TuffCut® Endmills

- TuffCut® GP Series V4S
- TuffCut® GP Series MV4 & MV4-W
- TuffCut® GP Series ASV4ACM
- TuffCut® GP Series VMH & VMH-W
- TuffCut® GP Series V4L & V4LB
- TuffCut® GP Series ASV4ACB
- TuffCut® GP Series GT2, GT2R, GT3 & GT3R
- TuffCut® GP Series ASVSM
- TuffCut® GP Series GT2B & GT3B

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High Performance Cutting Tools
20th ANNIVERSARY
1998 - 2018

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Our extensive range of tooling and 'Integrated Manufacturing Solutions' has developed and evolved to become a virtual byword for precision and performance. The principles of high precision and high quality extend beyond our tooling and are present in every aspect of M.A. Ford Europe to ensure customer demands are consistently met at all levels.


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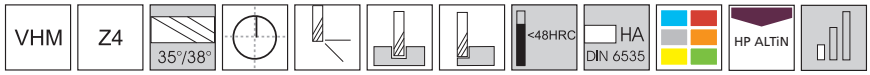
M.A. Ford (Europe) Limited

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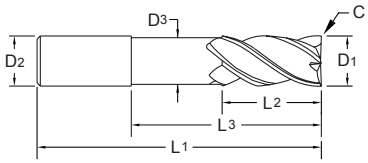
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TuffCut® GP Series V4S with Corner Chamfer



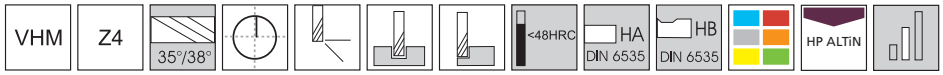




Series V4S	Tool Dimensions						
Tool No.	Ø D¹	Ø D²	L¹	L²	L³	Ø D³	C x 45°
V4S 0300A	3.0	6.0	45.0	6.0	-	-	0.1
V4S 0400A	4.0	6.0	45.0	8.0	-	-	0.1
V4S 0500A	5.0	6.0	45.0	10.0	-	-	0.1
V4S 0600A	6.0	6.0	55.0	9.0	14.0	5.7	0.25
V4S 0800A	8.0	8.0	58.0	12.0	18.0	7.7	0.25
V4S 1000A	10.0	10.0	66.0	15.0	22.0	9.7	0.25
V4S 1200A	12.0	12.0	73.0	18.0	26.0	11.7	0.5
V4S 1600A	16.0	16.0	82.0	24.0	34.0	15.7	0.5
V4S 2000A	20.0	20.0	93.0	30.0	42.0	19.7	0.5

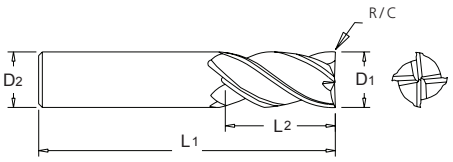
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TuffCut® GP Series MV4 with Corner Chamfer or Corner Radius

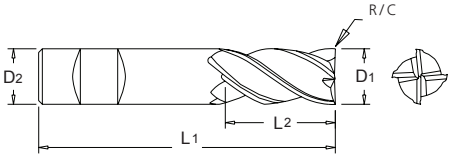




HA Shank



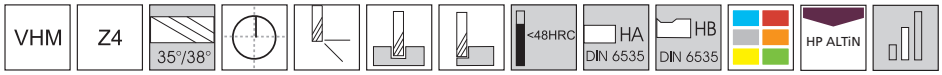
HB Shank



Series MV4	Tool Dimensions						
Tool No.	Ø D¹	Ø D²	L¹	L²	R	C x 45°	Shank
MV4 03HX	3.0	3.0	51.0	6.0	-	0.1	HA
MV4 03-0.25RHX	3.0	3.0	51.0	6.0	0.25	-	HA
MV4 04HX	4.0	6.0	64.0	11.0	-	0.1	HA
MV4 04-0.25RHX	4.0	6.0	64.0	11.0	0.25	-	HA
MV4 04-0.5RHX	4.0	6.0	64.0	11.0	0.5	-	HA
MV4 04-1.0RHX	4.0	6.0	64.0	11.0	1.0	-	HA
MV4 05HX	5.0	6.0	64.0	12.0	-	0.1	HA
MV4 05-0.25RHX	5.0	6.0	64.0	12.0	0.25	-	HA
MV4 05-0.5RHX	5.0	6.0	64.0	12.0	0.5	-	HA
MV4 05-1.0RHX	5.0	6.0	64.0	12.0	1.0	-	HA

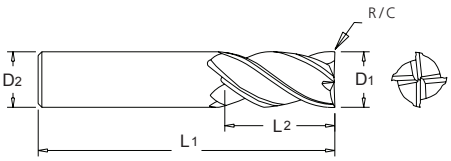
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TuffCut® GP Series MV4 & MV4-W with Corner Chamfer or Corner Radius

