



TMX
OWNER'S MANUAL



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SAFETY

ATTENTION!!! READ THIS SECTION FIRST.

This portion of the manual is concerned with safety considerations pertaining to towing, driving, operation and maintenance of the TMX (Towable Mini Excavator).

In this manual, the TMX Excavator is sometimes referred to as “the machine” or as “TMX.” All these terms refer to the TMX Towable Mini Excavator.

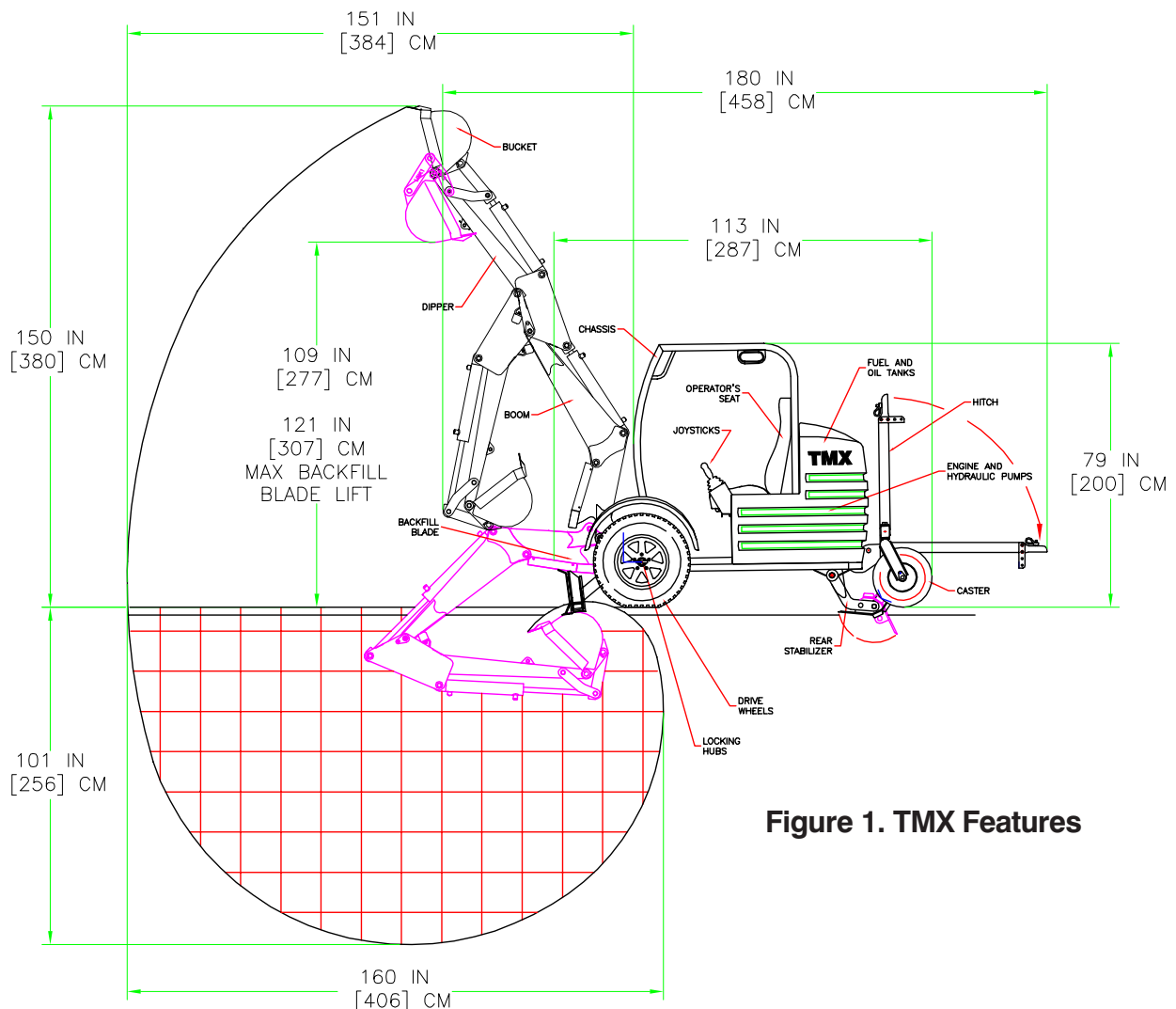


Figure 1. TMX Features

DO NOT operate the TMX Excavator without first becoming familiar with the machine and its controls (see figure 1 for features). The Excavator is intended for use by persons who are familiar with the operation of powered equipment and digging with machines. Read the “Operation & Controls” section of this manual and become familiar with the operating controls of the machine before attempting to operate the machine.

SAFETY

SIGNAL WORDS AND SYMBOLS



This is the safety - alert symbol. When you see this symbol on your TMX or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices. Your safety and the safety of others depends significantly upon your knowledge and understanding of all correct operating practices and procedures of this machine.

Signal words:

A signal word - **DANGER**, **WARNING** or **CAUTION** is used with the safety - alert symbol **DANGER** identifies the most serious hazards.



Safety signs with the signal word "**DANGER**" denotes that an extremely hazardous situation exists on or near the machine that could result in high probability of death or irreparable injury if proper precautions are not taken.



Safety signs with the signal word "**WARNING**" denotes that a hazard exists on or near the machine that can result in injury or death if proper precautions are not taken.



Safety signs with the signal word "**CAUTION**" is a reminder of safety practices on or near the machine that could result in personal injury if proper precautions are not taken.

LEARN MACHINE SAFETY

Carefully read this manual. Learn how to operate the TMX and how to use the controls properly.

Do not let anyone operate this machine without complete safety and operating instructions.

Unauthorized modifications to the TMX may impair the function and/or safety and affect machine life.

FOLLOW SAFETY INSTRUCTIONS



Carefully read this operator's manual. Learn how to safely operate the machine.

Keep your TMX in proper working condition.

Follow recommended maintenance and repair procedures.

OBSERVE SAFETY SIGNS

Carefully read all safety messages in this manual and on the TMX safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs.

Replacement safety labels are available at NO CHARGE. Contact us at www.iequipt.com

SAFETY Continued

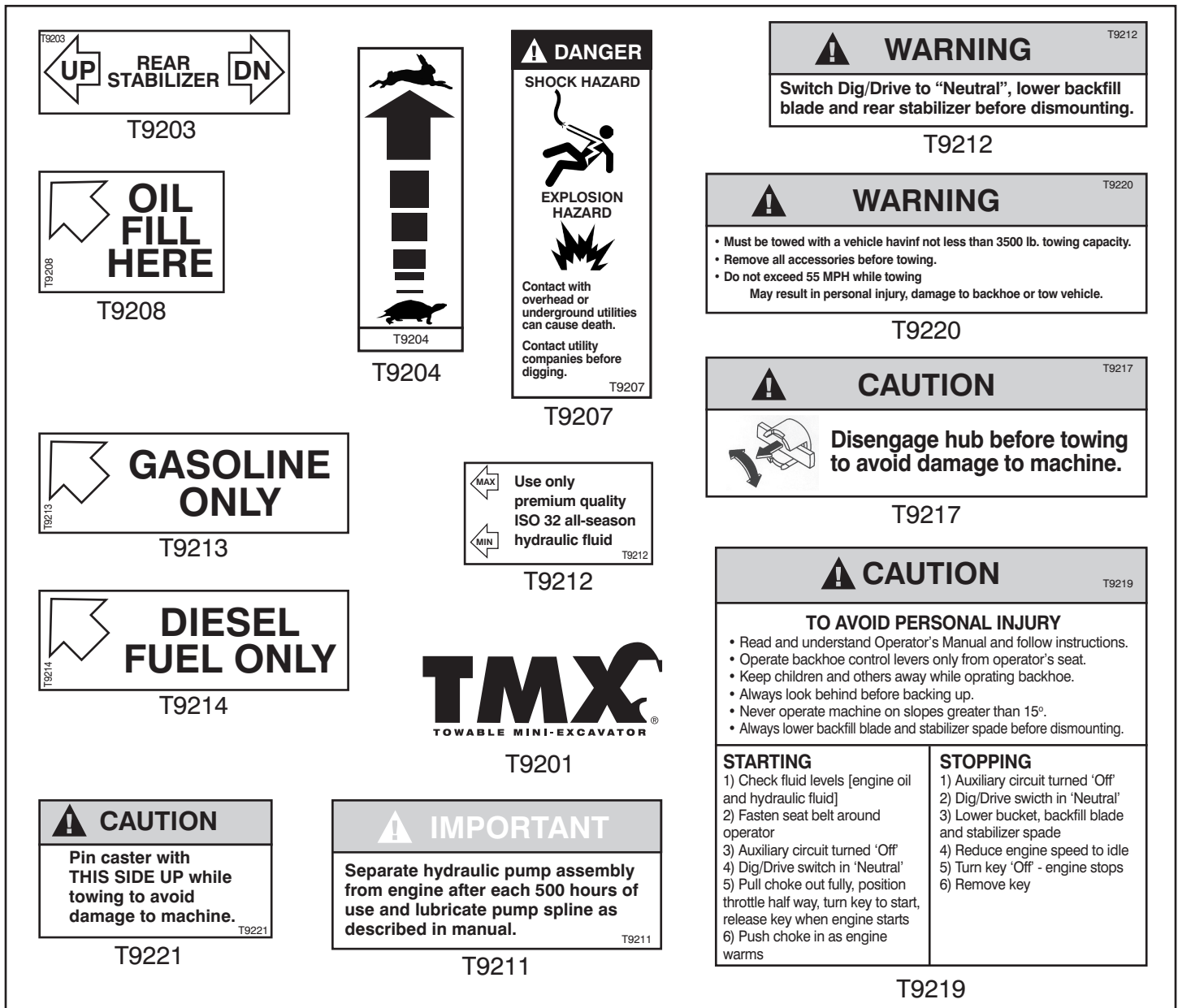


Figure 1. TMX Decals

WEAR PROTECTIVE CLOTHING

- Wear close fitting clothing and safety equipment appropriate to the job.
- Wear a suitable hearing protective device such as earmuffs or earplugs to protect against

objectionable or uncomfortable loud noises. Prolonged exposure to loud noise can cause impairment or loss of hearing.

- A hard hat is required when overhead hazard exists.

SAFETY Continued

PROTECT CHILDREN

- Keep children and others away when you operate machine.
- **BEFORE YOU BACK UP:** Look behind the TMX for children.
- **DO NOT** let children operate the TMX.
- **DO NOT** let children ride on the TMX.

AVOID TIPPING

DO NOT OPERATE WHERE MACHINE COULD SLIP OR TIP. Stay alert for holes, rocks, and roots in the terrain and other hidden hazards. Keep a safe distance from drop-offs and un-shored excavation.

Never operate the TMX on an incline of more than 15 degrees.

Slow down before making turns.

Driving backward out of a ditch or mired condition or up a steep slope could cause the TMX to tip over forward (backhoe end). Drive forward (backhoe first) in these situations.

Always travel up or down the slope--NEVER across slope.

Always keep the front (backhoe end) on the uphill side when ascending or descending inclines.

KEEP RIDERS OFF MACHINE

Only allow the operator on the TMX. Keep riders off all areas of the unit. Never use the backhoe to lift persons in or out of the trench.

USE SAFETY LIGHTS AND DEVICES

Stop, Turn and Tail Lights may be required by state or local authorities when towing the TMX on public roads.

Keep safety items in good condition. Replace missing or damaged items.

Use 4-way flasher whenever the TMX is operated near roadways or traffic areas.

PARK MACHINE SAFELY

Before working on the machine:

- Lower all components to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.

USE A SAFETY CHAIN

Safety chains will help control the TMX should it accidentally separate from the tow vehicle.

Using the appropriate adapter parts, attach the chain to the vehicle hitch or other specified anchor location. Use the chains so that they may "cradle" the hitch and prevent it from ground contact in the event of hitch failure. Provide only enough slack in the chain to permit turning.

The TMX safety chain may only be replaced with a chain that has a strength rating equal to or greater than the gross weight of the towed machine.

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

SAFETY Continued

HANDLE FUEL SAFELY - AVOID FIRES

Handle fuel with care; it is highly flammable and explosive. Do not refuel the machine while smoking, when near open flame or sparks or when the engine is hot.

Always stop engine. Allow engine to cool. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease and debris. Always clean up spilled fuel.

AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before unhooking hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard to search for leaks.

If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type of injury or gangrene or other infection may result.

UNDERSTAND CORRECT SERVICE

Illuminate your work area adequately and safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil. Catch draining fuel, oil, or other fluids in suitable containers. Do not use food or beverage containers that may mislead someone into drinking from them. Wipe up spills at once.

WORK IN A VENTILATED AREA

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 60 Fahrenheit (16 Celsius).

Most battery explosions are caused by incorrect "jump-starting" procedures. The first choice for safety is DO NOT "jump-start." If you must "jump-start" your equipment, use proper procedures. First, connect the positive (+) end of the cables to the "good" battery and the positive (+) post on the starter.

Next, connect the negative (-) end of the other cable to the negative (-) post of the "good" battery and then connect the other end of the cable to the frame of your equipment. Reverse this procedure when disconnecting.

SAFETY Continued

PREVENT ACIDIC BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing and cause blindness if splashed into eyes.

Avoid the hazard by:

1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoid breathing fumes when electrolyte is added.

PRACTICE SAFE MAINTENANCE

Understand service procedures before doing work. Keep area clean and dry.

Never lubricate or service machine while it is moving. Keep hands, feet and clothing from power-driven parts. Lower all equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil or debris.

To avoid damage to the TMX electrical system, disconnect battery ground cable (negative -) before making adjustments on electrical systems or welding on machine.

OPERATE MACHINE SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing or necklace when you work near machine, tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglements in moving parts.

Watch pinch points when operating machine.

Watch boom and dipper swing and use care to avoid injury to other workers.

When lowering backfill blade and stabilizer spade, be sure all workers are clear of operation.

SAFETY NOTES

Read and become familiar with these safety notes and the safety manual. They are repeated throughout Section B (Operation) of this manual.

-ALWAYS-

Be aware of all underground electrical cables, phone lines, sewage connections or other underground facilities in the digging area.

Call your utility or “diggers hotline” (listed in your telephone directory or online) before digging.

Operate the machine only in areas free of obstructions.

Mark off an area 20 feet beyond the machine's operating range. Keep all persons clear of this area.

SAFETY Continued

Use backfill blade and stabilizer spade to anchor machine before digging. The TMX Excavator is the most stable for digging when all wheels are off the ground.

Set and retract backfill blade and stabilizer spade.

Tilt backfill blade to level the machine when working on inclines.

Raise TMX on its backfill blade and stabilizer spade when parking on an incline.

Take note of job site conditions, such as soft or wet ground, overhead wires, obstructions, before operating the TMX.

Take extra precautions when digging on or near hillsides, close to ditches, or anywhere danger of tipping or sliding exists.

Avoid sudden starts and stops when operating.

Position backfill blade to approximately 6 inches above ground level when driving or maneuvering machine with digging arm.

Back down inclines (towing hitch first.)

Watch rear of machine while turning; turning axis is ahead of driver's seat.

When dismounting the TMX, relax the hydraulic system with bucket, backfill blade and stabilizer spade, rest on the ground and turn off the ignition key.

Perform operator maintenance checks and services daily before operating the TMX excavator.

NEVER operate the TMX Excavator from any location other than the driver's seat.

NEVER leave driver's seat while engine is running. (Except when loading and unloading from tow vehicle)

NEVER contact the backfill blade with the digging arm during digging operations.

NEVER use boom or bucket to transport persons or for any purpose other than digging.

NEVER operate the TMX on an incline of more than 15 degrees.

NEVER operate machine in poorly ventilated areas. Deadly CARBON MONOXIDE from the engine is no different than an automobile exhaust.

NEVER rely on hydraulic wheel motors as parking brakes. Lower the backfill blade and rear stabilizer to the ground.

NEVER operate the TMX without fastening the seatbelt.

MAINTENANCE

All maintenance other than daily operator maintenance should be performed by skilled technician.

DAILY OPERATION

1. Check hydraulic fluid level.
2. Check engine oil level.
3. Inspect chassis for cracks or broken welds, loose or missing pins, leaks, rubbing or chafed hoses. Correct as needed.
4. Check mechanisms for rocks, roots or other debris and remove.
5. Lubricate zerk (grease) fitting as shown on pages B2 and B3.
6. Fill fuel as required
7. Check drive tires inflation and condition (35 psi).

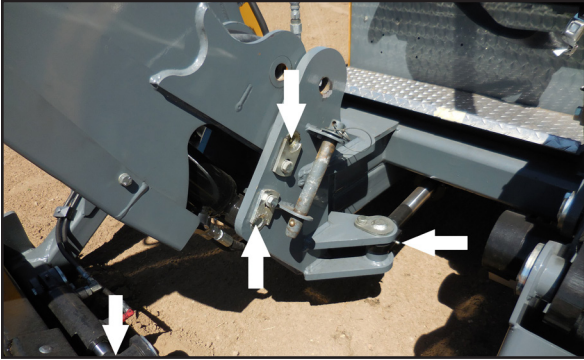
LUBRICATION & MAINTENANCE

Compatible Greases: Lidok EP #2 (found at industrial shops)
 Ronex MP (Exxon service stations)
 Shell Alvania (Shell service stations)
 Mobilux #2 (Mobil service stations)
 Super Lube M EP #2 (Conoco service stations)

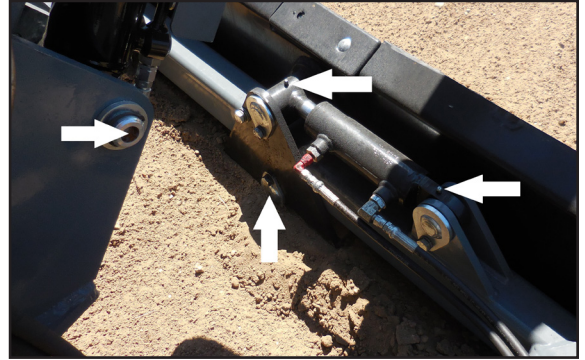
BREAK-IN		25 HOURS		100 HOURS		200 HOURS		500 HOURS OR ANNUALLY	
		PROCEDURE		COMMENTS					
X			Check wheel lug nuts and all hardware for proper tightness		Lug nuts - 90 ft. lbs.				
X			Change engine oil and filter at 5 hours		1.8 US quarts - 5W30 API SJ or higher				
	X		Service engine pre-cleaner element		Replace as needed				
	X		Check all bushings for wear						
		X	Replace engine air cleaner element		More often if needed				
		X	Change engine oil, 5W30 API SJ or higher		1.8 US quarts (synthetic oil preferred)				
		X	Change engine oil filter		Clean cooling areas				
		X	Remove engine cooling shroud						
			X	Check torque of wheel motor & hub bolts	75 ft. lbs.				
			X	Check torque of lug nuts	90 ft. lbs.				
			X	Check spark plug condition and gap	0.030" / 0.76mm .7-.8mm .028-.031				
			X	Change hydraulic system fluid and filter	ISO 32				
			X	Remove hydraulic pumps	Lubricate pump drive spline (Molybdenum grease)				
			X	Change oil in both disengaging hubs	6 fl. oz. 5W30 API SJ or higher				
			X	Change engine fuel filter					
			X	Service engine starter bendix	By Honda Engine Service Dealer				
			X	Disassemble and clean engine solenoid shift	By Honda Engine Service Dealer				

TMX BOOM LUBRICATION

BOOM SWING



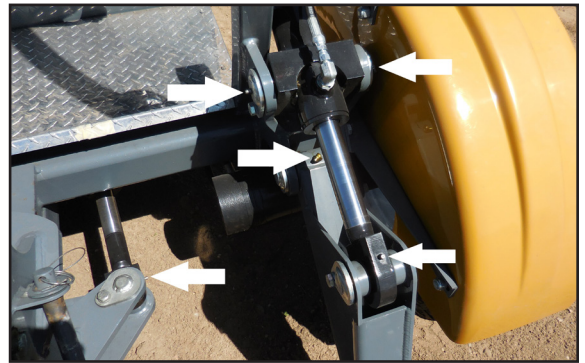
BLADE TILT & LOWER BOOM



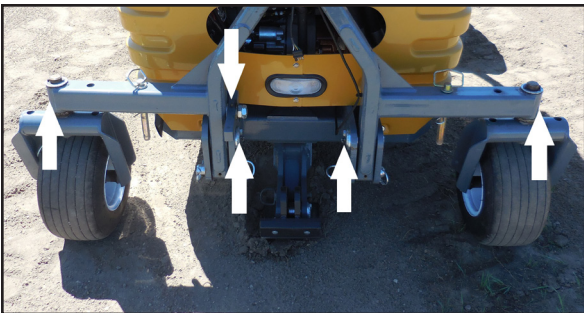
UPPER DIPPER



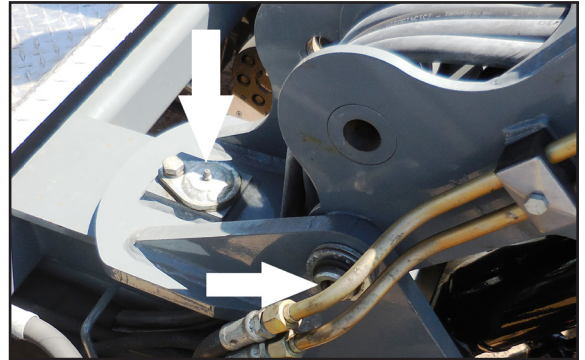
BLADE RAISE & LOWER CYLINDER



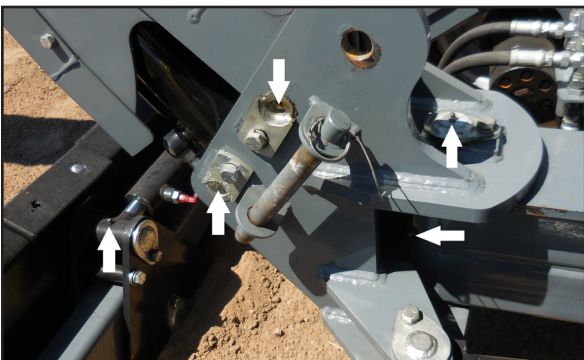
HITCH ASSEMBLY



BOOM PIVOT & SWING

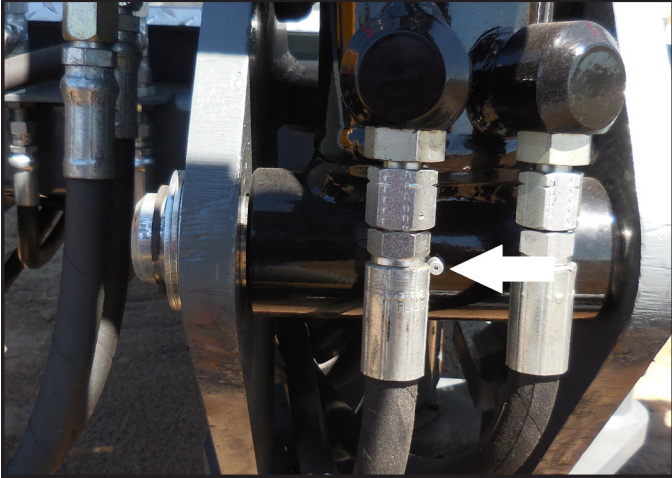


BOOM SWING SECOND VIEW

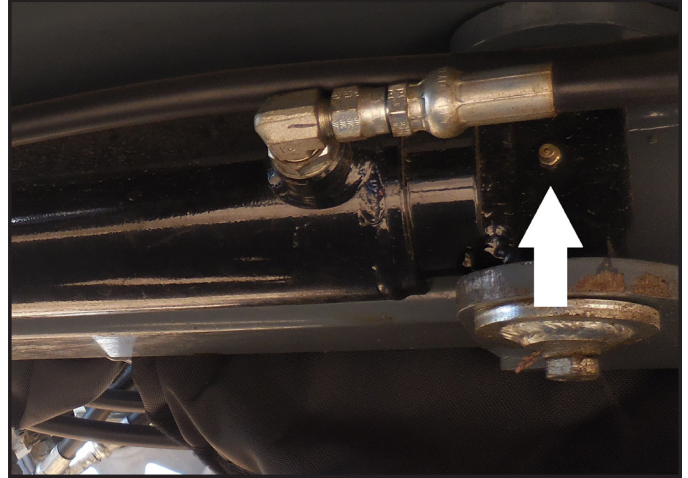


TMX CHASSIS LUBRICATION

LOWER BOOM



BOOM SWING CYLINDER



CASTER WHEEL X2



CASTER WHEEL X2



OPERATION & CONTROLS

Operators should be familiar with the controls before operating the machine. Operating with a smooth, steady motion reduces wear and tear on the mechanical and hydraulic parts, extends machine life and increases efficiency.

