING SYSTEM
TURF MODELS 898650, 898652, 898659
898662, 898663, 898664, 898684, and 898685



All components shown are used with the Suzuki 660, 970, and Perkins Diesel engines unless otherwise noted in the parts list shown on the following page.

P893445, P893972, 894614, P894615, 894198, 893594, 893444, 894197

RADIATOR and COOLING SYSTEM
TURF MODELS 898650, 898652, 898659
898662, 898663, 898664, 898684 and 898685



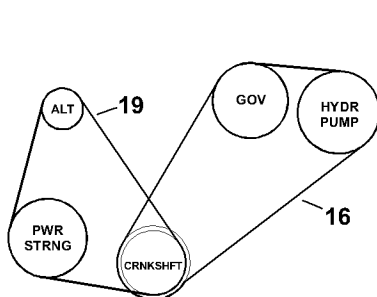
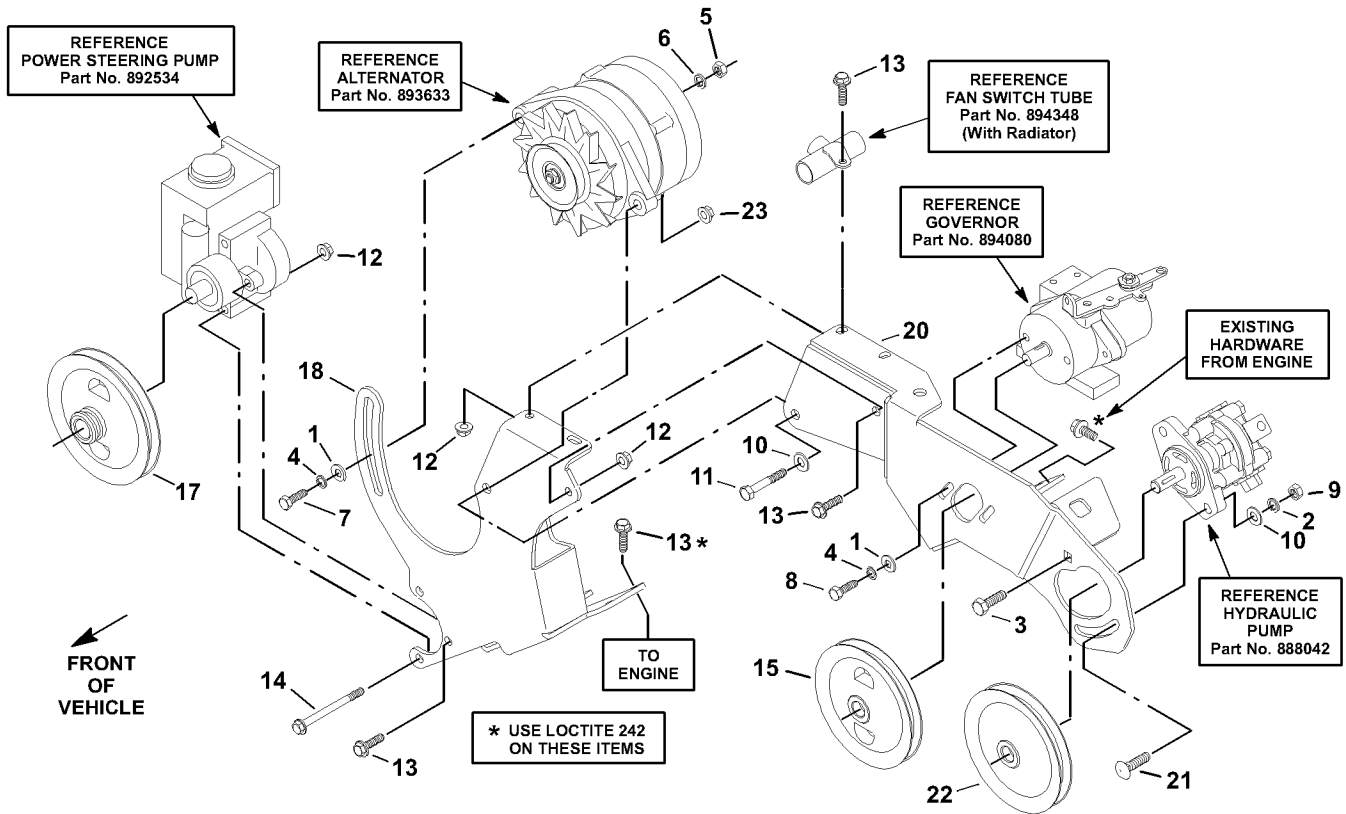
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	300646	Screw, 1/4-20 x 3/4	2	30	452398	Screw, M10-1.50 x 20 (8.8)	2
2	306396	Lockwasher, 1/4	2	31	820889	Clamp, tubing	6
3	308090	Washer, 1/4	2	32	843857	Sender, water temperature	1
4	450452	Nut, M6-1.00	7	33	843638	Hose, radiator upper (660)	1
5	450541	Screw, M6-1.00 x 16	4	34	843639	Hose, radiator (660)	1
6	452378	Screw, M6-1.00 x 20	7	35	843646	Hose, radiator lower (660 & 970)	1
7	835805	Hose, radiator overflow	As Req'd.	36	894348	Tube, fan switch (660 & Perkins)	1
8	825884	Clamp, tube	3	37	844034	Hose, radiator upper (970)	1
9	809231	Grommet (Model 898659)	2	38	842746	Hose, radiator upper (Perkins)	1
10	800177	Screw, 5/16-18 x 3/4	4	39	829787	Terminal, 45° 1/4" male	1
11	831846	Nut, isolation	4	40	826590	Hose, 5/16 i.d. (Model 898659)	As Req'd.
12 ◇	825624	Clamp, hose (Model 898659)	4	41	838340	Cooler, oil (automatic transmission)	1
13	889051	Cap, coolant reservoir	1	42 ◆	821893	Trim, push-on (Model 898659)	As Req'd.
14	833512	Foam	2	43	844391	Hose, radiator lower (Perkins)	1
15	800789	Kit, oil cooler mounting, automatic transmission (Model 898659)	1	44	844390	Hose, radiator (Perkins)	1
16	840754	Decal, Warning Pressure	1	45	452393	Screw, M8-1.25 x 60 (8.8)	2
17	843040	Bracket, fan mounting	1	46	832033	Clamp (970)	1
18	888549	Connector, hose (air cleaner)	1	47	833715	Plug (970)	1
19	894590	Radiator	1	48	833858	Fitting, hose (970)	1
20	833443	•Plug	1	49	843738	Housing, fan sender (970)	1
21	889049	•Cap, radiator	1	50	843856	Gasket, fan switch housing (970)	2
22	833442	•O-ring	1	51	009034880	Decal, fan	1
23	889050	Reservoir, coolant	1	52	17561-73000	Cap, water (970)	1
24	893388	Mount, radiator	1	53	17600-85831	Thermostat (970)	1
25	893554	Screen	1	54	17680-50F70	Switch, fan	1
26	2700799	Fan, radiator, cooling	1	55	17689-50F00	•O-ring	1
27	450453	Nut, M8-1.25 (G10.9)	2				
28	452388	Screw, M8-1.25 x 20 (8.8)	1				
29	452395	Screw, M10-1.50 x 80 (8.8)	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

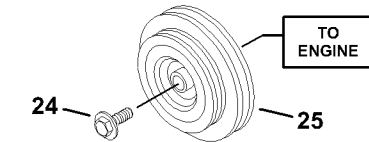
◇ The parts illustration only shows two (2) of Item 12 (825624 Hose Clamps). The other two are used to secure the cooler hoses to the transmission lines.

◆ Not Illustrated. Item 42 (821893 Push-on Trim) is used on Model 898659 to protect the automatic transmission hoses and is used on the right side motor mount and the frame rail.

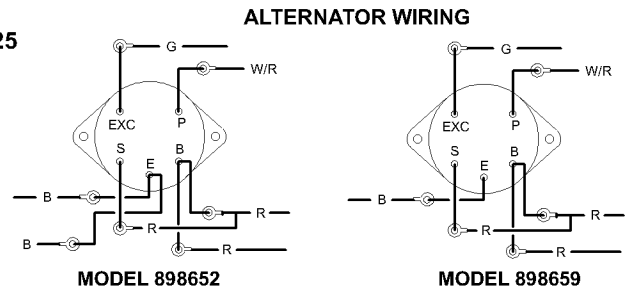
ALTERNATOR, ENGINE BELTS, PULLEYS and BRACKETS **SUZUKI 660 MODELS 898652 and 898659**



ENGINE BELT DIAGRAM
MODELS 898652 & 898659



894588, 894507

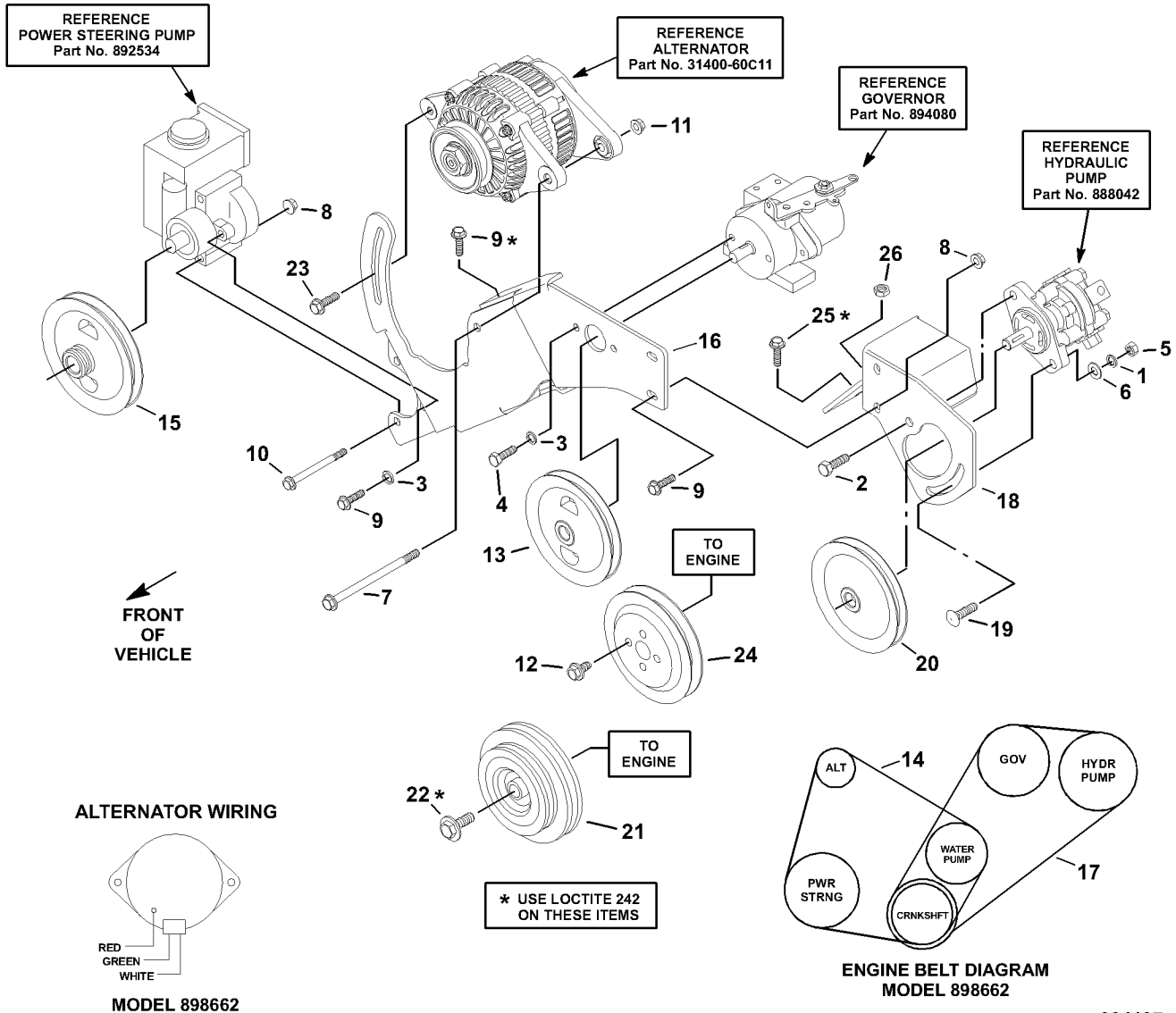


MODEL 898652

MODEL 898659

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 3/8	3	15	844035	Pulley, 4.75" (governor)	1
2	120177	Lockwasher, 3/8	2	16	841027	V-belt, 53 1/4" (1352 mm)	1
3	306835	Screw, 3/8-16 x 1 3/4	1	17	839907	Pulley, 5.50" (steering pump)	1
4	306325	Lockwasher, 5/16	3	18	842988	Bracket, alternator mounting	1
5	306375	Nut, 1/4-20	1	19	843998	V-belt, 40" (1016 mm)	1
6	306396	Lockwasher, 1/4	1	20	894375	Bracket, governor mounting	1
7	306416	Screw, 5/16-18 x 1	1	21	800073	Bolt, carriage, 3/8-16 x 1 1/4	1
8	306450	Screw, 5/16-18 x 3/4	2	22	828100	Pulley, 5.50" (hydraulic pump)	1
9	306562	Nut, 3/8-16	2	23	548804	Nut, 3/8-16	1
10	306981	Washer, 3/8	3	24	12619-60B00	Bolt	1
11	311213	Screw, 3/8-16 x 3	1	25	95131-51F60	Pulley, crankshaft (manual transmission)	1
12	450453	Nut, M8-1.25 (G10.9)	5		95131-51F50	Pulley, crankshaft (automatic transmission)	1
13	452388	Screw, M8-1.25 x 20 (8.8)	8				
14	452394	Screw, M8-1.25 x 70 (8.8)	2				

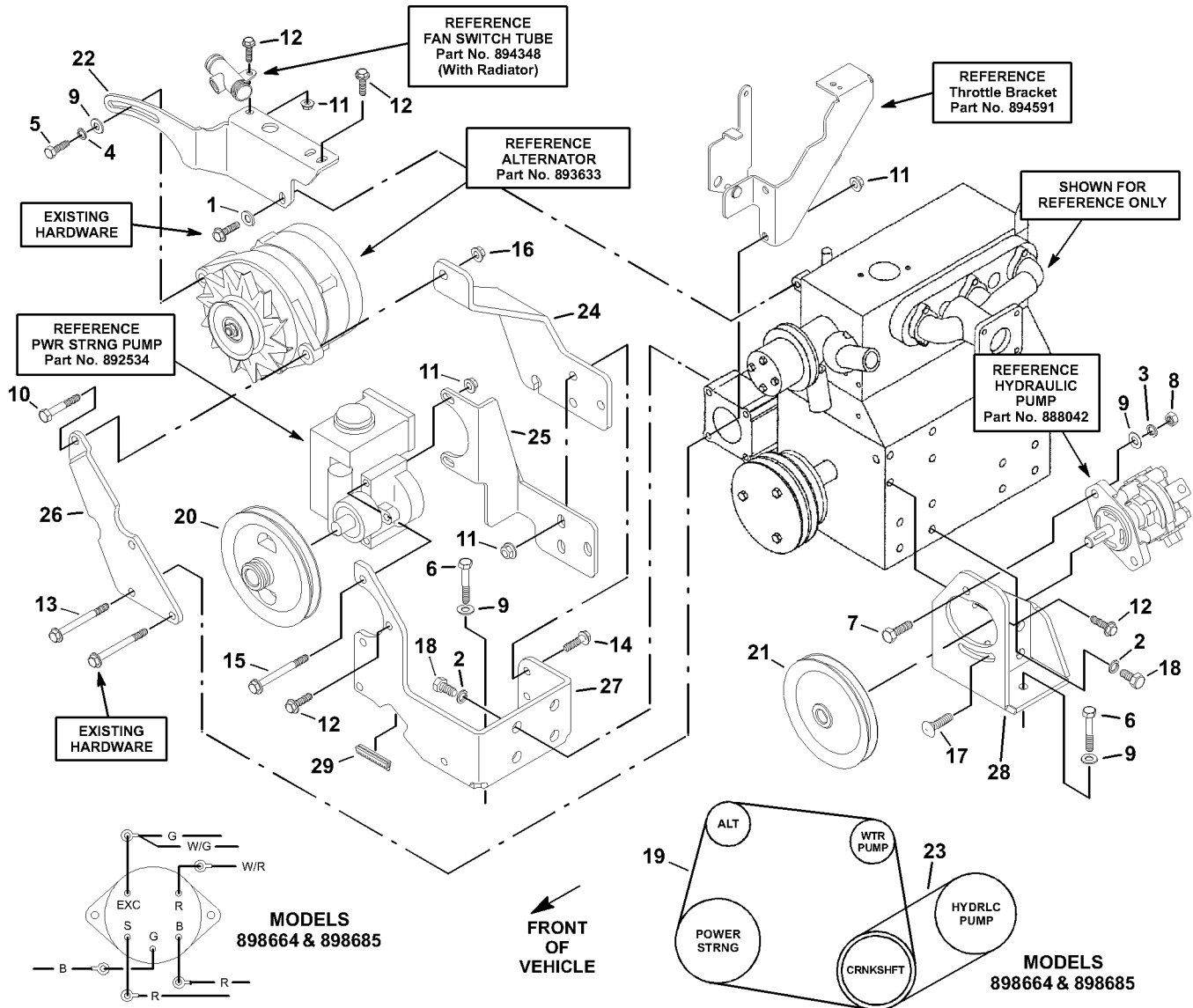
ALTERNATOR, ENGINE BELTS, PULLEYS and BRACKETS **SUZUKI 970 MODEL 898662**



894197

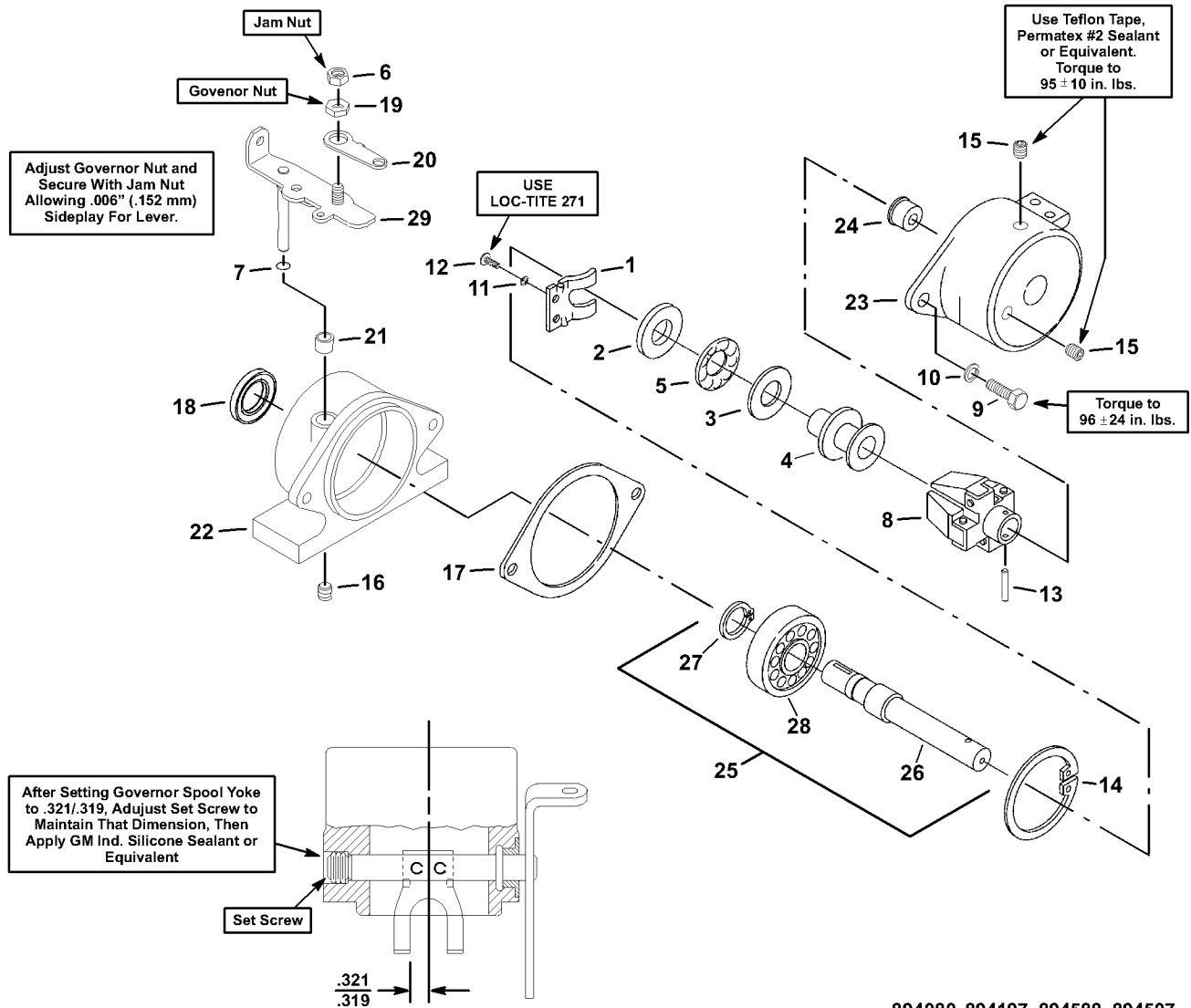
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	120177	Lockwasher, 3/8	2	15	839907	Pulley, 5.50" (steering pump)	1
2	306835	Screw, 3/8-16 x 1 3/4	1	16	894362	Bracket, alternator, governor and power steering pump	1
3	306325	Lockwasher, 5/16	3	17	844036	V-belt, 51" (1295 mm)	1
4	306450	Screw, 5/16-18 x 3/4	2	18	843702	Bracket, hydraulic pump	1
5	306932	Nut, 5/16-18	2	19	800073	Bolt, carriage, 3/8-16 x 1 1/4	1
6	306981	Washer, 3/8	2	20	828100	Pulley, 5.50" (hydraulic pump)	1
7	316909	Screw, 5/16-18 x 4 1/2	1	21	95131-51F60	Pulley, double groove	1
8	450453	Nut, M8-1.25 (G10.9)	4	22	12619-60B00	Bolt, crankshaft	1
9	452388	Screw, M8-1.25 x 20 (8.8)	7	23	09118-08107	Bolt	1
10	452394	Screw, M8-1.25 x 70 (8.8)	2	24	17511-73001	Pulley, water pump	1
11	800697	Nut, crownlock 5/16-18	1	25	452389	Screw, M8-1.25 x 25 (8.8)	1
12	800950	Screw, M6-1.00 x 10	4	26	08316-10083	Nut	1
13	844035	Pulley, 4.75" (governor)	1				
14	836854	V-belt, 42" (1067 mm)	1				

ALTERNATOR, ENGINE BELTS, PULLEYS and BRACKETS **DIESEL 4-WHEEL TURF MODELS 898664 & 898685**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 3/8	1	16	548804	Nut, flange 3/8-16	1
2	120166	Lockwasher, 1/2	8	17	800073	Bolt, carriage 3/8-16 x 1 1/4	1
3	120177	Lockwasher, 3/8	2	18	800921	Screw, M12-1.25 x 20 (8.8)	2
4	306325	Lockwasher, 5/16	1	19	844301	V-belt, 48" (1219 mm)	1
5	306416	Screw, 5/16-18 x 1	1	20	839907	Pulley, 5.50" (steering pump)	1
6	306836	Screw, 3/8-16 x 2 1/4	2	21	839911	Pulley, 4.75" (hydraulic pump)	1
7	306835	Screw, 3/8-16 x 1 1/4	1	22	844269	Bracket, alternator adjusment	1
8	306562	Nut, 3/8-16	2	23	841966	V-belt, 29.5" (750 mm)	1
9	306981	Washer, 3/8	5	24	844271	Bracket, alternator rear	1
10	311213	Screw, 3/8-16 x 3	1	25	844268	Bracket, power steering, rear	1
11	450453	Nut, M8-1.25 (G10.9)	8	26	844270	Bracket, alternator, front	1
12	452388	Screw, M8-1.25 x 20 (8.8)	5	27	844272	Mount, engine (right)	1
13	452394	Screw, M8-1.25 x 70 (8.8)	2	28	843760	Bracket, hydraulic pump	1
14	452390	Screw, M8-1.25 x 30 (8.8)	3	29	821893	Trim, push-on	As Req'd.
15	452395	Screw, M8-1.25 x 80 (8.8)	2				

GOVERNOR
SUZUKI 660 MODELS 898652 and 898659
AND
SUZUKI 970 MODEL 898662

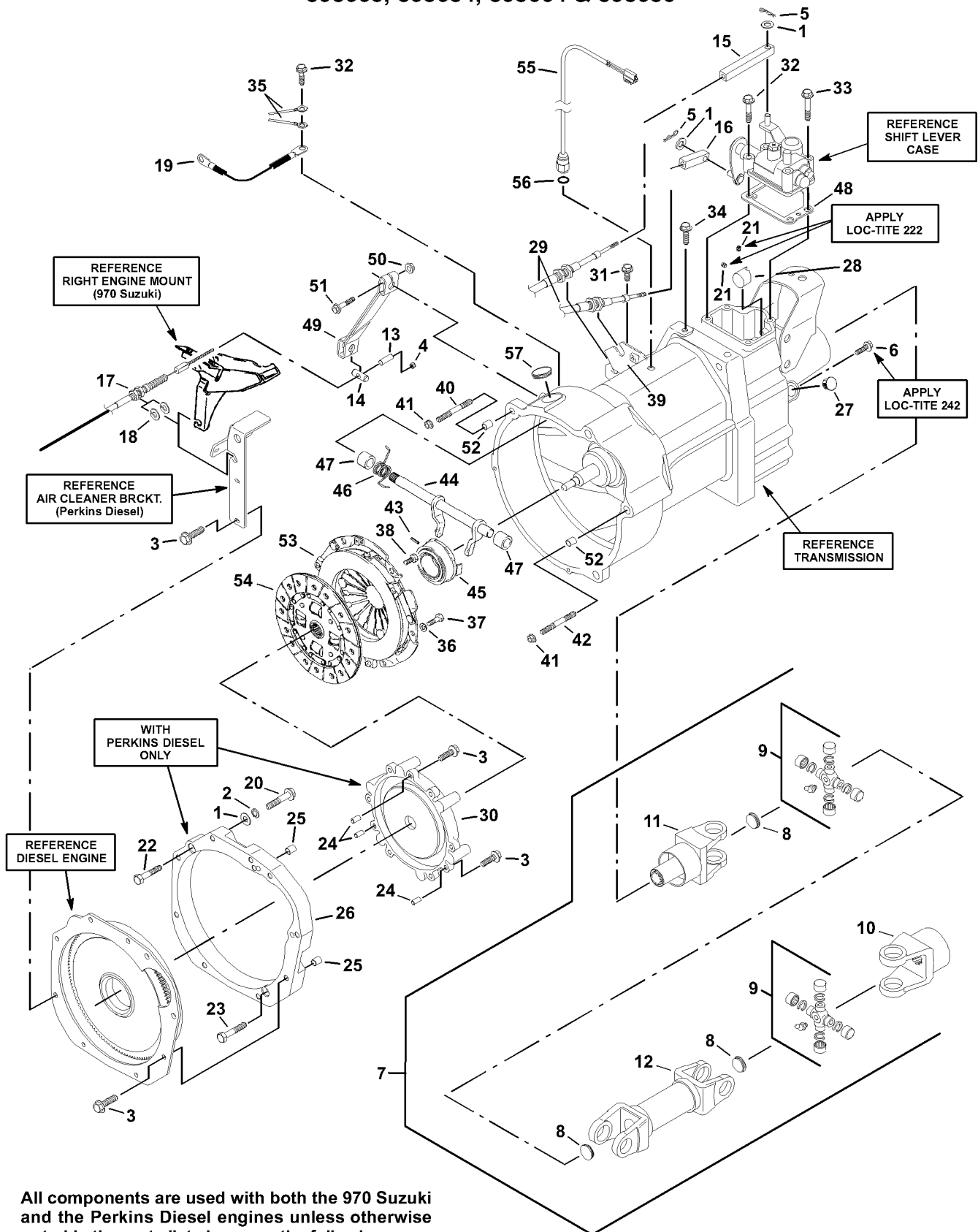


894080, 894197, 894588, 894507

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
	894080	Governor, complete	1	15	800227	•Plug, 1/8-27	2
1	111812	•Yoke, spool	1	16	800558	•Screw, set, 3/8-16 x 5/16"	1
2	111814	•Washer, thrust	1	17	833056	•Gasket, governor	1
3	111816	•Washer, thrust	1	18	833102	•Seal, oil	1
4	111817	•Spool, governor	1	19	835271	•Nut, governor arm	1
5	112840	•Bearing, thrust	1	20	843537	•Bracket, governor knee	1
6	130728	•Nut, jam, 1/4-20	1	21	843149	•Bushing, steel	1
7	158061-18	•O-ring	1	22	843157	•Head, governor	1
8	160410	•Carrier & weights	1	23	894471	•Reservoir, governor	1
9	302288	•Screw, 1/4-20 x 1"	2	24	833103	•Bearing, needle	1
10	306396	•Lockwasher, 1/4"	2	25	888397	•Shaft, governor, complete	1
11	306506	•Lockwasher, #6	2	26	833066	•Shaft, governor	1
12	306915	•Screw, machine, #6-32 x 5/16"	2	27	833104	•Ring, retaining	1
13	306966	•Pin, roll, 1/8" x 3/4"	1	28	833345	•Bearing, ball	1
14	548325	•Ring, retaining	1	29	894067	•Lever, governor control	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

**DRIVE SHAFT, CLUTCH & TRANSMISSION SHIFTER LINKAGE
SUZUKI 970 MODEL 898662 & PERKINS DIESEL MODELS
898663, 898684, 898664 & 898685**



All components are used with both the 970 Suzuki and the Perkins Diesel engines unless otherwise noted in the parts list shown on the following page.

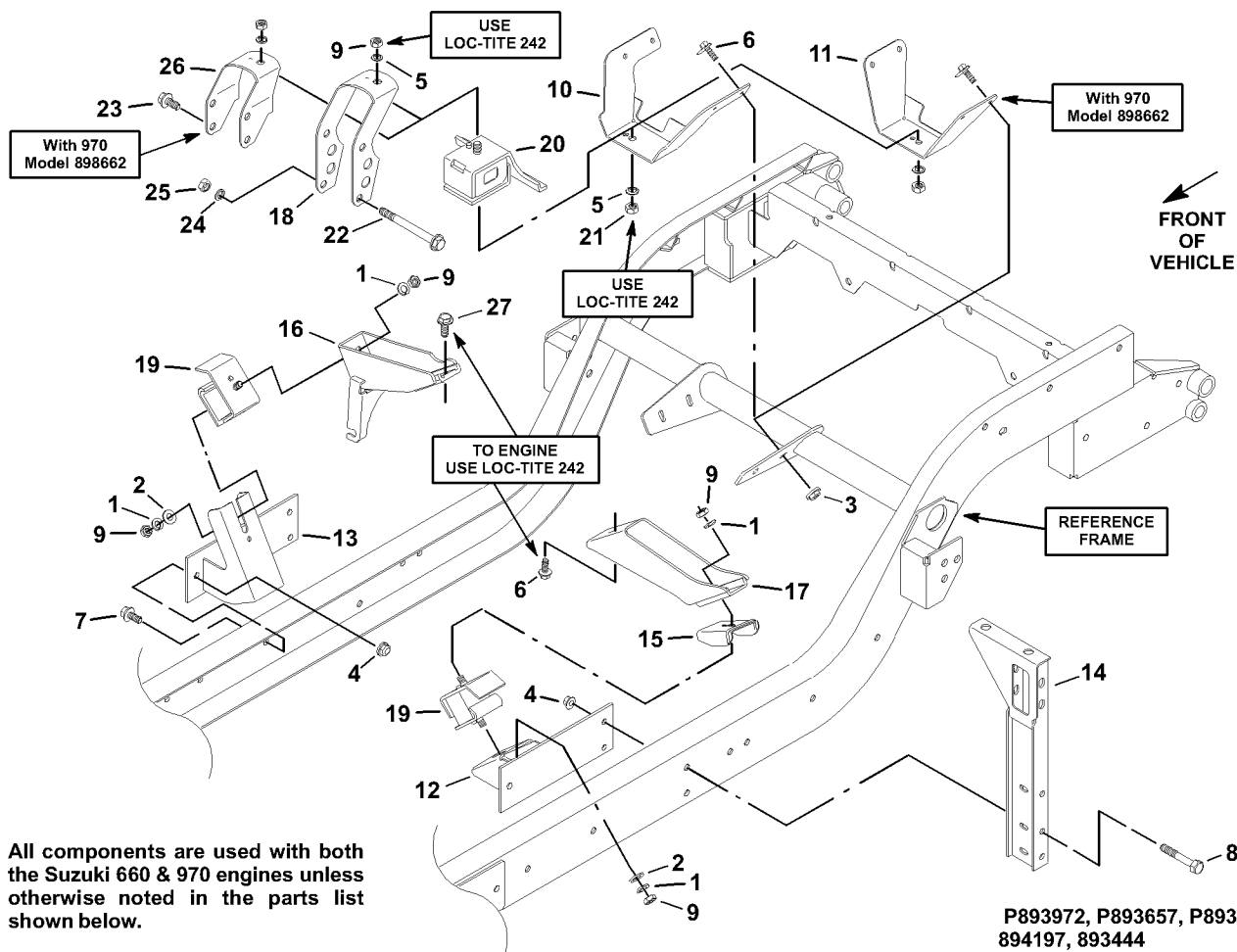
894197, 893444, 894198, 893594

DRIVE SHAFT, CLUTCH & TRANSMISSION SHIFTER LINKAGE
SUZUKI 970 MODEL 898662 & PERKINS DIESEL MODELS
898663, 898684, 898664 & 898685

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 5/16	4	30	894645	Ring, pressure plate (Perkins) . . .	1
2	306325	Lockwasher, 5/16	2	31	01550-08803	Screw	1
3	452389	Screw, M8-1.25 x 25 (8.8)	11	32	01550-08403	Screw	4
4	450377	Nut, nylock M6-1.00 (8.8)	1	33	01550-08553	Screw	1
5	548190	Hairpin	2	34	09103-08131	Screw	1
6	800934	Screw, M6-1.00 x 16 (8.8)	1	35	39312-50F01	Wire, noise suppressor	2
7	894272	Driveshaft, complete	1	36	08321-01083	Lockwasher	2
8	548482	•Plug, expansion	3	37	09111-08035	Screw	2
9	826284	•Cross, u-joint	2	38	09117-08096	Screw	4
10	826285	•Yoke, universal	1	39	28391-85202	Bracket, shift cables	1
11	894432	•Yoke, front	1	40	01421-10403	Stud	1
12	894433	•Shaft, drive	1	41	08316-10103	Nut	2
13	833273	Bushing	1	42	01421-10503	Stud	1
14	842010	Bushing, clutch arm	1	43	09205-03019	Pin, roll	1
15	843830	Connector, shift cable	1	44	23260-85203	Shaft, clutch release	1
16	843778	Connector, shift cable	1	45	23265-85200	Bearing, clutch release	1
17	894299	Cable, clutch	1	46	09448-20007	Spring, clutch release	1
18	844202	Washer, slotted	4	47	09300-14017	Bushing, clutch release	2
19	892811	Wire, ground, black 24" (610 mm)	1	48	845223	Gasket, shifter case	1
20	452392	Screw, M8-1.25 x 50 (8.8)	2	49	23266-85002	Arm, clutch release	1
21	548222	Set screw, #8-32	2	50	08316-10083	Nut	1
22	800948	Screw, M10-1.25 x 35 (12.9)	1	51	01550-08353	Screw	1
23	800949	Screw, M10-1.25 x 50 (12.9)	1	52	04211-13149	Sleeve, alignment	2
24	839752	Pin, dowel, 8 mm x 18 mm	3	53	22100-85200	Cover assembly, clutch	1
25	842961	Sleeve, alignment	2	54	22400-85141	Disc, compression clutch	1
26	843323	Adapter, transmission (Perkins)	1	55	37610-80023	Switch, backup lamp	1
27	843754	Plug	1	56	09280-11002	•O-ring	1
28	844228	Stop, 5th gear lockout	1	57	09250-30003	Plug, transmission inspection timing	1
29	894179	Cable, shifter	2				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

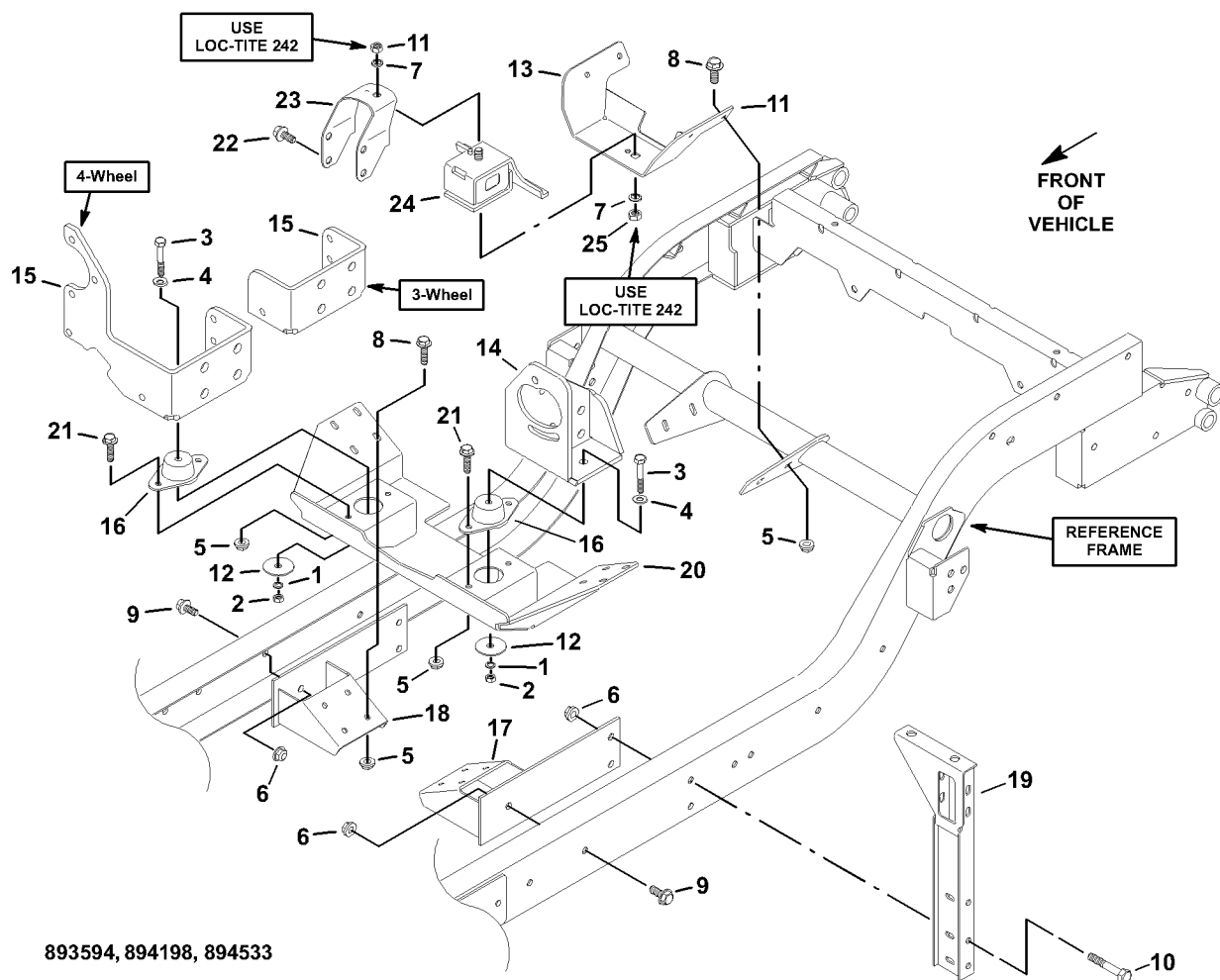
ENGINE and TRANSMISSION MOUNTS SUZUKI 660 & 970 MODELS 898652, 898659 & 898662



All components are used with both the Suzuki 660 & 970 engines unless otherwise noted in the parts list shown below.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	303269	Lockwasher, 7/16	4	15	11616-85000	Cover, engine mount	1
2	306982	Washer, 7/16	2	16	11640-53F20	Support, engine (right) (Suzuki 660)	1
3	450453	Nut, M8-1.25 (G10.9)	6		11640-85201	Support, engine (right) (Suzuki 970)	1
4	452454	Nut, M10-1.50 (10.9)	6	17	11650-85561	Support, engine (left) (Suzuki 660)	1
5	450412	Lockwasher, M10	2		11650-85550	Support, engine (left) (Suzuki 970)	1
6	452389	Screw, M8-1.25 x 25 (8.8)	4	18	11741-85510	Support, transmission, automatic trans. (660)	1
7	452398	Screw, M10-1.50 x 20 (8.8)	2		11741-85000	Support, transmission, manual trans. (660)	1
8	452406	Screw, M10-1.50 x 90 (8.8)	4	19	11610-60C01	Mount, engine (front)	2
9	800571	Nut, M10-1.25 (8.8)	5	20	11710-77100	Bracket, rear mount	1
10	843444	Bracket, transmission to frame (Suzuki 660)	1	21	08310-00103	Nut	1
11	843530	Bracket, transmission to frame (Suzuki 970)	1	22	01500-08953	Screw (660)	2
12	894009	Mount assembly, motor (left) (Suzuki 660)	1	23	01550-08163	Screw (970)	4
	894293	Mount assembly, motor (left) (Suzuki 970)	1	24	08321-01083	Lockwasher (660)	2
13	894010	Mount assembly, motor, right (Suzuki 660)	1	25	08310-00083	Nut (660)	2
	894292	Mount assembly, motor, right (Suzuki 970)	1	26	11741-85200	Support, transmission (970)	1
14	893525	Support, platform	2	27	01550-10203	Bolt (660 eng. mount)	3

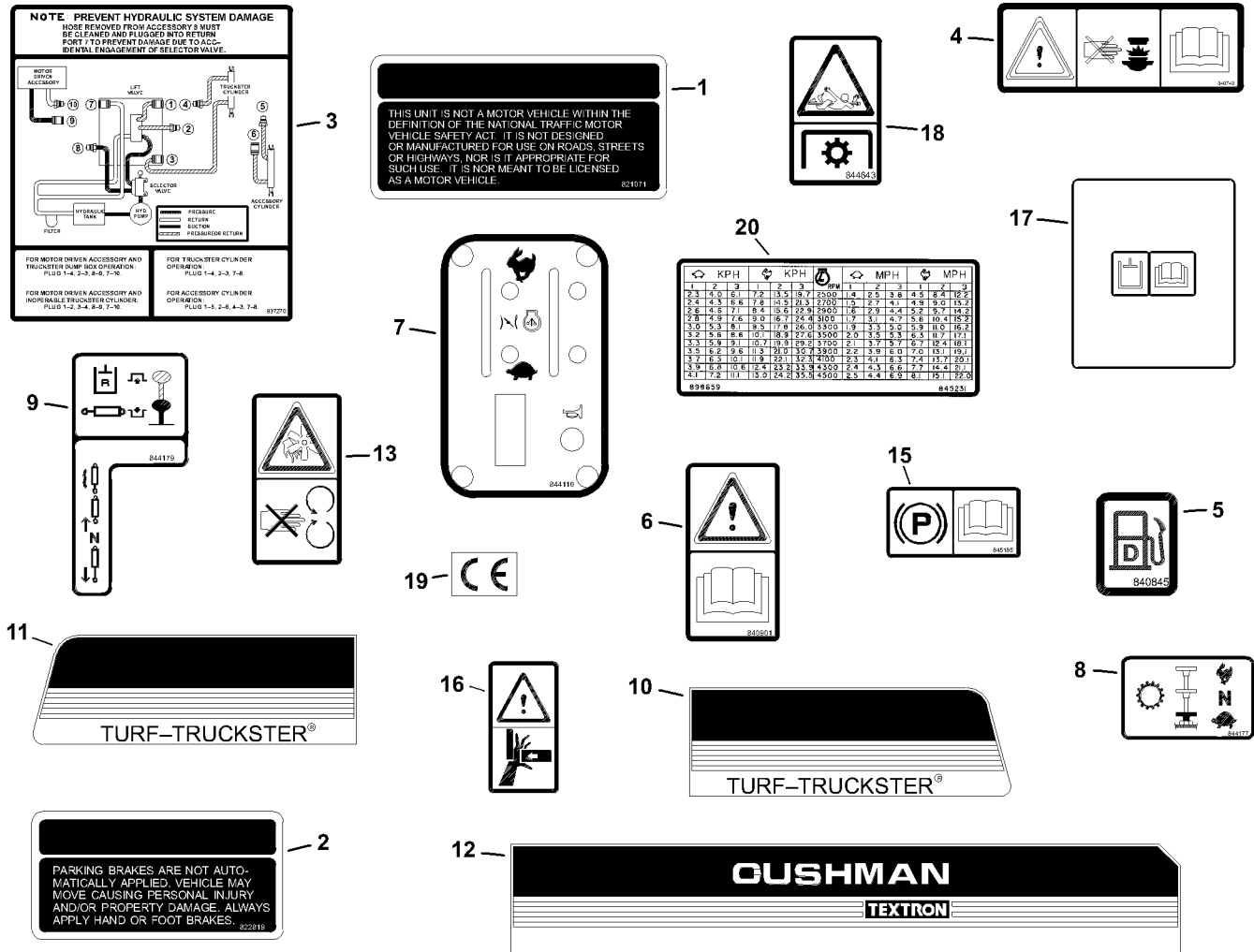
ENGINE and TRANSMISSION MOUNTS **PERKINS DIESEL MODELS 898663, 898684, 898664 & 898685**



