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G3 TOOLING

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HSSE-V3 ANSI SHANK Yellow Ring

Yellow Ring HSSE-V3 Steels and Other Materials Up to 35HRC

For Tough Materials including:

- HIGH CARBON STEEL
- HIGH ALLOY
- TITANIUM
- ALUMINUM

Materials Main Group	Materials Sub-Group	Condition	Hardness (HRC)	Cutting Speed (FPM)
Tool Steels	01, A-2, D-2, H-13, P-20	Annealed	<35	15-25
Medium Carbon	1030, 1035, 1038, 1040, 1045, 1050	Normalized	<28	20-40
Alloyed High Carbon	1065, 1070, 1080, 1090, 1095, 1561,1572	Normalized	<32	20-30
High Strength	4140, 4340	Normalized	<32	20-30
Titanium	Commercially Pure	Annealed	<32	15-30
Stainless Steel		Annealed	<29	20-30
Aluminum	Cast, Wrought	–	–	30-90

HSSE-V3 ANSI SHANK Orange Ring

Orange Ring HSSE-V3 for Stainless Steel and Other Materials

For STAINLESS STEEL as well as:

- LOW CARBON STEELS
- MEDIUM CARBON STEELS
- ALLOYED HIGH CARBON

Materials Main Group	Materials Sub-Group	Condition	Hardness (HRC)	Cutting Speed (FPM)
Stainless Steel	200 Series	Annealed	<28	20-35
	300 Series, 17-4 PH, 15-5, A286	Annealed	<28	20-35
	400 Series	Annealed	<29	20-35
	400 Series	Hardened	35-42	15-20
	17-4PH, 15-5, A286	Hardened	35-42	15-20
Low Carbon Steels	1010, 1018	Normalized	<20	25-50
Alloyed High Carbon	1050, 1065, 1070, 1080, 1090, 1095, 1561, 1572	Normalized	<25	20-30
Beryllium			<25	20-30

HSSE-V3 ANSI SHANK Green Series

Green Series HSSE-V3 for Aluminum and Other Materials

For ALUMINUM:

- PURE/LOW
- DIE CAST

Materials Main Group	Materials Sub-Group	Condition	Hardness (HRC)	Cutting Speed (FPM)
Steels	Sheet, Low/Medium Carbon, Stainless Steel	Hardened	<20	20-50
Aluminum	Pure/Low	–	–	30-60
Aluminum	Die Cast	–	–	30-60

Yellow Ring HSSE-V3 Spiral Point Taps — Black Oxide Finish

HSSE-V3% Vanadium

- Superior performance in hardened tool steels such as 4140, 4340, H13, D2
- Up to 35HRC

Designed for high-speed tapping applications. Developed to withstand the high stress and high heat associated with high-speed CNC production tapping. Features a unique free-cutting design with a special tempering and geometry which contributes to extra tool life.

HSSE-V3 | BLACK OXIDE | HOLE TYPE

Inch

• 4.5 Pitch lead (Intermediate)

Tap	No. Flutes	Overall Length (in.)	Thread Length (in.)	Black Oxide Code No.	Black Oxide Code No.	Black Oxide Code No.
2-56	2	1-3/4	0.433	122550	-	-
3-48	2	1-13/16	0.512	122552	-	-
4-40	2	1-7/8	0.433	123296	-	-
4-40	2	1-7/8	0.433	-	122554	-
6-32	3	2	0.512	-	123300	-
6-40	3	2	0.512	-	123334	-
8-32	3	2-1/8	0.512	-	123302	-
10-24	3	2-3/8	0.512	-	123304	-
10-32	3	2-3/8	0.512	-	123338	-
12-24	3	2-3/8	0.512	-	123306	-
1/4-20	3	2-1/2	0.630	-	123308	-
1/4-28	3	2-1/2	0.630	-	123342	-
5/16-18	3	2-23/32	0.748	-	123310	-
5/16-24	3	2-23/32	0.748	-	123344	-
3/8-16	3	2-15/16	0.748	-	123312	-
3/8-24	3	2-15/16	0.748	-	123346	-
7/16-14	3	3-5/32	0.866	-	123314	-
7/16-20	3	3-5/32	0.866	-	123348	-
1/2-13	3	3-3/8	0.945	-	123316	-
1/2-20	3	3-3/8	0.945	-	123350	-
5/8-11	3	3-13/16	1.102	-	123318	-
5/8-18	3	3-13/16	1.102	-	123352	-
3/4-10	3	4-1/4	1.220	-	123320	-
3/4-16	3	4-1/4	1.220	-	123353	-
7/8-9	3	4-11/16	1.339	-	-	123321
7/8-14	3	4-11/16	1.339	-	-	123359
1-8	4	5-1/8	1.496	-	-	123323
1-12	4	5-1/8	1.496	-	-	123361
1-14	4	5-1/8	1.496	-	-	123360
1-1/8-7	4	5-7/16	1.732	-	-	123364
1-1/8-12	4	5-7/16	1.732	-	-	123365
1-1/4-7	4	5-3/4	1.732	-	-	123367
1-1/4-12	4	5-3/4	1.732	-	-	123369
1-3/8-6	4	6-1/16	2.000	-	-	123371
1-3/8-12	4	6-1/16	2.000	-	-	123373
1-1/2-6	4	6-3/8	2.000	-	-	123363
1-1/2-12	4	6-3/8	2.000	-	-	123375

Metric

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Black Oxide Code No.
M2 x 0.4	2	D3	1-3/4	0.433	123502
M2.5 x 0.45	2	D3	1-13/16	0.512	123504
M3 x 0.5	3	D3	1-15/16	0.433	123505
M3.5 x 0.6	3	D4	2	0.512	123506
M4 x 0.7	3	D4	2-1/8	0.512	123507
M4.5 x 0.75	3	D4	2-3/8	0.512	123508
M5 x 0.8	3	D4	2-3/8	0.512	123509
M6 x 1	3	D5	2-1/2	0.630	123510
M7 x 1	3	D5	2-23/32	0.630	123511
M8 x 1	3	D5	2-23/32	0.748	123512
M8 x 1.25	3	D5	2-23/32	0.748	123513
M10 x 1.25	3	D5	2-15/16	0.748	123516
M10 x 1.5	3	D6	2-15/16	0.748	123515
M12 x 1.25	3	D5	3-3/8	0.945	123518
M12 x 1.75	3	D6	3-3/8	0.945	123517
M14 x 1.5	3	D7	3-19/32	0.984	123519

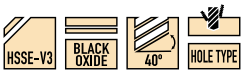
Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Black Oxide Code No.
M14 x 2	3	D6	3-19/32	0.984	123520
M16 x 1.5	3	D6	3-13/16	1.102	123522
M16 x 2	3	D7	3-13/16	1.102	123521
M18 x 1.5	4	D6	4-1/32	1.102	123523
M18 x 2.5	4	D7	4-1/32	1.102	123524
M20 x 1.5	4	D5	4-15/32	1.220	123525
M20 x 2.5	4	D6	4-15/32	1.220	123526
M22 x 1.5	4	D6	4-11/16	1.339	123527
M22 x 2.5	4	D6	4-11/16	1.339	123528
M24 x 1.5	4	D5	4-29/32	1.339	123529
M24 x 3	4	D7	4-29/32	1.339	123530
M27 x 1.5	4	D7	5-1/8	1.181	123531
M27 x 3	4	D7	5-1/8	1.181	123532
M30 x 1.5	4	D7	5-7/16	1.378	123533
M30 x 3.5	4	D7	5-7/16	1.378	123534

Yellow Ring HSSE-V3 Spiral Flute Taps — Black Oxide Finish

HSSE-V3% Vanadium

- Superior performance in hardened tool steels such as 4140, 4340, H13, D2
- Up to 35HRC

Designed for high-speed tapping applications. Developed to withstand the high stress and high heat associated with high-speed CNC production tapping. Features a unique free-cutting design with a special tempering and geometry which contributes to extra tool life.



Inch

• 2.5 Pitch lead (Bottoming)

Tap	No. Flutes	Overall Length (in.)	Thread Length (in.)	Black Oxide Code No.	Black Oxide Code No.	Black Oxide Code No.
2-56	2	1-3/4	0.433	122500	-	-
3-48	2	1-13/16	0.512	122502	-	-
4-40	2	1-7/8	0.433	123362	-	-
4-40	2	1-7/8	0.433	-	122506	-
6-32	3	2	0.512	123366	-	-
8-32	3	2-1/8	0.512	123368	-	-
10-24	3	2-3/8	0.512	-	123370	-
10-32	3	2-3/8	0.512	-	123382	-
1/4-20	3	2-1/2	0.512	-	123372	-
1/4-28	3	2-1/2	0.512	-	123384	-
5/16-18	3	2-23/32	0.630	-	123374	-
5/16-24	3	2-23/32	0.630	-	123386	-
3/8-16	3	2-15/16	0.748	-	123376	-
3/8-24	3	2-15/16	0.748	-	123388	-
7/16-14	3	3-5/32	0.748	-	123378	-
7/16-20	3	3-5/32	0.748	-	123389	-
1/2-13	3	3-3/8	0.866	-	123380	-
1/2-20	3	3-3/8	0.866	-	123392	-
5/8-11	4	3-13/16	0.945	-	123452	-
5/8-18	4	3-13/16	0.945	-	123462	-
3/4-10	4	4-1/4	1.102	-	123454	-
3/4-16	4	4-1/4	1.102	-	123464	-
7/8-9	4	4-11/16	1.220	-	-	123466
7/8-14	4	4-11/16	1.220	-	-	123468
1-8	4	5-1/8	1.339	-	-	123469
1-12	4	5-1/8	1.339	-	-	123470
1-14	4	5-1/8	1.496	-	-	123465
1-1/8-7	4	5-7/16	1.496	-	-	123471
1-1/8-12	4	5-7/16	1.496	-	-	123472
1-1/4-7	4	5-3/4	1.732	-	-	123473
1-1/4-12	4	5-3/4	1.732	-	-	123474
1-3/8-6	4	6-1/16	1.732	-	-	123475
1-3/8-12	4	6-1/16	1.732	-	-	123476
1-1/2-6	4	6-3/8	2.000	-	-	123477
1-1/2-12	4	6-3/8	2.000	-	-	123478

