

DORMER

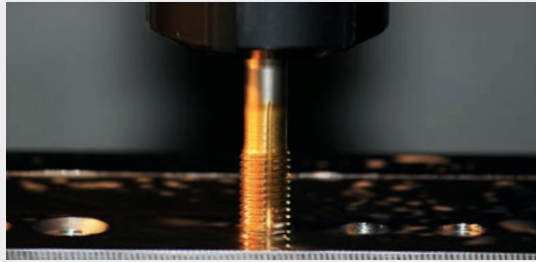
Nuevos productos

2016.2



MACHOS DE LAMINACIÓN

4

MACHOS DE ROSCAR
DE METAL DURO

16



FRESAS DE METAL DURO

26



AVELLANADORES

35



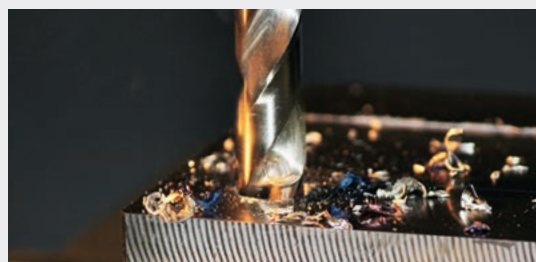
BROCAS DE CENTRAR

41



BROCAS DE HSS

56



MACHOS DE LAMINACIÓN





PRESENTACIÓN

La gama de machos de laminación de Dormer comprende un amplio catálogo de alta calidad de con diseños y formas de rosca para la mayoría de las aplicaciones en todos los segmentos principales de la industria. Los machos de laminación de Dormer proporcionan confianza y fiabilidad en la creación de roscas que ofrecen tanto resistencia dinámica como gran precisión dimensional.

CARACTERÍSTICAS Y VENTAJAS

- La gama se ha ampliado con formas de rosca para MF, UNC y UNF. Además, se han añadido más variantes con ranuras de lubricación, así como machos de roscar con refrigerante interior y un macho de roscar de metal duro de alto rendimiento.
- Gran rendimiento y productividad en una amplia gama de materiales
- Produce una rosca de mayor dureza que los machos de roscar de corte con mayor capacidad de soporte de carga
- Mayor precisión de la rosca acabada
- Menor rugosidad de la superficie
- El diseño altamente estable de la herramienta implica un riesgo menor de rotura del macho y una seguridad óptima del proceso

MATERIAL

Fabricado con calidad premium

Acero rápido al cobalto (HSS-E) para:

- Mayor dureza y resistencia
- Fuerza mejorada
- Mayor vida útil de la herramienta

Metal duro para:

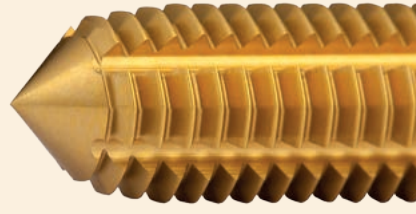
- Velocidades de corte extremadamente altas
- Vida útil muy prolongada

TIPOS DE MACHO DE ROSCAR



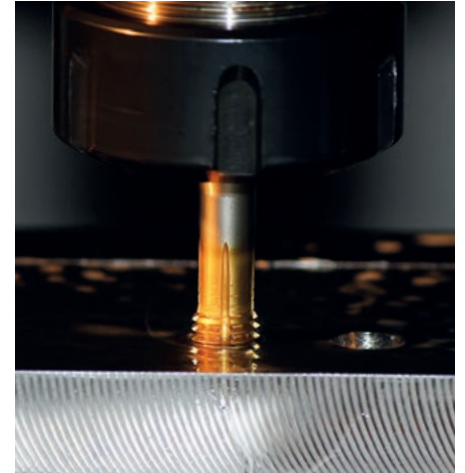
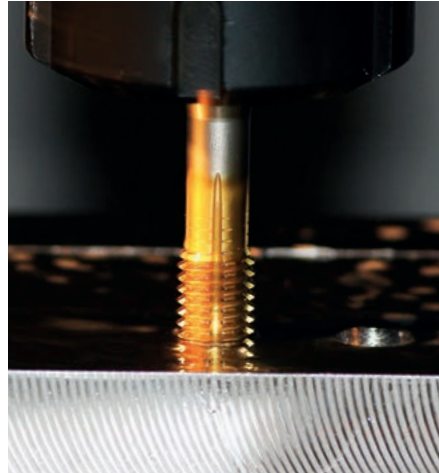
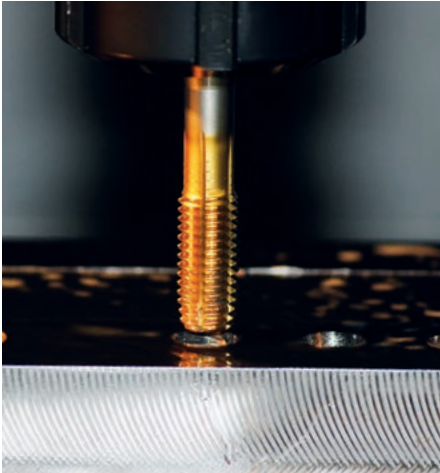
ESTÁNDAR

- Profundidades de roscado de hasta 3xD
- La mejor opción para uso universal en todos los materiales dúctiles
- Forma de chaflán E para agujeros ciegos y C para agujeros ciegos y pasantes
- Revestimiento de TiN para alargar la vida útil de la herramienta y adecuado para muchos materiales; también está disponible un acabado brillante opcional



RANURAS DE LUBRICACIÓN

- Profundidades de roscado de hasta 3,5xD
- La mejor opción para el mecanizado en vertical de agujeros pasantes
- Forma de chaflán C para agujeros ciegos y pasantes
- Revestimiento de TiN para alargar la vida útil de la herramienta y adecuado para muchos materiales



TRATAMIENTO SUPERFICIAL

Revestimiento de nitruro de titanio (TiN):

- Capa universal adecuada para muchos materiales
- Ofrece una mayor vida útil de la herramienta debido a la fricción reducida

Revestimiento de carbonitruro de titanio (TiCN) para:

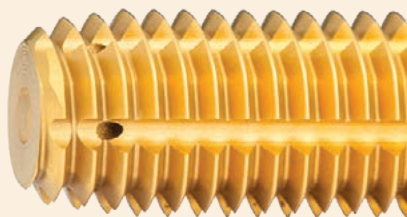
- Aceros aleados y no aleados
- Muy adecuado para herramientas de metal duro
- Resistencia al desgaste en materiales abrasivos

GEOMETRÍA Y CHAFLÁN

- El perfil de rosca con forma poligonal optimizada genera un par bajo
- Reduce la fricción y garantiza un acabado suave de la superficie de la rosca terminada
- Geometría del chaflán optimizada para mejorar el avance y ofrecer un comportamiento de desgaste uniforme

Disponible con:

- Forma de chaflán E para agujeros ciegos
- Forma de chaflán C para agujeros ciegos y pasantes



NEW

REFRIGERACIÓN INTERNA

- Refrigeración interna con salidas radiales y ranuras de lubricación para profundidades de roscado de hasta 3,5xD
- La mejor opción para el mecanizado en horizontal de agujeros ciegos y pasantes
- Forma de chaflán C para agujeros ciegos y pasantes
- Revestimiento de TiN para alargar la vida útil de la herramienta y adecuado para muchos materiales



NEW

METAL DURO

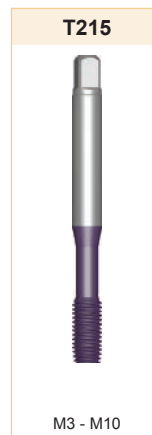
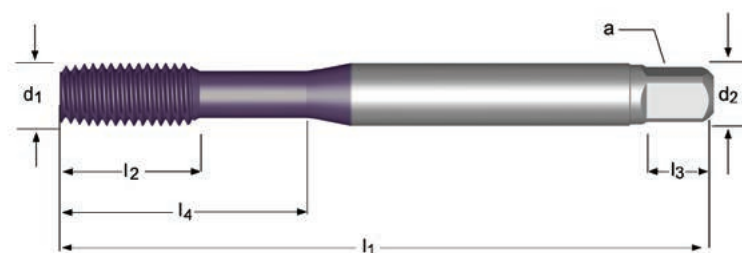
- Profundidades de roscado de hasta 3xD
- La mejor opción para una productividad extremadamente alta y una vida útil de la herramienta muy larga
- Atractiva relación precio-rendimiento para la producción en serie
- Forma de chaflán C para agujeros ciegos y pasantes
- Revestimiento de TiCN para una gran resistencia al desgaste en materiales abrasivos

	M	M	M	M	M	M	M	M	MF	UNC	UNF	
	DIN 2174	DIN 2174	DIN 2174	DIN 2174	DIN 2174	DIN 2174	DIN 2174	DIN 2174	DIN 2174	DIN 2184-1	DIN 2184-1	
	6HX	6HX	6HX	6HX	6HX	6HX	6GX	6GX	6HX	2BX	2BX	
	3XD	3XD	3XD	3.5XD	3.5XD	3XD	3XD	3XD	3XD	3.5XD	3.5XD	
	HM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	
	C 2-3.5	C 2-3.5	C 2-3.5	C 2-3.5	C 2-3.5	E 1.5-2	C 2-3.5	E 1.5-2	C 2-3.5	C 2-3.5	C 2-3.5	
	TiCN		TiN	TiN	TiN	TiN	TiN	TiN	TiN	TiN	TiN	
	T215	E291	E292	E294	E289	E293	E295	E296	E288	E287	E286	
	M3 - M10	M1.6 - M16	M1.6 - M16	M3 - M16	M5 - M12	M3 - M16	M3 - M12	M3 - M10	M5 - M12	No.4 - 1/2	No.4 - 1/2	
	NEW				NEW	NEW			NEW	NEW	NEW	
AMG												ISO
1.1	■60	■30	■55	■55	■55	■55	■55	■55	■55	■55	■55	P1
1.2	■60	■27	■50	■50	■50	■50	■50	■50	■50	■50	■50	P1
1.3	■60	■23	■45	■45	■45	■45	■45	■45	■45	■45	■45	P2
1.4	■40	■20	■40	■40	■40	■40	■40	■40	■40	■40	■40	P3
1.5	■30		●20	●20	●20	●20	●20	●20	●20	●20	●20	P4
1.6												H1
1.7												H3
1.8												H4
2.1	■25		■18	■18	■18	■18	■18	■18	■18	■18	■18	M1
2.2	■25		■15	■15	■15	■15	■15	■15	■15	■15	■15	M3
2.3	■25		●10	●10	●10	●10	●10	●10	●10	●10	●10	M2
2.4	●25											S2
3.1												K1
3.2												K2
3.3												K3
3.4												K4
4.1			■35	■35	■35	■35	■35	■35	■35	■35	■35	S1
4.2												S2
4.3												S3
5.1	■35		■20	■20	■20	■20	■20	■20	■20	■20	■20	S1
5.2	●15		●8	●8	●8	●8	●8	●8	●8	●8	●8	S2
5.3												S3
6.1	●40		●25	●25	●25	●25	●25	●25	●25	●25	●25	N3
6.2												N4
6.3	●80		●40	●40	●40	●40	●40	●40	●40	●40	●40	N3
6.4												N4
7.1	■70	■26	■55	■55	■55	■55	■55	■55	■55	■55	■55	N1
7.2	■80	■38	■55	■55	■55	■55	■55	■55	■55	■55	■55	N1
7.3	■80	●22	■40	■40	■40	■40	■40	■40	■40	■40	■40	N1
7.4			●25	●25	●25	●25	●25	●25	●25	●25	●25	N2
8.1												O
8.2												O
8.3												O
9.1												H
10.1												O

T215 • M Machos de laminación

T215 ■ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 5.1 7.1 7.2 7.3
 • 2.4 5.2 6.1 6.3

T215 M DIN 2174 6HX 3XD HM C 2-3.5 TICN

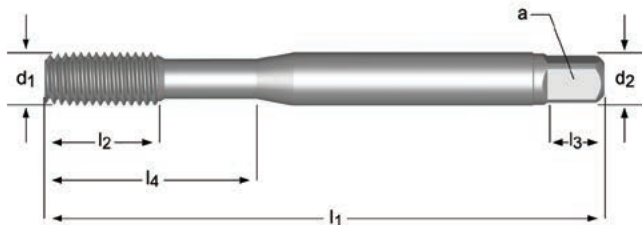


M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	\square a mm	l_3 mm	z		l_4 mm	T215
3	0.50	56	10	3.5	2.7	6	4	2.8	-	T215M3
4	0.70	63	13	4.5	3.4	6	5	3.7	-	T215M4
5	0.80	70	16	6.0	4.9	8	5	4.6	-	T215M5
6	1.00	80	19	6.0	4.9	8	5	5.5	30	T215M6
8	1.25	90	22	8.0	6.2	9	5	7.4	35	T215M8
10	1.50	100	24	10.0	8.0	11	5	9.3	39	T215M10

- E291** • M Machos de laminación
- E292** • M Machos de laminación
- E294** • M Machos de laminación, con ranuras de lubricación
- E289** • M Machos de laminación, con ranuras de lubricación y Refrigeración Interna

E291	▪	1.1	1.2	1.3	1.4	7.1	7.2						
	•	7.3											
E292; E294; E289	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3	
	•	1.5	2.3	5.2	6.1	6.3	7.4						

E291	M	DIN 2174	6HX		3XD	HSS-E	C 2-3.5				
E292	M	DIN 2174	6HX		3XD	HSS-E	C 2-3.5			TIN	
E294	M	DIN 2174	6HX		3.5XD	HSS-E	C 2-3.5			TIN	
E289	M	DIN 2174	6HX		3.5XD	HSS-E	C 2-3.5			TIN	



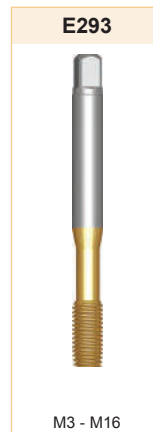
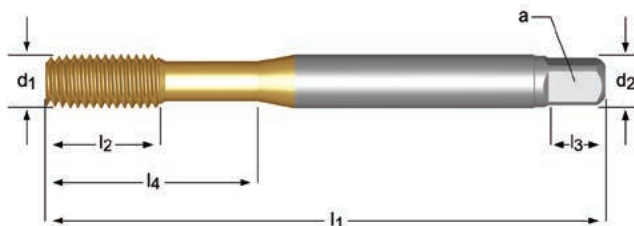
M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	l ₃ mm	z		l ₄ mm	E291	E292	E294	E289
1.6	0.35	40	8	2.5	2.1	5	3	1.4	-	E291M1.6	E292M1.6		
2	0.40	45	6	2.8	2.1	5	3	1.8	11	E291M2	E292M2		
2.5	0.45	50	8	2.8	2.1	5	3	2.3	12.5	E291M2.5	E292M2.5		
3	0.50	56	9	3.5	2.7	6	4	2.8	18	E291M3	E292M3	E294M3	
3.5	0.60	56	11	4.0	3.0	6	4	3.2	20	E291M3.5	E292M3.5		
4	0.70	63	12	4.5	3.4	6	5	3.7	21	E291M4	E292M4	E294M4	
5	0.80	70	13	6.0	4.9	8	5	4.6	25	E291M5	E292M5	E294M5	E289M5
6	1.00	80	15	6.0	4.9	8	5	5.5	30	E291M6	E292M6	E294M6	E289M6
8	1.25	90	18	8.0	6.2	9	5	7.4	35	E291M8	E292M8	E294M8	E289M8
10	1.50	100	20	10.0	8.0	11	5	9.3	39	E291M10	E292M10	E294M10	E289M10
12	1.75	110	23	9.0	7.0	10	5	11.2	-	E291M12	E292M12	E294M12	E289M12
14	2.00	110	25	11.0	9.0	12	6	13.0	-			E294M14	
16	2.00	110	25	12.0	9.0	12	6	15.0	-	E291M16	E292M16	E294M16	


E293 • M Machos de laminación

E293	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E293

- M
- DIN 2174
- 6HX
- 
- 3XD
- HSS-E
- E 1.5-2
- 
- 
- TiN
- 



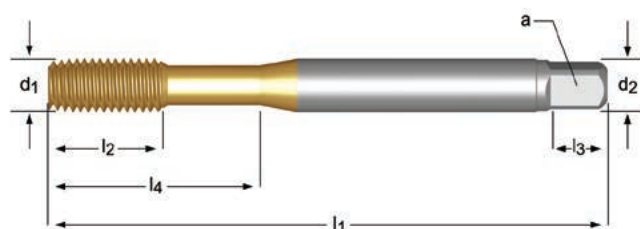
M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	\square a mm	l_3 mm	z		l_4 mm	E293
3	0.50	56	9	3.5	2.7	6	4	2.8	18	E293M3
4	0.70	63	12	4.5	3.4	6	5	3.7	21	E293M4
5	0.80	70	13	6.0	4.9	8	5	4.6	25	E293M5
6	1.00	80	15	6.0	4.9	8	5	5.5	30	E293M6
8	1.25	90	18	8.0	6.2	9	5	7.4	35	E293M8
10	1.50	100	20	10.0	8.0	11	5	9.3	39	E293M10
12	1.75	110	23	9.0	7.0	10	5	11.2	-	E293M12
16	2.00	110	25	12.0	9.0	12	6	15.0	-	E293M16

E295 • M Machos de laminación

E296 • M Machos de laminación

E295; E296	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E295	M	DIN 2174	6GX		3XD	HSS-E	C 2-3.5				
E296	M	DIN 2174	6GX		3XD	HSS-E	E 1.5-2				

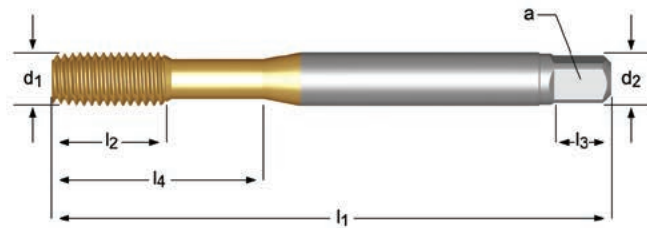


M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		l ₄ mm	E295	E296
3	0.50	56	9	3.5	2.7	6	4	2.8	18	E295M3	E296M3
3.5	0.60	56	11	4.0	3.0	6	4	3.2	20	E295M3.5	
4	0.70	63	12	4.5	3.4	6	5	3.7	21	E295M4	E296M4
5	0.80	70	13	6.0	4.9	8	5	4.6	25	E295M5	E296M5
6	1.00	80	15	6.0	4.9	8	5	5.5	30	E295M6	E296M6
8	1.25	90	18	8.0	6.2	9	5	7.4	35	E295M8	E296M8
10	1.50	100	20	10.0	8.0	11	5	9.3	39	E295M10	E296M10
12	1.75	110	23	9.0	7.0	10	5	11.2	-	E295M12	

E288 • MF Machos de laminación

E288	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E288 MF DIN 2174 6HX 3XD HSS-E C 2-3.5 TIN

