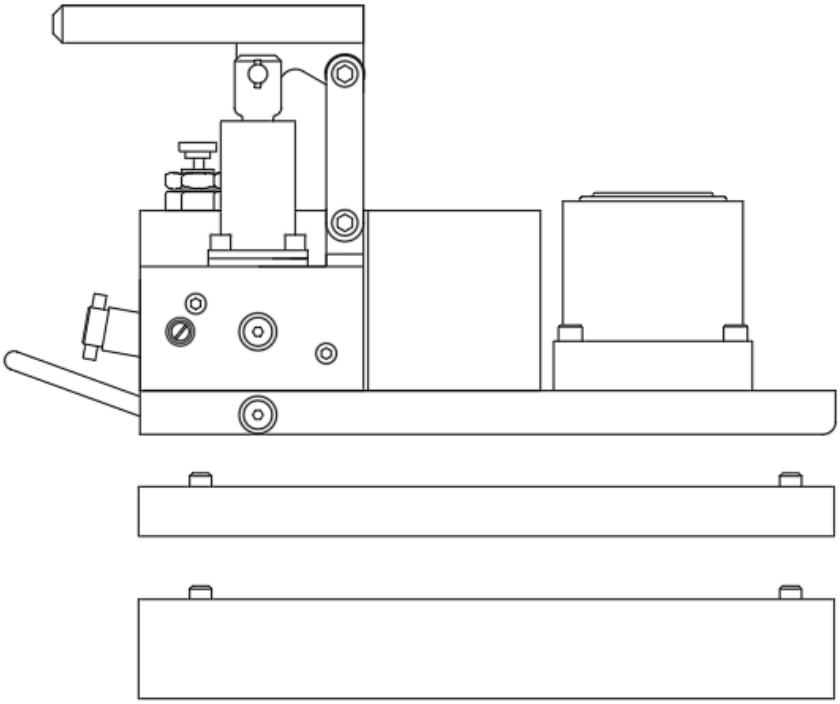
OPERATION & SERVICE MANUAL



Model Number: FAJ-180008

12 Ton Hydraulic Axle Jack

Revision A

FlyTek GSE

4901 Chester Creek Rd, Brookhaven, PA 19015

+1 (610) 586-6000

support@flytekgse.com

REV	DESCRIPTION	DATE
A	Initial Release	6/9/2021

NOTE: This manual is intended to be used as written only. Any editing or supplementing immediately voids all warranties and releases FlyTek GSE and its employees, distributors, suppliers, and financial institutions from any liability that may occur from misuse.

1. PRODUCT INFORMATION

1a. GENERAL DESCRIPTION

The FAJ-180008 hydraulic axle jack is a two-stage, telescoping jack with an additional two-stage acme-threaded mechanical extension. It is equipped with a 5/8" bore, .4 cu/in/stroke single-stage hydraulic hand pump with a metered pressure release valve and a pressure relief valve preset by the manufacturer. The FAJ-180008 axle jack features all-steel construction and Buna-N or equivalent seals. It is therefore intended for use only with MIL-PRF-5606 hydraulic fluid. The assembly includes two spacer blocks that can be used individually or stacked to reduce the distance between jack and jack pad if necessary.

1b. SPECIFICATIONS

- Maximum Rated Load: 24000 lbs
- Weight: 40 lbs
- Base Cross-Sectional Footprint: 14.0 in x 4.0 in
- Maximum Extended Height: 15.1 in
- Maximum Hydraulic Extension: 6.0 in
- Maximum Mechanical Extension: 4.5 in
- Minimum Closed Height: 4.6 in

2. SAFETY & TRAINING INFORMATION

2a. GENERAL SAFETY INFORMATION

This manual should be read by trained operators in its entirety before use. Employers are responsible for proper training of operators, ensuring their expertise in safe usage of jack. Note that proper training may include subjects outside the scope of this manual, e.g., aircraft- or location-specific training.