Metric

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Black Oxide Code No.
M3 x 0.5	3	D3	1-15/16	0.197	123650
M3.5 x 0.6	3	D4	2	0.236	123651
M4 x 0.7	3	D4	2-1/8	0.276	123652
M5 x .8	3	D4	2-3/8	0.315	123654
M6 x 1	3	D5	2-1/2	0.394	123656
M7 x 1	3	D5	2-23/32	0.394	123657
M8 x 1	3	D5	2-23/32	0.492	123659
M8 x 1.25	3	D5	2-23/32	0.492	123658
M10 x 1.25	3	D5	2-15/16	0.591	123661
M10 x 1.5	3	D6	2-15/16	0.591	123660
M12 x 1.25	3	D5	3-3/8	0.689	123663
M12 x 1.75	3	D6	3-3/8	0.689	123662
M14 x 1.5	3	D6	3-19/32	0.787	123665
M14 x 2	3	D7	3-19/32	0.787	123667

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Black Oxide Code No.
M16 x 1.5	3	D6	3-13/16	0.787	123668
M16 x 2	3	D7	3-13/16	0.787	123669
M18 x 1.5	4	D6	4-1/32	0.984	123670
M18 x 2.5	4	D7	4-1/32	0.984	123671
M20 x 1.5	4	D5	4-15/32	0.984	123672
M20 x 2.5	4	D6	4-15/32	0.984	123673
M22 x 1.5	4	D6	4-11/16	0.984	123674
M22 x 2.5	4	D6	4-11/16	0.984	123675
M24 x 1.5	4	D5	4-29/32	1.181	123676
M24 x 3	4	D7	4-29/32	1.181	123677
M27 x 1.5	4	D7	5-1/8	1.181	123678
M27 x 3	4	D7	5-1/8	1.181	123679
M30 x 1.5	4	D7	5-7/16	1.378	123680
M30 x 3.5	4	D7	5-7/16	1.378	123681

Yellow Ring HSSE-V3 UN8 DIN Length ANSI Shank Taps

HSSE-V3% Vanadium
- Superior performance in hardened tool steels such as 4140, 4340, H13, D2
- Up to 35HRC

HSSE-V3 | BLACK OXIDE | 40° | HOLE TYPE

• 2.5 Pitch lead (Bottoming)

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
1-8	4	H7	6.299	1.417	123055
1-1/8-8	4	H9	7.087	1.575	123056
1-1/4-8	4	H9	7.087	1.575	123079
1-3/8-8	5	H9	7.874	1.654	123080
1-1/2-8	5	H9	7.874	1.654	123057
1-3/4-8	6	H9	7.874	1.772	123058
2-8	6	H10	8.858	1.969	123059

Yellow Ring HSSE-V3 DIN Length ANSI Shank Spiral Point Taps

HSSE-V3% Vanadium
- Superior performance in hardened tool steels such as 4140, 4340, H13, D2
- Up to 35HRC

These taps combine ANSI shank specifications with advantage of DIN lengths for added reach.

HSSE-V3 | BLACK OXIDE | HOLE TYPE

• 4.5 Pitch lead (Intermediate)

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
10-24	3	H3	2.756	0.591	124820
1/4-20	3	H3	3.150	0.669	124822
5/16-18	3	H3	3.543	0.669	124824
3/8-16	3	H3	3.937	0.787	124826
7/16-14	3	H3	3.937	0.866	124828
1/2-13	3	H3	4.331	0.984	124830
5/8-11	3	H3	4.331	1.063	124832
3/4-10	3	H3	4.921	1.181	124834

Yellow Ring HSSE-V3 DIN Length ANSI Shank Spiral Flute Taps

HSSE-V3% Vanadium
- Superior performance in hardened tool steels such as 4140, 4340, H13, D2
- Up to 35HRC

These taps combine ANSI shank specifications with advantage of DIN lengths for added reach.

HSSE-V3 | BLACK OXIDE | 40° | HOLE TYPE

• 2.5 Pitch lead (Bottoming)

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
10-24	3	H3	2.756	0.417	124800
1/4-20	3	H3	3.150	0.500	124802
5/16-18	3	H3	3.543	0.556	124804
3/8-16	3	H3	3.937	0.625	124806
7/16-14	3	H3	3.937	0.714	124808
1/2-13	3	H3	4.331	0.769	124810
5/8-11	4	H3	4.331	0.909	124812
3/4-10	4	H3	4.921	1.000	124814

Yellow Ring 4" & 6" O.A.L. Spiral Point HSSE-V3 Taps — Inch

HSSE-V3% Vanadium
- Superior performance in hardened tool steels such as 4140, 4340, H13, D2
- Up to 35HRC

Designed for high-speed tapping applications. Developed to withstand the high stress and high heat associated with high-speed CNC production tapping. Features a unique free-cutting design with a special tempering and geometry which contributes to extra tool life. Designed for long reach applications.

HSSE-V3 | BLACK OXIDE | LONG LENGTH | HOLE TYPE

• 4.5 Pitch lead (Intermediate)

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
4-40	2	H2	4"	0.433	122700
6-32	3	H3	4"	0.512	122702
8-32	3	H3	4"	0.512	122704
10-24	3	H3	6"	0.512	122706
10-32	3	H3	6"	0.512	122708
1/4-20	3	H3	6"	0.630	122710
1/4-28	3	H3	6"	0.630	122712
5/16-18	3	H3	6"	0.748	122714
5/16-24	3	H3	6"	0.748	122716
3/8-16	3	H3	6"	0.748	122718
3/8-24	3	H3	6"	0.748	122720
7/16-14	3	H3	6"	0.866	122722
7/16-20	3	H3	6"	0.866	122724
1/2-13	3	H3	6"	0.945	122726
1/2-20	3	H3	6"	0.945	122728
5/8-11	3	H3	6"	1.102	122730
3/4-10	3	H3	6"	1.220	122731
7/8-9	3	H4	6"	1.339	122732
1-8	4	H4	6"	1.496	122733

Yellow Ring 4" & 6" O.A.L. Spiral Flute HSSE-V3 Taps — Inch

HSSE-V3% Vanadium
- Superior performance in hardened tool steels such as 4140, 4340, H13, D2
- Up to 35HRC

Designed for high-speed tapping applications. Developed to withstand the high stress and high heat associated with high-speed CNC production tapping. Features a unique free-cutting design with a special tempering and geometry which contributes to extra tool life. Designed for long reach applications.

HSSE-V3 | BLACK OXIDE | LONG LENGTH | 40° | HOLE TYPE

• 2.5 Pitch lead (Bottoming)

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
4-40	2	H2	4"	0.433	123060
6-32	3	H3	4"	0.512	123061
8-32	3	H3	4"	0.512	123062
10-24	3	H3	4"	0.512	123063
10-32	3	H3	6"	0.512	123073
1/4-20	3	H3	6"	0.630	123064
1/4-28	3	H3	6"	0.630	123074
5/16-18	3	H3	6"	0.748	123065
5/16-24	3	H3	6"	0.748	123075
3/8-16	3	H3	6"	0.748	123066
3/8-24	3	H3	6"	0.748	123076
7/16-14	3	H3	6"	0.866	123067
7/16-20	3	H3	6"	0.866	123077
1/2-13	3	H3	6"	0.945	123068
1/2-20	3	H3	6"	0.945	123078
5/8-11	4	H3	6"	1.102	123069
3/4-10	4	H3	6"	1.220	123070
7/8-9	4	H4	6"	1.339	123071
1-8	4	H4	6"	1.496	123072

Alloy / High Carbon Steels | Stainless Steel | Aluminum

Yellow Ring HSSE-V3 NPT Spiral Flute Pipe Taps

HSSE-V3% Vanadium
- Superior performance in hardened tool steels such as 4140, 4340, H13, D2
- Up to 35HRC

HSSE-V3 | BLACK OXIDE | 15° | HOLE TYPE

• 2.5 Pitch lead (Bottoming)

Tap	No. Flutes	Overall Length (in.)	Thread Length (in.)	Code No.
1/16-27	4	2-1/8	0.688	123400
1/8-27	4	2-1/8	0.750	123402
1/4-18	4	2-7/16	1.063	123404
3/8-18	4	2-9/16	1.063	123406
1/2-14	4	3-1/8	1.375	123410
3/4-14	5	3-1/4	1.375	123412
1-11-1/2	5	3-3/4	1.750	123414
1-1/4-11-1/2	5	4	1.750	123416
1-1/2-11-1/2	5	4-1/4	1.750	123418
2-11-1/2	5	4-1/2	1.750	123420

Orange Ring HSSE-V3 Spiral Flute Taps — Inch

HSSE-V3% Vanadium
- Superior performance in stainless steels
- Up to 35HRC

HSSE-V3 | BLACK OXIDE | 45° | HOLE TYPE

• 2.5 Pitch lead (Bottoming)