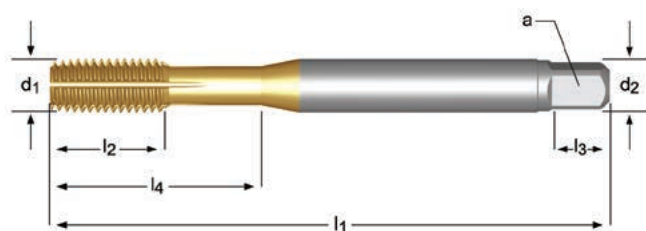


MF	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z		l ₄ mm	E288
5	0.50	70	13	6.0	4.9	8	5	4.8	25	E288M5X.5
6	0.75	80	15	6.0	4.9	8	5	5.7	30	E288M6X.75
8	1.00	90	18	6.0	4.9	8	5	7.5	-	E288M8X1.0
10	1.00	90	20	7.0	5.5	8	5	9.5	-	E288M10X1.0
10	1.25	100	20	7.0	5.5	8	5	9.4	-	E288M10X1.25
12	1.50	100	21	9.0	7.0	10	5	11.3	-	E288M12X1.5

E287 • UNC Machos de laminación, con ranuras de lubricación

E287	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E287 **UNC** **DIN 2184-1** **2BX** **3.5XD** **HSS-E** **C** 2-3.5

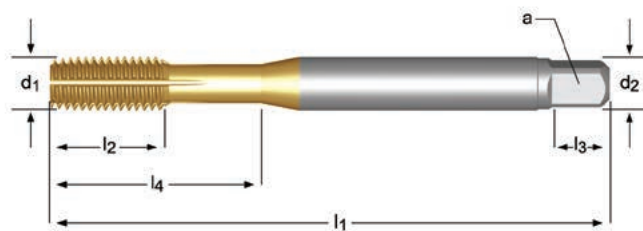



UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	E287
4	40	2.845	56	9	3.5	2.7	6	4	2.6	18	E2874-40
6	32	3.505	56	11	4.0	3.0	6	4	3.2	20	E2876-32
8	32	4.166	63	12	4.5	3.4	6	5	3.8	21	E2878-32
10	24	4.826	70	13	6.0	4.9	8	5	4.4	25	E28710-24
1/4	20	6.350	80	15	7.0	5.5	8	5	5.8	30	E2871/4
5/16	18	7.938	90	18	8.0	6.2	9	5	7.3	35	E2875/16
3/8	16	9.525	100	20	10.0	8.0	11	5	8.8	39	E2873/8
7/16	14	11.112	100	20	8.0	6.2	9	5	10.3	-	E2877/16
1/2	13	12.700	110	23	9.0	7.0	10	5	11.9	-	E2871/2

E286 • UNF Machos de laminación, con ranuras de lubricación

E286	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E286 UNF DIN 2184-1 2BX 3.5XD HSS-E C 2-3.5   



UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	E286
4	48	2.845	56	9	3.5	2.7	6	4	2.6	18	E2864-48
6	40	3.505	56	11	4.0	3.0	6	4	3.2	20	E2866-40
8	36	4.166	63	12	4.5	3.4	6	5	3.9	21	E2868-36
10	32	4.826	70	13	6.0	4.9	8	5	4.5	25	E28610-32
1/4	28	6.350	80	15	7.0	5.5	8	5	6.0	30	E2861/4
5/16	24	7.938	90	18	8.0	6.2	9	5	7.5	35	E2865/16
3/8	24	9.525	100	20	10.0	8.0	11	5	9.1	39	E2863/8
7/16	20	11.112	100	20	8.0	6.2	9	5	10.6	-	E2867/16
1/2	20	12.700	100	21	9.0	7.0	10	5	12.1	-	E2861/2

MACHOS DE ROSCAR DE METAL DURO





PRESENTACIÓN

Cada vez es más frecuente el uso de materiales endurecidos en los procesos industriales, lo que produce una necesidad mayor de herramientas de corte nuevas y mejoradas capaces de trabajar en condiciones extremas.

La nueva gama de Dormer de machos de roscar de metal duro constituye un amplio programa de alto rendimiento diseñado específicamente para el mecanizado de distintos tipos de acero endurecido y otros materiales difíciles.

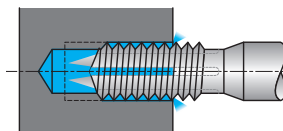
CARACTERÍSTICAS Y VENTAJAS

- Gran rendimiento y productividad en una amplia gama de aplicaciones, entre ellas, materiales endurecidos de hasta 63 HRC
- Ideal para la producción en serie con velocidades de corte hasta 3 veces superiores en comparación con los machos de roscar HSS-E
- Menos cambios de herramientas, lo que se traduce en un rendimiento óptimo de la máquina debido a una larga vida útil de la herramienta
- El diseño altamente estable de la herramienta implica un riesgo menor de rotura del macho y una seguridad óptima del proceso

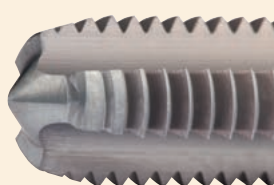
LUBRICACIÓN Y REFRIGERACIÓN

Refrigeración interna con salida axial de refrigeración:

- Profundidades de roscado de hasta 3xD
- Mayor vida útil de la herramienta
- Evacuación óptima de la viruta en el roscado de materiales de viruta corta
- Mecanizado horizontal y vertical de agujeros ciegos



TIPOS DE MACHO DE ROSCAR

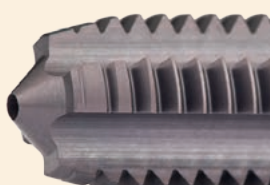


NEW
T200

T200

La mejor opción para **acero endurecido** 49-55 HRC

- Para materiales de viruta corta
- Revestimiento de TiCN para una mayor fuerza y dureza para resistir el desgaste abrasivo
- Profundidades de roscado de hasta 2xD
- Forma de chaflán C para agujeros ciegos y pasantes

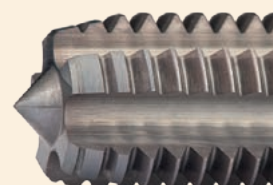


NEW
T201

T201

La mejor opción para **fundición y aleaciones de aluminio** con >10 % de contenido de silicio y dureza hasta 47 HRC

- Para materiales de viruta corta
- Revestimiento Super-B TiAlN-WC/C para mejorar la resistencia al desgaste y disminuir la fricción en materiales duros y abrasivos
- Refrigeración interna con salida axial
- Profundidades de roscado de hasta 2,5xD
- Forma de chaflán C



NEW
T210

T210

La mejor opción para **acero endurecido** 55-63 HRC

- Para materiales de viruta corta
- Revestimiento de TiCN para una mayor fuerza y dureza para resistir el desgaste por abrasión
- Profundidades de roscado de hasta 2xD
- Forma de chaflán C para agujeros ciegos y pasantes

MATERIAL

Fabricado con metal duro micrograno de calidad premium para:

- Larga vida útil de la herramienta y velocidades extremadamente elevadas
- Roscado de materiales endurecidos de hasta 63 HRC
- Elevada resistencia al desgaste en materiales abrasivos

TRATAMIENTO SUPERFICIAL

Revestimiento de carbonitruro de titanio (TiCN) para:

- Aceros aleados y no aleados
- Muy adecuado para herramientas de metal duro
- Resistencia al desgaste en materiales abrasivos

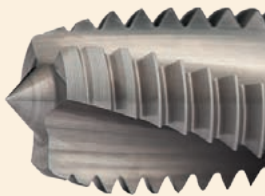
Revestimiento Super-B (TiAlN+WC/C) para:

- Fundición y aleaciones de aluminio con un alto contenido de silicio
- Ideal para velocidades y avances altos
- Se puede utilizar tanto para el mecanizado en seco como en húmedo

GEOMETRÍA Y CHAFLÁN

La gama ofrece una gran variedad de tipos, entre ellos, canal recto, canal en espiral, punta espiral y un macho de laminación, con el fin de proporcionar opciones fiables en numerosas aplicaciones.

- Geometría del chaflán optimizada para mejorar el avance y un comportamiento de desgaste uniforme
- Geometrías especiales para aplicaciones específicas:
 - T205/T206 presenta un ángulo de la hélice de 15° adecuado tanto para materiales de viruta corta y como larga
 - T210 con un número mayor de canales para un mejor arranque de viruta y un chaflán más largo para aumentar la vida útil de la herramienta
 - T215, el macho de laminación presenta un perfil de rosca con forma poligonal optimizada que genera un par bajo



NEW
T205

T205

La mejor opción para **hierro dúctil** y **aleaciones de aluminio** con >10 % de contenido de silicio y dureza hasta 47 HRC

- Para materiales de viruta corta y larga
- Acabado brillante para mejorar el flujo de viruta
- Profundidades de roscado de hasta 2xD
- Forma de chaflán C



NEW
T206

T206

La mejor opción para **hierro dúctil** y **aleaciones de aluminio** con >10 % de contenido de silicio y dureza hasta 47 HRC

- Para materiales de viruta corta y larga
- Acabado brillante para mejorar el flujo de viruta
- Refrigeración interna con salida axial
- Profundidades de roscado de hasta 2,5xD
- Forma de chaflán C



NEW
T215

T215

Macho de laminación, la mejor opción para una **amplia gama de materiales** con una dureza de hasta 36 HRC

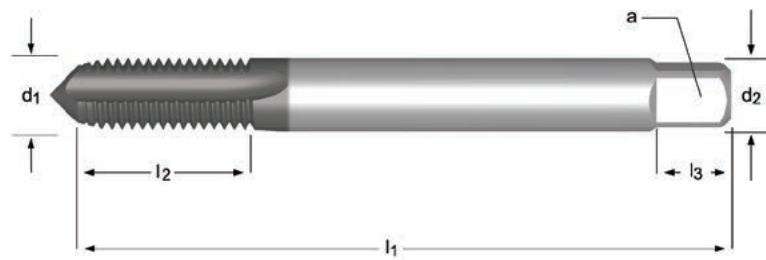
- **Productividad extremadamente alta** y una vida útil muy larga de la herramienta en materiales dúctiles
- Revestimiento de TiCN para una mayor fuerza y dureza para resistir el desgaste por abrasión
- Profundidades de roscado de hasta 3xD
- Forma de chaflán C para agujeros ciegos y pasantes


	M	M	M	M	M	M	
	DIN 3714/10 3763/12	DIN 3714/10 3763/12	DIN 3714/10 3763/12	DIN 3714/10 3763/12	DIN 3714/10 3763/12	DIN 2174	
	6H	6HX	6HX	6H	6H	6HX	
	2XD	2.5XD	2XD	2XD	2.5XD	3XD	
	HM	HM	HM	HM	HM	HM	
	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3.5	
				$\lambda 15^\circ$	$\lambda 15^\circ$		
	TiCN	Super B	TiCN			TiCN	
	T200	T201	T210	T205	T206	T215	
	M3 - M12	M5 - M16	M3 - M12	M3 - M12	M5 - M12	M3 - M10	
	NEW	NEW	NEW	NEW	NEW	NEW	
AMG							ISO
1.1						■60	P1
1.2						■60	P1
1.3						■60	P2
1.4						■40	P3
1.5						■30	P4
1.6							H1
1.7	■6		●6				H3
1.8	●4		■4				H4
2.1						■25	M1
2.2						■25	M3
2.3						■25	M2
2.4						●25	S2
3.1	●60	■60		●40	●40		K1
3.2	●30	■25		●15	●15		K2
3.3		●38		■25	■25		K3
3.4		●33		■15	■15		K4
4.1							S1
4.2							S2
4.3							S3
5.1						■35	S1
5.2						●15	S2
5.3							S3
6.1						●40	N3
6.2							N4
6.3						●80	N3
6.4	●7	●10					N4
7.1						■70	N1
7.2						■80	N1
7.3		●50		■35	■35	■80	N1
7.4	●60	■40		■30	■30		N2
8.1							O
8.2	●50	●25		●25	●25		O
8.3	●30	●15		●15	●15		O
9.1							H
10.1	●25	■25					O

T200 • M Machos de máquina Canales rectos

T200 ■ 1.7
 • 1.8 3.1 3.2 6.4 7.4 8.2 8.3 10.1

T200 M DIN 371 ≤ 10 376 ≥ 12 6H 2XD HM C 2-3 TiCN



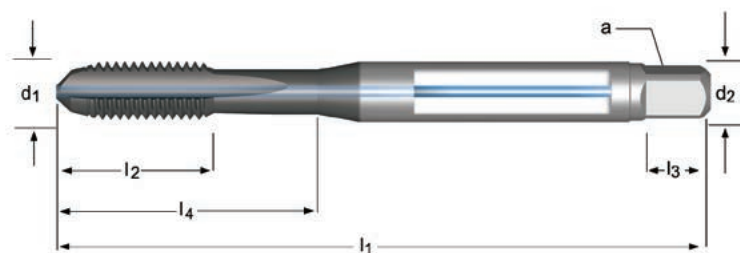
M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	T200
3	0.50	56	10	3.5	2.7	6	3	2.6	-	T200M3
4	0.70	63	13	4.5	3.4	6	3	3.4	-	T200M4
5	0.80	70	16	6.0	4.9	8	3	4.3	-	T200M5
6	1.00	80	19	6.0	4.9	8	3	5.1	30	T200M6
8	1.25	90	22	8.0	6.2	9	3	6.9	35	T200M8
10	1.50	100	24	10.0	8.0	11	3	8.7	39	T200M10
12	1.75	110	23	9.0	7.0	10	3	10.4	-	T200M12

T201 • M Machos de Máq. Canales rectos, Refrigeración Interna

T201	▪	3.1	3.2	7.4	10.1		
	•	3.3	3.4	6.4	7.3	8.2	8.3

T201

- M
- DIN 371 ≤ 10
376 ≥ 12
- 6HX
-
- 2.5XD
- HM
- C 2-3
-
-
- Super B



M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	T201
5	0.80	70	16	6.0	4.9	8	4	4.3	-	T201M5
6	1.00	80	19	6.0	4.9	8	4	5.1	30	T201M6
8	1.25	90	22	8.0	6.2	9	4	6.9	35	T201M8
10	1.50	100	24	10.0	8.0	11	4	8.7	39	T201M10
12	1.75	110	23	9.0	7.0	10	4	10.4	-	T201M12
16	2.00	110	25	12.0	9.0	12	4	14.25	-	T201M16

T210 • M Machos de máquina Canales rectos

T210 ▫ 1.8
• 1.7

T210

M

DIN
371 ≤ 10
376 ≥ 12

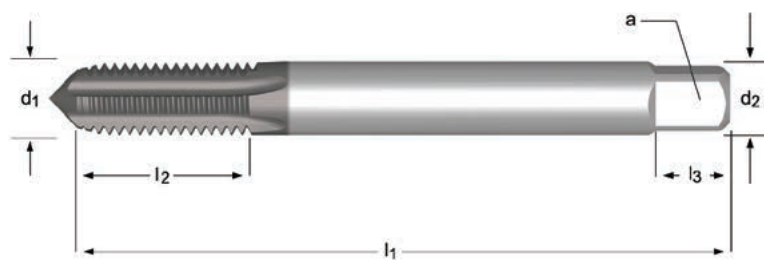
6HX



2XD

HM

C
2-3



T210



M3 - M12

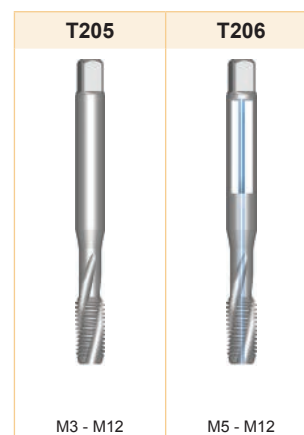
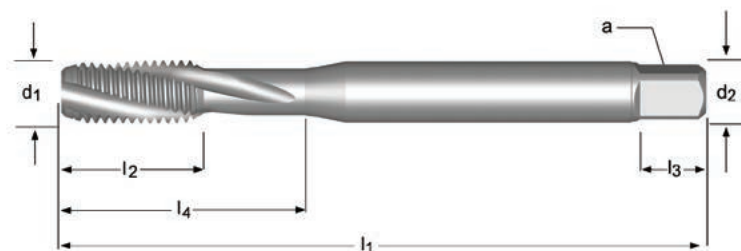
M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		T210
3	0.50	56	8	3.5	2.7	6	4	2.6	T210M3
4	0.70	63	11	4.5	3.4	6	5	3.4	T210M4
5	0.80	70	13.5	6.0	4.9	8	5	4.3	T210M5
6	1.00	80	16.5	6.0	4.9	8	5	5.1	T210M6
8	1.25	90	21.5	8.0	6.2	9	5	6.9	T210M8
10	1.50	100	27	10.0	8.0	11	5	8.7	T210M10
12	1.75	110	32	12.0	9.0	12	6	10.4	T210M12

T205 • M Machos de máquina Canales helicoidales a 15°

T206 • M Machos de máquina Canales helicoidales a 15°, Refrigeración Interna

T205; T206	▪	3.3	3.4	7.3	7.4
	•	3.1	3.2	8.2	8.3

T205	M	DIN 371≤10 376≥12	6H		2XD	HM	C 2-3				
T206	M	DIN 371≤10 376≥12	6H		2.5XD	HM	C 2-3				

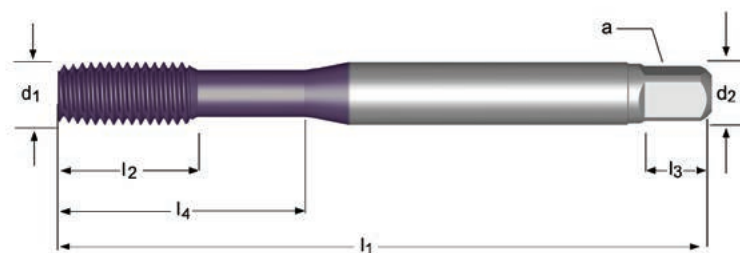


M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	T205	T206
3	0.50	56	10	3.5	2.7	6	3	2.6	-	T205M3	
4	0.70	63	13	4.5	3.4	6	3	3.4	-	T205M4	
5	0.80	70	16	6.0	4.9	8	3	4.3	-	T205M5	T206M5
6	1.00	80	19	6.0	4.9	8	3	5.1	30	T205M6	T206M6
8	1.25	90	22	8.0	6.2	9	3	6.9	35	T205M8	T206M8
10	1.50	100	24	10.0	8.0	11	3	8.7	39	T205M10	T206M10
12	1.75	110	23	9.0	7.0	10	3	10.4	-	T205M12	T206M12

T215 • M Machos de laminación

T215	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	5.1	7.1	7.2	7.3
	•	2.4	5.2	6.1	6.3								


T215	M	DIN 2174	6HX	3XD	HM	C 2-3.5				
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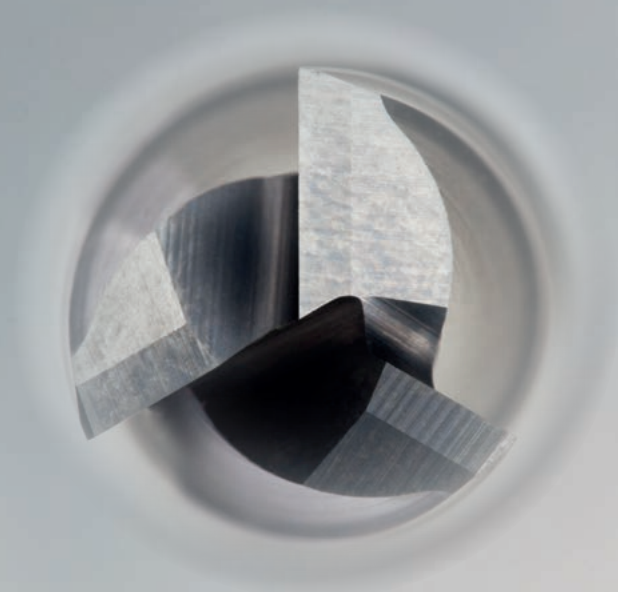
T215



M3 - M10

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	\square a mm	l_3 mm	z		l_4 mm	T215
3	0.50	56	10	3.5	2.7	6	4	2.8	-	T215M3
4	0.70	63	13	4.5	3.4	6	5	3.7	-	T215M4
5	0.80	70	16	6.0	4.9	8	5	4.6	-	T215M5
6	1.00	80	19	6.0	4.9	8	5	5.5	30	T215M6
8	1.25	90	22	8.0	6.2	9	5	7.4	35	T215M8
10	1.50	100	24	10.0	8.0	11	5	9.3	39	T215M10

FRESAS DE METAL DURO



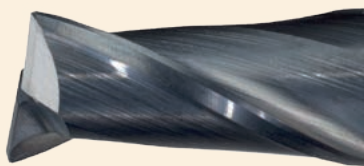


PRESENTACIÓN

La serie S8XX de fresas de metal duro proporciona un rendimiento y versatilidad probados en una amplia gama de materiales. Como tales, resultarán especialmente interesantes para las pequeñas y medianas empresas dedicadas al mecanizado de distintas gamas de materiales de trabajo en todos los sectores industriales.

