



# Current Tools

FOR THE PROFESSIONAL ELECTRICIAN

Current Tools™ Heavy Duty Knockout Sets  
for punching holes in 16 ga. to 10 ga. stainless steel

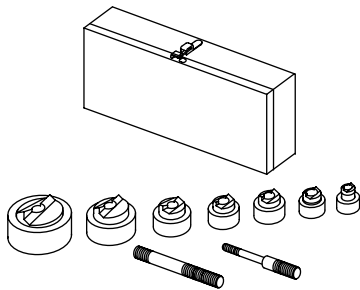


Model 160SS – 1/2" to 2"  
Heavy Duty Knockout Set

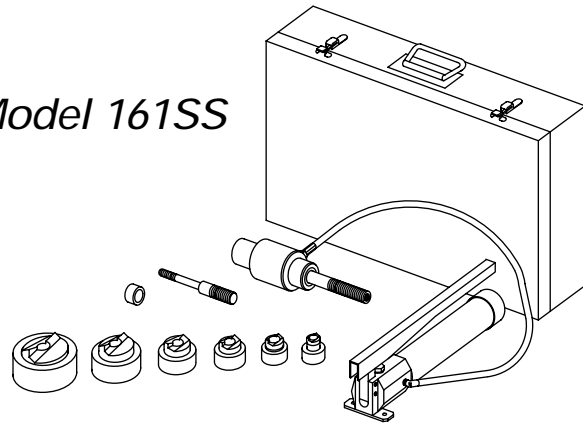
Model 161SS – 1/2" to 2"  
Heavy Duty Hydraulic Knockout Set



Model 160SS



Model 161SS



## Operating, Maintenance, Safety and Parts Manual

02/07- REV. 3



**Read and understand this material before operating or servicing any component of the Knockout Set. Failure to understand how to safely operate and service this unit may result in serious injury or death.**

This manual is free of charge. All personnel who operate the Knockout Set should have a copy of this manual and read and understand its contents. To request a copy, call or write to the address below.

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## SAFETY ALERTS



### Safety Alert Symbol

THIS SAFETY SYMBOL is used to call your attention to instructions that concern your personal safety. It means: ATTENTION! BE AWARE! THIS IS AN IMPORTANT SAFETY INSTRUCTION!

Read, understand, and follow these safety instructions. Failure to follow these safety instructions may result in injury or death.

#### **DANGER**

Immediate hazards which, if not avoided, WILL result in serious personal injury or death.

#### **WARNING**

Hazards or unsafe practices which, if not avoided, COULD result in serious personal injury or death.

#### **CAUTION**

Hazards or unsafe practices which, if not avoided, COULD result in minor personal injury or property damage.

## RETAIN SAFETY INFORMATION



This manual should be read and understood by all personnel who operate or service this Knockout Set. Failure to understand how to safely operate and service this unit could result in injury or death. This unit should only be operated or serviced by qualified personnel.



## IMPORTANT SAFETY INFORMATION

Follow ALL safety information provided by the manufacturer.

**⚠ DANGER**

NEVER use the Knockout Set or any of its components near live circuits.

**⚠ WARNING**

ALWAYS stand to the side of the ram when punching. This will help avoid injury should there be a component failure.

**⚠ WARNING**

The model 1521 Hand Pump is pre-set at the factory to operate at pressures up to 8,000 PSI. Do NOT connect any pump to the Current Tools model 1522 Ram that will exceed 8,000 PSI. Doing so may cause component failure which may result in injury or death. Only use a hand or foot operated pump with the model 1522 Ram. Never operate the ram with an electric pump.

**⚠ WARNING**

Be sure to support the ram while punching. An unsupported ram could fall causing injury.

**⚠ WARNING**

Do NOT continue to operate pump after the ram completes the punch. Doing so will damage the ram and could cause component failure resulting in serious injury or death.

**⚠ WARNING**

If the ram motion stops before the punching process is completed, Do NOT continue to operate the pump. Release the pump pressure and disassemble the set-up and determine the cause before continuing.

**⚠ WARNING**

Hydraulic tools create tremendous pressures and hydraulic oil can easily puncture skin. If your skin is pierced by oil you must seek medical attention immediately! NEVER touch the hydraulic hose or fittings while the unit is under pressure.