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
2-56	2	H2	1-3/4	0.433	124928
3-48	2	H2	1-13/16	0.512	124929
4-40	2	H2	1-7/8	0.250	124965
6-32	3	H2	2	0.313	124966
8-32	3	H2	2-1/8	0.313	124967
10-24	3	H3	2-3/8	0.417	124968
10-32	3	H3	2-3/8	0.417	124979
1/4-20	3	H3	2-1/2	0.500	124969
1/4-28	3	H3	2-1/2	0.500	124980
5/16-18	3	H3	2-23/32	0.556	124970
5/16-24	3	H3	2-23/32	0.556	124981
3/8-16	3	H3	2-15/16	0.625	124971
3/8-24	3	H3	2-15/16	0.625	124982
7/16-14	3	H3	3-5/32	0.714	124972
7/16-20	3	H3	3-5/32	0.714	124964
1/2-13	3	H3	3-3/8	0.769	124973
1/2-20	3	H3	3-3/8	0.769	124983
9/16-12	4	H3	3-19/32	0.880	124974
5/8-11	4	H3	3-13/16	0.909	124975
5/8-18	4	H3	3-13/16	0.909	124984
3/4-10	4	H3	4-1/4	1.000	124976
3/4-16	4	H3	4-1/4	1.000	124985
7/8-9	4	H4	4-11/16	1.111	124977
7/8-14	4	H4	4-11/16	1.111	124986
1-8	4	H4	5-1/8	1.250	124978
1-12	4	H4	5-1/8	1.250	124987

Orange Ring HSSE-V3 Spiral Point Taps — Inch

HSSE-V3% Vanadium
- Superior performance in stainless steels
- Up to 35HRC

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
2-56	2	H2	1-3/4	0.433	124926
3-48	2	H2	1-13/16	0.512	124927
4-40	2	H2	1-7/8	0.433	124930
6-32	3	H3	2	0.512	124931
8-32	3	H3	2-1/8	0.512	124932
10-24	3	H3	2-3/8	0.512	124933
10-32	3	H3	2-3/8	0.512	124945
1/4-20	3	H3	2-1/2	0.630	124934
1/4-28	3	H3	2-1/2	0.630	124946
5/16-18	3	H3	2-23/32	0.748	124935
5/16-24	3	H3	2-23/32	0.748	124947
3/8-16	3	H3	2-15/16	0.748	124936
3/8-24	3	H3	2-15/16	0.748	124948

Orange Ring HSSE-V3 Spiral Flute Taps — Metric

HSSE-V3% Vanadium
- Superior performance in stainless steels
- Up to 35HRC

HSSE-V3 | BLACK OXIDE | 45° | HOLE TYPE

• 2.5 Pitch lead (Bottoming)

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
M3 x 0.5	3	D3	1-15/16	0.197	124988
M4 x 0.7	3	D4	2-1/8	0.276	124989
M5 x 0.8	3	D4	2-3/8	0.315	124990
M6 x 1	3	D5	2-1/2	0.394	124991
M8 x 1.25	3	D5	2-23/32	0.492	124992
M10 x 1.25	3	D5	2-15/16	0.591	124993
M10 x 1.5	3	D6	2-15/16	0.591	124994
M12 x 1.75	3	D6	3-3/8	0.689	124995
M14 x 2	3	D7	3-19/32	0.787	124996
M16 x 2	3	D7	3-13/16	0.787	124997
M18 x 2.5	4	D7	4-1/32	0.984	124998
M20 x 2.5	4	D6	4-15/32	0.984	124999
M22 x 2.5	4	D6	4-11/16	0.984	124943
M24 x 3	4	D7	4-29/32	1.181	124944

Orange Ring HSSE-V3 Spiral Point Taps — Metric

HSSE-V3% Vanadium
- Superior performance in stainless steels
- Up to 35HRC

HSSE-V3 | BLACK OXIDE | HOLE TYPE

• 4.5 Pitch lead (Intermediate)

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
M3 x 0.5	3	D3	1-15/16	0.433	124955
M4 x 0.7	3	D4	2-1/8	0.512	124956
M5 x 0.8	3	D4	2-3/8	0.512	124957
M6 x 1	3	D5	2-1/2	0.630	124958
M8 x 1.25	3	D5	2-23/32	0.748	124959
M10 x 1.25	3	D5	2-15/16	0.748	124960
M10 x 1.5	3	D6	2-15/16	0.748	124961
M12 x 1.75	3	D6	3-3/8	0.945	124962
M14 x 2	3	D6	3-19/32	0.984	124897
M16 x 2	3	D7	3-13/16	1.102	124899
M18 x 2.5	3	D7	4-1/32	1.102	124901
M20 x 2.5	3	D6	4-1/4	1.220	124903
M22 x 2.5	3	D6	4-11/16	1.339	124905
M24 x 3	3	D7	4-29/32	1.339	124907

HSSE-V3 | BLACK OXIDE | HOLE TYPE

• 4.5 Pitch lead (Intermediate)

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
7/16-14	3	H3	3-5/32	0.866	124937
7/16-20	3	H3	3-5/32	0.866	124949
1/2-13	3	H3	3-3/8	0.945	124938
1/2-20	3	H3	3-3/8	0.945	124950
5/8-11	3	H3	3-13/16	1.102	124939
5/8-18	3	H3	3-13/16	1.102	124951
3/4-10	3	H3	4-1/4	1.220	124940
3/4-16	3	H3	4-1/4	1.220	124952
7/8-9	3	H4	4-11/16	1.339	124941
7/8-14	3	H4	4-11/16	1.339	124953
1-8	3	H4	5-1/8	1.496	124942
1-12	3	H4	5-1/8	1.496	124954

HSSE — V3 Spiral Flute Taps For Aluminum

Aluminum
High performance taps with special geometries and bright finish for Aluminum.

HSSE-V3 | BRIGHT | 45° | HOLE TYPE

- **2.5 Pitch lead (Bottoming)**

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
Inch					
4-40	2	H2	1-7/8	0.250	124400
6-32	2	H3	2	0.313	124405
8-32	2	H3	2-1/8	0.313	124415
10-24	2	H3	2-3/8	0.417	124420
10-32	2	H3	2-3/8	0.417	124425
1/4-20	2	H3	2-1/2	0.500	124430
1/4-28	2	H3	2-1/2	0.500	124440
5/16-18	2	H3	2-23/32	0.556	124445
5/16-24	2	H3	2-23/32	0.556	124455
3/8-16	2	H3	2-15/16	0.625	124465
3/8-24	2	H3	2-15/16	0.625	124475
Metric					
M3 x 0.5	2	D3	1-15/16	0.197	124600
M4 x 0.7	2	D4	2-1/8	0.276	124605
M5 x 0.8	2	D5	2-3/8	0.315	124610
M6 x 1.0	2	D5	2-1/2	0.394	124615
M8 x 1.25	2	D5	2-23/32	0.492	124620
M10 x 1.25	2	D5	2-15/16	0.591	124625
M10 x 1.5	2	D6	2-15/16	0.591	124630

HSS NPT Taps

Ground thread High Speed Steel pipe taps.

HSS | BRIGHT

Tap	No. Flutes	Overall Length (in.)	Thread Length (in.)	Code No.
1/16-27	4	2-1/8	0.688	123430
1/8-27	4	2-1/8	0.750	123432
1/4-18	4	2-7/16	1.063	123434
3/8-18	4	2-9/16	1.063	123436
1/2-14	4	3-1/8	1.375	123438
3/4-14	5	3-1/4	1.375	123440
1-11-1/2	5	3-3/4	1.750	123442
1-1/4-11-1/2	5	4	1.750	123444
1-1/2-11-1/2	7	4-1/4	1.750	123446
2-11-1/2	7	4-1/2	1.750	123448

HSS 6" OAL NPT Taps

Long series high speed steel pipe taps for longer reach applications.

HSS | BRIGHT

Tap	No. Flutes	Overall Length (in.)	Thread Length (in.)	Code No.
1/16-27	4	6"	0.688	122430
1/4-18	4	6"	1.063	122434
3/8-18	4	6"	1.063	122436
1/2-14	4	6"	1.375	122438

HSS Roll Form Taps

Extended life results from tap geometry that allows optimum cutting performance and close control over tapped hole size. Superior wear resistance, heat treated for toughness.

- Used for thread forming in copper, brass, aluminum, die castings, leaded steels, low carbon steels and stainless steels

PREMIUM HSS | BRIGHT

Tap	Thread Limits	Overall Length (in.)	Thread Length (in.)	Code No.
Inch				
4-40	H5	1-7/8	0.560	124650
6-32	H5	2	0.480	124655
8-32	H5	2-1/8	0.500	124660
10-24	H6	2-3/8	0.640	124665
10-32	H6	2-3/8	0.640	124670
1/4-20	H6	2-1/2	0.830	124675
1/4-28	H6	2-1/2	0.830	124680
5/16-18	H7	2-23/32	0.930	124685
5/16-24	H7	2-23/32	0.930	124690
3/8-16	H7	2-15/16	0.980	124695
3/8-24	H7	2-15/16	0.980	124700
1/2-13	H8	2-23/32	0.930	124705
1/2-20	H8	2-15/16	0.980	124710
Metric				
M3 x 0.5	D5	1-15/16	0.620	124750
M4 x 0.7	D6	2-1/8	0.500	124755
M5 x 0.8	D7	2-3/8	0.640	124760
M6 x 1.0	D8	2-1/2	0.830	124765
M8 x 1.25	D9	2-23/32	0.930	124770
M10 x 1.5	D10	2-15/16	0.980	124775

HSS NPT Interrupted Thread Taps

These taps are designed to produce less cutting pressure in a variety of applications.

HSS | BRIGHT

Tap	No. Flutes	Overall Length (in.)	Thread Length (in.)	Code No.
1/8-27	4	2-1/8	0.750	123700
1/4-18	4	2-7/16	1.063	123702
3/8-18	4	2-9/16	1.063	123704
1/2-14	4	3-1/8	1.375	123706
3/4-14	5	3-1/4	1.375	123708
1-11-1/2	5	3-3/4	1.750	123710

Alloy / High Carbon Steels | Stainless Steel | Aluminum

Hand Taps — Inch

High Speed Steel for hand tapping of through or blind holes in ferrous and non-ferrous alloys.

