

PASQUALI TRACTORS
INSTRUCTION AND MAINTENANCE MANUAL FOR
TRACTOR MODEL 988.30

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INDEX

Preface	Page 1.
Maintenance	1.
Identification	1.
Technical Specifications	2.
Important Notice	3.
Checking out the New Tractor	4.
Break-in Period	6.
Controls & Instruments	6.
Refueling	12.
Starting the Engine	13.
Operating the Tractor	14.
Driving & Working the Tractor	14.
Operational considerations	18.
Stopping the Engine	20.
Electric starting & Lighting syt.	20.
Braking System	23.
Clutch Adjustment	25.
Preparation for Storage	25.
Schedule of Maintenance	26.
Lubrication Table	28.
Safety Instructions	29.
Parts Breakdown, Tractor	31.-46.

The illustrations, descriptions and technical data in this manual is only representative and not binding. Pasquali Macchine Agricole S.p.A. reserves the right to modify them without notice.

PREFACE

We welcome you to the numerous customers of Pasquali Macchine Agricole Spa.

This tractor is the result of many studies of specialized engineers to build a modern, rugged, and functional machine that will help farmers improve the productivity of their farm.

Many years of experience, coupled with the use of high quality material and proven workmanship assure the efficiency and reliability of our tractors which will provide you with many years of trouble free use in normal agricultural operations with recommended service and maintenance. The world wide reputation of Pasquali is the best guarantee of product performance.

This manual is written to make you familiar with the operation of this tractor, including its construction and operational features. We suggest that you read it carefully and give strict attention to the safety, operational, and maintenance instructions.

MAINTENANCE

The maintenance requirements described in this manual to assure long, trouble free operation, may not be easily performed by the average end-user. In that case, it is advisable to use skilled trained mechanics available at your local dealer.

To insure proper operation of the tractor, we recommend the use of original equipment parts for replacement. Parts orders must be made in accordance with the spare parts pages in this catalog.

IDENTIFICATION

The model number and serial number of the tractor is stamped on the identification plate of the left side of the transmission case. These same numbers are also stamped into the case itself just below the nameplate. (see Fig 1).

The three digit TIPO number is the basic model number of the tractor. (i.e. model number 988).

The four digit number is the tractor serial number.

If you are ordering parts for the engine, refer to the identification tag on the engine for the part number and serial number of the engine on your tractor.

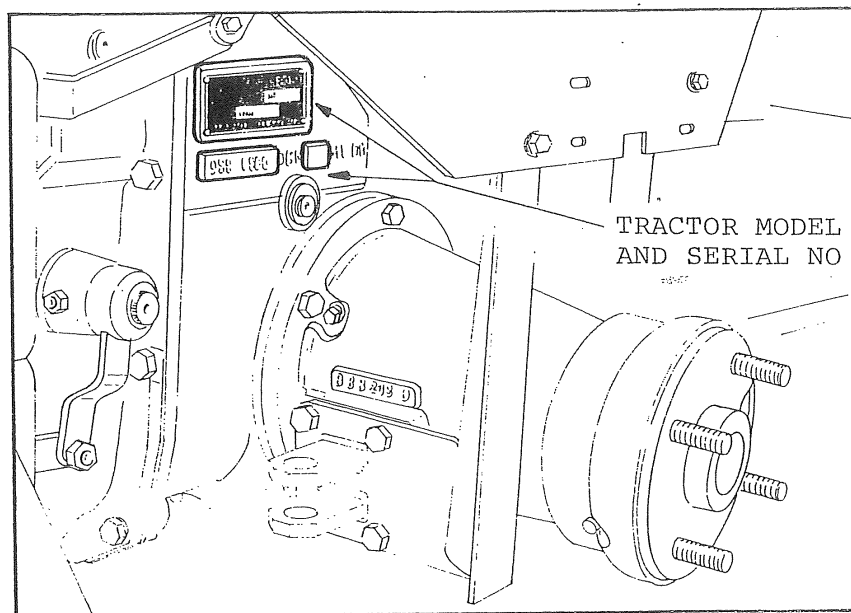


Fig. 1

TECHNICAL SPECIFICATIONS OF THE TRACTOR

Engine: 4 cycle, air cooled diesel engine, 2 cylinder, direct injection, 95mm Bore, 94mm Stroke, 1332cc displacement, compression ratio 17.8:1, 33HP at 3000RPM, max torque 78 N/m at 1800RPM, axial fan cooling, forced oil lubrication, automatic extra fuel device and oil bath air cleaner.

Clutch: Single dry plate.

Accelerator: Dual control, lever on dash and foot pedal.

Gearbox: 12 speeds forward, 3 reverse.

Transmission: Pinion crown differential, both axles. Front ratio, 1:4.500, rear ratio, 1:4,625. Front differential lock. Final reduction through spur gears, both front and rear axles ratio 1:1.666.

Forward Speed: See performance table on following pages.

Brakes: Mechanical parking brake on rear wheels. Conventional hydraulic shoe brakes on rear wheels.

Tires: Tractor comes standard with 7.5X16 Agricultural tires and wheels. Many other tire options are available, see your local dealer for details.

Steering: Power steering with twin actuating cylinders is standard equipment.

Hydraulic system: Open center system, using a 5.4GPM pump set for maximum operating pressure of 1500PSI.

Hitches: Standard, SAE Category I 3-point hitch, with standard adjustable draw bar.

Power take-off: Tractor comes standard with two power take offs. Top shaft is SAE standard 1 3/8" 6 spline with clockwise rotation, the bottom shaft is the standard Pasquali take-off, with counter-clockwise rotation.

Electrical System: Tractor is equipped with a 12 volt electrical system. It includes, battery, alternator, electric starting, regulator rectifier, turn signals, parking lights, head lights, and remote rear socket.

Dash board: Located on the dash panel is the following listed standard equipment: Key switch, oil pressure warning light, turn signal flasher, engine shut-off knob, tachometer that gives engine RPM's, and run time in hours, and low fuel warning light.

Over-all Dimensions: With standard tires and wheels the tractor is 48" wide, 95" long and 42" high.

Weight: The complete tractor equipped with standard tires and wheels and with no implements, weighs 2028 lbs.

IMPORTANT NOTICE

Pasquali tractors have been designed to provide a low center of gravity, and a unique weight distribution that makes them very desirable for working on slopes and hill sides.

However, the operator must still take extra precautions and care when operating the equipment on very steep inclines and grades, particularly when the tractor is towing a heavily loaded trailer.

Move slowly when terrain: IS VERY ROUGH, IS HILLY WITH STEEP SLOPES OR GRADES, IS FROZEN OR COVERED WITH SNOW.

RPM'S at the PTO: (With engine speed, 3000 RPM'S)

SAE 1 3/8" 6 Spline (Top PTO)	Independent of ground drive 570 & 730 RPM's, Clockwise rotation
----------------------------------	--

Synchronized to ground speed
9.92 RPM'S for each revolution
of rear wheels.

Standard Pasguli Shaft (Bottom PTO)	Independent of ground drive 590 & 750 RPM'S Counterclockwise rotation
--	--

Synchronized to ground drive,
10.28 RPM'S for each revolution
of rear wheels.

PERFORMANCE TABLE

GROUND SPEED TABLE WITH ENGINE AT 3000 RPM'S

RANGE LEVER	TRANSMISSION LEVER	GROUND SPEEDS
Low Range	1st Gear	.56 Mph
	2nd Gear	1.00 Mph
	3rd Gear	1.56 Mph
	Reverse	1.37 Mph
Medium Range	1st Gear	2.06 Mph
	2nd Gear	3.05 Mph
	3rd Gear	4.54 Mph
	Reverse	3.86 Mph
High Range	1st Gear	6.60 Mph
	2nd Gear	10.25 Mph
	3rd Gear	15.23 Mph
	Reverse	12.50 Mph

Note: These ground speeds are with the standard 7.5 X 16 Tire and wheel.

Checking out the New Tractor:

The tractor is supplied with the engine and gear boxes filled with oil. Before operating the tractor you should still check to assure that these lubricants are at the full level.

Engine: Check engine lubricating oil using the dip stick located on the left hand side of the tractor. If it is low, fill to the max level position.(Fig 2)

Make sure that the the fuel tank is filled to the maxium level. It is good practice to keep the fuel tank filled at all time, this reduces the possibility of moisture condensing in the tank and contaminating the fuel supply. If the tank is completely empty, it will necessary to bleed the supply line between the lift pump and the injection pump by loosening the fittings and allowing fuel to flow freely until all indications of air are gone. This procedure can be accelerated by using the manual actuating lever on the fuel lift pump.

As soon as the engine is started, the oil pressure warning light on the dashboard (Fig 9) must go off. If it does not go off shut down the engine immediately and trouble shoot the problem.

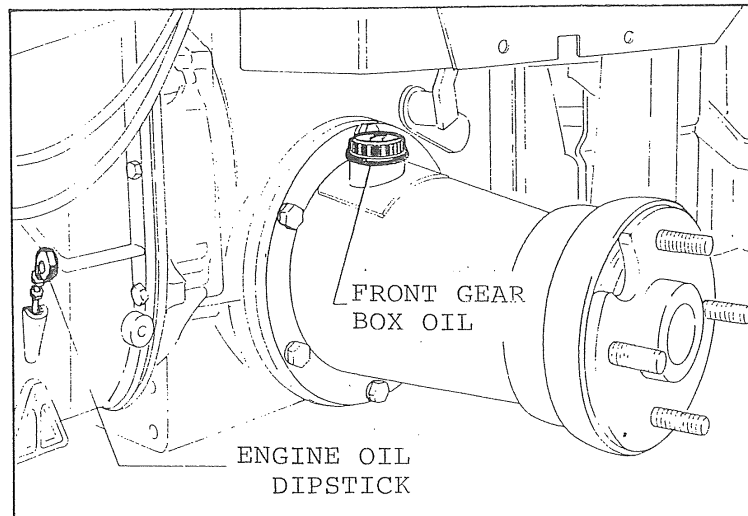


Fig. 2

Engine Air filter: Check the sump in the Oil Bath air cleaner. Add the same oil as used in the engine to the filter until it reaches the maximum level line on the bowl. (Do not over-fill the bowl).

Front and rear gear cases: Check the oil level using the dipstick attached to the cover. Add gear lubricant as required to bring level to the maximum position. (Fig's 2&7)

Hydraulic System: Check the oil level in the hydraulic reservoir (Fig 13). Note: when checking the oil level of hydraulic tank, make sure that all of the cylinders are positioned so that the maximum volume of oil is returned to the reservoir. Top off the tank with appropriate hydraulic fluid.

Battery: The tractor is not shipped with a battery installed. Install any good commercial battery with high cold cranking capacity is good. If the tractor is being used in extremely rough applications, we recommend a battery that has mechanical support for the plates on the bottom of the case. Battery size is 4-27F.

Chassis lubrication: Grease the moving parts of the rear lift rock-shaft and the ends of the power steering cylinders using their respective zerco fittings. It is good practice to coat all unpainted parts with a protective rust inhibitor.

Fan Belt: Check the tension of fan belt by applying moderate pressure against the belt as shown in Fig 3, using your finger. Deflection in excess of 1cm should be adjusted out, by removing shims from between the two halves of the pulley at the cooling fan.

Hydraulic brakes: Check level of brake fluid in the transparent plastic reservoir under the seat. Fill as required.

Tires: Check inflation of the tires; the inflation pressure for most agricultural tires should be 18 to 20 PSI.

BREAK-IN PERIOD:

Do not exceed 60 to 70% Maximum of engine power for the first 50 hours of run time.

When the engine is first started during cold weather, let it idle for 3 or 4 minutes while it warms up.

Change oil after the first 20 hours of run time on a new tractor.

Change air filter oil after the first 8 hours on a new tractor.

Periodically check to make sure that there are no oil leaks and all nuts bolts and screws are properly tightened during the break-in time.

CONTROLS AND INSTRUMENTS (As shown in Fig's 4 through 12).

