



CTT

Coil Tubing Technology, Inc.

Product Catalog



CTT

Coil Tubing Technology, Inc.

About CTT:

Coil Tubing Technology, Inc. (CTT) is a leader in providing new technology to the coiled tubing industry specializing in the design of proprietary downhole tools used in conjunction with coiled tubing. The Company's emphasis is on innovation, quality, service and performance. Our mission is to provide the worldwide coiled tubing industry with the highest level of technology available to the marketplace.

CTT supplies a full line of proprietary tools, manufactured in accordance with and to oil industry specifications. The tools are provided to oil companies, coiled tubing operators and well service companies for use in thru tubing fishing, thru tubing well stimulation workover, and coiled tubing lateral drillout operations.

CTT offers tools on a rental basis or sells tools. CTT services our tools at our shop in Houston, Texas and maintains a high quality standard for manufacturing and redress of all tools. For more information contact CTT at ctt@coiltubingtechnology.com or contact your local sales representative.



CTT

Coil Tubing Technology, Inc.

Here's Where You Find Us:

CTT's corporate office is located in Houston, Texas.

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CTT

Coil Tubing Technology, Inc.

CTT “H/H” Jar (Patented)

Description:

The “CTT H/H Jar” presents the most advanced technology available in metering of hydraulic fluids. The “CTT H/H Jar” provides the optimum time delay and maximized velocity at detent release providing an impact force at the “fish” previously unavailable in coil tubing operations.

By utilizing the “CTT H/H Jar” the CT operator has the ability to place the tool at the optimum position in the string.

Operational Advantages:

Minimal mechanical “drag” at detent release permits the maximum acceleration of the mass to the hammer and anvil. Fully hydraulic operation permits a wide range of overpull or setdown weight.

Utilizing the “CTT Amplidyne” with the “CTT H/H Jar” further enhances the acceleration of the tool.

Energy provided by the “CTT H/H Jar” requires fewer cycles to free the string thus reducing fatigue at the gooseneck.

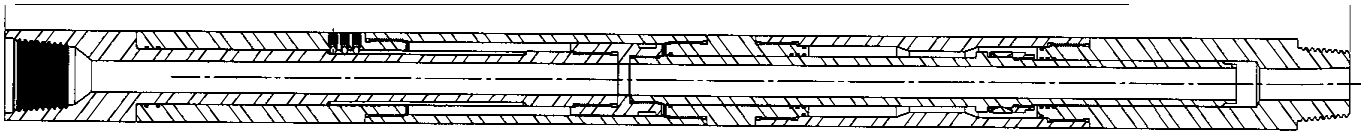


CTT

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CTT “H/H” Jar (Patented)

O.D. SIZE	STANDARD CONNECTION	LENGTH INCHES	I.D.	OPER. OVERPULL	OPER SET DOWN	STROKE INCHES	TEMPERATURE °F
1.500	Available upon Request						
1.688	1” MT	57”	.562”	8K	8K	3.5”	450
2.125	1-1/2” MT	57”	.625”	26K	16K	3.5”	450
2.875	2-3/8” PAC	57”	1”	45K	25K	3.5”	450
3.125	2-3/8” REG	57”	1”	70K	35K	3.5”	450
3.375	2-3/8” REG	57”	1”	80K	40K	3.5”	450



	1.688” “CTT H/H Jar”	2.125” “CTT H/H Jar”	2.875” “CTT H/H Jar”	3.125” “CTT H/H Jar”	3.375” “CTT H/H Jar”
Assembly Part Number	90-1688	90-2125	90-2875	90-3125	90-3375
Outside Diameter	1.168”	2.125”	2.875”	3.125”	3.375”
Inside Diameter	0.562”	0.625”	1”	1”	1”
Overall Length (Maximum)	57.25”	57.25”	57.25”	57.25”	57.25”
Overall Length (Maximum)	64.25”	64.25”	64.25”	64.25”	64.25”
Total Stroke	7”	7”	7”	7”	7”
Approximate Weight (Lbs.)	25	35	55	95	116
Standard Tool Joint	1” AMMT Pin Down / Box Up	1-1/2” AMMT Pin Down / Box Up	2-3/8” PAC Pin Down / Box Up	2-3/8” REG Std. Pin Down / Box Up	2-3/8” REG Std. Pin Down / Box Up
Operational					
Recommended Maximum Overpull Weight (Lbs.)	28,000	46,000	65,000	90,000	90,000
Maximum Setdown Weight (Lbs.)	28,000	36,000	45,000	55,000	60,000
Torsional Yield (Ft-Lbs.)	1,500	5,500	8,000	14,000	14,000
Tensile Yield	56,000	76,000	105,000	300,000	300,000
Temperature Rating (F)	500	500	500	500	500