HSS BRIGHT

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Taper Code No.	Plug Code No.	Bottom Code No.
6-32	3	H3	2	0.688	123032	123034	123036
8-32	4	H3	2-1/8	0.750	123038	123040	123042
10-24	4	H3	2-3/8	0.875	123044	123046	123048
10-32	4	H3	2-3/8	0.875	123104	123106	123108
12-24	4	H3	2-3/8	0.938	123050	123052	123054
1/4-20	4	H3	2-1/2	1.000	123116	123118	123120
1/4-28	4	H3	2-1/2	1.000	123200	123202	123204
5/16-18	4	H3	2-23/32	1.125	123122	123124	123126
5/16-24	4	H3	2-23/32	1.125	123206	123208	123210
3/8-16	4	H3	2-15/16	1.250	123128	123130	123132
3/8-24	4	H3	2-15/16	1.250	123212	123214	123216
7/16-14	4	H3	3-5/32	1.438	123134	123136	123138
7/16-20	4	H3	3-5/32	1.438	123218	123220	123222
1/2-13	4	H3	3-3/8	1.656	123140	123142	123144
1/2-20	4	H3	3-3/8	1.656	123224	123226	123228
9/16-12	4	H3	3-19/32	1.656	123146	123148	123150
9/16-18	4	H3	3-19/32	1.656	123230	123232	123234
5/8-11	4	H3	3-13/16	1.813	123152	123154	123156
5/8-18	4	H3	3-13/16	1.813	123236	123238	123240
3/4-10	4	H3	4-1/4	2.000	123158	123160	123162
3/4-16	4	H3	4-1/4	2.000	123242	123244	123246
7/8-9	4	H4	4-11/16	2.219	123164	123166	123168
7/8-14	4	H4	4-11/16	2.219	123248	123250	123252
1-8	4	H4	5-1/8	2.500	123170	123172	123174
1-12	4	H4	5-1/8	2.500	123254	123256	123258
1-14	4	H4	5-1/8	2.500	123260	123262	123264
1-1/8-7	4	H4	5-7/16	2.562	123176	123178	123180
1-1/8-12	4	H4	5-7/16	2.562	123266	123268	123270
1-1/4-7	4	H4	5-3/4	2.562	123272	123274	123276
1-1/4-12	6	H4	5-3/4	2.562	123536	123538	123540
1-3/8-6	4	H4	6-1/16	3.000	123278	123280	123282
1-3/8-12	6	H4	6-1/16	3.000	123542	123544	123546
1-1/2-6	4	H4	6-3/8	3.000	123284	123286	123288
1-1/2-12	6	H4	6-3/8	3.000	123548	123550	123552

Hand Taps — Metric

High Speed Steel for hand tapping of through or blind holes in ferrous and non-ferrous alloys.

HSS BRIGHT

Tap	No. Flutes	Thread Limits	Overall Length (in.)	Thread Length (in.)	Taper Code No.	Plug Code No.	Bottom Code No.
M3 x 0.5	3	D3	1-15/16	5/8	123479	123480	123481
M4 x 0.7	3	D4	2-1/8	3/4	123496	123482	123483
M5 x 0.8	3	D4	2-3/8	7/8	123497	123484	123485
M6 x 1.0	4	D5	2-1/2	1	123498	123486	123487
M8 x 1.25	4	D5	2-23/32	1-1/8	123499	123488	123489
M10 x 1.25	4	D5	2-15/16	1-1/4	123500	123490	123491
M10 x 1.5	4	D6	2-15/16	1-1/4	123501	123492	123493
M12 x 1.75	4	D6	3-3/8	1-21/32	123503	123494	123495
M14 x 2.0	4	D7	3-19/32	1-21/32	123081	123082	123083
M16 x 2.0	4	D7	3-13/16	1-13/16	123084	123085	123086
M18 x 2.5	4	D7	4-1/32	1-13/16	123087	123088	123089
M20 x 2.5	4	D6	4-15/32	2	123090	123091	123092
M22 x 2.5	4	D6	4-11/16	2-7/32	123093	123094	123095
M24 x 3.0	4	D7	4-29/32	2-7/32	123096	123098	123097

Alloy / High Carbon Steels | Stainless Steel | Aluminum

Screw Extractors

Spiral Flute/Straight Flute

- For removing broken screws, studs, pipe fittings, etc., without damaging the threads

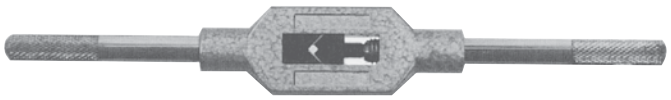
Tap	Drill Size	Screws & Bolts Sizes	Pipe Size	Spiral Flute Code No.	Straight Flute Code No.
1	5/64	3/16 - 1/4	-	110950	110962
2	7/64	1/4 - 5/16	-	110951	110963
3	5/32	5/16 - 7/16	-	110952	110964
4	7/32	7/16 - 9/16	1/8	110953	110965
5	17/64	9/16 - 3/4	1/4	110954	110966
6	13/32	3/4 - 1	3/8	110955	-
7	17/32	1 - 1-3/8	1/2	110956	-
8	13/16	1-3/8 - 1-3/4	3/4	110957	-
9	1-1/16	1-3/4 - 2-1/8	1	110958	-
10	1-9/32	2-1/8 - 2-1/2	1-1/4	110959	-
11	1-17/32	2-1/2 - 3	1-1/2	110960	-
12	1-15/16	3 - 3-1/2	2	110961	-

Screw Extractor Sets

- For removing broken screws, studs, pipe fittings, etc., without damaging the threads

Description	Spiral Flute Code No.	Straight Flute Code No.
5pc set incl. #1, 2, 3, 4, 5	110967	110969
4pc set incl. #6, 7, 8, 9	110968	-
9pc set incl. #1 through 9	110970	-

Adjustable Tap Wrench



Tool No.	For DIN Tap Size	For ANSI Tap	Square	Sq. Max	Length (mm)	Code No.
130/0	M1-8 1/16-1/4	M6 1/4	2.0-5.0	0.197	130	113717
130/1.5	M1-12 1/16-1/2 NPT-1/8	M10 3/8	2.1-8.0	0.315	176	113794
130/2	M4-12 5/32-1/2 NPT-1/8	M14 9/16	3.0-9.0	0.354	280	113725
130/3	M5-20 7/32-3/4 NPT-1/8-1/2	M18 3/4	4.9-12	0.472	380	113730
130/4	M11-27 7/16-1" NPT-1/4-3/4	M25 1"	5.5-16	0.630	505	113735
130/5L	M13-32 1/2-1-1/4 NPT-1/4-1	M30 1-1/4	7-20	0.787	700	113740

Adjustable Tap Wrench – 'T' Ratchet Type

Tool No.	For DIN Tap Size	For ANSI Tap	Length (mm)	Square	Sq. Max	Code No.
100/1	M3-10 1/8 - 3/8	M6 1/4	85	2.4-5.5	0.217	113700
100/2	M5-12 7/32 - 1/2	M12 1/2	100	4.5-8.0	0.315	113705
100/10	M3-10 1/8 - 3/8	M6 1/4	250	2.4-5.5	0.217	113710
100/20	M5-12 7/32 - 1/2	M12 1/2	300	4.5-8.0	0.315	113715

Die Stocks

Tool No.	(mm)	(in.)	Length (mm)	Code No.
13/16	20.6 x 6.35	13/16 x 1/4	200	113750
1	25.4 x 9.5	1 x 3/8	224	113755
1 1/2	38.1 x 12.7	1-1/2 x 1/2	315	113760
2	50.8 x 15.9	2 x 5/8	560	113765

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Tapping Speed Guide

Tapping Speed Guide
Proper tapping speeds are very important in obtaining efficient tapping results. There are many factors which affect proper tapping speeds, some of which are listed below.

Material Factors:
- Thermo-conductivity of the material and wall thickness as it affects heat dispersion
- Variations in carbon content of steel
- Hard spots in material
- Depth of hole to be tapped
- Percentage of full thread to be tapped

Tap Factors:
- Major diameters, pitch and lead
- Style of tap
- Width of lands
- Amount of hook or rake
- Length of chamfer
- Bottoming taps normally require slower speeds than plug chamfered taps

Materials			Speed Feet/Minute
HSSE-V3			
Stainless Steel	200 Series,	Annealed	20-35
	300 Series, 17-4, 15-5	Annealed	20-35
	AM286	Annealed	15-25
	400 Series	Annealed	20-35
Tool Steels	01, A-2, D-2, H-13, P-20	Annealed	15-25
Medium Carbon	1030, 1035, 1038, 1040, 1045, 1050	Normalized	20-40
Alloyed High Carbon	1065, 1070, 1080, 1090,1095, 1561, 1572	Normalized	20-30
High Strength	4140, 4340	Normalized	20-30
Titanium	Commercially Pure	Annealed	15-30
Aluminum	Cast, Wrought	–	30-90
ALUMINUM			
Aluminum		25-60	
Die Cast Aluminum		30-80	
ROLL FORM			
Steels	Sheet, Low/Medium Carbon/Stainless Steels	Hardened	20-50
Aluminum/Copper	Pure/Low Alloyed		30-60
Aluminum Cast, Copper Alloys	Die Cast, Zinc Die Cast, Brass, Bronze		30-80

Conversion Table, Surface Feet Per Minute to Revolutions Per Minute

Proper tapping speeds are determined best by experiment. In the table below, speeds shown should be used as a guide only, and the suggested surface feet per minute adjusted upward or downward until the best results are obtained.

