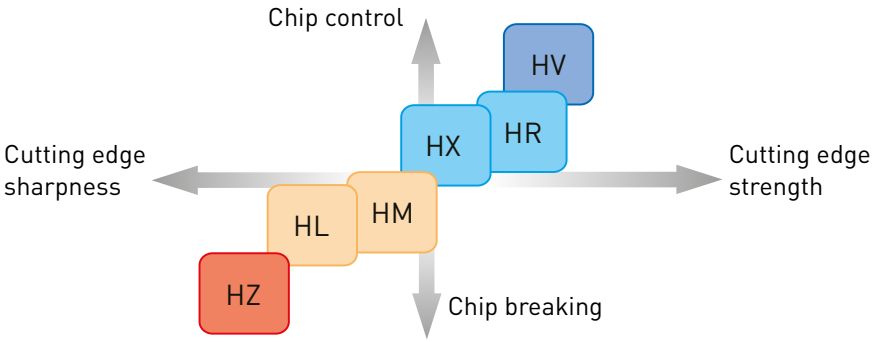
ISO INSERT SERIES FOR HEAVY CUTTING

SPECIALLY DESIGNED FOR HEAVY CUTTING OF STAINLESS AND ALLOY STEELS

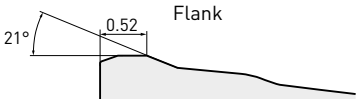
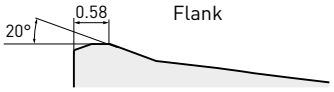
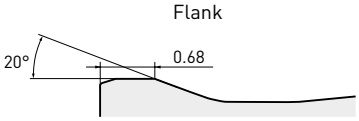
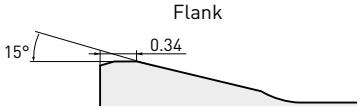
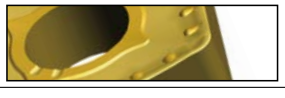
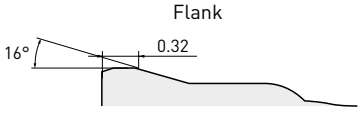
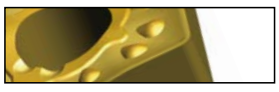
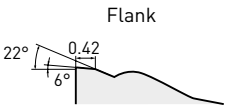
MITSUBISHI MATERIALS

