



Continuous Tubing Overshot

MAN-TTT-180 (R01)

Thru-Tubing Technology

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Continuous Tubing Overshot

Description

The continuous tubing overshot is used to retrieve continuous tubing strings that have been parted, stuck, and/or abandoned in the wellbore. The Continuous Tubing Overshot is available for externally engaging continuous tubing strings with 1/4, 3/8, 3/4, 1, 1-1/4, 1-1/2, 1-3/4, 2 and 2-3/8 inch diameters. The overshot consists of four major parts: the Top Sub, Bowl, Grapple and the Guide. A Pack Off sub can also be run with the overshot to permit circulation through the tubing string being fished.

Operation

The overshot is attached to the desired fishing string and then lowered to the top of the fish, while maintaining circulation and washing over to the required depth. Lifting the work string will cause the grapple to bite on the coil tubing. The fish parts a few inches to several feet below the overshot, if the fish cannot be pulled out of the hole. Retrieval of the tubing is now possible. If all the tubing is not retrieved, the overshot should be disassembled and a visual inspection made. If any parts are damaged, replace them and repeat the process until all of the tubing is retrieved. The coil tubing will be parted where the overshot will not have a problem re-latching. The overshot can not be released once the fish has been latched.



Note: Unless otherwise indicated, all the strength figures given in this manual, are the result of calculations based on the yield strength of the material used in the manufacture of this product. These strength calculations are considered accurate within plus or minus 20% and are to be used only as a guide. They do not constitute a guarantee, actual or implied. In use, appropriate allowance should be made as a safety factor.

Continuous Tubing Overshot

Application Chart

Product	OD of Tool (inches)	ID of Tool (inches)	Tool Length (inches)	Top Connection (inches)	Catch Range Min/Max (inches)
TT0180-186B*	1.858	1.31	24.63	1.250 CS	.250 - 1.250
TT0180-206B*	2.063	1.31	29.38	1.250 CS	.250 - 1.250
TT0180-209B*	2.093	1.31	29.38	1.500 CS	.250 - 1.250
TT0180-225B	2.25	1.34	31.38	1.500 CS	.250 - 1.250
TT0180-230B	2.295	1.56	24.50	2.0625 CS	1.250 - 1.500
TTT0180-244B	2.438	1.31	29.36	1.500 CS	.250 - 1.250
TT0180-263B	2.625	1.63	29.45	2.0625 CS	1.00 - 1.500
TT0180-266B	2.655	1.63	29.50	2.375 CS	1.00 - 1.500
TT0180-270B	2.7	1.63	29.50	2.375 CS	1.00 - 1.500
TT0180-270C*	2.7	1.81	29.50	2.375 CS	1.00 - 1.750
TT0180-313B	3.125	1.88	34.00	2.375 CS	1.00 - 1.750
TT0180-317C*	3.166	2.09	29.40	2.875 CS	1.00 - 2.00
TT0180-338B	3.375	2.13	31.67	2.875 CS	1.00 - 2.00
TT0180-363B*	3.625	2.50	32.25	as per request	1.500 - 2.375

*** Denotes Slim Hole Overshot**

TT0180-186B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-186B-001
2	1	Bowl	TT0180-186B-002
3	1	Guide	TT0180-186B-003
4	1	Grapple f/.25" Coil Tubing	TT0182-225AU025
	1	Grapple f/.375" Coil Tubing	TT0182-225AU038
	1	Grapple f/.75" Coil Tubing	TT0182-225AU
	1	Grapple f/1" Coil Tubing	TT0182-225A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-225B

Tool Name: 1.858 in. Series B Slim Coil Tubing Overshot

Product Code: TT0180-186B **Tool O.D.:** 1.858 in. **Tool I.D.:** 1.300 in.

Material: AISI 4340

Tool Length: 24.5 in.

Minimum Yield: 160,000 psi MY

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: Bowl Swell at 31,300 lbs is 0.006 in. and is non-permanent when grapple is removed, note this is on a New Unused Overshot bowl; bowl taper swell yield of the Bowl, 53,000 lbs.

