

6280 COMMANDER® WALK-BEHIND SCRAPER OPERATING & SERVICE MANUAL



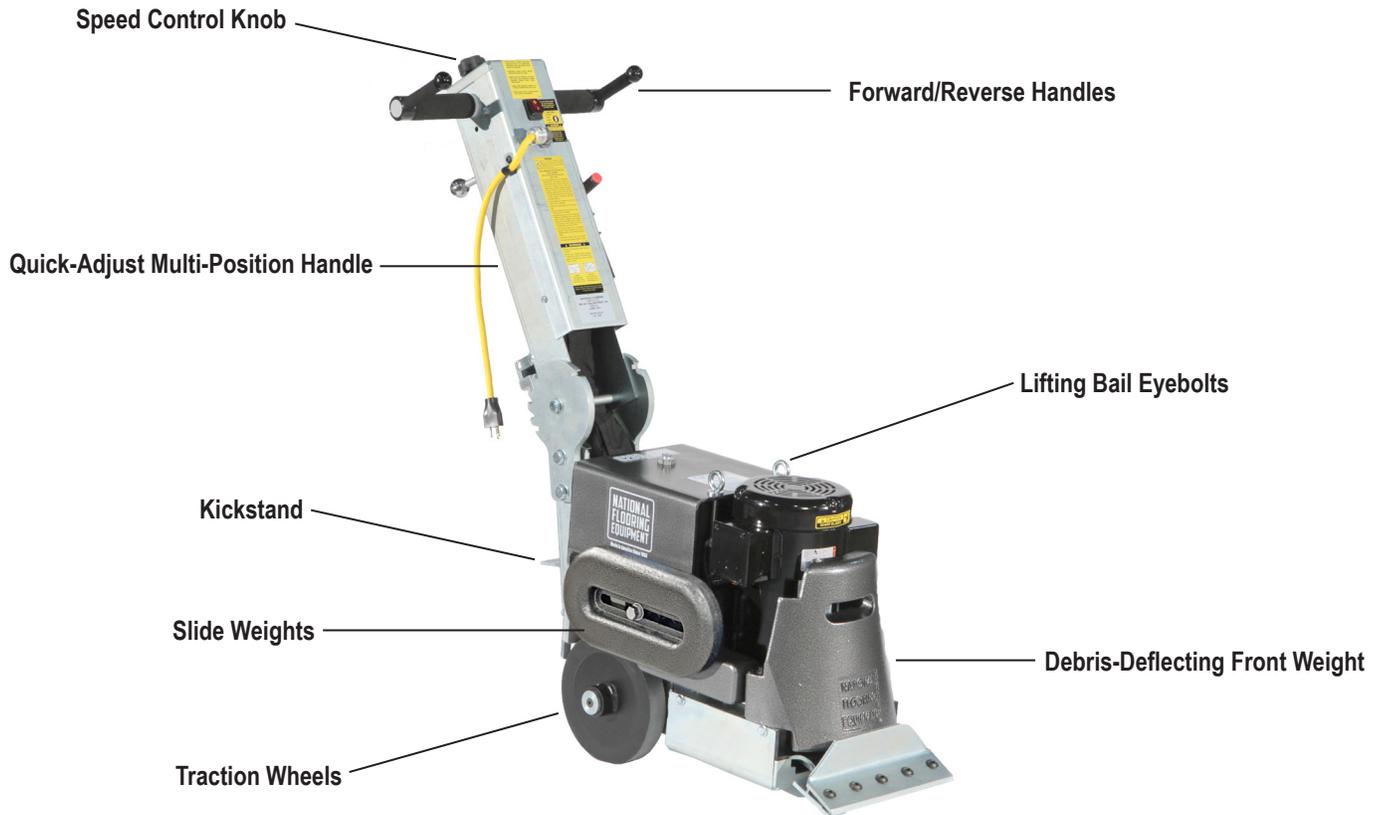
Read Manual Before Operating or
Servicing Machine

401891 Rev K

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Features and Specifications



FEATURES

Speed Control Knob - Limits maximum forward speed.

Kickstand - Aids operator in tilting the machine back for easier moving and maneuvering.

Traction Wheels - Self-cleaning industrial-grade wheels that disengage for loading/unloading.

Slide Weights - Applies additional pressure to the scraper head or more traction to the wheels as needed.

Forward/Reverse Handles - Controls both speed and direction of scraper with simple twist grips.

Lifting Bail Eyebolts - Eases loading/unloading.

Debris-Deflecting Front Weight - Prohibits material and debris from obstructing production.

Quick-Adjust Multi-Position Handle - Folds flat over machine for storage or transport; allows adjustment of handle angle to suit operator or work conditions.

Specifications

Product Specifications								
Width	Length	Height	Weight (Machine Only)	Weight*	Motor Power	Vibration		
						X Axis	Y Axis	Z Axis
17.8" (45 cm)	51" (130 cm) (max. length)	46" (117 cm) (max. height)	335 lbs (152.0 kg)	425 lbs (192.8 kg)	1.5 HP (1.1 kW)	3.2 m/s ²	6.3 m/s ²	4.8 m/s ²
	29" (74 cm) (handle folded)	30" (76 cm) (handle folded)						

*Includes removable weights.

Machine Variants						
Region	Serial Number	Input Power	Amps (Full Load)	RPM	Speed	Body Panels
Domestic (North America)	6280-10XXXX	120V / 60 Hz	13A	3450	0-45 ft/min	Silver Vein
	6280-12XXXX	120V / 60 Hz	13A	3450	0-45 ft/min	Green
	6280-23XXXX	120V / 60 Hz	13A	3450	0-45 ft/min	Silver Vein
International	6280-11XXXX	230V / 50 Hz	8A	2850	0-20 m/min	Silver Vein
	6280-13XXXX	230V / 50 Hz	8A	2850	0-20 m/min	Silver Vein
	6280-20XXXX	110V / 50 Hz	13A	2850	0-11 m/min	Silver Vein

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GENERAL RULES FOR SAFE OPERATION

Before use, anyone operating or performing maintenance on this equipment must read and understand this manual, as well as any labels packaged with or attached to the machine and its components. Read the manual carefully to learn equipment applications and limitations, as well as potential hazards associated with this type of equipment. Keep manual near machine at all times. If your manual is lost or damaged, contact National Flooring Equipment (NFE) for a replacement.

Personal

Dress properly and use safety gear.

Do not wear loose clothing; it may be caught in moving parts. Anyone in the work area must wear safety goggles or glasses and hearing protection. Wear a dust mask for dusty operations. Hard hats, face shields, safety shoes, etc. should be worn when specified or necessary.

Maintain control; stay alert.

Keep proper footing and balance, and maintain a firm grip. Observe surroundings at all times. Do not use when tired, distracted, or under the influence of drugs, alcohol, or any medication that may cause decreased control.

Keep hands away from all moving parts and tooling.

Wear gloves when changing tooling. Remove tooling when machine is not in use and/or lower cutting head to the floor.

Do not force equipment.

Equipment will perform best at the rate for which it was designed. Excessive force only causes operator fatigue, increased wear, and reduced control.

Environment

Avoid use in dangerous environments.

Do not use in rain, damp or wet locations, or in the presence of explosive atmospheres (gaseous fumes, dust, or flammable materials). Remove materials or debris that may be ignited by sparks. Keep work area tidy and well-lit - a cluttered or dark work area may lead to accidents. Extreme heat or cold may affect performance.

Protect others in the work area and be aware of surroundings.

Provide barriers or shields as needed to protect others from debris and machine operation. Children and other bystanders should be kept at a safe distance from the work area to avoid distracting the operator and/or coming into contact with the machine. Operator should be aware of who is around them and their proximity. Support personnel should never stand next to, in front of, or behind the machine while the machine is running. Operator should look behind them before backing up.

Do not come within 3 ft. of the machine's perimeter during operation.

Guard against electric shock.

Ensure that machine is connected to a properly grounded outlet. Prevent bodily contact with grounded surfaces, e.g. pipes, radiators, ranges, and refrigerators. When scoring or making cuts, always check the work area for hidden wires or pipes.

Maintenance & Repairs

Begin maintenance work only when the machine is shut down, unplugged, and cooled down.

Use proper cleaning agents.

Ensure that all cleaning rags are fiber-free; do not use any aggressive cleaning products.

Schedule regular maintenance check-ups.

Ensure machine is properly cleaned and serviced. Remove all traces of oil, combustible fuel, or cleaning fluids from the machine and its connections and fittings. Retighten all loose fittings found during maintenance and repair work. Loose or damaged parts should be replaced immediately; use only NFE parts.

Do not weld or flame-cut on the machine during repairs, or make changes to machine without authorization from NFE.

Equipment

Use proper parts and accessories.

Only use NFE-approved or recommended parts and accessories. Using any that are not recommended may be hazardous.

Ensure accessories are properly installed and maintained.

Do not permanently remove a guard or other safety device when installing an accessory or attachment.

Inspect for damaged parts.

Check for misalignment, binding of moving parts, loose fasteners, improper mounting, broken parts, and any other conditions that may affect operation. If abnormal noise or vibration occurs, turn the machine off immediately. Do not use damaged equipment until repaired. Do not use if power switch does not turn machine on and off. For all repairs, insist on only identical NFE replacement parts.

Maintain equipment and labels.

Keep handles dry, clean, and free from oil and grease. Keep cutting edges sharp and clean. Follow instructions for lubricating and changing accessories. Motor and switches should be completely enclosed at all times with no exposed wiring. Inspect cord regularly. Labels carry important information; if unreadable or missing, contact NFE for a free replacement.

Avoid accidental starting; store idle equipment.

When not in use, ensure that the machine is unplugged; do not turn on before plugging in. Store in a dry, secured place. Remove tooling when storing, and keep away from children.

Safety

WALK-BEHIND SCRAPER SAFETY GUIDELINES

Before use, anyone operating this equipment must read and understand these safety instructions.

Scraping

Beware of hidden obtrusions.

Watch out for hidden dangers and protrusions in flooring. Do not use on largely uneven surfaces.

Observe location of electrical supplies and extension cords.

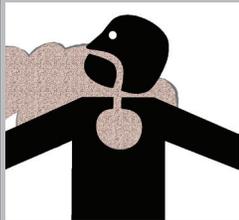
Do not allow cutting heads to come into contact with any electrical supply or extension cord.

Use correct tooling and accessories.

Provide barriers or shields as needed to protect others from debris. After mounting tooling, check for proper alignment.

Use for correct applications.

Do not force equipment to do heavier duty work than it was made for.



WARNING: GRINDING/CUTTING/DRILLING OF MASONRY, CONCRETE, METAL AND OTHER MATERIALS CAN GENERATE DUST, MISTS AND FUMES CONTAINING CHEMICALS KNOWN TO CAUSE SERIOUS FATAL INJURY OR ILLNESS, SUCH AS RESPIRATORY DISEASE, CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. IF YOU ARE UNFAMILIAR WITH THE RISKS ASSOCIATED WITH THE PARTICULAR MATERIAL BEING CUT, REVIEW THE MATERIAL SAFETY DATA SHEET AND/OR CONSULT YOU EMPLOYER, THE MATERIAL MANUFACTURER/SUPPLIER, GOVERNMENTAL AGENCIES SUCH AS OSHA AND NIOSH AND OTHER AUTHORITIES ON HAZARDOUS MATERIALS. CALIFORNIA AND SOME OTHER AUTHORITIES, FOR INSTANCE, HAVE PUBLISHED LISTS OF SUBSTANCES KNOWN TO CAUSE CANCER, REPRODUCTIVE TOXICITY, OR OTHER HARMFUL EFFECTS. CONTROL DUST, MIST AND FUMES AT THE SOURCE WHERE POSSIBLE. IN THIS REGARD USE GOOD WORK PRACTICES AND FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER/SUPPLIER, OSHA/NIOSH, AND OCCUPATIONAL AND TRADE ASSOCIATIONS. WHEN THE HAZARDS FROM INHALATION OF DUST, MISTS AND FUMES CANNOT BE ELIMINATED, THE OPERATOR AND ANY BYSTANDERS SHOULD ALWAYS WEAR A RESPIRATOR APPROVED BY OSHA/MSHA FOR THE MATERIAL BEING CUT.

HYDRAULIC SAFETY

Maintaining a Safe Work Environment

Establishing a safe work environment in and around your hydraulic equipment is extremely important. The easiest and most effective way to avoid problems is to make sure associates understand their equipment, know how to operate the machines safely, and recognize the dangers if handled carelessly. A few things to be aware of are:

- **Pressure:** Hydraulic fluid under pressure is dangerous and can cause serious injury. Never look for a leak when unit is under pressure. Using your hand could cause serious injury. A few common ways to encounter hydraulic fluid under pressure include:
 - Pinhole: Fluid under pressure can cause serious injury. It can be almost invisible escaping from a pinhole, and it can pierce the skin into the body.



DANGER: DO NOT TOUCH A PRESSURIZED HYDRAULIC HOSE ASSEMBLY WITH ANY PART OF THE BODY. IF FLUID PUNCTURES THE SKIN, EVEN IF NO PAIN IS FELT, A SERIOUS EMERGENCY EXISTS. OBTAIN MEDICAL ASSISTANCE IMMEDIATELY. FAILURE TO DO SO COULD RESULT IN LOSS OF THE INJURED BODY PART OR DEATH.

- Leak: Keep fittings and hoses tight. Only check and service when not under pressure. Leaking hydraulic fluid is hazardous; in addition to making workplace floors slippery and dangerous, it also contaminates the environment. Before cleaning an oil spill, always check EPA, state, and local regulations.
 - Burst: Whether due to improper selection or damage, a ruptured hose can cause injury. If it bursts, a worker can be burned, cut, injected, or may slip and fall.
 - Coupling Blow-Off: If the assembly is not properly made or installed, the coupling could come off and hit or spray a worker, possibly resulting in serious injury. Never operate machine without guards.
- **Flammability:** When ignited, some hydraulic fluids can cause fires and/or explode. With the exception of those comprised primarily of water, all hydraulic fluid is flammable (including many “fire-resistant” hydraulic fluids) when exposed to the proper conditions. Leaking pressurized hydraulic fluids may develop a mist or fine spray that can flash or explode upon contact with a source of ignition. These explosions can be very severe and could result in serious injury or death. Precautions should be taken to eliminate all ignition sources from contact with escaping fluids, sprays or mists resulting from hydraulic failures. Sources of ignition could be electrical discharges (sparks), open flames, extremely high temperatures, sparks caused by metal-to-metal contact, etc.



CAUTION: NEVER USE YOUR HANDS TO CHECK FOR LEAKS OVER HOSE OR HYDRAULIC CONNECTIONS. USE A PIECE OF CARDBOARD TO LOCATE A PRESSURIZED LEAK. FOR LOW PRESSURE LEAKS (DRIPS), USE A RAG TO CLEAN THE AREA AND DETERMINE WHERE THE LEAK ORIGINATES.

- **Mechanical:** Hydraulic fluid creates movement, which means some equipment may move. Observe surroundings and equipment at all times.
- **Moisture:** Do not use in wet or high moisture conditions.
- **Electrical:** Faulty wiring can be an electrical hazard. A regular preventive maintenance program should always include a wiring check. If applicable, disconnect battery before servicing.
- **Temperature:** Because this machine operates at a relatively low pressure, overheating is not common. If surface of tank becomes too hot to touch by hand (above 130°F or 55°C), shut off machine and allow it to cool.