-ALWAYS-

- PERFORM OPERATOR MAINTENANCE CHECKS AND SERVICES DAILY BEFORE OPERATING THE MACHINE.
- Watch rear end (Hitch End) while turning; turning axis is ahead of driver's seat.
- Keep the backhoe end uphill when ascending or descending grades.

STARTING THE ENGINE

1. Sit in operator's seat and fasten seat belt.
2. Ensure that the dig/drive selector switch is in the neutral (center position.) Fig C-3
3. Insert key into ignition switch. Fig C-6
4. Move throttle to approximately 3/4 open.
5. Adjust choke to "full" in cold weather or on cold engine.
6. Turn key to start position until engine starts. Release key to "run" position as soon as the engine is running.
7. Adjust choke as required.

For diesel engine starting, refer to the diesel supplement.

DRIVING

It is easier to engage or disengage the hubs with the wheels off the ground. This can be accomplished by raising the machine with the backfill blade.

Engaging the drive wheels: see Figure C-2-a Pull Drive Hub handle outward, turn 90 degrees and release (both hubs). Spring force will pull handle into engagement. (Position closest to wheel.)

Disengaging drive wheels: see Figure C-2-b Pull Drive Hub handle outward, turn 90 degrees, fit handle into "disengagement" storage position. (Position away from wheel.)

1. ALWAYS SIT IN THE SEAT WHILE THE TMX EXCAVATOR ENGINE IS RUNNING. (Except when loading and unloading from tow vehicle)
2. Move Dig/Drive switch to "Drive" position. (Right Joystick) Raise rear stabilizer spade completely.
3. Raise backfill blade approximately 6" (minimum).
4. Speed control: (Slow, Medium & Fast) see Figure C-4
 - a. Straight Forward or Back: Move both joystick levers the same amount at the same time. The further you move the control, the faster you will go.
 - b. Large Radius Turns: Move the lever for the outside wheel more than the inside wheel.
 - c. "Zero" turns or Tight Area Turns: Move the joystick levers in the opposite directions.

-NEVER-

- NEVER operate machine in poorly ventilated areas. CARBON MONOXIDE from the engine can cause sickness or death.
- NEVER use boom or bucket to transport persons.
- NEVER leave driver's seat while engine is running. (Except when loading and unloading from tow vehicle)



LOWERING/RAISING BACKFILL BLADE & STABILIZER SPADE

-ALWAYS-

1. Set and retract backfill blade and stabilizer spade slowly.
2. Angle backfill blade to match slope before contacting the ground.

Figure C-2-a

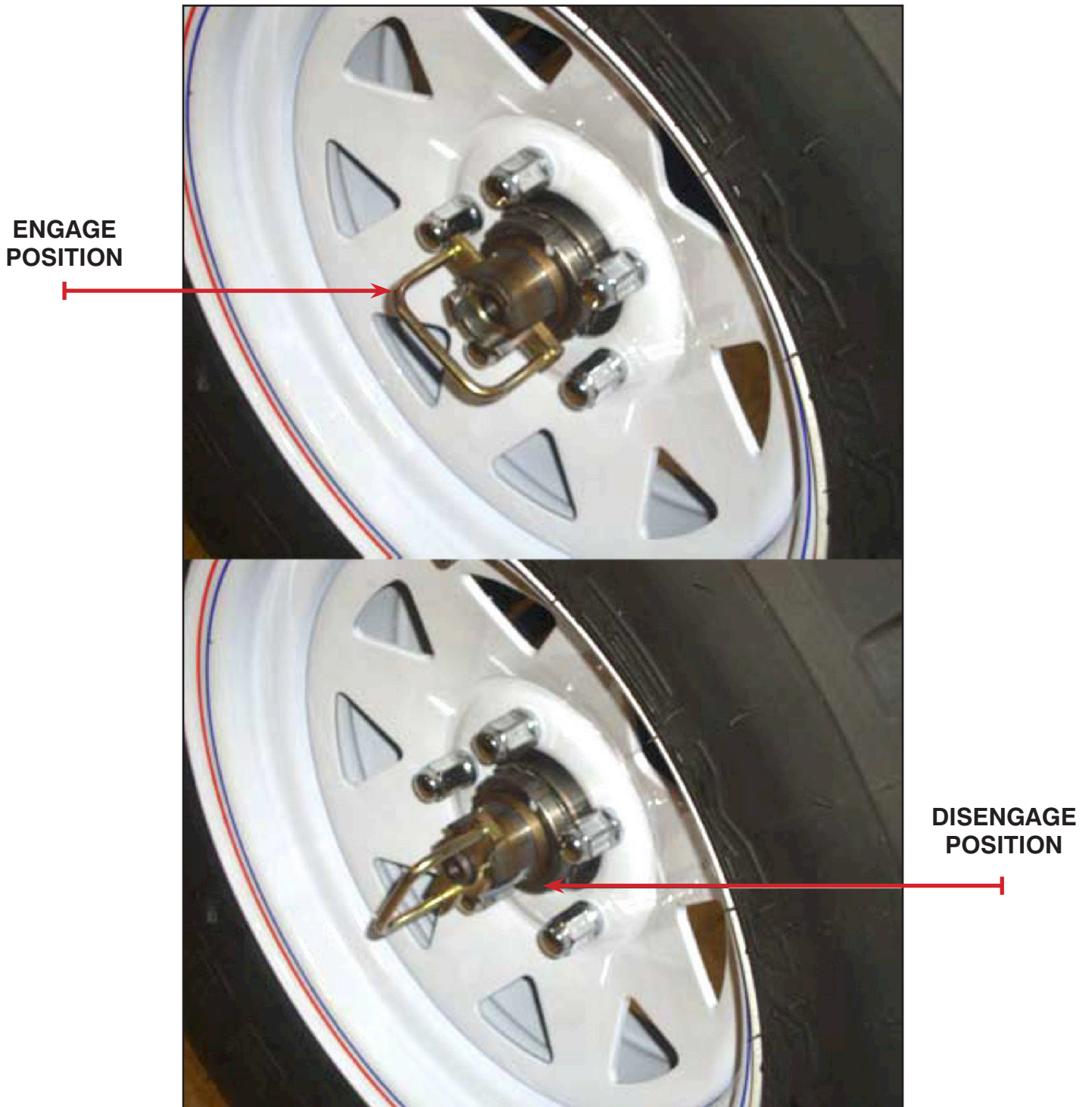


Figure C-3 Left Joystick

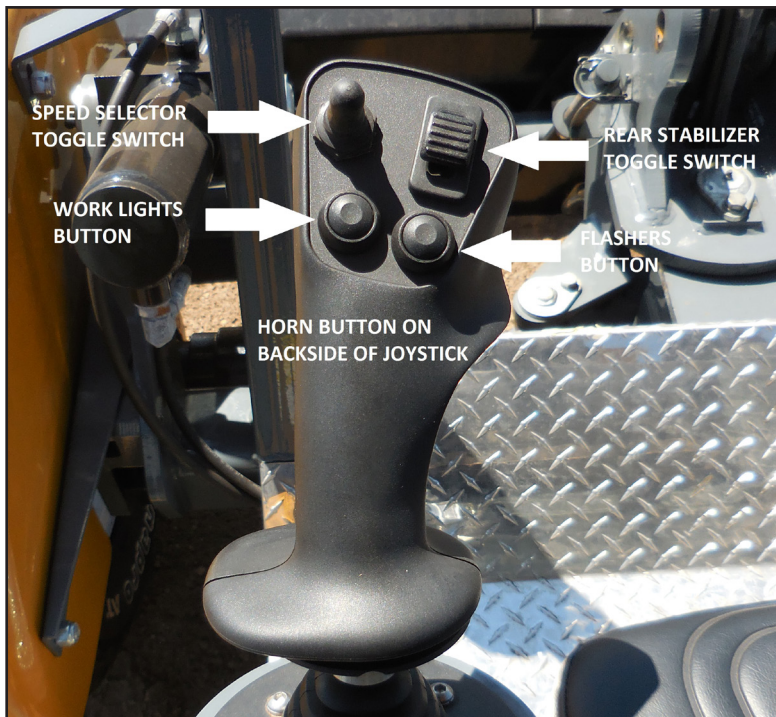


Figure C-3: Left Joystick

- Dig/Drive switch is upper right
- Front blade control is upper left up/down and side to side for tilt
- Lower left is bucket shake
- Lower right is AUX ON/OFF
- Back side switch is AUX reverse

Figure C-4 Right Joystick



Figure C-4: Right Joystick

- Upper left is speed control (drive), slow, medium and fast
- Upper right is rear stabilizer control
- Lower left is work Lights switch
- Lower right flasher switch
- Back side switch is horn

Figure C-5 Main screen on control panel



Figure C-5b: Joystick movement is SAE Dig Mode



Figure C-5 Boom movements in ISO Dig Mode

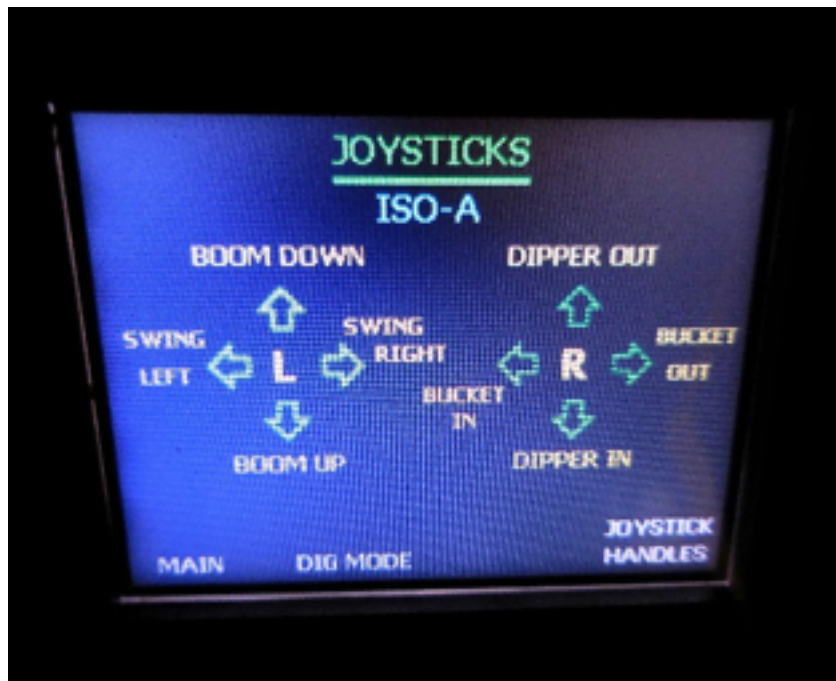


Figure C-6: Side Control Panel: Key start switch, choke (on gas model) and throttle control



LOWERING/RAISING BACKFILL BLADE & STABILIZER SPADE

1. Move the Stabilizer Control Switch in the desired direction as indicated on the Operator's Console. Move RH joystick castle switch down to lower the backfill blade. Move RH joystick castle switch up to raise the backfill blade. Move RH joystick castle switch right to tilt the backfill blade down to the right. Move RH joystick castle switch left to tilt the backfill blade down to the left.

SECURING BOOM FOR TOWING

Set Dig/Drive Switch to "Dig." Center the boom on the chassis and raise fully. Pull the boom all the way back until you can install the pin to lock the boom in the tow position.

HITCHING TO TOWING VEHICLE

1. Ensure that the hitch on the towing vehicle is Class II or higher with a 2" ball.
2. Make sure that the machine is in the following configuration before towing:
 - Backfill blade and Stabilizer Spade fully up.
 - Boom fully up.
 - Boom centered.
 - Dipper fully in. Bucket fully curl.
 - Drive wheels disengaged.
 - Pin caster wheels in furthest upward position. (So you see caution label – see "Disengaging Drive Wheels" on page C-2)



WARNING



The drive train will be damaged if the machine is towed with the drive wheels engaged.

3. Lower rear stabilizer spade until the caster tires are off the ground.
4. Remove two Hitch Securing Pins and lower hitch to towing position, securing with pins. Ensure that the two (2) hitch pins are in the correct positions. Position towing vehicle under machine hitch coupler
5. Start TMX Excavator engine.
6. Raise Rear Stabilizer Spade, lowering machine hitch coupler onto towing ball.
7. Lock tow coupler onto ball
8. Shut off engine
9. Connect and check towing lights
10. Connect safety chains.

TOWING

1. Avoid sudden stops.
2. Avoid high speed turns.
3. Surfaced road towing speed should not exceed 55 mph. Rough road or cross country towing speed should not exceed speed limits
4. Check machine during stops.
5. Allow extra distance for stopping (minimum two times normal distance.)

UNHITCHING FROM TOWING VEHICLE

1. Shut off towing vehicle engine.
2. Set towing vehicle parking brake.
3. Release safety chains, disconnect tail light wiring and release coupler locking mechanism from towing ball.

4. Start TMX Excavator engine.
5. Slowly lower Rear Stabilizer Spade, raising towing hitch from towing vehicle.
6. Remove Hitch Securing Pins and raise towing hitch to the stowed position. Ensure that the Hitch Securing Pins are secured in the correct storage holes.
7. Engage Hubs before lowering rear stabilizer, if unit is on an incline it may roll down the incline out of control.
8. Unpin caster wheels.

DIGGING INSTRUCTIONS

1. For best results, the Dipper should be at an angle to the ground. Do not extend Boom into a straight line.
2. After filling Bucket, do not pull bucket any closer to the machine than required to clear excavation.
3. When Bucket is clear, swing it to one side to dump. Plan dumping so that there is enough space to contain all soil without spilling into hole or having to over-extend Boom.
4. Push soil aside while swinging Boom to clear working area.
5. Make digging passes just long enough so that Bucket is full at the end of the pass. Do not continue to dig once bucket is filled with loose material. Continued digging with a full bucket will compact wet and moist soils and make discharge of materials very difficult. Depth of pass will depend on type of soil. Control pass depth by working the Bucket and Dipper controls alternately.
6. Set Bucket teeth at a slight angle to obtain a level bottom. Maintain this angle by gradually uncurling the Bucket while retracting the Dipper and Boom.

USING THE AUXILIARY CIRCUIT



CAUTION



Energize the auxiliary circuit only when an accessory is connected to the circuit.

1. Ensure that hydraulic accessory is compatible with the output of the Auxiliary Circuit (10 gpm at 2000 psi). Call TMX Service Department if required.
2. Connect accessory hydraulic lines to the Auxiliary Circuit quick disconnects.
3. Set engine speed to full.
4. Move Auxiliary Circuit Switch to “on.”

DIGGING NOTES

-ALWAYS-

- Operate the machine in areas free of overhead obstructions.
- Mark off an area 20 feet beyond the machine's operating range. Keep all persons clear of this area.
- Avoid sudden starts and stops when operating.
- Level the machine before digging. The TMX Excavator is most stable for digging when all wheels are off the ground.
- Set and retract backfill blade and stabilizer spade slowly.
- Be aware of all underground electrical cables, phone lines, sewage connections or other underground facilities in the digging area. Call your utility or “diggers’ hotline” (check for listings) whenever digging.
- Know ground conditions, such as soft or wet ground before digging.
- Keep the machine level.
- Take extra precautions when digging on hillsides, close to ditches or anywhere danger of tipping or sliding exists.

TMX OPERATOR'S MANUAL

- Keep the front (backhoe end) on the uphill side when ascending or descending inclines.
- Lower backfill blade and rear stabilizer until all wheels are off the ground.

-NEVER-

- NEVER dig on an incline of more than 15 degrees.
- NEVER dig or excavate under or near backfill blade.
- NEVER slam boom against stops.



HYDRAULIC SYSTEM MAINTENANCE AND SERVICE

HYDRAULIC SYSTEM

The TMX hydraulic system consists of these high-quality components:

- Oil Reservoir
- Filtration System
- Hydraulic Pumps
- Joystick Controls
- Manifold
- Cylinders
- Connecting Hoses
- Oil Cooler
- Hydraulic Wheel Motors

The system is under pressure whenever the engine is running. All mechanical components should be lowered to the ground to relieve pressure when engine is shut down.

 **DANGER** 

Hoses are under pressure. Escaping fluids can penetrate the skin. Relieve pressure before servicing. Never work on a hydraulic system while the engine is running.

HYDRAULIC PUMP

Note: The hydraulic pumps and cartridge valves are not repairable. Contact your TMX dealer for replacement components. Hydraulic hoses and fittings may be repaired or replaced by the user.

The system provides for multiple function control where the fluid will always take the path of least resistance, operating the lighter load when more than one function is demanded.

After replacing hydraulic hoses or fittings, refill the oil reservoir (premium-grade ISO 32 hydraulic oil only), run the TMX and check for leak-free operation.

The TMX hydraulic system consists of two separate circuits:

- 1) A piston pump to supply oil to the dig, backfill blade and rear stabilizer functions and drive wheels.
- 2) A fixed displacement gear pump to supply oil to the auxiliary (HyPTO) circuit to power tools.

 **CAUTION** 

Never run a pump or hydraulic system without fluid.

Since the multi-pump assembly is mounted directly to the engine and driven by a Lovejoy coupler, its alignment is unlikely to change over time. The Lovejoy is torqued to 63ft-lbs./85Nm.

The pump mounting bolts should be checked periodically for tightness (26ft.-lbs./35Nm - see TMX Maintenance Chart).

A Dig/Drive Switch on the right joystick shifts a series of cartridge valves on the manifold mounted under the operator's seat. This switches the joystick control between dig and drive functions.

When switched to the "Dig" position, the joysticks will control backhoe swing, boom, dipper, and bucket functions.

SERVICE Continued

When the selector switch is in the "Drive" position, the joysticks control the forward and reverse rotation of the TMX drive wheels.

The switches on the joysticks (RH) will raise and lower the backfill blade and will tilt the backfill blade. This is active in Drive or Dig Mode. (fig C-3)

When the selector switch is in the "Neutral" position between "Dig" and "Drive" a neutral valve is actuated, rendering the joysticks inactive. No dig or drive functions are possible in this "Neutral" position.

The switch on the operator's right hand console actuates the rear stabilizer at any time the seat is empty and is independent of the joystick controls. This for loading and unloading TMX from tow vehicle.

The joysticks provide electrical signal through the control circuit to the pump controls and to the main control valve stack. This allows progressive control of the dig and wheel drive functions. Moving the joystick further sends more oil to these functions for faster motion.

The auxiliary (HyPTO) circuit provides 10 GPM (34 l/min) @ 2000 PSI @ 3100 RPM (13750kPa) thru a 3-way cartridge valve actuated by the HyPTO switch. A hose 'pigtail' at the front of the operator's footboard is equipped with flat face quick disconnects to exclude dirt from the system and to allow quick attachment of auxiliary hydraulic tools.

HYDRAULIC PUMP REMOVAL

- 1) Close supply line from Hydraulic Tank.
- 2) Disconnect the hose between the filter and the hydrostatic pumps. Have a suitable container available to catch any spills.
- 3) Tag and remove all lines to the hydrostatic pumps.

- 4) Remove 2 bolts attaching the pump assembly to the mounting flange on the engine.

Split the Lovejoy coupling by sliding the pump assembly away from the engine taking care not to allow the weight of the pump assembly to bear on the coupling. Check condition of the coupling components.

HYDRAULIC PUMP INSTALLATION

- 1) Pump assembly and hose installation is the reverse of disassembly.
- 2) Torque pump attachment bolts to (63 ft.- lbs./ 85Nm).
- 3) Refill hydraulic reservoir with 10 gallons (38 liters) of premium quality all-season ISO 32 hydraulic oil.
- 4) Start engine, check for leak free operation.

CONTROL VALVE REMOVAL

- 1) Close valve on hydraulic reservoir or plug the supply hose leading to the lower, forward port on the control valve stack (# 8 JIC male plug).
- 2) Tag and remove the tank line at the upper, forward port.
- 3) Tag and remove all lines and work port hoses.
- 4) Remove 4 bolts securing the control valve stack to the machine.
- 5) Remove the control valve.

SERVICE Continued

CONTROL VALVE INSTALLATION

- 1) Mount valve to machine chassis.
- 2) Connect electrical lines and hoses to the correct control valve stack sections.
- 3) Start the machine and check for leaks and proper functions.

HYDRAULIC FILTRATION SYSTEM

The primary cause of hydraulic system failure is contaminated fluid. Regular filter and oil changes should prevent problems. A clogged filter will go into bypass and allow unfiltered fluid to circulate through the system.



CAUTION



Release all hydraulic system pressure before servicing the hydraulic system.

The returning oil from dig and auxiliary functions passes through the oil cooler and then through a large capacity in-tank filter in the top of the hydraulic reservoir. This filter element should be replaced when indicated by the restriction gauge on the filter head.

HYDRAULIC CYLINDERS

The hydraulic cylinders on the TMX are:

- 1) Boom – 3.0” bore x 10.0” stroke.
- 2) Dipper – 3.0” bore x 21.06” stroke.
- 3) Bucket – 2.5” bore x 21.0” stroke.
- 4) Swing – 2.5” bore x 12” stroke.
- 5) Backfill Blade Lift – 2.5” bore x 8.63” stroke [2 required].

- 6) Backfill Blade Tilt – 2.0” bore x 2.88” stroke.
- 7) Rear Stabilizer – 2.0” bore x 7.63” stroke.