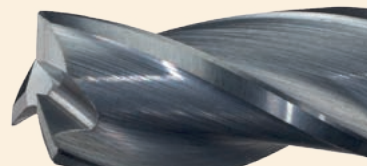
CARACTERÍSTICAS Y VENTAJAS

- Fresado de **alto rendimiento** para aplicaciones múltiples en una amplia gama de materiales, entre ellos, acero, acero inoxidable, aluminio y fundición.
- **Reducción en los costes de herramientas:** una sola fresa mecaniza diversos materiales y ejecuta múltiples operaciones.
- El revestimiento AlCrona mejora el acabado de la superficie de la pieza de trabajo y **incrementa la vida útil de la herramienta**
- **Versatilidad:** compatible con todas las operaciones de fresado: ranurado, perfilado, desbaste, semiacabado, acabado y fresado por penetración.
- Flexibilidad de la máquina herramienta: una misma herramienta para distintos materiales y operaciones permite reducir el tiempo de configuración de la máquina y, por lo tanto, **se reduce el tiempo de producción.**
- El diseño del filo y del alma ofrecen una **evacuación rápida y eficiente de la viruta.**



NEW

S822



NEW

S823

PLANO CILÍNDRICO

La combinación de rebaje plano y refuerzo cilíndrico en las fresas de 2 y 3 canales aumenta la estabilidad durante el mecanizado. Las fresas de 4 canales presentan rebaje radial.

DIENTES FINALES

El refuerzo a lo largo de toda la longitud de los filos de corte aumenta notablemente la tenacidad, lo que consigue reducir el astillamiento en el filo de corte. A su vez, esto redundará en una mayor vida útil de la herramienta en todas las operaciones en las que se utilizan los filos de corte (fresado por penetración, mecanizado en rampa e interpolación helicoidal). El diseño de la geometría de los filos de corte garantiza una evacuación de las virutas suave y eficaz en las operaciones de fresado por penetración.

ÁNGULO DE ATAQUE

Una reducción del ángulo de ataque de los filos y del ángulo de desprendimiento principal aumenta la fuerza de las fresas S8XX.



MATERIAL

Fabricado con metal duro micrograno con una excelente combinación de propiedades de dureza y resistencia. Esto significa que las fresas S8XX son adecuadas para todas las operaciones de fresado, desde el desbaste hasta el acabado.

TRATAMIENTO SUPERFICIAL

El revestimiento de AlCrona (AlCrN) se aplica a muchas gamas de fresas para aplicaciones múltiples por su dureza en caliente y resistencia al desgaste y la oxidación. Esto contribuye a una gran productividad y a un acabado superior de la superficie de la pieza de trabajo, incluso en materiales difíciles de mecanizar. El versátil revestimiento se presta igualmente a las operaciones de desbaste y a las de acabado, tanto en mecanizado en seco como en húmedo.

ALMA

Las fresas de 4 canales S8XX poseen un diseño de alma cónica aumentada. La forma modificada del canal propicia la evacuación eficaz de la viruta.

MANGO

Los mangos se fabrican según DIN 6535 pulido hasta una tolerancia h6 para una sujeción precisa de la herramienta

LONGITUD

Las nuevas fresas añaden opcionalmente una longitud de corte media (estándar Dormer) a las longitudes de corte existentes extracorta (DIN 6527 K) y corta (DIN 6527 L) para las fresas S8XX de 2 y 3 canales. Las fresas S8XX de 4 canales están disponibles en longitudes de corte extracortas (DIN 6527 K) y cortas (DIN 6527 L).

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM		
	N	N	N	N	N	N	N	N	N	N	N	N	N		
	Z 2	Z 2	Z 2	Z 2	Z 2	Z 3	Z 3	Z 3	Z 3	Z 3	Z 4	Z 4	Z 4		
	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 34° γ 9°	λ 34° γ 9°	λ 34° γ 9°		
	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HB		
											h10	h10	h10	h10	
	S802HA	S802HB	S812HA	S812HB	S822	S803HA	S803HB	S813HA	S813HB	S823	S804HA	S804HB	S814HA	S814HB	
	1.00 - 20.00	1.80 - 20.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00	1.00 - 20.00	1.80 - 20.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00	2.00 - 25.00	2.00 - 25.00	2.00 - 25.00	2.00 - 25.00	
					NEW					NEW					
AMG														ISO	
1.1	■260B	■260B	■210B	■210B	■180B	■260B	■260B	■210B	■210B	■180B	■360B	■360B	■270B	■270B	P1
1.2	■260B	■260B	■210B	■210B	■180B	■260B	■260B	■210B	■210B	■180B	■300B	■300B	■225B	■225B	P1
1.3	■155B	■155B	■125B	■125B	■110B	■155B	■155B	■125B	■125B	■110B	■230B	■230B	■175B	■175B	P2
1.4	■155B	■155B	■125B	■125B	■110B	■155B	■155B	■125B	■125B	■110B	■230B	■230B	■175B	■175B	P3
1.5	■115B	■115B	■90B	■90B	■80B	■115B	■115B	■90B	■90B	■80B	■165B	■165B	■125B	■125B	P4
1.6	■90B	■90B	■75B	■75B	■65B	■90B	■90B	●75B	●75B	●65B	■130B	■130B	●100B	●100B	H1
1.7															H3
1.8															H4
2.1	■105A	■105A	■75A	■75A	■70A	■105A	■105A	■85A	■85A	■70A	■165A	■165A	■125A	■125A	M1
2.2	■70A	■70A	■55A	■55A	■50A	■70A	■70A	●55A	●55A	●50A	■110A	■110A	●85A	●85A	M3
2.3	●70A	●70A	■55A	■55A	■50A	●70A	●70A	●55A	●55A	●50A	●110A	●110A	●85A	●85A	M2
2.4	●50A	●50A				●50A	●50A				●75A	●75A			S2
3.1	■180B	■180B	■145B	■145B	■125B	■180B	■180B	■145B	■145B	■125B	■275B	■275B	■205B	■205B	K1
3.2	■110B	■110B	■85B	■85B	■75B	■110B	■110B	■85B	■85B	■75B	■165B	■165B	■125B	■125B	K2
3.3	■145B	■145B	■115B	■115B	■100B	■145B	■145B	■115B	■115B	■100B	■165B	■165B	■125B	■125B	K3
3.4	■95B	■95B	■75B	■75B	■65B	■95B	■95B	■75B	■75B	■65B	■135B	■135B	■105B	■105B	K4
4.1	●170B	●170B	■140B	■140B	■120B	●170B	●170B	●140B	●140B	●120B	●275B	●275B	●205B	●205B	S1
4.2	●115B	●115B	■90B	■90B	■80B	●115B	●115B	●90B	●90B	●80B	●140B	●140B	●105B	●105B	S2
4.3															S3
5.1	●165B	●165B	■130B	■130B	■115B	●165B	●165B	●130B	●130B	●115B	●275B	●275B	●205B	●205B	S1
5.2	●35A	●35A	■25A	■25A	■25A	●35A	●35A	●25A	●25A	●25A	●55A	●55A	●40A	●40A	S2
5.3															S3
6.1	●320C	●320C	■255C	■255C	■220C	●320C	●320C	●255C	●255C	●220C	●320C	●320C	●255C	●255C	N3
6.2	●320C	●320C	■255C	■255C	■220C	●320C	●320C	●255C	●255C	●220C	●320C	●320C	●255C	●255C	N4
6.3	■320C	■320C	■255C	■255C	■220C	■320C	■320C	■255C	■255C	■220C	■320C	■320C	■255C	■255C	N3
6.4	■40B	■40B	■30C	■30C	■25B	■40B	■40B	■30C	■30C	■25B	■40B	■40B	■32C	■32C	N4
7.1	●800C	●800C	■640C	■640C	■550C	●800C	●800C	●640C	●640C	●550C	●800C	●800C	●640C	●640C	N1
7.2	●800C	●800C	■640C	■640C	■550C	●800C	●800C	●640C	●640C	●550C	●800C	●800C	●640C	●640C	N1
7.3	■480C	■480C	■380C	■380C	■330C	■480C	■480C	■380C	■380C	■330C	■480C	■480C	■380C	■380C	N1
7.4	■240B	■240B	■190B	■190B	■160B	■240B	■240B	■190B	■190B	■160B	■240B	■240B	■190B	■190B	N2
8.1	●320C	●320C	■255C	■255C	■245C	●320C	●320C	●255C	●255C	●245C	●320C	●320C	●255C	●255C	O
8.2	●320C	●320C	■255C	■255C	■245C	●320C	●320C	●255C	●255C	●245C	●320C	●320C	●255C	●255C	O
8.3															O
9.1															H
10.1															O

HM

Z					Ae	Ap	fz	ø [mm] fz [mm/Z] ± 25 %													
1	2	3	4	>4	(x ø)	(x ø)		Ø	1	2	3	4	5	6	8	10	12	14	16	18	20
					0.05	1.5	A	0.012	0.024	0.035	0.045	0.055	0.065	0.080	0.093	0.107	0.121	0.134	0.149	0.162	
							B	0.016	0.032	0.047	0.061	0.074	0.087	0.107	0.124	0.143	0.162	0.179	0.198	0.216	
							C	0.020	0.040	0.058	0.076	0.092	0.108	0.134	0.156	0.179	0.202	0.224	0.248	0.271	
							D	0.024	0.048	0.070	0.091	0.111	0.130	0.160	0.187	0.214	0.242	0.268	0.297	0.325	
							E	0.028	0.056	0.081	0.106	0.129	0.152	0.187	0.218	0.250	0.283	0.313	0.347	0.379	
							F	0.032	0.064	0.093	0.121	0.148	0.173	0.214	0.249	0.286	0.323	0.358	0.396	0.433	
							G	0.037	0.071	0.105	0.136	0.166	0.195	0.240	0.280	0.321	0.364	0.403	0.446	0.487	
							H	0.041	0.079	0.116	0.152	0.185	0.216	0.267	0.311	0.357	0.404	0.447	0.495	0.541	
												0.08	1.5	A	0.010	0.019	0.028	0.036	0.044	0.052	0.064
B	0.013	0.025	0.037	0.048	0.059	0.069								0.085	0.099	0.114	0.128	0.142	0.157	0.172	
C	0.016	0.032	0.046	0.060	0.073	0.086								0.106	0.124	0.142	0.161	0.178	0.197	0.215	
D	0.019	0.038	0.055	0.072	0.088	0.103								0.127	0.148	0.170	0.193	0.213	0.236	0.258	
E	0.023	0.044	0.065	0.084	0.103	0.120								0.149	0.173	0.199	0.225	0.249	0.276	0.301	
F	0.026	0.050	0.074	0.096	0.118	0.138								0.170	0.198	0.227	0.257	0.284	0.315	0.344	
G	0.029	0.057	0.083	0.108	0.132	0.155								0.191	0.223	0.256	0.289	0.320	0.354	0.387	
H	0.032	0.063	0.092	0.120	0.147	0.172								0.212	0.247	0.284	0.321	0.356	0.394	0.430	
					0.15	1.5								A	0.007	0.014	0.021	0.027	0.033	0.038	0.047
							B	0.010	0.019	0.027	0.036	0.043	0.051	0.063	0.073	0.084	0.095	0.105	0.116	0.127	
							C	0.012	0.023	0.034	0.045	0.054	0.064	0.078	0.091	0.105	0.119	0.132	0.146	0.159	
							D	0.014	0.028	0.041	0.053	0.065	0.076	0.094	0.110	0.126	0.143	0.158	0.175	0.191	
							E	0.017	0.033	0.048	0.062	0.076	0.089	0.110	0.128	0.147	0.166	0.184	0.204	0.223	
							F	0.019	0.037	0.055	0.071	0.087	0.102	0.126	0.146	0.168	0.190	0.210	0.233	0.255	
							G	0.021	0.042	0.062	0.080	0.098	0.115	0.141	0.165	0.189	0.214	0.237	0.262	0.286	
							H	0.024	0.047	0.068	0.089	0.109	0.127	0.157	0.183	0.210	0.238	0.263	0.291	0.318	
												0.30	1.5	A	0.005	0.010	0.015	0.019	0.024	0.028	0.034
B	0.007	0.014	0.020	0.026	0.032	0.037								0.046	0.053	0.061	0.069	0.077	0.085	0.093	
C	0.009	0.017	0.025	0.032	0.040	0.046								0.057	0.067	0.077	0.087	0.096	0.106	0.116	
D	0.010	0.020	0.030	0.039	0.048	0.056								0.069	0.080	0.092	0.104	0.115	0.127	0.139	
E	0.012	0.024	0.035	0.045	0.055	0.065								0.080	0.093	0.107	0.121	0.134	0.149	0.162	
F	0.014	0.027	0.040	0.052	0.063	0.074								0.092	0.107	0.122	0.138	0.153	0.170	0.185	
G	0.016	0.031	0.045	0.058	0.071	0.083								0.103	0.120	0.138	0.156	0.173	0.191	0.209	
H	0.017	0.034	0.050	0.065	0.079	0.093								0.114	0.133	0.153	0.173	0.192	0.212	0.232	
					0.60	1.5								A	0.004	0.008	0.011	0.015	0.018	0.021	0.026
							B	0.005	0.010	0.015	0.020	0.024	0.028	0.035	0.041	0.047	0.053	0.059	0.065	0.071	
							C	0.007	0.013	0.019	0.025	0.030	0.035	0.044	0.051	0.058	0.066	0.073	0.081	0.089	
							D	0.008	0.016	0.023	0.030	0.036	0.043	0.052	0.061	0.070	0.079	0.088	0.097	0.106	
							E	0.009	0.018	0.027	0.035	0.042	0.050	0.061	0.071	0.082	0.093	0.103	0.114	0.124	
							F	0.011	0.021	0.030	0.040	0.048	0.057	0.070	0.082	0.094	0.106	0.117	0.130	0.142	
							G	0.012	0.023	0.034	0.045	0.054	0.064	0.079	0.092	0.105	0.119	0.132	0.146	0.159	
							H	0.013	0.026	0.038	0.050	0.061	0.071	0.087	0.102	0.117	0.132	0.146	0.162	0.177	

■ Excelente para aplicación ● Bueno para aplicación

HM

Z	Z	Z	Z	Z	A _e (x Ø)	A _p (x Ø)	fz [mm/Z] ± 25%	Ø [mm]													
1	2	3	4	>4				Ø	1	2	3	4	5	6	8	10	12	14	16	18	20
■	■	■						A	0.003	0.006	0.009	0.012	0.014	0.017	0.021	0.024	0.028	0.032	0.035	0.039	0.042
								B	0.004	0.008	0.012	0.016	0.019	0.023	0.028	0.033	0.037	0.042	0.047	0.052	0.057
								C	0.005	0.010	0.015	0.020	0.024	0.028	0.035	0.041	0.047	0.053	0.058	0.065	0.071
								D	0.006	0.012	0.018	0.024	0.029	0.034	0.042	0.049	0.056	0.063	0.070	0.078	0.085
								E	0.007	0.015	0.021	0.028	0.034	0.040	0.049	0.057	0.065	0.074	0.082	0.091	0.099
								F	0.008	0.017	0.024	0.032	0.039	0.045	0.056	0.065	0.075	0.084	0.093	0.103	0.113
								G	0.010	0.019	0.027	0.036	0.043	0.051	0.063	0.073	0.084	0.095	0.105	0.116	0.127
								H	0.011	0.021	0.030	0.040	0.048	0.057	0.070	0.081	0.093	0.106	0.117	0.129	0.141

■	■	■						A	0.003	0.005	0.007	0.010	0.012	0.014	0.017	0.020	0.022	0.025	0.028	0.031	0.034
								B	0.003	0.007	0.010	0.013	0.015	0.018	0.022	0.026	0.030	0.034	0.037	0.041	0.045
								C	0.004	0.008	0.012	0.016	0.019	0.023	0.028	0.033	0.037	0.042	0.047	0.052	0.057
								D	0.005	0.010	0.015	0.019	0.023	0.027	0.033	0.039	0.045	0.051	0.056	0.062	0.068
								E	0.006	0.012	0.017	0.022	0.027	0.032	0.039	0.046	0.052	0.059	0.065	0.072	0.079
								F	0.007	0.013	0.019	0.025	0.031	0.036	0.045	0.052	0.060	0.068	0.075	0.083	0.090
								G	0.008	0.015	0.022	0.029	0.035	0.041	0.050	0.059	0.067	0.076	0.084	0.093	0.102
								H	0.008	0.017	0.024	0.032	0.039	0.045	0.056	0.065	0.075	0.084	0.093	0.103	0.113

■ Excelente para aplicación ● Bueno para aplicación

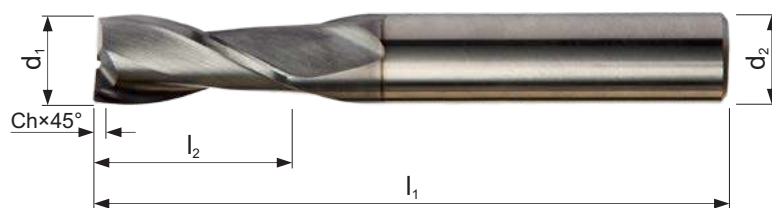
$$n = \frac{V_c \times 1000}{\pi \times d}$$

$$V_f = n \times fz \times Z$$

S822 • Fresas de ranurar

S822	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	
	•	6.4	7.1	7.2	7.3	7.4	8.1	8.2														

S822 **HM**   **N**     $\lambda 28^\circ$
 $\gamma 9^\circ$



d_1 \varnothing mm	Ch $\pm 0.03 \times 45^\circ$ mm	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	z	S822
2.00	-	6	8	57	2	S8222.0
2.50	0.08	6	12	57	2	S8222.5
3.00	0.08	6	12	57	2	S8223.0
4.00	0.13	6	14	57	2	S8224.0
5.00	0.13	6	16	57	2	S8225.0
6.00	0.13	6	19	57	2	S8226.0
7.00	0.13	8	19	63	2	S8227.0
8.00	0.20	8	19	63	2	S8228.0 ¹⁾
9.00	0.20	10	21	72	2	S8229.0 ¹⁾
10.00	0.20	10	22	72	2	S82210.0 ¹⁾
12.00	0.20	12	25	83	2	S82212.0 ¹⁾
14.00	0.20	14	30	83	2	S82214.0 ¹⁾
16.00	0.20	16	32	92	2	S82216.0 ¹⁾
18.00	0.20	18	32	92	2	S82218.0 ¹⁾
20.00	0.30	20	38	104	2	S82220.0 ¹⁾

1) Ch $\pm 0.05 \times 45^\circ$ mm

AVELLANADORES



PRESENTACIÓN

Para complementar la gama de avellanadores, Dormer ha introducido tres artículos nuevos que incorporan caras planas en el mango para proporcionar un empuje más positivo cuando se utiliza en aplicaciones manuales.

