TWISTER

PSI 2.4L Powered Floor Scraper

Rev 07.2025

OPERATIONS AND MAINTENANCE MANUAL



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SECTION I
GENERAL DESCRIPTION
TWISTER

The TWISTER is a heavy-duty, propane-powered floor scraper designed for professional surface preparation. It is driven by a PSI 2.4L engine that powers a tandem hydrostatic pump system, delivering responsive skid-steer propulsion and high-torque performance.
This machine removes floor coverings and surface coatings by applying a weighted, sharpened blade directly to the floor surface. As the TWISTER moves forward, the blade conforms to the contours of the floor, applying consistent downward force to penetrate and lift even well-adhered materials. The combination of mechanical force and precision blade control ensures efficient, thorough removal of coatings without the blade lifting or skipping.

SECTION II
SPECIFICATIONS

Specification	Value
Overall Machine Weight	4,350 lbs.
Removable Weight	2,000 lbs.
Fuel Capacity	33 lbs. (liquid propane)
Hydraulic Fluid Capacity	15 gallons
Travel Speed	Up to 500 feet per minute
Engine Type	PSI 2.4L, 4-cylinder, propane-fueled
Maximum Engine Speed	3,200 RPM
Machine Length	75 in.
Machine Width	26 in.
Optional Auxiliary Output	Available upon request

SECTION III
SAFETY AND PRECAUTIONS

⚠ WARNING: CARBON MONOXIDE HAZARD
Operating this machine in a confined or poorly ventilated area can lead to carbon monoxide poisoning, which may result in serious injury or death. Always use the TWISTER in a well-ventilated environment. A carbon monoxide (CO) monitor is strongly recommended when operating indoors.

GENERAL SAFETY GUIDELINES

Before operating the TWISTER, read this manual thoroughly and ensure complete understanding of all safety instructions. If you have any questions, contact OEM Products at 1-866-636-7763.

A proper safety program can result in:

- Reduced operating costs
- Lower workers' compensation claims
- Decreased downtime
- Improved morale
- Fewer incidents and injuries

Operators must understand:

- Proper use of personal protective equipment (PPE)
- Safe operating procedures
- Potential hazards in the work area

BASIC SAFETY PRACTICES

- Always turn off the engine and disconnect the battery before performing inspections or maintenance.
- Wear appropriate PPE: safety glasses, hearing protection, and heavy-duty work gloves.
- Keep the machine clean and free from debris; maintain a safe, organized work area.
- Chock the rear wheels and ensure the engine is off before performing maintenance.

- Replace worn or damaged parts promptly.
- Never insert hands or tools near moving components during operation.
- Do not open any access panels unless the engine and propane system are fully shut off.
- Electrical work must be performed by a qualified electrician.
- Be cautious of loose debris—floor coatings can create slip hazards.
- After servicing, verify that:
    - All tools are removed
    - All fasteners are secure
    - Rotating parts are correctly reassembled
- Always lower the blade to the ground when leaving the operator position.
- Keep unauthorized personnel and the public clear of the work area. Barricade the jobsite appropriately.
- Maintain a 200-foot safety buffer around all active scraping operations.
- Never operate the machine under the influence of drugs, alcohol, or medication that impairs alertness.

PROPANE SAFETY

- Have a certified propane professional inspect the propane system at least twice annually.
- If a leak is suspected:
    1. Immediately close the propane tank valve
    2. Evacuate the area
    3. Do not restart until the system is cleared by a certified technician
- No smoking or open flames are allowed within 50 feet of the unit during operation.
- Propane bottle installation and leak checks must follow instructions provided in this manual.

TRANSPORT SAFETY

- The Twister may roll on an incline when the engine is off. Always chock the wheels immediately after shutting off the engine unless the machine is securely strapped to prevent movement.
- Ensure the wheels remain on a stable surface during loading/unloading.

