SPX Corporation
655 Eisenhower Drive
Owatonna, MN 55060-0995 USA
Phone: (507) 455-7000
Tech. Serv.: (800) 533-6127
Fax: (800) 955-8329
Order Entry: (507) 533-6127
Fax: (800) 283-8665
International Sales: (507) 455-7223
Fax: (507) 455-7063

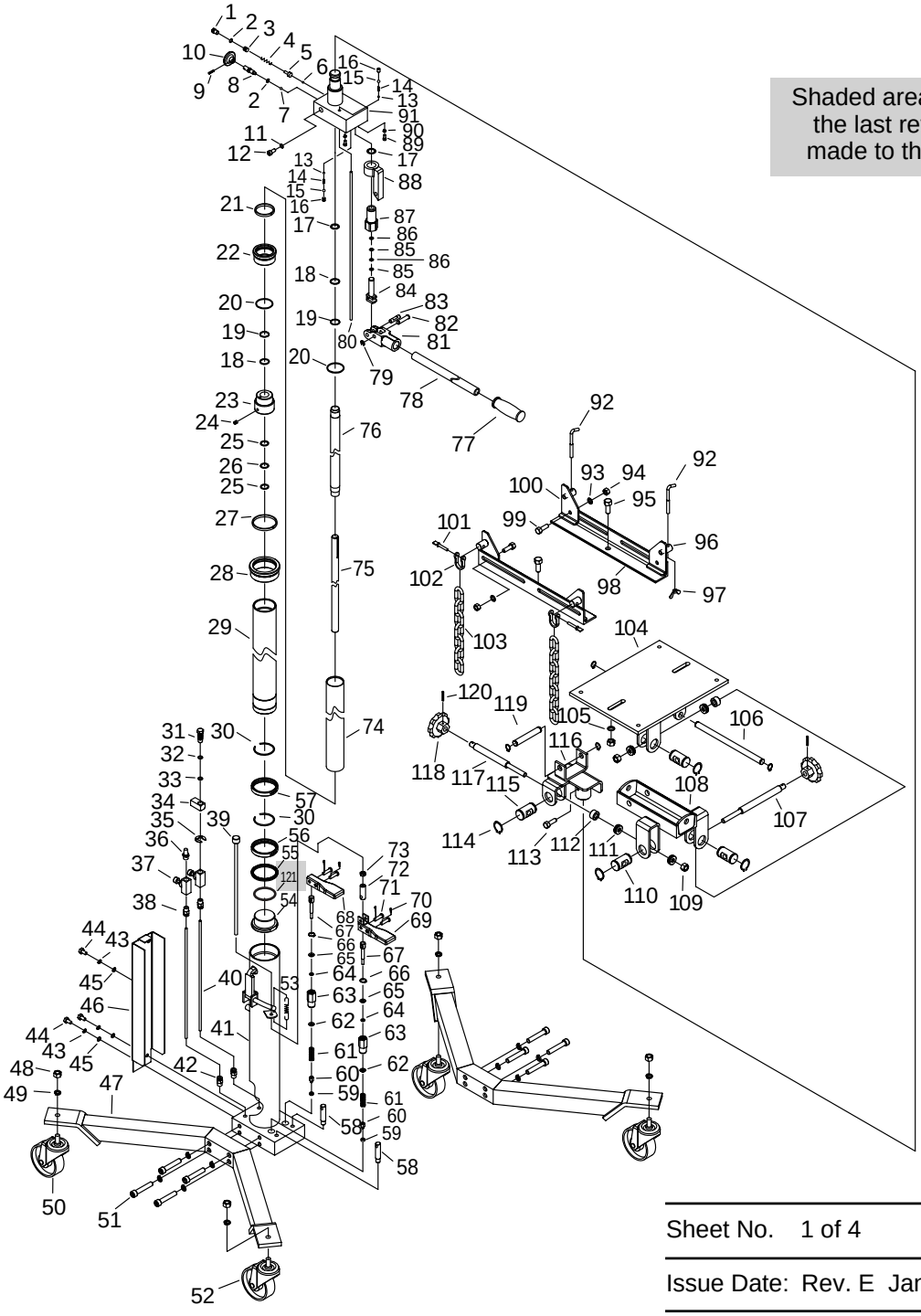
Form No. 528220

Parts List & Operating Instructions for: **1794A**

Air / Hydraulic High Lift Transmission Jack

Max. Capacity: 1,000 lbs. at 90 PSI

The High Lift Transmission Jack is designed for the installation and removal of automobile transmissions.



Shaded areas reflect the last revisions made to this form.

