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334

OPERATION MANUAL

4WD DIESEL TRACTOR

TYTAN International

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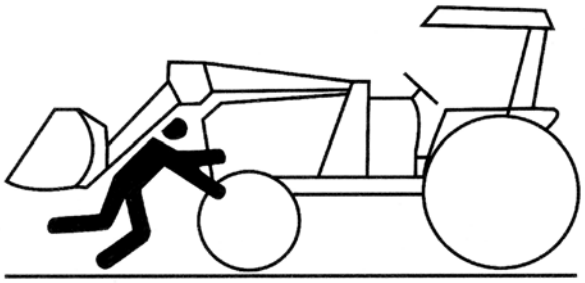
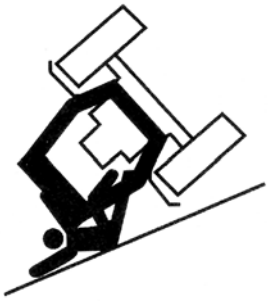
Warning!

Please heed the warnings below for your safety!

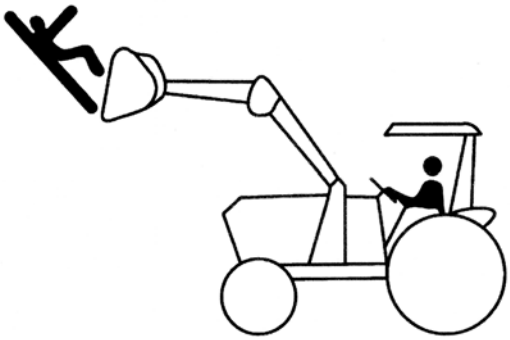


Leave the front loader in the ‘down’ position when getting off the tractor. Do not crawl under the front loader when it is in the ‘up’ position

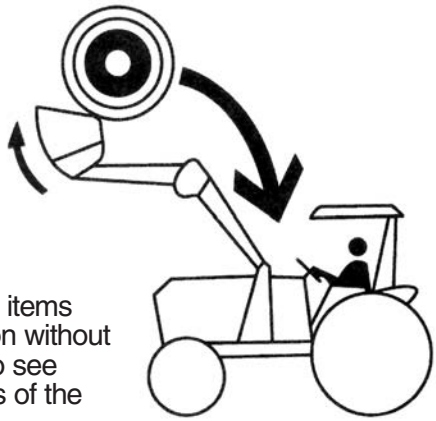
CAUTION!



Use ROPS and seatbelt at all times!



Do not ride in or on a front loader.



Do not carry items in ‘up’ position without being able to see the levelness of the bucket.

Do not travel with bucket in ‘up’ position, if possible. You may hit live wires.

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Congratulations!

You have just purchased a 4WD Diesel Tractor that will perform a wide variety of jobs for you. Read this Operation Manual closely and call your dealer for further clarifications if needed.

The basic 334 tractor chassis has been in production since 1958 with the goal in mind to be simple, strong, and affordable. It has undergone many improvements and because of its proven performance doing the hardest of jobs such as tilling and brush cutting with ease, it is now knows as the "Brute Strong" tractor in its class. The 334 tractor can be easily serviced in the field and will be very frugal on fuel.

Tractors function much better when the operator has a good understanding of its operational functions, limitations and maintenance needs. The owner is required to service this equipment routinely. Good care is the key to having a long lasting and smooth running tractor.

The 334 Tractor

Figure 1—

Battery Charging—When starting the tractor, the tractor will charge in the 'plus' (+). When running and fully charged, it will run at zero. If there is a short in the wiring or failure in the alternator etc., the charging will be negative or left of the zero.

Hour meter—Your tractor traditionally may have 8 to 14 hours on it from factory and dealership testing. The dealership is required to perform certain dealer prep tests that run the hour meter. Do not leave your key on after using the tractor or you will also run the hour meter.

Water Temperature—should run about 80 degrees. When running in a dry grass or hay field with lots of dust or dirt, your temperature may rise because of a build up on the radiator screen. Keep it clean of debris and dirt.

An Optional Engine Block Heater—is available with Napa #605-1466

Oil Pressure—Your oil pressure should run between .4 and .6 in normal operation. It is not uncommon for this to take a while to get functioning after starting the engine. All of the above gauges are mechanical in function and very easy and inexpensive to replace. That is the theme of this tractor.

Emergency flashers—are for safety use on the road.

Running lights—are to be on when running the tractor at night.

Rear Flood Light—is halogen and should be adjusted to focus on the tasks you are performing. Make sure it is tightened and doesn't loosen and shake.

Horn—is great to notify another party of your presence

Head lights—are great to find your way with and must be used at night.

Turn Signals—let others know your intentions and must be used on the road.

Safety Switch—This is an on-off switch that must be in 'on' position in order to make the key functional. Likewise with this key off it also saves you from running the battery down if the key is left on. The procedure for shutting down the tractor should always be turn the key off first and then turn the safety switch to the 'off' position.

