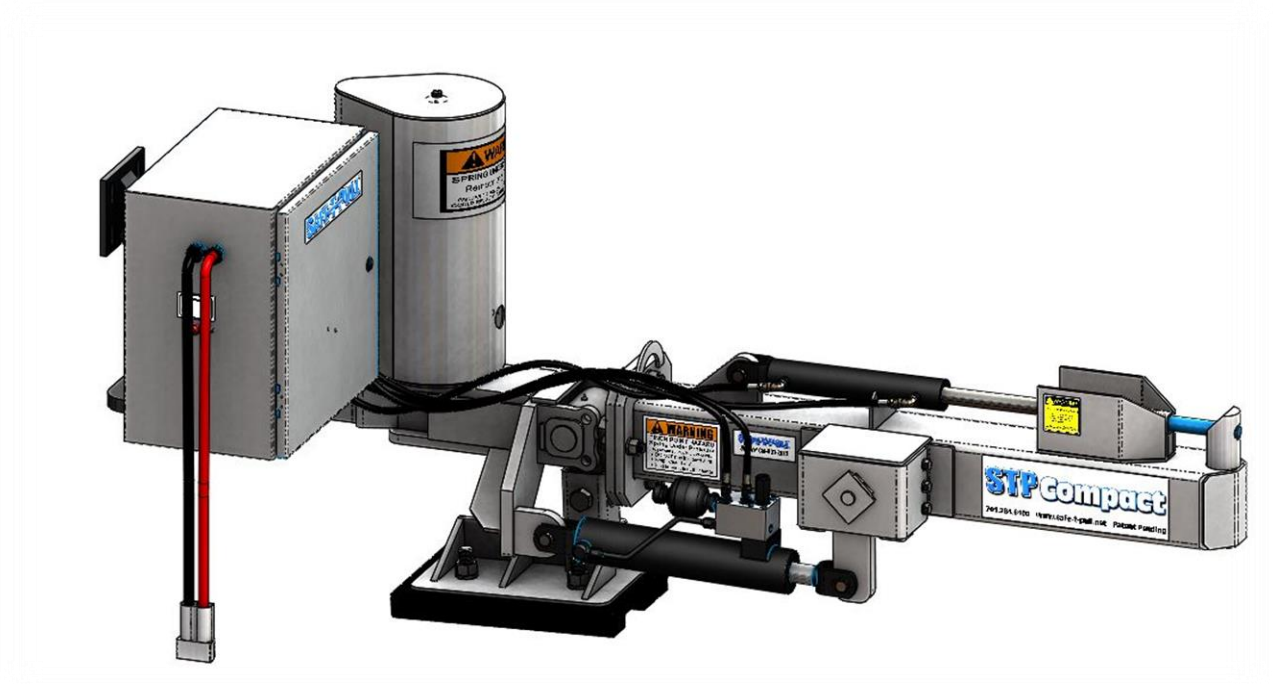
SAFE-T-PULL™ Compact

User Manual



Safe-T-Pull Inc.

2015

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1. Before You Begin

Disclaimer

The information and specifications contained in this document are subject to change without notice. Safe-T-Pull Inc. assumes no responsibility or liability for any errors or omissions that may appear in this manual. Safe-T-Pull Inc. reserves the right to update the existing document or to create a new document to correct any errors or omissions. You can receive the latest version of this document from Safe-T-Pull Inc. by calling your local dealer during their business hours.

What Is Included

- Puller Tube Assembly
- Swivel Assembly
- Spring Tongue
- Smart Lift Cylinder
- Safe-T-Pull Compact User's Manual
- Manual cylinder lock (FP-173)
- 1 Mast lock pin (XP-210)

Optional Accessories

- Hydraulic Power Unit (XP-008)
- Bumper (CM-005)
- Safe-T-Pull Receiver (model dependent)
- Camera System (XP-020)

Unpacking Instructions

Immediately upon receipt, carefully unpack the product and check the packaging to make sure you have received all the parts indicated above and that they are in good condition.

Claims

If the packaging or the material inside the packaging (the product and included accessories) appear damaged from shipping, or show signs of mishandling, upon receipt notify the carrier immediately, not Safe-T-Pull Inc. Failure to do so in a timely manner may invalidate your claim with the carrier. In addition, keep the container and all the packing material for inspection. For other issues such as missing components or parts, damage not related to shipping, or concealed damage, file a claim with Safe-T-Pull Inc. immediately after receiving the merchandise.

Contact Us

Email – sales@safe-t-pull.net

Mail - Safe-T-Pull
P.O. Box 94
Park River, ND 58270

Web – www.safe-t-pull.net

2. Safety Information

Please read the following safety notes carefully before working with the product. These notes include important safety information about installation, usage, and maintenance.

Safety Notes

All personnel working on, with, or near a Safe-T-Pull Compact must wear safety toed shoes, safety glasses, reflective safety vest, protective gloves, and hard hat.

The Safe-T-Pull Compact may raise or lower unexpectedly. When servicing the Safe-T-Pull Compact be sure the pulling vehicle is OFF and the puller arm is in the lowered position.

When traveling on public roads or during extended periods of storage, install the manual cylinder lock. This will prevent the puller arm from accidentally lowering. Mast lock pins should also be installed.

WARNING: **Contact with the bumper will cause your puller arm to fold down if all locks are not installed. See the safety lock section of this document for more information.**

Rules for safe hydraulic operation

- Park hydraulic machinery where children cannot reach it.
- If your pulling vehicle has hydraulic flow control capabilities, (usually measured in GPM) decrease the flow to the minimum amount required to operate the Safe-T-Pull Compact
- Block the Safe-T-Pull Compact when you must work on the system while raised; do not rely solely on the hydraulic lift.
- Avoid servicing the hydraulic system while the machine engine is running.
- Do not remove cylinders until the Safe-T-Pull Compact is resting on the ground or securely on safety stands or blocks; shut off engine.
- Before disconnecting hydraulic hoses, relieve all hydraulic pressure.
- Be sure all hose connections are tight and hoses are not damaged.
- Use a non-volatile cleaning solvent to wash parts.

Three common hydraulic system hazards

- Burns from very hot, high pressure fluid.
- Injuries and illness from flailing hydraulic lines.
- Hydraulic fluid injection into the body.

Ways to prevent hazards from occurring

- When attempting to detect pinhole leaks in hydraulic hoses run a piece of cardboard or wood along the hose.
- NEVER touch hydraulic hoses when they are under pressure.
- Never connect a low pressure hose, cylinder, or other aftermarket equipment to the Safe-T-Pull Compact.
- Ensure all hydraulic components are in proper working condition on the pulling vehicle.
- Periodically check for oil leaks and worn hoses.
- Keep contaminants from hydraulic oil and replace filters regularly.
- Lubricate cylinder rods with protective lubricant to avoid rusting.

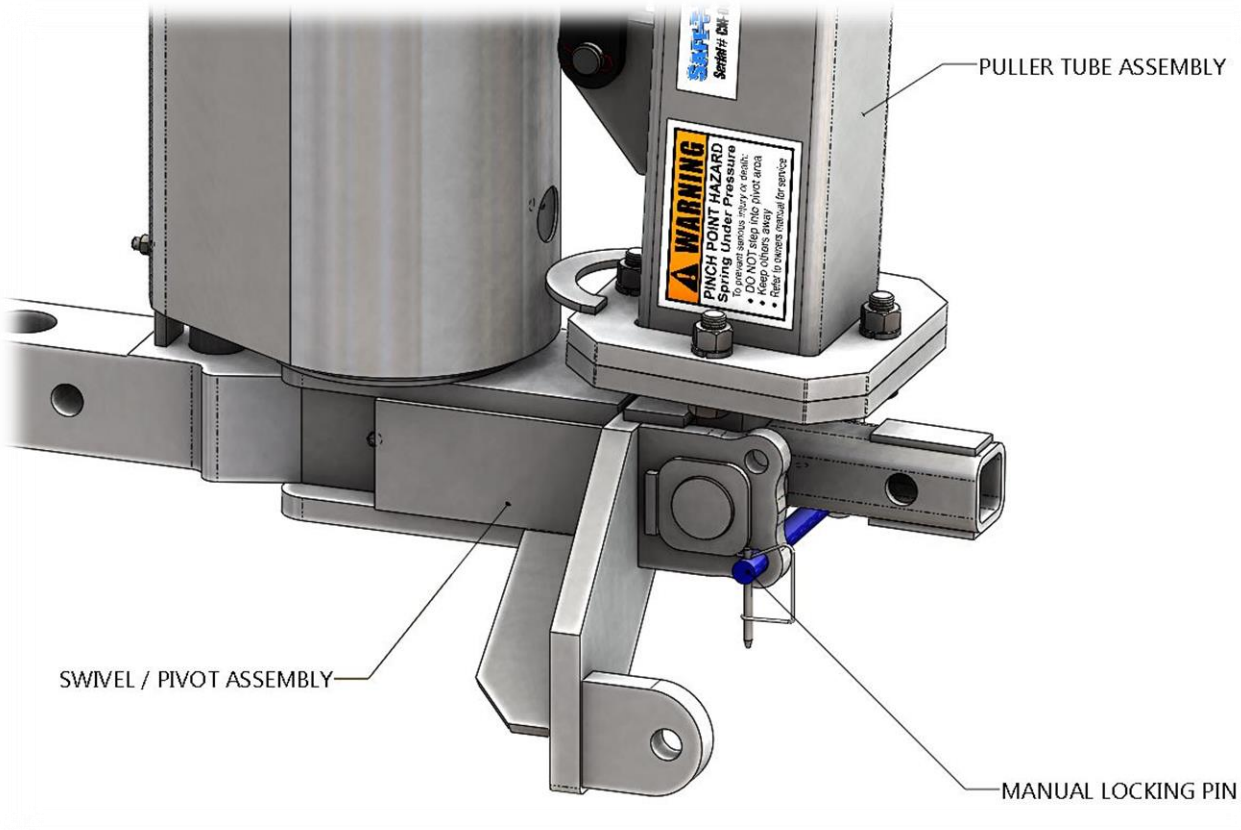
Safety Locks

As a safety feature, Safe-T-Pull Compact's come equipped with manual puller arm locks (CP-006). The Safe-T-Pull Compact may be locked into the raised postion.