Hydraulic Fluid

Only use Texaco Rando 46 Hydraulic Oil or compatible fluid like ISO or AW #46 from a brand name manufacturer. Non-compatible fluids could cause damage to unit or serious injury.

Safety

ELECTRICAL PRACTICES



WARNING: ELECTRICAL CORDS CAN BE HAZARDOUS. MISUSE CAN RESULT IN FIRE OR DEATH BY ELECTRICAL SHOCK. READ CAREFULLY AND FOLLOW ALL DIRECTIONS.



CAUTION: ALWAYS FOLLOW APPLICABLE ELECTRICAL CODES, STANDARDS AND/OR REGULATIONS. CONSULT YOUR LOCAL ELECTRICAL AUTHORITY OR A LICENSED ELECTRICIAN BEFORE ATTEMPTING TO MODIFY AN ELECTRICAL INSTALLATION. ENSURE THAT CIRCUIT AND GROUND FAULT PROTECTION DEVICES AND ALL OTHER ELECTRICAL SAFETY EQUIPMENT ARE FUNCTIONING PROPERLY.

Extension Cord Requirements



WARNING: GROUND YOUR EQUIPMENT. THE EQUIPMENT MUST BE PLUGGED INTO AN APPROPRIATE OUTLET, ONE WHICH IS PROPERLY INSTALLED AND GROUNDED IN ACCORDANCE WITH ALL CODES AND ORDINANCES. DO NOT MODIFY THE PLUG PROVIDED WITH THE EQUIPMENT. NEVER REMOVE THE GROUNDING PRONG FROM THE PLUG.



WARNING: DO NOT REMOVE, BEND OR MODIFY ANY METAL PRONGS OR PINS OF THE PLUG. MODIFICATIONS TO POWER CORDS AND/OR PLUGS MAY RESULT IN INJURY AND/OR EQUIPMENT DAMAGE.

- Ensure the cord type is suitable for the application and location. If you are unsure about your cord type, consult a qualified electrical professional or electrician.
- FULLY INSERT plug into outlet.
- Do not use excessive force to make connections.
- Never unplug by pulling the cord from the outlet. Pull plug rather than cord to reduce the risk of damage.
- Regularly examine your extension cord and ensure it is in good electrical condition. Never use a damaged cord—either replace it or have it repaired by a qualified person.
- Protect your extension cords from sharp objects, excessive heat and damp or wet areas. Keep the cord away from oil, cutting edges and moving parts.
- Do not drive, drag or place objects over cord.
- Avoid overheating. Uncoil cord and do not cover it with any material.
- Avoid accidental starting. Be sure equipment is turned off before plugging in. Do not use equipment if the power switch does not turn the equipment on and off.
- Make sure equipment is not running before disconnecting cord.
- Unplug equipment. When not in use and before changing accessories or performing maintenance, unplug the machine.

Extension Cord Selection

All cords should be sized appropriately to reduce the risk of damage, fire or reduced performance. Reference the table in this section for cord sizes.

ELECTRICAL PRACTICES (CONT'D)

How to Use This Table

1. Determine your supply voltage.
2. Determine the total length of your cord including all extension cords.
3. Determine the maximum amp draw for your machine.
4. Trace your voltage across the top of the table to the first length that is greater than or equal to your cord length.
5. Follow the column down to the first row that contains a maximum amp draw greater than or equal to yours.
6. This cell contains the minimum wire size for your application.

Example

Application: Max Amps = 11A, Length = 40ft, Voltage = 120V 1ph

Solution: 40ft is between the 25ft and 50ft columns, so the larger of the two columns is chosen. Likewise, 11A is between the 10A and 12A rows, so the larger of the two rows is chosen. 14 AWG (2.5mm²) is the minimum wire size for this example.

		Single Phase Equipment			
Max Length	120V Supply	25ft (7.5m)	50ft (15m)	75ft (22.5m)	
	230V Supply	50ft (15m)	100ft (30m)	150ft (45m)	
Max Amps		Minimum Wire Size			
8		16 AWG (1.5mm ²)	16 AWG (1.5mm ²)	16 AWG (1.5mm ²)	
10		16 AWG (1.5mm ²)	16 AWG (1.5mm ²)	16 AWG (1.5mm ²)	
12		14 AWG (2.5mm ²)	14 AWG (2.5mm ²)	14 AWG (2.5mm ²)	
14		14 AWG (2.5mm ²)	14 AWG (2.5mm ²)	14 AWG (2.5mm ²)	

Extension Cord Sizes

Single Phase Equipment							
Max Length	120V Supply	25ft (7.5m)	50ft (15m)	75ft (25m)	100ft (30m)	150ft (45m)	200ft (60m)
	230V Supply	50ft (15m)	100ft (30m)	150ft (45m)	200ft (60m)	300ft (90m)	400ft (120m)
Max Amps		Minimum Wire Size					
8		16 AWG (1.5mm ²)	14 AWG (2.5mm ²)	14 AWG (2.5mm ²)			
10		16 AWG (1.5mm ²)	14 AWG (2.5mm ²)	12 AWG (4mm ²)			
12		14 AWG (2.5mm ²)	12 AWG (4mm ²)	12 AWG (4mm ²)			
14		14 AWG (2.5mm ²)	12 AWG (4mm ²)	10 AWG (6mm ²)			
16		14 AWG (2.5mm ²)	12 AWG (4mm ²)	10 AWG (6mm ²)			
18		14 AWG (2.5mm ²)	14 AWG (2.5mm ²)	14 AWG (2.5mm ²)	12 AWG (4mm ²)	12 AWG (4mm ²)	10 AWG (6mm ²)
20		12 AWG (4mm ²)	10 AWG (6mm ²)	10 AWG (6mm ²)			
25		12 AWG (4mm ²)	10 AWG (6mm ²)	8 AWG (10mm ²)			
30		10 AWG (6mm ²)	8 AWG (10mm ²)	8 AWG (10mm ²)			

Note: The table is based on a <10% voltage loss, data from the U.S. National Electrical Code Tables 400.5(A) & 400.5(B) and typical resistances for copper wire.

Components and Assembly



FIG. 1



FIG. 1.1



FIG. 1.2



FIG. 2



FIG. 2.1

TRANSPORTATION

Attach/Remove Transport Wheels



WARNING: NEVER HAVE TRANSPORT WHEEL ASSEMBLY MOUNTED ON MACHINE OR WHEELS DISENGAGED WHEN GOING UP OR DOWN A LOADING RAMP OR INCLINE. FAILURE TO DO SO COULD CAUSE LOSS OF CONTROL, DAMAGE TO MACHINE OR PROPERTY, OR SERIOUS INJURY.

Transport wheels help eliminate damage to the flooring and make moving the machine easier. To attach transport wheels, complete the following steps:

1. Remove two outside blade cover bolts (Figure 1).
2. To ensure cutting head has enough clearance for front wheel assembly to fit under, tip machine back and block up the front (Figure 1.1).
3. Mount front wheel assembly over blade cover; re-place two outside blade cover bolts (Figure 1.2).
4. Remove blocks.

Note: Do not leave machine in transport mode during transit without being secured.

To remove, reverse these steps.

Lifting Bail

The lifting bails make loading/unloading easier when unable to use a ramp. Location of lifting bails centers the balance of the machine, making it safe to pick up machine.

1. Place rope, hook system, or chain through eyelets located on top of machine.
2. Raise machine with a fork lift or winch.
3. Slowly lower to desired location.

Ramp Unloading

1. Put the wheels in “engage mode” (Figure 2).
2. Position ramp securely to back of vehicle; ensure there is good contact.
3. Position machine at the back of the truck, in line with the ramp.
4. Carefully move machine onto ramp, leaving the cutting head down (in contact with ramp surface). Be cautious; machine is heavy.
5. Slowly back machine down ramp.



CAUTION: REMOVE ALL COUNTER WEIGHTS AND BLADES AND ENSURE WHEELS ARE IN “ENGAGE MODE” (FIGURE E) BEFORE LOADING OR UNLOADING. FAILURE TO DO SO COULD RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

WHEEL MODES

Wheels engage and disengage for easier maneuverability. Wheels in the “engage mode” are secured with axle pins (Figure 2), which engage the wheels so the machine can be self-propelled.

When wheels are in the “disengage mode” (Figure 2.1), the machine can be moved freely when not under power.

Disengaging Wheels

1. Lift ring outwards; slide pin up and off.
2. Repeat on second wheel.

Note: Keeping the axle pin facing straight up will make re-engaging easier.

Components and Assembly

Re-engaging Wheels

1. Line up wheel hub hole and axle hole (Figure 3).
2. Insert pin and push ring over the hole so that it is parallel to the wheel.
3. Repeat on second wheel.

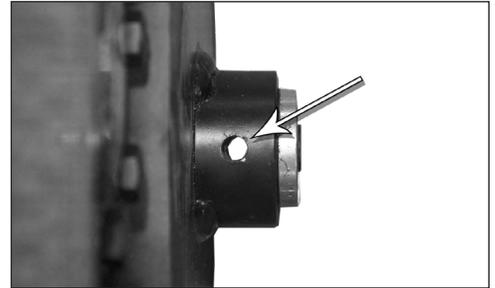


FIG. 3

APPLICATION SETUP

VCT Tile

Never use a blade wider than the size of the tile being removed. If materials being removed still do not come up clean or machine jumps on top of materials, reduce blade size or use a smaller portion of the blade.

Pure Vinyl Rubber Tile

Materials will need to be scored down to 10-12" (25-30.5 cm) for proper removal. Self-scoring blades can be used with some materials. A 10" blade is recommended for this application.

Direct-Glued Carpet

NFE recommends using a self-scoring blade. Normally 6-14" (15.2-35.6 cm) self-scoring blades are used on direct-glued carpet, secondary-backed, unitary, double-glued, vinyl foam and urethane foam.

Concrete

When working on concrete slab, a normal blade position is bevel up for best performance, especially when cleaning adhesive. On occasion, bevel down gives better blade life. Test each job for best performance.

Gypcrete and Soft-Poured Flooring

Requires blade bevel down to create a better wearing surface.

INSTALLING AND ADJUSTING SLIDE WEIGHTS



WARNING: ALWAYS ENSURE THE HEX BOLTS ARE TIGHT AND THE SLIDE WEIGHTS ARE SECURE. UNSECURED WEIGHTS COULD SHIFT CAUSING BODILY INJURY. USE CAUTION IF LOOSENING THE HEX BOLTS—IF BACKED OUT TOO FAR, THE SLIDE WEIGHTS COULD DROP CAUSING BODILY INJURY.

Installing Slide Weights

Orientate the slide weight with the long channel below the short channel. Install the long channel over the heads of the two Allen bolts. Holding the slide weight in place, install the hex bolt into the threaded hole aligned with the short channel. Tighten the hex bolt using a 3/4" socket wrench to secure the weight to the side of the machine.

Adjusting Slide Weights

To adjust the slide weight forward or backward based on the job application, loosen the hex bolt using a 3/4" socket wrench and gently slide the weight to the desired position. After adjusting, retighten the hex bolt to secure the weight to the side of the machine.

Operation



FIG. 4

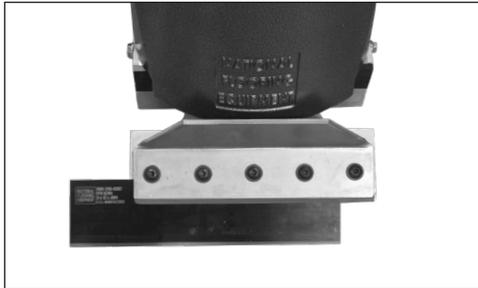


FIG. 5

OPERATING CONTROLS

Speed Control (Figure 4)

- Turn speed control knob clockwise to decrease maximum forward speed.
- Turn speed control knob counterclockwise to increase maximum forward speed.
- Speed control knob can be adjusted while machine is running.

Forward/Reverse

- Push handles forward to move the machine forward.
- Pull handles backward to move the machine in reverse.

START-UP PROCEDURE

Starting the Machine

1. The ON/OFF switch must be in the “OFF” position before connecting to a power source (domestic machines only).
2. Plug machine into power source.
3. Turn speed control knob to slowest position (Figure 4).
4. Press ON/OFF switch to the “ON” position.
5. Push or pull the handles to move the machine forward or backwards.

Turning Off the Machine

Press ON/OFF switch to the “OFF” position to turn off machine.

PREPARING BLADES



CAUTION: BLADES ARE SHARP. USE EXTREME CAUTION WHEN HANDLING. NEVER CHANGE CUTTING HEAD OR SERVICE BLADES WHILE MACHINE IS RUNNING. ALWAYS WEAR GLOVES WHILE HANDLING BLADES.

Setting

Note: This machine is designed to remove soft good materials.

- Proper blade size and placement will affect performance, depending on the material and sub-floor type.
- For difficult materials, use smaller blades.
- Start with a narrow blade, then increase blade size to optimize cutting pass. Narrower blades work easier than wider blades and usually clean the floor better.
- Normally, bevel up is for concrete; bevel down is for wood.
- Keep blades sharp. Dull blades greatly affect the performance of the machine and reduce cutting ability. Sharpen or replace blades as needed.
- Keep work area clean and clear of debris. After removing a portion of material, move it out of the way.
- For wood or wood-like floors, pound down or remove any nails or metal obstructions to avoid blade damage.
- Blades can be offset in the cutting head for easier access to toe kicks or for removal along the wall (Figure 5).
- Sheet vinyl, solid vinyl, rubber tile, urethane, or PVC sheet roofing will need to be scored for best removal results. NFE recommends using a self-scoring blade.

- Self-scoring blades are available in a number of sizes; these blades eliminate the need for pre-scoring material. Depending upon the type of material being removed and the sharpness of the blade and scoring wings, the self-scoring blades may make it harder to control the machine. Keep scoring wings sharp at all times.

Blade Changing

1. Block up the front of the machine (Figure 6) using a flat piece of wood or something similar.
2. Use the supplied extended 7/32 "T" wrench (Domestic) or a 6 mm Hex wrench (International) with at least a 3" (76 mm) extension to keep hand safely away from the blade. Loosen the five hex drive bolts (Figure 6.1), it is not necessary to remove them completely.
3. Place blade into the cutting head and slide back until fully seated against the machined edge (Figure 6.2).

Note: Do not insert blade all the way back to the bolts. Incorrect installation of blade will cause insufficient clamping leading to premature blade wear and damage.

If the blade is wider than the cutting head, center the blade to the head. If the blade is smaller than the cutting head, the blade should be mounted in the center of the cutting head during the first pass. After the first pass is made, the blade can be off-set in the head to allow the wheels to keep even contact with the floor and provide easy access to the wall.