Ignition Key switch—Make every effort to turn this to the 'off' position when shutting the tractor down. This key is spring load. Turned it to the right when starting the tractor. When

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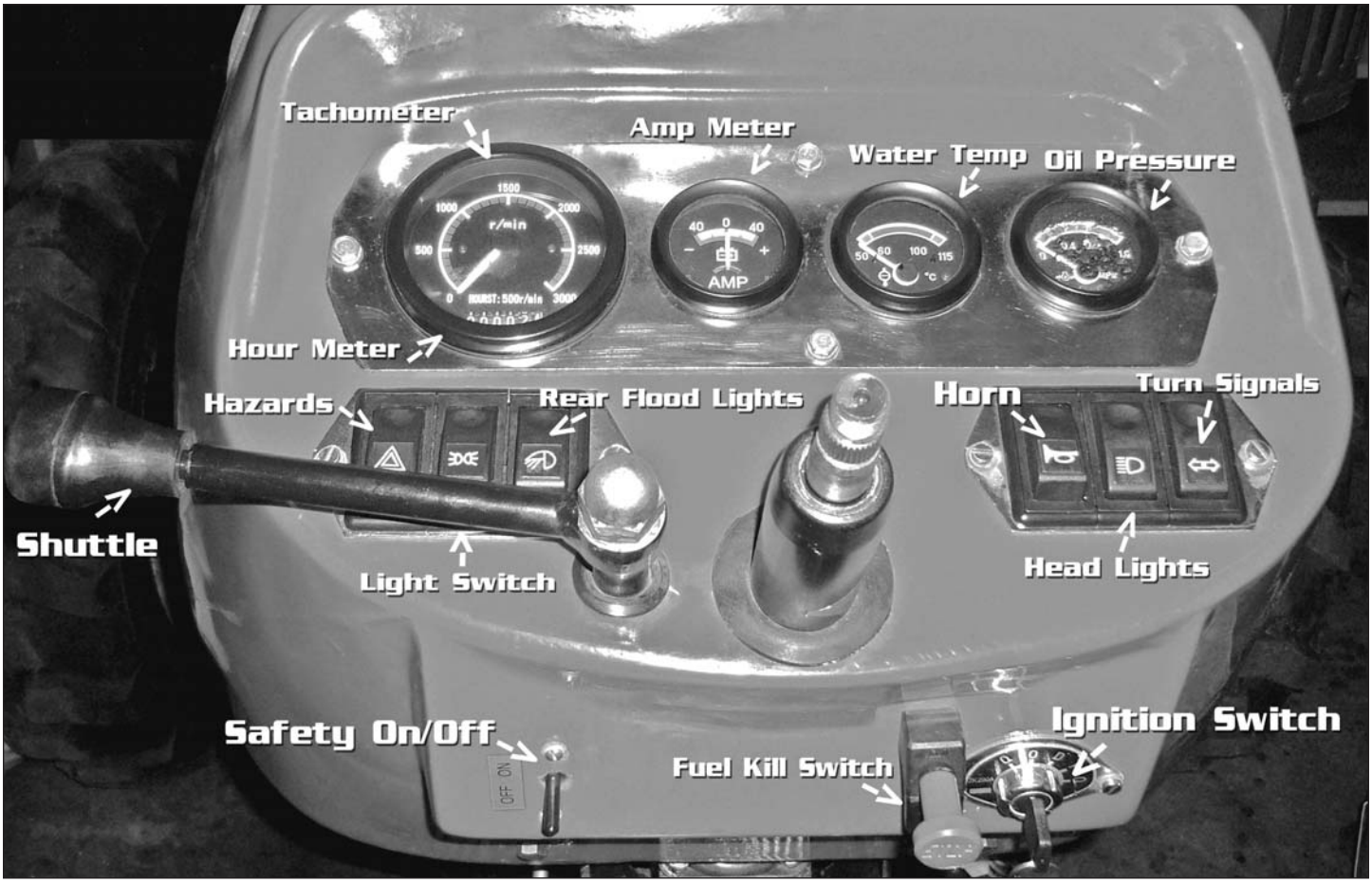

FIGURE 1: The basic layout of the main control panel.

released after starting it will spring back to the "run" position while the tractor is running.

***Shut off*—**Below the safety switch (see Fig. 1) and also below the fiberglass lies the red knob that is a 'pull type' kill switch. It is to be pulled out to kill the motor. Make sure it moves freely back in when you release it.

Figure 2—

***Shuttle Lever*—**Once you have selected the working gear range that you prefer from the (on floor) gear shift lever and H/L lever, you then can move the shuttle lever (on the left side of the steering column) to forward, neutral or back positions for tractor movement. This is a steering column type shuttle shifter. Remember, that you cannot move the gears when shuttle is engaged. Shuttle should be in neutral when selecting gears. This is a mechanical shuttle and requires using the clutch to operate.

***Two Stage clutch*—**this means when you depress the clutch to the half way mark that will stop the ground speed of your tractor. Pressing it further to the floor will stop the PTO. You must depress the clutch pedal all the way to the floor in order to have smooth engagement of the PTO lever. If there is any noise or roughness in that engagement with the clutch all the way to the floor, then that means there may need to be a clutch adjustment made.

***Brakes*—**there are twin brake pedals that have a flip-over pin connecting them. They can be depressed individually for steering but it isn't recommended. To the left of the brake pedals is a flip-up locking lever to use when parking the tractor. Tractor brakes are not designed for heavy road use and especially not for going down long hills. They will wear fast if used in this manner.

***Foot and Hand throttles*—**The foot throttle is handy to use at various times however, in the field, using the hand throttle gives you a constant RPM while in motion. The hand throttle has an adjustment nut that can be tightened or loosened as needed.

***Gear shift lever*—**the gear pattern is seen just to the left of the shifting lever. The key here is to fully engage into your gears and to fully disengage. Otherwise if those gears are not moved to the proper positions, it is possible to jam them. The gears start out rather stiff when new but get much smoother after 75 hours.