893594, 894198, 894533

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	120177	Lockwasher, 3/8	2	14	843760	Mount, hydraulic pump	1
2	306562	Nut, 3/8-16	2	15	844272	Mount, engine (right, 4-wheel)	1
3	306836	Screw, 3/8-16 x 2 1/4	2		844619	Mount, engine (right, 3-wheel)	1
4	306981	Washer, 3/8	2	16	841885	Mount, isolation	2
5	450453	Nut, M8-1.25 (G10.9)	16	17	894581	Mount, motor (left)	1
6	452454	Nut, M10-1.50 (10.9)	6	18	894582	Mount, motor (right)	1
7	450412	Lockwasher, M10	2	19	893525	Support, platform	2
8	452389	Screw, M8-1.25 x 25 (8.8)	12	20	894580	Frame, engine mount	1
9	452398	Screw, M10-1.50 x 20 (8.8)	2	21	452388	Screw, M8-1.25 x 20 (8.8)	4
10	452406	Screw, M10-1.50 x 90 (8.8)	4	22	01550-08163	Screw	4
11	800571	Nut, M10-1.25 (8.8)	1	23	11741-85200	Support, transmission	1
12	809174	Washer, 3/8 (1.94" dia.)	1	24	11710-77100	Bracket, rear mount	1
13	843568	Mount, transmission	1	25	08310-00103	Nut	1

DECALS, TURF MODELS

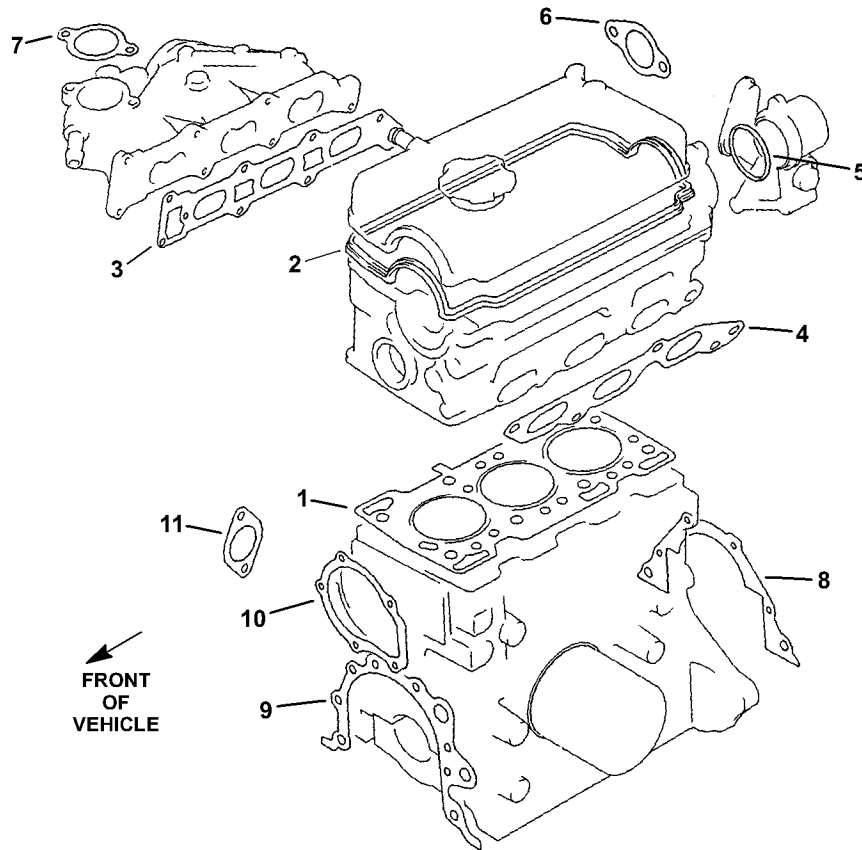


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|--|---|---|
| <p>14</p> <p>WARNING</p> <p>FAILURE TO HEED THESE WARNINGS MAY RESULT IN SERIOUS INJURY OR DEATH</p> | <ol style="list-style-type: none"> 1. READ AND UNDERSTAND ALL LABELS AND THE OPERATOR'S MANUAL. 2. DO NOT ALLOW UNTRAINED PERSONNEL TO OPERATE THIS VEHICLE. 3. DO NOT MODIFY THIS VEHICLE WITHOUT MANUFACTURER'S AUTHORIZATION. 4. PLACE LOADS FORWARD OF REAR AXLE. 5. TOP HEAVY LOADS CAN CAUSE UPSETTING. DO NOT EXCEED PAYLOAD CAPACITY. 6. DO NOT OPERATE IF REPAIRS ARE REQUIRED. 7. KEEP ALL SHIELDS IN PLACE. | <ol style="list-style-type: none"> 8. SHIFT INTO NEUTRAL OR PARK BEFORE STARTING ENGINE. 9. ONLY CARRY PASSENGERS IN SEATS PROVIDED. 10. WHEN PARKING (LEAVING) VEHICLE, FOLLOW ALL INSTRUCTIONS IN OPERATOR'S MANUAL. 11. AVOID SUDDEN STARTS, STOPS AND SHARP TURNS ESPECIALLY ON SLOPES, OR WITH HEAVY LOADS 12. KEEP ALL LABELS AND INSTRUCTIONAL LITERATURE LEGIBLE AND INTACT. 13. KEEP ARMS AND LEGS WITHIN VEHICLE BODY. <p>8450306</p> |
|--|---|---|

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	821071	Decal, Notice not motor vehicle .	1	12	844430	Decal, Cushman-Textron	1
2	822819	Decal, Warning, park brake	1	13	009034880	Decal, Warning, fan	1
3	837270	Decal, remote hyd. connections .	1	14	845038	Decal, Vehicle Operation	1
4	840754	Decal, Warning, pressure	1	15	845185	Decal, Park brake CE	1
5	840845	Decal, diesel fuel only	1	16	845027	Decal, Pinch point	As Req'd.
6	840901	Decal, Warning, read ops. man. .	1	17	840857	Decal, Remote hydraulics CE . . .	1
7	844116	Decal, LH dash, turf	1	18	844643	Decal, Warning, pto	1
8	844177	Decal, aux. transmission	1	19	009039290	Decal, CE	1
9	844179	Decal, hydraulic controls	1	20	845231	Decal, ground speed (660 A)	1
10	844426	Decal, 4 wheel turf LH	1	*	845232	Decal, ground speed (660 M) . . .	1
*	844422	Decal, 3 wheel turf LH	1	*	845233	Decal, ground speed (970)	1
11	844427	Decal, 4 wheel turf RH	1	*	845234	Decal, ground speed (diesel)	1
*	844423	Decal, 3 wheel turf RH	1				

* Not Illustrated

ENGINE GASKETS **SUZUKI 660 MODELS 898650, 898652 & 898659**

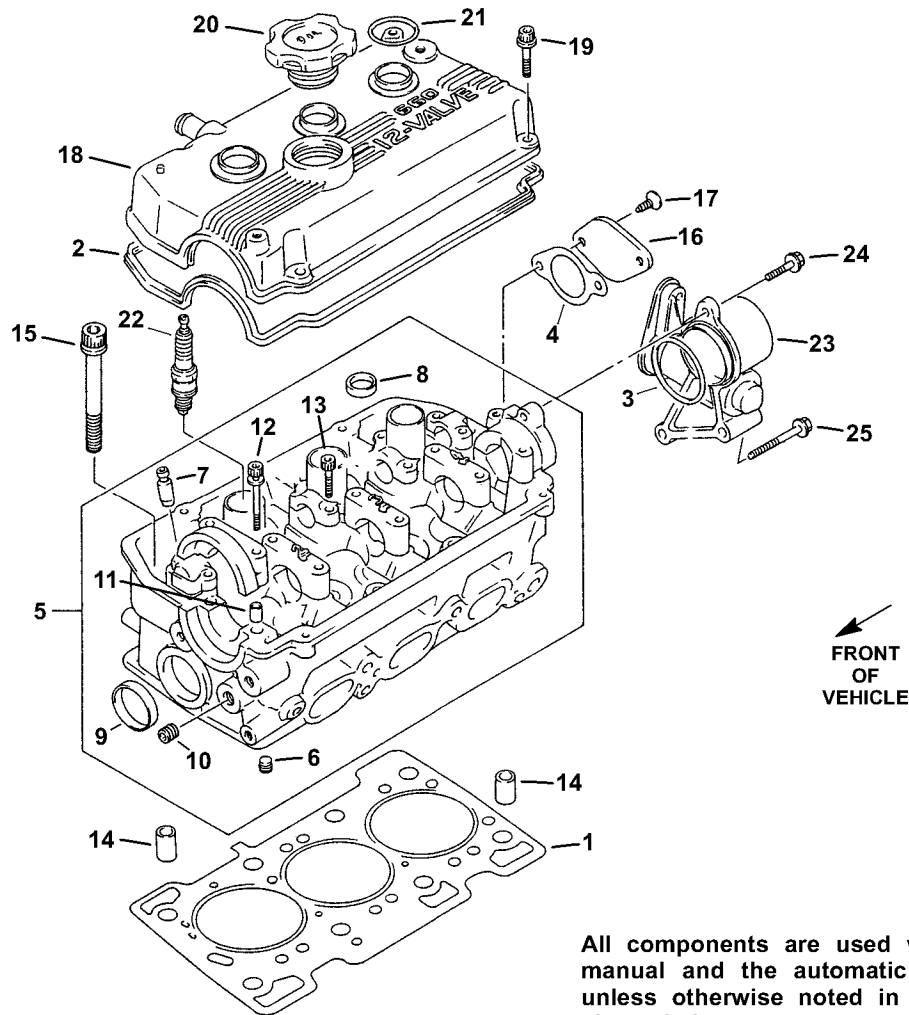


All components are used with both the manual and the automatic transmission unless otherwise noted in the parts list shown below.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	11401-62814	Gasket set, complete	1	7	17569-82001-H17	•Gasket, thermostat housing . .	1
2	11141-81401	•Gasket, head	1	8	11349-73010	Gasket, rear	1
3	11189-81401	•Gasket, valve cover	1	9	16119-50E00	Gasket, oil pump cover . .	1
4	13119-62F01	•Gasket, intake manifold . .	1	10	17431-73001	Gasket, water pump	1
5	14141-63F00	•Gasket, exhaust manifold	1	11	17559-73000-H17	Gasket, coolant return	1
6	11162-81400	•Gasket, distributor drive . .	1				
	17699-53F01	•Gasket	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

CYLINDER HEAD & COMPONENTS **SUZUKI 660 MODELS 898650, 898652 & 898659**

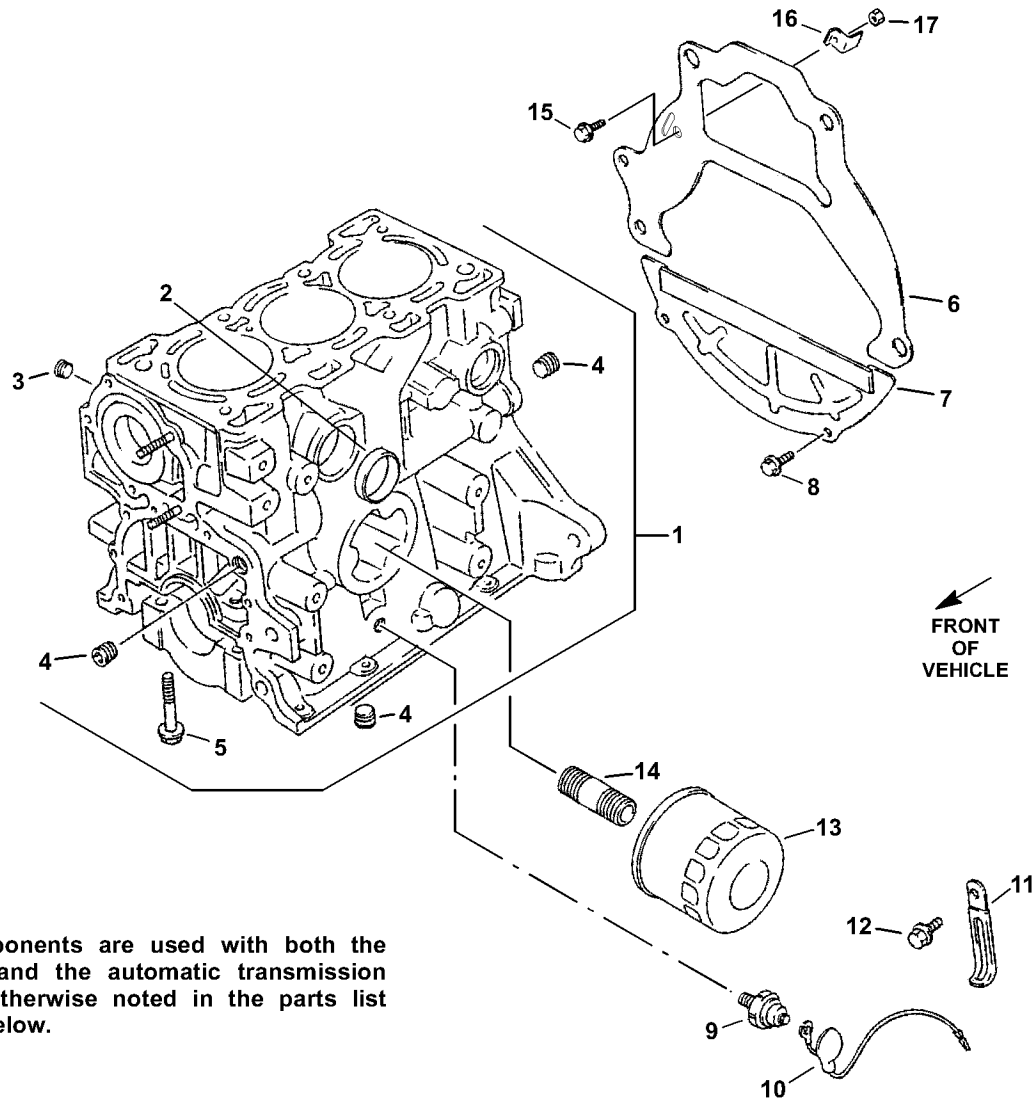


All components are used with both the manual and the automatic transmission unless otherwise noted in the parts list shown below.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	11141-81401	Gasket, head	1	15	11117-52E10	Bolt, cylinder head	8
2	11189-81401	Gasket, valve cover	1	16	11116-60C00	Plate, cylinder head	1
3	11162-81400	Gasket, distributor drive . .	1	17	09126-08004	Screw	2
4	17699-53F01	Gasket	1	18	11170-71X50	Cover, cylinder head	1
5	11100-71G01	Head, cylinder	1	19	01550-06253	Bolt	4
6	11112-53A00	•Plug, oil venturi	1	20	16920-86502	Cap, oil filler	1
7	11115-81400-001	•Guide, valve	12	21	11179-81402	O-ring, spark plug pipe . . .	3
8	09241-20006	•Seal	2	22	09482-00448	Plug, spark	
9	09241-30009	•Seal	1			NGK DCPR7E	3
10	09246-05006	•Plug	4	or	09482-00449	Plug, spark	
11	09206-08001	•Pin	10			Nippon Denso XU22EPR-U .	3
12	07130-06403	•Bolt	11	23	11161-61C00	Case, distributor	1
13	09103-06185	•Bolt	13	24	01550-06163	Bolt	1
14	04211-13189	Pin	2	25	01550-06503	Bolt	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

CYLINDER BLOCK & COMPONENTS **SUZUKI 660 MODELS 898650, 898652 & 898659**

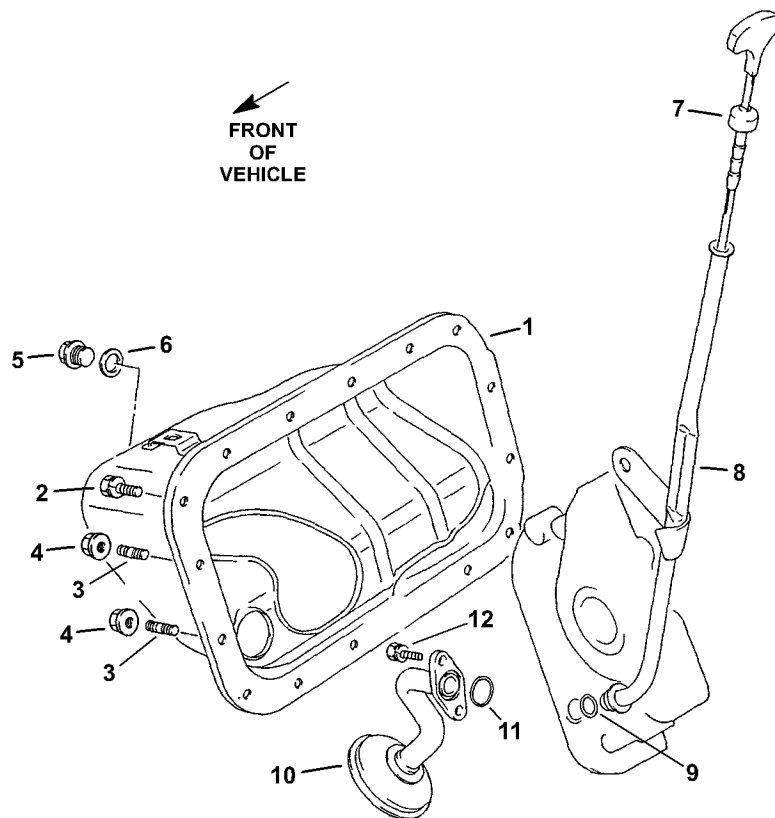


All components are used with both the manual and the automatic transmission unless otherwise noted in the parts list shown below.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	11200-53F10	Block, cylinder	1	10	36890-85020	Wire, oil pressure	1
2	09241-30009	•Seal	2	11	09404-08206	Clamp (mnl. trans.)	3
3	09246-05006	•Plug	1		09404-06429	Clamp (auto. trans.)	2
4	09246-06002	•Plug	3		09404-08206	Clamp (auto. trans.)	1
5	09103-10022	•Bolt	8	12	01550-08123	Bolt	1
6	11311-60C82	Plate, clutch housing upper	1	13	16510-82703	Filter, oil	1
7	11320-60C02	Plate, clutch housing lower (manual trans.)	1	14	11241-73003	Nipple	1
	11320-60C80	Plate, clutch housing lower (automatic trans.) ..	1	15	02162-06103	Bolt (auto. trans.)	1
8	02162-06103	Bolt	3	16	11331-78122	Plate, spark timing (auto. trans.)	1
9	37820-80001	Sender, oil pressure	1	17	08310-00063	Nut (auto. trans.)	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

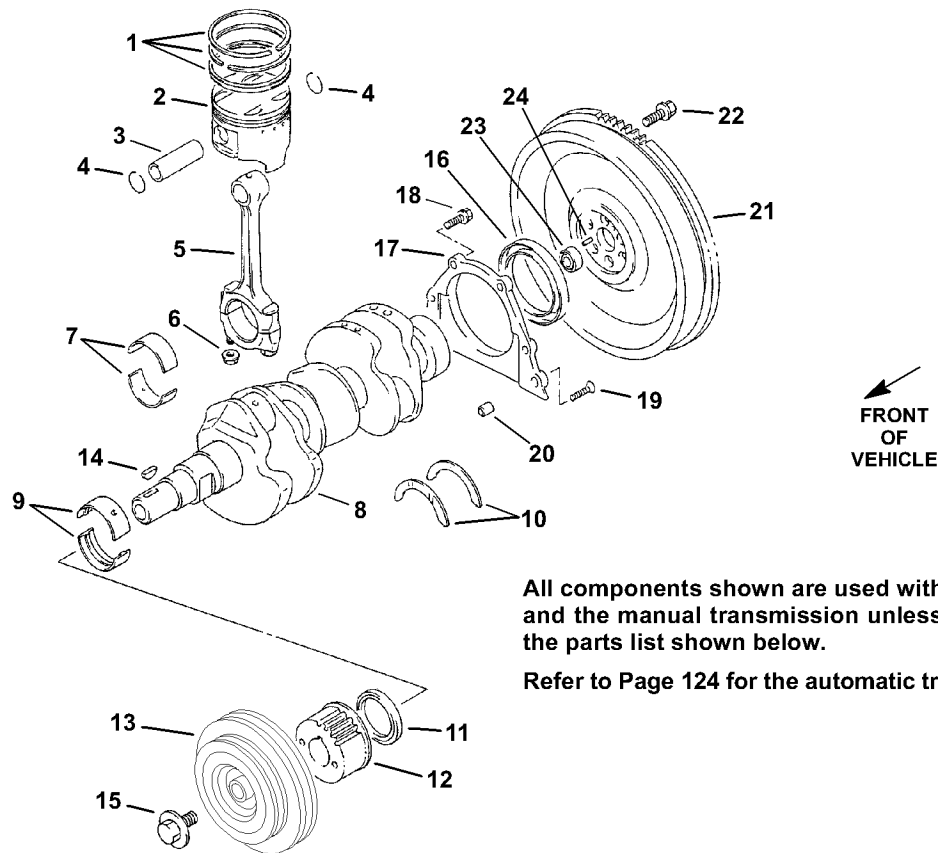
OIL PAN & DIPSTICK **SUZUKI 660 MODELS 898650, 898652 & 898659**



All components are used with both the manual and the automatic transmission unless otherwise noted in the parts list shown below.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	11510-53F01	Pan, oil	1	7	16910-60C15	Dipstick, oil level	1
2	09117-06033	Bolt	14	8	16930-70D00	Tube, dipstick	1
3	01411-06123	Stud	2	9	09280-10016	O-ring	1
4	08316-10063	Nut	2	10	16520-70D00	Strainer, oil pump	1
5	09247-14027	Plug, oil drain	1	11	09280-16005	O-ring	1
6	09168-14015	Gasket, oil drain plug	1	12	01570-06163	Bolt	2

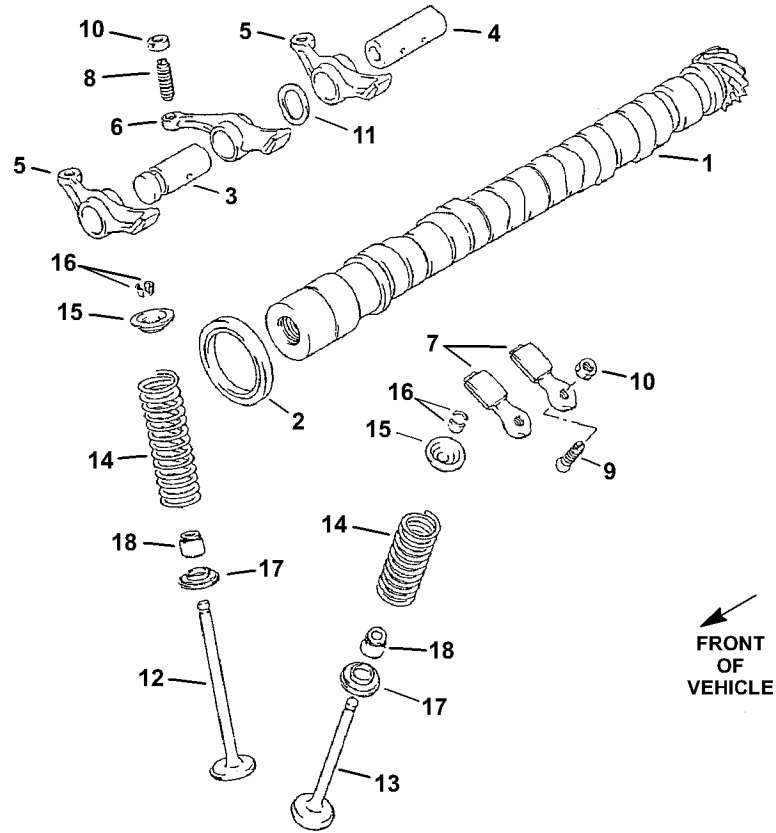
CRANKSHAFT, FLYWHEEL, PISTONS **SUZUKI 660 MODELS 898650, 898652 & 898659**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	12140-51F10	Ring, piston (standard)	3	12	12631-61D01	Pulley, timing belt	1
(1)	12140-51F10-025	Ring, piston	3	13	95131-51F60	Pulley (manual transmission)	1
(1)	12140-51F10-050	Ring, piston	3	(13)	95131-51F50	Pulley (automatic transmission)	1
2	12111-71G00-0B0	Piston (standard)	3	14	08341-31059	Key	1
(2)	12111-71G00-025	Piston (OS:0.25)	3	15	12619-60B00	Bolt	1
(2)	12111-71G00-050	Piston (OS:0.50)	3	16	09283-60005	Seal, rear main	1
3	12151-78110	Pin, piston	3	17	11341-70B01	Plate, rear	1
4	09381-16001	Ring, snap	6	18	01550-06203	Bolt	4
5	12160-60D01	Rod, connecting	3	19	02122-06253	Bolt	2
6	09159-08033	•Nut, connecting rod	2	20	04211-09109	Pin	2
7	12181-81401-0A0	Bearing, cnctng. rod	6	21	12620-70D02	Flywheel (manl. trans.)	1
(7)	12181-81401-025	Bearing, cnctng. rod	6	22	09103-10097	Bolt	6
8	12221-50E00	Crankshaft	1	23	12623-70B00	Bearing, input shaft (manl. trans.)	1
9	12300-61810-0A0	Bearing set, crnkshft.	1	24	09205-06009	Pin (auto. trans.)	1
(9)	12300-61810-025	Bearing set, crnkshft.	1	(24)	04221-06129	Pin (manl. trans.)	1
10	12300-82820	Bearing set, crank thrust	1				
(10)	12300-82820-012	Bearing set, thrst	1				
11	09283-32042	Seal, front	1				

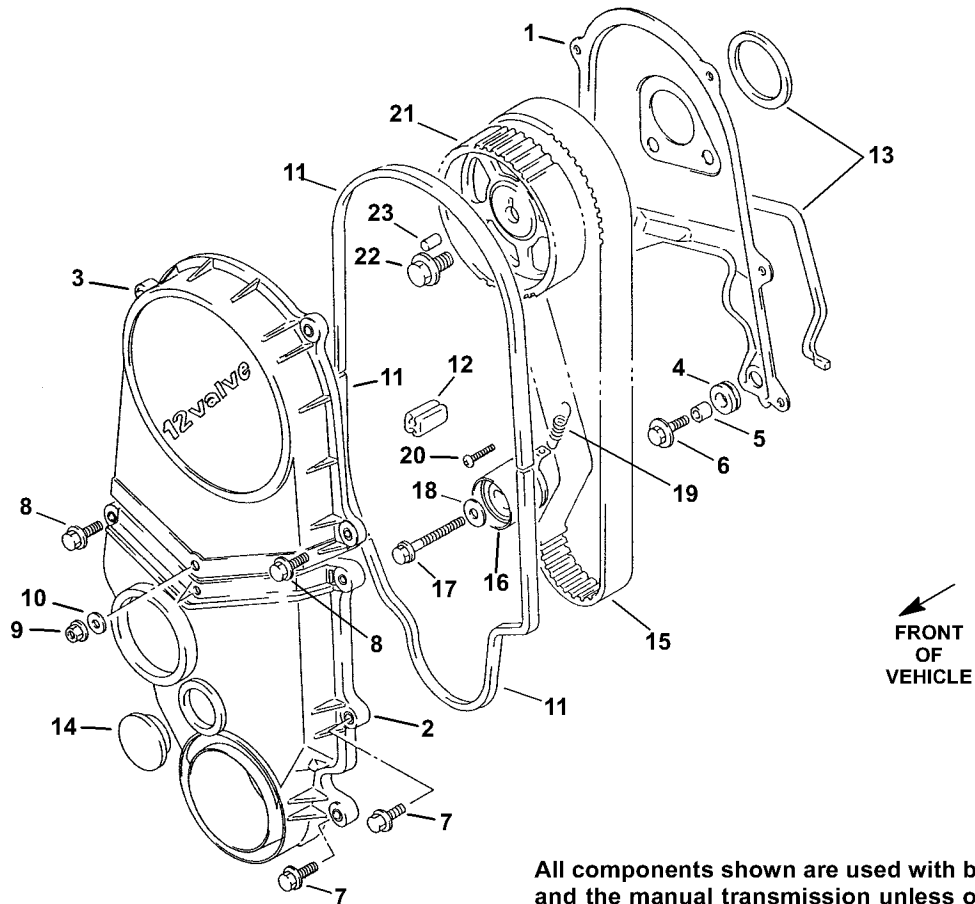
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

CAMSHAFT & COMPONENTS
SUZUKI 660 MODELS 898650, 898652 & 898659



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	12710-72D00	Camshaft	1	9	12846-61D00	Screw, valve adjusting	6
2	09283-35047	Seal, camshaft	1	10	12843-32400	Nut	12
3	12861-71G00	Shaft, rocker arm (No. 1) .	2	11	12891-81410	Washer, wavy	4
4	12862-71G00	Shaft, rocker arm (No. 2) .	2	12	12911-61C00	Valve, intake	6
5	12841-61D00	Arm, valve rocker intake No. 1	3	13	12915-81401	Valve, exhaust	6
6	12844-61D00	Arm, valve rocker intake No. 2	3	14	12921-51E00	Spring, valve	12
7	12845-81401	Arm, rocker exhaust	6	15	12931-51E03	Retainer, valve spring . . .	12
8	12842-32411	Screw, adjusting	6	16	12932-27A00	Cotter, valve	24
				17	12933-51E00	Seat, valve spring	12
				18	12934-81400	Seal, valve stem	12

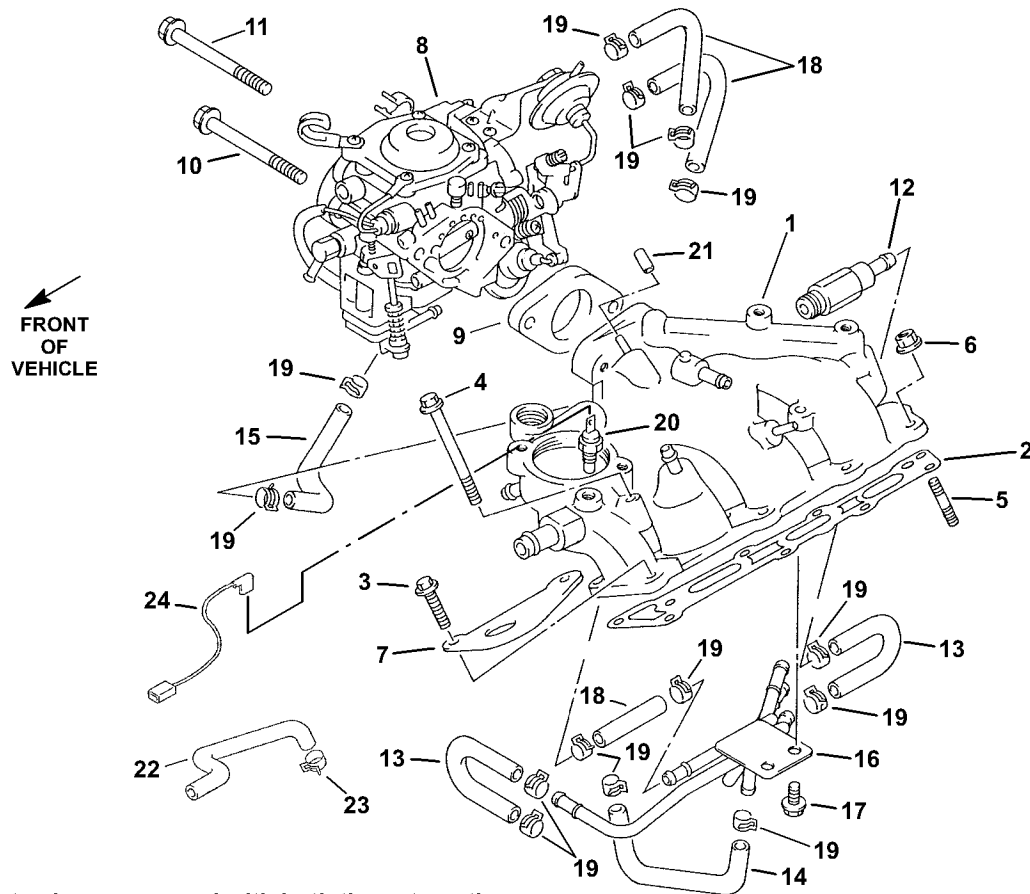
TIMING BELT & TIMING COVER **SUZUKI 660 MODELS 898650, 898652 & 898659**



All components shown are used with both the automatic and the manual transmission unless otherwise noted in the parts list shown below.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	11360-61C00	Cover, timing belt inside . .	1	12	11394-70B00	Seal, water/oil pump	1
2	11380-53F01	Cover, timing belt, lower front (No. 1)	1	13	11480-60D00	Seal, timing cover	1
3	11390-51F01	Cover, timing belt, upper front (No. 2)	1	14	09250-30017	Cap	1
4	09308-10004	Grommet	4	15	12761-71D10	Belt, timing (113YU25)	1
5	09180-06106	Spacer	4	16	12810-81402	Tensioner assembly	1
6	09116-06167	Bolt	4	17	01550-08403	Bolt	1
7	01550-06203	Bolt	6	18	08322-01083	Washer	1
8	01550-06253	Bolt	2	19	12821-50F00	Spring, tensioner	1
9	08316-10063	Nut	1	20	02112-06203	Screw	1
10	09160-06079	Washer (mnl. trans.)	1	21	12741-61D01	Pulley, cam shaft timing . . .	1
11	11396-71C00	Seal, timing belt cover	1	22	01550-12253	Bolt	1
				23	04221-05109	Pin	1

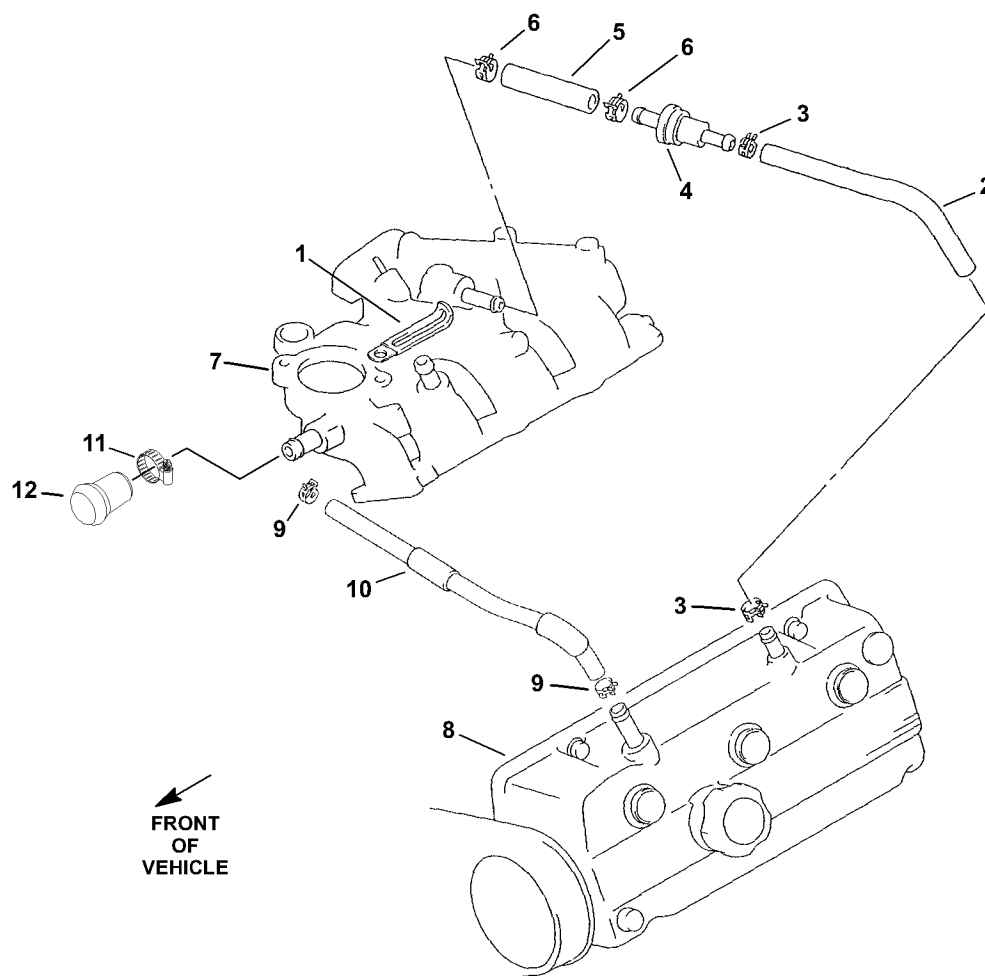
**CARBURETOR & INTAKE MANIFOLD
SUZUKI 660 MODELS
898650, 898652 & 898659**



All components shown are used with both the automatic and the manual transmission unless otherwise noted in the parts list shown below.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	13110-77D31	Manifold, intake	1	12	17860-53F00	Valve, thermo	1
2	13119-62F01	Gasket, intake manifold . . .	1	13	13193-53F00	Hose, water inlet	2
3	01550-06203	Bolt	6	14	13194-53F00	Hose, carb. flange outlet . .	1
4	01550-06553	Bolt	1	15	13195-53F00	Hose, carb. flange inlet . . .	1
5	01411-06253	Stud	2	16	13180-53F00	Pipe, carb. choke	1
6	08316-10063	Nut	2	17	01550-06123	Bolt	2
7	11851-65C00	Hook, engine	1	18	09352-70121	Hose As Req'd.	
8	2700623	Carburetor		19	09401-11407	Clip, hose	14
		(automatic transmission)	1	20	34850-70B10	Sender, water temperature	1
(8)	2700622	Carburetor		21	09250-04003	Plug	1
		(manual transmission)	1	22	51030-50F32	Hose, brake vacuum	1
9	13121-70D01	Insulator, carburetor	1	23	09401-15404	Clamp	1
10	01550-08953	Bolt	1	24	36863-50F10	Wire, temp. sender	1
11	09103-08133	Bolt	1				

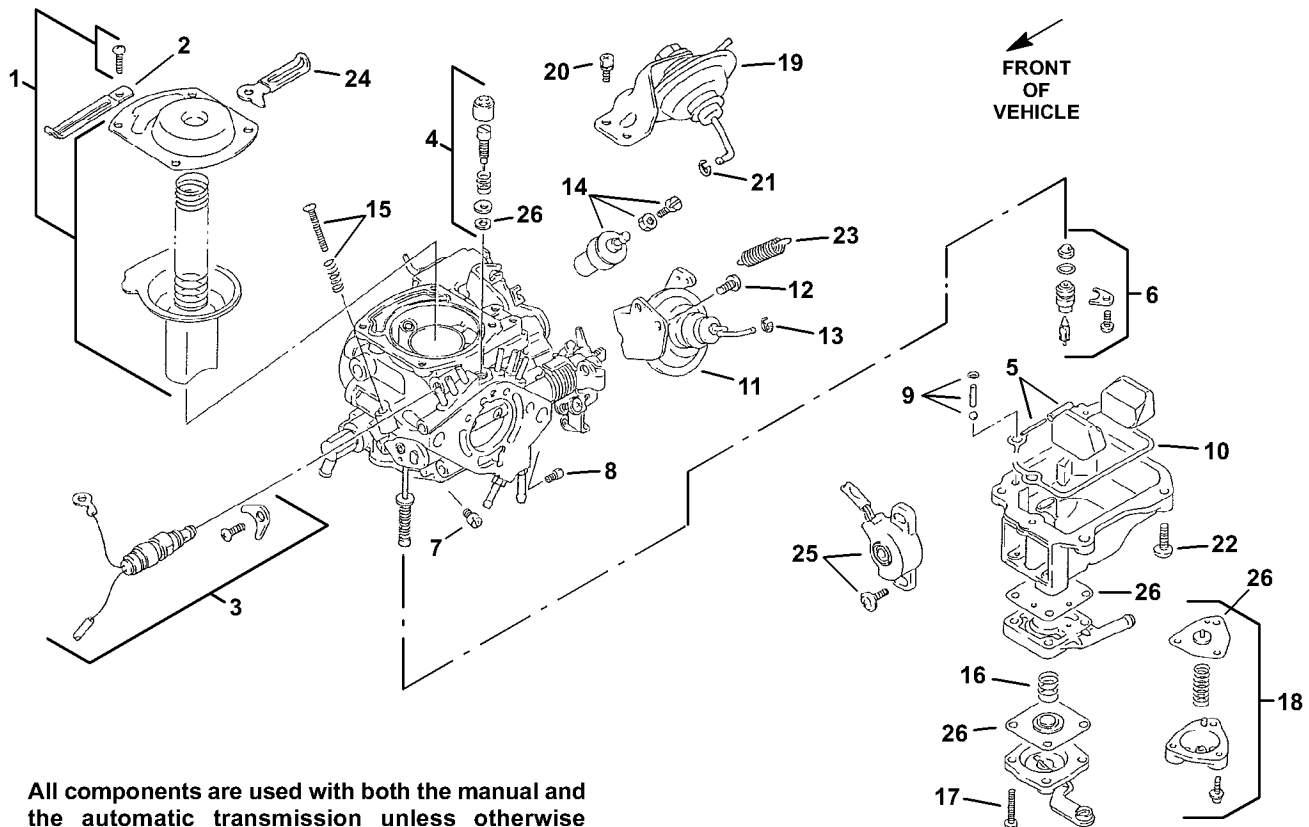
**PCV VALVE & COMPONENTS
SUZUKI 660 MODELS
898650, 898652 & 898659**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	09404-06435	Clamp	1	7	13110-77D31	Manifold, intake	1
2	09355-70125	Hose	As Req'd.	8	11170-71X50	Cover, valve	1
3	09401-11407	Clip, hose	2	9	09401-18404	Clip, hose	2
4	18118-72B01	Valve, PCV	1	10	11191-53F20	Hose, breather	1
5	09355-90145	Hose	As Req'd.	11	832033	Clamp, hose	1
6	09401-13417	Clip, hose	2	12	833715	Plug	1

CARBURETOR

SUZUKI 660 MODELS 898650, 898652 & 898659

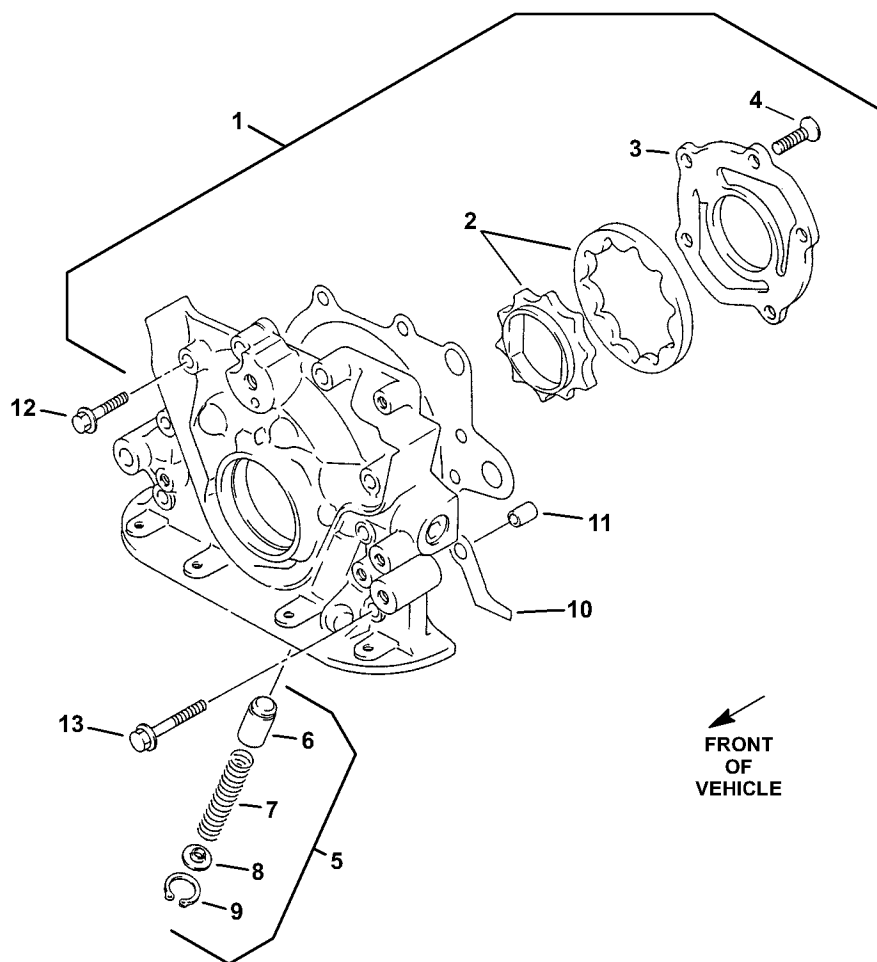


All components are used with both the manual and the automatic transmission unless otherwise noted in the parts list shown below.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
	2700623	Carburetor (automatic transmission)	1	15	13275-63CT0	•Screw, throttle adjustment (auto. trans.)	1
	2700622	Carburetor (manual transmission)	1	(15)	13275-851T0	•Screw, throttle adjustment (mnl. trans.)	1
1	13310-53FT0	•Valve set, piston	1	16	13494-78420	•Spring	1
2	09404-06433	•Clamp	1	17	02112-34253	•Bolt	4
3	13260-50FT0	•Solenoid set	1	18	13320-66CT0	•Valve set, power	1
4	13270-850T0	•Screw set, idle adjust	1	19	95550-85010	•Actuator, idle-up (auto. trans.)	1
5	13250-70DT0	•Float	1	(19)	95550-85500	•Actuator, idle-up (mnl. trans.)	1
6	13370-70DT0	•Valve, needle	1	20	13372-70D00	•Bolt (auto. trans.)	2
7	09491-92005	•Jet, main (auto. trans.)	1	(20)	09137-05009	•Bolt (mnl. trans.)	2
(7)	09491-92006	•Jet, main (mnl. trans.)	1	21	13384-78330	•Retainer, E-ring	1
8	09492-26002	•Jet, power (auto. trans.)	1	22	13601-05148	•Bolt	4
(8)	09492-27010	•Jet, power (mnl. trans.)	1	23	13326-70D00	•Spring	1
9	13240-60CT0	•Weight set, pump	1	24	09404-06432	•Clamp	1
10	13251-77320	•Gasket, float bowl	1	25	13564-63CT0	•Sensor, throttle position	1
11	13350-50F00	•Chamber, depression	1	26	13380-854T0	•Gasket set (auto. trans.)	1
12	02112-05107	•Screw	1	(26)	13380-851T0	•Gasket set (mnl. trans.)	1
13	13415-85010	•Clip	1				
14	13228-840T0	•Element, thermo	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