4. Tighten the bolts.



FIG. 6



FIG. 6.1

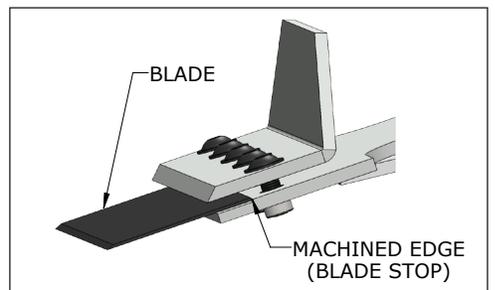


FIG. 6.2

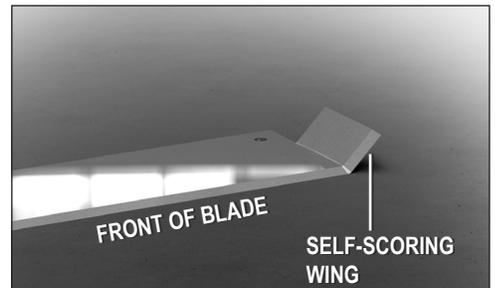


FIG. 7

Troubleshooting Guide

Problem	Cause	Solution
Machine will not start.	Insufficient power.	Ensure use of properly rated extension cord.
	Loose capacitor leads.	Check capacitor leads to ensure good connection.
	Overload button on motor has been tripped.	Button is located on the bottom of the electric box on motor. If tripped, hold button in until it clicks.
	Faulty ON/OFF switch.	Replace if needed.
Machine will not move under power.	Speed control is set too slow.	Turn speed control knob counterclockwise until the machine goes forward.
	Wheels are not in the "engage mode".	Install wheel pins for "engage mode".
	Broken belt.	Remove wheels and bottom cover to inspect. Replace if needed.
	Broken chain.	Remove wheels and bottom cover to inspect; repair or replace if needed.
Motor is humming, but machine does not run or breakers are blown.	Control handle mechanism failure.	Inspect control mechanism; repair or replace as needed.
	Failed isolators.	Remove wheels and bottom cover to inspect.
	Failed capacitors.	Replace as needed.
Machine is leaking hydraulic fluid.	Motor start switch connections are dirty.	Remove fan cover and fan. Clean the motor start switch (set of points) with an emery board or cloth between the points; reassemble.
	Leak in hose(s).	Tighten; replace if needed.
Machine is heating up.	Hydraulic fittings are loose.	Tighten; replace if needed.
	Motor shaft is binding.	Remove wheels and cover to inspect isolators. Inspect cutting head bearing and eccentric to ensure that they are not binding. If issue continues, contact NFE for additional support.

Maintenance Schedule

Maintenance To Be Performed	Interval			
	Daily	50 hrs	1000 hrs	2000 hrs
Inspect fasteners, wheels and blade holders for damage.	•			
Clean built-up glue and debris from wheels, front weight, and blade holder.	•			
Visually inspect internal parts.		•		
Inspect safety devices and switches (power cord, wheel cleaners, switches).		•		
Inspect and replace isolators.			•	
Inspect and replace cutting head bearing.			•	
Change hydraulic fluid.				•

Maintenance



WARNING: ALWAYS UNPLUG MACHINE BEFORE PERFORMING MAINTENANCE.

WHEEL CLEANER ADJUSTMENT

1. Loosen wheel cleaner with 9/16" wrench (Figure 8).
2. Slide cleaner up to the face of the wheel until it touches, but does not dig into the wheel surface.
3. Re-tighten firmly. **Note:** Too much interference between the wheel and cleaner will damage wheel.

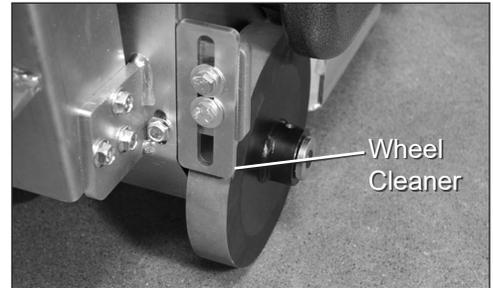


FIG. 8

WHEEL REMOVAL

1. Turn off and unplug machine.
2. Examine back of wheels for built-up debris.
3. Remove yarn build-up.
4. Place block under machine between wheels.
5. Disengage and remove axle pin (Figure 9).
6. Remove wheel-securing screw with a 3/16" or 5mm hex wrench (Figure 9).
7. Remove wheel-securing cap. Wheel will slide off.
8. Remove wheel spacer. This should be inspected at regular intervals.
9. Relubricate bearing inside wheel before reassembly.

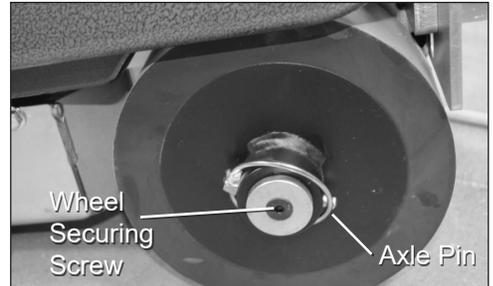


FIG. 9

ADDING OR CHANGING HYDRAULIC FLUID

- Change or add fluid when needed; check fluid level if there has been a leak, damaged or ruptured hose, or a loose fitting. Fluid should be level with bottom of tank plug hole (Figure 10).
- **To add fluid**, unscrew filler port cap from top of machine (Figure 11); add fluid through a filter or funnel with a screen to keep fluid clean.
- **To change fluid**, remove filler port cap. Remove drain plug from side of machine (Figure 11). A 2 gallon (8 liter) container will be needed to drain the fluid into. (Fluid will not be removed from hoses.) Regardless of the machine's straining system, add fluid through a filter or funnel with a screen to keep fluid clean.



FIG. 10

INSPECTION OF INTERNAL PARTS

Visual inspection of internal parts can be done without draining the tank.

1. Remove two lifting bail eyebolts and the two bolts from the back of the tank.
2. Carefully lift tank 3-4" (8-10 cm).
3. Using a flashlight, inspect the drive chain, hoses, front seal on hydraulic motor, and suction and pressure line on pump.
4. If service is necessary, follow the procedure for tank removal.



FIG. 11

Note: Figures 1-4 are shown without sliding side weights for clarity.

TANK REMOVAL

It is necessary to remove the tank in order to repair the pump, or to replace or service internal hoses.

1. Drain tank by removing the top filler port cap and drain plug on the side of the machine (Figure 4). A two gallon container will be needed to drain the fluid into.
2. Replace drain plug and filler port cap.
3. Remove two lifting bail eyebolts and the two bolts from the back of the tank.
4. Disconnect return line on the back of the tank; carefully lift tank 3-4" (8-10 cm) and disconnect suction line. The tank can now be removed.

POWER CORD

If the power cord is damaged, it must be replaced by NFE or a qualified professional.

ISOLATORS

Inspection

1. Perform the wheel removal procedure to access the bottom cover.
2. Remove one wheel at a time; remove the bottom cover bolt behind each wheel.
3. Carefully remove the bottom cover to expose the underside.
4. Inspect the isolators from the side for damage or wear.

Replacement

1. Remove the side slide weights, side weights, and front weight.
2. Loosen the seven socket head cap screws holding the isolators in place. Grip each isolator with locking pliers to aid in loosening.
3. Remove and replace each isolator. It is recommended adding red threadlocker to the threads of the cap screws when reinstalling.

CUTTING HEAD BEARING

Inspection

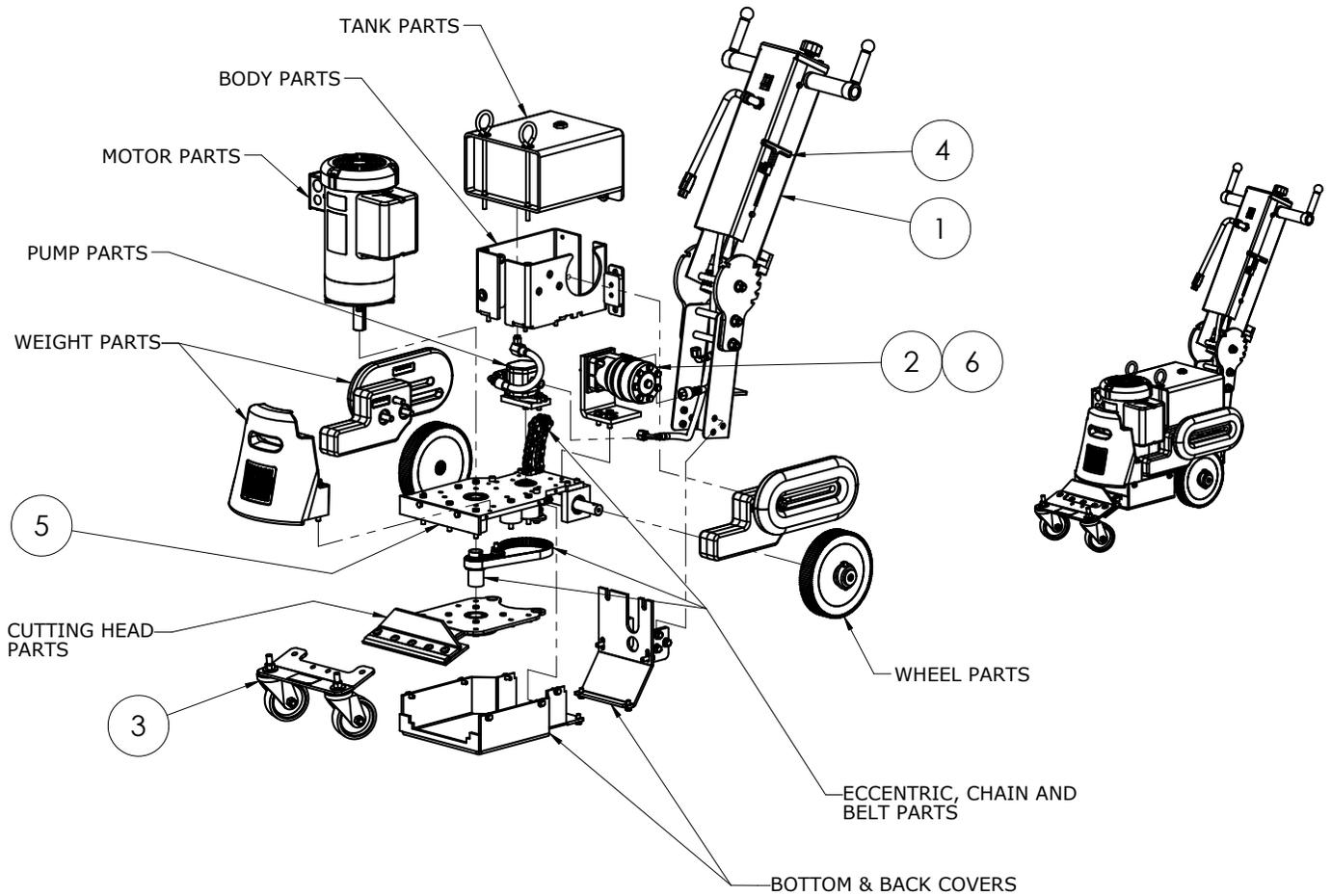
1. Perform the wheel removal procedure to access the bottom cover.
2. Remove one wheel at a time; remove the bottom cover bolt behind each wheel.
3. Carefully remove the bottom cover to expose the underside.
4. Inspect the cutting head bearing for damage or wear.

Replacement

1. Remove the bottom cover.
2. Remove the cutting head bearing from the cutting head by removing the four bolts that hold down the bearing.
3. Replace the cutting head bearing and re-tighten the four bolts.
4. Place the bottom cover and re-tighten the eight bolts that hold the bottom cover in place.

Parts List and Diagrams

OVERALL MACHINE (DOMESTIC SHOWN)



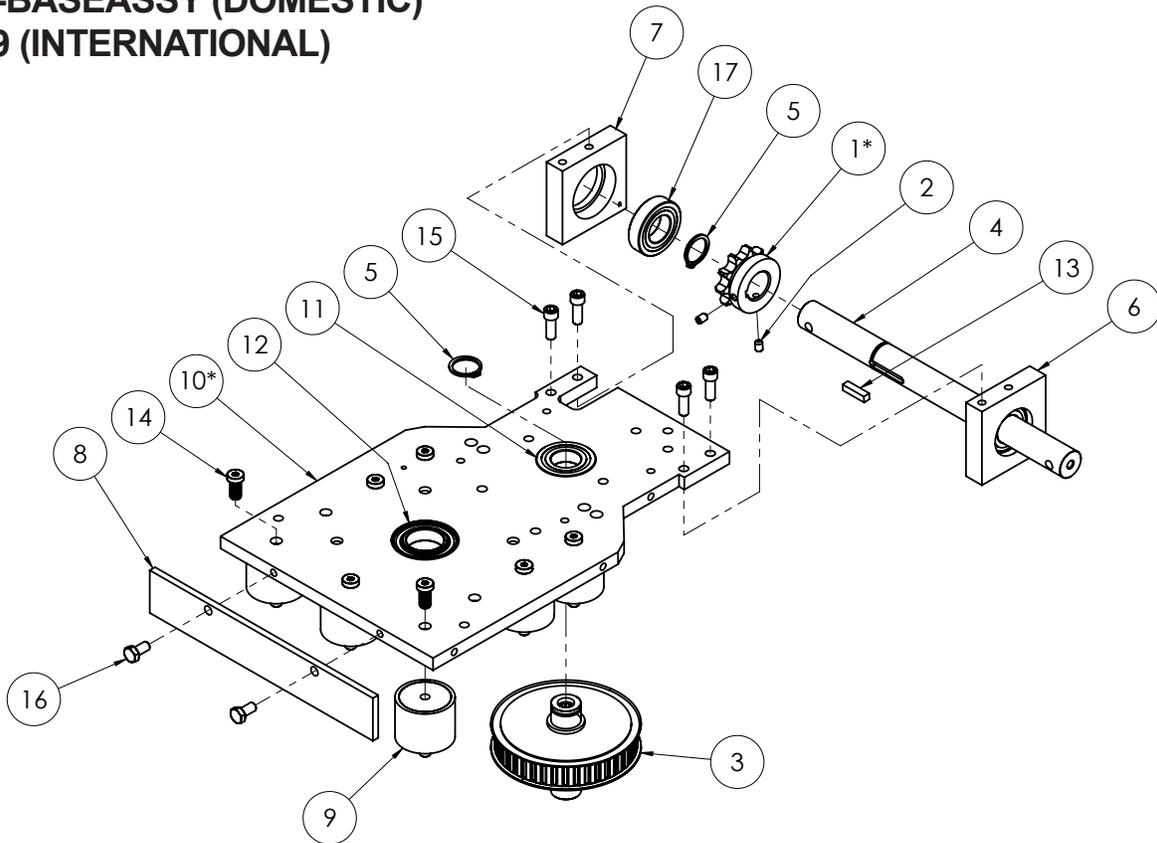
ITEM NO.	6280-10XXXX 6280-12XXXX 6280-23XXXX	6280-11XXXX	6280-13XXXX	6280-20XXXX	DESCRIPTION	QTY.
1	401577				Assembly, Commander Handle, 115V	1
		404581-011			Assembly, Commander Handle, EUR	1
			404581-013		Assembly, Commander Handle, AUS	1
				404581-020	Assembly, Commander Handle, UK	1
2	401546	401546	401546	401546	Motor, Hydraulic, Sub, 6280	1
3	6280-299	6280-299	6280-299	6280-299	Wheel Assembly, Front	1
4	6280-401B				Wrench, Allen, 7/32	1
		5280-137W	5280-137W	5280-137W	Wrench, Blade, 6mm	1
5	6280S-BASEASSY				Subassembly, Base, 6280, 7 Isolators	1
		401639	401639	401639	Subassembly, Base, 6280, Metric	1
6	73222				Screw, Hex Head Cap, Flange, 3/8-16 x 1	3
		74650	74650	74650	Bolt, Wizlock, M10-1.5 x 25mm, Class 8.8	3