***2WD-4WD lever*—**This lever is one you don't want to move accidentally when in operation. It is best to push the lever out towards the fender just slightly before attempting to slide it into position. Forward is 2WD and this is where you should keep your tractor when you are off the farm land acreage. Pull the lever back for 4WD.

***Hydraulic and transmission oil fill*—**This has a dip stick and that level should be ½" below the housing that the top plate attaches to. We use Mobil #424, JD 303 or AW-46 oil for this function. Sometimes it is labeled 'tractor hydraulic oil'.

High & Low lever—this lever has low gear in the 'down' position, neutral in the center and high in the 'up' position. The normal user has no need to use high gear. The first gear low is great for tilling and fourth low is great for bush hogging a field of grass.

***Locking Differential*—**this is an optional lever sold only as part of a package purchase. This operates similar to positraction.

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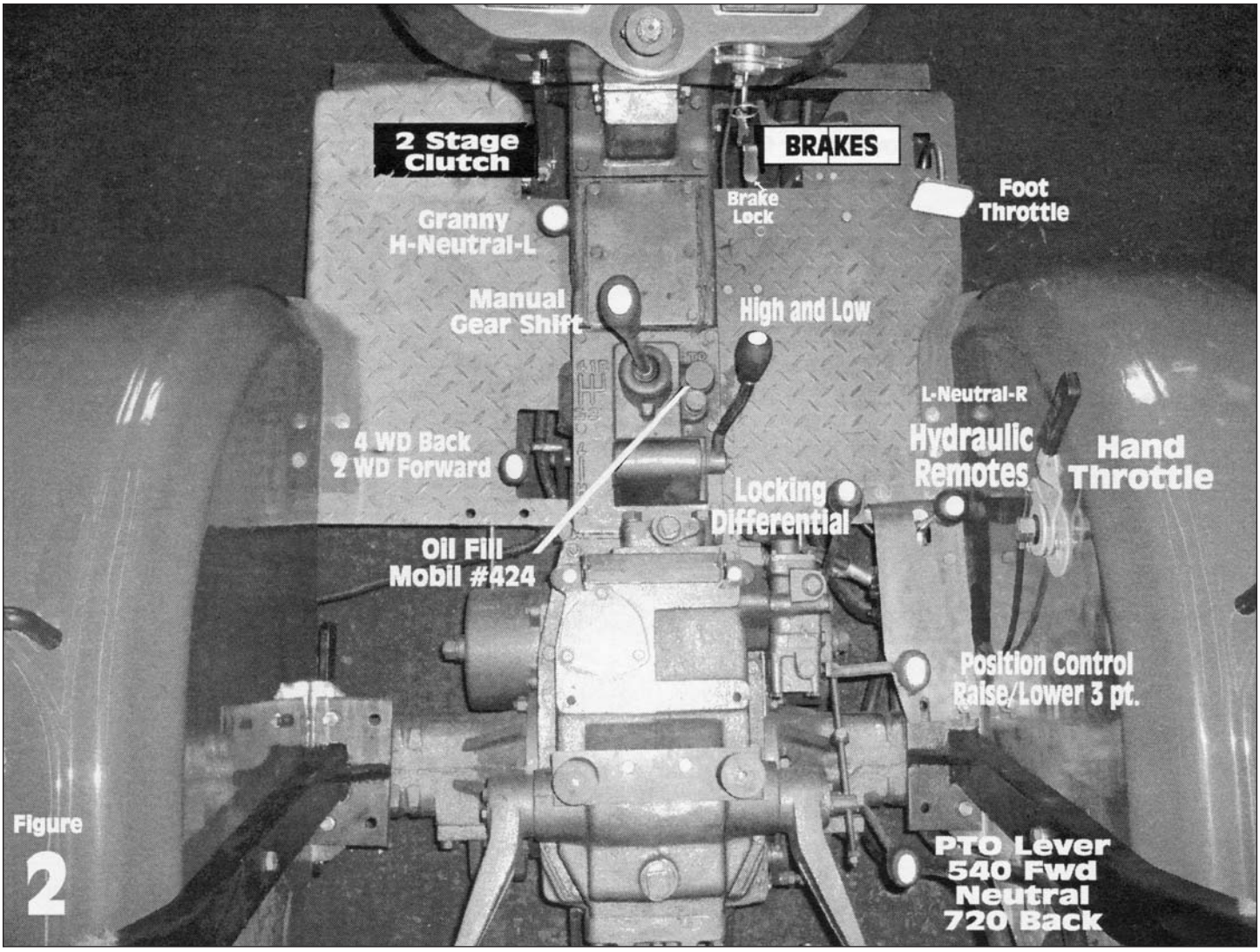

FIGURE 2:

It locks both rear wheels for getting out of the toughest of conditions. It operates in addition to 4WD. It must be slipped into gear only when moving very slowly at low RPM and double clutching. Once in, it will stay in automatically without being held in until you are free of the stuck position.

Position Control—is the raise-and-lower lever for your three-point implements. This lowers your implements by moving lever forward from the neutral position and raises them when moving the lever toward the back position.

PTO Engagement Lever—is to be left in the center position at all times unless you are planning use with a PTO run implement. Moving the lever forward puts it in 540 RPM and to the rear past neutral is the 720 RPM speed setting.

Tires—the standard tires are a 9.50 X 24 in the rear and 16 X 6.00 in the front. Optional are the Dual Trax brand 12.9 X 18 rears and 16 X 7.50 fronts. These meet both R1 and R4 standards (ag and industrial design).

