vargus
NEUMO Ehrenberg Group

V-TAPS

Advanced Tapping Solutions

METRIC

VARDEX
Advanced Threading Solutions

V-TAPS

Advanced Tapping Solutions

Vargus Ltd. introduces **V-Taps**, the new line of advanced tapping solutions.

Features and Benefits:

- Covers the most popular threading application standards:
  - ISO Metric
  - American UN
  - **BSP (G)** NEW
  - **NPT** NEW
- Includes different geometries in an assortment of types:
  - Straight Flute with Spiral Point
  - Spiral Flute
  - Straight Flute
  - Cold Forming
- Suitable for blind holes and thru hole operations
- Tools are designed to work on a wide range of materials
- 3 different grades:
  - **VHB** - Black oxide coating
  - **VHN** - TiN coated
  - **VHC** - TiCN coated
- Available in JIS (Japanese Industrial Standards)

V-TAPS

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V-Taps Ordering Code System

VT	M	10x1.5	-	SP	-	6H	-	DIN371	-	VHB
1	2	3		4		5		6		7

1- Tool Type

VT - Vargus Tap

2 - Thread Specifications

M - ISO Metric Coarse Thread DIN13
MF - ISO Metric Fine Thread DIN13
UNC - Unified Coarse Thread ASME B1.1
UNF - Unified Fine Thread ASME B1.1
BSP (G) - British Standard Pipe DIN ISO 228-1
NPT - National Pipe Thread ASA B 2.1

3 - Thread Size

Nominal Dia. x Pitch

4 - Geometry

SP - Spiral point (gun)
SF - Spiral flute
ST - Straight flute
FM - Forming

5 - Precision Class

6H/ISO2 - ISO Pitch Diameter Tolerance Zone (high basic pitch diameter)
6HX - Pitch Diameter Tolerance Zone (with increased pitch diameter)
2B - Internal Inch UN Thread Medium Class of Fit

6 - Shank

DIN 371
DIN 374
DIN 376
DIN 2174
DIN 5156
JIS B-4430

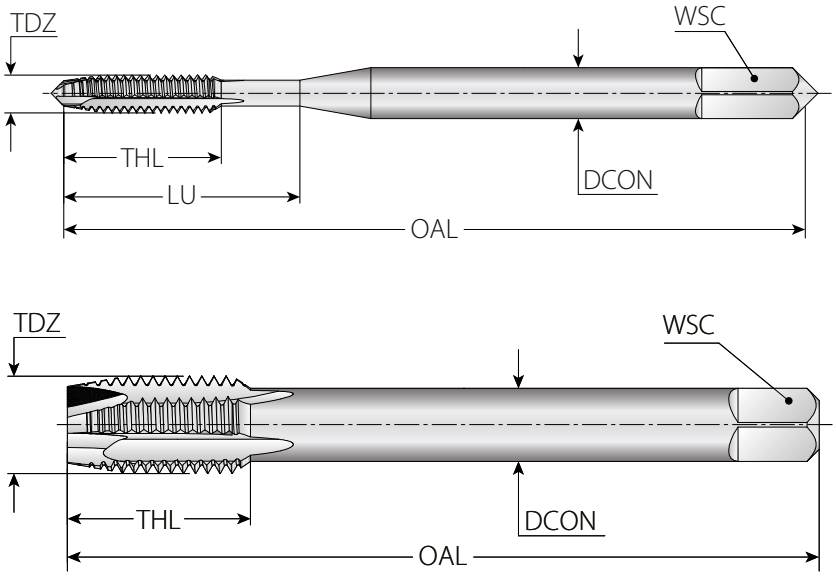
7 - Grade

VHB - HSS-E grade with Black oxide coated
VHC - HSS-E grade, TiCN coated
VHN - HSS-E grade, TiN coated
(HSS-E PM available for cold forming taps)

Cutting Tool Dimensions According to ISO 13399

Vargus defines the **new V-Taps Line according to the ISO 13399 standard**.
The following is a list of dimensions which are used in this catalog.

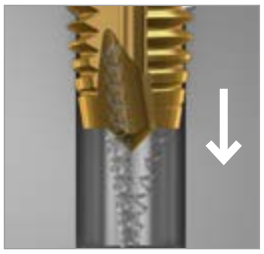
ISO 13399 is an international technical standard for the computer-interpretable representation and exchange of cutting tools and toolholders. The objective is to provide a system that allows for a neutral file exchange, and a basis for implementing and sharing product databases and archiving.



ISO 13399 Dimension	Description
TDZ	Thread diameter size
TP	Thread pitch
DCON	Connection diameter
OAL	Overall length
THL	Threading length
LU	Usable length
WSC	Clamping width
SG	Standards
PHD	Pre-machined hole diameter
NOF	Flute count
TCS	Chamfer lead type

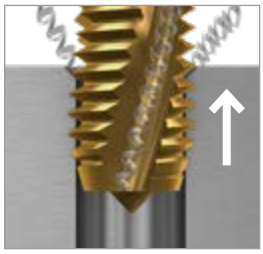
Tool Geometry

Straight Flutes with Spiral Point (SP)



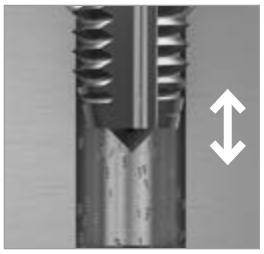
P M K N

Spiral Flute (SF)



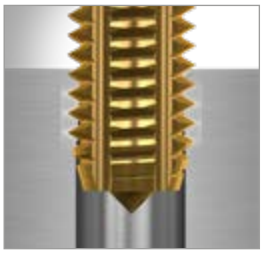
P M K N

Straight Flute (ST)



K

Cold Forming (FM)



P M N

Thread Form Type

- **M** – Metric Coarse
- **UNC** – Unified Coarse
- **BSP (G)** – British Standard Pipe
- **MF** – Metric Fine
- **UNF** – Unified Fine
- **NPT** – National Pipe Thread

Threading Application

Thru Hole

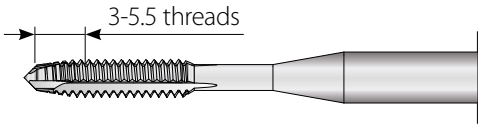
Blind Hole

Basic Standard Group

- **DIN 371/374** – DIN Thread Standard (based on size range) DIN 371 if Ø ≤ 10mm / DIN 374 if Ø ≥ 12mm
- **DIN 376** – DIN 376 – M Thread Standard
- **DIN 5156** – Machine Taps for Pipe Threads
- **DIN 371/376** – DIN Thread Standard (based on size range) DIN 371 if Ø ≤ 10mm / DIN 376 if Ø ≥ 12mm
- **DIN 2174** – DIN 2174 – Forming Tap Standard
- **JIS B-4430** – JIS – Japnese Industrial Standards
- **DIN 374** – DIN 374 – MF Thread Standard

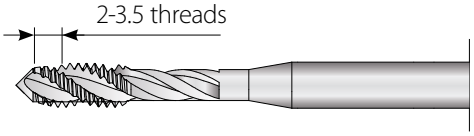
Chamfer Lead Types

B 3.5-5.5



Form B
Medium, 3.5-5 threads, with spiral point, for all thru holes and deep tapping holes.

C 2-3.5



Form C
Long, 2-3.5 threads for blind holes and generally for aluminum, gray cast iron and brass.