Parts List and Diagrams

BASE ASSEMBLY

6280S-BASEASSY (DOMESTIC)

401639 (INTERNATIONAL)

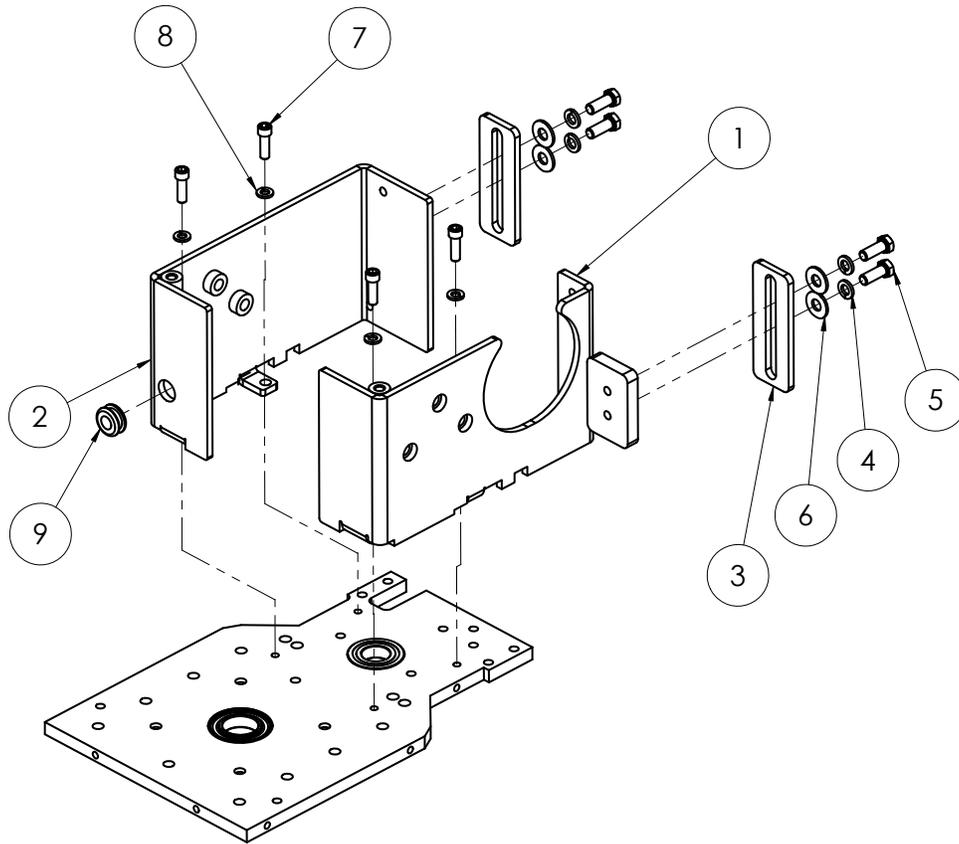


ITEM NO.	6280-10XXXX 6280-12XXXX 6280-23XXXX	6280-11XXXX 6280-13XXXX 6280-20XXXX	DESCRIPTION	QTY.
1*	401541	401541	Sprocket, Axle, Heavy Duty	1
2	73012	73012	Screw, Set, Cup Point, 1/4-20x3/8	2
3	401627	401627	Pump Drive Assembly, Splined	1
4	6280-103-1	6280-103-1M	Shaft, Axle	1
5	6280-103A	6280-103A	Ring, Retaining, Axial, 1"	3
6	6280-105L	6280-105LM	Support, Axle Bearing, Left	1
7	6280-105R	6280-105RM	Support, Axle Bearing, Right	1
8	6280-145	6280-145	Cover, Front	1
9	405950	405950	Isolator, Vibration, 2 x 1-5/8, M/F, Neoprene	7
10*	404591		Assembly, Plate, Base With Bearings, 6280HD	1
		404592	Assembly, Plate, Base With Bearings, Metric, 6280	1
11	71115	71115	Bearing, 1x2x1/2	1
12	71132	71132	Bearing, 1-1/4	1
13	73033	73033	Key, 1/4x1/4x1	1
14	73217	73217	Screw, Socket Head Cap, Low, 3/8-16x3/4	7
15	73310	73310	Screw, Socket Head Cap, 5/16-18x7/8, Black Oxide	4
16	73332		Screw, Hex Head Cap, 5/16-18x5/8	2
		74631	Bolt, Wizlock, M6-1.0 x 16, Plain	2
17	71115	71115	Bearing, 1x2x1/2	2

*Item 1 includes Item 2. Item 10 includes Items 11 and 12.

Parts List and Diagrams

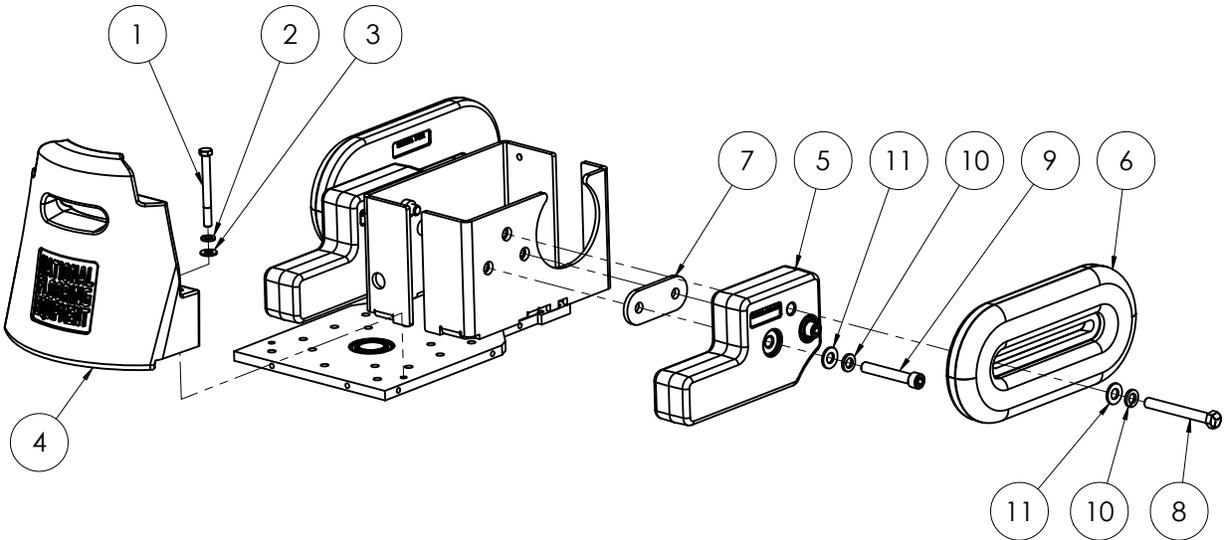
BODY



ITEM NO.	6280-10XXXX 6280-12XXXX 6280-23XXXX	6280-11XXXX 6280-13XXXX 6280-20XXXX	DESCRIPTION	QTY.
1	6280-156L	6280-156L	Body, Main, Upper, Left	1
2	6280-156R	6280-156R	Body, Main, Upper, Right	1
3	6280-165	6280-165	Cleaner, Wheel	2
4	73204	73204	Washer, Lock, 3/8	4
5	73201	73201	Screw, Hex Head Cap, 3/8-16 x 1	4
6	73264	73264	Washer, Flat, Zinc USS 3/8	4
7	73311		Screw, Socket Head Cap, 5/16-18 x 1	4
		401848	Screw, Socket Head Cap, M8-1.25 x 25	4
8	73303	73303	Washer, Split Lock 5/16	4
9	74763	74763	Grommet, Rubber 1/2"	1

Parts List and Diagrams

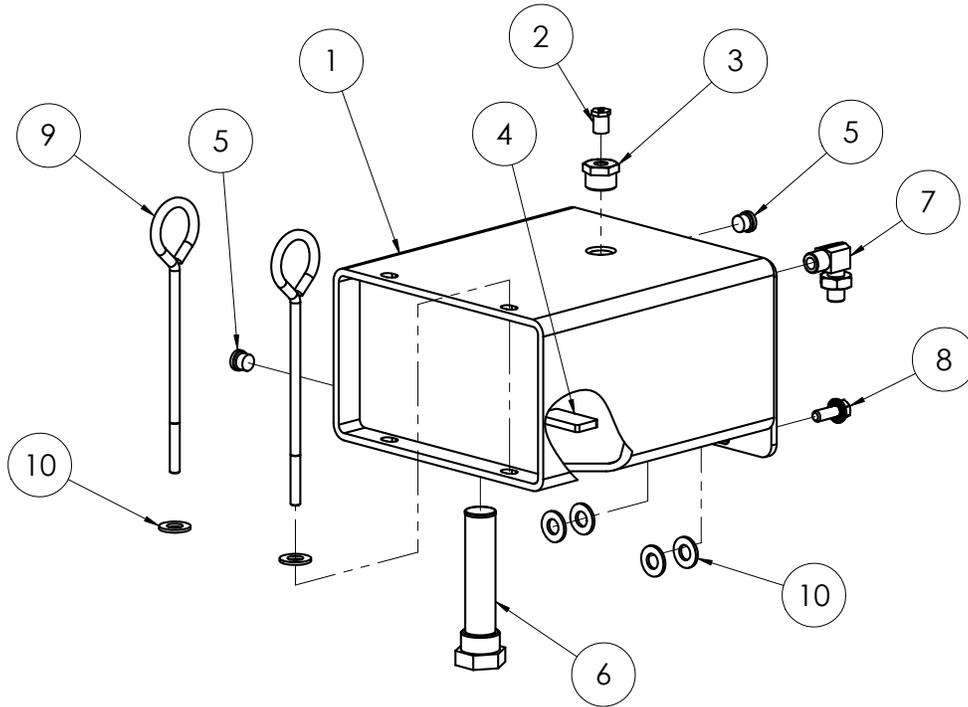
WEIGHTS



ITEM NO.	6280-10XXXX 6280-23XXXX	6280-12XXXX	6280-11XXXX 6280-13XXXX 6280-20XXXX	DESCRIPTION	QTY.
1	400269	400269		Bolt, Hex Head, 3/8-16 x 3-3/4	2
			400184	Bolt, M10-1.5 x 90, HHCS	2
2	73204	73204		Washer, Lock, 3/8	2
			74657	Washer, Lock, M10	2
3	73263	73263		Washer, Flat SAE Zinc 3/8	2
			74655	Washer, Flat, M10	2
4		74852-G		Weight, Front, Green	1
	74852-SV		74852-SV	Weight, Front, Silver Vein	1
5	74853-BLK	74853-BLK	74853-BLK	Side weight	2
6		74851-G		Weight, Slide, Green	2
	74851-SV		74851-SV	Weight, Slide, Silver Vein	2
7	405980	405980	405980	Spacer, Side Weight, Commander	2
8	406618	406618	406618	Screw, Hex Head Cap, 1/2-13 x 4-1/4, Grade 5, Clear Zinc	2
9	406619	406619	406619	Screw, Socket Head Cap, 1/2-13 x 3-1/4, Black Oxide	4
10	73403	73403	73403	Washer, Split lock 1/2	6
11	73424	73424	73424	Washer, Flat, Zinc SAE 1/2	6

Parts List and Diagrams

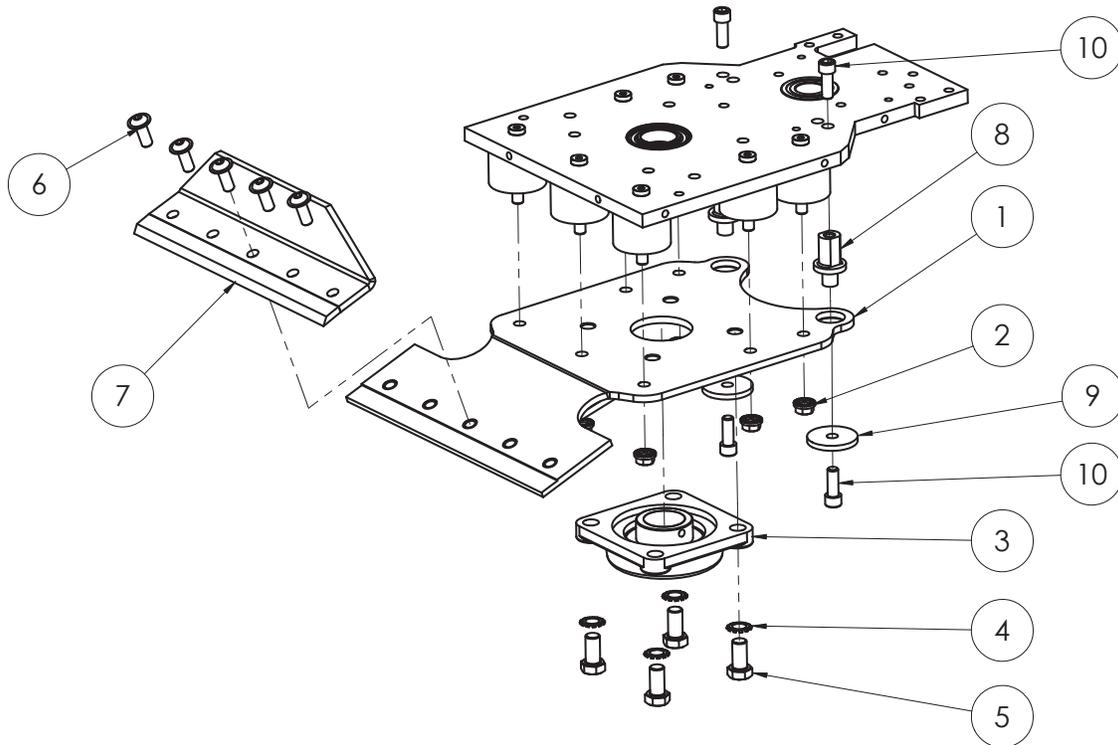
TANK



ITEM NO.	6280-10XXXX 6280-11XXXX 6280-13XXXX 6280-20XXXX 6280-23XXXX	6280-12XXXX	DESCRIPTION	QTY.
1	6280-162-SV		Tank, Hydraulic, Weldment, Silver Vein	1
		6280-162-G	Tank, Hydraulic, Weldment, Green	1
2	6280-161B	6280-161B	Plug, Vent, Filler Cap	1
3	6280-161D	6280-161D	Plug, Filler Port	1
4	6280-162G	6280-162G	Magnet, Tank	1
5	6280-214	6280-214	Plug, Tank	2
6	70601	70601	Strainer, Tank Mounted	1
7	72816	72816	Adapter, Hydraulic, 90 deg, -6M ORFS, -6M ORB	1
8	73222	73222	Bolt, Flange 3/8-16 x 1	2
9	403882	403882	Eye Bolt, 1.50 ID, 3/8-16 x 8	2
10	401452	401452	Washer, Flat, 1/2", SAE	6