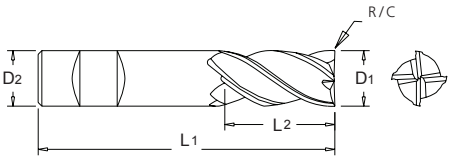




HA Shank



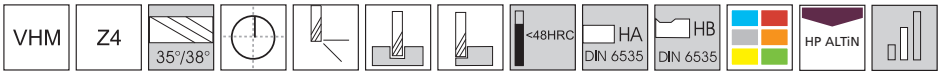
HB Shank

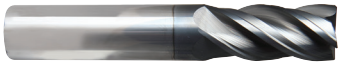


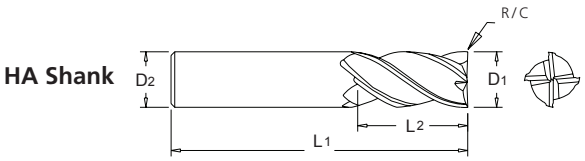
Series MV4	Tool Dimensions						
Tool No.	Ø D¹	Ø D²	L¹	L²	R	C x 45°	Shank
MV4 06HX	6.0	6.0	64.0	15.0	-	0.1	HA
MV4 06HXW	6.0	6.0	64.0	15.0	-	0.1	HB
MV4 06-0.25RHX	6.0	6.0	64.0	15.0	0.25	-	HA
MV4 06-0.25RHXW	6.0	6.0	64.0	15.0	0.25	-	HB
MV4 06-0.5RHX	6.0	6.0	64.0	15.0	0.5	-	HA
MV4 06-0.5RHXW	6.0	6.0	64.0	15.0	0.5	-	HB
MV4 06-1.0RHX	6.0	6.0	64.0	15.0	1.0	-	HA
MV4 06-1.0RHXW	6.0	6.0	64.0	15.0	1.0	-	HB
MV4 08HX	8.0	8.0	64.0	22.0	-	0.15	HA
MV4 08HXW	8.0	8.0	64.0	22.0	-	0.15	HB
MV4 08-0.25RHX	8.0	8.0	64.0	22.0	0.25	-	HA
MV4 08-0.25RHXW	8.0	8.0	64.0	22.0	0.25	-	HB
MV4 08-0.5RHX	8.0	8.0	64.0	22.0	0.5	-	HA
MV4 08-0.5RHXW	8.0	8.0	64.0	22.0	0.5	-	HB
MV4 08-1.0RHX	8.0	8.0	64.0	22.0	1.0	-	HA
MV4 08-1.0RHXW	8.0	8.0	64.0	22.0	1.0	-	HB
MV4 08-1.5RHX	8.0	8.0	64.0	22.0	1.5	-	HA
MV4 08-1.5RHXW	8.0	8.0	64.0	22.0	1.5	-	HB
MV4 08-2.0RHX	8.0	8.0	64.0	22.0	2.0	-	HA
MV4 08-2.0RHXW	8.0	8.0	64.0	22.0	2.0	-	HB
MV4 10HX	10.0	10.0	72.0	22.0	-	0.15	HA
MV4 10HXW	10.0	10.0	72.0	22.0	-	0.15	HB
MV4 10-0.5RHX	10.0	10.0	72.0	22.0	0.5	-	HA
MV4 10-0.5RHXW	10.0	10.0	72.0	22.0	0.5	-	HB
MV4 10-1.0RHX	10.0	10.0	72.0	22.0	1.0	-	HA
MV4 10-1.0RHXW	10.0	10.0	72.0	22.0	1.0	-	HB
MV4 10-1.5RHX	10.0	10.0	72.0	22.0	1.5	-	HA
MV4 10-1.5RHXW	10.0	10.0	72.0	22.0	1.5	-	HB
MV4 10-2.0RHX	10.0	10.0	72.0	22.0	2.0	-	HA
MV4 10-2.0RHXW	10.0	10.0	72.0	22.0	2.0	-	HB
MV4 10-2.5RHX	10.0	10.0	73.0	22.0	2.5	-	HA
MV4 10-2.5RHXW	10.0	10.0	73.0	22.0	2.5	-	HB
MV4 10-3.0RHX	10.0	10.0	73.0	22.0	3.0	-	HA
MV4 10-3.0RHXW	10.0	10.0	73.0	22.0	3.0	-	HB
MV4 12HX	12.0	12.0	73.0	27.0	-	0.15	HA
MV4 12HXW	12.0	12.0	73.0	27.0	-	0.15	HB
MV4 12-0.5RHX	12.0	12.0	73.0	27.0	0.5	-	HA
MV4 12-0.5RHXW	12.0	12.0	73.0	27.0	0.5	-	HB
MV4 12-1.0RHX	12.0	12.0	73.0	27.0	1.0	-	HA

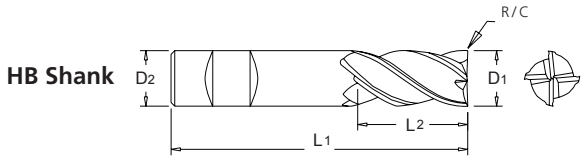
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TuffCut® GP Series MV4 & MV4-W with Corner Chamfer or Corner Radius









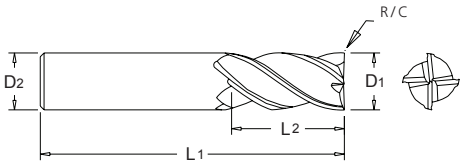
Series MV4	Tool Dimensions						
Tool No.	Ø D¹	Ø D²	L¹	L²	R	C x 45°	Shank
MV4 12-1.0RHXW	12.0	12.0	83.0	27.0	1.0	-	HB
MV4 12-1.5RHX	12.0	12.0	73.0	27.0	1.5	-	HA
MV4 12-1.5RHXW	12.0	12.0	83.0	27.0	1.5	-	HB
MV4 12-2.0RHX	12.0	12.0	73.0	27.0	2.0	-	HA
MV4 12-2.0RHXW	12.0	12.0	83.0	27.0	2.0	-	HB
MV4 12-2.5RHX	12.0	12.0	73.0	27.0	2.5	-	HA
MV4 12-2.5RHXW	12.0	12.0	83.0	27.0	2.5	-	HB
MV4 12-3.0RHX	12.0	12.0	73.0	27.0	3.0	-	HA
MV4 12-3.0RHXW	12.0	12.0	83.0	27.0	3.0	-	HB
MV4 16HX	16.0	16.0	92.0	33.0	-	0.3	HA
MV4 16HXW	16.0	16.0	92.0	33.0	-	0.3	HB
MV4 16-0.5RHX	16.0	16.0	92.0	33.0	0.5	-	HA
MV4 16-0.5RHXW	16.0	16.0	92.0	33.0	0.5	-	HB
MV4 16-1.0RHX	16.0	16.0	92.0	33.0	1.0	-	HA
MV4 16-1.0RHXW	16.0	16.0	92.0	33.0	1.0	-	HB
MV4 16-1.5RHX	16.0	16.0	92.0	33.0	1.5	-	HA
MV4 16-1.5RHXW	16.0	16.0	92.0	33.0	1.5	-	HB
MV4 16-2.0RHX	16.0	16.0	92.0	33.0	2.0	-	HA
MV4 16-2.0RHXW	16.0	16.0	92.0	33.0	2.0	-	HB
MV4 16-2.5RHX	16.0	16.0	92.0	33.0	2.5	-	HA
MV4 16-2.5RHXW	16.0	16.0	92.0	33.0	2.5	-	HB
MV4 16-3.0RHX	16.0	16.0	93.0	33.0	3.0	-	HA
MV4 16-3.0RHXW	16.0	16.0	93.0	33.0	3.0	-	HB
MV4 20HX	20.0	20.0	104.0	40.0	-	0.3	HA
MV4 20HXW	20.0	20.0	104.0	40.0	-	0.3	HB
MV4 20-1.0RHX	20.0	20.0	104.0	40.0	1.0	-	HA
MV4 20-1.0RHXW	20.0	20.0	104.0	40.0	1.0	-	HB
MV4 20-1.5RHX	20.0	20.0	104.0	40.0	1.5	-	HA
MV4 20-1.5RHXW	20.0	20.0	104.0	40.0	1.5	-	HB
MV4 20-2.0RHX	20.0	20.0	104.0	40.0	2.0	-	HA
MV4 20-2.0RHXW	20.0	20.0	104.0	40.0	2.0	-	HB
MV4 20-3.0RHX	20.0	20.0	104.0	40.0	3.0	-	HA
MV4 20-3.0RHXW	20.0	20.0	104.0	40.0	3.0	-	HB
MV4 20-4.0RHX	20.0	20.0	104.0	40.0	4.0	-	HA
MV4 20-4.0RHXW	20.0	20.0	104.0	40.0	4.0	-	HB
MV4 20-5.0RHX	20.0	20.0	104.0	40.0	5.0	-	HA
MV4 20-5.0RHXW	20.0	20.0	104.0	40.0	5.0	-	HB
MV4 20-6.0RHX	20.0	20.0	104.0	40.0	6.0	-	HA
MV4 20-6.0RHXW	20.0	20.0	104.0	40.0	6.0	-	HB