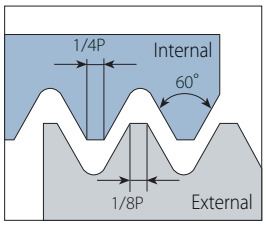
Substrate

- **HSS** – High speed steel tool material
- **HSS-E PM** – High speed cobalt powder metal tool material
- **HSS-E** – High speed cobalt steel tool material

Usable Length Thread Diameter Ratio

- **2.5xTDZ** – 2.5×TDZ Useable tool depth to thread diameter ratio

Internal



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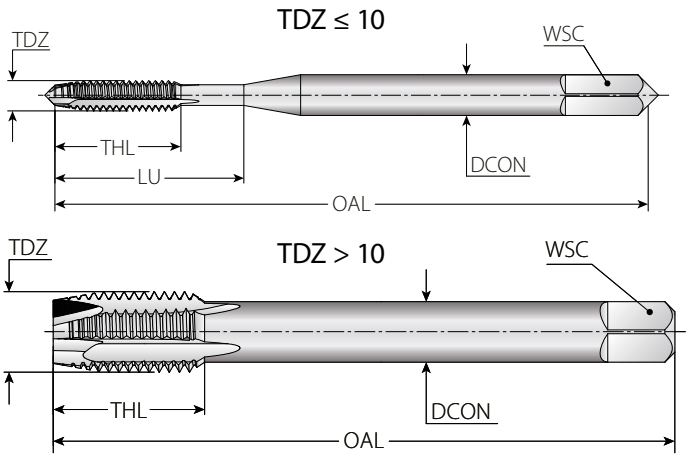
Tolerance class: 6H



M |  | DIN 371/376 | B 3.5-5.5 | 2.5xTDZ | HSS-E

P M K N

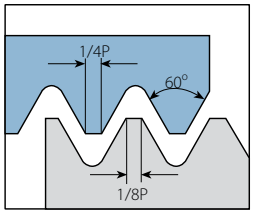
Straight Flutes with Spiral Point Taps

M Coarse	Pitch	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade		
TDZ	TP	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC	VHN
M2	0.40	VT-M2x0.4-SP-6H-DIN371-...	2.80	45	8	9	2.10		1.60	2	B	•	•	•
M2.5	0.45	VT-M2.5x0.45-SP-6H-DIN371-...	2.80	50	9	10	2.10		2.05	2	B	•	•	•
M3	0.50	VT-M3x0.5-SP-6H-DIN371-...	3.50	56	11	18	2.70		2.50	3	B	•	•	•
M4	0.70	VT-M4x0.7-SP-6H-DIN371-...	4.50	63	13	19	3.40		3.30	3	B	•	•	•
M5	0.80	VT-M5x0.8-SP-6H-DIN371-...	6.00	70	16	25	4.90	371	4.20	3	B	•	•	•
M6	1.00	VT-M6x1-SP-6H-DIN371-...	6.00	80	19	30	4.90		5.00	3	B	•	•	•
M8	1.25	VT-M8x1.25-SP-6H-DIN371-...	8.00	90	22	34	6.20		6.80	3	B	•	•	•
M10	1.50	VT-M10x1.5-SP-6H-DIN371-...	10.00	100	24	40	8.00		8.50	3	B	•	•	•
M12	1.75	VT-M12x1.75-SP-6H-DIN376-...	9.00	110	28	-	7.00		10.20	3	B	•	•	•
M14	2.00	VT-M14x2-SP-6H-DIN376-...	11.00	110	30	-	9.00		12.00	3	B	•	•	•
M16	2.00	VT-M16x2-SP-6H-DIN376-...	12.00	110	32	-	9.00	376	14.00	3	B	•	•	•
M18	2.50	VT-M18x2.5-SP-6H-DIN376-...	14.00	125	36	-	11.00		15.50	4	B	•	•	•
M20	2.50	VT-M20x2.5-SP-6H-DIN376-...	16.00	140	36	-	12.00		17.50	4	B	•	•	•

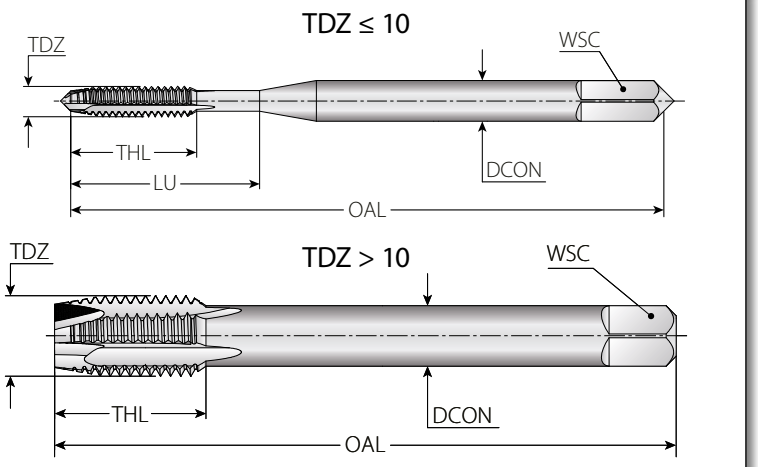
• Available in these grades

ISO Metric (MF)

Internal



Defined by: DIN 13
Tolerance class: 6H



MF | DIN 371/374 | B 3.5-5.5 | 2.5xTDZ | HSS-E

P M K N

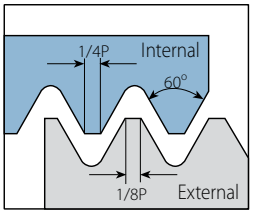
Straight Flutes with Spiral Point Taps

M Fine	Pitch	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade		
TDZ	TP	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC	VHN
MF4	0.50	VT-MF4x0.5-SP-6H-DIN371-...	4.50	63	12	19	3.40		3.50	3	B	•	•	•
MF5	0.50	VT-MF5x0.5-SP-6H-DIN371-...	6.00	70	12	25	4.90		4.50	3	B	•	•	•
MF6	0.50	VT-MF6x0.5-SP-6H-DIN371-...	6.00	80	15	30	4.90		5.50	3	B	•	•	•
MF6	0.75	VT-MF6x0.75-SP-6H-DIN371-...	6.00	80	15	30	4.90	371	6.20	3	B	•	•	•
MF8	1.00	VT-MF8x1-SP-6H-DIN371-...	8.00	90	22	34	6.20		7.00	3	B	•	•	•
MF10	1.00	VT-MF10x1-SP-6H-DIN371-...	10.00	90	20	36	8.00		9.00	3	B	•	•	•
MF10	1.25	VT-MF10x1.25-SP-6H-DIN371-...	10.00	100	24	40	8.00		8.80	3	B	•	•	•
MF12	1.00	VT-MF12x1-SP-6H-DIN374-...	9.00	100	22	-	7.00		11.00	3	B	•	•	•
MF12	1.25	VT-MF12x1.25-SP-6H-DIN374-...	9.00	100	22	-	7.00		10.80	3	B	•	•	•
MF14	1.25	VT-MF14x1.25-SP-6H-DIN374-...	11.00	100	22	-	9.00		12.80	3	B	•	•	•
MF16	1.50	VT-MF16x1.5-SP-6H-DIN374-...	12.00	100	22	-	9.00	374	14.50	3	B	•	•	•
MF18	1.50	VT-MF18x1.5-SP-6H-DIN374-...	14.00	110	26	-	11.00		16.50	4	B	•	•	•
MF20	1.50	VT-MF20x1.5-SP-6H-DIN374-...	16.00	125	26	-	12.00		18.50	4	B	•	•	•

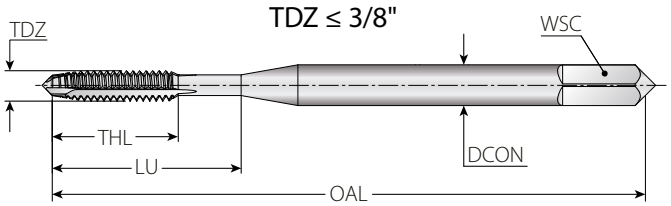
• Available in these grades

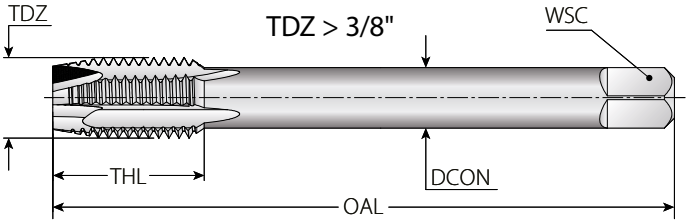
American UN (UNC)