Parts List and Diagrams

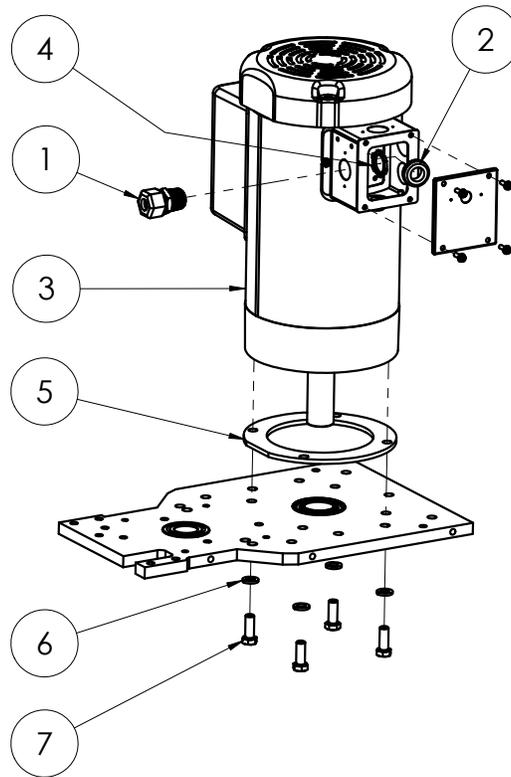
CUTTING HEAD



ITEM NO.	6280-10XXX 6280-12XXX 6280-23XXX	6280-11XXX 6280-13XXX 6280-20XXX	DESCRIPTION	QTY.
1	6280-330		Head, Cutting, Heavy Duty	1
		401638	Head, Cutting, Metric	1
2	73211	73211	Nut, Flange, Serrated, 3/8-16	7
3	71141	71141	Bearing, 1-7/16" ID 16SC4FB Dodge Housing Assy	1
4	73423	73423	Washer, Interior/Exterior Lock 1/2"	4
5	73418	73418	Bolt, Hex Head 1/2-20x1	4
6	73242		Screw, Button Head Cap with Flange 3/8-16 x 1	5
		74649	Screw, Button Head Cap With Flange M10-25	5
7	6280-136	6280-136	Cover, Blade	1
8	402893	402893	Spacer, Stop, Cutting Head	2
9	404167	404167	Stop, Washer, Thrust, Walk Behind	2
10	73266	73266	Bolt, Socket Head Cap 3/8-16x1	4

Parts List and Diagrams

MOTOR ASSEMBLY



ITEM NO.	6280-10XXXX 6280-12XXXX 6280-23XXXX	6280-11XXXX 6280-13XXXX 6280-20XXXX	DESCRIPTION	QTY.
1	73502	73502	Strain Relief, Straight 1/2 in	1
2	74730	74730	Grommet, Rubber 5/8"	1
3	72365		Motor, 1-1/2 HP, 115/230 VAC, 60 Hz, 3450 RPM	1
		72367W	Motor, 230V, 1.5 HP, 116943	1
4	73401	73401	Locknut, Conduit, 1/2"	1
5	6280-179	6280-179	Ring, Motor Spacer	1
6	73204	73204	Washer, Lock, 3/8	4
7	73201	73201	Screw, Hex Head Cap, 3/8-16 x 1	4
8*	72810	72810	Caps, Splice	3
9*	72811	72811	Caps, Insulator, Splice	3
10*	72821	72821	Terminal, Ring, 16-14 Gauge, Nylon, 10 Stud	1
11*	72554		Cord Assembly, Motor, 120 Volt	1
		72554-W	Cord Assembly, Motor, 220 Volt	1

*Not shown

Parts List and Diagrams

MOTOR PARTS

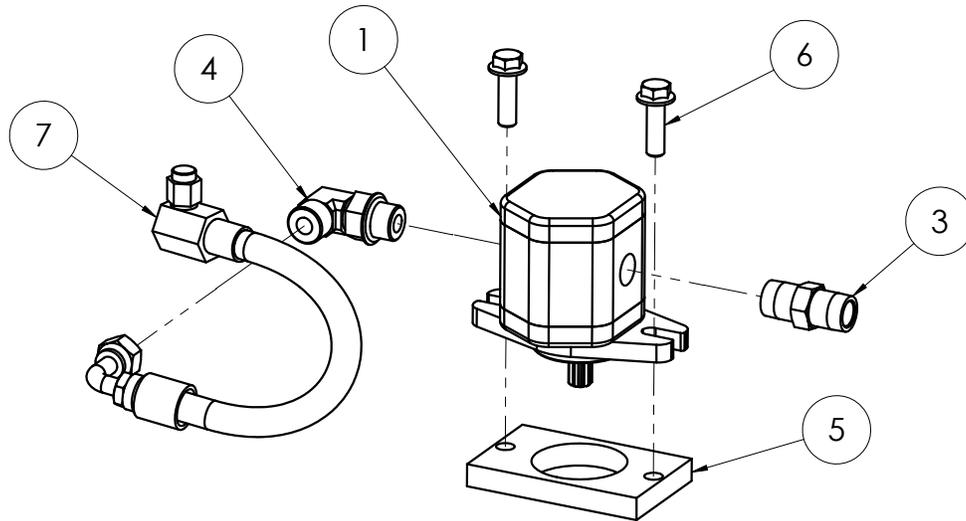


ITEM NO.	6280-10XXXX 6280-12XXXX 6280-23XXXX	6280-11XXXX 6280-13XXXX 6280-20XXXX	DESCRIPTION	QTY.
1	72365		Motor, 1-1/2 HP, 115/230 VAC, 60 Hz, 3450 RPM	1
		72367W	Motor, 230V, 1.5 HP, 116943	1
2	6280-151A	6280-151A	Capacitor, Motor (Run)	1
3	6280-151B	6280-151B	Capacitor, Motor (Start)	1
4	6280-150	6280-150	Cover, Capacitor	1
5	401698	401698	Box, Junction, Motor, 3" x 3.3"	1
6	401869	401869	Gasket, Frame, Junction Box, 3x3.33"	1
7	401699	401699	Cover, Junction Box, Motor, 3" x 3.3"	1
8	401870	401870	Gasket, Cover, Junction Box, 3x3.33"	1
9*	6280-147-1	6280-147-1	Switch, Starter	1
10*	6280-147-2	6280-147-2	Actuator, Starter Switch	1
11	72461	72461	Switch, Thermo Overload	1
12	62181	62181	Fan, Motor	1
13	400001	400001	Cover, Motor Fan, Top Mount Screws, Painted	1

*Not shown

Parts List and Diagrams

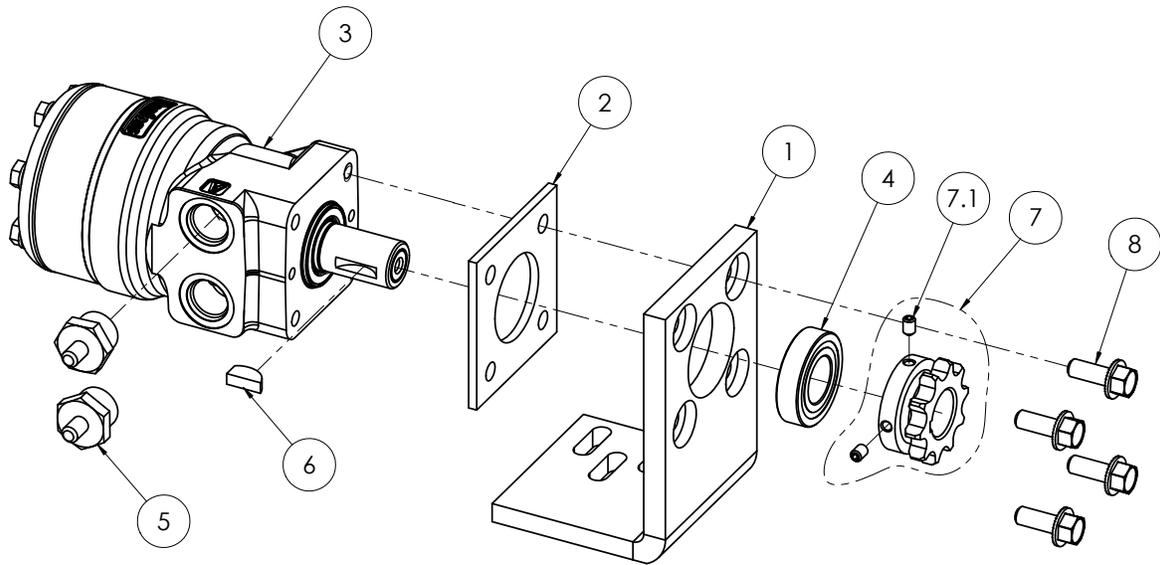
PUMP



ITEM NO.	6280-10XXXX 6280-12XXXX 6280-23XXXX	6280-11XXXX 6280-13XXXX 6280-20XXXX	DESCRIPTION	QTY.
1	6280-113S		Pump, Spline #4	1
		70925	Pump, Hydraulic, Single, #7, Splined	1
3	6280-117	6280-117	Fitting, Pump	1
4	6280-118	6280-118	Adapter, Hydraulic, 90 deg, -8M ORFS, -8M ORB	1
5	6280-119	6280-119	Spacer, Pump	1
6	73223	73223	Bolt, Wizlock, 3/8-16x1-1/4	2
7	6280-120	6280-120	Suction Hose	1

Parts List and Diagrams

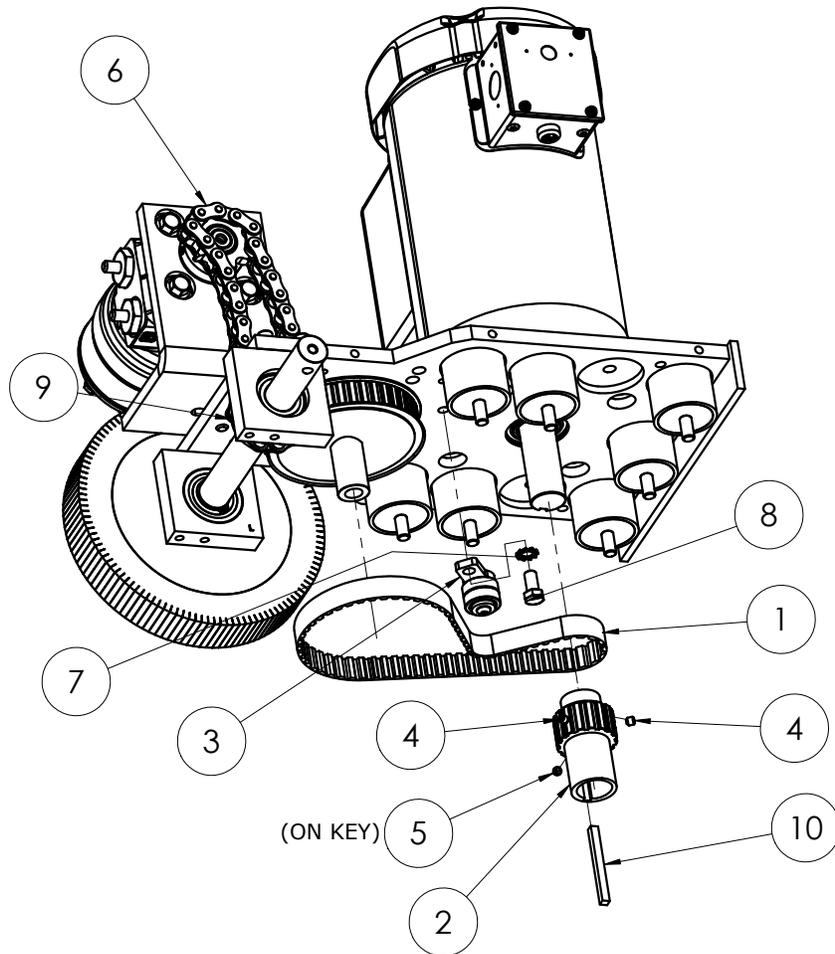
HYDRAULIC MOTOR ASSEMBLY 401546



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	6280-226	Bracket, Mounting, Hydraulic Motor	1
2	6280-225	Spacer, Hydraulic Motor	1
3	405967	Motor, Hydraulic, 200CCM	1
4	71115	Bearing, Ball, 1 x 2 x .5	1
5	6280-221	Connector, Hydraulic Motor	2
6	6280-223	Key, Shaft, Hydraulic Motor	1
7	401541	Sprocket, Axle, Heavy Duty	1
7.1	73012	Screw, Set, Cup Point, 1/4-20x3/8	2
8	73222	Bolt, Wizlock, 3/8-16x1, Zinc Plated	4

Parts List and Diagrams

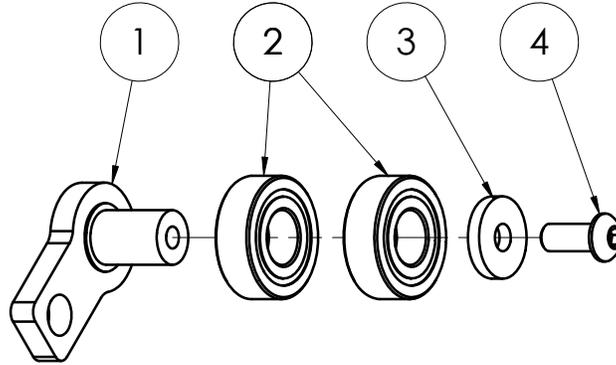
ECCENTRIC, CHAIN AND BELT



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	6280-124	Belt, Pump Drive, DD12	1
2	6280-405	Eccentric	1
3	6280-125	Assembly, Idler	1
4	73010	Screw, Set 1/4-20x1/4	2
5	73039	Screw, Set, 1/4-20x3/16	1
6	6280-228	Chain, Drive, #50 Strand, 30p, with Link	1
7	73215	Washer, External Lock 3/8	1
8	73218	Screw, Hex Head Cap, 3/8-24x3/4	1
9	6280-229	Link, Master, Drive Chain	1
10	6280HD-131	Key, Eccentric, HD	1

Parts List and Diagrams

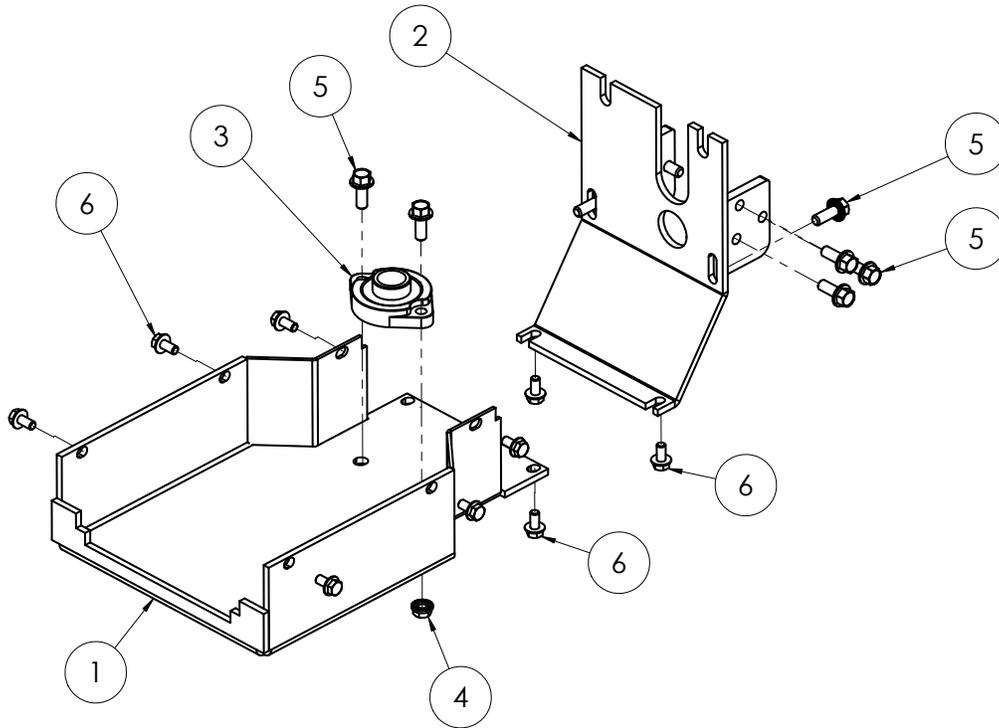
IDLER ASSEMBLY 6280-125



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	6280-125W	Bracket and Pin, Idler Mount	1
2	71072	Bearing, 1/2 ID DCTN-1616	2
3	6280-126A	Cap, Idler Bearing	1
4	73003	Screw, Button Head Socket Cap, 1/4-20x5/8	1