Raised Position

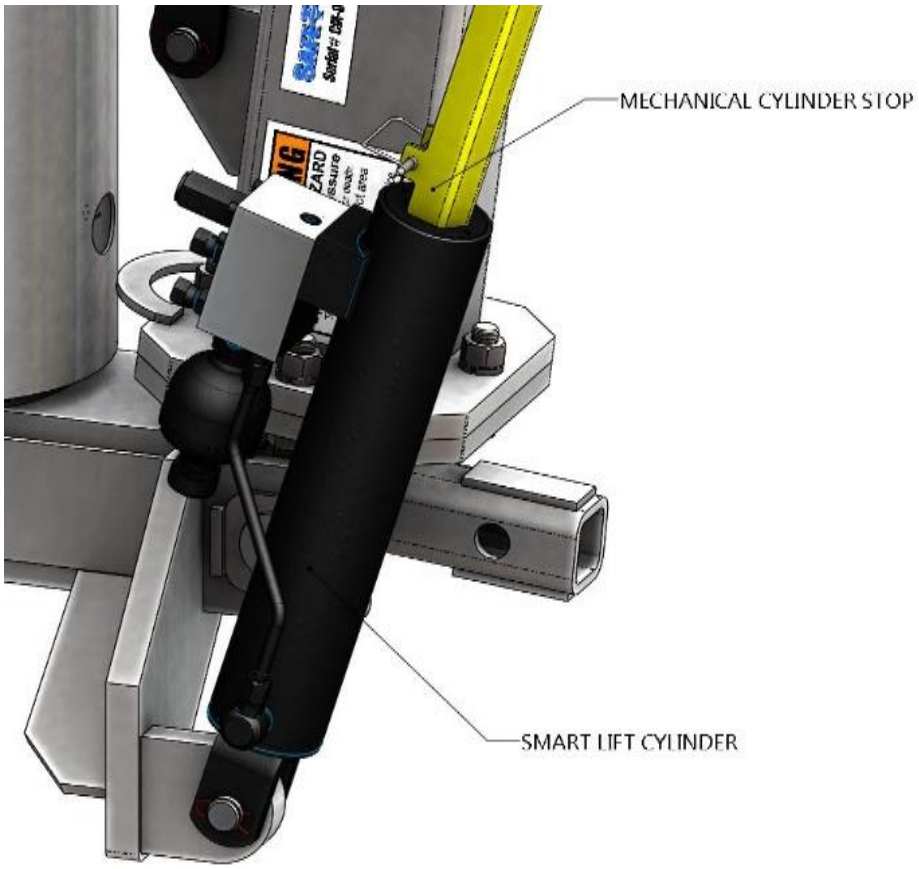
When the puller arm is raised all of the way up, a pin may be installed into the top hole position to keep it from lowering.

WARNING: **These pins may NOT stop the puller arm from being raised or lowered hydraulically.**



Manual Cylinder Lock

As a safety feature, Safe-T-Pull Compacts come equipped with a Manual Cylinder Lock (FP-173). The Safe-T-Pull Compact may be locked upright. This is recommended whenever the puller arm is in the raised position for extended periods of time. The Manual Cylinder Lock can be installed by raising the puller arm all the way up and clipping the lock onto the cylinder ram with the included Retainer Clips (XP-210).



3. *Setup*

Unpacking Instructions:

Before discarding any packaging, be sure all included parts are accounted for. Remove all strapping and/or banding on the package. For claims please visit section 1 of this document.

Assembly:

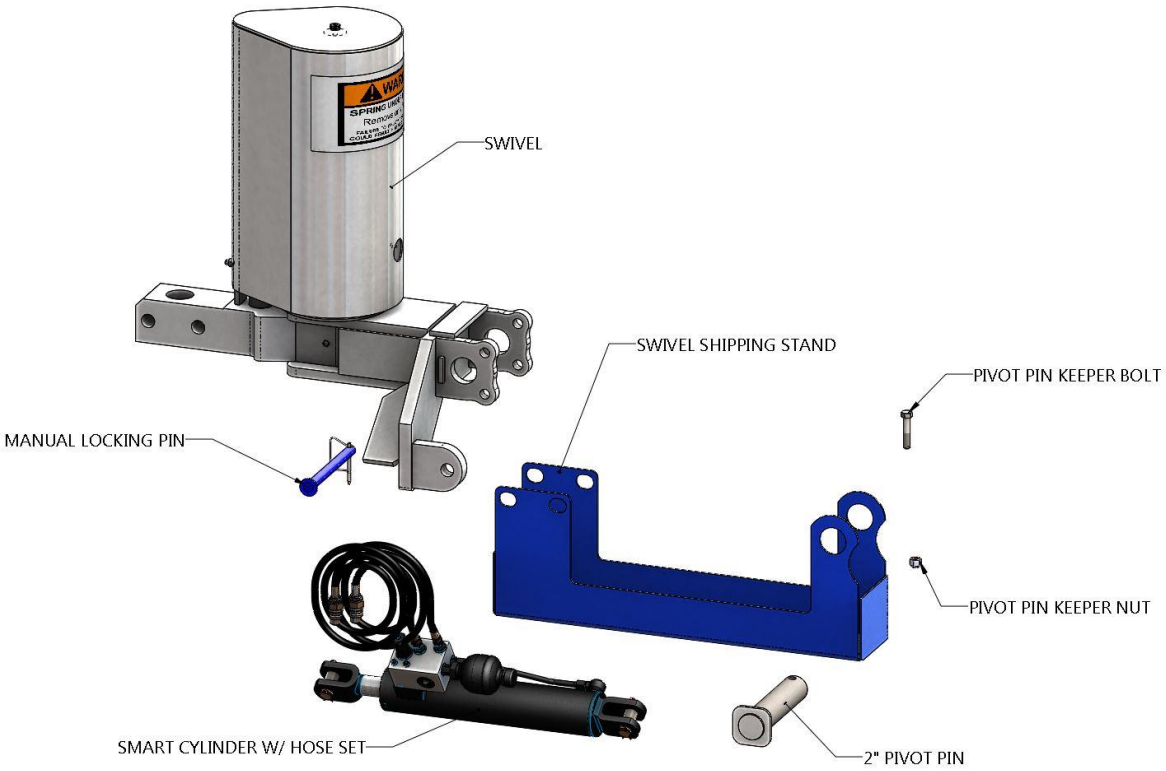
If your Safe-T-Pull Compact has been palletized, assembly is required. After unpacking follow these steps to assemble your Safe-T-Pull Compact.

Recommended Tools:

- Lifting device (fork lift, skid-steer, cherry picker)
- Chain or lifting strap
- Two ¾" wrenches or sockets
- Two 11/16" wrenches
- Two 1 1/8" wrenches or sockets
- One 1 1/2" wrench or socket
- One 1 7/16" wrench or socket

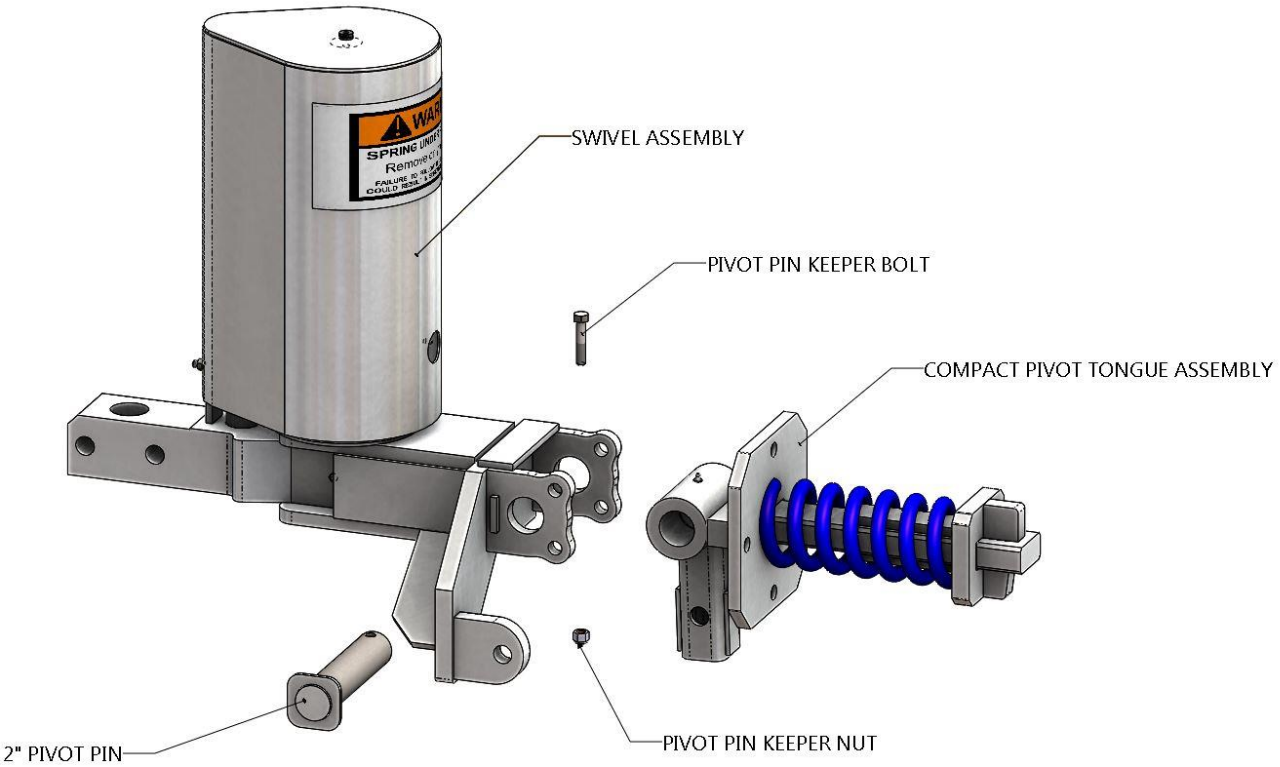
***WARNING*: All lifting equipment must be rated for 1,000 pounds (453.5kg) or more!**

Step 1: Remove the swivel assembly by lifting it out of its stand using a lifting strap or chain.
Note: Two ¾" wrenches or sockets required.