ISO INSERT SERIES FOR HEAVY CUTTING

APPLICATION AREA



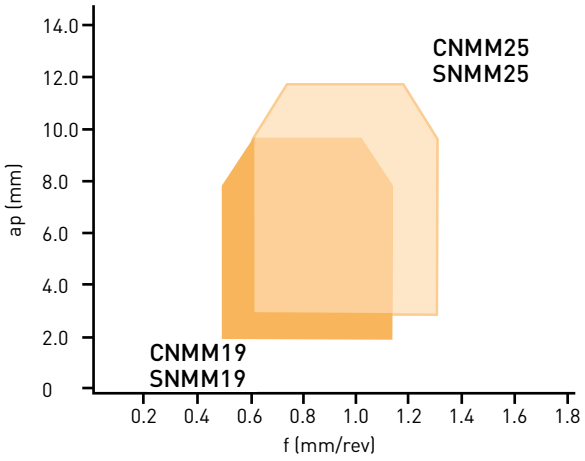
SINGLE SIDED CHIPBREAKER

HX	First recommendation for heavy cutting of general steel and alloy steel 	Covers the medium range of the heavy cutting region. Owing to the straight edge and chamfer gives a balance of sharpness and strength. Variable land and a wavy chipbreaker for good chip control.	
HR	Alternative chip breaker for heavy cutting of general steel and alloy steel 	Covers the heavy cutting region by using a straight cutting edge with high edge strength. It exhibits smooth chip control during large depths of cut and high feed rate machining.	
HV	Alternative chip breaker for heavy cutting of general steel and alloy steel 	Covers the upper end of the heavy cutting region. Wide land and large chamfer offer high edge strength. A wide chipbreaker prevents chip jamming.	
HL	First recommendation for heavy cutting of mild steel and stainless steel 	Covers the lower end of the heavy cutting region. The curved edge and narrow chamfer allows good chip control and sharp cutting action. Dots on the nose radius ensure chip control at low depths of cut.	
HM	Alternative chip breaker for heavy cutting of mild steel and stainless steel 	Covers the lower end through to the medium range of the heavy cutting region. The curved edge and narrow chamfer allows good chip control and sharp cutting action. Teardrop dots provided along the cutting edge ensures chip control even with variable depths of cut.	
HZ	Alternative chip breaker for heavy cutting of mild steel and stainless steel 	Covers the lower end of the heavy cutting region. Low cutting resistance due to positive land and curved edge. Teardrop dots improve chip control without increasing cutting resistance.	

