VARGUS GENius™ Tool Selector and CNC Program Generator

TM Solid TMDR

Drilling, Thread Milling & Chamfering

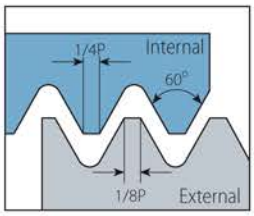
TM Solid 3-in-1 Tool for Reduced Cycle Times and Productivity

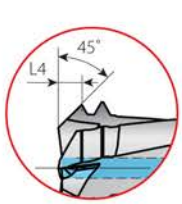
Features and Benefits

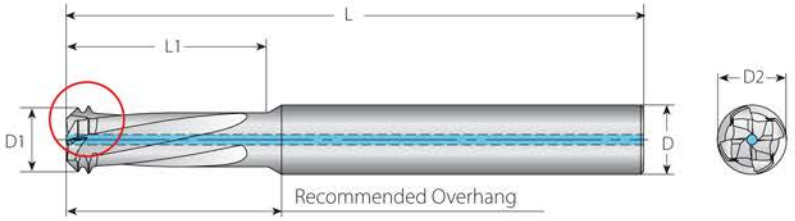
- TMDR tools drill, thread and chamfer all in one tooling operation
- Pre-drilled holes are no longer required!
- Drilling and thread milling is done simultaneously, while chamfering is produced at the end of the operation
- This versatile tool also works on components with pre-drilled holes, such as: blind holes, through holes, and even semi-finished holes
- For shank diameters 8, 10, and 12mm tools are offered with coolant thru
- Thread lengths: 2xDo and 2.5xDo (Thread Diameter)
- All tools are left handed, and are suitable for right and left hand threads
- **Thread Standards:**
  ISO Metric: From M3x0.5 up to M23x2.0
  American UN: From No. 4-40 up to 3/8"x16
- **VTS Grade:**
  A general-purpose, heavy duty thread milling grade
  TiAlN coated for high resistance to wear

The **TMDR** is fully supported by **VARGUS GENius™**, the most advanced Tool Selector and CNC Program Generator in the metal cutting tools industry.

Internal







Defined by: R262 (DIN 13)
Tolerance class: 6H

* Coolant available only when specified

Left Hand Tool

TMDR

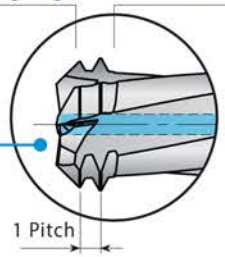
2 x Do (L1 ≤ 2 x Thread Diameter)

Thread	Pitch	Ordering Code	Dimensions mm				No. of Flutes	Teeth		
	mm		D	D2	L	L1	Z	Zt	L4 mm*	D1 mm
Without coolant										
M3	0.50	TD-2L06024L070-I0.50ISO...	6	2.40	58	7.0	3	2	0.40	2.08
M4	0.70	TD-2L06032L092-I0.70ISO...	6	3.20	58	9.2	3	2	0.57	2.88
M5	0.80	TD-2L06039L115-I0.80ISO...	6	3.90	58	11.5	3	2	0.70	3.51
M6-M9	1.00	TD-2L06047L140-I1.00ISO...	6	4.70	58	14.0	3	2	0.79	4.16
With coolant										
M6-M9	1.00	TDC2L08047L140-I1.00ISO...	8	4.70	64	14.0	3	2	0.79	4.16
M8-M12	1.25	TDC2L08061L180-I1.25ISO...	8	6.10	64	18.0	4	2	0.90	5.57
M10-M15	1.50	TDC2L08078L230-I1.50ISO...	8	7.80	64	23.0	4	2	1.12	7.24
M12	1.75	TDC2L10090L260-I1.75ISO...	10	9.00	80	26.0	4	2	1.20	8.35
M16-M23	2.00	TDC2L12118L350-I2.00ISO...	12	11.80	100	35.0	4	2	2.00	11.13

TMDR

2.5 x Do (L1 ≤ 2.5 x Thread Diameter)