A-Gear shift lever	L-Parking brake lever
B-Range shift lever	M-Rear lift lever
C-Hand throttle	N-Power steering
D-Foot throttle	O-Engine kill knob
E-Clutch pedal	P-Electrical switch & start key
F-Front differential lock	Q-Light switch
G-PTO Shift lever	R-Engine oil pressure warning light
H-PTO synchronizing lever	S-Lights on-warning light
I-Brake pedal	T-Tachourmeter
	U-Turn signal lever
	V-Blinker indicator light

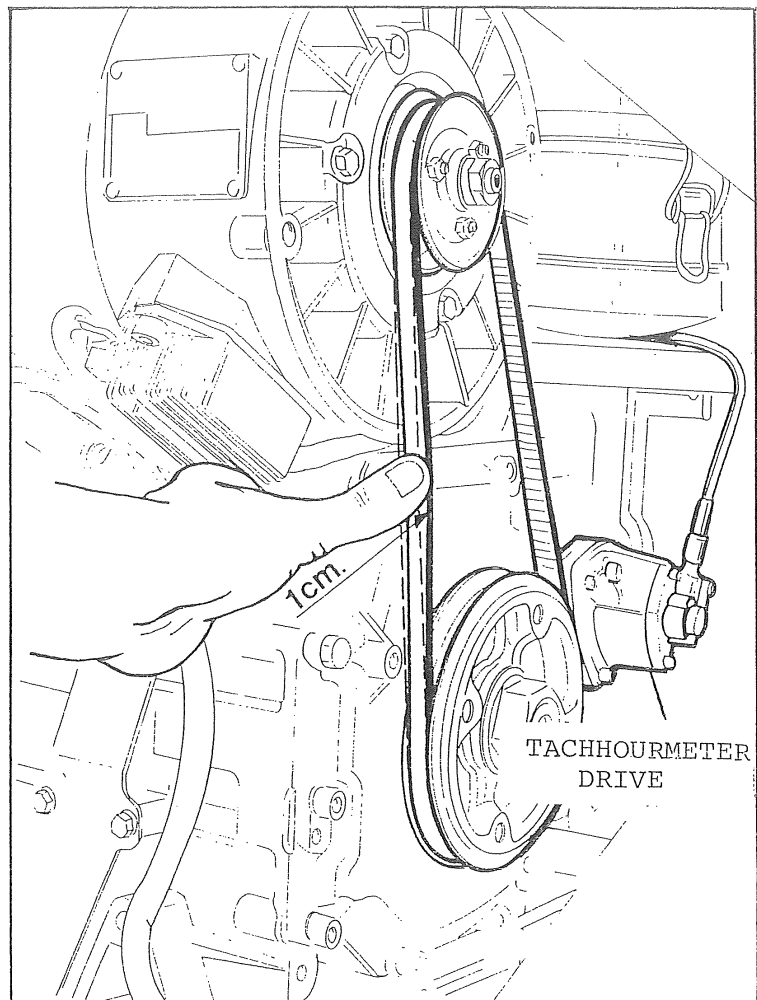


Fig. 3

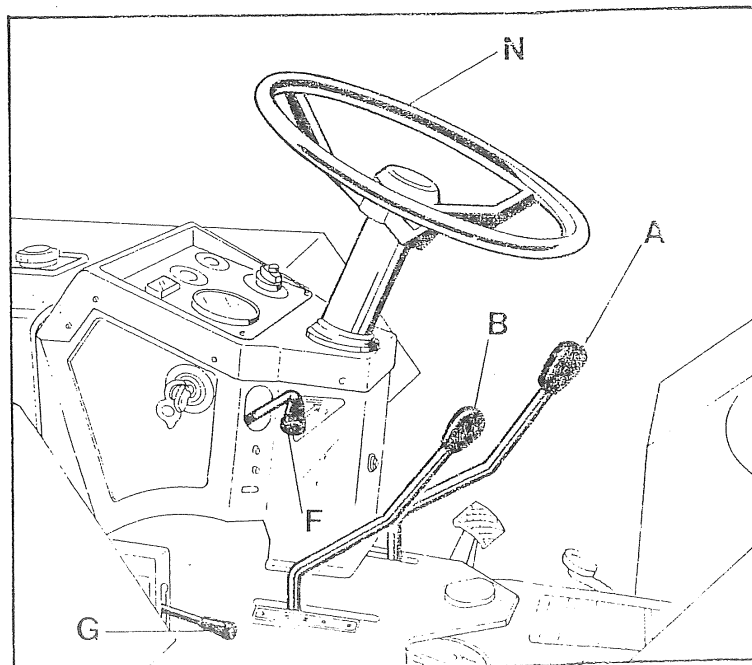


Fig. 4

A-Gear shift lever: Used to shift from 1st, reverse, 2nd, and third gear. There is a neutral position between each gear.

B-Range shift lever: Used to shift from low, medium and high range. There is a neutral position between each range. (with the standard transmission you have three forward speeds and one reverse speed in each of three ranges, which gives you 9 forward speeds and 3 reverse speeds). See Fig. 4,5, & 6.

C-Hand throttle: Controls engine speed. The throttle may be set at any one working speed. See fig. 5.

D-Foot throttle: Controls engine speed through use of foot pedal. When foot is removed from pedal, engine returns to idle position. See Fig. Fig. 5.

E-Clutch pedal: The tractor is equipped with a standard single disc dry, clutch. It is used when shifting the transmission lever the range lever, and or the PTO shift lever.

The clutch linkage is connected to a safety start switch, which requires the clutch be fully released prior to energizing the starter motor. (the clutch pedal must be depressed down to lowest position). See Fig 6.

F-Front differential lock lever: By pulling this lever back towards the operator, you may lock out the front differential. This feature should be used only when you require maximum pulling power in a straight line pull.

Rocking the steering wheel right and left while shifting into, or out of differential lock mode will make shifting easier.

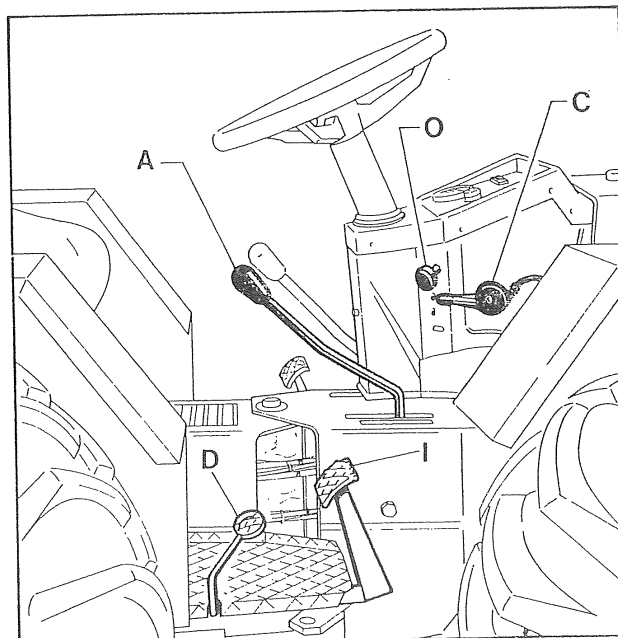


Fig. 5

G-PTO Shift lever: This lever allows you to select either of two available PTO speeds. There is also a detented neutral position. See Fig 4.

It is good practice to run the PTO shaft continuously during the tractor break-in period to provide additional lubrication to the transmission parts.

H-PTO synchronizing lever: This lever allows the rear PTO to either be driven independently from ground drive or synchronized to ground drive. It also has a neutral position located between the two different work positions. See Fig 7.

I-Brake pedal: This pedal actuates the hydraulic shoe brakes that are standard on the rear wheels only.

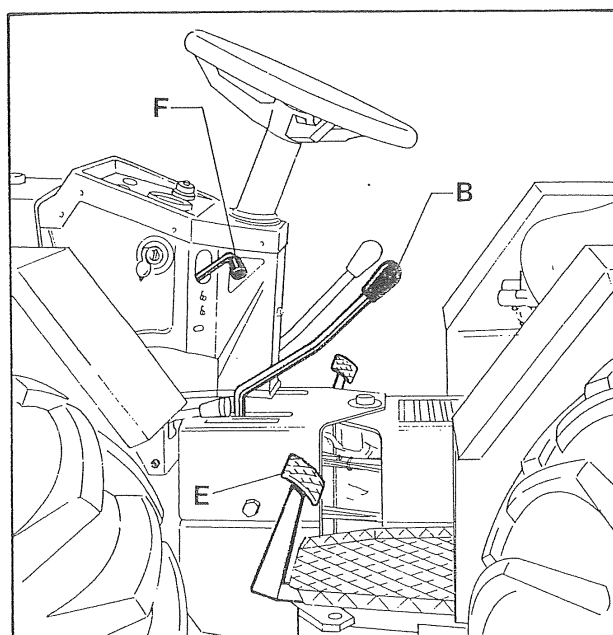


Fig. 6

L-Parking brake lever: This lever actuates the mechanical parking brakes on the rear wheels only. See Fig 7.

M-Rear lift lever: This lever controls the 3-point hitch lift on the rear of the tractor. This valve has 3 functions; first, by pulling the handle forward towards the operator it raises the Hitch, when the handle is released it is returned by spring pressure to the middle, hold position, which will keep the hitch and implement installed onto it in the respective raised position, and finally when the handle is pushed to the rear from the middle hold position the hitch drops to the ground into a float position.

The three point hitch lift cylinder is a single acting cylinder, so there can be no down pressure. See Fig 12.

N-Power steering system: The power steering system uses an orbital power steering motor to direct hydraulic pressure to two positive displacement single acting cylinders located on either side of the centersection. As either one or the other of these two cylinders is activated, it causes the tractor to articulated about the center hinge mechanism.

This steering system allows the operator to steer and control the tractor with very little physical effort. The two separate cylinders working one against the other eliminates shocks or excessive resistance from the wheels be transferred to the steering wheel/and or the operator, giving him safe comfortable control of the machine.

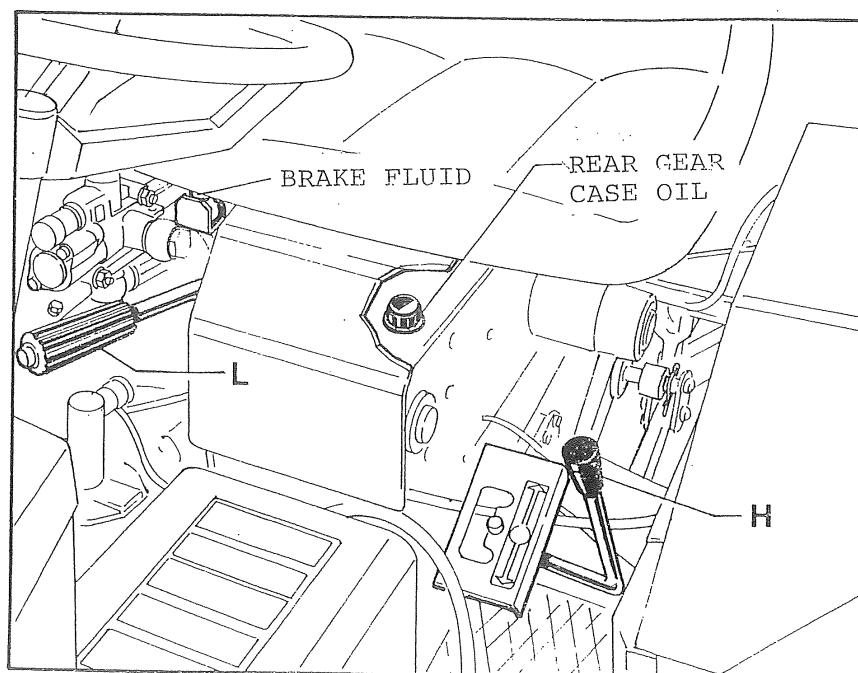


Fig. 7

O-Engine kill knob: This knob shuts off fuel to the injection pump when it is pulled, which stops the engine. See Fig 5.

P-Electrical switch and start key: This is a two position switch. Turning the key clockwise to the first detent activates all electrical circuits used when the tractor is working. Continue turning the key clockwise, against spring pressure, will start the engine. As soon as the engine starts remove pressure from the key, and the spring will return the key to the normal run position. See Fig 9.

Do not turn the key to the off position when the engine is running. This procedure can do serious damage to the charging system. (Specifically the alternator,regulator,)

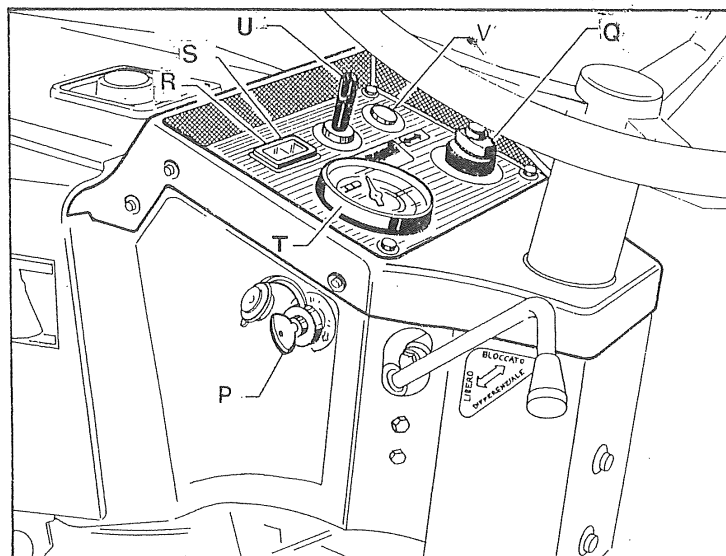


Fig. 9

Turning the key counterclockwise activates the lighting circuits only.

Q-Light switch: This switch controls the parking and head lights. Rotating the switch clockwise to first position turns on the parking or running lights, continuing clockwise to the second position turns on the headlights.

R-Engine oil pressure warning light: When this red light is on it is an indication of low or no oil pressure. When the key switch is turned on, this light should come on, as the engine starts it should go out almost immediately. If this light comes on with the engine running, shut down the engine and investigate the problem. See Fig 9.

S-Lights on, warning light: This indicator light is on when the head lights are on.

T-Tachourmeter: This instrument is mechanically drive off of the camshaft. It registers engine RPM's, PTO speeds, forward ground speed in kilimeters per hour, and engine run time in hours.

U-Turn signal lever: Flip the switch to the left and the left hand running lights blink, flip the lever to the right and the right hand blinkers are activated.

V-Blinker indicator light: This indicator light blinks on and off with the turn signals indicating proper operation.

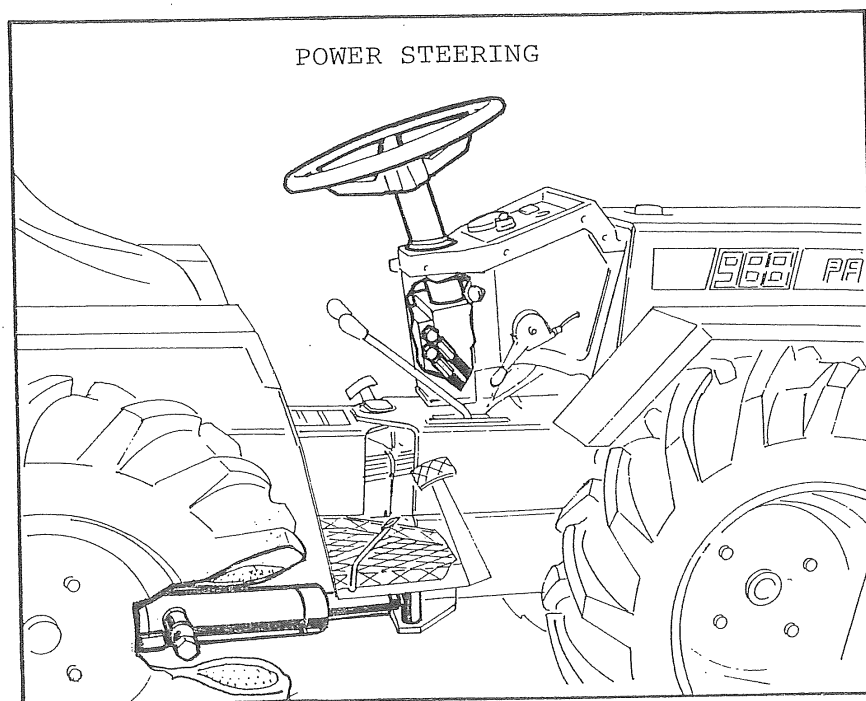


Fig. 8

REFUELING

This tractor uses a four stroke air cooled diesel engine for power. It uses commercially available diesel fuels, and no other fuels should be used.