2b. STORAGE & BEFORE-USE SAFETY INFORMATION

- Store jacks on a stable, low surface and in an environment that is safe for Buna-N type seals. The cylinder should be retracted to protect chromed surfaces from damage.
- Inspect the jack for visible fluid leaks.
- Inspect all fasteners for tightness.
- Inspect jack for adequate hydraulic fluid by fully extending the jack (unloaded) and ensuring sufficient reserve fluid level.
- Ensure maximum load is less than 24000 lbs.
- Only use jack on a hard, level surface that can support 24000 lbs safely.

3. OPERATION

CAUTION: Never place anything between the jack cylinder or mechanical extension and jack pad.

To Raise Aircraft:

- Position jack on a hard, level surface capable of supporting required load.
- Position jack cylinder under jack pad.
- Use spacers and available mechanical extension to raise jack as close as possible to jack pad.
- Ensure that the reservoir vent is open and pressure release screw is closed tightly.
- Operate hand pump to raise aircraft.

To Lower Aircraft:

- Loosen pressure release screw slowly.

4. MAINTENANCE

- All maintenance should be performed by trained technicians using proper tooling in a clean environment.

- Any maintenance performed which mechanically modifies original components or adds/removes components to the assembly immediately voids the product warranty and releases FlyTek GSE and its employees, distributors, suppliers, and financial institutions from any liability that may occur from said modifications.
- To clean unit after use or before storage, blow clean with compressed air or wipe down with a clean, new cloth. Do not use any cleaning agents which may damage paint or Buna-N type seals.
- Before performing any maintenance, the unit should be drained of oil. Fill with new, filtered oil when finished.
- When servicing seals, backup rings, or wipers, parts should be blown or wiped clean and dry, and lubricated with clean MIL-PRF-5606 oil before installation. Special care should be taken not to damage o-ring surfaces.

5. TEAR DOWN INSTRUCTIONS

NOTE: Part numbers are called out by parts list drawing and bill of materials number.

5a. CYLINDER TEARDOWN

- Ensure pressure release screw (pump #36) is open and collapse cylinder (assembly #2) fully.
- Remove reservoir vent screw (assembly #7) and drain reservoir (assembly #10) of oil.
- Remove 4 screws (assembly #3) from flange (assembly #4).
- Remove flange.
- Gently remove cylinder from jack base (assembly #7). Support cylinder assembly from underneath, as inner cylinder tubes may otherwise fall through the outer tube.

5b. CYLINDER ASSEMBLY

- Assemble in reverse order from section 5a. Note that to prevent leaks from reservoir vent assembly threads during a possible tip of the jack, Hernon 947 hydraulic sealant or equivalent is recommended.

5c. PUMP REMOVAL & TEARDOWN

- Remove reservoir vent assembly (assembly #7) and drain reservoir (assembly #10) of oil.
- Remove 4 socket head cap screws (assembly #12).
- Remove roll pin from clevis pin assembly (pump #19).
- Remove 4 socket head cap screws (pump #24) and flanges (pump #9).
- Remove snap ring (pump #20).
- Remove piston (pump #14) from tube (pump #16), and tube from pump body (pump #1).
- Remove spring (pump #4), ball (pump #5), and o-ring (pump #2) from pump body cavity.
- Remove retaining screw (pump #35) from side of pump body and remove pressure release screw (pump #37).
- Remove pressure relief screw (pump #27).

5d. PUMP ASSEMBLY & INSTALLATION

- Assemble in reverse order from section 5c.

6. SPARE PARTS

Spare parts may be ordered from FlyTek GSE using the contact information on the cover page. For parts listed and repair kit information, see parts lists at the end of this manual.