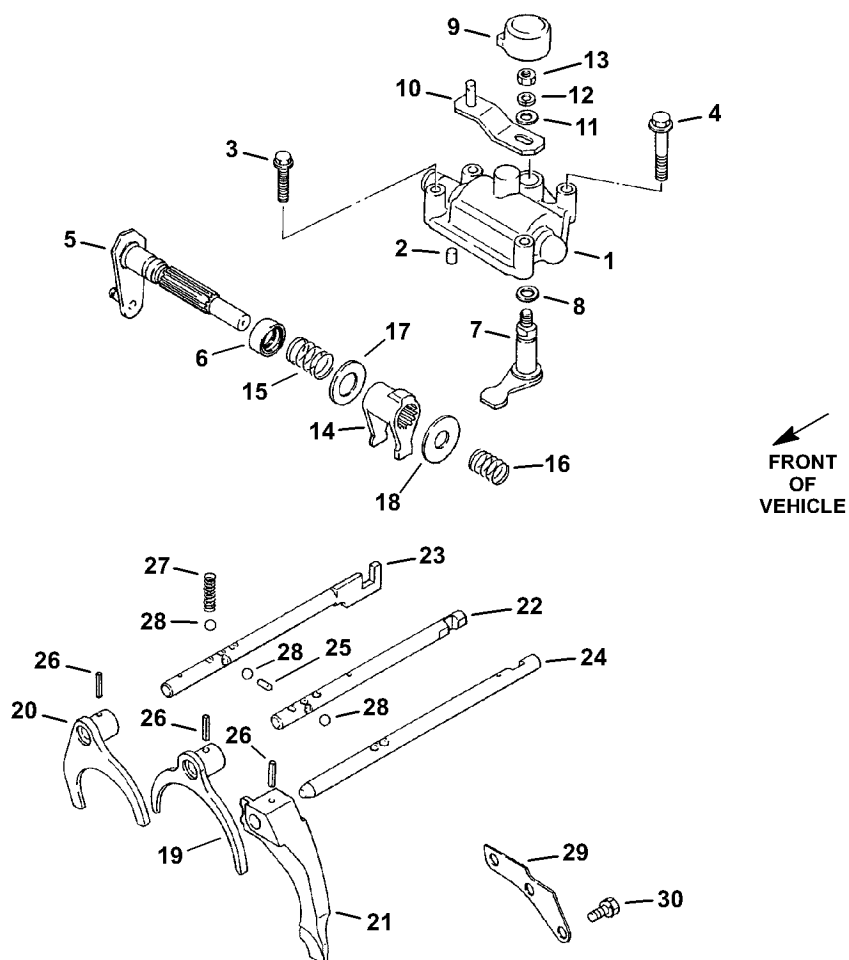
**OIL PUMP
SUZUKI 660 MODELS
898650, 898652 & 898659**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	16100-70836	Pump, oil	1	8	09169-05021	••Cap	1
2	16130-70B01	•Rotor, oil pump	1	9	08331-41156	••Retainer	1
3	16161-70B00	•Case, oil pump	1	10	16119-50E00	Gasket, oil pump cover	1
4	02122-06163	•Screw	5	11	04211-09109	Pin	2
5	16150-60A00	•Valve, oil relief	1	12	01550-06303	Bolt	4
6	16151-60A00	••Piston	1	13	01550-06353	Bolt	4
7	16152-60A00	••Spring	1				

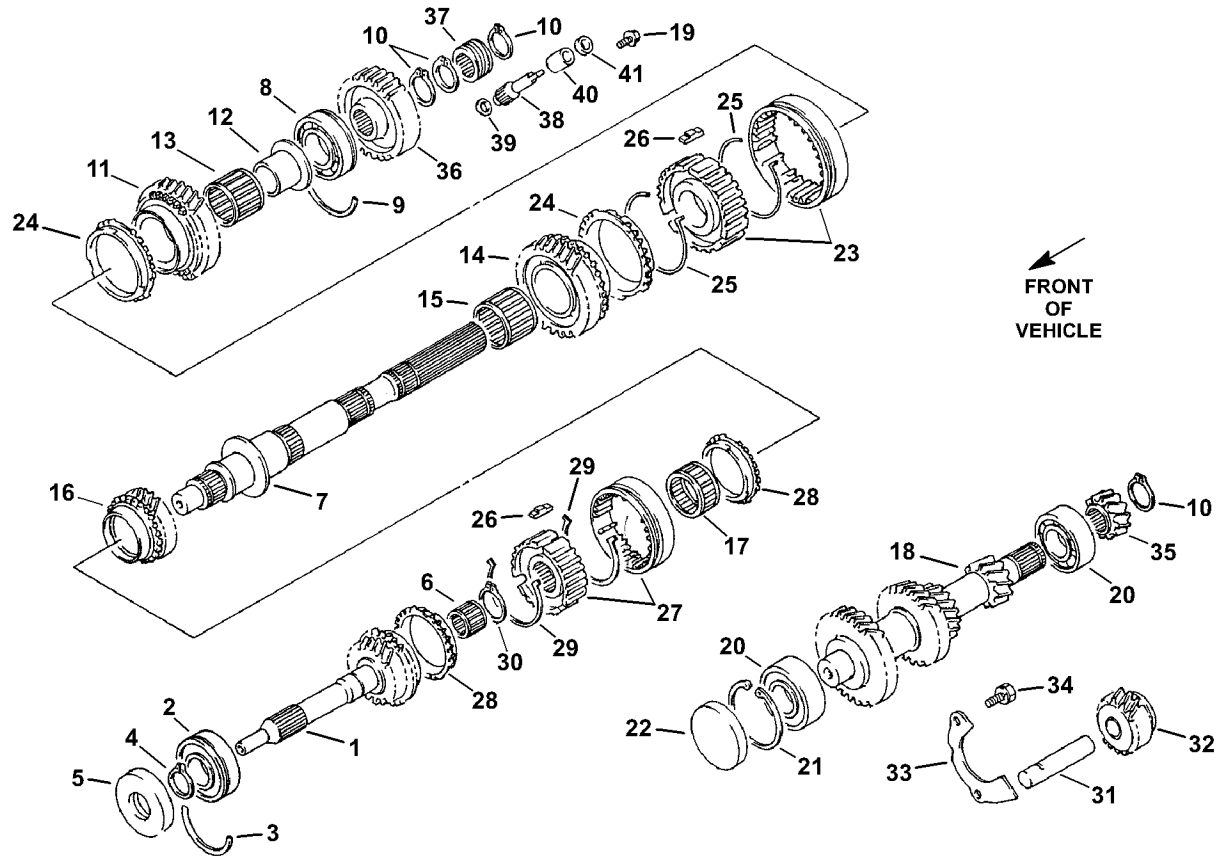
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

SHIFTER GEARS (MANUAL TRANSMISSION) **SUZUKI 660 MODEL 898652**



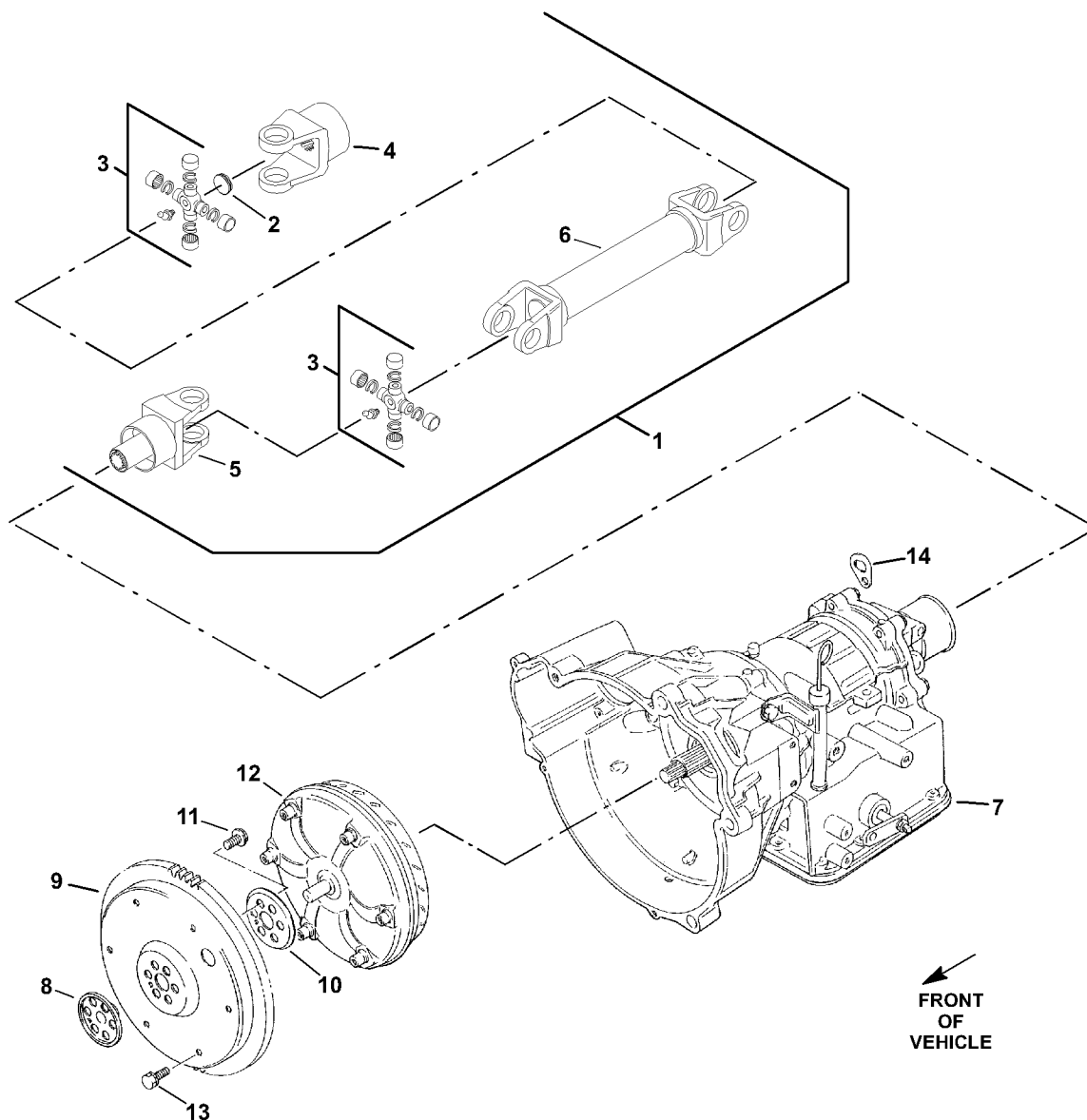
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	25121-85002	Case, gear shift lever	1	16	09440-15011	Spring	1
2	04221-06129	Pin	1	17	09160-17035	Washer	1
3	01550-06353	Bolt	3	18	09160-12093	Washer	1
4	01550-08403	Bolt	1	19	25210-77D00	Fork, low speed	1
5	25520-76D40	Shaft, gear shift lever	1	20	25220-77D00	Fork, high speed	1
6	09284-17004	Seal	1	21	25251-85000	Fork, reverse gear	1
7	25530-79501	Shaft, gear select	1	22	25411-70D01	Shaft, low speed fork	1
8	09286-09001	Seal	1	23	25420-70D01	Shaft, high speed fork	1
9	25536-84200	Boot, gear select shaft	1	24	25451-85300	Sjaft, reverse fork	1
10	25535-77D00	Arm, gear select	1	25	09261-03002	Roller	1
11	08322-01083	Washer	1	26	09205-04003	Pin, spring	3
12	09162-08008	Washer	1	27	25415-77D00	Spring	3
13	08310-00083	Nut	1	28	06111-10003	Ball	5
14	25541-85000	Lever, gear shift	1	29	25481-79400	Plate, stop	1
15	25576-70D00	Spring	1	30	09117-08007	Bolt	2

INPUT SHAFT & GEARS (MANUAL TRANSMISSION) **SUZUKI 660 MODEL 898652**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24110-77D00	Shaft, input	1	22	09241-47002	Plug	1
2	09262-20125	Bearing	1	23	24400-73D00	Hub set, low speed	1
3	24152-70D00	C-ring	1	24	24431-85020	Ring, low speed sync.	2
4	09380-20011	Circlip	1	25	09388-00020	Spring, synchronizer	2
5	24151-70D00	Seal	1	26	24472-60B00	Key, synchronizer	6
6	09263-17043	Bearing, needle	1	27	24400-73850	Hub set, high speed	1
7	24121-77D40	Shaft, main	1	28	24432-73D00	Ring, high speed sync.	2
8	08163-62050	Bearing	1	29	24442-60B00	Spring, synchronizer	2
9	09390-52003	C-ring	1	30	09380-22013	Circlip	1
10	09380-19004	Ring, snap	4	31	24551-85100	Shaft, reverse	1
11	24211-70D01	Gear, main shaft, low	1	32	24560-85000	Gear, reverse idle	1
12	24214-70D00	Bushing, main shaft, low	1	33	25482-85000	Plate, stop	1
13	09263-30031	Bearing, needle	1	34	01570-06163	Bolt	2
14	24221-70D03	Gear, main shaft, second	1	35	24671-85000	Gear, reverse drive	1
15	09263-30030	Bearing, needle	1	36	24681-85000	Gear, reverse driven	1
16	24231-70D01	Gear, main shaft, third	1	37	26121-77D00	Gear, speedometer drive	1
17	24239-80F00	Bearing, needle	1	38	26131-77D00	Gear, speedometer driven	1
18	24130-70D02	Shaft, counter	1	39	09160-08003	Washer	1
19	02162-06163	Bolt	1	40	09300-08017	Bushing	1
20	09262-20069	Bearing	1	41	09282-08001	Seal	1
21	08331-41478	Circlip	1				

**DRIVESHAFT, TORQUE CONVERTER
and AUTOMATIC TRANSMISSION
SUZUKI 660 MODEL 898659**

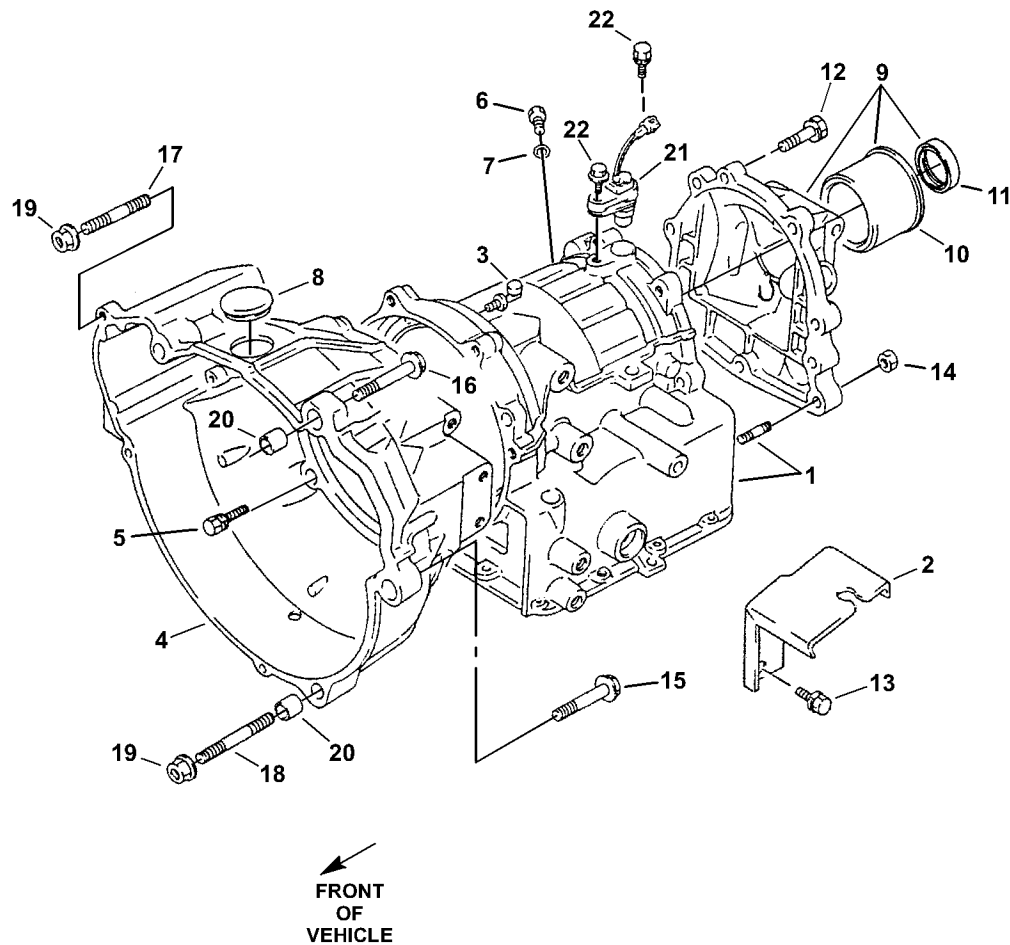


FRONT
OF
VEHICLE

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	894607	Driveshaft, complete (automatic transmission)	1	8	22611-55A11	Flange, drive plate	1
2	548482	•Plug, expansion	3	9	22621-52F00	Plate, drive (flywheel)	1
3	826284	•Cross, u-joint	2	10	22631-78131	Plate, drive rear	1
4	826285	•Yoke, universal	1	11	09103-10097	Bolt	6
5	894192	•Yoke, front	1	12	22710-52F00	Converter, torque	1
6	894605	•Shaft, drive	1	13	09137-08335	Bolt	6
7	20002-52F01	Transmission, complete	1	14	11851-62B00	Hook, engine	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

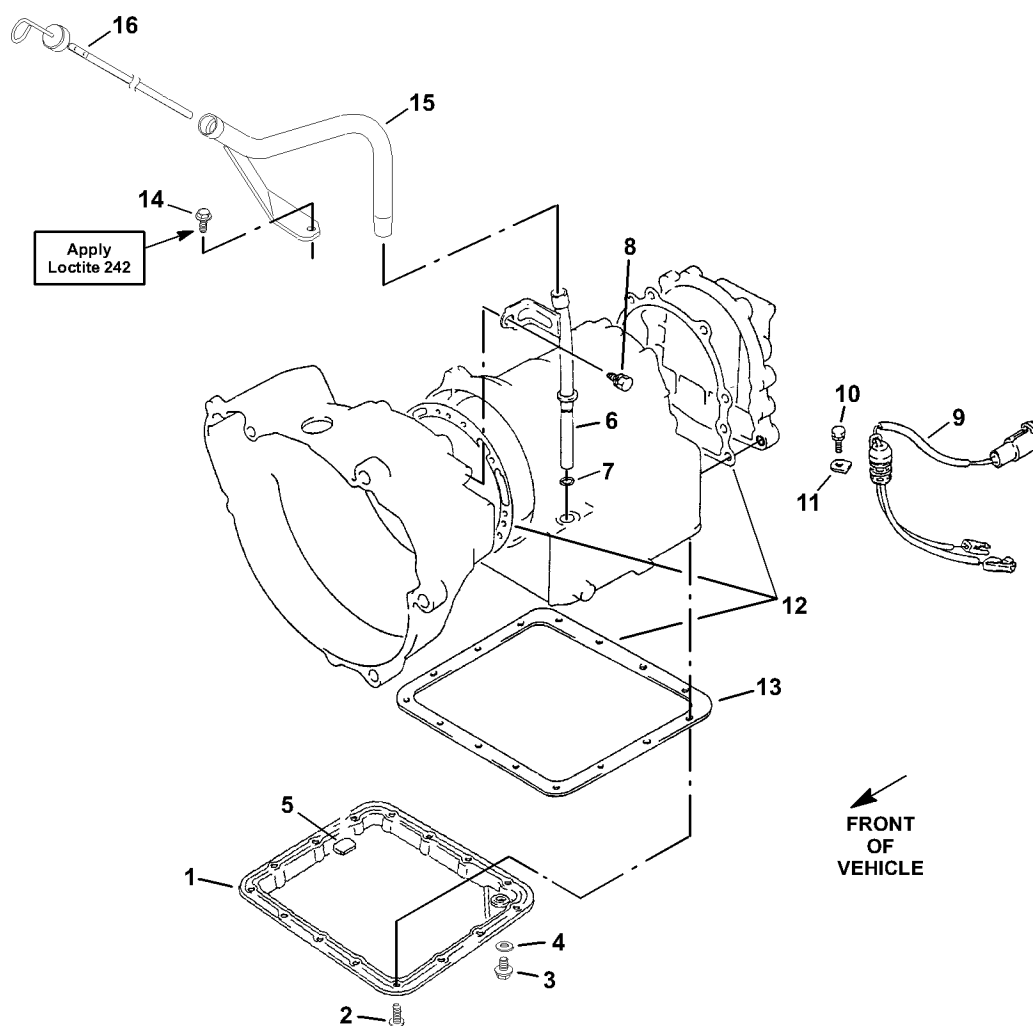
AUTOMATIC TRANSMISSION **and COMPONENTS** **SUZUKI 660 MODEL 898659**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24710-83CT0	Case, transmission	1	12	09117-08089	Bolt	5
2	28221-85501	Bracket, selector cable . . .	2	13	01570-08253	Bolt	2
3	24717-83C00	Breather	1	14	08310-00083	Nut	2
4	24721-78D00	Housing, torque converter .	1	15	01550-10503	Bolt	1
5	24883-85500	Bolt	6	16	01550-10553	Bolt	1
6	24820-62B00	Plug, booster	1	17	01421-10353	Stud	1
7	24755-78130	O-ring	1	18	01421-10403	Stud	1
8	09250-30003	Cap	1	19	08316-10103	Nut	2
9	24770-78DT0	Housing, extension	1	20	04211-13149	Collar	2
10	24773-83C00	•Cover, dust	1	21	26141-62D01	Sensor, speed	1
11	24780-85500	•Seal, extension case . . .	1	22	26599-85500	Bolt	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

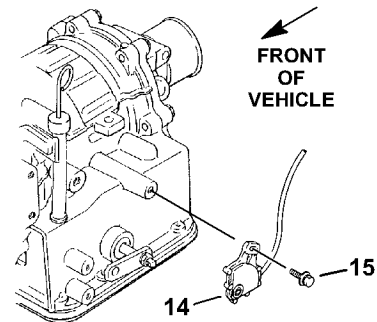
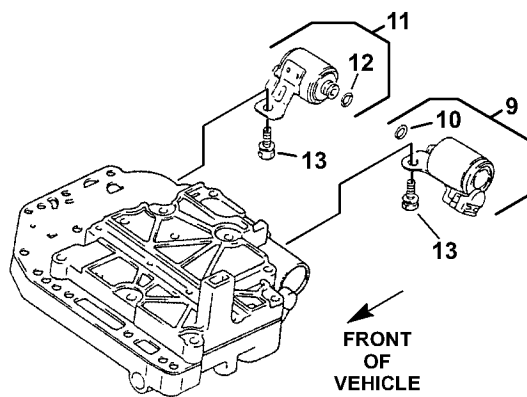
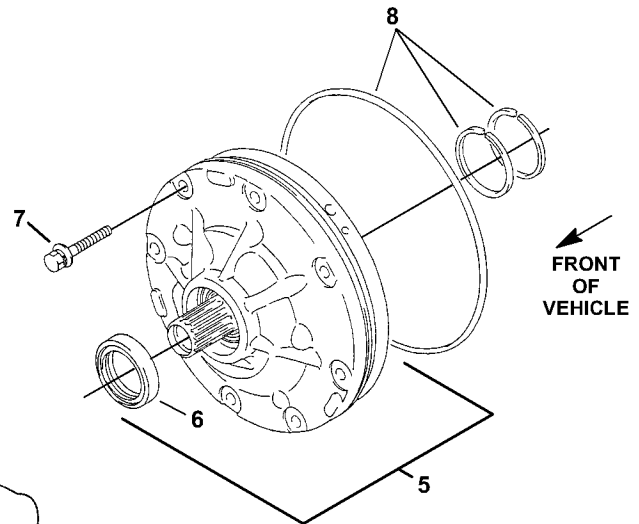
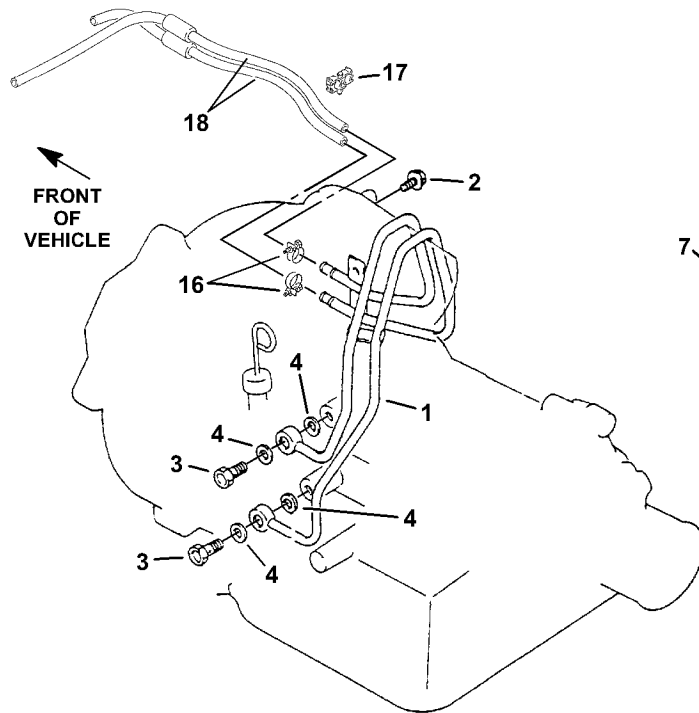
AUTOMATIC TRANSMISSION PAN, DIPSTICK & GASKETS SUZUKI 660 MODEL 898659



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24761-85500	Pan, transmission oil	1	9	24751-85500	Harness, solenoid wire	1
2	24882-85501	Bolt	15	10	01570-06163	Bolt	1
3	09247-10007	Plug, transmission oil drain	1	11	24742-82300	Plate, solenoid harness	1
4	09168-12009	Gasket, plug	1	12	24780-83CT0	Set, transmission gasket	1
5	24861-78230	Magneto, oil cleaner	1	13	24784-85500	•Gasket, oil pan	1
6	24785-85500	Tube, oil filler (dipstick)	1	14	800934	Screw, M6-1.00 x 16 (G8.8)	1
7	24785-82300	O-ring	1	15	894843	Tube, oil fill (transmission)	1
8	01550-08163	Bolt	1	16	894844	Dipstick, extended	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

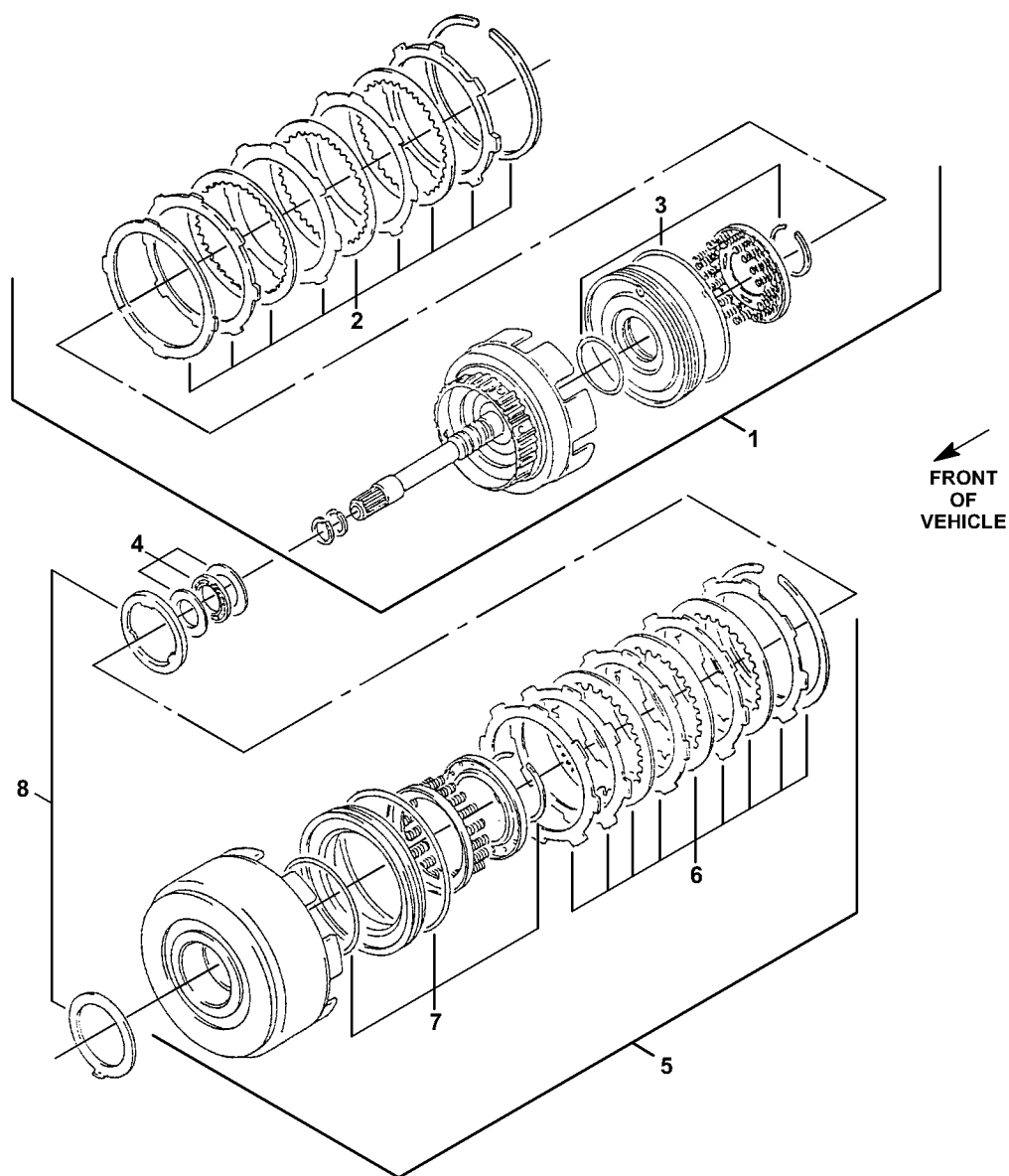
**TRANSMISSION TUBES, OIL PUMP,
SOLENOIDS & SHIFT SWITCH
(AUTOMATIC TRANSMISSION)
SUZUKI 660 MODEL 898659**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24891-52F00	Pipe assembly, oil	1	10	24786-82300	•O-ring	1
2	02162-06103	Bolt	1	11	26521-83C00	Solenoid, 2nd brake	1
3	09360-10032	Union bolt	2	12	24786-82300	•O-ring	1
4	09168-10028	Gasket	4	13	26599-85500	Bolt	2
5	22800-83C00	Pump, oil	1	14	37720-60C00	Switch, shift	1
6	22881-72B20	•Seal, oil pump	1	15	25948-83C00	Bolt	1
7	22883-55A00	Bolt, oil pump	8	16	09401-13415	Clamp	2
8	22860-62DT0	Ring set, oil pump seal	1	17	09403-14309	Clamp	1
9	26519-83C00	Solenoid, direct clutch	1	18	22931-56X52	Hose	As Req'd.

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

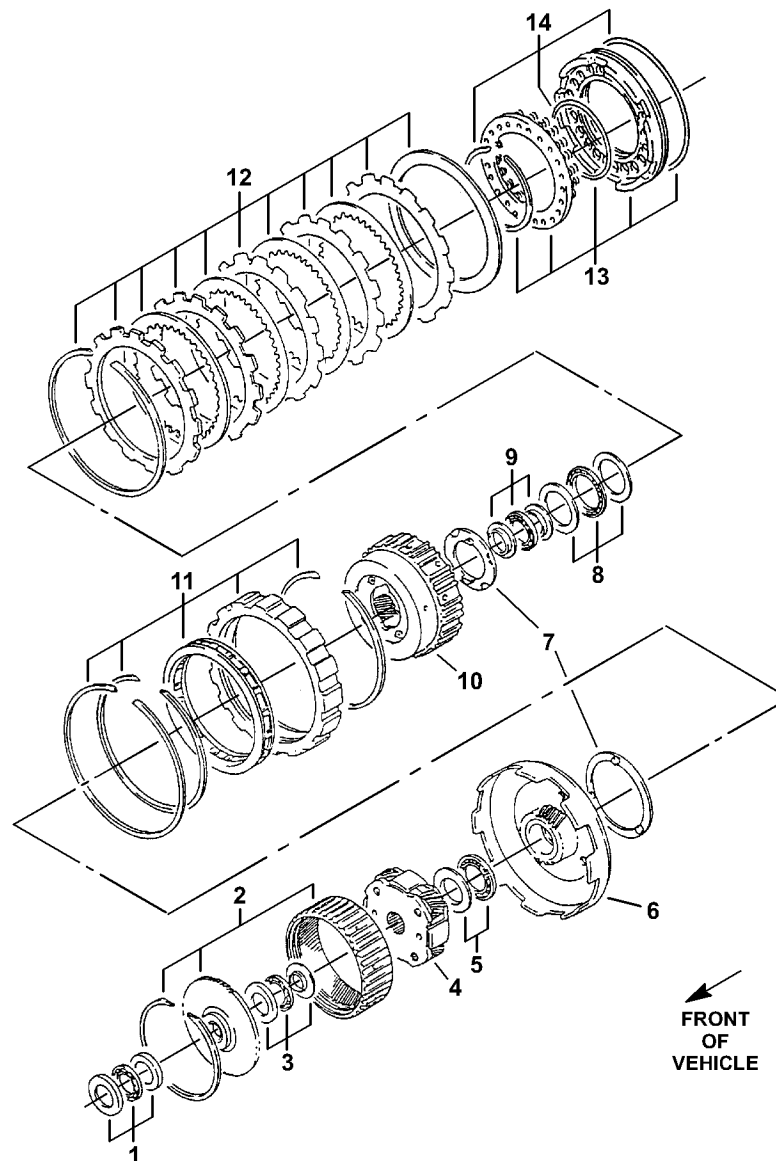
**TRANSMISSION INPUT SHAFT & CLUTCH ASSEMBLY
(AUTOMATIC TRANSMISSION)
SUZUKI 660 MODEL 898659**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24100-79BT0	Shaft set, input	1	5	26630-78B00	Clutch assembly, direct . . .	1
2	26621-72BT0	•Plate set, forward clutch .	1	6	26631-72BT0	•Plate set, direct clutch . . .	1
3	26622-855T0	•O-ring set, forward clutch	1	7	26632-78DT0	•O-ring set, direct clutch . .	1
4	24152-62DT0	Bearing set, thrust (No. 1) .	1	8	26651-78DT0	Washer set, direct clutch . .	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

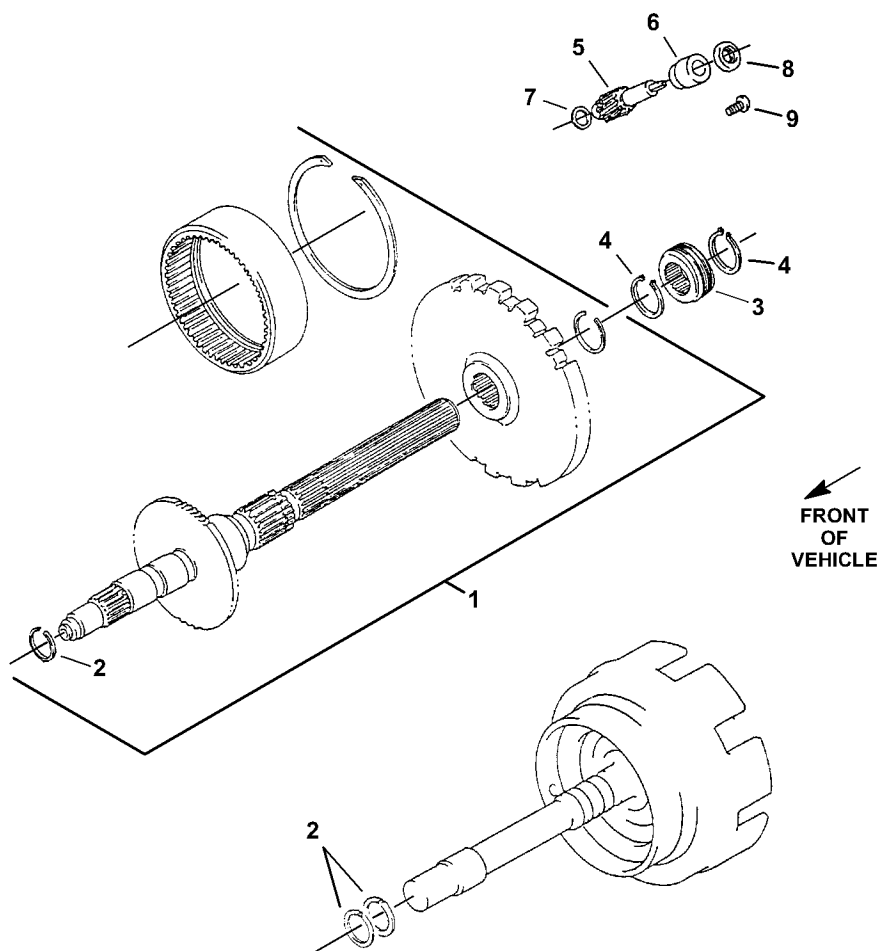
**TRANSMISSION PLANETARY GEARS
(AUTOMATIC TRANSMISSION)
SUZUKI 660 MODEL 898659**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24961-855T0	Bearing set, thrust (No. 3)	1	8	24964-855T0	Bearing set, thrust (No. 6)	1
2	24920-85500	Gear assembly, forward planetary link	1	9	24153-78DT0	Bearing set, thrust (No. 1)	1
3	24962-855T0	Bearing set, thrust (No. 4)	1	10	24940-78D10	Gear, rear planetary	1
4	24910-85500	Gear assembly, front	1	11	26850-83CT0	Clutch set, 1-way	1
5	24963-855T0	Bearing set, thrust (No. 5)	1	12	26811-83CT0	Plate set, 1st/reverse	1
6	24930-83C00	Gear, planetary sun	1	13	26840-78DT0	Piston set, 1st/reverse	1
7	24941-855T0	Washer set, thrust	1	14	26812-78DT0	•O-ring set, 1st/reverse	1

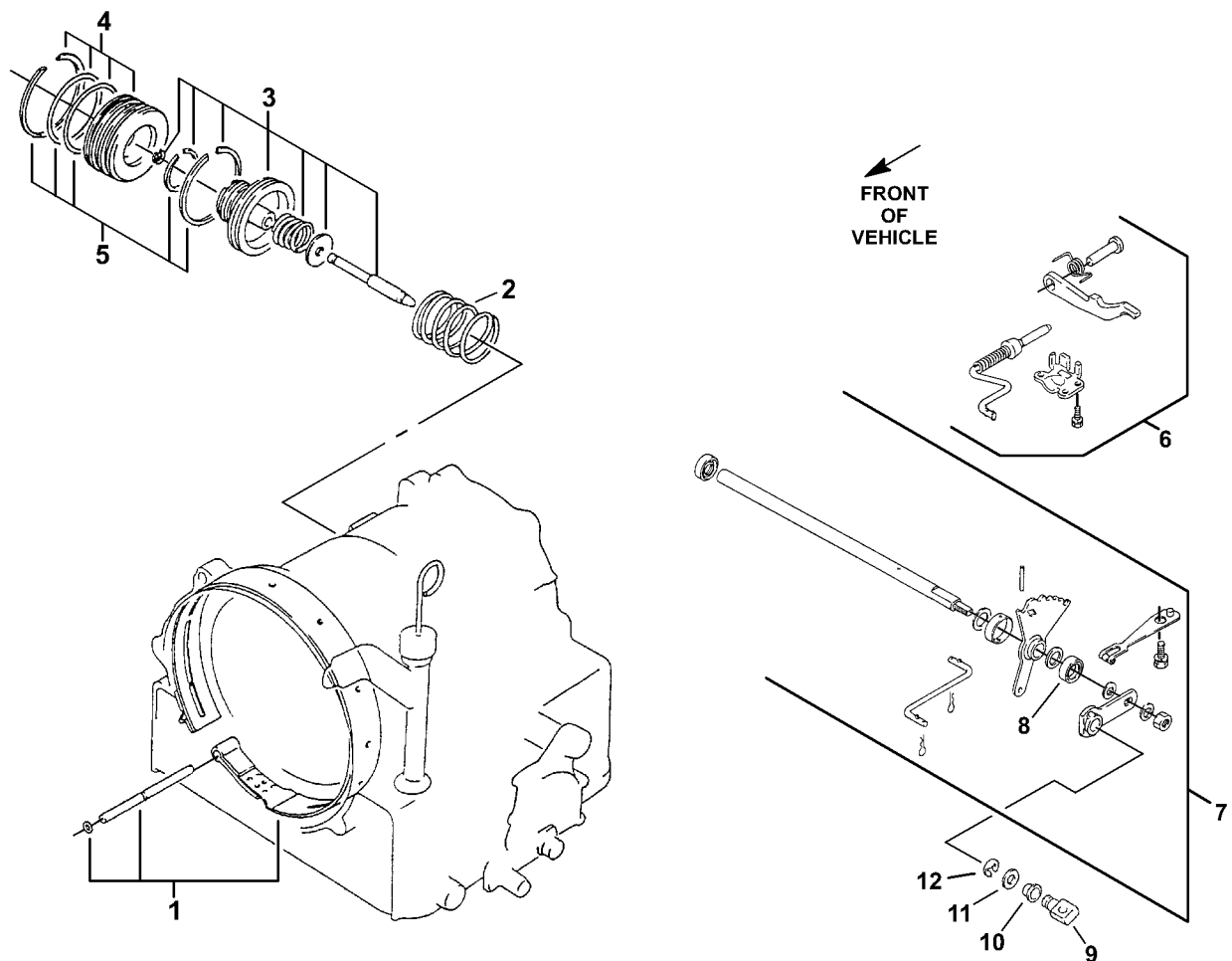
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

**OUTPUT SHAFT
(AUTOMATIC TRANSMISSION)
SUZUKI 660 MODEL 898659**



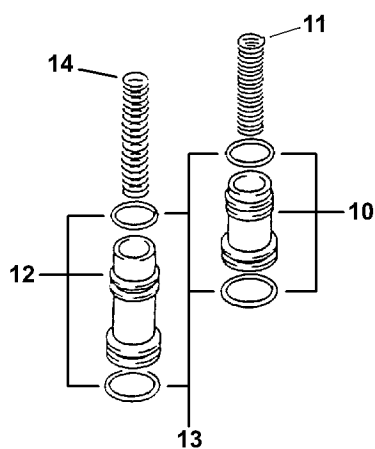
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24120-52FT0	Output shaft	1	6	09300-08017	Retainer	1
2	24122-72BT0	Ring, snap	1	7	09160-08003	Washer	1
3	26121-78D00	Gear	1	8	09282-08001	Seal	1
4	09380-19004	Ring, snap	2	9	01570-06163	Bolt	1
5	26131-78D00	Gear, speedometer drive	1				

**BRAKE BAND & SHIFT SHAFT
(AUTOMATIC TRANSMISSION)
SUZUKI 660 MODEL 898659**

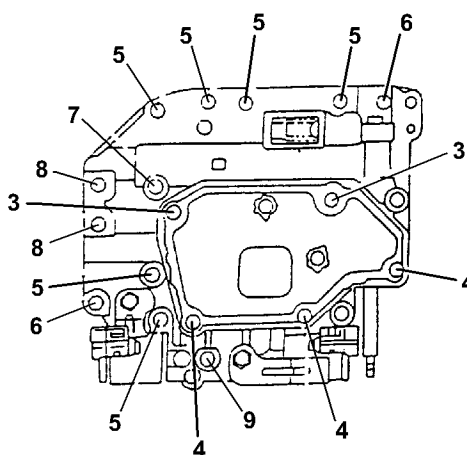


Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	26700-81CT0	Band set, second brake . . .	1	6	25910-855T0	Pole set, parking	1
2	26762-81C00	Spring, second brake piston return	1	7	25940-78DT0	Shaft set, lever	1
3	26740-85580	Piston assembly, second brake	1	8	25981-85500	•Seal	1
4	26750-855T0	Cover set, 2nd brake	1	9	28291-78233	Joint	1
5	26741-855T0	Ring set, 2nd brake seal . .	1	10	09305-08012	Bushing	1
				11	08322-01083	Washer	1
				12	08332-11063	E-ring, retainer	1

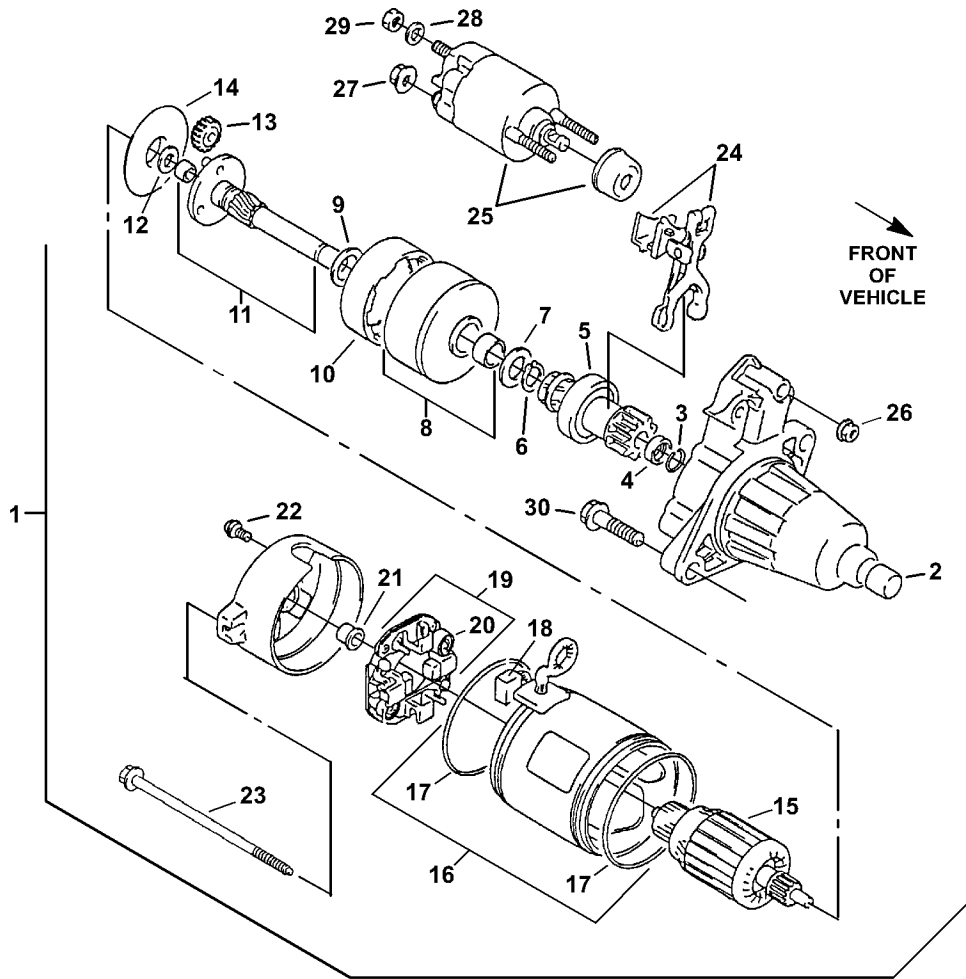
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY




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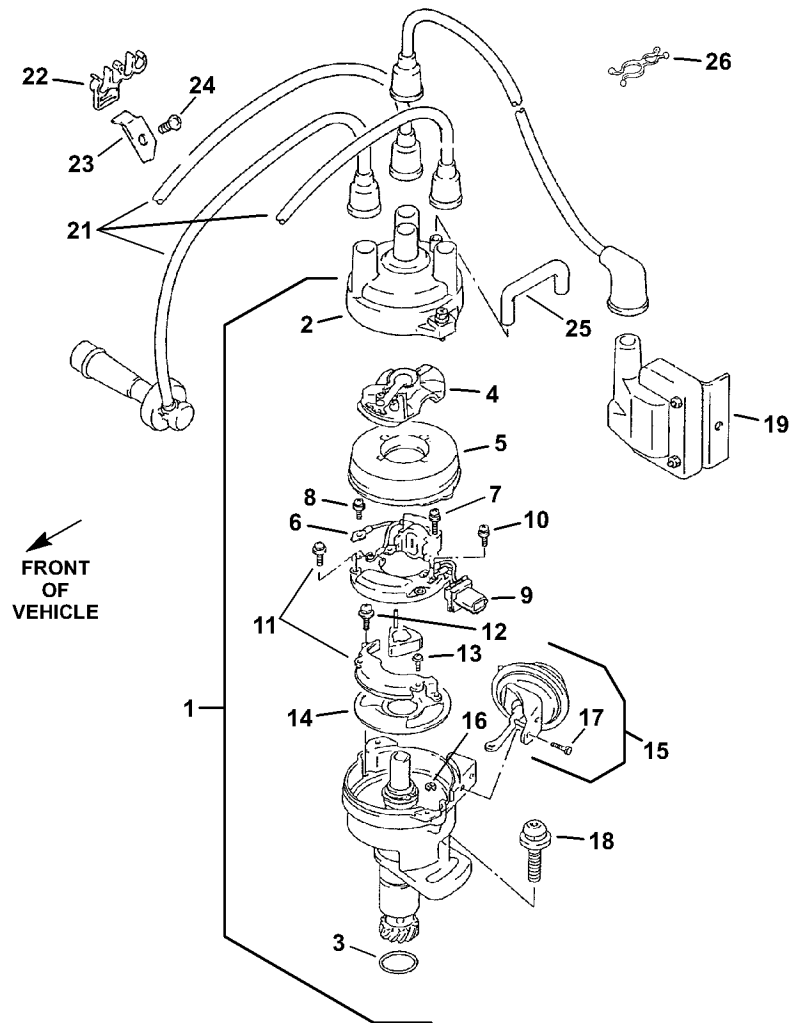
**STARTER
(AUTOMATIC TRANSMISSION)
SUZUKI 660 MODEL 898659**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	31100-70D40	Motor assembly, starting	1	16	31110-60B50	•Yoke assembly	1
2	31152-52A50	•Bushings	1	17	31125-60B50	••O-ring	2
3	31312-51A10	•Ring, snap	1	18	31131-60B50	••Starter kit	2
4	31313-79010	•Collar, pinion stop	1	19	31173-60C40	•Holder assembly, brush	1
5	31320-60C40	•Clutch assembly	1	20	31135-60B50	••Spring, brush	2
6	31350-60B50	•Ring, snap	1	21	31172-60B50	•Bearing	1
7	31155-60B50	•Washer	1	22	31136-60B50	•Screw	2
8	31348-60B50	•Shock absorber	1	23	31281-24B10	•Bolt	2
9	31154-60B50	•Washer	1	24	31191-60C40	•Lever assembly	1
10	31343-60B50	•Gear, internal	1	25	31220-51A10	•Switch assembly	1
11	31341-60C40	•Shaft, planetary carrier	1	26	08316-10063	•Nut	2
12	31153-60B50	•Washer	1	27	08316-10083	•Nut	1
13	31344-60B50	•Gear, planetary	3	28	08321-01083	Lockwasher	1
14	31349-60B50	•Plate	1	29	08310-00083	Nut	1
15	31311-60B51	•Armature	1	30	01550-08303	Bolt	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

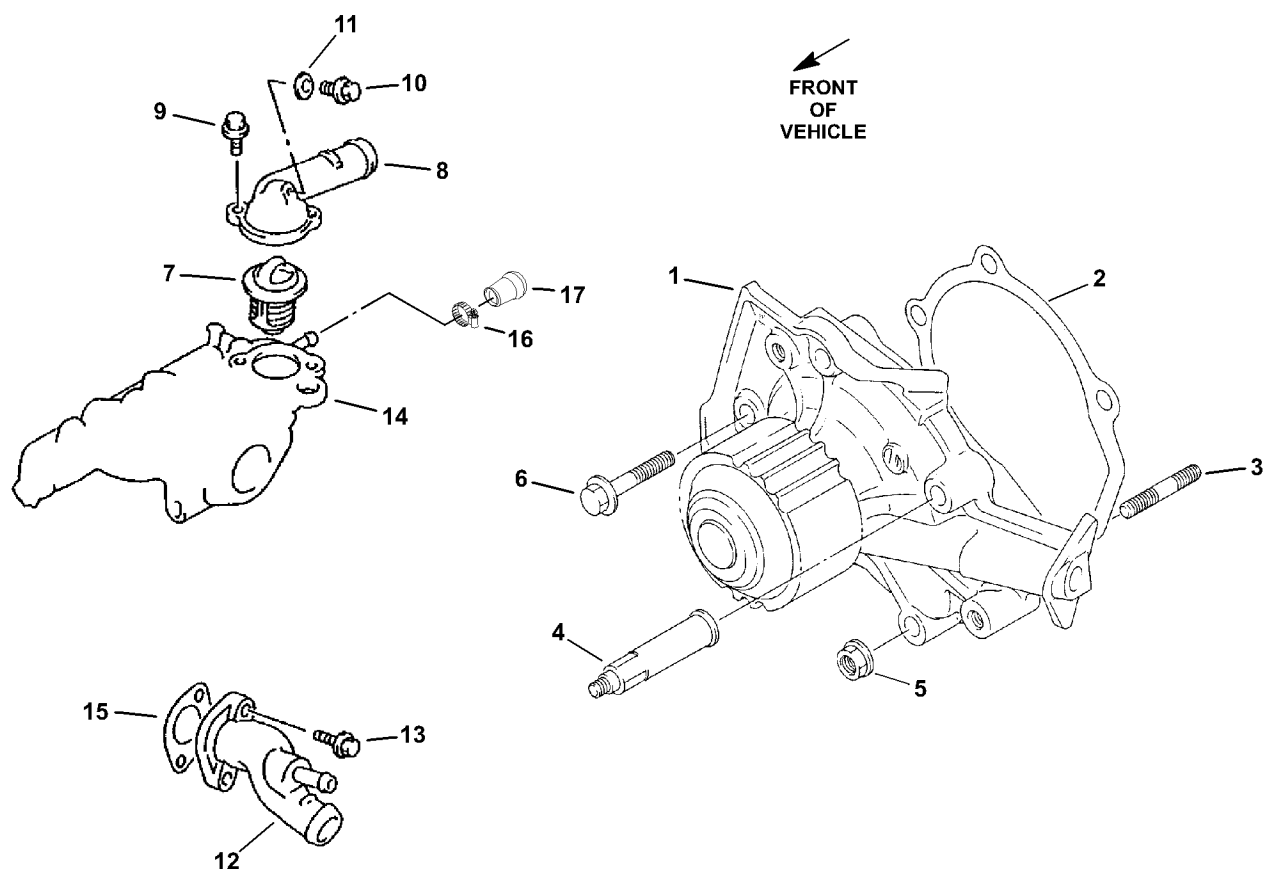
DISTRIBUTOR SUZUKI 660 MODELS 898650, 898652 & 898659



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	33100-51F11	Distributor, complete	1	14	33180-62D10	•Breaker assembly	1
2	33321-50F50	•Cap, distributor	1	15	33230-51F10	•Controller, vacuum	1
3	33278-85060	•O-ring	1	16	08332-11033	••E-ring	1
4	33310-51F10	•Rotor	1	17	33151-60B40	••Screw	2
5	33326-51F10	•Shield, dust	1	18	09138-08003	Screw	1
6	33140-64B70	•Coil, pick-up	1	19	33410-50F20	Coil, ignition	1
7	33151-86240	•Screw	2	20	33710-60C21	Cord, high tension (No. 1)	1
8	33152-64B70	•Screw	2	21	33705-60C11	Cord set, high tension	1
9	33375-62D10	•Connector	1	22	33884-86510	Clamp	1
10	33152-64B70	•Screw	2	23	33881-60C11	Bracket	1
11	33370-76D20	•Igniter assembly	1	24	02112-06083	Screw	1
12	02112-34103	••Screw	2	25	33460-50F30	Hose, distributor cap	1
13	33187-50F10	••Screw	2	26	09408-00013	Clip	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

WATER PUMP, THERMOSTAT & WATER OUTLET **SUZUKI 660 MODELS 898650, 898652 & 898659**

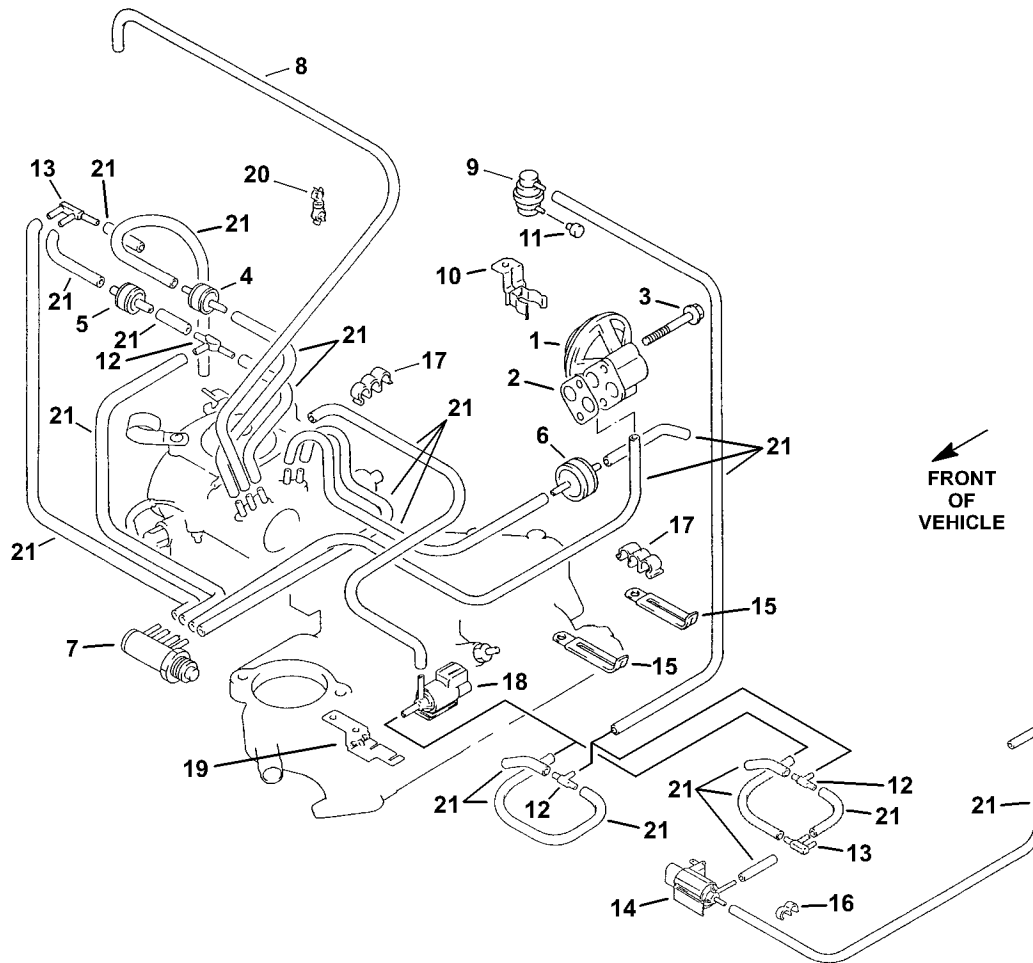


Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	17400-51812	Pump, water	1	10	17568-50F00	Union, air vent	1
2	17431-73001	•Gasket, water pump	1	11	09168-06026	Gasket	1
3	01411-06253	Stud	2	12	17550-85X50	Pipe, water inlet	1
4	17432-53F00	Stud	1	13	01550-06203	Bolt	2
5	08316-10063	Nut	1	14	13110-77D31	Manifold, intake	1
6	01550-06303	Bolt	3	15	17559-73000-H17	Gasket, coolant inlet .	1
7	17670-50G00	Thermostat	1	16	832033	Clamp, hose	1
8	17561-53F10	Housing, thermostat	1	17	833715	Plug	1
9	01550-06253	Bolt	2				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

EMISSION CONTROLS

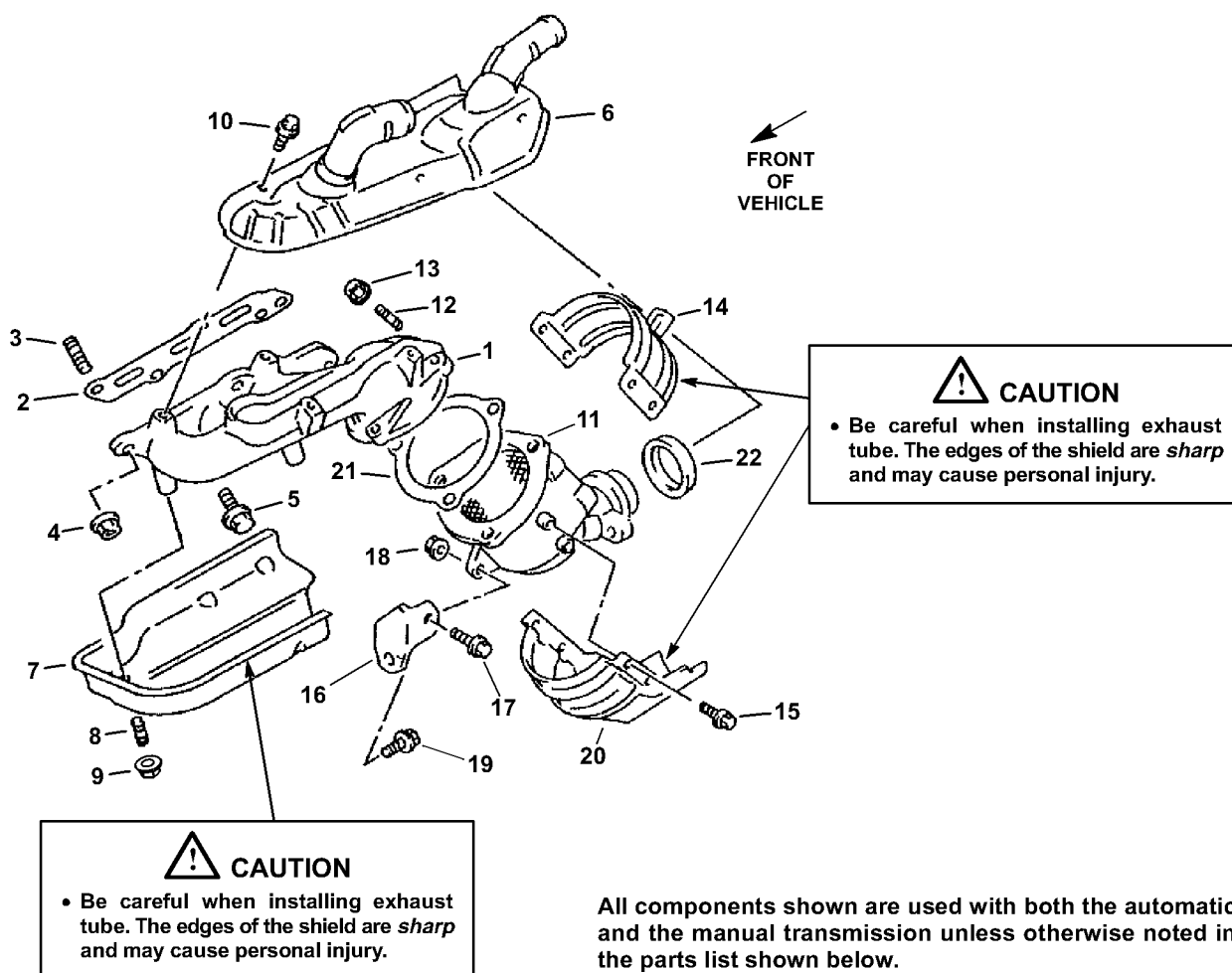
SUZUKI 660 MODELS 898650, 898652 & 898659



All components are used with both the manual and the automatic transmission unless otherwise noted in the parts list shown below.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	18111-50F01	Valve, EGR	1	11	18133-80401	Filter (auto. trans.)	1
2	18529-60A00	Gasket, EGR valve	1	12	09367-04002	Joint, 3-way	2
3	01570-06453	Bolt	2	13	09367-04009	Joint, 3-way (manl. trans)	1
4	18114-82150	Valve, vacuum transmitting (automatic transmission)	1		09367-04009	Joint, 3-way (auto. trans)	2
	18480-85500	Jet (manual transmission)	1	14	95160-70B00	VSV, idle-up (auto. trans.)	1
5	18115-50F00	Jet	1	15	09404-06433	Clamp	2
6	18480-74020	Valve, vacuum transmitting	1	16	09408-00033	Clip (auto. trans)	1
7	18124-53F00	Valve, TVS	1	17	09408-00035	Clip	7
8	09355-35754-00B	Hose	As Req'd.	18	18117-50F00	Valve, idle-up	1
9	18570-84000	Switch, vacuum (auto. trans.)	1	19	18417-53F00	Bracket	1
10	18569-53F00	Bracket (auto. trans.)	1	20	09408-00067	Clip	1
				21	09355-35754-600	Hose	As Req'd.

**CATALYTIC CONVERTER (AUTOMATIC TRANSMISSION)
AND ENGINE EXHAUST
SUZUKI 660 MODELS 898650, 898652 & 898659**

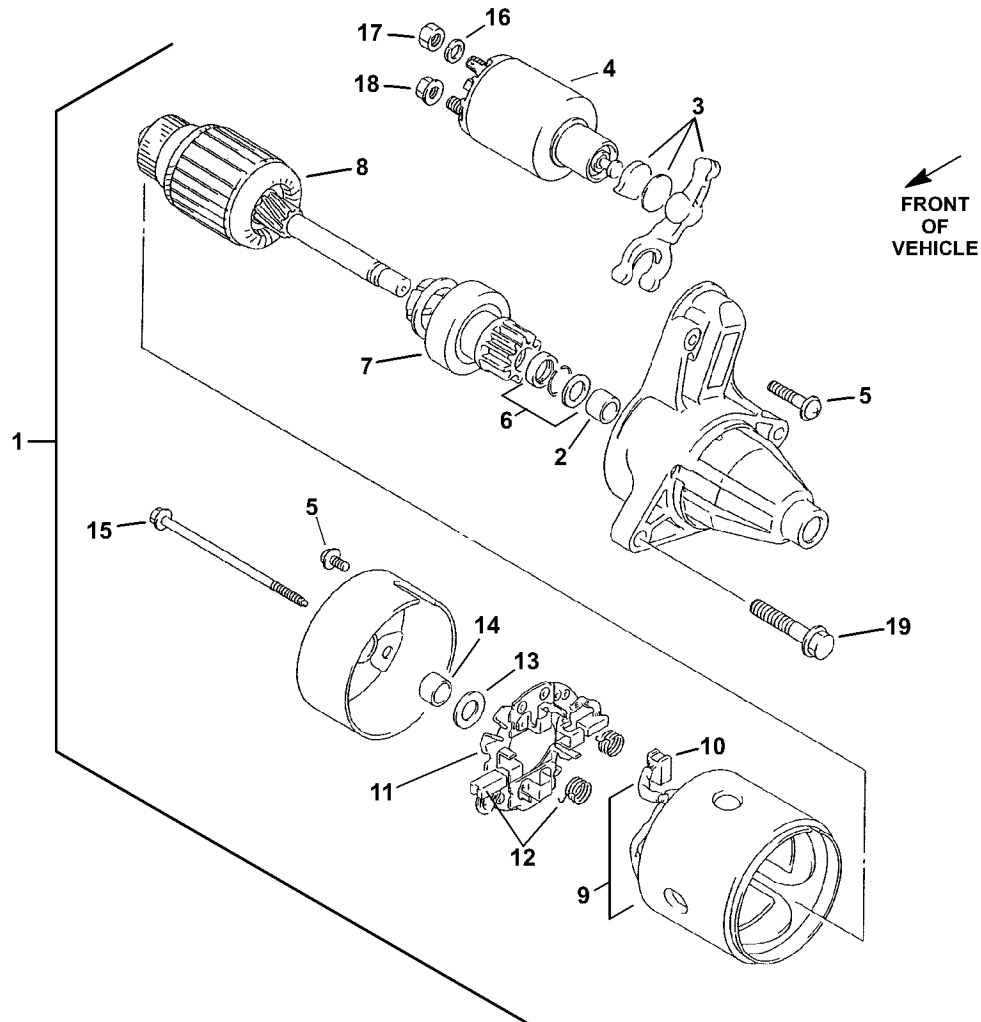


All components shown are used with both the automatic and the manual transmission unless otherwise noted in the parts list shown below.

Also Refer to the Exhaust System and Muffler, Page 58.

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	14111-50F10	Manifold, exhaust	1	12	01411-10353	Stud (auto. trans.)	3
2	14141-63F00	Gasket, exhaust manifold .	1	13	09159-10049	Nut (auto. trans.)	3
3	14119-81402	Stud	3	14	14171-53F10	Heat-shield (auto. trans.) .	1
4	08310-00083	Nut	3	15	01550-06103	Bolt (auto. trans.)	4
5	01500-08253	Bolt	1	16	14173-53F00	Bracket (auto. trans.) . . .	1
6	14120-50F10	Cover, exhaust manifold .	1	17	01550-08353	Bolt (auto. trans.)	1
7	14131-50F01	Cover, exhst. mnfld. lower	1	18	08316-10083	Nut (auto. trans.)	1
8	01411-06123	Stud	3	19	01550-08203	Bolt (auto. trans.)	1
9	08310-00063	Nut	3	20	14176-53F10	Heat-shield (auto. trans.) .	1
10	09103-06168	Bolt	4	21	14181-50F01	Gasket, catalytic converter (auto. trans.)	1
11	14100-51881	Converter, catalytic (automatic transmission) .	1	22	14183-82050	Gasket, exhaust	1
(11)	843253	Adapter, manifold to muffler (manual transmission) . . .	1				

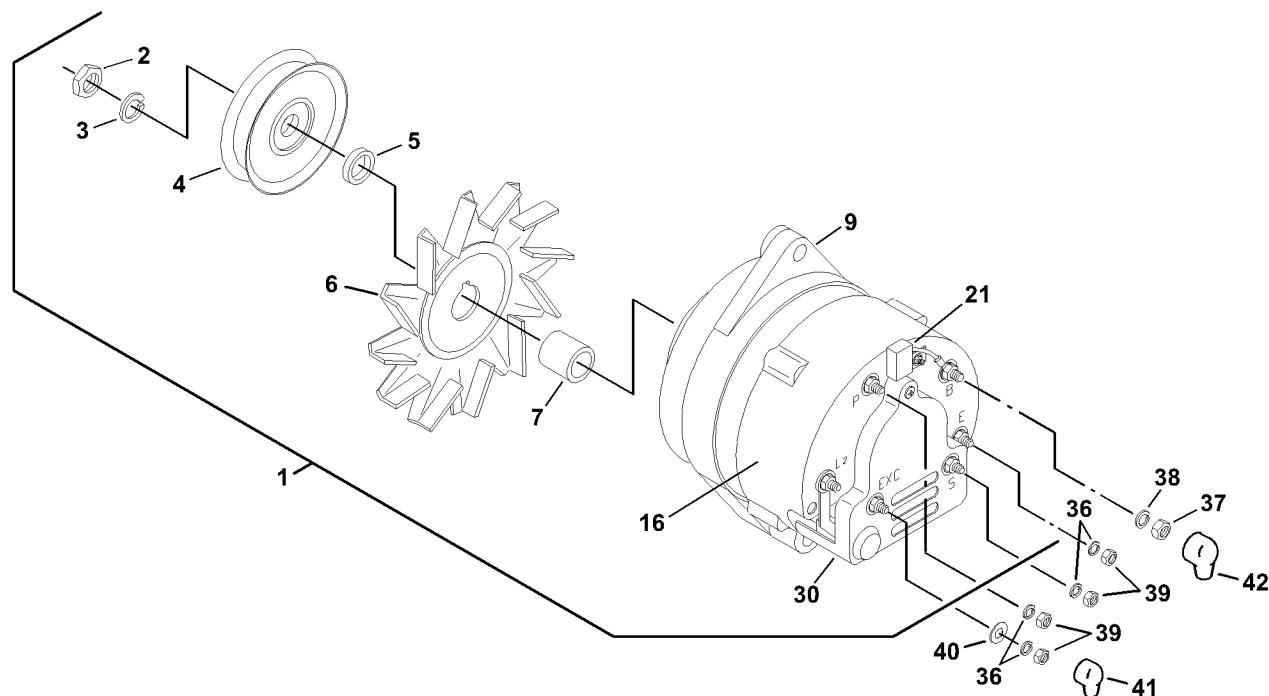
**STARTER
(MANUAL TRANSMISSION)
SUZUKI 660 MODELS 898650 & 898652**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	31100-70D50	Starter, complete	1	11	31173-82130	• Holder assembly, brush	1
2	31152-79030	• Bushing	1	12	31132-80090	• Brush (-)	1
3	31191-78141	• Lever, pinion drive	1	13	31361-79030	• Washer	1
4	31220-84030	• Solenoid (switch ay.)	1	14	31172-79030	• Bushing	1
5	31136-79030	• Screw	1	15	31261-82130	• Bolt, housing	2
6	31133-80090	• Ring assembly	1	16	08321-01083	• Washer, lock	1
7	31320-50A30	• Clutch assembly	1	17	08310-00083	• Nut	1
8	31311-70D11	• Armature	1	18	08316-10083	• Nut	1
9	31110-50F30	• Yoke assembly	1	19	01550-08303	Bolt	2
10	31131-80090	• Brush (+)	2				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

ALTERNATOR
SUZUKI 660 MODELS 898650, 898652 & 898659,
AND PERKINS DIESEL MODELS 898663, 898684, 898664 & 898685



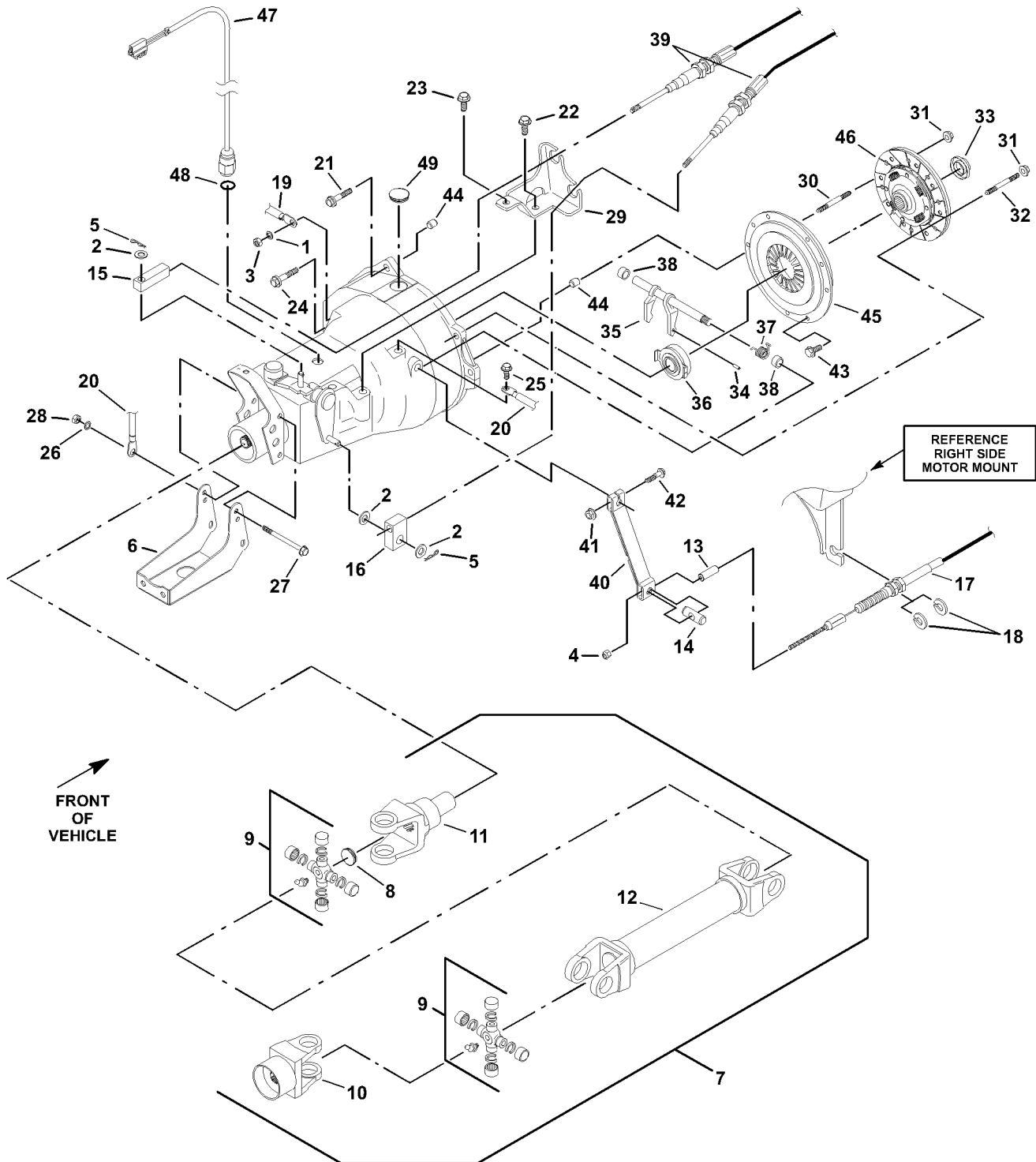
Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	893633	Alternator	1	22 *	842572	••Mold-B	1
2	842558	•Nut	1	23 *	842573	••Nut, flange	1
3	842559	•Lockwasher	1	24 *	842574	••Through bolt	4
4	842560	•Pulley	1	25 *	893855	•Regulator assembly	1
5	842561	•Spacer	1	26 *	842575	••Brush	1
6	842562	•Fan	1	27 *	842576	••Spring, brush	1
7	842563	•Spacer	1	28 *	842577	•Set, screw	1
8 *	893849	•Bracket assembly (front)	1	29 *	842578	•Terminal-L	1
9	842564	••Bracket, front	1	30	842579	•Cover	1
10 *	842565	••Screw, flange	3	31 *	842580	•Set, screw	1
11 *	842566	••Bearing	1	32 *	842581	•Wire, lead (A)	1
12 *	842567	••Retainer	1	33 *	842582	•Wire, lead (B)	1
13 *	893850	•Rotor assembly	1	34 *	842571	•Nut, flange	2
14 *	893851	••Stator assenbly	1	35 *	842570	•Mold	1
15 *	893852	•Bracket assembly (rear)	1	36	120052	Lockwasher, #10	4
16	842568	••Bracket, rear	1	37	306375	Nut, 1/4-20	1
17 *	893853	••Rectifier assembly	1	38	306396	Lockwasher, 1/4	1
18 *	842569	••Screw set	1	39	306531	Nut, #10-24	4
19 *	842570	••Mold	1	40	308089	Washer, #10	1
20 *	842571	••Nut, flange	2	41	825970	Boot, terminal	4
21	893854	••Condenser assembly	1	42	844328	Boot, terminal	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

* Not Illustrated

Item No. 36 (Terminal Boot, Part No. 825970) only 3 required for diesel.

**CLUTCH, DRIVE SHAFT
and
TRANSMISSION SHIFTER LINKAGE
SUZUKI 660 MODELS 898650 & 898652**



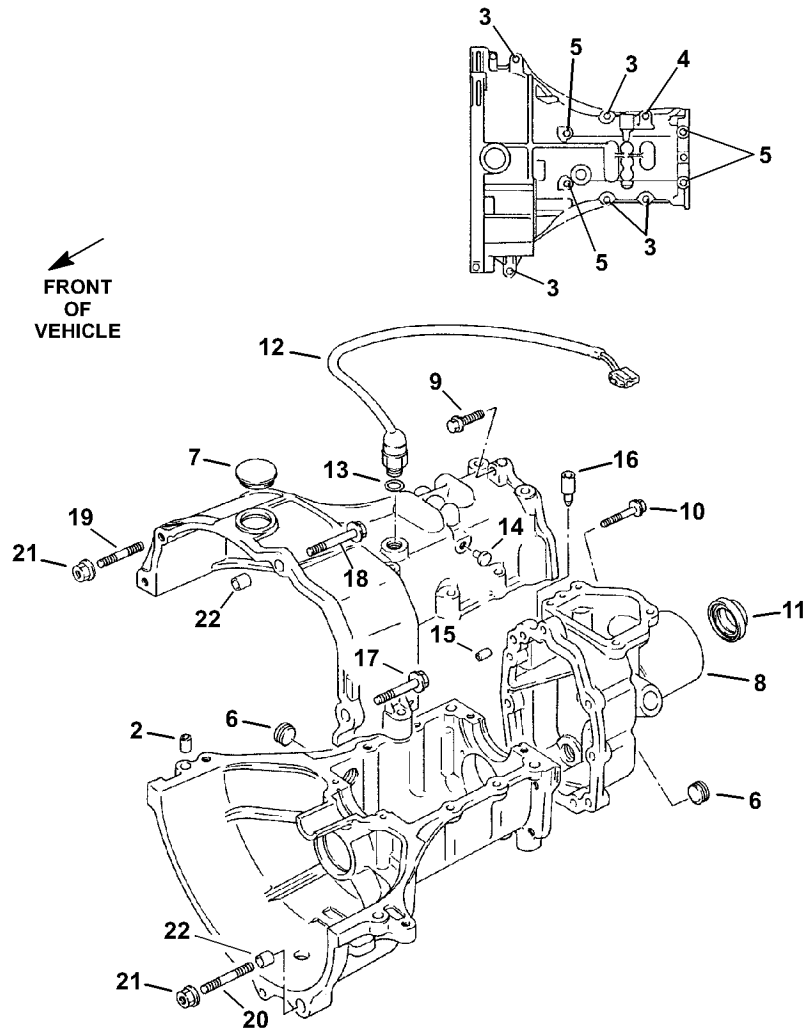
P893982, P893983, 894506 & 894507

**CLUTCH, DRIVE SHAFT
and
TRANSMISSION SHIFTER LINKAGE
SUZUKI 660 MODELS 898650 & 898652**

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	306325	Lockwasher, 5/16	1	25	01550-08953	Screw	1
2	306453	Washer, 5/16	3	26	08321-01083	Lockwasher	2
3	450324	Nut, M8-1.25 (8.8)	1	27	01500-08953	Screw	2
4	450377	Nut, nylock M6-1.00 (8.8)	1	28	08310-00083	Nut	2
5	548190	Hairpin	2	29	28391-77D40	Bracket, shift cables	1
6	839946	Bracket, muffler	1	30	01421-10403	Stud	1
7	894190	Driveshaft, complete (manual Transmission)	1	31	08316-10103	Nut	2
8	548482	•Plug, expansion	3	32	01421-10353	Stud	1
9	826284	•Cross, u-joint	2	33	24780-79001	Seal	1
10	826285	•Yoke, universal	1	34	09205-03019	Pin, roll	1
11	894192	•Yoke, front	1	35	23260-60C03	Shaft, clutch release	1
12	894194	•Shaft, drive (manual transmission)	1	36	23265-77D00	Bearing, clutch release	1
13	833273	Bushing	1	37	23269-70D00	Spring, clutch release	1
14	842010	Bushing, clutch arm	1	38	09300-14017	Bushing, clutch release	2
15	843777	Connector, shift cable	1	39	894179	Cable, shifter	2
16	843778	Connector, shift cable	1	40	23266-85002	Arm, clutch release	1
17	894299	Cable, clutch	1	41	08316-10083	Nut	1
18	844202	Washer, slotted	4	42	01550-08353	Screw	1
19	894596	Cable, battery, 30" (762 mm)	1	43	09117-08096	Screw	6
20	894602	Cable, battery, 32" (813 mm)	2	44	04211-13149	Sleeve, alignment	2
21	01550-10553	Screw	1	45	22100-70D00	Cover assembly, clutch	1
22	01550-08403	Screw	1	46	22400-50F00	Disc, compression clutch	1
23	01550-08603	Screw	1	47	37610-80023	Switch, backup lamp	1
24	01550-10503	Screw	1	48	09280-11002	•O-ring	1
				49	09250-30003	Plug, transmission inspection timing	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

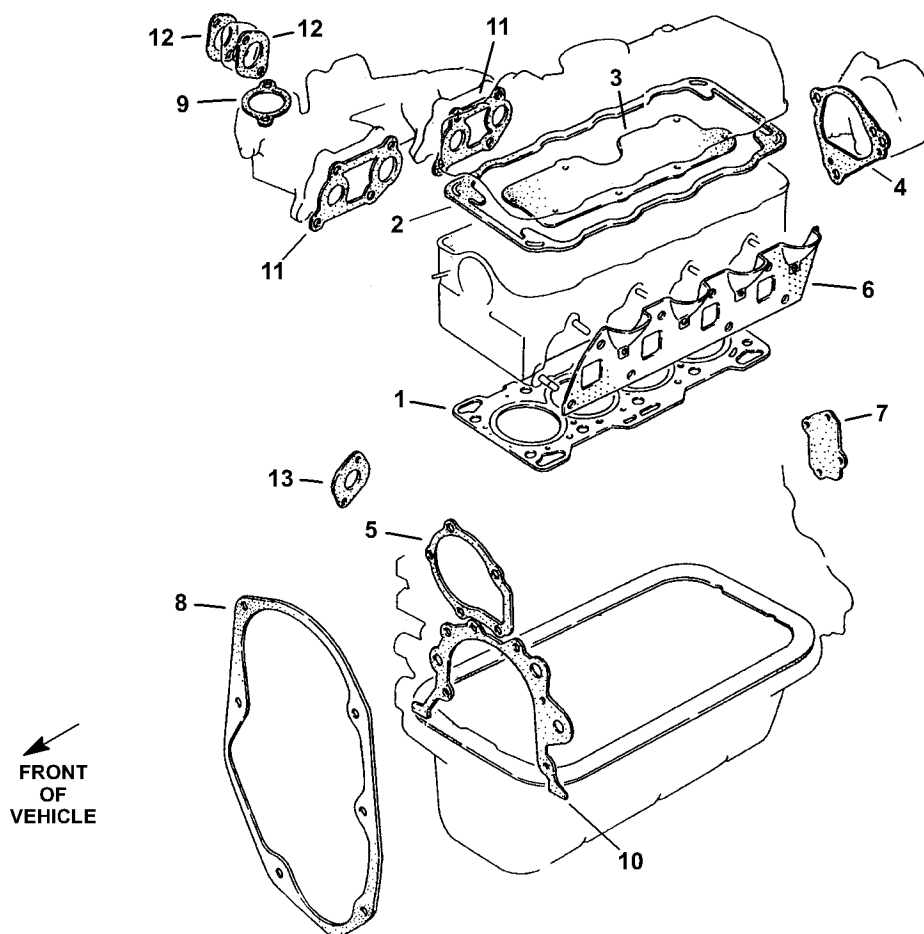
MANUAL TRANSMISSION HOUSING SUZUKI 660 MODELS 898650 & 898652



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24700-70D02	Case ay., transmission	1	12	37610-80023	Switch, back-up light	1
2	04211-09169	•Pin	2	13	09280-11002	•O-ring	1
3	01550-08403	•Bolt	5	14	09250-08001	Cap	1
4	01550-08653	•Bolt	1	15	04211-09169	Pin	2
5	01550-08953	•Bolt	4	16	24821-09001	Pin, alignment	1
6	09246-16010	Plug	2	17	01550-10503	Bolt	1
7	09250-30003	Cap, inspection timing	1	18	01550-10553	Bolt	1
8	24770-85001	Casing, extension	1	19	01421-10353	Stud	1
9	01550-08303	Bolt	1	20	01421-10403	Stud	1
10	01550-08353	Bolt	7	21	08316-10103	Nut	2
11	24780-79001	Seal	1	22	04211-13149	Pin	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

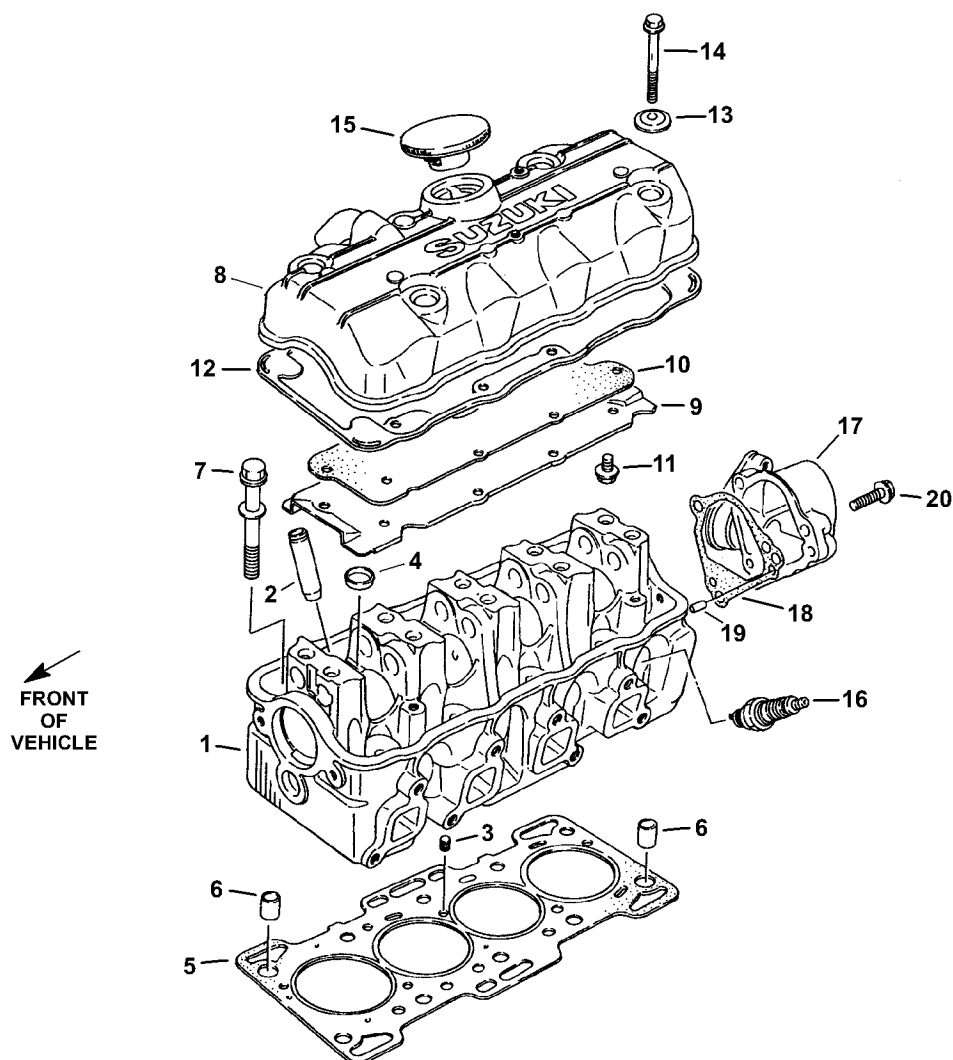
ENGINE GASKETS **SUZUKI 970 MODEL 898662**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	11401-85893	Gasket set, complete	1	7	11229-73000	•Gasket, cylindr. block plate	1
2	11141-75120	•Gasket, head	1	8	11399-73010	•Gasket, timing belt cover .	1
3	11189-73004	•Gasket, valve cover	1	9	17569-60A10	•Gasket, thermostat cap . .	1
4	11173-73001	•Gasket, breather plate . . .	1	10	16119-76G00	•Gasket, oil pump case . . .	1
5	11169-70D00	•Gasket, distributor case . .	1	11	13119-73001-H17	•Gasket, intake man. . .	2
6	17431-73001	•Gasket, water pump	1	12	13125-80000-H17	•Gasket, carburetor . .	2
	14140-85200	•Gasket, exhaust man. . . .	1	13	17559-73000-H17	•Gasket, water inlet . .	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