Refueling should be carried out in such a manner as to assure that no impurities are introduced into the fuel system.

When filling the fuel tank always use a funnel with a fine mesh screen in it. The capacity of the fuel tank is some 3.4 gallons topped off. The fuel filter is located in the lower corner of the tank, and it should be changed after the first 20 hours of run time on a new tractor. After this initial service it should be changed every 300 hours, or oftener, if the conditions warrant it.

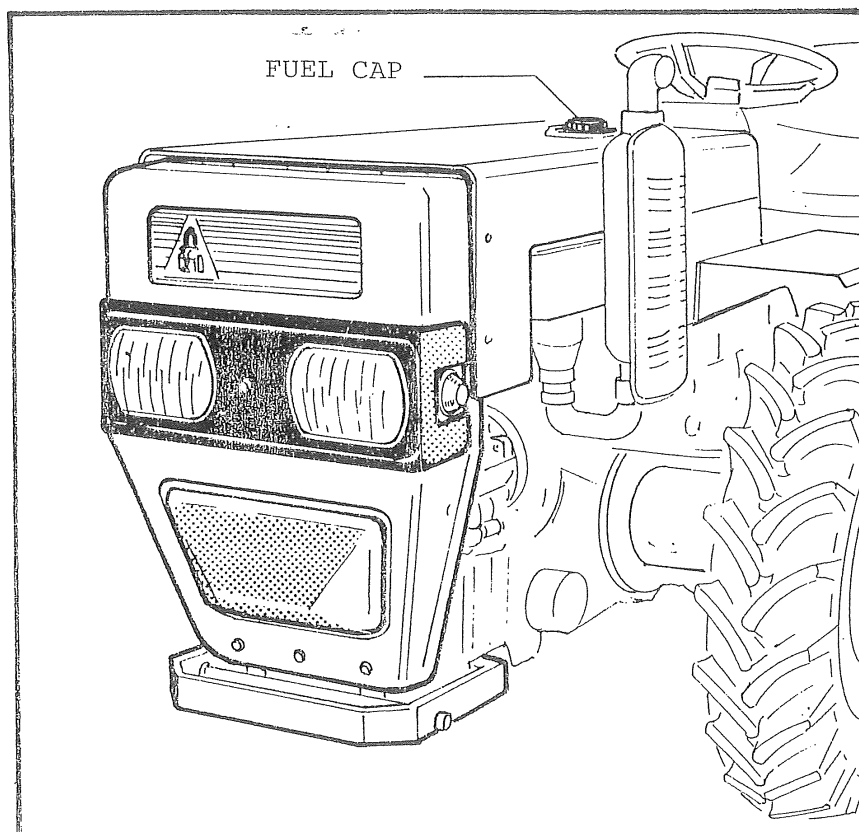


Fig. 10

STARTING THE ENGINE

Before starting the engine the operator should check:

1. Proper engine oil level.
2. Proper oil level in the air cleaner sump.
3. Full tank of fuel.

While sitting on the tractor the operator should then:

1. Set the parking brake.
2. Place transmission, range and PTO shift levers in neutral.
3. Raise the Draft and Position control levers up.

Then he should proceed as follows:

1. Depress the clutch pedal all the way down, and open the throttle lever to one half throttle position.
2. Turn the key in the start switch to engage the starter motor. After a few revolutions of the engine it should start. If not, try again for 3 or 4 seconds more, waiting 15 seconds between each attempt.
3. As soon as the engine starts release the key and it will return to the normal run position.
4. Set the throttle lever to an idle position and let the engine warm up for a few minutes. You may release the clutch pedal, keeping the shift levers in a neutral position.

If the engine did not start because the battery was not properly charged, you may start the tractor by towing it. This is only an emergency procedure and some caution should be exercised. If it is really necessary you may proceed as follows:

1. Attach the tractor to a towing vehicle
2. Shift into high range 2nd or 3rd gear.
3. With the clutch pedal in, have the tractor towed to a ground speed of 6 to 8 MPH.
4. Release the clutch pedal smoothly until the engine turns over and starts. As the engine starts push in the clutch pedal and position the throttle to an idle position.
5. Disconnect the tow vehicle, place the shift levers in a neutral position, turn the key switch to the run position, and let the tractor run at about 1500 RPMs to allow the alternator to recharge the battery.

DRIVING THE TRACTOR

Before working the tractor the oil levels in the gear cases should be checked.

1. Oil level in the front transmission. Fig 2.
2. Oil level in the rear gear case. Fig 7.
3. Oil level in the hydraulic reservoir. Fig 13.
4. Oil level in the hydraulic brake reservoir. Fig 7.

The engine may then be started and the operator may proceed:

1. Release the hand brake.
2. Select the desired gear speed and range selection to obtain preferred ground speed.
3. Release clutch smoothly, and accelerate to the to the selected ground speed.

WORKING THE TRACTOR

The use of quality materials and components with responsible workmanship assures that Pasquali Tractors are capable of excellent performance. It is important then, to keep in mind

that each application is special, and that such variables as gear selection, engine speed, weight distribution and tire options must be selected carefully to obtain maximum performance in each job.

Some basics to keep in mind are:

1. low ground speeds for heavy pulling, requiring maximum tractive effort.
2. Lighter work can generally be done at higher ground speeds.
3. Choose gear selections that do not over-work the engine continuously. When the engine is over-worked it will lug down and continuous black smoke will come from the exhaust indicating incomplete fuel combustion.
4. Operate the engine at speeds high enough to provide sufficient cooling air, as well as adequate power. Engine RPMs in the range of 2200 to 2400 are efficient operating speeds.

USE OF THE DIFFERENTIAL LOCK

Use the differential lock only when maximum tractive effort is required. Care should be exercised to avoid turning when the differential lock is engaged, it can result in over stressing drive line components and may cause serious damage.

When engaging or dis-engaging the differential lock it is helpful to rock the steering wheel back and forth, to the left and then to the right will apply shifting pressure to the lever.

USE OF POWER TAKE OFFS

The tractor is delivered standard with two power take offs. The top PTO is a standard SAE 1 3/8" dia, 6 splined shaft which rotates clockwise.

The bottom PTO is a Pasquali power take off used with some European implements and accessories. It rotates counter-clockwise. These two shafts are interconnected through spur gears, so they both run at the same time.

When engaging the the PTOs, take care to assure that the shifting levers are firmly seated in their respective detented drive positions. See levers G & H.

When the PTO synchronize lever is engaged the PTO's are driven through the ground drive. This function is generally only used when a trailer with ground drive wheels is attached.

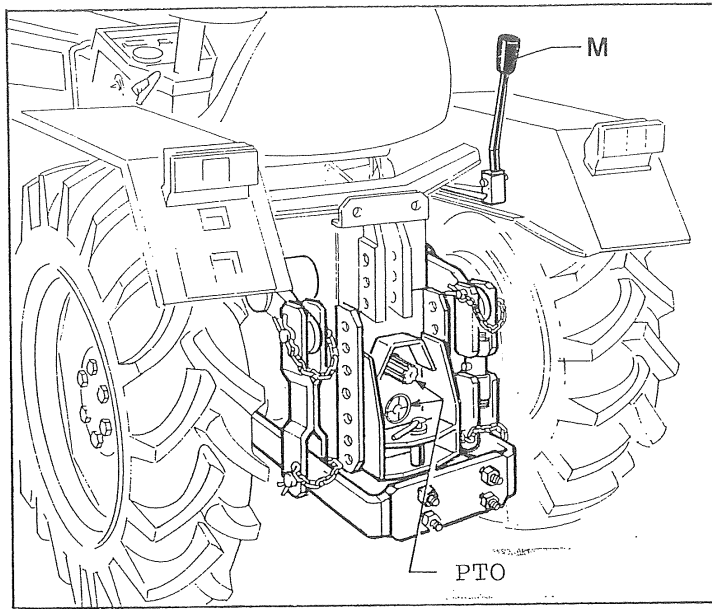


Fig. 11

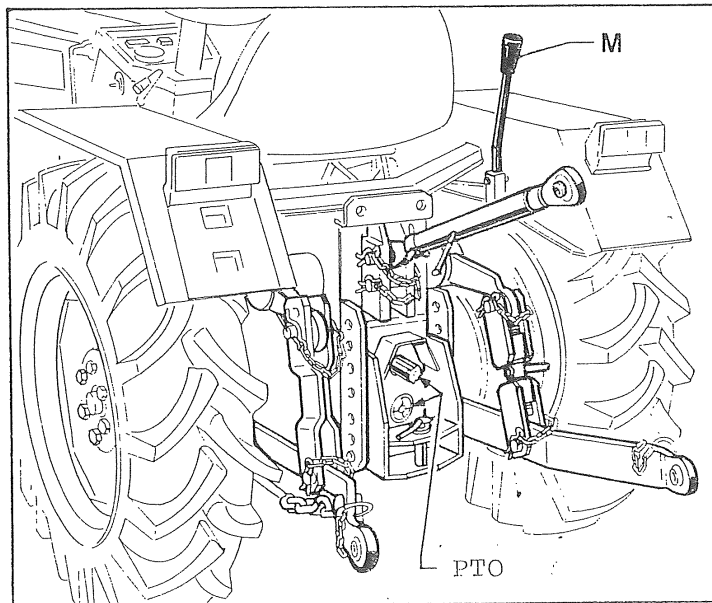


Fig. 12

The Gear ratio with the tractor PTO's in synchro is:

- | | | | |
|--------------------------|---|---|-------|
| 1. Top power take-off | 1 | : | 9.92 |
| 2. Bottom power take-off | 1 | : | 10.28 |

Tire size and drive gears of the power trailer must be selected on the basis of RPM's of the driving power-take-off. It strongly recommended to equip drive wheel trailers so that they run some 1 to 1.5% slower than tractor to allow for proper handling, particularly on slopes.

IMPORTANT. When using a drive wheel trailer the PTO select lever (Lever H in fig 7) must always be in the synchro position. If the PTO select lever is inadvertently left in the independent position, extensive damage could be done to the drive gears.

When using the tractor with PTO for normal agricultural applications such as, mowing, tilling, drive grain augers, etc; the PTO select lever is to be in the independent position. This is the normal position when using the PTO with all American implements that connect to the standard SAE 1 3/8", clockwise rotating shaft.

IMPROVEMENT OF TRACTOR STABILITY ON SIDE HILLS

When operating the tractors on slopes and side hills it is important to widen out the tires and wheels and in some instances it is necessary lower the tractor's center of gravity. The over-all width of the tractor can be increased by reversing the wheels (the wheel is made with 3" offset in the mount plate). Keep in mind it is important to swap the tires, one side for the other, to properly orient the tire tread patterns on agricultural tires.

There are a wide range of tire and wheel options, and also some tractors can be equipped with wheel spacer blocks, to adjust the overall width, or smaller diameter tires and wheels to lower the tractor's center of gravity.

ADDING EXTRA WEIGHT FOR TRACTION

When maximum power to the ground is required it may become necessary to add weight or ballast to the tractor. Where the weight is added, and how much weight is added

depends on each particular situation. Keep in mind that the tractor is equipped with a standard front differential lock the increases power to the ground with no additional weight.

The least expensive and most convenient way to counter weight the tractor is by adding water/calcium chloride solution to the tires. Contact your dealer for specific information in selecting the correct mixture for your area and application. Keep in mind that once you have added fluid to the tires it is difficulty to remove, and weight added for a temporary problem, can increase fuel consumption and decrease engine life.

If you are considering adding signifigant weight to the tractor over and above discussed here, contact your dealer.

CHOICE OF TIRES

In agricultural applications the most suitable tire is selected after carefully considering the type of soil the tractor will be working in.

1. Narrow tires are normally used on firm to hard ground which offer good traction, or in applications where the tractor must be narrow to fit between row crops.
2. Wide tires (flotation tires) are best used on soft or sandy soils where the additional "foot print" supports the weight of the tractor and provides additional traction to the ground

Periodically check tire pressures when they are cold, and adjust to recommended pressure. In general practice, agricultural tires should be filled to 16 to 18 PSI. Tire pressure may be adjusted to compensate for heavier load-on either front or rear axles.

IMPORTANT

Do not use flotation tires loaded with fluid for applications requiring high tractive effort.

When the tractor is over-loaded on either front or rear tires, the overloaded tire is reduced in diameter, thereby reducing its speed. This condition can be minimized by adjusting the tire pressures so that all tires have approximately the same rolling diameter. When running on paved roads in this condition, it is good to keep the rolling diameter 1 to 1 1/2% larger on the front tires to aid in control and steering of the machine.

Avoid sharp objects when operating the tractor. Be particularly aware of cutting the sidewall of the tractor tires.

TIRE CONT'D

At the end of the work day remove the stones and other debris that is wedged between the tractor tire treads.

When replacing tires it is important to change all 4 tires and the same time with new tires from the same manufacturer. This will eliminate differences in rolling diameter, and the resultant slipping that can cause excessive tire wear.

OPERATIONAL CONSIDERATIONS

IMPORTANT

When operating the tractor, do not rest your foot on the clutch pedal. This can cause rapid wearing or burning of the clutch disc.

While operating the tractor be aware if the tractor does not perform normally. If there are indications of any problems, immediately shut off the engine and investigate the problem.