Los mangos aplanados evitan que las herramientas puedan deslizarse en el portapinzas y, por lo tanto, mejoran el rendimiento de la herramienta y producen un agujero avellanado y un acabado de la superficie de mejor calidad.

MATERIAL

Fabricado con acero rápido (HSS) o acero rápido al cobalto (HSS-E) de primera calidad:

- Mayor **dureza y resistencia**
- **Fuerza del filo** mejorada
- Mayor **vida útil de la herramienta**



TRATAMIENTO SUPERFICIAL

Acabado brillante (G106 y G107):

Uso universal para múltiples materiales

- También funciona bien en materiales dúctiles blandos con tendencia a adherirse a los filos

Con revestimiento de TiAlN (G506):

Adecuado para materiales duros y abrasivos

- Capacidad de soportar altas temperaturas de funcionamiento para aumentar la vida útil de la herramienta
- La baja fricción evita la acumulación de material en el filo mejorando el acabado de la superficie

TIPOS DE MANGO



MANGO TRIPLANO

- Caras planas pulidas para la ubicación positiva en portapinzas de 3 garras
- Disponible en acabado brillante para materiales suaves y con revestimiento de TiAlN para materiales más duros y abrasivos
- Ambos tipos disponibles también como juego de 6 piezas con los siguientes diámetros: 6,3; 8,3; 10,4; 12,4; 16,5 y 20,5 mm



MANGO HEXAGONAL

- El mango hexagonal se ajusta directamente en los accesorios del taladro inalámbrico para un cambio rápido
- Compatible también con los taladros manuales para desbarbar y achaflanar a mano



AMG				ISO
1.1	■30F	■50E	■30F	P1
1.2	■25E	■40E	■25E	P1
1.3	■20D	■30D	■20D	P2
1.4	■15D	●20D	■15D	P3
1.5	■10B	●15B	■10B	P4
1.6	●6A	●10B	●6A	H1
1.7				H3
1.8				H4
2.1	●8C		●8C	M1
2.2	●6B		●6B	M3
2.3	●4A		●4A	M2
2.4				S2
3.1	●25F	■45F	●25F	K1
3.2	●15D	■35D	●15D	K2
3.3	●12C	■30C	●12C	K3
3.4	●8C	■30C	●8C	K4
4.1	■12C	●20C	■12C	S1
4.2	■10A	●15A	■10A	S2
4.3	■8A	●10A	■8A	S3
5.1	■12C	●20C	■12C	S1
5.2	■6B	●10B	■6B	S2
5.3	■4A	●6A	■4A	S3
6.1	■25D	●40D	■25D	N3
6.2	■20F	●30F	■20F	N4
6.3	■25F	●40F	■25F	N3
6.4	●10D	●15D	●10D	N4
7.1	●30G	■50G	●30G	N1
7.2	●25F	■40F	●25F	N1
7.3	●20F	■30F	●20F	N1
7.4	●10F	■15F	●10F	N2
8.1	●30G	●50G	●30G	O
8.2	●20G	●30G	●20G	O
8.3				O
9.1				H
10.1				O

$$n = \frac{V_c \times 1000}{\pi \times D}$$

$$V_f = n \times f_n$$

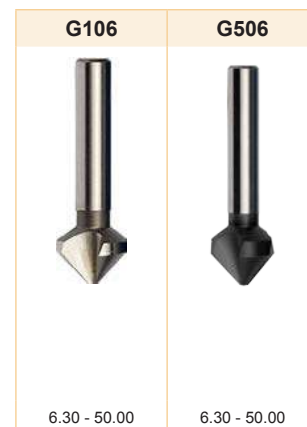
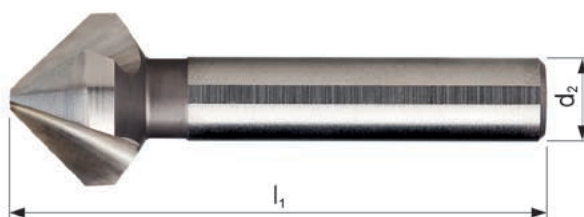
	Ø mm									
	6	8	10	16	20	25	32	40	60	80
A	0.03	0.04	0.05	0.06	0.08	0.09	0.10	0.12	0.14	0.16
B	0.04	0.05	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20
C	0.05	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22
D	0.06	0.08	0.10	0.12	0.15	0.18	0.20	0.22	0.25	0.28
E	0.08	0.10	0.12	0.15	0.18	0.20	0.25	0.27	0.30	0.32
F	0.09	0.11	0.13	0.16	0.19	0.21	0.26	0.29	0.33	0.36
G	0.10	0.12	0.15	0.18	0.20	0.22	0.28	0.32	0.36	0.40
mm/REV										

G106 • Avellanador 90° con mango con 3 planos

G506 • Avellanador 90° con mango con 3 planos

G106	▪	1.1	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.1	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1
G506	▪	1.1	1.1	1.2	1.3	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4			
	•	1.1	1.4	1.5	1.6	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	8.1

G106	HSS		DIN 335C				90°	
G506	HSS	TiAIN	DIN 335C				90°	



max d mm	min d mm	l ₁ mm	d ₂ Øh ₉ mm	z	G106	G506
6.3	1.5	45	5	3	G1066.3	G5066.3
8.3	2.0	50	6	3	G1068.3	G5068.3
10.4	2.5	50	6	3	G10610.4	G50610.4
12.4	2.8	56	8	3	G10612.4	G50612.4
16.5	3.2	60	10	3	G10616.5	G50616.5
20.5	3.5	63	10	3	G10620.5	G50620.5
25.0	3.8	67	10	3	G10625.0	G50625.0
31.0	4.2	71	12	3	G10631.0	G50631.0
34.0	4.5	103	16	3	G10634.0	G50634.0
37.0	4.5	118	16	3	G10637.0	G50637.0
40.0	4.5	118	16	3	G10640.0	G50640.0
50.0	5.0	126	16	3	G10650.0	G50650.0

G107 • Avellanador 90° con mango hexagonal

G107	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1

G107 HSS-E      



max d mm	min d mm	l ₁ mm	d ₂ Ø A/F mm	DIN 74	z	G107
6.3	1.5	50	1/4"	M2-M3	3	G1076.3
8.3	2.0	50	1/4"	M4	3	G1078.3
10.4	2.5	50	1/4"	M5	3	G10710.4
12.4	2.8	50	1/4"	M6	3	G10712.4
16.5	3.2	50	1/4"	M8	3	G10716.5
20.5	3.5	50	1/4"	M10	3	G10720.5

G236 • Juego de Avellanadores

A=Tipos en el juego, B=No. en el Juego, C=Diámetros en el Juego



Nr.	A	B	C	G236
4	G106	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2364
5	G506	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2365

BROCAS DE CENTRAR

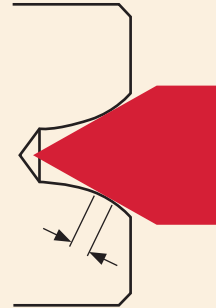


PRESENTACIÓN

Para complementar la gama existente de brocas de centrar, Dormer ha introducido varios diseños nuevos con el fin de ampliar la cobertura de aplicaciones de clientes potenciales. Entre ellos, se incluyen HSS-E para materiales y entornos más duros, mango aplanado para mejorar la fijación, series largas para aumentar el alcance y metal duro para materiales duros y abrasivos. La completa gama de tamaños disponibles hace que Dormer sea una buena opción para todas las aplicaciones que requieran brocas de centrar.

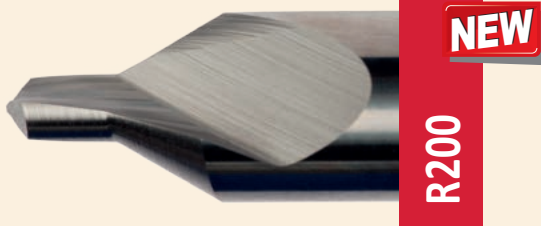
CARACTERÍSTICAS Y VENTAJAS

- Mayor resistencia al desgaste y vida útil de la herramienta
- Fabricada con mango aplanado para su uso en cabezales de centrado personalizados utilizados para mecanizar los extremos de ejes
- La forma de radio aumenta la resistencia de la sección transversal y, por lo tanto, reduce el riesgo de rotura



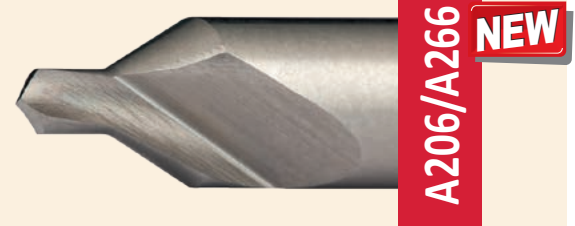
El área de contacto se encuentra por debajo de la cara del eje y, por lo tanto, queda protegida contra posibles daños

TIPOS DE BROCA DE CENTRAR



METAL DURO

- Metal duro de primera calidad para mejorar la vida útil de la herramienta al realizar taladrados centrados en materiales duros y abrasivos
- Funcionamiento más rígido para una mayor precisión y calidad de la superficie



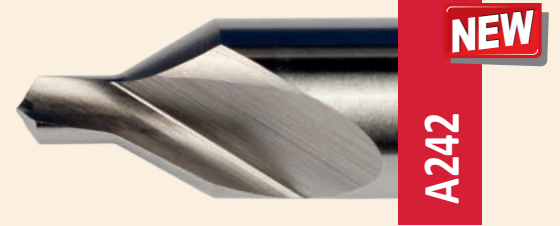
HSS-E UTILIZADO PARA MATERIALES MÁS DUROS Y ACEROS INOXIDABLES

- HSS-E con un contenido del 8 % de cobalto para aumentar la dureza en caliente, lo que se traduce en una mayor resistencia al desgaste y una mayor vida útil de la herramienta
- A266 con revestimiento de TiAlN, que proporciona una mejor resistencia frente a la abrasión y una mayor vida útil de la herramienta




MANGO DE HSS-E CON CARA PLANA

- A238 con forma de radio para producir centros protegidos en los extremos de eje
- Se puede utilizar con unidades de chaflán



SERIES LARGAS DE HSS-E

- Mayor longitud global para aumentar el alcance

 f_n	<div style="display: flex; justify-content: space-around;"> HM HSS HSS-E </div>									
	$\varnothing(D)$	1mm	2mm	3mm	4mm	5mm	6mm	8mm	10mm	12mm
A	0.012	0.023	0.029	0.032	0.036	0.042	0.054	0.062	0.069	
B	0.014	0.028	0.037	0.041	0.046	0.053	0.067	0.080	0.090	
C	0.015	0.032	0.044	0.050	0.056	0.064	0.080	0.098	0.110	
D	0.016	0.038	0.053	0.060	0.068	0.078	0.098	0.119	0.130	
E	0.017	0.043	0.062	0.071	0.080	0.092	0.115	0.140	0.150	
F	0.018	0.050	0.073	0.084	0.095	0.109	0.138	0.165	0.178	
G	0.019	0.056	0.084	0.096	0.109	0.126	0.160	0.190	0.205	
H	0.020	0.066	0.102	0.116	0.130	0.150	0.190	0.228	0.243	
I	0.021	0.076	0.119	0.134	0.150	0.173	0.220	0.265	0.280	
J	0.024	0.084	0.135	0.152	0.170	0.197	0.250	0.298	0.315	
mm/N \pm 25%										

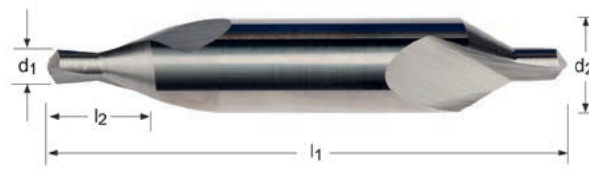
$$n = \frac{V_c \times 1000}{\pi \times D}$$

$$V_f = n \times f_n$$

R200 • Brocas de Centrar - 60°

R200 ▣ 1.1 1.2 1.3 1.4 1.5 1.6 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4

R200 **HM** **DIN 333A** **1XD** **118°** **60°**



d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	d_2 Ø mm	R200
1.00	0.0394	1.7 - 1.3	31	3.15	R2001.0X3.15
1.25	0.0492	2.0 - 1.6	31	3.15	R2001.25X3.15
1.60	0.0630	2.6 - 2.0	35	4.00	R2001.6X4.0
2.00	0.0787	3.1 - 2.5	40	5.00	R2002.0X5.0
2.50	0.0984	3.8 - 3.1	45	6.30	R2002.5X6.3
3.15	0.1240	4.6 - 3.9	50	8.00	R2003.15X8.0
4.00	0.1575	5.9 - 5.0	55	10.00	R2004.0X10.0
5.00	0.1969	7.2 - 6.3	63	12.50	R2005.0X12.5

A200 • Brocas de Centrar - 60°

A205 • Brocas de Centrar - 60°

A206 • Brocas de Centrar - 60°

A266 • Brocas de Centrar - 60°

A200; A205; A206; A266	1.1	1.2	1.3	1.4	3.1	3.2											
	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2		
	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1							

A200	HSS		DIN 333A		1XD						
A205	HSS	TIN	DIN 333A		1XD						
A206	HSS-E		DIN 333A		1XD						
A266	HSS-E	TiAlN	DIN 333A		1XD						



A200	A205	A206	A266
0.50 - 12.50	1.00 - 5.00	1.00 - 5.00	1.00 - 5.00

d ₁ Ø mm	d ₁ decimal Inch	l ₂ max/min mm	l ₁ mm	d ₂ Ø mm	A200	A205	A206	A266
0.50	0.0197	0.9 - 0.6	25	3.15	A200.5X3.15 ¹⁾			
0.80	0.0315	1.3 - 1.0	25	3.15	A200.8X3.15 ¹⁾			
1.00	0.0394	1.7 - 1.3	31	3.15	A2001.0X3.15	A2051.0X3.15	A2061.0X3.15	A2661.0X3.15
1.25	0.0492	2.0 - 1.6	31	3.15	A2001.25X3.15	A2051.25X3.15	A2061.25X3.15	A2661.25X3.15
1.60	0.0630	2.6 - 2.0	35	4.00	A2001.6X4.0	A2051.6X4.0	A2061.6X4.0	A2661.6X4.0
2.00	0.0787	3.1 - 2.5	40	5.00	A2002.0X5.0	A2052.0X5.0	A2062.0X5.0	A2662.0X5.0
2.50	0.0984	3.8 - 3.1	45	6.30	A2002.5X6.3	A2052.5X6.3	A2062.5X6.3	A2662.5X6.3
3.15	0.1240	4.6 - 3.9	50	8.00	A2003.15X8.0	A2053.15X8.0	A2063.15X8.0	A2663.15X8.0
4.00	0.1575	5.9 - 5.0	55	10.00	A2004.0X10.0	A2054.0X10.0	A2064.0X10.0	A2664.0X10.0
5.00	0.1969	7.2 - 6.3	63	12.50	A2005.0X12.5	A2055.0X12.5	A2065.0X12.5	A2665.0X12.5
6.30	0.2480	8.9 - 8.0	71	16.00	A2006.3X16.0			
8.00	0.3150	11.1 - 10.1	80	20.00	A2008.0X20.0			
10.00	0.3937	13.8 - 12.8	100	25.00	A20010.0X25.0			
12.50	0.4921	17.5 - 16.5	125	31.50	A20012.5X31.5			

1) Afilada sólo por una punta

A210 • Brocas de Centrar

Radio protegido

A210	▪	1.1	1.2	1.3	1.4	3.1	3.2														
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1															

A210

HSS

DIN
333R

1XD

118°



d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	r max/min mm	d_2 Ø mm	A210
0.50	0.0197	2.6 - 2.3	25.0	2.50 - 2.00	3.15	A210.5X3.15 ¹⁾
0.80	0.0315	2.9 - 2.6	25.0	3.15 - 2.50	3.15	A210.8X3.15 ¹⁾
1.00	0.0394	3.3 - 3.0	31.0	3.65 - 2.90	3.15	A2101.0X3.15
1.25	0.0492	3.6 - 3.3	31.0	3.95 - 3.15	3.15	A2101.25X3.15
1.60	0.0630	4.7 - 4.2	35.0	5.00 - 4.00	4.00	A2101.6X4.0
2.00	0.0787	5.4 - 5.0	40.0	6.25 - 5.00	5.00	A2102.0X5.0
2.50	0.0984	6.8 - 6.3	45.0	7.88 - 6.30	6.30	A2102.5X6.3
3.15	0.1240	8.5 - 8.0	50.0	10.00 - 8.00	8.00	A2103.15X8.0
4.00	0.1575	10.6 - 10.0	55.0	12.50 - 10.00	10.00	A2104.0X10.0
5.00	0.1969	13.1 - 12.5	63.0	15.63 - 12.50	12.50	A2105.0X12.5
6.30	0.2480	16.6 - 16.0	71.0	20.00 - 16.00	16.00	A2106.3X16.0
8.00	0.3150	20.7 - 20.0	80.0	25.00 - 20.00	20.00	A2108.0X20.0
10.00	0.3937	25.7 - 25.0	100.0	31.25 - 25.00	25.00	A21010.0X25.0

1) Afilada sólo por una punta

A225 • Brocas de Centrar - 60°

A225	▪	1.1	1.2	1.3	1.4	3.1	3.2														
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1															

A225

HSS



BS
328



1XD



120°



60°



A296
52



Nr.	d_1 Ø Inch	d_1 decimal Inch	l_2 max/min Inch	l_1 Inch	d_2 Ø Inch	A225
BS1	3/64	0.0469	5/64 - 1/16	1.1/2	1/8	A225BS1
BS2	1/16	0.0625	3/32 - 5/64	1.3/4	3/16	A225BS2
BS3	3/32	0.0938	5/32 - 1/8	2"	1/4	A225BS3
BS4	1/8	0.1250	3/16 - 5/32	2.1/4	5/16	A225BS4
BS5	3/16	0.1875	9/32 - 1/4	2.1/2	7/16	A225BS5
BS5A	7/32	0.2188	5/16 - 9/32	2.3/4	1/2	A225BS5A
BS6	1/4	0.2500	3/8 - 5/16	3"	5/8	A225BS6
BS7	5/16	0.3125	15/32 - 13/32	3.1/2	3/4	A225BS7

A237 • Brocas de Centrar - 60°

Mango Plano

A237	▪	1.1	1.2	1.3	1.4	3.1	3.2														
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1															

