LEE OILFIELD SERVICE LTD.

SJ TYPE FISHING JAR

TOOL SIZE		CONNECTION	RECOMMENDED JARRING LOAD	MAXIMUM JARRING LOAD	MAXIMUM PULL AFTER FULLY OPEN	TOTAL STROKE	MAXIMUM TORQUE	BODY JOINT TORQUE
OD	ID							
1-11/16"	9/16"	1" AMMT	8,000 lbs	9,000 lbs	56,000 lbs	6"	700 ft/lbs	400 ft/lbs
42.86 mm	14.28 mm		3,558 daN	4,003 daN	24,909 daN	152.40 mm	949 Nm	542 Nm
2-1/8"	3/4"	2" LDC	12,000 lbs	14,500 lbs	80,000 lbs	7"	1,670 ft/lbs	1,000 ft/lbs
53.87 mm	19.05 mm	1-1/2 MT	5,338 daN	6,450 daN	35,584 daN	177.80 mm	2,263 Nm	1,355 Nm
2-1/4"	3/4"	2" LDC	15,000 lbs	17,500 lbs	81,000 lbs	7"	2,050 ft/lbs	1,230 ft/lbs
57.15 mm	19.05 mm	1-1/2 MT	6,672 daN	7,784 daN	36,029 daN	177.80 mm	2,778 Nm	1,667 Nm
2-1/4"	3/8"	2" LDC	15,000 lbs	17,500 lbs	127,800 lbs	7"	2,050 ft/lbs	1,230 ft/lbs
57.15 mm	9.52 mm		6,672 daN	7,784 daN	56,845 daN	177.80 mm	2,778 Nm	1,667 Nm
2-7/8"	1"	2-3/8" PAC	25,000 lbs	30,000 lbs	187,000 lbs	9"	3,700 ft/lbs	2,200 ft/lbs
73.02 mm	25.40 mm		11,120 daN	13,344 daN	83,178 daN	228.60 mm	5,014 Nm	2,981 Nm
3-1/8"	1"	2-3/8" REG	35,000 lbs	45,000 lbs	187,000 lbs	9"	5,700 ft/lbs	3,420 ft/lbs
79.37 mm	25.40 mm		15,568 daN	20,016 daN	83,178 daN	228.60 mm	7,724 Nm	4,634 Nm
3-3/4"	1-1/4"	2-7/8" REG	60,000 lbs	66,000 lbs	300,000 lbs	9-1/4"	9,200 ft/lbs	5,500 ft/lbs
95.25 mm	31.75 mm	2-3/8" IF	26,688 daN	29,357 daN	133,440 daN	234.95 mm	12,466 Nm	7,453 Nm
3-3/4"	1.900"	2-3/8" EUE	46,500 lbs	49,500 lbs	220,000 lbs	9-1/2"	5,500 ft/lbs	3,300 ft/lbs
95.25 mm	48.26 mm		20,683 daN	22,018 daN	97,856 daN	241.30 mm	7,453 Nm	4,472 Nm
4-1/2"	2-3/8"	2-7/8" EUE	49,000 lbs	60,000 lbs	400,000 lbs	9-1/2"	9,800 ft/lbs	5,880 ft/lbs
114.30 mm	60.32 mm		21,795 daN	26,688 daN	177,920 daN	241.30 mm	13,279 Nm	7,967 Nm
4-3/4"	2"	3-1/2" IF	80,000 lbs	90,000 lbs	485,000 lbs	9-1/2"	14,000 ft/lbs	8,400 ft/lbs
120.65 mm	50.80 mm		35,584 daN	40,032 daN	215,728 daN	241.30 mm	18,970 Nm	11,382 Nm
5-1/4"	2-1/4"	4" FH	120,000 lbs	130,000 lbs	600,000 lbs	9-3/8"	26,000 ft/lbs	15,000 ft/lbs
133.35 mm	57.15 mm		53,376 daN	57,824 daN	266,880 daN	238.12 mm	35,230 Nm	20,325 Nm
6-1/4"	2-1/4"	4-1/2" FH	160,000 lbs	180,000 lbs	650,000 lbs	9-1/2"	33,000 ft/lbs	20,000 ft/lbs
158.75 mm	57.15 mm	4-1/2" IF	71,168 daN	80,064 daN	289,120 daN	241.30 mm	44,715 Nm	27,100 Nm
6-3/4"	2-1/2"	5-1/2" REG	170,000 lbs	200,000 lbs	730,000 lbs	9-1/2"	44,450 ft/lbs	26,670 ft/lbs
171.45 mm	63.50 mm		75,616 daN	88,960 daN	324,704 daN	241.30 mm	60 ,230 Nm	36,138 Nm
7-3/4"	2-1/2"	6-5/8" REG	200,000 lbs	225,000 lbs	1,000,000 lbs	9-1/2"	67,300 ft/lbs	40,400 ft/lbs
196.85 mm	63.50 mm		88,960 daN	100,080 daN	444,800 daN	241.30 mm	91,192 Nm	54,742 Nm
8"	2-3/4"	6-5/8" REG	215,000 lbs	250,000 lbs	1,400,000 lbs	9-1/2"	68,730 ft/lbs	41,240 ft/lbs
203.20 mm	69.85 mm		95,632 daN	111,200 daN	622,720 daN	241.30 mm	93,129 Nm	55,880 Nm
9"	2-3/4"	7" H90	230,000 lbs	280,000 lbs	1,900,000 lbs	11-1/2"	105,800 ft/lbs	63,500 ft/lbs
228.60 mm	69.85 mm		102,304 daN	124,544 daN	845,120 daN	292.10 mm	143,359 Nm	86,043 Nm