Surface Feet Per Minute	20	25	30	40	50	60	70	80	90	100	110	120	130	140	150
Tap Size	**RPM**														
0	1273	1592	1910	2546	3183	3820	4456	5093	5730	6366	7003	7639	8276	8913	9549
1	1047	1308	1570	2093	2617	3140	3663	4186	4710	5233	5756	5279	6808	7326	7849
2	888	1110	1333	1777	2221	2665	3109	3554	3999	4442	4886	5330	5774	6218	6662
3	772	964	1157	1543	1929	2315	2701	3086	3472	3858	4244	4629	5015	3401	5787
4	682	853	1023	1364	1705	2046	2387	2728	3069	3411	3751	4092	4434	4775	5116
5	611	764	917	1222	1528	1833	2139	2445	2750	3056	3361	3667	3973	4278	4584
6	553	691	829	1106	1382	1658	1934	2211	2487	2764	3040	3316	3592	3869	4145
8	466	583	699	932	1165	1387	1631	1864	2097	2330	2563	2796	3029	3262	3495
10	402	502	603	804	1005	1208	1406	1607	1808	2009	2210	2411	2612	2813	3014
12	354	442	531	707	884	1061	1238	1415	1592	1769	1945	2122	2300	2476	2653
1/4	306	382	458	611	764	917	1070	1222	1375	1528	1681	1833	1986	2139	2292
5/16	245	306	367	489	611	733	856	978	1100	1222	1345	1467	1589	1711	1833
3/8	204	255	306	407	509	611	713	845	917	1019	1120	1222	1324	1426	1528
7/16	175	219	262	349	437	524	611	698	786	872	960	1048	1135	1222	1310
1/2	153	191	229	306	382	458	535	611	688	764	840	917	993	1070	1146
9/16	137	172	206	275	344	412	481	550	619	687	756	825	893	963	1031
5/8	122	153	183	244	306	367	428	489	550	611	672	733	794	856	917
3/4	102	128	153	203	255	306	357	407	458	509	560	611	662	713	764
7/8	87	109	131	175	218	262	306	350	392	437	480	524	568	611	655
1	76	96	115	153	191	230	268	306	344	382	420	458	497	535	573

Mechanical Factors:
- Type of tapping machine and holder; speeds for small diameter taps are often governed by the limitations of the machine
- Condition of tapping machine and spindle
- Type of fixture; vertical or horizontal tapping (faster speeds for vertical tapping)
- Method of feeding the tap
- Cutting fluid used and method of application
- The optimum speed for tapping is the highest speed that conditions permit, consistent with economic tool life

ANSI Tap Dimensions

Mach. Screw Size No.	Nominal Fractional Diameter (in.)	Nominal Metric Diameter (mm)	Tap Dimensions — Inches				
			Overall Length	Thread Length	Square Length	Shank Diameter	Size of Square
0	1/16	M1.6	1-5/8	5/16	3/16	0.141	0.110
1		M1.8	1-11/16	3/8	3/16	0.141	0.110
2		M2, M2.2	1-3/4	7/16	3/16	0.141	0.110
3	3/32	M2.5	1-13/16	1/2	3/16	0.141	0.110
4			1-7/8	9/16	3/16	0.141	0.110
5	1/8	M3, M3.15	1-15/16	5/8	3/16	0.141	0.110
6		M3.5	2	11/16	3/16	0.141	0.110
8	5/32	M4	2-1/8	3/4	1/4	0.168	0.131
10	3/16	M4.5, M5	2-3/8	7/8	1/4	0.194	0.152
12	7/32		2-3/8	15/16	9/32	0.220	0.165
14	1/4	M6, M6.3	2-1/2	1	5/16	0.255	0.191
	5/16	M7, M8	2-23/32	1-1/8	3/8	0.318	0.238
	3/8	M10	2-15/16	1-1/4	7/16	0.381	0.286
	7/16		3-5/32	1-7/16	13/32	0.323	0.242
	1/2	M12, 12.5	3-3/8	1-21/32	7/16	0.367	0.275
	9/16	M14	3-19/32	1-21/32	1/2	0.429	0.322
	5/8	M16	3-13/16	1-13/16	9/16	0.480	0.360
	11/16	M18	4-1/32	1-13/16	5/8	0.542	0.406
	3/4		4-1/4	2	11/16	0.590	0.442
	13/16	M20	4-15/32	2	11/16	0.652	0.489
	7/8	M22	4-11/16	2-7/32	3/4	0.697	0.523
	15/16	M24	4-29/32	2-7/32	3/4	0.760	0.570
	1	M25	5-1/8	2-1/2	13/16	0.800	0.600
	1-1/16	M27	5-1/8	2-1/2	7/8	0.895	0.672
	1-1/8		5-7/16	2-9/16	7/8	0.896	0.672
	1-3/16	M30	5-7/16	2-9/16	1	1.021	0.766
	1-1/4		5-3/4	2-9/16	1	1.021	0.766
	1-5/16	M33	5-3/4	2-9/16	1-1/16	1.108	0.831
	1-3/8		6-1/16	3	1-1/16	1.108	0.831
	1-7/16	M36	6-1/16	3	1-1/8	1.233	0.925
	1-1/2		6-3/8	3	1-1/8	1.233	0.925
	1-5/8	M39	6-11/16	3-3/16	1-1/8	1.305	0.979
	1-3/4	M42	7	3-3/16	1-1/4	1.430	1.072
	1-7/8		7-5/16	3-9/16	1-1/4	1.519	1.139
	2	M48	7-5/8	3-9/16	1-3/8	1.644	1.233

Nominal Size Inches	NPT Dimensions — Inches				
	Overall Length	Thread Length	Square Length	Shank Diameter	Size of Square
1/16	2-1/8	11/16	3/8	0.3125	0.234
1/8	2-1/8	3/4	3/8	0.3125	0.234
1/8	2-1/8	3/4	3/8	0.4375	0.328
1/4	2-7/16	1-1/16	7/16	0.5625	0.421
3/8	2-9/16	1-1/16	1/2	0.7000	0.531
1/2	3-1/8	1-3/8	5/8	0.6875	0.515
3/4	3-1/4	1-3/8	11/16	0.9063	0.679
1	3-3/4	1-3/4	13/16	1.1250	0.843
1-1/4	4	1-3/4	15/16	1.3125	0.984
1-1/2	4-1/4	1-3/4	1	1.5000	1.125
2	4-1/2	1-3/4	1-1/8	1.8750	1.406

Tap/Drill Chart — Inch

To minimize tapping problems and lengthen tool life, use the largest drill possible to produce a minor diameter that will result in the lowest percentage of full thread consistent with adequate strength. A minor diameter that provides a 55% to 65% thread is sufficient for most requirements, but in some cases a higher percentage of thread may be necessary to conform with the minor diameter limits of the thread class specified.

Tap Drill Sizes

Drills generally cut holes larger than their diameters. In the table to the right, the probable percentages of full thread were determined by the average amount oversize the various drills are expected to cut.

SUGGESTED PIPE TAP DRILL SIZES

Tap Size	Pipe Tap Drill Size	
	Taper	Straight
1/16	D	–
1/8	R	S
1/4	7/16	29/64
3/8	37/64	19/32
1/2	23/32	47/64
3/4	59/64	15/16
1	1-5/32	1-3/16
1-1/4	1-1/2	1-33/64
1-1/2	1-47/64	1-3/4
2	2-7/32	2-7/32
2-1/2	2-5/8	–
3	3-1/4	–

* Sizes given permit direct tapping without reaming the hole, but only give a full thread for the first two or three threads

† For Dryseal Straight Pipe Threads suggested drill sizes are as shown, except; 1/4" pipe, use 0.444 drill size

TAP/DRILL SELECTION

Tap	Tap Drill	Decimal Equiv. of Tap Drill	Theo. Oversize Mean (%)	Probable Oversize Mean	Probable Hole Size	% of Threads
0-80	56	0.0465	83	0.0015	0.0480	74
	3/64	0.0469	81	0.0015	0.0484	71
1-64	54	0.0550	89	0.0015	0.0565	81
	53	0.0595	67	0.0015	0.0610	59
1-72	53	0.0595	75	0.0015	0.0610	67
	1/16	0.0625	58	0.0015	0.0640	50
5-56	51	0.0670	82	0.0017	0.0687	74
	50	0.0700	69	0.0017	0.0717	62
	49	0.0730	56	0.0017	0.0747	49
2-64	50	0.0700	79	0.0017	0.0717	70
	49	0.0730	64	0.0017	0.0747	56
3-48	48	0.0760	85	0.0019	0.0779	78
	5/64	0.0781	77	0.0019	0.0800	70
	47	0.0785	76	0.0019	0.0801	69
	46	0.0810	67	0.0019	0.0829	60
	45	0.0820	61	0.0019	0.0839	56
3-56	46	0.0810	78	0.0019	0.0829	69
	45	0.0820	73	0.0019	0.0839	65
	44	0.0860	56	0.0020	0.0880	47
4-40	44	0.0860	80	0.0020	0.0880	74
	43	0.0890	71	0.0020	0.0910	65
	42	0.0935	57	0.0020	0.0955	51
	3/32	0.0938	56	0.0020	0.0958	50
4-48	42	0.0935	68	0.0020	0.0955	61
	3/32	0.0938	68	0.0020	0.0958	60
	41	0.0960	59	0.0020	0.0980	52
5-40	40	0.0980	83	0.0023	0.1003	76
	39	0.0995	79	0.0023	0.1018	71
	38	0.1015	72	0.0023	0.1038	65
	37	0.1040	65	0.0023	0.1063	58
5-44	38	0.1015	79	0.0023	0.1038	72
	37	0.1040	71	0.0023	0.1063	63
	36	0.1065	63	0.0023	0.1088	55
6-32	37	0.1040	84	0.0023	0.1063	78
	36	0.1065	78	0.0023	0.1088	72
	7/64	0.1094	70	0.0026	0.1120	64
	35	0.1100	69	0.0026	0.1126	63
	34	0.1110	67	0.0026	0.1136	60
	33	0.1130	62	0.0026	0.1156	55
6-40	34	0.1110	83	0.0026	0.1136	75
	33	0.1130	77	0.0026	0.1156	69
	32	0.1160	68	0.0026	0.1186	60
8-32	29	0.1360	69	0.0029	0.1389	62
	28	0.1405	58	0.0029	0.1434	51
8-36	29	0.1360	78	0.0029	0.1389	70
	28	0.1405	68	0.0029	0.1434	57
	9/64	0.1406	68	0.0029	0.1435	57
10-24	27	0.1440	85	0.0032	0.1472	79
	26	0.1470	79	0.0032	0.1502	74
	25	0.1495	75	0.0032	0.1527	69
	24	0.1520	70	0.0032	0.1552	64
	23	0.1540	67	0.0032	0.1572	61
	5/32	0.1563	62	0.0032	0.1595	56
	22	0.1570	61	0.0032	0.1602	55
10-32	5/32	0.1563	83	0.0032	0.1595	75
	22	0.1570	81	0.0032	0.1602	73
	21	0.1590	76	0.0032	0.1672	64
	20	0.1610	71	0.0032	0.1642	64
	19	0.1660	59	0.0032	0.1692	51
12-24	11/64	0.1719	82	0.0035	0.1754	75
	17	0.1730	79	0.0035	0.1765	73
	16	0.1770	72	0.0035	0.1805	66
	15	0.1800	67	0.0035	0.1835	60
	14	0.1820	63	0.0035	0.1855	56
12-28	16	0.1770	84	0.0035	0.1805	77
	15	0.1800	78	0.0035	0.1835	70
	14	0.1820	73	0.0038	0.1835	66
	13	0.1850	67	0.0035	0.1885	59
	3/16	0.1875	61	0.0035	0.1970	54