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TuffCut® GP Series ASV4ACM with Corner Chamfer or Corner Radius

VHM | Z4 | 35°/38° | <48HRC | HA DIN 6535 | ALtima® BLAZE

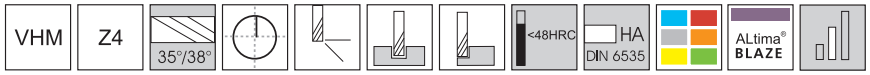


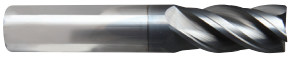


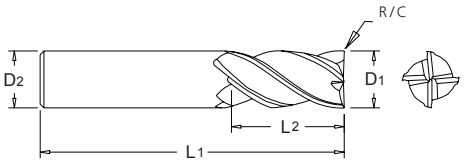
Series AVSV4ACM	Tool Dimensions					
Tool No.	Ø D¹	Ø D²	L¹	L²	R	C x 45°
ASV4ACM0300	3.0	3.0	50.0	6.0	-	0.1
ASV4ACM0400	4.0	4.0	55.0	11.0	-	0.1
ASV4ACM0400R0.25	4.0	4.0	55.0	11.0	0.25	-
ASV4ACM0400R0.5	4.0	4.0	55.0	11.0	0.5	-
ASV4ACM0400R0.75	4.0	4.0	55.0	11.0	0.75	-
ASV4ACM0400R1.0	4.0	4.0	55.0	11.0	1.0	-
ASV4ACM0500	5.0	5.0	60.0	12.0	-	0.1
ASV4ACM0500R0.25	5.0	5.0	60.0	12.0	0.25	-
ASV4ACM0500R0.5	5.0	5.0	60.0	12.0	0.5	-
ASV4ACM0500R1.0	5.0	5.0	60.0	12.0	1.0	-
ASV4ACM0600	6.0	6.0	64.0	15.0	-	0.1
ASV4ACM0600R0.25	6.0	6.0	64.0	15.0	0.25	-
ASV4ACM0600R0.5	6.0	6.0	64.0	15.0	0.5	-
ASV4ACM0600R1.0	6.0	6.0	64.0	15.0	1.0	-
ASV4ACM0800	8.0	8.0	65.0	22.0	-	0.15
ASV4ACM0800R0.25	8.0	8.0	65.0	22.0	0.25	-
ASV4ACM0800R0.5	8.0	8.0	65.0	22.0	0.5	-
ASV4ACM0800R1.0	8.0	8.0	65.0	22.0	1.0	-
ASV4ACM0800R1.5	8.0	8.0	65.0	22.0	1.5	-
ASV4ACM0800R2.0	8.0	8.0	65.0	22.0	2.0	-
ASV4ACM1000	10.0	10.0	73.0	22.0	-	0.15
ASV4ACM1000R0.25	10.0	10.0	73.0	22.0	0.25	-
ASV4ACM1000R0.5	10.0	10.0	73.0	22.0	0.5	-
ASV4ACM1000R1.0	10.0	10.0	73.0	22.0	1.0	-
ASV4ACM1000R1.5	10.0	10.0	73.0	22.0	1.5	-
ASV4ACM1000R2.0	10.0	10.0	73.0	22.0	2.0	-
ASV4ACM1000R2.5	10.0	10.0	73.0	22.0	2.5	-
ASV4ACM1000R3.0	10.0	10.0	73.0	22.0	3.0	-
ASV4ACM1200	12.0	12.0	73.0	27.0	-	0.15
ASV4ACM1200R0.25	12.0	12.0	73.0	27.0	0.25	-
ASV4ACM1200R0.5	12.0	12.0	73.0	27.0	0.5	-
ASV4ACM1200R1.0	12.0	12.0	73.0	27.0	1.0	-
ASV4ACM1200R1.5	12.0	12.0	73.0	27.0	1.5	-
ASV4ACM1200R1.75	12.0	12.0	73.0	27.0	1.75	-
ASV4ACM1200R2.0	12.0	12.0	73.0	27.0	2.0	-
ASV4ACM1200R2.5	12.0	12.0	73.0	27.0	2.5	-
ASV4ACM1200R3.0	12.0	12.0	73.0	27.0	3.0	-