NOTE: All specifications accurate within 15%

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All strengths listed are calculated theoretical values and are accurate within 15%. The strength values shown are based on only one (1) load type being applied at a time; this is consistent with API methods for their published strength values for drill string components. When two (2) or more load types (pull, lift, torque, rotation and/or bending) are applied at the same time, the stresses on the tool are increased and the listed load ratings are reduced substantially. This is particularly true in milling, washover or drilling operations; in deviated or directional holes; and in the neutral position, where combining loads (stress) can also lead to fatigue failure. The need for operating under such conditions is acknowledged. This is not intended to advise against such operations, but merely to caution the operator of possible risks when operating in these conditions. Rotation and bending together can lead to fatigue failure. As with all oilfield equipment, a safety factor should be applied when running the tools to avoid damage.

Loads indicated are Maximum Recommended Jarring Loads during the pull stroke of the jars. Pulling above the values shown can damage the jar.

The values shown do not apply to API tool joints or other downhole connection strengths since various connections may be used on either end of the tools. Users should be guided by API or other published specifications covering downhole connections for the connection strengths.

Torque at Yield is the value that will cause yield of the material in one (1) or more parts of a tool but will always refer to the weakest torsional components within the tool. Recommended tightening torque is for various threaded connections within a tool. Tightening torque values were calculated assuming anti-galling compound with low co-efficient of friction being applied to all threads and butting shoulders of the connections.

In a situation where you may have a fish stuck off bottom and by bumping downwards with a bumper sub and the fish suddenly falls free, the bumper sub stops at full extension. The sudden pressure surge in the hydraulic jar can exceed the pressure ratings of the hydraulic jar and do damage to the hydraulic jar. This is an unavoidable condition. It all depends on how quickly the fish falls free and how heavy the fish is.

When swedging or milling and the hole size is large enough to allow the working string to flex sideways, it is recommended that stabilizers be utilized to reduce side bending forces.

Occasionally a fishing job will already have a jar in the well. In this case when you run a second jar to fish with, there is always a possibility that you can do damage to one or both of the jars. In this case it is also unavoidable.

When jarring, care must be taken not to overpull more than the ultimate jarring value and then slack off to the recommended jarring load and wait for the jar to fire. The damage in the hydraulic section of jar does not happen when the jar fires. It happens when the jar is in the metering stroke mode.

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