Parts List and Diagrams

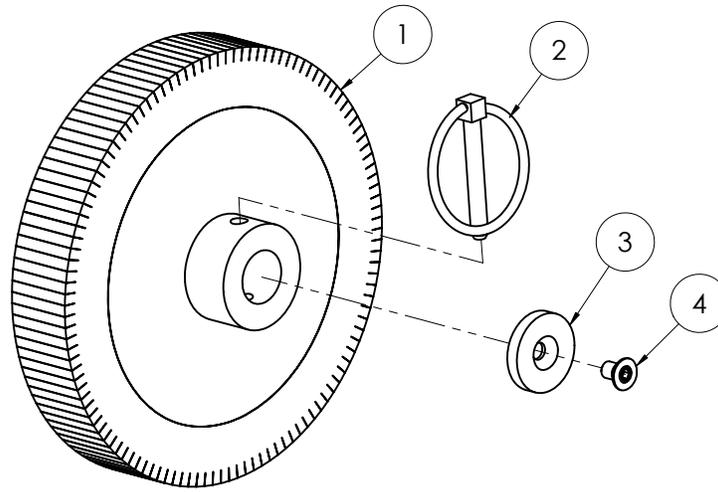
BOTTOM AND BACK COVERS



ITEM NO.	6280-10XXXX	6280-11XXXX	DESCRIPTION	QTY.
	6280-12XXXX	6280-13XXXX		
	6280-23XXXX	6280-20XXXX		
1	6280-138	6280-138	Cover, Main Bottom	1
2	6280-139	6280-139	Cover, Rear	1
3	71118	71118	Bearing, Flange	1
4	73211	73211	Nut, Flange, Serrated, 3/8-16	2
5	73222	73222	Bolt, Flange 3/8-16 x 1	10
	73318		Bolt, Wizlock Flange 5/16-18x5/8	10
6		74631	Bolt, Hex Flange Bolt M6-16	10

Parts List and Diagrams

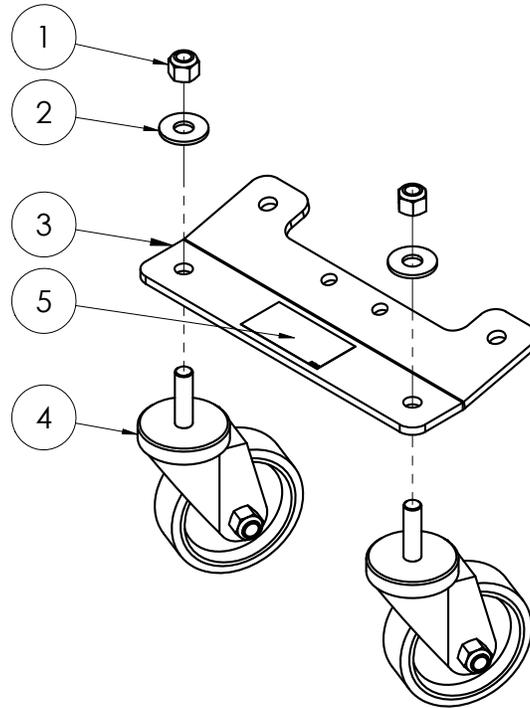
WHEELS



ITEM NO.	6280-10XXXX 6280-12XXXX 6280-23XXXX	6280-11XXXX 6280-13XXXX 6280-20XXXX	DESCRIPTION	QTY.
1	402591	402591	Wheel, Drive, Siped, Med. Duty, 8.25 x 1.38	2
2	402311	402311	Pin, Lynch, 5/16 x 2-1/16	2
3	6280-112	6280-112	Cap, Wheel	2
4	73313		Screw, Flat Head Socket Cap 5/16-18x1/2	2
		400342	Bolt, Flat Socket Head, M8 1.25 x 14mm	2

Parts List and Diagrams

FRONT WHEEL ASSEMBLY 6280-299



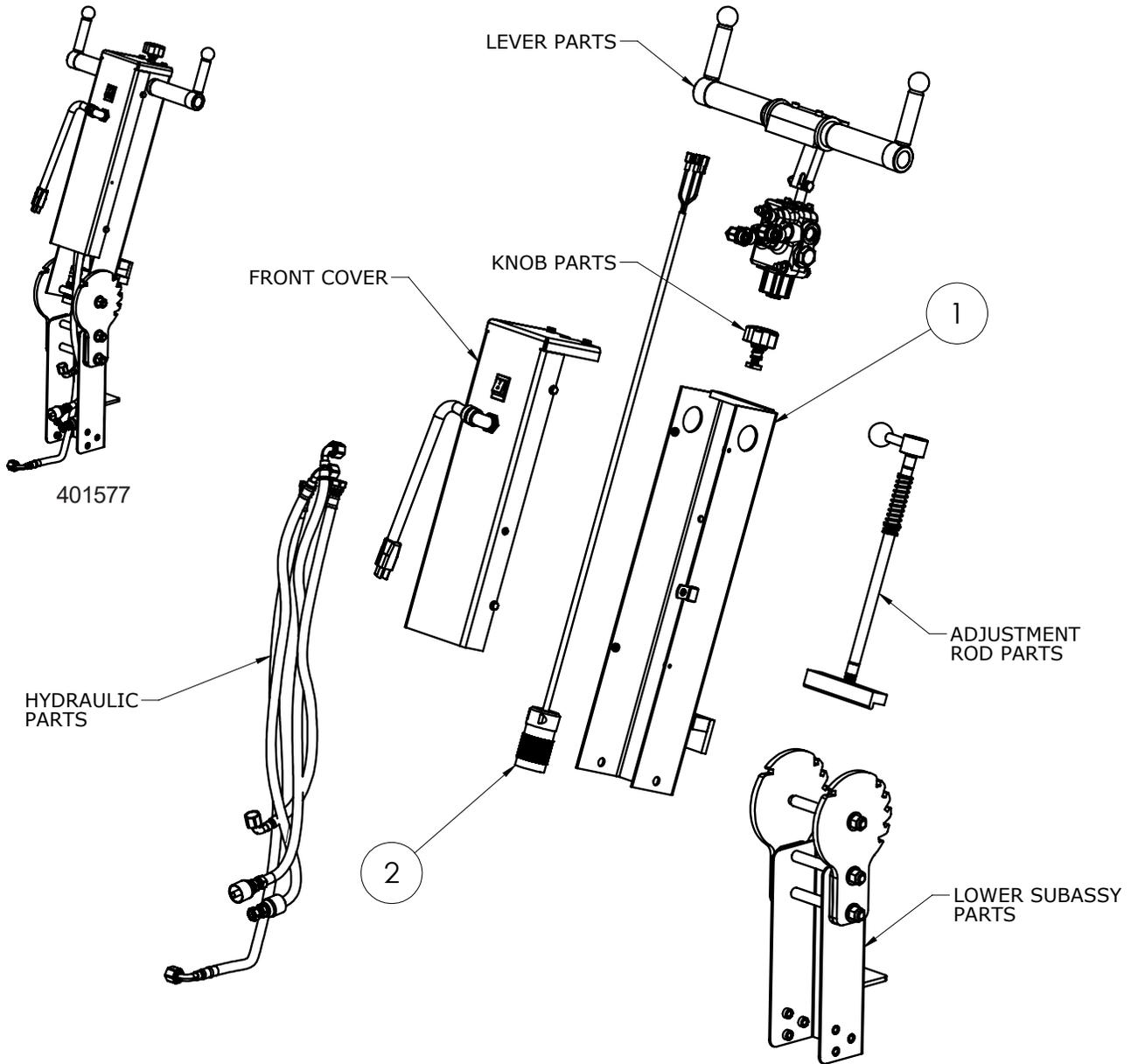
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	73402	Nut, Hex, Nylon Insert, 1/2-13	2
2	73425	Washer, Flat USS Zinc 1/2	2
3	6280-300	Bracket, Transport Wheel	1
4	6280-301	Caster Assy, Swivel, 4", Stem	2
5	L191	Label Caution	1

Parts List and Diagrams

HANDLE ASSEMBLY

401577 (DOMESTIC)—SHOWN

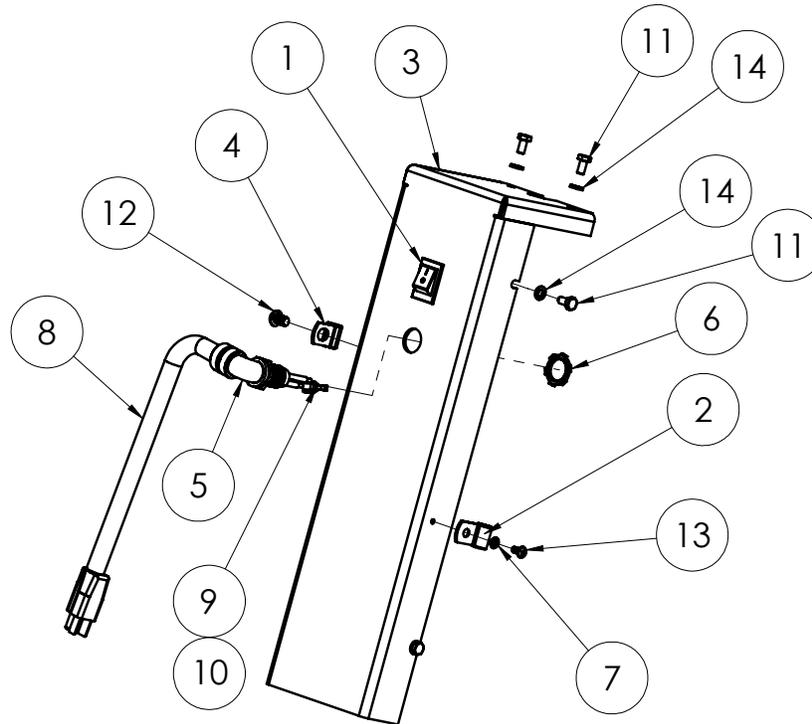
404581-XXX (INTERNATIONAL)



ITEM NO.	6280-10XXXX 6280-12XXXX 6280-23XXXX	6280-11XXXX 6280-13XXXX 6280-20XXXX	DESCRIPTION	QTY.
1	6280-601	6280-601	Weldment, Upper Handle	1
2	401588		Cord, Handle, Commander, 6280, 110V	1
		404583-033	Assembly, Cord, Handle, 2.5mm/3, NEMA L6-15R, 33"	1

Parts List and Diagrams

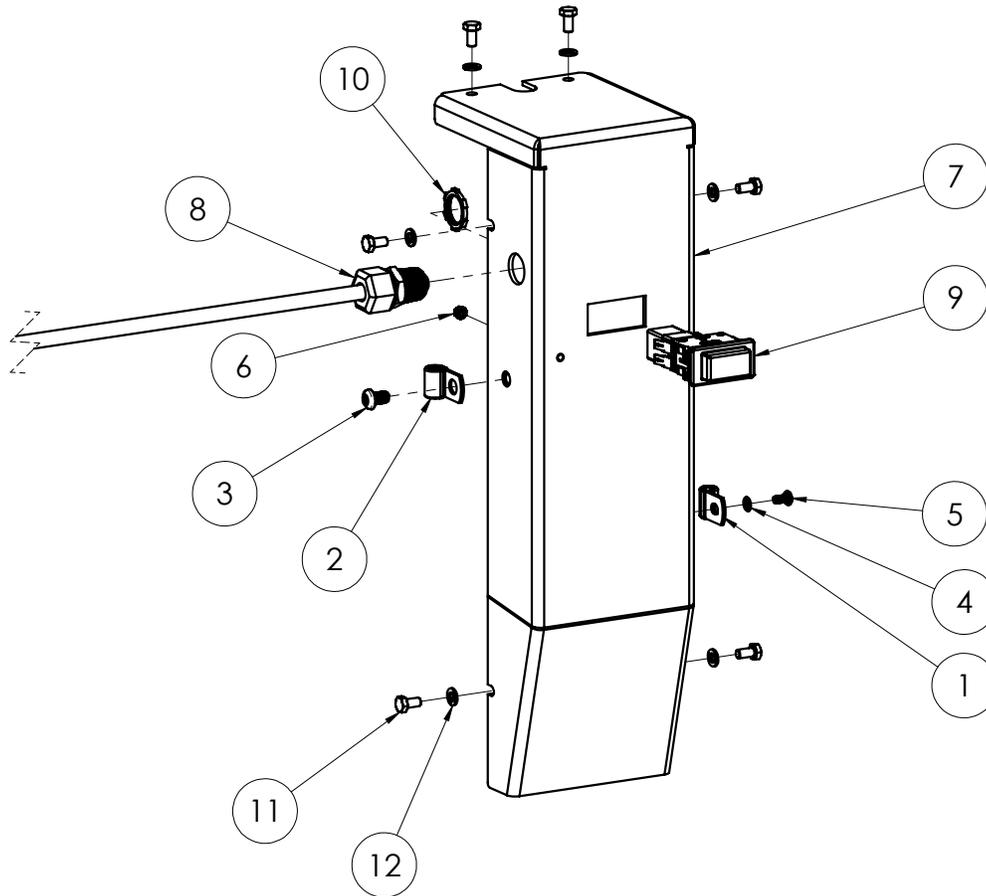
FRONT COVER (DOMESTIC)



ITEM NO.	6280-10XXXX 6280-12XXXX 6280-23XXXX	DESCRIPTION	QTY.
1	6280-207	Switch, On-Off	1
2	72837	Clamp, Cable, Vinyl Coated, 5/16	1
3	6280-602	Cover, Upper Handle	1
4	72873	Clamp, Cable, Vinyl Coated, 3/8	1
5	401682	Connector, 1/2", 90 Degree	1
6	73401	Locknut, Conduit, 1/2"	1
7	74413	Washer, Internal Lock #10	1
8	6280-168	Cord, Power, SJTOW, 12/3, NEMA 5-15, Yellow, 30in	1
9	405215	Terminal, QC, Flag, Yellow Nylon, .250, 10-12AWG	2
10	72812	Terminal, QC, Female, Yellow Nylon, .250, 10-12AWG	1
11	74630	Bolt, Hex Head Cap M6-12 8.8	6
12	73301	Bolt, Button Head Socket Cap 5/16-18x1/2	1
13	74406	Screw, Phillips Pan Head 10-32x3/8	1
14	74619	Washer, Lock, M6	6