Thread	Pitch	Ordering Code	Dimensions mm				No. of Flutes	Teeth		
	mm		D	D2	L	L1	Z	Zt	L4 mm*	D1 mm
Without coolant										
M3	0.50	TD-2L06024L085-I0.50ISO...	6	2.40	58	8.5	3	2	0.40	2.08
M4	0.70	TD-2L06032L112-I0.70ISO...	6	3.20	58	11.2	3	2	0.57	2.88
M5	0.80	TD-2L06039L144-I0.80ISO...	6	3.90	58	14.4	3	2	0.70	3.51
M6-M9	1.00	TD-2L06047L170-I1.00ISO...	6	4.70	58	17.0	3	2	0.79	4.16
With coolant										
M6-M9	1.00	TDC2L08047L170-I1.00ISO...	8	4.70	64	17.0	3	2	0.79	4.16
M8-M12	1.25	TDC2L08061L220-I1.25ISO...	8	6.10	64	22.0	4	2	0.90	5.57



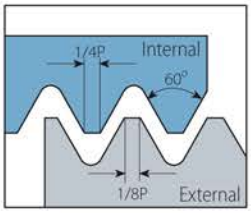
Two cutting teeth: Partial Profile for leading tooth followed by Full Profile for finishing.

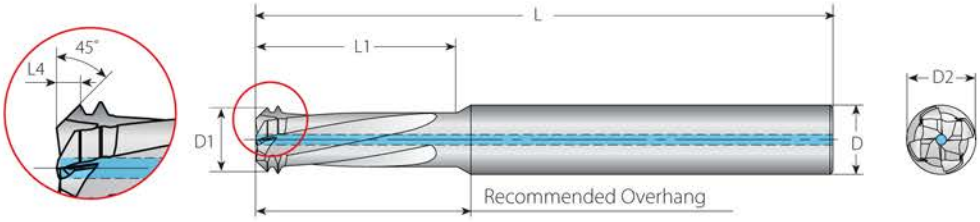
The work direction should be from the outside inwards (Climb Milling).

TMDR Tools are left handed. For CNC use M04 code.

* Please use the VARGUS GENius™ for Chamfer recommendations.

Internal





Defined by: ANSI B1.1:74
Tolerance class: 2B
* Coolant available only when specified

Left Hand Tool

TMDR

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread	Pitch	Ordering Code	Dimensions mm				No. of Flutes	Teeth		
	TPI		D	D2	L	L1	Z	Zt	L4 mm*	D1 mm
Without coolant										
No.4-40	40	TD-2L06021L072-I40UNC...	6	2.10	58	7.2	3	2	0.38	1.76
No.6-32	32	TD-2L06026L086-I32UNC...	6	2.60	58	8.6	3	2	0.45	2.21
No.8-32	32	TD-2L06030L100-I32UNC...	6	3.00	58	10.0	3	2	0.60	2.62
1/4"-28	28	TD-2L06050L144-I28UNF...	6	5.00	58	14.4	3	2	0.69	4.58
No.10-24	24	TD-2L06035L114-I24UNC...	6	3.50	58	11.4	3	2	0.80	3.18
1/4"x20	20	TD-2L06048L145-I20UNC...	6	4.80	58	14.5	3	2	0.80	4.29
With coolant										
1/4"-28	28	TDC2L08050L144-I28UNF...	8	5.00	64	14.4	3	2	0.69	4.58
5/16"-24	24	TDC2L08065L176-I24UNF...	8	6.50	64	17.6	3	2	0.85	6.02
1/4"x20	20	TDC2L08048L145-I20UNC...	8	4.80	64	14.5	3	2	0.80	4.29

TMDR

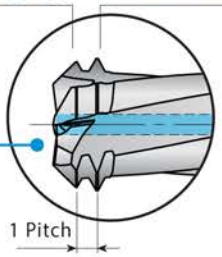
2.5 x Do (L1 ≤ 2.5 x Thread Diameter)