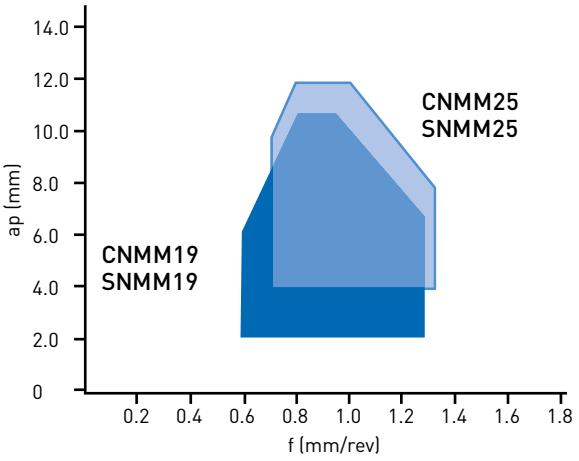
EFFECTIVE CHIP CONTROL RANGE

MAIN CHIPBREAKERS

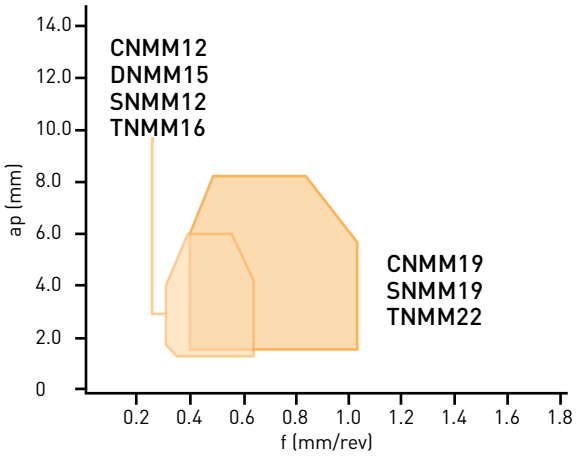
HM



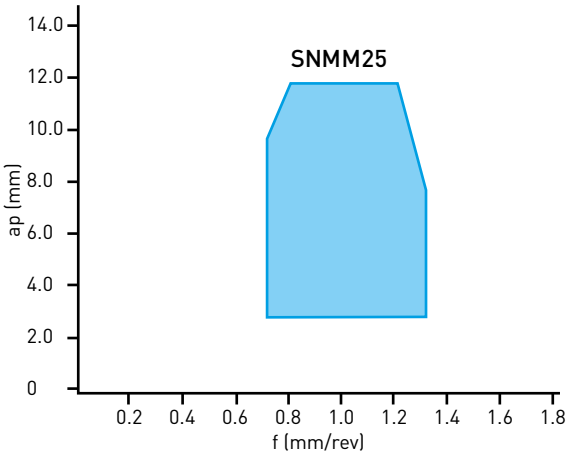
HV



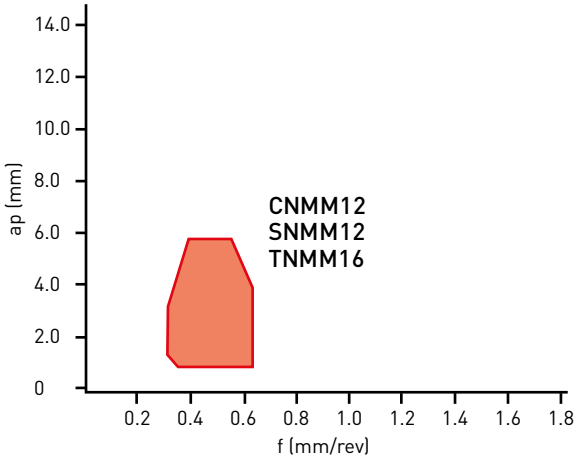
HL



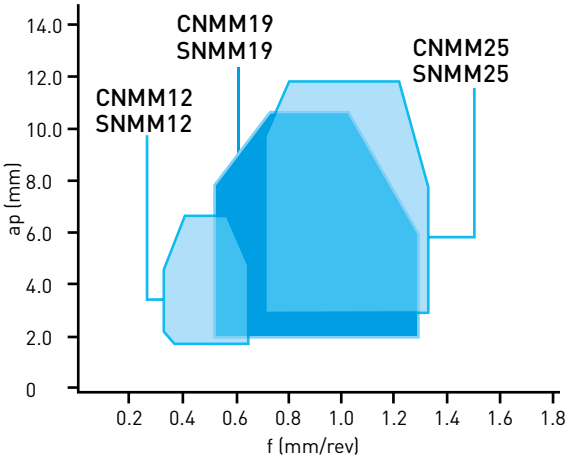
HR



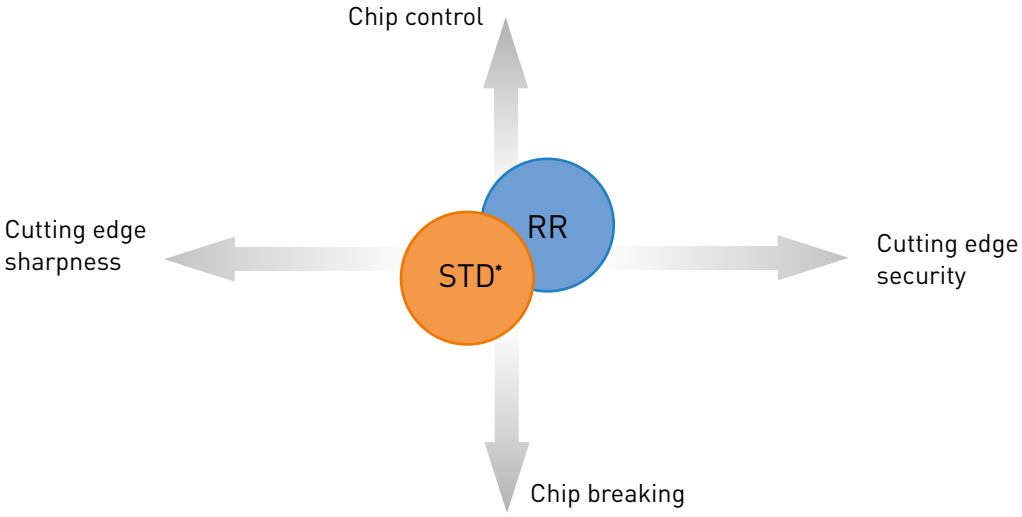
HZ

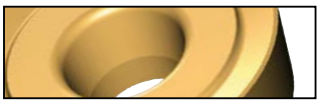
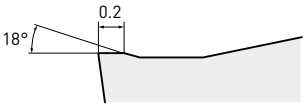