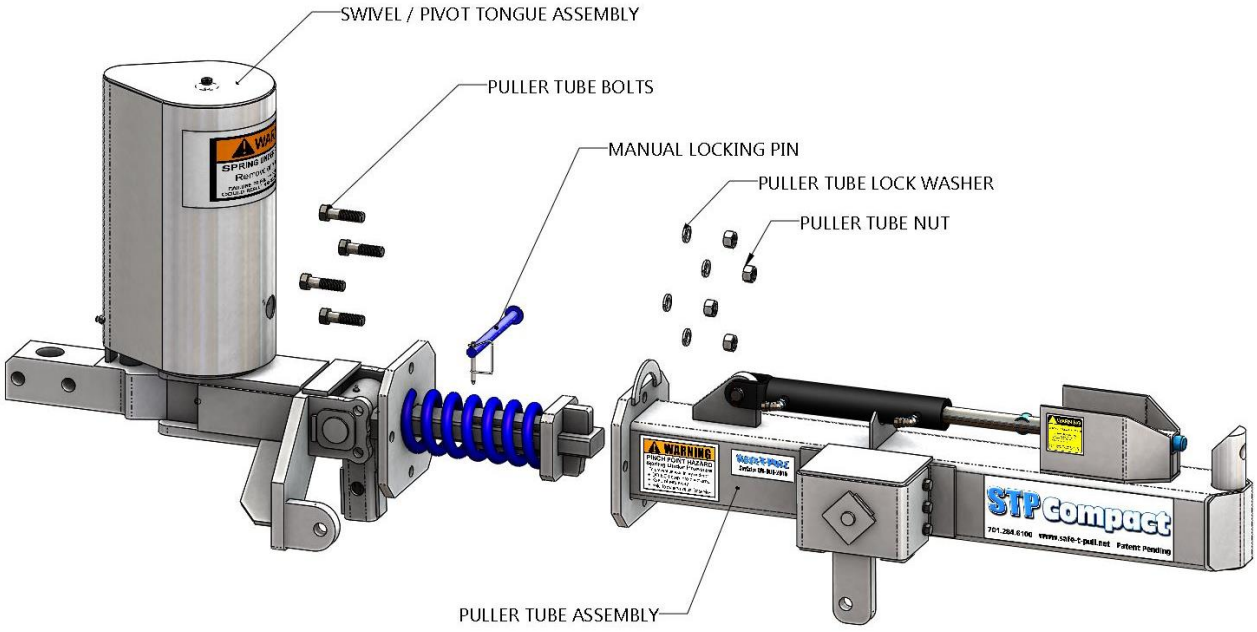


Step 2: Pin the Spring Tongue onto the Swivel Assembly. Bolt the pin into place with the included ½" bolt and nylock nut.

Note: Two ¾" wrenches or sockets required.



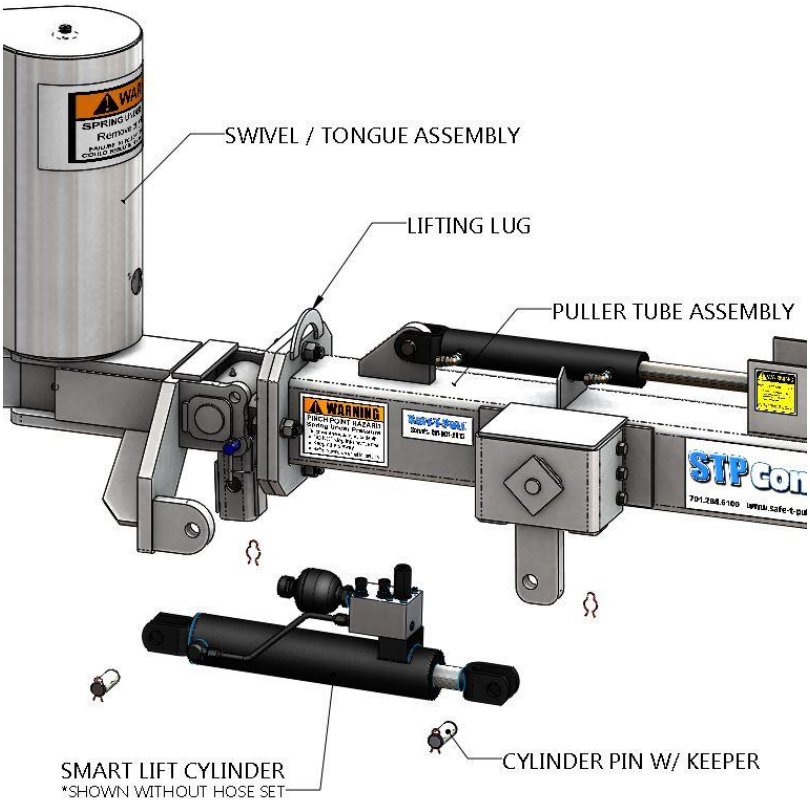
Step 3: Align the puller tube assembly and the tongue assembly as shown below. Slide the Spring Tongue into the Puller Tube Assembly.



Step 4: Bolt the tube and swivel assembly together with four included ¾" bolts, lock washers, and nuts.

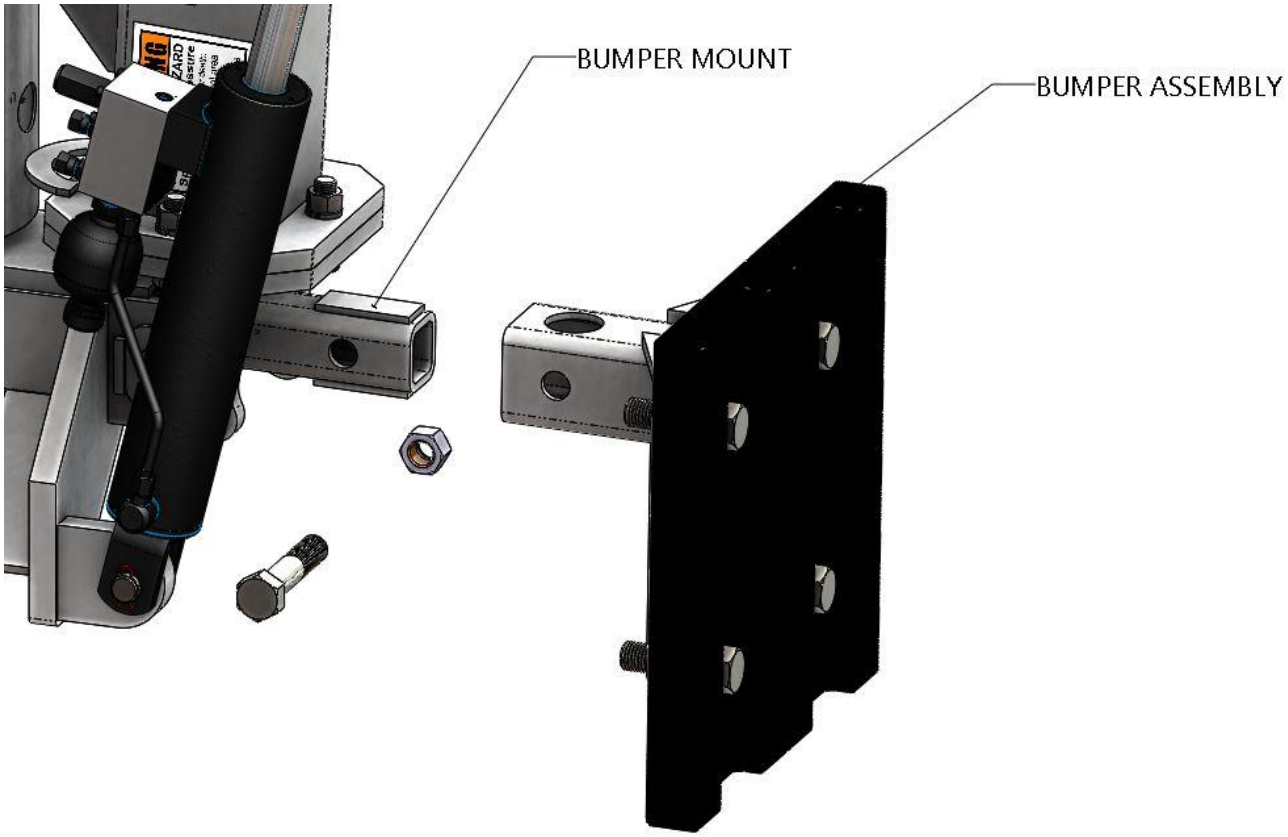
Note: Two 1 1/8" wrenches or sockets required

Step 5: Using the provided pins, attach the Smart Lift Cylinder as shown below



Step 6: Install and bolt on the bumper with the included 1” bolt as shown below.

Note: One 1 ½” wrench or socket and one 1 7/16” wrench or socket required.



Note: The bumper may be installed directly to the receiver for use without a Safe-T-Pull

WARNING: **Contact with the bumper will cause your puller arm to fold down if all locks are not installed. See the safety lock section of the User’s Manual for more information.**

3. Operation Instructions

Pre-Operation Maintenance

Before every operation of your Safe-T-Pull Compact, an inspection and pre-operation maintenance should be done to ensure all components are in operating order:

1. Check hydraulic fluid in the hydraulic box reservoir to make sure levels are adequate.
   NOTE: Use only Aeroshell Fluid 4 hydraulic oil or your warranty will be void.
2. Check hydraulic hoses for cuts, cracks, pressure bubbles, or other damage. Replace if any signs of damage.
   ***WARNING*: Steel braiding should NEVER be visible**
3. Check hydraulic fittings for dents, cuts, leaks, or other signs of damage. Replace if any signs of damage.
4. Check to make sure all hydraulic hoses are securely fastened to their correct fittings.
5. Check to make sure all hydraulic cylinders pins are secured with correctly installed hitch clips and/or bolts.
6. Check power cables for cuts, cracks, corrosion, or other signs of damage. Replace if any signs of damage.
7. Check to make sure the power cable is connected correctly
8. Turn the power switch to the ON position
9. Power on the wireless remote
10. Cycle all cylinders to check for proper operation
    NOTE: Several cycles may be needed to fill the hydraulic lines

NOTE: If your Safe-T-Pull Compact is being used continuously, pre-operation maintenance should be done before EVERY shift change or EVERY 12 hours, whichever comes first.

Operating Instructions

Hydraulic Power Unit Duty Cycle:

The duty cycle for the 24 volt Safe-T-Pull Compact is three (3) minutes continuous run time with fifteen (15) minutes cool down. Cycling the hydraulic unit more than this will void your warranty.