A237 HSS-E



d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	d_2 Ø mm	d_4 max/min mm	A237
1.60	0.0630	2.6 - 2.0	35	4.00	3.25 - 3.15	A2371.6X4.0
2.00	0.0787	3.1 - 2.5	40	5.00	4.20 - 4.10	A2372.0X5.0
2.50	0.0984	3.8 - 3.1	45	6.30	5.35 - 5.25	A2372.5X6.3
3.15	0.1240	4.6 - 3.9	50	8.00	6.95 - 6.85	A2373.15X8.0
4.00	0.1575	5.9 - 5.0	55	10.00	8.40 - 8.30	A2374.0X10.0
5.00	0.1969	7.2 - 6.3	63	12.50	10.95 - 10.85	A2375.0X12.5
6.30	0.2480	8.9 - 8.0	71	16.00	14.00 - 13.90	A2376.3X16.0
8.00	0.3150	11.1 - 10.1	80	20.00	17.90 - 17.80	A2378.0X20.0
10.00	0.3937	13.8 - 12.8	100	25.00	22.50 - 22.40	A23710.0X25.0

A238 • Brocas de Centrar

Radio Protegido y Mango Plano

A238	▪	1.1	1.2	1.3	1.4	3.1	3.2														
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1															

A238 HSS-E



d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	r max/min mm	d_2 Ø mm	d_4 max/min mm	A238
1.60	0.0630	4.7 - 4.2	35	5.00 - 4.00	4.00	3.25 - 3.15	A2381.6X4.0
2.00	0.0787	5.4 - 5.0	40	6.25 - 5.00	5.00	4.20 - 4.10	A2382.0X5.0
2.50	0.0984	6.8 - 6.3	45	7.88 - 6.30	6.30	5.35 - 5.25	A2382.5X6.3
3.15	0.1240	8.5 - 8.0	50	10.00 - 8.00	8.00	6.95 - 6.85	A2383.15X8.0
4.00	0.1575	10.6 - 10.0	55	12.50 - 10.00	10.00	8.40 - 8.30	A2384.0X10.0
5.00	0.1969	13.1 - 12.5	63	15.63 - 12.50	12.50	10.95 - 10.85	A2385.0X12.5
6.30	0.2480	16.6 - 16.0	71	20.00 - 16.00	16.00	14.00 - 13.90	A2386.3X16.0
8.00	0.3150	20.7 - 20.0	80	25.00 - 20.00	20.00	17.90 - 17.80	A2388.0X20.0

A242 • Brocas de Centrar - 60°

A242	▪	1.1	1.2	1.3	1.4	3.1	3.2														
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1															



d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	d_2 Ø mm	A242
1.00	0.0394	1.7 - 1.3	100	4.00	A2421.0X4.0
1.50	0.0591	2.6 - 2.0	100	5.00	A2421.5X5.0
2.00	0.0787	3.1 - 2.5	100	6.00	A2422.0X6.0
2.50	0.0984	3.8 - 3.1	100	8.00	A2422.5X8.0
3.00	0.1181	4.6 - 3.9	100	8.00	A2423.0X8.0
3.00	0.1181	4.6 - 3.9	100	10.00	A2423.0X10.0
4.00	0.1575	5.9 - 5.0	100	10.00	A2424.0X10.0
4.00	0.1575	5.9 - 5.0	100	12.00	A2424.0X12.0
5.00	0.1969	7.2 - 6.3	100	12.00	A2425.0X12.0

A296 • Juego de Brocas de Centrar

A296200 - 118° DIN333A

A296225 - 120° BS328

A=Tipos en el juego, B=No. en el Juego, C=Diámetros en el Juego



Nr	A	B	C	A296
200	A200	5	1.00 mm, 2.00 mm, 2.50 mm, 3.15 mm, 4.00 mm	A296200
225	A225	5	BS1, BS2, BS3, BS4, BS5	A296225

BROCAS DE HSS





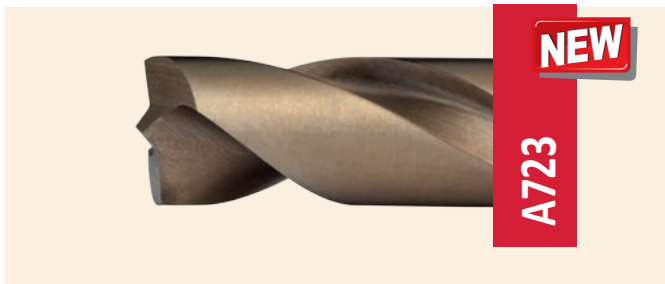
PRESENTACIÓN

Las brocas despunteadoras de Dormer son una gama de brocas de cobalto diseñadas específicamente para taladrar puntos de soldadura, con el fin de desunir paneles y chapas de acero. Se encuentran disponibles en varios tamaños estándar para adaptarse a los puntos de soldadura comunes que se encuentran en la industria de la reparación de automóviles y remolques. Fabricadas con un sustrato de primera calidad y conforme a un alto estándar de calidad para proporcionar un rendimiento fiable y constante.

MATERIAL

acero rápido al cobalto (HSS-E) premium

- Fabricado con M42 para proporcionar una alta dureza en caliente
- Conserva un **filo de corte vivo bajo condiciones extremas**
- El acabado de la superficie en bronce identifica el material de cobalto



GEOMETRÍA

Labio especial y punta de espuela

- Proporciona un centrado positivo
- Las afiladas esquinas exteriores cortan el material blando alrededor del punto de soldadura

Alma robusta

- Proporciona fuerza para una **mejor penetración en condiciones adversas**

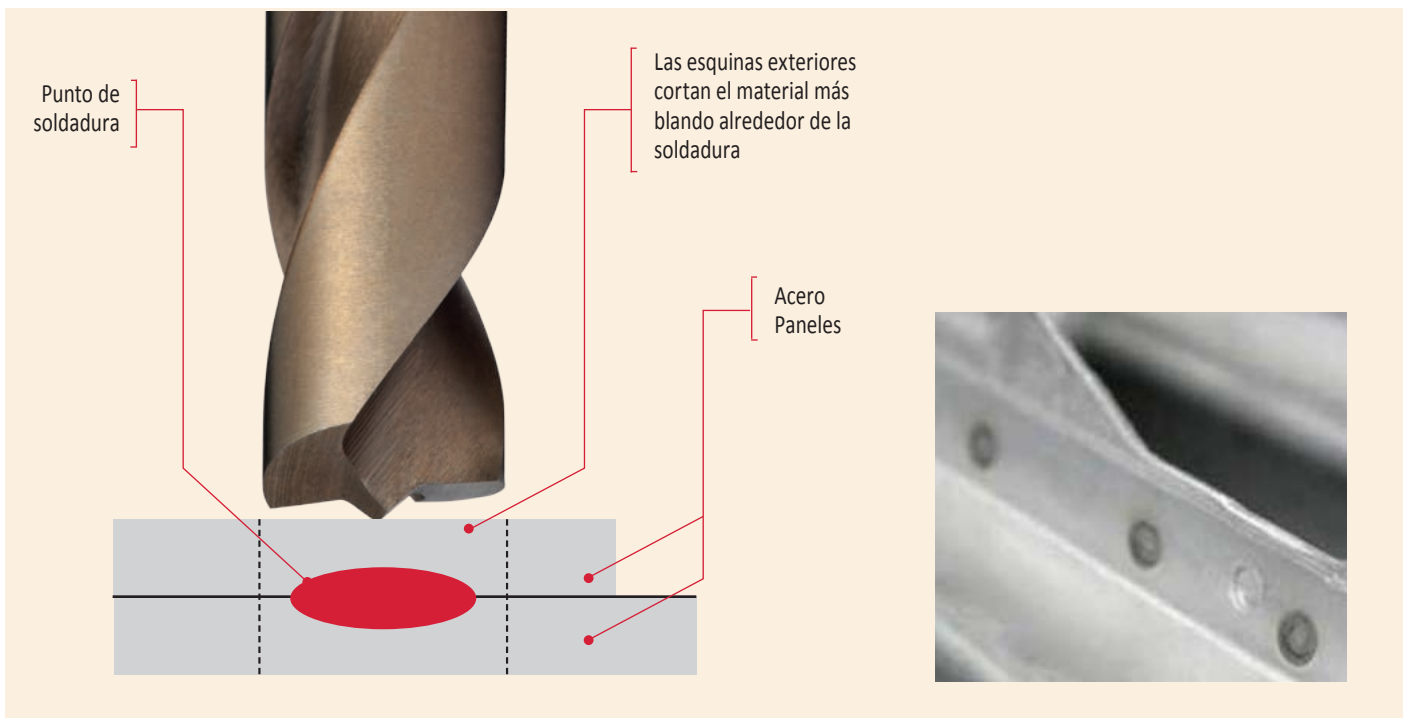
Canal corto

- Proporciona **rigidez para el taladrado a mano** de paneles y chapas finas

Sin cuerpo de separación

- Aumenta la estabilidad durante el taladrado y se consigue un **agujero de calidad superior**

EJEMPLO DE APLICACIÓN



PRESENTACIÓN

Las brocas para chapas de metal de Dormer son una gama de brocas de acero rápido diseñadas específicamente para taladrar chapas y paneles finos de acero

- Fabricadas con un sustrato de primera calidad y conforme a un alto estándar de calidad para proporcionar un **rendimiento fiable y constante**
- Se encuentran disponibles en varios tamaños estándar para adaptarse a los remaches, tornillos y pernos comunes
- También disponibles en versión de doble extremo (A119) para ayudar a reducir el inventario y **mejorar la rentabilidad**

MATERIAL

Acero rápido (HSS) premium

- Fabricado con M2 para proporcionar una buena dureza
- Conserva un filo de corte vivo bajo condiciones extremas
- Templado al vapor para mejorar el rendimiento y reducir la probabilidad de acumulación de material en el filo



GEOMETRÍA

Punta estándar de 120 grados

- Facilita la penetración en aplicaciones a mano

Alma especial

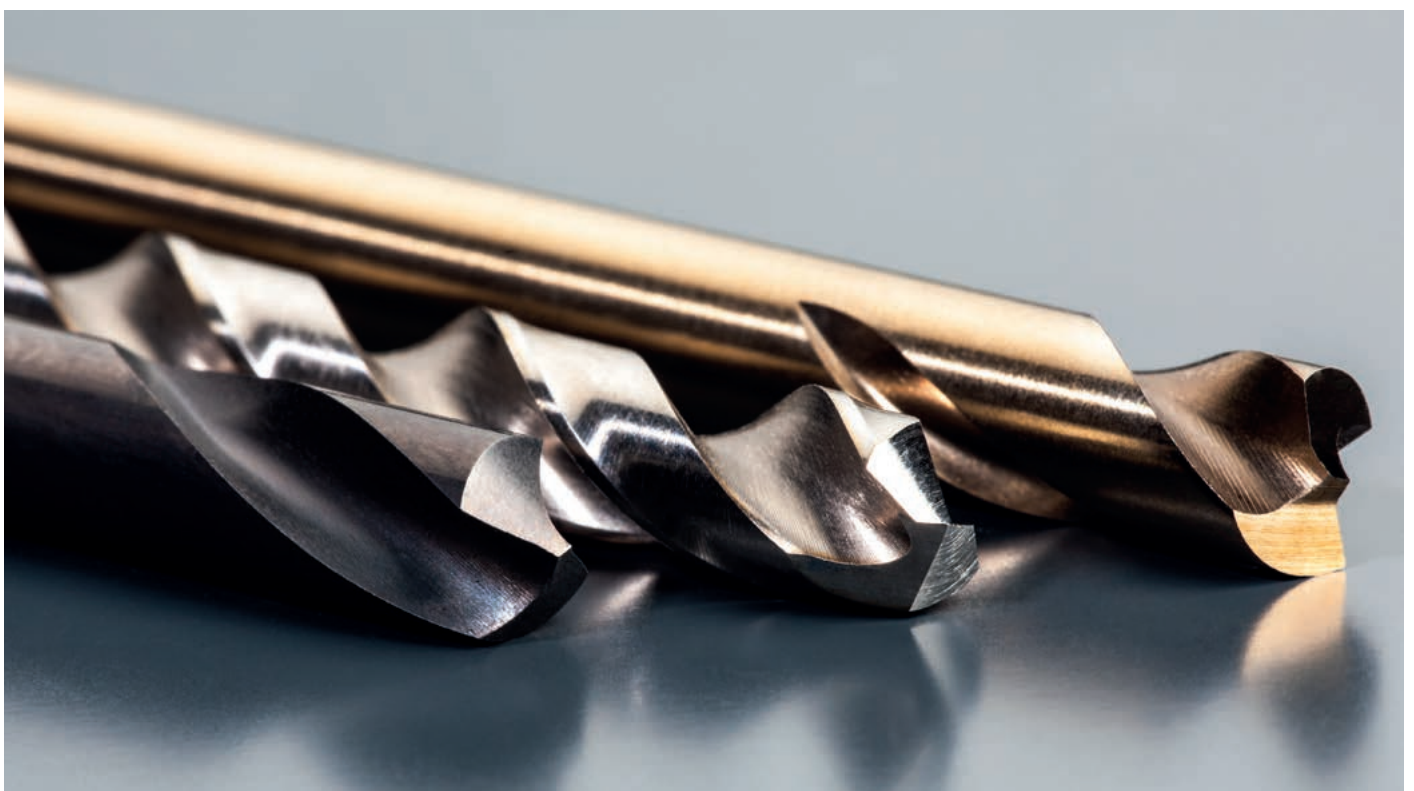
- Un alma fina en la punta proporciona **excelentes propiedades de autocentrado**

Canal corto


- Proporciona **rigidez para el taladrado a mano** de paneles y chapas finas

Sin cuerpo de separación

- Aumenta la estabilidad durante el taladrado y se consigue un **agujero de calidad superior**



	HSS-E	HSS-E	HSS	HSS			
	DIN 338	DORMER	DIN 1897	DIN 1897			
	6XD	1XD	1.25XD	1.5XD			
	130°		120°	120°			
		Bronze	ST	ST			
	VA	N	N	N			
	A147	A723	A119	A123	A087	A089	A188
	0.30 - 15.0	6.00 - 8.00	3.30 - 5.10	3/32 - 1/4	Set	Set	Set
	NEW	NEW	NEW	NEW	NEW	NEW	NEW
AMG							ISO
1.1	●35I	■35D	■35C	■35E			P1
1.2	●30I	■30D	■27C	■30E			P1
1.3	●25G	●25C	●23C	■27C			P2
1.4	●20F	●20C	●20C	●21C			P3
1.5	●13E		●8C	●14C			P4
1.6	●9D		●7A	●10B			H1
1.7							H3
1.8							H4
2.1	■15E		●15A	●16C			M1
2.2	■9G		●7C	●9D			M3
2.3	■10D		●10A	●10B			M2
2.4	●7B						S2
3.1	●30H						K1
3.2	●24F						K2
3.3	●20E						K3
3.4	●14E						K4
4.1	■25G		●27A	●27C			S1
4.2	■16E		●12A	●12B			S2
4.3	●7B		●7A	●7A			S3
5.1	■12G		●9A	●13D			S1
5.2	●7G		●4C	●8C			S2
5.3	●6E		●3C	●4A			S3
6.1	●33G		●27A	■27D			N3
6.2	●35I		●33C	■33E			N4
6.3	●31H		●27C	■27D			N3
6.4	●16G		●16C	■16D			N4
7.1	●33J		●33C	■33E			N1
7.2	●30I		●30C	■30E			N1
7.3	●27H		●30C	●30D			N1
7.4	●24F		●25C	●25D			N2
8.1	●30J		●30I	●30F			O
8.2	●28H		●35C	●35E			O
8.3	●14F			●17D			O
9.1	●3B			●12A			H
10.1							O

 Fn	HSS		HSS-E							
	Ø(D)	1mm	2mm	3mm	4mm	5mm	6mm	8mm	10mm	12mm
A	0.012	0.023	0.029	0.032	0.036	0.042	0.054	0.062	0.069	0.082
B	0.014	0.028	0.037	0.041	0.046	0.053	0.067	0.080	0.090	0.103
C	0.015	0.032	0.044	0.050	0.056	0.064	0.080	0.098	0.110	0.125
D	0.016	0.038	0.053	0.060	0.068	0.078	0.098	0.119	0.130	0.149
E	0.017	0.043	0.062	0.071	0.080	0.092	0.115	0.140	0.150	0.173
F	0.018	0.050	0.073	0.084	0.095	0.109	0.138	0.165	0.178	0.202
G	0.019	0.056	0.084	0.096	0.109	0.126	0.160	0.190	0.205	0.231
H	0.020	0.066	0.102	0.116	0.130	0.150	0.190	0.228	0.243	0.271
I	0.021	0.076	0.119	0.134	0.150	0.173	0.220	0.265	0.280	0.310
J	0.024	0.084	0.135	0.152	0.170	0.197	0.250	0.298	0.315	0.349

$$n = \frac{Vc \times 1000}{\pi \times D}$$

$$Vf = n \times fn$$

A147 • Broca , serie corta

A147	▪	2.1	2.2	2.3	4.1	4.2	5.1														
	•	1.1	1.2	1.3	1.4	1.5	1.6	2.4	3.1	3.2	3.3	3.4	4.3	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2
		7.3	7.4	8.1	8.2	8.3	9.1														

A147 **HSS-E** **DIN 338** **6XD** **130°** **VA**



d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A147
	0.30	0.0118	3	19	A147.3
	0.40	0.0157	5	20	A147.4
	0.50	0.0197	6	22	A147.5
	0.60	0.0236	7	24	A147.6
	0.70	0.0276	9	28	A147.7
	0.80	0.0315	10	30	A147.8
	0.90	0.0354	11	32	A147.9
	1.00	0.0394	12	34	A1471.0
	1.10	0.0433	14	36	A1471.1
	1.20	0.0472	16	38	A1471.2
	1.30	0.0512	16	38	A1471.3
	1.40	0.0551	18	40	A1471.4
	1.50	0.0591	18	40	A1471.5
1/16	1.59	0.0626	20	43	A1471/16
	1.60	0.0630	20	43	A1471.6
	1.70	0.0669	20	43	A1471.7
	1.80	0.0709	22	46	A1471.8
	1.90	0.0748	22	46	A1471.9
	2.00	0.0787	24	49	A1472.0
	2.10	0.0827	24	49	A1472.1
	2.20	0.0866	27	53	A1472.2
	2.30	0.0906	27	53	A1472.3
3/32	2.38	0.0937	30	57	A1473/32
	2.40	0.0945	30	57	A1472.4
	2.50	0.0984	30	57	A1472.5
	2.60	0.1024	30	57	A1472.6
	2.70	0.1063	33	61	A1472.7
	2.80	0.1102	33	61	A1472.8
	2.90	0.1142	33	61	A1472.9
	3.00	0.1181	33	61	A1473.0
	3.10	0.1220	36	65	A1473.1
	3.18	0.1252	36	65	A1471/8
	3.20	0.1260	36	65	A1473.2
	3.30	0.1299	36	65	A1473.3
	3.40	0.1339	39	70	A1473.4
	3.50	0.1378	39	70	A1473.5
	3.60	0.1417	39	70	A1473.6
	3.70	0.1457	39	70	A1473.7

