

## Mill-Thread tools for threading on CNC milling machines by using helical interpolation programs



Demonstration

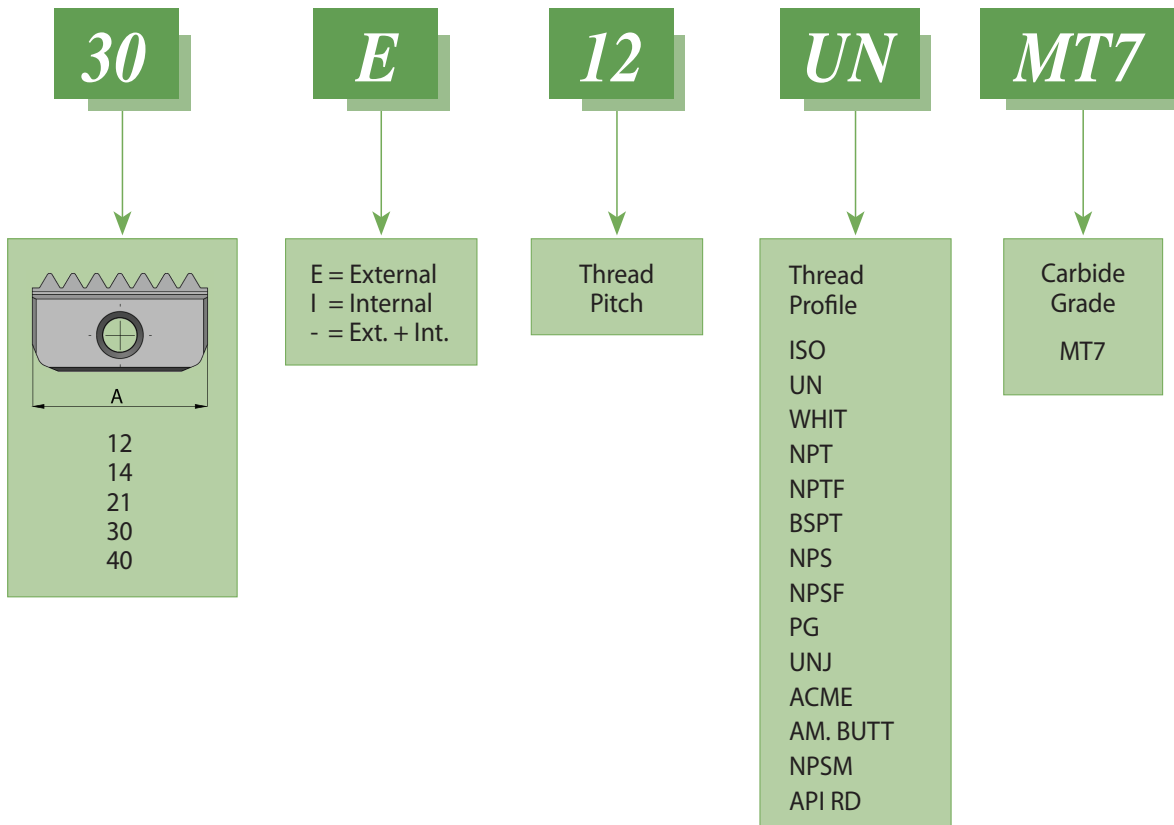
### Advantages of Mill-Thread Tools

- Same toolholder and insert can produce both right-hand and left-hand threads.
- A single insert & toolholder can produce a given thread on many diameters (External & Internal).
- Prismatic shape of insert's tail ensures exact and reliable clamping in the toolholder.
- Most inserts are double sided, having two cutting edges.
- Thread is produced in one tool pass.
- MT tools can produce tapered threads.
- Improved productivity thanks to increased cutting speeds and multitooth type carbide inserts.
- Threading to one pitch of a shoulder in a blind hole.
- Longer tool life thanks to a special multilayer coating process.
- Lower tooling costs, considerably less expensive than using taps and dies.
- Since lower machine power is required, a smaller machine can produce larger threads in a single operation with less idle time and tool changes.