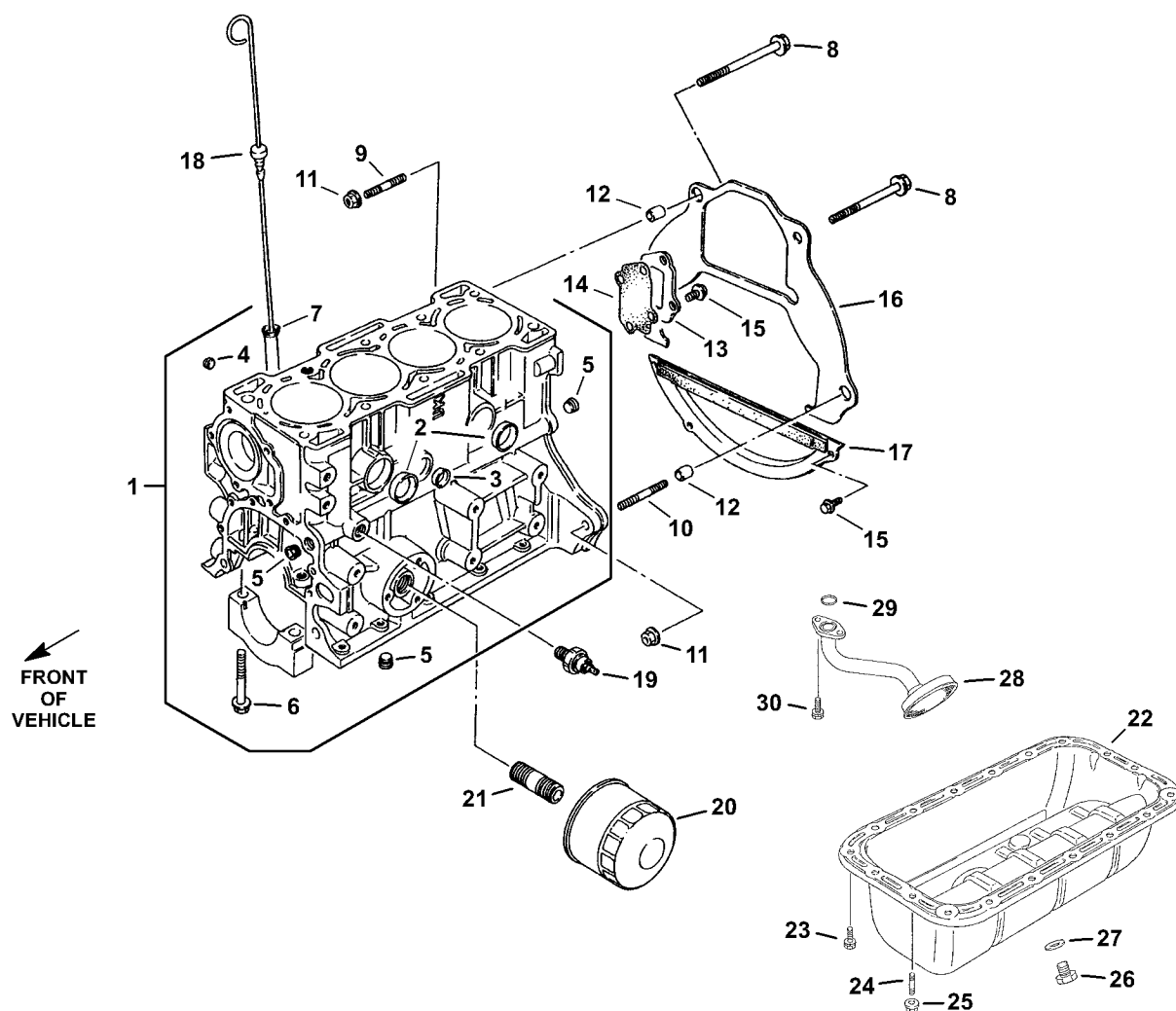
CYLINDER HEAD & COMPONENTS **SUZUKI 970 MODEL 898662**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	11110-80002	Head, cylinder	1	13	11180-82010	Grommet, head cover	4
2	11115-82000-001	•Guide, valve	8	14	09103-06134	Bolt (6 x 65)	4
3	11112-73002	•Plug, oil venturi	1	15	16920-86502	Cap, oil filler	1
4	09241-20006	•Plug	5	16	09482-00123	Plug, spark W16EX-U, Denso	4
5	11141-75120	Gasket, cylinder head	1	or	09482-00131	Plug, spark BP5ES, NGK	4
6	04211-13189	Pin	2	17	11161-79120	Case, distributor	1
7	09116-10116	Bolt (10 x 87)	10	18	11169-70D00	Gasket, case	1
8	11170-79203	Cover, cylinder head	2	19	04221-06129	Pin	2
9	11172-73000	Plate, breather	1	20	09103-08153	Bolt, No. 2 (8 x 30)	3
10	11173-73001	Gasket, breather plate	1				
11	02162-06103	Bolt	8				
12	11189-73004	Gasket, head cover	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

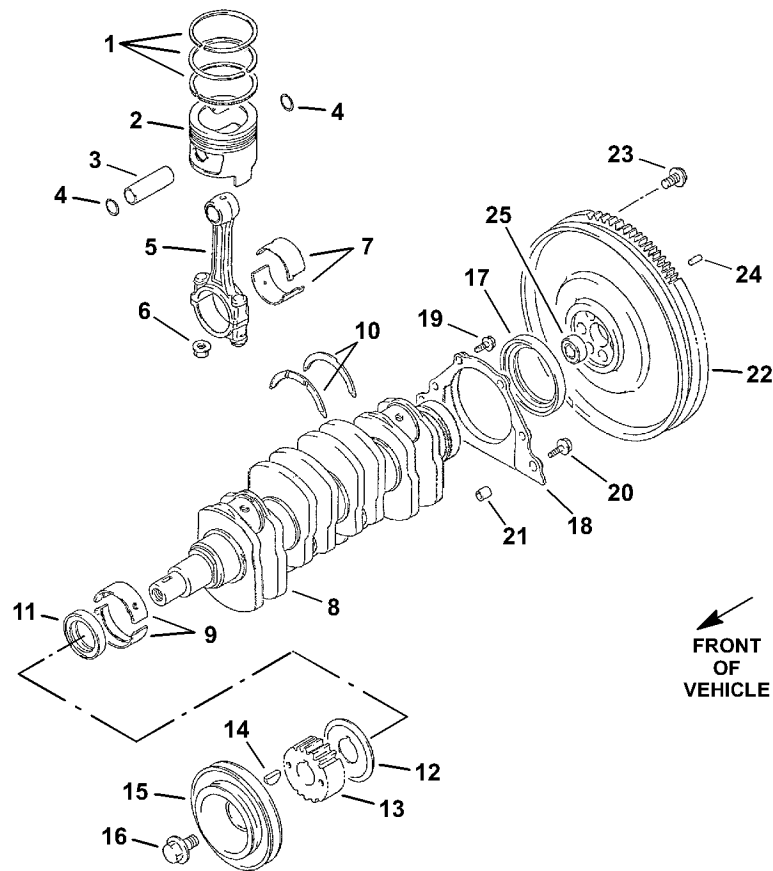
CYLINDER BLOCK, OIL PAN & GASKET **SUZUKI 970 MODEL 898662**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	11200-80001	Block, cylinder	1	16	11311-79100	Plate, clutch hsng. upper . .	1
2	09241-30009	•Plug (OD:30)	3	17	11320-77201	Plate, clutch hsng. lower . .	1
3	09246-20006	•Plug (OD:20)	2	18	16910-85550	Gauge, oil level	1
4	09246-05006	•Plug, oil gallery	1	19	37820-82001	Switch, oil pressure	1
5	09246-06002	•Plug, oil gallery	3	20	16510-82703	Filter, oil	1
6	01550-10603	•Bolt	10	21	11241-73003	Stand, oil filter	1
7	11219-85200	•Guide, oil level gauge . . .	1	22	11510-85201	Pan, oil	1
8	09103-10063	Bolt (10 x 115)	2	23	09117-06059	Bolt (6 x 16)	16
9	01421-10403	Stud bolt	1	24	01411-06163	Stud bolt	2
10	01421-10503	Stud bolt	1	25	08316-10063	Nut	2
11	08316-10103	Nut	2	26	09247-12101	Plug, oil drain	1
12	04211-13149	Pin	2	27	09168-12018	Gasket	1
13	11221-73000	Plate, cylinder block	1	28	16520-79101	Strainer, oil pump	1
14	11229-73000	Gasket	1	29	09280-16005	O-ring	1
15	02162-06103	Bolt	6	30	01570-06163	Bolt	2

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

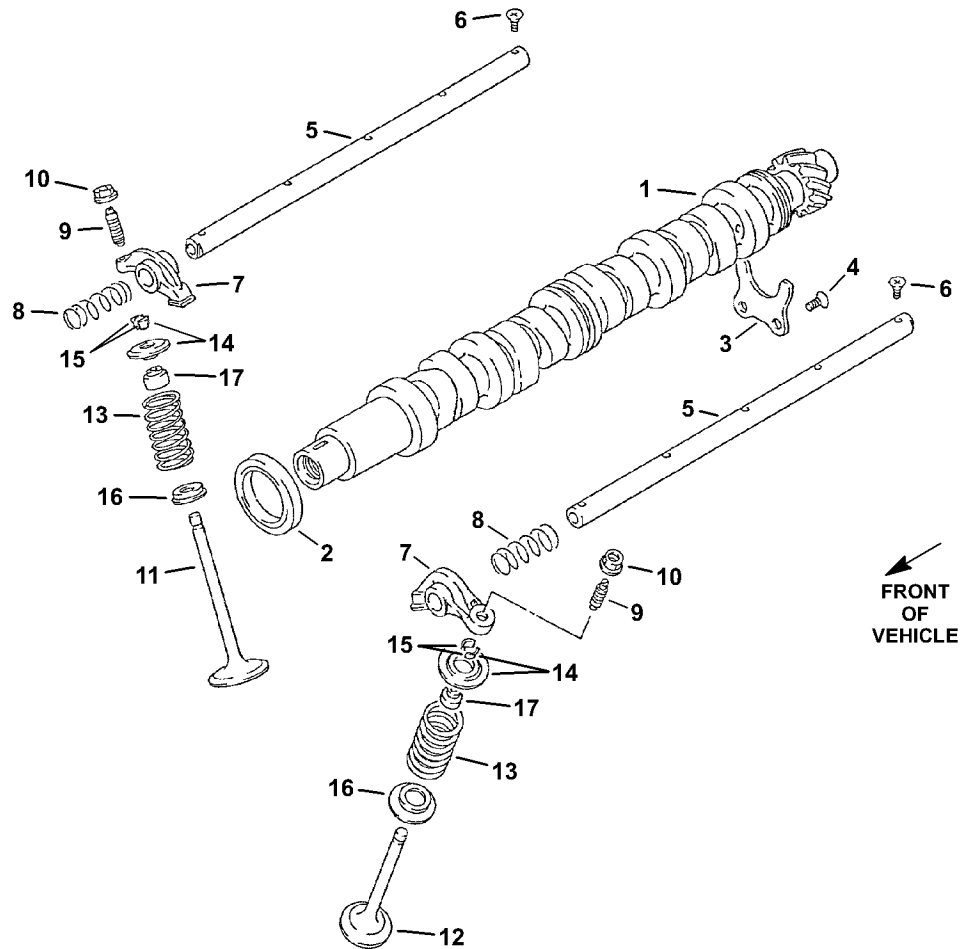
CRANKSHAFT, FLYWHEEL, PISTONS **SUZUKI 970 MODEL 898662**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	12140-75112	Ring, piston (standard) . . .	4	(9)	12300-73812-075	Bearing set, crnkshft. .	1
(1)	12140-75112-025	Ring, piston	4	(9)	12300-73812-100	Bearing set, crnkshft. .	1
(1)	12140-75112-050	Ring, piston	4	10	12300-73830	Bearing set, crank thrust .	1
2	12111-85201-0B0	Piston (standard)	4	(10)	12300-73830-012	Bearing set, thrust . . .	1
(2)	12111-85201-025	Piston (OS:0.25)	4	(10)	12300-73830-025	Bearing set, thrust . . .	1
(2)	12111-85201-050	Piston (OS:0.50)	4	11	09283-32040	Seal, front	1
3	12151-29001	Pin, piston	4	12	12635-78401	Guide, timing belt	1
4	09381-16001	Circlip	8	13	12631-78401	Pulley, timing belt	1
5	12160-73010	Rod, connecting	4	14	08341-31059	Key	1
6	09159-08033	•Nut, connecting rod	8	15	12611-66C00	Pulley, crank	1
7	12181-81051-0A0	Bearing (standard) . . .	8	16	12619-60B00	Bolt	1
(7)	12181-81051-025	Bearing, cnctng. rod . .	8	17	09283-60005	Seal, rear main	1
(7)	12181-81051-050	Bearing, cnctng. rod . .	8	18	11341-70B01	Housing, oil seal	1
(7)	12181-81051-075	Bearing, cnctng. rod . .	8	19	01550-06203	Bolt	4
(7)	12181-81051-100	Bearing, cnctng. rod . .	8	20	02122-06253	Bolt	2
8	12221-75104	Crankshaft	1	21	04211-09109	Pin	2
9	12300-73812-0A0	Bearing set, crnkshft. .	1	22	12620-85301	Flywheel	1
(9)	12300-73812-025	Bearing set, crnkshft. .	1	23	09103-10097	Bolt (10 x 17)	6
(9)	12300-73812-050	Bearing set, crnkshft. .	1	24	04421-06129	Pin	1
				25	12623-70B00	Bearing, input shaft	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

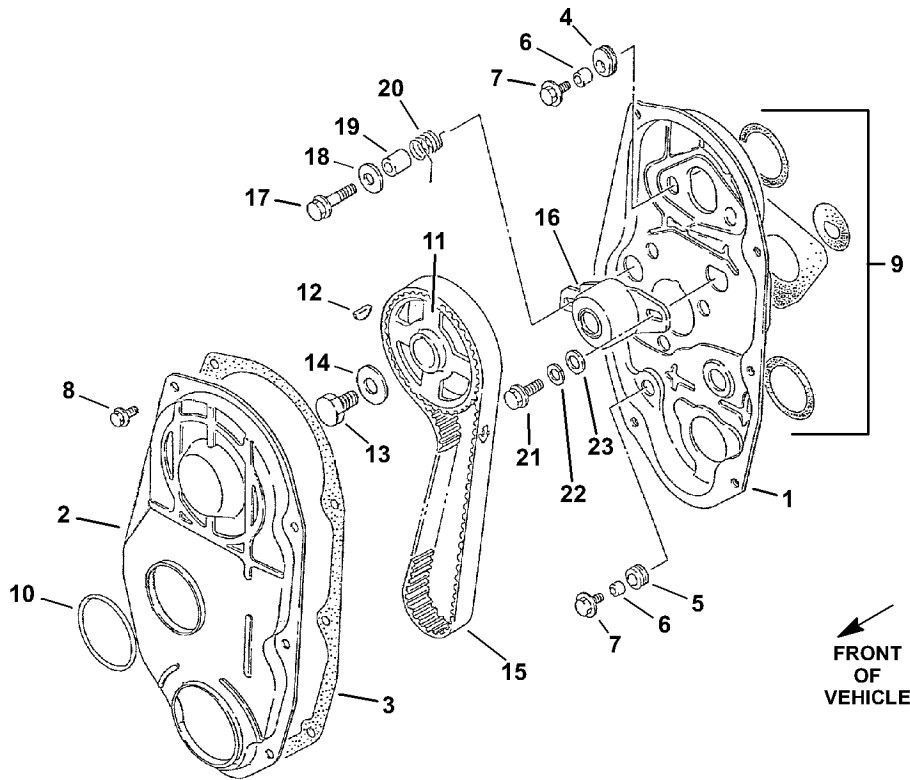
CAMSHAFT & COMPONENTS **SUZUKI 970 MODEL 898662**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	12710-77314	Camshaft	1	10	09159-07002	Nut	8
2	09283-32040	Seal, camshaft	1	11	12911-78101	Valve, inlet	4
3	12749-73002	Plate, cam shaft thrust	1	12	12915-84010	Valve, exhaust	4
4	02122-06123	Screw	2	13	12921-73002	Spring, valve	8
5	12860-73004	Shaft, valve rocker	2	14	12900-82810	Retainer, valve spring	8
6	02122-06163	Screw	10	15	12932-82000	•Cotter, valve	16
7	12841-77300	Arm, valve rocker	8	16	12933-73000	Seat, valve spring	8
8	12891-51G00	Spring, rocker arm	8	17	09289-07007	Seal, oil	8
9	12848-73010	Screw, valve adjusting	8				

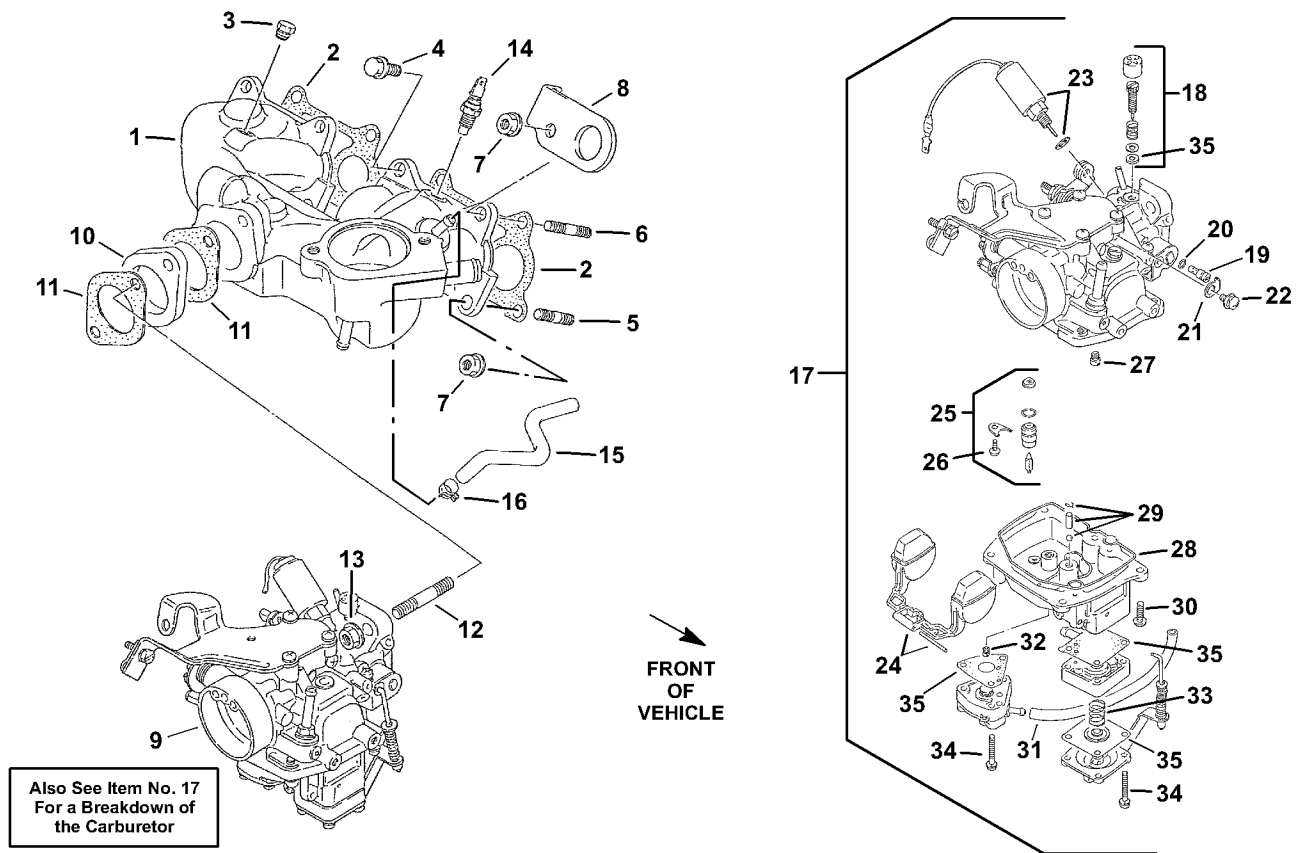
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

TIMING BELT & TIMING COVER **SUZUKI 970 MODEL 898662**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	11360-78100	Cover, inside	1	13	01500-12253	Bolt	1
2	11391-78113	Cover, outside	1	14	09160-12094	Washer (12.5 x 32 x 4.5) . .	1
3	11399-73010	Gasket, cover	1	15	12761-78400	Belt, timing	1
4	11398-73000	Grommet	2	16	12810-53A00	Tensioner, timing belt	1
5	09308-10004	Grommet	2	17	01550-08403	Bolt	1
6	09180-06106	Spacer (6 x 10 x 17)	4	18	09160-08133	Washer (8.5 x 26 x 1.6) . . .	1
7	09136-06139	Bolt (6 x 16)	4	19	09180-08111	Spacer (8.1 x 16 x 17)	1
8	02162-06103	Bolt	6	20	12821-78100	Spring, tensioner	1
9	11480-78110	Seal set, inside cover	1	21	09103-08152	Bolt (8 x 25)	1
10	11484-73000	Grommet, outside	1	22	08321-01083	Lockwasher	1
11	12741-78403	Pulley, timing belt	1	23	09160-08126	Washer (8.5 x 20 x 2.6)	1
12	08341-31059	Key	1				

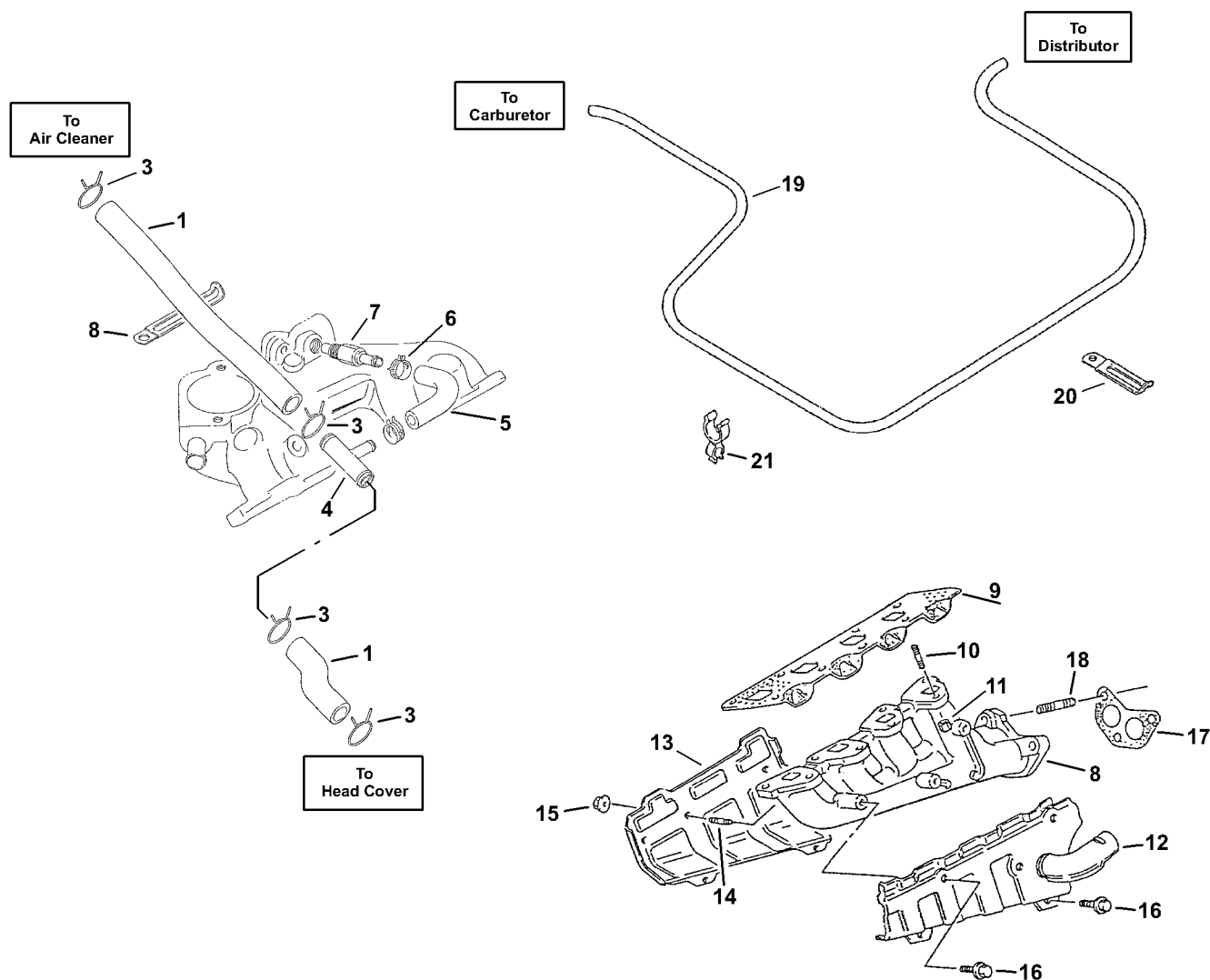
CARBURETOR & INTAKE MANIFOLD SUZUKI 970 MODEL 898662



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	13110-85X57	Manifold, intake	1	19	09492-47006	•Jet, pilot (#47.5)	1
2	13119-73001-H17	Gasket, intake mnfld.	2	20	13278-45010	•O-ring	1
3	09246-04005	Plug, boost	1	21	13398-78110	•Plate	1
4	01550-08203	Bolt	3	22	02112-75103	•Screw	1
5	01411-08203	Stud bolt	4	23	13260-797T0	•Solenoid set	1
6	01411-08253	Stud bolt	1	24	13250-852T0	•Float set	1
7	08316-10083	Nut	5	25	13370-60CT0	•Valve set, needle	1
8	11851-62B00	Hook, engine	1	26	02112-04087	•Screw	1
9	2700621	Carburetor, complete	1	27	09491-21024	•Jet, main (#108.8)	1
10	13121-80000	Insulator, carburetor	1	28	13251-79110	•O-ring	1
11	13125-80000-H17	Gasket, carburetor	2	29	13240-852T0	•Weight set, pump	1
12	09108-08169	Stud bolt	2	30	02142-05163	•Screw	5
13	08316-10083	Nut	2	31	09355-35754	•Hose As Req'd.	
14	34850-50A00	Gauge, water temp.	1	32	09492-65005	•Jet, enrichment (#65)	1
15	51030-85051	Hose, brake vacuum No. 3	1	33	13494-78420	•Spring	1
16	09401-15404	Clamp	1	34	02112-34253	•Screw	1
17	2700621	Carburetor, complete	1	35	13380-793T0	•Gasket set	1
18	13270-855T0	•Screw set, idle adjust	1				

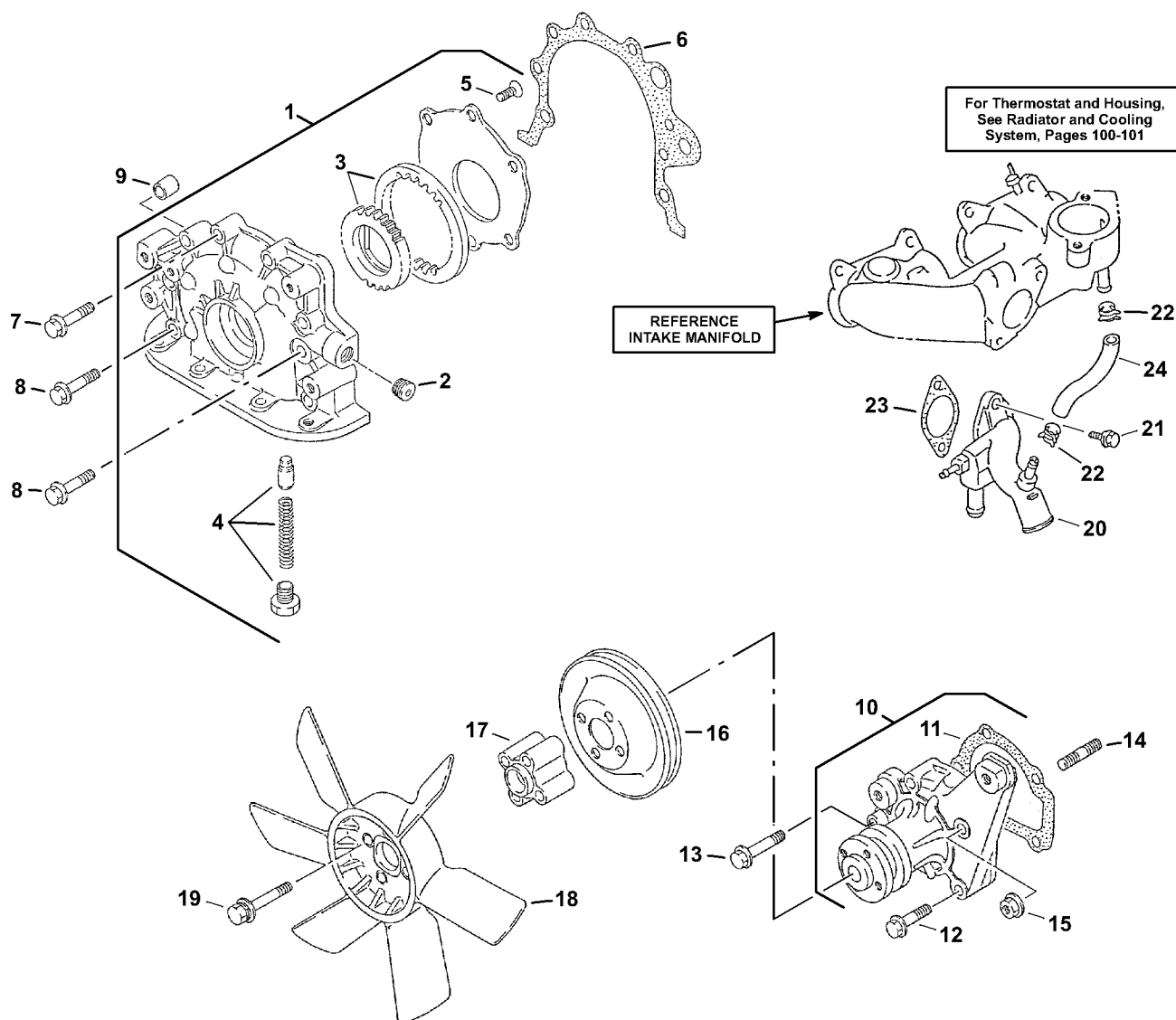
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

PCV VALVE, EMISSIONS & EXHAUST MANIFOLD SUZUKI 970 MODEL 898662



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	09355-13207-600	Hose	As Req'd.	12	14120-85220	Cover, upper	1
2	09401-20301	Clip	4	13	14125-85201	Cover, lower	1
3	09367-14002	Union, 3-way	1	14	01411-06123	Stud bolt	3
4	11193-85000	Hose, PCV	1	15	08361-35063	Nut	3
5	09401-13414	Clip	2	16	09103-06168	Bolt (6 x 10)	5
6	18118-80010	Valve, PCV	1	17	14181-85200	Gasket, exhaust pipe	1
7	09404-08420	Clamp, breather hose	1	18	01411-10253	Stud bolt	3
8	14111-85210	Manifold, exhaust	1	19	09355-35754-600	Hose	As Req'd.
9	14140-85200	Gasket, exhaust manifold	1	20	09404-08206	Clamp	1
10	01411-08253	Stud bolt	8	21	09408-00060	Clamp	1
11	08310-00083	Nut	8				

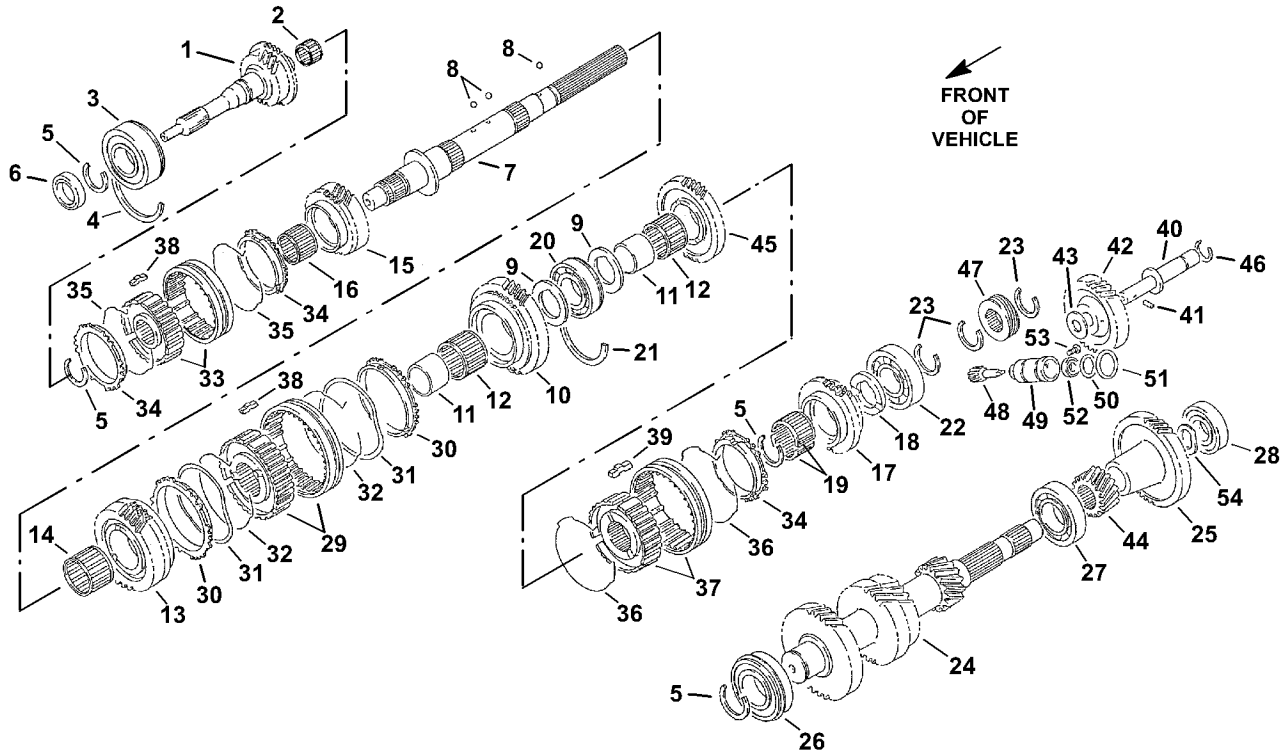
OIL PUMP and WATER PUMP SUZUKI 970 MODEL 898662



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	16100-73004	Pump, oil	1	13	01550-06403	Bolt	1
2	09246-06002	•Plug, oil gallery	1	14	01411-06253	Stud bolt	2
3	16130-73000	•Rotor set, oil pump	1	15	08316-10063	Nut	2
4	16150-73000	•Valve set, oil pump relief .	1	16	17511-73001	Pulley, water pump	1
5	02122-06123	•Screw	6	17	17131-80000	Hub, cooling fan	1
6	16119-50E00	Gasket, oil pump case	1	18	17110-77300	Fan, cooling	1
7	01550-06303	Bolt	1	19	01580-06503	Bolt	4
8	01550-06353	Bolt	7	20	17550-77X50	Pipe, water inlet	1
9	04211-09109	Pin	2	21	01550-06203	Bolt	2
10	17400-78821	Pump set, water	1	22	09401-11415	Clip	2
11	17431-73001	•Gasket, water pump	1	23	17559-73000-H17	Gasket, inlet pipe	1
12	01550-06303	Bolt	2	24	09352-70121-00B	Hose, water bypass ..	1

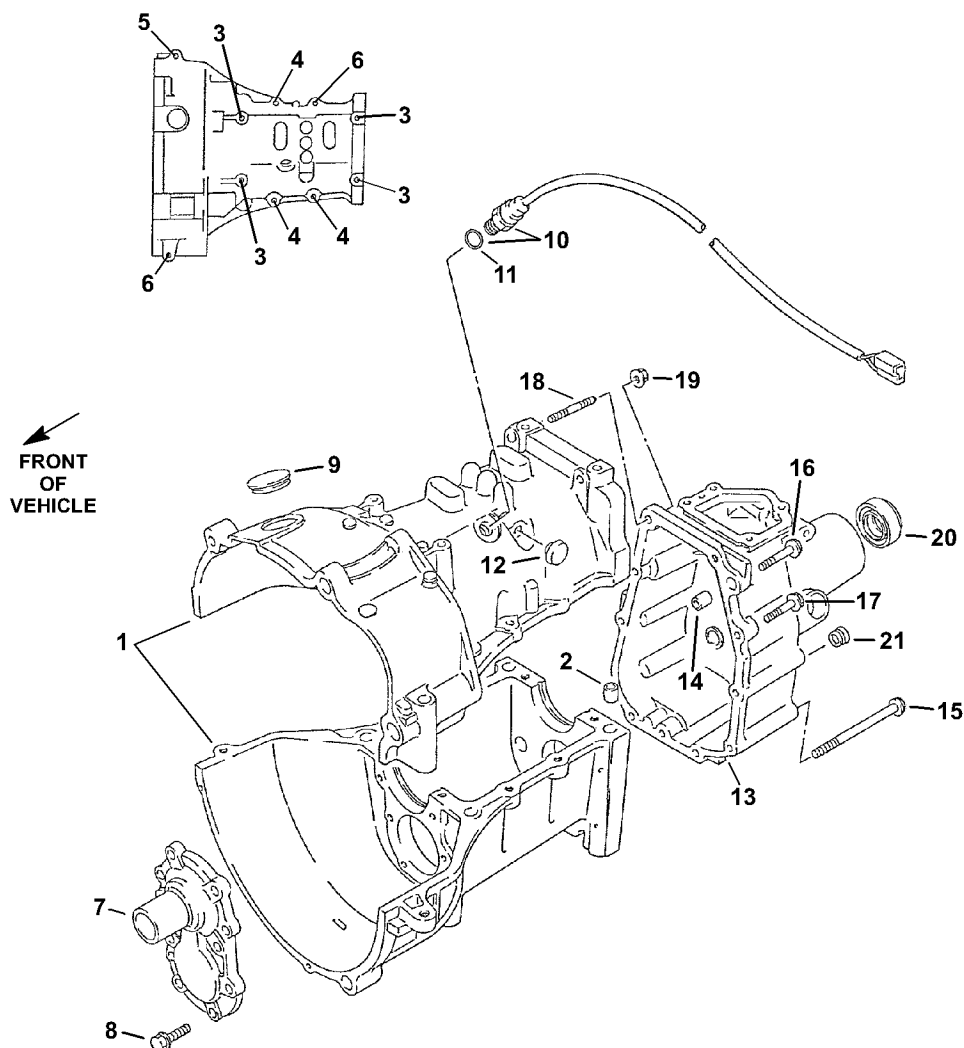
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

INPUT SHAFT & GEARS (MANUAL TRANSMISSION)
SUZUKI 970 MODEL 898662 & DIESEL MODELS
898663, 898664, 898684, 898685



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24110-80410	Shaft, input	1	28	09262-20073	Bearing, rear	1
2	09263-20056	Bearing	1	29	24400-83000	Hub, synchronizer low	1
3	09262-28005	Bearing	1	30	24431-83001	Ring, synchronizer low	2
4	09390-68002	C-ring	1	31	24436-83000	Spring, low/2nd	2
5	09380-28007	Circlip	4	32	24441-85F41	Spring, low	2
6	09283-25088	Seal,oil	1	33	24410-83000	Hub, synchronizer high	1
7	24121-85252	Shaft, main	1	34	24432-83001	Ring, synchronizer high	3
8	06111-06003	Ball	3	35	24442-81A20	Spring, high	2
9	09166-30007	Washer	2	36	09388-00019	Spring, 5th speed	2
10	24211-83011	Gear, main shaft, low	1	37	24420-83000	Hub, reverse drive	1
11	09300-30003	Bushing	2	38	24471-60A00	Key	6
12	09263-35015	Bearing	2	39	24473-70D10	Key	3
13	24220-60A01	Gear, main shaft 2nd	1	40	24551-83010	Shaft, reverse idle gear	1
14	09263-35015	Bearing	1	41	09261-06003	Pin	1
15	24230-83001	Gear, main shaft 3rd	1	42	24560-83001	Gear, reverse idle (NT:33)	1
16	09263-30031	Bearing	1	43	09166-16014	Washer	1
17	24250-83020	Gear, main shaft 5th	1	44	24671-83000	Gear, countershaft (rev.)	1
18	24255-60A00	Washer	1	45	24681-83000	Gear, mainshaft (rev.)	1
19	24801-60810	Bearing	1	46	09380-17008	Circlip	1
20	09262-30086	Bearing	1	47	26121-85202	Gear, speedometer drive	1
21	09390-62010	C-ring	1	48	26131-85201	Gear, speedometer driven	1
22	09262-25073	Bearing	1	49	29431-85400	Case, speedometer gear	1
23	09380-25011	Circlip	3	50	09280-19001	O-ring	1
24	24131-83002	Shaft, counter	1	51	09280-21014	O-ring	1
25	24351-60A10	Gear, counter shaft 5th	1	52	09282-08001	Seal, oil	1
26	09262-28019	Bearing, front	1	53	09128-06032	Bolt	1
27	09262-28020	Bearing, center	1	54	09164-20008	Washer	1

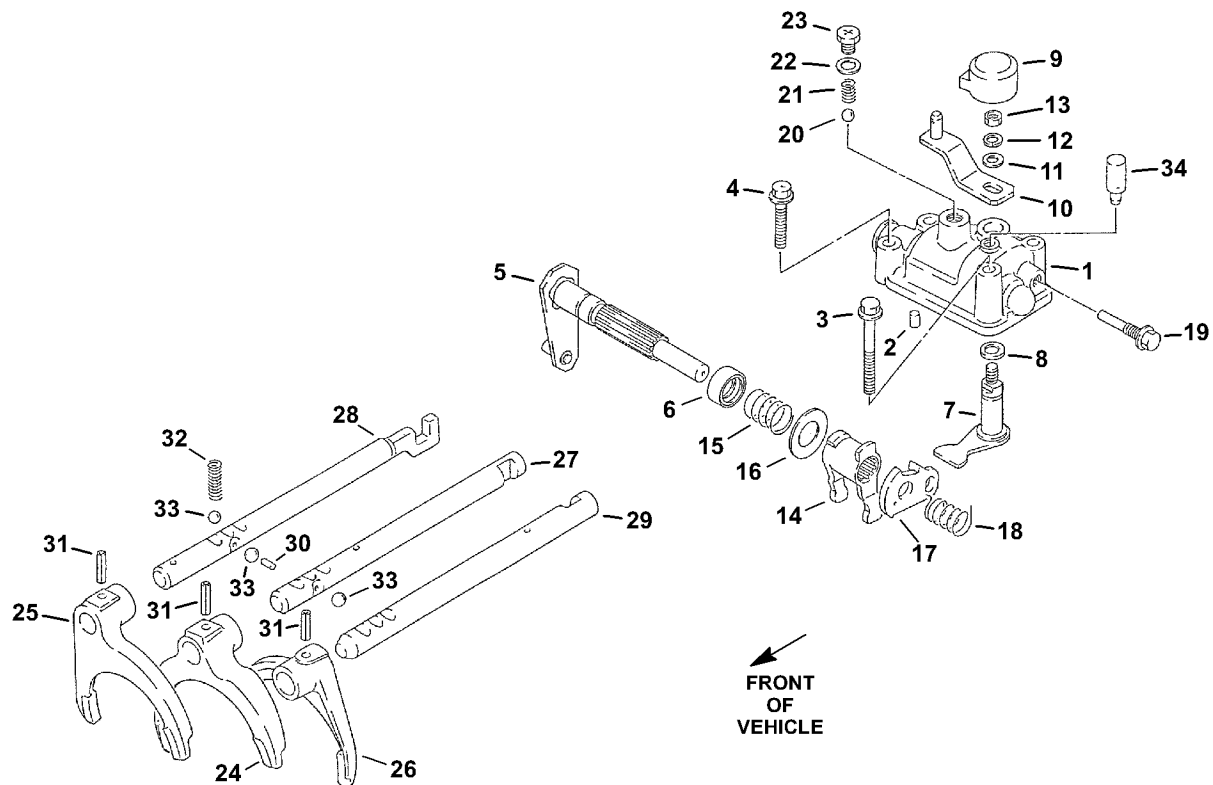
TRANSMISSION CASE
SUZUKI 970 MODEL 898662 & DIESEL MODELS
898663, 898664, 898684, 898685



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	24700-85200	Case, transmission	1	12	09250-10006	Plug, locating	1
2	04211-13149	•Pin	2	13	24770-85252	Case, extension	1
3	09103-08131	•Bolt, No. 1 (8 x 120)	4	14	04211-13149	Pin	2
4	01550-08303	•Bolt, No. 2	3	15	09103-08132	Bolt, No. 1 (8 x 100)	3
5	01550-08403	•Bolt, No. 3	1	16	01550-08403	Bolt, No. 2	1
6	01550-08803	•Bolt, No. 4	2	17	01550-08353	Bolt, No. 3	5
7	24741-83001	Retainer, input shaft brng.	1	18	01421-08303	Stud bolt	1
8	09103-08152	Bolt (8 x 25)	8	19	08316-10083	Nut	1
9	09250-30003	Cap, inspection timing	1	20	24780-83010	Seal, extension case	1
10	37610-80023	Switch, back-up lamp	1	21	09246-16010	Plug, oil filler	2
11	09280-11002	•O-ring	1				