Figure 3—

Tire Pressures—Suggested 20 lbs rear and 25 lbs front. Pressures can be adjusted up by 10% depending on loads put on the tractor.

Lower Link Arms—left and right are the points at which you attach the ears of your three-point implement. The ears on the implements used on this equipment are Category I in size. Likewise, so are the holes in these lower links.

Top Link—this is the top adjustable arm that attaches to the top or third attaching position of your three-point implements. The top link is responsible for properly adjusting most implements on how they are to angle or face. Make sure once your adjustments are made that you lock them with the tightening nut.

Lower link lift arms—these help make sure your implement is evenly leveled or in some cases you may want the reverse. You may want a road blade to tilt and thus is of a turn-buckle type design. Make sure once you have your desired adjustment, that you lock that positioning by tightening the nut at the top.

PTO—is the Power Take Off which attaches to your implements via a shaft. It is of a standard 6 spline type that is universal. Implement shafts are made to lock onto this PTO shaft from the tractor. Have the dealer show you how this lock works on the various implements you use. Never operate this PTO when you are off the tractor. Standard PTO speed is 540 RPM or revolutions per minute. Over 90% of the implements you

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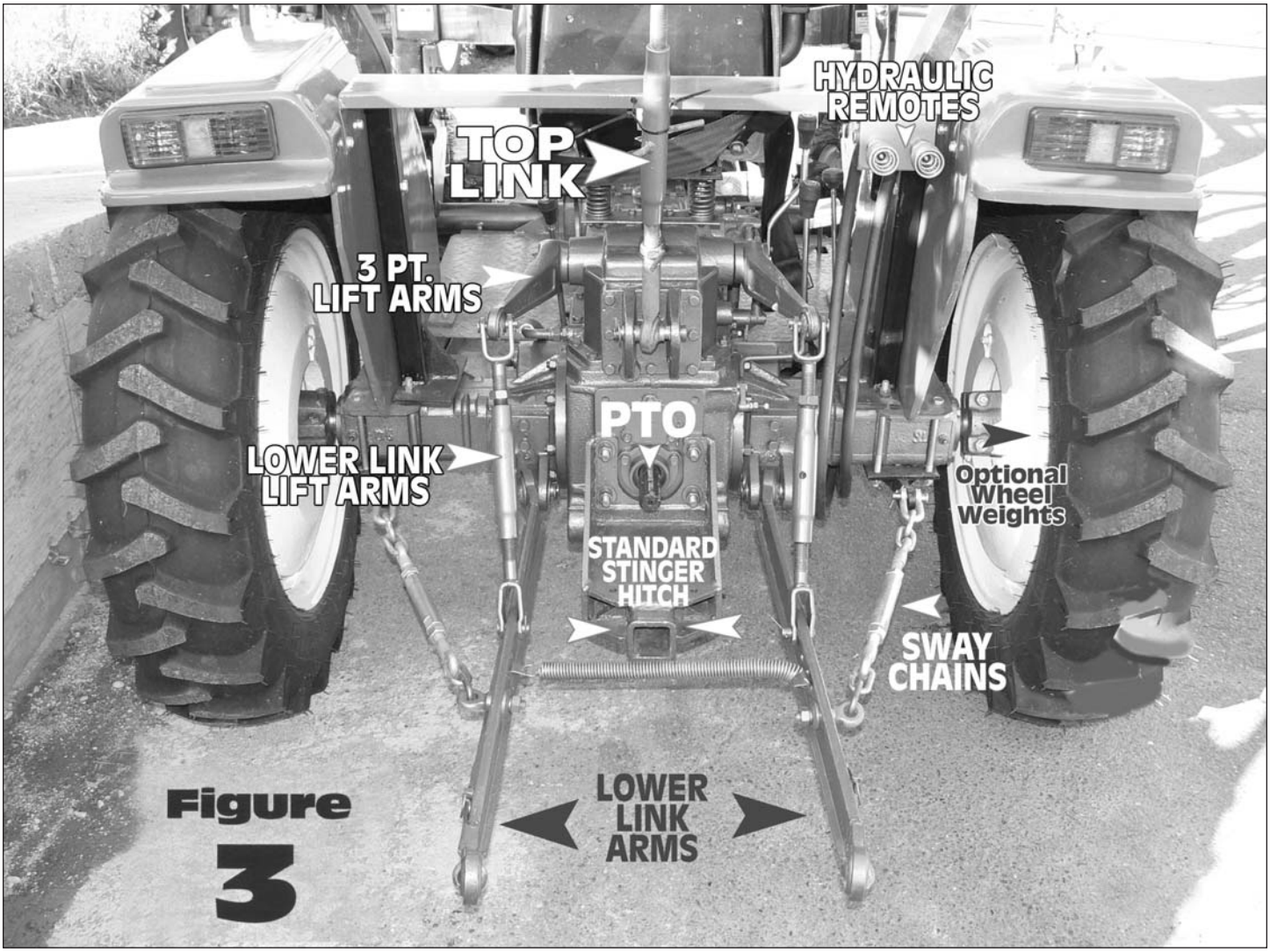

FIGURE 3:

will use are to be used at 540 speed ONLY. Do not confuse this selection.

***Hydraulic Remotes*—**These are controlled by a lever that will push hydraulic fluid to the port you want to use. When using a log splitter for example, one is the pressure line out and other is the return line in. The two ports may switch function depending on where you position the remotes lever. The lever is configured to operate the ports as follows: Left-Neutral-Reverse.

***Stinger hitch*—**This is for towing and many other possible uses. The stinger hitch is the female receptacle that is exactly the same as on the USA built pickup trucks. It takes the standard male receiver with a ball.