Burst Point & Burst Pressure: N/A

Torsional Weak Point and Ft-Lbs to Yield: Top Sub and Bowl Stub Acme Connection – 1010 ft-lbs.

Recommended Make Up Torque:


1st Connection: 1-1/4 in. CS Hydril Box connection - 600 ft-lbs.

2nd Connection: Top Sub and Bowl Stub Acme Connection - 350 ft-lbs.

3rd Connection: Bowl and Guide Stub Acme Connection - 350 ft-lbs.

Continuous Tubing Overshot

TT0180-206B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-206B-001
2	1	Bowl	TT0180-206B-002
3	1	Guide	TT0180-206B-003
4	1	Grapple f/.25" Coil Tubing	TT0182-225AU025
	1	Grapple f/.375" Coil Tubing	TT0182-225AU038
	1	Grapple f/.75" Coil Tubing	TT0182-225AU
	1	Grapple f/1" Coil Tubing	TT0182-225A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-225B

Tool Name: 2.063 in. OD Slim Hole Coiled Tubing Overshot
Product Code: TT0180-206B **Tool OD:** 2.063 in. **Tool ID:** 1.312 in.
Material: AISI 4340 HT **Tool Length:** 23.5in
Minimum Yield: 140,000 psi

Strength Properties of Tool:
Minimum Yield Point & Load to Yield: Grapple Taper in Bowl, 65,000 lbs
Burst Point & Burst Pressure: N/A Pack-Off Sub should not be run below the overshot
Torsional Weak Point and Ft-Lbs to Yield: Box connection on Bowl, 800 ft-lbs

Recommended Make Up Torque:
1st Connection: Top Sub and Bowl connection - 600 ft-lbs.
2nd Connection: Bowl and Guide Connection - 600 ft-lbs.

TT0180-209B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-209B-001
2	1	Bowl	TT0180-209B-002
3	1	Guide	TT0180-209B-003
4	1	Grapple f/.25" Coil Tubing	TT0182-225AU025
	1	Grapple f/.375" Coil Tubing	TT0182-225AU038
	1	Grapple f/.75" Coil Tubing	TT0182-225AU
	1	Grapple f/1" Coil Tubing	TT0182-225A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-225B

Tool Name: 2.094 in. OD Slim Hole Coiled Tubing Overshot

Product Code: TT0180-209B **Tool OD:** 2.094 in. **Tool ID:** 1-3/8 in

Material: AISI 4140 HT **Tool Length:** 29.4 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: Grapple Taper in Bowl, 30,868 lbs

Burst Point and Burst Pressure: N/A Pack-Off should not be run below overshot.

Torsional Weak and Ft-Lbs to Yield: Box Connection on Bowl, 800 ft-lbs.

Recommended Make Up Torque:

1st Connection: Top Sub and Bowl Connection - 400 ft-lbs.

2nd Connection: Bowl and Guide Connection - 400 ft-lbs.

Continuous Tubing Overshot

TT0180-225B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-225B-001
2	1	Bowl	TT0180-225B-002
3	1	Guide	TT0180-225B-003
4	1	Grapple f/.25" Coil Tubing	TT0182-225AU025
	1	Grapple f/.375" Coil Tubing	TT0182-225AU038
	1	Grapple f/.75" Coil Tubing	TT0182-225AU
	1	Grapple f/1" Coil Tubing	TT0182-225A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-225B

Tool Name: 2.250 in. OD Coil Tubing Overshot

Product Code: TT0180-225B **Tool OD:** 2-1/4 in. **Tool ID:** 1-3/8 in.

Material: AISI 4140 HT **Tool Length:** 29.4 in. w/1-1/2 in. CS Box

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: Grapple Taper in Bowl, 60,149 lbs

Burst Point and Burst Pressure: N/A Pack-Off Sub should not be run below overshot.

Torsional Weak and Ft-Lbs to Yield: Top Sub Bowl Connection, 1,318 ft-lbs.

Recommended Make Up Torque:

1st Connection: Top Sub and Guide Connection-650 ft-lbs.

2nd Connection: Bowl and Guide Connection-650 ft-lbs.

