Standard cutting conditions

ISO	Workpiece materials	Hardness HB	Selection criteria	Recommended grade	Chip-breaker	Cutting speed Vc (sfm)	Feed per tooth fz (ipt)
P	Low carbon steels (1015 etc.)	< 200	First choice	**AH3135**	**MJ**	350 - 800	0.004 - 0.024
		< 200	First choice	**AH725**	**MJ**	350 - 800	0.004 - 0.024
		< 200	Priority on wear resistance	**T3130**	**MJ**	390 - 800	0.004 - 0.024
		< 200	Priority on surface quality	**NS740**	**MJ**	350 - 800	0.004 - 0.020
		< 200	Low cutting force	**AH3135**	**ML**	350 - 800	0.004 - 0.020
	High carbon steels (1045 etc.)	200 - 300	First choice	**AH3135**	**MJ**	350 - 750	0.004 - 0.020
		200 - 300	First choice	**AH725**	**MJ**	350 - 750	0.004 - 0.020
		200 - 300	Priority on wear resistance	**T3130**	**MJ**	390 - 800	0.004 - 0.020
		200 - 300	Priority on surface quality	**NS740**	**MJ**	350 - 800	0.004 - 0.016
		200 - 300	Low cutting force	**AH3135**	**ML**	350 - 800	0.004 - 0.016
	Alloyed steels (4140 etc.)	150 - 300	First choice	**AH3135**	**MJ**	350 - 750	0.004 - 0.020
		150 - 300	First choice	**AH725**	**MJ**	350 - 750	0.004 - 0.020
		150 - 300	Priority on wear resistance	**T3130**	**MJ**	390 - 800	0.004 - 0.020
		150 - 300	Priority on surface quality	**NS740**	**MJ**	350 - 800	0.004 - 0.016
		150 - 300	Low cutting force	**AH3135**	**ML**	350 - 750	0.004 - 0.016
	Tool steels (D2 etc.)	< 300	First choice	**AH3135**	**MJ**	350 - 750	0.004 - 0.020
		< 300	First choice	**AH725**	**MJ**	350 - 750	0.004 - 0.020
		< 300	Priority on wear resistance	**T3130**	**MJ**	350 - 750	0.004 - 0.020
		< 300	Low cutting force	**AH3135**	**ML**	350 - 750	0.004 - 0.016
M	Stainless steels (S30400 etc.)	-	First choice	**AH3135**	**MJ**	300 - 600	0.004 - 0.018
		-	Priority on fracture resistance	**AH725**	**MJ**	300 - 600	0.004 - 0.018
		-	Priority on fracture resistance	**AH3135**	**ML**	300 - 600	0.004 - 0.016
K	Gray cast irons (No.250B, No.300B etc.)	-	First choice	**AH120**	**MJ**	450 - 800	0.004 - 0.024
		-	Priority on wear resistance	**T1115**	**MJ**	490 - 920	0.004 - 0.024
	Ductile cast irons (60-40-18 etc.)	-	First choice	**AH120**	**MJ**	350 - 650	0.004 - 0.024
		-	Priority on wear resistance	**T1115**	**MJ**	390 - 720	0.004 - 0.024
N	Aluminum alloys (Si < 13%)	-	First choice	**TH10**	**AJ**	1600 - 5000	0.004 - 0.020
	Aluminum alloys (Si ≥ 13%)	-	First choice	**TH10**	**AJ**	490 - 1600	0.004 - 0.020
S	Titanium alloy Ti-6Al-4V etc.	-	First choice	**AH3135**	**ML**	98 - 197	0.004 - 0.016
	Heat-resistance alloy Inconel 718 etc.	-	First choice	**AH725**	**ML**	66 - 164	0.002 - 0.004

· To remove excessive chip accumulation use an air blast.
· When chips stick to the cutting edges (aluminum machining), use a water soluble cutting fluid.
· When interrupted cutting or cutting in a cast condition, the cutting feed (fz) should be reduced to below the values shown in the above table.
· Cutting conditions are limited by machine power and material rigidity. When the cutting width or depth is large, set Vc and fz below the recommended values and check the machine vibration and spindle load.

Bore Type Components

Description		Replacement Parts Cat. No.	
Applicable cutter		TEN09R...	*TEN09R...
Clamping screw		CSTR-4L100	
Wrench	Torx Bit	BT15S	BT15M
	Grip	H-TBS	
Mono block type substitution wrench		T-15D	

Most unmarked items are available on a RFQ basis, contact your sales rep for more information.

Relating pages
Technical Reference (14–1)