



## TOOL STEEL - MATERIAL SELECTION GUIDE

### HIGH SPEED STEELS

AISI/ ASTM	MATERIAL (Closest Corresponding Grades)										CHEMISTRY											APPLICATION	HEAT TREATMENT DETAILS						SUPPLY CONDITION	PROPERTIES					STOCKING PROGRAM			
	EN/ DIN	JIS	HITACHI	BOHLER	ASSAB	DAIDO	POSCO	SANYO	C	Si	Mn	S	Cr	Mo	Ni	V	W	Co	Others	Annealing (Slow Cooling)	Quenching (Hot Bath)		Quenching (Air Cooling)	Tempering (Air Cooling)	Annealed (hb)-max	Quenched & (hrc) Tempered	Red Hardness	Wear Resistance		Toughness	Grindability	Compressive Strength	Min	Max	Min	Max		
	M2	.6/5/02 / 1.3343	SKH51	YXM1	S600		MH51	THSM2	QH51	0.9	0.3	0.3	4.1	5	1.8	6.4				Taps, twist drills, reamers, broach tools, cold work tools.	800-880		Oil	1200-1240	550-570	255	63	Annealed							3	317	25x4	400x105

Remarks: → Original Steel

### COLD WORK TOOL STEELS

AISI/ ASTM	MATERIAL (Closest Corresponding Grades)										CHEMISTRY											APPLICATION	HEAT TREATMENT DETAILS						PROPERTIES	STOCKING PROGRAM								
	EN/ DIN	JIS	HITACHI	KIND	BOHLER	ASSAB	DAIDO	POSCO	SANYO	C	Si	Mn	S	P	S	Cr	Ni	W	Mo	V	Others		Annealing (Slow Cooling)	Quenching (Hot Bath)	Quenching (Air Cooling)	Tempering (Air Cooling)	Annealed (hb)-max	Quenched & (hrc) Tempered		Red Hardness	Wear Resistance	Toughness	Grindability	Compressive Strength	Min	Max	Min	Max
	D3	X210Cr12 / 1.2080	SKD11	CRD	CH16V	K100			QC1	2	0.25	0.45	0.03	0.01	12								Drawing dies, blanking dies	830-880	OIL/AIR	930-980	150-200	248		61						6	660	16x10

Remarks: → Original Steel

### Hot Work Tool Steels

AISI/ ASTM	MATERIAL (Closest Corresponding Grades)										CHEMISTRY											APPLICATION	HEAT TREATMENT DETAILS						PROPERTIES	STOCKING PROGRAM						
	EN/ DIN	JIS	HITACHI	KIND	BOHLER	ASSAB	DAIDO	POSCO	SANYO	C	Si	Mn	P	S	Cr	W	Mo	Ni	V	Others	Annealing (Slow Cooling)		Quenching (Hot Bath)	Quenching (Air Cooling)	Tempering (Air Cooling)	Annealed (hb)-max	Quenched & (hrc) Tempered	High Temperature Strength		High Temperature Toughness	High Temperature Wear Resistance	Machinability	Min	Max	Min	Max
	H11	X38CrMoV5-1 / 1.2343	SKD6		USN	TH11	W300		DH6	38	1.1	0.4	0.03	0.01	5		1.25	0.45			Hot extrusion tools, tools for manufacture of screws, nuts, bolts etc		750-800	OIL/AIR	1000-1040	500-600	240	48							3	410

Remarks: → Original Steel  
 Available in ESR & NON-ESR  
 Available only in ESR

### PLASTIC MOULD STEELS

AISI/ ASTM	MATERIAL (Closest Corresponding Grades)										CHEMISTRY											APPLICATION	HEAT TREATMENT DETAILS						PROPERTIES	STOCKING PROGRAM								
	EN/ DIN	JIS	HITACHI	KIND	BOHLER	ASSAB	DAIDO	POSCO	SANYO	C	Si	Mn	S	Cr	Mo	Ni	W	Co	N	Others	Annealing		Quenching	Quenching	Tempering	Annealed (hb)-max	Quenched & (hrc) Tempered	Supply Condition		Wear Resistance	Toughness	Polishability	Machinability in the as-supplied condition	Corrosion Resistance	Min	Max	Min	Max
	P20	40CrMnMo7 / 1.2311			HPM7		PSTP4P	M201	618	PX5	HP4A	0.4	3	1.5	1.9	0.2					Mould frames, plastic moulds <400mm		720-750	Oil/Air	850-880	600-680	240	29-32		H & T 280-320BHN	2	2	3	5	2	10	230	20