CTT

Coil Tubing Technology, Inc.

CTT Amplidyne

Description:

The “CTT Amplidyne” is used with the “CTT H/H Jar” to intensify the impact at the jar hammer and anvil.

The “CTT Amplidyne” develops reactive energy from the overpull or setdown on the jar. The energy is then transferred into a fluid spring and valve system that accelerates the velocity enhancing by four times the over pull or setdown weight as impact force at the hammer and anvil.

The “CTT Amplidyne” is compact in length to maintain a short fishing or drilling string on coiled tubing, yet designed to maximize the velocity and impact to the hammer and anvil at the jar release. The “CTT Amplidyne” has a large I.D. to permit passage of drop balls which permits placement of the tool at any position in the work string.



CTT

Coil Tubing Technology, Inc.

CTT Amplidyne

O.D. SIZE	STANDARD CONNECTION	LENGTH INCHES	I.D.	OPER. OVERPULL	OPER. SET DOWN	STROKE INCHES	TEMPERATURE °F
1.500	Available upon request						
1.688	1" MT	57"	.562"	8K	8K	3.5"	450
2.125	1-1/2" MT	57"	.625"	16K	16K	3.5"	450
2.875	2-3/8" PAC	57"	1"	25K	25K	3.5"	450
3.125	2-3/8" REG	57"	1"	35K	35K	3.5"	450



	1.500" "Amplidyne"	1.688" "Amplidyne"	2.125" "Amplidyne"	2.875" "Amplidyne"	3.125" "Amplidyne"
Assembly Part Number		91-1688	91-2125	91-2875	91-3125
Outside Diameter		1.168"	2.125"	2.875"	3.125"
Inside Diameter		0.562"	0.625"	1"	1"
Overall Length (Maximum)		57.25"	57.25"	57.25"	57.25"
Overall Length (Open)		64.25"	64.25"	64.25"	64.25"
Total Stroke		7"	7"	7"	7"
Approximate Weight (Lbs.)		25	35	55	95
Standard Tool Joint	Available upon request	1" AMMT Pin Down / Box Up	1 1/2" AMMT Pin Down / Box Up	2 3/8" PAC Pin Down / Box Up	2 3/8" REG Pin Down / Box Up
Operational					
Recommended Maximum Overpull Weight (Lbs.)		28,000	46,000	65,000	90,000
Maximum Setdown Weight (Lbs.)		28,000	36,000	45,000	55,000
Torsional Yield (Ft-Lbs.)		1,500	5,500	8,000	14,000
Tensile Yield		56,000	76,000	105,000	300,000
Temperature Rating (F)		450	450	450	450



CTT

Coil Tubing Technology, Inc.

CTT Oscillator (Patented)

Description:

Operational Methods of Creating Vibrational Frequency

- The “CTT Oscillator” generates imbalanced rotational frequency generated and controlled by an Internal Eccentric Drive Sub placed on the patented “CTT Jet Motor “connected to a Flex Joint Ported Sub Housing.
- The tool’s internal frequency is then transmitted to the other housing creating a motion that pushes or pulls the string. The more free string available also contributes to the magnitude of Oscillation affects.

“CTT Oscillator” Component & Operational Data

- The Top Ported Sub (Item 1) distributes fluid and pressure up to volume required by the customer’s hydraulic specifications. Up to 40 GPM is distributed to the Power Section (Item 2) through to Oscillators Eccentric Sub (Item 3) which rotationally energizes and generates a controlled frequency per rotation.
- All Fluid not required to operate the (Item 2) Power Section is circulated by and through to the Lower Sub (Item 4) along with fluid from the Eccentric Sub Nozzle (Item 5). (GPM and Pressures setup are standard 3 barrels and 500 – 1500 PSI pressure drop. Other Hydraulic requirements and frequency can be adjusted to customers’ requests).