TRAINING & SUPPORT

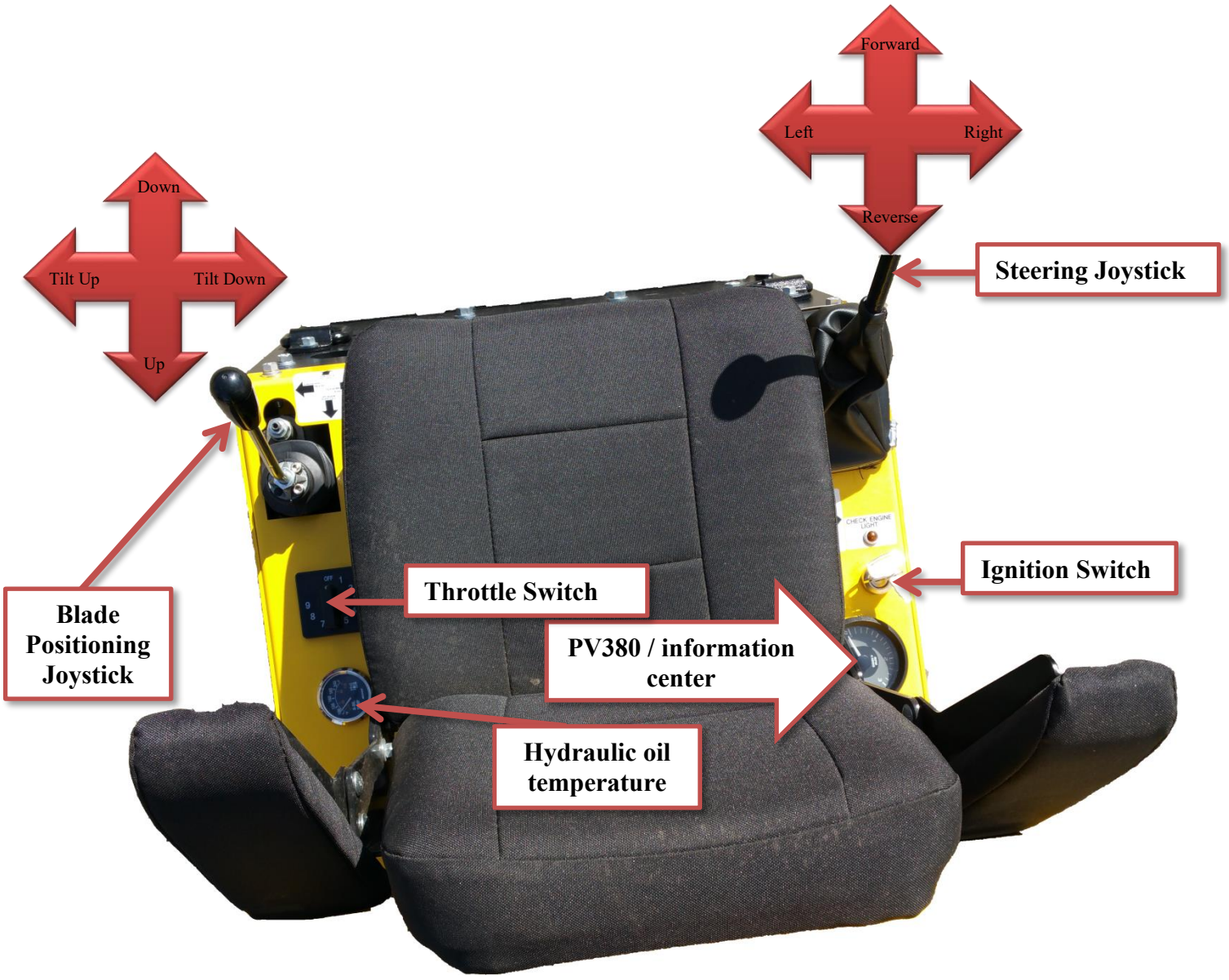
- Operators must be at least 18 years old and complete safety training before use.
- OEM Products provides a free 8-hour safety and maintenance seminar at its Oklahoma City facility. Call 1-866-636-7763 to schedule.

SECTION IV

TWISTER

INSTRUMENTS AND CONTROLS

TOP VIEW OF CONTROL AREA



Control	Function
Ignition Switch	**Turns the engine on/off.**
Throttle Control	**Adjusts engine RPM.**
Left Joystick	**Controls blade elevation and pitch**
PV380 Display Screen	**Shows engine diagnostics, fault codes, parameters, and system alerts.**
Right Joystick	**Controls machine steering, forward/reverse motion.**

🔧 **The PV380 Murphy display allows for advanced monitoring of engine functions. Key features include real-time display of engine RPM, oil pressure, temperature, battery voltage, and active fault codes.**

🔧 PV380 FAULT CODE USAGE

- When a fault occurs, the PV380 display will:
  - Show a flashing icon or message
  - Log the fault in its history
  - Trigger a warning or shutdown depending on severity

To view fault codes:

1. Press the **Menu (Key 3)** on the PV380
2. Navigate to **Faults**
3. Use **Arrow Keys** to scroll through active or stored faults

✴️ **Tip:** Record any active codes before shutting down the machine for accurate troubleshooting.

SECTION V
START-UP AND BREAK-IN

The **TWISTER** has been safety tested and run at our factory prior to shipping. All fluid levels have been topped off; however, no propane has been added to the tanks for safety shipment purposes. Before running the TWISTER please check the following items that may have shifted or changed during shipping.