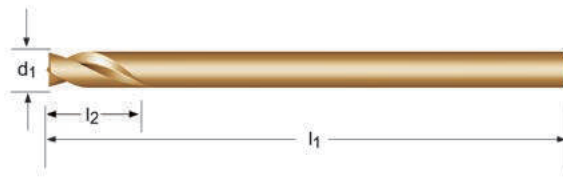
d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A147
	3.80	0.1496	43	75	A1473.8
	3.90	0.1535	43	75	A1473.9
5/32	3.97	0.1563	43	75	A1475/32
	4.00	0.1575	43	75	A1474.0
	4.10	0.1614	43	75	A1474.1
	4.20	0.1654	43	75	A1474.2
	4.30	0.1693	47	80	A1474.3
	4.40	0.1732	47	80	A1474.4
	4.50	0.1772	47	80	A1474.5
	4.60	0.1811	47	80	A1474.6
	4.70	0.1850	47	80	A1474.7
3/16	4.76	0.1874	52	86	A1473/16
	4.80	0.1890	52	86	A1474.8
	4.90	0.1929	52	86	A1474.9
	5.00	0.1969	52	86	A1475.0
	5.10	0.2008	52	86	A1475.1
	5.20	0.2047	52	86	A1475.2
	5.30	0.2087	52	86	A1475.3
	5.40	0.2126	57	93	A1475.4
	5.50	0.2165	57	93	A1475.5
	5.60	0.2205	57	93	A1475.6
	5.70	0.2244	57	93	A1475.7
	5.80	0.2283	57	93	A1475.8
	5.90	0.2323	57	93	A1475.9
	6.00	0.2362	57	93	A1476.0
	6.10	0.2402	63	101	A1476.1
	6.20	0.2441	63	101	A1476.2
	6.30	0.2480	63	101	A1476.3
	6.35	0.2500	63	101	A1471/4
	6.40	0.2520	63	101	A1476.4
	6.50	0.2559	63	101	A1476.5
	6.60	0.2598	63	101	A1476.6
	6.70	0.2638	63	101	A1476.7
	6.80	0.2677	69	109	A1476.8
	6.90	0.2717	69	109	A1476.9
	7.00	0.2756	69	109	A1477.0
	7.10	0.2795	69	109	A1477.1
	7.20	0.2835	69	109	A1477.2
	7.30	0.2874	69	109	A1477.3
	7.40	0.2913	69	109	A1477.4
	7.50	0.2953	69	109	A1477.5
	7.60	0.2992	75	117	A1477.6
	7.70	0.3031	75	117	A1477.7
	7.80	0.3071	75	117	A1477.8
	7.90	0.3110	75	117	A1477.9
	8.00	0.3150	75	117	A1478.0
	8.10	0.3189	75	117	A1478.1
	8.20	0.3228	75	117	A1478.2
	8.30	0.3268	75	117	A1478.3
	8.40	0.3307	75	117	A1478.4
	8.50	0.3346	75	117	A1478.5
	8.60	0.3386	81	125	A1478.6
	8.70	0.3425	81	125	A1478.7
	8.80	0.3465	81	125	A1478.8
	8.90	0.3504	81	125	A1478.9
	9.00	0.3543	81	125	A1479.0
	9.10	0.3583	81	125	A1479.1
	9.20	0.3622	81	125	A1479.2
	9.30	0.3661	81	125	A1479.3
	9.40	0.3701	81	125	A1479.4
	9.50	0.3740	81	125	A1479.5
	9.60	0.3780	87	133	A1479.6
	9.70	0.3819	87	133	A1479.7
	9.80	0.3858	87	133	A1479.8
	9.90	0.3898	87	133	A1479.9
	10.00	0.3937	87	133	A14710.0
	10.20	0.4016	87	133	A14710.2
	10.50	0.4134	87	133	A14710.5

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A147
	11.00	0.4331	94	142	A14711.0
	11.20	0.4409	94	142	A14711.2
	11.50	0.4528	94	142	A14711.5
	12.00	0.4724	101	151	A14712.0
	12.50	0.4921	101	151	A14712.5
	13.00	0.5118	101	151	A14713.0
	13.50	0.5315	108	160	A14713.5
	14.00	0.5512	108	160	A14714.0
	14.50	0.5709	114	169	A14714.5
	15.00	0.5906	114	169	A14715.0

A723 • Broca Para Soldaduras

A723 ■ 1.1 1.2
 • 1.3 1.4

A723 HSS-E DORMER 1XD Bronze N



A723



6.00 - 8.00

d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A723
6.00	0.2362	18	66	A7236.0X66
6.00	0.2362	18	93	A7236.0X93
8.00	0.3150	24	79	A7238.0X79
8.00	0.3150	24	117	

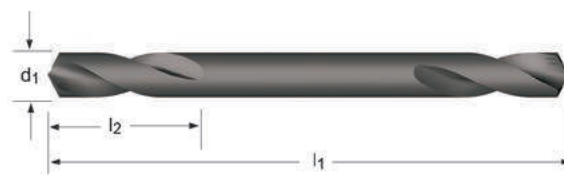
A119 • Broca extra corta - Doble punta

Broca Para Planchas

A119	▪	1.1	1.2																			
		•	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2																		

A119

- HSS
- DIN 1897
- 1.25XD
- 120°
- ST
-
- N
-



d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A119
3.30	0.1299	11	49	A1193.3
3.60	0.1417	12	52	A1193.6
4.10	0.1614	14	55	A1194.1
4.20	0.1654	14	55	A1194.2
4.90	0.1929	17	62	A1194.9
5.10	0.2008	17	62	A1195.1

A123 • Broca extra corta

Longitud Total DIN1897 y Broca Para Planchas

A123	▪	1.1	1.2	1.3	6.1	6.2	6.3	6.4	7.1	7.2									
	•	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	7.3	7.4	8.1	8.2	8.3	9.1

A123

HSS

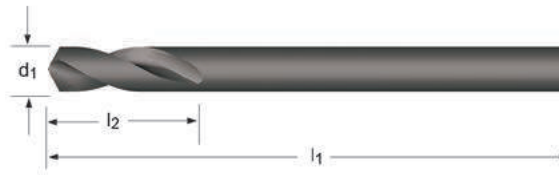
DIN
1897

1.5XD

120°

ST

N



d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A123
3/32	2.38	0.0937	14	43	A1233/32S
	2.50	0.0984	14	43	A1232.5S
1/8	3.00	0.1181	16	46	A1233.0S
	3.18	0.1252	18	49	A1231/8S
	3.20	0.1260	18	49	A1233.2S
	3.30	0.1299	18	49	A1233.3S
	3.50	0.1378	18	52	A1233.5S
	3.70	0.1457	18	52	A1233.7S
5/32	3.97	0.1563	18	55	A1235/32S
	4.00	0.1575	18	55	A1234.0S
	4.10	0.1614	18	55	A1234.1S
	4.20	0.1654	18	55	A1234.2S
	4.50	0.1772	18	58	A1234.5S
3/16	4.76	0.1874	18	62	A1233/16S
	4.80	0.1890	18	62	A1234.8S
	4.90	0.1929	18	62	A1234.9S
	5.00	0.1969	18	62	A1235.0S
	5.50	0.2165	18	66	A1235.5S
7/32	5.56	0.2189	18	66	A1237/32S
	6.00	0.2362	18	66	A1236.0S
1/4	6.35	0.2500	19	70	A1231/4S

A087 • Juego de Brocas Compacto

A=Tipos en el juego, B=No. en el Juego, C=Diámetros en el Juego

Brocas con revestimiento de A002 TiN para tareas generales de taladrado en una amplia gama de materiales.



Nr.	A	B	C	A087
201	A002	19	1.0 mm - 10.0 mm x 0.5 mm	A087201

A089 • Juego de Brocas, serie corta

A=Tipos en el juego, B=No. en el Juego, C=Diámetros en el Juego

Brocas con revestimiento de A002 TiN para tareas generales de taladrado en una amplia gama de materiales.



Nr.	A	B	C	A089
10	A002	5	A0024.0, A0025.0, A0026.0, A0028.0, A00210.0	A08910

A188 • Juego de Brocas, serie corta

A=Tipos en el juego, B=No. en el Juego, C=Diámetros en el Juego

Brocas con hélice rápida
A108 HSS para acero
inoxidable



Nr.	A	B	C	A188
201	A108	19	1.0 mm - 10.0 mm x 0.5 mm	A188201
204	A108	25	1.0 mm - 13.0 mm x 0.5 mm	A188204

SIMPLY RELIABLE

Como profesional se puede juzgar la calidad del trabajo sólo mirando la viruta. La viruta es una forma limpia y sin complicaciones, que en sí misma cuenta una historia. Es una señal clara y consistente y es por eso que la usamos como un símbolo por ser **simplemente fiables**.

Argentina

T: 54 (11) 6777-6777
F: 54 (11) 4441-4467
info.ar@dormerpramet.com

Australia

T: 1300 131 274
F: 1300 809 510
info.au@dormerpramet.com

Austria

T: +31 10 2080 240
F: +31 10 2080 282
info.at@dormerpramet.com

Belgium & Luxembourg

T: +32 3 440 59 01
F: +32 3 449 15 43
info.be@dormerpramet.com

Brazil

T: +55 11 5660 3000
F: +55 11 5667 5883
info.br@dormerpramet.com

Canada

T: (888) 336 7637
En Français: (888) 368 8457
F: (905) 542 7000
cs.canada@dormerpramet.com

China

T: +86 21 2416 0508
F: +86 21 5442 6315
info.cn@dormerpramet.com

Croatia

T: +385 98 407 489
info.hr@dormerpramet.com

Czech Republic

T: +420 583 381 111
F: +420 583 215 401
info.cz@dormerpramet.com

Denmark

T: 808 82106
F: +46 35 16 52 90
info.se@dormerpramet.com

Finland

T: 0205 44 7003
F: 0205 44 7004
info.fi@dormerpramet.com

France

T: +33 (0)2 47 62 57 01
F: +33 (0)2 47 62 52 00
info.fr@dormerpramet.com

Germany

T: +49 9131 933 08 70
F: +49 9131 933 08 742
info.de@dormerpramet.com

Hungary

T: +36-96 / 522-846
F: +36-96 / 522-847
info.hu@dormerpramet.com

India

T: +91 11 4601 5686
info.in@dormerpramet.com

Italy

solid tools:
T: +39 02 38 04 51
F: +39 02 38 04 52 43
indexable tools:
T: +39 0523 55 19 11
F: +39 0523 55 18 00
info.it@dormerpramet.com

Kazakhstan

T: +7 771 305 11 45
info.kz@dormerpramet.com

Mexico

T: +52 (555) 7293981
F: +52 (555) 7293981
cs.mexico@dormerpramet.com

Netherlands

T: +31 10 2080 240
F: +31 10 2080 282
info.nl@dormerpramet.com

New Zealand

T: +64 9 2735858
F: +64 9 2735857
info.int@dormerpramet.com

Norway

T: 800 10 113
F: +46 35 16 52 90
info.se@dormerpramet.com

Poland

T: +48 32 78-15-890
F: +48 32 78-60-406
info.pl@dormerpramet.com

Romania

T: +4(0)730 015 885
info.ro@dormerpramet.com

Russia

T: +7 495 775 10 28
F: +7 (499) 763 38 90
info.ru@dormerpramet.com

Slovakia

T: +421 (41) 764 54 60
F: +421 (41) 763 74 49
info.sk@dormerpramet.com

Spain

T: +34 935717722
F: +34 935717765
info.es@dormerpramet.com

Portugal

T: +351 21 424 54 21
F: +351 21 424 54 25
info.pt@dormerpramet.com

Slovenia

T: +385 98 407 489
info.si@dormerpramet.com

Sweden

responsible for Iceland
T: +46 35 16 52 96
F: +46 35 16 52 90
info.se@dormerpramet.com

Switzerland

T: +31 10 2080 240
F: +31 10 2080 282
info.ch@dormerpramet.com

Turkey

T: +90 533 212 45 47
info.tr@dormerpramet.com

Ukraine

T: +38 056 376 51 19
F: +38 056 376 51 20
info.ua@dormerpramet.com

United Kingdom

responsible for Ireland
T: 0870 850 4466
F: 0870 850 8866
info.uk@dormerpramet.com

United States of America

T: (800) 877-3745
F: (847) 783-5760
cs@dormerpramet.com

Other countries

South America

T: +55 11 5660 3000
F: +55 11 5667 5883
info.br@dormerpramet.com

Central and Eastern Europe

T: +420 583 381 529
F: +420 583 381 401
info.rcee@dormerpramet.com

Rest of the World

Dormer Pramet International UK
T: +44 1246 571338
F: +44 1246 571339
info.int@dormerpramet.com

Dormer Pramet International CZ

T: +420 583 381 520
F: +420 583 215 401
info.int.cz@dormerpramet.com



Solid Carbide End Mills








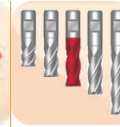
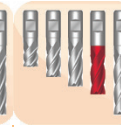
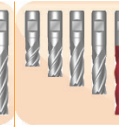
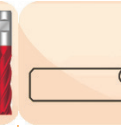


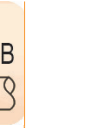


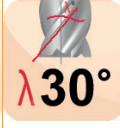

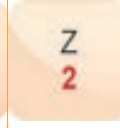
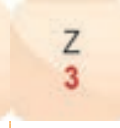
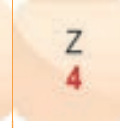
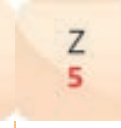



List Number Index - End Mills

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Icon Key

HM 										DIN 6535HA 	DIN 6535HB 
Carbide	Roughing	Slotting	Ball nose	Slotting, Ramping, Plunging	Slotting, Ramping	Medium cut length	Long cut length	Extra long cut length	Straight shank	Din 6535HA	Din 6535HB Weldon shank
											
Unequal helix	37° helix angle	30° helix angle	45° helix angle	2-flute	3-flute	4-flute	5-flute	Bright finish	Aluminum Titanium Nitride	Zirconium	

SOLID CARBIDE END MILLS

INTRODUCTION

Dormer Pramet's new range of Solid Carbide End Mills represent a new direction in our branding of end mills products all under the Dormer brand name. These solid carbide end mills are suited for the most common milling operations such as slotting, plunging, side and face milling, as well as ramping and copy milling in a wide range of materials.

FEATURES AND BENEFITS

- Consistent performance and repeatability in multiple material applications across a diverse array of machines and conditions.
- This solid carbide end mill family offers ranges of uncoated and coated end mills with options for square end, ball nosed, and radius corners as well as various length options.
- The designs of these products enable them to deliver high quality and performance at an exceptional value. Some styles are specifically designed as material or application specific products. See AMG tables for running parameters in the different materials.

TOOL MATERIAL

Premium micrograin carbide provides an excellent combination of hardness and toughness, resulting in high wear resistance and long consistent tool life.

COATINGS

- A Zirconium Nitride (ZrN) coating on some products offer improved performance in milling aluminum (including high silica aluminum).
- Multi-layer Aluminum Titanium Nitride (AlTiN) coating on some products offer improved cutting edge stability, outstanding wear protection, higher hot hardness and increased tool life.

SHANKS

High precision (h6) shanks are offered as standard on most cutters. Cylindrical shanks are made to DIN 6535 HA but on some of the variable helix designs a Weldon shank design is used. These are made to DIN 6535 HB.

GEOMETRY

- New 2-flute aluminum cutters introduced offer excellent performance in aluminum, aluminum alloys and other non-ferrous materials. This geometry when coupled with the ZrN coating promotes excellent chip evacuation, improves material removal rates and improves surface finishes.
- New variable helix design cutters introduced with radius corners offer increased stability and lower harmonics during the milling process. This reduces the possibility of vibrations and lowers the risk of chipping at the cutting edges or corners. Increased stability also allows these cutters to be used in a wide variety of materials and applications where conventional type cutters do not perform as well.

Visual Index - End Mills

# of Flutes	Type of Cut	Depth/Width of Cut	Alpha Code	Feed Per Tooth (Ft) Dia Inches												
				1/8	5/32	3/16	1/4	5/16	13/32	1/2	9/16	5/8	11/16	3/4	1"	
>4		↓ 1,5 ↔ 0,05	A				0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002		
			B				0.002	0.002	0.002	0.003	0.003	0.004	0.004	0.004		
			C				0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.007		
3-4		↓ 1,5 ↔ 0,1	A	0.001	0.001	0.002	0.002	0.002	0.002	0.003	0.003	0.004	0.004	0.005		
			B	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.007		
			C	0.001	0.002	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.008	0.009		
3-4		↓ 1 ↔ 0,5	A	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002		
			B	0.003	0.000	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.004		
			C	0.000	0.001	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.005		
2-3		↓ 0,5 ↔ 1	A	0.000	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.003		
			B	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.004		
			C	0.001	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.005	0.005		
3-4		↓ 0,5 ↔ 1	B				0.001	0.002	0.003	0.003	0.003	0.004	0.004	0.004		
2 & 4		↓ 0,1 - 0,5mm ↔ 0,1 - 0,5mm	A													
			B	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003				
			C	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.004				
4-5		↓ 0,01 - 0,1 ↔ ≤ 1	A	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.004	
			B	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.004	0.004	0.005	
			C	0.001	0.001	0.001	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.007	0.01	

How To Use This Chart to Find Cutting

Feed Rate (IPR):

1. Find your Alpha Code on the AMG Chart (example: 279U : U is the Alpha Code).
2. Find the closest diameter for your cutting application on the chart.
3. Select the type of cut and # of flutes to find your Ft Range.