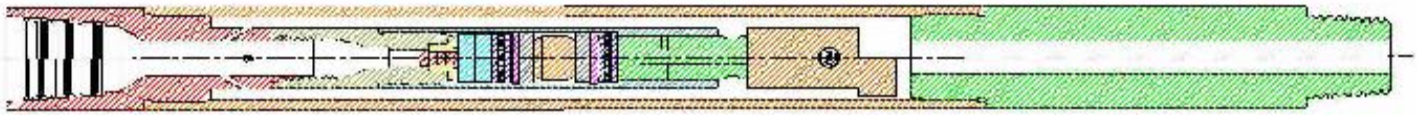


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CTT Oscillator (Patented)

O.D. SIZE	STANDARD CONNECTION	LENGTH INCHES	WEIGHT LBS	FLOW RATE GPM/LITRE	TEMPERATURE °F	OPERATION PRESSURE DROP	MAX PULL
2.125	1-1/2" MT	22"	14 LBS	40-120 GPM	450°	300 – 1000 PSI	55,000
2.875	2-3/8" PAC	35"	35 LBS	40-120 GPM	450°	300 – 1000 PSI	75,000
2.875	2-3/8" PAC	66"	70 LBS	40-120 GPM	450°	300 – 1000 PSI	75,000
3.125	2-3/8" REG	37"	45 LBS	40-120 GPM	450°	300 – 1000 PSI	82,500



2.125" CTT Oscillator	2.875" CTT Oscillator	2.875" CTT Extreme Oscillator	3.125" CTT Oscillator
PSI	PSI	PSI	PSI
100 PSI	100 PSI	100 PSI	100 PSI
200 PSI	200 PSI	200 PSI	200 PSI
300 PSI	300 PSI	300 PSI	300 PSI
400 PSI	400 PSI	400 PSI	400 PSI
500 PSI	500 PSI	500 PSI	500 PSI
600 PSI	600 PSI	600 PSI	600 PSI
GPM/LITRE	GPM/LITRE	GPM/LITRE	GPM/LITRE
40 GPM / 151 LITRE	40 GPM / 151 LITRE	40 GPM / 151 LITRE	40 GPM / 151 LITRE
60 GPM / 227 LITRE	60 GPM / 227 LITRE	60 GPM / 227 LITRE	60 GPM / 227 LITRE
80 GPM / 303 LITRE	80 GPM / 303 LITRE	80 GPM / 303 LITRE	80 GPM / 303 LITRE
100 GPM / 379 LITRE	100 GPM / 379 LITRE	100 GPM / 379 LITRE	100 GPM / 379 LITRE
100 GPM / 379 LITRE	100 GPM / 379 LITRE	100 GPM / 379 LITRE	100 GPM / 379 LITRE
120 GPM / 454 LITRE	120 GPM / 454 LITRE	120 GPM / 454 LITRE	120 GPM / 454 LITRE
FREQUENCY HZ	FREQUENCY HZ	FREQUENCY HZ	FREQUENCY HZ
6.75 HZ	9 HZ	13.5 HZ	9.90 HZ
9 HZ	12 HZ	18 HZ	13.20 HZ
11.25 HZ	15 HZ	22.5 HZ	16.50 HZ
15 HZ	20 HZ	30 HZ	22 HZ
18 HZ	24 HZ	34 HZ	26.40 HZ
25.50 HZ	34 HZ	51 HZ	37.40 HZ



CTT

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**CTT Ampli-Max
(Patented)**

Description:

The Ampli-max is set up as a dual stage tool. The top end of the tool incorporates a dual acting valve mechanism that relieves a spring loaded triggering mechanism accelerating a piston to an internal stop creating a high energy internal frequency impact in a timed sequence with dual acting (up and down) impulses controlled by pressure and fluid (or gas) volumes. The energy generated in the top tool section is thus converted to lateral hertz frequency.