**⚠ WARNING**

ALWAYS thread the punch COMPLETELY onto the draw stud ( or adapter ) to avoid thread failure. If the punch tightens before it is completely threaded onto the draw stud, disassemble the set-up and determine the cause. Then reassemble the set-up.

**⚠ WARNING**

ALWAYS release the hydraulic pressure before removing any hoses or before servicing any component of the hydraulic system.

**⚠ WARNING**

ONLY replace the hoses and fittings with Current Tools replacement parts.

**⚠ WARNING**

NEVER attempt to exceed the punching capacity of this knockout set. Doing so may cause component failure and possibly serious injury or death.

*continued on next page . . .*

## IMPORTANT SAFETY INFORMATION *continued . . .*

**▲ WARNING**

NEVER attempt to punch a hole through more than a single layer of material. Doing so may cause component failure and possibly serious injury or death.

**▲ WARNING**

NEVER use this knockout set or any of its components except for its intended purpose.

**▲ WARNING**

Hand pressure is sufficient to activate the pump. NEVER attempt to apply additional pressure to the pump handle.

**▲ WARNING**

The Model 1521 Hand Pump is designed for use ONLY with Hydraulic Knockout Sets and Cable Cutters.

**▲ CAUTION**

ALWAYS inspect every component of the punch set-up including the ram, pump, fittings, punch, die, draw stud(s), and spacer(s) before each use. Replace any worn or defective parts with Current Tools replacement parts. NEVER use dull punches.

**▲ CAUTION**

NEVER use any component that has worn or damaged threads.

**▲ CAUTION**

ALWAYS check to ensure all components are properly assembled before punching.

**▲ CAUTION**

New punches are sharp. Be careful when handling them.

**▲ CAUTION**

ALWAYS wear safety glasses when punching.



## SPECIFICATIONS

Model No.	160SS	161SS
Overall Dimensions	2 1/4" x 5" x 11"	4 1/8" x 10 1/2" x 17 3/4"
Capacity	1/2" to 2" <i>conduit size holes</i>	1/2" to 2" <i>conduit size holes</i>
Weight	11 lbs.	33 lbs.

*The Model 1521 Hand Pump has a maximum operating pressure of 8,000 PSI.*

**NOTE:** *All models are designed to punch holes in 16 ga. to 10 ga. stainless steel.*

*Current Tools™ Models 160SS and 161SS — Piece Maker™ SS are designed to split the slug into two pieces for easy removal from the die after punch completion. However, due to variations in the material to be punched, some slugs may not split into two pieces. These slugs will be distorted and easily removed from the die.*

# OPERATING INSTRUCTIONS

1. Match the punch, die, draw stud and spacer as required for the size hole to be punched. ( See *Figures 1a and 1b.* )
2. After marking the pilot hole location, drill a hole as indicated below:

<u>conduit size</u>	<u>pilot hole required</u>
1/2"	1/2"
3/4" thru 2"	7/8"

**NOTE: *Alternate Method for 3/4" thru 2" conduit sizes* — Use the 1/2" punch and die to increase the hole size to accept the 3/4" draw stud.**

3. **When using the 1/2" punch and die:**  
Thread the 7/16" - 3/4" x 4 1/4" draw stud (#1574) into the ram.  
Tighten the draw stud using the screwdriver slot located at the end of the draw stud.

**When using the 3/4" thru 2" punch and dies:**  
Thread the 3/4" x 5 1/2" draw stud (#1575) into the ram.  
Tighten the draw stud using the screwdriver slot located at the end of the draw stud.

4. Determine if spacer is needed and install. ( See *Spacer Chart below.* )

SPACER CHART	
<u>Punch &amp; Die Size</u>	<u>Spacer</u>
1/2"	No spacer
3/4" thru 1 1/4"	S
1 1/2" - 2"	No spacer

5. Slide the die onto the draw stud with the open end of the die facing away from the ram.

*continued on next page . . .*

- Place the draw stud through the pilot hole you made in step 2. Then thread the punch onto the draw stud with the cutting face toward the material to be punched. Thread the punch onto the draw stud until the punch, die (and spacer) are snug against the material.