TT0180-230B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-230B-001
2	1	Bowl	TT0180-230B-002
3	1	Guide	TT0180-230B-003
4	1	Grapple f/1 1/4" Coil Tubing	TT0182-230B
	1	Grapple f/1 1/2" Coil Tubing	TT0182-230C

Tool Name: 2.295 in. OD Slimhole CT Overshot

Product Code: TT0180-230B **Tool O.D.:** 2.295 in. **Tool I.D.:** 1.563 in.

Material: AISI 4340 HT **Tool Length:** 24.5 in.

Minimum Yield: 140,000 psi

Strength Properties of Tool:

Minimum Yield Point & Load to Yield: The thread relief of the box connection of the Bowl, 53,000 lbs; bowl taper swell of the Bowl, 99,000 lbs.

Burst Point & Burst Pressure: N/A Pack-Off Sub should not be run below overshot.

Torsional Weak Point and Ft-Lbs to Yield: 1,620 ft-lbs as a function of torsional yield of the box connection of the Bowl.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bowl Connection - 400 ft-lbs.

2nd Connection: The Bowl - Guide Connection - 340 ft-lbs.

Continuous Tubing Overshot

TT0180-244B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-244B-001
2	1	Bowl	TT0180-244B-002
3	1	Guide	TT0180-244B-003
4	1	Grapple f/.25" Coil Tubing	TT0182-225AU025
	1	Grapple f/.375" Coil Tubing	TT0182-225AU038
	1	Grapple f/.75" Coil Tubing	TT0182-225AU
	1	Grapple f/1" Coil Tubing	TT0182-225A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-225B

Tool Name: 2.438 in. OD Continuous Tubing Overshot w/1-1/2 in. CS Hydril Connection

Product Code: TT0180-244B **Tool OD:** 2.438 in. **Tool ID:** 1.313 in.

Material: AISI 4140 HT 30-36 Rockwell C **Tool Length:** 29.38 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The thread relief of the box connection of the Bowl, 130,550 lbs; bowl taper swell of the Bowl, 128,350 lbs.

Burst Point and Burst Pressure: N/A Pack-Off Sub should not be run below overshot.

Torsional Weak Point and Ft-Lbs to Yield: 2,635 ft-lbs as a function of torsional yield of the box connection of the Bowl.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bowl Connection - 750 ft-lbs.

2nd Connection: The Bowl - Guide Connection - 750 ft-lbs.

TT0180-263B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-263B-001
2	1	Bowl	TT0180-263B-002
3	1	Guide	TT0180-263B-003
4	1	Grapple f/1" Coil Tubing	TT0182-263A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-263B
	1	Grapple f/1 1/2" Coil Tubing	TT0182-263C

Tool Name: 2.625 in. OD Continuous Tubing Overshot w/2-1/16 in. CS Hydril Connection

Product Code: TT0180-263B

Tool OD: 2.625 in. **Tool ID:** 1.63 in.

Material: AISI 4140 HT 30-36 Rockwell C

Tool Length: 29.50 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The thread relief of the box connection of the Bowl, 130,750 lbs; bowl taper swell of the Bowl, 118,500 lbs.

Burst Point and Burst Pressure: N/A Pack-Off Sub should not be run below overshot.

Torsional Weak Point and Ft-Lbs to Yield: 2,904 ft-lbs as a function of torsional yield of the box connection of the Bowl.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bowl Connection - 1010 ft-lbs.

2nd Connection: The Bowl - Guide Connection - 1010 ft-lbs.

Continuous Tubing Overshot

TT0180-266B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-266B-001
2	1	Bowl	TT0180-266B-002
3	1	Guide	TT0180-266B-003
4	1	Grapple f/1" Coil Tubing	TT0182-263A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-263B
	1	Grapple f/1 1/2" Coil Tubing	TT0182-263C

Tool Name: 2.655 in. OD Continuous Tubing Overshot w/2-3/8 in. CS Hydril Connection

Product Code: TT0180-266B **Tool OD:** 2.655 in. **Tool ID:** 1.63 in.

Material: AISI 4140 HT 30-36 Rockwell C **Tool Length:** 29.50 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The thread relief of the box connection of the Bowl, 143,190 lbs; bowl taper swell of the Bowl, 123,250 lbs.