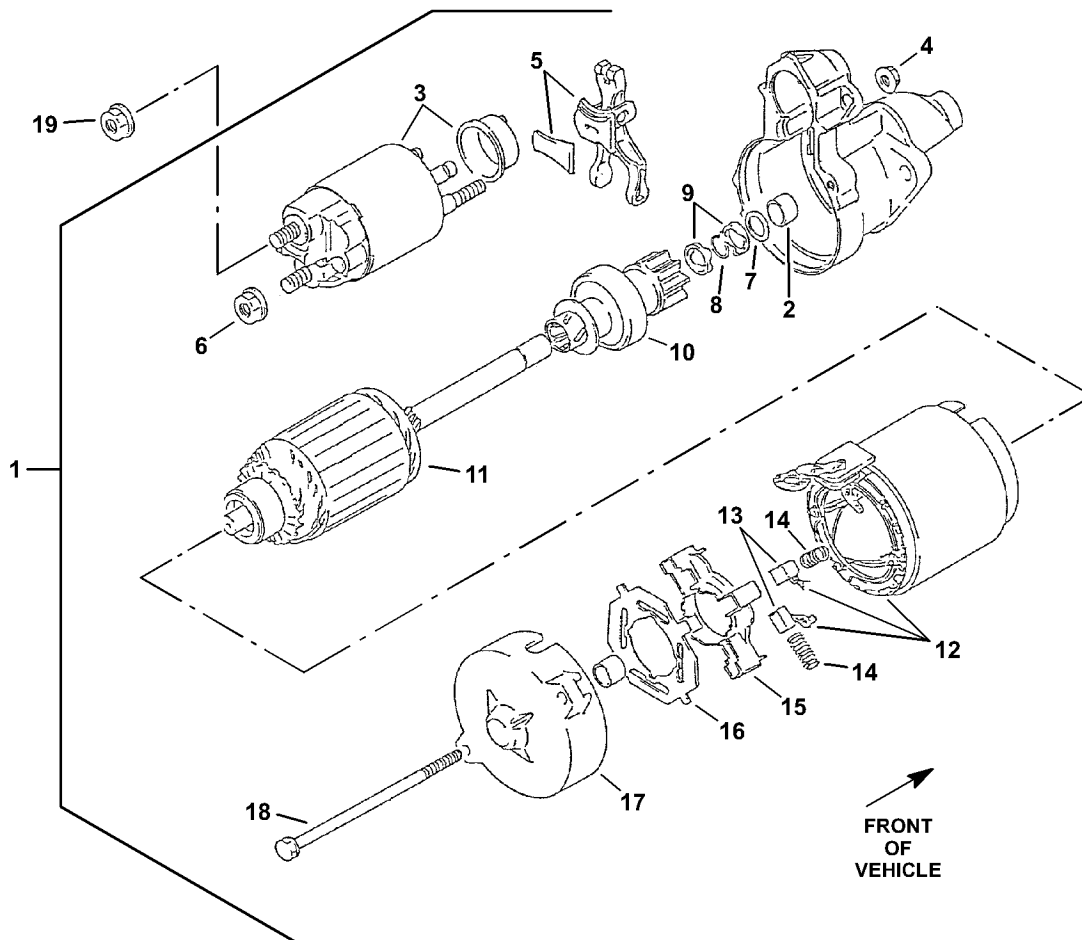
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

GEAR SHIFT FORK
SUZUKI 970 MODEL 898662 & DIESEL MODELS
898663, 898664, 898684 and 898685



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	25121-85051	Case, gear shift lever	1	18	25546-60C01	Spring	1
2	04221-06129	Pin	1	19	09135-08005	Bolt	1
3	01550-08553	Bolt	1	20	06111-10003	Ball	1
4	01550-08403	Bolt	3	21	25547-70D00	Spring	1
5	25520-85203	Shaft, gear shift lever	1	22	09168-10007	Gasket	1
6	09284-17004	Seal, oil	1	23	09128-10002	Bolt (10 x 9)	1
7	25530-79501	Shaft, gear select	1	24	25211-85201	Fork, low speed gear shift	1
8	09286-09001	Seal, oil	1	25	25221-85202	Fork, high speed gear shift	1
9	25536-84200	Boot, gear select shaft	1	26	25221-83002	Fork, reverse gear shift	1
10	25535-85412	Arm, gear select	1	27	25411-85201	Shaft, low speed fork	1
11	09162-08008	Washer	1	28	25420-85201	Shaft, high speed fork	1
12	08322-01083	Washer	1	29	25451-85261	Shaft, reverse fork	1
13	08310-00083	Nut	1	30	09261-03017	Roller	1
14	25541-85201	Lever, gear select	1	31	09205-05012	Spring, pin	3
15	25576-70D00	Spring	1	32	25415-83000	Spring	3
16	09160-17035	Washer (17 x 32 x 1.2)	1	33	06111-12004	Ball	5
17	25545-85055	Dog, rerverse shift limit	1	34	24821-09001	Plug, breather	1

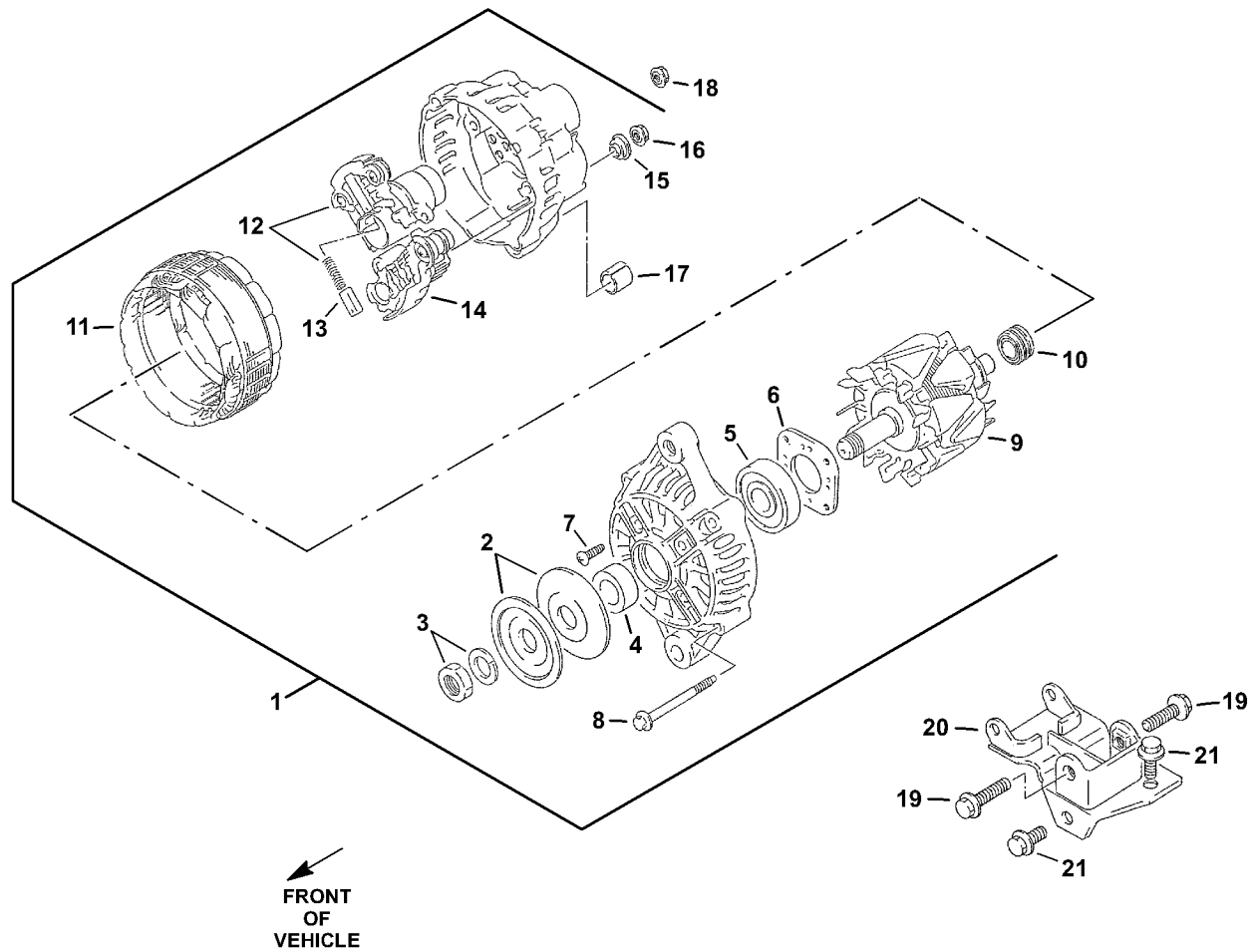
STARTER MOTOR SUZUKI 970 MODEL 898662



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	31100-79X50	Motor, starting	1	11	31311-51A10	•Armature	1
2	31152-51A10	•Bushings	1	12	31110-52A50	•Yoke assembly	1
3	31220-51A10	•Switch assembly	1	13	31131-51A10	•Brush	4
4	08316-10063	•Nut	2	14	31135-51A10	•Spring, brush	4
5	31191-85020	•Lever, pinion drive	1	15	31173-51A10	•Holder, brush	1
6	08316-10083	•Nut, switch	2	16	31175-51A10	•Insulator	1
7	31153-51A10	•Washer	1	17	31172-51A10	•Bushings	1
8	31312-51A10	•Ring, snap	1	18	31281-51A10	•Bolt	2
9	31310-51A10	•Nut, pinion stop	2	19	08316-10083	Nut	1
10	31320-51A10	•Clutch assembly	1				

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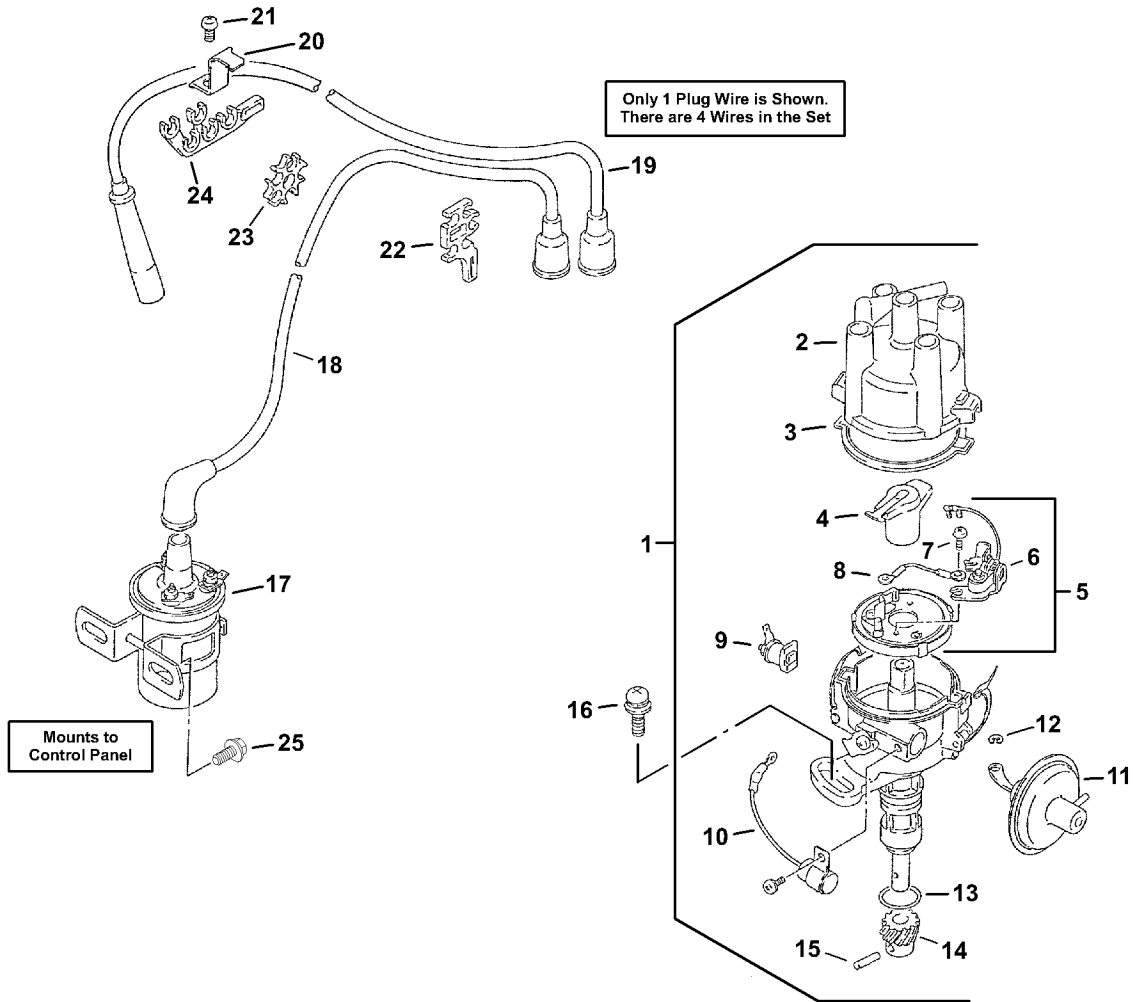
ALTERNATOR **SUZUKI 970 MODEL 898662**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	31400-60C11	Generator (alternator)	1	12	32500-60C11	•Regulator	1
2	31771-82C20	•Pulley	2	13	31631-60F30	••Brush set	2
3	31775-50F20	•Nut	1	14	31621-70D11	•Rectifier	1
4	31792-51F10	•Spacer	1	15	31514-82630	•Insulator	1
5	31582-50F20	•Bearing	1	16	08316-10063	•Nut	1
6	31585-60A10	•Retainer, bearing	1	17	31616-82C20	•Bushing	1
7	31586-60A10	•Screw	1	18	08316-10063	Nut	1
8	31651-86520	•Screw kit	1	19	01550-08303	Bolt	2
9	31710-82C20	•Rotor	1	20	95110-66C00	Bracket	1
10	31612-60A10	••Bearing, rear	1	21	01550-08163	Bolt	3
11	31410-85320	•Stator	1				

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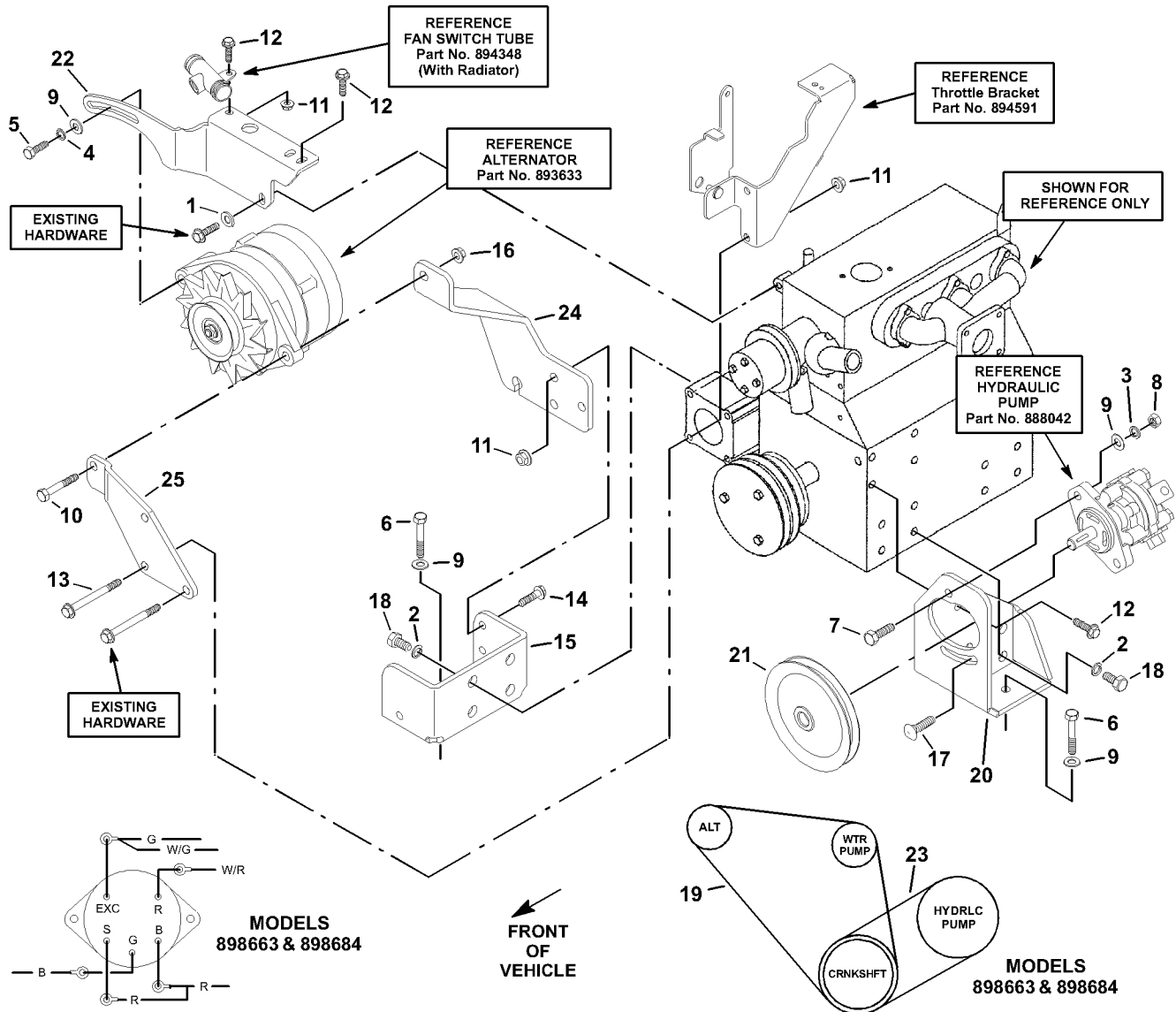
DISTRIBUTOR SUZUKI 970 MODEL 898662



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	33100-85750	Distributor	1	15	33268-72010	•Pin	1
2	33321-60A10	•Cap, distributor	1	16	09138-08003	Screw (8 x 30)	1
3	33324-79610	•Seal, cap	1	17	33410-85010	Coil, ignition	1
4	33310-82010	•Rotor	1	18	33710-85051	Cord, high tension No. 1 (coil wire)	1
5	33102-75110	•Breaker assembly	1	19	33705-85220	Cord set, high tension (spark plug wire set)	1
6	33140-74010	•Point assembly	1	20	33881-75100	Bracket, cord clamp	1
7	33151-52011	•Screw, point	2	21	02112-06083	Screw	1
8	33341-76410	•Wire, read	1	22	33881-85210	Clamp, distributor side	1
9	33210-73010	•Terminal assembly	1	23	33882-85210	Spacer, cord	1
10	33261-77090	•Condenser	1	24	33883-85210	Clamp, head	1
11	33230-85730	•Controller, vacuum	1	25	800934	Screw, M6-1.00 x 16 (10.9)	2
12	33239-76410	•E-ring	1				
13	33278-85310	•O-ring	1				
14	33267-79610	•Gear	1				

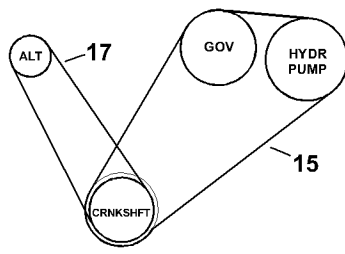
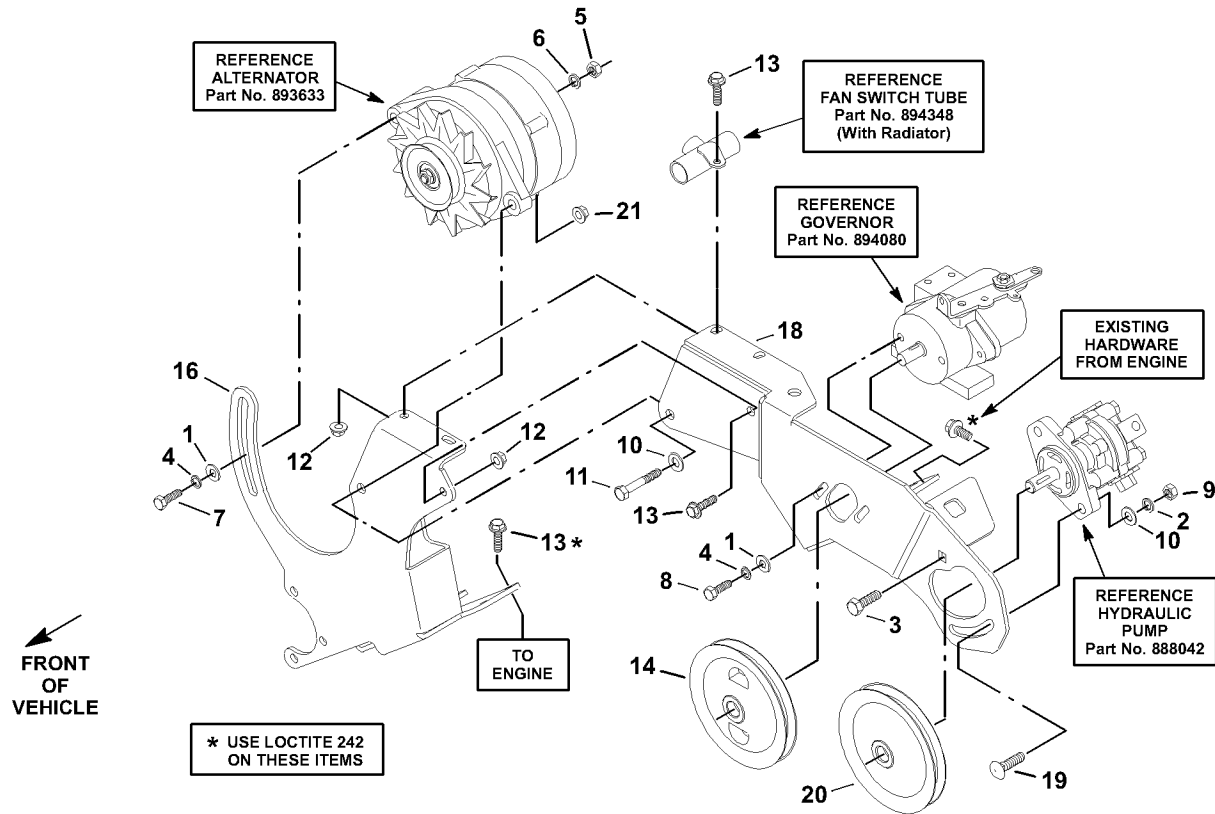
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

ALTERNATOR, ENGINE BELTS, PULLEYS and BRACKETS **DIESEL 3-WHEEL TURF MODELS 898663 & 898684**

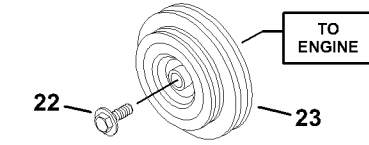


Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 3/8	1	14	452389	Screw, M8-1.25 x 25 (8.8)	3
2	120166	Lockwasher, 1/2	8	15	844619	Mount, engine (right)	1
3	120177	Lockwasher, 3/8	2	16	548804	Nut, flange 3/8-16	1
4	306325	Lockwasher, 5/16	1	17	800073	Bolt, carriage 3/8-16 x 1 1/4	1
5	306416	Screw, 5/16-18 x 1	1	18	800921	Screw, M12-1.25 x 20 (8.8)	2
6	306836	Screw, 3/8-16 x 2 1/4	2	19	843998	V-belt, 40" (1016 mm)	1
7	306835	Screw, 3/8-16 x 1 1/4	1	20	843760	Bracket, hydraulic pump	1
8	306562	Nut, 3/8-16	2	21	839911	Pulley, 4.75" (hydraulic pump)	1
9	306981	Washer, 3/8	5	22	844269	Bracket, alternator adjustment	1
10	311213	Screw, 3/8-16 x 3	1	23	841966	V-belt, 29.5" (750 mm)	1
11	450453	Nut, M8-1.25 (G10.9)	5	24	844271	Bracket, alternator rear	1
12	452388	Screw, M8-1.25 x 20 (8.8)	4	25	844270	Bracket, alternator, front	1
13	452394	Screw, M8-1.25 x 70 (8.8)	2				

ALTERNATOR, ENGINE BELTS, PULLEYS and BRACKETS **SUZUKI 660 TURF 3-WHEEL MODEL 898650**

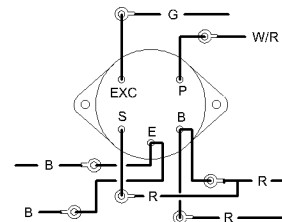


ENGINE BELT DIAGRAM
MODEL 898650



894588, 894506

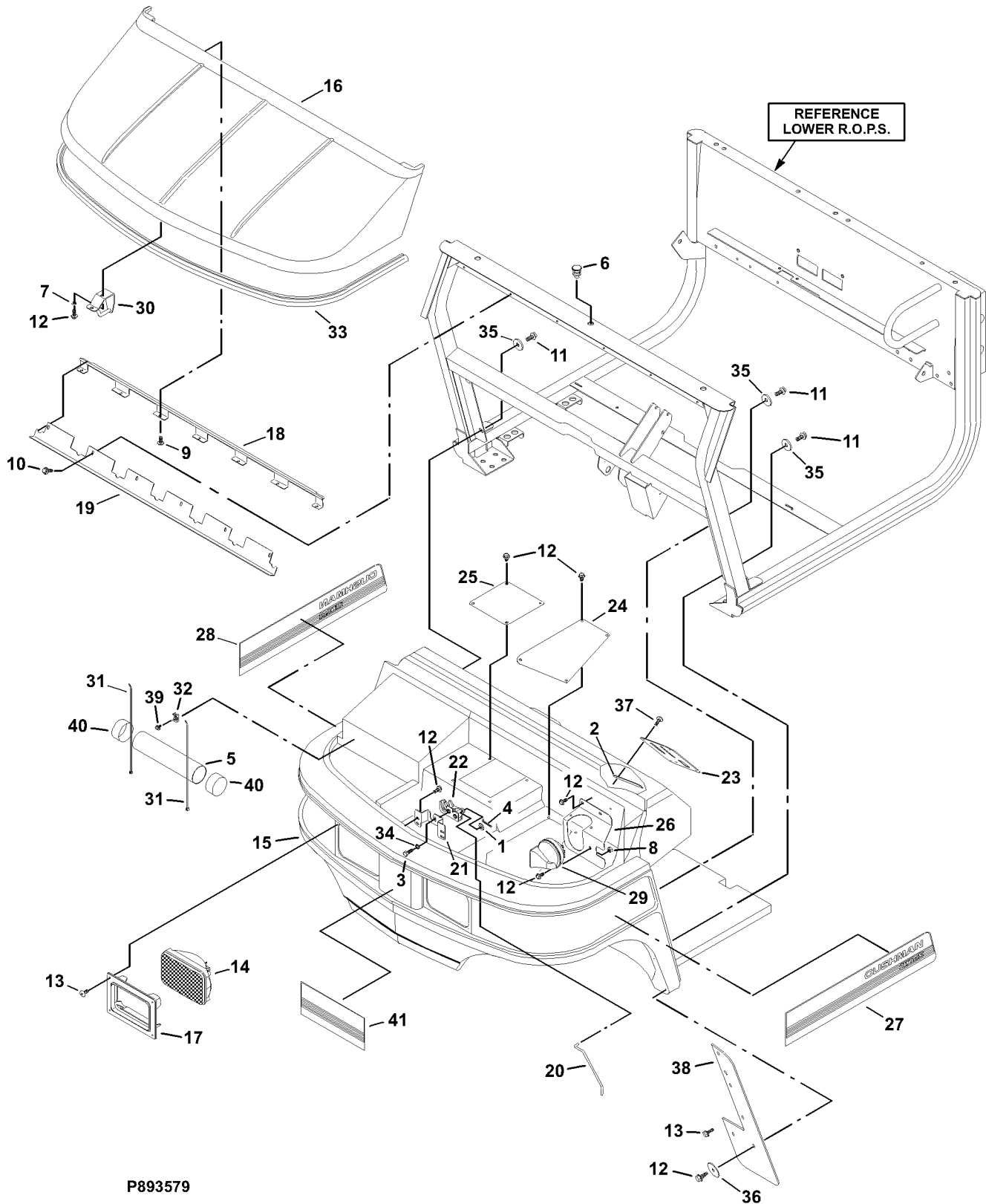
ALTERNATOR WIRING



MODEL 898650

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 3/8	3	14	844035	Pulley, 4.75" (governor)	1
2	120177	Lockwasher, 3/8	2	15	841027	V-belt, 53 1/4" (1352 mm)	1
3	306835	Screw, 3/8-16 x 1 3/4	1	16	842988	Bracket, alternator mounting	1
4	306325	Lockwasher, 5/16	3	17	844037	V-belt, 34.5" (876 mm)	1
5	306375	Nut, 1/4-20	1	18	894375	Bracket, governor mounting	1
6	306396	Lockwasher, 1/4	1	19	800073	Bolt, carriage, 3/8-16 x 1 1/4	1
7	306416	Screw, 5/16-18 x 1	1	20	828100	Pulley, 5.50" (hydraulic pump)	1
8	306450	Screw, 5/16-18 x 3/4	2	21	548804	Nut, 3/8-16	1
9	306562	Nut, 3/8-16	2	22	12619-60B00	Bolt	1
10	306981	Washer, 3/8	3	23	95131-51F60	Pulley, crankshaft (manual transmission)	1
11	311213	Screw, 3/8-16 x 3	1		95131-51F50	Pulley, crankshaft (automatic transmission)	1
12	450453	Nut, M8-1.25 (G10.9)	2				
13	452388	Screw, M8-1.25 x 20 (8.8)	7				

BODY, HOOD, HEADLIGHTS **3-WHEEL TURF MODELS 898650, 898663 & 898684**



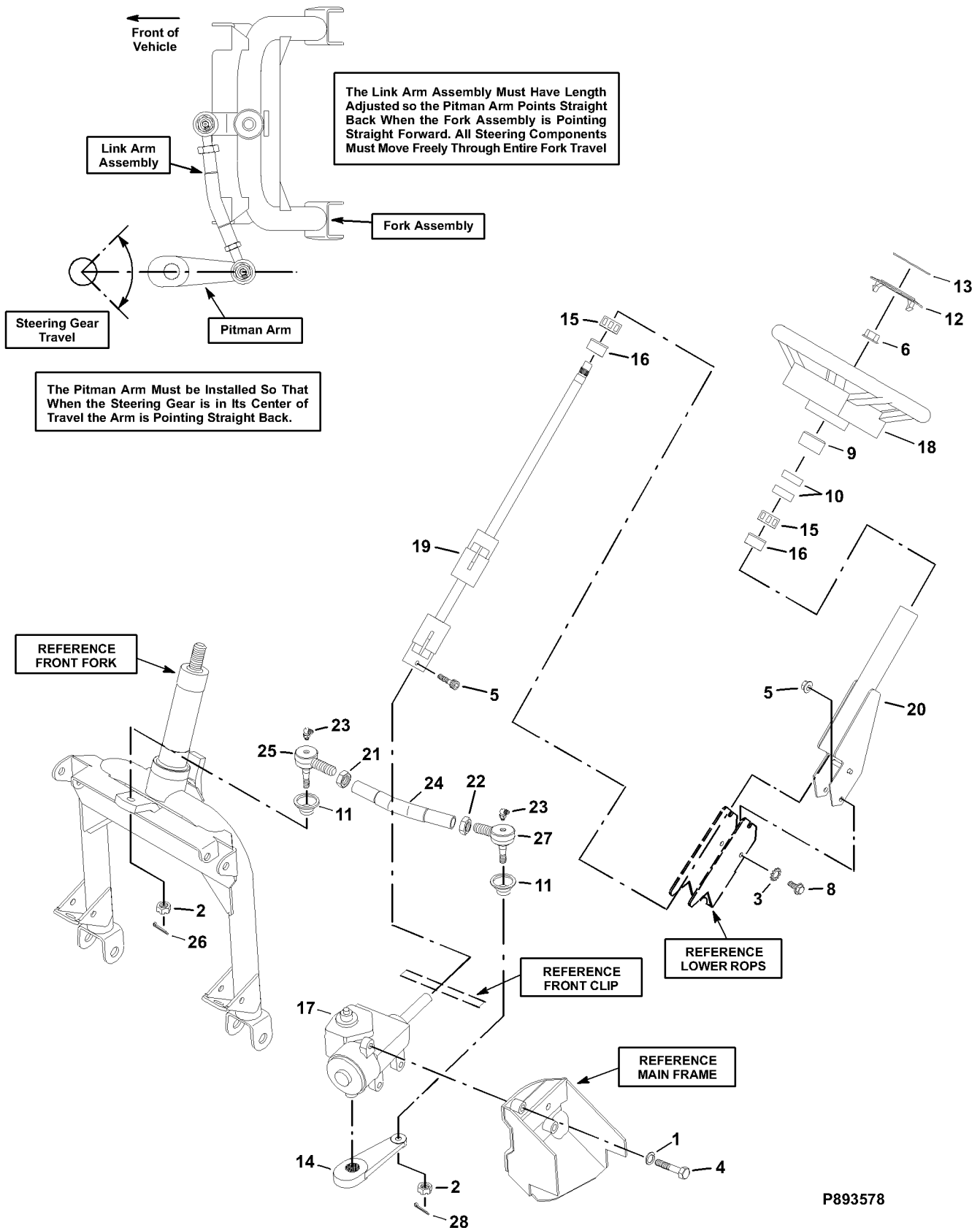
BODY, HOOD, HEADLIGHTS
3-WHEEL TURF MODELS 898650, 898663 & 898684

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	303952	Washer, #10	1	21	841753	Bracket, hood latch	1
2	894743	Nut ay., double 1/4-20	2	22	841787	Latch, hood	1
3	306419	Screw, 1/4-20 x 1/2	2	23	841264	Panel, dash (left)	1
4	306463	Pin, cotter	1	*	844116	Decal, left dash panel, turf	1
5	38541	Tube, document	1	24	844645	Cover, steering gear (3-wheel) ..	2
6	844293	Plug	3	25	844646	Cover, access (3-wheel)	1
7	450410	Lockwasher, M6	2	26	844167	Bracket, horn/brake reservoir ...	1
8	450452	Nut, M6-1.00	1	27	844422	Decal, turf, LH (3-wheel)	1
9	450541	Screw, M6-1.00 x 16 (RPH)	7	28	844423	Decal, turf, RH (3-wheel)	1
10	452695	Screw, M6-1.00 x 20, taptite	6	29	886090	Horn	1
11	800930	Screw, M8-1.25 x 16 (8.8)	4	30	894030	Striker, hood	1
12	800934	Screw, M6-1.00 x 16 (8.8)	25	31	823549	Tie, cable, 15.5" (394 mm)	2
13	800943	Screw, tap, #10-14	10	32	840508	Mount, cable tie	2
14	837303	Headlight, rectangular	2	33	844669	Seal, weather	As Req'd.
15	2700793	Clip, front w/decal (3-wheel)	1	34	306488	Lockwasher, 1/4 shakeproof	2
*	821071	•Decal, notice not motor vehicle ..	1	35	548159	Washer, 5/16 (1 1/4" diameter) ...	4
*	840901	•Decal, Warning read ops. manual	1	36	548175	Washer, 1/4 (1 1/4" diameter)	8
16	843854	Hood, turf (green)	1	37	800582	Screw, 1/4-20 x 3/4	4
17	841428	Bezel, headlamp	2	38	844049	Flap, mud	2
18	841477	HInge, hood	1	39	800344	Screw, tapping, #10 type AB	2
19	841637	Angle, front clip mount	1	40	38061A	Cap, vinyl	2
20	844653	Rod, hood release (3-wheel)	1	41	844783	Decal, 3-wheel (center)	1

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* Not Illustrated.

STEERING WHEEL, STEERING SHAFT AND STEERING GEAR 3-WHEEL TURF MODELS 898650, 898663 & 898684



P893578

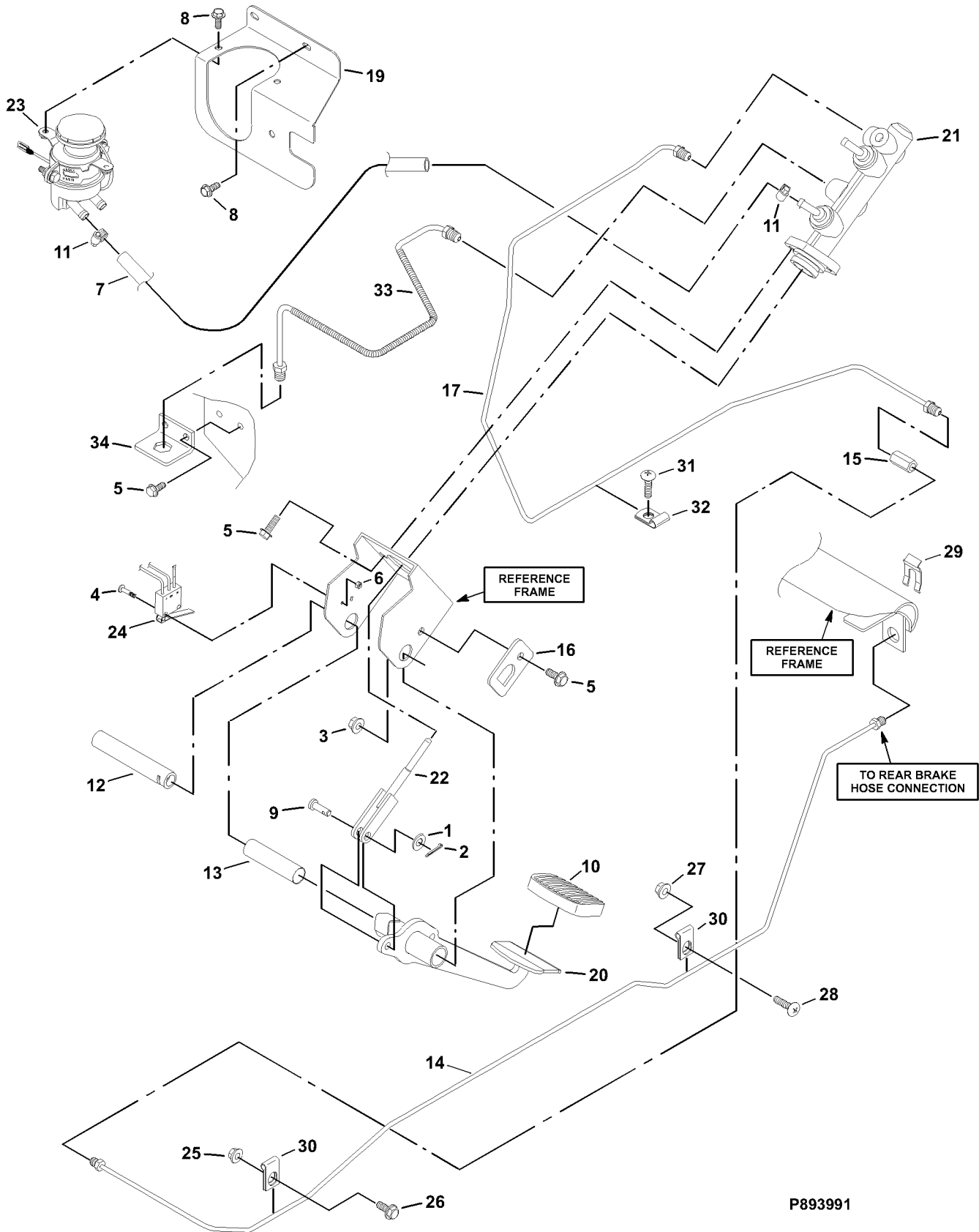
STEERING WHEEL, STEERING SHAFT AND STEERING GEAR
3-WHEEL TURF MODELS 898650, 898663 & 898684

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	303269	Lockwasher, 7/16	3	16	828590	Housing, bearing	2
2	306825	Nut, castle, 7/16-20	2	17	887597	Gear, steering	1
3	306799	Lockwasher, 5/16 ext. shkprf.	2	18	892228	Wheel, steering 14" w/o horn	1
4	311392	Screw, 7/16-14 x 2 (G5)	3	19	893564	Shaft, steering 3-wheel	1
5	450453	Nut, M8-1.25 (10.9)	2	20	893571	Tube, steering mount	1
6	450457	Nut, M16-2.00 (10.9)	1	21	302944	Nut, 9/16-18 jam	1
7	450739	Bolt, M10-1.50 x 30 sckthd (12.9)	1	22	800485	Nut, 9/16-18 jam (LH thread)	1
8	800930	Screw, M8-1.25 x 16 (8.8)	2	23	831405	Fitting, grease 90° 1/4-28	2
9	2700453	Cover	1	24	841793	Link, fork	1
10	819923	Collar, foam	2	25	887512	End assembly, tie rod (right)	1
11	816586	Retainer, grease	2	26	306328	•Pin, cotter, 3/32 x 3/4	1
12	892486	Cover, steering wheel center	1	*	548224	•Fitting, lubrication	1
13	839862	•Decal, steering wheel	1	27	887750	End assembly, tie rod (left)	1
14	845225	Arm, pitman	1	28	306328	•Pin, cotter, 3/32 x 3/4	1
15	808060	Bearing, needle	2	*	548224	•Fitting, lubrication	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

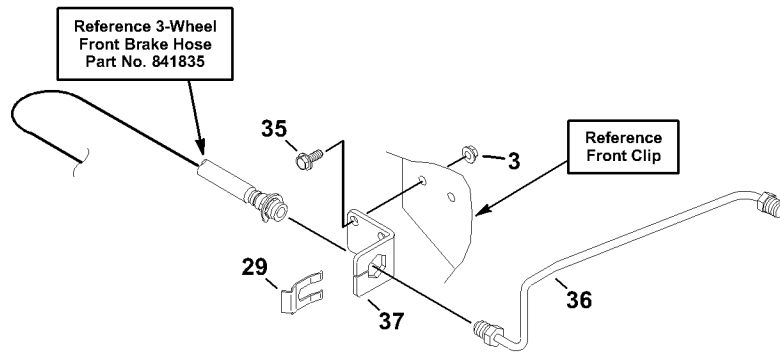
* Not Illustrated. Although this lubrication fitting is the standard fitting that comes with this tie rod, it is **not** used in this application. Use Ref. No. 23, Part No. 831405.

**HYDRAULIC BRAKE LINES
TURF 3-WHEEL WITH FRONT BRAKES
MODELS 898650, 898663 & 898684**



P893991

HYDRAULIC BRAKE LINES **TURF 3-WHEEL WITH FRONT BRAKES** **MODELS 898650, 898663 & 898684**



The Brake Line and Bracket (Ref. No.'s 36 & 37) will be used on 3-wheel vehicles manufactured *beginning* with the following Serial No's.:

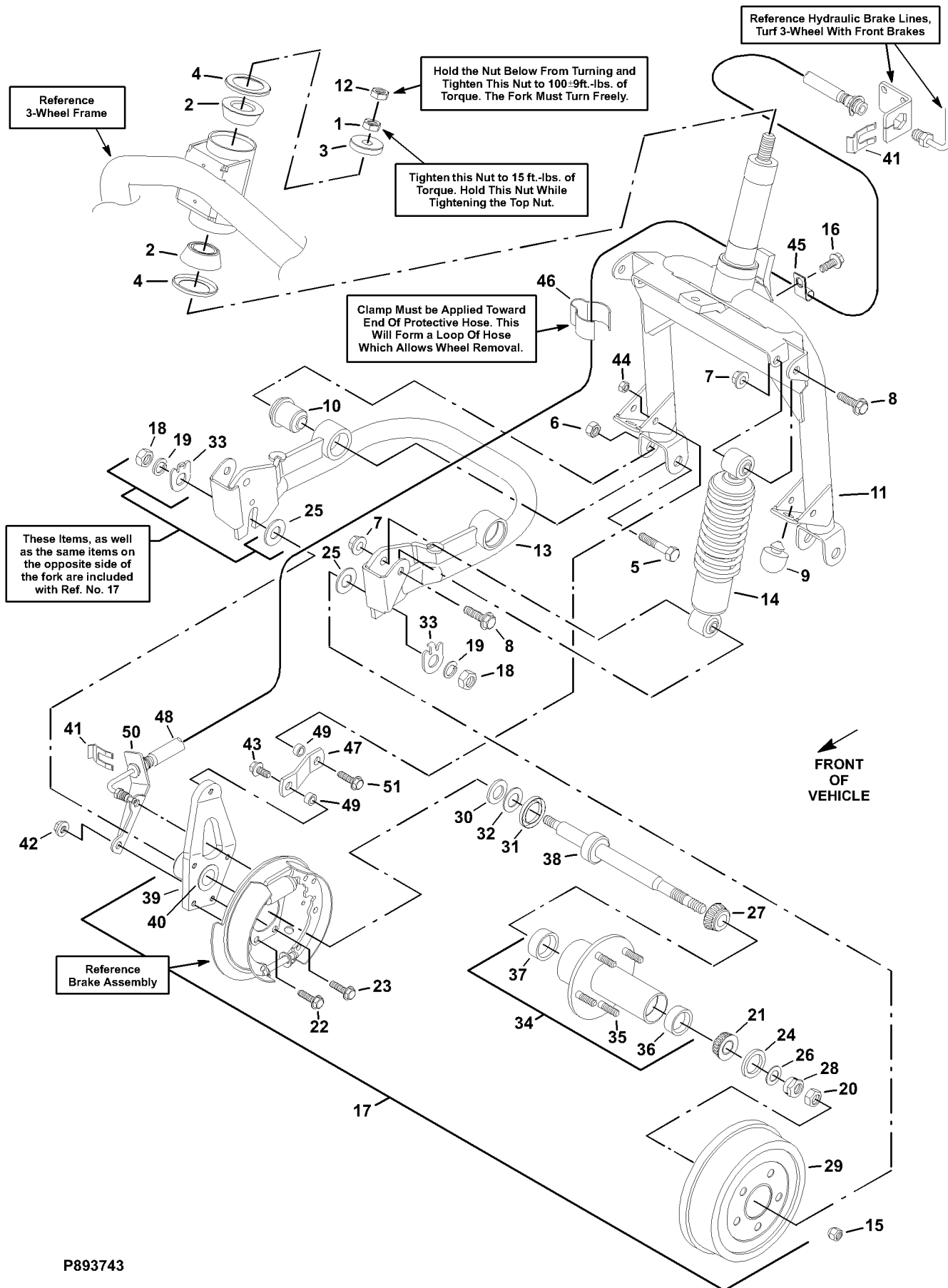
Model	Serial No.	Manufacture Date
898650 (Suzuki 660)	99002896	05-19-99
898663 (Perkins Diesel)	99001597	05-19-99
898684 (Perkins Diesel)	99001892	05-19-99

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	103867	Washer, 5/16	1	20	892921	Lever, brake	1
2	306328	Pin, cotter, 3/32 x 3/4	1	21	893559	Cylinder, brake (dual)	1
3 ◇	450453	Nut, M8-1.25 (G10.9)	3	22	894167	Rod, brake	1
4	450510	Screw, M3-.50 x 20 (G10.9)	2	23	894456	Reservoir, brake fluid	1
5	452388	Screw, M8-1.25 x 20 (8.8)	3	24	890808	Switch, micro	1
6	452424	Nut, M3-.50	2	25	450454	Nut, M10-1.50 (G10.9)	1
7 ▼	845380	Hose, 5/16" brake	As Req'd.	26	452398	Screw, M10-1.50 x 20 (8.8)	1
8	800934	Screw, M6-1.00 x 16 (8.8)	4	27	548910	Nut, 1/4-20	1
9	806714	Pin, clevis 5/16 x 15/16	1	28	800026	Screw, 1/4-20 x 3/4	1
10	810152	Cover, brake pedal	1	29	809137	Clip	1
11	825624	Clamp, hose	4	30	810435	Clamp	2
12	840725	Pin, brake pivot	1	31	800943	Screw, tap #10-14 x 5/8	1
13	840726	Bearing, brake pivot	1	32	812445	Clamp, tube/wire	1
14	842051	Tube, brake line rear	1	33	842052	Tube, front brake	1
15	842103	Union, brake fitting (metric)	1	34	844623	Bracket, hose support	1
16	842935	Tab, locking	1	35 ◇	452390	Screw, M8-1.25 x 30 (8.8)	2
17	844057	Tube, rear brake	1	36 ◇	845391	Tube, front brake	1
18	843858	Plug, M10	As Req'd.	37 ◇	845378	Bracket, hose support	1
19	844167	Bracket, reservoir mounting	1				

▼ The brake hose (Part No. 845380) is serviced as a 6' (1,829 mm) length.