Internal



Defined by: ANSI B1.1
Tolerance class: 2B





UNC | DIN 371/376 | B 3.5-5.5 | 2.5xTDZ | HSS -E

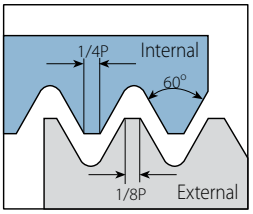
P M K N

Straight Flutes with Spiral Point Taps

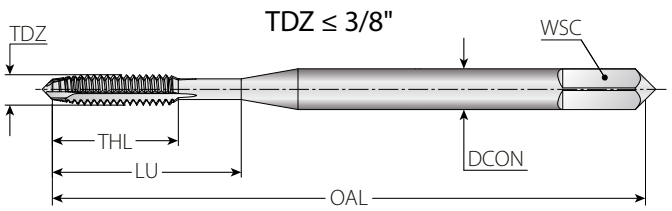
UNC	Pitch	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade		
TDZ	TPI	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC	VHN
No.4	40	VT-UNC4x40-SP-2B-DIN371-...	3.50	56	11	17	2.70		2.30	2	B	•	•	•
No.5	40	VT-UNC5x40-SP-2B-DIN371-...	3.50	56	11	18	2.70		2.60	3	B	•	•	•
No.6	32	VT-UNC6x32-SP-2B-DIN371-...	4.00	56	12	18	3.00		2.85	3	B	•	•	•
No.8	32	VT-UNC8x32-SP-2B-DIN371-...	4.50	63	13	21	3.40		3.50	3	B	•	•	•
No.10	24	VT-UNC10x24-SP-2B-DIN371-...	6.00	70	16	25	4.90	371	3.90	3	B	•	•	•
No.12	24	VT-UNC12x24-SP-2B-DIN371-...	6.00	80	19	30	4.90		4.50	3	B	•	•	•
1/4"	20	VT-UNC1/4x20-SP-2B-DIN371-...	7.00	80	19	31	5.50		5.20	3	B	•	•	•
5/16"	18	VT-UNC5/16x18-SP-2B-DIN371-...	8.00	90	22	34	6.20		6.60	3	B	•	•	•
3/8"	16	VT-UNC3/8x16-SP-2B-DIN371-...	9.00	90	22	39	7.00		8.00	3	B	•	•	•
7/16"	14	VT-UNC7/16x14-SP-2B-DIN376-...	8.00	100	25	-	6.20		9.40	3	B	•	•	•
1/2"	13	VT-UNC1/2x13-SP-2B-DIN376-...	9.00	110	28	-	7.00		10.75	3	B	•	•	•
9/16"	12	VT-UNC9/16x12-SP-2B-DIN376-...	11.00	110	30	-	9.00		12.25	3	B	•	•	•
5/8"	11	VT-UNC5/8x11-SP-2B-DIN376-...	12.00	110	33	-	9.00	376	13.50	3	B	•	•	•
3/4"	10	VT-UNC3/4x10-SP-2B-DIN376-...	14.00	125	38	-	11.00		16.50	4	B	•	•	•
7/8"	9	VT-UNC7/8x9-SP-2B-DIN376-...	18.00	140	41	-	14.50		19.50	4	B	•	•	•
1"	8	VT-UNC1x8-SP-2B-DIN376-...	18.00	160	47	-	14.50		22.25	4	B	•	•	•

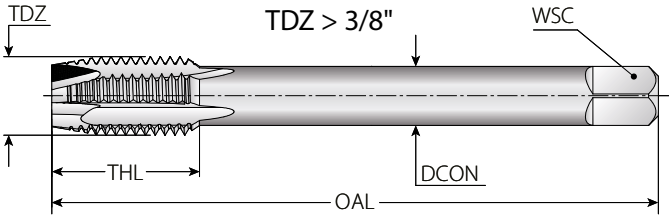
• Available in these grades

Internal



Defined by: ANSI B1.1
Tolerance class: 2B





UNF | DIN 371/374 | B 3.5-5.5 | 2.5xTDZ | HSS-E

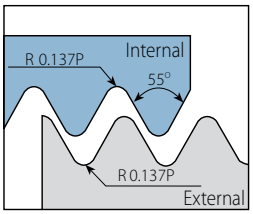
P M K N

Straight Flutes with Spiral Point Taps

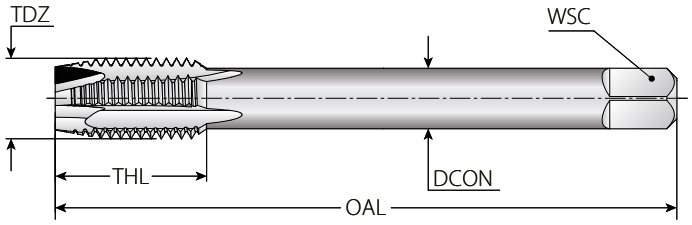
UNF	Pitch	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade		
TDZ	TPI	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC	VHN
No.4	48	VT-UNF4x48-SP-2B-DIN371-...	3.50	56	11	17	2.70		2.40	2	B	•	•	•
No.5	44	VT-UNF5x44-SP-2B-DIN371-...	3.50	56	11	18	2.70		2.70	3	B	•	•	•
No.6	40	VT-UNF6x40-SP-2B-DIN371-...	4.00	56	12	18	3.00		3.00	3	B	•	•	•
No.8	36	VT-UNF8x36-SP-2B-DIN371-...	4.50	63	13	21	3.40		3.50	3	B	•	•	•
No.10	32	VT-UNF10x32-SP-2B-DIN371-...	6.00	70	16	25	4.90	371	4.10	3	B	•	•	•
No.12	28	VT-UNF12x28-SP-2B-DIN371-...	6.00	80	19	30	4.90		4.70	3	B	•	•	•
1/4"	28	VT-UNF1/4x28-SP-2B-DIN371-...	7.00	80	19	31	5.50		5.50	3	B	•	•	•
5/16"	24	VT-UNF5/16x24-SP-2B-DIN371-...	8.00	90	22	34	6.20		6.90	3	B	•	•	•
3/8"	24	VT-UNF3/8x24-SP-2B-DIN371-...	9.00	90	22	39	7.00		8.50	3	B	•	•	•
7/16"	20	VT-UNF7/16x20-SP-2B-DIN374-...	8.00	100	21	-	6.20		9.90	3	B	•	•	•
1/2"	20	VT-UNF1/2x20-SP-2B-DIN374-...	9.00	100	22	-	7.00		11.50	3	B	•	•	•
9/16"	18	VT-UNF9/16x18-SP-2B-DIN374-...	11.00	100	22	-	9.00		12.90	3	B	•	•	•
5/8"	18	VT-UNF5/8x18-SP-2B-DIN374-...	12.00	110	32	-	9.00	374	14.50	4	B	•	•	•
3/4"	16	VT-UNF3/4x16-SP-2B-DIN374-...	14.00	125	37	-	11.00		17.50	4	B	•	•	•
7/8"	14	VT-UNF7/8x14-SP-2B-DIN374-...	18.00	125	38	-	14.50		20.40	4	B	•	•	•
1"	12	VT-UNF1x12-SP-2B-DIN374-...	20.00	140	38	-	16.00		23.25	4	B	•	•	•

• Available in these grades

Internal



Defined by: DIN ISO 228-1
Tolerance class: Medium class



BSP (G) | DIN 5156 | B 3.5-5.5 | HSS-E

P M K N

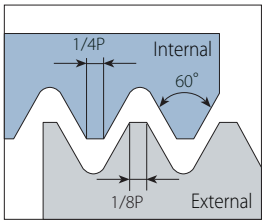
Straight Flutes with Spiral Point Taps

BSP(G)	Pitch	Ordering Code	Dimensions mm				DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade	
TDZ	TPI	Internal	DCON	OAL		WSC	SG	PHD	NOF	TCS	VHB	VHC
1/8"	28	VT-G1/8x28-SP-DIN5156-...	7	90	20	5.5		8.8	3	B	•	•
1/4"	19	VT-G1/4x19-SP-DIN5156-...	11	100	22	9.0		11.8	3	B	•	•
3/8"	19	VT-G3/8x19-SP-DIN5156-...	12	100	22	9.0		15.3	4	B	•	•
1/2"	14	VT-G1/2x14-SP-DIN5156-...	16	125	25	12.0	DIN5156	19.1	4	B	•	•
5/8"	14	VT-G5/8x14-SP-DIN5156-...	18	125	25	14.5		21.0	4	B	•	•
3/4"	14	VT-G3/4x14-SP-DIN5156-...	20	140	28	16.0		24.6	4	B	•	•
1"	11	VT-G1x11-SP-DIN5156-...	25	160	36	20.0		31.0	5	B	•	•

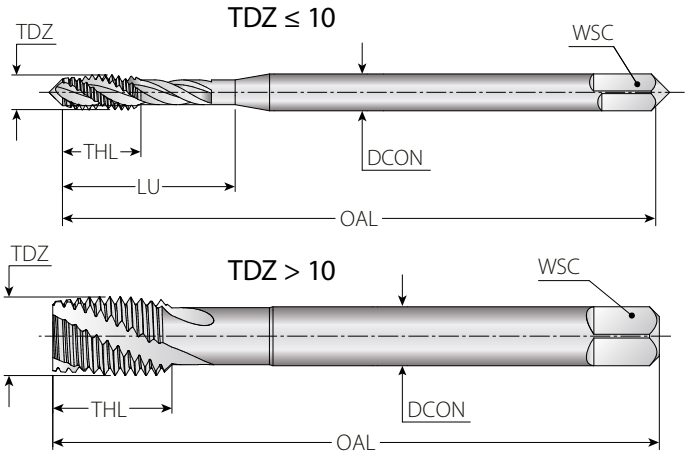
• Available in these grades

ISO Metric (M)