FUEL TANK (Fig 10 & 13)

Schedule refueling so as not to run out of fuel when working the machine. Once the tank has been allowed to run dry, the fuel system will have to be bled as instructed on page 4. It is also good practice to keep the tank filled overnight and during periods of storage. This will reduce the possibility of moisture condensing in the tank and causing serious damage to the injection system.

ENGINE OIL PRESSURE (Fig 9)

The engine oil pressure warning light on the dash board should go out, almost immediately after the engine starts. If it does not go out, or if it comes on during normal operations, stop the engine immediately or otherwise serious damage to the engine may result. This warning light indicates low lubricating oil pressure in the engine. Some typical causes of low oil pressure are:

1. Engine low on lubricating oil.
2. Blocked oil filter.
3. Operating the tractor at too low engine RPM's.
4. Incorrect grade of oil.
5. Damage to the oil pump or the distributing system.
6. Operating the engine in an over-heated condition.

COLOR OF EXHAUST

Excessive exhaust smoke is due to faulty combustion during operation. The color of the smoke is a useful tool in troubleshooting.

BLACK SMOKE is generally caused by incomplete combustion; Some of the reasons could be:

1. Engine overloaded. (Select a lower gear.)
2. Air filter blocked, or plugged.
3. Faulty operation of injectors.
4. Improperly calibrated or timed injection pump.

BLUE SMOKE is usually an indication of burning lubricating oil. First check to see if the sump on the oil bath air cleaner is overfilled.

If the oil level in the engine is down, and there is some indication of engine oil consumption have the engine examined by a responsible trained mechanic.

STOPPING THE ENGINE

Before stopping the engine check to make sure that the control levers are in a neutral position, then pull the engine stop knob. (knob O in Fig 5). Do not try to stop the engine by shutting off the electrical key switch, because the engine would continue to run, and cause serious damage to the tractor's electrical system. If the engine has run hard and it is very hot, let it idle for a few minutes prior to shutting it down.

ELECTRIC STARTING AND LIGHTING SYSTEM

BATTERY The battery should be checked approximately every 50 hours of run time to assure that the electrolyte level is covering the plates. Check the battery when the tractor is not running.

Make sure that the terminals are clean and securely connected to the battery posts. It is good practice to smear the terminals and posts with vaseline or heavy grease to inhibit corrosion.

Use a wrench to loosen the battery cable clamps. (note: disconnect the ground terminal first, prior to working on the positive cable.)

IMPORTANT

1. Do not keep the lights on when the engine is not running.
2. Do not let the battery discharge completely.
3. Do not recharge the battery while it is connected.
4. Do not reverse the polarity. (Connect positive cable to negative terminal on battery, or do not connect the ground cable to the positive terminal on the battery).
5. If the battery requires frequent service to keep the plates covered with electrolyte, have the charging system serviced by a qualified technician.

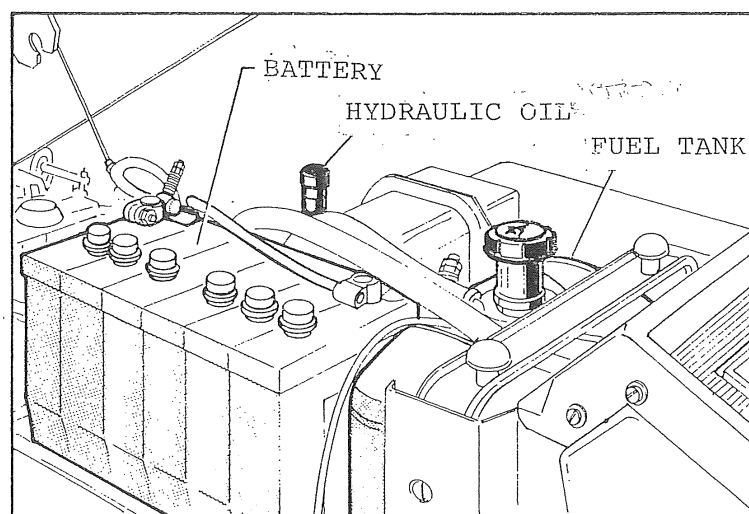


Fig. 13

The electrolyte should cover the battery plates by at least 3/8". If the electrolyte level is low, fill it up with distilled water. The battery should be kept clean, particularly the top, around the terminals.

ALTERNATOR

The battery is charged by an alternator which provides plenty of charging current to keep the battery fully charged. To protect the alternator it is necessary to observe some basic rules:

1. Do not disconnect the wires between the alternator, voltage regulator and/or battery while the tractor is running.

2. Do not short circuit the terminals of the alternator or the regulator, nor short them to ground, while the tractor is running.

Generally the alternator requires no servicing. In case of a rebuild it should be done by a trained technician.

It is good practice to check to fan belt tension periodically; the belt should not deflect in excess of 1 cm, when moderate pressure is applied using your finger as shown in Fig 3. Adjust by removing the shims from between the two halves of the split pulley on the fan drive shaft.

VOLTAGE REGULATOR RECTIFIER

This unit requires no maintenance. It is encapsulated so there are no repairs that can be performed on it. This unit does contain diodes and transistors in the rectifier circuit, so it is sensitive to overloads and reversed polarity. Refer to the engine workshop manual for check-out procedures.

STARTER MOTOR

The starter motor requires no periodic maintenance of lubrication. It is good practice not to engage the starter, and let it run continuously for an extended period of time. if the engine does not start immediately. Rather, short start cycles of 8 to 10 RPM's with a slight pause between each try, is better.

This is a very expensive component of the tractor engine, and it is good practice to remove it from the engine once a year, in the slow time to clean it, check the brushes, and bushings and clean the commutator.

FUSES (Fig 14)

The electrical system is equipped with fuses to protect the starting and lighting circuits. Should a fuse blow, replace it with another fuse of the same amperage rating.

REMOTE ELECTRICAL SOCKET

When using a trailer with your tractor you may plug into this socket to energize running lights.

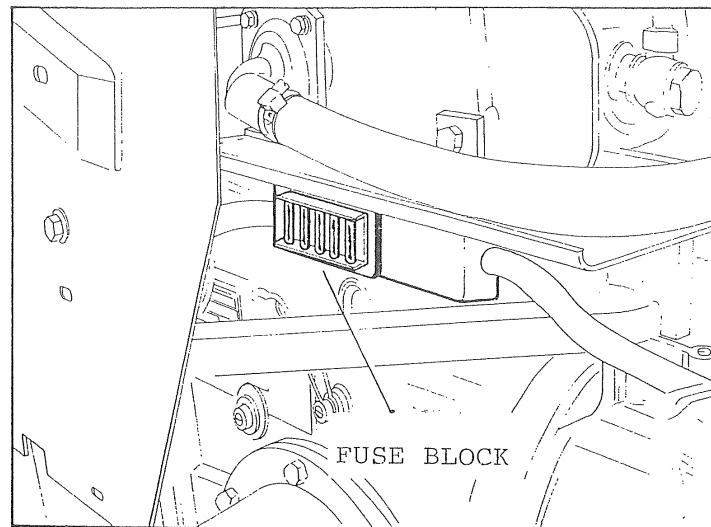


Fig. 14

BRAKING SYSTEM

The tractor is equipped with hydraulic shoe brakes on the rear wheels. The pedal (I Fig 5) actuates the master cylinder which in turn, applies pressure to the wheel cylinders that activate the shoes against the brake drum, stopping the tractor.

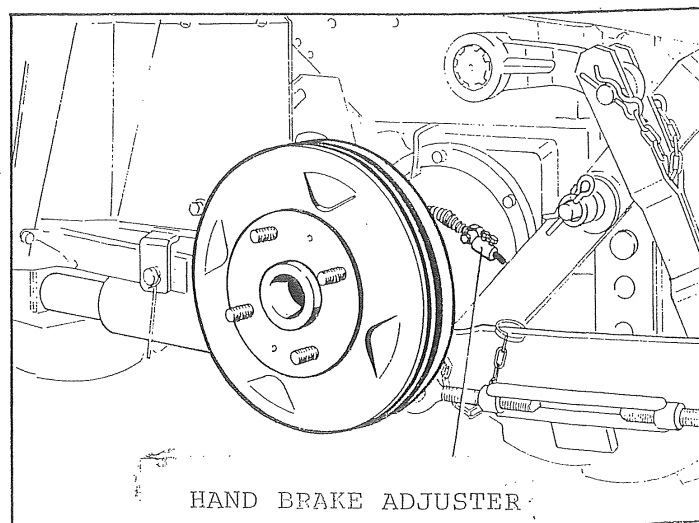


Fig. 15

The hydraulic brakes may require adjustment periodically,

1. To compensate for normal wear.
2. To eliminate one wheel from braking ahead of the other.
3. When replacing brake shoes.

Adjustment is accomplished by rotating the mechanical cam type adjusters, one for each brake shoe. (Fig 16).

The Hand brake is mechanical; it is connected to the mechanical actuation arm by steel cables. The brake may be adjusted by repositioning the cable clamps aft of the actuation arm on either wheel. (Fig 15).

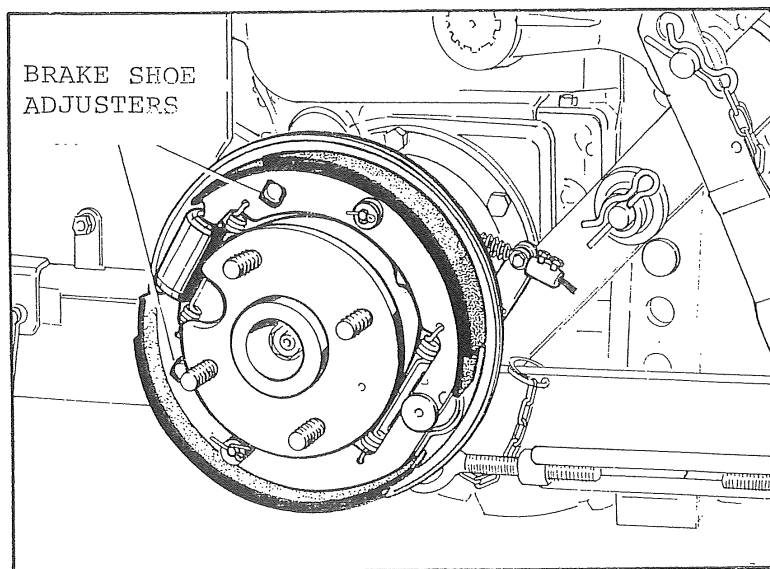


Fig. 16

Periodically check the level of brake fluid in the reservoir. If there is a sudden significant loss of fluid and/or braking ability trouble shoot and repair.

When braking on steep slopes with a heavily loaded trailer attached, it is important to select a gear speed that will provide additional braking force and control the load.

CLUTCH ADJUSTMENT (Fig 17).

When the clutch is adjusted properly there should be approximately 3/4" freeplay, before the pedal develops tension on the cable. The clutch, in turn should release when the pedal is about 1/2 the distance to the deck-plate.

This adjustment is made using the adjustable socket shown in Fig 17.

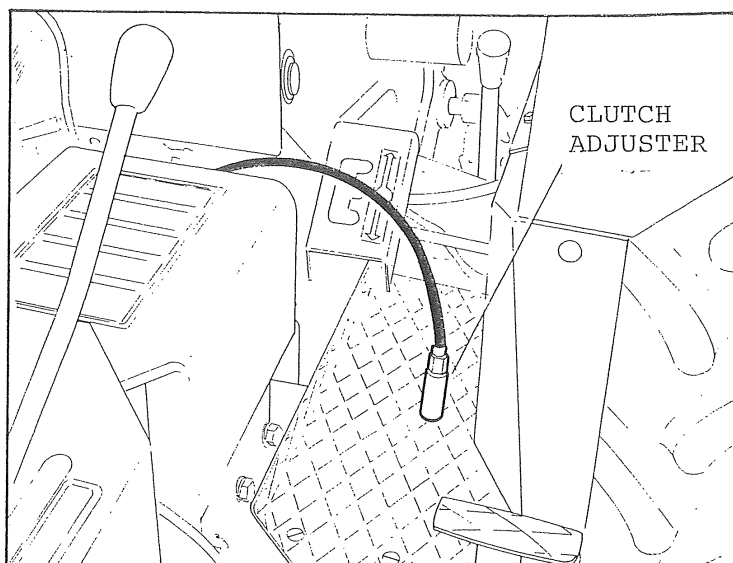


Fig. 17

When replacing the pressure plate it is necessary to adjust the height of the release fingers after the pressure plate is bolted up to the flywheel, trapping the friction disc in place. This adjustment is made to a special set gauge that is available from your Pasquali Dealer. See Fig 18.

PREPARING THE TRACTOR FOR LONG STORAGE

Prior to storing the tractor for a period of inactivity you should proceed as follows:

1. Clean the external structure of the tractor.

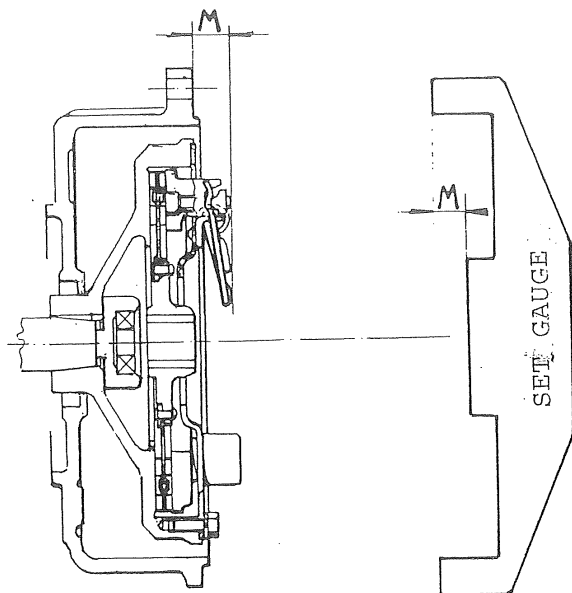


Fig. 18

STORAGE PREPARATIONS, CONT'D

2. Remove the air filter and service per the engine instruction booklet.
3. Check for oil leaks and correct.
4. Apply rust resistant compound to unpainted parts.
5. Disconnect battery terminals and smear with vasoline. Store battery in a warm place.
6. Fill the fuel tank to the maximum level.
7. Block the tractor off of the ground and cover with a canvas, or other suitable cover.
8. Try not to store the machine in a damp place.