The bottom end of the Ampli-max consists of an internal rotational motor with an eccentric counter weighted component that generates high rpm and radial frequency based on pressure and GPM. The CTT Ampli-max is a unique tool that generates both lateral and radial hertz frequency that assists in the efficiency of extended reach drilling.



CTT

Coil Tubing Technology, Inc.

CTT Ampli-Max (Patented)

O.D. SIZE	STANDARD CONNECTION	LENGTH INCHES	WEIGHT LBS.	TEMPERATURE °F	OPER. PRESSURE DROP	MAX PULL
2.875	2-3/8" PAC	77"	100 LBS	450	300 – 1000 PSI	75,000
2.875	2-3/8" PAC	113"	150 LBS	450	300 – 1000 PSI	75,000
3.125	2-3/8" REG	77"	125 LBS	450	300 – 1000 PSI	90,000

2.875" Ampli-Max

PSI

100 PSI
200 PSI
300 PSI
400 PSI
500 PSI
600 PSI

GPM/LITRE

40 GPM / 151 LITRE
60 GPM / 227 LITRE
80 GPM / 303 LITRE
100 GPM / 379 LITRE
120 GPM / 454 LITRE
180 GPM / 681 LITRE

FREQUENCY HZ

30.5 HZ
38 HZ
52 HZ
68 HZ
74 HZ
85 HZ

PSI DROP ACROSS TOOL

250 PSI
300 PSI
400 PSI
600 PSI
800 PSI
900 PSI

2.875" Extreme Ampli-Max

PSI

100 PSI
200 PSI
300 PSI
400 PSI
500 PSI
600 PSI

GPM/LITRE

40 GPM / 151 LITRE
60 GPM / 227 LITRE
80 GPM / 303 LITRE
100 GPM / 379 LITRE
120 GPM / 454 LITRE
180 GPM / 681 LITRE

FREQUENCY HZ

50.5 HZ
58 HZ
72 HZ
88 HZ
94 HZ
105 HZ

PSI DROP ACROSS TOOL

250 PSI
300 PSI
400 PSI
600 PSI
800 PSI
900 PSI

3.125" Ampli-Max

PSI

100 PSI
200 PSI
300 PSI
400 PSI
500 PSI
600 PSI

GPM/LITRE

40 GPM / 151 LITRE
60 GPM / 227 LITRE
80 GPM / 303 LITRE
100 GPM / 379 LITRE
120 GPM / 454 LITRE
180 GPM / 681 LITRE

FREQUENCY HZ

33.5 HZ
41.8 HZ
57.2 HZ
74.8 HZ
81.4 HZ
93.5 HZ

PSI DROP ACROSS TOOL

250 PSI
300 PSI
400 PSI
600 PSI
800 PSI
900 PSI



CTT

Coil Tubing Technology, Inc.

CTT “Long Stroke” Bumper Sub

Description:

The CTT “Long Stroke” Bumper Sub is used in fishing, drilling and milling operations. The LSBS is also utilized as a tagging up indicator in the CT application. When the LSBS is set down on an object (fish or other object) the weight indicator reflects the LSBS free stroking indicating the tag up point.



C T T

Coil Tubing Technology, Inc.

CTT “Long Stroke” Bumper Sub

O.D. SIZE	STANDARD CONNECTION	LENGTH INCHES	I.D. INCHES	OPER. OVERPULL	OPER SET DOWN	STROKE INCHES	TEMPERATURE °F
1.688	1” AMMT	56.5”	.562”	8K	8K	12”	600
2.125	1-1/2” AMMT	56.5”	.625”	26K	16K	12”	600
2.875	2-3/8” PAC or REG	56.5”	1”	45K	25K	12”	600
3.125	2-7/8” PAC or REG	56.5”	1”	70K	35K	12”	600