1. Raise engine covers and check oil level.
2. Check air cleaner filter element for snug fit.
3. All battery cable connections are snug.
4. Inspect for major hydraulic oil leaks. Snug hydraulic fittings using two wrenches. Use caution not to over tighten.
5. Fill propane tank.
6. Mount propane bottle in brackets, be sure bracket alignment pin corresponds with alignment slot on bottle.
7. Attach propane hose to liquid side of bottle by attaching to the handle valve. Snug fit the female connector attached to hose and slowly turn valve on. You should hear gas briefly enter the propane hose. Immediately check for propane leaks with soapy water solution. If leak persists after retightening the knurled female connector: **STOP**, turn off the bottle at valve and seek assistance from certified propane professional. Serious damage and or an explosion could occur.
8. Check lug bolts for tightness, torque 85-100 lbs.
9. Return all engine guards to proper position.
10. You are now ready to start the engine.
11. Once the engine is warming and running, and the operator is safely in the seat, the machine can be driven.

NEW MACHINE BREAK-IN

Since the TWISTER is a very low maintenance and user-friendly machine, there isn't any break in period. No oil additives or break-in oil change is required.

SECTION VI
MACHINERY OPERATION

Before reading the machinery operation section, new operators should familiarize themselves with all diagram views of the machine. These drawings show the activation of all moving parts of the TWISTER.

Even though the TWISTER surface prep machine is very easy to drive and operate, it is recommended that all operators familiarize themselves with this equipment before attempting to use machine in a jobsite or removal situation. This machine has certain steering characteristics that should be noted and practiced prior to operating in a confined space or restrictive environment.

The TWISTER is engineered for powerful and precise removal of floor coverings. Proper operation ensures both performance and longevity of the machine. Follow the steps below for safe and effective use.

🔧 PRE-OPERATION CHECKLIST

Before starting the machine:

- ✅ **Inspect all fluid levels (propane, engine oil, coolant, hydraulic fluid)**
- ✅ **Check the blade for wear and secure mounting**
- ✅ **Confirm that all guards and covers are in place**
- ✅ **Ensure the operator's area is clean and free of obstructions**
- ✅ **Inspect hoses and fittings for leaks or damage**
- ✅ **Verify that the propane tank is securely installed and free of leaks**

🚦 START-UP PROCEDURE

1. **Enter the Operator's Seat**
   Sit in the operator's position
2. **Turn the Ignition Switch**
   Rotate the key to the ON position. Allow the PV380 display to be initialized.
3. **Check PV380 Display**
   Wait for system checks. If any fault codes or alerts appear, do not proceed until they are resolved.
4. **Start the Engine**
   Turn the ignition key to START. Release once the engine fires.
5. **Warm-Up**
   Allow the engine to run at low throttle for 3–5 minutes before operation.

⊛ OPERATING CONTROLS

** Driving:**

Use the right joystick to control all machine movement. Push it in the direction you want the machine to go—forward, backward, left, or right.

** Blade Elevation and Tilt:**

Use the left joystick to control blade functions:

- **Push forward to lower the blade**
- **Pull back to raise the blade**
- **Push left to tilt the blade upward**
- **Push right to tilt the blade downward**

** Throttle Control:**

Adjust engine RPM using the throttle dial. Higher RPM improves removal on stubborn coatings but may reduce blade longevity if used excessively.

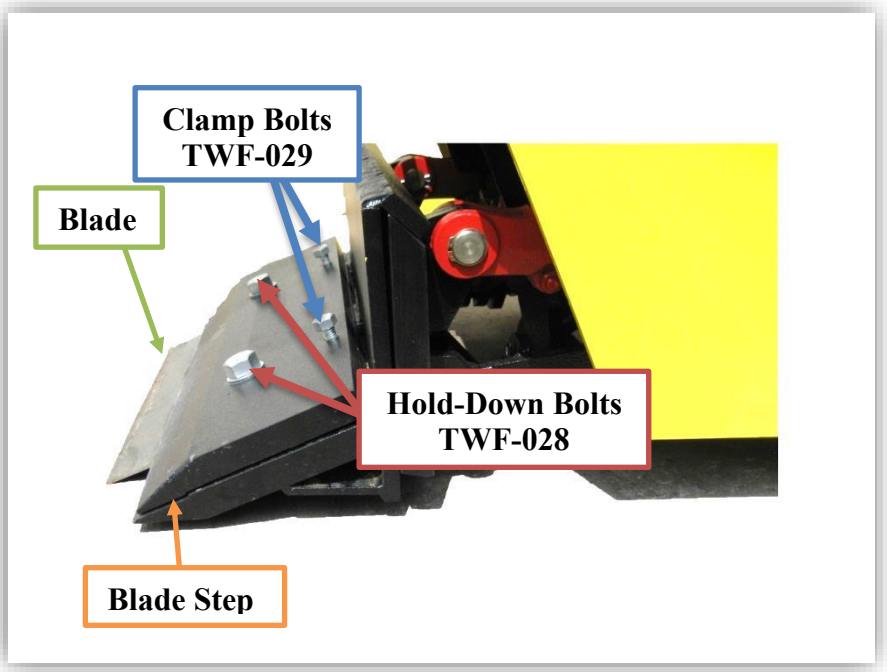
⚠ OPERATING CAUTIONS

- **Never operate near flammable vapors or liquids.**
- **Always maintain visibility of the working area.**
- **Do not raise the blade during forward motion except when necessary to avoid obstacles.**
- **Stop immediately if you hear abnormal noises, smell propane, or see excessive vibration.**

