

# Series # 2485 / # 5242 (3xD body)

Material group	Hardness	SFM	Feed Rate - IPR					
			≤16.000 mm	41/64 - 25/32 in. 16.001 - 20.000 mm	51/64 - 31/32 in. 20.001 - 25.000 mm	63/64 - 1 17/64 in. 25.001 - 31.500 mm	1 1/4 - 1 9/16 in. 31.501 - 40.000 mm	1 37/64 - 1 61/64 in. 40.001 - 50.000 mm
Common structural steels	≤100 Bhn	430	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	>100-260 Bhn	365	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Free-cutting steels	≤24 Rc	430	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
	>24-30 Rc	365	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Unalloyed heat-treatable steels	≤16 Rc	430	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	16-24 Rc	410	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	24-30 Rc	365	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Alloyed heat-treatable steels	24-30 Rc	365	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	>30-38 Rc	300	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Unalloyed case hardened steels	≤230 Bhn	430	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Alloyed case hardened steels	24-30 Rc	365	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	>30-38 Rc	230	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
Nitriding steels	≥24-30 Rc	345	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
	>30-38 Rc	230	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
Tool steels	≤24 Rc	185	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
	>24-30 Rc	165	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
High speed steels	≥14-30 Rc	185	0.0050	0.0065	0.0080	0.0080	0.0100	0.0125
Spring steels	≤330 Bhn	165	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Stainless steels, sulphured	≤24 Rc	185	0.0050	0.0065	0.0080	0.0080	0.0100	0.0125
	≤24 Rc	135	0.0050	0.0065	0.0080	0.0080	0.0100	0.0125
	≤24 Rc	115	0.0050	0.0065	0.0080	0.0080	0.0100	0.0125
Hardened steels	≤40-48 Rc	85	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
	>48-60 Rc	•	•	•	•	•	•	•
Special alloys	≤38 Rc	85	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Cast iron	≤240 Bhn	685	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
	<300 Bhn	505	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Spheroidal graphite iron and malleable cast iron	≤240 Bhn	505	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
	<300 Bhn	425	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Chilled cast iron	≤350 Bhn	115	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Ti and Ti-alloys	≤24 Rc	135	0.0050	0.0065	0.0080	0.0080	0.0100	0.0125
	>24-38 Rc	115	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Aluminium and Al-alloys	≤120 Bhn	955	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Al wrought alloys	≤150 Bhn	855	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Al cast alloys ≤ 10 % Si	≤200 Bhn	770	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
	> 10 % Si	635	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Magnesium alloys	≤150 Bhn	850	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Copper, low-alloyed	≤120 Bhn	340	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Brass, short-chipping	≤200 Bhn	885	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
	long-chipping	590	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Bronze, short-chipping	≤200 Bhn	340	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	>200-260 Bhn	275	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Bronze, long-chipping	≤24 Rc	210	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	>24-30 Rc	180	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Duroplastics	-	340	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Thermoplastics	-	340	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Reinforced plastics - Kevlar	-	340	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Reinforced plastics - GFK / CFK	-	340	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200