HX



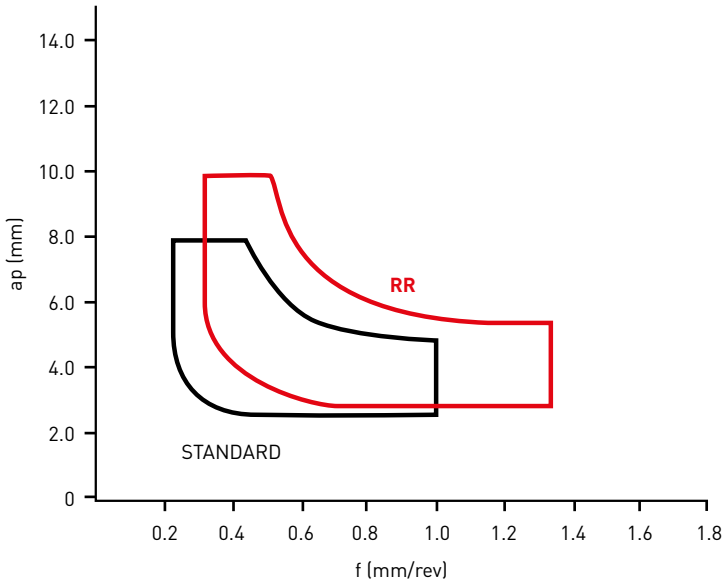
ROUND CHIPBREAKERS



STD*	Medium cutting of general steel, alloy steel and stainless steel 	Balance of edge strength and sharpness due to a combination of a flat land and large rake angle.	
RR	Heavy cutting of general steel and alloy steel 	A wide groove chipbreaker prevents chips from jamming at large depths of cut. Small dimples improve chip control at small depths of cut.	

* STANDARD

EFFECTIVE CHIP CONTROL RANGE



Workpiece	DIN 42CrMo4
Insert	RCMX2006M0-RR, STANDARD
Vc (m/min)	100
Cutting mode	Dry cutting

NEGATIVE INSERTS

P M

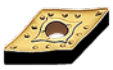
Order number	UE6110	MC6025	MC6035	UH6400	US735	IC	S	RE	D1	Shape
CNMM190616-HV	★	●	●	●		19.05	6.35	1.6	7.93	HV
CNMM190624-HV	★	●	●	★		19.05	6.35	2.4	7.93	
CNMM250924-HV	★	●	●	●		25.4	9.52	2.4	9.12	
CNMM250924-HR		●	●			25.4	9.52	2.4	9.12	HR
CNMM120408-HX		★	★			12.7	4.76	0.8	5.16	HX
CNMM120412-HX		★	★			12.7	4.76	1.2	5.16	
CNMM160612-HX		★	★			15.875	6.35	1.2	6.35	
CNMM160616-HX		★	★			15.875	6.35	1.6	6.35	
CNMM190612-HX	★	●	●	●		19.05	6.35	1.2	7.93	
CNMM190616-HX	●	●	●	●	●	19.05	6.35	1.6	7.93	
CNMM190624-HX	★	●	●	★		19.05	6.35	2.4	7.93	
CNMM250924-HX	●	●	●	●		25.4	9.52	2.4	9.12	
CNMM160612-HM	●	●	●	●	●	15.875	6.35	1.2	6.35	HM
CNMM160616-HM	●	●	●	★	★	15.875	6.35	1.6	6.35	
CNMM190612-HM	●	●	●	●	●	19.05	6.35	1.2	7.93	
CNMM190616-HM	★	●	●	★	●	19.05	6.35	1.6	7.93	
CNMM190624-HM	★	●	●	★	●	19.05	6.35	2.4	7.93	
CNMM250924-HM	★	●	●	●	★	25.4	9.52	2.4	9.12	
CNMM120408-HL	●	●	●		●	12.7	4.76	0.8	5.16	HL
CNMM120412-HL	●	●	●		●	12.7	4.76	1.2	5.16	
CNMM120416-HL	●		●		★	12.7	4.76	1.6	5.16	
CNMM160612-HL	●	●	●		★	15.875	6.35	1.2	6.35	
CNMM160616-HL	●	●	●		★	15.875	6.35	1.6	6.35	
CNMM190612-HL	●	●	●		★	19.05	6.35	1.2	7.93	
CNMM190616-HL	●		●		★	19.05	6.35	1.6	7.93	
CNMM190624-HL	★	●	●		★	19.05	6.35	2.4	7.93	
CNMM120408-HZ	●	●	●			12.7	4.76	0.8	5.16	HZ
CNMM120412-HZ	●	●	●			12.7	4.76	1.2	5.16	
CNMM120416-HZ			●			12.7	4.76	1.6	5.16	
CNMM160612-HZ	●					15.875	6.35	1.2	6.35	
CNMM160616-HZ	★					15.875	6.35	1.6	6.35	
CNMM190612-HZ	★			●		19.05	6.35	1.2	7.93	
CNMM190616-HZ	★			★		19.05	6.35	1.6	7.93	
CNMM190624-HZ					★	19.05	6.35	2.4	7.93	
DNMM150408-HL		★	★		★	12.7	4.76	0.8	5.16	HL
DNMM150412-HL		★	★		★	12.7	4.76	1.2	5.16	
DNMM150608-HL	●	●	●		●	12.7	6.35	0.8	5.16	
DNMM150612-HL	●	●	●		●	12.7	6.35	1.2	5.16	