( See Figures 1a and 1b on the next page, page 7. )

**! WARNING**

ALWAYS thread the punch COMPLETELY onto the draw stud ( or adapter ) to avoid thread failure. If the punch tightens before it is completely threaded onto the draw stud, disassemble the set-up and determine the cause. Then reassemble the set-up.

- Complete the punching process by activating the hand pump.  
( See hand pump operating instructions on page 9. )

**! WARNING**

- DO NOT continue to operate the pump after the ram completes the punch. Doing so will damage the ram and could cause component failure resulting in serious injury or death.
- If the ram motion stops before the punching process is completed, DO NOT continue to operate the pump. Release the pump pressure and disassemble the set-up and determine the cause before continuing.
- Be sure to support the weight of the ram while punching. An unsupported ram could fall causing injury.

**ACTUAL HOLE SIZE CHART**

Punch & Conduit Size	1/2"	3/4"	1 7/32" *	1"	1 1/4"	1 1/2"	2"
Actual Punched Hole Diameter (in.)	.885	1.115	1.220	1.362	1.701	1.948	2.415

\* 1 7/32" oiltight punch is actual diameter, not conduit size.

# SET UPS

## EXPLODED VIEW

## COMPLETED VIEW

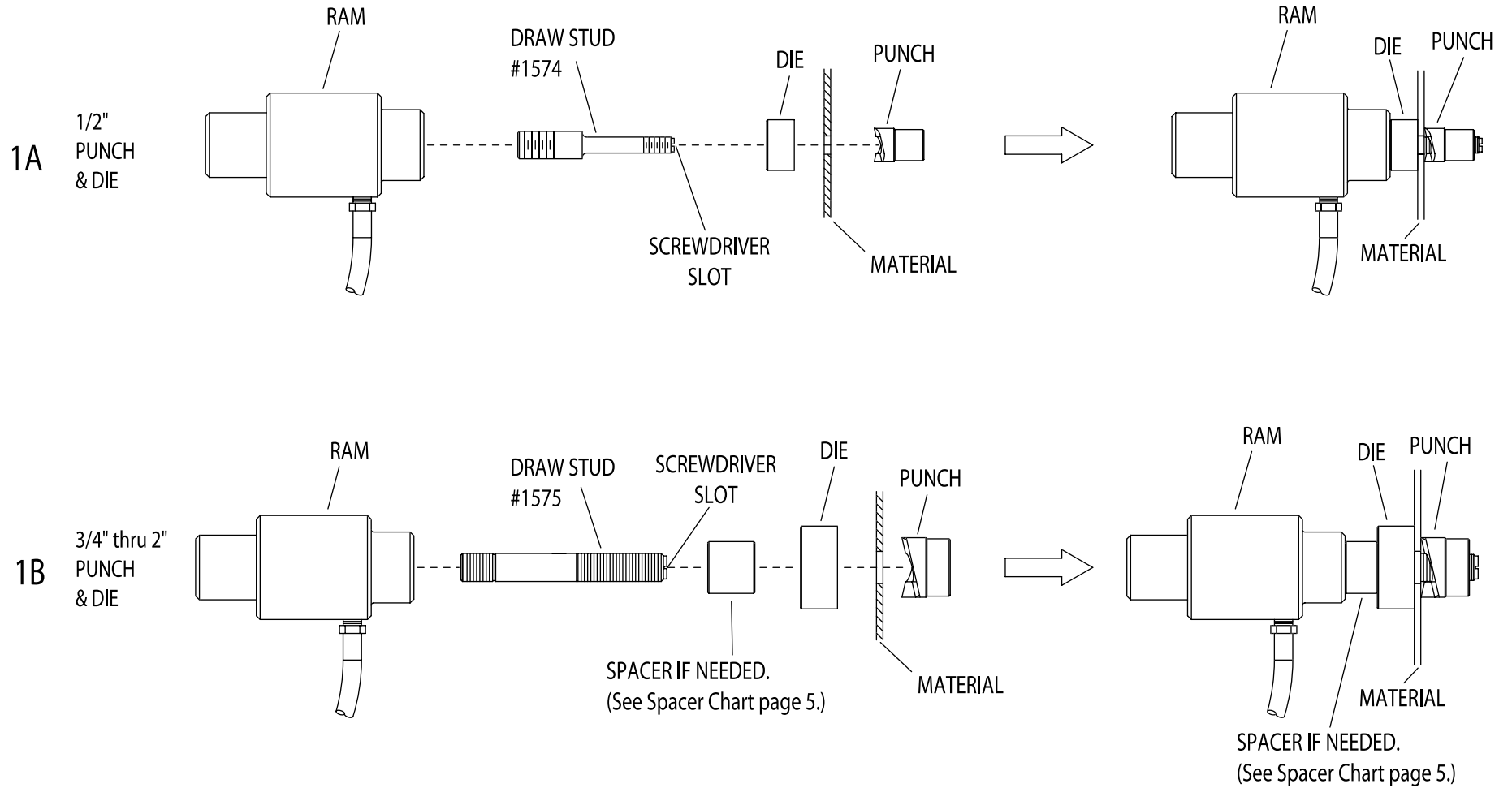
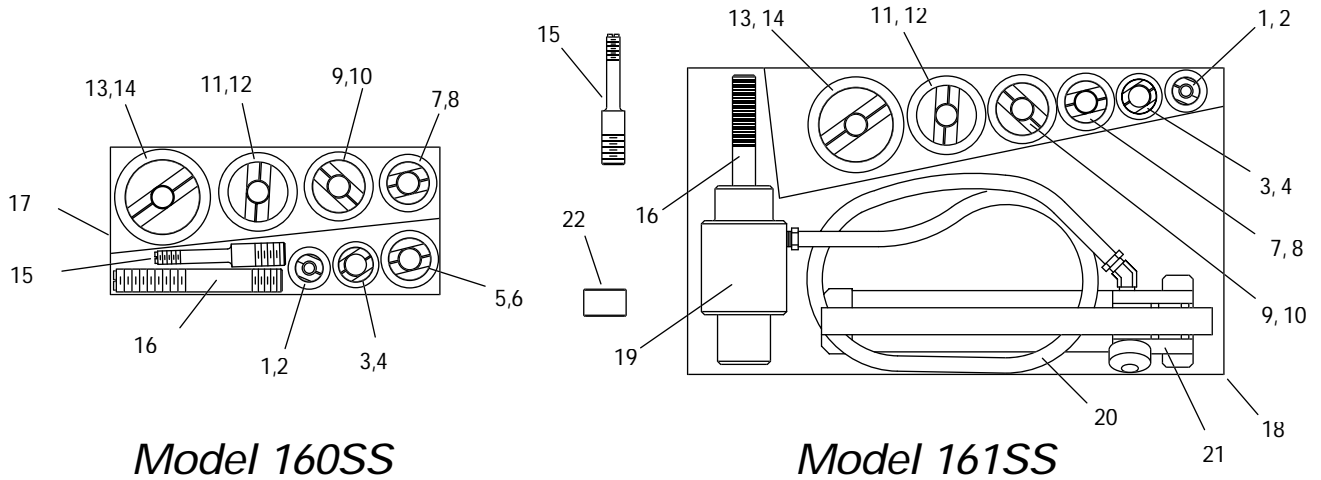