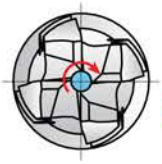
Thread	Pitch	Ordering Code	Dimensions mm				No. of Flutes	Teeth		
	TPI		D	D2	L	L1	Z	Zt	L4 mm*	D1 mm
Without coolant										
No.4-40	40	TD-2L06021L088-I40UNC...	6	2.10	58	8.8	3	2	0.38	1.76
No.6-32	32	TD-2L06026L105-I32UNC...	6	2.60	58	10.5	3	2	0.45	2.21
No.8-32	32	TD-2L06030L122-I32UNC...	6	3.00	58	12.2	3	2	0.60	2.62
1/4"x28	28	TD-2L06050L178-I28UNF...	6	5.00	58	17.8	3	2	0.69	4.58
1/4"-20	20	TD-2L06048L180-I20UNC...	6	4.80	58	18.0	3	2	0.80	4.29
With coolant										
1/4"-28	28	TDC2L08050L178-I28UNF...	8	5.00	64	17.8	3	2	0.69	4.58
5/16"-24	24	TDC2L08065L218-I24UNF...	8	6.50	64	21.8	3	2	0.85	6.02
1/4"x20	20	TDC2L08048L180-I20UNC...	8	4.80	64	18.0	3	2	0.80	4.29
3/8"-16	16	TDC2L08067L260-I16UNC...	8	6.70	64	26.0	4	2	1.10	6.18

1st Tooth: Partial Profile (Roughing) 2nd Tooth: Full Profile (Finish)

Two cutting teeth: Partial Profile for leading tooth followed by Full Profile for finishing.

The work direction should be from the outside inwards (Climb Milling).