◇ Ref. No's. 35, 36 & 37 and two (2) 450453's (Ref. No 3) will be used on models beginning with the Serial No's. shown above.

FRONT FORK **3-WHEEL TURF MODELS 898650, 898663 & 898684**



P893743

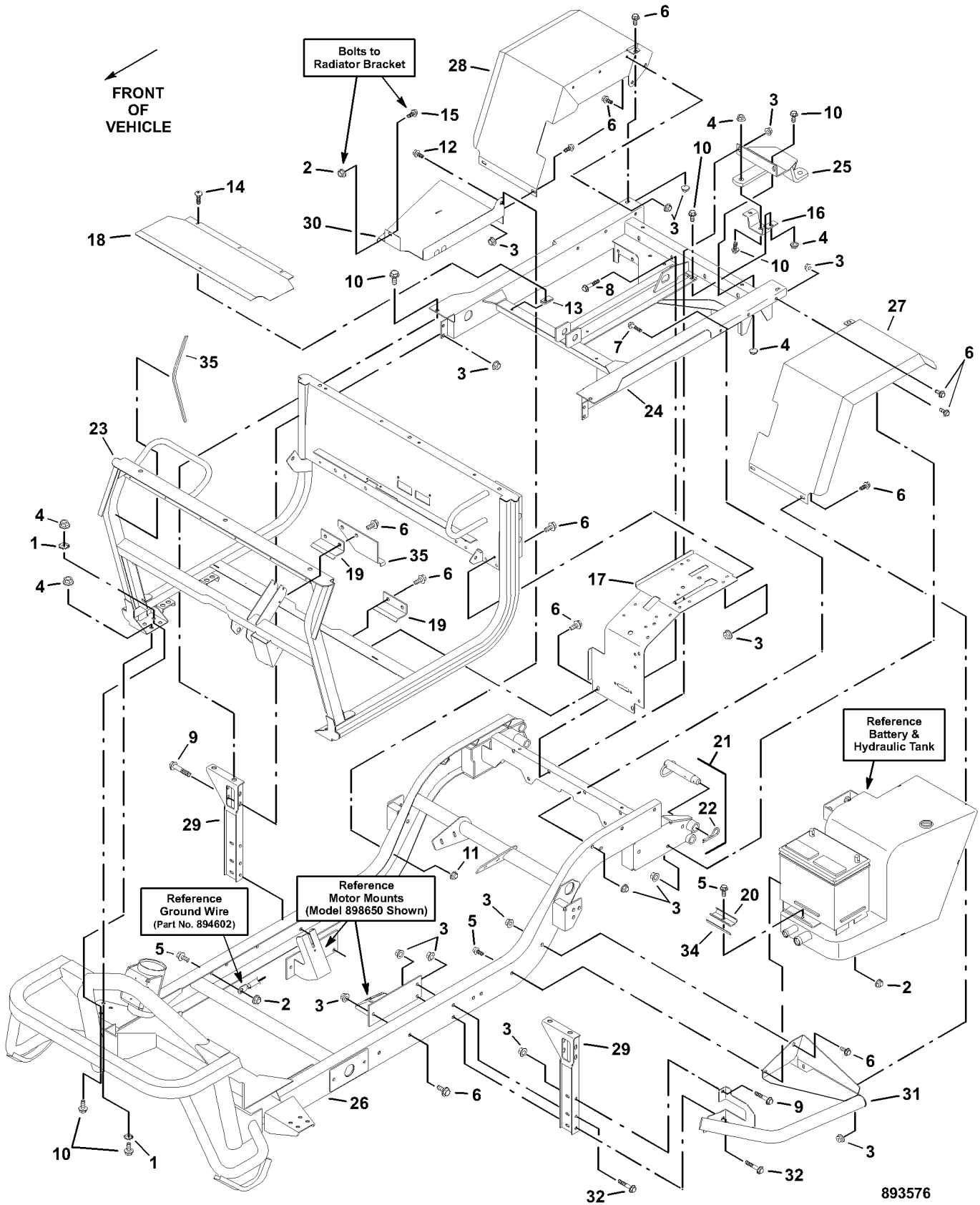
FRONT FORK
3-WHEEL TURF MODELS 898650, 898663 & 898684

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	307665	Nut, 3/4-16 jam	1	28	836719	•Nut, bearing adjustment	1
2	842646	Cone, bearing	2	29	841430	•Drum, brake	1
3	844180	Retainer, spindle bearing	1	30	844129	•Washer, oilite 1 x 1.5 x .125 . . .	1
4	844190	Seal, oil	2	31	844197	•Seal, oil 1.5 id. x 2.5 od.	1
5	450075	Bolt, M16-2.00 x 80	2	32	844433	•Spring, thrust	1
6	450382	Nut, M16-2.00 locking insert	2	33	844508	•Washer, keeper	2
7	450455	Nut, M12-1.75 (G10.9)	4	34	894536	•Hub, complete (3-wheel)	1
8	452413	Bolt, M12-1.75 x 60	4	35	800908	••Bolt, lug M12-1.50 x 42	5
9	813850	Bumper, rubber	2	36	808088	••Cup, tapered roller bearing 1.78 od. .48T	1
10	841167	Bushing, silentbloc	2	37	827069	••Cup, tapered roller bearing 2.44 od. .56T	1
11	894549	Fork assembly	1	38	894537	•Axle, complete	1
12	307665	•Nut, 3/4-16 jam	1	39	894539	•Arm, complete, brake	1
13	894550	Yoke assembly	1	40	844128	••Bushing, oilite	1
14	894636	Strut and shock, complete	2	41	809137	Clip	2
15	800909	Nut, wheel mount	5	42	450454	Nut, M10-1.50 (10.9)	2
16	112050	Screw, 1/4-20 x 5/8 (G5)	1	43	452398	Screw, M10-1.50 x 20	1
17	894538	Axle, hub & brake assembly	1	44	450379	Nut, staytite, M10-1.50	1
18	304104	•Nut, 5/8-18	2	45	814924	Clamp	1
19	306494	•Lockwashr, 5/8	2	46	825977	Clip	1
20	307665	•Nut, 3/4-16	1	47	841760	Link, brake anchor	1
21	385174	•Cone, tapered bearing	1	48	841835	Hose, front brake	1
22	452398	•Screw, M10-1.50 x 20 (8.8)	2	49	844486	Bushing	2
23	452400	•Bolt, M10-1.50 x 30 (8.8)	2	50	844642	Bracket, brake hose support	1
24	807630	•Seal, oil	1	51	452399	Screw, M10-1.50 x 25 (8.8)	1
25	809156	•Washer, 5/8 x 1.38 dia.	2				
26	809229	•Washer, 3/4 x 1.6 dia.	1				
27	827068	•Cone, tapered bearing	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

FRAME

3-WHEEL TURF MODELS 898650, 898663 & 898684



FRAME
3-WHEEL TURF MODELS 898650, 898663 & 898684

Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	309067	Lockwasher, 1/2 shakeproof	2	*	844177	•Decal, auxillary transmission	1
2	450453	Nut, M8-1.25 (G10.9)	3	*	845185	•Decal, park brake EC	1
3	450454	Nut, M10-1.50 (G10.9)	40	18	841805	Panel, access	1
4	450455	Nut, M12-1.75 (G10.9)	13	19	842870	Angle, support	2
5	452389	Screw, M8-1.25 x 25 (8.8)	3	20	844601	Bracket, battery clamp	1
6	452398	Screw, M10-1.50 x 20 (8.8)	27	21	882971	Pin, disconnect	2
7	452402	Screw, M10-1.50 x 50 (8.8)	6	22	809265	•Pin, hair 25/32 x 2 11/16	1
8	452403	Screw, M10-1.50 x 60 (8.8)	4	23	893145	ROPS, lower	1
9	452405	Screw, M10-1.50 x 80 (8.8)	5	24	893199	Platform, turf	1
10	452410	Screw, M12-1.75 x 30 (8.8)	17	also	893199G	Platform, turf (Galvanized)	1
11	548911	Nut, 5/16-18	1	25	893220	Drawbar, turf	1
12	800177	Screw, 5/16-18 x 3/4	1	26	897159	Frame, main (3-wheel)	1
13	800279	Nut, speed, 1/4-20	4	also	897159G	Frame, main (3-wheel galv.)	1
14	800582	Screw, 1/4-20 x 3/4	4	27	893487	Fender (left)	1
15	800930	Screw, M8-1.25 x 16 (8.8)	1	28	893488	Fender (right)	1
16	841258	Bracket, drawbar	1	29	893525	Support, platform	2
17	2700796	Panel, console, w/decals (turf) . .	1	30	893527	Support, fuel tank	1
*	822819	•Decal, Warning Park Brake	1	31	894711	Guard, hydraulic tank	1
*	844177	•Decal, auxillary transmission	1	32	452406	Screw, M10-1.50 x 90 (8.8)	4
*	844179	•Decal, hydraulic controls	1	33	844647	Angle, hold-down	1
(17)	2700797	Panel, EC console, w/decals . .	1	34 ♦	844729	Spacer, battery hold-down	1
*	822819	•Decal, Warning Park Brake	1	35	828382	Sealer, foam	As Req'd.

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY.

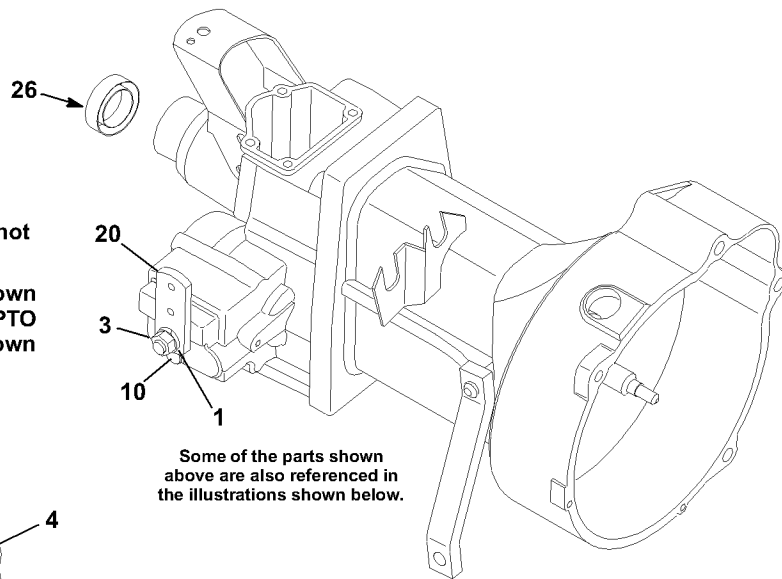
* Not Illustrated.

♦ Item No. 34 (Battery Hold-down Spacer, Part No. 844729) may not be used on all vehicles. If the battery clamp cannot be adjusted to properly secure the battery, this spacer will be required.

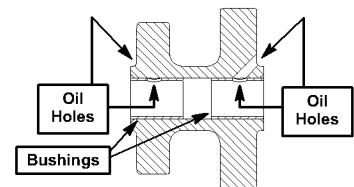
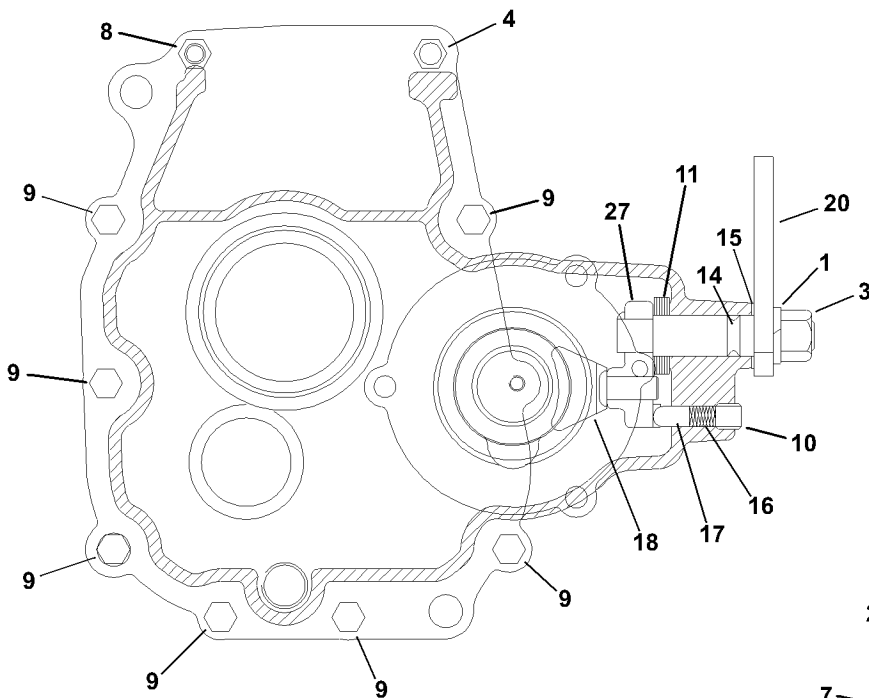
MECHANICAL PTO SUZUKI 970 MODEL 898662 and PERKINS DIESEL MODELS 898663, 898664, 898684 & 898685

The parts breakdown illustration was not available at the time of this printing.

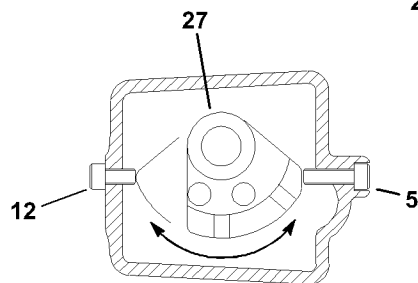
The isometric view of the transmission shown at the right references the location of the PTO housing. Please use the illustrations shown below for individual PTO parts.



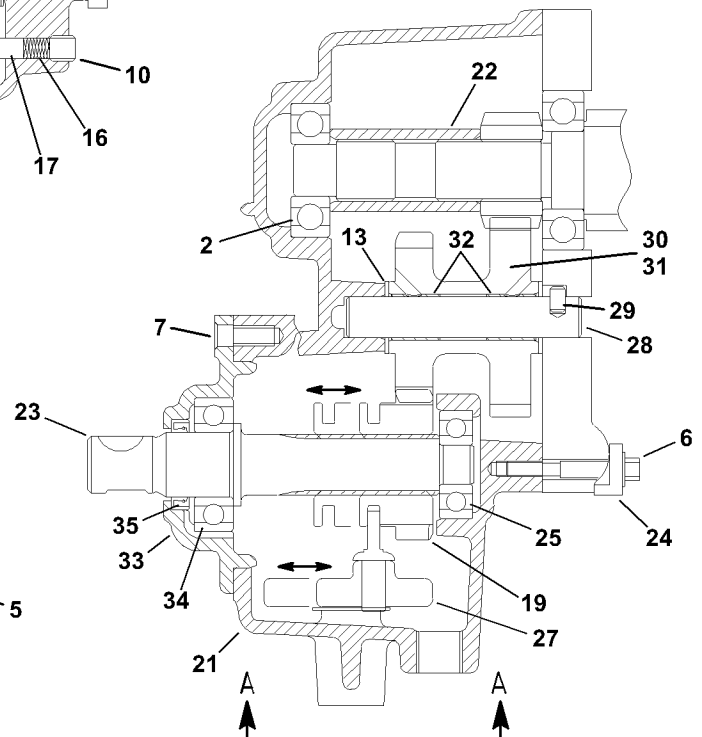
Some of the parts shown above are also referenced in the illustrations shown below.



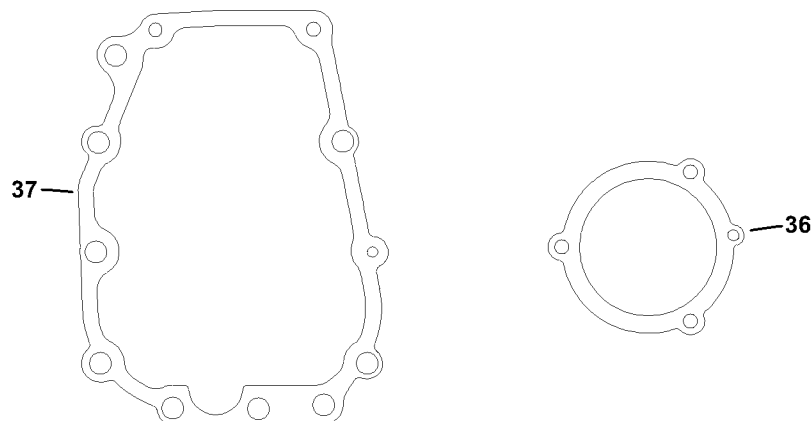
In reference to items 30, 31 & 32, make sure oil holes in gear align with oil holes in the bushings.



VIEW A-A



**MECHANICAL PTO
SUZUKI 970 MODEL 898662
and
PERKINS DIESEL MODELS 898663, 898664, 898684 & 898685**



Ref. No.	Part No.	Description	No. Req'd	Ref. No.	Part No.	Description	No. Req'd
1	120166	Lockwasher, 1/2	1	20	817397	Arm, PTO shifter	1
2	181027	Bearing, ball (mm 20 52 15 "OP")	1	21	844181	Housing, PTO	1
3	301988	Nut, 1/2-20	1	22	844184	Spacer, 5th gear	1
4	450324	Nut, M8-1.25 (G8.8)	1	23	844185	Shaft, output	1
5	452380	Bolt, M6-1.00 x 30 (8.8)	1	24	844186	Washer, special	1
6	452381	Screw, M6-1.00 x 40 (8.8)	1	25	844187	Bearing, ball (.59 1.65 .51 "OP")	1
7	452389	Screw, M8-1.25 x 25 (8.8)	3	26	844906	Seal, tailshaft	1
8	452390	Bolt, M8-1.25 x 30 (8.8)	1	27	879807	Arm assembly, PTO shifter	1
9	452396	Bolt, M8-1.25 x 90 (8.8)	7	28	894947	Shaft, idler	1
10	548204	Set screw, 3/8-16 x 3/8	1	29	316942	•Pin, spirol	1
11	548477	Washer	6	30	894965	Gear assembly, idler	1
12	800425	Screw, M6-1.00 x 12 (8.8)	1	31	844182	•Gear, idler	1
13	805307	Washer, 5/8	1	32	09304-16014	•Bushing, countershaft	2
14	807624	O-ring	1	33	894989	Housing, bearing	1
15	812419	Shim, transmission	1	34	815093	•Bearing, ball (.998 2.05 .59 "OP")	1
16	815012	Spring	1	35	844188	•Seal, oil	1
17	815013	Button	1	36	2700120	Gasket, PTO housing to trans	1
18	815085	Fork, shifter	1	37	2700121	Gasket, PTO housing	1
19	815182	Gear, PTO sliding	1				

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN THE PRECEDING ASSEMBLY

TORQUE SPECIFICATIONS HEX HEAD CAP SCREWS

The torque values shown should be used as a general guideline when specific torque values are not given.
Note the minimum grade for the U.S. standard bolt is **grade 5**.

U.S. Standard Hardware

Grade	Shank Size (Diameter in inches, fine or coarse thread)													
		1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8		
SAE grade 5*	ft.-lbs.	9	18	31	50	75	110	150	250	378	583	782		
	N·m	12	24	42	68	102	150	203	339	513	790	1060		
SAE grade 8**	ft.-lbs.	13	28	46	75	115	165	225	370	591	893	1410		
	N·m	18	38	62	108	156	224	305	502	801	1211	1912		
Flangelock Screw w/ Flangelock Nut	ft.-lbs.		24	40										
	N·m		33	54										

* Grade 5 marking –  **Minimum commercial quality** (Lower quality not recommended).

** Grade 8 marking – 

Metric Standard Hardware

Grade	Shank Size (Diameter in millimeters, fine or coarse thread)														
		M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27
Grade 8.8*	ft.-lbs.	1.5	3	5.2	8.2	13.5	24	43.5	70.5	108	142	195	276	353	530
	N·m	2	4	7	11	18	32	58	94	144	190	260	368	470	707
Grade 10.9**	ft.-lbs.	2.2	4.5	7.5	12	18.8	35.2	62.2	100	147	202	275	390	498	747
	N·m	3	6	10	16	25	47	83	133	196	269	366	520	664	996
Grade 12.9***	ft.-lbs.	2.7	5.2	8.2	15	21.8	43.5	75	119	176	242	330	471	596	904
	N·m	3.6	7	11	20	29	58	100	159	235	323	440	628	794	1205

* Grade 8.8 marking – 

** Grade 10.9 marking – 

*** Grade 12.9 marking – 

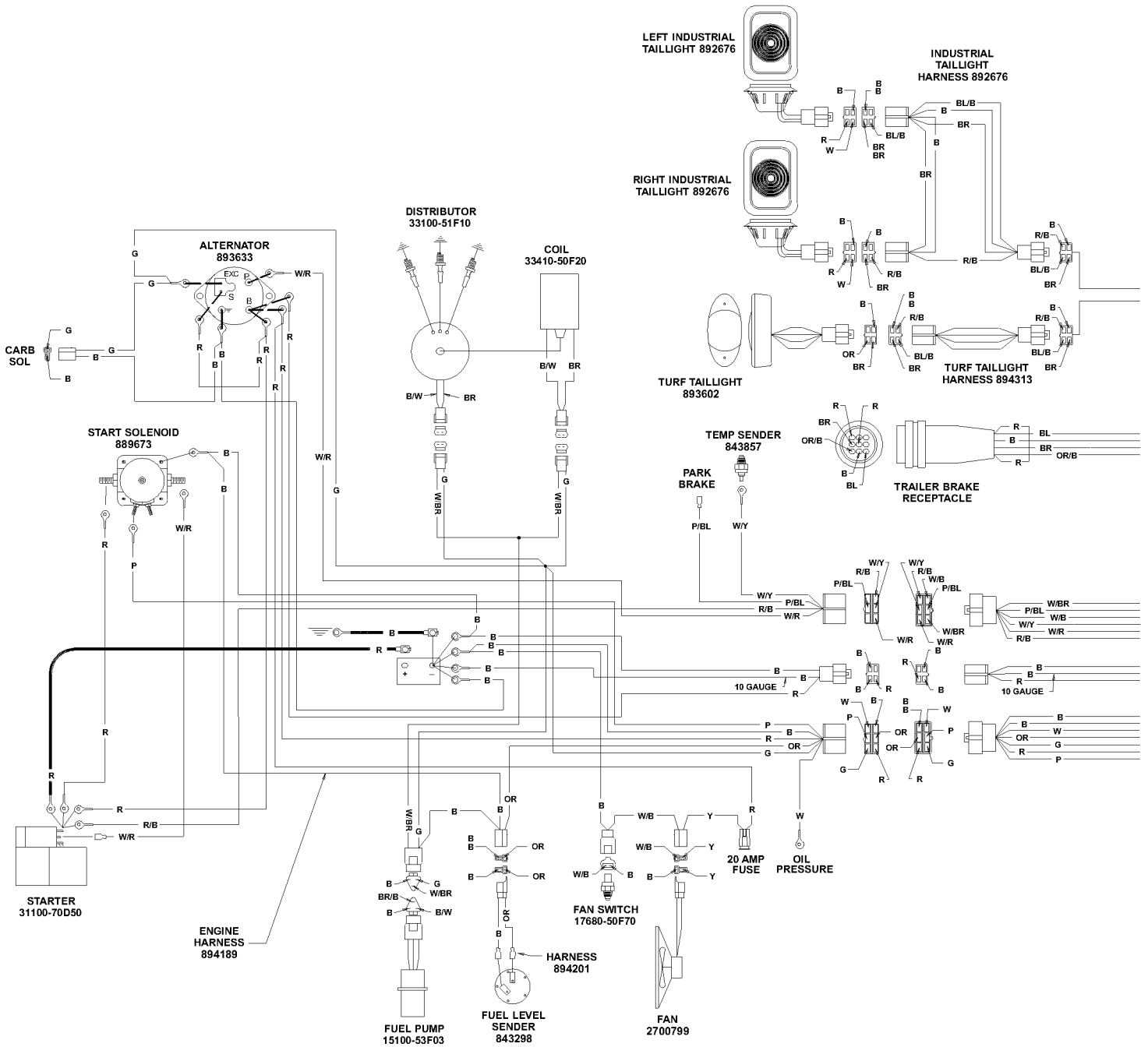
SERVICE

[illegible]

WIRING DIAGRAM

SUZUKI 660 TURF TRUCKSTER

MODELS 898650 & 898652



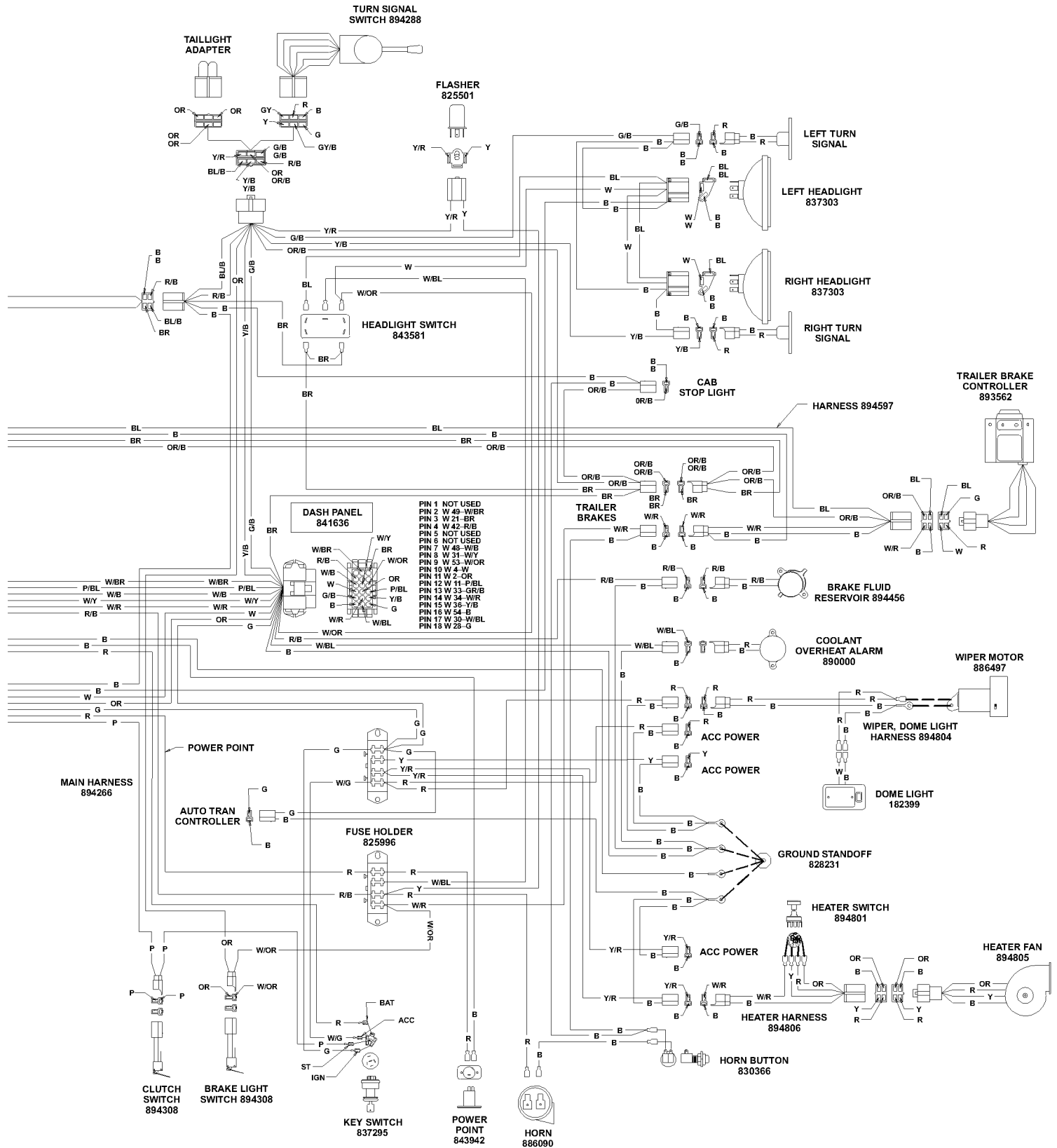
COLOR CODE:

B - BLACK
BL - BLUE
BR - BROWN
G - GREEN
GY - GREY
OR - ORANGE
PK - PINK
P - PURPLE
R - RED

W - WHITE
Y - YELLOW
BL/B - BLUE w/BLACK STRIPE
G/B - GREEN w/BLACK STRIPE
OR/B - ORANGE w/BLACK STRIPE
P/BL - PURPLE w/BUE STRIPE
R/B - RED w/BLACK STRIPE
W/B - WHITE w/BLACK STRIPE
W/BL - WHITE w/BLUE STRIPE

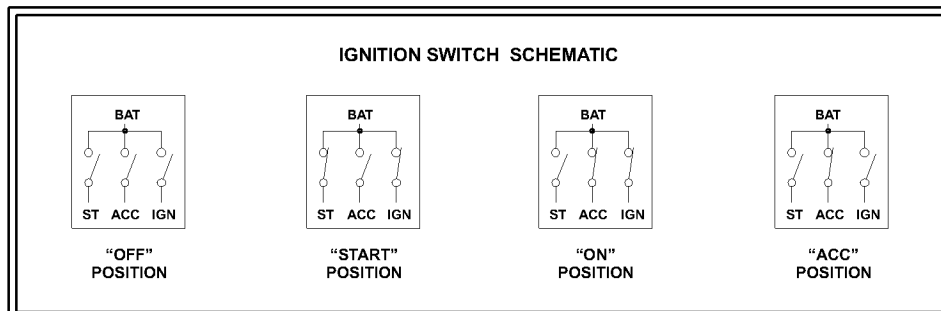
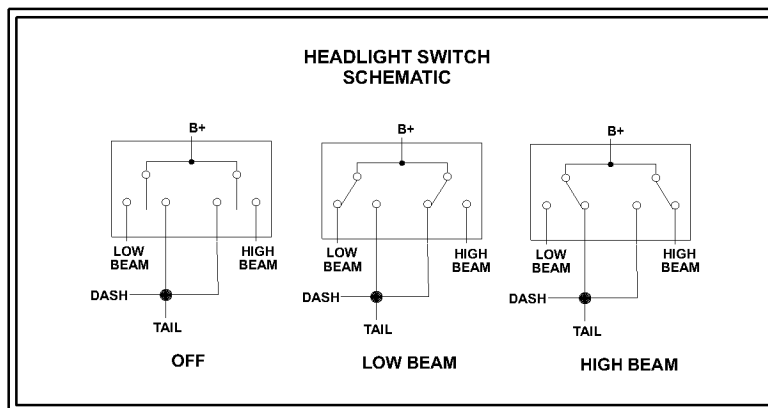
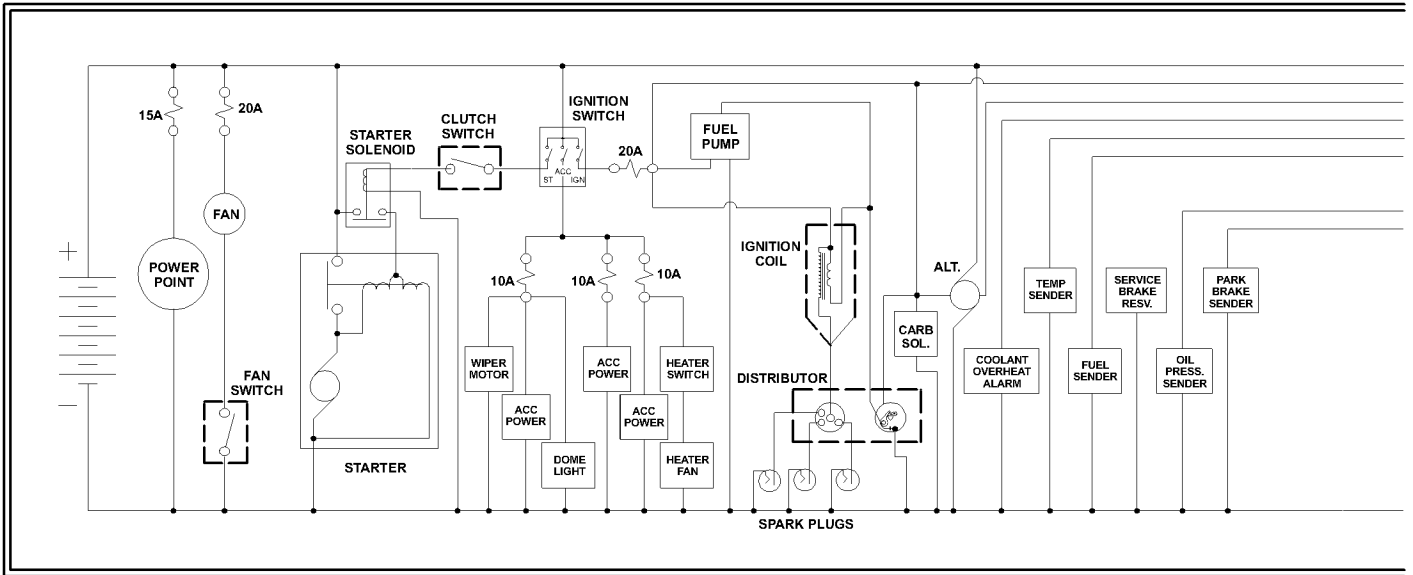
W/BR - WHITE w/BROWN STRIPE
W/G - WHITE w/GREEN STRIPE
W/OR - WHITE w/ORANGE STRIPE
W/R - WHITE w/RED STRIPE
W/Y - WHITE w/YELLOW STRIPE
Y/B - YELLOW w/BLACK STRIPE
Y/R - YELLOW w/RED STRIPE

WIRING DIAGRAM (con't.) MODELS 898650 & 898652

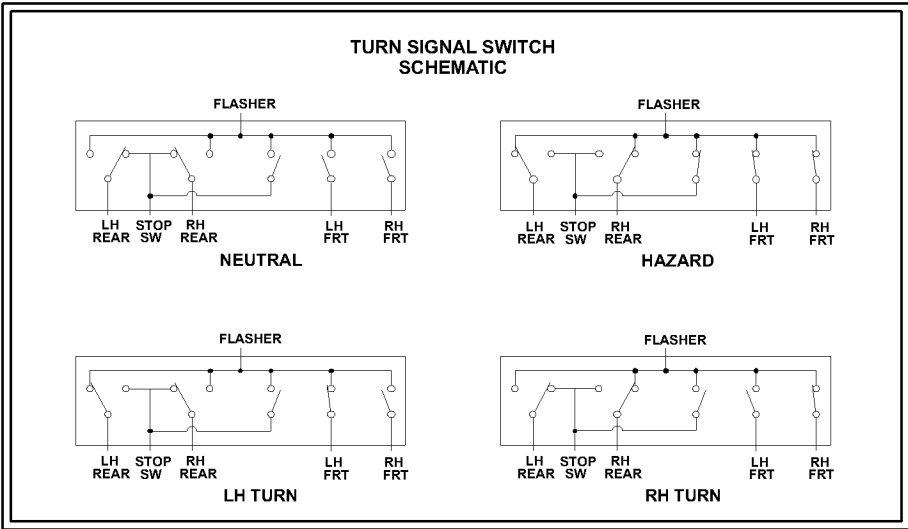
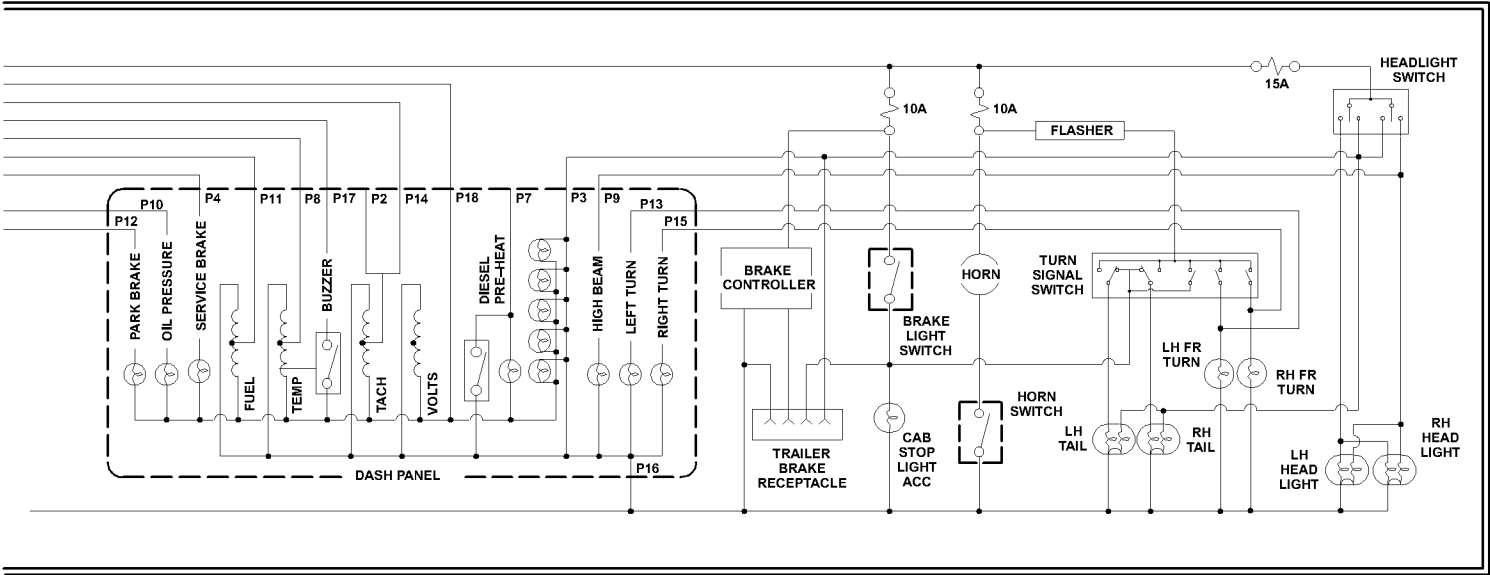


W.D.
No.1

WIRING SCHEMATIC **SUZUKI 660 TURF TRUCKSTER** **MODELS 898650 & 898652**

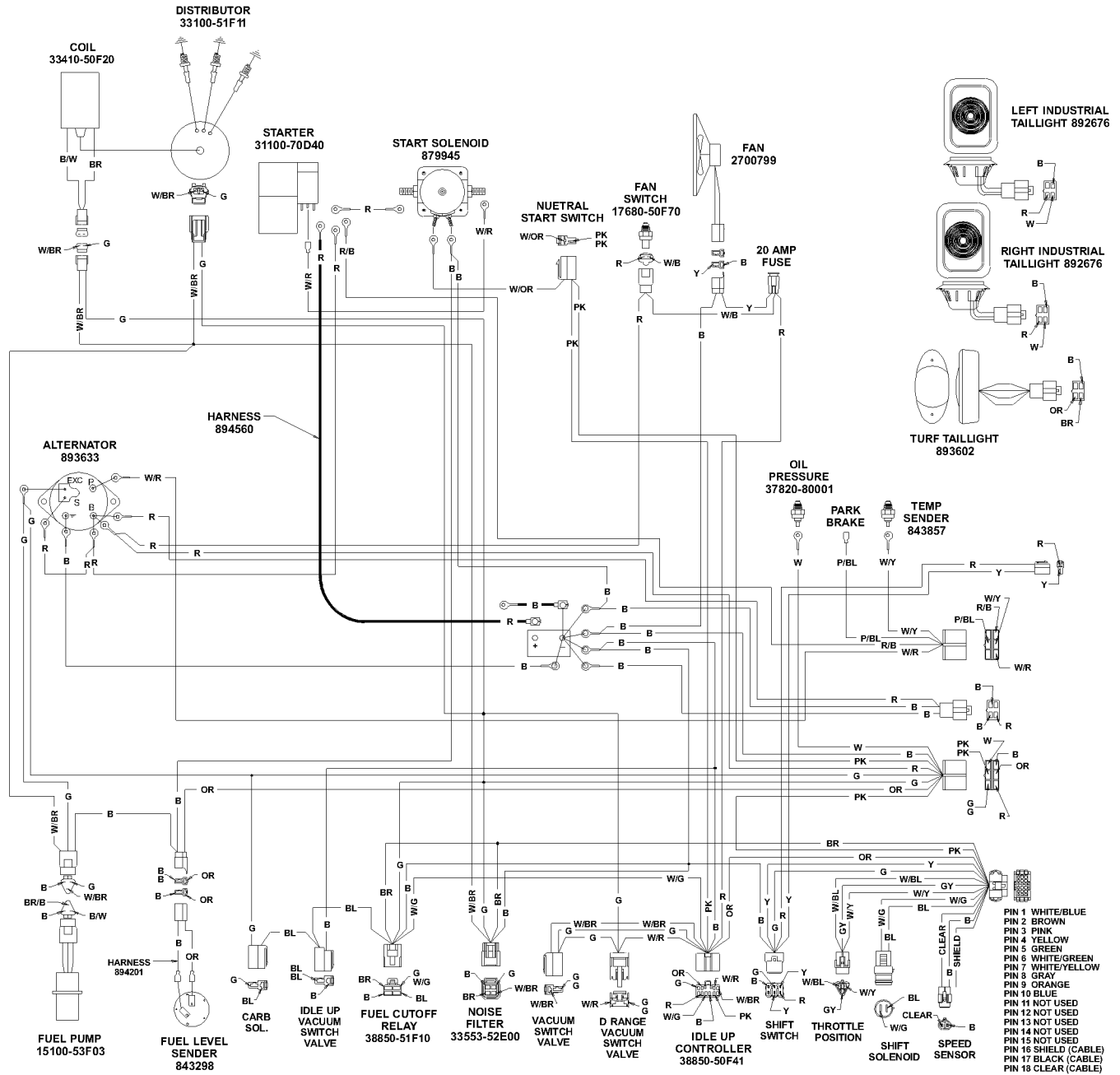


WIRING SCHEMATIC (con't.)
MODELS 898650 & 898652



WIRING DIAGRAM

MODEL 898659, SUZUKI 660 TURF TRUCKSTER w/AUTOMATIC TRANSMISSION



COLOR CODE:

B - BLACK	W - WHITE	W/BR - WHITE w/BROWN STRIPE
BL - BLUE	Y - YELLOW	W/G - WHITE w/GREEN STRIPE
BR - BROWN	BL/B - BLUE w/BLACK STRIPE	W/OR - WHITE w/ORANGE STRIPE
G - GREEN	G/B - GREEN w/BLACK STRIPE	W/R - WHITE w/RED STRIPE
GY - GREY	OR/B - ORANGE w/BLACK STRIPE	W/Y - WHITE w/YELLOW STRIPE
OR - ORANGE	P/BL - PURPLE w/BLUE STRIPE	Y/B - YELLOW w/BLACK STRIPE
PK - PINK	R/B - RED w/BLACK STRIPE	Y/R - YELLOW w/RED STRIPE
P - PURPLE	W/B - WHITE w/BLACK STRIPE	
R - RED	W/BL - WHITE w/BLUE STRIPE	