Parts List and Diagrams

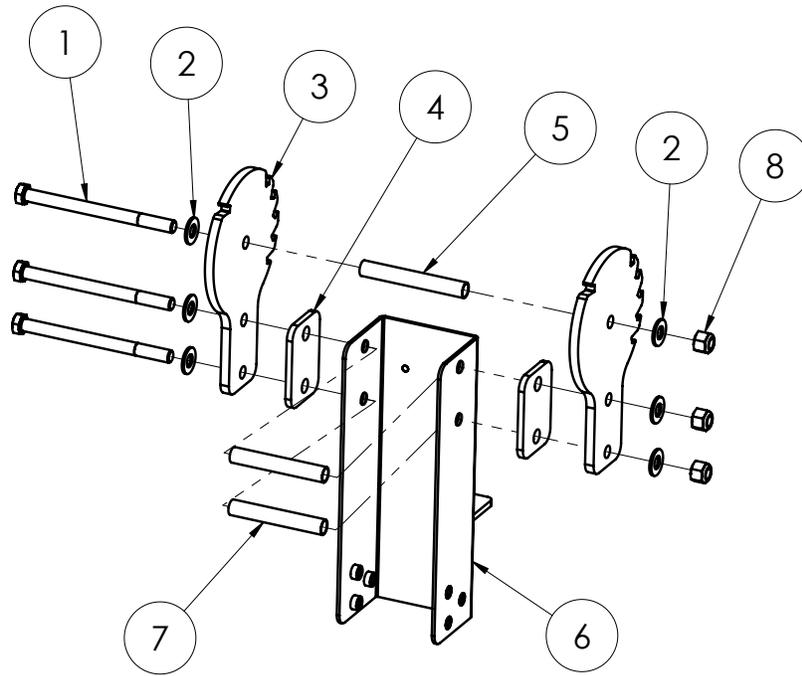
FRONT COVER (INTERNATIONAL)



ITEM NO.	6280-11XXXX	6280-13XXXX	6280-20XXXX	DESCRIPTION	QTY.
1	72837	72837	72837	Clamp, Cable, Vinyl Coated, 5/16	1
2	72873	72873	72873	Clamp, Cable, Vinyl Coated, 3/8	1
3	73301	73301	73301	Screw, Button Head Socket Cap, 5/16-18x1/2	1
4	74413	74413	74413	Washer, Internal Lock #10	1
5	74406	74406	74406	Screw, Phillips Pan Head, 10-32x3/8	1
6	403281	403281	403281	Nut, Keps, M4-0.7, Clear Zinc	1
7	404318	404318	404318	Cover, Upper Handle, CE	1
8	404172			Assembly, Cord, Power, 1.5mm/3, EU1-16P, 15in	1
		404173		Assembly, Cord, Power, 1mm/3, AUS1-16P, 15in	1
			404171	Assembly, Cord, Power, 2.5mm/3, IEC 309 110V/16A, 50ft	1
9			404144	Switch, Rocker Breaker, 18A, 90-120V, UVR	1
	404180	404180		Switch, Rocker Breaker, 10A, 220-240V, UVR	1
10			73401	Locknut, Conduit, 1/2"	1
11	74630	74630	74630	Screw, Hex Head Cap, M6-12 8.8	6
12	74619	74619	74619	Washer, Lock, M6	6

Parts List and Diagrams

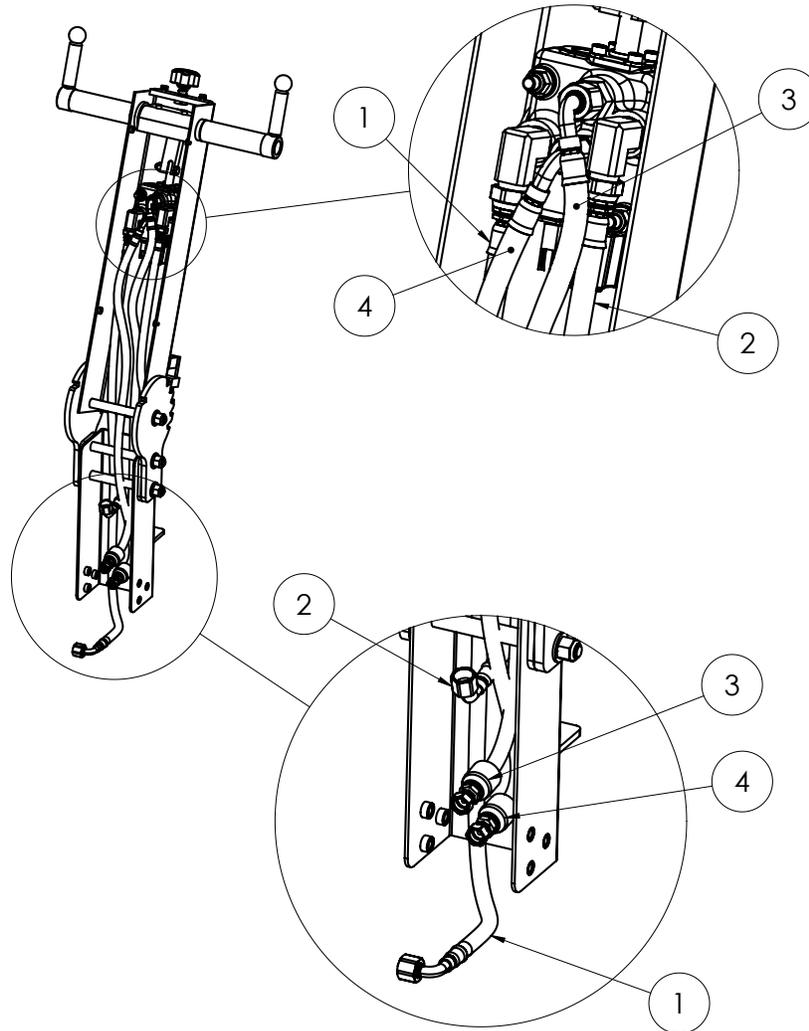
LOWER SUB-ASSEMBLY



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	400056	Screw, Hex Head Cap, 1/2-13x6-1/2	3
2	73424	Washer, Flat, Zinc SAE 1/2	6
3	6280-600	Plate, Index, Handle	2
4	400077	Gasket, Handle	2
5	6280-618	Tube, Spacer, Long	1
6	401629	Handle, Lower, Rack Pins	1
7	6280-619	Spacer Tube, Short	2
8	73402	Nut, Hex, Nylon Insert, 1/2-13	3

Parts List and Diagrams

HYDRAULIC HOSES

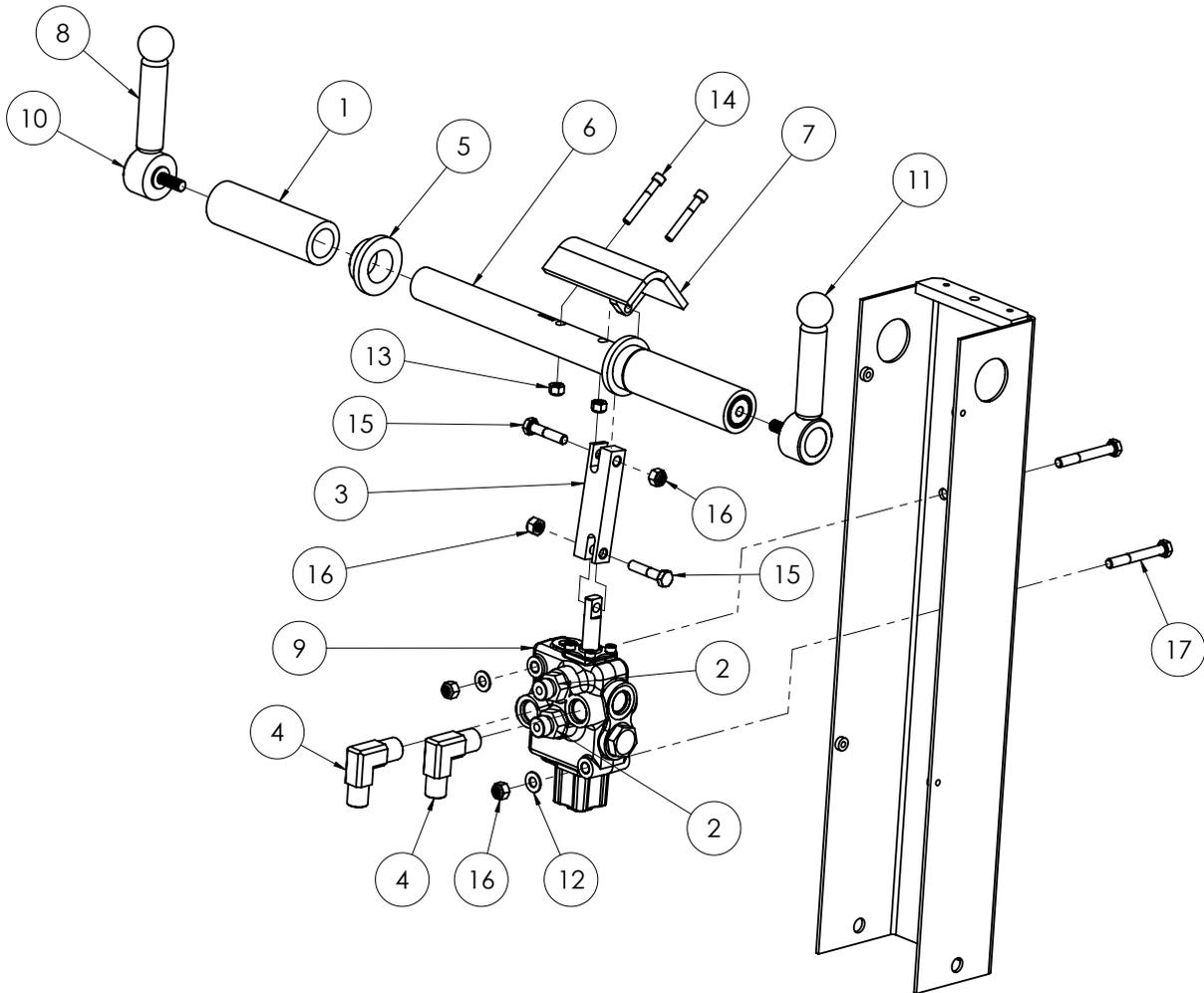


ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	400031	Hose, Hydraulic, 1/4 x 40, F/90F	1
2	400033	Hose, Hydraulic, 3/8 x 36, F/F	1
3	400032	Hose, Hydraulic, 1/4 x 33, F/90F	1
4	400032	Hose, Hydraulic, 1/4 x 33, F/90F	1
5*	400097	Wrap, Kevlar	21"

*Not shown

Parts List and Diagrams

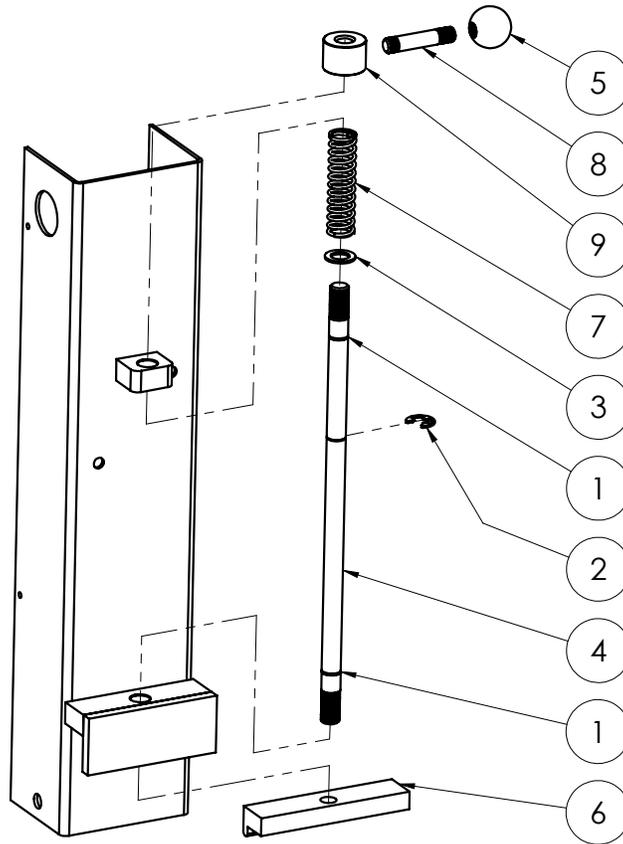
LEVER



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	400024	Grip, Foam, 1"	2
2	400034	Fitting, FF1231-06-08	2
3	401434	Linkage, Valve, Handle	1
4	5280-118	Adapter, Hydraulic, 90 Deg, -6M ORFS, -8M ORB	2
5	6280-607	Bushing, Handle Bar	2
6	6280-608	Weldment, Handle Bar	1
7	6280-613	Bracket, Valve Connector	1
8	70623	Grip, Foam	2
9	70624	Valve, Single Spool, Tapered	1
10	70636	Lever, Adjustable, Right Hand	1
11	70637	Lever, Adjustable, Left Hand	1
12	73351	Washer, Flat, 5/16, SAE	2
13	73008	Nut, Hex, Nylon Insert, 1/4-20	2
14	73066	Bolt, SHCS, 1/4-20x1.75	2
15	73334	Bolt, Hex Head Cap 5/16-18x1-1/2	2
16	73322	Nut, Hex, Nylon Insert, 5/16-18	4
17	73327	Bolt, Hex Head Cap 5/16-18x2 1/2	2

Parts List and Diagrams

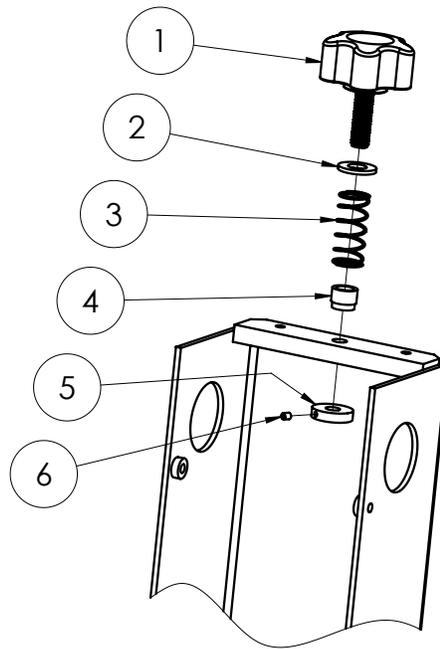
ADJUSTMENT ROD



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	402197	O-ring, .489 ID X .629 OD X .070 W	2
2	402200	E-Clip, Shaft, .625	1
3	402201	Washer, .625 ID x 1.000 OD	1
4	402219	Rod, Adjustment, Large, 3X Groove	1
5	6280-606	Handle, Ball	1
6	6280-611	Lock, Adjustment Bar	1
7	92800-12	Spring, Adjustment, 3.5"	1
8	92800-98	Rod, Adjustment, Short	1
9	92800-99	Collar, Adjustment Rod	1

Parts List and Diagrams

SPEED CONTROL KNOB



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	70638	Knob, Adjustable, 1-1/4"	1
2	73263	Washer, Flat SAE Zinc 3/8	1
3	402290	Spring, .66"OD x 1.50"L x .049"w	1
4	402256	Sleeve, Knob, Commander Handle	1
5	401997	Stopper, Speed Control	1
6	404735	Screw, Set, Cup, 6-32 x 1/4, Black Oxide w/ Patch	1