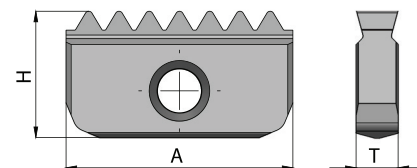
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## Product Identification

### Mill-Thread Inserts Ordering Codes

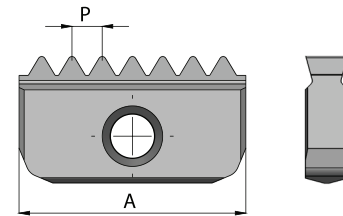
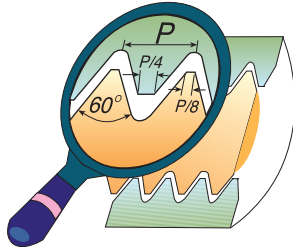


	Insert Size = A				
	12 mm	14 mm	21 mm	30 mm	40 mm
H	.248	.295	.472	.630	.787
T	.114	.122	.185	.217	.248



# Mill - Thread Inserts

## ISO

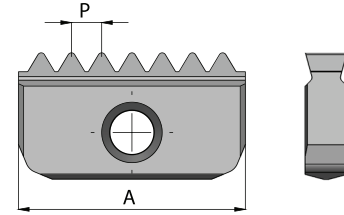
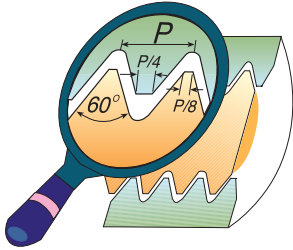


Pitch mm		Insert Size = A				
		12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
0.5	Ext.					
0.5	Int.	* 12 I 0.5 ISO	14 I 0.5 ISO			
0.75	Ext.		14 E 0.75 ISO			
0.75	Int.	* 12 I 0.75 ISO	14 I 0.75 ISO			
1.0	Ext.		14 E 1.0 ISO	21 E 1.0 ISO		
1.0	Int.	* 12 I 1.0 ISO	14 I 1.0 ISO	21 I 1.0 ISO		
1.25	Ext.		14 E 1.25 ISO	21 E 1.25 ISO		
1.25	Int.	* 12 I 1.25 ISO	14 I 1.25 ISO	21 I 1.25 ISO		
1.5	Ext.		14 E 1.5 ISO	21 E 1.5 ISO	30 E 1.5 ISO	40 E 1.5 ISO
1.5	Int.	* 12 I 1.5 ISO	14 I 1.5 ISO	21 I 1.5 ISO	30 I 1.5 ISO	40 I 1.5 ISO
1.75	Ext.		14 E 1.75 ISO	21 E 1.75 ISO		
1.75	Int.		14 I 1.75 ISO	21 I 1.75 ISO		
2.0	Ext.		14 E 2.0 ISO	21 E 2.0 ISO	30 E 2.0 ISO	40 E 2.0 ISO
2.0	Int.		14 I 2.0 ISO	21 I 2.0 ISO	30 I 2.0 ISO	40 I 2.0 ISO
2.5	Ext.		14 E 2.5 ISO	21 E 2.5 ISO		
2.5	Int.		14 I 2.5 ISO	21 I 2.5 ISO		
3.0	Ext.			21 E 3.0 ISO	30 E 3.0 ISO	40 E 3.0 ISO
3.0	Int.			21 I 3.0 ISO	30 I 3.0 ISO	40 I 3.0 ISO
3.5	Ext.				30 E 3.5 ISO	
3.5	Int.			21 I 3.5 ISO	30 I 3.5 ISO	40 I 3.5 ISO
4.0	Ext.				30 E 4.0 ISO	40 E 4.0 ISO
4.0	Int.				30 I 4.0 ISO	40 I 4.0 ISO
4.5	Ext.					
4.5	Int.				30 I 4.5 ISO	40 I 4.5 ISO
5.0	Ext.					40 E 5.0 ISO
5.0	Int.				30 I 5.0 ISO	40 I 5.0 ISO
5.5	Ext.					
5.5	Int.				30 I 5.5 ISO	40 I 5.5 ISO
6.0	Ext.					40 E 6.0 ISO
6.0	Int.					40 I 6.0 ISO