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TuffCut® GP Series ASV4ACM with Corner Chamfer or Corner Radius



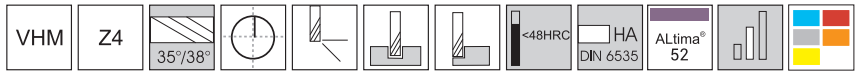




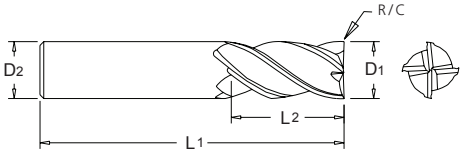
Series AVSV4ACM	Tool Dimensions					
Tool No.	Ø D¹	Ø D²	L¹	L²	R	C x 45°
ASV4ACM1400	14.0	14.0	85.0	30.0	-	0.3
ASV4ACM1400R0.2	14.0	14.0	85.0	30.0	0.2	-
ASV4ACM1600	16.0	16.0	93.0	33.0	-	-
ASV4ACM1600R0.5	16.0	16.0	93.0	33.0	0.5	0.3
ASV4ACM1600R1.0	16.0	16.0	93.0	33.0	1	-
ASV4ACM1600R1.5	16.0	16.0	93.0	33.0	1.5	-
ASV4ACM1600R2.0	16.0	16.0	93.0	33.0	2	-
ASV4ACM1600R2.5	16.0	16.0	93.0	33.0	2.5	-
ASV4ACM1600R3.0	16.0	16.0	93.0	33.0	3	-
ASV4ACM2000	20.0	20.0	100.0	40.0	-	0.3

P13

TuffCut® GP Series VMH with Corner Chamfer or Corner Radius



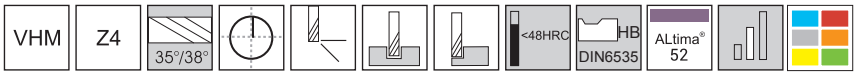




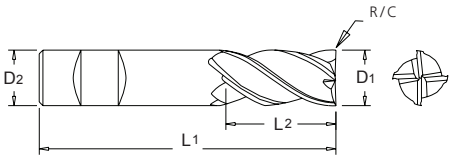
Series VMH	Tool Dimensions					
Tool No.	Ø D¹	Ø D²	L¹	L²	R	C x 45°
VMH 0300	3.0	6.0	64.0	7.5	-	0.15
VMH 03-0.3R	3.0	6.0	64.0	7.5	0.3	-
VMH 0400	4.0	6.0	64.0	10.0	-	0.2
VMH 04-0.3R	4.0	6.0	64.0	10.0	0.3	-
VMH 0500	5.0	6.0	64.0	12.5	-	0.2
VMH 05-0.3R	5.0	6.0	64.0	12.5	0.3	-
VMH 0600	6.0	6.0	64.0	15.0	-	0.2
VMH 06-0.3R	6.0	6.0	64.0	15.0	0.3	-
VMH 0800	8.0	8.0	64.0	20.0	-	0.25
VMH 08-0.5R	8.0	8.0	64.0	20.0	0.5	-
VMH 1000	10.0	10.0	73.0	25.0	-	0.3
VMH 10-0.5R	10.0	10.0	73.0	25.0	0.5	-
VMH 1200	12.0	12.0	84.0	30.0	-	0.35
VMH 12-1.0R	12.0	12.0	84.0	30.0	1.0	-
VMH 1600	16.0	16.0	93.0	40.0	-	0.4
VMH 16-1.0R	16.0	16.0	93.0	40.0	1.0	-
VMH 2000	20.0	20.0	105.0	50.0	-	0.5
VMH 20-1.0R	20.0	20.0	105.0	50.0	1.0	-

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TuffCut® GP Series VMH-W with Corner Chamfer or Corner Radius



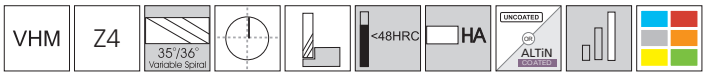




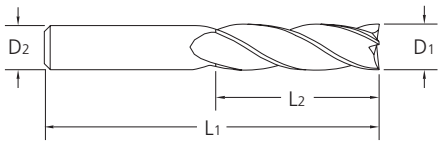
Series VMH	Tool Dimensions					
Tool No.	Ø D¹	Ø D²	L¹	L²	R	C x 45°
VMH 0300-W	3.0	6.0	64.0	7.5	-	0.15
VMH 0400-W	4.0	6.0	64.0	10.0	-	0.2
VMH 0500-W	5.0	6.0	64.0	12.5	-	0.2
VMH 0600-W	6.0	6.0	64.0	15.0	-	0.2
VMH 06-1.0RW	6.0	6.0	64.0	15.0	1.0	-
VMH 0800-W	8.0	8.0	64.0	20.0	-	0.25
VMH 08-1.0RW	8.0	8.0	64.0	20.0	1.0	-
VMH 1000-W	10.0	10.0	73.0	25.0	-	0.3
VMH 10-1.0RW	10.0	10.0	73.0	25.0	1.0	-
VMH 1200-W	12.0	12.0	84.0	30.0	-	0.35
VMH 12-1.0RW	12.0	12.0	84.0	30.0	1.0	-
VMH 1600-W	16.0	16.0	93.0	40.0	-	0.4
VMH 16-1.0RW	16.0	16.0	93.0	40.0	1.0	-
VMH 2000-W	20.0	20.0	105.0	50.0	-	0.5
VMH 20-1.0RW	20.0	20.0	105.0	50.0	1.0	-