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Parts List

Item No.	Qty.	Description
1	1	Bolt
2	2	O-ring
3	1	Screw
4	1	Spring
5	1	Ball Seat
6	1	Steel Ball
7	1	Steel Ball
8	1	Oil Release Valve Rod
9	1	Pin
10	1	Release Knob
11	1	Copper Washer
12	1	Bolt
13	2	Steel Ball
14	2	Spring
15	2	Steel Ball
16	2	Screw
17	2	Copper Washer
18	2	O-ring
19	2	Nylon Washer
20	2	O-ring
21	1	Guide Ring
✱ 22	1	Piston Cap
✱ 23	1	Screw Cap
24	1	Screw
25	2	O-ring
26	1	Nylon Washer
27	1	Guide Ring
✱ 28	1	Cylinder Cap
✱ 29	1	Pneumatic Piston Rod
30	2	Snap Ring
31	1	Bolt
32	1	O-ring
33	1	O-ring
34	1	Coupler
35	1	Snap Ring
36	1	Muffler
37	2	Adjustor
38	2	Joint
39	1	Rod
40	2	Pipe
✱ 41	1	Air Cylinder Assembly
42	2	Joint
43	3	Lock Washer
44	3	Bolt
45	3	Flat Washer
46	1	Fixing Board
✱ 47	2	Leg
48	6	Nut
49	12	Lock Washer
50	2	Swivel Caster A
51	8	Bolt
52	2	Swivel Caster B
53	1	Spring
✱ 54	1	Piston Base
55	1	Y-seal
56	1	Bushing
57	1	Bushing
58	2	Rod
59	2	Seal
60	2	Joint
61	2	Spring
62	2	Copper Washer
63	2	Air Release Valve
64	2	O-ring
65	2	Washer
66	2	Snap Ring
67	2	Air Release Rod
68	1	Up Pedal
69	1	Down Pedal
70	5	Pin
71	5	Pin
72	1	Rod
73	1	Nut
✱ 74	1	Oil Container
✱ 75	1	Hydraulic Piston Rod
✱ 76	1	Oil Cylinder
77	1	Handle Sleeve
78	1	Handle
79	1	Snap Ring
✱ 80	1	Oil Pipe
81	1	Handle Socket
82	1	Pin
83	1	Pin
84	1	Pump Plunger
85	2	Nylon Gasket
86	2	O-ring
87	1	Pump Cylinder
88	1	Pump Seat
89	2	Bolt
90	2	Lock Washer
91	1	Top Base
92	2	Hook
93	4	Washer
94	4	Nut
95	2	Bolt
96	2	Fixing Bracket A
97	2	Screw Cap
98	2	Corner Bracket
99	4	Bolt
100	2	Fixing Bracket B
101	2	Screw
102	2	Link
103	2	Safety Chain
104	1	Universal Saddle
105	2	Washer
106	1	Shaft
107	1	Screw
108	1	Bracket
109	2	Locknut
110	2	Shaft
111	4	Bearing
112	2	Bushing
113	1	Bolt
114	8	Snap Ring
115	2	Shaft
116	1	Bracket
117	1	Screw
118	2	Knob
119	1	Shaft
120	2	Pin
121	1	O-ring

Items marked with an asterisk (✱) are not available as repair parts.

Replacement Parts Kits

Air Kit No. 529037

Item No.	Qty.	Description
31	1	Bolt
32	1	O-ring
33	1	O-ring
34	1	Coupler
35	1	Snap Ring
36	1	Muffler
37	2	Adjustor
38	2	Joint
40	2	Pipe
42	2	Joint
43	3	Lock Washer
44	3	Bolt
45	3	Flat Washer
46	1	Fixing Board

Caster Kit No. 529035

Item No.	Qty.	Description
48	4	Nut
49	4	Lock Washer
50	2	Swivel Caster A
52	2	Swivel Caster B

Foot Pedal Kit No. 529036

Item No.	Qty.	Description
39	1	Rod
53	1	Spring
58	2	Rod
59	2	Seal
60	2	Joint
61	2	Spring
62	2	Copper Washer
63	2	Air Release Valve
64	2	O-ring
65	2	Washer
66	2	Snap Ring
67	2	Air Release Rod
68	1	Up Pedal
69	1	Down Pedal
70	5	Pin
71	5	Pin
72	1	Rod
73	1	Nut

Handle Kit No. 529038

Item No.	Qty.	Description
17	1	Copper Washer
77	1	Handle Sleeve
78	1	Handle
79	1	Snap Ring
81	1	Handle Socket
82	1	Pin
83	1	Pin
84	1	Pump Plunger
85	2	Nylon Gasket
86	2	O-ring
87	1	Pump Cylinder
88	1	Pump Seat

