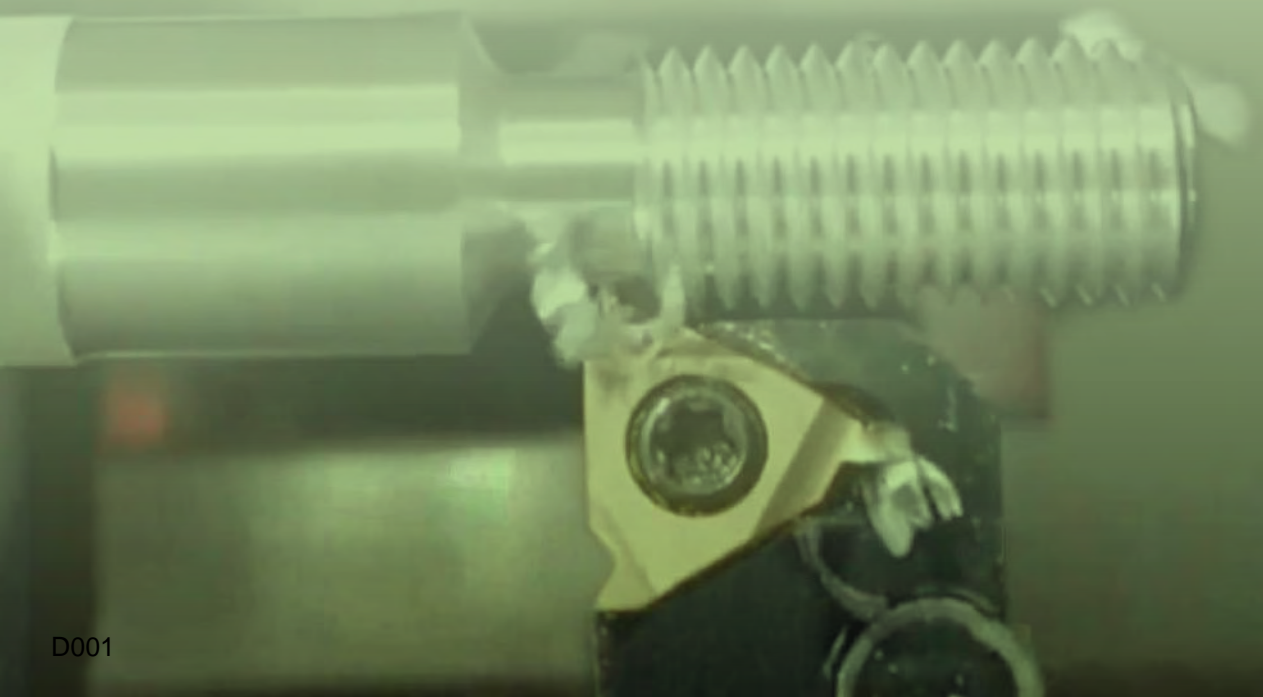


Threading

Solid Thread Mills..... D002

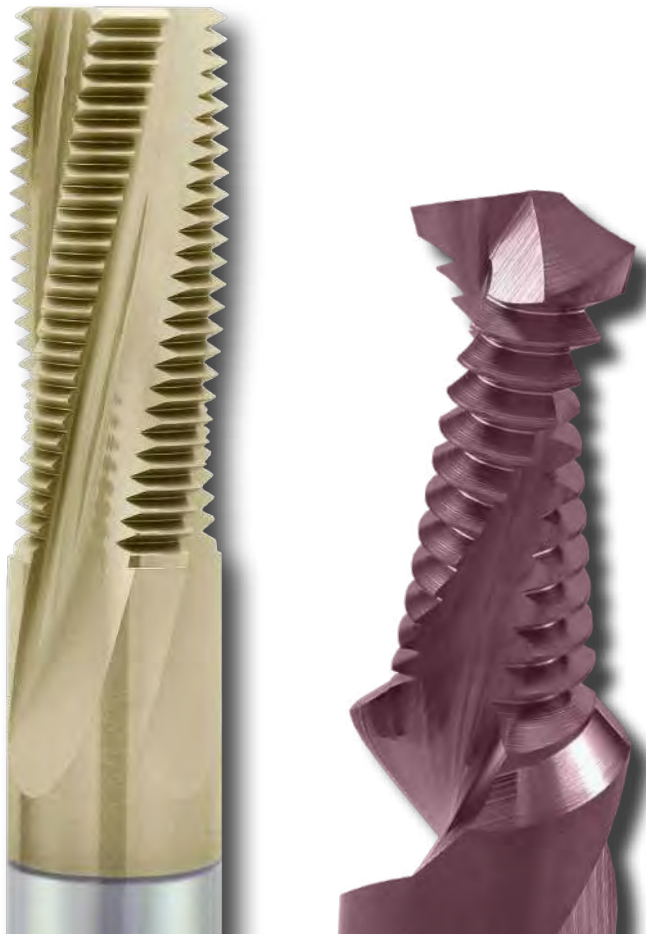
Solid Thread Turning Bars..... D009

Indexable Thread Turning Tool.. D016



INDEX

ETH Series - Thread Mills.....D003
ETD Series - Drill / Thread Mills.....D007

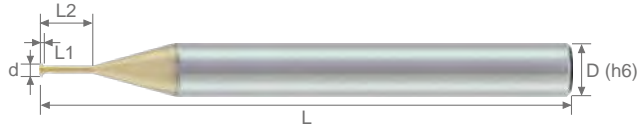
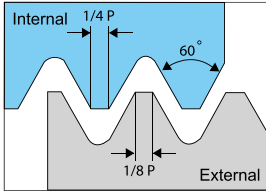


- *The thread mill is designed to cut threads by milling.*
- *A single tool is suitable for thread cutting in various sizes of diameter.*
- *Large diameter thread can be machined with low power machine.*



ETH Series

■ ETSNM Series

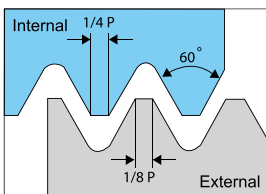


Tolerance class : 6H

Order No.	Size	Pitch	No. of Threads	Dia. (d)	CL (L1)	EFF-L (L2)	OAL (L)	Shank (D)	Flutes (F)
ETSNM30072025S	M1.0	0.25	1	0.72	0.25	2.75	42	4	3
ETSNM30092025S	M1.2	0.25	1	0.91	0.25	3.25	42	4	3
ETSNM30105030S	M1.4	0.30	1	1.05	0.30	3.80	42	4	3
ETSNM30120035S	M1.6	0.35	1	1.20	0.35	4.35	42	4	3