The hydraulic cylinders are controlled by the main control valve located under the operator's seat.

HYDRAULIC CYLINDER REMOVAL

- 1) Disconnect and plug hydraulic hoses to cylinder.
- 2) Remove pivot pins.
- 3) Operate cylinder by hand to expel as much hydraulic fluid as possible.

HYDRAULIC HOSES

The TMX hydraulic hoses are rated for the pressures in each system of the machine. Safe working pressure is marked on the exterior jacket of the hose. Replace cracked, cut or leaky hoses with hoses of the same or higher rating. Never route hoses so that they rub against sharp edges or chafe against moving parts.

HYDRAULIC RESERVOIR

The hydraulic fluid reservoir is located behind the driver's seat at the right rear of the TMX. A breather is located to the right of the in-tank return filter. Remove this breather to fill or top up the reservoir. Tank capacity is 10 U.S. gallons [38 liters].

HYDRAULIC FLUID

The hydraulic fluid used in the TMX is premium quality ISO 32 hydraulic oil. At temperatures below 10 F [-12C], allow the machine to run at part throttle for a few minutes to warm the oil.

SERVICE Continued

TIRE CARE

Proper tire maintenance is one of the most important factors in the satisfactory performance of your TMX machine. Observe the following tire care rules for best results:

1) Maintain Proper inflation of the drive tires (as noted on side wall of tire), but no less than 35 PSI [240 kPa]. A correctly inflated tire results in good traction with the least wear.

Under-inflation diminishes the tire load carrying capacity and may cause heat build-up while towing, which can cause excessive wear and the danger of a blow-out.

Over-inflation may cause internal damage to the tire and cause the drive wheels to slip under load and cause accelerated wear because a smaller surface of the tire tread is in contact with the ground.

2) Avoid driving or towing over sharp objects, which may cut or puncture the drive tires.

3) Avoid 'bruising' the drive tires by striking hard objects, curbs, etc. at speed.

4) Immediately clean spilled oil or fuel from tires. Petroleum products attack rubber and may weaken the sidewalls of the tire.

5) The caster tires are foam-filled at the factory and require no inflation. Periodically inspect the caster tire tread for wear and replace tires as required.

ENGINE

The TMX has a gasoline or diesel engine to supply power to the hydraulic pump for the hydraulic circuits, and a starter/alternator for electrical power and battery charging. Refer to the engine manufacturer's owners' manual for detailed operating and adjustment instructions.

The engine has a factory set maximum speed of 3600 rpm. For warranty purposes, the engine may not be operated over 3600 rpm. To set the engine speed, see the engine manufacturer's owners' manual.

TROUBLESHOOTING

PROBLEM: No or low hydraulic pressure

Causes

Dirty hydraulic filter
Main relief valve stuck or out of adjustment
Defective pump

Solutions

Replace filter element
Remove and clean, adjust relief valve to 2500 PSI
Replace pump

PROBLEM: Slow cylinder movement

Causes

Slow engine speed
Low fluid level
Cold weather
Dirty hydraulic filter
Relief valve out of adjustment
Defective pump
Wrong fluid
Suction line blocked
Internal cylinder damage

Solutions

Adjust engine throttle
Add fluid
Increase warm-up time
Replace filter element
Adjust relief valve
Replace pump
Use recommended fluid
Clean or replace
Replace worn or damaged parts

PROBLEM: No cylinder movement

Causes

Defective dig/drive switch or circuit
Low fluid level
Dirty hydraulic filter
Defective pump
Dirty or defective dig/drive cartridge valve
Blocked suction line
Internal cylinder damage
(Water) contaminated

Solutions

Check circuit, replace switch
Add fluid
Replace filter element
Replace pump
Clean or replace
Clean or replace
Replace damaged or worn parts
Drain tank, flush, fill with new oil

PROBLEM: No dig functions, drive OK

Causes

Blown Fuse
Defective dig/drive selector switch

Solutions

Replace fuse
Replace switch

TROUBLESHOOTING Continued

PROBLEM: Erratic cylinder movement

Causes

Low fluid level
Air in hydraulic lines
Incorrect fluid viscosity

Solutions

Add fluid and check for leaks
Tighten suction line fittings
Use proper fluid

PROBLEM: Cylinder drifting

Causes

Hydraulic line leak
Cylinder seal leak
Dirt in valve load check
Leaking valve section

Solutions

Repair or replace
Repair or replace
Clean load check
Center valve section spool or replace valve section

PROBLEM: Loss of drive wheel power

Causes

Defective dig/drive switch or circuit
Broken spline sleeve inside hub

Solutions

Check circuit, replace switch
Replace spline sleeve

TMX TECHNICAL SPECIFICATIONS

ENGINE

Make	Honda
Model	GS690
Fuel	Gasoline
Cooling	Air
Displacement	38 cid (624cc)
Horsepower	21 hp (15.5kw) @ 3600rpm
Torque	38.6 lbs. - ft. (48.3 N/m)

DIMENSIONS

Length	151 in. (384 cm)
Width	74.5 in. (189.3 cm)
Height	79 in. (201 cm)
Weight	2,941 lbs. (1334 kg)
Tongue Weight	380 lbs. (172 kg)

HYDRAULIC SYSTEM

Hydraulic Pumps	2
Type	Piston pump, electronic controlled, output flow (4.1 gpm ea @1800 rpm)
Displacement	5.7 gpm (21.5 l/min)
Dig Functions	@ 3600 rpm
Displacement	10 gpm @ 3600 rpm
Tool Circuit	
Cooler	Air to oil, with fan
Filtration	Suction & return, 10 micron
System Relief Pressure	2500 psi (17000kPa)
Hoses	Abrasion resistant

DRIVE SYSTEM

Hydraulic Pumps	6.73 gpm (25.5 l/min)
Wheel Motors	High efficient orbital motor with tapered roller bearings on output shaft for high loads, with disengaging hubs
Drive Tires	LT235/75R15 Mud-Terrain

PERFORMANCE

Max Travel Speed	3 speed 100% 6mph, 75% 4.5 mph and 50% 3mph
Turning Radius	Zero
Digging Depth	8' (244 cm)
Loading Height	9' 2" (280 cm)

DIGGING FORCE

Bucket	4050 lbs. (1835 kg)
Dipper	2550 lbs. (1155 kg)

SWING SYSTEM

Min. Swing Radius	62 in. (157.5 cm)
Boom Swing	140 degrees (70 right + 70 left)

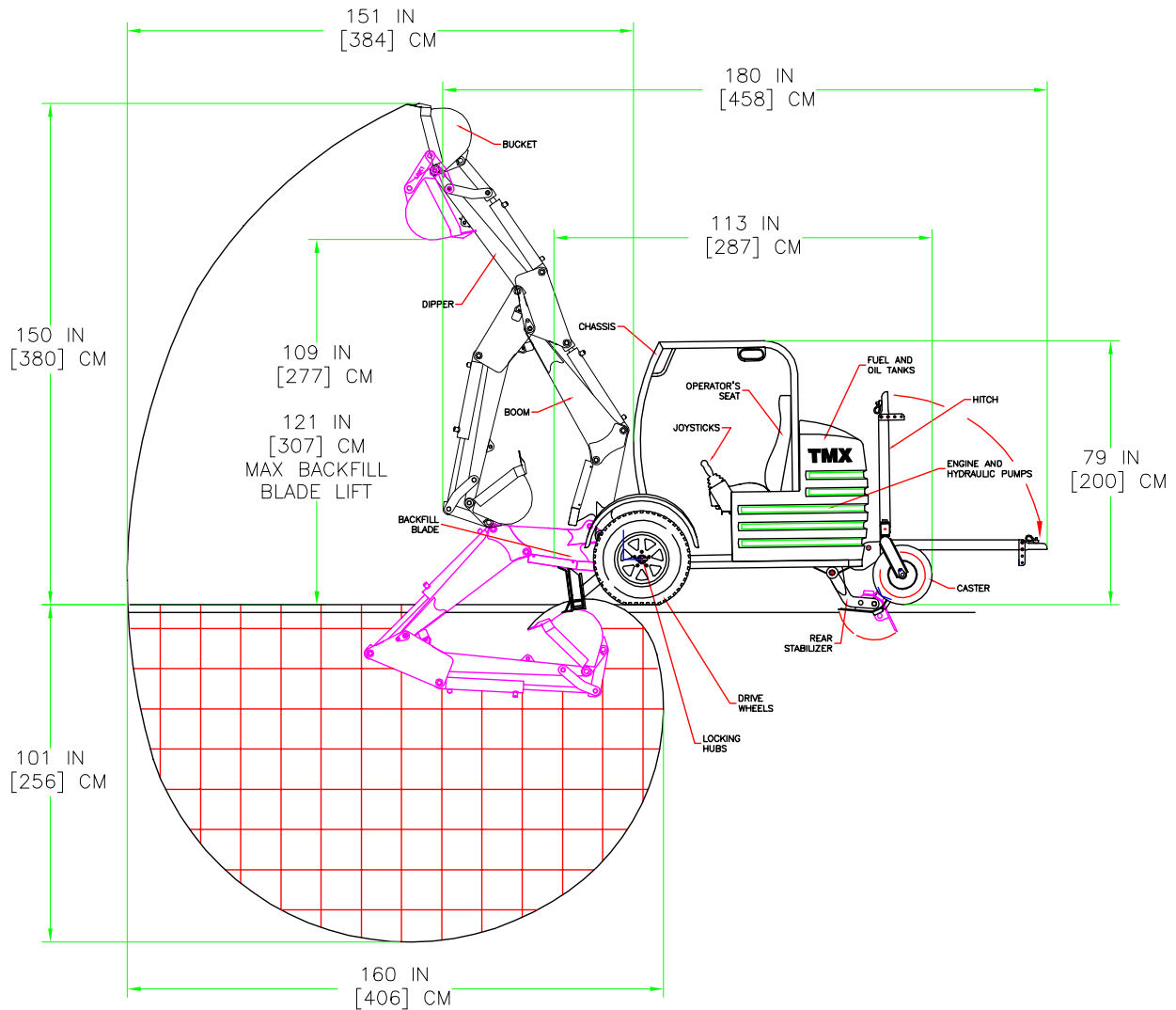
BACKFILL BLADE

Blade Width	72 in. (183 cm)
Max Machine Lift	9.5 in. (24.13 cm)
Blade Tilt	21 degrees total (10.5 right + 10.5 left)

TOOL CIRCUIT

Flow	10 gpm (37 l/min) @ 3600 rpm
Pressure	2000 psi (13750 kPa) 1/2" Flat Face - Quick Disconnects

ILLUSTRATED PARTS LIST



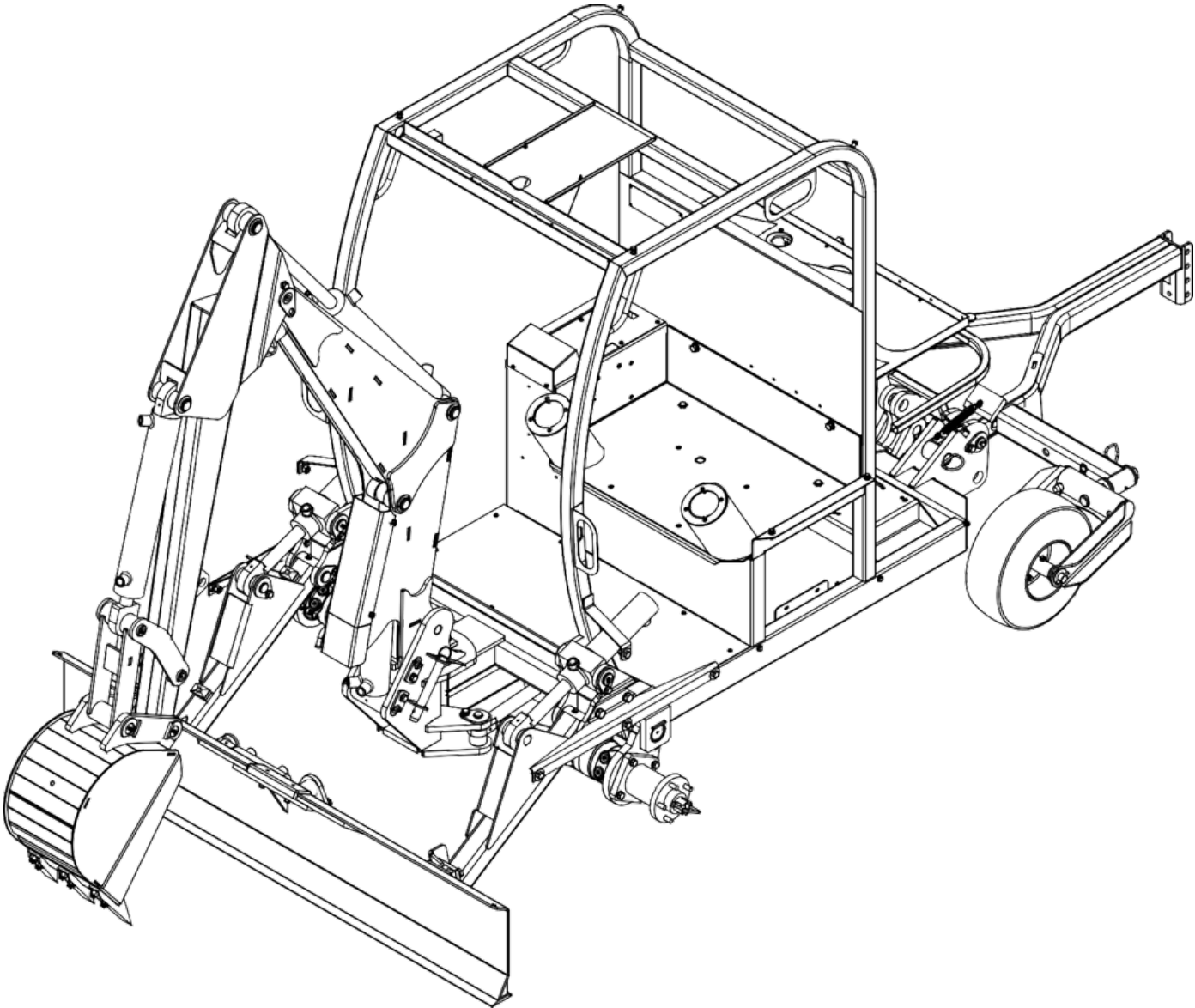
TMX[®]

TOWABLE MINI-EXCAVATOR

For Parts: Contact your TMX dealer or factory parts department

FAX: 715-241-9305

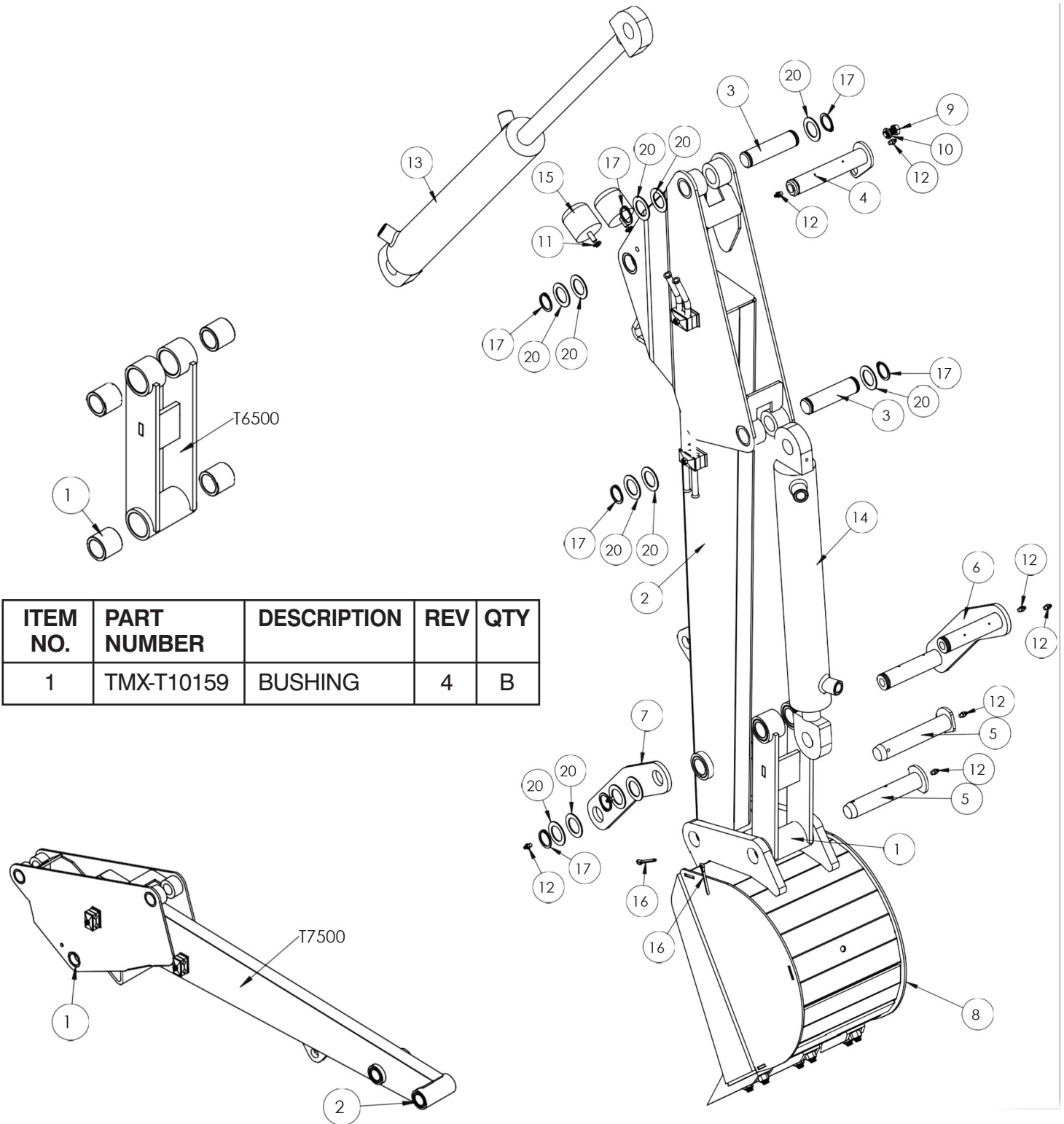
TMX OPERATOR'S MANUAL



TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	REV	QTY
1	T6500	BUCKET LINK ASSEMBLY	A	1
2	T7300	LOWER BOOM ARM	.	1
3	T9042	PIN, BUCKET & DIPPER CYLS. TO DIPPER (PIN, SNAP RING)	2	
4	T9040	PIN, BOOM TO DIPPER		1
5	T9045	PIN, BUCKET TO DIPPER, BUCKET TO LINK	.	2
6	T6703	DIPPER LINK WELDMENT		1
7	T6702	DIPPER LINKAGE PLATE	.	1
8	T10028	12" BUCKET		1
9	TMX-7008	1/2-13 X 1 GRADE 5 ZINC HCS		1
10	TMX-8101	1/2" ZINC LOCK WASHER		1
11	TMX-8078	3/8" ZINC SPLIT LOCK WASHER		2
12	TMX-14505	1/4-28 STRAIGHT GREASE ZERK	.	8
13	TMX-T10038	UPPER BOOM CYLINDER	.	1
14	TMX-T10040	DIPPER/BUCKET PIVOT CYLINDER	.	1
15	TMX-T10042	BUMPER, RUBBER (DIPPER)	.	2
16	TMX-T10051	1/4" COTTER PIN, 2"	.	2
17	TMX-T10501	1.375" EXTERNAL RETAINING RING		7
20	TMX-T10050	THRUST WASHER 1.38" X 0.90"	.	12

TMX OPERATOR'S MANUAL



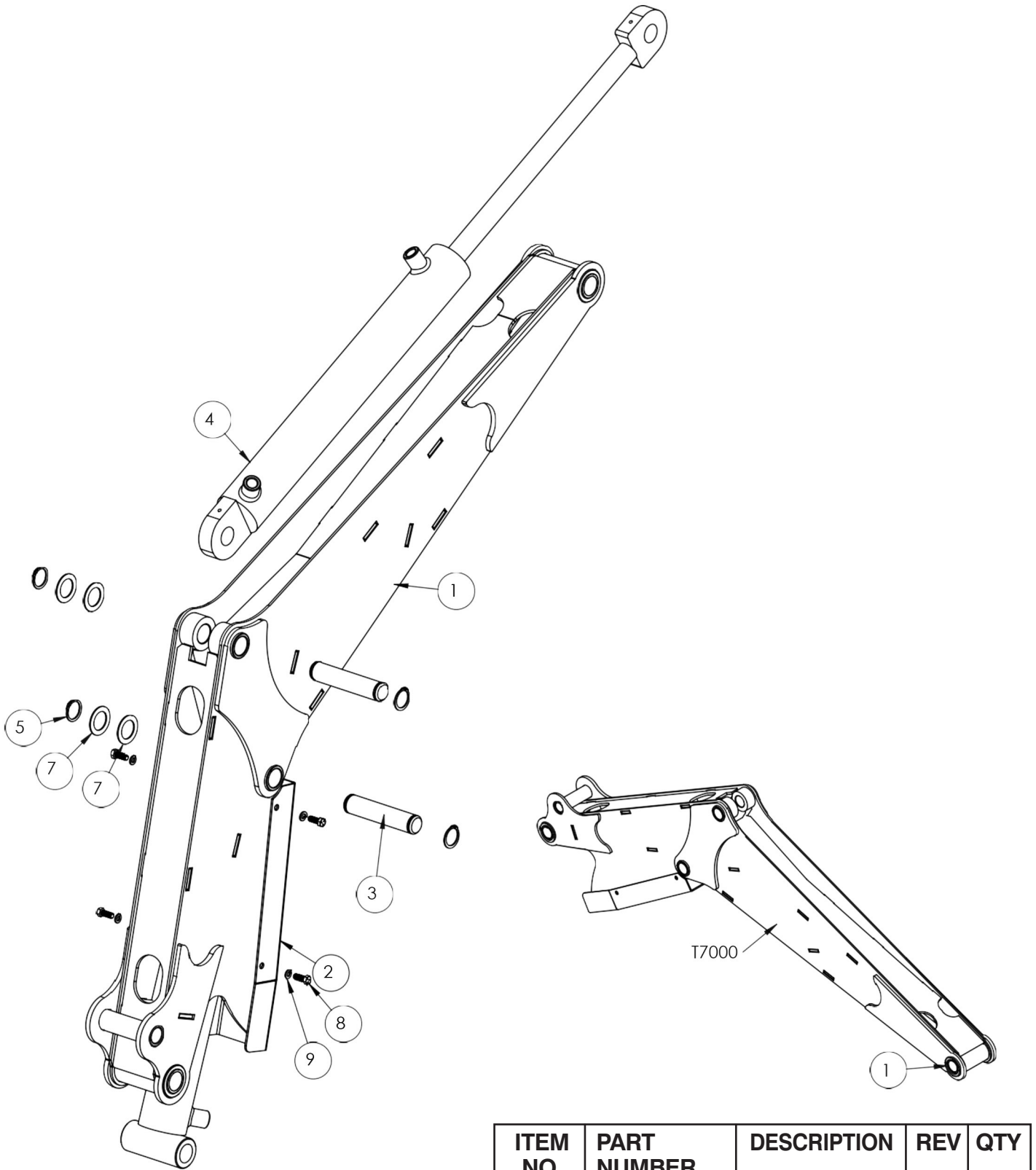
ITEM NO.	PART NUMBER	DESCRIPTION	REV	QTY
1	TMX-T10159	BUSHING	4	B