	1.688” “CTT LSBS”	2.125” “CTT LSBS”	2.875” “CTT LSBS”	3.125” “CTT LSBS”
Assembly Part Number	120-1688	120-2125	120-2875	120-3125
Outside Diameter	1.168"	2.125"	2.875"	3.125"
Inside Diameter	0.562"	0.625"	1"	1"
Overall Length (Maximum)	56.5"	56.5"	56.5"	56.5"
Overall Length (Maximum)	64.25"	64.25"	64.25"	64.25"
Total Stroke	12"	12"	12"	12"
Approximate Weight (Lbs.)	25	35	55	95
Standard Tool Joint	1" AMMT	1-1/2" AMMT	2-3/8" REG OR PAC	2-7/8" REG OR PAC
Operational				
Torsional Yield (Ft-Lbs.)	1,500	5,500	8,000	14,000
Tensile Yield	56,000	76,000	105,000	300,000
Temperature Rating (F)	600	600	600	600

Note: Larger O.D.’s, I.D.’s and longer stroke available upon request



TM

CTT

Coil Tubing Technology, Inc.

**CTT Rotating Tool
(Patented)**

Description:

The “CTT Rotating Tool” is a product specifically designed and developed for use in coiled tubing and wireline operations to mechanically induce rotation of components in the work string. The “CTT Rotating Tool” is designed to provide up to (8) full 360 degree revolutions per cycle with rotation initiated when 50 pounds of weight is set down on the tool.

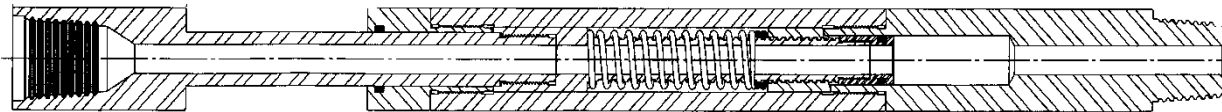


CTT

Coil Tubing Technology, Inc.

CTT Rotating Tool (Patented)

O.D. SIZE	STANDARD CONNECTION	LENGTH INCHES	BORE I.D.	ROTATIONS PER CYCLE	TEMPERATURE °F
1.688	1" MT	32"	.562	4 – 360°	450
1.750	1" MT	32"	.562	4 – 360°	450
2.125	1-1/2" MT	42"	.625	4 – 360°	450
2.875	2-3/8" PAC	42"	.812	4 – 360°	450



	1.688" "CTT Rotating Tool"	1.750" "CTT Rotating Tool"	2.125" "CTT Rotating Tool"	2.875" "CTT Rotating Tool"
Assembly Part Number	80-1688	80-1750	80-2125	80-2875
Outside Diameter	1.168"	1.750"	2.125"	2.875"
Inside Diameter	0.562"	0.562"	0.625"	0.812"
Overall Length (Maximum)	35"	35"	42"	47"
Approximate Weight (Lbs.)	25	30	45	80
Standard Tool Joint	1" AMMT Pin Down / Box Up	1" AMMT Pin Down / Box Up	1-1/2" AMMT Pin Down / Box Up	2-3/8" PAC Pin Down / Box Up
Operational				
Maximum Overpull Weight (Lbs.)	28,000	28,000	46,000	75,000
Maximum Setdown Weight (Lbs.)	28,000	28,000	36,000	45,000
Torsional Yield (Ft.-Lbs.)	3,000	3,000	4,000	5,000
Tensile Yield	64,000	68,000	76,000	105,000
Temperature Rating (F)	500	500	500	500



CTT

Coil Tubing Technology, Inc.

CTT Jet Hammer (Patented)

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.



CTT

Coil Tubing Technology, Inc.

CTT Jet Hammer (Patented)

O.D. SIZE	STANDARD CONNECTION	LENGTH INCHES	FLOW GPM/LITRE	SPEED RPM	OP. DP PSI	CYCLES PER MIN	TEMPERATURE °F
1.375	3/4" MT	22"	20 / 76	60	500	1500	450
1.69/1.75	1" MT	22"	35 / 132	60	500	1500	450
2.125	1-1/2" MT	25"	60 / 227	60	500	1500	450

	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	1.375"	1.688"	1.750"	2.125"
Bit Range	1.400 – 1.700	1.700 – 2.000	1.875 – 2.250	2.189 – 3.000
Overall Length (Maximum)	22"	22"	22"	25"
Approximate Weight (Lbs.)	10	15	18	25
Standard Tool Joint	3/4" 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
Operational				
Operating Pressure (Maximum)	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	20,000	25,000	35,000.
Tensile Yield (Lbs.)	20,000	24,000	25,000	28,000
Temperature Rating (F)	450	450	450	450
Performance at Optimum				
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



CTT

Coil Tubing Technology, Inc.