⊖ SHUTDOWN PROCEDURE

1. **Bring the machine to a full stop.**
2. **Lower the blade to the floor.**
3. **Reduce the throttle to idle**
4. **Turn off the ignition switch.**
5. **Chock the rear tires**
6. **Close the propane tank valve.**
7. **Disconnect the battery if long-term storage is planned.**

BLADE CHANGE PROCEDURE



To change scraping blades: Stop Engine. Loosen the smaller **Clamp Bolts** at the rear of the blade holder using a ¾" open-end wrench if your blade bar top is equipped. The newest style blade bar top doesn't have clamp bolts. Slide the dull blade out. Loosen the **Hold-Down Bolts** if necessary to fit the replacement blade against the **Blade Step**. Retighten the **Hold-Down Bolts** by hand and then retighten the **Clamp Bolts** with your wrench. Lower the blade and resume scraping. With a little practice, you should be able to change the blades in 15 seconds. Dull blades may be sharpened and reused many times.

Blade Positioning and Transport Guidelines

- Always lower the blade by pushing the left-hand lever forward before dismounting the machine. This critical safety procedure helps prevent accidental injury from contact with the blade or from unauthorized operations.
- Ensure the transport caster is not in contact with the floor during scraping operations. The caster will lift off the ground when the blade is properly lowered. If the caster remains in contact with the surface, it can impair both scraping efficiency and steering control.
- When transporting the machine, do not raise the front end more than ½ inch off the floor. Excessive lift may compromise stability and safety.

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SECTION VII
MAINTENANCE SCHEDULES

🔄 DAILY MAINTENANCE (Pre-Operation)

Before each use:

- Inspect for hydraulic leaks
- Check propane fuel level and line integrity
- Check engine oil level
- Check the coolant level (when cool) and cooling fins of engine radiator
- Check hydraulic fluid level (should be within 2 inches of the top of the hydraulic tank. The hydraulic fluid should not be all the way into the fill neck)
- Inspect blade and mounting bolts
- Check tire condition
- Verify PV380 display is free of fault codes
- Check hydraulic oil cooler for obstructions
- Torque wheel lug bolts to 125 ft./lbs.

🧰 WEEKLY MAINTENANCE

Every 40–50 hours or weekly (whichever comes first):

- Inspect and clean air filter element
- Clean or replace propane filter if contaminated
- Inspect battery terminals and clean as needed
- Check all hydraulic connections and hoses for signs of wear
- Grease pivot points and caster wheels
- Torque blade mounting bolts
- Test coolant mixture
- Inspect engine belts
- Use compressed air to clean debris from alternator and other parts
- Inspect and tighten all joystick steering linkages

🛠️ MONTHLY MAINTENANCE

Every 150–200 hours:

- **Change engine oil and replace oil filter**
- **Flush sediment from coolant reservoir and inspect fluid condition**
- **Inspect ignition coil and spark plug wiring**
- **Inspect motor mounts and bolts**

🧪 FLUID SPECIFICATIONS

Fluid Type	Specification
Engine Oil	**10W-30 (API CJ-4 or higher)**
Coolant	**50/50 mix of ethylene glycol & water**
Hydraulic Fluid	**30W TO-4**

⛽ EMISSIONS SYSTEM (PSI 2.4L Compliance)

This engine meets EPA and CARB emission standards for large spark-ignited (LSI) engines using propane fuel. It includes:

- **Closed-loop fuel control**
- **Oxygen sensor monitoring**
- **Catalytic converter**

Do not modify or bypass the emissions system. For diagnostics or certified emissions service, contact OEM Products.

🛑 STORAGE & SEASONAL MAINTENANCE

For extended storage:

- **Shut off propane supply**
- **Disconnect battery**
- **Store in a dry, covered environment**

Environmental Impact on Scraper Performance

Be aware that harsh working environments can significantly affect the performance and longevity of the floor scraper. Observe the following precautions:

- Vibration Stress: Continuous impact from ceramic tile removal may lead to premature loosening of bolts and fasteners throughout the machine. Inspect and tighten hardware regularly.
- Hydraulic Operation: When using hydraulic attachments, closely monitor the hydraulic oil temperature to prevent overheating and potential system damage.
- Dust Exposure: In high-dust environments such as demolition sites, dust can clog the radiator fins and lead to engine overheating. Dust buildup on the engine air filter can also disrupt the fuel-air mixture, increasing exhaust emissions. Regularly inspect and clean the radiator and air filter. Watch for warning indicators on the instrument panel.
- Tire Selection: Non-marking (white) tires are not suitable for use on ceramic tile, marble, or sharp debris surfaces. These conditions will cause excessive tire damage. Use black tires for better durability in these applications.
- Carpet Removal: Carpet fibers can wrap around the front transport caster, potentially damaging the wheel bearing. Inspect and clean the caster daily during carpet removal operations to avoid permanent damage.