P13

TuffCut® GP Series V4L Increased Core Anti-Vibration Geometry





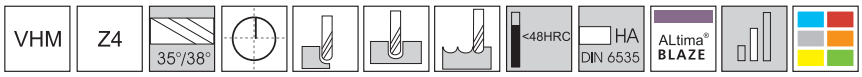


Series V4L		Tool Dimensions			
Uncoated	Coated				
Tool No.	Tool No.	Ø D¹	Ø D²	L¹	L²
V4L 0600	V4L 0600B	6.0	6.0	75.0	25.0
V4L 0800	V4L 0800B	8.0	8.0	75.0	25.0
V4L 1000	V4L 1000B	10.0	10.0	100.0	40.0
V4L 1200	V4L 1200B	12.0	12.0	100.0	50.0
V4L 1201	V4L 1201B	12.0	12.0	150.0	75.0
V4L 1600	V4L 1600B	16.0	16.0	150.0	75.0
V4L 2000	V4L 2000B	20.0	20.0	150.0	75.0

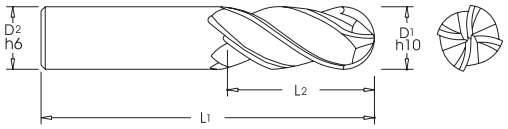
P14

www.mafordeurope.com email: sales@mafordeurope.com Tel:+44(0) 1332 267960 Fax:+44(0) 1332 267969

TuffCut® GP Series ASV4ACB



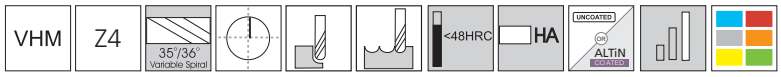




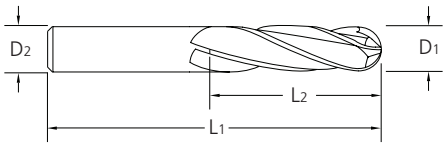
Series ASV4ACB	Tool Dimensions			
Tool No.	Ø D¹	Ø D²	L¹	L²
ASV4ACBNM0300	3.0	3.0	50.0	6.0
ASV4ACBNM0400	4.0	4.0	55.0	11.0
ASV4ACBNM0500	5.0	5.0	60.0	12.0
ASV4ACBNM0600	6.0	6.0	64.0	15.0
ASV4ACBNM0800	8.0	8.0	65.0	22.0
ASV4ACBNM1000	10.0	10.0	73.0	22.0
ASV4ACBNM1200	12.0	12.0	73.0	27.0
ASV4ACBNM1400	14.0	14.0	85.0	30.0
ASV4ACBNM1600	16.0	16.0	93.0	33.0
ASV4ACBNM2000	20.0	20.0	100.0	40.0

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TuffCut® GP Series V4LB Increased Core Anti-Vibration Geometry



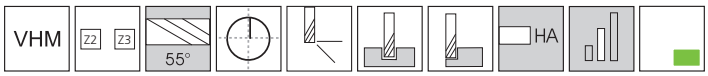




Series V4LB		Tool Dimensions			
Uncoated	Coated				
Tool No.	Tool No.	Ø D¹	Ø D²	L¹	L²
V4LB 0600	V4LB 0600B	6.0	6.0	75.0	25.0
V4LB 0800	V4LB 0800B	8.0	8.0	75.0	25.0
V4LB 1000	V4LB 1000B	10.0	10.0	100.0	40.0
V4LB 1200	V4LB 1200B	12.0	12.0	100.0	50.0
V4LB 1201	V4LB 1201B	12.0	12.0	150.0	75.0
V4LB 1600	V4LB 1600B	16.0	16.0	150.0	75.0
V4LB 2000	V4LB 2000B	20.0	20.0	150.0	75.0

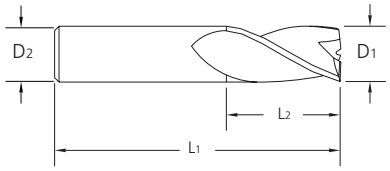
P14

TuffCut® GP Series GT2 & GT3 Square Corner





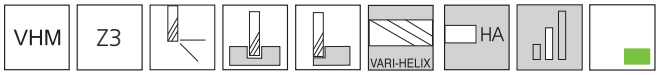




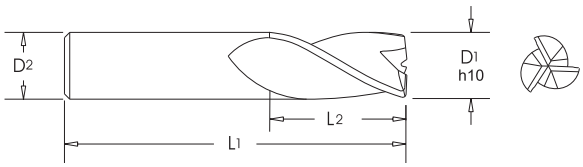
Series GT2	Series GT3	Tool Dimensions			
Tool No.	Tool No.	Ø D¹	Ø D²	L¹	L²
GT2 0200	-	2.0	3.0	50.0	12.0
GT2 0250	-	2.5	3.0	50.0	12.0
GT2 0300	GT3 0300	3.0	3.0	51.0	12.0
GT2 0400	GT3 0400	4.0	4.0	51.0	15.0
GT2 0500	GT3 0500	5.0	5.0	57.0	20.0
GT2 0600	GT3 0600	6.0	6.0	64.0	20.0
GT2 0800	GT3 0800	8.0	8.0	64.0	20.0
GT2 1000	GT3 1000	10.0	10.0	73.0	25.0
GT2 1200	GT3 1200	12.0	12.0	73.0	25.0
GT2 1400	GT3 1400	14.0	14.0	84.0	30.0
GT2 1600	GT3 1600	16.0	16.0	93.0	35.0
GT2 2000	GT3 2000	20.0	20.0	105.0	40.0

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TuffCut® GP Series ASVSM Square Corner



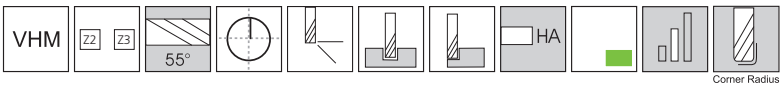




Series ASVSM	Tool Dimensions			
Tool No.	Ø D¹	Ø D²	L¹	L²
ASVSM0300	3.0	3.0	60.0	16.0
ASVSM0400	4.0	4.0	60.0	16.0
ASVSM0500	5.0	5.0	60.0	16.0
ASVSM0600	6.0	6.0	64.0	18.0
ASVSM0800	8.0	8.0	65.0	20.0
ASVSM1000	10.0	10.0	73.0	22.0
ASVSM1200	12.0	12.0	73.0	25.0
ASVSM1400	14.0	14.0	85.0	30.0
ASVSM1600	16.0	16.0	93.0	33.0
ASVSM2000	20.0	20.0	100.0	40.0