Internal



Defined by: DIN 13
Tolerance class: 6H



M | DIN 371/376 | C 2-3.5 | 2.5xTDZ | HSS-E

P M K N

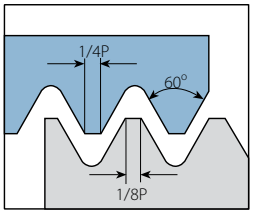
Spiral Flute Taps

M Coarse	Pitch	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade		
TDZ	TP	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC	VHN
M2	0.40	VT-M2x0.4-SF-6H-DIN371-...	2.80	45	8	9	2.10	371	1.60	3	C	•	•	•
M2.5	0.45	VT-M2.5x0.45-SF-6H-DIN371-...	2.80	50	9	10	2.10		2.05	3	C	•	•	•
M3	0.50	VT-M3x0.5-SF-6H-DIN371-...	3.50	56	11	18	2.70		2.50	3	C	•	•	•
M4	0.70	VT-M4x0.7-SF-6H-DIN371-...	4.50	63	13	19	3.40		3.30	3	C	•	•	•
M5	0.80	VT-M5x0.8-SF-6H-DIN371-...	6.00	70	16	25	4.90		4.20	3	C	•	•	•
M6	1.00	VT-M6x1-SF-6H-DIN371-...	6.00	80	19	30	4.90		5.00	3	C	•	•	•
M8	1.25	VT-M8x1.25-SF-6H-DIN371-...	8.00	90	22	36	6.20		6.80	3	C	•	•	•
M10	1.50	VT-M10x1.5-SF-6H-DIN371-...	10.00	100	24	40	8.00		8.50	3	C	•	•	•
M12	1.75	VT-M12x1.75-SF-6H-DIN376-...	9.00	110	28	-	7.00	376	10.20	3	C	•	•	•
M14	2.00	VT-M14x2-SF-6H-DIN376-...	11.00	110	30	-	9.00		12.00	3	C	•	•	•
M16	2.00	VT-M16x2-SF-6H-DIN376-...	12.00	110	32	-	9.00		14.00	4	C	•	•	•
M18	2.50	VT-M18x2.5-SF-6H-DIN376-...	14.00	125	34	-	11.00		15.50	4	C	•	•	•
M20	2.50	VT-M20x2.5-SF-6H-DIN376-...	16.00	140	34	-	12.00		17.50	4	C	•	•	•

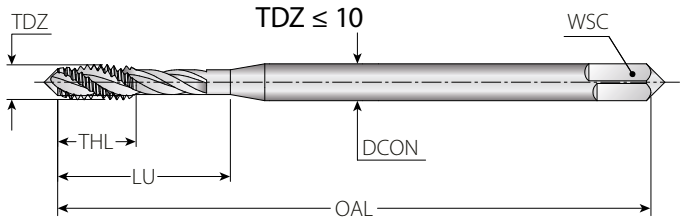
• Available in these grades

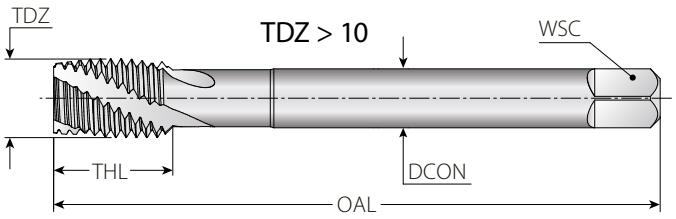
ISO Metric (MF)

Internal



Defined by: DIN 13
Tolerance class: 6H





MF | DIN 371/374 | C 2-3.5 | 2.5xTDZ | HSS -E

P M K N

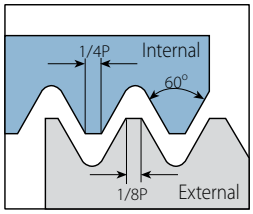
Spiral Flute Taps

M Fine	Pitch	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade		
TDZ	TP	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC	VHN
MF4	0.50	VT-MF4x0.5-SF-6H-DIN371-...	4.50	63	10	19	3.40		3.50	3	C	•	•	•
MF5	0.50	VT-MF5x0.5-SF-6H-DIN371-...	6.00	70	12	25	4.90		4.50	3	C	•	•	•
MF6	0.50	VT-MF6x0.5-SF-6H-DIN371-...	6.00	80	14	30	4.90		5.50	3	C	•	•	•
MF6	0.75	VT-MF6x0.75-SF-6H-DIN371-...	6.00	80	14	30	4.90	371	5.20	3	C	•	•	•
MF8	1.00	VT-MF8x1-SF-6H-DIN371-...	8.00	90	22	36	6.20		7.00	3	C	•	•	•
MF10	1.00	VT-MF10x1-SF-6H-DIN371-...	10.00	90	20	39	8.00		9.00	3	C	•	•	•
MF10	1.25	VT-MF10x1.25-SF-6H-DIN371-...	10.00	100	24	40	8.00		8.80	3	C	•	•	•
MF12	1.00	VT-MF12x1-SF-6H-DIN374-...	9.00	100	22	-	7.00		11.00	4	C	•	•	•
MF12	1.25	VT-MF12x1.25-SF-6H-DIN374-...	9.00	100	22	-	7.00		10.80	4	C	•	•	•
MF14	1.25	VT-MF14x1.25-SF-6H-DIN374-...	11.00	100	22	-	9.00		12.80	4	C	•	•	•
MF16	1.50	VT-MF16x1.5-SF-6H-DIN374-...	12.00	100	22	-	9.00	374	14.50	4	C	•	•	•
MF18	1.50	VT-MF18x1.5-SF-6H-DIN374-...	14.00	110	25	-	11.00		16.50	4	C	•	•	•
MF20	1.50	VT-MF20x1.5-SF-6H-DIN374-...	16.00	125	25	-	12.00		18.50	4	C	•	•	•

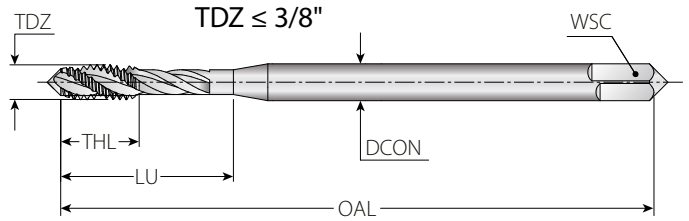
• Available in these grades

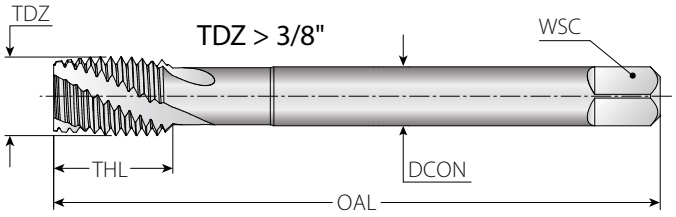
American UN (UNC)

Internal



Defined by: ANSI B1.1
Tolerance class: 2B





UNC | DIN 371/376 | C 2-3.5 | 2.5xTDZ | HSS-E

P M K N

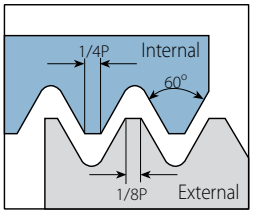
Spiral Flute Taps

UNC	Pitch	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade		
TDZ	TPI	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC	VHN
No.4	40	VT-UNC4x40-SF-2B-DIN371-...	3.50	56	11	17	2.70		2.30	3	C	•	•	•
No.5	40	VT-UNC5x40-SF-2B-DIN371-...	3.50	56	11	18	2.70		2.60	3	C	•	•	•
No.6	32	VT-UNC6x32-SF-2B-DIN371-...	4.00	56	12	18	3.00		2.85	3	C	•	•	•
No.8	32	VT-UNC8x32-SF-2B-DIN371-...	4.50	63	13	21	3.40		3.50	3	C	•	•	•
No.10	24	VT-UNC10x24-SF-2B-DIN371-...	6.00	70	16	25	4.90	371	3.90	3	C	•	•	•
No.12	24	VT-UNC12x24-SF-2B-DIN371-...	6.00	80	19	30	4.90		4.50	3	C	•	•	•
1/4"	20	VT-UNC1/4x20-SF-2B-DIN371-...	7.00	80	19	31	5.50		5.20	3	C	•	•	•
5/16"	18	VT-UNC5/16x18-SF-2B-DIN371-...	8.00	90	22	36	6.20		6.60	3	C	•	•	•
3/8"	16	VT-UNC3/8x16-SF-2B-DIN371-...	9.00	90	22	42	7.00		8.00	3	C	•	•	•
7/16"	14	VT-UNC7/16x14-SF-2B-DIN376-...	8.00	100	24	-	6.20		9.40	3	C	•	•	•
1/2"	13	VT-UNC1/2x13-SF-2B-DIN376-...	9.00	110	28	-	7.00		10.75	3	C	•	•	•
9/16"	12	VT-UNC9/16x12-SF-2B-DIN376-...	11.00	110	30	-	9.00		12.25	3	C	•	•	•
5/8"	11	VT-UNC5/8x11-SF-2B-DIN376-...	12.00	110	32	-	9.00	376	13.50	4	C	•	•	•
3/4"	10	VT-UNC3/4x10-SF-2B-DIN376-...	14.00	125	34	-	11.00		16.50	4	C	•	•	•
7/8"	9	VT-UNC7/8x9-SF-2B-DIN376-...	18.00	140	34	-	14.50		19.50	4	C	•	•	•
1"	8	VT-UNC1x8-SF-2B-DIN376-...	19.00	160	38	-	14.50		22.25	4	C	•	•	•