Burst Point and Burst Pressure: N/A Pack-Off Sub should not be run below overshot.

Torsional Weak Point and Ft-Lbs to Yield: 3,185 ft-lbs as a function of torsional yield of the box connection of the Bowl.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bowl Connection - 1015 ft-lbs.

2nd Connection: The Bowl - Guide Connection - 1015 ft-lbs.

TT0180-270C BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-270C-001
2	1	Bowl	TT0180-270C-002
3	1	Guide	TT0180-270C-003
4	1	Grapple f/1" Coil Tubing	TT0182-313A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-313B
	1	Grapple f/1 1/2" Coil Tubing	TT0182-313C
	1	Grapple f/1 3/4" Coil Tubing	TT0182-313D

Tool Name: 2.700 in. OD Slimhole CT Overshot

Product Code: TT0180-270C **Tool OD:** 2.700 in. **Tool ID:** 1.813 in.

Material: AISI 4140 / 4340 **Tool Length:** 29.6 in. w/ 2-3/8 in, CS Conn.

Minimum Yield: 100,000 psi; 140,000 psi for the Bowl

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The fillet near the pin connection of the Top Sub, 62,000 lbs; bowl taper swell of the Bowl, 124,000 lbs.

Burst Point & Burst Pressure: N/A Pack-Off Sub should not be run below overshot.

Torsional Weak Point and Ft-Lbs to Yield: 2250 ft-lbs as a function of torsional yield of the box connection of the Bowl.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bowl connection - 675 ft-lbs.

2nd Connection: The Bowl - Guide connection - 710 ft-lbs.

Continuous Tubing Overshot

TT0180-313B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-313B-001
2	1	Bowl	TT0180-313B-002
3	1	Guide	TT0180-313B-003
4	1	Grapple f/1" Coil Tubing	TT0182-313A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-313B
	1	Grapple f/1 1/2" Coil Tubing	TT0182-313C
	1	Grapple f/1 3/4" Coil Tubing	TT0182-313D

Tool Name: 3.125 in. OD CT Overshot

Product Code: TT0180-313B **Tool OD:** 3.125 in. **Tool ID:** 1.88 in.

Material: AISI 4140 HT **Tool Length:** 34.0 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The thread recess of the box connection of the Bowl, 84,000 lbs; bowl taper swell of the Bowl, 172,000 lbs.

Burst Point and Burst Pressure: N/A Pack-Off Sub should not be run below overshot.

Torsional Weak Point and Ft-Lbs to Yield: 2,950 ft-lbs as a function of torsional yield of the box connection of the Bowl.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bowl connection - 885 ft-lbs.

2nd Connection: The Bowl - Guide connection - 885 ft-lbs.

TT0180-317C BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-317C-001
2	1	Bowl	TT0180-317C-002
3	1	Guide	TT0180-317C-003
4	1	Grapple f/1" Coil Tubing	TT0182-338A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-338B
	1	Grapple f/1 1/2" Coil Tubing	TT0182-338C
	1	Grapple f/1 3/4" Coil Tubing	TT0182-338D
	1	Grapple f/2" Coil Tubing	TT0182-338E

Tool Name: 3.166 in. OD Slimhole CT Overshot

Product Code: TT0180-317C **Tool OD:** 3.166 in. **Tool ID:** 2.094 in.

Material: AISI 4140 / 4340 **Tool Length:** 30 in. w/ 2-7/8 in. CS

Minimum Yield: 100,000 psi; 140,000 psi for the Bowl

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The fillet near the pin connection of the Top Sub, 70,100 lbs; bowl taper swell of the Bowl, 215,000 lbs.

Burst Point and Burst Pressure: N/A Pack-Off Sub should not be run below overshot.

Torsional Weak Point and Ft-Lbs to Yield: 3,820 ft-lbs as a function of torsional yield of the pin connection of the Top Sub.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bowl connection - 1,140 ft-lbs.

2nd Connection: The Bowl - Guide connection - 1,040 ft-lbs.