TWISTER AIR FILTER ASSEMBLY

🔄 Air Intake System

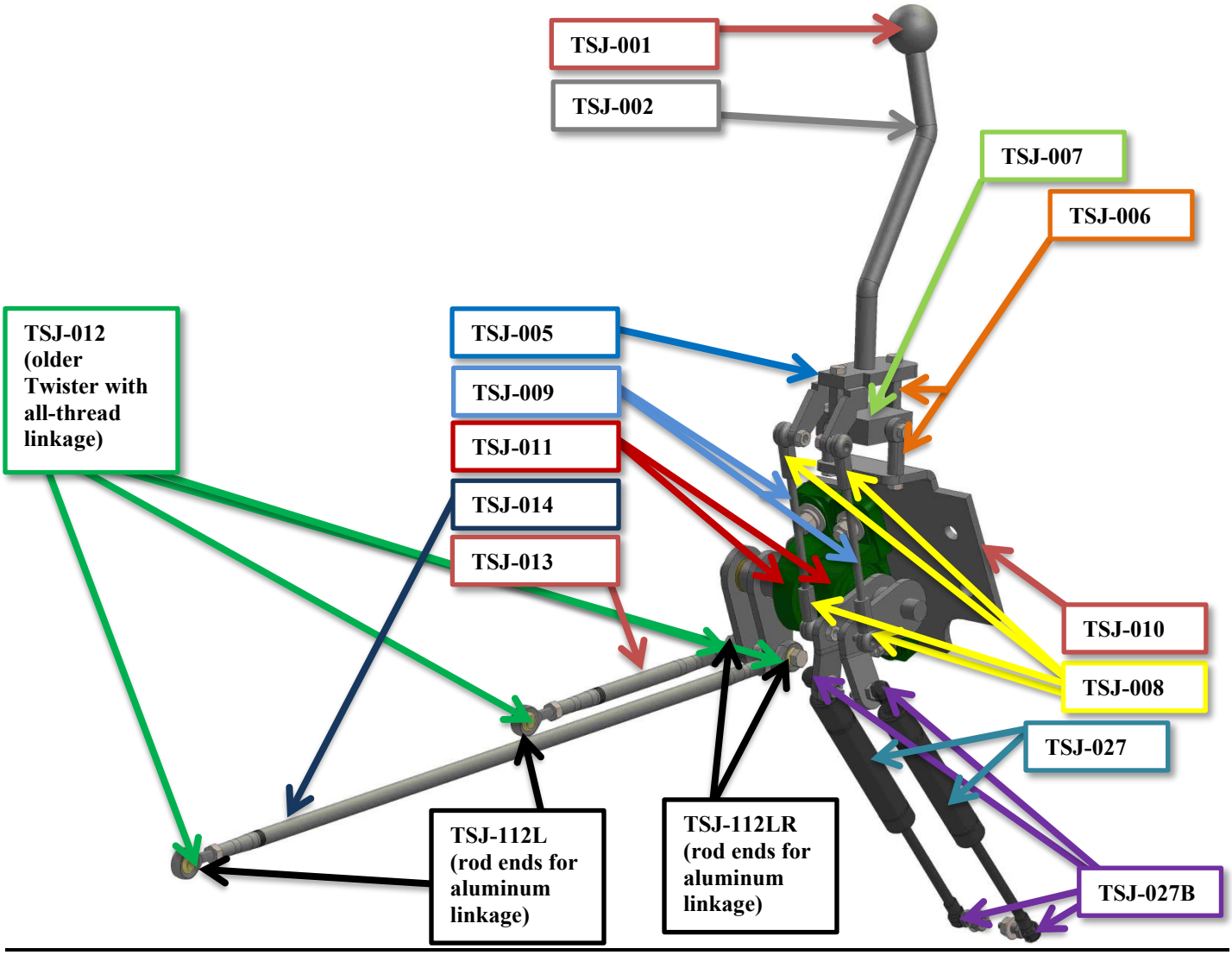
The TWISTER is equipped with an Enginaire VLR Air Cleaner:

- Function: Dual-stage filtration with centrifugal pre-cleaner for extended filter life
- Service Interval: Inspect and clean weekly or every 40 hours in normal conditions; inspect daily in dusty environments

🛠️ Tip: Ensure proper sealing of the air filter housing after maintenance. A loose or damaged lid can allow unfiltered air into the engine.