ITEM NO.	PART NUMBER	DESCRIPTION	REV	QTY
1	TMX-T10158	BUSHING	2	B
2	TMX-T10159	BUSHING	4	B

TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	REV	QTY
1	T7000	BOOM WELDMENT	1	B
2	T7017	HOSE GUARD	1	B
3	T9044	PIN, DIPPER & BOOM CYLS. TO BOOM	2	.
4	TMX-T10038	UPPER BOOM CYLINDER	1	.
5	TMX-T10501	1.375" EXTERNAL RETAINING RING	4	
6	TMX-T10034	VERTICAL ARM BOOM	1	.
7	TMX-T10050	THRUST WASHER 1.38" X 0.90"	4	.
8	TMX-6863	3/8-16 1" LONG HEX ZINC CAP SCREW	4	
9	TMX-8078	3/8" ZINC SPLIT LOCK WASHER	4	

TMX OPERATOR'S MANUAL

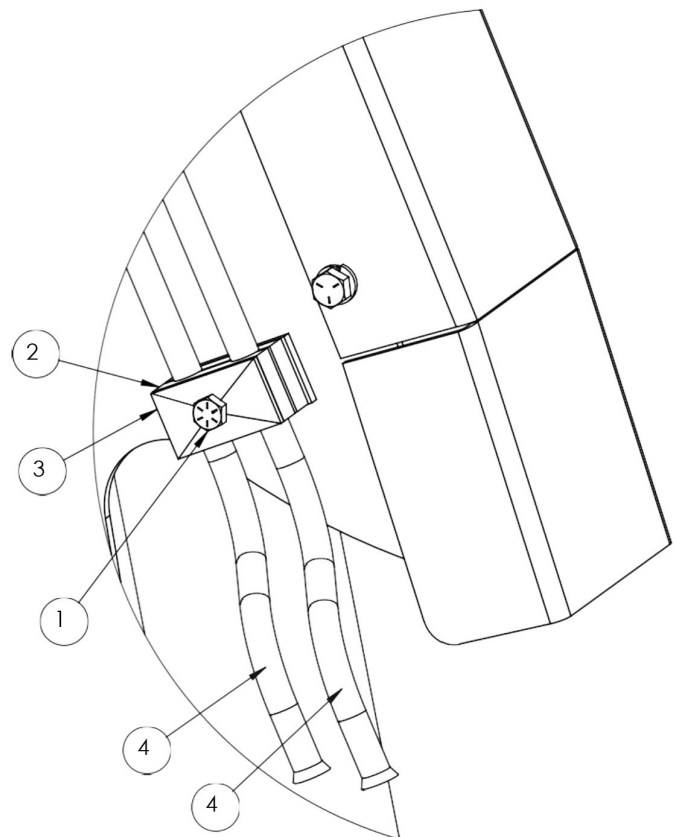
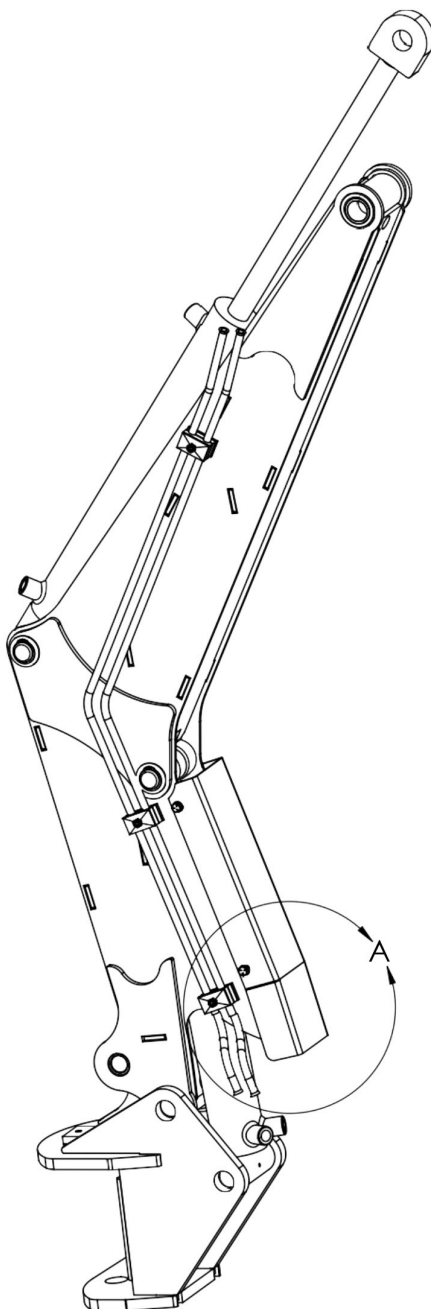


ITEM NO.	PART NUMBER	DESCRIPTION	REV	QTY
1	TMX-T81610	BUSHING	4	A

TMX OPERATOR'S MANUAL

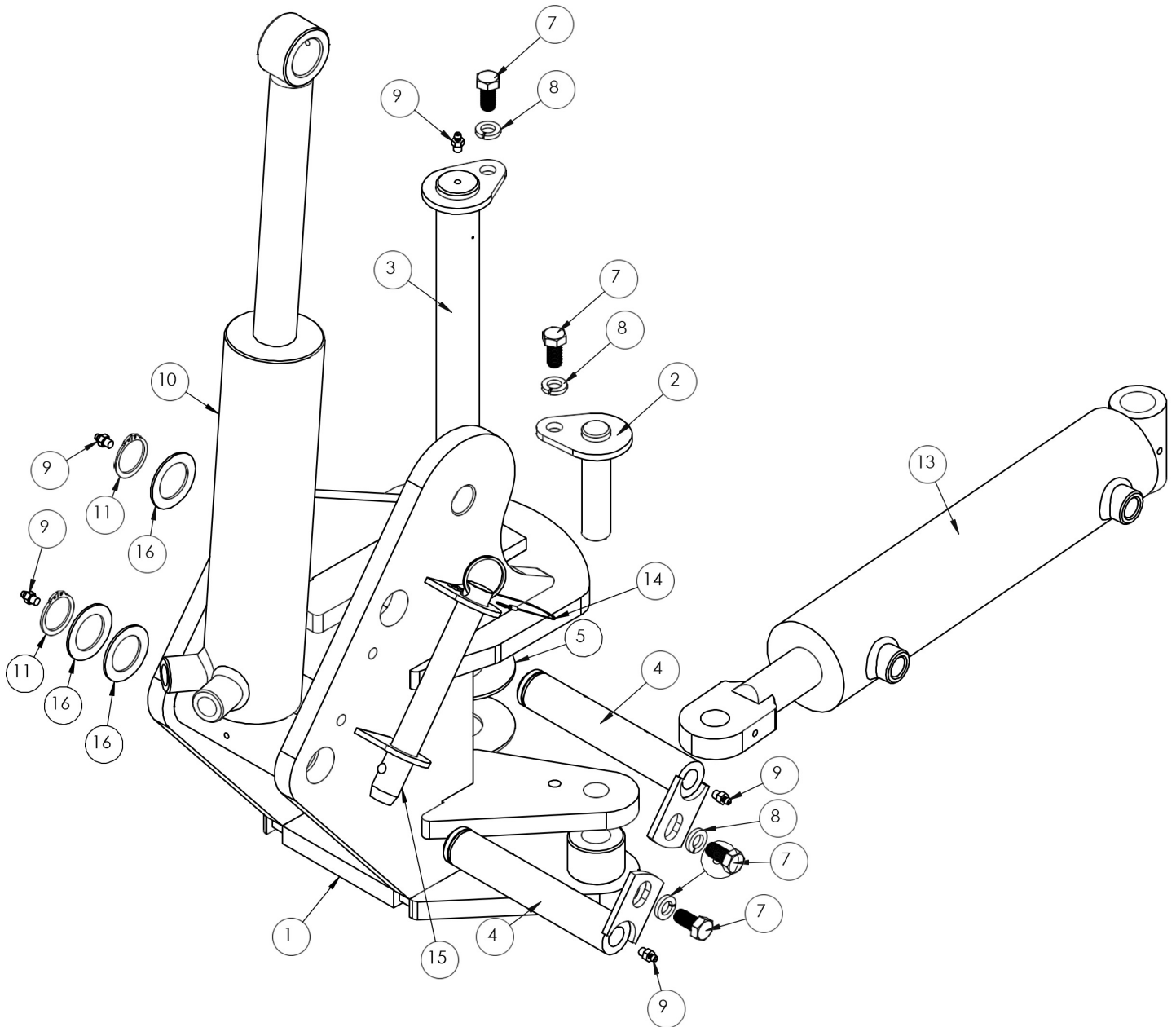
ITEM NO.	PART NUMBER	DESCRIPTION	REV	BOOM HYDRAULIC LINES / QTY
1	TMX-T7423	5/16-18, 1 3/8 LONG CAP SCREW		3
2	TMX-T7421	CLAMP HALF	.	6
3	TMX-T7422	HYDRAULIC LINE COVER PLATE	.	3
4	TMX-T10257-1	1/2" HYDRAULIC STEEL LINE	.	2
18	TMX-8078	3/8" ZINC SPLIT LOCK WASHER		4
19	TMX-6863	3/8-16 1" LONG HEX ZINC CAP SCREW		4

HYDRAULIC LINES KIT



DETAIL A
SCALE 1 : 3

SEE FRAME GROUP FOR
BUSHING INSTALLATION

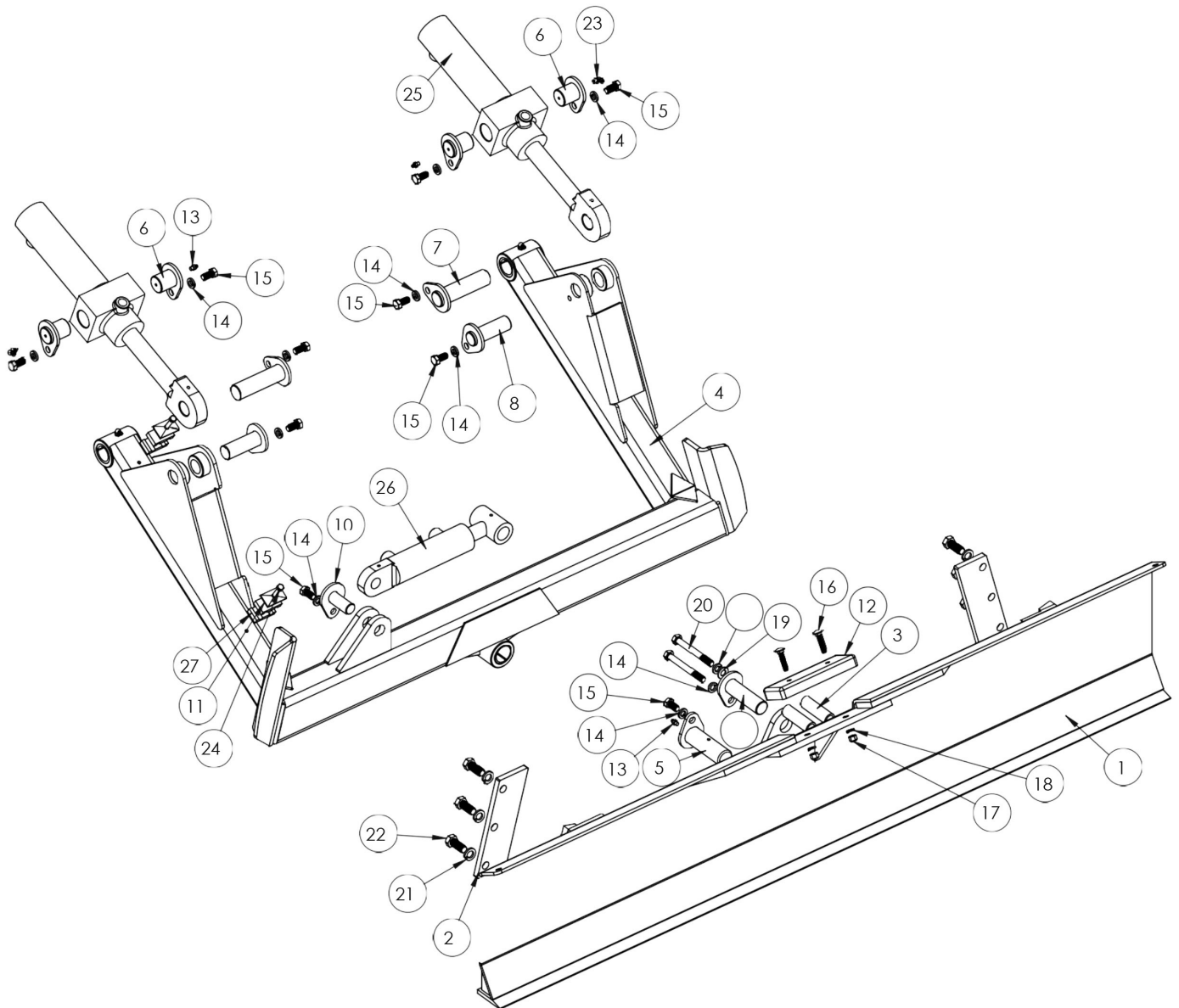
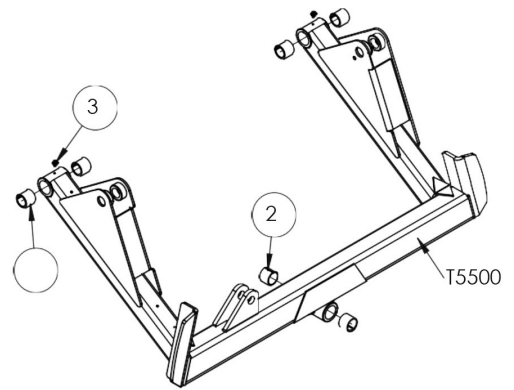


TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY	REV
1	T3110	SWING WELDMENT	1	B
2	T9012	PIN, SWING CYL. ROD TO SWING	1	.
3	T9036	SWING PIN	1	.
4	T9043	PIN, BOOM & BOOM CYL. TO TMX	2	
5	T10104	WASHER, THRUST - 4"	2	.
7	TMX-7008	1/2-13 X 1 GRADE 5 ZINC HCS	4	
8	TMX-8101	1/2" ZINC LOCK WASHER	4	
9	TMX-14505	1/4-28 STRAIGHT GREASE ZERK	5	.
10	TMX-T10034	VERTICAL ARM BOOM	1	.
11	TMX-T10501	1.375" EXTERNAL RETAINING RING	2	
13	TMX-T10067	BUCKET/ ARM SWING CYL	1	
14	TMX-T3130	LANYARD	1	
15	TMX-T3131	1" QUICK-RELEASE PIN	1	
16	TMX-T10050	THRUST WASHER 1.38" X 0.90"	3	.

TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY	REV
1	T10108	BUSHING	4	.
2	T10078	BUSHING	2	.
3	TMX-14522	ZERK 1/4-28 X 90 DEGRESS	2	

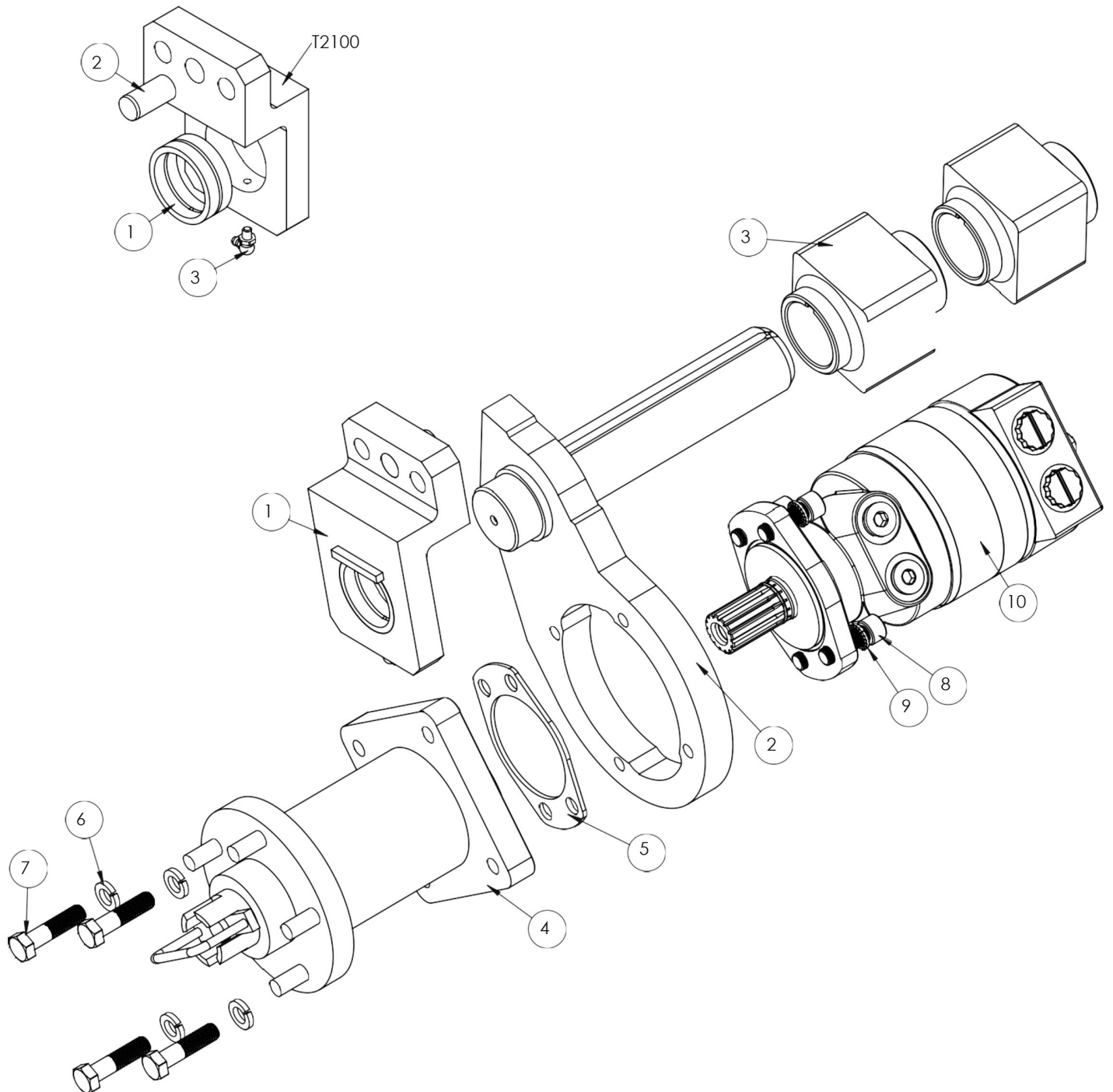


TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	REV	BACKFILL BLADE GROUP/QTY
1	T5100	BACKFILL BLADE WELDMENT		1
2	T5114	PLATE, RETAINING	.	2
3	T5116	TUBE, SPACER	.	2
4	T5500	ARM, WELDMENT, BACKFILL BLADE	B	1
5	T9001	PIN, BLADE PIVOT	.	1
6	T9002	PIN, BLADE LIFT CYL. TO CHASSIS	.	4
7	T9005	PIN, BLADE ARM TO CHASSIS	.	2
8	T9008	PIN, CYL. ARM TO BLADE ARM	A	2
9	T9009	PIN, SWING CYL. TO CHASSIS & TILT CYL. ROD TO BLADE	A	1
10	T9010	PIN, TILT CYL. TO BLADE ARM & CYL. ROD TO STABILIZER	A	1
11	TMX-T7422	HYDRAULIC LINE COVER PLATE	.	2
12	TMX-T10179	PAD, BOOM SUPPORT	.	1
13	TMX-14505	1/4-28 STRAIGHT GREASE ZERK	.	3
14	TMX-8101	1/2" ZINC LOCK WASHER		12
15	TMX-7008	1/2-13 X 1 GRADE 5 ZINC HCS		10
16	TMX-6960	3/8-16 1.75 LONG ZINC CARRIAGE BOLT		2
17	TMX-6972	3/8-16 LOCKNUT		2
18	TMX-8078	3/8" ZINC SPLIT LOCK WASHER		2
19	TMX-8173	1/2" ZINC FLAT WASHER		1
20	TMX-T11002	1/2-13, 4.5" LONG, ZINC HEX HEAD		2
21	TMX-8111	5/8 SPLIT LOCK WASHER		6
22	TMX-7125	5/8-11, 1.5" LONG ZINC HEX HEAD BOLT		6
23	TMX-14522	ZERK 1/4-28 X 90 DEGRESS		2
24	TMX-6811	5/16-18, 2.25" LONG HEX HEAD BOLT		2
25	TMX-T10072	BLADE RAISE/LOWER CYL	.	2
26	TMX-T10070	BLADE TILT CYL	.	1
27	TMX-T9642	HYDRAULIC LINE CLAMP HALF	.	4