8 Vc

● : Inventory maintained. ★ : Inventory maintained in Japan.

NEGATIVE INSERTS

P M

Order number	UE6110	MC6025	MC6035	UH6400	US735	IC	S	RE	D1	Shape
DNMM150408-HZ		★	★			12.7	4.76	0.8	5.16	
DNMM150412-HZ		★	★			12.7	4.76	1.2	5.16	HZ
DNMM150608-HZ	★	★	★			12.7	6.35	0.8	5.16	
DNMM150612-HZ	★	★	★			12.7	6.35	1.2	5.16	
SNMM190616-HV	●	●	●	●		19.05	6.35	1.6	7.93	
SNMM190624-HV	★	●	●	●		19.05	6.35	2.4	7.93	HV
SNMM250724-HV	★	●	●	●		25.4	7.94	2.4	9.12	
SNMM250924-HV	★	●	●	★		25.4	9.52	2.4	9.12	
SNMM250724-HR		●	●			25.4	7.94	2.4	9.12	
SNMM250924-HR		●	●			25.4	9.52	2.4	9.12	HR
										
SNMM120408-HX		★	★			12.7	4.76	0.8	5.16	
SNMM120412-HX		★	★			12.7	4.76	1.2	5.16	
SNMM150612-HX		★	★			15.875	6.35	1.2	6.35	HX
SNMM190612-HX	★	●	●	●		19.05	6.35	1.2	7.93	
SNMM190616-HX	●	●	●	●	●	19.05	6.35	1.6	7.93	
SNMM190624-HX	●	●	●	★		19.05	6.35	2.4	7.93	
SNMM250724-HX	★	●	●	★		25.4	7.94	2.4	9.12	
SNMM250924-HX	★	●	●	●		25.4	9.52	2.4	9.12	
SNMM150612-HM	★	●	●	●	●	15.875	6.35	1.2	6.35	
SNMM150616-HM	★			★	★	15.875	6.35	1.6	6.35	HM
SNMM190612-HM	★	●	●	●	●	19.05	6.35	1.2	7.93	
SNMM190616-HM	★	●	●	●	●	19.05	6.35	1.6	7.93	
SNMM190624-HM	★	●	●	★	●	19.05	6.35	2.4	7.93	
SNMM250724-HM	★	●	●	★	●	25.4	7.94	2.4	9.12	
SNMM250924-HM	★	●	●	★	★	25.4	9.52	2.4	9.12	
SNMM120408-HL	●	●	●		●	12.7	4.76	0.8	5.16	
SNMM120412-HL	★	●	●		●	12.7	4.76	1.2	5.16	
SNMM150612-HL	★	●	●		★	15.875	6.35	1.2	6.35	HL
SNMM150616-HL	★					15.875	6.35	1.6	6.35	
SNMM190612-HL	●	●	●		★	19.05	6.35	1.2	7.93	
SNMM190616-HL	●	●	●		★	19.05	6.35	1.6	7.93	
SNMM190624-HL	★	●	●		★	19.05	6.35	2.4	7.93	
SNMM120408-HZ	★	★	★			12.7	4.76	0.8	5.16	
SNMM120412-HZ	★	★	★			12.7	4.76	1.2	5.16	HZ
SNMM150612-HZ	★					15.875	6.35	1.2	6.35	
SNMM190612-HZ	★			●		19.05	6.35	1.2	7.93	
SNMM190616-HZ	★			★		19.05	6.35	1.6	7.93	
SNMM190624-HZ					●	19.05	6.35	2.4	7.93	