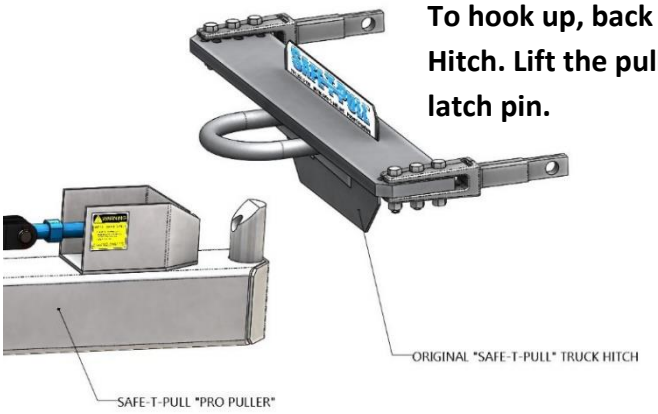
The duty cycle for the 12 volt Safe-T-Pull Compact is two and a half (2.5) minutes continuous run time with fifteen (15) minutes cool down. Cycling the hydraulic unit more than this will void your warranty.

Excessive Heat and Noise Check

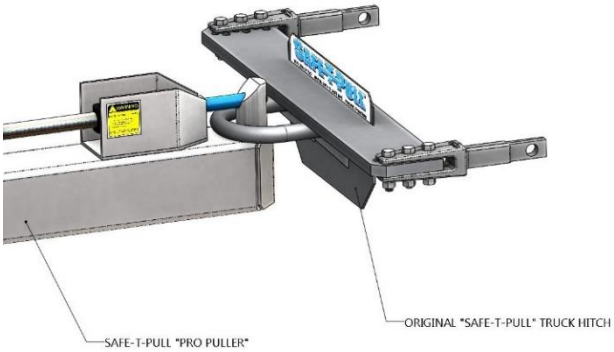
During use, periodically check the hydraulic power unit for excessive heat and noise. If excessive heat and/or noise occurs refer to the *hydraulic power unit troubleshooting* section of this document.

Hooking up:

- Be sure ALL persons are clear of the operating area.
- With the Safe-T-Pull Compact arm in the lowered position (but not on the ground), back the pulling vehicle up to the stuck vehicle. (A decrease in engine RPMs may be necessary for more precise control)
- Once the Safe-T-Pull Compact's hook pin is directly under the Safe-T-Pull Truck Hitch pulling loop, raise the Safe-T-Pull Compact up (extend the lift cylinder) and into the Truck Hitch pulling loop.
  WARNING: **For your safety NEVER use the Safe-T-Pull Compact for pulling on unauthorized products.**
- Close the Pin (extend the Pin Cylinder) to lock in the Truck Hitch.
- Remove the downed vehicle from its location to a suitable location.



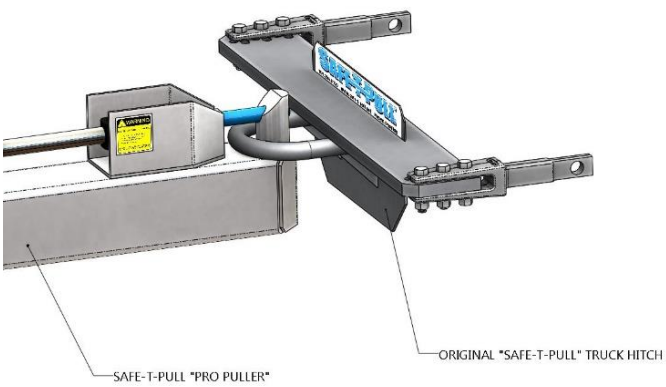
To hook up, back the Safe-T-Pull Pro under the Truck Hitch. Lift the puller arm into the hitch loop and close the latch pin.

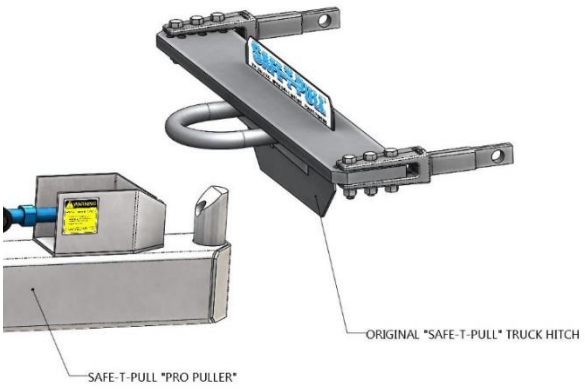


Unhooking:

- Open the lock pin (retract the Pin Cylinder)
- Lower the Safe-T-Pull Compact (retract the lift cylinder). If there is tension between the hook pin of the puller and pulling loop of the Truck Hitch, the puller may not lower. In this case a decrease in ground speed by the pulling vehicle may be required to free the pulling arm from the Truck Hitch.
- Once the Safe-T-Pull Compact is clear of the Truck Hitch, raise the pulling arm up (extend the lift cylinder) to keep it from dragging on the ground.
  NOTE: **Your warranty will be void if you use a Safe-T-Pull Compact with unauthorized products.**

To unhook, open the latch pin, lower the puller arm, and drive away.





4. Technical Information

Product Maintenance

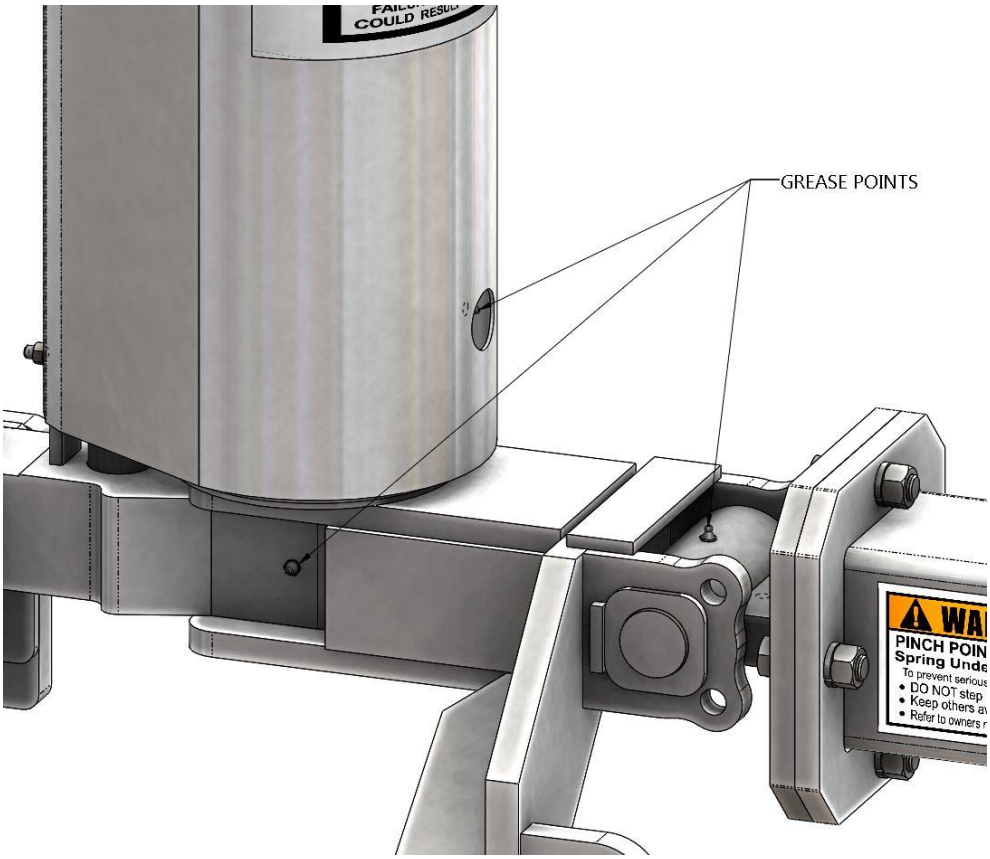
For proper operation ensure the following equipment is in proper operating condition.

Hydraulic system

- Check hydraulic fluid in the hydraulic box reservoir to make sure levels are adequate.
  NOTE: Use only Aeroshell Fluid 4 hydraulic oil or your warranty will be void.
- Check hydraulic hoses for cuts, cracks, pressure bubbles, or other damage. Replace if any signs of damage.
  CAUTION: Steel braiding should NEVER be visible
- Check hydraulic fittings for dents, cuts, leaks, or other signs of damage. Replace if any signs of damage.
- Check to make sure all hydraulic hoses are securely fastened to their correct fittings.
- Check to make sure all hydraulic cylinders pins are secured with correctly installed hitch clips and/or bolts.
- Change hydraulic filter after 40 hours of pump run time or once a year, whichever is first.
- Be sure to keep the interior of the hydraulic box clean and free of any dirt and debris.

Grease

- Grease the three grease points as shown in the image below.