Hardware Kit No. 529042

Item No.	Qty.	Description
9	1	Pin
10	1	Release Knob
31	1	Bolt
43	3	Lock Washer
44	3	Bolt
45	3	Flat Washer
48	6	Nut
49	12	Lock Washer
51	8	Bolt
53	1	Spring
70	5	Pin
71	5	Pin
79	1	Snap Ring
82	1	Pin
83	1	Pin
92	2	Hook
93	4	Washer
94	4	Nut
95	2	Bolt
97	2	Screw Cap
99	4	Bolt
101	2	Screw
102	2	Link
103	2	Safety Chain
105	2	Washer
109	2	Locknut
113	1	Bolt
114	8	Snap Ring
118	2	Knob
120	2	Pin

Hydraulic Kit No. 529041

Item No.	Qty.	Description
1	1	Bolt
2	2	O-ring
3	1	Screw
4	1	Spring
5	1	Ball Seat
6	1	Steel Ball
7	1	Steel Ball
8	1	Oil Release Valve Rod
9	1	Pin
10	1	Release Knob
11	1	Copper Washer
12	1	Bolt
13	2	Steel Ball
14	2	Spring
15	2	Steel Ball
16	2	Screw
17	2	Copper Washer
18	2	O-ring
19	2	Nylon Washer
20	2	O-ring
21	1	Guide Ring
24	1	Screw
25	2	O-ring
26	1	Nylon Washer
27	1	Guide Ring
30	2	Snap Ring
55	1	Y-seal
56	1	Bushing
57	1	Bushing
89	2	Bolt
90	2	Lock Washer
121	1	O-ring

Tilt Screws No. 529039

Item No.	Qty.	Description
106	1	Shaft
107	1	Screw
109	2	Locknut
110	2	Shaft
111	4	Bearing
112	2	Bushing
114	8	Snap Ring
115	2	Shaft
117	1	Screw
118	2	Knob
119	1	Shaft
120	2	Pin

Saddle Kit No. 529040

Item No.	Qty.	Description
92	2	Hook
93	4	Washer
94	4	Nut
95	2	Bolt
96	2	Fixing Bracket A
97	2	Screw Cap
98	2	Corner Bracket
99	4	Bolt
100	2	Fixing Bracket B
101	2	Screw
102	2	Link
103	2	Safety Chain
104	1	Universal Saddle
105	2	Washer
108	1	Bracket
113	1	Bolt
116	1	Bracket

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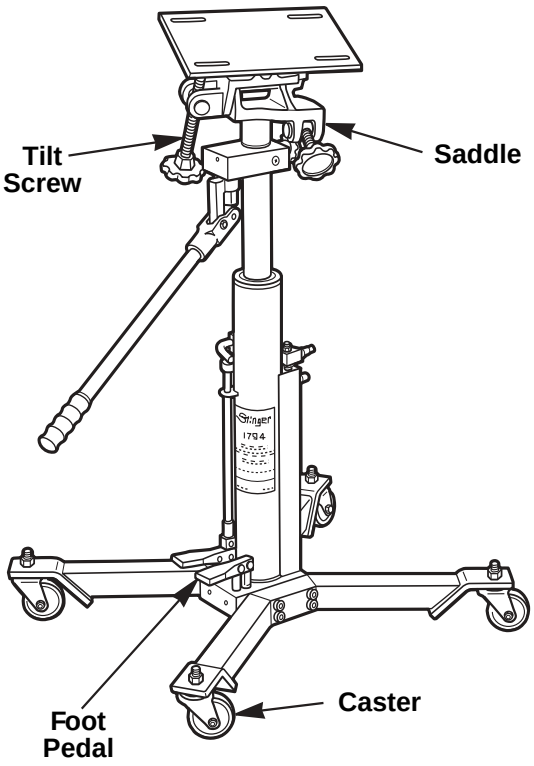
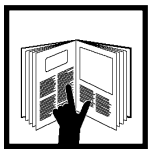
Assembly

1. Assemble the swivel casters on the jack legs using lock washers and nuts provided.
2. Assemble the legs (with casters) to the jack's base, and slightly secure with the Allen socket bolts and lock washers provided.
3. Position the jack (with legs) on a hard level surface. Tighten the Allen socket bolts while all four casters are contacting the floor, and the jack appears vertical to the floor.
4. Assemble the handle by screwing it into the handle socket on the top base and tightening it with your hand.
5. Saddle assembly: Loosen the screw from outside the saddle adapter. Mount the saddle adapter onto the top of the piston rod. Once mounted, tighten the screw and secure the entire saddle assembly.
6. Use the tilt adjusting knob to adjust the saddle angle to a relatively horizontal position.
7. Attach the two corner support brackets onto the saddle board, and fasten with the hex bolts and nuts.
8. Locate the corner support bracket in the chain pack. Assemble the corner support bracket on the saddle side frame, and secure with the nuts mounted. Assemble chains and chain hardware to the corner support bracket.
9. Chains and chain hardware are provided to secure a transmission, transfer box, or differential to the saddle assembly according to the different shape of each housing. When in use, both ends of the chain should be anchored to the bracket.