ETSNM30130035S	M1.7~M1.8	0.35	1	1.30	0.35	4.85	42	4	3
ETSNM30152040S	M2	0.40	1	1.52	0.40	6	42	4	3
ETSNM30240050S	M3	0.50	1	2.40	0.50	9	42	4	3
ETSNM30315070S	M4	0.70	1	3.15	0.70	12	50	4	3
ETSNM40480100S	M6	1.00	1	4.80	1.00	18	60	6	4
ETSNM50820150S	M10	1.50	1	8.20	1.50	32	75	10	5
ETSNM50990175S	M12	1.75	1	9.90	1.75	38	75	10	5

* Customized specification available.

■ ETTNM Series



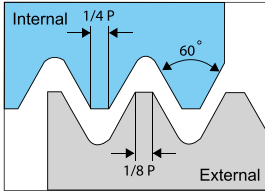
Tolerance class : 6H

Order No.	Size	Pitch	No. of Threads	Dia. (d)	CL (L1)	EFF-L (L2)	OAL (L)	Shank (D)	Flutes (F)
ETTNM30150040S	M2.0	0.40	3	1.5	1.20	4.4	50	6	3
ETTNM30190045S	M2.5	0.45	3	1.9	1.35	5.6	50	6	3
ETTNM30240050S	M3.0	0.50	3	2.4	1.50	6.5	50	6	3
ETTNM30310070S	M4.0	0.70	3	3.1	2.10	8.7	50	6	3
ETTNM30400080S	M5.0	0.80	3	4.0	2.40	10.8	50	6	3

* Customized specification available.

ETH Series

ETMNM Series

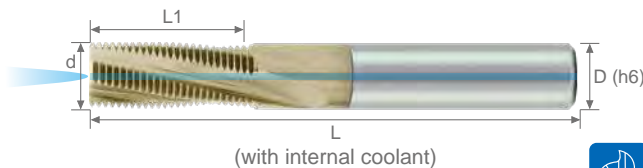
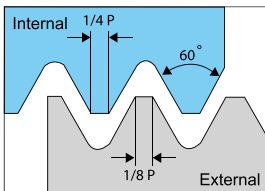