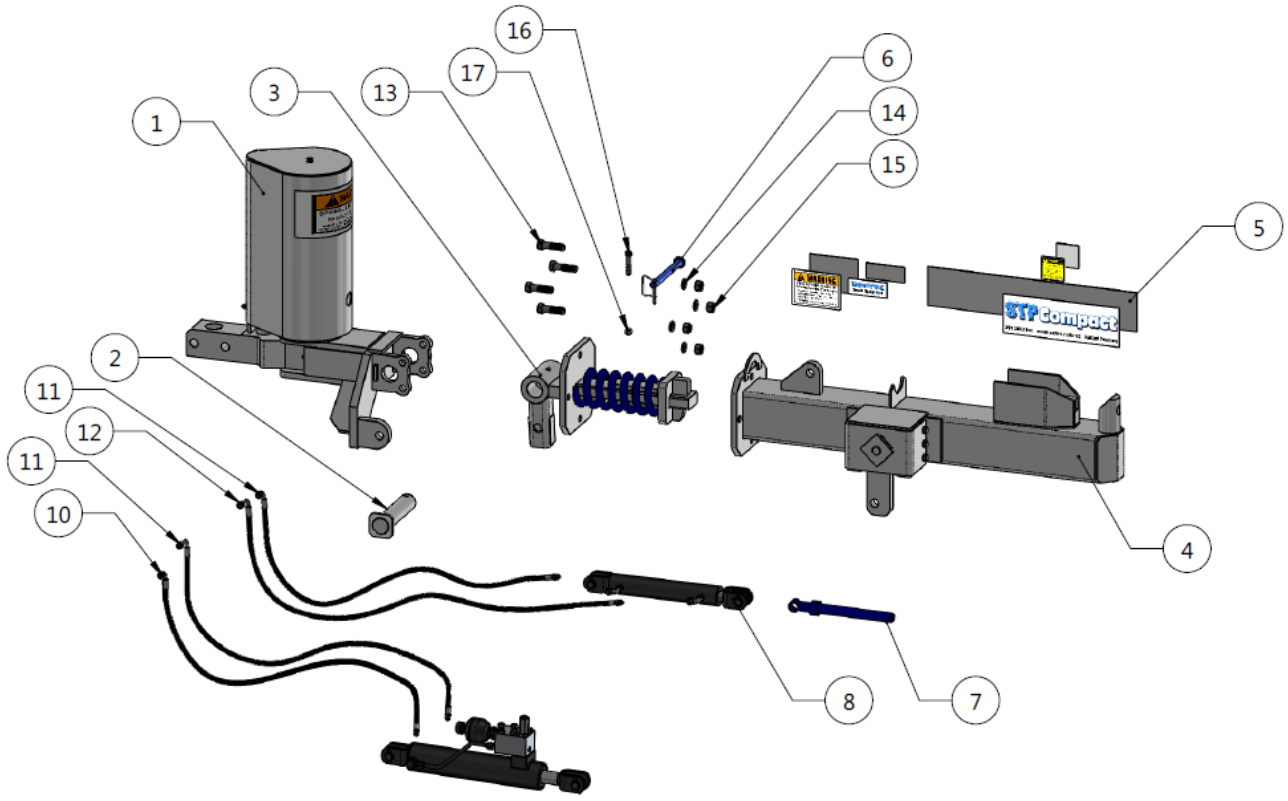
5. Technical Specifications

Specifications

Dimensions – Length: 82” Width: 25” Height: 62” (dependent on options)
Weight – 700lbs (dependent on options)
Hydraulic Power Source – Optional Hydraulic Power Unit
System Voltage – 24v or 12V (Optional Hydraulic Power Unit)
Max psi – 3000 psi

Replacement Parts

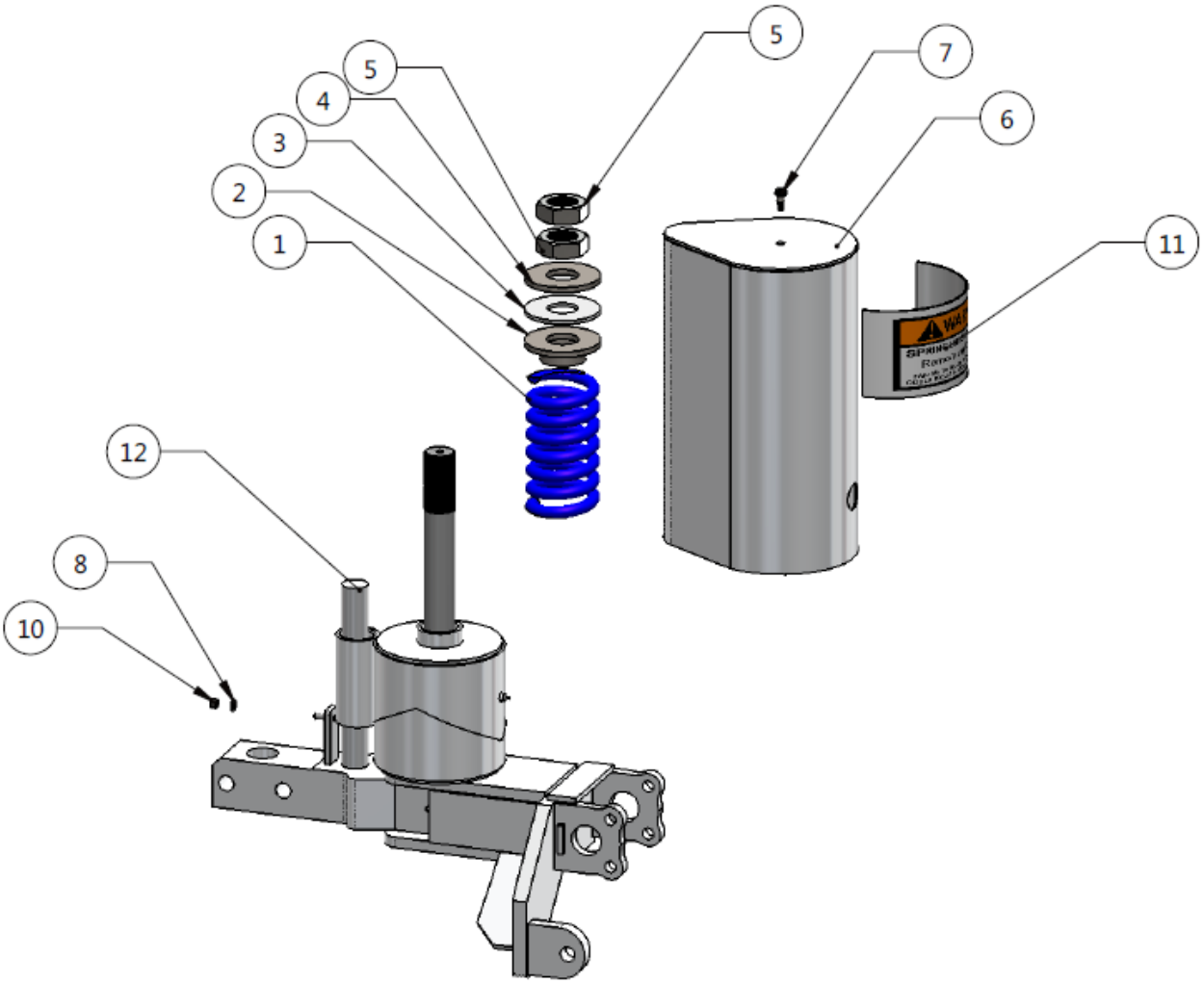
Contact your authorized dealer or manufacturer representative to order replacement parts.



BOM #1

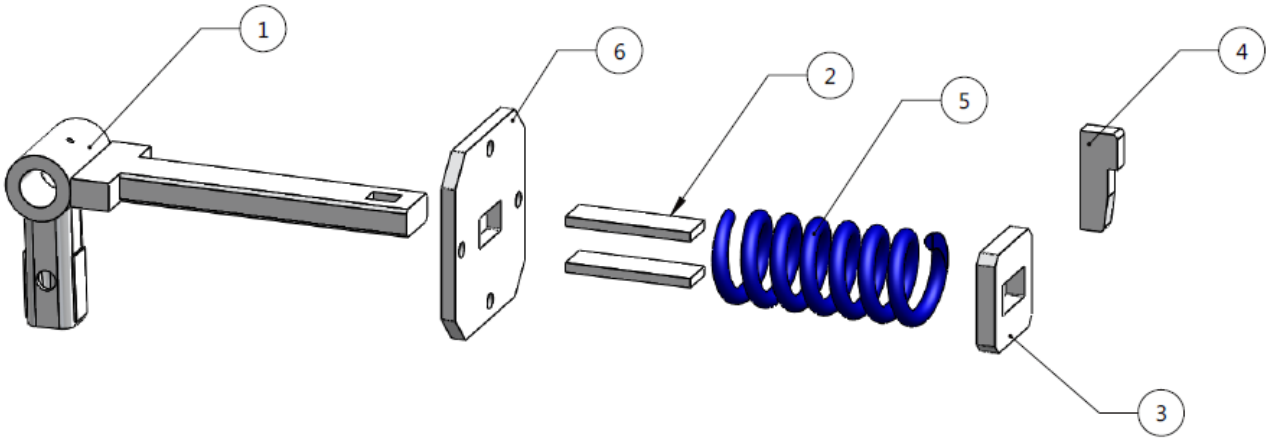
SAFE-T-PULL, COMPACT PULLER

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FP-15005	STP SWIVEL, SWIVEL ASSEMBLY	1
2	FP-012	STP PRO PULLER, PIVOT PIN WELDMENT	1
3	CM-15014	STP PRO PULLER, SPRING TONGUE ASSEMBLY	1
4	CM-002	STP COMPACT, PULLER TUBE WELDMENT	1
5	XP-297	STP COMPACT PULLER, LABEL KIT	1
6	CP-006	STP PRO PULLER, MANUAL LOCKING PIN W/CLIP	1
7	CP-003	STP COMMON PULLER, HITCH LOCKING PIN WELDMENT	1
8	XP-002	STP COMMON PULLER, HITCH PIN LOCKING CYLINDER	1
9	XP-004	STP PRO / COMPACT PULLER, SMART LIFT CYLINDER	1
10	XP-211	STP COMMON HYDRAULIC HOSE ASSEMBLY - 5' LONG (W/ENDS)	2
11	XP-212	STP COMMON HYDRAULIC HOSE ASSEMBLY - 5' LONG (W/ENDS)	1
12	XP-213	STP COMMON HYDRAULIC HOSE ASSEMBLY - 6' LONG (W/ENDS)	1
13	XP-100	HBOLT 0.7500-10X2.75X1.75	4
14	XP-101	LW 0.7500	4
15	XP-102	HNUT 0.75000-13	4
16	XP-194	HBOLT 0.5000-13x2.5x1.25	1
17	XP-266	NYLOCNUT 0.50-13	1