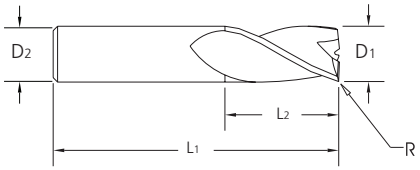
P15

TuffCut® GP Series GT2R, GT3R with Corner Radius





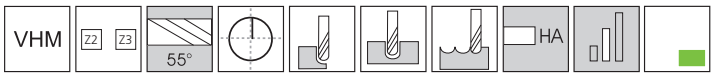




Series GT2R	Series GT3R	Tool Dimensions				
Tool No.	Tool No.	Ø D¹	Ø D²	L¹	L²	R
-	GT3 0300-0.3R	3.0	3.0	51.0	12.0	0.3
-	GT3 0300-0.5R	3.0	3.0	51.0	12.0	0.5
GT2 0400-0.25R	GT3 0400-0.25R	4.0	4.0	51.0	15.0	0.25
GT2 0400-0.5R	GT3 0400-0.5R	4.0	4.0	51.0	15.0	0.5
GT2 0400-1.0R	GT3 0400-1.0R	4.0	4.0	51.0	15.0	1.0
GT2 0500-0.25R	GT3 0500-0.25R	5.0	5.0	57.0	20.0	0.25
GT2 0500-0.5R	GT3 0500-0.5R	5.0	5.0	57.0	20.0	0.5
GT2 0500-1.0R	GT3 0500-1.0R	5.0	5.0	57.0	20.0	1.0
-	GT3 0500-1.5R	5.0	5.0	57.0	20.0	1.5
GT2 0600-0.25R	GT3 0600-0.25R	6.0	6.0	64.0	20.0	0.25
GT2 0600-0.5R	GT3 0600-0.5R	6.0	6.0	64.0	20.0	0.5
GT2 0600-1.0R	GT3 0600-1.0R	6.0	6.0	64.0	20.0	1.0
GT2 0600-1.5R	GT3 0600-1.5R	6.0	6.0	64.0	20.0	1.5
GT2 0600-2.0R	GT3 0600-2.0R	6.0	6.0	64.0	20.0	2.0
GT2 0800-0.25R	GT3 0800-0.25R	8.0	8.0	64.0	20.0	0.25
GT2 0800-0.5R	GT3 0800-0.5R	8.0	8.0	64.0	20.0	0.5
GT2 0800-1.0R	GT3 0800-1.0R	8.0	8.0	64.0	20.0	1.0
GT2 0800-1.5R	GT3 0800-1.5R	8.0	8.0	64.0	20.0	1.5
GT2 0800-2.0R	GT3 0800-2.0R	8.0	8.0	64.0	20.0	2.0
GT2 0800-3.0R	GT3 0800-3.0R	8.0	8.0	64.0	20.0	3.0
GT2 1000-0.5R	GT3 1000-0.5R	10.0	10.0	73.0	25.0	0.5
GT2 1000-1.0R	GT3 1000-1.0R	10.0	10.0	73.0	25.0	1.0
GT2 1000-2.0R	GT3 1000-1.5R	10.0	10.0	73.0	25.0	1.5
GT2 1000-3.0R	GT3 1000-2.0R	10.0	10.0	73.0	25.0	2.0
GT2 1200-0.25R	-	12.0	12.0	73.0	25.0	0.25
GT2 1200-0.5R	GT3 1200-0.5R	12.0	12.0	73.0	25.0	0.5
GT2 1200-1.0R	GT3 1200-1.0R	12.0	12.0	73.0	25.0	1.0
GT2 1200-1.5R	GT3 1200-1.5R	12.0	12.0	73.0	25.0	1.5
GT2 1200-2.0R	GT3 1200-2.0R	12.0	12.0	73.0	25.0	2.0
GT2 1200-3.0R	GT3 1200-3.0R	12.0	12.0	73.0	25.0	3.0
-	GT3 1600-0.5R	16.0	16.0	93.0	35.0	0.5
GT2 1600-1.0R	GT3 1600-1.0R	16.0	16.0	93.0	35.0	1.0
-	GT3 1600-1.5R	16.0	16.0	93.0	35.0	1.5
GT2 1600-2.0R	GT3 1600-2.0R	16.0	16.0	93.0	35.0	2.0
-	GT3 1600-3.0R	16.0	16.0	93.0	35.0	3.0

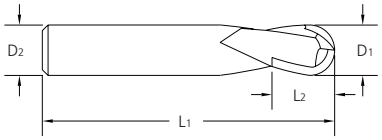
P15

TuffCut® GP Series GT2B, GT3B




Z2


Z3



Series GT2B	Series GT3B	Tool Dimensions			
Tool No.	Tool No.	Ø D¹	Ø D²	L¹	L²
GT2B 0300	GT3B 0300	3.0	3.0	51.0	12.0
GT2B 0400	GT3B 0400	4.0	4.0	51.0	15.0
GT2B 0500	GT3B 0500	5.0	5.0	57.0	20.0
GT2B 0600	GT3B 0600	6.0	6.0	64.0	20.0
GT2B 0800	GT3B 0800	8.0	8.0	64.0	20.0
GT2B 1000	GT3B 1000	10.0	10.0	73.0	25.0
GT2B 1200	GT3B 1200	12.0	12.0	73.0	25.0
GT2B 1400	GT3B 1400	14.0	14.0	84.0	30.0
GT2B 1600	GT3B 1600	16.0	16.0	93.0	35.0
GT2B 2000	GT3B 2000	20.0	20.0	105.0	40.0

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TuffCut® FORDMAX Carbide Endmills

