TOOL SIZE		CONNECTION	MAXIMUM JARRING LOAD UP	MAXIMUM JARRING LOAD DOWN	MAXIMUM PULL/PUSH AFTER JARRING	TOTAL STROKE	PUMP OPEN AREA	MAXIMUM TORQUE	BODY JOINT TORQUE
OD	ID								
1-11/16"	9/16"	1" AMMT	10,000 lbs	10,000 lbs	42,200 lbs	13-1/4"	0.69 sq. in.	600 ft/lbs	350 ft/lbs
42.86 mm	14.28 mm		4,448 daN	4,448 daN	18,771 daN	336.55 mm	445 sq. mm	813 Nm	474 Nm
1-13/16"									
46.03 mm									
2-1/8"	3/4"	1-1/2" AMMT	18,000 lbs	18,000 lbs	103,000 lbs	12-1/2"	1.35 sq. in.	1,000 ft/lbs	700 ft/lbs
53.97 mm	19.05 mm		8,006 daN	8,006 daN	45,814 daN	317.50 mm	871 sq. mm	1,355 Nm	949 Nm
2-1/4"	3/4"	1-1/2" AMMT	22,000 lbs	22,000 lbs	103,000 lbs	12-1/2"	1.35 sq. in.	1,000 ft/lbs	700 ft/lbs
57.15 mm	19.05 mm		9,786 daN	9,786 daN	45,814 daN	317.50 mm	871 sq. mm	1,355 Nm	949 Nm
2-7/8"	1"	2-3/8" PAC	30,000 lbs	30,000 lbs	193,000 lbs	14-1/2"	2.4 sq. in.	3,200 ft/lbs	2,200 ft/lbs
73.02 mm	25.40 mm		13,344 daN	13,344 daN	85,846 daN	368.30 mm	1,548 sq. mm	4,336 Nm	2,981 Nm
3-1/8"	1-1/4"	2-3/8" REG	37,000 lbs	37,000 lbs	200,000 lbs	14-1/2"	2.94 sq. in.	5,000 ft/lbs	3,000 ft/lbs
79.37 mm	31.75 mm		16,458 daN	16,458 daN	88,960 daN	368.30 mm	1,896 sq. mm	6,775 Nm	4,065 Nm
3-1/2"	1"	2-3/8" REG	54,000 lbs	54,000 lbs	238,000 lbs	12"	3.14 sq. in.	6,400 ft/lbs	3,800 ft/lbs
88.90 mm	25.40 mm		24,019 daN	24,019 daN	105,862 daN	304.80 mm	2,025 sq. mm	8,672 Nm	5,149 Nm

NOTE: All specifications accurate within 15%

HD BI-DIRECTIONAL JAR

The Lee Oilfield Heavy Duty Bi-Directional jar is a hydraulic jar with a neutral position which allows the user to jar upwards or downwards in succession without going through the full cycle of the jar. The HD Bi-Directional jar has an integral male spline to withstand high torque values achieved by the latest motor technology. No setting or adjusting is required prior to running in the hole. Varying the amount of pull/push load at surface will control the amount of impact at the jar. When resetting the Lee Oilfield Jar to the neutral position, minimal force to overcome seal resistance is required. The HD Bi-Directional jar is designed to operate in conjunction with the Lee Oilfield Bi-Directional Compounder. Lee Oilfield Bi-Directional Jars and Compounders are designed in such a way that the weight of the tools themselves will provide reasonable jarring impacts when weight bars cannot be utilized.

PATENTED

4604 ELENIAK ROAD, EDMONTON, ALBERTA, CANADA T6B 2S1 • PHONE: (780) 440-6705 • FAX: (780) 463-5570 • EMAIL: info@leeoil.ca • WEB: www.leeoil.ca

SAFETY CONCERNS

When installing the jar onto the working string and you have any appreciable weight below it, the jar can slowly bleed open and free fall for 6". **NEVER RUN A PLUG BELOW THE JAR.** If you do the well bore pressure can cause the jar to fire upwards and damage surface equipment and even blow the string out of the hole.

RUNNING ASSEMBLY

All body joints are pre-torqued at our service facility. Tong on the upper and lower tool joint areas only. Place jar as close to fish as possible. For more effective jarring you can run some weight bar above the jars. For the most efficient jarring hook-up you can place a Bi-Directional compounder on top of the weight bar to give the most impact possible, whether jarring up or down. It is desirable to run a compounder when you are fishing very shallow because you have no string stretch, or if you are very deep and are limited to the amount of overpull/push you can apply at surface to achieve proper jarring impact. A compounder is often used on coil tubing operations because you can not use any weight bar and you can still get effective jarring with the weight of the jar and compounder because of tool design, but still not as effective as having some weight bar between the jar and compounder. When using a compounder all the jarring action is taking place between the jar and the compounder because you build up energy in the compounder during the overpull/push into the jar. When the jar passes through the restricted stroke the stored energy in the compounder is released and the momentum of the free stroke in the jar is increased, therefore increasing jarring impact.

When punching a plug or a situation where you anticipate that you may be jarring downwards and you are not hooked onto a fish below the jar, a restrictor sub must be run to reset the jar with the pump.

JARRING PROCEDURE

After running in the hole and reaching the top of the fish take a very accurate weight reading of fishing string and record it. When fish is engaged pull up desired load over recorded string weight and wait for the jar to fire. After tripping, slowly lower the tubing. It requires only minimal force to re-cock the Up Jar. When the Jar starts to take weight, the next Pull Load is ready to be applied. Repeat the Up Jar sequence as described above until the fish is freed. Note: Always remain within recommended jar load specifications. The cycle life of the coil tubing string should always be kept in mind when jarring and the fish is not moving.

DOWN JARRING PROCEDURE

Slack off the desired load and wait for the jar to fire. After firing, slowly pull the tubing string up to reset jar. When the jar starts to take weight it is in neutral position and ready for the next slack off load to be applied. Repeat down jar procedures as required.

NOTE: ALWAYS REMAIN WITHIN RECOMMENDED JAR LOAD SPECIFICATIONS.

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