BOM #2
SAFE-T-PULL, SWIVEL

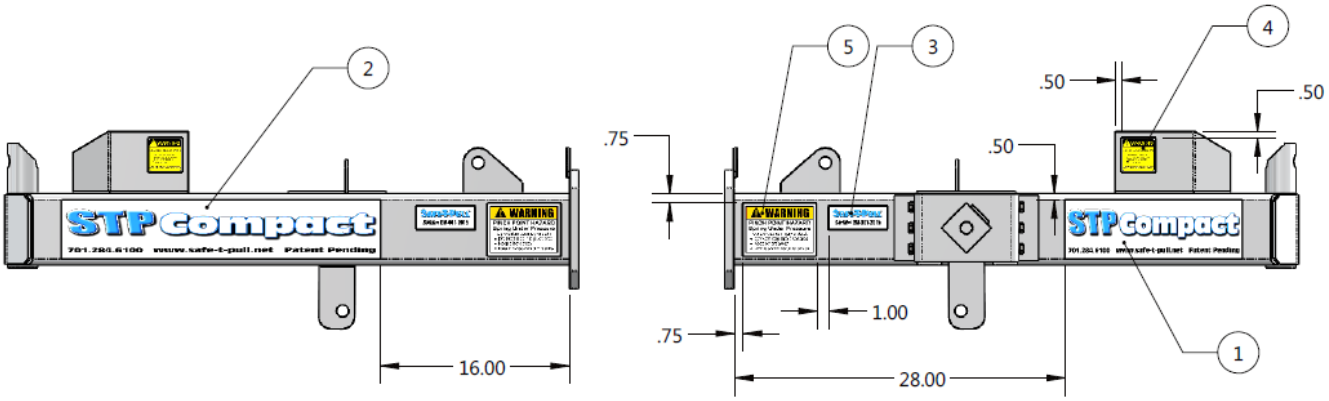
ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	XP-114	STP COMMON PULLER, D20 SPRING (353)	1
2	FP-009	STP PRO PULLER, SPRING RETAINER SUB WELDMENT	1
3	FP-160	STP PRO PULLER, SPRING RETAINER PIN WASHER	1
4	FP-174	STP PRO PULLER, SPRING RETAINER WASHER	1
5	XP-014	HJNUT 2.000-12	2
6	FP-008	STP PRO PULLER, SPRING COVER SUB WELDMENT	1
7	XP-143	SHSC 0.375-16X.5X.5	1
8	XP-131	FW 0.3750	1
10	XP-221	HNUT 0.3750-16	1
11	XP-294	STP PRO PULLER, LABEL - SWIVEL SPRING	1
12	FP-135	STP PRO PULLER, CENTERING PIN	1



BOM #3

SAFE-T-PULL, COMPACT SPRING TONGUE ASSEMBLY

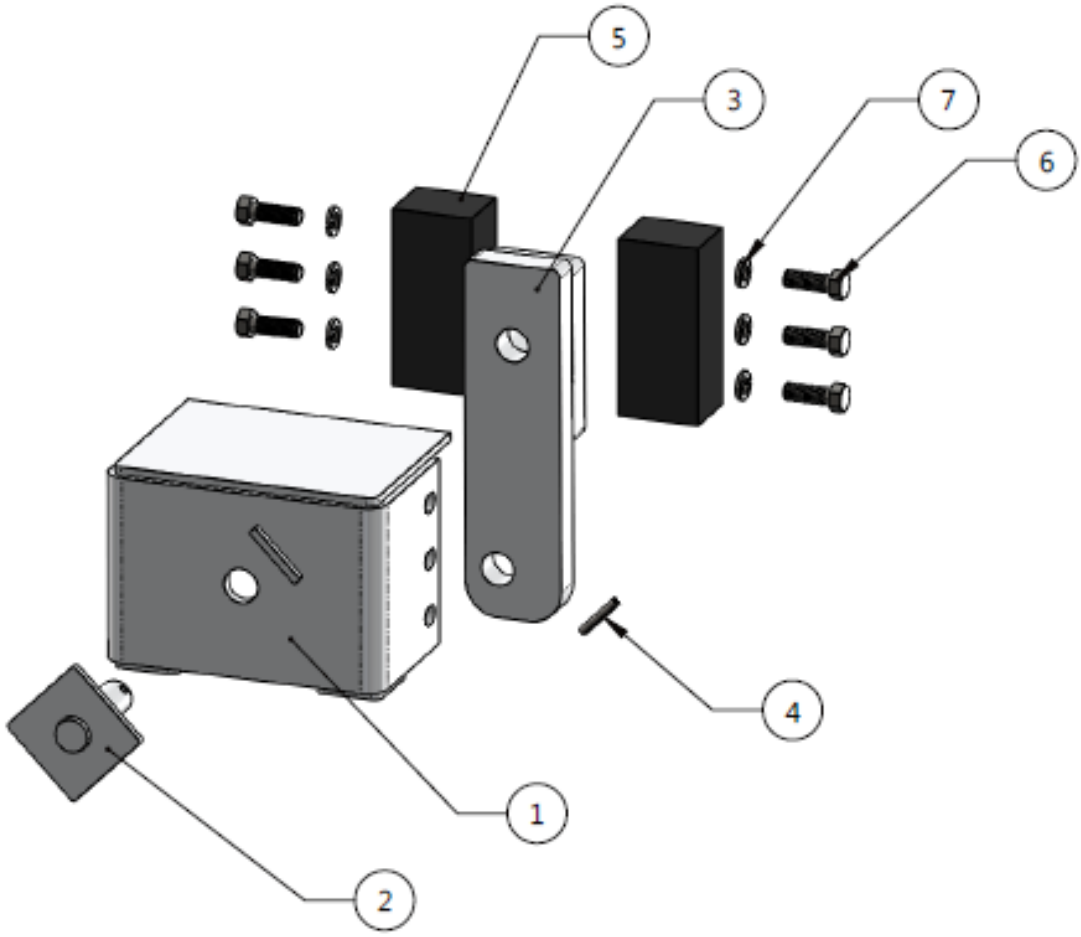
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CM-15013	STP COMPACT, PIVOT TONGUE WELDMENT	1
2	CP-134	STP COMMON PULLER, SPRING STOP PLATE	2
3	CP-15180	STP COMMON PULLER, 353 SPRING BACK PLATE	1
4	FP-181	STP PRO PULLER, SPRING KEY (D20 - 353 SPRING)	1
5	XP-114	STP COMMON PULLER, D20 SPRING (353)	1
6	CP-15132	STP COMMON PULLER, TONGUE CAP PLATE	1



BOM #4

SAFE-T-PULL COMPACT PULLER, STICKER KIT

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	XP-298	STP COMPACT PULLER, LABEL - SHORT LABEL	1
2	XP-299	STP COMPACT PULLER, LABEL - LONG LABEL	1
3	XP-301	STP COMPACT PULLER, LABEL - SERIAL NUMBER	2
4	XP-290	STP COMMON PULLER, LABEL - MOVING HYD	2
5	XP-292	STP COMMON PULLER, LABEL - PINCH POINT / SPRING	2



BOM #5

SAFE-T-PULL TORSION BOX REPLACEMENT PARTS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FP-017	STP PRO PULLER, TORSION BOX COVER WELDMENT	1
2	FP-010	STP PRO PULLER, TORSION BLOCK LEVER PIN WELDMENT	1
3	FP-026	STP PRO PULLER, TORSION BOX LEVER ARM WELDMENT	1
4	XP-112	0.25X1.5, ROLL PIN	1
5	XP-113	STP PRO PULLER, TORSION BLOCK RUBBER	2
6	XP-125	HBOLT 0.5000-13x1.5x1.25	6
7	XP-123	LW 0.5	6

6. Hydraulic Information (optional)

6.1. General System Information (24v & 12v)

- Supply Voltage: 24v DC or 12v DC
- Power Draw: 68A @ 1200psi or 130A @ 1200psi
- Reservoir Oil Capacity: ~2 Gallons
- System Oil: Aero Shell 4
- Work Port Connections: -6 JIC Male

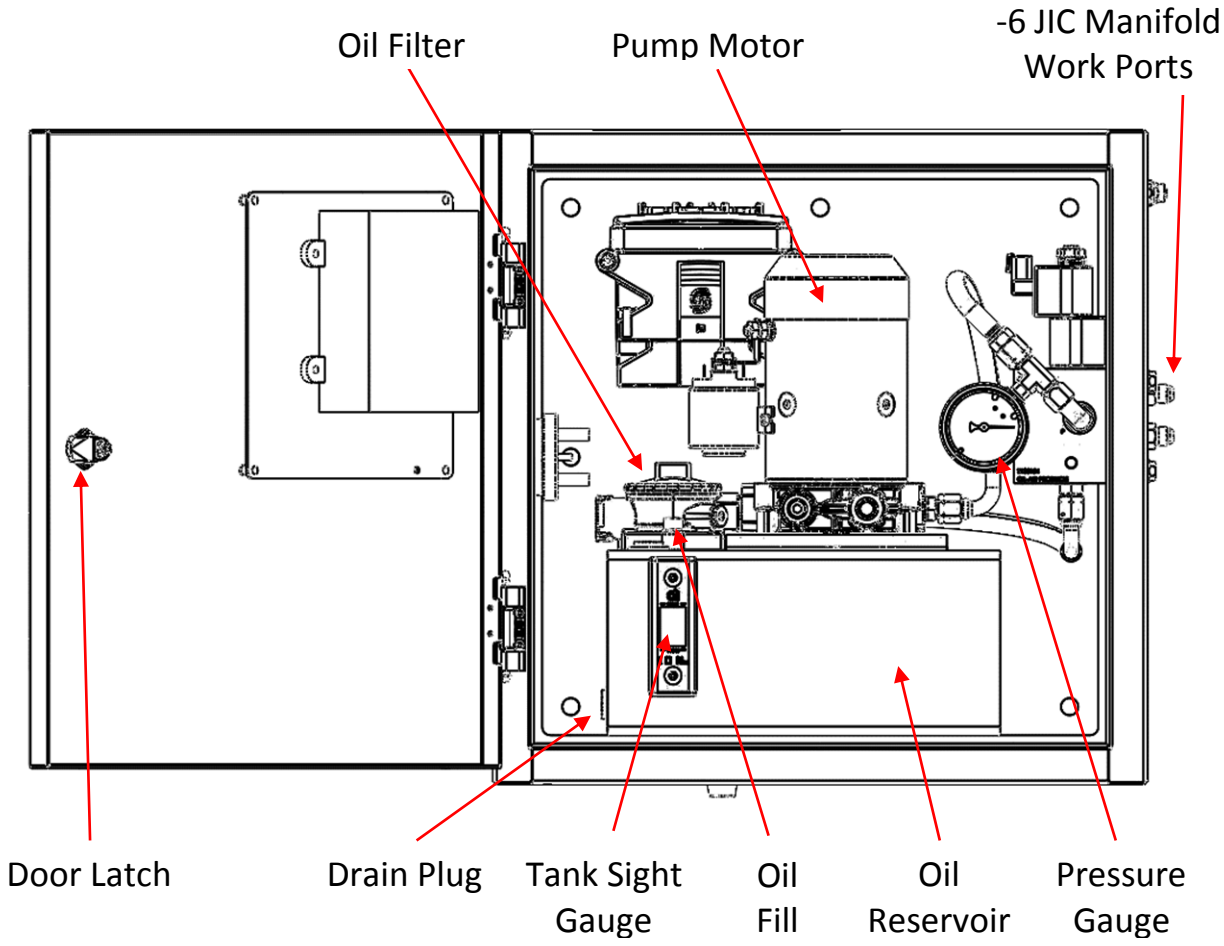
6.2. Hydraulic Pump Information

- Hydraulic Flow: Approximately 1.2GPM @ 1200psi
- Hydraulic Pressure: 1200psi Standard Setting
- Fluid Temperature Range: +32 to +158°F (Short Term -68 to +176°F for 10 Minutes Max)