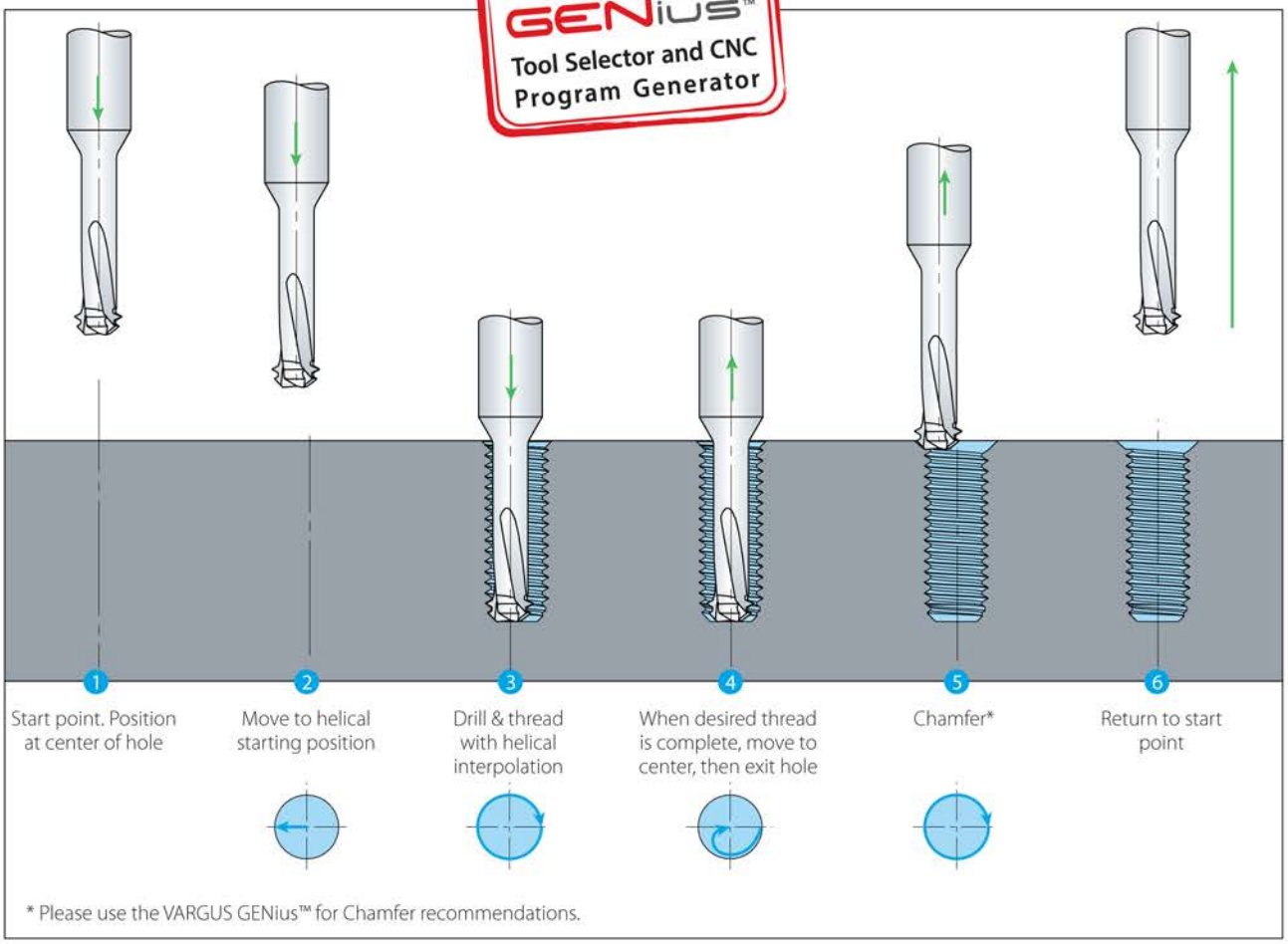


TMDR Tools are left handed. For CNC use M04 code.

* Please use the VARGUS GENius™ for Chamfer recommendations.