DESCRIPTION	QTY	PART NUMBER
Complete Assembly	1	TWE-026-EA
Air filter Element	1	TWE-033-EA

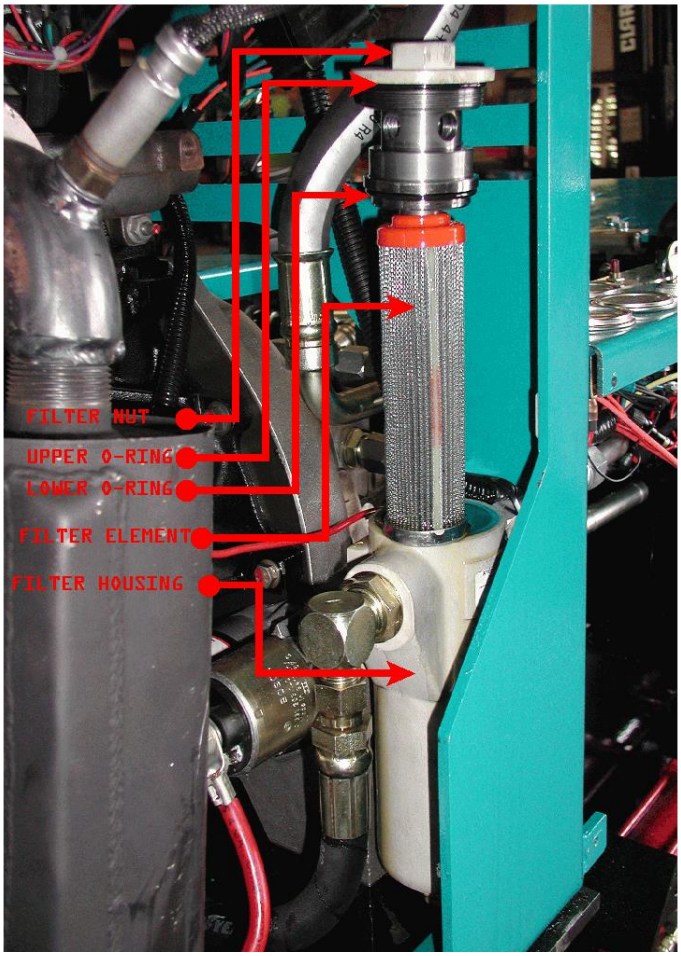
TWISTER JOYSTICK ASSEMBLY (TSJ-028)



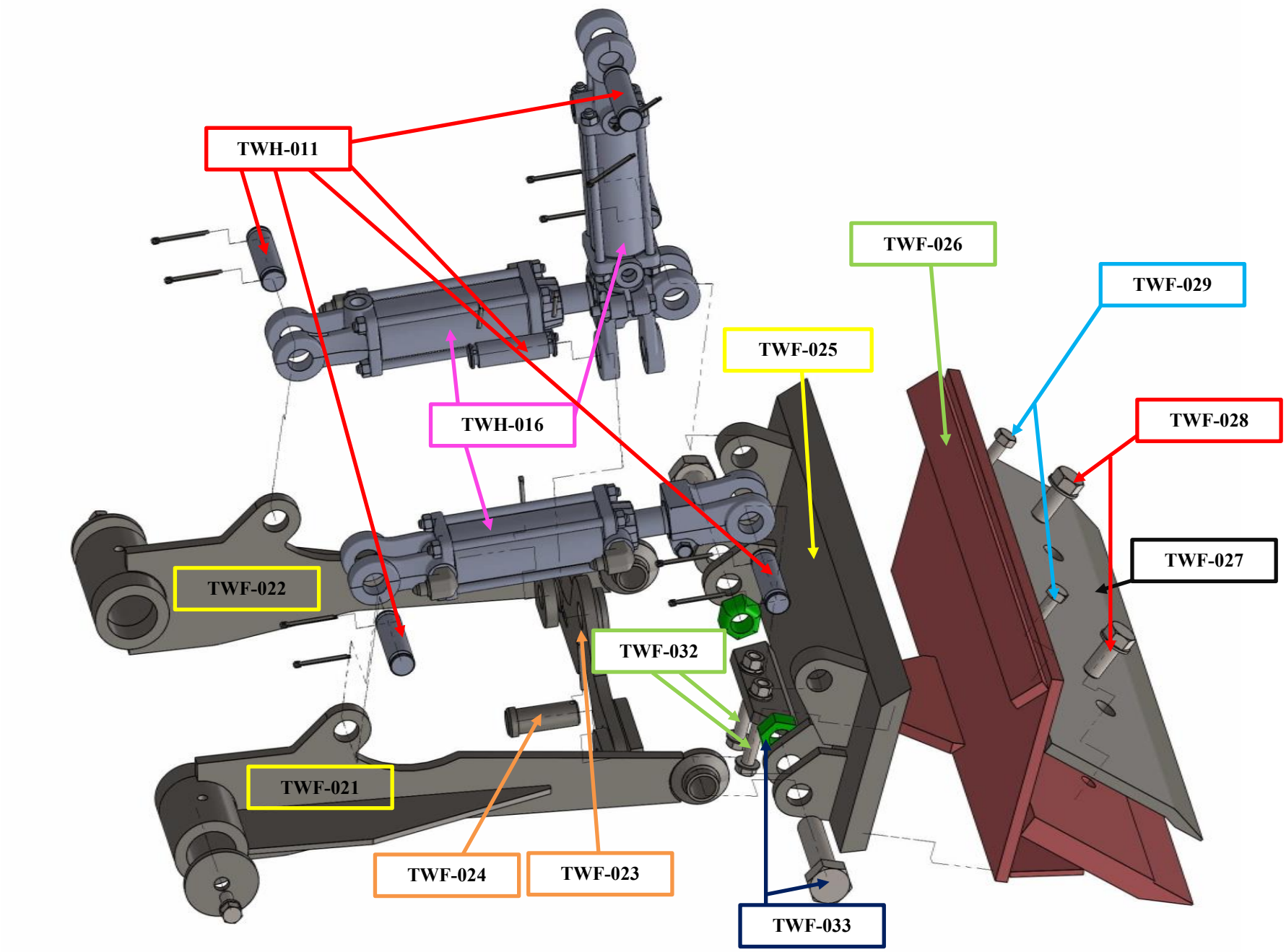
DESCRIPTION	QTY	PART NUMBER
Whole shifter assembly (pictured)	1	TSJ-028
Ball knob	1	TSJ-001
Shifter handle	1	TSJ-002
Shifter boot	1	TSJ-003
Boot clamp	1	TSJ-004