Tolerance class : 6H

Order No.	Size	Pitch	No. of Threads	Dia. (d)	CL (L1)	OAL (L)	Shank (D)	Flutes (F)
ETMNM30390100S	M6	1.00	12	3.90	12.00	50	6	3
ETMNM30390075S		0.75	16	3.90	12.00	50	6	3
ETMNM30580125S	M8	1.25	13	5.80	16.25	60	6	3
ETMNM30590100S		1.00	16	5.90	16.00	60	6	3
ETMNM30770150S	M10	1.50	14	7.70	21.00	60	8	3
ETMNM30770125S		1.25	16	7.70	20.00	60	8	3
ETMNM30790100S		1.00	20	7.90	20.00	60	8	3
ETMNM40870175S	M12	1.75	14	8.70	24.50	75	10	4
ETMNM40940150S		1.50	16	9.40	24.00	75	10	4
ETMNM40990100S		1.00	24	9.90	24.00	75	10	4
ETMNM40990200S	M14	2.00	14	9.90	28.00	75	10	4
ETMNM41120150S		1.50	19	11.20	28.50	75	12	4
ETMNM41190200S	M16	2.00	16	11.90	32.00	100	12	4
ETMNM41190150S		1.50	22	11.90	33.00	100	12	4

* Customized specification available.

ETMCM Series



Tolerance class : 6H

Order No.	Size	Pitch	No. of Threads	Dia. (d)	CL (L1)	OAL (L)	Shank (D)	Flutes (F)
ETMCM30390100S	M6	1.00	12	3.90	12.00	50	6	3
ETMCM30390075S		0.75	16	3.90	12.00	50	6	3
ETMCM30580125S	M8	1.25	13	5.80	16.25	60	6	3
ETMCM30590100S		1.00	16	5.90	16.00	60	6	3
ETMCM30770150S	M10	1.50	14	7.70	21.00	60	8	3
ETMCM30770125S		1.25	16	7.70	20.00	60	8	3
ETMCM30790100S		1.00	20	7.90	20.00	60	8	3
ETMCM40870175S	M12	1.75	14	8.70	24.50	75	10	4
ETMCM40940150S		1.50	16	9.40	24.00	75	10	4
ETMCM40990100S		1.00	24	9.90	24.00	75	10	4
ETMCM40990200S	M14	2.00	14	9.90	28.00	75	10	4
ETMCM41120150S		1.50	19	11.20	28.50	75	12	4
ETMCM41190200S	M16	2.00	16	11.90	32.00	100	12	4
ETMCM41190150S		1.50	22	11.90	33.00	100	12	4

* Customized specification available.