***Wheel weights*—**The wheel weights are optional and come in sets. Any tractor can have one or two sets added to the rear wheels. The weights are good to counterbalance a front loader, as well as assuring better traction.

Figure 4—

***Fuel filter*—**The 390 engine that is equipped with the #334 tractor takes the Tytan CX0708 fuel filter. It is an easy spin-on type. It also uses a Napa #3195 fuel filter.

***Oil filter*—**The Tytan #334 takes a Tytan JX0811A spin-on oil filter or Napa #1553

***Primer pump*—**this is a device to prime your fuel lines if you run your tractor out of fuel. It is screwed down and can be unscrewed in which case it pops up from being spring loaded. By pressing it up and down you can slowly feel the pressure of the fuel coming back into prime. When done, press it down hard and screw it back down. You must get this done or you will have an air leak and keep the tractor from operating correctly.

***Fuel pump*—**this is designed very similar to the Bosch type pump and controls your fuel pumping through your system. If you get too much air in your system, you may be required to open the small hex nut above the primer pump slightly. That will allow air to first be pumped out with the primer pump. When fuel starts coming out without air then tighten the hex nut. It should be tightened lightly

***Optional Pre-Heater*—**the pre heater is designed to heat the air before going into the engine, so that firing in cold weather is easier. This element can be easily installed by your dealer.

***Oil dip stick*—**is provided to check your engine oil. Close attention should be paid to this at all times. We suggest Delo® 400

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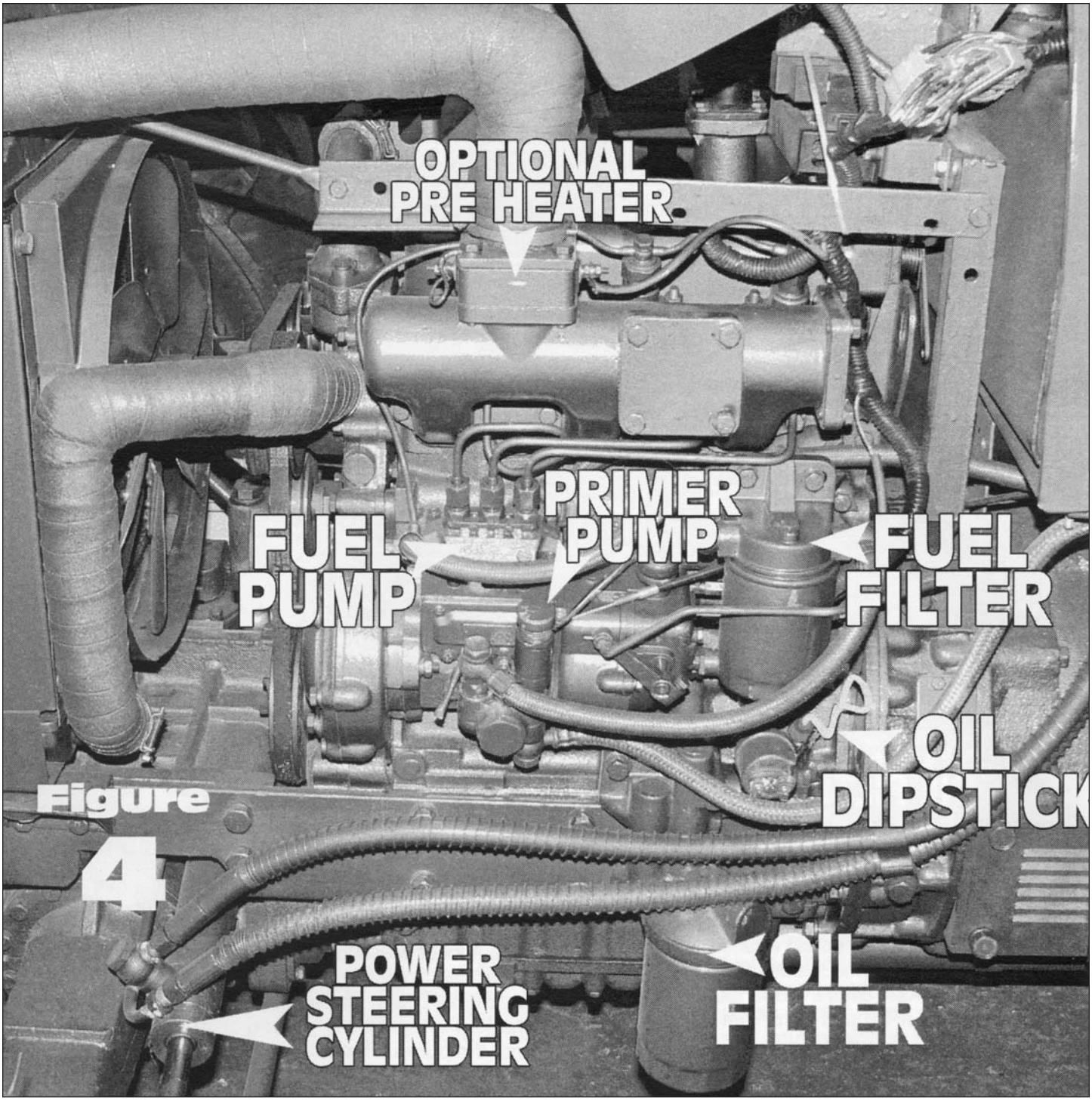

FIGURE 4:

Multigrade Heavy Duty Motor Oil 15W-40, for great diesel engine performance

Figure 5—

The starter is what turns the engine over to start. This item should never be power washed. Connections to the battery and starter must always be very clean for good contact. The #334 uses a Model QD138 starter. In cold regions, it is advisable to upgrade battery cables to a 1/0 size.