7. TROUBLESHOOTING

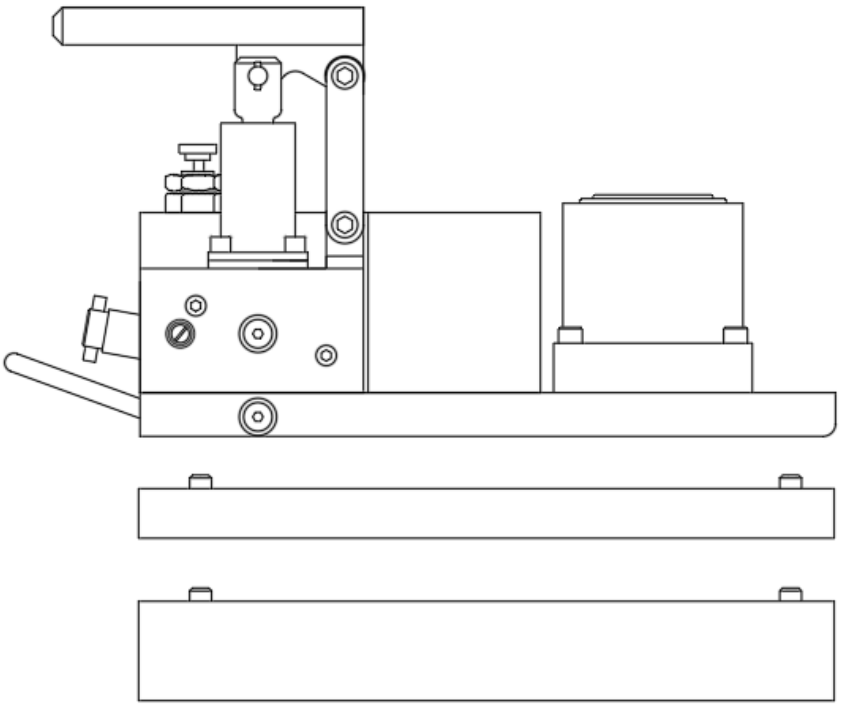
NOTE: In “trouble” categories that have multiple possible causes, causes are listed in recommended order of investigation.

TROUBLE	CAUSE	FIX
Oil on top of ram cylinder	Damaged ram cylinder o-ring or backup ring	Follow cylinder teardown procedure, replace damaged part(s)
Oil on top of pump tube	Damaged pump piston o-ring or backup ring	Follow pump teardown procedure to remove pump tube, replace damaged part(s)
Oil leak around pump or baseplate	Damaged o-ring	Follow pump teardown procedure, replace damaged part(s)
Jack cannot lift load	Pressure release valve is open	Tighten pressure release valve
	Vent screw closed	Open vent screw
	Insufficient oil	Fill tank to proper level
	Check valve failure	Follow pump teardown procedure to remove pump tube, replace valve body assembly
	Pressure relief valve set too low	Remove roll pin from screw and slowly adjust valve **1/8 turn** CW at a time
Jack lowers under load	Damaged ram cylinder o-ring or backup ring (leak observed)	Follow cylinder teardown procedure, replace damaged part(s)
	Check valve failure	Follow pump teardown procedure to remove pump tube, replace valve body assembly
	Pressure relief valve failure	Follow pump teardown procedure, replace relief assembly.
Jack locks at top of stroke	Vent screw closed	Open vent screw
	Damaged ram cylinder o-ring or backup ring	Follow cylinder teardown procedure, replace damaged part(s)

8. LIMITED WARRANTY

FlyTek GSE FAJ-180008 hydraulic axle jacks are warranted for one year after date of sale, limited to repair or replacement of defective components. Any repairs or alterations not authorized by FlyTek GSE voids this warranty. Purchaser must notify manufacturer within 10 days after defect is discovered. FlyTek GSE liability is limited to repair or replacement of defective parts and does not include any other damages incurred because of unit failure.