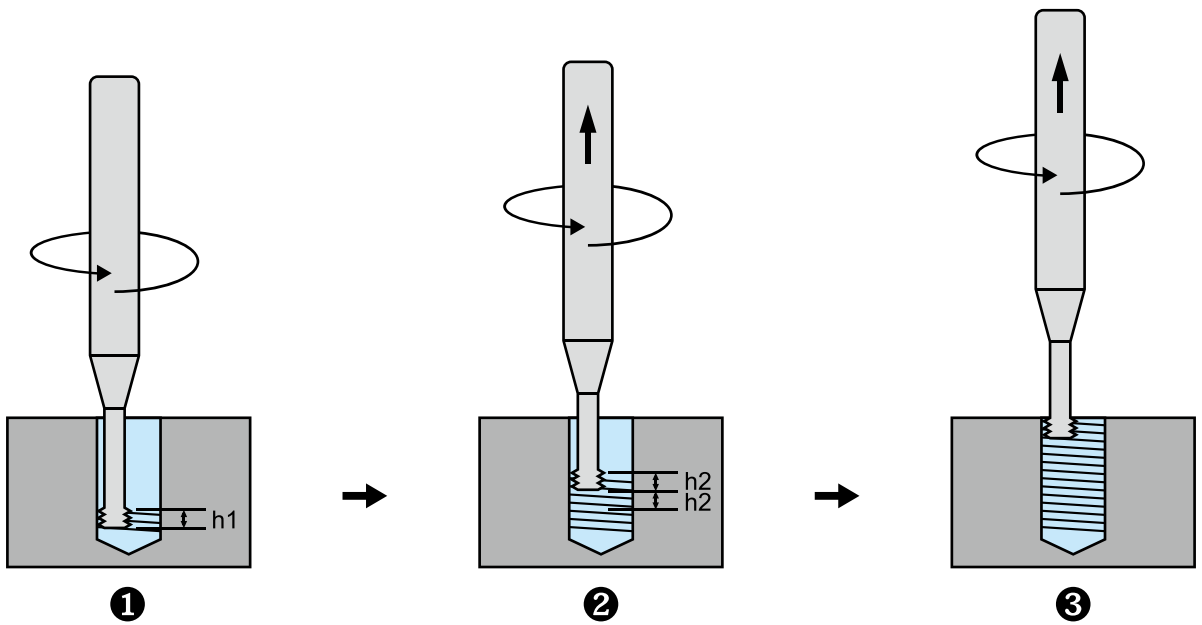
ETH Series

Recommended Cutting Conditions

Work Material	for ETTNM		for ETMNM	
	Vc (m/min)	Feed (mm/t)	Vc (m/min)	Feed (mm/t)
Carbon Steel / Alloy Steel	60 ~ 90	0.02 ~ 0.08	50 ~ 70	0.02 ~ 0.07
Stainless Steel	60 ~ 90	0.02 ~ 0.08	50 ~ 70	0.02 ~ 0.07
Cast Iron	50 ~ 100	0.03 ~ 0.10	50 ~ 100	0.03 ~ 0.10
Aluminum Alloy	50 ~ 100	0.02 ~ 0.06	50 ~ 70	0.03 ~ 0.10
High Temperature Alloy	20 ~ 60	0.01 ~ 0.03	20 ~ 60	0.01 ~ 0.03
Hardened Steel	30 ~ 60	0.01 ~ 0.03	25 ~ 50	0.01 ~ 0.05

※ To choose uncoated tool for aluminum materials machining.

ETTNM Cutting method



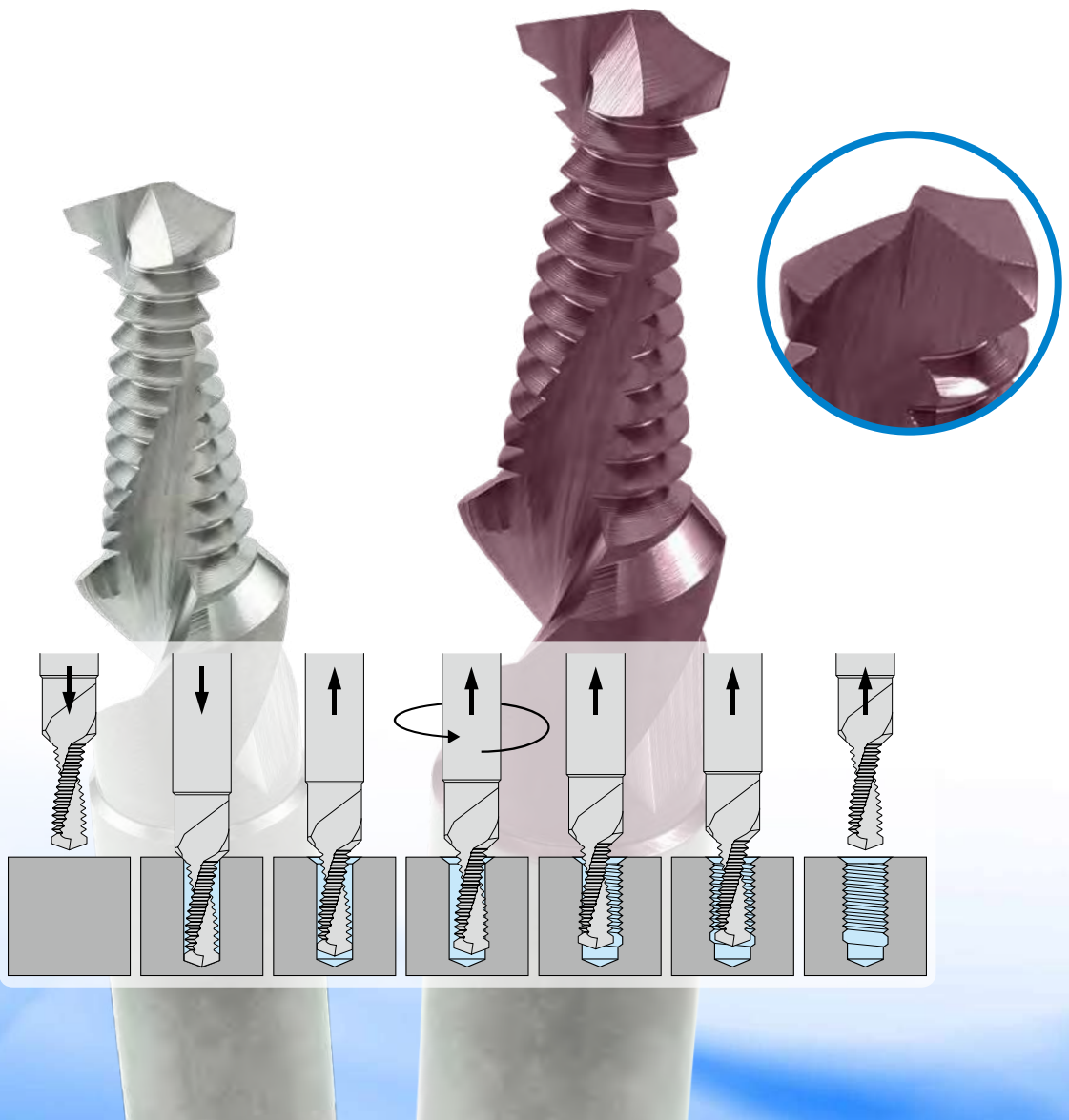
- Machine h_1 distance at the bottom of the hole and move the tool to the center of the hole. ($h_1 = 3 \text{ Pitch}$)
- Machine h_2 distance while moving in Z axial direction.
- Repeat operation ② to finish the hole.