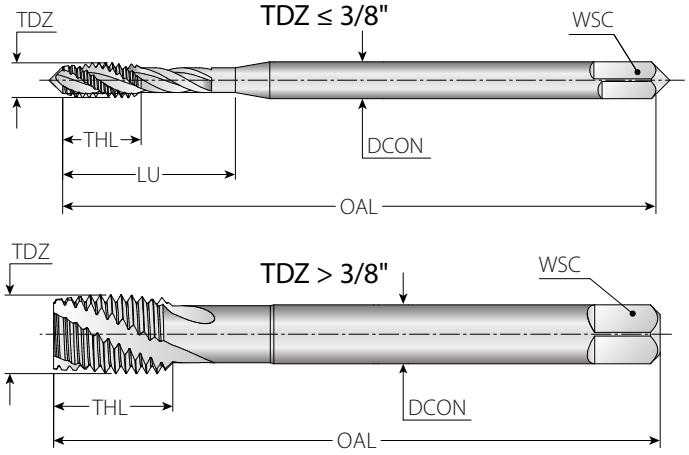
• Available in these grades

American UN (UNF)

Internal



Defined by: ANSI B1.1
Tolerance class: 2B



UNF | DIN 371/374 | C 2-3.5 | 2.5xTDZ | HSS -E

P M K N

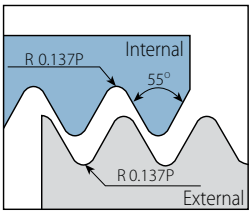
Spiral Flute Taps

UNF	Pitch	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade		
TDZ	TP	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC	VHN
No.4	48	VT-UNF4x48-SF-2B-DIN371-...	3.50	56	11	17	2.70		2.40	3	C	•	•	•
No.5	44	VT-UNF5x44-SF-2B-DIN371-...	3.50	56	11	18	2.70		2.70	3	C	•	•	•
No.6	40	VT-UNF6x40-SF-2B-DIN371-...	4.00	56	12	18	3.00		3.00	3	C	•	•	•
No.8	36	VT-UNF8x36-SF-2B-DIN371-...	4.50	63	13	21	3.40		3.50	3	C	•	•	•
No.10	32	VT-UNF10x32-SF-2B-DIN371-...	6.00	70	16	25	4.90	371	4.10	3	C	•	•	•
No.12	28	VT-UNF12x28-SF-2B-DIN371-...	6.00	80	19	30	4.90		4.70	3	C	•	•	•
1/4"	28	VT-UNF1/4x28-SF-2B-DIN371-...	7.00	80	19	31	5.50		5.50	3	C	•	•	•
5/16"	24	VT-UNF5/16x24-SF-2B-DIN371-...	8.00	90	22	36	6.20		6.90	3	C	•	•	•
3/8"	24	VT-UNF3/8x24-SF-2B-DIN371-...	9.00	90	22	42	7.00		8.50	3	C	•	•	•
7/16"	20	VT-UNF7/16x20-SF-2B-DIN374-...	8.00	100	20	-	6.20		9.90	4	C	•	•	•
1/2"	20	VT-UNF1/2x20-SF-2B-DIN374-...	9.00	100	22	-	7.00		11.50	4	C	•	•	•
9/16"	18	VT-UNF9/16x18-SF-2B-DIN374-...	11.00	100	22	-	9.00		12.90	4	C	•	•	•
5/8"	18	VT-UNF5/8x18-SF-2B-DIN374-...	12.00	110	32	-	9.00	374	14.50	4	C	•	•	•
3/4"	16	VT-UNF3/4x16-SF-2B-DIN374-...	14.00	125	34	-	11.00		17.50	4	C	•	•	•
7/8"	14	VT-UNF7/8x14-SF-2B-DIN374-...	18.00	125	38	-	14.50		20.40	4	C	•	•	•
1"	12	VT-UNF1x12-SF-2B-DIN374-...	18.00	140	28	-	14.50		23.25	4	C	•	•	•

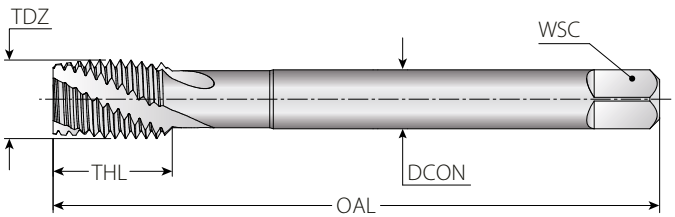
• Available in these grades

BSP (G) NEW

Internal



Defined by: DIN ISO 228-1
Tolerance class: Medium class



BSP (G) | DIN 5156 | C 2-3.5 | HSS-E

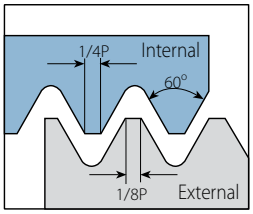
P M K N

Spiral Flute Taps

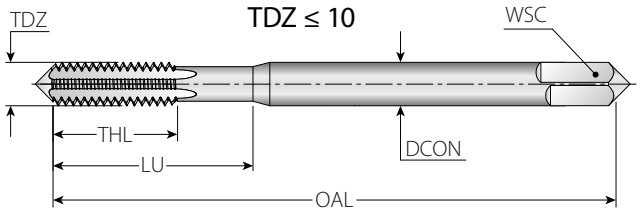
BSP(G)	Pitch	Ordering Code	Dimensions mm				DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade	
TDZ	TPI	Internal	DCON	OAL	THL (max)	WSC	SG	PHD	NOF	TCS	VHB	VHC
1/8"	28	VT-G1/8x28-SF-DIN5156-...	7	90	20	5.5	DIN5156	8.8	3	C	•	•
1/4"	19	VT-G1/4x19-SF-DIN5156-...	11	100	22	9.0		11.8	4	C	•	•
3/8"	19	VT-G3/8x19-SF-DIN5156-...	12	100	22	9.0		15.3	4	C	•	•
1/2"	14	VT-G1/2x14-SF-DIN5156-...	16	125	25	12.0		19.1	4	C	•	•
5/8"	14	VT-G5/8x14-SF-DIN5156-...	18	125	25	14.5		21.0	4	C	•	•
3/4"	14	VT-G3/4x14-SF-DIN5156-...	20	140	28	16.0		24.6	4	C	•	•
1"	11	VT-G1x11-SF-DIN5156-...	25	160	36	20.0		31.0	5	C	•	•