When the tractor is to be put in service again, prepare it using the "Checking the new tractor" procedures on page 4.

SCHEDULE OF MAINTENANCE

To obtain good performance and long life from your tractor, we recommend the following maintenance schedule.

EVERY 8 HOURS

1. Check oil level in engine.
2. Change air cleaner oil. (Every 5 hours in very dusty conditions.)
3. Clean air filter.

SCHEDULE OF MAINTENANCE, CONT'D.

EVERY 30 HOURS

1. Grease Bearings of steering cylinder pins and main articulated bearings. (2 Zerc fittings)
2. Grease rockshaft on rear 3-point lift. (2 Zerc fittings)

EVERY 0 HOURS

1. Grease clutch pedal pin.
2. Grease brake pedal and driving lever pins.
3. Grease hand brake lever pins.
4. Grease gear control lever pins.
5. Grease independent PTO speed control lever pins.
6. Grease hydraulic lift control lever pins.
7. Grease 3-point rockshaft.

EVERY 100 HOURS

1. Change engine oil.
2. Check fan belt tension.
3. Check electrolyte in battery.
4. Check oil level in front transmission case.
5. Check oil level in rear gear case.
6. Check and adjust clutch play.
7. Check and adjust brakes.
8. Check tire wear.
9. Check and tighten all bolts, nuts and screws. Watch nuts on wheels, and bolts and nuts through the center of the tractor.

EVERY 300 HOURS

1. Replace fuel filter.
2. Replace engine oil filter.
3. Check hydraulic oil reservoir, clean filter, and top off oil as necessary.

EVERY 500 HOURS

1. Clean engine cooling fins,.
2. Clean engine fuel pump membrane.
3. Change engine cooling fan belt.
4. Check and recalibrate injector nozzles and injection pump.
5. Adjust valves.

SCHEDULE OF MAINTENANCE CON'D

EVERY 1000 HOURS

1. Change oil in the front transmission gear case.
2. Change oil in the rear gear case.
3. Change oil in the hydraulic system.

EVERY 2000 HOURS

1. Have the alternator serviced by an authorized trained technician.

LUBRICATION TABLE

Lubrication item.	Lubrication type.	Quantity	Interval
Engine	Multi-grade 15W/40	5.5#	After first 20 hours on new tractor. Then every 100 Hours.
Air Filter	Same as engine oil	.6#	Every 8 hours.
Front Trans. Case	90 Wt gear oil	22.0#	Every 1000 hrs.
Rear Gear Case	90 Wt gear oil	11.4#	Every 1000 hrs.
Hydraulic system	Agricultural grade hydraulic fluid	10.0#	Every 1000 hrs.
Rear lift shaft	Multi-purpose grease		Every 30 Hours
Steering pins	Multi-purpose grease		Every 30 Hours
Pins and adjusters w/o Zerco	Multi-purpose grease		Every 30 Hours

SAFETY INSTRUCTIONS

The Pasquali line of tractors have designed and tested so as to minimize the potential for accidents. However, with careless or improper operation coupled with inadequate maintenance, the possibility for personal injury to the operator increases. The following listed safety instructions are meant to remind the operator of some of the more obvious hazards associated with operating mechanical equipment coupled with some of less obvious operating characteristics associated with articulated tractors. Please read them carefully before operating our equipment.

BEFORE OPERATING:

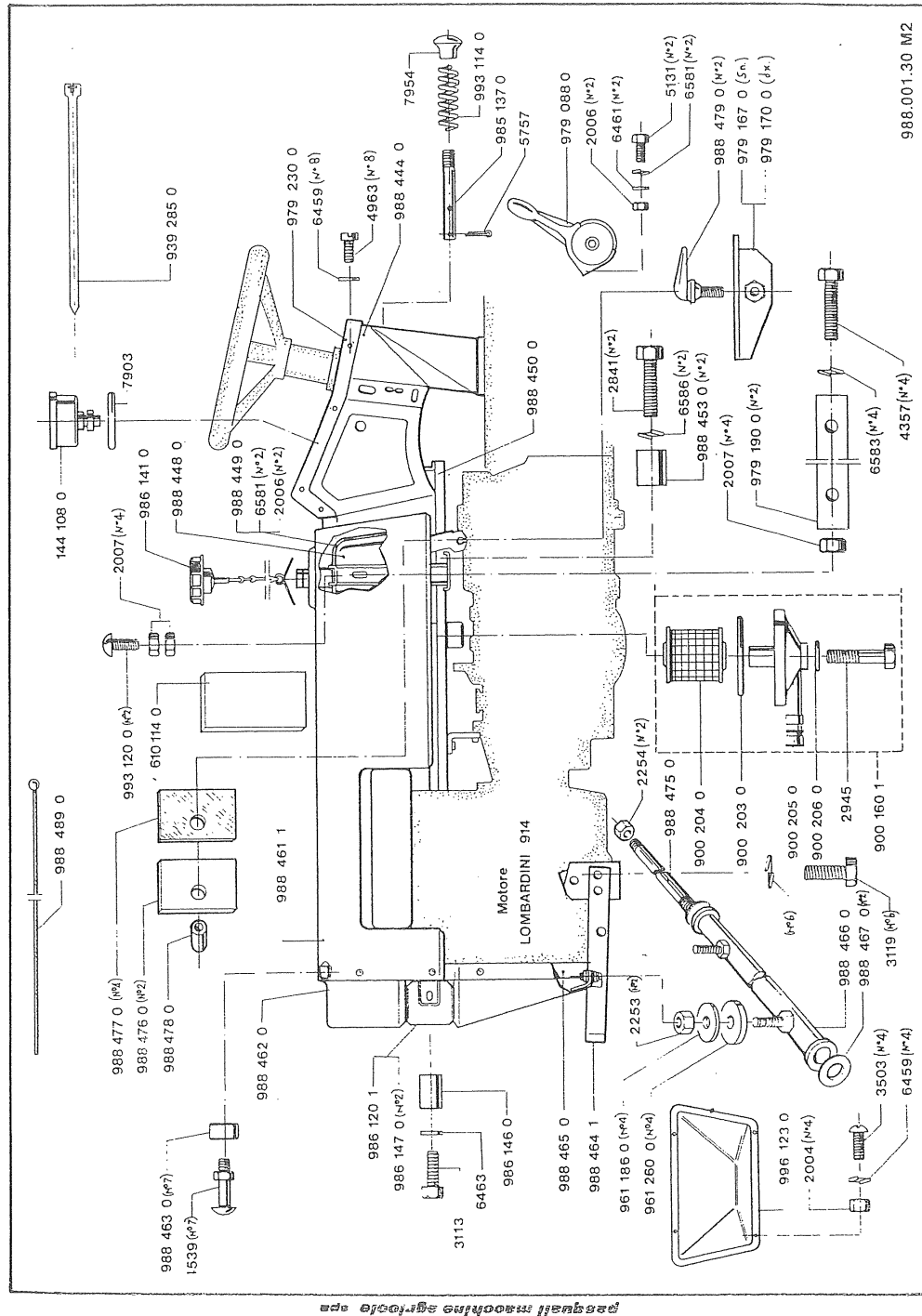
1. Read and understand that portion of this manual that covers the operation of this vehicle. Be familiar with all of the controls and know how to stop quickly.
2. Keep all safety devices and shields in place and confirm that the safety devices are operational.
3. Wear long pants and substantial shoes. If you are working in heavy brush or orchards with low-hanging limbs, safety glasses and hard hats are adviseable.
4. Be sure that the safety start switch is adjusted so that the tractor can only be started when the clutch pedal is fully depressed, disengaging the ground drive.
5. Verify that the PTO speed selection lever is in neutral. If you are not using the PTO, the 1 3/8" stub shaft should be removed and stored in the tool box. Place the protective rubber shield over the PTO shaft socket to keep it clean.

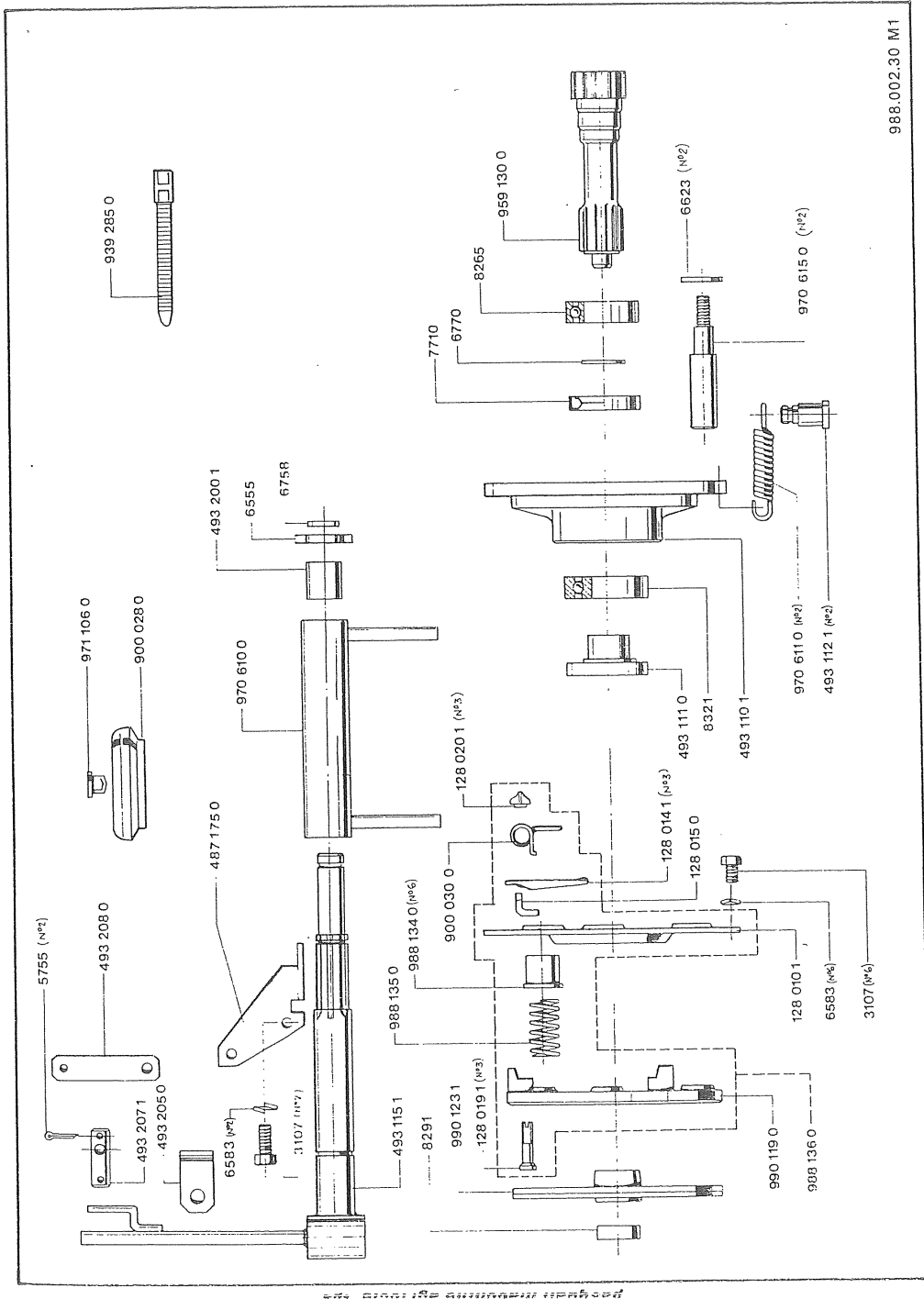
WHILE OPERATING:

6. Start and operate the tractor only while sitting in the seat. Before starting the engine:
 - a. Assure that the transmission shift levers are in neutral.
 - b. Assure that the PTO shift lever is in neutral.
 - c. Set the parking brake.
 - d. Depress the clutch fully.
7. After starting the engine release the clutch pedal slowly, confirming in fact, that the shift levers are in neutral.

