OILFIELD SERVICE LTD.

WIRELINE TYPE JAR

JAR OD	MAXIMUM JARRING LOAD	MAXIMUM PULL AFTER FULLY OPEN	TOTAL STROKE	MANDREL A TORQUE	MANDREL B TORQUE	BODY JOINT TORQUE
1-1/4"	6,500 lbs.	17,000 lbs.	8"	50 ft/lbs	30 ft/lbs	150 ft/lbs
31.75 mm	2,891 daN	7,562 daN	203.20 mm	68 Nm	41 Nm	203 Nm
1-1/2"	7,000 lbs.	40,000 lbs.	8"	70 ft/lbs	50 ft/lbs	200 ft/lbs
38.10 mm	3,114 daN	17,792 daN	203.20 mm	95 Nm	68 Nm	271 Nm
1-1/2"	9,200 lbs.	40,000 lbs.	20"	70 ft/lbs		200 ft/lbs
38.10 mm	4,092 daN	17,792 daN	508.00 mm	95 Nm		271 Nm
1-3/4"	10,000 lbs.	50,000 lbs.	8"	90 ft/lbs	70 ft/lbs	220 ft/lbs
44.45 mm	4,448 daN	22,240 daN	203.20 mm	122 Nm	95 Nm	298 Nm
1-3/4"	15,000 lbs.	50,000 lbs.	20"	90 ft/lbs		220 ft/lbs
44.45 mm	6,672 daN	22,240 daN	508.00 mm	122 Nm		298 Nm
1-7/8"	11,000 lbs.	50,000 lbs.	8"	90 ft/lbs	70 ft/lbs	220 ft/lbs
47.62 mm	4,893 daN	22,240 daN	203.20 mm	122 Nm	95 Nm	298 Nm
2-1/8"	15,500 lbs.	90,000 lbs.	8"	180 ft/lbs	150 ft/lbs	350 ft/lbs
53.97 mm	6,894 daN	40,032 daN	203.20 mm	244 Nm	203 Nm	474 Nm

NOTE: All specifications are accurate within 15%. Other sizes available upon request.

Lee Oilfield Service Ltd. has been supplying hydraulic jars to the oil and gas industry for over five decades. As a result of a need for a better product, Lee Oilfield Service has developed and field tested a jar for use in all types of wireline operations.

The Lee Oilfield Service Wireline Jar works by pulling upwards, creating a momentary hydraulic delay in the oil chamber and a sudden release with a free travel which will impact in the Jar, giving an upward jarring action. The more upward pull the sooner the Jar will release and impact. You then reset the Jar and do the procedure over again. When jarring lightly you will have to wait longer for the Jar to release.

Lee Oilfield Wireline Jars are designed with the following features:

(A) Rugged sliding sleeve assembly in the hydraulic chamber, which is very simple and has no intricate parts which are susceptible to failure.

(B) Oil chamber is evenly balanced by a moveable double sealed pressure ring.

(C) The high pressure end of the jar is designed in a way to allow the use of different types of seals at the same time for different operating conditions. This is very important because there is no one seal which meets all well bore conditions.

(D) Mandrels are coated with tungsten carbide, which resists well bore corrosion much better than previous coatings.

(E) The top subs are threaded to the mandrels with a tapered thread eliminating the need for pinning.

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SERVICING - 8" Stroke

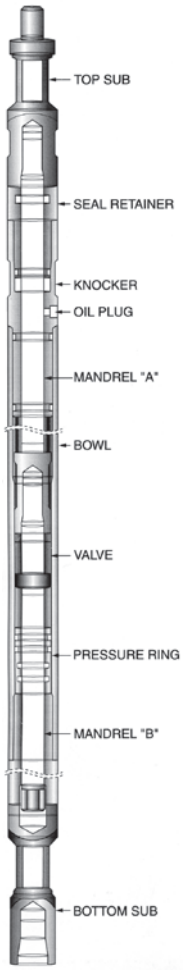
The Lee Oilfield Wireline Jars are quite simple and can be field serviced. It is desirable to use friction wrenches when breaking the body joints, but if you use pipe wrenches it is important to place wrench on bowl in pressure ring area only. With body joints all broken:

1. Remove bottom sub.
2. Break and unscrew the mandrel. If the mandrel unscrews in the middle, remove the bowl, Mandrel B and the pressure ring all together and set aside. Break and unscrew mandrel A. Slide mandrel A out through seal retainer and knocker assembly. Pick up bowl and screw mandrel A onto mandrel B only hand tight and slide the valve, pressure ring and mandrel assembly out through the bottom of the bowl. Separate mandrels again.
3. Unscrew the seal retainer from the knocker and remove fill plug from the knocker.
4. Remove all old seals.
5. Clean and inspect parts for wear and damage.

ASSEMBLY - 8" Stroke

1. Install new seals.
2. Screw the seal retainer into the knocker, lightly oil the seals and slide this assembly onto mandrel A and torque mandrel A to specs.
3. Slide the valve onto mandrel B with the smooth face contacting the smooth face of the mandrel; screw mandrel A and B together and torque to specs.
4. Slide the bowl with larger ID first over the mandrel assembly and screw onto the knocker.
5. Screw the fill plug into the knocker but do not tighten at this time. Open tool fully and stand vertically with bottom end of the tool upwards. Fill the jar with the proper oil 3/4" to 1" below bottom of the threads in the bowl. Allow a little time for all of the air to come to the top. Slide the pressure ring onto the mandrel and start it into the bowl until the seals begin to seal. Screw the bottom sub onto the bowl when you get a hydraulic pressure build-up, lay the tool at a 30 degree angle with the fill plug on top at the highest point, loosen the fill plug and finish screwing the bottom sub into the bowl, displacing any surplus oil out of the plug hole. Tighten the plug. Tighten body joints to specs.