\* One cutting edge

Order example: 14 I 1.5 ISO MT7

## UN UNC, UNF, UNEF, UNS



Pitch TPI		Insert Size = A				
		12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
32	Ext.		14 E 32 UN			
32	Int.	* 12   32 UN	14   32 UN			
28	Ext.		14 E 28 UN			
28	Int.	* 12   28 UN	14   28 UN			
27	Ext.					
27	Int.		14   27 UN			
24	Ext.		14 E 24 UN	21 E 24 UN		
24	Int.	* 12   24 UN	14   24 UN	21   24 UN		
20	Ext.		14 E 20 UN	21 E 20 UN	30 E 20 UN	
20	Int.	* 12   20 UN	14   20 UN	21   20 UN	30   20 UN	
18	Ext.		14 E 18 UN	21 E 18 UN	30 E 18 UN	
18	Int.	* 12   18 UN	14   18 UN	21   18 UN	30   18 UN	
16	Ext.		14 E 16 UN	21 E 16 UN	30 E 16 UN	40 E 16 UN
16	Int.	* 12   16 UN	14   16 UN	21   16 UN	30   16 UN	40   16 UN
14	Ext.		14 E 14 UN	21 E 14 UN	30 E 14 UN	40 E 14 UN
14	Int.		14   14 UN	21   14 UN	30   14 UN	40   14 UN
13	Ext.		14 E 13 UN			
12	Ext.		14 E 12 UN	21 E 12 UN	30 E 12 UN	40 E 12 UN
12	Int.		14   12 UN	21   12 UN	30   12 UN	40   12 UN
11	Ext.		14 E 11 UN	21 E 11 UN		
11	Int.		14   11 UN			
10	Ext.		* 14 E 10 UN	21 E 10 UN	30 E 10 UN	40 E 10 UN
10	Int.		14   10 UN	21   10 UN	30   10 UN	40   10 UN
9	Ext.					
9	Int.		** 14   9 UN			
8	Ext.				30 E 8 UN	40 E 8 UN
8	Int.			21   8 UN	30   8 UN	40   8 UN
7	Ext.					
7	Int.			21   7 UN		
6	Ext.				30 E 6 UN	40 E 6 UN
6	Int.				30   6 UN	40   6 UN
5	Ext.					
5	Int.				30   5 UN	
4.5	Ext.					
4.5	Int.					40   4.5 UN
4	Ext.					40 E 4 UN
4	Int.					40   4 UN

\* One cutting edge

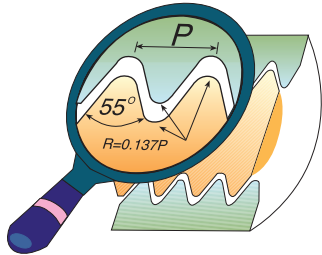
\*\* Cannot be used with carbide shank Toolholders.

Order example: 21 | 18 UN MT7

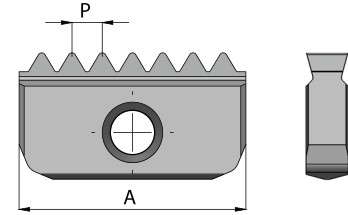
**B01-4**

# Mill - Thread Inserts

## WHIT BSW, BSF, BSP



Same Insert for External and Internal thread.

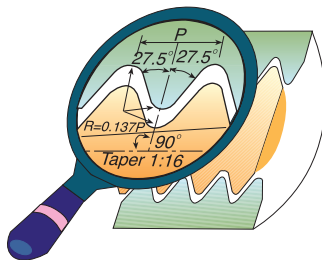


Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
24		14-24 W			
20		14-20 W	21-20 W		
19	* 12 - 19 W	14-19 W	21-19 W		
18		14-18 W			
16		14-16 W	21-16 W	30-16 W	
14		14-14 W	21-14 W	30-14 W	
12		14-12 W	21-12 W		
11		* 14-11 W	21-11 W	30-11 W	40-11 W
10			21-10 W		
8					40- 8 W

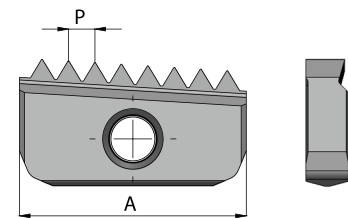
\* One cutting edge

Order example: 21-11 W MT7

## BSPT



Conical pipe thread inserts are one-sided and may be used for both External and Internal threading.