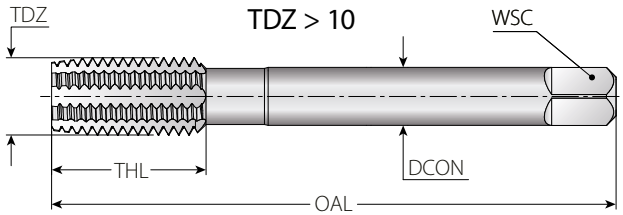
• Available in these grades

Internal



Defined by: DIN 13
Tolerance class: 6HX





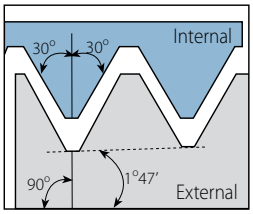
K

Straight Flute Taps

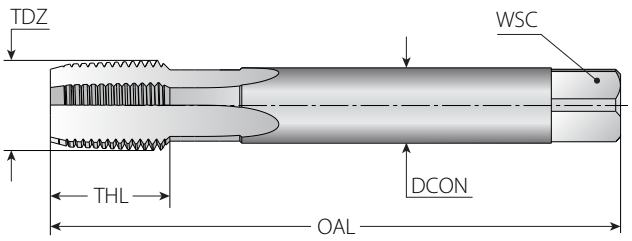
M Coarse	Pitch	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade
TDZ	TP	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHC
M3	0.50	VT-M3x0.5-ST-6HX-DIN371-...	3.50	56	11	18	2.70	371	2.50	3	C	•
M4	0.70	VT-M4x0.7-ST-6HX-DIN371-...	4.50	63	13	19	3.40		3.30	3	C	•
M5	0.80	VT-M5x0.8-ST-6HX-DIN371-...	6.00	70	16	25	4.90		4.20	3	C	•
M6	1.00	VT-M6x1-ST-6HX-DIN371-...	6.00	80	19	30	4.90		5.00	4	C	•
M8	1.25	VT-M8x1.25-ST-6HX-DIN371-...	8.00	90	22	34	6.20		6.80	4	C	•
M10	1.50	VT-M10x1.5-ST-6HX-DIN371-...	10.00	100	24	40	8.00		8.50	4	C	•
M12	1.75	VT-M12x1.75-ST-6HX-DIN376-...	9.00	110	28	-	7.00	376	10.20	4	C	•
M14	2.00	VT-M14x2-ST-6HX-DIN376-...	11.00	110	30	-	9.00		12.00	4	C	•
M16	2.00	VT-M16x2-ST-6HX-DIN376-...	12.00	110	32	-	9.00		14.00	4	C	•
M18	2.50	VT-M18x2.5-ST-6HX-DIN376-...	14.00	125	34	-	11.00		15.50	4	C	•
M20	2.50	VT-M20x2.5-ST-6HX-DIN376-...	16.00	140	34	-	12.00		17.50	4	C	•

• Available in these grades

Internal



Defined by: ASA B 2.1
Tolerance class: Standard NPT



NPT | C 2-3.5 | HSS

P M

Straight Flute Taps

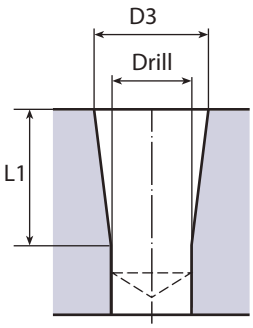
NPT	Pitch	Ordering Code	Dimensions mm				Drill Hole	No. of Flutes	Chamfer Lead	Grade
TDZ	TPI	Internal	DCON	OAL	THL (max)	WSC	PHD	NOF	TCS	VHB
1/16"	27	VT-NPT1/16x27-ST-...	6	90	17	4.9	See Drill hole Dia. table below	3	C	•
1/8"	27	VT-NPT1/8x27-ST-...	8	90	17	6.2		3	C	•
1/4"	18	VT-NPT1/4x18-ST-...	11	100	23	9		4	C	•
3/8"	18	VT-NPT3/8x18-ST-...	14	110	23	11		4	C	•
1/2"	14	VT-NPT1/2x14-ST-...	18	140	30	14.5		4	C	•
3/4"	14	VT-NPT3/4x14-ST-...	22	140	30	18		5	C	•
1"	11.5	VT-NPT1x11.5-ST-...	25	160	35	20		5	C	•

• Available in these grades

NPT Pre-Hole Diameter Table

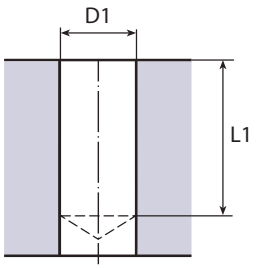
Conical

Thread	Drill Ø	D3	L1
1/16 - 27	6.0	6.41	12.0
1/8 - 27	8.3	8.76	12.0
1/4 - 18	10.7	11.40	17.5
3/8 - 18	14.2	14.84	17.6
1/2 - 14	17.4	18.33	22.8
3/4 - 14	22.8	23.68	23.0
1 - 11.5	28.6	29.72	27.4

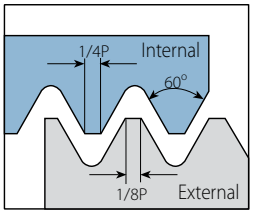


Parallel

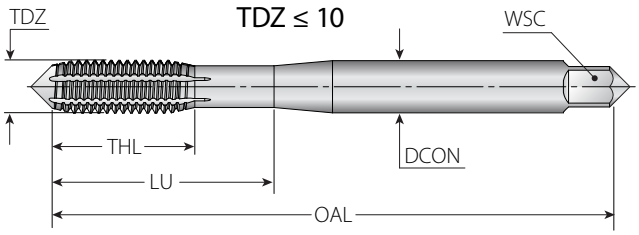
Thread	Drill Ø	D1	L1 min
1/16 - 27	6.0	6.2	12.0
1/8 - 27	8.3	8.5	12.0
1/4 - 18	10.7	11.0	17.5
3/8 - 18	14.2	14.5	17.6
1/2 - 14	17.4	17.8	22.8
3/4 - 14	22.8	23.0	23.0
1 - 11.5	28.6	29.0	27.4

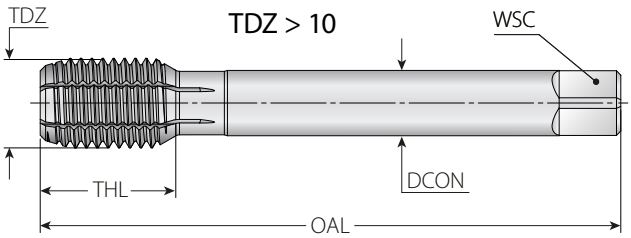


Internal



Defined by: DIN 13
Tolerance class: 6HX





M | DIN 2174 | C 2-3.5 | 2.5xTDZ | HSS-E PM

P M N

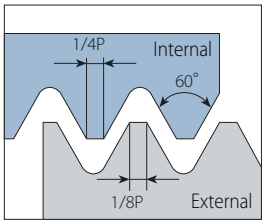
Cold Forming Taps*

M Coarse	Pitch mm	Ordering Code	Dimensions mm					DIN	Drill Hole	No. of Flutes	Chamfer Lead	Grade
TDZ	TP	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHN
M2.5	0.45	VT-M2.5x0.45-FM-6HX-DIN2174...	2.8	50	9	18	2.10		2.30	3	C	•
M3	0.50	VT-M3x0.5-FM-6HX-DIN2174-...	3.5	56	11	19	2.70		2.80	4	C	•
M4	0.70	VT-M4x0.7-FM-6HX-DIN2174-...	4.5	63	13	25	3.40		3.70	5	C	•
M5	0.80	VT-M5x0.8-FM-6HX-DIN2174-...	6	70	16	28	4.90		4.65	5	C	•
M6	1.00	VT-M6x1-FM-6HX-DIN2174-...	6	80	19	34	4.90		5.55	5	C	•
M8	1.25	VT-M8x1.25-FM-6HX-DIN2174-...	8	90	22	40	6.20		7.40	5	C	•
M10	1.50	VT-M10x1.5-FM-6HX-DIN2174-...	10	100	24	-	8.00	2174	9.30	5	C	•
M12	1.75	VT-M12x1.75-FM-6HX-DIN2174-...	9	110	28	-	7.00		11.20	5	C	•
M14	2.00	VT-M14x2-FM-6HX-DIN2174-...	11	110	30	-	9.00		13.10	6	C	•
M16	2.00	VT-M16x2-FM-6HX-DIN2174-...	12	110	32	-	9.00		15.10	6	C	•
M18	2.50	VT-M18x2.5-FM-6HX-DIN2174-...	14	125	34	-	11.00		16.90	7	C	•
M20	2.50	VT-M20x2.5-FM-6HX-DIN2174-...	16	140	34	-	12.00		18.90	7	C	•

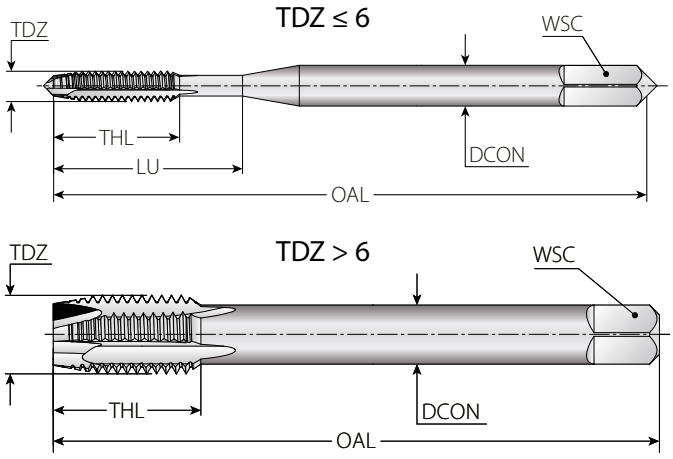
• Available in these grades

* For materials with a minimum elongation coefficient of 10-12%.