Pivot bracket	1	TSJ-005
¼” rod end no/stud	4	TSJ-006
4-way pivot	1	TSJ-007
¼” rod end w/stud	4	TSJ-008
¼” linkage rod	2	TSJ-009
Shifter mount Plate	1	TSJ-010
Bearing Assembly	2	TSJ-011
5/16 rod end no/stud	4	TSJ-012
Trunion linkage “A”	1	TSJ-013
Trunion linkage “B”	1	TSJ-014
Trunion mount	2	TSJ-015
Crossover tube	1	TSJ-021
Crossover shaft	1	TSJ-022
Crossover tube bushing	2	TSJ-023
Black Damper	2	TSJ-027
Ball stud for damper	4	TSJ-027B
5/16 Male Rod End no stud (left hand thread)	2	TSJ-112L
5/16 Male Rod End no stud (right hand thread	2	TSJ-112R

TWISTER HYDRAULIC FILTER ASSEMBLY



DESCRIPTION	QTY	PART NUMBER
Filter Cap Nut	1	TWH-021
Upper O-Ring Seal	1	TWH-022
Lower O-Ring Seal	1	TWH-023
Filter Element	1	TWH-024
Filter Housing	1	TWH-025


TWH-011
TWF-026
TWF-029
TWF-025
TWH-016
TWF-028
TWF-027
TWF-022
TWF-032
TWF-021
TWF-024
TWF-023
TWF-033

TWISTER FRAME AND COWLING PARTS

DESCRIPTION	QTY	PART NUMBER
Front Caster	1	TWF-001
Front caster wheel only	1	TWF-002
Frame	1	TWF-003
Rear Plate	1	TWF-004
Front Plate	1	TWF-005
Foot Step	1	TWF-006
Left Instrument Panel	1	TWF-007
Right Instrument Panel	1	TWF-008
Front Cowling	1	TWF-009
Rear Cowling	1	TWF-010
Top Cowling	1	TWF-011
Propane Tank Brackets	1	TWF-012
Rear Weight Hanger	2	TWF-015
Wheel Scraper	2	TWF-016
Pivot Bar	1	TWF-017
Pivot Bar Retainer Ring	2	TWF-018
Pivot Bar Inner Spacer	2	TWF-019
Pivot Bar Outer Spacer	2	TWF-020
Right Arm	1	TWF-021
Left Arm	1	TWF-022
Crossover Arm	1	TWF-023
Crossover Arm Pin	2	TWF-024
Blade bar Mount Plate	1	TWF-025
Blade Bar Bottom 24”	1	TWF-026
Blade Bar Top 24”	1	TWF-027
Blade Bar Top “middle hold down bolts”	2	TWF-028
Blade Bar Top “clamp bolts”	2	TWF-029
Blade Bar Bottom 8”	1	TWF-030
Blade Bar Top 8”	1	TWF-031
Blade Bar Mounting Bolts ½-13 x 2	2	TWF-032
Blade Bar Pivot Pins	2	TWF-033
Rear Weights	14	TWF-034
Side Rear Weights	14	TWF-035
Side Front Weights	14	TWF-036
Engine Mount Plate	1	TWF-037
Side Cowling	2	TWF-038
Blade Positioning Valve Mount	1	TWF-039
Accessory Valve Mount	1	TWF-040
Hydraulic Tank Assembly	1	TWF-041-P
Seat Mount Plate	1	TWF-042
Bumper, Seat Mount Plate	2	TWF-042-B
Battery Tie Down Top Cowling Box	1	TWF-044-TSG415
Right Side Weight Cover	1	TWF-045
Left Side Weight Cover	1	TWF-046
Right side Panel	1	TWF-047