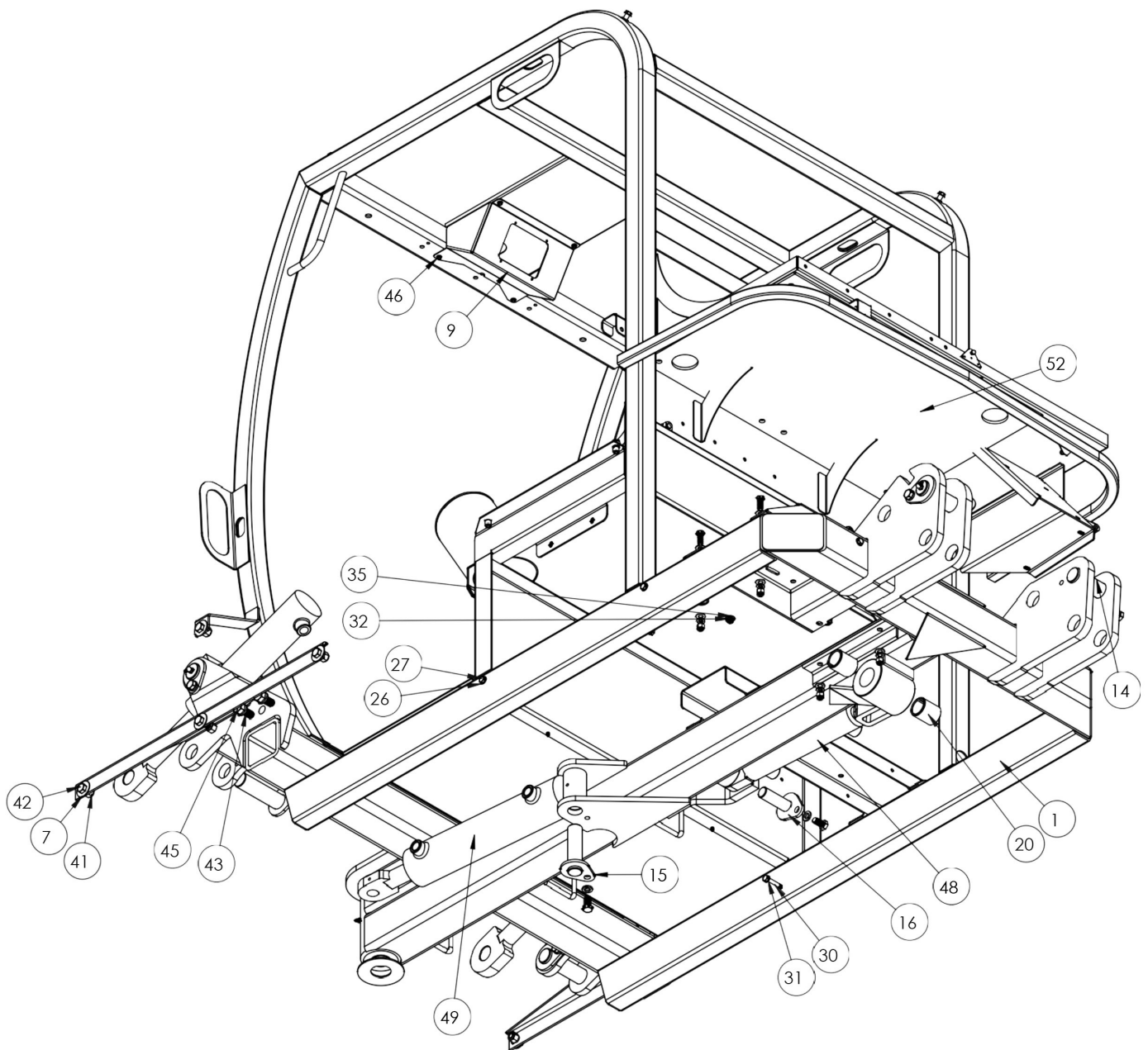
TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY	REV
1	T10080	BUSHING, CAST BRONZE	1	.
2	T10079	DOWEL PIN	1	.
3	TMX- 14522	ZERK 1/4-28 X 90 DEGRESS	1	

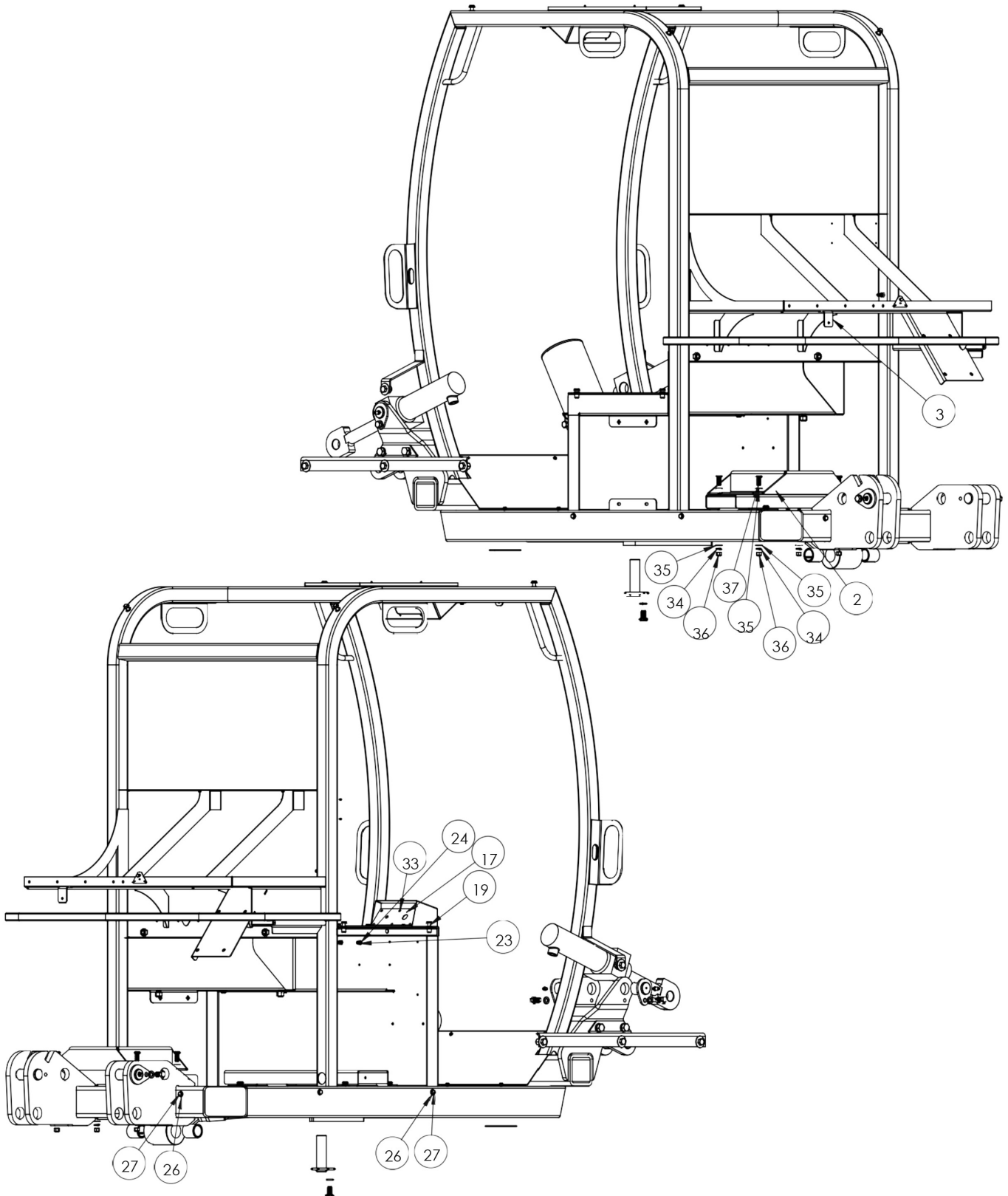


TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	REV	DRIVE HUB GROUP/QTY
1	T2100	BRACKET, ASSY, SUSPENSION		1
2	T2500	SUSPENSION ARM		1
3	T10087	TORSION BLOCK	.	2
4	T10023	HUB, DISENGAGING INCLUDES		
		SPLINE SLEEVE	.	1
5	T10096	WHEELMOTOR GASKET	.	1
6	TMX-8101	1/2" ZINC LOCK WASHER		4
7	TMX-7041	1/2-13, 2" LONG ZINC HEX HEAD BOLT		4
8	TMX-T10500	1/2-20, 1.5 LONG SOCKET HEAD CAP SCREW		4
9	TMX-7059	1/2" NORD-LOCK WASHER	.	4
10	TMX-10280	TMX WHEEL MOTOR	.	1

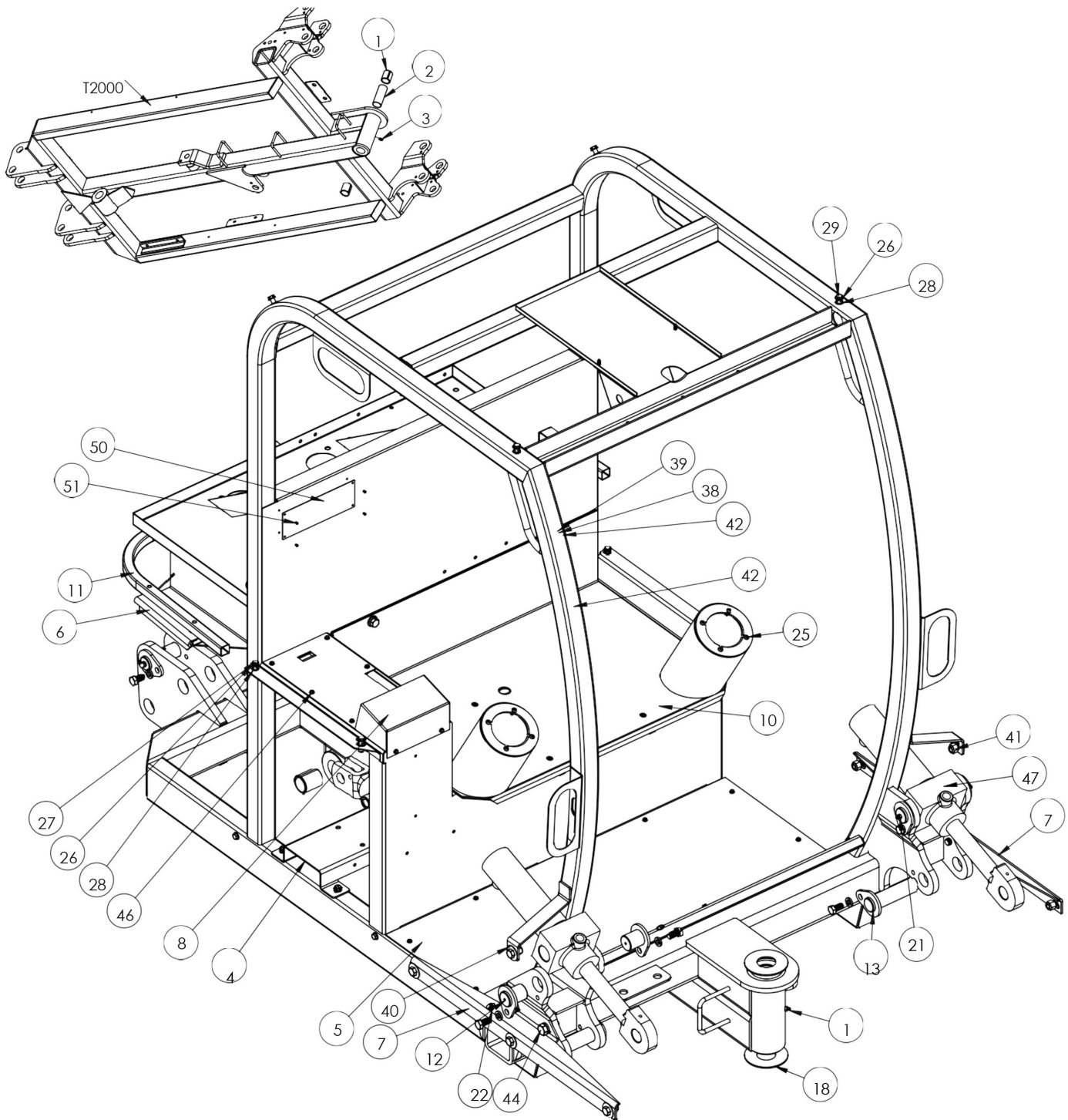


TMX OPERATOR'S MANUAL



TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY	REV
1	T10077	BUSHING SWING PIVOT	2	.
2	T12074	TUBE, SPACER, SWING PIN	1	.
3	TMX- 14505	1/4-28 STRAIGHT GREASE ZERK	1	.
4	T2033	RADIATOR BRACKET	1	A



TMX OPERATOR'S MANUAL

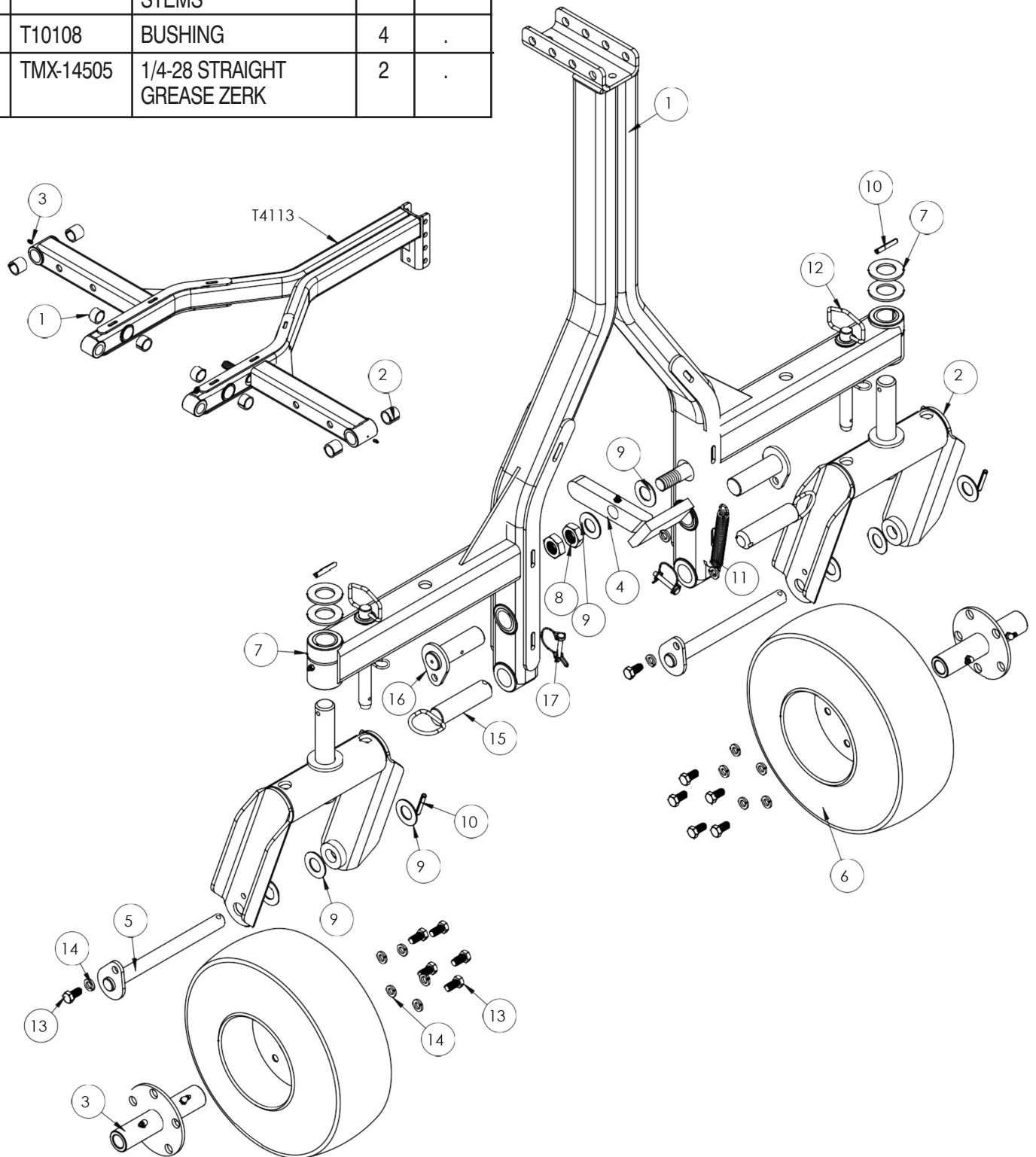
ITEM NO.	PART NUMBER	DESCRIPTION	REV	FRAME GROUP/QTY
1	T2000	FRAME WELDMENT	C	1
2	T2024	GAS ENGINE MOUNT	A	1
3	T2026	RELAY BRACKET	A	1
4	T2043	VALVE MANIFOLD BRACKET	A	1
5	T2068	PLATE, 4-WAY	A	1
6	T2069	HINGE, HOOD	.	1
7	T2101	BRACKET, FENDER	C	2
8	T2200	COVER WELDMENT, CONSOLE - GAS TMX	.	1
9	T2203	GAGE PANEL		1
10	T2205	SEAT PLATE WELDMENT		1
11	T8008	TUBE, WELDMENT, HOOD STIFFENING		1
12	T9002	PIN, BLADE LIFT CYL. TO CHASSIS	.	4
13	T9005	PIN, BLADE ARM TO CHASSIS	.	2
14	T9006	PIN, HITCH PIVOT & FLIP PAD PIVOT	B	2
15	T9009	PIN, SWING CYL. TO CHASSIS & TILT CYL. ROD TO BLADE	A	1
16	T9013	PIN, REAR STABILIZER CYL. TO CHASSIS	.	1
17	T1000H-5	HONDA INSTRUMENT PLATE	A	1
18	T10104	WASHER, THRUST - 4"	.	2
19	T10105	BODY PANNEL SPACER, .450 LENGTH	.	8
20	T10109	BUSHING, STABILIZER TO CHASSIS	.	2
21	TMX-14505	1/4-28 STRAIGHT GREASE ZERK	.	2
22	TMX-14522	ZERK 1/4-28 X 90 DEGRESS		4
23	TMX-7403	1/4-20 NYLON-INSERT ZINC LOCKNUT		2
24	TMX-T11020	1/4-20 .75 LONG ZINC TRUSS MACHINE SCREW		2
25	TMX-8112	1/4-20 .75 LONG SOCKET BUTTON HEAD CAP SCREW		8
26	TMX-6759	5/16 SS WASHER		14

TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	REV	FRAME GROUP/QTY
27	TMX-11003	5/16-18, 1" LONG SS HEX HEAD BOLT		10
28	TMX-T10116	5/16-18 RIVET NUT		8
29	TMX-T11004	5/16-18, 1.5" LONG SS HEX HEAD BOLT		4
30	TMX-6811	5/16-18, 2.25" LONG HEX HEAD BOLT		2
31	TMX-8071	5/16 ZINC SPLIT LOCK WASHER		2
32	TMX-6846	5/16 NYLON-INSERT HEX LOCKNUT		4
33	TMX-8195	.125, .275 LONG BLIND ALUM RIVET	.	6
34	TMX-8078	3/8" ZINC SPLIT LOCK WASHER		8
35	TMX-8158	3/8 ZINC FLAT WASHER		12
36	TMX-6972	3/8-16 LOCKNUT		4
37	TMX-6863	3/8-16 1" LONG HEX ZINC CAP SCREW		8
38	TMX-8101	1/2" ZINC LOCK WASHER		12
39	TMX-8173	1/2" ZINC FLAT WASHER		2
40	TMX-T11001	1/2" FENDER WASHER		8
41	TMX-7042	1/2" NYLON-INSERT NUT LOCKNUT		10
42	TMX-7008	1/2-13 X 1 GRADE 5 ZINC HCS		22
43	TMX-8111	5/8 SPLIT LOCK WASHER		6
44	TMX-7125	5/8-11, 1.5" LONG ZINC HEX HEAD BOLT		4
45	TMX-7135	5/8-11, 1.75" LONG HEX HEAD BOLT		2
46	TMX-T11008	#12-24 X 7/8" HEX WASHER HEAD SELF TAPPING SCREW		21
47	TMX-T10072	BLADE RAISE/LOWER CYL	.	2
48	TMX-T10076	BACK STABILIZER CYL	.	1
49	TMX-T10067	BUCKET/ ARM SWING CYL		1
50	TMX ID PLATE	SERIAL ID PLATE	.	1
51	TMX-8414	#6 X 3/16 U DRIVE SCREW	.	4
52	TMX-T2059-2	HEAT BLANKET	.	1

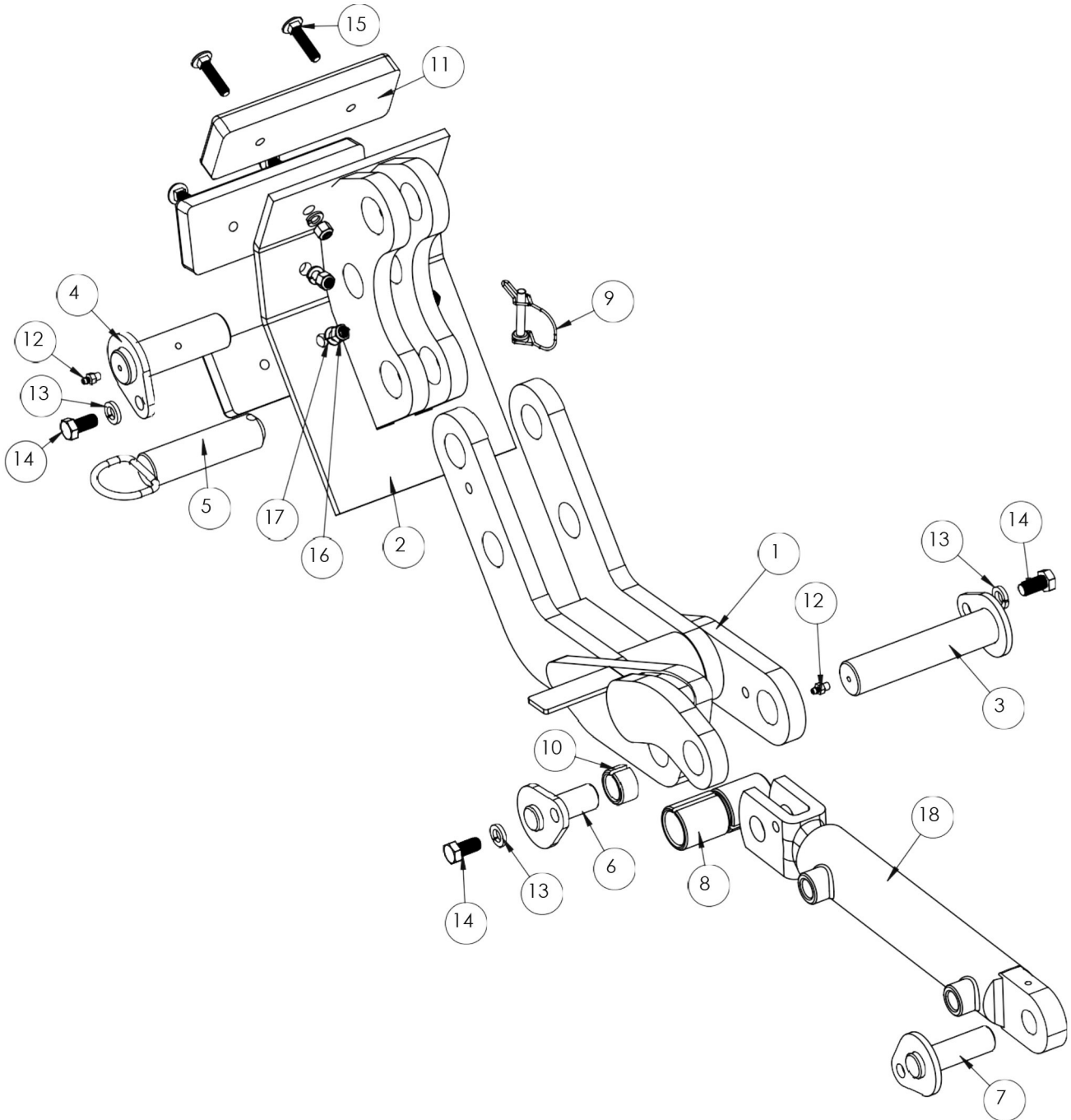
TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY	REV
1	T10107	BUSHING, BLADE ARMS & CASTER STEMS	4	.
2	T10108	BUSHING	4	.
3	TMX-14505	1/4-28 STRAIGHT GREASE ZERK	2	.