Continuous Tubing Overshot

TT0180-338B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-338B-001
2	1	Bowl	TT0180-338B-002
3	1	Guide	TT0180-338B-003
4	1	Grapple f/1" Coil Tubing	TT0182-338A
	1	Grapple f/1 1/4" Coil Tubing	TT0182-338B
	1	Grapple f/1 1/2" Coil Tubing	TT0182-338C
	1	Grapple f/1 3/4" Coil Tubing	TT0182-338D
	1	Grapple f/1/2" Coil Tubing	TT0182-338E

Tool Name: 3.375 in. OD CT Overshot

Product Code: TT0180-338B **Tool OD:** 3.375 in. **Tool ID:** 2.125 in.

Material: AISI 4140 HT **Tool Length:** 34.8 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The fillet near the pin connection of the Top Sub, 91,100 lbs; bowl taper swell of the Bowl, 181,000 lbs.

Burst Point and Burst Pressure: N/A Pack-Off Sub should not be run below overshot.

Torsional Weak Point and Ft-Lbs to Yield: 4,560 ft-lbs as a function of torsional yield of the box connection of the Bowl.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bowl connection - 1,370 ft-lbs.

2nd Connection: The Bowl - Guide connection - 1,070 ft-lbs.

TT0180-363B BOM, Schematic and Tool Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0180-363B-001
2	1	Bowl	TT0180-363B-002
3	1	Guide	TT0180-363B-003
4	1	Grapple f/1 1/2" Coil Tubing	TT0182-363C
	1	Grapple f/1 3/4" Coil Tubing	TT0182-363D
	1	Grapple f/2" Coil Tubing	TT0182-363E
	1	Grapple f/2 3/8" Coil Tubing	TT0182-363F

Tool Name: 3.625 in. OD Series B Coiled Tubing Overshot

Product Code: TT0180-363B **Tool OD:** 3.625 in. **Tool ID:** 2.500 in.

Material: AISI 4340 HT 38-42 Rc **Tool Length:** 36.25 in.

Minimum Yield: 140,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: Swelling of the Bowl 158,000 Lbs. in tension.

Burst Point and Burst Pressure: N/A

Torsional Weak Point and Ft-Lbs to Yield: Stub Acme Box Connection on Bowl at 4,828 ft-lbs of Torque.

Recommended Make Up Torque:

1st Connection: Top Sub and Bottom Sub Connection - 1,000 ft-lbs.

Continuous Tubing Overshot

1.0 Pre-Assembly



Warning: *Make sure all tool parts and components have been thoroughly cleaned or serious damage and/or injury could occur!*



Note: *Verify that the correct O-Ring redress kit and quantities are used as specified on the Bill Of Materials (for example, 5 each etc....). Lay out all redress kit components on a clean surface.*



Note: *Make sure to lubricate all O-Rings and threaded surfaces.*



Note: *Visually inspect all parts for damage or wear. Thread parts together without the O-rings to check fit. Repair or replace damaged parts.*



Caution: *Always file wrench marks or burrs and clean off debris!*

2.0 Assembly

2.1 Grease the entire ID of the Guide (item #3), then put in a vise.

2.2 Grease the entire ID of the Bowl (item #2), then thread into the Guide. Make wrench tight.

2.3 First grease the OD fingers of the appropriate sized Grapple (item #4), then insert it, fingers down, into the Bowl. Push in until it is past the ID threads of the Bowl.

2.4 Grease the entire ID of the Top Sub (item #1) and then thread into the Bowl. Make wrench tight.

Continuous Tubing Overshot

3.0 Disassembly

3.1 Place the tool in a vise, in the middle of the Bowl (item #2).

3.2 Remove the Top Sub (item #1) from the Bowl.

3.3 Take the assembly out of the vise and drop (box end first) on a wood block to remove the Grapple (item #4).

3.4 Place the assembly back in the vise on the Guide (item #3) and then remove the Bowl.

3.5 Finally remove the Guide and clean all parts.



Note: Remove and discard all O-Rings. Replace O-Rings after each use. Thoroughly clean tool parts in a cleaner approved by state and/or local laws.



Note: Visually inspect tool for swelling after each use. Damaged or swelled components must be replaced.



Note: It is recommended that a Magnetic Particle Inspection (MPI) be completed on all components after each job.