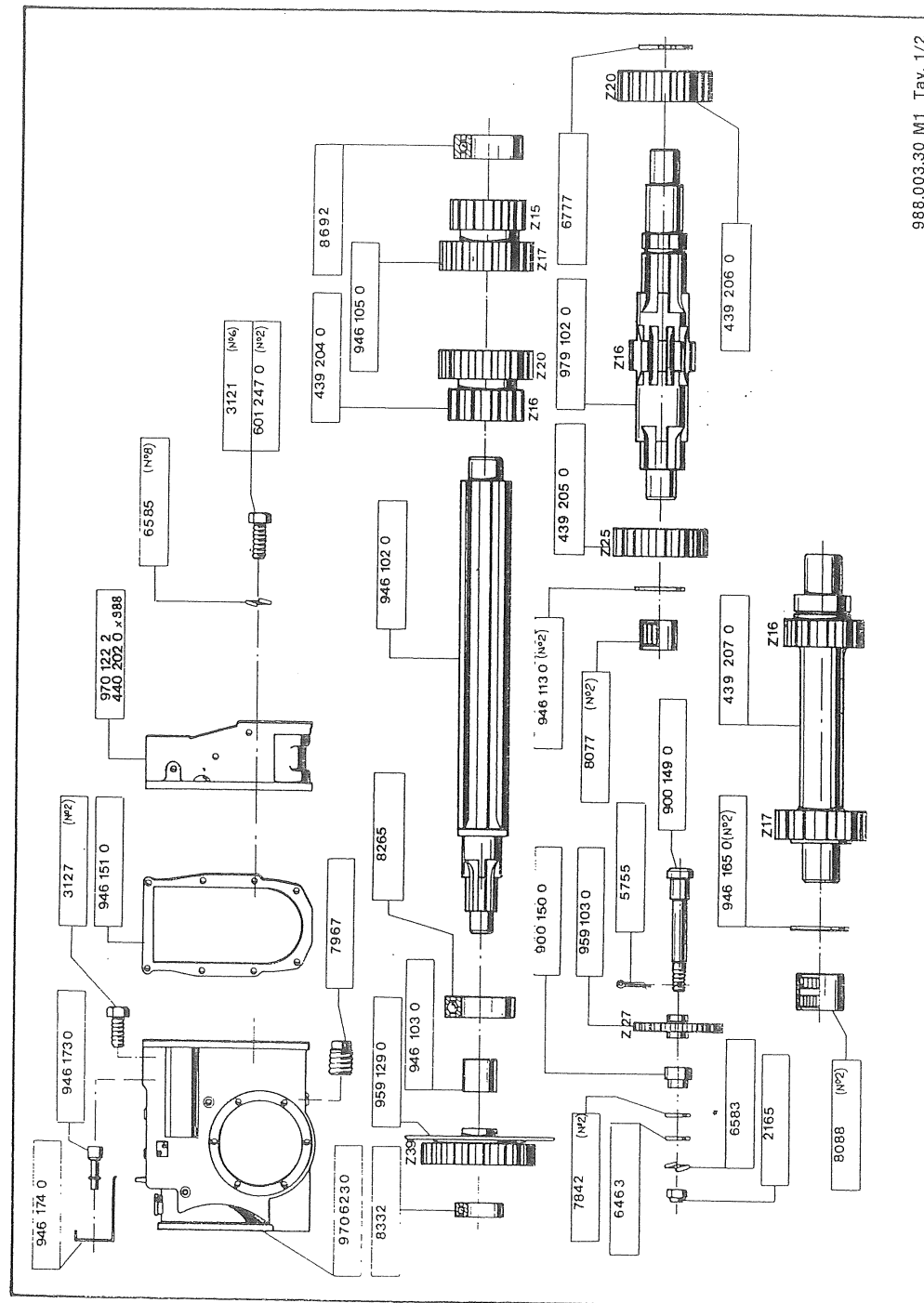
SAFETY INSTRUCTIONS, WHILE OPERATING, CONT'D.

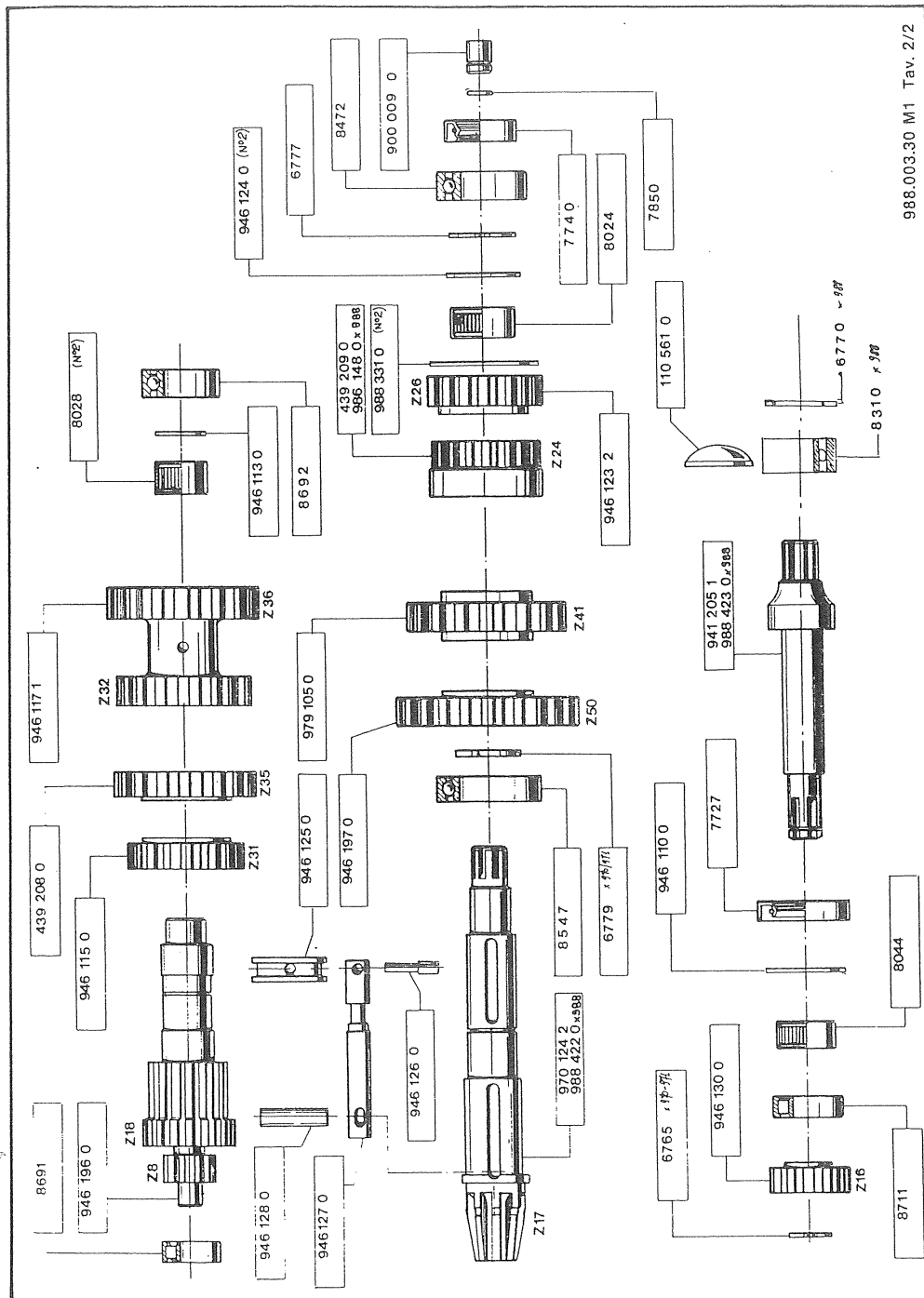
8. Do not run the engine in a closed area without adequate ventilation. The exhaust fumes can cause great discomfort, and could prove to be hazardous.
9. The tractor is designed to operated by a single person. At no time should you carry a passenger.
10. Operating these tractors safely requires constant attention to minimize risks and maintain control, the operator should:
 - a. Operate the equipment only in daylight, or where there is good artificial light.
 - b. Reduce speed when on rough terrain or making sharp turns, particularly on a hillside.
 - c. Do not drive too closely to deep ditches, creeks or other hazards.
 - d. Watch for deep holes or other hidden hazards.
 - e. Avoid sudden starts and stops.
 - f. Do not leave the tractor attended when it is running.
 - g. Keep the tractor in a low gear when going down steep grades.
 - h. Adjust the weight distribution if the wheels come off of the ground.
12. Shut off the tractor and set the hand brake before making and adjustments or repairs to the tractor, or implements attached to the tractor.
13. Do not touch the the engine or muffler while the engine is running, it can be hot enough to cause a burn.
14. To reduce fire hazard, keep the engine free of grease, fuel,, grass, or other flammable material.
15. Do not overspeed the engine. Maximum RPM's of the engine unloaded is 3000 RPM's. Any adjustment to the govenor settings should be made only by a factory trained technician using an external tachometer.
15. Do not check the engine oil level, or hydraulic oil level with the engine running. Do not add engine oil or hydraulic oil with engine running.



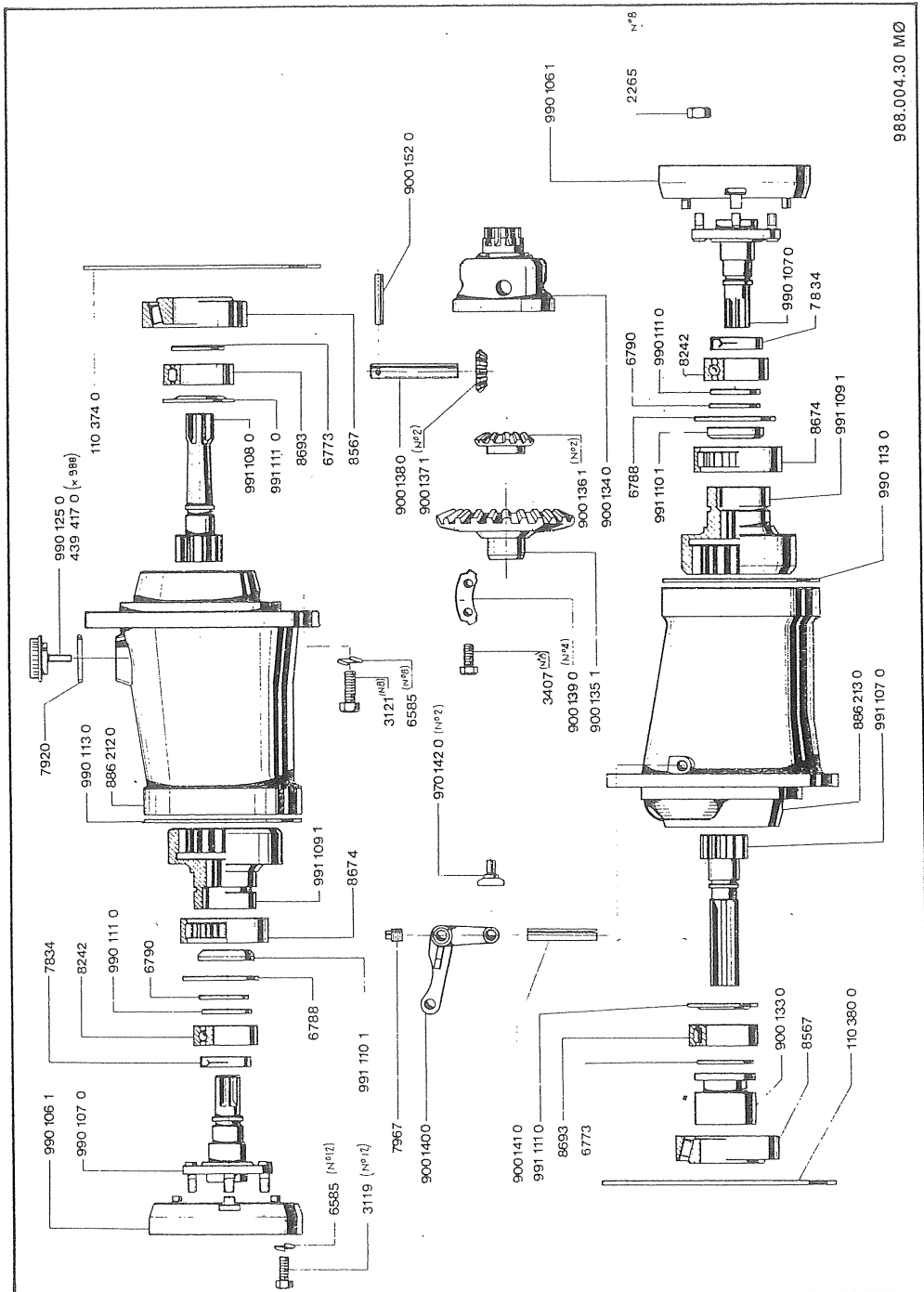


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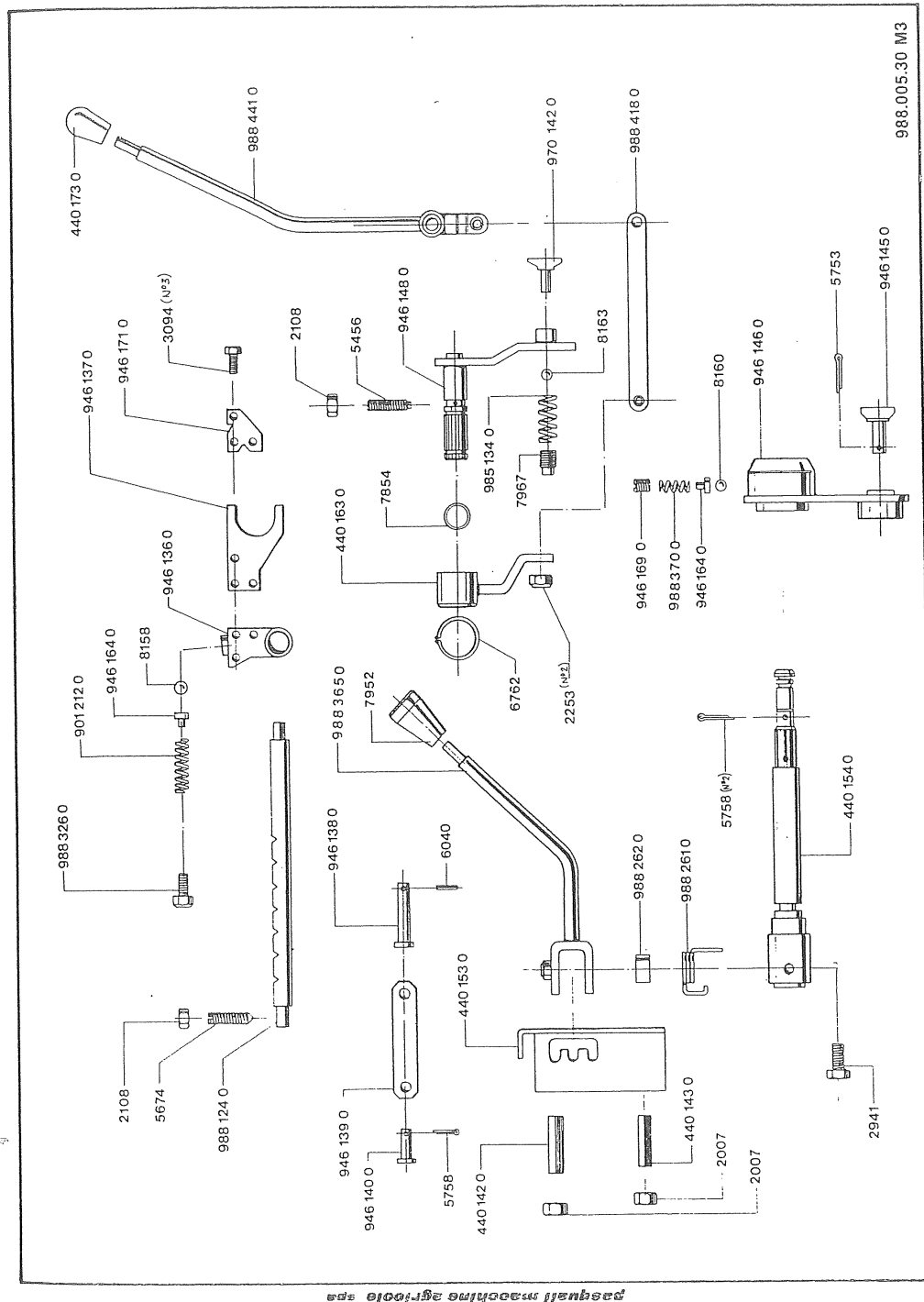