TMX OPERATOR'S MANUAL

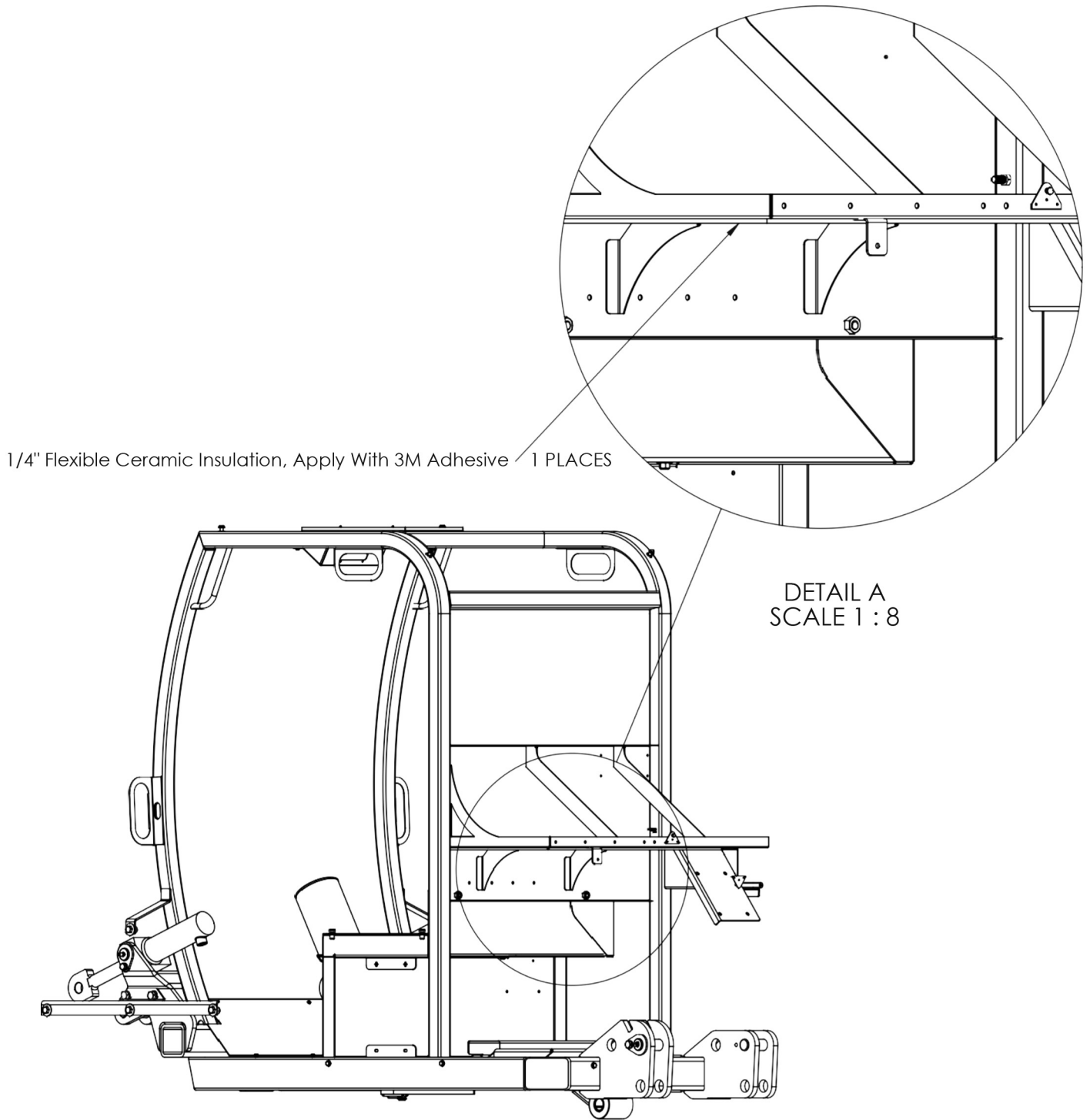
ITEM NO.	PART NUMBER	DESCRIPTION	HITCH GROUP/QTY	REV
1	T4113	HITCH WELDMENT	1	
2	T4500	CASTER WELDMENT	2	
3	T4200	WHEEL HUB WELDMENT	2	A
4	T4110	LOCK WELDMENT, HITCH	1	
5	T9011	PIN-AXLE, CASTER WHEEL	2	A
6	T10089	18X8.5 CASTER WHEEL/TIRE, FOAM FILLED	2	.
7	T11018	1.375" WASHER, CASTER PIVOT	6	.
8	T11017	JAMNUT, 1"-8 ZP	2	
9	T8203	WASHER, 1" NARROW SERIES ZP	8	
10	T11019	SPRING PIN, 5/16 X 2"	4	
11	T10115	EXTENSION SPRING	1	
12	T2075	HITCH PIN, 7/8 DIA WITH CASTOR LOCK PIN	2	.
13	TMX-7008	1/2-13 X 1 GRADE 5 ZINC HCS	12	
14	TMX-8101	1/2" ZINC LOCK WASHER	12	
15	T9007	PIN, HITCH LOCK & FLIP PAD LOCK	2	.
16	T9006	PIN, HITCH PIVOT & FLIP PAD PIVOT	2	B
17	T10120	PTO PIN 5/16 X 1.75 SW TBLK	2	.



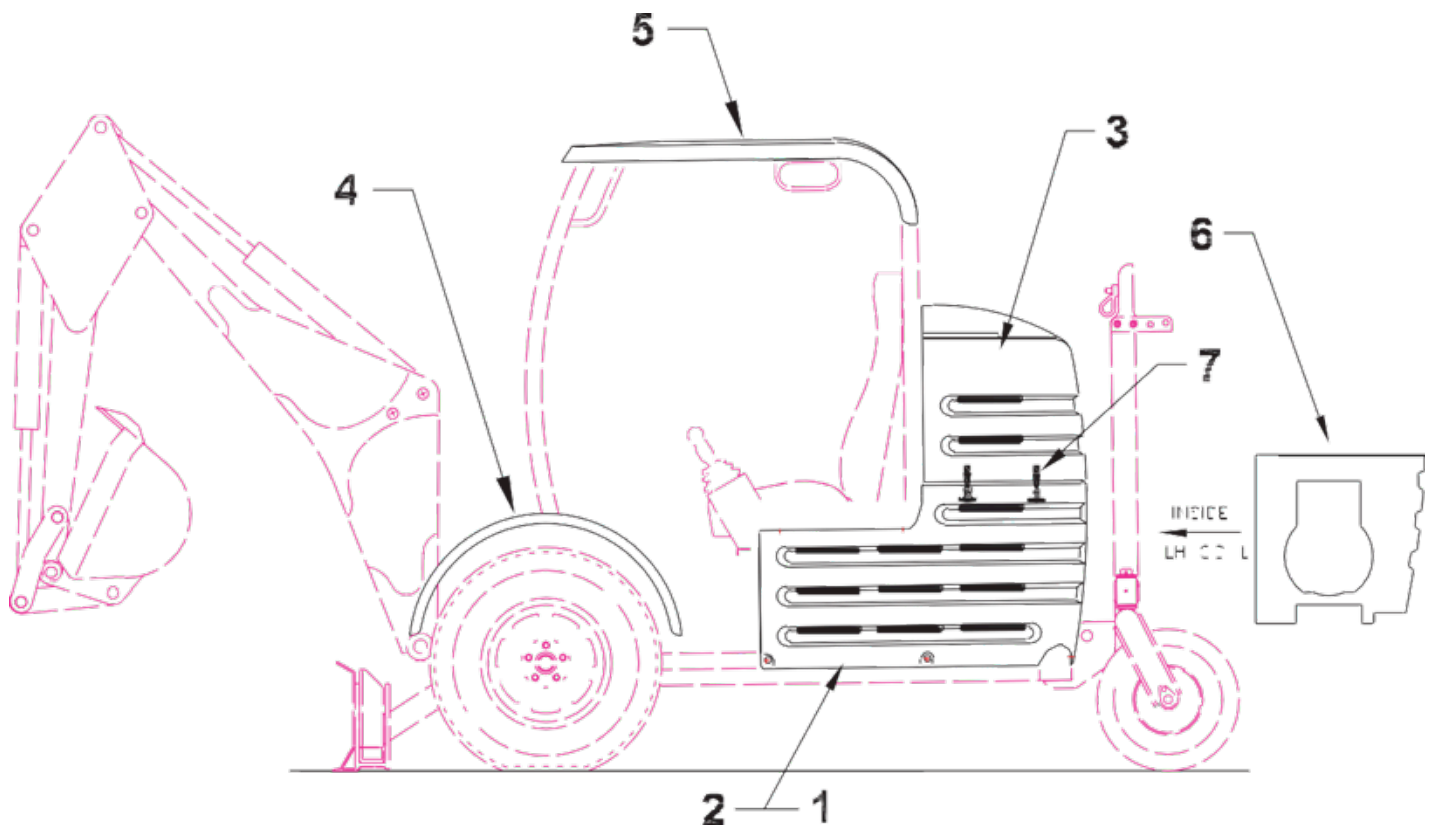
TMX OPERATOR'S MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	REV	REAR STAB GROUP/QTY
1	T6000	REAR STABILIZER WELDMENT		1
2	T6100	FLIP PAD WELDMENT		1
3	T9004	PIN, REAR STABILIZER PIVOT	.	1
4	T9006	PIN, HITCH PIVOT & FLIP PAD PIVOT	B	1
5	T9007	PIN, HITCH LOCK & FLIP PAD LOCK	.	1
6	T9010	PIN, TILT CYL. TO BLADE ARM & CYL. ROD TO STABILIZER	A	1
7	T9013	PIN, REAR STABILIZER CYL. TO CHASSIS	.	1
8	T10109	BUSHING, STABILIZER TO CHASSIS	.	2
9	T10120	PTO PIN 5/16 X 1.75 SW TBLK	.	1
10	T10163	BUSHING, STABILIZER TO CHASSIS	.	1
11	TMX-T10179	PAD, BOOM SUPPORT	.	3
12	TMX-14505	1/4-28 STRAIGHT GREASE ZERK	.	2
13	TMX-8101	1/2" ZINC LOCK WASHER		3
14	TMX-7008	1/2-13 X 1 GRADE 5 ZINC HCS		3
15	TMX-6960	3/8-16 1.75 LONG ZINC CARRIAGE BOLT		6
16	TMX-6972	3/8-16 LOCKNUT		6
17	TMX-8078	3/8" ZINC SPLIT LOCK WASHER		6
18	TMX-T10076	BACK STABILIZER CYL	.	1

TMX OPERATOR'S MANUAL



COWL GROUP



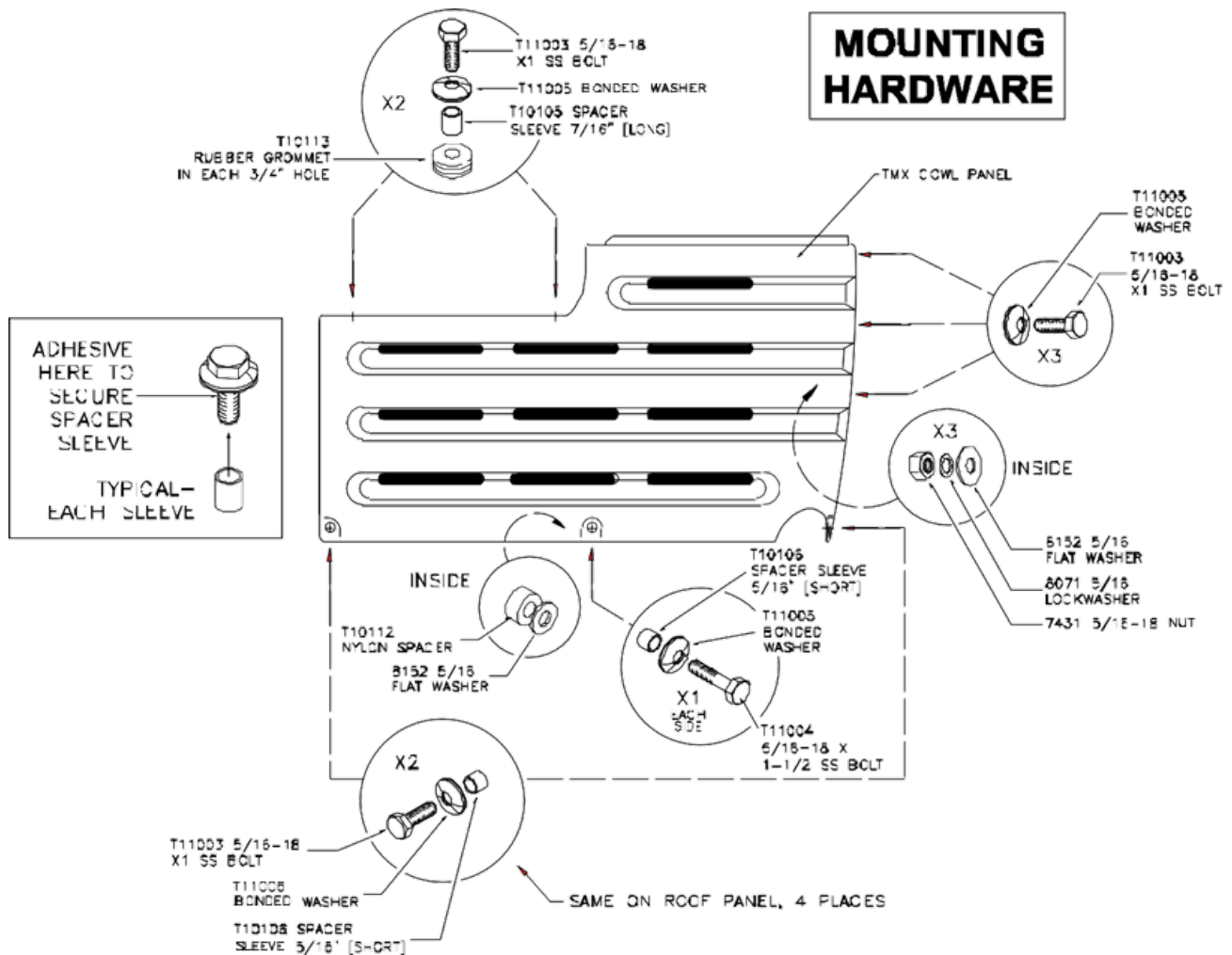
Important Note:

Cowl parts expand and contract with temperature changes grommets are different rate than the steel TMX chassis, Make sure that elastomer fitted to the attachment points and that spacer sleeves are used on attachment bolts to avoid pinching cowl panels, which may result in cracking.

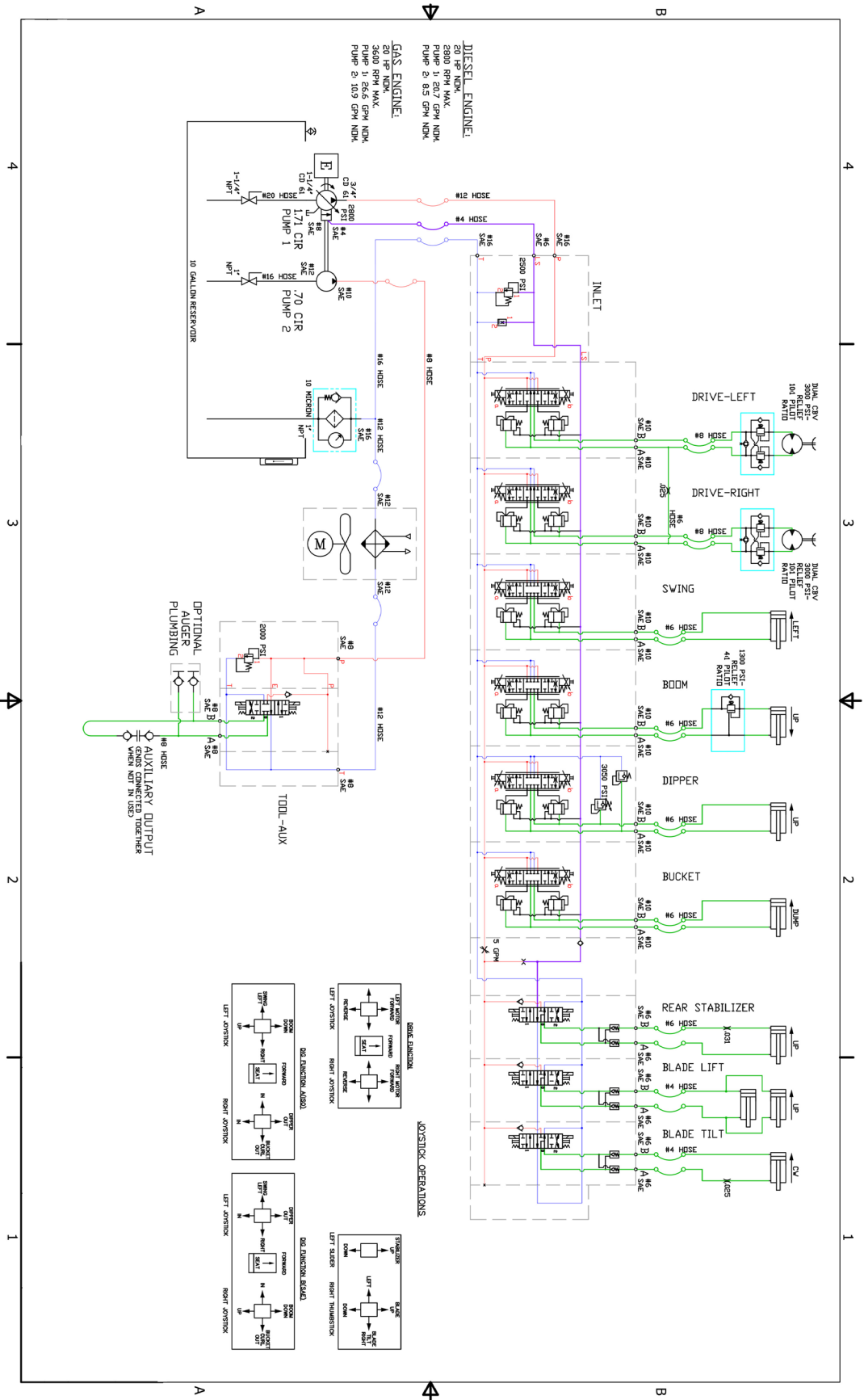
TMX OPERATOR'S MANUAL

COWL GROUP

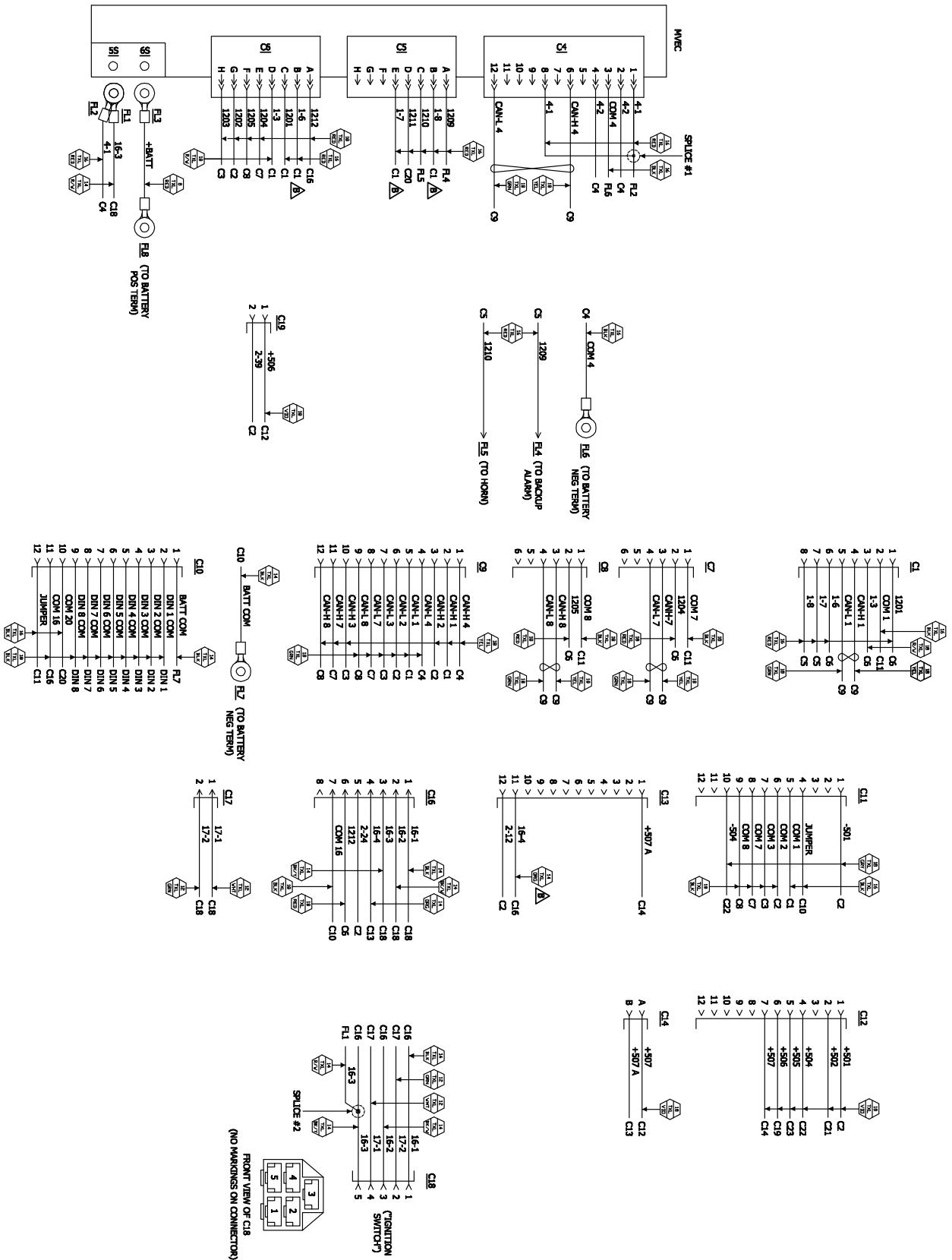
Item	Qty.	Part Number	Description
1	1	T10056	Cowl Panel, Engine, RH
2	1	T10057	Cowl Panel, Engine, LH
3	1	T10058	Hood Assembly
4	2	T10059	Fender, RH or LH
5	1	T10060	Sunshade Roof Panel
6	1	T10061	Cooling Duct, Gas Engine Only
7	2	T10114	Latch, Tee Handle