$$\text{RPM} = \frac{\text{SFM}}{\text{DIAM. in.}} \times 3.82$$

$$\text{IPM} = \text{IPR} \times \text{RPM}$$

$$\frac{\text{HOLE DEPTH in.}}{\text{IPM}} \times 60 = \text{CutTime}$$

$$\text{mm} = \text{in.} \times 25.40$$

$$\text{m/min.} = \text{SFM} \div 3.28$$

$$\text{mm/rev.} = \text{IPR} \times 25.40$$

$$\text{Bar} = \text{PSI} \div 14.50$$

$$\text{Liter} = \text{Gal.} \div 3.79$$

## Series # 2485 / # 5243 (5xD body)

Material group	Hardness	SFM	Feed Rate - IPR					
			≤16.000 mm	41/64 - 25/32 in. 16.001 - 20.000 mm	51/64 - 31/32 in. 20.001 - 25.000 mm	63/64 - 1 17/64 in. 25.001 - 31.500 mm	1 1/4 - 1 9/16 in. 31.501 - 40.000 mm	1 37/64 - 1 61/64 in. 40.001 - 50.000 mm
Common structural steels	≤100 Bhn >100-260 Bhn	410 345	0.0100 0.0080	0.0125 0.0100	0.0160 0.0125	0.0200 0.0125	0.0200 0.0160	0.0250 0.0250
Free-cutting steels	≤24 Rc >24-30 Rc	410 345	0.0125 0.0100	0.0160 0.0125	0.0200 0.0160	0.0200 0.0160	0.0250 0.0200	0.0315 0.0250
Unalloyed heat-treatable steels	≤16 Rc 16-24 Rc 24-30 Rc	410 395 345	0.0100 0.0100 0.0080	0.0125 0.0125 0.0100	0.0160 0.0160 0.0125	0.0200 0.0160 0.0125	0.0200 0.0200 0.0160	0.0250 0.0250 0.0200
Alloyed heat-treatable steels	24-30 Rc >30-38 Rc	345 280	0.0100 0.0080	0.0125 0.0100	0.0160 0.0125	0.0200 0.0125	0.0200 0.0160	0.0250 0.0200
Unalloyed case hardened steels	≤230 Bhn	410	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Alloyed case hardened steels	24-30 Rc >30-38 Rc	345 230	0.0100 0.0065	0.0125 0.0080	0.0160 0.0100	0.0200 0.0100	0.0200 0.0125	0.0250 0.0160
Nitriding steels	≥24-30 Rc >30-38 Rc	345 230	0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0160 0.0100	0.0200 0.0125	0.0200 0.0160
Tool steels	≤24 Rc >24-30 Rc	185 165	0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0160 0.0100	0.0200 0.0125	0.0200 0.0160
High speed steels	≥14-30 Rc	185	0.0050	0.0065	0.0080	0.0080	0.0100	0.0125
Spring steels	≤330 Bhn	165	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Stainless steels, sulphured austenitic martensitic	≤24 Rc ≤24 Rc ≤24 Rc	185 135 115	0.0050 0.0050 0.0050	0.0065 0.0065 0.0065	0.0080 0.0080 0.0080	0.0080 0.0080 0.0080	0.0100 0.0100 0.0100	0.0125 0.0125 0.0125
Hardened steels	≤40-48 Rc >48-60 Rc	85 •	0.0040 •	0.0050 •	0.0065 •	0.0065 •	0.0080 •	0.0100 •
Special alloys	≤38 Rc	85	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Cast iron	≤240 Bhn <300 Bhn	635 475	0.0125 0.0125	0.0160 0.0160	0.0200 0.0200	0.0200 0.0200	0.0250 0.0250	0.0315 0.0315
Spheroidal graphite iron and malleable cast iron	≤240 Bhn <300 Bhn	475 390	0.0125 0.0100	0.0160 0.0125	0.0200 0.0160	0.0200 0.0160	0.0250 0.0200	0.0315 0.0250
Chilled cast iron	≤350 Bhn	115	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Ti and Ti-alloys	≤24 Rc >24-38 Rc	135 115	0.0050 0.0040	0.0065 0.0050	0.0080 0.0065	0.0080 0.0065	0.0100 0.0080	0.0125 0.0100
Aluminium and Al-alloys	≤120 Bhn	855	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Al wrought alloys	≤150 Bhn	855	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Al cast alloys ≤ 10 % Si > 10 % Si	≤200 Bhn ≤200 Bhn	720 590	0.0125 0.0125	0.0160 0.0160	0.0200 0.0200	0.0200 0.0200	0.0250 0.0250	0.0315 0.0315
Magnesium alloys	≤150 Bhn	850	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Copper, low-alloyed	≤120 Bhn	340	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Brass, short-chipping long-chipping	≤200 Bhn ≤200 Bhn	885 590	0.0125 0.0100	0.0160 0.0125	0.0200 0.0160	0.0200 0.0160	0.0250 0.0200	0.0315 0.0250
Bronze, short-chipping	≤200 Bhn >200-260 Bhn	340 275	0.0100 0.0100	0.0125 0.0125	0.0160 0.0160	0.0160 0.0160	0.0200 0.0200	0.0250 0.0250
Bronze, long-chipping	≤24 Rc >24-30 Rc	210 180	0.0100 0.0080	0.0125 0.0100	0.0160 0.0125	0.0160 0.0125	0.0200 0.0160	0.0200 0.0200
Duroplastics	-	340	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Thermoplastics	-	340	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Reinforced plastics - Kevlar	-	340	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Reinforced plastics - GFK / CFK	-	340	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200