CTT Jet Motor (Patented)

Description:

The “CTT Jet Motor” is a powerful downhole rotating motor designed for use in coiled tubing drilling and workover service. The rotational torque output in foot pounds is equal to or greater than many conventional positive displacement motors on the market today.

The advantage of The “CTT Jet Motor” is the elimination of elastomers in the tool and compact length. The tool can be run with fluid, nitrogen, acids or co-mingled fluids without damaging the tool.

The “CTT Jet Motor” can be utilized to drill formation, cement plugs or clean-out work. The external rotational nozzle system can clean the tubing completely to the wall and the “CTT Jet Motor” drill bit removes obstructions all in one trip.

The “CTT Jet Motor” can be used in hot hole situations without damage to the tool as there are no rubber products in the “CTT Jet Motor” to swell and deteriorate.

Redress cost of the “CTT Jet Motor” is very minimal compared to a conventional PDM as there are no rotors or stators to replace or repair in the tool.

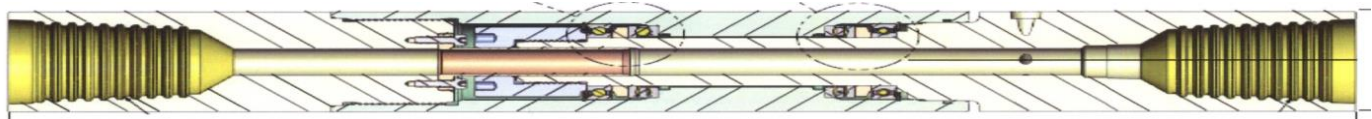


CTT

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CTT Jet Motor (Patented)

O.D. SIZE	STANDARD CONNECTION	LENGTH INCHES	OP W.O.B	FLOW GPM/LITRE	SPEED RPM	OP. DP PSI	OP. TORQUE FT/LBS.	TEMPERATURE °F
1.688	1" MT	19"	300	30 / 114	300	500	80	450
1.750	1" MT	19"	300	30 / 128	300	500	80	450
2.125	1-1/2" MT	22"	500	70 / 270	400	500	300	450
2.875	2-3/8" PAC	22"	600	90 / 341	500	600	450	450



	1.688" "CTT Jet Motor"	1.750" "CTT Jet Motor"	2.125" "CTT Jet Motor"	2.875" "CTT Jet Motor"
Assembly Part Number	70-1688	70-1750	70-2125	70-2875
Overall Length (Maximum)	21"	21"	24"	24"
Approximate Weight Lbs.	10	12	20	30
Standard Tool Joint	1" AMMT Box Up x 1" AMMT Box Down	1" AMMT Box Up x 1" AMMT Box Down	1-1/2" AMMT Box Up x 1-1/2" AMMT Box Down	2-3/8" PAC Box Up x 2-3/8" PAC Box Down
Operational				
Operating Pressure (Maximum)	500 PSI	500 PSI	750 PSI	1200 PSI
MAX OVERPULL (Lbs.)	20,000	20,000	25,000	40,000
Flow Rate (Optimum)	32 GPM/250 SCFM	32 GPM/250 SCFM	70 GPM/500 SCFM	120 GPM/700 SCFM
Torsional Yield (Ft-Lbs.)	5,000	7,000	10,000	15,000
Tensile Yield (Lbs.)	41,000	52,000	60,000	68,000
Temperature Rating (F)	450	450	450	450
Performance at Optimum				
Nozzle Diameter/Jet Impact Force Per Nozzle (Lbs.)	.188/52	.188/52	.188/52	.188/200
Wt./RPM	500 Lbs. @ 600 RPM	500 Lbs. @ 600 RPM	1500 Lbs. @ 600 RPM	1500 Lbs. @ 600 RPM
MAX ALLOWABLE WT. ON BIT (Lbs.)	1,000	1,000	2500	3000
Torque Output/Stall	90 Ft. Lbs./ 120 Ft. Lbs. Stall	90 Ft. Lbs./ 120 Ft. Lbs. Stall	300 Ft. Lbs./ 450 Ft. Lbs. Stall	450 Ft. Lbs./ 600 Ft. Lbs. Stall



C T T

Coil Tubing Technology, Inc.