WARNING: DO NOT RAISE, LOWER, OR TRANSPORT A TRANSMISSION UNLESS IT IS SECURED BY THE RESTRAINT SYSTEM. IT IS YOUR RESPONSIBILITY TO ADJUST THE RESTRAINT SYSTEM TO A SUITABLE POSITION. OTC IS NOT SUBJECT TO ANY RESPONSIBILITY FOR INCORRECT SETUPS OF THE RESTRAINT SYSTEM THAT MAY CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

Safety Precautions



WARNING: To prevent personal injury and damage to equipment,

- **Study, understand, and follow all instructions, including the ANSI B30.1 safety code for jacks.**
- **If the operator cannot read these instructions, operating instructions and safety precautions must be read and discussed in the operator's native language.**
- **Wear eye protection that meets ANSI Z87.1 and OSHA standards.**
- **Inspect the jack before each use; do not use the jack if it's damaged, altered, or in poor condition.**
- **Before using the jack for the first time, perform the setup procedure outlined below to correctly set the lowering and raising speed of the jack.**
- **Use only on a hard, level surface.**
- **A load must never exceed the rated jack capacity.**
- **Lower the load completely before moving the jack. Slowly and carefully move the jack around corners because the load could tip.**
- **Adequately support the vehicle before starting repairs.**
- **Use of this product is limited to the removal, installation, and transportation in the lowered position of transmissions, transfer cases, and transaxles.**
- **Lower the jack slowly and carefully while watching the position of the load.**
- **Do not modify the jack or use adapters unless approved or supplied by OTC.**
- **Use only approved hydraulic fluid (Chevron AW Hydraulic Oil MV or equivalent). The use of alcohol or hydraulic brake fluid could damage seals and result in jack failure.**

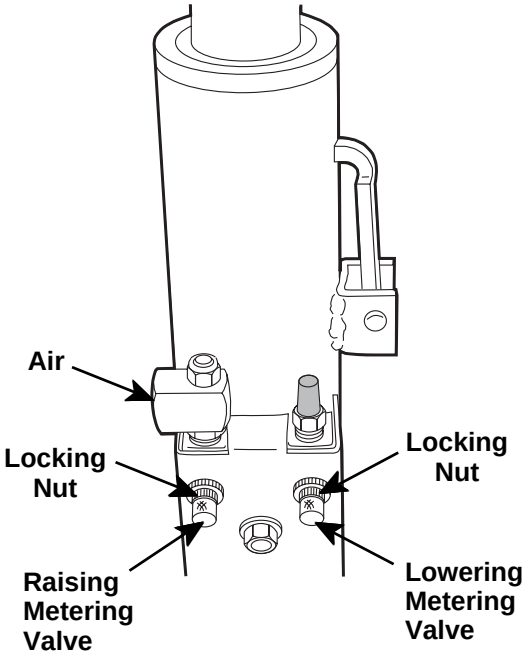
This guide cannot cover every situation, so always do the job with safety first.

Setup

WARNING: The raising and lowering speeds of the metering valves must be adjusted correctly before using the jack the first time. If the valves are not adjusted correctly, the jack could drop down too quickly under load, and personal injury and/or equipment damage could occur as a result of the loss of load.

Before using the transmission jack for the first time:

1. Close both metering valves (raising and lowering) by turning them clockwise (CW).
2. Attach the air supply.
3. Set the lift speed by fully depressing the UP pedal and SLOWLY turning the raising air metering valve counterclockwise (CCW) until a comfortable speed is reached. Tighten the locking nut behind the valve screw by turning it clockwise (CW) until tight.
4. To set the lowering speed, it is necessary to **place a load on the jack.**
5. Fully depress the DOWN pedal and SLOWLY turn the lowering metering valve counterclockwise (CCW) until a comfortable speed is reached. Tighten the locking nut behind the valve screw by turning it clockwise (CW) until tight.