Internal



Defined by: DIN 13
Tolerance class: 6H



M |  | JIS B-4430 | B 3.5-5.5 | 2.5xTDZ | HSS-E

P M K N

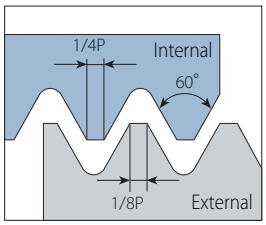
Straight Flutes with Spiral Point Taps

M Coarse	Pitch	Ordering Code	Dimensions mm					JIS	Drill Hole	No. of Flutes	Chamfer Lead	Grade	
TDZ	TP	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC
M3	0.50	VT-M3x0.5-SP-6H-JIS-...	4.00	46	18	18	3.20		2.50	3	B	•	•
M4	0.70	VT-M4x0.7-SP-6H-JIS-...	5.00	52	20	20	4.00		3.30	3	B	•	•
M5	0.80	VT-M5x0.8-SP-6H-JIS-...	5.50	60	22	25	4.50		4.20	3	B	•	•
M6	1.00	VT-M6x1-SP-6H-JIS-...	6.00	62	24	30	4.50		5.00	3	B	•	•
M8	1.25	VT-M8x1.25-SP-6H-JIS-...	6.20	70	30	-	5.00	B-4430	6.80	3	B	•	•
M10	1.50	VT-M10x1.5-SP-6H-JIS-...	7.00	75	32	-	5.50		8.50	3	B	•	•
M12	1.75	VT-M12x1.75-SP-6H-JIS-...	8.50	82	38	-	6.50		10.20	3	B	•	•
M14	2.00	VT-M14x2-SP-6H-JIS-...	10.50	88	42	-	8.00		12.00	3	B	•	•
M16	2.00	VT-M16x2-SP-6H-JIS-...	12.50	95	45	-	10.00		14.00	3	B	•	•

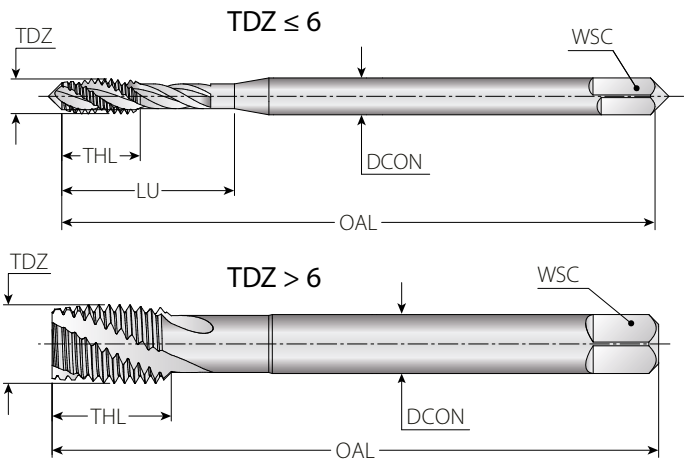
• Available in these grades

ISO Metric (M) - JIS

Internal



Defined by: DIN 13
Tolerance class: 6H



M | JIS B-4430 | C 2-3.5 | 2.5xTDZ | HSS -E

P M K N

Spiral Flute Taps

M Coarse	Pitch	Ordering Code	Dimensions mm					JIS	Drill Hole	No. of Flutes	Chamfer Lead	Grade	
TDZ	TP	Internal	DCON	OAL	THL	LU	WSC	SG	PHD	NOF	TCS	VHB	VHC
M3	0.50	VT-M3x0.5-SF-6H-JIS-...	4.00	46	18	18	3.20	B-4430	2.50	3	B	•	•
M4	0.70	VT-M4x0.7-SF-6H-JIS-...	5.00	52	20	20	4.00		3.30	3	B	•	•
M5	0.80	VT-M5x0.8-SF-6H-JIS-...	5.50	60	22	25	4.50		4.20	3	B	•	•
M6	1.00	VT-M6x1-SF-6H-JIS-...	6.00	62	24	30	4.50		5.00	3	B	•	•
M8	1.25	VT-M8x1.25-SF-6H-JIS-...	6.20	70	30	-	5.00		6.80	3	B	•	•
M10	1.50	VT-M10x1.5-SF-6H-JIS-...	7.00	75	32	-	5.50		8.50	3	B	•	•
M12	1.75	VT-M12x1.75-SF-6H-JIS-...	8.50	82	38	-	6.50		10.20	3	B	•	•
M14	2.00	VT-M14x2-SF-6H-JIS-...	10.50	88	42	-	8.00		12.00	3	B	•	•
M16	2.00	VT-M16x2-SF-6H-JIS-...	12.50	95	45	-	10.00		14.00	3	B	•	•

• Available in these grades

VARGUS GENius™ Tool Selector and CNC Program Generator

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Recommended Grades and Cutting Speeds Vc [m/min] for ISO Metric and American UN Standards

Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [m/min]							
					Spiral Point			Spiral Flute			Straight Flute	Cold Forming
					VHB	**VHC**	**VHN**	**VHB**	**VHC**	**VHN**	**VHC**	**VHN**
P Steel	1	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	15-20	20-30		10-15	15-20			20-40
	2		Medium Carbon (C=0.25-0.55%)	150	15-20	20-30	20-30	10-15	15-20	15-20		20-40
	3		High Carbon (C=0.55-0.85%)	170	15-20	20-30	20-30	10-15	15-20	15-20		20-40
	4	Low Alloy Steel (alloying elements≤5%)	Non Hardened	180	15-20	20-30	20-30	10-15	15-20	15-20		20-40
	5		Hardened	275	10-15	15-20	15-20	8-10	10-15	10-15		15-25
	6		Hardened	350		12-18	12-18		8-12	8-12		15-25
	7	High Alloy Steel (alloying elements>5%)	Annealed	200	10-15	15-20	15-20	8-10	10-15	10-15		15-25
	8		Hardened	325		15-20	15-20		10-15	10-15		
	9	Cast Steel	Low Alloy (alloying elements <5%)	200		15-20	15-20		10-15	10-15		
	10		High Alloy (alloying elements >5%)	225		15-20	15-20		10-15	10-15		
M Stainless Steel	11	Stainless Steel Ferritic	Non Hardened	200	6-12	9-18		4-8	6-12			12-25
	12		Hardened	330			6-12			4-8		10-20
	13	Stainless Steel Austenitic	Austenitic	180	6-12	9-18		4-8	6-12			12-25
	14		Super Austenitic	200			6-12			4-8		6-15
	15	Stainless Steel Cast Ferritic	Non Hardened	200	6-12	9-18		4-8	6-12			12-25
	16		Hardened	330			6-12			4-8		
	17	Stainless Steel Cast Austenitic	Austenitic	200	6-12	9-18		4-8	6-12			12-25
	18		Hardened	330			6-12			4-8		
K Cast Iron	28	Malleable Cast Iron	Ferritic (short chips)	130							20-30	
	29		Pearlitic (long chips)	230	15-20	20-30		10-15	15-20			
	30	Grey Cast Iron	Low Tensile Strength	180							20-30	
	31		High Tensile Strength	260							15-25	
	32	Nodular Sg Iron	Ferritic	160	15-20	20-30		10-15	15-20		20-30	
	33		Pearlitic	260								
N Non-Ferrous Metals	34	Aluminum Alloys Wrought	Non Aging	60		20-30	20-30		15-20	15-20		25-40
	35		Aged	100		15-25	15-25		10-15	10-15		20-40
	36	Aluminum Alloys	Cast	75		20-30	20-30		15-20	15-20		25-40
	37		Cast & Aged	90		20-30	20-30		15-20	15-20		25-40
	38	Aluminum Alloys	Cast Si 13-22%	130							20-30	
	39	Copper and Copper Alloys	Brass	90								
	40		Bronze And Non Leaded Copper	100								

Grade	Application	Sample
VHB	HSS-E **Black Oxide Coated** Economical solution grade for general use	
VHC	HSS-E **TiCN Coated** Excellent grade for stainless , cast steels and general use	
VHN	HSS-E **TiN Coated** Excellent grade for steels and general use (HSS-E PM TiN coated available for cold forming geometry)	