Left Side Panel	1	TWF-048
Accessory Control Handle	1	TWF-049
Wheel Lug Stud	10	TWF-050-PS
Wheel Stud Nut	10	TWF-050-PN
Side Cowling Latch	4	TWF-052
Latch, Rubber for Side Cowling	4	N/A
Tie Down D-Ring	2	TWF-053
Seat	1	TWF-054
Transport Dolly	1	TWF-056
Caster, Transport Dolly	2	TD-C
Bolt, Front Caster Wheel Axle	1	TWF-057
Fork, Axle & Seal for Front Caster	1	TWF-058
Rear Tire/wheel, all purpose Black	2	TWD-001-POC
Rear Tire/wheel, non-marking White	2	TWD-002-POC
Rear Tire/wheel, non-marking Traction	2	TWD-002-POC-TRAC

TWISTER HYDRAULIC COMPONENTS

DESCRIPTION	QTY	PART NUMBER
Hydrostat Assembly, self-centering with gear pump	1	TWH-001N
Accessory Valve	1	TWH-003
Hydraulic Filter Assembly	See Detailed List on PAGE 15	
Wheel Motor	2	TWH-005-POC
Wheel Motor Hub	2	TWH-006-POC
Hydraulic Oil Heat Exchanger	1	TWH-007-E
Joystick Valve	1	TWH-008
Handle, Joystick Valve	1	TWH-008-H
Cylinder Clevis for tilt or lift cylinder	1	TWH-009
Pin, Lift/Tilt Cylinder	6	TWH-011
Hydraulic Heat Exchanger (fan)	1	TWH-015
Twister Lift and Tilt Cylinder	3	TWH-016
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Cap, Hydraulic Filler	1	TWH-020
Hydraulic Filter Housing	1	TWH-025
Hydraulic Hose Kit	1	TWH-029-GM24
Hose, left wheel motor front	1	TWH-050-NAG
Hose, left wheel motor rear	1	TWH-051-F
Hose, right wheel motor front	1	TWH-053-F
Hose, right wheel motor rear	1	TWH-053-F
Hose, cooler to tank	1	TWH-066-H49
Hose, pump to valve	1	TWH-067
Hose, valve out to cooler in	1	TWH-068-415
Hose, valve to tilt cylinder tee	2	TWH-069
Hose, right tilt cylinder front	1	TWH-071
Hose, right tilt cylinder rear	1	TWH-072

Hose, left tilt cylinder front	1	TWH-073
Hose, left tilt cylinder rear	1	TWH-074
Hose, Charge Pump to Filter In	1	TWH-075-P-GM
Hose, filter out to pump	1	TWH-076-G
Hose, lift cylinder upper	1	TWH-078
Hose, lift cylinder lower	1	TWH-079
Hose, case drain to block tee	1	TWH-080
Hose, case drain – short	1	TWH-082
Hose, case drain – long	1	TWH-083
Hose, Tandem Pump Connect	1	TWH-084

TWISTER ELECTRICAL COMPONENTS

DESCRIPTION	QTY	PART NUMBER
Hydraulic Temperature Gauge	1	TWE-002
Ignition Switch	1	TWE-003
Ignition key	1	TWE-003Key
Engine Light	1	TWE-014
Battery	1	FT-825-34

PSI GM2.4L Engine Parts

DESCRIPTION	QTY	PART NUMBER
Filter, Engine Oil	1	51356
Regulator, Propane	1	32502699
Lock-off, Fuel Solenoid	1	32502388
Spark Plug	4	801001
Ignition coil	4	33001919
Water Pump	1	800267
O2 Sensor	1	32501267
Starter	1	33001173
Timing Belt	1	32001070
Alternator	1	33001243
Radiator	1	38020628

Twister Propane Parts

DESCRIPTION	QTY	PART NUMBER
Propane Tank	1	TWP-001
Propane Tank Mount	1	TWP-002
Propane Bulkhead	1	TWP-003
Propane Filter	1	TWP-004
Propane Hose Assembly	1	TWP-005