



860 Tapping Machine

Sizes: 3" through 20"



T. D. Williamson, Inc.

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■ 860 Tapping Machine

Description

Tapping machines are used for making connections to pipelines, tanks, and plant piping without shutdown and to make hot taps in preparation for plugging machine application.

The 860 Tapping Machine is hydraulically operated and is used for making pipe and tank taps from 3" to 20" (DN 80 to DN 500). It includes an electric start, diesel power unit. Its maximum working pressure is 1,480 psi (100 bar) at 100°F (38°C). Its operating temperature is -20°F (-9°C) to 700°F (371°C) at 700 psi (48 bar) for intermittent service. Its maximum continuous rating is 350°F (177°C) at 1,025 psi (48 bar).

This model features a split frame for lower maintenance costs and ease of packing replacement.

Features

The basic machine includes:

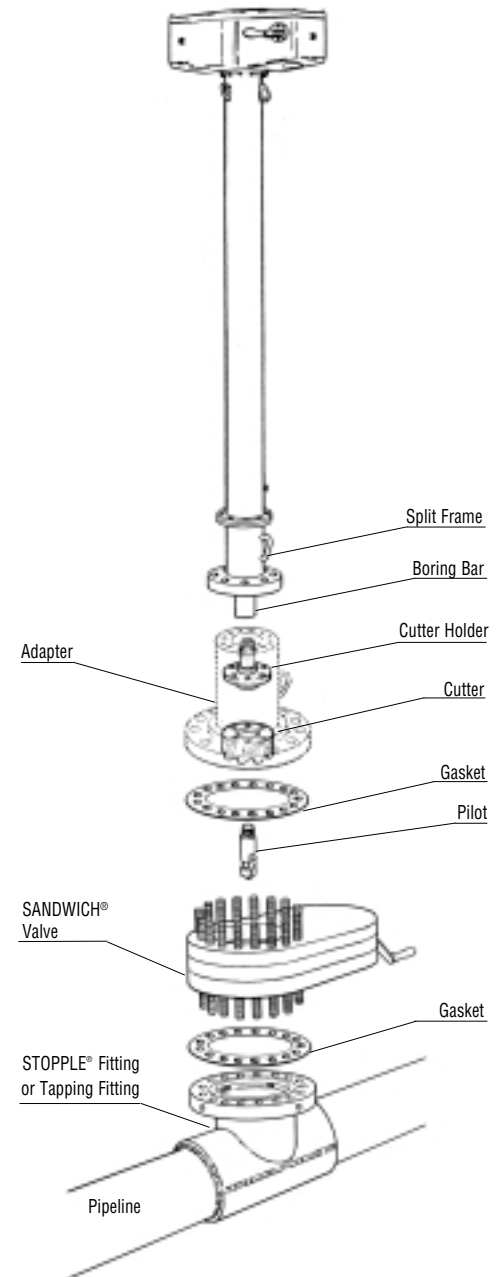
- Lower-in crank
- Measuring rod
- Retainer rod pusher
- Ring gasket
- Bleeder valve and nipple
- Motor adapter
- Set of bolts and nuts
- LOCK-O-RING® bypass gauge
- Convenient storage with tapping machine atop power unit
- Speed control without changing power unit RPM

ISO 9001 Certified

Toll Free

1-888-TDWmSon (839-6766)

■ Typical Tapping Setup





T. D. Williamson, Inc.

Dimensions and Part Numbers

860 Tapping Machine

Operating Specifications

Boring Bar Travel	66" (1,676 mm)
Tank Taps*	3" through 12" (80-300 mm)
Pipe Taps*	3" through 20" (80-500 mm)
Max. Operating Pressure	1,480 psi (100 bar) at 100°F (38°C)
Max. Operating Temperature	700°F (371°C) at 700 psi (48 bar)**
Power	Hydraulic
Feed Rate	.005" (.127 mm) per revolution
Lower-In Crank	4-1/2 turns per inch (5.6 mm per turn)
Length without measuring rod	88-1/2" (2,248 mm)
Length with measuring rod	158-1/2" (4,026 mm)
Meets NACE specification	MR0175-93

* See note 5 in "Recommended Power Options" Chart.