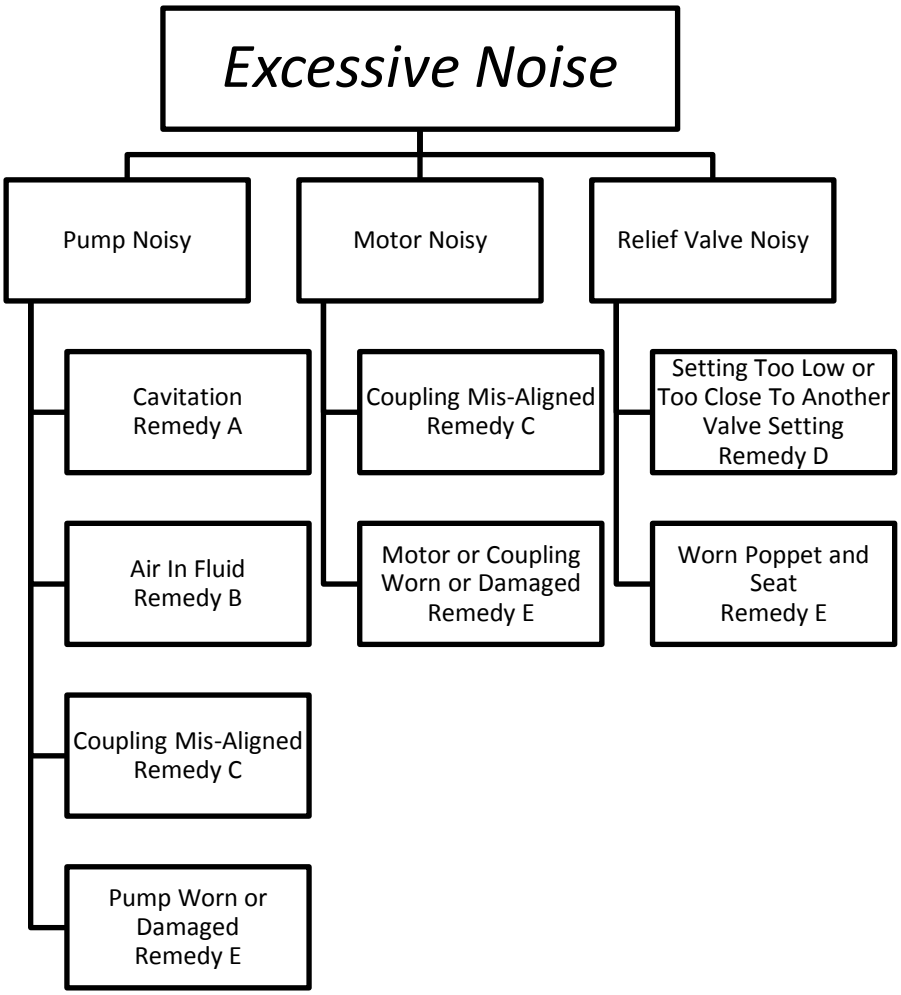
6.3. Radio Remote System Information

- Receiver Power Supply: 12 to 36v DC
- Transmitter Power Supply: (4) 1.5v AAA Batteries
- Nominal Transmitting Range: 200ft
- Total Max Amp Draw: 15A

6.4. Hydraulic Power Unit Diagram



7.Hydraulic System Troubleshooting:



REMEDIES:

A. Any or all of the following:

- **Replace dirty filters**
- **Wash strainers in solvent compatible with system fluid**
- **Clean clogged inlet line**
- **Clean reservoir breather vent**
- **Change system fluid**
- **Change to proper pump drive motor speed**
- **Overhaul or replace supercharge pump**
- **Fluid may be too cold**

B. Any or all of the following:

1. Tighten leaky inlet connections

2. Fill reservoir to proper level (with rare exception all return lines should be below fluid level in reservoir)

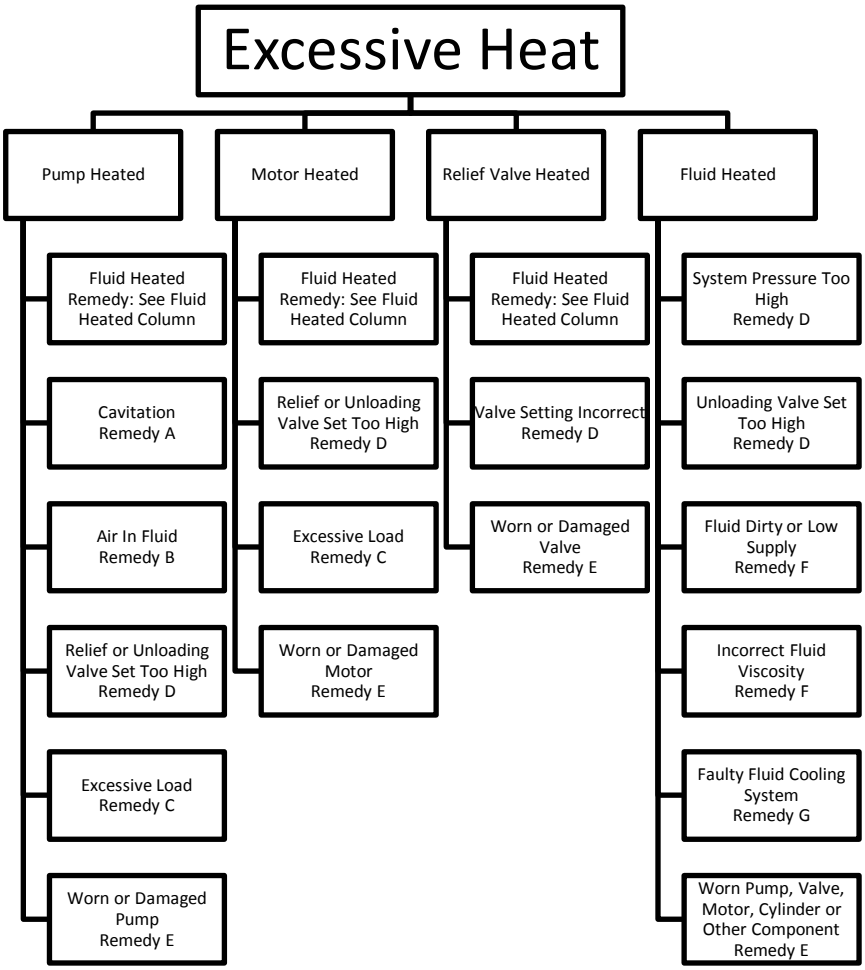
3. Bleed air from system

4. Replace pump shaft seal (and shaft if worn at seal journal)

C. Align unit and check condition of seals, bearings and coupling

D. Install pressure gauge and adjust to correct pressure

E. Overhaul or replace



REMEDIES:

A. Any or all of the following:

- **Replace dirty filters**
- **Clean clogged inlet line**
- **Clean reservoir breather vent**
- **Change system fluid**
- **Change to proper pump drive motor speed**
- **Overhaul or replace supercharge pump**

B. Any or all of the following:

- **Tighten leaky inlet connections**
- **Fill reservoir to proper level (with rare exception all return lines should be below fluid level in reservoir)**
- **Bleed air from system**
- **Replace pump shaft seal (and shaft if worn at seal journal)**

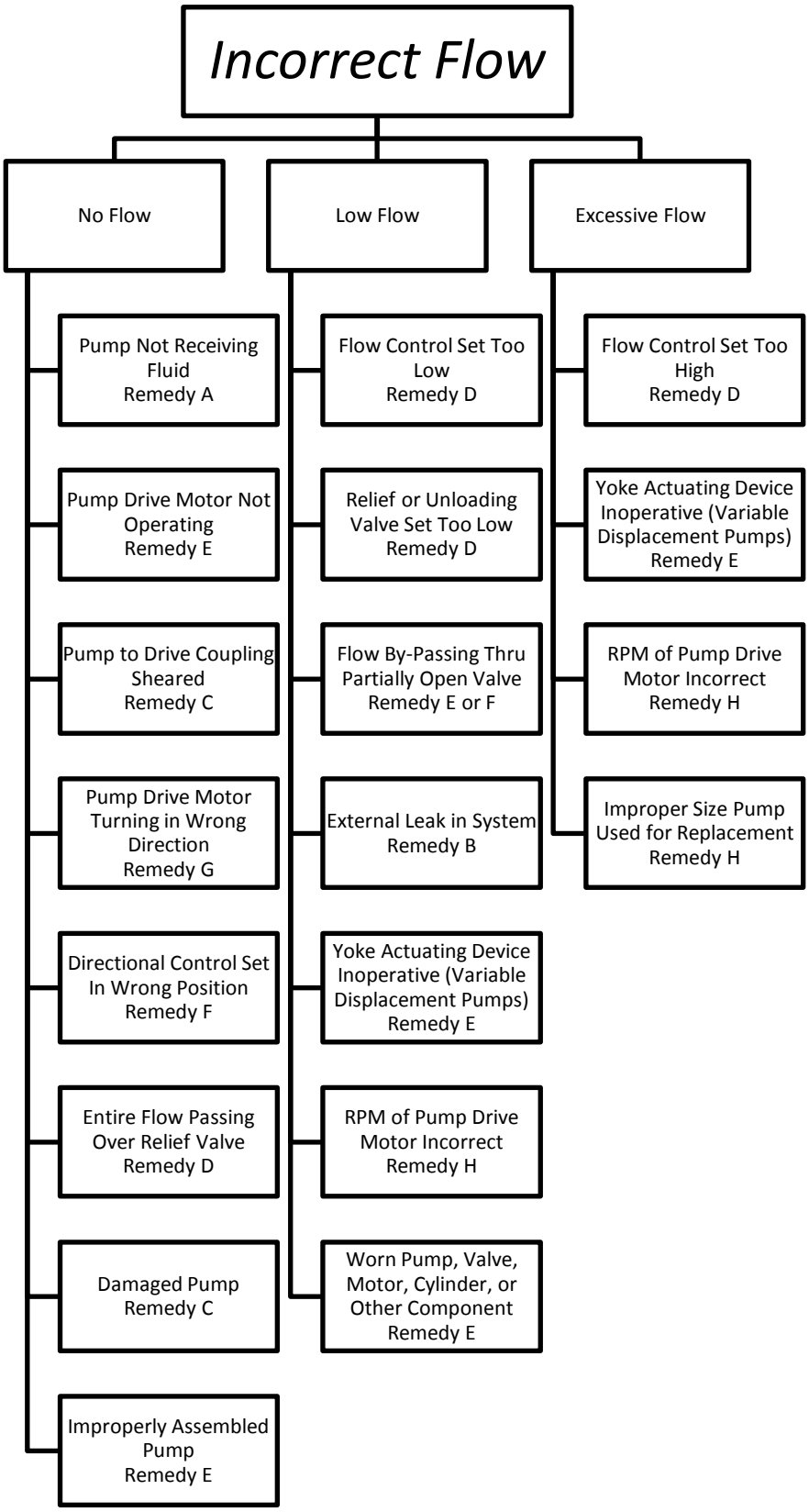
C. Align unit and check condition of seals and bearings; locate and correct mechanical binding; check for work load in excess of circuit design