Alternator is a Model JF151 and is the item that generates the electricity.

Oil Breather is what the name says. It vents any excess heat or possible over-filled oil from the engine

Solenoid—Is the top portion of a starter that controls the flow of electricity. Do not let a power washer hit this.

Power Steering Pump—this is the item that independently pumps the exact supply needed to the power steering distributor at the base of the steering wheel shaft. It gets its own supply located on top of the engine area in a brass colored tank.

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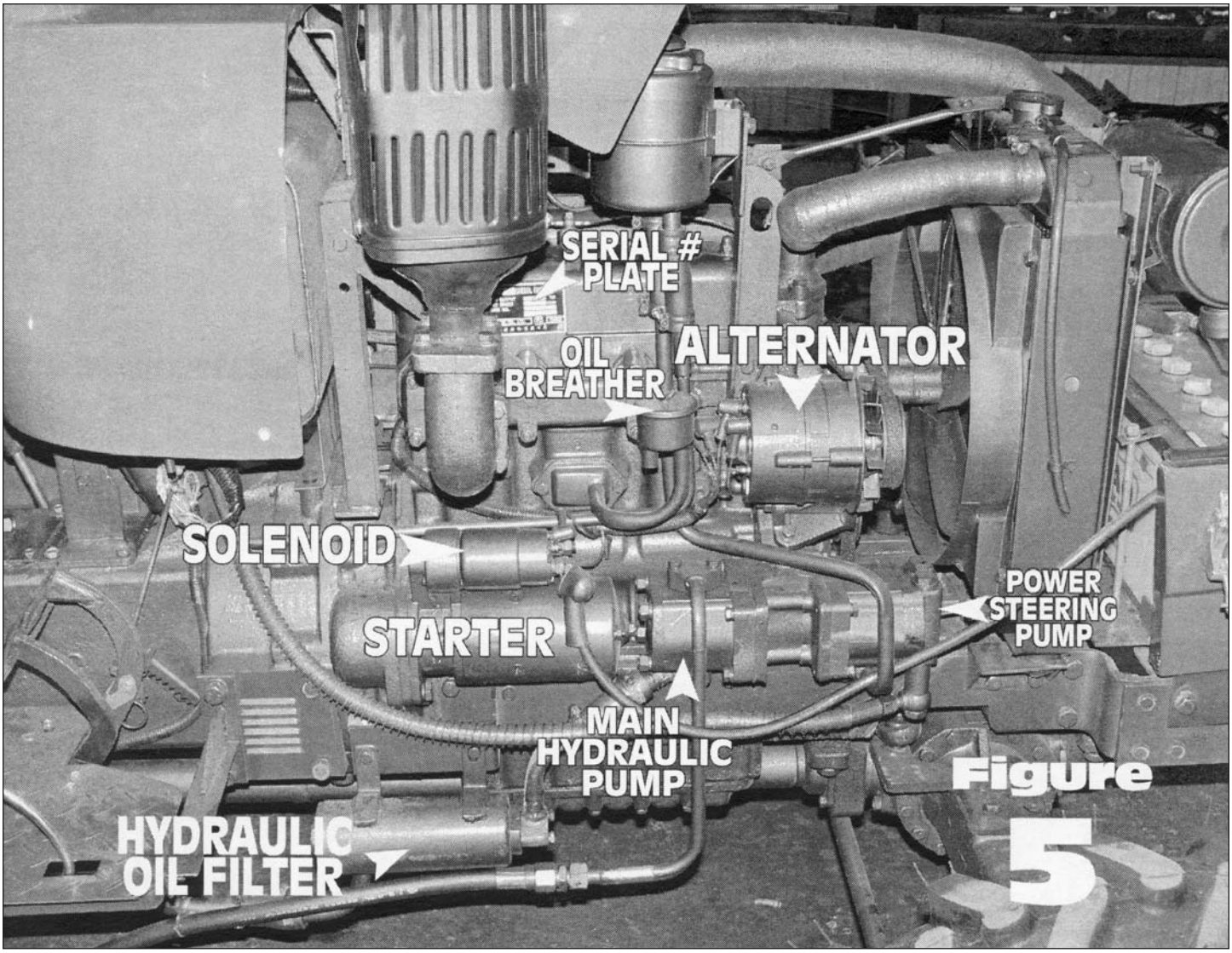

FIGURE 5:

***Main Hydraulic pump*—**This is the pump that supplies the front loader, three-point implements, and remotes. This pump handles quite a lot of pressure from the oil and actually this is far more than anything normally found in a domestic vehicle (car, truck, etc.). You cannot disconnect any hoses connected to the pump and related points on implements and the engine without turning off the engine and knowing exactly which leads to reconnect before restarting the engine. Disconnecting the pump hoses while the engine is running will cause the pump to break. Failing to reconnect the proper hoses when disconnecting the front loader or other hydraulic implements will also break the pump. See your dealer for proper instruction on disconnecting any hydraulic hoses since doing this can be very dangerous.

***Hydraulic Oil filter*—**this is a metal enclosed filter that is extremely easy to clean. The interior filter is metal and should be cleaned every 200–300 hours of use, except when new. When new, it will be cleaned during the major service at 75 hours.