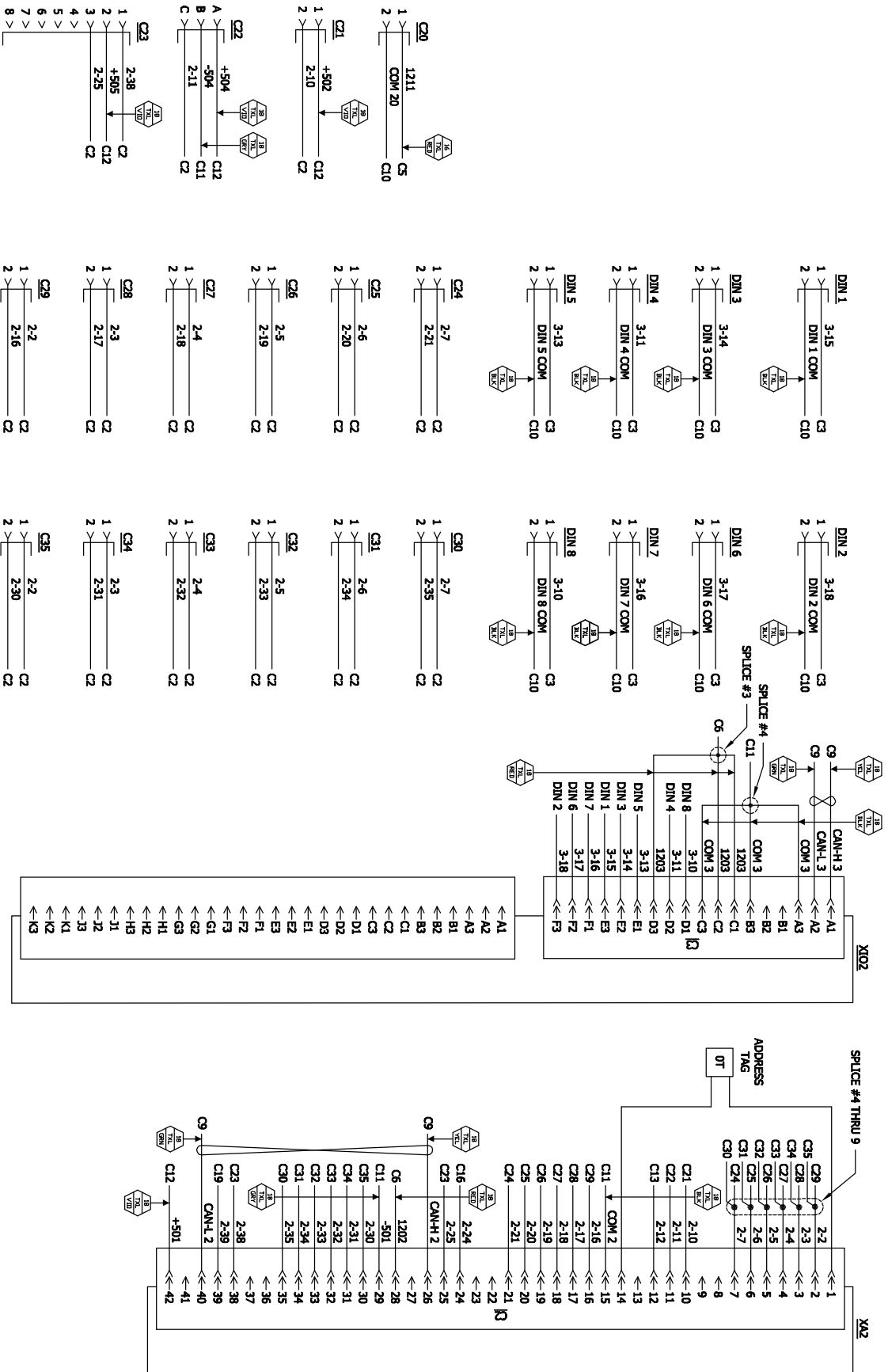
HYDRAULIC DIAGRAM



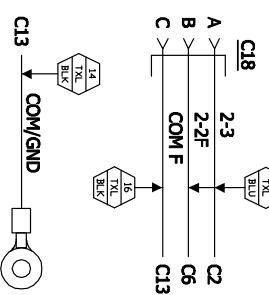
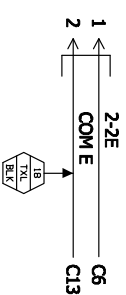
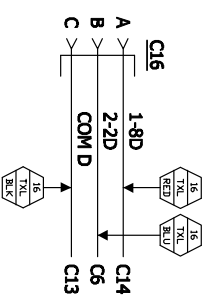
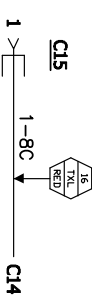
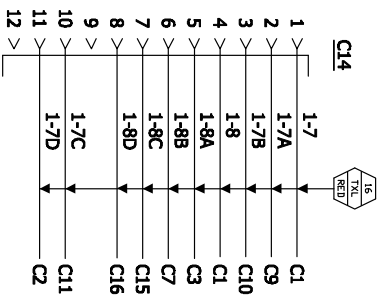
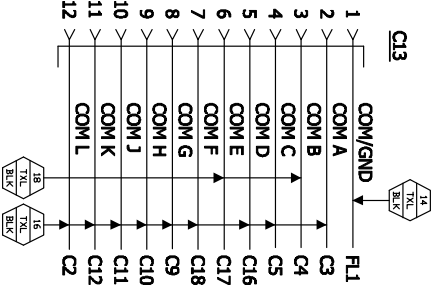
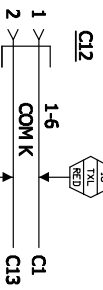
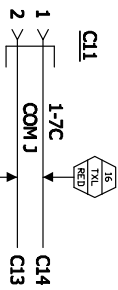
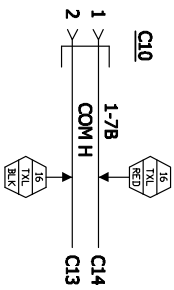
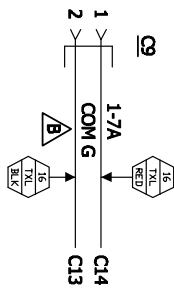
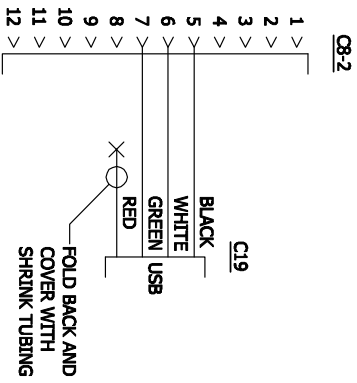
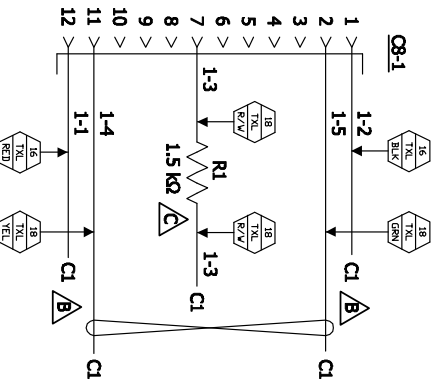
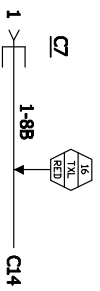
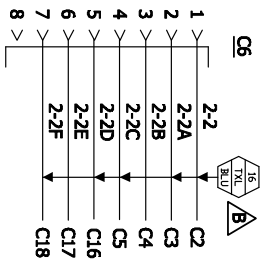
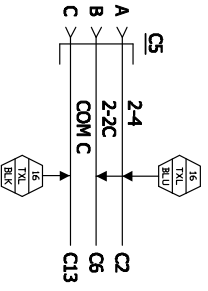
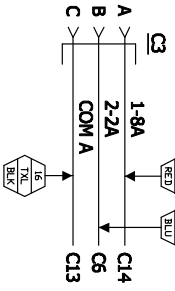
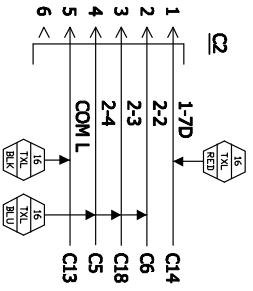
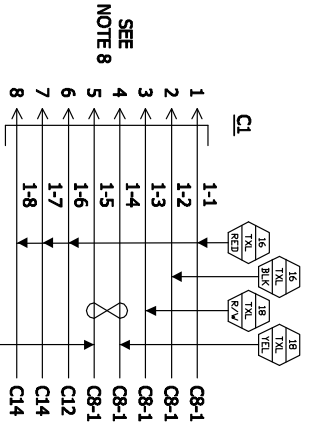
ELECTRICAL DIAGRAMS



TMX OPERATOR'S MANUAL



TMX OPERATOR'S MANUAL

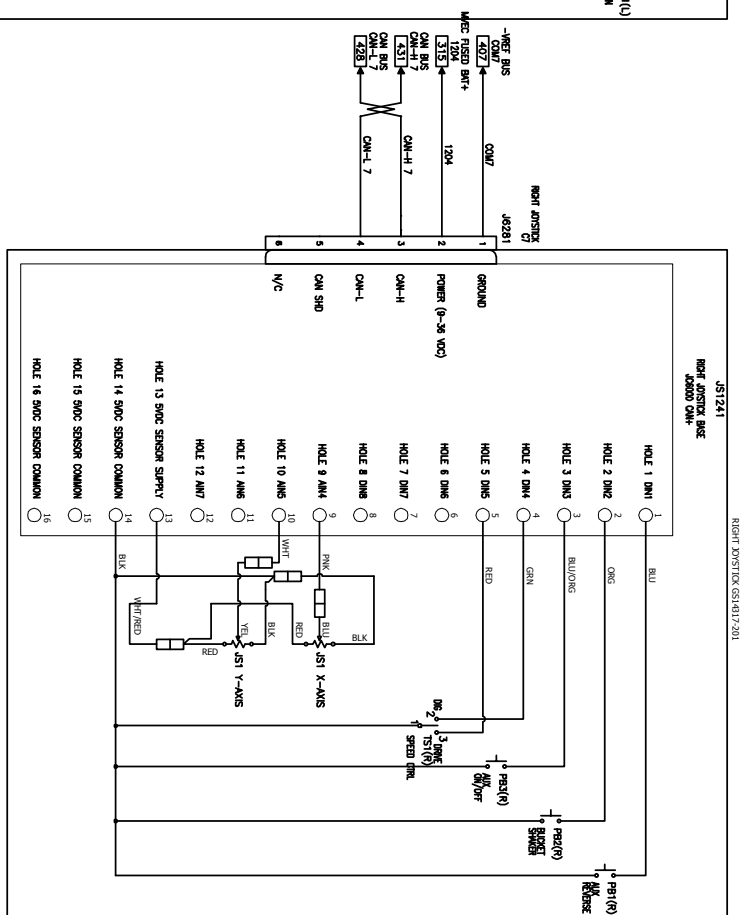
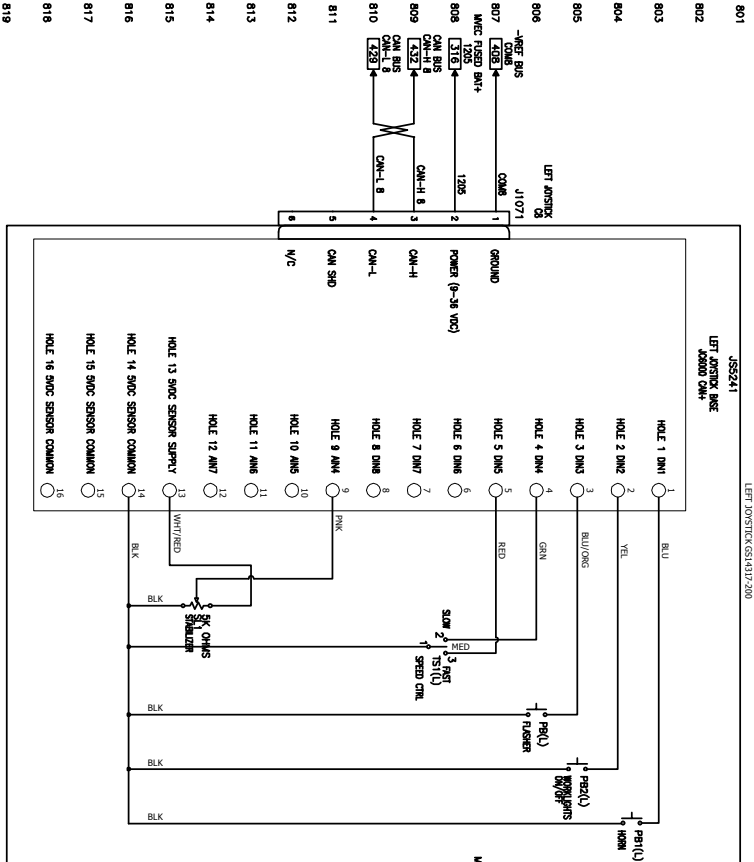


SUPPLIER MATING CONNECTOR LIST ES14317-901.wpd

CSGR CONNECTOR/TAGNAME	SUPPLIER TAGNAME	LOCATION (FUNCTION)	QNT	MFG	CAT	CATDESC
C21 P109	J1092	HYDRAULIC TEMP SENSOR	1 2	DEUTSCH DEUTSCH DEUTSCH	DT04-2P 0460-202-16141 V2P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C22 P109A	J1091	HYDRAULIC PRESSURE SENSOR	1 3	DEUTSCH DEUTSCH DEUTSCH	DT04-3P 0460-202-16141 V3P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C19 J1181	P1181	SEAT SWITCH	1 2	DEUTSCH DEUTSCH DEUTSCH	DT04-2P 0460-202-16141 V2P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C23 RECP1151	PL1151	STABILIZER SW	1	CARLING	N/A. CONNECTOR INTEGRAL TO SWITCH HOUSING	
C20 P3111	J3111	HYDRAULIC FAN	1 2	DEUTSCH DEUTSCH DEUTSCH	DT04-2P 0460-202-16141 V2P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C18 P5041	J5041	IGNITION SW	1		N/A. CONNECTOR INTEGRAL TO SWITCH HOUSING	
C16 J5111	P5111	ENGINE HARNESS	1 3 4	DEUTSCH DEUTSCH DEUTSCH DEUTSCH	DT04-08SA 0462-201-16141 0462-209-16141 114017 V8S	DT SERIES COMMON CONTACT PIN COMMON CONTACT PIN WEDGELOCK SEALING PLUG
C17 P5131	J5131	STARTER MOTOR	1 2	DEUTSCH DEUTSCH DEUTSCH	DTM06-2S 0462-201-20141 WM-2S	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C16 P6131	RECP6131	LEFT SIDE MARKER LTS	1 1	DEUTSCH DEUTSCH DEUTSCH	DT04-3P 0460-202-16141 V3P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C18 P6061	RECP6062	LEFT SIDE STOP LIGHT	1 3	DEUTSCH DEUTSCH DEUTSCH	DT04-3P 0460-202-16141 V3S	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C3 PL6131	J6131	RIGHT SIDE MARKER LTS	1 3	DEUTSCH DEUTSCH DEUTSCH	DT04-3P 0460-202-16141 V3P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C4 RECP6101	P6101	RIGHT SIDE STOP LED	1 2	DEUTSCH DEUTSCH DEUTSCH	DTM06-2S 0462-201-20141 WM-2S	COMMON CONTACT SOCKET
C5 PL6061	J6061	RIGHT SIDE STOP LIGHT	1 3	DEUTSCH DEUTSCH DEUTSCH	DT04-3P 0460-202-16141 V3P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C12 P6141	RECP6141	STROBE LIGHT	1 2	DEUTSCH DEUTSCH DEUTSCH	DT04-2P 0460-202-16141 V2P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C17 J6102	PL6101	LEFT SIDE STOP LED	1 2	DEUTSCH DEUTSCH DEUTSCH	DTM06-2S 0462-201-20141 WM2S	COMMON CONTACT SOCKET
C7 P7021	J7021	RIGHT FRONT FLASHER			N/A. CONNECTOR INTEGRAL TO LIGHT HOUSING	
C15 P7071	J7071	LEFT FRONT FLASHER			N/A. CONNECTOR INTEGRAL TO LIGHT HOUSING	
C9 P7231	J7231	WORK LIGHT 1	1 2	DEUTSCH DEUTSCH DEUTSCH	DT04-2P 0460-202-16141 V2P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C10 P7281	J7281	WORK LIGHT 2	1 2	DEUTSCH DEUTSCH DEUTSCH	DT04-2P 0460-202-16141 V2P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
C11 P7321	J7321	WORK LIGHT 3	1 2	DEUTSCH DEUTSCH DEUTSCH	DT04-2P 0460-202-16141 V2P	DT RECEPTACLE COMMON CONTACT PIN WEDGELOCK
P7361	J7361	REA WORK LIGHT	1		N/A. CONNECTOR INTEGRAL TO LIGHT HOUSING	

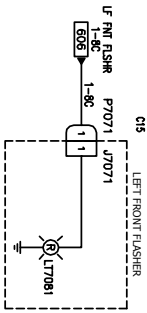
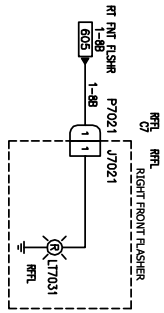
TMX OPERATOR'S MANUAL