Remark

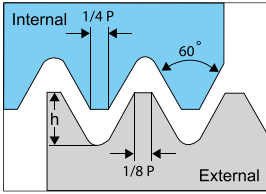
h_2 value set :

- for Machining General materials, $h_2 = 3 \text{ Pitch}$.
- for Machining Heat resistant alloys or High hardness material, $h_2 = 1 \text{ Pitch}$.

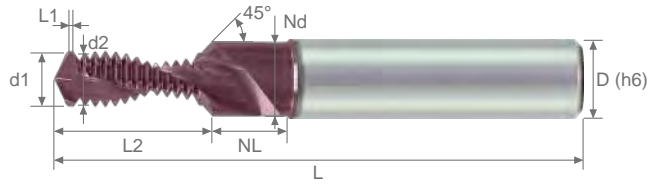
- **Multiple functions in one tool - drilling, chamfering and thread milling.**
- **Work cycle optimization, drilling, chamfering and thread milling in one operation.**
- **For cast iron, aluminum alloy, copper and plastic material machining.**



ETD Series



Tolerance class : 6g / 6H



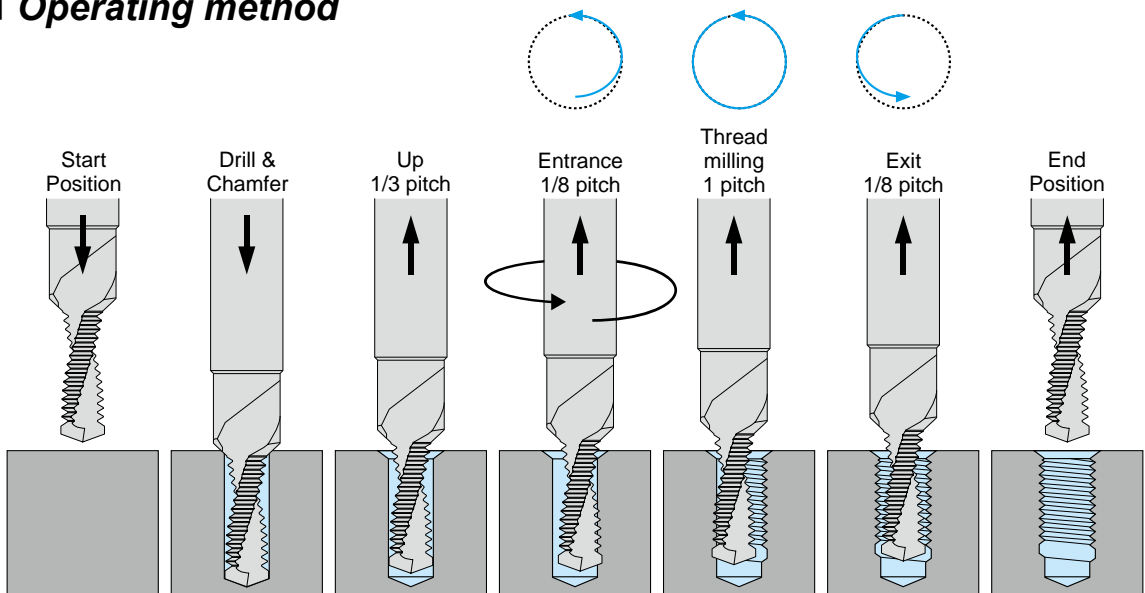
Order No.	Size (Coarse)	Pitch	No. of Threads	d1	d2	Lt	L1	L2	Nd	NL	L	D	h	Coating
ETDNM20420080U	M5	0.80	12	4.2	4.00	9.60	0.8	11.9	5.7	6.1	55	6	0.46	●
ETDNM20050100U	M6	1.00	11	5.0	4.85	11.00	1.0	13.7	6.6	9.5	60	8	0.58	●
ETDNM20680125U	M8	1.25	11	6.8	6.45	13.75	1.3	17.1	9.0	16.8	75	10	0.72	●
ETDNM20850150U	M10	1.50	12	8.5	8.08	18.00	1.5	22.1	11.0	11.6	80	12	0.87	●
ETDNM20420080	M5	0.80	12	4.2	4.00	9.60	0.8	11.9	5.7	6.1	55	6	0.46	
ETDNM20050100	M6	1.00	11	5.0	4.85	11.00	1.0	13.7	6.6	9.5	60	8	0.58	
ETDNM20680125	M8	1.25	11	6.8	6.45	13.75	1.3	17.1	9.0	16.8	75	10	0.72	
ETDNM20850150	M10	1.50	12	8.5	8.08	18.00	1.5	22.1	11.0	11.6	80	12	0.87	