D. Install pressure gauge and adjust to correct pressure (keep at least 125PSI difference between valve settings)

E. Overhaul or replace

F. Change filters and also system fluid if of improper viscosity; fill reservoir to proper level

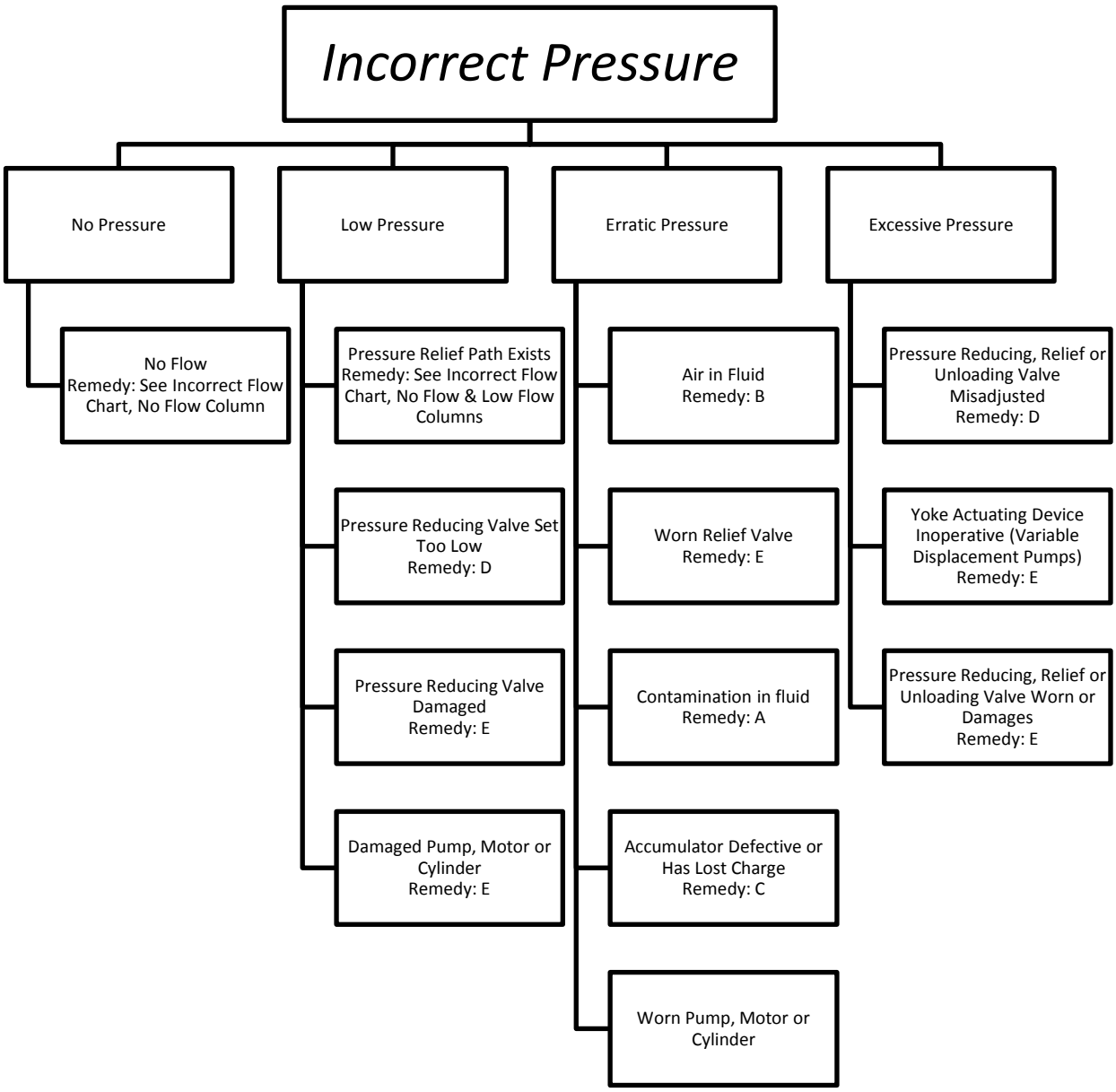
G. Clean cooler and/or cooler strainer; replace cooler control valve; repair or replace cooler



Remedies on next page

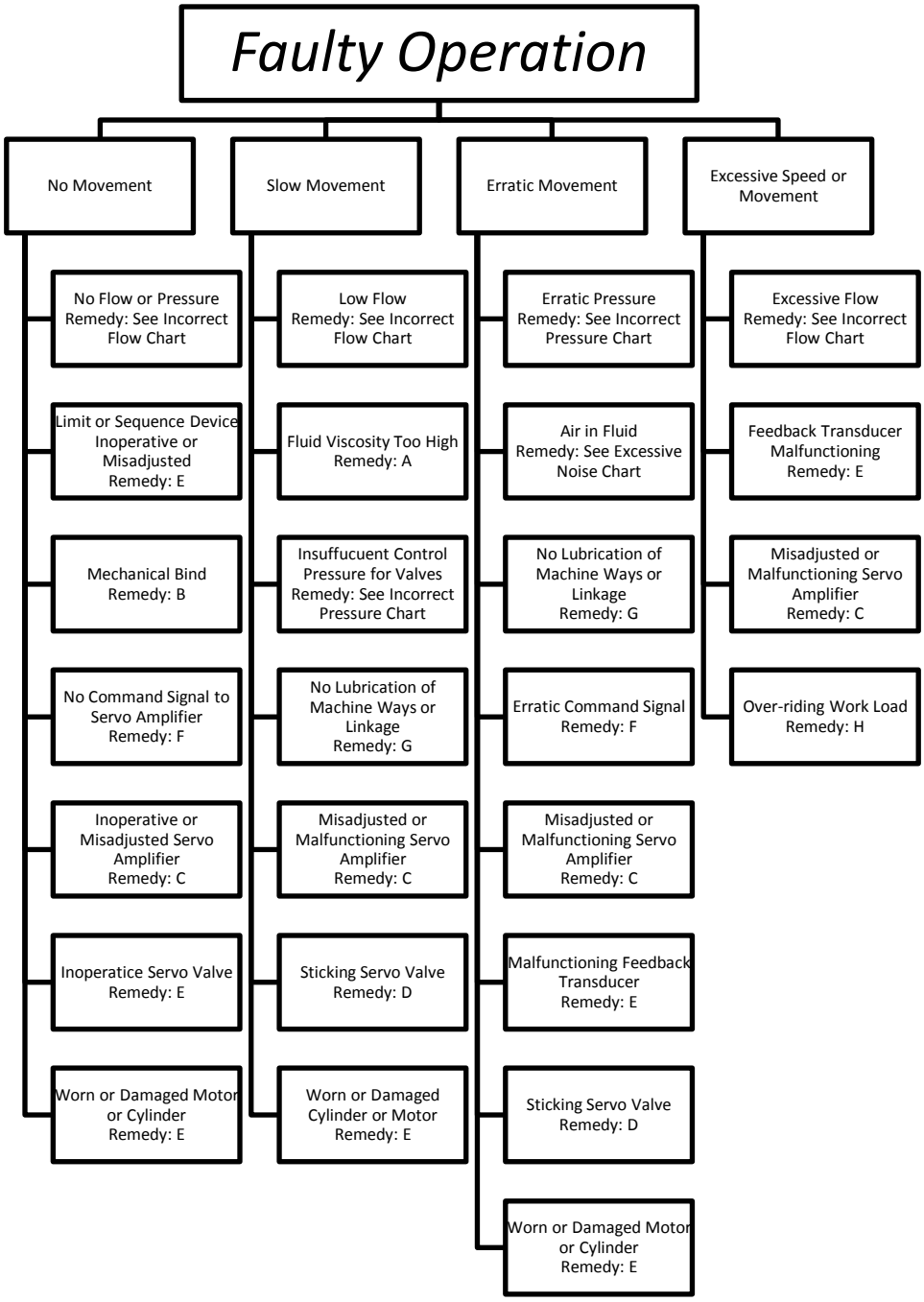
Remedies:

A. **Any or all of the following:**
    - **Replace dirty filters**
    - **Clean clogged inlet line**
    - **Clean reservoir breather vent**
    - **Fill reservoir to proper level**
    - **Overhaul or replace supercharge pump**
B. **Tighten leaky connections; bleed air from system**
C. **Check for damaged pump or pump drive; replace and align coupling**
D. **Adjust**
E. **Overhaul or replace**
F. **Check position of manually operated controls; check electrical circuit on solenoid operated controls' repair or replace pilot pressure pump**
G. **Reverse Rotation**
H. **Replace with correct unit**



Remedies:

A. **Replace dirty filters and system fluid**
B. **Tighten leaky connections (fill reservoir to proper level and bleed air from system)**
C. **Check gas valve for leakage; charge to correct pressure; overhaul if defective**
D. **Adjust**
E. **Overhaul or Replace**



Remedies:

A. **Fluid may be too cold or should be changed to clean fluid of correct viscosity**
B. **Locate bind and repair**
C. **Adjust, repair, or replace**
D. **Clean and adjust or replace; check condition of system fluid and filter**
E. **Overhaul or replace**
F. **Repair command console or interconnecting wires**
G. **Lubricate**
H. **Adjust, repair or replace counterbalance valve**