FIGURE 1

# COMPONENTS

## KNOCKOUT SET



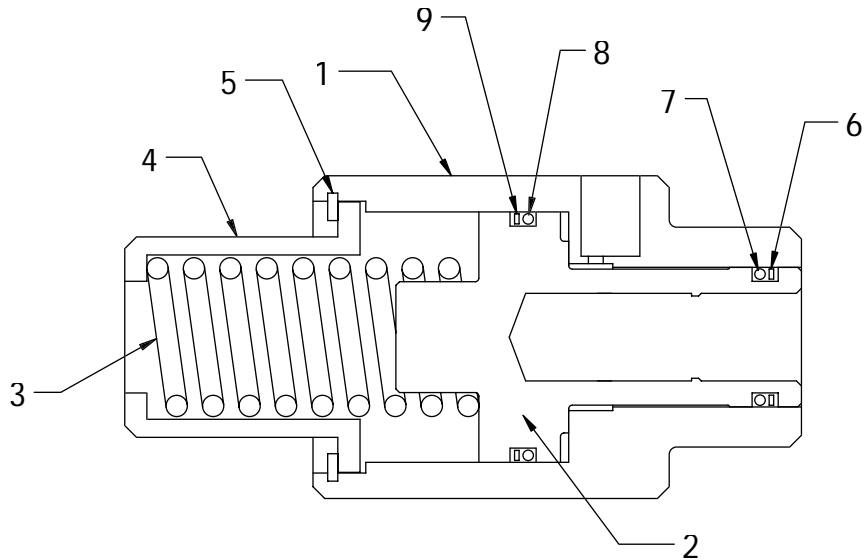
### COMPONENTS LIST

<u>ITEM#</u>	<u>CATALOG#</u>	<u>DESCRIPTION</u>	<u>160SS</u> 1/2" to 2"	<u>161SS</u> 1/2" to 2"
1	1536	.1/2" SS Punch	1	1
2	1537	.1/2" SS Die	1	1
3	1538	.3/4" SS Punch	1	1
4	1539	.3/4" SS Die	1	1
5	1540	.1 7/32" SS Punch	1	
6	1541	.1 7/32" SS Die	1	
7	1542	.1" SS Punch	1	1
8	1543	.1" SS Die	1	1
9	1544	.1 1/4" SS Punch	1	1
10	1545	1 1/4" SS Die	1	1
11	1546	.1 1/2" SS Punch	1	1
12	1547	.1 1/2" SS Die	1	1
13	1548	.2" SS Punch	1	1
14	1549	.2" SS Die	1	1
15	1574	.7/16" - 3/4" x 4 1/4" SS Draw Stud	1	1
16	1575	.3/4" x 5 1/2" SS Draw Stud	1	1
17	1600	.Metal Case - 160SS	1	
18	1500	.Metal Case - 161SS		1
19	1522	.Ram		1
20	1523	.1/4" x 3' Hydraulic Hose		1
21	1521	.Hydraulic Hand Pump		1
22	1553	.Spacer - S		1



SECTION VIEW

**MODEL 1522 RAM**



**PARTS LIST — Model 1522 Ram**

<u>ITEM#</u>	<u>PART#</u>	<u>QTY</u>	<u>DESCRIPTION</u>
1.....	1522-11.....	1.....	.....CYLINDER
2.....	1522-12.....	1.....	.....PISTON
3.....	1522-2.....	1.....	.....SPRING
4.....	1522-4.....	1.....	.....CAP
5.....	1522-5.....	1.....	.....RETAINING RING
6.....	1522-7.....	1.....	.....BACK-UP RING
7.....	1522-8.....	1.....	.....O-RING
8.....	1522-9.....	1.....	.....O-RING
9.....	1522-10.....	1.....	.....BACK-UP RING



## SPECIFICATIONS — MODEL 1521 HAND PUMP

### **WARNING**

The Model 1521 Hand Pump is designed for use ONLY with Hydraulic Knockout Sets and Cable Cutters.

<b>Model No.</b>	1521 Hand pump
<b>Overall Dimensions</b>	2 7/8" Wide x 3 7/8" Tall x 12 3/4" Long
<b>Capacity</b>	8,000 PSI max — .069 cu. in. of oil per stroke
<b>Weight</b>	4.5 lbs. ( with oil )
<b>Oil Capacity</b>	16 cu. in.



## OPERATING INSTRUCTIONS

1. Turn knob clockwise.
2. Pump handle to activate hand pump.
3. When operation is complete, turn knob counter-clockwise.

### **WARNING**

Hand pressure is sufficient to activate the pump. NEVER attempt to apply additional pressure to the pump handle.