CTT Jet Nozzle

CTT Jet Nozzle Operating GPM & Jet Velocity Output									
Tool O.D.	Connection	Standard Rate	Standard Nozzle Setup			Pressure Drop Across Nozzle (Feet per Second Jet Velocity)			
					500 PSI	1000 PSI	1500 PSI	2000 PSI	2500 PSI
1.25"	3/4" AMMT Box Up								
1.50"	1" AMMT Box Up	38 GPM	Cutting Head Nozzle	1/16"	266	377	453	N/A	N/A
1.75"	1" AMMT Box Up		Head Rotational Nozzle	5/64"	"	"	"		
			Backflow Nozzle	3/64"	"	"	"		
NOTE : For Greater GPM Adjust Backflow Nozzle size by 1/64" per 10 GPM Required up to 60 GPM MAX									
2.125"	1 1/2" AMMT Box	42 GPM	Cutting Head Nozzle	1/16"	266	377	453	535	595
			Head Rotational Nozzle	1/8"	"	"	"	"	"
			Backflow Nozzle	1/8"	"	"	"	"	"
NOTE : For Greater GPM Adjust Backflow Nozzle size by 1/64" per 10 GPM Required up to 70 GPM MAX									
2.875"	2 3/8" PAC Box Up	60 GPM	Cutting Head Nozzle	1/16"	266	377	453	535	595
			Head Rotational Nozzle	1/8"	"	"	"	"	"
			Backflow Nozzle	1/8"	"	"	"	"	"
NOTE : For Greater GPM Adjust Backflow Nozzle size by 1/64" per 10 GPM Required up to 120 GPM MAX									



CTT
Coil Tubing Technology, Inc.

approved for rental at

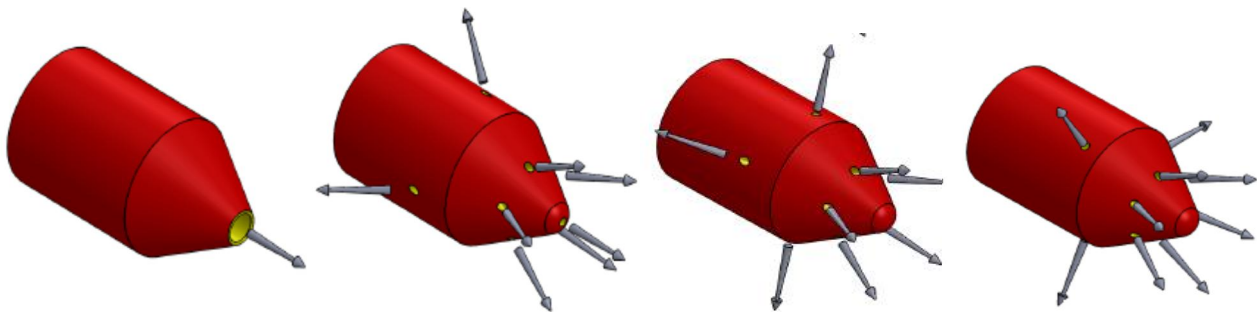
Extreme Pulse Technology has been able to implement multi-flow conditioning patterns thru a series of resonating chambers, which create dynamic high and low pressure events with high and low velocities that successfully aid in the recovery of both oil and gas during workover (cleanout) operations. The *ExP* ports of the nozzle can be oriented in multi-directional flow patterns. They are also able to be custom built to client specifications without impeding the performance.