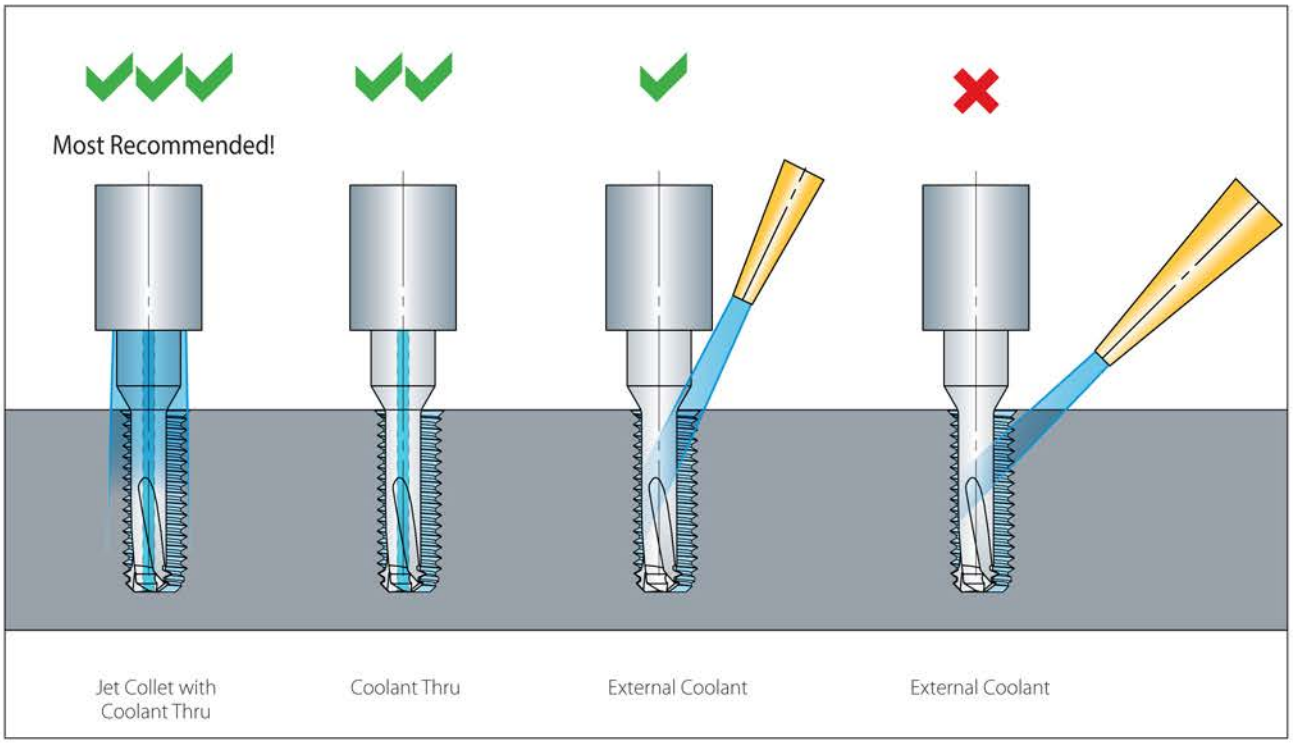
TMDR - Operating Cycle

VARGUS GENius™ Tool Selector and CNC Program Generator



* Please use the VARGUS GENius™ for Chamfer recommendations.

TMDR - Coolant Use for Best Chip Evacuation



Recommended Cutting Speeds Vc [m/min] and Feed f [mm/tooth]

TMDR

Material Group	Vargus No.	Material		Hardness Brinell HB	Vc(m/min) TMDR	Vc(m/min) VTS	Feed [mm/tooth]
P Steel	1	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	60-120		0.02-0.12
	2		Medium Carbon (C=0.25-0.55%)	150	60-120		0.02-0.12
	3		High Carbon (C=0.55-0.85%)	170	60-90		0.02-0.12
	4	Low Alloy Steel (alloying elements≤5%)	Non Hardened	180	60-90		0.02-0.12
	5		Hardened	275	50-80		0.02-0.05
	6		Hardened	350	50-80		0.02-0.03
	7	High Alloy Steel (alloying elements>5%)	Annealed	200	50-80		0.02-0.07
	8		Hardened	325	50-80		0.02-0.03
	9	Cast Steel	Low Alloy (alloying elements <5%)	200	70-90		0.02-0.12
	10		High Alloy (alloying elements >5%)	225	60-80		0.02-0.03
M Stainless Steel	11	Stainless Steel Ferritic	Non Hardened	200	60-90		0.02-0.12
	12		Hardened	330	50-80		0.02-0.03
	13	Stainless Steel Austenitic	Austenitic	180	60-90		0.02-0.12
	14		Super Austenitic	200	50-80		0.02-0.12
	15	Stainless Steel Cast Ferritic	Non Hardened	200	60-90		0.02-0.12
	16		Hardened	330	50-80		0.02-0.03
	17	Stainless Steel Cast Austenitic	Austenitic	200	60-90		0.02-0.12
	18		Hardened	330	50-80		0.02-0.03
K Cast Iron	28	Malleable Cast Iron	Ferritic (short chips)	130	50-80		0.02-0.03
	29		Pearlitic (long chips)	230	60-90		0.02-0.09
	30	Grey Cast Iron	Low Tensile Strength	180	70-100		0.02-0.12
	31		High Tensile Strength	260	60-90		0.02-0.09
	32	Nodular Sg Iron	Ferritic	160	70-100		0.02-0.12
	33		Pearlitic	260	60-90		0.02-0.09
N Non-Ferrous Metals	34	Aluminum Alloys Wrought	Non Aging	60	60-250		0.03-0.11
	35		Aged	100	60-150		0.03-0.12
	36	Aluminum Alloys	Cast	75	60-250		0.03-0.12
	37		Cast & Aged	90	60-150		0.02-0.12
	38	Aluminum Alloys	Cast Si 13-22%	130	250		0.03-0.11
	39	Copper and Copper Alloys	Brass	90	60-250		0.03-0.12
	40		Bronze And Non Leaded Copper	100	60-150		0.03-0.11
S Heat Resistant Material	19	High Temperature Alloys	Annealed (iron based)	200	60		0.02-0.12
	20		Aged (iron based)	280	50		0.02-0.03
	21		Annealed (nickel or cobalt based)	250	35		0.02-0.03
	22		Aged (nickel or cobalt based)	350	30		0.02-0.03
	23	Titanium Alloys	Pure 99.5 Ti	400Rm	30-50		0.02-0.05
	24		α+β Alloys	1050Rm	25-35		0.02-0.05
H Hardened Material	25	Extra Hard Steel	Hardened & Tempered	45-50HRc	-		-
	26			51-55HRc	-		-