Tap/Drill Chart — Inch — Cont'd

Formula: Percentage of Full Thread

$$\text{Threads Per Inch} \times \frac{\text{Major Dia. of Tap - Drill Dia.}}{0.01299} = \text{Percentage of Full Thread}$$

Example: Determine percentage of full thread for 2" – 12N Tap, using 1.9219" Drill.

2.0000-1.9219 = 0.0781 ÷ 0.01299 = 6.012
Threads Per Inch = x 12
Theoretical Percentage of Full Threads = 72.144

Formula: Tap Drill Size

$$\text{Major Dia. of Tap} - \frac{0.1299 \times \text{Percent of Full Thread}}{\text{Number of threads Per inch}} = \text{Drill Size}$$

Example: Determine drill size for 2"–12N Tap, 70% Full Thread.
Basic Major Diameter of Tap = 2.0000"

0.01299 x 70 = 0.9093 ÷ 12 = 0.0758"
Theoretical Drill Size = 1.9242"
Nearest Standard Drill Size 1 59/64 = 1.9219"

	*Deep Hole Tapping	Average Commercial	Thin Sheet Stock or Stamping
FREE CUTTING MATERIAL			
Aluminum Brass Bronze Cast Iron Copper Mild Steel Tool Steel	60%-70%	65%-70%	75%-85%
FREE CUTTING MATERIAL			
Cast Steel Drop Forging Monel Metal Nickel Steel Stainless Steel	55%-65%	65%-70%	

* Sizes given permit direct tapping without reaming the hole, but only give a full thread for the first two or three threads

TAP/DRILL SELECTION

Tap	Tap Drill	Decimal Equiv. of Tap Drill	Theo. Oversize Mean (%)	Probable Oversize Mean	Probable Hole Size	% of Threads
1/4-20	9	0.1960	83	0.0038	0.1998	77
	8	0.1990	79	0.0039	0.2028	73
	7	0.2010	75	0.0038	0.2048	70
	13/64	0.2031	72	0.0038	0.2068	66
	6	0.2040	71	0.0038	0.2078	65
	5	0.2055	69	0.0038	0.2093	63
	4	0.2090	63	0.0038	0.2128	57
1/4-28	3	0.2130	80	0.0038	0.2168	72
	7/32	0.2188	67	0.0038	0.2226	59
	2	0.2210	63	0.0038	0.2248	55
5/16-18	F	0.2570	77	0.0038	0.2608	72
	G	0.2610	71	0.0041	0.2651	66
	17/64	0.2656	65	0.0041	0.2697	59
	H	0.2660	64	0.0041	0.2701	59
5/16-24	H	0.2660	86	0.0041	0.2701	78
	I	0.2720	75	0.0041	0.2761	67
	J	0.2770	66	0.0041	0.2811	58
3/8-16	5/16	0.3125	77	0.0044	0.3169	72
	O	0.3160	73	0.0044	0.3204	68
	P	0.3230	64	0.0044	0.3274	59
3/8-24	21/64	0.3281	87	0.0044	0.3325	79
	Q	0.3320	79	0.0044	0.3364	71
	R	0.3390	67	0.0044	0.3434	58
7/16-14	T	0.3580	86	0.0046	0.3626	81
	23/64	0.3594	84	0.0046	0.3640	79
	U	0.3680	75	0.0046	0.3726	70
	3/8	0.3750	67	0.0046	0.3796	62
	V	0.3770	65	0.0046	0.3816	61
7/16-20	W	0.3860	79	0.0046	0.3906	72
	25/64	0.3906	72	0.0046	0.3952	65
	X	0.3970	62	0.0046	0.4016	55
1/2-13	27/64	0.4219	78	0.0047	0.4266	73
	7/16	0.4375	63	0.0047	0.4422	58
1/2-20	29/64	0.4531	72	0.0047	0.4578	65
9/16-12	15/32	0.4688	87	0.0048	0.4736	82
	31/64	0.4844	72	0.0048	0.4892	68
9/16-18	1/2	0.5000	87	0.0048	0.5048	80
	33/64	0.5156	65	0.0048	0.5204	58
5/8-11	17/32	0.5313	79	0.0049	0.5362	75
	35/64	0.5469	66	0.0049	0.5618	62
5/8-18	9/16	0.5628	87	0.0049	0.5674	80
	37/64	0.5781	65	0.0049	0.5831	58
3/4-10	41/64	0.6406	84	0.0050	0.6456	80
	21/32	0.6563	72	0.0050	0.6613	68
3/4-16	11/16	0.6875	77	0.0050	0.6925	71
7/8-9	49/64	0.7656	76	0.0052	0.7708	72
	25/32	0.7812	65	0.0052	0.7864	61
7/8-14	51/64	0.7969	84	0.0052	0.8021	79
	13/16	0.8125	67	0.0052	0.8177	62
1-8	55/64	0.8594	87	0.0059	0.8653	83
	7/8	0.8750	77	0.0059	0.8809	73
	57/64	0.8906	67	0.0059	0.8965	64
	29/32	0.9063	58	0.0059	0.9122	54
1-12	29/32	0.9063	87	0.0059	0.9122	81
	59/64	0.9219	72	0.0060	0.9279	67
	15/16	0.9375	58	0.0060	0.9435	52
1-14	59/64	0.9219	84	0.0060	0.9279	78
	15/16	0.9375	67	0.0060	0.9435	61
1-1/8-7	31/21	0.9688	84	0.0062	0.9750	81
	63/64	0.9844	76	0.0067	0.9911	72
	1	1.0000	67	0.0070	1.0070	64
	1-1/64	1.0156	59	0.0070	1.0226	55
1-1/8-12	1-1/32	1.0313	87	0.0071	1.0384	80
	1-3/64	1.0469	72	0.0072	1.0541	66
1-1/4-7	1-3/32	1.0938	84	Reaming Recommended		
	1-7/64	1.1094	76			
	1-1/8	1.1250	67			
1-1/4-12	1-5/32	1.1563	87			
	1-11/64	1.1719	72			
1-3/8-6	1-3/16	1.1875	87			
	1-13/64	1.2031	79			
	1-7/32	1.2188	72			
	1-15/64	1.2344	65			
1-3/8-12	1-9/32	1.2813	87			
	1-19/64	1.2969	72			
1-1/2-6	1-5/16	1.3125	87			
	1-21/64	1.3281	79			
	1-11/32	1.3438	72			
	1-23/64	1.3594	65			
1-1/2-12	1-13/32	1.4063	87			
	1-27/64	1.4219	72			

Tap/Drill Chart — Metric

METRIC TAP DRILL SIZES

(Drill sizes based on approximate 72%-77% Full Thread)