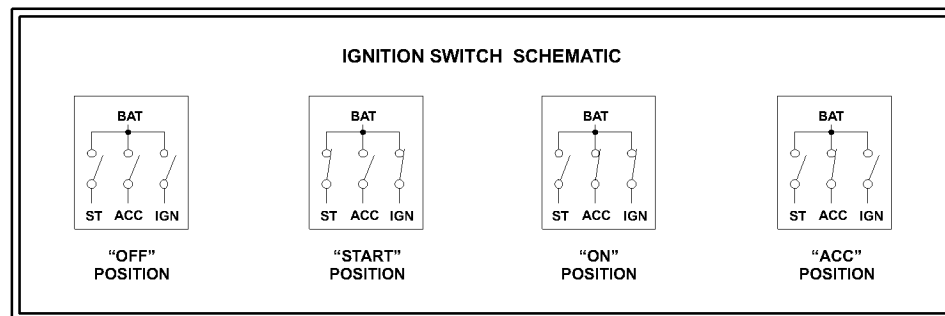
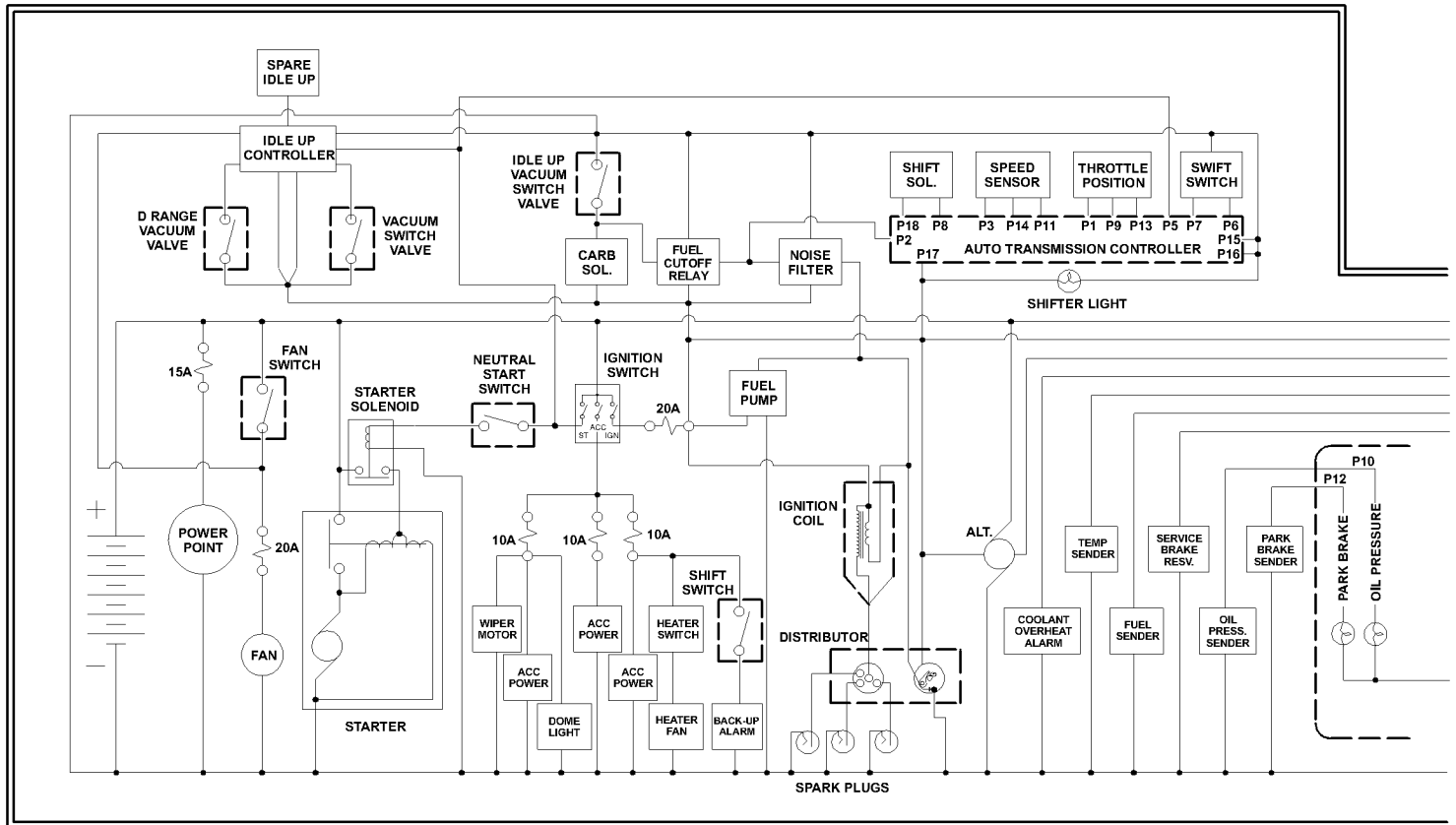
- PIN 1 WHITE/BLUE
- PIN 2 BROWN
- PIN 3 PINK
- PIN 4 YELLOW
- PIN 5 GREEN
- PIN 6 WHITE/GREEN
- PIN 7 WHITE/YELLOW
- PIN 8 GRAY
- PIN 9 ORANGE
- PIN 10 BLUE
- PIN 11 NOT USED
- PIN 12 NOT USED
- PIN 13 NOT USED
- PIN 14 NOT USED
- PIN 15 NOT USED
- PIN 16 SHIELD (CABLE)
- PIN 17 BLACK (CABLE)
- PIN 18 CLEAR (CABLE)



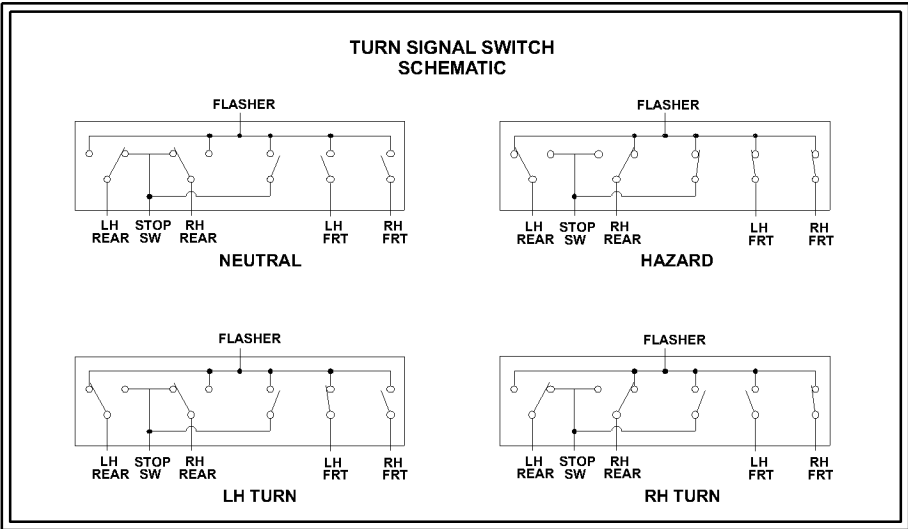
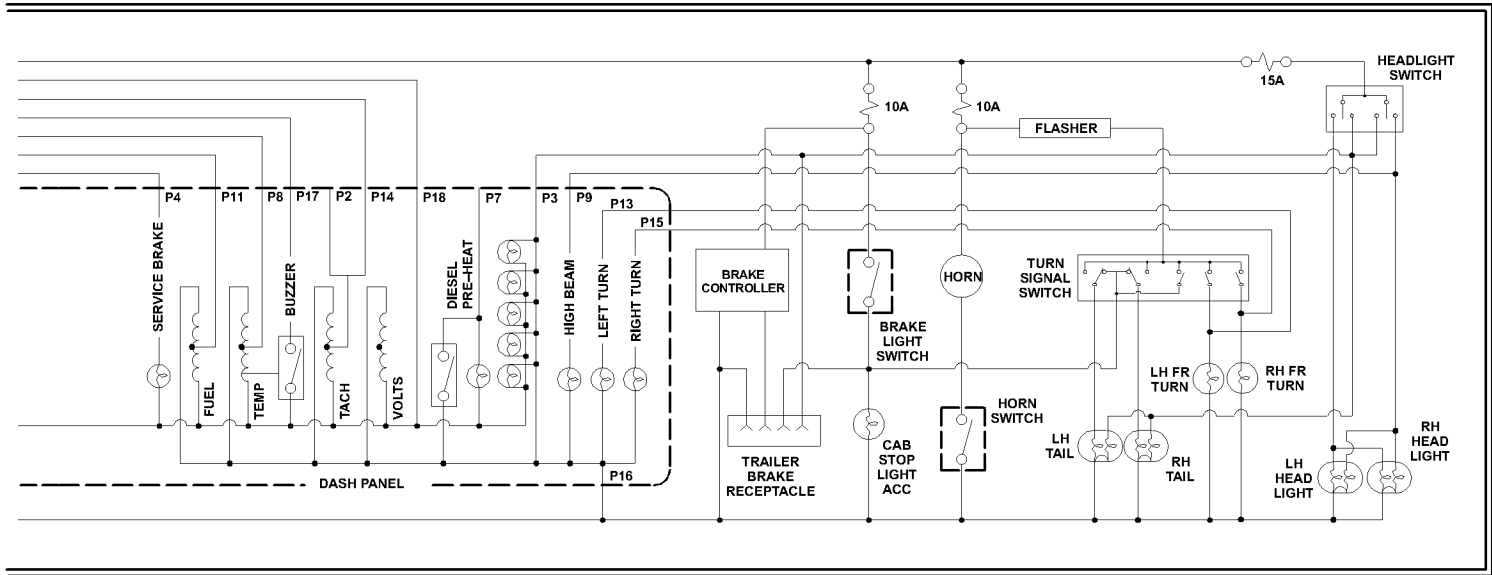
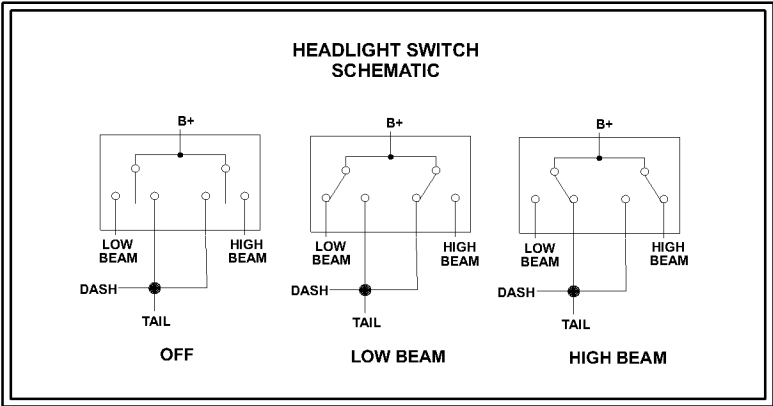
MODEL 898659, w/AUTOMATIC TRANSMISSION

WIRING SCHEMATIC

MODEL 898659, SUZUKI 660 TURF TRUCKSTER WITH AUTOMATIC TRANSMISSION

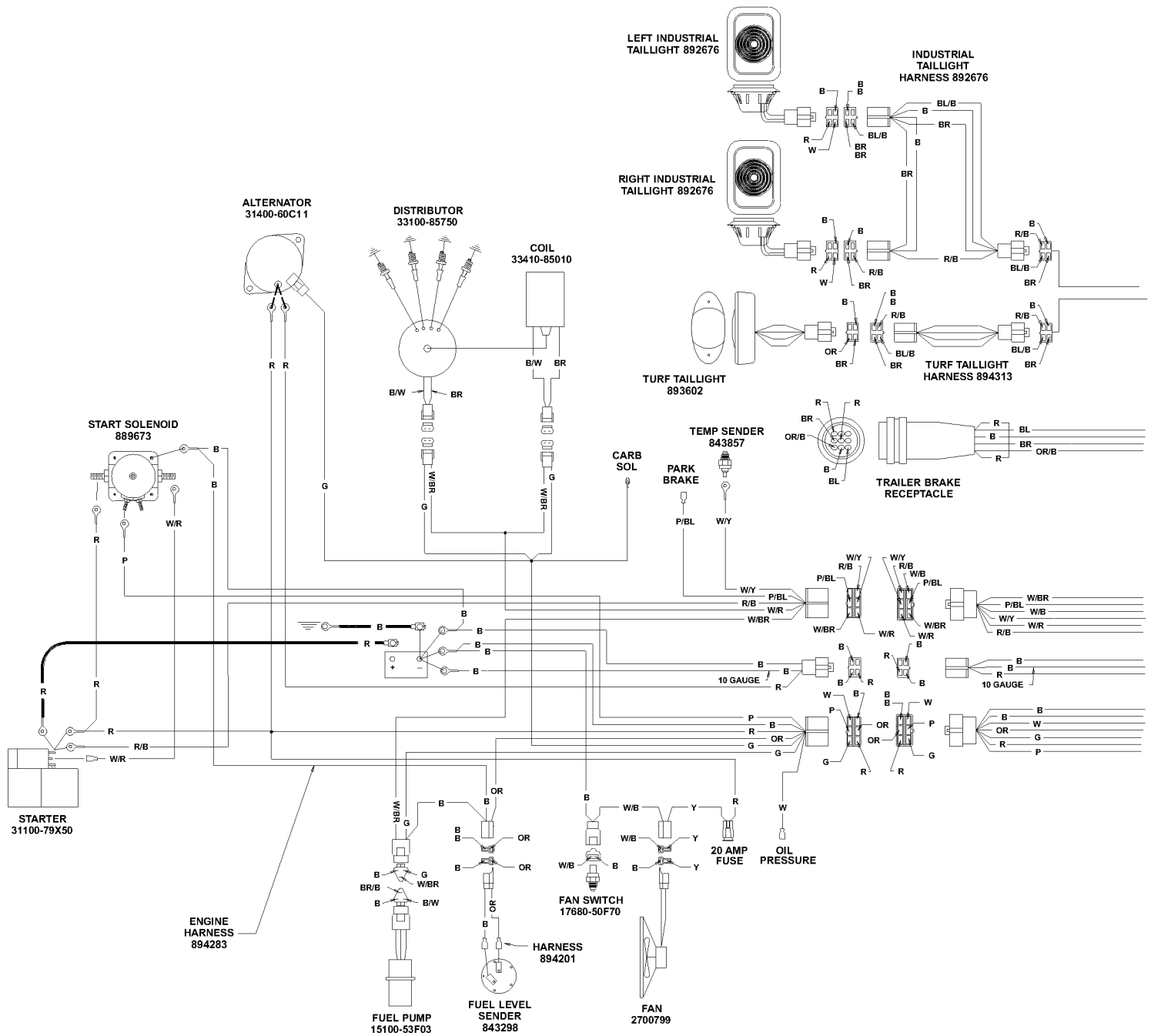


WIRING SCHEMATIC (con't.)
MODEL 898659 w/ATM



W.S.
No.2

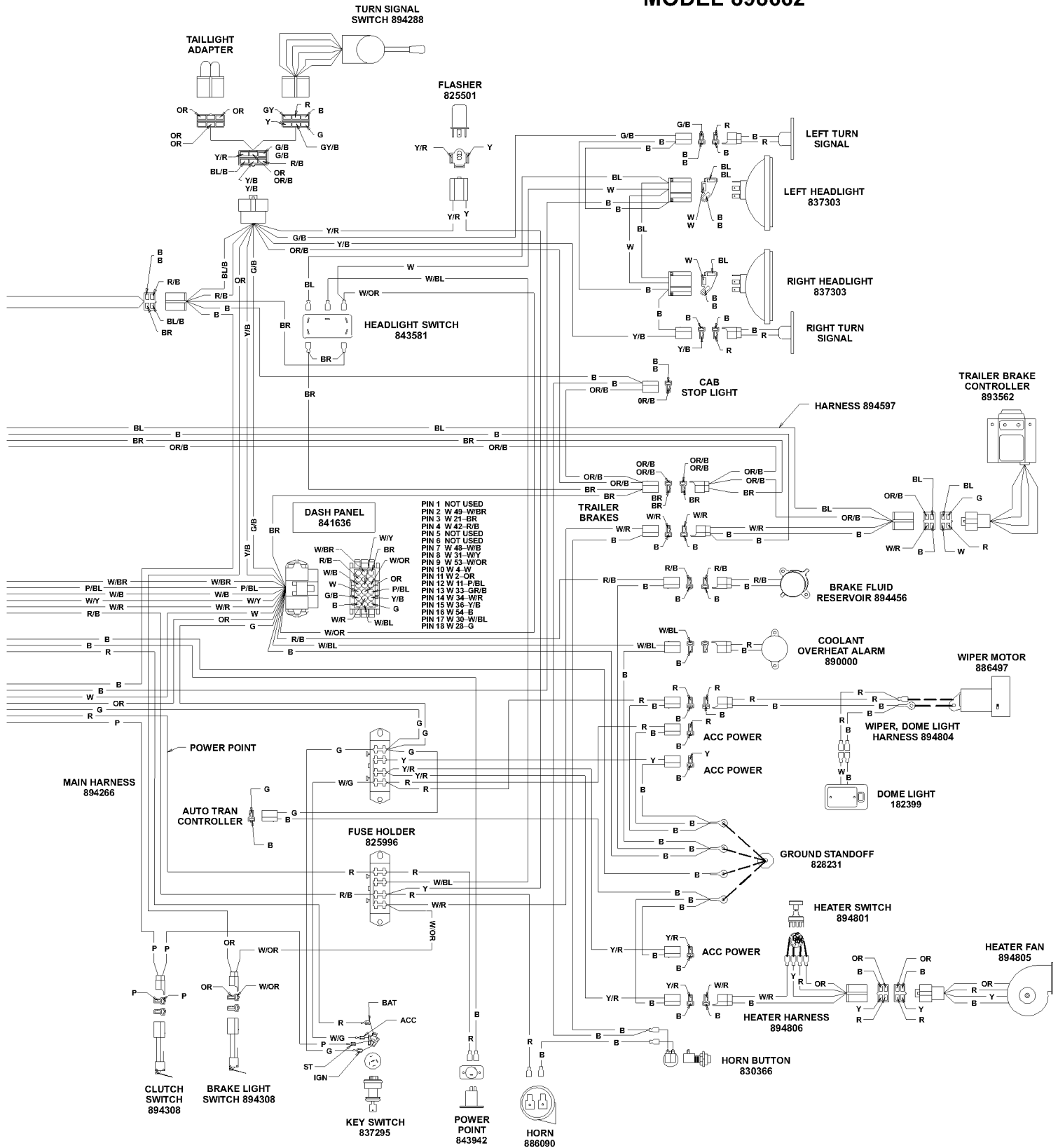
WIRING DIAGRAM **SUZUKI 970 TURF TRUCKSTER** **MODEL 898662**



COLOR CODE:

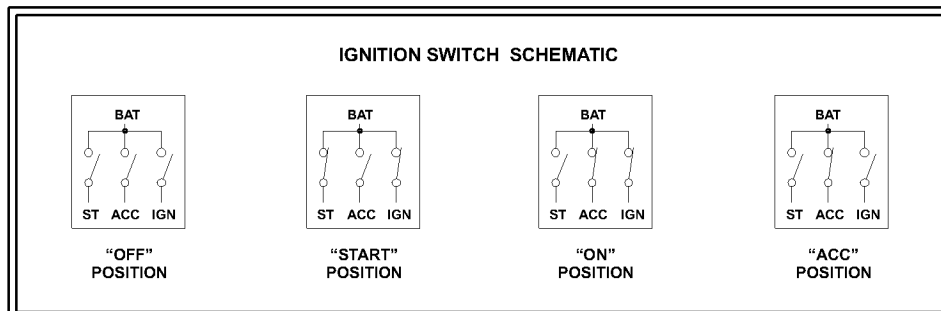
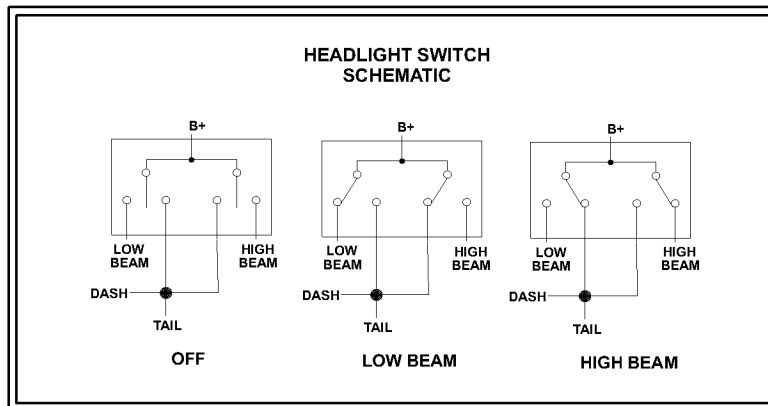
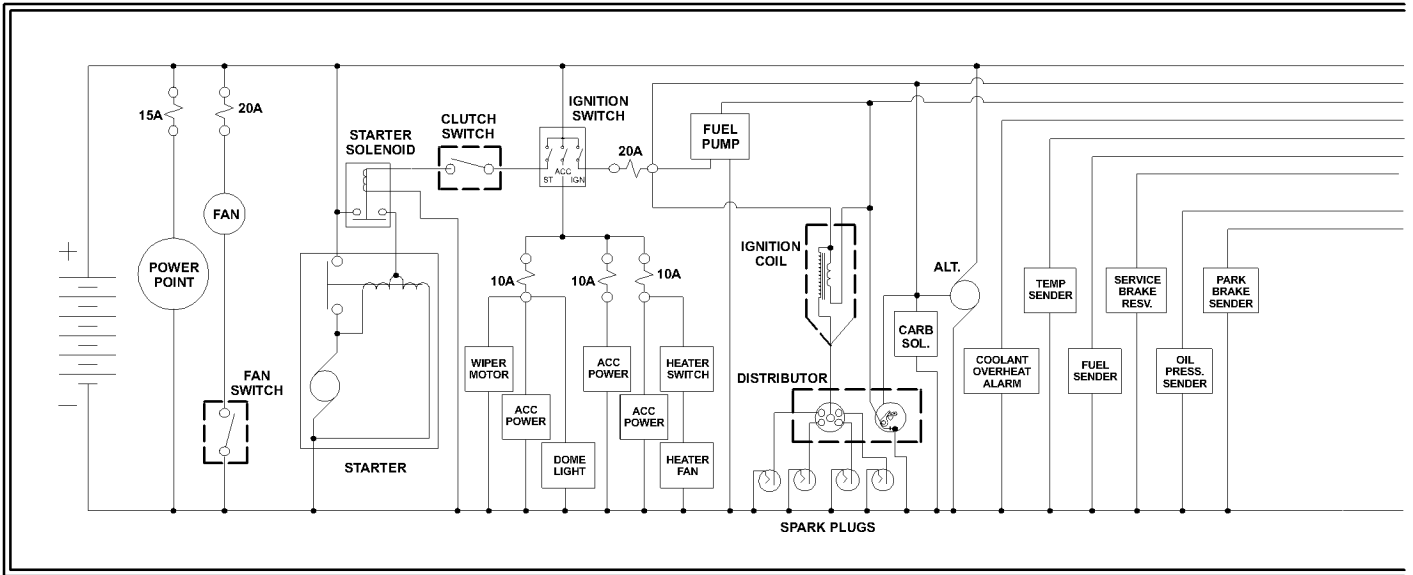
B - BLACK	W - WHITE	W/BR - WHITE w/BROWN STRIPE
BL - BLUE	Y - YELLOW	W/G - WHITE w/GREEN STRIPE
BR - BROWN	BL/B - BLUE w/BLACK STRIPE	W/OR - WHITE w/ORANGE STRIPE
G - GREEN	G/B - GREEN w/BLACK STRIPE	W/R - WHITE w/RED STRIPE
GY - GREY	OR/B - ORANGE w/BLACK STRIPE	W/Y - WHITE w/YELLOW STRIPE
OR - ORANGE	P/BL - PURPLE w/BLUE STRIPE	Y/B - YELLOW w/BLACK STRIPE
PK - PINK	R/B - RED w/BLACK STRIPE	Y/R - YELLOW w/RED STRIPE
P - PURPLE	W/B - WHITE w/BLACK STRIPE	
R - RED	W/BL - WHITE w/BLUE STRIPE	

WIRING DIAGRAM (con't.) SUZUKI 970 MODEL 898662

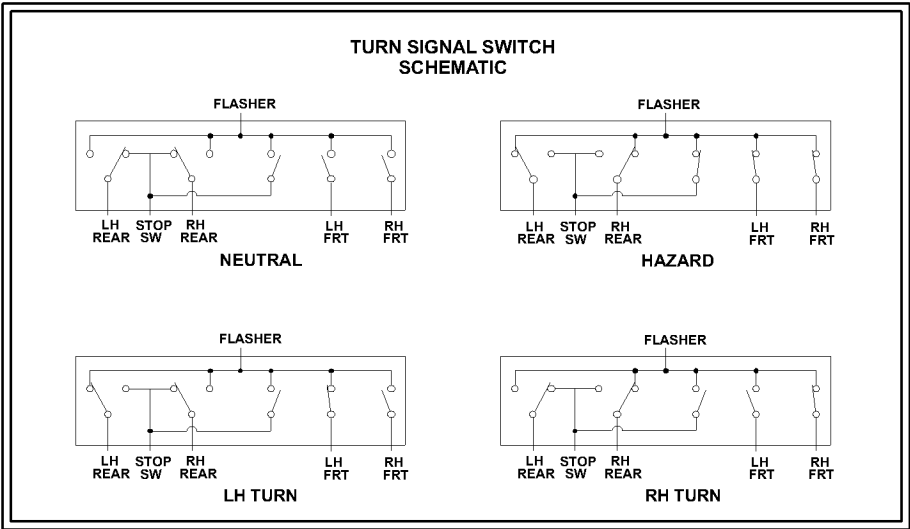
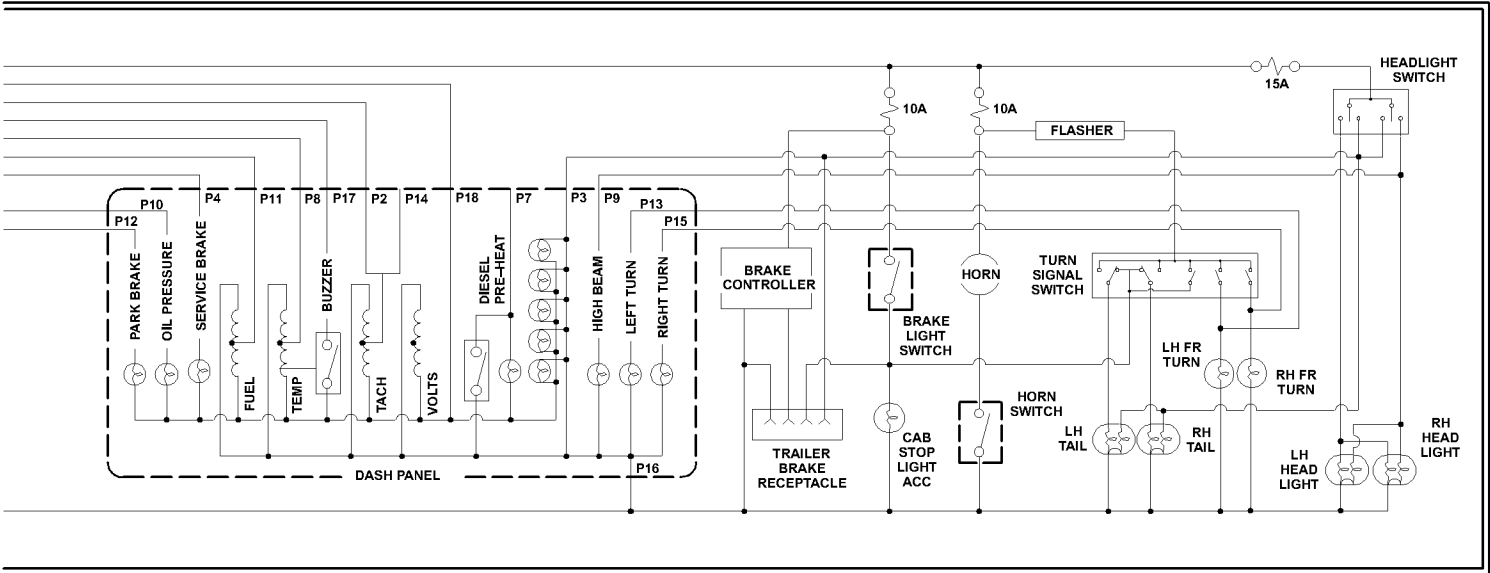


W.D.
No.3

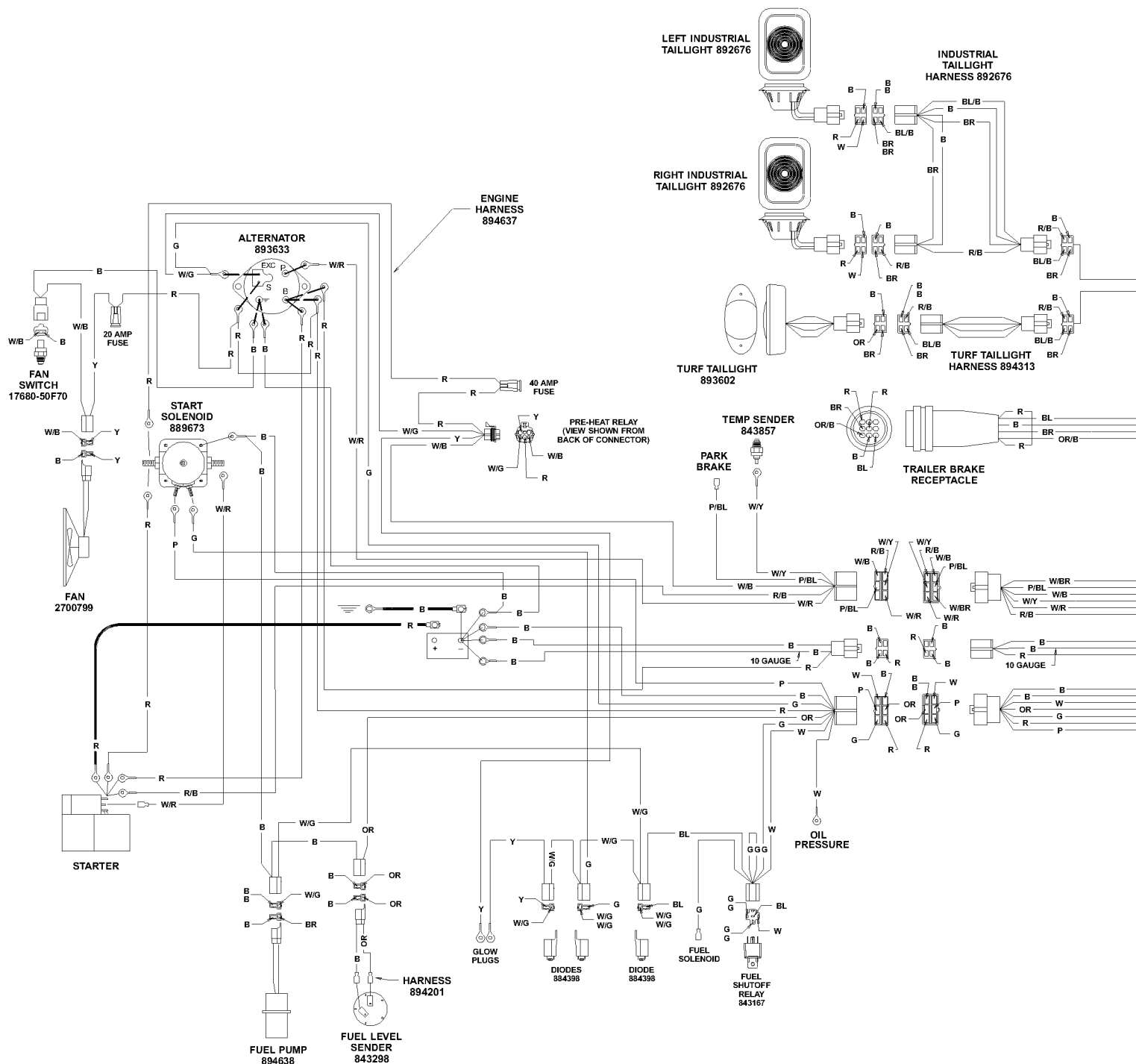
WIRING SCHEMATIC **SUZUKI 970 TURF TRUCKSTER MODEL 898662**



WIRING SCHEMATIC (con't.)
SUZUKI 970 MODEL 898662



WIRING DIAGRAM **DIESEL TURF TRUCKSTER** **MODELS 898663, 898664, 898684, 898685**

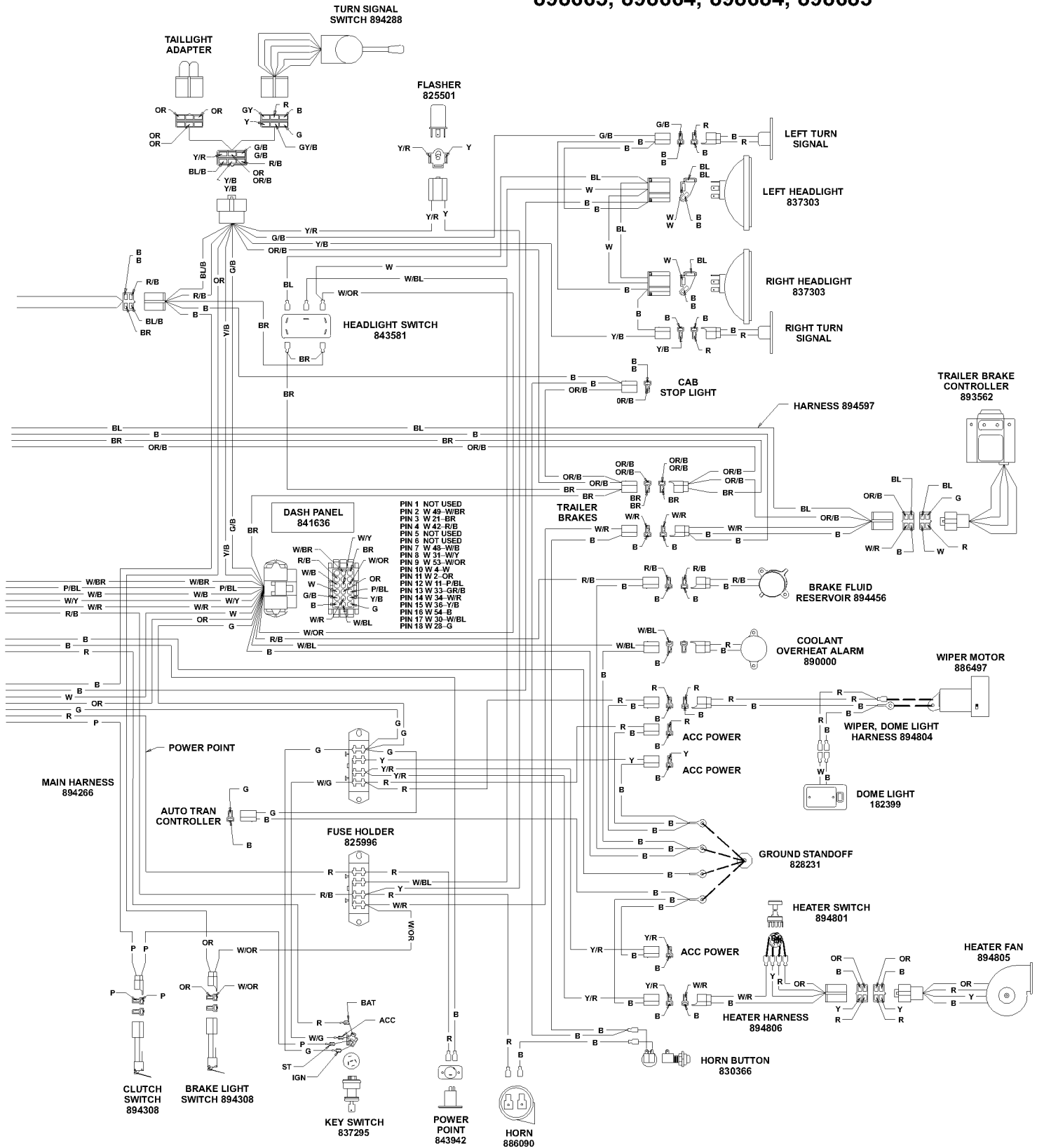


COLOR CODE:

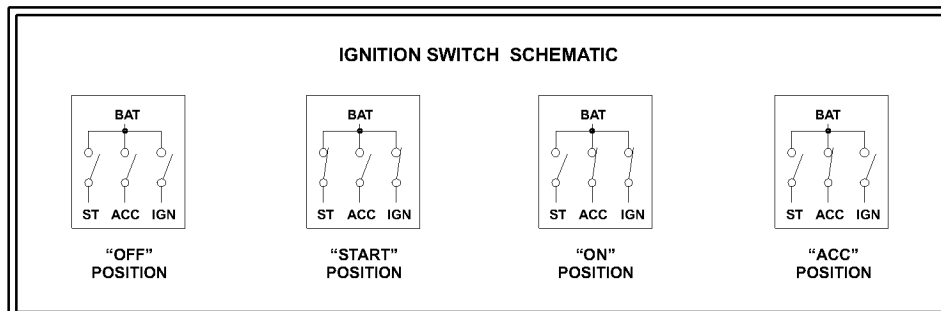
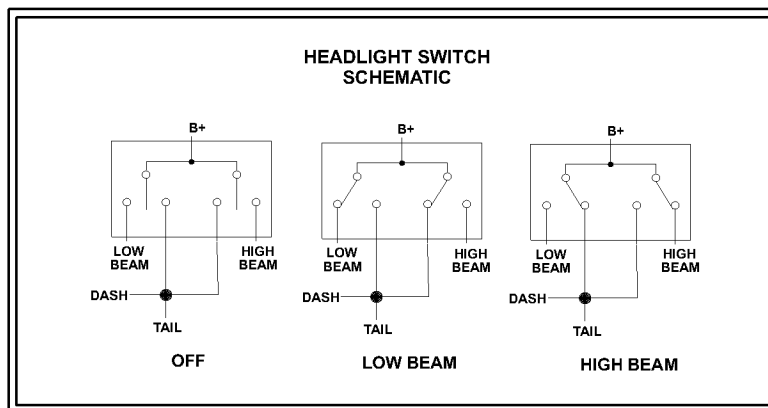
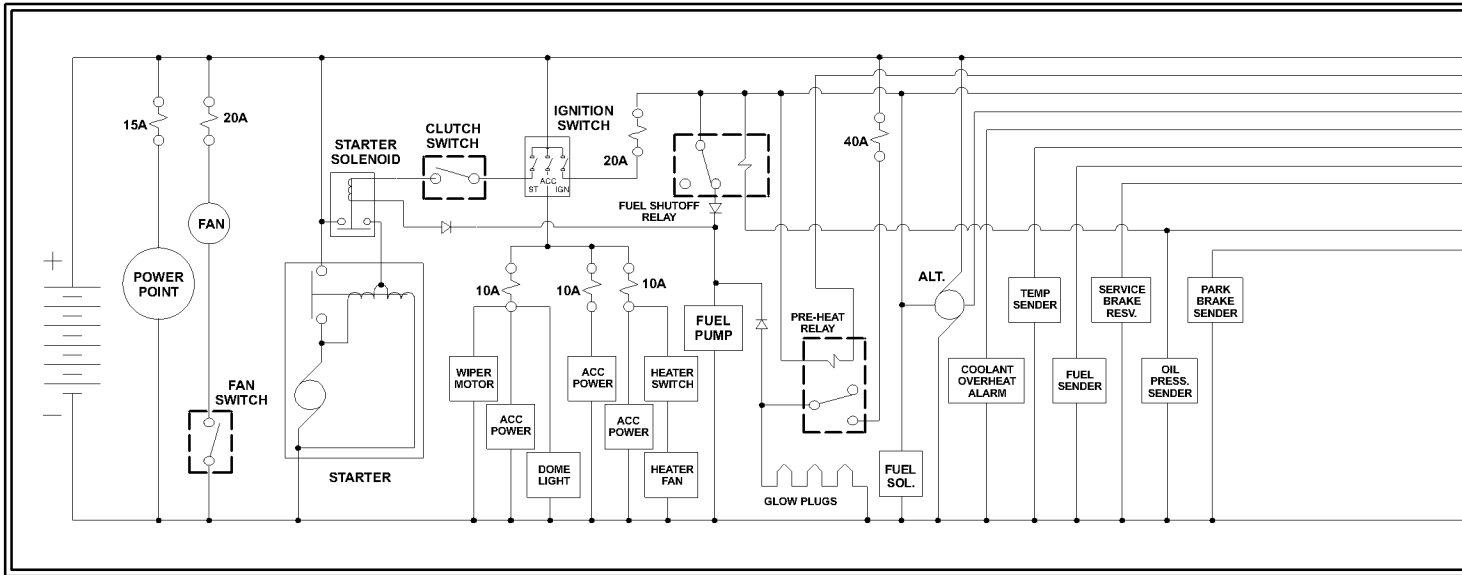
B - BLACK	W - WHITE	W/BR - WHITE w/BROWN STRIPE
BL - BLUE	Y - YELLOW	W/G - WHITE w/GREEN STRIPE
BR - BROWN	BL/B - BLUE w/BLACK STRIPE	W/OR - WHITE w/ORANGE STRIPE
G - GREEN	G/B - GREEN w/BLACK STRIPE	W/R - WHITE w/RED STRIPE
GY - GREY	OR/B - ORANGE w/BLACK STRIPE	W/Y - WHITE w/YELLOW STRIPE
OR - ORANGE	P/BL - PURPLE w/BLUE STRIPE	Y/B - YELLOW w/BLACK STRIPE
PK - PINK	R/B - RED w/BLACK STRIPE	Y/R - YELLOW w/RED STRIPE
P - PURPLE	W/B - WHITE w/BLACK STRIPE	
R - RED	W/BL - WHITE w/BLUE STRIPE	



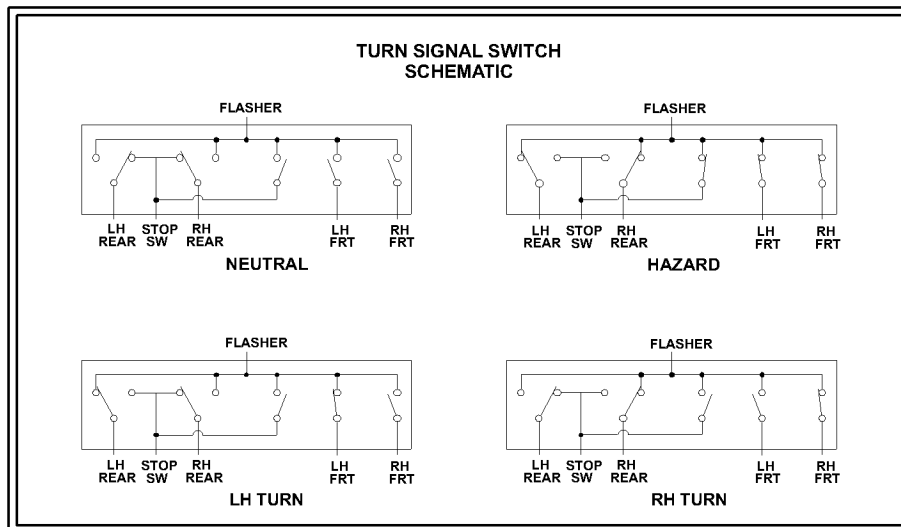
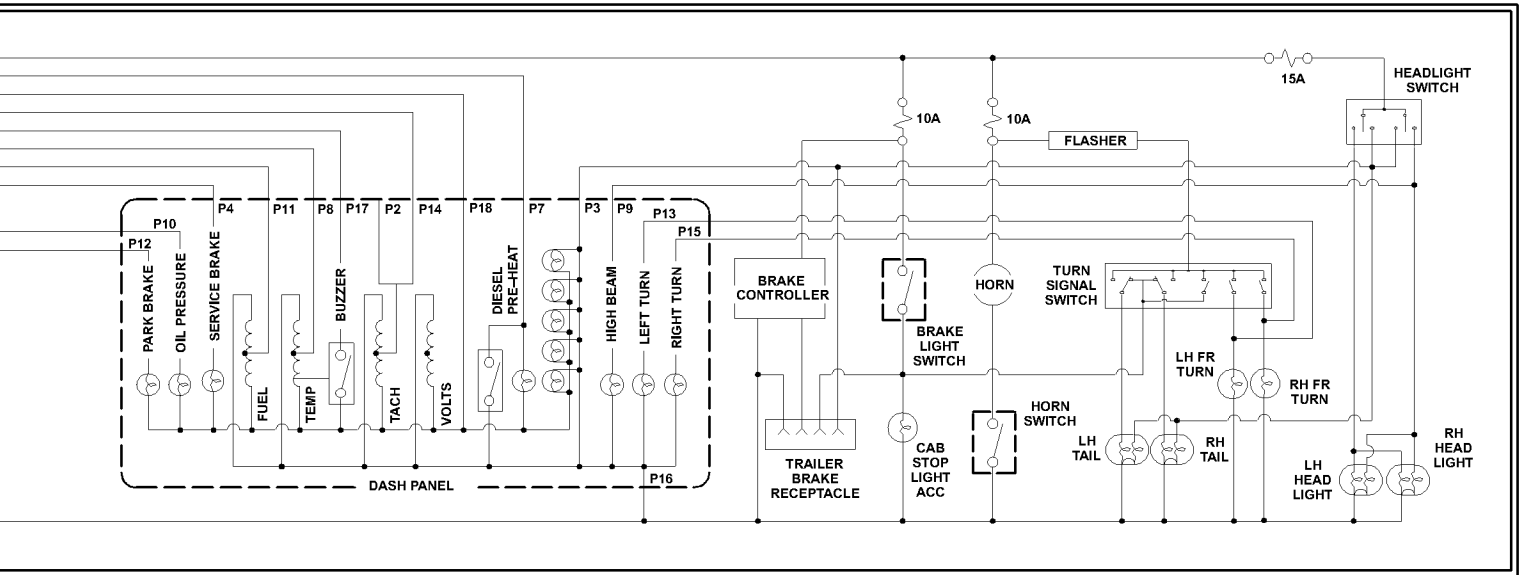
WIRING DIAGRAM (con't.) **MODELS** **898663, 898664, 898684, 898685**



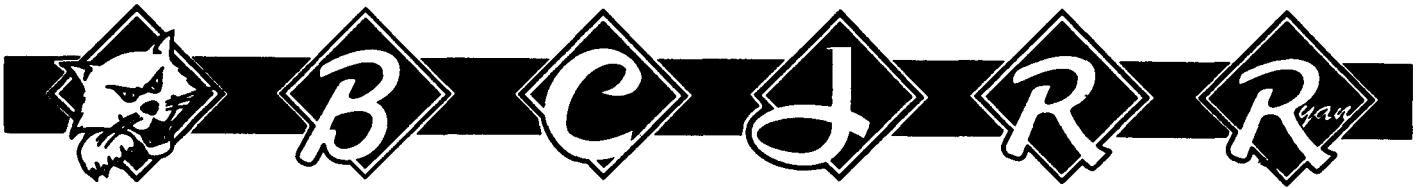
WIRING SCHEMATIC **DIESEL TURF TRUCKSTER** **MODELS 898663, 898664, 898684, 8983685**



WIRING SCHEMATIC (con't.) **DIESEL TURF TRUCKSTER** **MODELS 898663, 898664, 898684, 8983685**



NOTES



World Class Quality, Performance And Support

Equipment from Textron Turf Care And Specialty Products is built to exacting standards ensured by ISO 9001 registration at all our manufacturing locations.

A worldwide dealer network and factory-trained technicians backed by Textron Parts Xpress provide reliable, high-quality product support.



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