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TMX OPERATOR'S MANUAL

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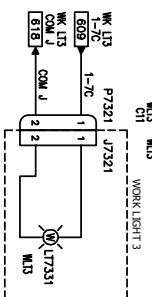
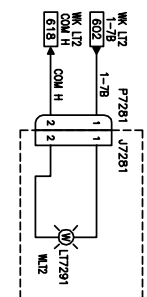
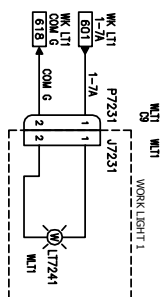
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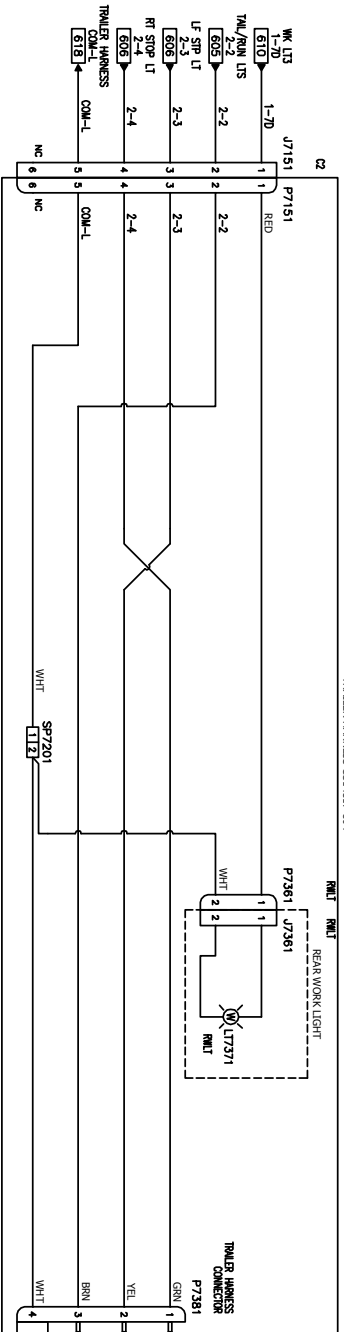
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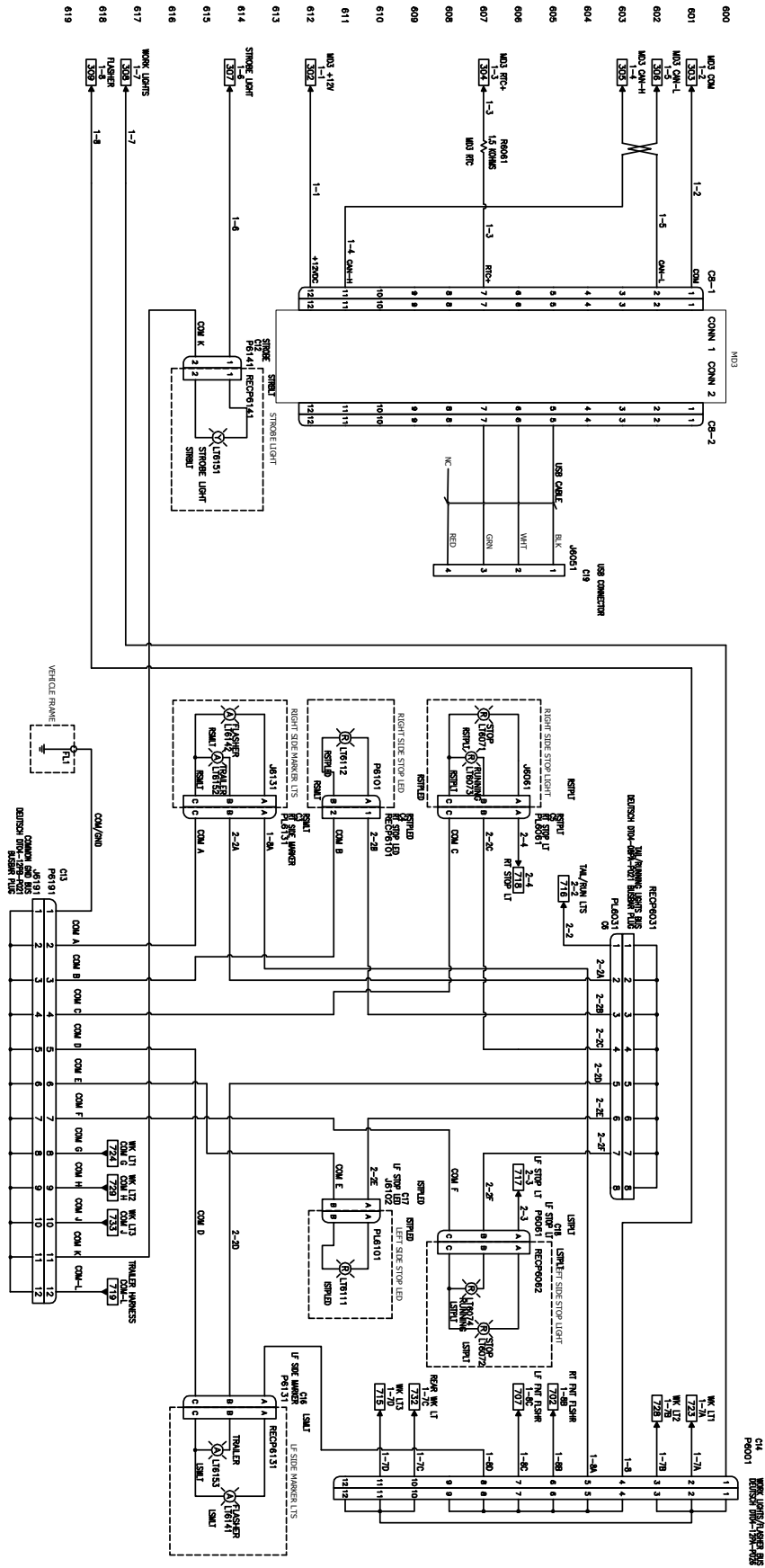
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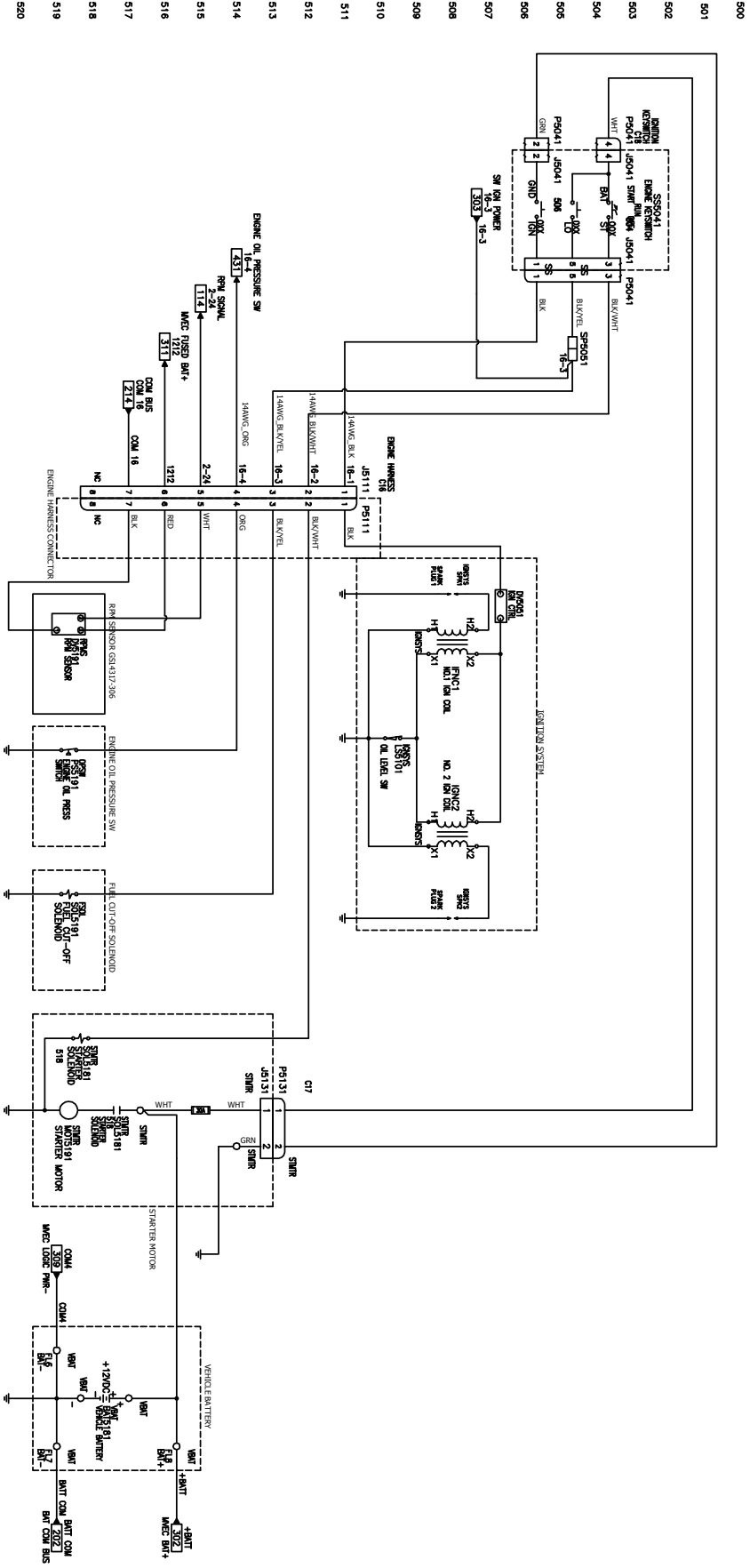
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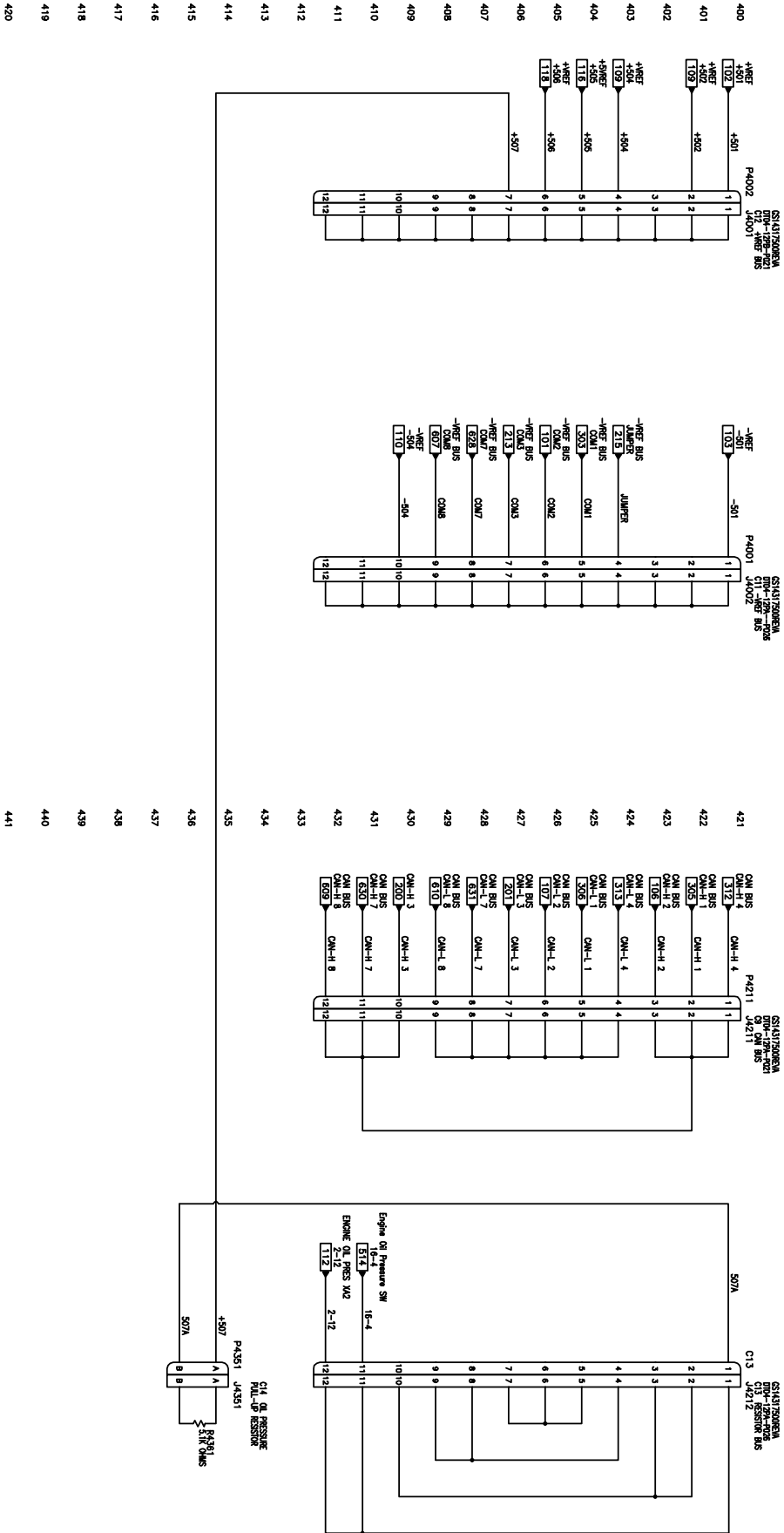


TMX OPERATOR'S MANUAL

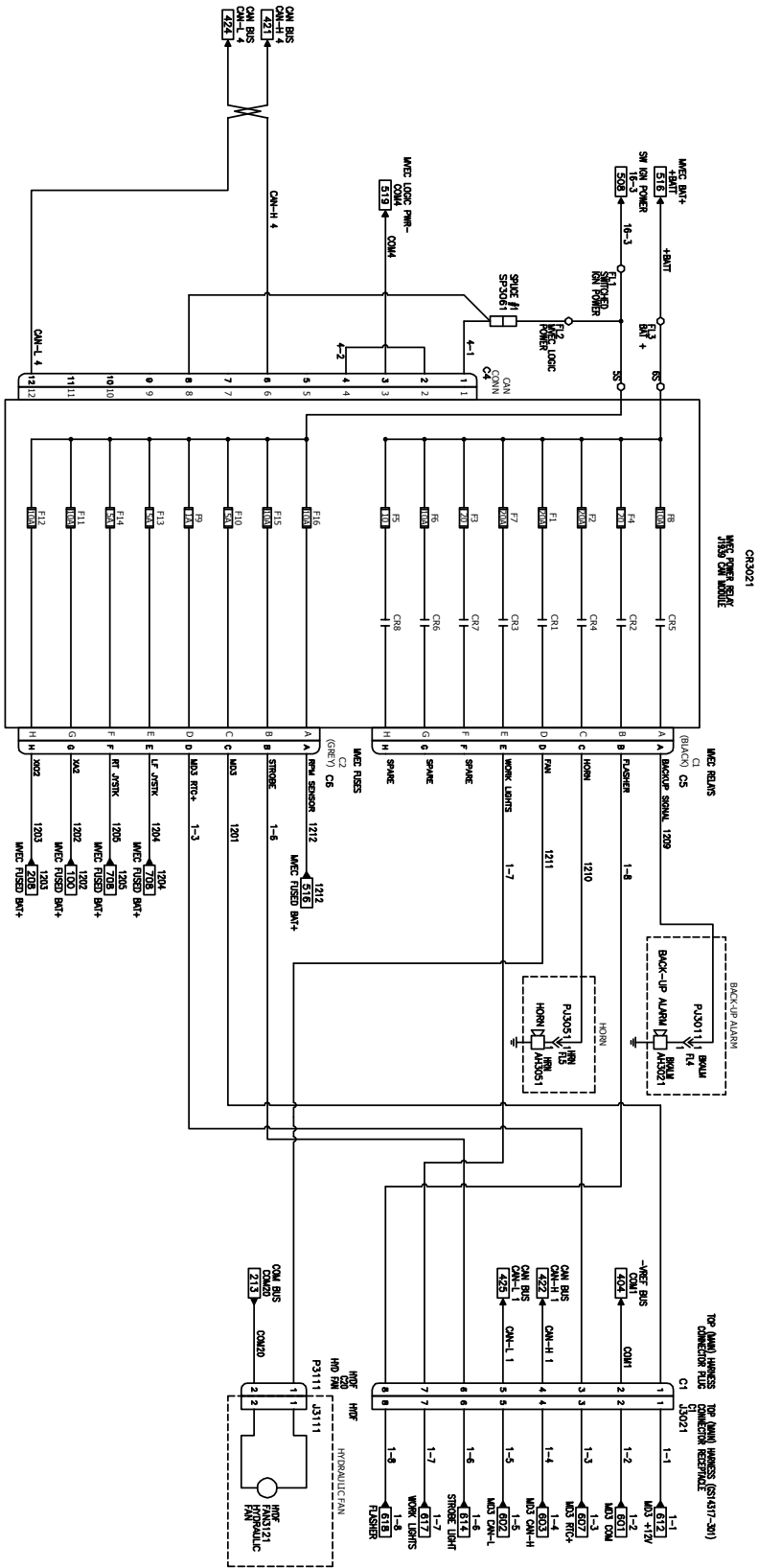




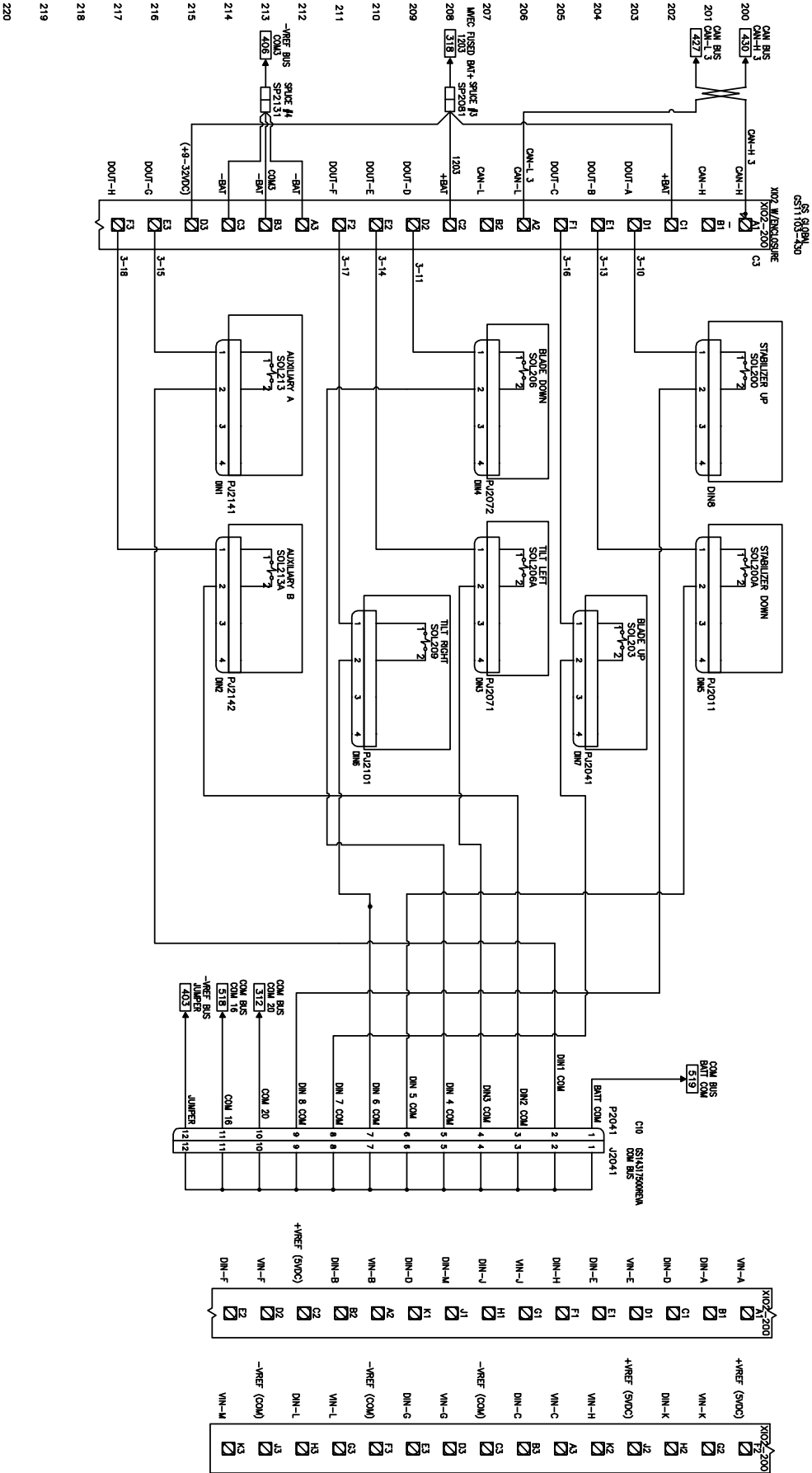
TMX OPERATOR'S MANUAL



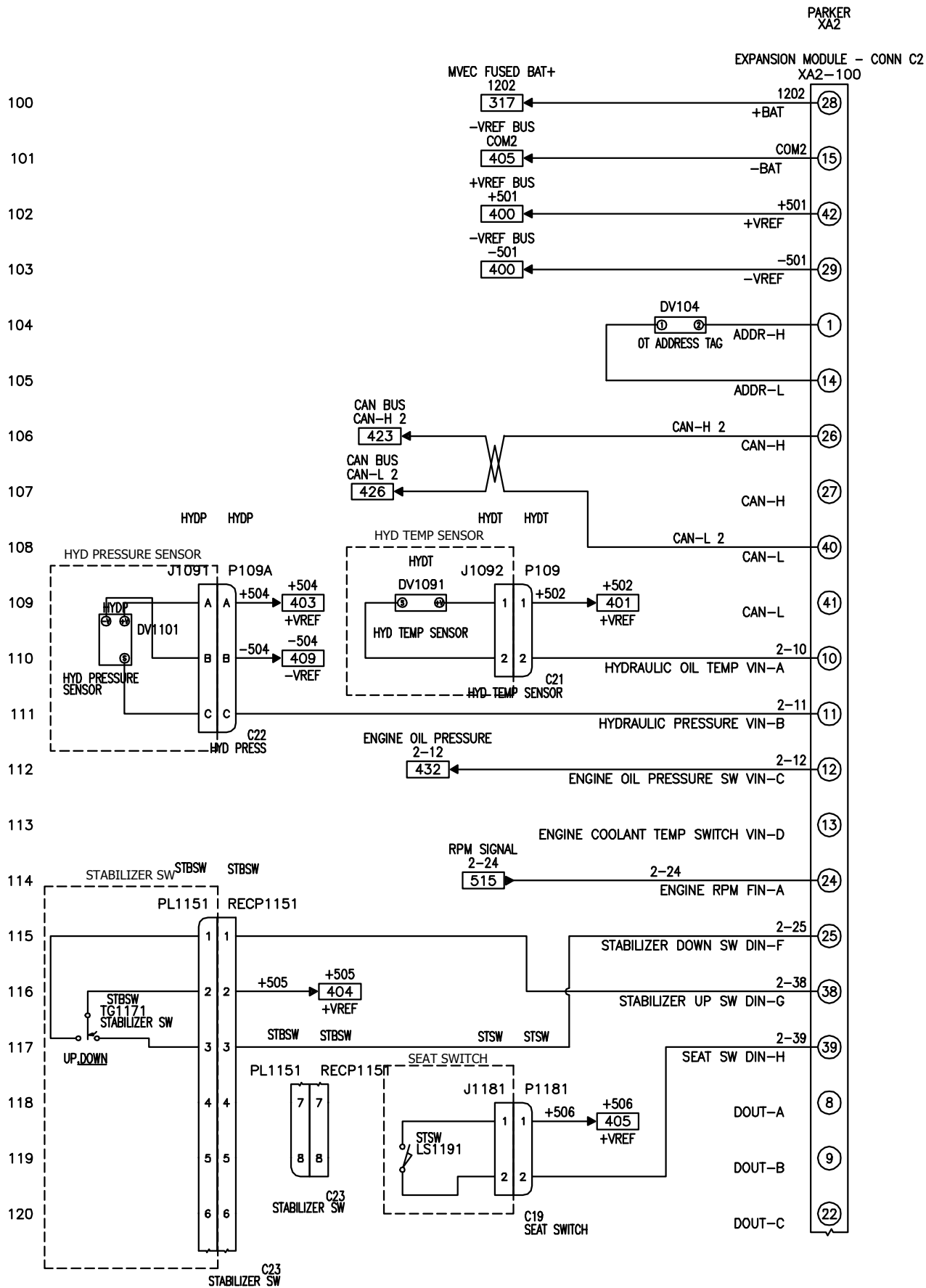
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TMX OPERATOR'S MANUAL



TMX OPERATOR'S MANUAL



TMX LIMITED WARRANTY

PERIOD OF WARRANTY

Innovative Equipment, LLC (hereafter referred to as the Manufacturer) warrants the TMX Excavator to be free from defects in material and workmanship for a period of one (1) year after the date of delivery to the end user or of the date of initial use, whichever date comes first.

WARRANTY DETERMINATION

The Manufacturer will (at its option) replace, repair or have repaired, any parts or components which are found to be defective in material or workmanship. This warranty does not in any way obligate the Manufacturer to be responsible for transportation, removal or installation charges in connection with said inspection, replacement or repair of defective parts.

EXCLUSIONS AND RESERVATIONS OF WARRANTY

This warranty is expressed in lieu of any other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligations or liability on the part of the manufacturer. The Manufacturer neither assumes nor authorizes any other person to assume for it any other liability in connection with such equipment.

The TMX Excavator is designed as a digging machine. This warranty does not apply to any TMX Excavator or parts thereof which, in the opinion of the Manufacturer:

- have been used for purposes other than those for which they were designed;
- have been subjected to excessive and unreasonable use;
- have been improperly or negligently installed, maintained or operated;
- have been damaged by accident;
- have been replaced as a result of normal and routine machine maintenance or service;
- have been altered without the express written consent of the Manufacturer.

The Manufacturer reserves the right to discontinue the manufacturing of any model or type of products to make changes in design and to add improvements without incurring any obligation to install the same on products previously ordered.

COMPONENTS WARRANTED BY THEIR ORIGINAL MANUFACTURER

Component parts of the TMX Excavator not originally manufactured by the Manufacturer are not covered by this warranty; but are limited to the warranties of the original manufacturer. Component parts not manufactured or warranted by the Manufacturer include, but are not limited to:

- Engine
- Hydraulic valves
- Hydraulic Drive Motors
- Hydraulic Cylinders
- Hydraulic Pump & Lines
- Electronic components
- Lights

COMPONENTS NOT WARRANTED BY THE MANUFACTURER OR THEIR ORIGINAL MANUFACTURER

Component parts not manufactured by and not warranted by the Manufacturer or by their original manufacturer include, but are not limited to:

Common Hardware Items (screws, nuts, bolts, cotter pins, securing and safety chains, etc.) Tires and Wheels
Ground Contacting Parts (e.g., Buckets & Teeth)

TIME LIMITS

All parts found defective and covered under this warranty must be returned to Innovative Equipment, LLC within thirty (30) days of discovery of defect to receive full credit.

VALIDITY

This warranty is valid only if the warranty sheet is completed and mailed to Innovative Equipment, LLC.

TMX WARRANTY REGISTRATION FORM

This sheet must be completed in full and mailed within ten (10) days to Innovative Equipment, LLC.

Date Purchased _____

Purchaser's Name _____

Company Name _____

Address _____

City _____ State _____ Zip Code _____

Telephone Number _____ Fax Number _____

Email _____

Engine Model No. _____ Engine Serial No. _____

I HAVE READ AND UNDERSTAND THE MANUALS AND I UNDERSTAND THE PROPER USE OF THIS EQUIPMENT.

SIGNATURE _____ DATE _____

To assist Innovative Equipment, LLC in processing warranty claims, please complete this customer service guide:

1. What type of business is your company involved in? _____

2. What will be your primary uses for the TMX? _____

3. How did you first become aware of the TMX product line? _____

After completing this form completely, remove, fold, affix postage and mail to Innovative Equipment, LLC.

Thank you for registering your new TMX excavator.

TAPE HERE

AFFIX
FIRST CLASS
STAMP HERE

**INNOVATIVE EQUIPMENT
WARRANTY REGISTRATION**
8404 VENTURE CIRCLE
SCHOFIELD, WI 54476

FOLD

FOLD

MAINTENANCE SUPPLEMENT

Section I – Decal Placement

Decal Placement and Locations



Fuel tank sticker, gas or diesel
T9213 (Gas) T9214 (Diesel)



Fender mounted, wheel engagement
T9217



Electrical shock hazard, located on multiple locations boom, and both sides of ropes T9027 (x3)



Operation decal on side control panel, rear stabilizer foot, throttle control
T9219 T9203

TMX OPERATOR'S MANUAL

Decal Placement and Locations



TMX decal on boom (x2)



TMX decal on engine/tank cover (x2)



Dipper cylinder decal (x2)



Front hood shield decal



Dolly wheel placement for towing T9221

Decal Placement and Locations



Decal on end of hitch (x2)
T9220 T9217



Moved to console T9202



Fuel tank warning (x2) T9214



Hydraulic tank decals
T9215 T9211 T9212



Hydraulic tank decal T9206



Diesel only decal



8404 Venture Circle, Weston, WI 54476

www.iequipt.com