Bleeding Air from the Hydraulic System

Air can accumulate within a hydraulic system during shipment or after prolonged use. This entrapped air causes the jack to respond slowly or feel “spongy.” To remove the air:

1. Tilt the jack onto two casters with the pump handle positioned below the cylinder.
2. Open the release valve by turning the knob counterclockwise (CCW).
3. Pump the handle until resistance is felt.
4. Close the release valve by turning the knob all the way clockwise (CW).
5. Continue pumping the handle while returning the jack to its upright position.

Operating Instructions

This is a two-stage transmission jack. The air stage is designed to quickly move the adapter into position, and is completed with an automatic lock function that prevents loss of load. The next hydraulic stage is designed to align the adapter with the transmission.

⚠ WARNING: PERSONAL INJURY AND/OR EQUIPMENT DAMAGE MAY OCCUR IF THE SETUP PROCEDURE (SHEET 3, FRONT) IS NOT PERFORMED. The raising and lowering speed of the metering valves must be adjusted correctly before using the jack the first time. If the valves are not adjusted correctly, the jack could drop down too quickly under load, and personal injury could occur as a result of the loss of load.

1. Lift the vehicle on a hoist.
2. Position the jack under the transmission.
3. Connect the shop air supply to the jack. (90 psi of clean, dry air is required for the capacity of this jack.)
4. Press the pedal marked UP to raise the adapter until the cylinder locks into place (at about 20 inches). The air hose can be removed at this time.

⚠ WARNING: If a load is transferred to the adapter when the air cylinder is only partially raised, the cylinder will drop suddenly. To eliminate this problem, always raise the cylinder to the point where the mechanical lock engages.

5. Check the placement of the jack. The transmission’s center of weight, or balance point, should be centered over the jack adapter, with the power output end located over the adapter bracket between the chains. The jack’s mechanical lock must be engaged.
6. Close the hydraulic release valve by turning the knob clockwise (CW).
7. Pump the jack handle to finish raising the adapter to the transmission. Use the controls on the adapter to roll or tip the adapter as needed to align it with the transmission.
8. Push in the four adapter brackets until they touch the transmission. Use the chains to secure the transmission to the adapter.
9. Support the engine, and remove the transmission according to instructions in the vehicle service manual.
10. Slowly turn the hydraulic release valve counterclockwise to lower the hydraulic stage. Lower the air stage by pressing the DOWN foot pedal. If the load is already resting on the mechanical lock, attach the air hose, and press the UP pedal briefly so the mechanical lock will release. The air stage should then lower when the DOWN pedal is pressed.

Preventive Maintenance

IMPORTANT: The greatest single cause of failure in hydraulic units is dirt. Keep the transmission jack clean and well lubricated to prevent foreign matter from entering the system. If the jack has been exposed to rain, snow, sand, or grit, it must be cleaned before it is used.

1. Store the jack in a well-protected area where it will not be exposed to corrosive vapors, abrasive dust, or any other harmful elements.
2. Lubricate moving parts at least once per month.
3. Regularly wipe the cylinder columns with a clean cloth to remove dirt and abrasives.
4. Inspect the jack before each use. Take corrective action if any of the following problems are found:
   a. Cracked or damaged housing
   b. Excessive wear, bending, or other damage
   c. Leaking hydraulic fluid
   d. Scored or damaged piston rod
   e. Loose hardware
   f. Modified or altered equipment

Maintenance

Regularly lubricate all moving parts of the jack. Pay special attention to the lift screw and related linkages.

1. Use a medium weight lubricating grease on external moving parts, such as bearing surfaces, pivot points, and tilt screws.
2. Use only hydraulic jack oil. Do not use hydraulic brake fluid.
3. If the jack fails to operate, check the oil level and/or bleed the unit before seeking repair service.

IMPORTANT: Do not use this jack as a wash rack when washing or steam cleaning transmissions.

Troubleshooting Guide

Repair procedures must be performed in a dirt free environment by qualified personnel who are familiar with this equipment.

Trouble	Cause	Solution
Air Stage - Air leak causes mechanical lock to engage, or erratic cylinder action	1. Air valve is dirty	*1. Clean air valve.*
Air Stage - Cylinder does not lower when DOWN pedal is pressed	1. Mechanical lock is engaged	*1. Attach air hose, and press UP pedal until cylinder is at full line pressure. Press DOWN pedal and mechanical lock should release.*
Hydraulic Stage - Cylinder does not raise	1. Jack is out of prime	*1. Refer to Bleeding Air from the Hydraulic System.*
Hydraulic Stage - Cylinder lifts load, but doesn't hold	1. Release valve is not sealing 2. System oil is dirty	*1. Clean or reseat release valve ball.* *2. Replace hydraulic oil.*
Hydraulic Stage - Cylinder does not raise to full height	1. Low oil level	*1. Refer to Maintenance for instructions about adding oil.*

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