● : Inventory maintained. ★ : Inventory maintained in Japan.

NEGATIVE INSERTS

Order number	UE6110	MC6025	MC6035	UH6400	US735	IC	S	RE	D1	Shape
TNMM160408-HL	●	●	●		★	9.525	4.76	0.8	3.81	HL
TNMM160412-HL	●	●	●		★	9.525	4.76	1.2	3.81	
TNMM220408-HL	●	●	●		●	12.7	4.76	0.8	5.16	
TNMM220412-HL	●	●	●		●	12.7	4.76	1.2	5.16	
TNMM220416-HL	●	●	●		●	12.7	4.76	1.6	5.16	
TNMM160408-HZ	★	★	★			9.525	4.76	0.8	3.81	HZ
TNMM160412-HZ		★	★			9.525	4.76	1.2	3.81	
TNMM220408-HZ	★					12.7	4.76	0.8	5.16	
TNMM220412-HZ	★					12.7	4.76	1.2	5.16	
TNMM220416-HZ	★					12.7	4.76	1.6	5.16	

8 Vc

7°POSITIVE INSERTS

P M

Order number	UE6110	MC6025	MC6035	UH6400	US735	IC	S	RE	D1	Shape
RCMX1606M0-RR		●		●	●	16	6.35	–	5.2	RR
RCMX2006M0-RR		●		●	●	20	6.35	–	6.5	
RCMX2507M0-RR		●		●	●	25	7.94	–	7.2	
RCMX1003M0		●			●	10	3.18	–	3.6	Standard
RCMX1204M0	●	●			●	12	4.76	–	4.2	
RCMX1606M0	●	●		●	●	16	6.35	–	5.2	
RCMX2006M0	●	●		★	●	20	6.35	–	6.5	
RCMX2507M0	★	●		★	★	25	7.94	–	7.2	
RCMX3209M0	★			★	★	32	9.52	–	9.5	
RCMX1606M0-RR		●		●	●	16	6.35	–	5.2	RR
RCMX2006M0-RR		●		●	●	20	6.35	–	6.5	
RCMX2507M0-RR		●		●	●	25	7.94	–	7.2	
RCMX3209M0-RR				★	★	32	9.52	–	9.5	
RCMX1003M0		●			●	10	3.18	–	3.6	Standard
RCMX1204M0	●	●			●	12	4.76	–	4.2	
RCMX1606M0	●	●		★	●	16	6.35	–	5.2	
RCMX2006M0	●	●		★	●	20	6.35	–	6.5	
RCMX2507M0	★	●		★	★	25	7.94	–	7.2	
RCMX3209M0	★			★	★	32	9.52	–	9.5	