* Maximum chamfering depth = (Nd - d1) x 0.5

Recommended Cutting Conditions

	Work Material	HB	Strength (N-mm)	Vc (m/min)	Drilling f (mm/rev)		Thread milling fz (mm)	
					≤ 6mm	≤ 12mm	≤ 6mm	≤ 12mm
K	Grey Cast Iron	≤150	≤500	55 ~ 85	0.07 ~ 0.105	0.105 ~ 0.154	0.014 ~ 0.035	0.035 ~ 0.07
	Grey Cast Iron (Heat Treated)	150 ~ 300	500 ~ 1000	55 ~ 85	0.07 ~ 0.105	0.105 ~ 0.154	0.014 ~ 0.035	0.035 ~ 0.07
N	Short Chips, Brass, Bronze	≤200	≤700	70 ~ 280	0.07 ~ 0.210	0.042 ~ 0.070	0.021 ~ 0.042	0.042 ~ 0.07
	Aluminium, Cast Alloy (Si<10%)	≤180	≤600	70 ~ 280	0.07 ~ 0.175	0.175 ~ 0.210	0.021 ~ 0.042	0.042 ~ 0.07
	Aluminium, Cast Alloy (Si≥10%)	≤180	≤600	70 ~ 280	0.07 ~ 0.175	0.175 ~ 0.210	0.021 ~ 0.042	0.042 ~ 0.07
	Thermoplastics	-	-	40 ~ 80	0.07 ~ 0.175	0.175 ~ 0.210	0.021 ~ 0.042	0.042 ~ 0.07

Operating method



Threading

Solid Thread Mills

INDEX

DL Series - General Type

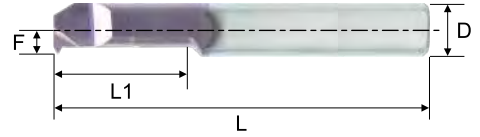
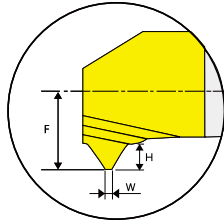
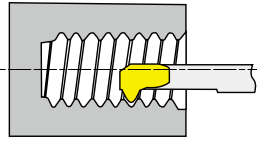
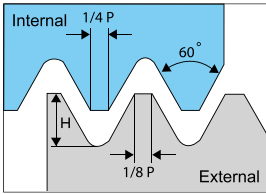
DLTSR - Internal Thread - ISO Metric 60°.....D010
DLTMR - Internal Multipurpose Thread - ISO Metric 60°D011
Sleeves.....D012

DE Modular Series - Exchangable Type

DETSR - Internal Thread - ISO Metric 60°.....D013
DETMR - Internal Multipurpose Thread - ISO Metric 60°.....D014
Double Sizes Sleeves.....D015



DL Series - Internal Thread (ISO Metric 60°)

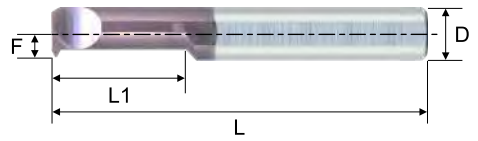
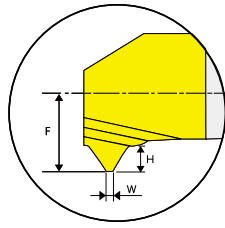
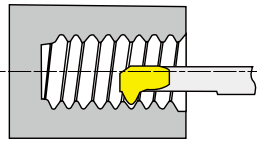
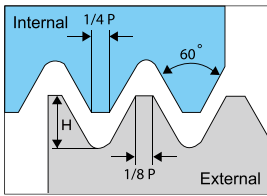