Tap Size	Pitch Form	Tap Drill Size	Alt. Tap Drill	Tap Size	Pitch Form	Tap Drill Size	Alt. Tap Drill
I.S.O. METRIC COARSE				I.S.O. METRIC FINE			
1.6	0.35mm	1.25mm	3/64	3	0.35mm	2.65mm	37
1.7	0.35mm	1.35mm	55	4	0.35mm	3.65mm	27
1.8	0.35mm	1.45mm	54	4	0.50mm	3.50mm	29
2	0.40mm	1.60mm	1/16	4.5	0.45mm	4.06mm	21
2.2	0.45mm	1.75mm	50	5	0.50mm	4.50mm	16
2.3	0.40mm	1.90mm	49	5	0.70mm	4.30mm	18
2.5	0.45mm	2.05mm	46	5	0.75mm	4.25mm	18
2.6	0.45mm	2.15mm	44	5.5	0.50mm	5.00mm	9
3	0.5mm	2.50mm	40	6	0.50mm	5.50mm	7/32
3.5	0.60mm	2.90mm	33	6	0.75mm	5.25mm	5
4	0.70mm	3.30mm	30	7	0.75mm	6.25mm	D
4.5	0.75mm	3.70mm	27	8	0.50mm	7.50mm	M
5	0.80mm	4.20mm	19	8	1.00mm	7.00mm	J
5.5	0.90mm	4.60mm	15	9	0.50mm	8.50mm	Q
6	1.00mm	5.00mm	9	9	1.00mm	8.00mm	O
7	1.00mm	6.00mm	15/64	10	0.50mm	9.50mm	3/8
8	1.25mm	6.80mm	H	10	0.75mm	9.25mm	U
9	1.25mm	7.80mm	5/16	10	1.00mm	9.00mm	T
10	1.50mm	8.50mm	Q	10	1.25mm	8.75mm	11/32
11	1.50mm	9.50mm	3/8	11	1.00mm	10.00mm	X
12	1.75mm	10.20mm	Y	12	1.00mm	11.00mm	7/16
14	2.00mm	12.00mm	15/32	12	1.25mm	10.75mm	27/64
16	2.00mm	14.00mm	35/64	12	1.50mm	10.50mm	Z
18	2.50mm	15.50mm	39/64	13	1.50mm	11.50mm	29/64
20	2.50mm	17.50mm	11/16	13	1.75mm	11.25mm	7/16
22	2.50mm	19.50mm	49/64	14	1.25mm	12.75mm	1/2
24	3.00mm	21.00mm	53/64	14	1.50mm	12.50mm	31/64
27	3.00mm	24.00mm	61/64	15	1.50mm	13.50mm	17/32
30	3.50mm	26.50mm	1-3/64	16	1.00mm	15.00mm	19/32
33	3.50mm	29.50mm	1-5/32	16	1.25mm	14.75mm	37/64
36	4.00mm	32.00mm	1-1/4	16	1.50mm	14.50mm	9/16
39	4.00mm	35.00mm	1-3/8	18	1.00mm	17.00mm	43/64
				18	1.25mm	16.75mm	21/32
				18	1.50mm	16.50mm	41/64
				18	2.00mm	16.00mm	5/8
				20	1.00mm	19.00mm	3/4
				20	1.50mm	18.50mm	47/64
				20	2.00mm	18.00mm	45/64
				22	1.0mm	21.00mm	53/64
				22	1.50mm	20.50mm	13/16
				22	2.00mm	20.00mm	25/32
				24	1.00mm	23.00mm	29/32
				24	1.50mm	22.50mm	7/8
				24	2.00mm	22.00mm	55/64
				24	2.50mm	21.50mm	27/32

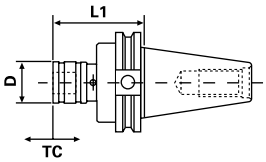
GS TOOLING

GS Tooling Taper Tension/ Compression Tap Holders

Quickly change your tools in seconds.

CAT Taper Tension/ Compression Tap Holders

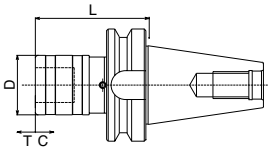
- Quick-change - push back on the holder sleeve and the adapter with tool is removable
- Press on the end of the adapter nose and the tool is removable - all in a few seconds
- Smooth stroke - even under full torque load, the tension-compression stroke is full and free
- Interchangeability - our adapters and holders are interchangeable with Universal-Bilz quick change holders and adapters
- AT2 Taper Accuracy
- RFID Chip Hole



Taper	Tap Range Hand	Tap Range Pipe	System	L (in.)	D (in.)	T/C (in.)	Code No.
CT40	#0-9/16	1/8	#1	2.93	1.43	0.29/0.29	531543
CT40	#0-9/16	1/8	#1	4.00	1.43	0.29/0.29	531540
CT40	#0-9/16	1/8	#1	4.47	1.25	0.79/0.39	531542
CT40	5/16-7/8	1/4-1/2	#2	4.50	2.09	0.49/0.49	531544
CT40	5/16-7/8	1/4-1/2	#2	6.66	2.00	0.85/0.49	531546
CT40	13/16-1-3/8	3/4-1	#3	5.75	3.07	0.79/0.79	531549
CT40	13/16-1-3/8	3/4-1	#3	8.00	3.07	0.79/0.79	531548
CT40	13/16-1-3/8	3/4-1	#3	9.19	2.87	0.98/0.59	531550
CT50	#0-9/16	1/8	#1	4.00	1.43	0.29/0.29	531552
CT50	#0-9/16	1/8	#1	5.02	1.25	0.79/0.39	531554
CT50	5/16-7/8	1/4-1/2	#2	4.50	2.09	0.49/0.49	531556
CT50	5/16-7/8	1/4-1/2	#2	5.66	2.00	0.85/0.49	531558
CT50	13/16-1-3/8	3/4-1	#3	6.25	3.07	0.79/0.79	531560
CT50	13/16-1-3/8	3/4-1	#3	7.72	2.87	0.98/0.59	531562

BT Taper Tension/ Compression Tap Holders

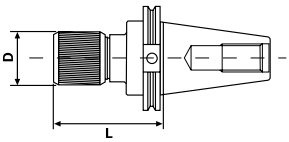
- Quick-change - push back on the holder sleeve and the adapter with tool is removable
- Press on the end of the adapter nose and the tool is removable - all in a few seconds
- Smooth stroke - even under full torque load, the tension-compression stroke is full and free
- Interchangeability - our adapters and holders are interchangeable with Universal-Bilz quick change holders and adapters
- AT2 Taper Accuracy
- RFID Chip Hole



Taper	Tap Range Hand	Tap Range Pipe	System	L (in.)	D (in.)	T/C (in.)	Code No.
BT30	#0-9/16	1/8	#1	2.40	1.43	0.29/0.29	532261
BT30	#0-9/16	1/8	#1	4.25	1.43	0.29/0.29	532260
BT30	#0-9/16	1/8	#1	4.92	1.25	0.79/0.39	532262
BT40	#0-9/16	1/8	#1	2.62	1.43	0.29/0.29	532267
BT40	#0-9/16	1/8	#1	3.80	1.43	0.29/0.29	532264
BT40	#0-9/16	1/8	#1	4.33	1.25	0.79/0.39	532266
BT40	5/16-7/8	1/4-1/2	#2	4.50	2.09	0.49/0.49	532268
BT40	5/16-7/8	1/4-1/2	#2	6.34	2.00	0.85/0.49	532270
BT40	13/16-1-3/8	3/4-1	#3	7.50	3.07	0.79/0.79	532272
BT40	13/16-1-3/8	3/4-1	#3	9.00	2.87	0.98/0.59	532274
BT50	5/16-7/8	1/4-1/2	#2	6.34	2.00	0.85/0.49	532277

CAT Taper Rigid Tap Holders

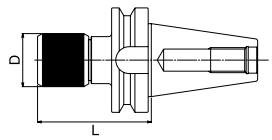
- Quick-change - push back on the holder sleeve and the adapter with tool is removable
- Press on the end of the adapter nose and the tool is removable - all in a few seconds
- Interchangeability - our adapters and holders are interchangeable with Universal-Bilz quick change holders and adapters
- AT2 Taper Accuracy
- RFID Chip Hole



Taper	Tap Range Hand	Tap Range Pipe	System	L (in.)	D (in.)	Code No.
CT40	#0-9/16	1/8	#1	2.95	1.25	531564
CT40	5/16-7/8	1/4-1/2	#2	3.74	2.00	531566
CT40	13/16-1-3/8	3/4-1	#3	4.72	2.87	531568
CT50	#0-9/16	1/8	#1	3.02	1.25	531570
CT50	5/16-7/8	1/4-1/2	#2	3.91	2.00	531572
CT50	13/16-1-3/8	3/4-1	#3	5.11	2.87	531574

BT Taper Rigid Tap Holders

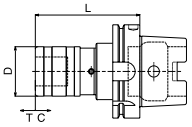
- Quick-change - push back on the holder sleeve and the adapter with tool is removable
- Press on the end of the adapter nose and the tool is removable - all in a few seconds
- Interchangeability - our adapters and holders are interchangeable with Universal-Bilz quick change holders and adapters
- AT2 Taper Accuracy
- RFID Chip Hole



Taper	Tap Range Hand	Tap Range Pipe	System	L (in.)	D (in.)	Code No.
BT30	#0-9/16	1/8	#1	2.44	1.25	532276
BT40	#0-9/16	1/8	#1	2.95	1.25	532278
BT40	5/16-7/8	1/4-1/2	#2	3.74	2.00	532280
BT40	13/16-1-3/8	3/4-1	#3	4.72	2.87	532282
BT50	#0-9/16	1/8	#1	3.03	1.25	532281
BT50	5/16-7/8	1/4-1/2	#2	3.74	2.00	532283
BT50	13/16-1-3/8	3/4-1	#3	4.92	2.87	532284

HSK Tension/Compression Tap Holders

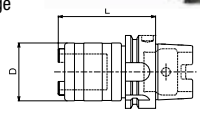
- Quick-change - push back on the holder sleeve and the adapter with tool is removable
- Press on the end of the adapter nose and the tool is removable - all in a few seconds
- Smooth stroke - even under full torque load, the tension-compression stroke is full and free
- Interchangeability - our adapters and holders are interchangeable with Universal-Bilz quick change holders and adapters
- AT2 Taper Accuracy
- RFID Chip Hole



Taper	Tap Range Hand	Tap Range Pipe	System	L (in.)	D (in.)	T/C (in.)	Code No.
HSK63	#0-9/16	1/8	#1	5.30	1.43	0.29/0.29	536196
HSK63	5/16-7/8	1/4-1/2	#2	6.10	2.09	0.49/0.49	536198
HSK100	#0-9/16	1/8	#1	5.30	1.43	0.29/0.29	536202
HSK100	5/16-7/8	1/4-1/2	#2	6.30	2.09	0.49/0.49	536204

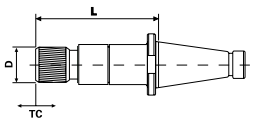
HSK Rigid Tap Holders

- Quick-change - push back on the holder sleeve and the adapter with tool is removable
- Press on the end of the adapter nose and the tool is removable - all in a few seconds.
- Interchangeability - our adapters and holders are interchangeable with Universal-Bilz quick change holders and adapters
- AT2 Taper Accuracy
- RFID Chip Hole