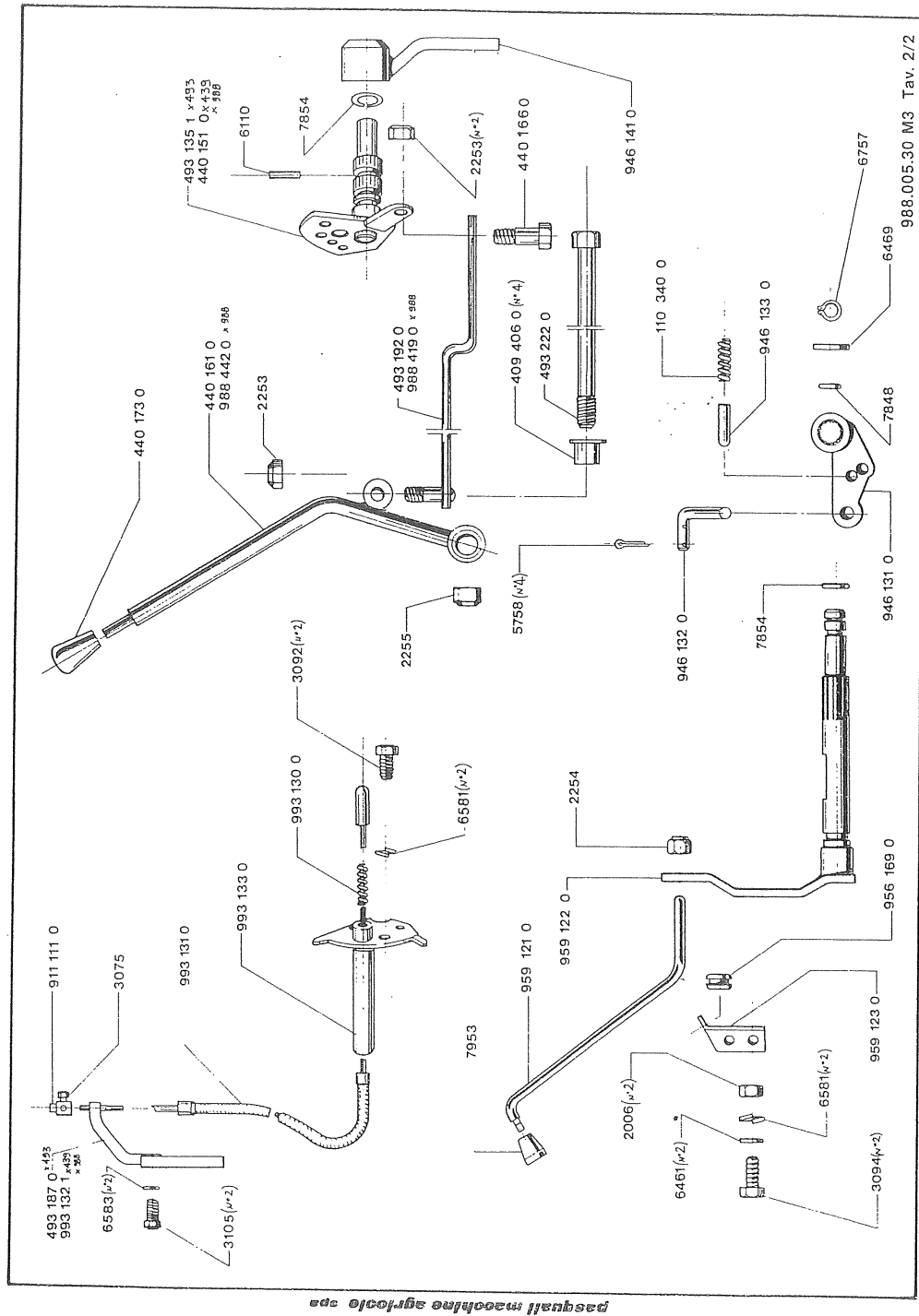
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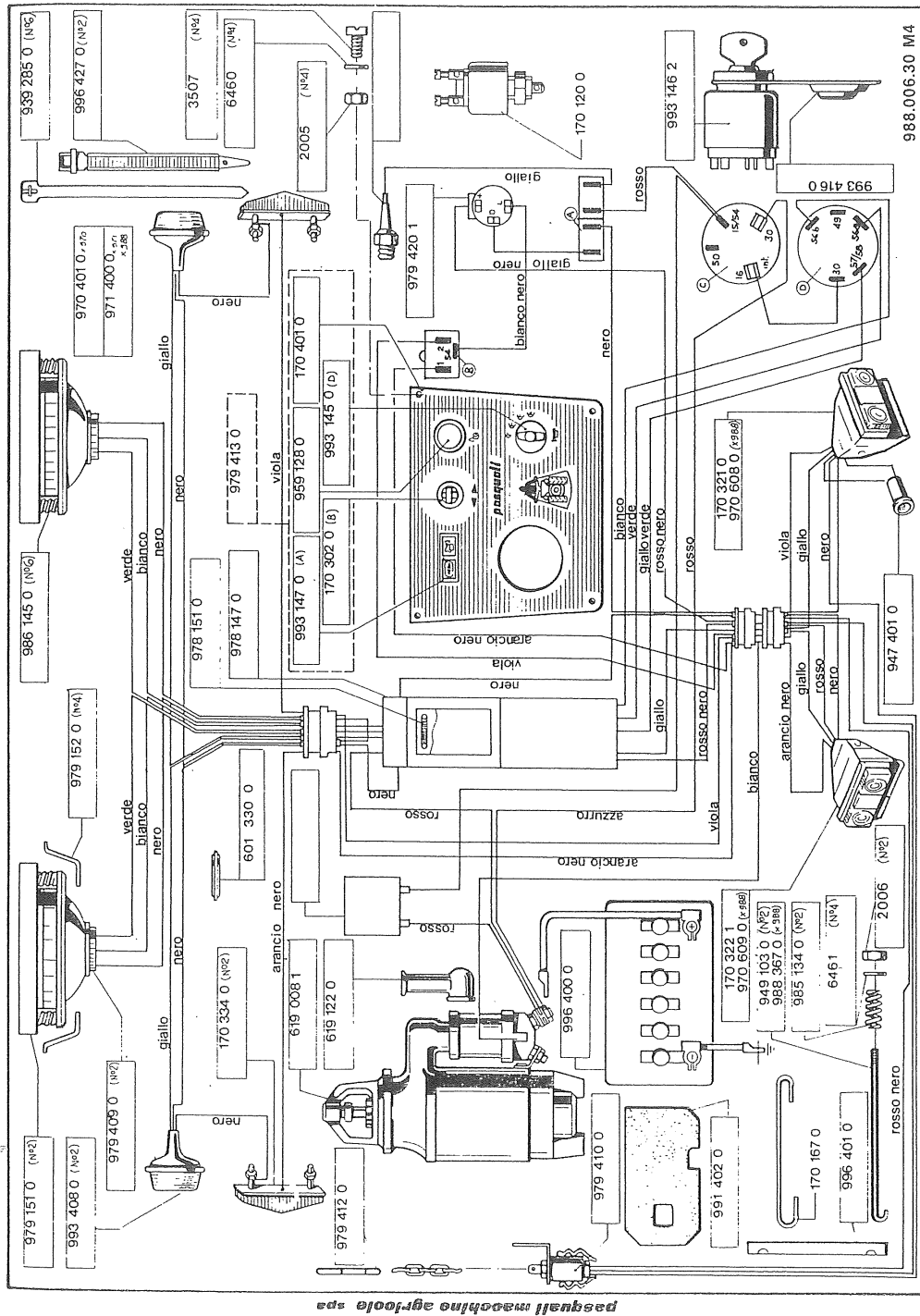


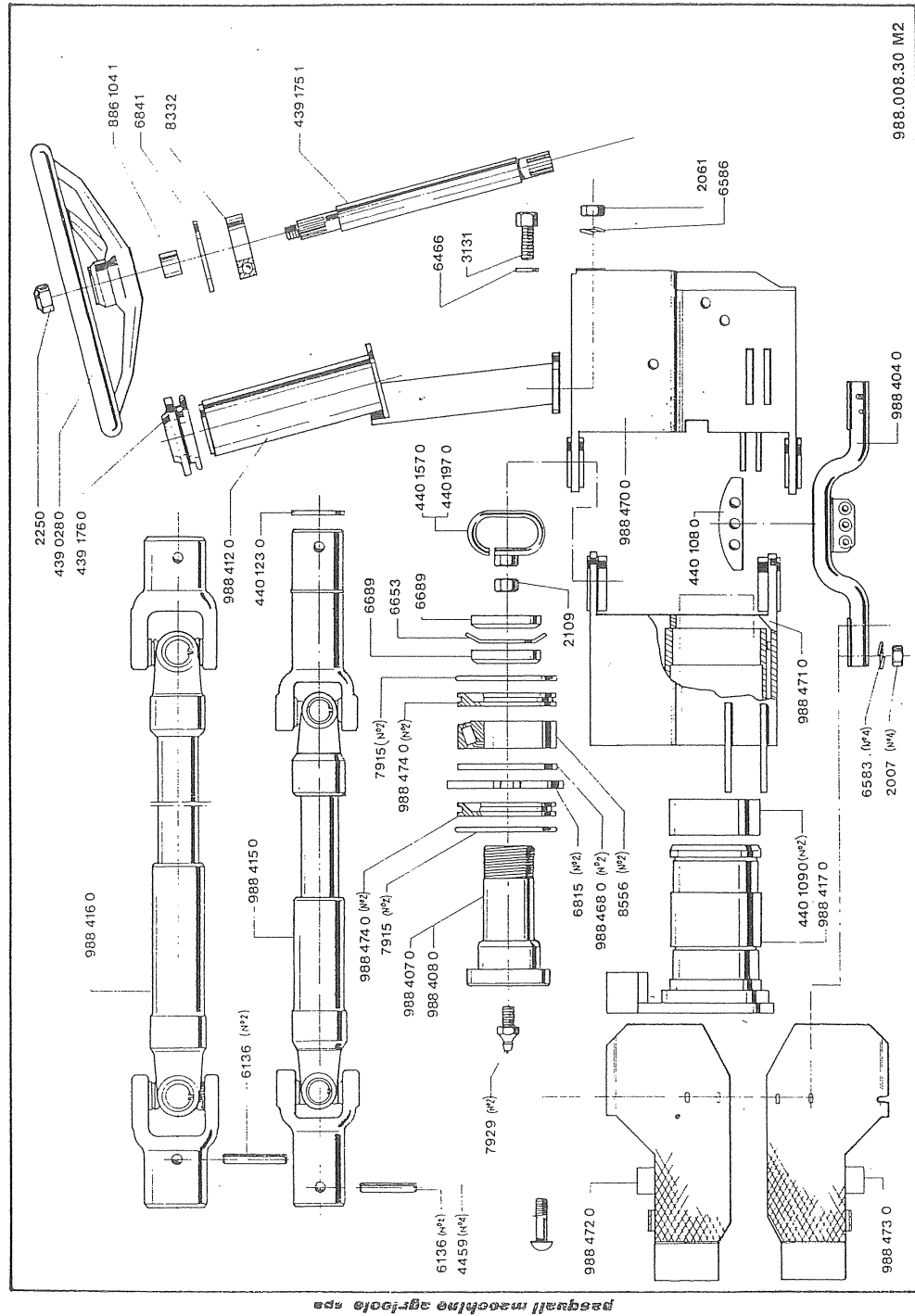
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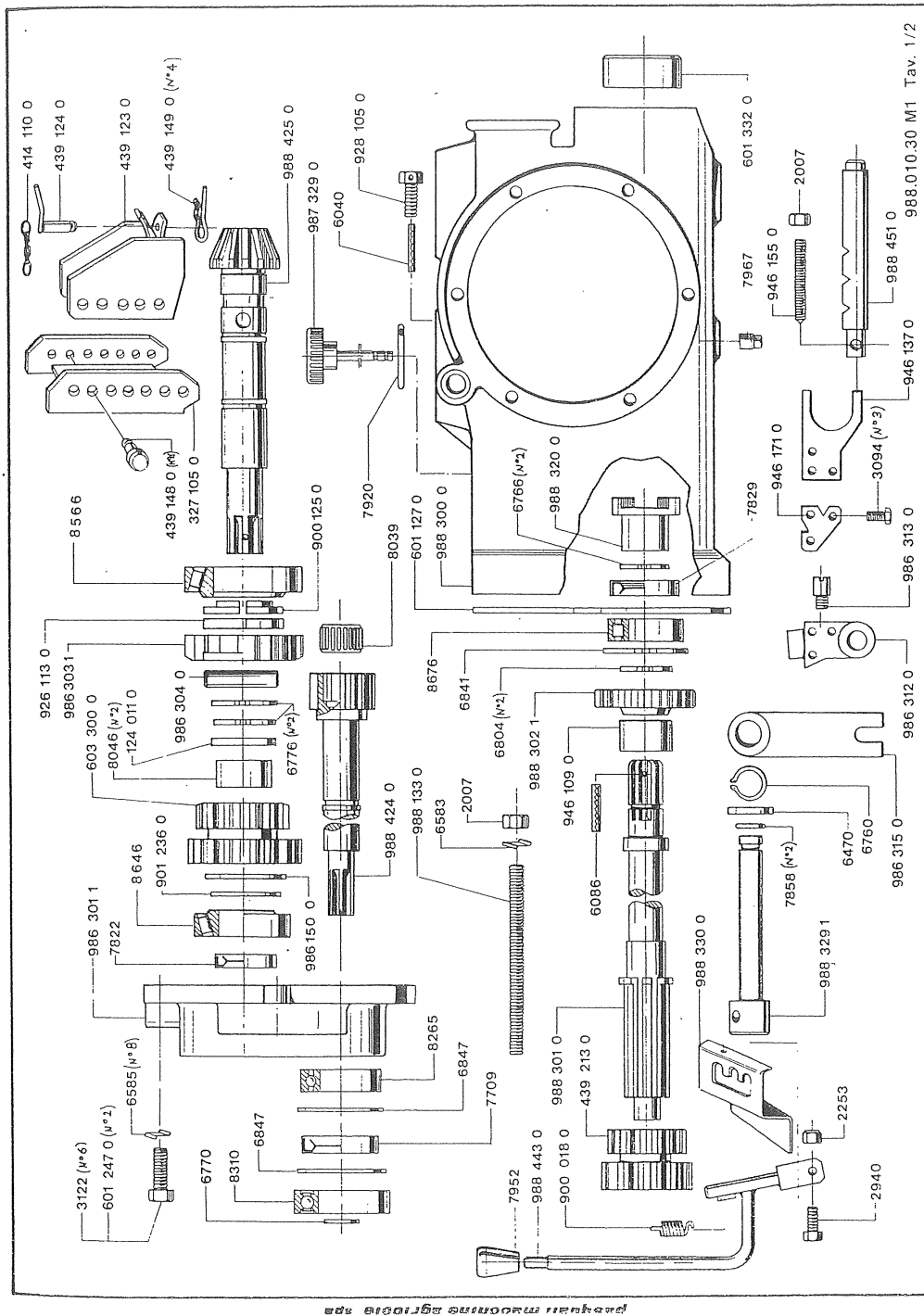