## MAINTENANCE

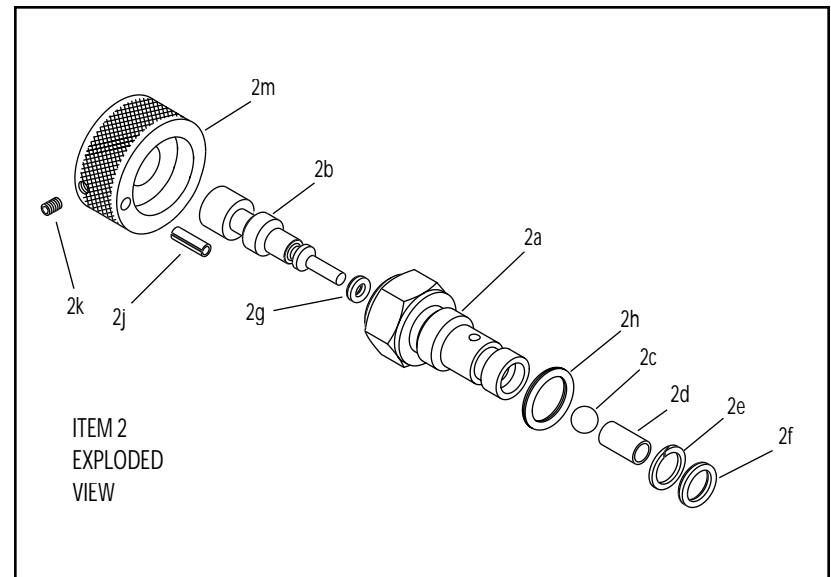
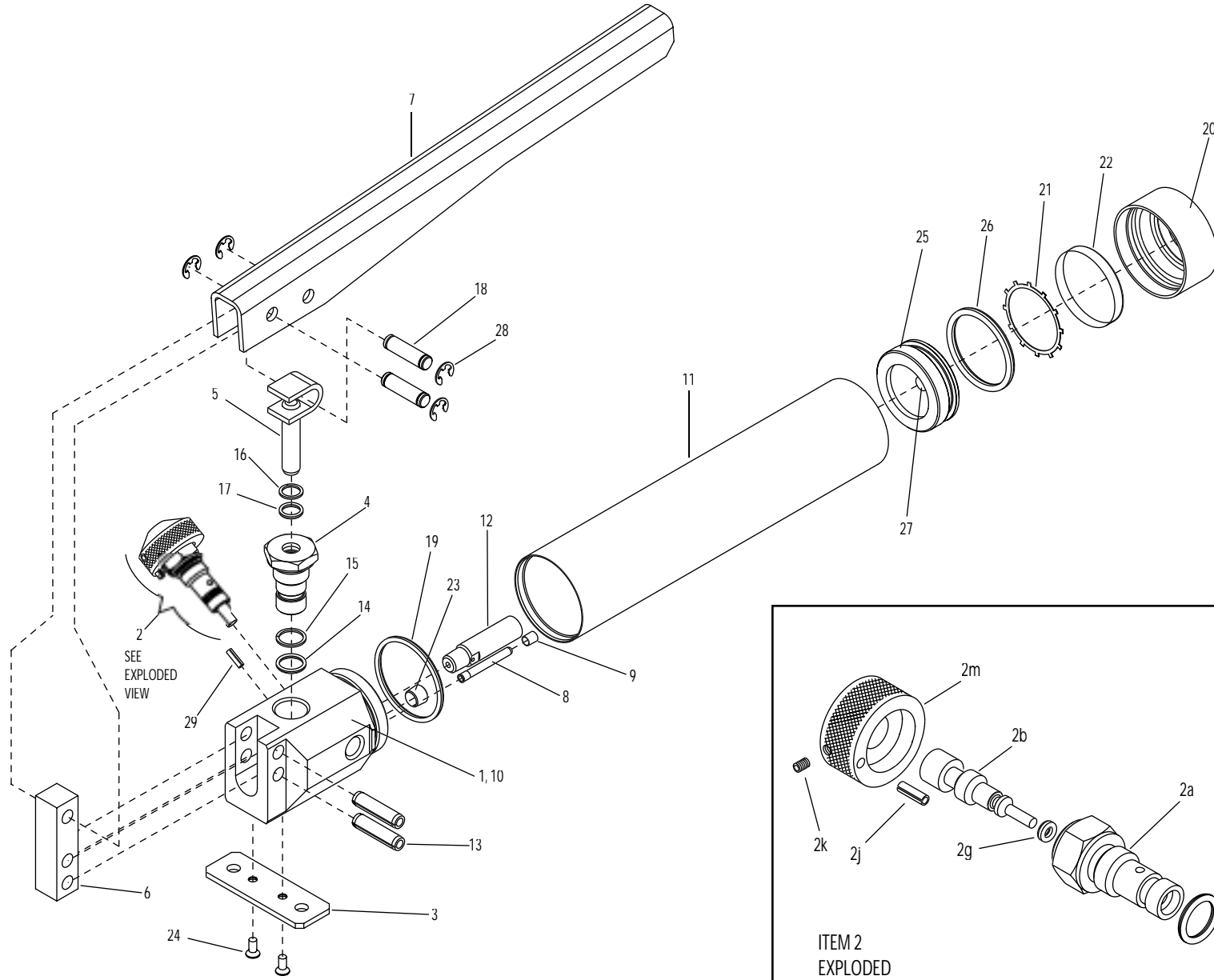
**Oil Requirements:** We recommend a high quality automatic transmission fluid such as Shell DONAX TG or equivalent.