## Series # 2485 / # 5248 (7xD body)

Material group	Hardness	SFM	Feed Rate - IPR					
			≤16.000 mm	41/64 - 25/32 in. 16.001 - 20.000 mm	451/64 - 31/32 in. 20.001 - 25.000 mm	63/64 - 1 17/64 in. 25.001 - 31.500 mm	1 1/4 - 1 9/16 in. 31.501 - 40.000 mm	1 37/64 - 1 61/64 in. 40.001 - 50.000 mm
Common structural steels	≤100 Bhn >100-260 Bhn	395 345	0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0125 0.0100	0.0160 0.0125	0.0200 0.0160
Free-cutting steels	≤24 Rc >24-30 Rc	395 345	0.0100 0.0080	0.0125 0.0100	0.0160 0.0125	0.0160 0.0125	0.0200 0.0160	0.0250 0.0200
Unalloyed heat-treatable steels	≤16 Rc 16-24 Rc 24-30 Rc	395 365 330	0.0080 0.0080 0.0065	0.0100 0.0100 0.0080	0.0125 0.0125 0.0100	0.0160 0.0125 0.0100	0.0200 0.0160 0.0125	0.0200 0.0200 0.0160
Alloyed heat-treatable steels	24-30 Rc >30-38 Rc	330 280	0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0160 0.0100	0.0200 0.0125	0.0200 0.0160
Unalloyed case hardened steels	≤230 Bhn	395	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Alloyed case hardened steels	24-30 Rc >30-38 Rc	330 230	0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0160 0.0100	0.0200 0.0125	0.0200 0.0160
Nitriding steels	≥24-30 Rc >30-38 Rc	345 230	0.0065 0.0050	0.0080 0.0065	0.0100 0.0080	0.0100 0.0080	0.0125 0.0100	0.0160 0.0125
Tool steels	≤24 Rc >24-30 Rc	185 165	0.0065 0.0050	0.0080 0.0065	0.0100 0.0080	0.0100 0.0080	0.0125 0.0100	0.0160 0.0125
High speed steels	≥14-30 Rc	185	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Spring steels	≤330 Bhn	165	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Stainless steels, sulphured austenitic martensitic	≤24 Rc ≤24 Rc ≤24 Rc	185 135 115	0.0040 0.0040 0.0040	0.0050 0.0050 0.0050	0.0065 0.0065 0.0065	0.0065 0.0065 0.0065	0.0080 0.0080 0.0080	0.0100 0.0100 0.0100
Hardened steels	≤40-48 Rc >48-60 Rc	85 •	0.0035 •	0.0040 •	0.0050 •	0.0065 •	0.0065 •	0.0080 •
Special alloys	≤38 Rc	85	0.0035	0.0040	0.0050	0.0065	0.0065	0.0080
Cast iron	≤240 Bhn <300 Bhn	635 475	0.0100 0.0100	0.0125 0.0125	0.0160 0.0160	0.0160 0.0160	0.0200 0.0200	0.0250 0.0250
Spheroidal graphite iron and malleable cast iron	≤240 Bhn <300 Bhn	475 390	0.0100 0.0080	0.0125 0.0100	0.0160 0.0125	0.0160 0.0125	0.0200 0.0160	0.0250 0.0200
Chilled cast iron	≤350 Bhn	115	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
Ti and Ti-alloys	≤24 Rc >24-38 Rc	135 115	0.0040 0.0035	0.0050 0.0040	0.0065 0.0050	0.0065 0.0065	0.0080 0.0065	0.0100 0.0080
Aluminium and Al-alloys	≤120 Bhn	855	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Al wrought alloys	≤150 Bhn	855	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Al cast alloys ≤ 10 % Si > 10 % Si	≤200 Bhn ≤200 Bhn	720 590	0.0100 0.0100	0.0125 0.0125	0.0160 0.0160	0.0160 0.0160	0.0200 0.0200	0.0250 0.0250
Magnesium alloys	≤150 Bhn	850	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Copper, low-alloyed	≤120 Bhn	340	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Brass, short-chipping long-chipping	≤200 Bhn ≤200 Bhn	885 590	0.0100 0.0080	0.0125 0.0100	0.0160 0.0125	0.0160 0.0125	0.0200 0.0160	0.0250 0.0200
Bronze, short-chipping	≤200 Bhn >200-260 Bhn	340 275	0.0080 0.0080	0.0100 0.0100	0.0125 0.0125	0.0160 0.0125	0.0200 0.0160	0.0200 0.0200
Bronze, long-chipping	≤24 Rc >24-30 Rc	210 180	0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0160 0.0100	0.0200 0.0125	0.0200 0.0160
Duroplastics	-	340	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
Thermoplastics	-	340	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
Reinforced plastics - Kevlar	-	340	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
Reinforced plastics - GFK / CFK	-	340	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160

Note: When drilling from solid with #5248 holder, spot drilling (> 140° point angle to a depth of at least 2/3 insert diameter) is recommended.

Feeds/Speeds