PARTS LISTS



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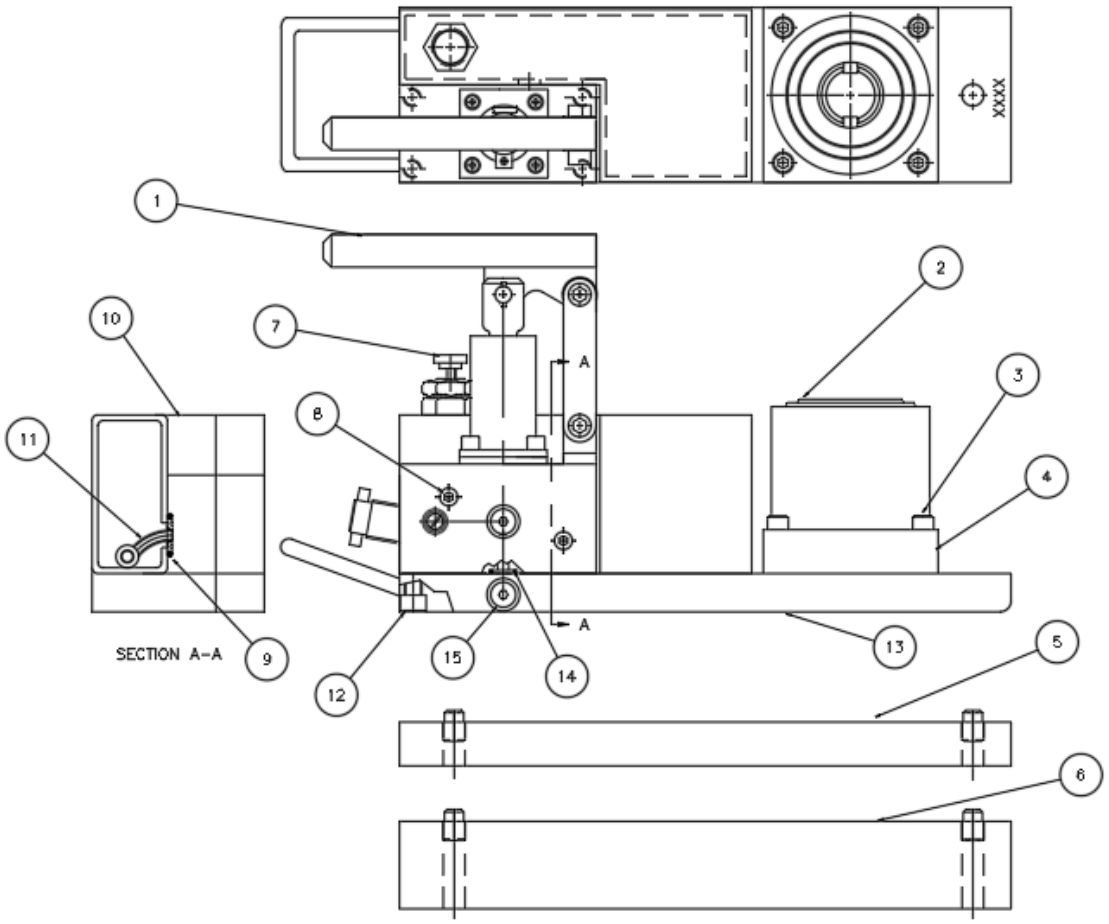
NOTES:

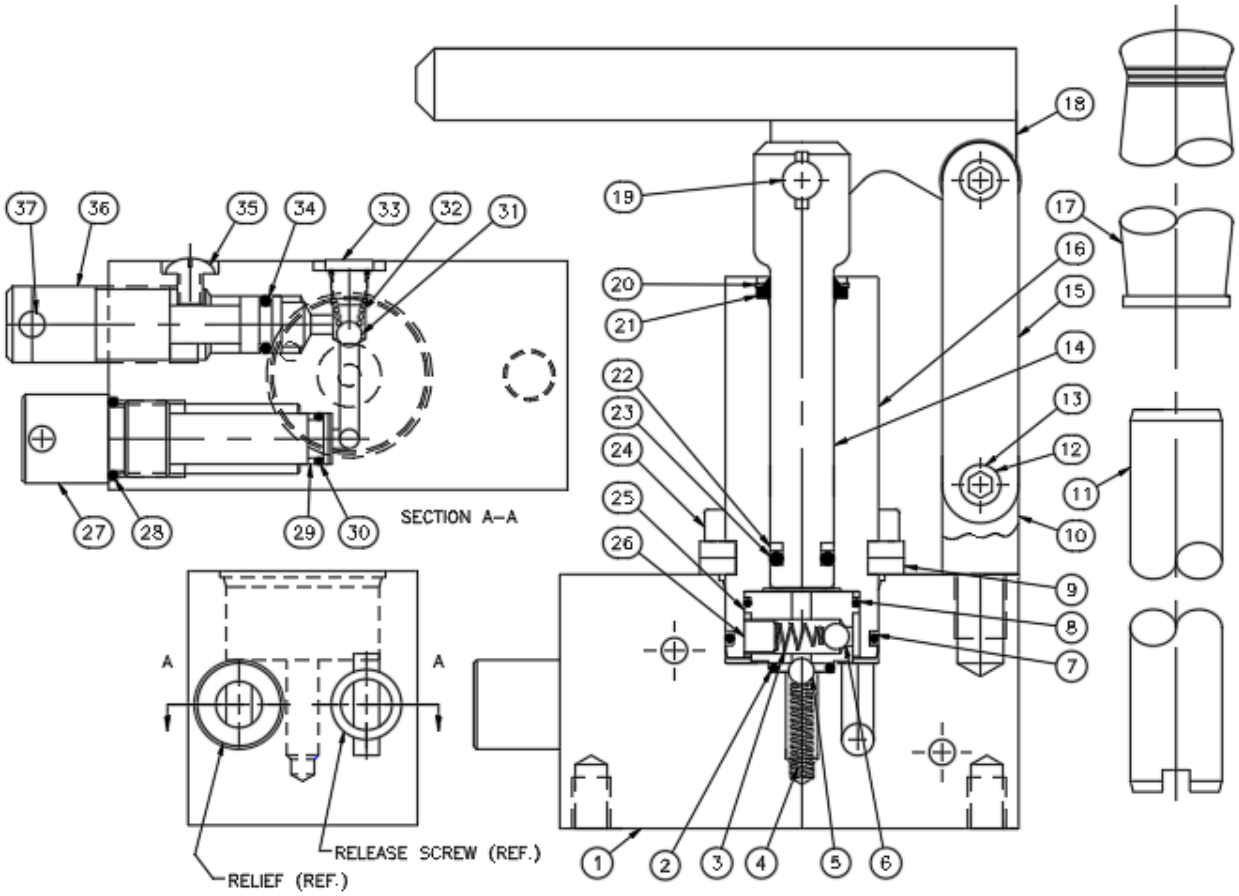
- Pump #1 and ram cylinder #2 are sold complete as subassemblies.



ITEM	NAME	QTY
1	FAJ-180008-PUMP	1
2	FAJ-020018-CYL	1
3	FAJ-09-ADDF-08-20 X 28	4
4	FAJ-180008-008	1
5	FAJ-180008-103	1
6	FAJ-180008-104	1
7	FAJ-180008-505	1
8	FAJ-09-ADDF-04-20 X 40	2
9	FAJ-01-210-A070	1
10	FAJ-890036-501	1
11	FAJ-890036-525	1
12	FAJ-09-ADDF-06-16 X 16	4
13	FAJ-020018-101	1
14	FAJ-01-111-A070	1

NOTES:

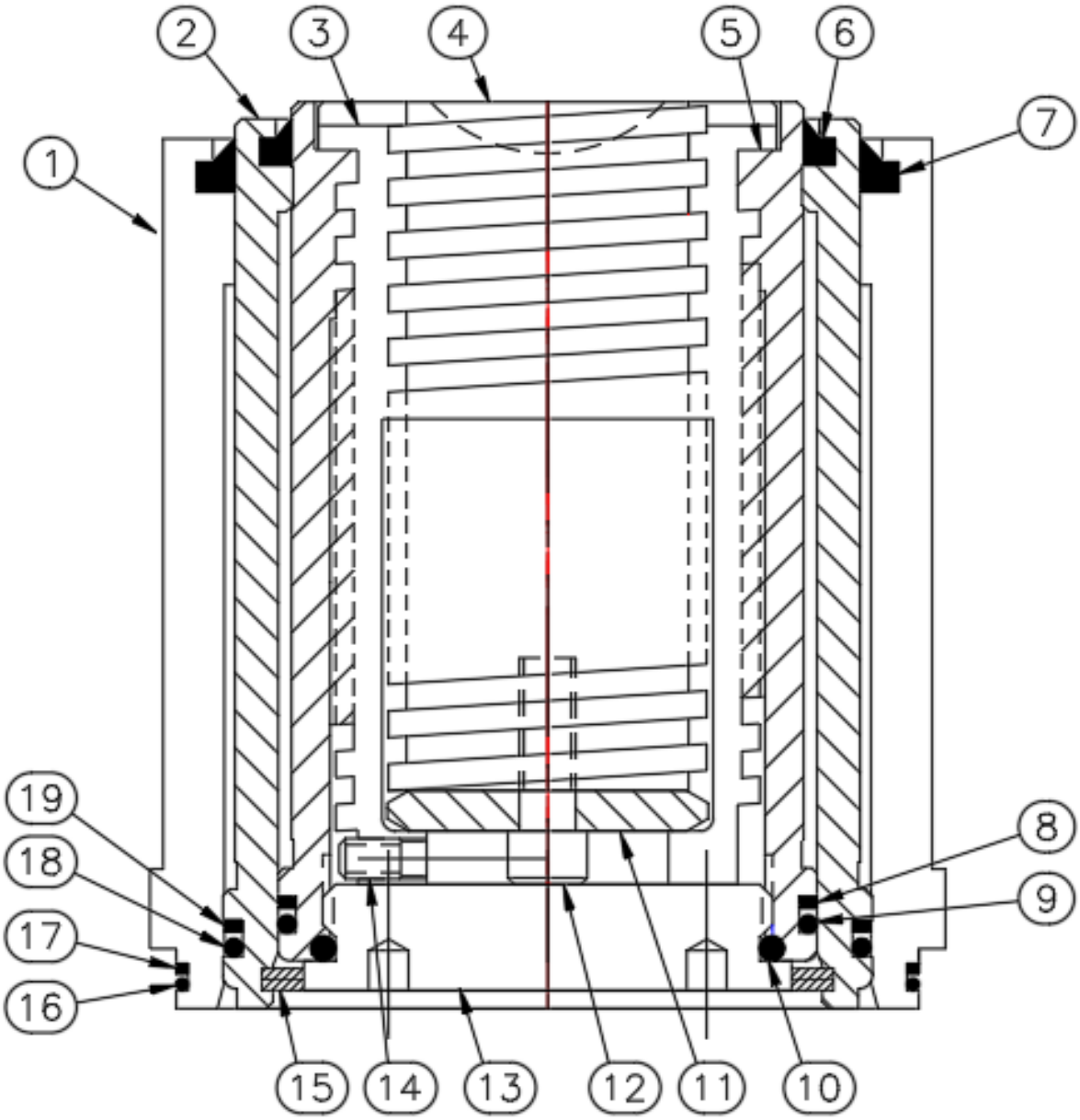
- Parts #27 and #25 (which includes #3, #6, and #26) are subassemblies that should not be dissasembled. They are sold complete as subassemblies.
- Entire pump assembly is available as part number FAJ-180008-PUMP.
- Parts labeled "+" in the bill of materials below are available only as part of an internal parts kit, part number FAJ-PHR-180008.
- Parts labeled "^" in the bill of materials below are available only as part of a pump linkage kit, part number FAJ-PL-180008.
- Parts labeled "*" in the bill of materials below are available only as part of a seal repair kit, part number FAJ-SRK-180008-PUMP.