Tool O.D.	1.33"	1.69"	2.0"	2.375"	2.875"	3.125"	3.5"
Length	9.125"	12"	12"	12"	12"	18"	18"
Min. Flow	7 GPM	21 GPM	21 GPM	21 GPM	21 GPM	42 GPM	42 GPM
Max. Flow	1.75 bbls	4 bbls	5 bbls	6 bbls	6 bbls	6 bbls	6 bbls
N2 Compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Moving Parts	No	No	No	No	No	No	No
Redress Required	No	No	No	No	No	No	No

ExP

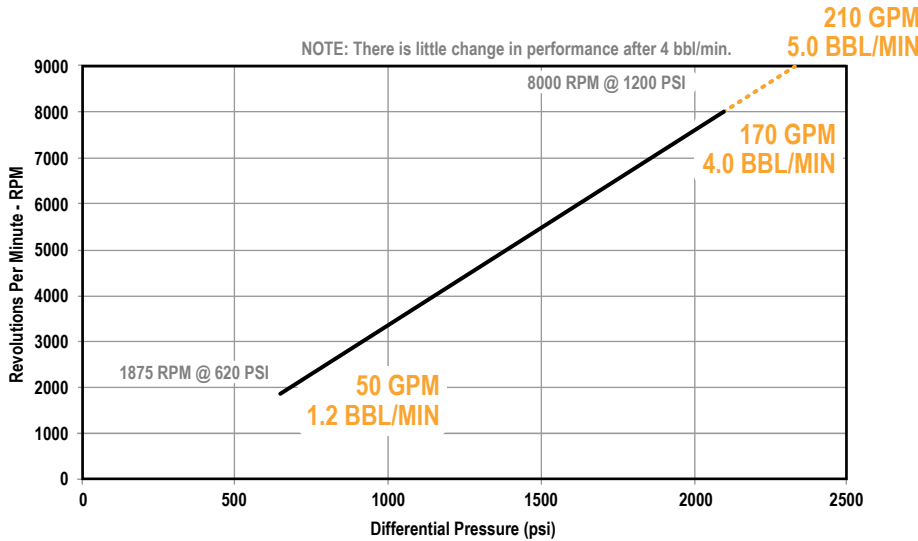
The simplistic design helps make it the most economically feasible technology in the marketplace for stimulation, acidizing, scale and solids removal. As an added value feature this technology creates turbulent flow pockets on the annulus which keep solids in suspension much longer than conventional laminar annular flow during cleanouts thru a series of dynamic high and low pressure events. The *ExP* can be utilized in Oil, Gas, and Water wells to increase production by conducting optimal cleaning of the wellbore and near wellbore regions. When utilized to clean injection, wastewater and disposal wells the *ExP* will help improve injectivity by breaking and removing debris within the near region. Contact us to custom adapt the technology to your operations.

Nozzle Port Orientation Options



TOUCAN TORNADO - 2.875"

toucandhs.com



Optional 2-7/8" head configuration



3-1/2" Standard Head pictured

SPECIFICATIONS	
Overall Length	28.46 in
Standard Head Gauge Diameters Available	2.875 and 3.5 in
Custom Head Gauge Diameters (upon request)	2.875 to 4.00 in
Top Connection	2 3/8 PAC, or other specified
Hole Size	Min. 3"
Casing Size	N/A
Flow Rate - Gallons per Minute	50 - 210 GPM
Flow Rate - Barrels per Minute	1.2 - 5.0 bbl/min
Rotational Speed	1875 - 8000 RPM
Pressure Drop	620 - 2100 psi

Operational specifications are for reference only. Actual tool performance may vary depending on a variety of downhole conditions. Performance data is subject to change without notice.

LCM Guidelines Lost Circulation Material

When operating the Tornado, certain lost circulation materials (LCM) can be used safely by following these recommended parameters:

- Particle size should be LESS than 60 – 100 MESH size or smaller.
 - Larger particle sizes or heavy concentrations of fibrous material tend to start plugging up the Tornado's internal ports that can lead to circulation problems through the Tornado reducing operating performance and potentially plugging the tool off completely.
 - LCM should be added slowly in order to avoid plugging the system.
- NOTE:** Always follow the manufacturer's instructions for mixing.
- Add material away from the pump intake. Use a pre-mix system if available.

Any issues or concerns, please contact your Toucan Downhole Solutions representative.

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DOWNHOLE SOLUTIONS



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