Application Material Groups (AMG)			Hardness HRC	ISO
1. Steel	1.1 Magnetic soft steel	12L14, 12L15	<120 HB	P 1
	1.2 Structural Steel/ case carburising steel	1005-1025, 1214, 1215, A36	<200 HB	P 1
	1.3 Plain Carbon steel	1030-1060, 1050-1060, 1144-1146	<24	P 2
	1.4 Alloy steel	4140,4340,52100,8620 H11-H41,A2,D2,01,P20,420	<24	P 3
	1.5 Alloy steel/ Hardened and tempered steel	4140,4340,52100,8620 H11-H41,A2,D2,01,P20,420	>24<38	P 4
	1.6 Alloy steel/ Hardened and tempered steel	4140,4340,52100,8620 H11-H41,A2,D2,01,P20,420	>38	H 1
	1.7 Alloy steel Hardened	A2-D2, H10-H41, L1-L6, M1-M42, T1	49-55	H 3
	1.8 Alloy steel Hardened	A2-D2, H10-H41, L1-L6, M1-M42, T1	55-63	H 4
2. Stainless Steel	2.1 Free machining Stainless Steel	200, 303, 416, 420F, 430F, 440	<24	M 1
	2.2 Austenitic	301, 302, 304, 316, 321, 330, CUSTOM 455, AM-350	<24	M 3
	2.3 Ferritic + Austenitic, Martensitic	318-329, 400-446, DUPLEX	<32	M 2
	2.4 Precipitation Hardened	15-5PH, Custom 450 17-4PH	<32	S 2
3. Cast Iron	3.1 Lamellar graphite	Grey, G10, Gg40, J431C, A48 CLASS 20	<150 HB	K 1
	3.2 Lamellar graphite	Grey, GG25-Gg40, J158, A48 CLASS 40-60	>150 HB<32	K 2
	3.3 Nodular graphite/ Malleable Cast Iron	A220, A436, A439, A602, Black, GGG40-GGG70	<200 HB	K 3
	3.4 Nodular graphite/ Malleable Cast Iron	Black Gts/Gtw, J434C	>200 HB<32	K 4
4. Titanium	4.1 Titanium, unalloyed	Commercially Pure	<200 HB	S 1
	4.2 Titanium, alloyed	6Al4V, 6Al4V-2Sn, Monel, Monel K	<28	S 2
	4.3 Titanium, alloyed	6Al4V-4Mo, 7Al4V-4Mo, 4911-4967	>28<38	S 3
5. Nickel	5.1 Nickel, unalloyed	Commercially Pure, 17644, 200, 5553	<150 HB	S 1
	5.2 Nickel, alloyed	Monel 400, Hastelloy C, Inconel 625, Waspaloy	<28	S 2
	5.3 Nickel, alloyed	Inconel 718, Nimonic 75-95, Rene 41, Inconel 825, A286	>28<38	S 3
6. Copper	6.1 Copper	Commercially Pure	<100 HB	N 3
	6.2 β-Brass, Bronze	314-340, 350-370	<200 HB	N 4
	6.3 α-Brass	Alloyed Cu + Al + Fe, Long Chipping	<200 HB	N 3
	6.4 High Strength Bronze	Ampco 18-25	<49	N 4
7. Aluminium Magnesium	7.1 Al, Mg, unalloyed	Commercially Pure	<100 HB	N 1
	7.2 Al alloyed, Si<0.5%	6061 T6, 7075, 314-340	<150 HB	N 1
	7.3 Al alloyed, Si>0.5%<10%	6061 T6, 380-390	<120 HB	N 1
	7.4 Al alloyed, Si>10% Mg alloys	Magnesium Whisker Reinforced	<120 HB	N 2
8. Synthetic Materials	8.1 Thermoplastics	Ultradid, Polystrol	---	O
	8.2 Thermosetting plastics	Bakelit, Pertinax	---	O
	8.3 Reinforced plastic materials	CFK, GFKAFK	---	O
9. Hard Mat.	9.1 Cermets (Metal-ceramics)	Ferrotic	<54	H
10. Graphite	10.1 Standard graphite		---	O

Visual Index - End Mills

Tool Material:	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
Application:																
Number of Flutes:	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2
Cut Length:																
Helix:	λ 45°	λ 45°	λ 37°	λ 30°	λ 30°	λ 30°	λ 30°	λ 30°	λ 30°	λ 30°	λ 30°	λ 30°	λ 30°	λ 30°	λ 30°	λ 30°
Shank:																
Finish/Coating:		ZrN	ZrN			AlTiN				AlTiN		AlTiN		AlTiN		
Direction:																
Style:	S106	S206	S207	S116	S108	S208	S109	S110	S111	S211	S112	S212	S113	S213	S114	S115
Range:	1/4 - 1.0"	1/4 - 1.0"	1/8 - 1.0"	1/8 - 1/2	1/16 - 1"	1/16 - 5/8	2.00 - 25.00	1/8 - 1/2	1/8 - 1/2	1/8 - 1/2	1/16 - 1/2	1/16 - 1/2	2.00 - 20.00	3.00 - 12.00	1/8 - 5/8	1/8 - 1/2

Page #	8	8	9	10	11	11	12	13	14	14	15	15	16	16	17	18
370				289B	289B	400B	289B	269B	249B	361B	289B	400B	289B	400B	269B	249B
1.2				223B	223B	298B	223B	212B	200B	269B	223B	298B	223B	298B	212B	200B
1.3				223B	223B	298B	223B	212B	200B	269B	223B	298B	223B	298B	212B	200B
1.4				180B	180B	259B	180B	171B	161B	239B	180B	259B	180B	259B	170B	161B
1.5				161B	161B	230B	161B	152B	144B	200B	161B	230B	161B	230B	152B	144B
1.6				148B	148B	200B	148B	140B	131B	180B	148B	200B	148B	200B	140B	131B
1.7																
1.8																
2.1				200A	200A	325A	200A	190A	180A	298A	200A	325A	200A	325A	190A	180A
2.2				141A	141A	223A	141A	125A	108A	180A	141A	223A	141A	223A	125A	108A
2.3				108A	108A	174A	108A	103A	98A	171A	108A	174A	108A	174A	103A	98A
2.4				89A	89A	131A	89A	78A	66A	131A	89A	131A	89A	131A	78A	82A
3.1				374B	374B	551B	374B	336A	298B	499B	374B	551B	374B	551B	336A	298B
3.2				318B	318B	525B	318B	284B	249B	400B	318B	525B	318B	525B	284B	249B
3.3				318B	318B	525B	318B	284B	249B	400B	318B	525B	318B	525B	284B	249B
3.4				249B	249B	374B	249B	225B	200B	341B	249B	374B	249B	374B	225B	200B
4.1						230B				200B		230B		230B		
4.2						200B				180B		200B		200B		
4.3						190B				174B		190B		190B		
5.1						230B				200B		230B		230B		148B
5.2						161A				141A		161A		161A		
5.3						98A				85A		98A		98A		
6.1			900C	649C	649C		649C	617C	584C		649C		649C		617C	584C
6.2			750C	499C	499C		499C	474C	449C		499C		499C		474C	449C
6.3			530C	499C	499C		499C	474C	449C		499C		499C		474C	449C
6.4			140C	125B	125B		125B	117B	108B		125B		125B		117B	108B
7.1	2100C	2100C	1850C	1499C	1499C		1499C	1424C	1348C		1499C		1499C		1424C	1348C
7.2	2100C	2100C	1560C	1499C	1499C		1499C	1424C	1348C		1499C		1499C		1424C	1348C
7.3	1750C	1750C	750C	649C	649C		649C	617C	584C		649C		649C		617C	584C
7.4	915C	915C	500C	400B	400B		400B	380B	361B		400B		400B		380B	361B
8.1	1325C	1325C	1325C													
8.2	600C	600C	600C													
8.3			328C													
9.1																
10.1																

Visual Index - End Mills

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	
	Z 2	Z 3	Z 3	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4
	S215	S121	S221	S129	S134	S234	S135	S235	S136	S236	S137	S237	S138	S238	S139	S239	S146
	1/8 - 1/2	1/16 - 1/2	1/16 - 1/2	1/8 - 1/2	1/16 - 1"	1/16 - 1"	2.00 - 25.00	2.00 - 20.00	1/8 - 3/4	1/8 - 3/4	1/8 - 1"	1/8 - 1"	1/16 - 3/4	1/16 - 3/4	2.00 - 12.00	2.00 - 12.00	1/4 - 5/8
	18	19	19	20	21	21	22	22	23	23	24	24	25	25	26	26	27
1.1	361B	289B	400B	361B	361B	499B	361B	499B	343B	474B	325B	449B	361B	499B	361B	499B	343B
1.2	269B	223B	298B	325B	325B	449B	325B	449B	312B	425B	298B	400B	325B	449B	325B	449B	312B
1.3	269B	223B	298B	325B	325B	449B	325B	449B	312B	425B	298B	400B	325B	449B	325B	449B	312B
1.4	239B	180B	259B	298B	298B	423B	298B	423B	287B	406B	276B	390B	298B	423B	298B	423B	287B
1.5	200B	161B	230B	249B	249B	400B	249B	400B	238B	380B	226B	361B	249B	400B	249B	400B	238B
1.6	180B	148B	200B	230B	230B	328B	230B	328B	205B	313B	180B	298B	230B	328B	230B	328B	205B
1.7																	
1.8																	
2.1	298A	200A	325A	239A	239A	351A	239A	351A	220A	338A	200A	325A	239A	351A	239A	351A	220A
2.2	180A	141A	223A	171A	171A	276A	171A	276A	156A	251A	141A	226A	171A	276A	171A	276A	156A
2.3	171A	108A	174A	131A	131A	200A	131A	200A	123A	182A	115A	164A	131A	200A	131A	200A	123A
2.4	89A			105A	105A	164A	105A	164A	97A	140A	89A	115A	98A	148A	98A	148A	
3.1	499B	374B	551B	449B	449B	699B	449B	699B	405B	650B	361B	600B	449B	699B	449B	699B	405B
3.2	400B	318B	525B	377B	377B	649B	377B	649B	338B	578B	298B	508B	377B	649B	377B	649B	338B
3.3	400B	318B	525B	377B	377B	649B	377B	649B	338B	578B	298B	508B	377B	649B	377B	649B	338B
3.4	341B	249B	374B	279B	279B	430B	279B	430B	254B	415B	230B	400B	279B	430B	279B	430B	255B
4.1	200B		230B			259B		259B		245B		230B		259B		259B	
4.2	180B		200B			230B		230B		220B		210B		230B		230B	
4.3	174B		190B			200B		200B		190B		180B		200B		200B	
5.1	200B		230B			266B		266B		251B		236B		266B		266B	
5.2	141A		161A			200A		200A		190A		180A		200A		200A	
5.3	85A		98A			131A		131A		123A		115A		131A		131A	
6.1		649C		679C	679C		679C		646C		613C		679C		679C		646C
6.2		499C		574C	574C		574C		546C		518C		574C		574C		602C
6.3		499C		574C	574C		574C		546C		518C		574C		574C		546C
6.4		125B		144B	144B		144B		138B		131B		144B		144B		137B
7.1		1499C		1601C	1601C		1601C		1525C		1450C		1601C		1601C		1526C
7.2		1499C		1601C	1601C		1601C		1525C		1450C		1601C		1601C		1526C
7.3		649C		708C	708C		708C		674C		640C		708C		708C		674C
7.4		400B		479B	479B		479B		455B		430B		479B		479B		455B
8.1																	
8.2																	
8.3																	
9.1																	
10.1																	

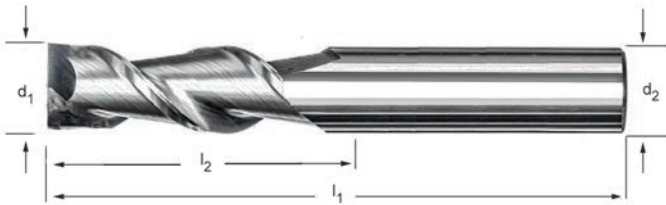
Visual Index - End Mills

	HM	HM	HM	HM	HM	HM	HM
	Z 4	Z 4	Z 4	Z 4	Z 4	Z 5	Z 5
	λ 30°	λ 30°	λ 30°	λ *	λ *	λ *	λ *
				DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HB

Regular length, Square End, 45° Helix

S106 Double gullet flute design allows for fast, efficient evacuation of chips in soft and non-ferrous materials

S206 Zirconium coating increases surface hardness, improves chip evacuation and tool life allowing for higher removal rates in soft and non-ferrous materials



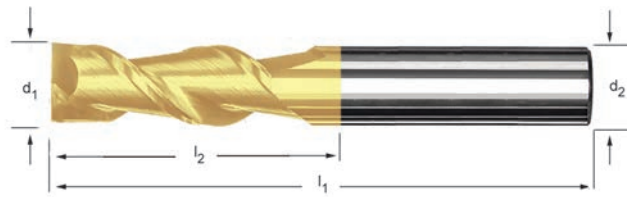
d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S106	S206
1/4	0.2500	1/4	1	2-1/2	2	1	7648490	7648497
5/16	0.3125	5/16	1	3	2	1	7648491	7648498
3/8	0.3750	3/8	1	2-1/2	2	1	7648492	7648499
1/2	0.5000	1/2	1-1/4	3	2	1	7648493	7648500
5/8	0.6250	5/8	1-5/8	3-1/2	2	1	7648494	7648501
3/4	0.7500	3/4	1-3/4	4	2	1	7648495	7648502
1	1.0000	1	1-1/2	4	2	1	7648496	7648503

Solid Carbide 2 Flute End Mill



Regular Length, Square End, 37° Helix

S207 Unique flute design along with the Zirconium coating allow for faster speeds and feeds in soft and non-ferrous materials



S207

HM

ZrN

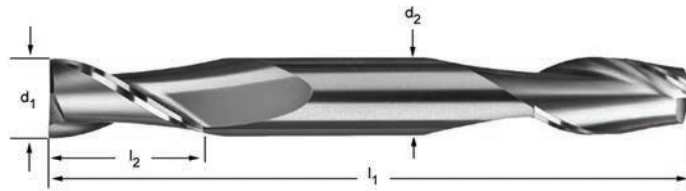
Z
2

1/8 - 1"

d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S207
1/8	0.1250	1/8	1/2	1-1/2	2	1	7648504
1/8	0.1250	1/8	3/4	2"	2	1	7648505
5/32	0.1563	5/32	9/16	2"	2	1	7648506
3/16	0.1875	3/16	3/4	2"	2	1	7648507
3/16	0.1875	3/16	1-1/8	3"	2	1	7648508
1/4	0.2500	1/4	1"	2-1/2	2	1	7648509
1/4	0.2500	1/4	1-1/2	4"	2	1	7648510
5/16	0.3125	5/16	3/4	2-1/2	2	1	7648511
5/16	0.3125	5/16	1-5/8	4"	2	1	7648512
3/8	0.3750	3/8	1"	2-1/2	2	1	7648513
3/8	0.3750	3/8	2"	4"	2	1	7648514
7/16	0.4375	7/16	1"	2-1/2	2	1	7648515
7/16	0.4375	7/16	2"	4"	2	1	7648516
1/2	0.5000	1/2	1"	3"	2	1	7648517
1/2	0.5000	1/2	3"	6"	2	1	7648518
9/16	0.5625	9/16	1-1/4	3"	2	1	7648519
5/8	0.6250	5/8	1-5/8	3-1/2	2	1	7648520
5/8	0.6250	5/8	2-1/4	5"	2	1	7648521
3/4	0.7500	3/4	1-3/4	4"	2	1	7648522
3/4	0.7500	3/4	3"	6"	2	1	7648523
1"	1.0000	1"	1-1/2	4"	2	1	7648524
1"	1.0000	1"	4"	6"	2	1	7648525

Regular Length, Square End, Double End, 30° Helix

S116 Double end provides two cutting ends in one tool. Bright finish improves chip flow in soft and non-ferrous materials.



d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S116
1/8	0.1250	3/8	3/8	3"	2	1	7648650
5/32	0.1562	3/8	7/16	3"	2	1	7648651
3/16	0.1875	3/8	1/2	3"	2	1	7648652
1/4	0.2500	3/8	5/8	3"	2	1	7648653
5/16	0.3125	3/8	3/4	3.1/2	2	1	7648654
3/8	0.3750	3/8	3/4	3.1/2	2	1	7648655
1/2	0.5000	1/2	1"	4"	2	1	7648656

Solid Carbide 2 Flute End Mill



Regular Length, Square End, 30° Helix

S108 Bright finish improves chip flow in soft and non-ferrous materials.

S208 ALTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.



d_1 ∅ Inch	d_1 decimal Inch	d_2 ∅ Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S108	S208
1/16	0.0625	1/8	1/4	1.1/2	2	1	7648526	7648544
5/64	0.0781	1/8	1/4	1.1/2	2	1	7648527	7648545
3/32	0.0938	1/8	3/8	1.1/2	2	1	7648528	7648546
1/8	0.1250	1/8	1/2	1.1/2	2	1	7648529	7648547
9/64	0.1406	3/16	9/16	2"	2	1	7648530	—
5/32	0.1562	3/16	9/16	2"	2	1	7648531	7648548
11/64	0.1719	3/16	9/16	2"	2	1	7648532	—
3/16	0.1875	3/16	5/8	2"	2	1	7648533	7648549
7/32	0.2188	1/4	5/8	2.1/2	2	1	7648534	7648550
1/4	0.2500	1/4	3/4	2.1/2	2	1	7648535	7648551
5/16	0.3125	5/16	7/8	2.1/2	2	1	7648536	7648552
3/8	0.3750	3/8	7/8	2.1/2	2	1	7648537	7648553
7/16	0.4375	7/16	1"	2.1/2	2	1	7648538	7648554
1/2	0.5000	1/2	1"	3"	2	1	7648539	7648555
9/16	0.5625	9/16	1.1/4	3.1/2	2	1	7648540	7648556
5/8	0.6250	5/8	1.1/4	3.1/2	2	1	7648541	7648557
3/4	0.7500	3/4	1.1/2	4"	2	1	7648542	—
1"	1.0000	1"	1.1/2	4"	2	1	7648543	—

Regular Length, Square End, 30° Helix

S109 Bright finish improves chip flow in soft and non-ferrous materials.



S109

HM



Z
2



2.00 - 25.00

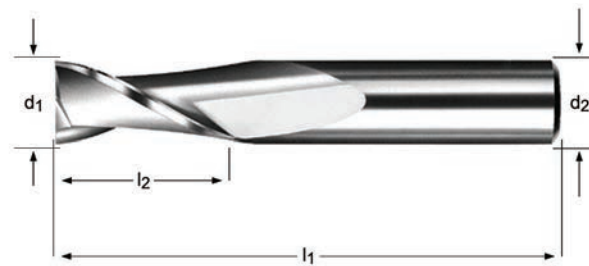
d_1 Ø mm	d_1 decimal Inch	d_2 Ø mm	l_2 mm	l_1 mm	# of Flutes	Pack Qty	S109
2.00	0.0787	3.0	6.0	38.0	2	1	7648558
2.50	0.0984	3.0	7.0	38.0	2	1	7648559
3.00	0.1181	3.0	12.0	38.0	2	1	7648560
4.00	0.1575	4.0	14.0	50.0	2	1	7648561
4.50	0.1772	5.0	14.0	50.0	2	1	7648562
5.00	0.1969	5.0	16.0	50.0	2	1	7648563
6.00	0.2362	6.0	19.0	63.0	2	1	7648564
7.00	0.2756	8.0	19.0	63.0	2	1	7648565
8.00	0.3150	8.0	20.0	63.0	2	1	7648566
9.00	0.3543	10.0	22.0	70.0	2	1	7648567
10.00	0.3937	10.0	22.0	70.0	2	1	7648568
11.00	0.4331	11.0	25.0	70.0	2	1	7648569
12.00	0.4724	12.0	25.0	75.0	2	1	7648570
14.00	0.5512	14.0	30.0	88.0	2	1	7648571
16.00	0.6299	16.0	32.0	88.0	2	1	7648572
20.00	0.7874	20.0	38.0	100.0	2	1	7648573
25.00	0.9843	25.0	38.0	100.0	2	1	7648574

Solid Carbide 2 Flute End Mill



Long Length, Square End, 30° Helix

S110 Bright finish improves chip flow in soft and non-ferrous materials.



S110

HM

Z
2

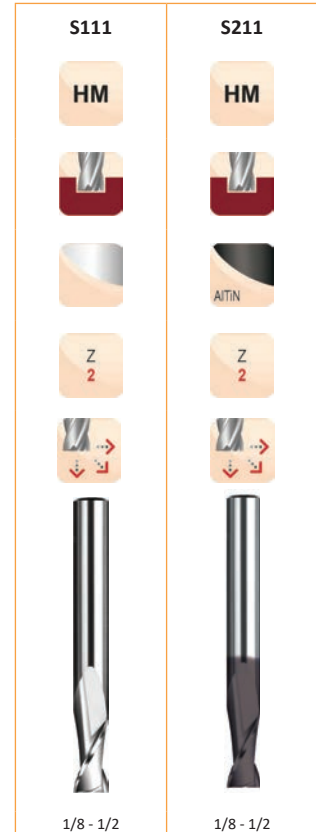
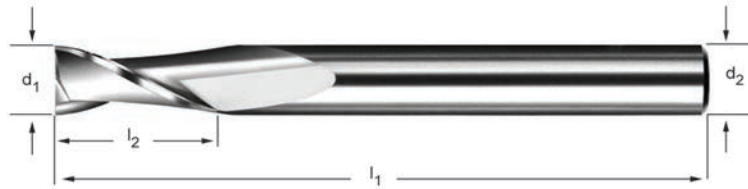
1/8 - 1/2

d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S110
1/8	0.1250	1/8	3/4	2"	2	1	7648575
3/16	0.1875	3/16	3/4	2.1/2	2	1	7648576
1/4	0.2500	1/4	1.1/8	3"	2	1	7648577
3/8	0.3750	3/8	1.1/8	3"	2	1	7648578
1/2	0.5000	1/2	2"	4"	2	1	7648579

Extra Long Length, Square End, 30° Helix

S111 Bright finish improves chip flow in soft and non-ferrous materials.