NOTE: We recommend that you only use oil that the tool was originally set up with. You can use other types of oil but this will vary the firing time drastically if the viscosity of the oils are not the same.



PART OD	1-1/4" 31.75 mm	1-1/2" 38.10 mm	1-3/4" 44.45 mm	1-7/8" 47.62 mm	2-1/8" 53.97 mm
TOP SUB	WJ-125-01	WJ-150-01	WJ-175-01	WJ-1875-01	WJ-2125-01
SEAL RETAINER	WJ-125-02	WJ-150-02	WJ-175-02	WJ-1875-02	WJ-2125-02
KNOCKER	WJ-125-03	WJ-150-03	WJ-175-03	WJ-1875-03	WJ-2125-03
MANDREL A	WJ-125-04	WJ-150-04	WJ-175-04	WJ-1875-04	WJ-2125-04
MANDREL B	WJ-125-05	WJ-150-05	WJ-175-05	WJ-1875-05	WJ-2125-05
BOWL	WJ-125-06	WJ-150-06	WJ-175-06	WJ-1875-06	WJ-2125-06
VALVE	WJ-125-07	WJ-150-07	WJ-175-07	WJ-1875-07	WJ-2125-07
PRESSURE RING	WJ-125-08	WJ-150-08	WJ-175-08	WJ-1875-08	WJ-2125-08
BOTTOM SUB	WJ-125-09	WJ-150-09	WJ-175-09	WJ-1875-09	WJ-2125-09
SERVICE KIT	WJ-125-10	WJ-150-10	WJ-175-10	WJ-1875-10	WJ-2125-10
COMPLETE UNIT	WJ-125-11	WJ-150-11	WJ-175-11	WJ-1875-11	WJ-2125-11

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SERVICING - 20" Stroke

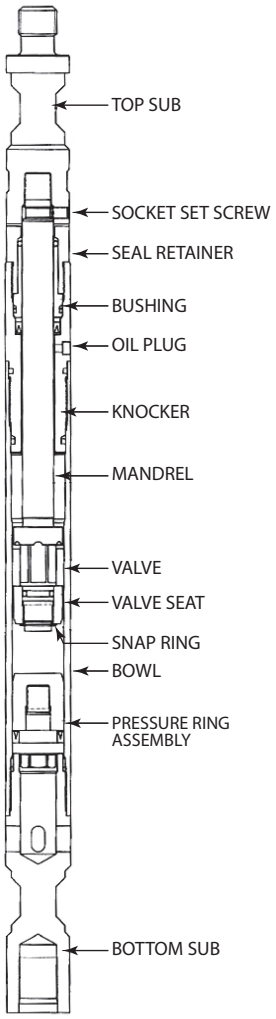
The Lee Oilfield Wireline Jars are quite simple and can be field serviced. It is desirable to use friction wrenches when breaking the body joints, but if you use pipe wrenches it is important to place wrench on bowl in pressure ring area only. With body joints all broken:

1. Break all body joints and remove fill plug.
2. Remove bottom sub and bowl. Remove pressure ring from bowl by lightly tapping it out.
3. Supporting the mandrel, take off the snap ring, loosen valve seat and remove valve.
4. Break mandrel from top sub using proper wrench on raised section of mandrel where the 2 sections are milled.
5. Pull mandrel out of knocker assembly.
6. Unthread the seal retainer from the knocker and remove brass bushing.
7. Remove all seals from pieces, keeping all peek back-ups, inspecting them for wear.
8. Clean and inspect all parts for wear & damage.

ASSEMBLY - 20" Stroke

1. Install seals on all parts.
2. Assemble brass bushing into seal retainer and thread into knocker.
3. Lightly lube seals, slide mandrel through, thread into top sub and torque to specs.
4. Install valve with OD groove towards pin on mandrel, thread on valve seat, tighten and install snap ring.
5. Slide the bowl with the larger ID over the mandrel assembly and thread onto knocker.
6. Open tool fully and stand vertically with top sub down.
7. Fill with recommended oil to approximately 5" from top of bowl.
8. Slide Pressure Ring assembly into bowl with hex head up.
9. Set Pressure Ring in 2" and make sure it stays at 2" from body joint.
10. Place in bench vice with fill plug up on a 30° - 40° angle and remove fill plug.
11. Slowly close tool, bleeding out air and oil, ensuring the Pressure Ring stays 2" in.
12. After tool is closed put in fill plug and tighten. Then install bottom sub and torque body joints.

NOTE: We recommend that you only use oil that the tool was originally set up with. You can use other types of oil but this will vary the firing time drastically if the viscosity of the oils are not the same.



PART OD	1-1/2" 38.10 mm	1-3/4" 44.45 mm
TOP SUB	WJLS-150-01	WJLS-175-01
SEAL RETAINER	WJLS-150-02	WJLS-175-02
BUSHING	WJLS-150-03	WJLS-175-03
KNOCKER	WJLS-150-04	WJLS-175-04
MANDREL	WJLS-150-05	WJLS-175-05
VALVE	WJLS-150-06	WJLS-175-06
VALVE SEAT	WJLS-150-07	WJLS-175-07
SNAP RING	WJLS-150-08	WJLS-175-08
BOWL	WJLS-150-09	WJLS-175-09
PRESSURE RING ASSEMBLY	WJLS-150-10	WJLS-175-10
BOTTOM SUB	WJLS-150-11	WJLS-175-11
SERVICE KIT	WJLS-150-12	WJLS-175-12
COMPLETE UNIT	WJLS-150-13	WJLS-175-13

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