Parts List and Diagrams

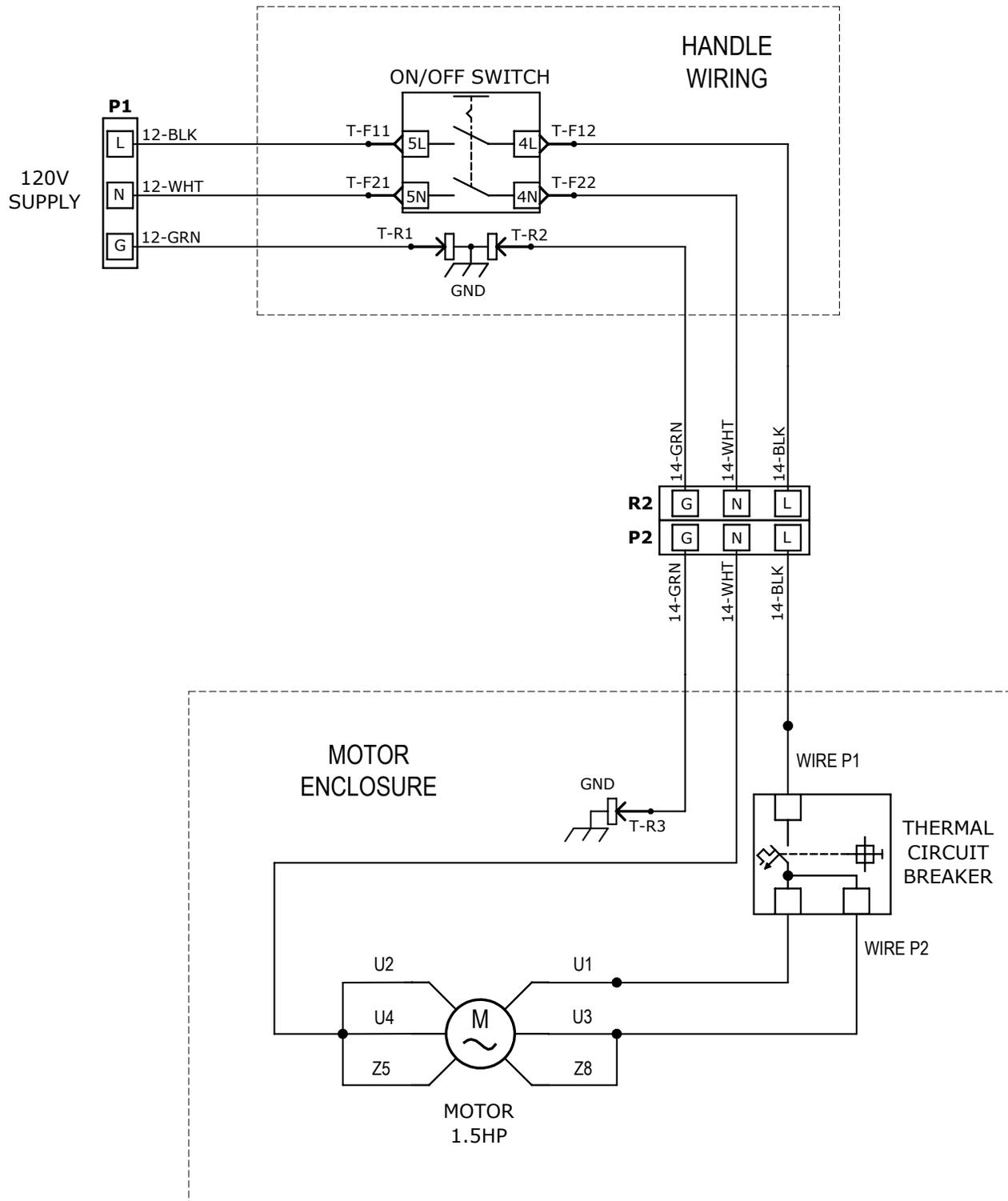
LABELS

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	403359-XX*	Kit, Labels, 6280-COM, [Language]	1
2	402627	Label, Private, 1.5 x 2 (6280-23XXXX Only)	2
3	402628	Label, Private, 3.5 x 5.5 (6280-23XXXX Only)	2

*Suffix (-XX) denotes language: None=English; -FR=French; -NL=Dutch; -DE=German.

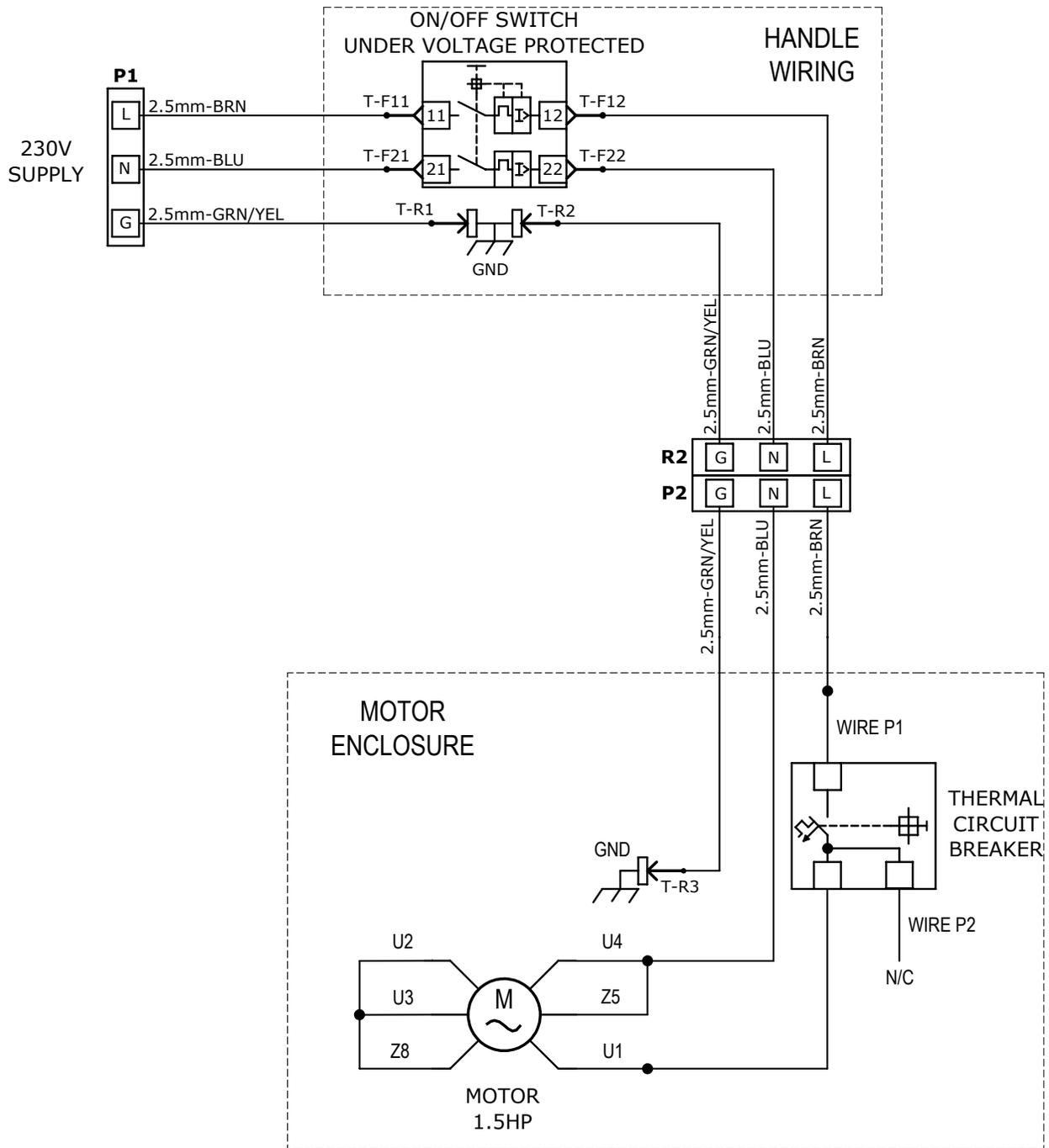
Parts List and Diagrams

WIRING DIAGRAM (120V DOMESTIC)



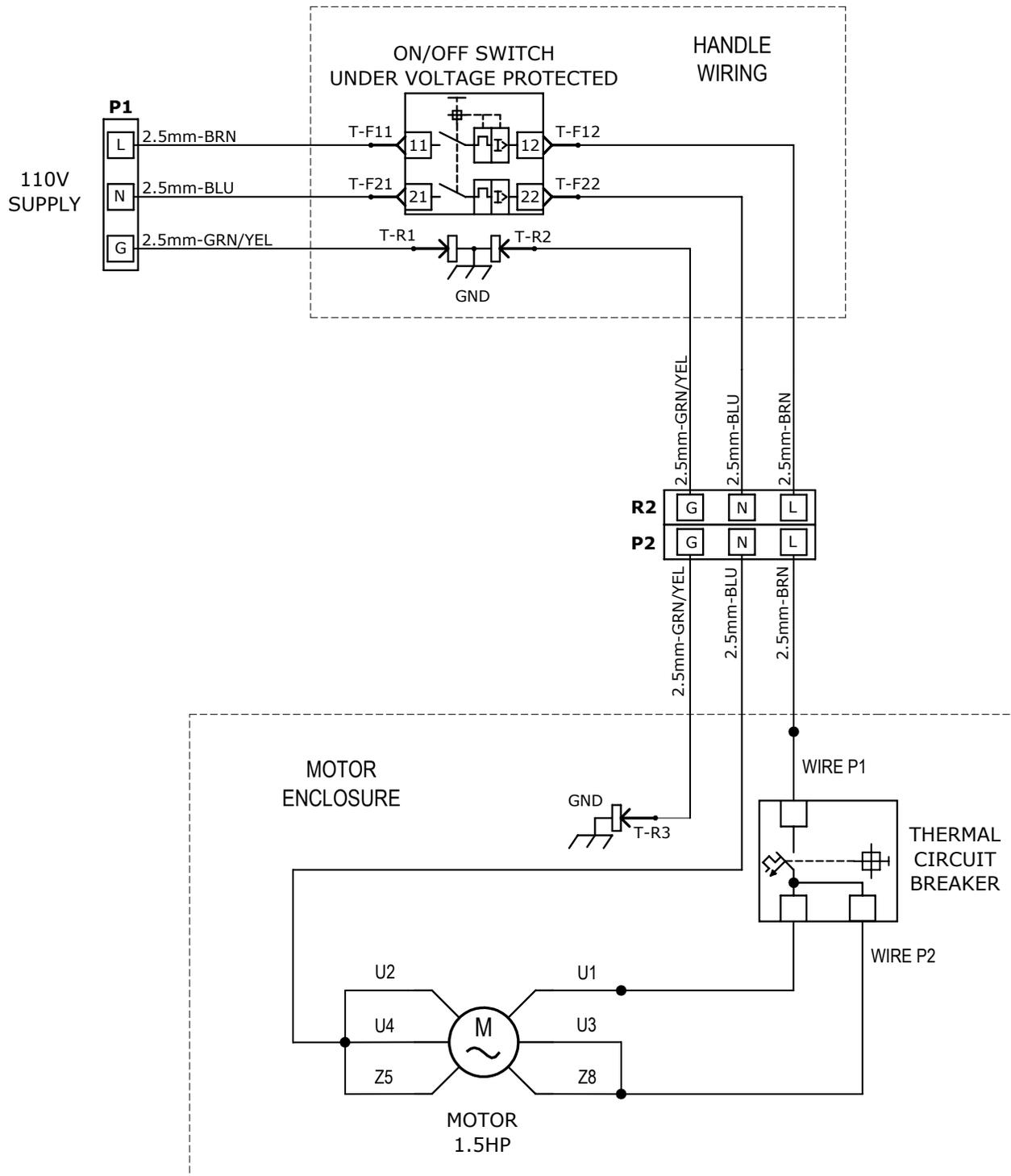
Parts List and Diagrams

WIRING DIAGRAM (230V INTERNATIONAL)



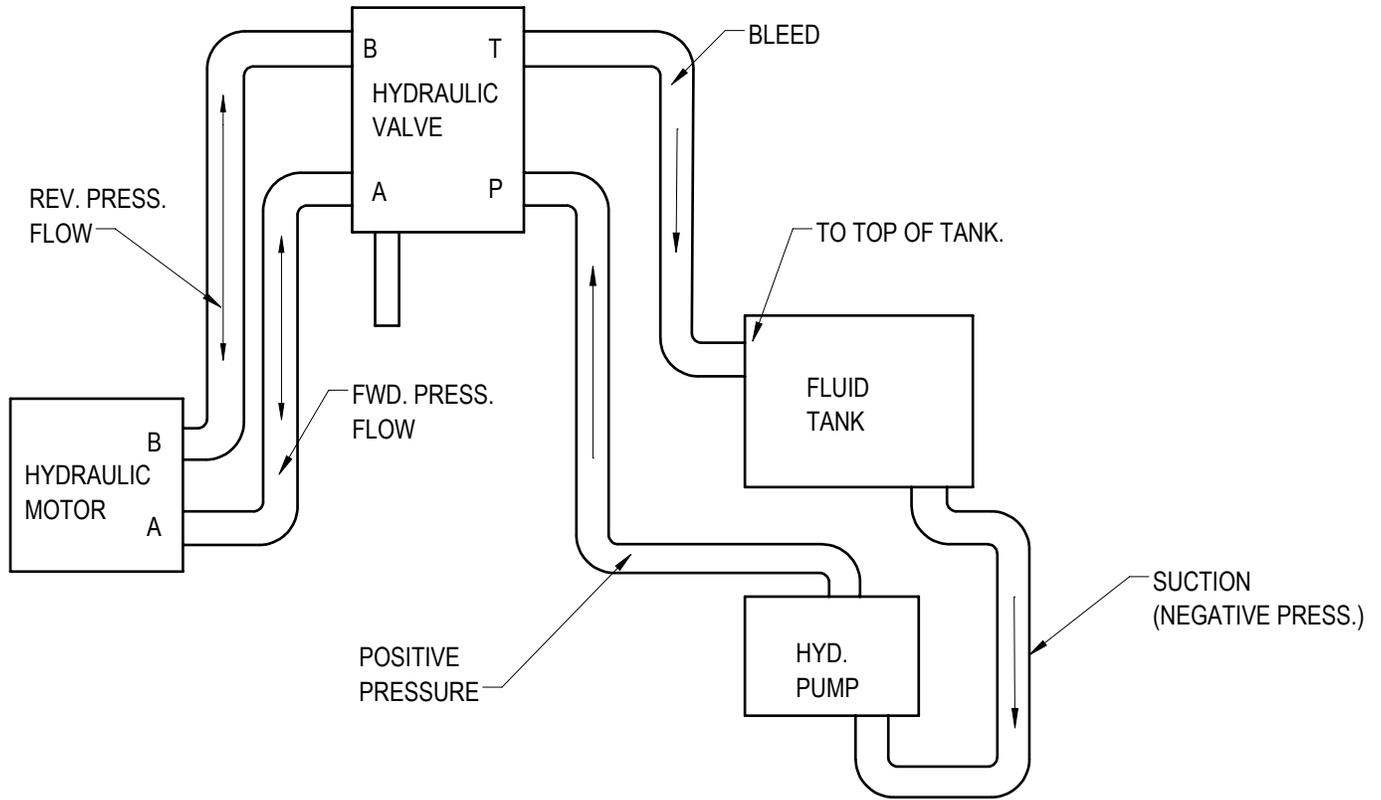
Parts List and Diagrams

WIRING DIAGRAM (100V-110V INTERNATIONAL)



Parts List and Diagrams

HYDRAULICS





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