Taper	Tap Range Hand	Tap Range Pipe	System	L (in.)	D (in.)	Code No.
HSK63	#0-9/16	1/8	#1	3.34	1.26	536184
HSK63	5/16-7/8	1/4-1/2	#2	4.00	1.97	536186
HSK100	#0-9/16	1/8	#1	3.54	1.43	536190
HSK100	5/16-7/8	1/4-1/2	#2	3.74	2.09	536192

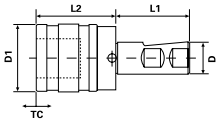
NMTB Taper Tension/ Compression Tap Holders



Taper	Tap Range Hand	Tap Range Pipe	System	L (in.)	D (in.)	T/C (in.)	Code No.
NMTB40	#0-9/16	1/8	#1	3.90	1.25	0.79/0.39	534500

Weldon Shank Tension/Compression Tap Holders

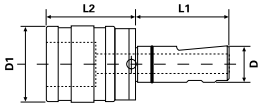
- Precision ground surfaces
- Compact length
- Provide additional mating flexibility
- Provides axial float
- Adjustable entry force



Tap Range Hand	Tap Range Pipe	System	Shank Dia. D	D1	L1	L2	T/C	Code No.
#0-9/16	1/8	#1	1	1.25	2.28	4.13	0.79/0.39	534520
#0-9/16	1/8	#1	1	1.43	2.28	1.53	0.79/0.39	534522
#0-9/16	1/8	#1	1-1/2	1.25	2.69	4.13	0.79/0.39	534532
5/16-7/8	1/4-1/2	#2	1-1/4	2.00	2.28	5.55	0.85/0.49	534530
5/16-7/8	1/4-1/2	#2	1-1/2	2.00	2.69	5.55	0.85/0.49	534534

Weldon Shank Rigid Tap Holders

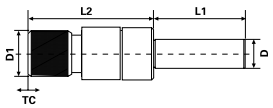
- Precision ground surfaces
- Compact length
- Provides axial float
- Adjustable entry force
- Provide additional mating flexibility



Tap Range Hand	Tap Range Pipe	System	Shank Dia. D	D1	L1	L2	Code No.
#0-9/16	1/8	#1	1	1.26	2.28	1.46	534540
5/16-7/8	1/4-1/2	#2	1	1.97	2.28	2.12	534542
13/16-1-3/8	3/4-1	#3	1-1/2	2.83	2.69	3.27	534544

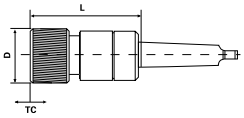
Straight Shank Tension/Compression Tap Holders

- Straight shank tooling may be used to extend tooling reach for extended length operations
- This option is less costly than extended length integral shank tooling
- They may be used with any size machining centre or lathe
- When loaded into larger holders, their reduced O.D. permits tapping applications within large holes or whenever tight clearances are encountered



Tap Range Hand	Tap Range Pipe	System	Shank Dia. D	D1	L1	L2	Tension & Compression T	Tension & Compression C	Code No.
#0-9/16	1/8	#1	1	1.25	3.50	4.13	0.79	0.39	534510
5/16-7/8	1/4-1/2	#2	1	2.00	3.50	5.55	0.85	0.49	534512
#0-9/16	1/8	#1	1-1/4	1.25	4.00	4.13	0.79	0.39	534514

Morse Taper Tension/ Compression Tap Holders



Morse Taper	Tap Range Hand	Tap Range Pipe	System	D (in.)	L (in.)	T/C (in.)	Code No.
3	#0-9/16	1/8	#1	1.25	4.750	0.79/0.39	534550
3	5/16-7/8	1/4-1/2	#2	2.00	5.870	0.85/0.49	534552
4	#0-9/16	1/8	#1	1.25	4.72	0.79/0.39	534554
4	5/16-7/8	1/4-1/2	#2	2.00	5.94	0.85/0.49	534556

Torque Control Tap Collets & Sets

Tap System #1
- Tap Collets are fully compatible with Bilz System #1. Size Range: #0 - 9/16" hand tap and 1/8" pipe tap

Tap System #2
- Tap Collets are fully compatible with Bilz System #2. Size Range: 5/16" - 7/8" hand tap and 1/4" - 1/2" pipe tap

Tap System #3
- Tap Collets are fully compatible with Bilz System #3. Size Range: 1/2" - 1-3/8" hand tap and 3/4" - 1" pipe tap

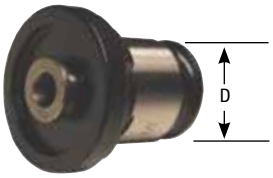
	Tap Size	Tap System	D	Tap Shank	Square	Code No.
	#0-#6	1	0.748	0.141	0.110	337260
	#8	1	0.748	0.168	0.131	337261
	#10	1	0.748	0.194	0.152	337262
	#12	1	0.748	0.220	0.165	337263
	1/4	1	0.748	0.255	0.191	337264
	5/16	1	0.748	0.318	0.238	337265
	3/8	1	0.748	0.381	0.286	337266
	7/16	1	0.748	0.323	0.110	337267
	1/2	1	0.748	0.367	0.110	337268
	9/16	1	0.748	0.429	0.332	337269
NPT	1/8P	1	0.748	0.313	0.234	337270
	5/16	2	1.220	0.318	0.238	337275
	3/8	2	1.220	0.381	0.286	337276
	7/16	2	1.220	0.323	0.242	337277
	1/2	2	1.220	0.367	0.275	337278
	9/16	2	1.220	0.429	0.322	337279
	5/8	2	1.220	0.480	0.360	337280
	11/16	2	1.220	0.542	0.406	337281
	3/4	2	1.220	0.590	0.442	337282
	13/16	2	1.220	0.652	0.489	337283
	7/8	2	1.220	0.697	0.523	337284
NPT	1/4P	2	1.220	0.562	0.421	337285
	3/8P	2	1.220	0.700	0.531	337286
	1/2P	2	1.220	0.687	0.515	337287
	1/2	3	1.891	0.367	0.275	337230
	9/16	3	1.891	0.429	0.322	337231
	5/8	3	1.891	0.480	0.360	337233
	11/16	3	1.891	0.542	0.406	337234
	3/4	3	1.891	0.590	0.442	337235
	13/16	3	1.891	0.652	0.489	337237
	7/8	3	1.891	0.697	0.523	337238
	15/16	3	1.891	0.760	0.570	337239
	1	3	1.891	0.800	0.600	337241
	1-1/16 - 1-1/8	3	1.891	1.021	0.766	337242
	1-3/16 - 1-1/4	3	1.891	0.381	0.286	337243
	1-5/16 - 1-3/8	3	1.891	1.108	0.831	337245
NPT	3/4P	3	1.891	0.906	0.679	337246
	1P	3	1.891	1.125	0.843	337247

Positive Drive Tap Collets, Reducers & Sets

Tap System #1
- Tap Collets are fully compatible with Bilz System #1. Size Range: #0 - 9/16" hand tap and 1/8" pipe tap

Tap System #2
- Tap Collets are fully compatible with Bilz System #2. Size Range: 5/16" - 7/8" hand tap and 1/4" - 1/2" pipe tap

Tap System #3
- Tap Collets are fully compatible with Bilz System #3. Size Range: 3/8" - 1-3/8" hand tap and 1/2" - 1" pipe tap



	Tap Size	Tap System	D	Tap Shank	Square	Code No.
	#0-#6	1	0.748	0.141	0.110	337052
	#8	1	0.748	0.168	0.131	337054
	#10	1	0.748	0.194	0.152	337056
	#12	1	0.748	0.220	0.165	337058
	1/4	1	0.748	0.255	0.191	337060
	5/16	1	0.748	0.318	0.238	337062
	3/8	1	0.748	0.381	0.286	337064
	7/16	1	0.748	0.323	0.242	337066
	1/2	1	0.748	0.367	0.275	337068
	9/16	1	0.748	0.429	0.322	337070
NPT	1/8P	1	0.748	0.438	0.328	337072
	5/16	2	1.220	0.318	0.238	337074
	3/8	2	1.220	0.381	0.286	337076
	7/16	2	1.220	0.323	0.242	337078
	1/2	2	1.220	0.367	0.275	337080
	9/16	2	1.220	0.429	0.322	337082
	5/8	2	1.220	0.480	0.360	337084
	11/16	2	1.220	0.542	0.406	337086
	3/4	2	1.220	0.590	0.442	337088
	13/16	2	1.220	0.652	0.489	337090
	7/8	2	1.220	0.697	0.523	337092
NPT	1/4P	2	1.220	0.562	0.421	337094
	3/8P	2	1.220	0.700	0.531	337096
	1/2P	2	1.220	0.687	0.515	337098
	3/8	3	1.891	0.381	0.286	337111
	1/2	3	1.891	0.367	0.275	337089
	9/16	3	1.891	0.429	0.322	337091
	5/8	3	1.891	0.480	0.360	337093
	11/16	3	1.891	0.542	0.406	337095
	3/4	3	1.891	0.590	0.442	337097
	13/16	3	1.891	0.652	0.489	337100
	7/8	3	1.891	0.697	0.523	337102
	15/16	3	1.891	0.760	0.570	337104
	1	3	1.891	0.800	0.600	337106
	1-1/8	3	1.891	0.896	0.672	337108
	1-1/4	3	1.891	1.021	0.766	337110
	3/8	3	1.891	0.381	0.286	337111
	1-3/8	3	1.891	1.108	0.831	337112
NPT	1/2P	3	1.891	0.687	0.515	337113
	3/4P	3	1.891	0.906	0.679	337114
	1P	3	1.891	1.125	0.843	337116

Reducers	Type #2 - #1	337118
	Type #3 - #2	337119

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