Figure 6—

12V Battery—is large, over-sized strong battery for good reason. Diesel engines are compression run and turning one over is much harder than a gas engine. This heavy-duty engine is a powerful advantage in your tractor. Keep the battery terminals clean with special cleaner such as that carried by Napa. The size is 8" tall x 6.5" wide x 15.75" long. The key to long battery life is to keep a charger on it when it's new. Make sure your system is showing a charge when running after start up. Use the slowest charge selection only (trickle charge) and also ensure you have an 'automatic' shutoff feature set to 'on'. Batteries must be fully charged. They must also be fully filled with battery acid to the marked levels. If the level drops at any point during your usage to below the interior plates, then chances are high your battery life is greatly decreased.

Air Cleaner needs checking every 75 hours unless you are in very adverse conditions. It should be replaced when it appears to have a build up of dust or dirt. Usually at 100 hours is a good time to change it under normal use.

Radiator should be about ½" below the base of the neck of where the cap attaches and above the interior housing. The front of the radiator is equipped with an additional protective screen that is connected with four small bolts. The screen should be checked daily when working in heavy grass or dusty, dirty conditions. An excessive buildup of dirt and debris will cause overheating. Make sure your radiator fluid

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is suited to your climate needs, especially for winter conditions.

Overflow hose—is located on top of the radiator and comes down the side of the radiator. It is not uncommon to see a small amount of water seeping from this when the engine is worked extremely hard, if you are on an incline, or when the engine is new. Keep your eye on the radiator level if you are seeing some overflow.

Water pump—This is an important item that is often over greased. When you pump grease into the openings on the water pump, make sure you quit when you feel the least resistance. Pumping the grease too hard will blow the seal easily. The water pump should be greased sparingly, about every 25–50 hours, depending on frequency of use.

FIGURE 6:

Oil fill level—This is the point for filling engine oil. We suggest using a 15–40 weight oil and use a total of 5.75 quarts.

Injectors—Injectors are what ignite the diesel. If they are plugged with dirty fuel, you could experience a rough-firing engine. Use of a 'diesel conditioner' in your fuel periodically, per the suggested mix, will help to maintain clean injectors and give you a clean burn. If it's a cold winter and your engine is having trouble firing, it may be the fuel is jelled up. In some winter areas using a diesel #1 is suggested. Otherwise use diesel #2. A smoking or missing cylinder is another symptom of a bad injector. Injectors can cleaned or replaced by a skilled mechanic. If problems continue, the lines to and from the injectors should also be checked for fuel leaks and to ensure that they are not plugged.

Power Steering Fluid—needs to be checked via the dip stick at the top of the tank. This takes power steering fluid only. If your steering becomes hard, then usually it's due to low power steering fluid. Another possibility could be that the lines going to and from the power steering tank are loose or plugged up. Make sure they have no leaks and are not plugged.

Fuse box—The fuse box is a standard type such as those used in domestic vehicles (cars, trucks, etc.). Use only the size of fuse that is already in each slot. Increasing the fuse size may void the warranty.

Fuel tank—is approximately 8 gallons in capacity. You should not allow your tractor to run out of diesel. This is the most fuel-efficient tractor on the market for its size. Clean diesel is crucial for a tractor engine! Only use fresh diesel.

Voltage regulator is the small box that distributes the electrical current at exactly the voltage required by the electrical components.

Hood lift cylinder—is a hydraulic cylinder used to aid in lifting the hood for easy engine access. Hydraulic cylinders slow down some in cold weather, so be aware of that but realize it's not serious. The cylinders require no oiling except occasionally to the metal shaft to protect it and to prevent rust. A very light LPS #1 for example will do the trick.

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Important Warnings

* Implements should be in down when tractor is not in operation.
* Do not drive the tractor or lift your implements when in or near dangerously sloped areas. Do not use the low gears of your transmission as a braking mechanism when traveling down hill with great momentum.
* Keep seat belts fastened and do not modify your tractor in any way.
* Do not pressure wash near your engine's starter or the electrical system.
* Perform routine maintenance as recommended. Make sure all settings and fluid levels are correct before using the tractor.
* Do not loan this tractor or allow it to be used in a commercial setting.Do not allow inexperienced drivers to use or be around this equipment.
* Keep the PTO in the "off" position when you are not using the tractor with a PTO implement attached. Never get off the tractor with the PTO engaged.
* Use primarily in low gear ranges for working your implements
* Do not have the 4WD engaged when using on dry pavement, etc.
* Do not force levers. Inquire about proper engagement.
* Learn carefully about the proper setup of each implement you own.
* Do not jerk stumps or use your tractor in dangerous ways that it was not designed for.
* If fuses blow, then call your local service person to trace problem immediately. Fuses blow to tell you there is a greater problem that needs repair.
* Full suspension of the tractor during backhoe use requires an additional 'subframe' added to the tractor.
* Do not grind on the starter continuously if the tractor will not start. Get help from your dealer to find out why the engine is not starting.
* When shutting off your tractor, do not leave the ignition key in the 'on' position or the safety on/off switch in the 'on' position.
* Get further instruction from your dealer if the operation, maintenance and use of the tractor are unclear.
* Park your tractor under cover always. Warm your tractor up with a heater before starting when tractor is in freezing conditions.
* Wear protective eye wear in conditions that are possibly dangerous to your eyes. This can be chipping, mowing, tilling, etc.
* Do not drink alcohol while operating your tractor.