** For intermittent service only. Its maximum continuous rating is 350°F (177°C) at 1,025 psi (48 bar).

Hydraulic Operation Model

Standard Feed (.005"/Revolution)

	Lbs.	Kg.	Part Number
Total Package	2150	977	05-2362-0000
Tapping Machine	500	227	05-2361-0000
Hydraulic Power Unit and 50' Hose w/Oil			
Electric Start/Diesel	1650	750	05-2360-0000

860 Tapping Machine

Standard Adapters for Gate Valves

		ASME Class 150 RF Flange			ASME Class 300 RF Flange			ASME Class 600 RF Flange		
Inches	mm	Lbs.	Kg.	Part Number	Lbs.	Kg.	Part Number	Lbs.	Kg.	Part Number
3	80	54	24	06-6102-0003	55	25	06-6103-0003	57	26	06-6105-0003
4	100	57	26	06-6102-0004*	65	29	06-6103-0004	80	36	06-5091-0004
6	150	70	32	06-5088-0006*	95	43	06-6103-0006	146	66	06-5091-0006
8	200	85	39	06-6102-0008*	100	45	06-6103-0008	150	68	06-6105-0008
10	250	115	42	06-6102-0010*	155	70	06-6103-0010	200	91	06-6105-0010
12	300	170	77	06-6102-0012*	215	98	06-6103-0012	315	143	06-6105-0012
14	350	191	87	06-6102-0014	227	103	06-6103-0014	359	163	06-6105-0014
16	400	300	136	06-6102-0016	350	160	06-6103-0016	460	210	06-6105-0016

* Will work on SHORTCUTT® Valves, Bulletin 2010.000.00

Consult the factory for 18" and 20" adapters.

Adapters for SANDWICH® Valves and Ball Valves

		ASME Class 300 RF Flange			ASME Class 600 RF Flange		
Inches	mm	Lbs.	Kg.	Part Number	Lbs.	Kg.	Part Number
4	100	65	29	06-6103-0004	76	34	06-5091-0004
6	150	95	43	06-6103-0006	130	59	06-5091-0006
8	200	100	45	06-5089-0008	265	91	06-5091-0008
10	250	155	70	06-5089-0010	265	120	06-5091-0010
12	250	215	97	06-5089-0012	384	174	06-5091-0012
14	300	315	143	06-5089-0014	510	231	06-5091-0014
16	350	415	188	06-5089-0016	580	262	06-5091-0016

Consult the factory for 18" and 20" adapters.

Cutter Holders & LOCK-O-RING® Plug Holders

		Cutter Holders			LOCK-O-RING® Plug Holders		
Inches	mm	Lbs.	Kg.	Part Number	Lbs.	Kg.	Part Number
3 & 4	80 & 100	2.5	1	05-0054-0001	3.5	2	05-0075-0006
6-12	150-300	8	4	05-0054-0002	3.5	2	05-0075-0006
14-20	350-400	7	3	05-1043-0001	10	4.5	05-1044-0000

■ Split Frame Feature

The frame assembly is split at the lower end, so that the lower section can be unbolted and removed over the drive tube and boring bar and the packing replaced.





860 Tapping Machine

Standard Cutters & Pilot Drills

Nominal Tap Size		Actual Size		Cutters			Pilot Drills			Spare U-Rods
Inches	mm	Inches	mm	Wt./Lbs.	Wt./Kg.	Part Number	Wt./Lbs.	Wt./Kg.	Part Number	Part Number
4	100	3-7/16	87.3	2	0.9	05-0328-0004	1/2	0.2	05-0293-0008	00-1424-0012
6	150	5-15/32	138.9	5-3/4	3	05-0328-0006	2	0.9	05-0293-0002	00-1424-0003
8	200	7-5/16	185.8	14-1/2	7	05-0328-0008	2	0.9	05-0293-0003	00-1424-0003
10	250	9-1/2	241.3	22-1/2	10	05-0328-0010	2	0.9	05-0293-0004	00-1424-0003
12	300	11-1/2	292.1	36	16	05-0328-0012	2-1/2	1.0	05-0293-0005	00-1424-0008
14	350	12-3/4	323.9	42	19	05-0389-0014	5-1/2	2.5	05-0293-0006	00-1424-0008
16	400	14-5/8	371.5	61	28	05-0389-0016	6	2.7	05-0293-0007	00-1424-0008
18	450	15-1/16	383	53-1/2	24	05-0388-0016	6	2.7	05-0294-0003	00-1424-0008
20	500	17	432	84	38	05-0388-0018	6-1/2	3	05-0294-0004	00-1424-0008