8 Vc

ISO INSERT SERIES FOR HEAVY CUTTING

RECOMMENDED CUTTING CONDITIONS

Cutting conditions : ●: Stable cutting ◔: General cutting ✣: Unstable cutting

	Material	Hardness	Cutting conditions	Grade		Vc	f	ap
P	Carbon and alloy steel	180-280 HB	●	UE6110	HL	160—275	0.40—1.00	1.50— 8.00
					HZ	160—275	0.40—1.20	2.00—10.00
					HM	160—275	0.50—1.10	2.00—10.00
					HX	160—275	0.50—1.26	3.00—11.00
					HV	135—225	0.70—1.30	4.00—12.00
			◔	MC6025	HL	160—265	0.40—1.00	1.50— 8.00
					HZ	160—265	0.40—1.20	2.00—10.00
					HM	160—265	0.50—1.10	2.00—10.00
					HX	160—265	0.50—1.26	3.00—11.00
					HR	135—215	0.70—1.30	3.00—12.00
					HV	135—215	0.70—1.30	4.00—12.00
				UE6110	HZ	160—275	0.40—1.20	2.00—10.00
			✣	MC6035	HX	140—200	0.50—1.26	3.00—11.00
					HV	115—165	0.70—1.30	4.00—12.00
					HZ	140—200	0.40—1.20	2.00—10.00
					HL	140—200	0.40—1.00	1.50— 8.00
					HM	140—200	0.50—1.10	2.00—10.00
					HR	115—165	0.70—1.30	3.00—12.00
				UH6400	HZ	135—195	0.40—1.20	2.00—10.00
					HX	135—195	0.50—1.26	3.00—11.00
					HV	110—160	0.70—1.30	4.00—12.00
				UE6020	HZ	155—250	0.40—1.20	2.00—10.00

RECOMMENDED CUTTING CONDITIONS

	Material	Hardness	Cutting conditions	Grade		Vc	f	ap
M	Austenitic stainless steel	⩽ 200 HB	●	US735	HL	75—140	0.40—1.00	1.50— 8.00
			●	US735	HL	75—140	0.40—1.00	1.50— 8.00
					HM	75—140	0.50—1.10	2.00—10.00
			●	US735	HL	75—140	0.40—1.00	1.50— 8.00
					HM	75—140	0.50—1.10	2.00—10.00
		> 200 HB	●	US735	HL	60—120	0.40—1.00	1.50— 8.00
					HM	60—120	0.50—1.10	2.00—10.00
			●	US735	HL	60—120	0.40—1.00	1.50— 8.00
					HM	60—120	0.50—1.10	2.00—10.00
			●	US735	HL	60—120	0.40—1.00	1.50— 8.00
					HM	60—120	0.50—1.10	2.00—10.00
			●	US735	HL	50— 95	0.40—1.00	1.50— 8.00
					HM	50— 95	0.50—1.10	2.00—10.00
			●	US735	HL	50— 95	0.40—1.00	1.50— 8.00
					HM	50— 95	0.50—1.10	2.00—10.00
			●	US735	HL	50— 95	0.40—1.00	1.50— 8.00
					HM	50— 95	0.50—1.10	2.00—10.00
	Ferritic and martensitic stainless steels	⩽ 200 HB	●	US735	HL	75—140	0.40—1.00	1.50— 8.00
					HM	75—140	0.50—1.10	2.00—10.00
			●	US735	HL	75—140	0.40—1.00	1.50— 8.00
					HM	75—140	0.50—1.10	2.00—10.00
			●	US735	HL	75—140	0.40—1.00	1.50— 8.00
					HM	75—140	0.50—1.10	2.00—10.00
		> 200 HB	●	US735	HL	60—120	0.40—1.00	1.50— 8.00
					HM	60—120	0.50—1.10	2.00—10.00
			●	US735	HL	60—120	0.40—1.00	1.50— 8.00
					HM	60—120	0.50—1.10	2.00—10.00
			●	US735	HL	60—120	0.40—1.00	1.50— 8.00
					HM	60—120	0.50—1.10	2.00—10.00
	Hardened stainless steel	< 450 HB	●	US735	HL	40— 80	0.40—1.00	1.50— 8.00
					HM	40— 80	0.50—1.10	2.00—10.00
			●	US735	HL	40— 80	0.40—1.00	1.50— 8.00
					HM	40— 80	0.50—1.10	2.00—10.00
			●	US735	HL	40— 80	0.40—1.00	1.50— 8.00
					HM	40— 80	0.50—1.10	2.00—10.00

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