Tolerance class : 6H

Order No.	F	Pitch	L1	W	L	D	H	Min. Bore Dia.
DLTSR05010360U	1.4	0.50	10	0.062	39	3	0.33	3.2
DLTSR07010360U	1.4	0.70	10	0.087	39	3	0.46	3.2
DLTSR07510360U	1.4	0.75	10	0.093	39	3	0.49	3.2
DLTSR05010460U	1.8	0.50	10	0.062	50	4	0.33	4.1
DLTSR07510460U	1.8	0.75	10	0.093	50	4	0.49	4.1
DLTSR08010460U	1.8	0.80	10	0.100	50	4	0.52	4.1
DLTSR10010560U	2.2	1.00	10	0.125	50	5	0.65	4.9
DLTSR05015660U	2.6	0.50	15	0.062	50	6	0.33	5.9
DLTSR07515660U	2.6	0.75	15	0.093	50	6	0.49	5.9
DLTSR10015660U	2.6	1.00	15	0.125	50	6	0.65	5.9
DLTSR12522660U	2.8	1.25	22	0.156	50	6	0.81	6.1

* For left hand tools specify DLTSL instead of DLTSR.

DL Series - Internal Multipurpose Thread (ISO Metric 60°)

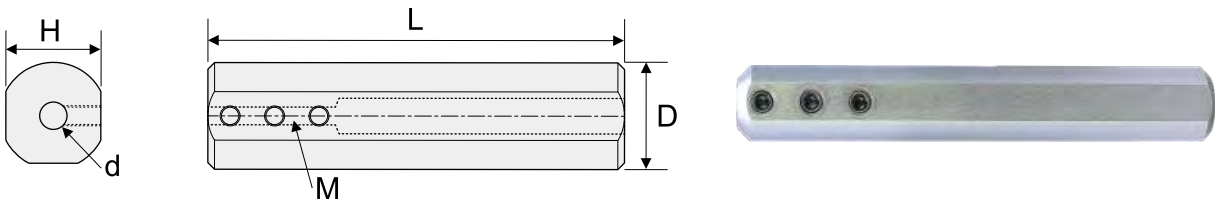


Tolerance class : 6H

Order No.	F	Pitch	L1	W	L	D	H	Min. Bore Dia.
DLTMR04508360U	1.0	0.45 ~ 0.70	8	0.056	50	3	0.5	2.6
DLTMR07015360U	1.4	0.70 ~ 1.00	15	0.087	50	3	0.7	3.2
DLTMR08015460U	1.8	0.80 ~ 1.00	15	0.100	50	4	0.7	4.1
DLTMR10015560U	2.3	1.00 ~ 1.25	15	0.125	50	5	0.8	5.1
DLTMR10015660U	2.6	1.00 ~ 1.50	15	0.125	50	6	1.0	6.0
DLTMR10018860U	3.6	1.00 ~ 1.75	18	0.125	60	8	1.4	8.0
DLTMR10018160U	4.6	1.00 ~ 2.00	18	0.125	75	10	1.8	10.0

* For left hand tools specify DLTML instead of DLTMR.

DL Series - Sleeves

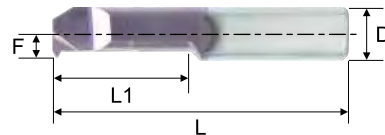
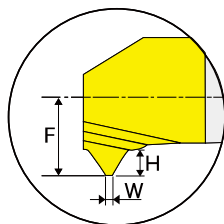
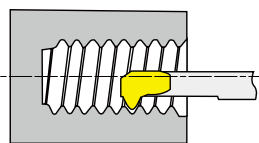
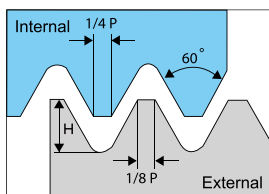


Order No.	d	D	L	H	M
DLS0316100	3	16	100	14	M4
DLS0416100	4	16	100	14	M4
DLS0516100	5	16	100	14	M4
DLS0616100	6	16	100	14	M5
DLS0816100	8	16	100	14	M5
DLS1016100	10	16	100	14	M5