Series V4S, MV4, ASV4, VMH - Recommended cutting data

Workpiece Material Group		Material Type	Coolant			1 x D / 0.5 x D	1 x D / 1 x D	0.05 x D / 2 x D	0.1 x D / 2 x D	0.2 x D / 2 x D	0.3 x D / 1.5 x D	0.5 x D / 1.5 x D
			Max	Air	MMS	Vc-M/Min						
Steels	P	Low Carbon	●	●	●	230	220	480	385	330	275	220
		Medium Carbon	●	●	●	200	185	345	275	255	220	185
		Alloy Steels	●	●	●	175	165	315	255	230	200	165
		Die/Tool Steels	●	●	●	145	130	275	220	187	145	130
Stainless Steels	M	Free Machining	●	X	○	120	110	205	165	130	115	110
		Austenitic	●	X	○	110	100	160	130	120	110	100
		Difficult Stainless	●	X	○	75	65	125	100	90	75	65
		PH Stainless	●	X	○	110	100	160	130	120	110	100
		Cobalt Chrome Alloys	●	X	○	75	65	125	100	90	75	65
		Duplex (22%)	●	X	○	75	65	125	100	90	75	65
		Super Duplex (25%)	●	X	○	55	45	75	60	55	50	45
Cast Irons	K	Gray Cast Iron	●	○	○	200	175	495	395	265	210	175
		Ductile Cast Iron	●	○	○	185	165	370	300	210	185	165
		Malleable Iron	●	○	○	145	132	205	165	155	145	130
Special Alloys	S	High Temp Alloys	●	X	X	35	28	55	45	40	35	28
			●	X	X	35	28	55	45	40	35	28
		Titanium Alloys	●	X	X	75	66	160	130	100	85	65
Hardened Steels	H	Hardened Steels 35 - 45 Rc	●	○	○	60	50	185	150	100	55	50
		Hardened Steels 45 - 55 Rc	●	○	○	50	45	155	125	85	50	45

● Preferred ○ Possible X Not Possible

Workpiece Material Group		Type of Machining	Tool Diameter							
			3mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm
			Vc-M/Min							
Steels	P	Profiling	0.030	0.050	0.060	0.080	0.100	0.120	0.160	0.200
		Slotting	0.015	0.025	0.030	0.040	0.050	0.060	0.080	0.100
Stainless Steels	M	Profiling	0.030	0.050	0.060	0.080	0.100	0.120	0.160	0.200
		Slotting	0.015	0.025	0.030	0.040	0.050	0.060	0.080	0.100
Cast Irons	K	Profiling	0.030	0.050	0.060	0.080	0.100	0.120	0.160	0.200
		Slotting	0.015	0.025	0.030	0.040	0.050	0.060	0.080	0.100
High Temp Alloys	S	Profiling	0.009	0.013	0.032	0.038	0.044	0.064	0.076	0.089
		Slotting	0.005	0.007	0.016	0.019	0.022	0.032	0.038	0.045
Titanium	S	Profiling	0.030	0.050	0.060	0.080	0.100	0.120	0.160	0.200
		Slotting	0.015	0.025	0.030	0.040	0.050	0.060	0.080	0.100
Hardened Steels	H	Profiling 35 - 45 Rc	0.016	0.023	0.057	0.069	0.080	0.114	0.137	0.160
		Slotting 35 - 45 Rc	0.010	0.015	0.025	0.035	0.045	0.065	0.070	0.075
		Profiling 45 - 55 Rc	0.010	0.015	0.041	0.051	0.058	0.084	0.102	0.119
		Slotting 45 - 55 Rc	0.008	0.011	0.020	0.030	0.040	0.050	0.055	0.080

RPM Formula For Metric Endmills - RPM = (Vc x 318.0) ÷ Endmill Ø
Feedrate Formula For Metric Endmills - Feedrate = RPM x fz x Number Of Cutting Teeth

TuffCut® FORDMAX Carbide Endmills

Series V4L / V4LB - Recommended cutting data

Please use lower Vc values shown for uncoated tools.
Please use higher Vc values shown for ALtima® coated tools

Cutting Speeds By Material Group				Feed Recommendations					
				Tool Diameter (mm)					
Workpiece Material Group		Material Type	Vc (m/min)	6.0	8.0	10.0	12.0	16.0	20.0
				Feed/Tooth (fz - mm)					
Steels	P	Low Carbon	100 – 150	.038 - .051	.038 - .051	.053 - .076	.051 - .089	.058 - .102	.056 - .110
		Medium Carbon	90 – 125						
		Mould/Tool Steel	60 - 75	.030 - .038	.036 - .046	.046 - .051	.051 - .058	.058 - .076	.061 - .081
Stainless Steels	M	Free Machining	70 - 90	.038 - .051	.038 - .051	.053 - .076	.051 - .089	.058 - .102	.056 - .110
		Ferritic	60 - 85						
		Austenitic	55 - 70	.030 - .038	.036 - .046	.046 - .051	.051 - .058	.058 - .076	.061 - .081
		Martensitic	45 - 60						
		PH Stainless	40 - 50						
Cast Irons	K	Grey Cast Iron	120 - 140	.038 - .051	.038 - .051	.053 - .076	.051 - .089	.058 - .102	.056 - .109
		Ductile Cast Iron	90 - 120						
		Malleable Iron	70 - 90						
Special Alloys	S	High Temp Alloys	10 - 20	.005 - .015	.015 - .030	.015 - .030	.020 - .030	.030 - .040	.030 - .045
		Titanium Alloys	20 - 50	.015 - .020	.020 - .030	.020 - .030	.030 - .040	.040 - .045	.045 - .050
Hardened Steels	H	35 - 45 HRc	60 - 75	.010 - .030	.025 - .050	.025 - .050	.030 - .060	.050 - .070	.060 - .080
		45 - 55 Rc Steel	45 - 60						
Non-Ferrous	N	Aluminium Alloys	150 - 200	.050 - .060	.060 - .070	.070 - .080	.080 - .100	.100 - .200	.200 - .250
		Brass / Bronze	120 - 180						
		Magnesium & Alloys	200 - 300						

RPM Formula For Metric Endmills - RPM = (Vc x 318.0) ÷ Endmill Ø
Feedrate Formula For Metric Endmills - Feedrate = RPM x fz x Number Of Cutting Teeth