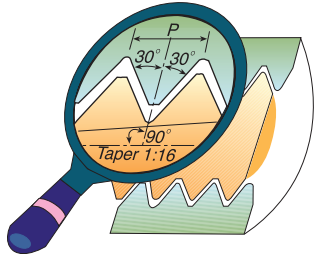


Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
19	12-19 BSPT	14-19 BSPT			
14		14-14 BSPT	21-14 BSPT		
11			21-11 BSPT	30-11 BSPT	40-11 BSPT

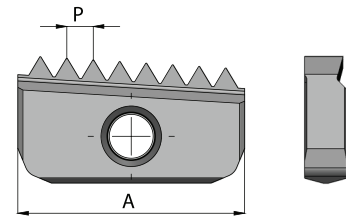
Order example: 14-19 BSPT MT7

For conical preparation end mills see page B08-23

## NPT



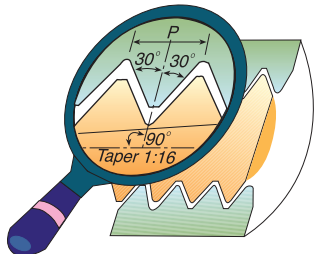
Conical pipe thread inserts are one-sided and may be used for both External and Internal threading.



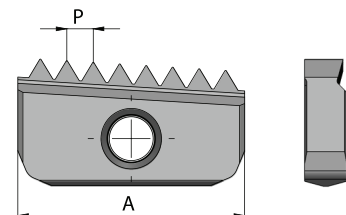
Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	12-18 NPT	14-18 NPT			
14		14-14 NPT	21-14 NPT		
11.5			21-11.5 NPT	30-11.5 NPT	40-11.5 NPT
8				30- 8 NPT	40- 8 NPT

Order example: 30-11.5 NPT MT7

## NPTF



Conical pipe thread inserts are one-sided and may be used for both External and Internal threading.



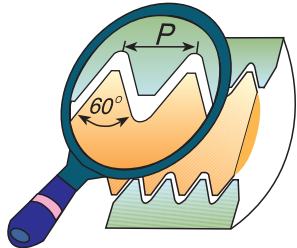
Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	12-18 NPTF	14-18 NPTF			
14		14-14 NPTF	21-14 NPTF		
11.5			21-11.5 NPTF	30-11.5 NPTF	40-11.5 NPTF
8				30- 8 NPTF	40- 8 NPTF

Order example: 21-14 NPTF MT7

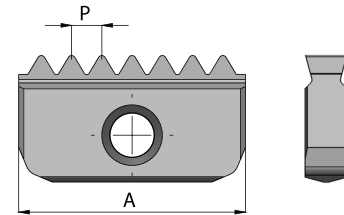
For conical preparation end mills see page B08-23

# Mill - Thread Inserts

## NPS



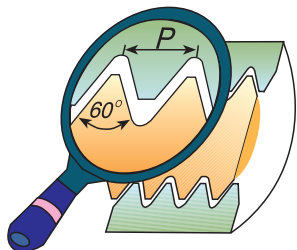
Same Insert for External and Internal thread



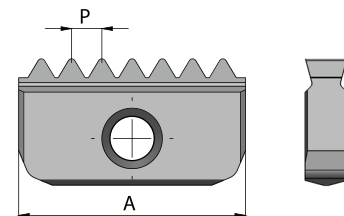
Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	* 12-18 NPS	14-18 NPS			
14		14-14 NPS	21-14 NPS		
11.5			21-11.5 NPS	30-11.5 NPS	40-11.5 NPS
8				30- 8 NPS	40- 8 NPS