Threading

Solid Thread Turning Bars

DE Modular Series - Internal Thread (ISO Metric 60°)

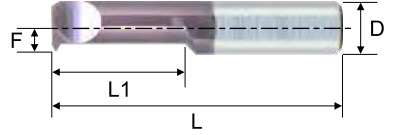
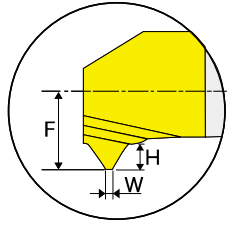
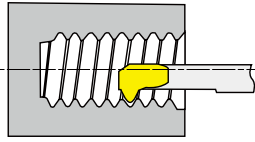
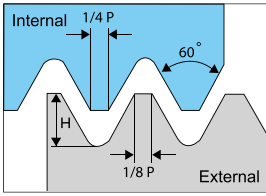


Tolerance class : 6H

Order No.	F	Pitch	L1	W	L (±0.05mm)	D	H	Min. Bore Dia.
DETSR05010360U	1.4	0.50	10	0.062	26.5	3	0.33	3.2
DETSR07010360U	1.4	0.70	10	0.087	26.5	3	0.46	3.2
DETSR07510360U	1.4	0.75	10	0.093	26.5	3	0.49	3.2
DETSR05010460U	1.8	0.50	10	0.062	26.5	4	0.33	4.1
DETSR07510460U	1.8	0.75	10	0.093	26.5	4	0.49	4.1
DETSR08010460U	1.8	0.80	10	0.100	26.5	4	0.52	4.1
DETSR10010560U	2.2	1.00	10	0.125	26.5	5	0.65	4.9
DETSR05015660U	2.6	0.50	15	0.062	31.5	6	0.33	5.9
DETSR07515660U	2.6	0.75	15	0.093	31.5	6	0.49	5.9
DETSR10015660U	2.6	1.00	15	0.125	31.5	6	0.65	5.9
DETSR12522660U	2.8	1.25	22	0.156	38.5	6	0.81	6.1

* For left hand tools specify DETSL instead of DETSR.

DE Modular Series - Internal Multipurpose Thread (ISO Metric 60°)



Tolerance class : 6H

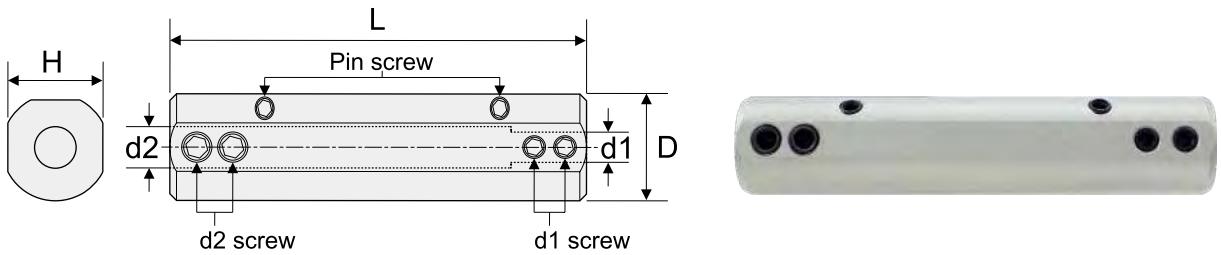
Order No.	F	Pitch	L1	W	L (±0.05mm)	D	H	Min. Bore Dia.
DEMR04508360U	1.0	0.45 ~ 0.70	8	0.056	24.5	3	0.5	2.6
DEMR07015360U	1.4	0.70 ~ 1.00	15	0.087	31.5	3	0.7	3.2
DEMR08015460U	1.8	0.80 ~ 1.00	15	0.100	31.5	4	0.7	4.1
DEMR10015560U	2.3	1.00 ~ 1.25	15	0.125	31.5	5	0.8	5.1
DEMR10015660U	2.6	1.00 ~ 1.50	15	0.125	31.5	6	1.0	6.0

* For left hand tools specify DETML instead of DETMR.







Threading

Solid Thread Turning Bars

DE Modular Series - Double Sizes Sleeves



Order No.	D	d1	d2	L	H	Spare parts
DES1635075	16	3	5	75	15	①
DES1646075	16	4	6	75	15	②

Spare parts	d1		d2		Pin	
	Screw 	Wrench 	Screw 	Wrench 	Screw 	Wrench 
①	ITHM405	IPL20	ITHM405	IPL20	ITTS412	IPL20
②	ITHM405	IPL20	ITHM505	IPL25	ITTS412	IPL20