### *Filling the Pump with Oil:*

1. Secure the pump in a vise by clamping lightly onto the hex body with the reservoir and end cap facing upward, and unscrew the end cap.
2. Remove the rubber plug located in the center of the reservoir follower, and then remove the reservoir follower. Check the reservoir follower O-ring and the rubber plug for damage or wear, and replace as needed.
3. Fill the reservoir until the oil level is 3/4" from the top.
4. Push the reservoir follower into the reservoir until oil begins to come out of the hole.
5. To remove trapped air from the pump, turn the release knob clockwise to the closed position and pump the handle 5 times. Slowly turn the release knob counterclockwise while keeping light pressure with your finger over the hole in the reservoir follower. This allows air to escape under your finger and prevents ejecting oil. Repeat this procedure if needed.
6. Replace the rubber plug in the reservoir follower.
7. Remove and clean the felt vent located inside the reservoir end cap. Then screw the reservoir end cap back onto the reservoir.

# MODEL 1521 HAND PUMP

## EXPLODED VIEW





# PARTS LIST — Model 1521 Hand Pump

<u>ITEM #</u>	<u>PART #</u>	<u>QTY</u>	<u>DESCRIPTION</u>
1	1521-1	1	BODY
2	1521-2	1	RELEASE ASSEMBLY
2a	1521-2A	1	RELEASE BODY
2b	1521-2B	1	SCREW
2c	1521-2C	1	BALL
2d	1521-2D	1	SPRING RELEASE
2e	1521-2E	1	BACK UP
2f	1521-2F	1	O-RING
2g	1521-2G	1	O-RING
2h	1521-2H	1	O-RING
2j	1521-2J	1	ROLL PIN
2k	1521-2K	1	SET SCREW
2m	1521-2M	1	KNOB
3	1521-3	1	FOOT
4	1521-4	1	PISTON RETAINER
5	1521-5	1	PISTON DOWEL
6	1521-6	1	HANDLE LINK
7	1521-7	1	HANDLE
8	1521-8	1	SCREEN
9	1521-9	1	SCREEN RETAINER
10	1521-10	2	CHECK VALVE
11	1521-11	1	RESERVOIR
12	1521-12	1	RELIEF VALVE
13	1521-13	2	SPRING PIN
14	1521-14	1	O-RING
15	1521-15	1	BACK UP RING
16	1521-16	1	BACK UP RING
17	1521-17	1	O-RING
18	1521-18	2	HANDLE PIN
19	1521-19	1	O-RING
20	1521-20	1	RESERVOIR CAP
21	1521-21	1	RETAINING CLIP
22	1521-22	1	FELT VENT
23	1521-23	1	PLUG
24	1521-24	2	SCREW
25	1521-25	1	RESERVOIR PISTON
26	1521-26	1	O-RING
27	1521-27	1	RUBBER PLUG
28	1521-28	4	RETAINING RING
29	1521-29	1	ROLL PIN

## REPAIR KIT PART #1521-RPRKIT Contains the following:

14	1521-14	1	O-RING
15	1521-15	1	BACK UP RING
16	1521-16	1	BACK UP RING
17	1521-17	1	O-RING
19	1521-19	1	O-RING
26	1521-26	1	O-RING
27	1521-27	1	FILLER PLUG
2e	1521-2e	1	BACK UP RING
2f	1521-2f	1	O-RING
2g	1521-2g	1	O-RING
2h	1521-2h	1	O-RING