Order example: 16 ER 14 NPS MXC

## NPSF



Same Insert for External and Internal thread

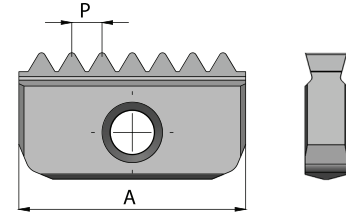
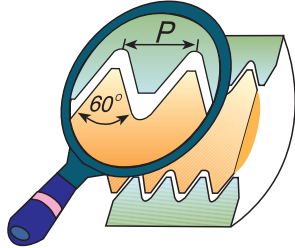


Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	* 12-18 NPSF	14-18 NPSF			
14		14-14 NPSF	21-14 NPSF		
11.5			21-11.5 NPSF	30-11.5 NPSF	40-11.5 NPSF
8				30- 8 NPSF	40- 8 NPSF

Order example: 21-14 NPSF MT7

\* One cutting edge

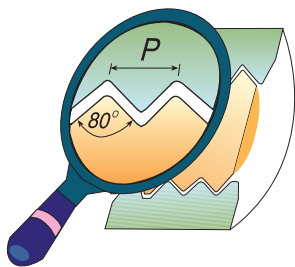
## NPSM



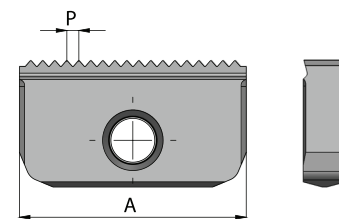
Pitch TPI		Insert Size = A				
		12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	Ext.		14 E 18 NPSM			
18	Int.	12 I 18 NPSM	14 I 18 NPSM			
14	Ext.			21 E 14 NPSM		
14	Int.		14 I 14 NPSM	21 I 14 NPSM		
11.5	Ext.			21 E 11.5 NPSM	30 E 11.5 NPSM	40 E 11.5 NPSM
11.5	Int.			21 I 11.5 NPSM	30 I 11.5 NPSM	40 I 11.5 NPSM
8	Ext.				30 E 8 NPSM	40 E 8 NPSM
8	Int.				30 I 8 NPSM	40 I 8 NPSM

Order example: 21 I 11.5 NPSM MT7

## PG - DIN 40430



Same Insert for External and Internal thread



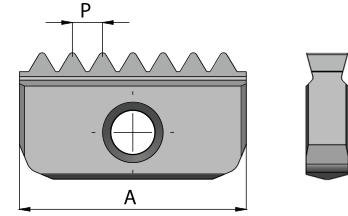
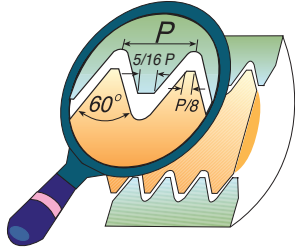
Pitch TPI	Insert Size = A		
	14 mm .551	21 mm .827	30 mm 1.181
18	14-18 PG (PG 9, 11, 13.5, 16)	21-18 PG (PG 16)	
16		21-16 PG (PG 21, 29, 36, 42, 48)	30-16 PG (PG 36, 42, 48)

Order example: 21-18 PG MT7



# Mill - Thread Inserts

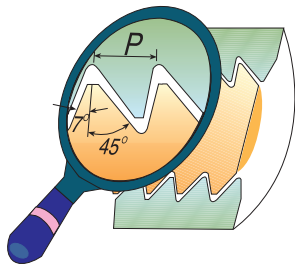
## UNJ



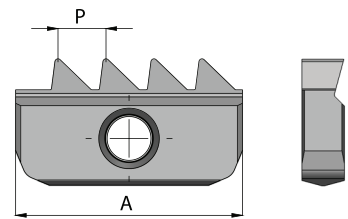
Pitch TPI		Insert Size = A	
		14 mm .551	21 mm .827
24	Ext.	14 E 24 UNJ	21 E 24 UNJ
24	Int.	14 I 24 UNJ	21 I 24 UNJ
20	Ext.	14 E 20 UNJ	21 E 20 UNJ
20	Int.	14 I 20 UNJ	21 I 20 UNJ
18	Ext.	14 E 18 UNJ	21 E 18 UNJ
18	Int.	14 I 18 UNJ	21 I 18 UNJ
16	Ext.	14 E 16 UNJ	21 E 16 UNJ
16	Int.	14 I 16 UNJ	21 I 16 UNJ
14	Ext.	14 E 14 UNJ	21 E 14 UNJ
14	Int.	14 I 14 UNJ	21 I 14 UNJ
12	Ext.	14 E 12 UNJ	21 E 12 UNJ
12	Int.	14 I 12 UNJ	21 I 12 UNJ