Recommended Grades and Cutting Speeds Vc [m/min] for BSP (G) and NPT Standards

NEW

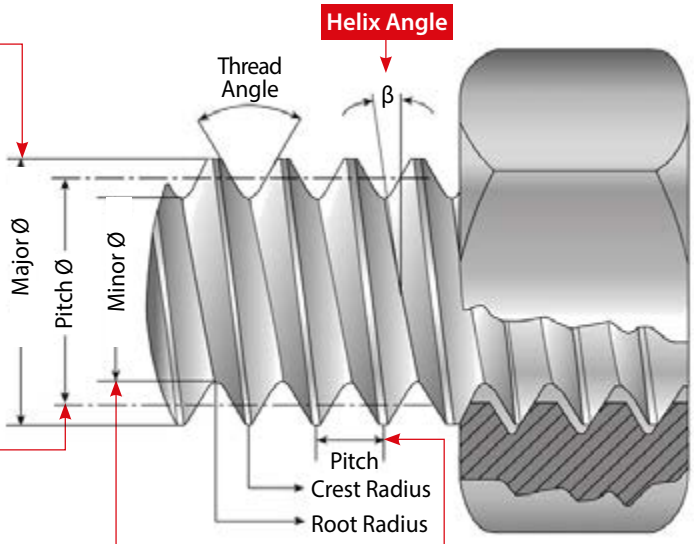
Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [m/min]				
					BSP (G)				NPT
					VHB Spiral Point	VHC Spiral Point	VHB Spiral Flute	VHC Spiral Flute	VHB Straight Flute
P Steel	1	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	15-20	20-30	10-15	15-20	2-8
	2		Medium Carbon (C=0.25-0.55%)	150	15-20	20-30	10-15	15-20	2-8
	3		High Carbon (C=0.55-0.85%)	170	15-20	20-30	10-15	15-20	2-8
	4	Low Alloy Steel (alloying elements≤5%)	Non Hardened	180	15-20	20-30	10-15	15-20	2-8
	5		Hardened	275	10-15	15-20	8-10	10-15	1-6
	6		Hardened	350		12-18		8-12	
	7	High Alloy Steel (alloying elements>5%)	Annealed	200	10-15	15-20	8-10	10-15	1-6
	8		Hardened	325		15-20		10-15	
	9	Cast Steel	Low Alloy (alloying elements <5%)	200		15-20		10-15	
	10		High Alloy (alloying elements >5%)	225		15-20		10-15	
M Stainless Steel	11	Stainless Steel Ferritic	Non Hardened	200	6-12	9-18	4-8	6-12	1-6
	12		Hardened	330					
	13	Stainless Steel Austenitic	Austenitic	180	6-12	9-18	4-8	6-12	1-6
	14		Super Austenitic	200					1-6
	15	Stainless Steel Cast Ferritic	Non Hardened	200	6-12	9-18	4-8	6-12	1-6
	16		Hardened	330					
	17	Stainless Steel Cast Austenitic	Austenitic	200	6-12	9-18	4-8	6-12	1-5
	18		Hardened	330					
K Cast Iron	28	Malleable Cast Iron	Ferritic (short chips)	130					
	29		Pearlitic (long chips)	230	15-20	20-30	10-15	15-20	
	30	Grey Cast Iron	Low Tensile Strength	180					
	31		High Tensile Strength	260					
	32	Nodular Sg Iron	Ferritic	160	15-20	20-30	10-15	15-20	
	33		Pearlitic	260					
N Non-Ferrous Metals	34	Aluminum Alloys Wrought	Non Aging	60		20-30		15-20	
	35		Aged	100		15-25		10-15	
	36	Aluminum Alloys	Cast	75		20-30		15-20	
	37		Cast & Aged	90		20-30		15-20	
	38	Aluminum Alloys	Cast Si 13-22%	130					
	39	Copper and Copper Alloys	Brass	90					
	40		Bronze And Non Leaded Copper	100					

Thread Diameters

Major Diameter (Ø)
The largest diameter
(Nominal Dia./Outside Dia.)

Pitch Diameter (Ø)
(Effective Dia.)

Minor Diameter (Ø)
The smallest diameter
(Root Dia./Inside Dia.)



Pitch
- mm
- TPI (Thread Per Inch)

ISO Metric

M Coarse

Thread	Minor Ø min	Minor Ø max	Drill Ø*
2x0.4	1.567	1.679	1.6
2.2x0.45	1.713	1.838	1.75
2.5x0.45	2.013	2.138	2.05
3x0.5	2.459	2.599	2.5
3.5x0.6	2.850	3.010	2.9
4x0.7	3.242	3.422	3.3
4.5x0.75	3.688	3.878	3.7
5x0.8	4.134	4.334	4.2
6x1	4.917	5.153	5
7x1	5.917	6.153	6
8x1.25	6.647	6.912	6.8
10x1.5	8.376	8.676	8.5
12x1.75	10.106	10.441	10.2
14x2	11.835	12.210	12
16x2	13.835	14.210	14
18x2.5	15.294	15.744	15.5
20x2.5	17.294	17.744	17.5

M Fine

Thread	Minor Ø min	Minor Ø max	Drill Ø*
4x0.35	3.621	3.721	3.65
4x0.5	3.459	3.599	3.5
4.5x0.5	3.959	4.099	4
5x0.5	4.459	4.599	4.5
6x0.5	5.459	5.599	5.5
6x0.75	5.188	5.378	5.2
7x0.75	6.188	6.378	6.2
8x0.5	7.459	7.599	7.5
8x0.75	7.188	7.378	7.2
8x1	6.917	7.153	7
9x1	7.917	8.153	8
10x0.75	9.188	9.378	9.2
10x1	8.917	9.153	9
10x1.25	8.647	8.912	8.8
11x1	9.917	10.153	10
12x1	10.917	11.153	11
12x1.25	10.647	10.912	10.8
12x1.5	10.376	10.676	10.5
14x1	12.917	13.153	13
14x1.25	12.647	12.912	12.8
14x1.5	12.376	12.676	12.5
15x1	13.917	14.153	14
15x1.5	13.376	13.676	13.5
16x1	14.917	15.153	15
16x1.5	14.376	14.676	14.5
18x1	16.917	17.153	17
18x1.5	16.376	16.676	16.5
18x2	15.835	16.210	16
20x1	18.917	19.153	19
20x1.5	18.376	18.676	18.5
20x2	17.835	18.210	18

American UN

UNC

Thread	Minor Ø min	Minor Ø max	Drill Ø*
No.4 -40	2.156	2.385	2.3
No.5 -40	2.487	2.697	2.6
No.6 -32	2.642	2.896	2.85
No.8 -32	3.302	3.531	3.5
No.10 -24	3.683	3.962	3.9
No.12 -24	4.343	4.597	4.5
¼-20	4.978	5.258	5.2
5⁄16-18	6.401	6.731	6.6
⅜-16	7.798	8.153	8
7⁄16-14	9.144	9.550	9.4
½-13	10.592	11.024	10.75
9⁄16-12	11.989	12.446	12.25
⅝-11	13.386	13.868	13.5
¾-10	16.307	16.840	16.6
⅞-9	19.177	19.761	19.5
1-8	21.971	22.606	22.25

UNF

Thread	Minor Ø min	Minor Ø max	Drill Ø*
No.4-48	2.271	2.459	2.4
No.5-44	2.550	2.741	2.7
No.6-40	2.819	3.023	3.0
No.8-36	3.404	3.607	3.5
No.10-32	3.962	4.166	4.1
No.12-28	4.496	4.724	4.7
¼-28	5.359	5.588	5.5
5⁄16-24	6.782	7.036	6.9
⅜-24	8.382	8.636	8.5
7⁄16-20	9.728	10.033	9.9
½-20	11.328	11.608	11.5
9⁄16-18	12.751	13.081	12.9
⅝-18	14.351	14.681	14.5
¾-16	17.323	17.678	17.5
⅞-14	20.269	20.676	20.4
1-12	23.114	23.571	23.25

BSP (G) NEW

Thread	Minor Ø min	Minor Ø max	Drill Ø
G1/16-28	6.561	6.843	6.7
G1/8-28	8.566	8.848	8.7
G1/4-19	11.445	11.890	11.7
G3/8-19	14.950	15.395	15.2
G1/2-14	18.631	19.172	19.0
G5/8-14	20.587	21.128	21.0
G3/4-14	24.117	24.658	24.5
G7/8-14	27.877	28.418	28.3
G1-11	30.291	30.931	30.8

*Drill Ø for Forming Taps see Vargus Genius

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