ITEM	PART	DESCRIPTION	QTY	NOTE
1	FAJ-060025-001	BODY	1	
2	FAJ-522-000	O-RING	1	*
3	FAJ-516-001	SPRING, INTAKE CHECK	1	+
4	FAJ-514-000	SPRING, OUTLET CHECK	1	+
5	FAJ-515-000	BALL	1	+
6	FAJ-517-000	BALL	1	+
7	FAJ-525-002	O-RING	1	*
8	FAJ-524-000	O-RING	1	*
9	FAJ-506-000	FLANGE HALF	4	
10	FAJ-508-000	PIVOT	1	
11	FAJ-511-240-001	HANDLE	1	
12	FAJ-09-AHDF-06-18 X 12	SHOULDER SCREW	2	
13	FAJ-08-AEFH-05-18	LOCKNUT	2	
14	FAJ-507-050	PISTON	1	
15	FAJ-512-000	STRAP	2	^
16	FAJ-504-050	TUBE	1	
17	FAJ-529-000	HANDLE GRIP	1	
18	FAJ-180008-011	HANDLE BRACKET	1	^
19	FAJ-531-000	CLEVIS PIN ASSY.	1	^
20	FAJ-520-050	RETAINER, WIPER	1	
21	FAJ-528-050	WIPER	1	*
22	FAJ-534-050	BACK-UP	1	*
23	FAJ-526-050	O-RING	1	*
24	FAJ-518-000	SCREW	4	
25	FAJ-503-001	VALVE BODY	1	
26	FAJ-540-000	PLUG	1	
27	FAJ-060025-003	RELIEF ASSY.	1	
28	FAJ-01-114-AO70	O-RING	1	*
29	FAJ-02-012-TL62	BACK-UP	1	*
30	FAJ-01-012-AO70	O-RING	1	*
31	FAJ-515-000	BALL	1	+
32	FAJ-516-120	SPRING	1	+
33	FAJ-13-07 03	SAE PLUG	1	
34	FAJ-01-110-AO70	O-RING	1	*
35	FAJ-000003-004	RELEASE SCREW RETAINER	1	
36	FAJ-060025-002	RELEASE SCREW	1	
37	FAJ-519-000	ROLL PIN	1	

NOTES:

- Entire ram cylinder assembly is available as part number FAJ-020018-CYL.
- Parts labeled "+" in the bill of materials below are available only as part of a seal repair kit, part number FAJ-SRK-890036-JE.



ITEM	PART_NUMBER	DESCR	QTY	NOTE
1	FAJ-890036-002	TUBE, OUTER	1	
2	FAJ-890036-003-1C	RAM TUBE, 1ST STAGE	1	
3	FAJ-020018-005	EXTENSION TUBE, OUTER	1	
4	FAJ-020018-006	EXTENSION TUBE, INNER	1	
5	FAJ-890036-004-1C	RAM TUBE, 2ND STAGE	1	
6	FAJ-07-229-US90	WIPER	1	+
7	FAJ-07-234-US90	WIPER	1	+
8	FAJ-02-141-AP90	BACK-UP	1	+
9	FAJ-01-142-A070	O-RING	1	+
10	FAJ-01-136-A070	O-RING	1	+
11	FAJ-020018-004	RETAINING, WASHER	1	
12	FAJ-518-000P	SCREW	1	
13	FAJ-890036-007	RETAINING PLUG	1	
14	FAJ-09-AUDC-0J-32 X 06	SCREW	1	
15	FAJ-15-05-2.562-0	RETAINING RING	1	
16	FAJ-01-042-A070	O-RING	1	+
17	FAJ-02-042-AP90	BACK-UP	1	+
18	FAJ-01-150-A070	O-RING	1	+
19	FAJ-02-150-AP90	BACK-UP	1	+