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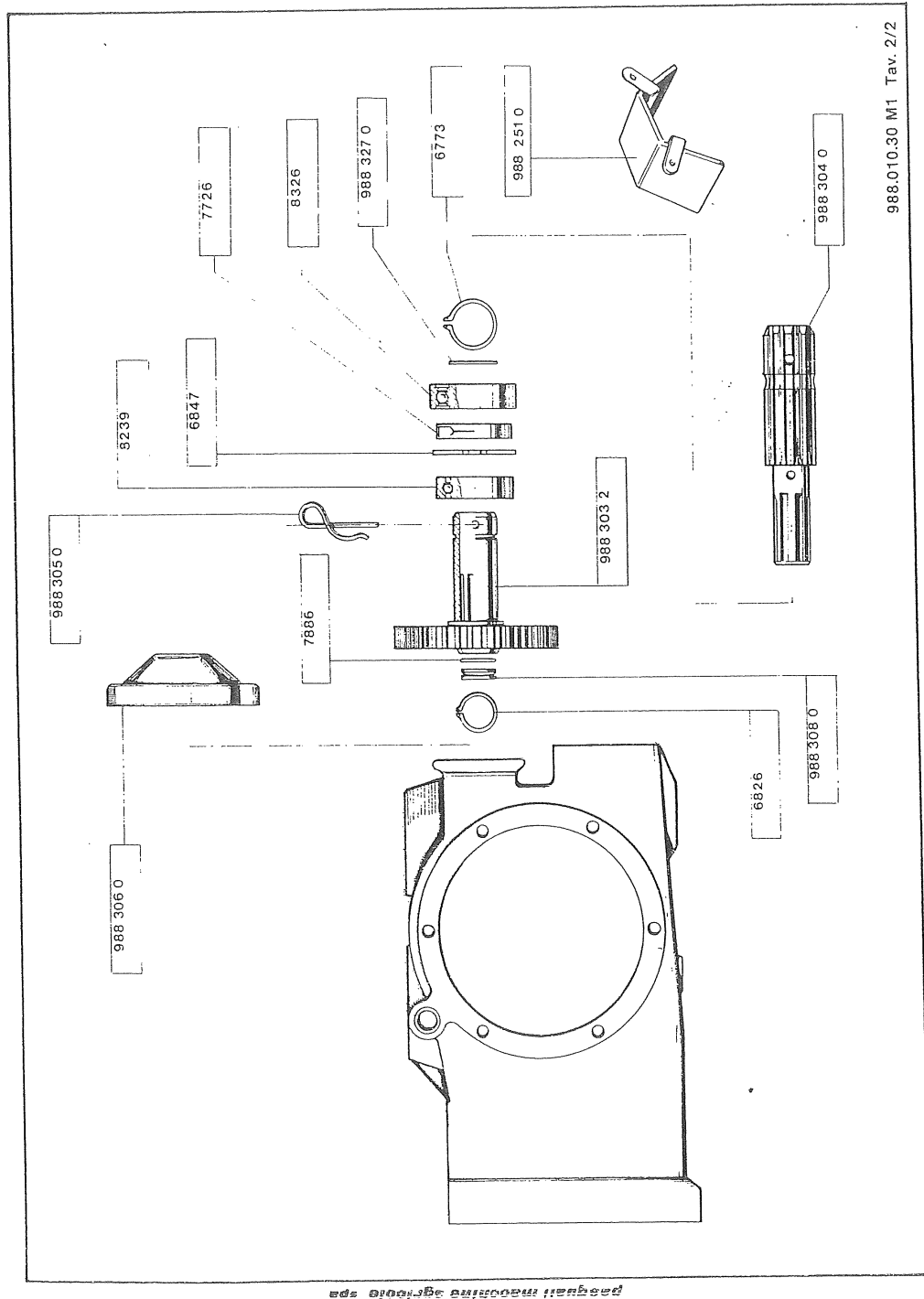




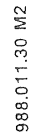


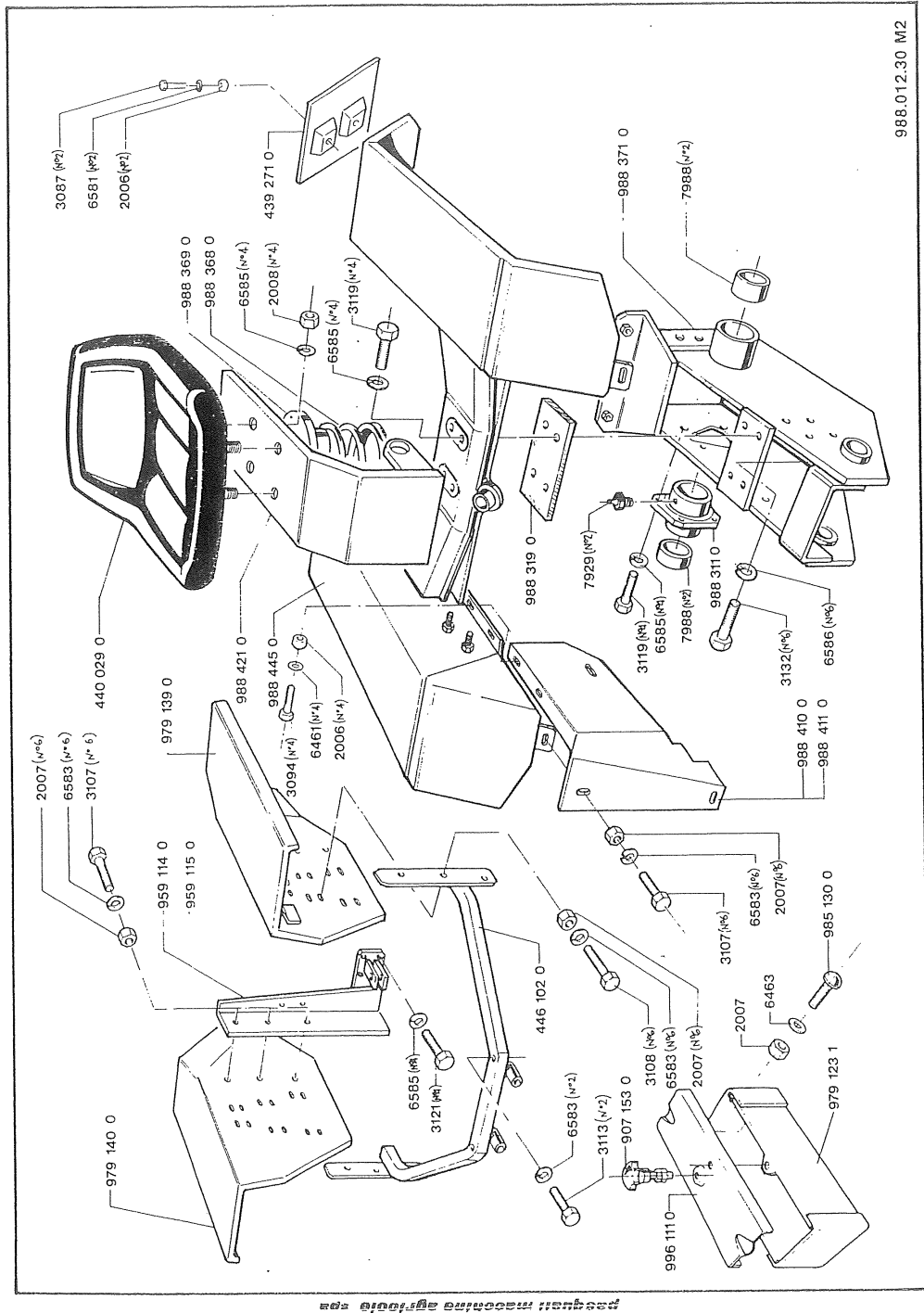


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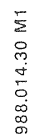


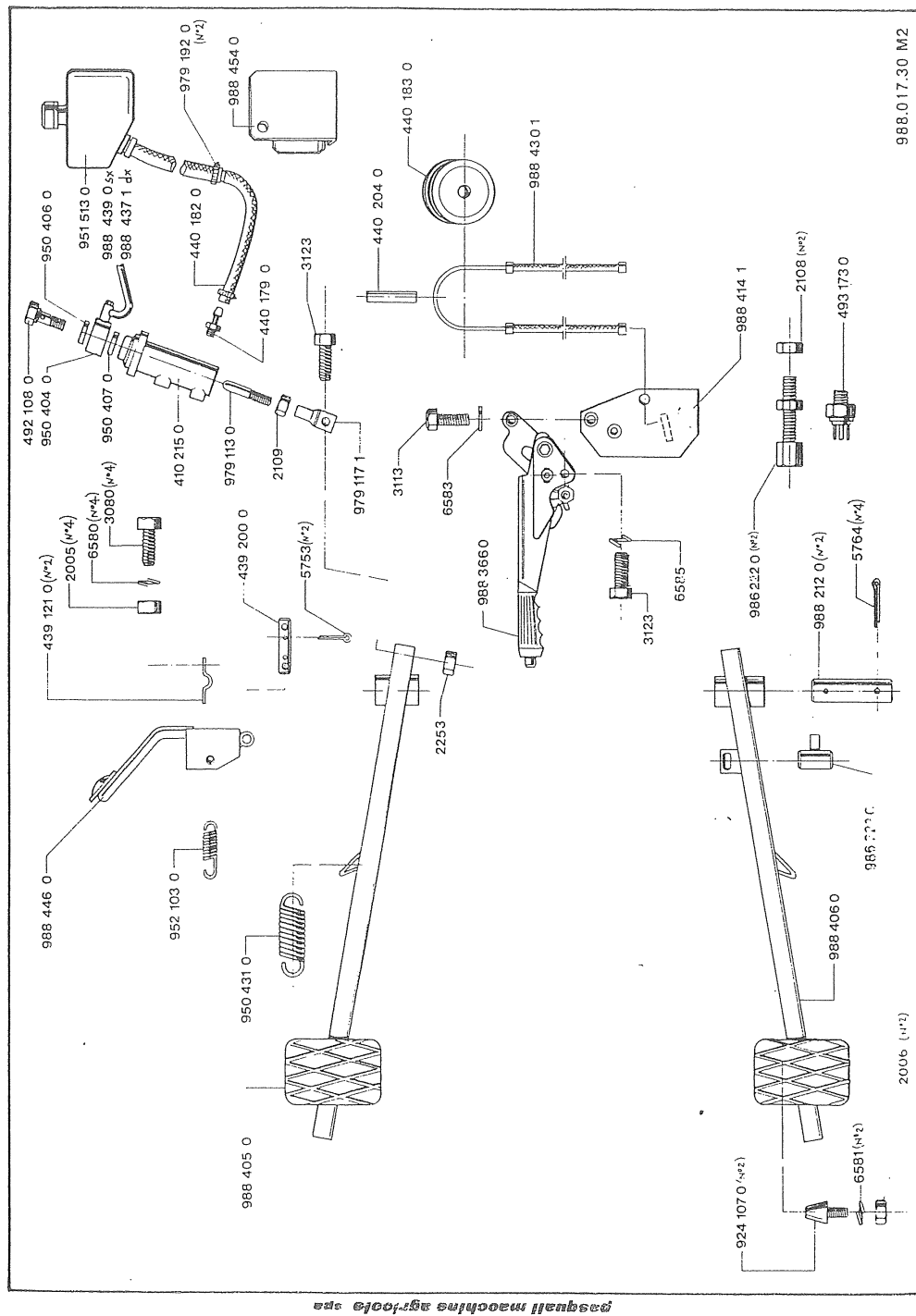
988.010.30 M1 Tav. 2/2





988.012.30 M2





988.017.30 M2