Order example: 21E 16 UNJ MT7

## American Buttress



ABUT thread inserts are one-sided and may be used for both External and Internal threading

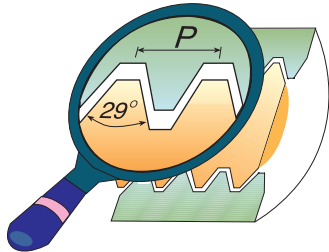


Pitch TPI	Insert Size = A		
	21 mm .827	30 mm 1.181	40 mm 1.575
16	21 - 16 ABUT	30 - 16 ABUT	
12	21 - 12 ABUT	30 - 12 ABUT	
10	21 - 10 ABUT	30 - 10 ABUT	
8	21 - 8 ABUT	30 - 8 ABUT	
6		30 - 6 ABUT	
4		* 30 - 4 ABUT	40 - 4 ABUT

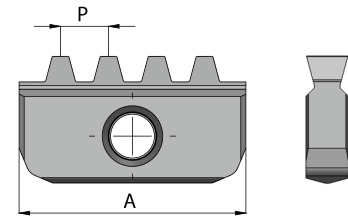
Order example: 30 - 6 ABUT MT7

\* Inserts to be used only on Multi-Insert toolholders see page B02-5

## ACME



Inserts for Internal threads



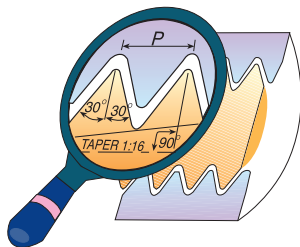
Pitch TPI		Insert Size = A		
		21 mm .827	30 mm 1.181	40 mm 1.575
12	Int.	21   12 ACME	30   12 ACME	
10	Int.	21   10 ACME	30   10 ACME	
8	Int.	21   8 ACME	30   8 ACME	
6	Int.		30   6 ACME	
5	Int.		30   5 ACME	
4	Int.		* 30   4 ACME	40   4 ACME
3.5	Int.			40   3.5 ACME
3	Int.			** 40   3 ACME

Order example: 21 | 8 ACME MT7

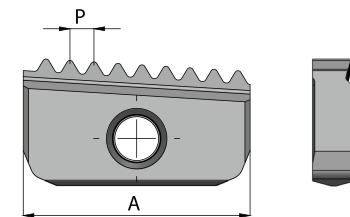
\* Inserts to be used only on Multi-Insert toolholders see page B02-5

\*\* One cutting edge

## API RD



API RD thread inserts are one - sided and may be used for both External and Internal threading



Pitch TPI		Insert Size = A		
		21 mm .827	30 mm 1.181	40 mm 1.575
10		21 - 10 API RD	30 - 10 API RD	
8			30 - 8 API RD	40 - 8 API RD

Order example: 30 - 8 API RD MT7

# Mill - Thread Inserts

## Internal UN Kits



MTK 12 I UN	MTK 14 I UN
<u>INSERTS</u>	<u>INSERTS</u>
12 I 32 UN	14 I 24 UN
12 I 24 UN	14 I 24 UN
12 I 20 UN	14 I 20 UN
12 I 20 UN	14 I 20 UN
12 I 16 UN	14 I 16 UN
12 I 16 UN	14 I 16 UN
<u>TOOLHOLDER</u>	<u>TOOLHOLDER</u>
SR 0375 H12	SR 0670 H14
<u>KEY</u>	<u>KEY</u>
K12	K14
<u>SCREW</u>	<u>SCREW</u>
S12	S14

Order example : MTK 14 I UN

## Special Tools



In addition to standard products, Carmex manufactures special tools and inserts according to customers' requests. Special tools are supplied in short delivery times.