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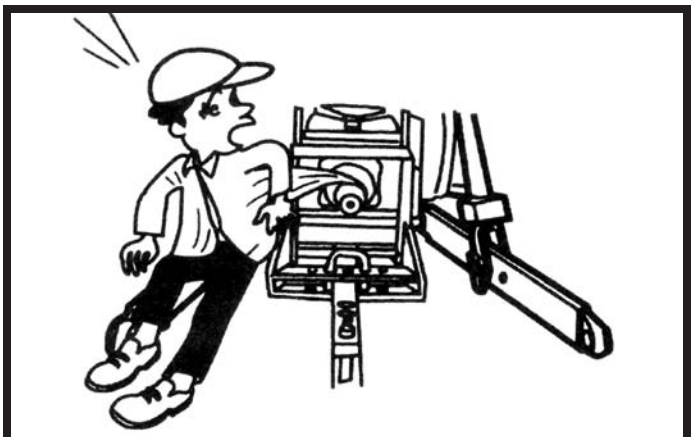
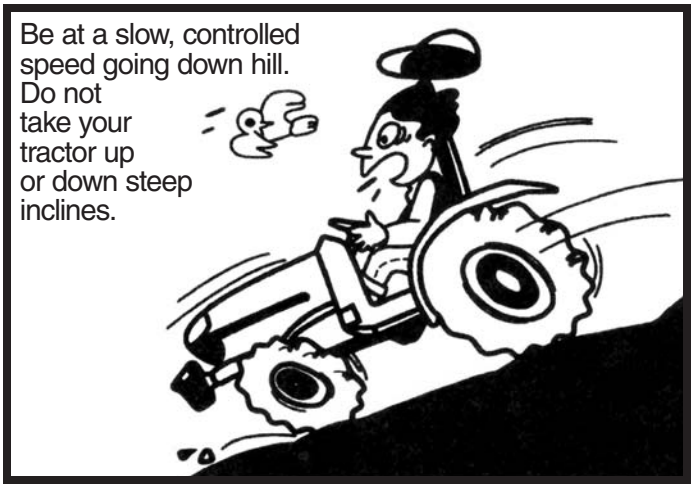


Disengage PTO before getting off tractor.

Don’t open radiator cap when engine is warm.

Do not allow anyone to ride on, or be near a moving PTO implement.

Don’t take extra riders.



Be at a slow, controlled speed going down hill. Do not take your tractor up or down steep inclines.

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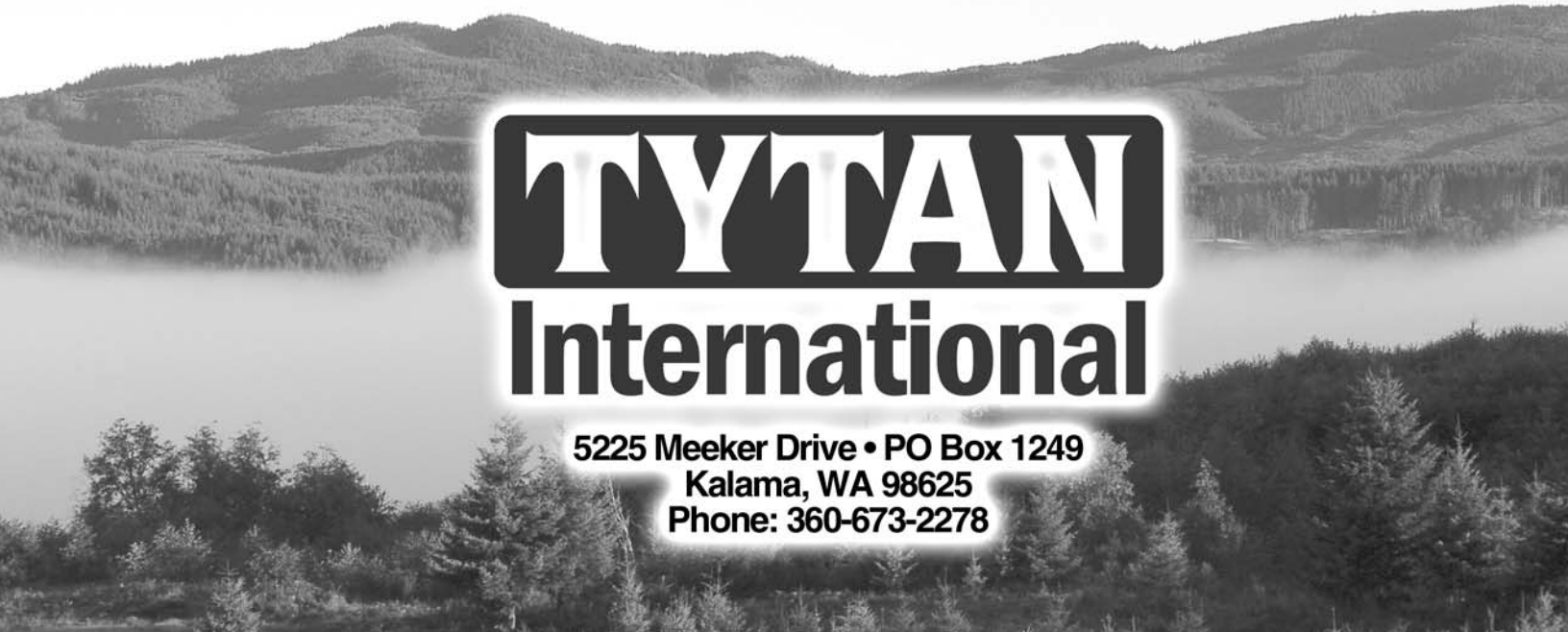

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