SHORTSTOPP® Cutters & Pilot Drills

4	100	3-7/8	98.4	3-1/4	1	05-0330-0004	1/2	0.2	05-0293-0008	00-1424-0012
6	150	5-7/8	149.2	8-3/4	3	05-0330-0006	2	0.9	05-0293-0002	00-1424-0003
8	200	7-3/4	196.9	20	9	05-0330-0008	2	0.9	05-0293-0003	00-1424-0003
10	250	9-3/4	247.7	23	10	05-0330-0010	2	0.9	05-0293-0004	00-1424-0003
12	300	11-3/4	298.5	40	18	05-0330-0012	2-1/2	1.0	05-0293-0005	00-1424-0003

STOPPLE® Cutters & Pilot Drills

4	100	3-15/16	100	3-1/2	2	05-0329-0004	1/2	0.2	05-0293-0008	00-1424-0012
6	150	5-15/16	150.8	9	4	05-0329-0006	2	0.9	05-0293-0002	00-1424-0003
8	200	7-7/8	200	16	7	05-0329-0008	2	.09	05-0293-0003	00-1424-0003
10	250	9-7/8	200.8	27	12	05-0329-0010	2	0.9	05-0293-0004	00-1424-0003
12	300	11-13/16	300.1	40-1/2	18	05-0329-0012	2-1/2	1	05-0293-0005	00-1424-0008
14	350	13-1/16	331.8	49	22	05-0388-0014	5-1/2	2.5	05-0293-0006	00-1424-0008
16	400	15-1/16	382.6	64	29	05-0388-0016	6	2.7	05-0293-0007	00-1424-0008
18	450	17	432	84	38	05-0388-0018	6-1/2	3	05-0294-0004	00-1424-0008
20	500	19	483	98	45	05-0388-0020	7-1/2	3	05-0294-0005	00-1424-0008



860 Tapping Machine

Recommended Power Options for Tapping Size On Size

Feed Rate (0.005"/REV) HYD	Cutter Size									
	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
	A	A	A	A	A	A	A	A	A	A
	B	B	B	B	B	B	B			
	C	C	C	C	C	C	C			
	D	D	D	D	D	D	D			
	E	E	E	E	E	E	E			
	F	F	F	F	F	F				

Notes

- The following letters represent:
 - A = Carbon steel pipe SMYS (Specified Minimum Yield Strength) 30,000 to 50,000 psi, maximum tensile strength of 70,000 psi.
 - B = Carbon steel pipe SMYS 50,000 to 70,000 psi, maximum tensile strength of 90,000 psi.
 - C = Cast iron pipe. Cutting characteristics vary widely; hard to predict.
 - D = Chrome-moly, high temperature, steel pipe.
 - E = 300 series stainless steel pipe.
 - F = Flat plate cuts using special cutters on the materials listed above (refer to Notes 3 and 4). Pilot drill must be through before cutter tooth engages material.
- The table (above) is based on the latest TDW designs and past experience. The data should be used as a guideline. There have been, and will be, conditions which will not strictly follow the guidelines.
- Special cutters are available for flat plates, stainless steel pipe, cast iron pipe and other special conditions.
- When tapping a larger pipe or tank, the cutter will sometimes go through the flat-plate condition. For example, all teeth are cutting at the same time. This is the most power-consuming condition possible and special cutters may be required. Considering cutter size, diameter of cylinder, wall thickness, different materials of construction, etc., the possibilities are infinite. The following table gives some examples of flat-plate conditions. Any pipe or tank with wall thicknesses greater than those shown will also be considered flat plate.

Cutter Size	Nom. Pipe x Wall	Nom. Pipe x Wall	Nom. Pipe x Wall
3"	4" x .359"	6" x .232"	8" x .176"
4"	6" x .481"	8" x .357"	10" x .282"
6"	10" x .748"	12" x .616"	14" x .556"
8"	18" x .776"	20" x .692"	24" x .571"
10"	24" x .980"	30" x .772"	48" x .475"
12"	36" x .943"	48" x .699"	60" x .556"
14"	48" x .862"	60" x .685"	72" x .569"
16"	56" x .980"	60" x .913"	72" x .757"