* Please Note - 4 Flute (Z4) Endmills Are Not Recommended For Full Diameter Engagement/Slotting Applications
Please use series V4S or choose from our high performance range of XR endmills

** V4L & V4LB long series Endmills are for profile milling
For V4L & V4LB reduce speed by 20%
For V4L & V4LB - Maximum Radial Cut (Ae) = 0.01 x D

TuffCut® X-AL

Series ASVSM - Recommended cutting data

Series		Type of cut		Vc	Diameter - mm				
					ø 3.0	ø 4.0	ø 5.0	ø 6.0	ø 8.0
		Ae	Ap	M/Min	fz	fz	fz	fz	fz
ASVSM		1 x D	0.25 x D	400-600	0.03	0.04	0.05	0.06	0.08
		1 x D	0.5 x D	400-600	0.03	0.04	0.05	0.06	0.08
		1 x D	1 x D	400-600	0.02	0.03	0.04	0.05	0.07
		0.75 x D	0.5 x D	500-700	0.045	0.06	0.075	0.09	0.12
		0.5 x D	1 x D	500-700	0.03	0.04	0.05	0.06	0.08
		0.5 x D	1.5 x D	500-700	0.03	0.04	0.05	0.06	0.08
									
		≤ 0.1 x D	≤ 0.9 x L^2	800-1000	0.036	0.054	0.072	0.09	0.126

Series		Type of cut		Vc	Diameter - mm			
					ø 10.0	ø 12.0	ø 16.0	ø 20.0
		Ae	Ap	M/Min	fz	fz	fz	fz
ASVSM		1 x D	0.25 x D	400-600	0.10	0.12	0.16	0.20
		1 x D	0.5 x D	400-600	0.10	0.12	0.16	0.20
		1 x D	1 x D	400-600	0.09	0.11	0.15	0.19
		0.75 x D	0.5 x D	500-700	0.15	0.18	0.24	0.30
		0.5 x D	1 x D	500-700	0.10	0.12	0.16	0.20
		0.5 x D	1.5 x D	500-700	0.10	0.12	0.16	0.20
								
		≤ 0.1 x D	≤ 0.9 x L2	800-1000	0.162	0.2	0.27	0.342

Series GT2 GT3 & GT2B GT3B -

Recommended cutting data

Material Group		
Workpiece Material		Material Type
Non Ferrous	N	Aluminium/Aluminium Alloys

						Tool Diameter (mm)				
					Vc (m/min)	3.0	4.0	5.0	6.0	8.0
Series	Type Of Cut		ap	ae		Feed/Tooth (fz - mm)				
GT2 & GT3 GT2B & GT3B		Slotting	0.5 x D	1 x D	300 - 500	0.02	0.03	0.04	0.05	0.07
		Profiling	1 x D	0.2 x D	300 - 500	0.03	0.045	0.06	0.075	0.105
			1 x D	0.5 x D	300 - 500	0.02	0.03	0.04	0.05	0.07

						Tool Diameter (mm)				
					Vc (m/min)	10.0	12.0	14.0	16.0	20.0
Series	Type Of Cut		ap	ae		Feed/Tooth (fz - mm)				
GT2 & GT3 GT2B & GT3B		Slotting	0.5 x D	1 x D	300 - 500	0.10	0.12	0.15	0.16	0.20
		Profiling	1 x D	0.2 x D	300 - 500	0.15	0.18	0.225	0.24	0.30
			1 x D	0.5 x D	300 - 500	0.10	0.12	0.15	0.16	0.20

RPM Formula For Metric Endmills - RPM = (Vc x 318.0) ÷ Endmill Ø
Feedrate Formula For Metric Endmills - Feedrate = RPM x fz x Number Of Cutting Teeth

M.A. FORD
High Performance Cutting Tools

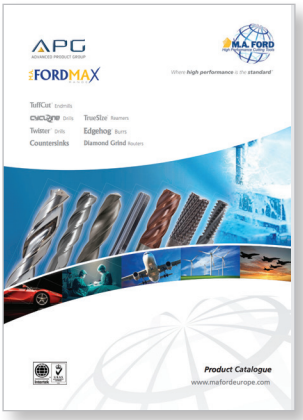
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Unit 38, Royal Scot Road
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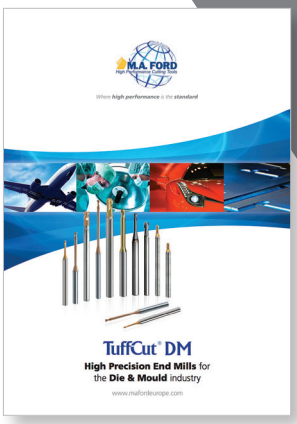
Phone: +44(0) 1332 267960
Fax: +44(0) 1332 267969
e-mail: sales@mafordeurope.com

mafordeurope.com

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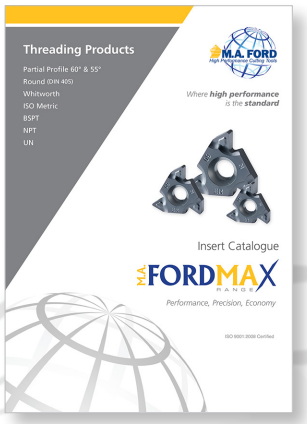












M.A. Ford® Mfg. Co., Inc.
7737 Northwest Blvd.

Davenport, IA 52806
USA

Tel: 563-391-6220 or 800-553-8024
Fax: 563-386-7660 or 800-892-9522
e-mail: sales@maford.com
www.maford.com

M.A. Ford®
Asia-Pacific, Limited

Unit 2501, 25/f
148 Electric Road
North Point
Hong Kong

Tel: +852-2167-7150
Fax: +852-2167-8150
Email: sales@mafordap.com

M.A. Ford®
Asia-Pacific, Limited

(Mumbai Branch)
412A Arcadia, Hiranandani Estate
Thane (W) 400607, Maharashtra
India

Tel: +91-22-4123-7421
Fax: +91-22-4123-3387
Email: sales@mafordin.com