



CTT

Coil Tubing Technology, Inc.

## CTT Jet Hammer (Patented)

### Operating Instructions

#### Description:

The “CTT Jet Hammer” is a powerful downhole rotating impact actuator designed for use in coiled tubing workover service. The high energy impact frequency and torque output of the “CTT Jet Hammer” provides efficient removal of paraffin, scale, sludge, and tar as well as an effective tool for drilling barium, sand, and cement bridge plugs. When a “blind box” is used in place of the bit or mill the “CTT Jet Hammer” can be utilized to drive debris downhole.

Operation of the “CTT Jet Hammer” begins when the bit comes into contact with a resistance that forces the mandrel closed to the tool housing. Internal pressure builds until the tool’s internal valve opens thrusting the bit outwardly with high velocity acceleration and rotational torque into the medium being drilled.

Water or light drilling fluid may be used as well as nitrogen when co-mingled with soap or foam to operate the tool.



#### Tool String Recommendation

- Since the “CTT Jet Hammer” rotates on each mandrel stroke cycle, all tools run in the BHA should have no rotational slack or backlash as movement would reduce or eliminate bit rotation.
- The use of a reliable coil connector or motorhead assembly that can withstand high pressure, rotary and longitudinal vibrational forces is important.

Making up the “CTT Jet Hammer” into the String To install or change the bit insert the pin provided with the tool through the tool drive sub and mandrel. (It is important to use the pin provided) NEVER WRENCH ON THE BARREL as this may pinch the internal piston and prevent proper operation of the tool. All “CTT Jet Hammer” connections are shipped tightened so no additional torque is needed. To make up string connections above the tool wrench on the top sub and mating tool, be sure to remove the lock pin from the tool drive sub. Failure to remove the pin will prevent the tool from working.

Surface testing the “CTT Jet Hammer” Prior to running the “CTT Jet Hammer” into the hole; a surface test can be conducted to establish operational characteristics of the tool. This can be done by lifting the tool and pumping fluid through the string, making sure the volume being pumped is sufficient to conduct the test. While pumping, the bit and mandrel will telescope out. Do not attempt to test the tool by setting the injector head on the tool as this will restrict the tool’s ability to start up and damage may occur. With the test complete you are ready to run in the hole.

Maximum Operating Limits of the “CTT Jet Hammer”: The “CTT Jet Hammer’s” operational limits are as follows:

- Maximum Operating Pressure = 1,000 PSI across the tool
- Maximum Applied Down Force = 750 LBS
- Pressure Rated All Tool Sizes = 5,000 PSI
- All Tools Dressed for 450 F

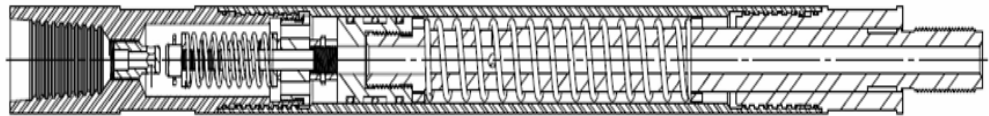


**CTT**

**Coil Tubing Technology, Inc.**

## CTT Jet Hammer (Patent Pending)

OD SIZE	STANDARD CONNECTION	LENGTH Ft.	FLOW GPM/LITRE	SPEED RPM	OP. DP PSI	CYCLES PER MIN	TEMPERATURE °F
1.375	¾" MT	22"	20 / 76	60	500	1500	500
1.69/1.75	1" MT	22"	35 / 132	60	500	1500	500
2.125	1-1/2" MT	25"	60 / 227	60	500	1500	500



	1.375 "CTT Jet Hammer"	1.688 "CTT Jet Hammer"	1.750 "CTT Jet Hammer"	2.125 "CTT Jet Hammer"
Assembly Part Number	30-1375	30-1688	30-1750	30-2125
Outside Diameter (Inches)	1.375"	1.688"	1.75"	2.125"
Bit Range (Inches)	1.400 - 1.700	1.700 - 2.000	1.875 - 2.250	2.189 - 3.000
Overall Length (Open)	22"	22"	22"	25"
Approximate Weight	10 Lbs.	15 Lbs.	18 Lbs.	25 Lbs.
Standard Tool Joint	¾" AMMT Box Down / Box Up	1" AMMT Box Down / Box Up	1" AMMT Box Down / Box Up	1-1/2" AMMT Box Down / Box Up
<i>Operational</i>				
Operating Pressure (Optimum)	500 PSI	500 PSI	500 PSI	500 PSI
Flow Rate (Optimum)	20 GPM/600 SCFM	35GPM/1000 SCFM	35GPM/1000 SCFM	60 GPM/1500 SCFM
Torsional Yield (Ft.-Lbs.)	15,000 Ft. Lbs.	20,000 Ft. Lbs.	25,000 Ft. Lbs.	35,000 Ft. Lbs.
Tensile Yield	20,000 Lbs.	24,000 Lbs.	25,000 Lbs.	28,000 Lbs.
Temperature Rating (F)	450 F	450 F	450 F	450 F
<i>Performance at Optimum</i>				
Impacts Per Min/Impact Force	1500 cycles /10,000 Lbs.	1500 cycles /15,000 Lbs.	1500 cycles /15,000 Lbs.	1500 cycles /20,000 Lbs.
RPM	60	60	60	60