S211 ALTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.



d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S111	S211
1/8	0.1250	1/8	1"	3"	2	1	7648580	7648586
3/16	0.1875	3/16	1.1/8	3"	2	1	7648581	7648587
1/4	0.2500	1/4	1.1/2	4"	2	1	7648582	7648588
5/16	0.3125	5/16	1.5/8	4"	2	1	7648583	—
3/8	0.3750	3/8	1.3/4	4"	2	1	7648584	7648589
1/2	0.5000	1/2	3"	6"	2	1	7648585	7648590

Solid Carbide 2 Flute End Mill



Regular Length, Ball Nose, 30° Helix

S112 Ball nose for cutting internal part radius. Bright finish improves chip flow in soft or non-ferrous materials.

S212 Ball nose for cutting internal part radius. ALTiN coating increases surface hardness, improves chip flow and tool life, allowing higher metal removal rates.

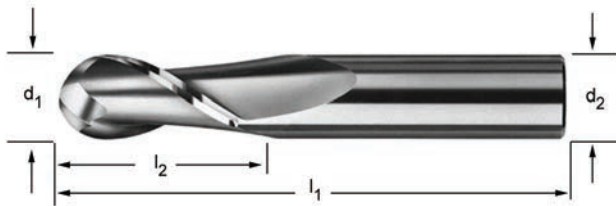


d_1 ∅ Inch	d_1 decimal Inch	d_2 ∅ Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S112	S212
1/16	0.0625	1/8	1/4	1.1/2	2	1	7648591	7648601
3/32	0.0938	1/8	3/8	1.1/2	2	1	7648592	—
1/8	0.1250	1/8	1/2	1.1/2	2	1	7648593	7648602
5/32	0.1562	3/16	9/16	2"	2	1	7648594	—
3/16	0.1875	3/16	5/8	2"	2	1	7648595	7648603
7/32	0.2188	1/4	5/8	2.1/2	2	1	7648596	7648604
1/4	0.2500	1/4	3/4	2.1/2	2	1	7648597	7648605
5/16	0.3125	5/16	7/8	2.1/2	2	1	7648598	7648606
3/8	0.3750	3/8	7/8	2.1/2	2	1	7648599	7648607
1/2	0.5000	1/2	1"	3"	2	1	7648600	7648608

Regular Length, Ball Nose, 30° Helix

S113 Ball nose for cutting internal part radius. Bright finish improves chip flow in soft or non-ferrous materials.

S213 Ball nose for cutting internal part radius. ALTiN coating increases surface hardness, improves chip flow and tool life, allowing higher metal removal rates.



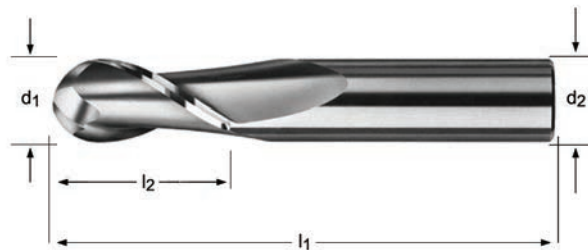
d_1 Ø mm	d_1 decimal Inch	d_2 Ø mm	l_2 mm	l_1 mm	# of Flutes	Pack Qty	S113	S213
2.00	0.0787	3.0	6.0	38.0	2	1	7648609	—
2.50	0.0984	3.0	6.0	38.0	2	1	7648610	—
3.00	0.1181	3.0	12.0	38.0	2	1	7648611	7648622
4.00	0.1575	4.0	14.0	50.0	2	1	7648612	7648623
5.00	0.1969	5.0	16.0	50.0	2	1	7648613	7648624
6.00	0.2362	6.0	19.0	63.0	2	1	7648614	7648625
7.00	0.2756	8.0	19.0	63.0	2	1	7648615	7648626
8.00	0.3150	8.0	19.0	63.0	2	1	7648616	7648627
9.00	0.3543	10.0	22.0	70.0	2	1	7648617	7648628
10.00	0.3937	10.0	22.0	70.0	2	1	7648618	7648629
12.00	0.4724	12.0	25.0	75.0	2	1	7648619	7648630
16.00	0.6299	16.0	32.0	88.0	2	1	7648620	—
20.00	0.7874	20.0	38.0	100.0	2	1	7648621	—

Solid Carbide 2 Flute End Mill



Long Length, Ball Nose, 30° Helix

S114 Ball nose for cutting internal part radius. Bright finish improves chip flow in soft or non-ferrous materials.



S114

HM




Z
2



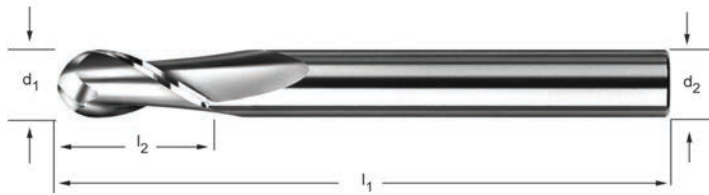

1/8 - 5/8

d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S114
1/8	0.1250	1/8	3/4	2"	2	1	7648631
3/16	0.1875	3/16	3/4	2.1/2	2	1	7648632
1/4	0.2500	1/4	1.1/8	3"	2	1	7648633
5/16	0.3125	5/16	1.1/8	3"	2	1	7648634
3/8	0.3750	3/8	1.1/8	3"	2	1	7648635
1/2	0.5000	1/2	2"	4"	2	1	7648636
5/8	0.6250	5/8	2.1/4	5"	2	1	7648637

Extra Long Length, Ball Nose, 30° Helix

S115 Ball nose for cutting internal part radius. Bright finish improves chip flow in soft or non-ferrous materials.

S215 Ball nose for cutting internal part radius. ALTiN coating increases surface hardness, improves chip flow and tool life, allowing higher metal removal rates.



d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S115	S215
1/8	0.1250	1/8	1"	3"	2	1	7648638	7648644
3/16	0.1875	3/16	1.1/8	3"	2	1	7648639	7648645
1/4	0.2500	1/4	1.1/2	4"	2	1	7648640	7648646
5/16	0.3125	5/16	1.5/8	4"	2	1	7648641	7648647
3/8	0.3750	3/8	1.3/4	4"	2	1	7648642	7648648
1/2	0.5000	1/2	3"	6"	2	1	7648643	7648649

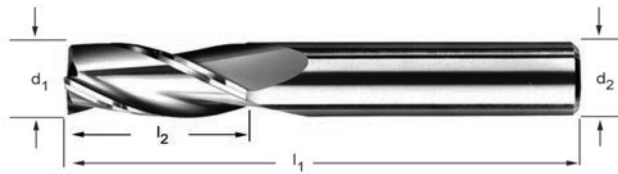
Solid Carbide 3 Flute End Mill



Regular Length, Square End, 30° Helix

S121 3-flute design for less chatter. Bright finish improves chip flow in soft or non-ferrous materials.

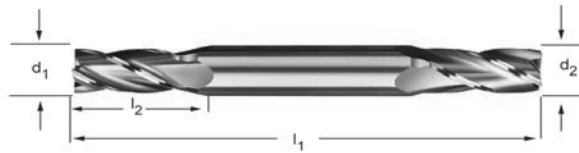
S221 3-flute design for less chatter. ALTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.



d_1 ∅ Inch	d_1 decimal Inch	d_2 ∅ Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S121	S221
1/16	0.0625	1/8	1/4	1.1/2	3	1	7648657	7648666
3/32	0.0938	1/8	3/8	1.1/2	3	1	7648658	7648667
1/8	0.1250	1/8	1/2	1.1/2	3	1	7648659	7648668
5/32	0.1562	3/16	9/16	2"	3	1	7648660	7648669
3/16	0.1875	3/16	5/8	2"	3	1	7648661	7648670
1/4	0.2500	1/4	3/4	2.1/2	3	1	7648662	7648671
5/16	0.3125	5/16	7/8	2.1/2	3	1	7648663	7648672
3/8	0.3750	3/8	7/8	2.1/2	3	1	7648664	7648673
1/2	0.5000	1/2	1"	3"	3	1	7648665	7648674

Square End, Double End, 30° Helix

S129 **Regular Length.** Double end provides two cutting ends in one tool. Bright finish improves chip flow in soft and non-ferrous materials.



d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S129
1/8	0.1250	3/8	3/8	3"	4	1	7648719
5/32	0.1562	3/8	7/16	3"	4	1	7648720
3/16	0.1875	3/8	1/2	3"	4	1	7648721
1/4	0.2500	3/8	5/8	3"	4	1	7648722
5/16	0.3125	3/8	3/4	3.1/2	4	1	7648723
3/8	0.3750	3/8	3/4	3.1/2	4	1	7648724
1/2	0.5000	1/2	1"	4"	4	1	7648725

Solid Carbide 4 Flute End Mill



Regular Length, Square End, 30° Helix

S134 Bright finish improves chip flow in soft or non-ferrous materials.

S234 ALTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.

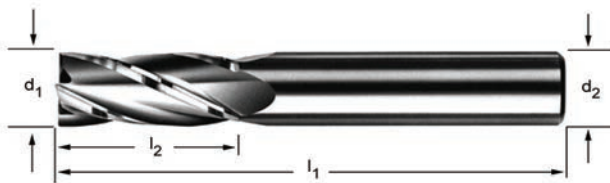


d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S134	S234
1/16	0.0625	1/8	1/4	1.1/2	4	1	7648726	7648748
5/64	0.0781	1/8	1/4	1.1/2	4	1	7648727	7648749
3/32	0.0938	1/8	3/8	1.1/2	4	1	7648728	7648750
7/64	0.1094	1/8	3/8	1.1/2	4	1	7648729	7648751
1/8	0.1250	1/8	1/2	1.1/2	4	1	7648730	7648752
9/64	0.1406	3/16	9/16	2"	4	1	7648731	7648753
5/32	0.1562	3/16	9/16	2"	4	1	7648732	7648754
11/64	0.1719	3/16	9/16	2"	4	1	7648733	7648755
3/16	0.1875	3/16	5/8	2"	4	1	7648734	7648756
13/64	0.2031	1/4	5/8	2.1/2	4	1	7648735	7648757
7/32	0.2188	1/4	5/8	2.1/2	4	1	7648736	7648758
1/4	0.2500	1/4	3/4	2.1/2	4	1	7648737	7648759
5/16	0.3125	5/16	7/8	2.1/2	4	1	7648738	7648760
3/8	0.3750	3/8	7/8	2.1/2	4	1	7648739	7648761
7/16	0.4375	7/16	1"	2.1/2	4	1	7648740	7648762
1/2	0.5000	1/2	1"	3"	4	1	7648741	7648763
9/16	0.5625	9/16	1.1/4	3.1/2	4	1	7648742	7648764
5/8	0.6250	5/8	1.1/4	3.1/2	4	1	7648743	7648765
11/16	0.6875	3/4	1.1/2	4"	4	1	7648744	7648766
3/4	0.7500	3/4	1.1/2	4"	4	1	7648745	7648767
7/8	0.8750	7/8	1.1/2	4"	4	1	7648746	7648768
1"	1.0000	1"	1.1/2	4"	4	1	7648747	7648769

Regular Length, Square End, 30° Helix

S135 Bright finish improves chip flow in soft or non-ferrous materials.

S235 AlTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.



d_1 Ø mm	d_1 decimal Inch	d_2 Ø mm	l_2 mm	l_1 mm	# of Flutes	Pack Qty	S135	S235
2.00	0.0787	3.0	6.0	38.0	4	1	7648770	7648789
2.50	0.0984	3.0	7.0	38.0	4	1	7648771	7648790
3.00	0.1181	3.0	12.0	38.0	4	1	7648772	7648791
3.50	0.1378	4.0	12.0	50.0	4	1	7648773	7648792
4.00	0.1575	4.0	14.0	50.0	4	1	7648774	7648793
4.50	0.1772	5.0	14.0	50.0	4	1	7648775	7648794
5.00	0.1969	5.0	16.0	50.0	4	1	7648776	7648795
6.00	0.2362	6.0	19.0	63.0	4	1	7648777	7648796
7.00	0.2756	8.0	19.0	63.0	4	1	7648778	7648797
8.00	0.3150	8.0	19.0	63.0	4	1	7648779	7648798
9.00	0.3543	10.0	22.0	70.0	4	1	7648780	7648799
10.00	0.3937	10.0	22.0	70.0	4	1	7648781	7648800
11.00	0.4331	11.0	25.0	70.0	4	1	7648782	7648801
12.00	0.4724	12.0	25.0	75.0	4	1	7648783	7648802
14.00	0.5512	14.0	30.0	88.0	4	1	7648784	7648803
16.00	0.6299	16.0	32.0	88.0	4	1	7648785	7648804
18.00	0.7087	18.0	36.0	100.0	4	1	7648786	7648805
20.00	0.7874	20.0	38.0	100.0	4	1	7648787	7648806
25.00	0.9843	25.0	38.0	100.0	4	1	7648788	—

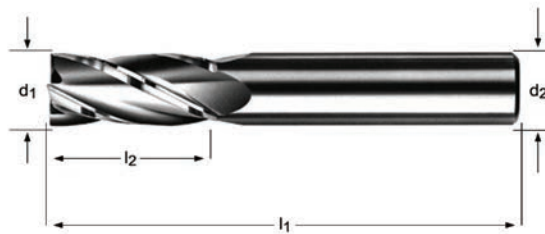
Solid Carbide 4 Flute End Mill



Long Length, Square End, 30° Helix

S136 Bright finish improves chip flow in soft or non-ferrous materials.

S236 AlTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.

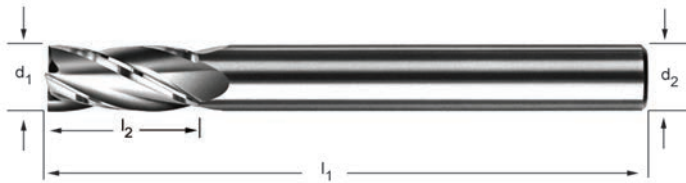


d_1 ∅ Inch	d_1 decimal Inch	d_2 ∅ Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S136	S236
1/8	0.1250	1/8	3/4	2"	4	1	7648807	7648816
3/16	0.1875	3/16	3/4	2.1/2	4	1	7648808	7648817
1/4	0.2500	1/4	1.1/8	3"	4	1	7648809	7648818
5/16	0.3125	5/16	1.1/8	3"	4	1	7648810	7648819
3/8	0.3750	3/8	1.1/8	3"	4	1	7648811	7648820
7/16	0.4375	7/16	2"	4"	4	1	7648812	7648821
1/2	0.5000	1/2	2"	4"	4	1	7648813	7648822
5/8	0.6250	5/8	2.1/4	5"	4	1	7648814	7648823
3/4	0.7500	3/4	2.1/4	5"	4	1	7648815	7648824

Extra Long Length, Square End, 30° Helix

S137 Bright finish improves chip flow in soft or non-ferrous materials.

S237 AlTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.



d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S137	S237
1/8	0.1250	1/8	1"	3"	4	1	7648825	7648835
3/16	0.1875	3/16	1.1/8	3"	4	1	7648826	7648836
1/4	0.2500	1/4	1.1/2	4"	4	1	7648827	7648837
5/16	0.3125	5/16	1.5/8	4"	4	1	7648828	7648838
3/8	0.3750	3/8	1.3/4	4"	4	1	7648829	7648839
7/16	0.4375	7/16	3"	6"	4	1	7648830	7648840
1/2	0.5000	1/2	3"	6"	4	1	7648831	7648841
5/8	0.6250	5/8	3"	6"	4	1	7648832	7648842
3/4	0.7500	3/4	3"	6"	4	1	7648833	7648843
1"	1.0000	1"	3"	6"	4	1	7648834	7648844

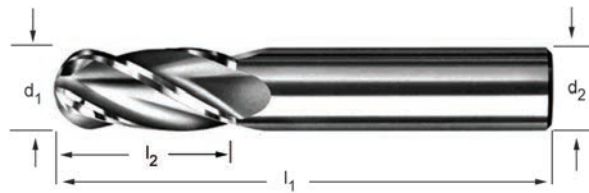
Solid Carbide 4 Flute End Mill



Regular Length, Ball Nose, 30° Helix

S138 Ball nose for cutting internal part radius. Bright finish improves chip flow in soft or non-ferrous materials.

S238 Ball nose for cutting internal part radius. AlTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.

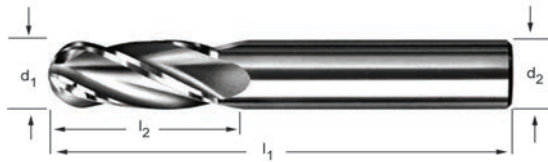


d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S138	S238
1/16	0.0625	1/8	1/4	1.1/2	4	1	7648845	7648857
3/32	0.0938	1/8	3/8	1.1/2	4	1	7648846	7648858
1/8	0.1250	1/8	1/2	1.1/2	4	1	7648847	7648859
5/32	0.1562	3/16	9/16	2"	4	1	7648848	7648860
3/16	0.1875	3/16	5/8	2"	4	1	7648849	7648861
1/4	0.2500	1/4	3/4	2.1/2	4	1	7648850	7648862
5/16	0.3125	5/16	7/8	2.1/2	4	1	7648851	7648863
3/8	0.3750	3/8	7/8	2.1/2	4	1	7648852	7648864
7/16	0.4375	7/16	1"	2.1/2	4	1	7648853	7648865
1/2	0.5000	1/2	1"	3"	4	1	7648854	7648866
5/8	0.6250	5/8	1.1/4	3.1/2	4	1	7648855	7648867
3/4	0.7500	3/4	1.1/2	4"	4	1	7648856	7648868

Regular Length, Ball Nose, 30° Helix

S139 Ball nose for cutting internal part radius. Bright finish improves chip flow in soft or non-ferrous materials.

S239 Ball nose for cutting internal part radius. AlTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.



d_1 Ø mm	d_1 decimal Inch	d_2 Ø mm	l_2 mm	l_1 mm	# of Flutes	Pack Qty	S139	S239
2.00	0.0787	3.0	6.0	38.0	4	1	7648877	7648878
3.00	0.1181	3.0	12.0	38.0	4	1	7648876	7648879
4.00	0.1575	4.0	14.0	50.0	4	1	7648875	7648880
4.50	0.1772	5.0	14.0	50.0	4	1	7648874	—
5.00	0.1969	5.0	16.0	50.0	4	1	7648873	7648881
6.00	0.2362	6.0	19.0	63.0	4	1	7648872	7648882
8.00	0.3150	8.0	19.0	63.0	4	1	7648871	7648883
10.00	0.3937	10.0	22.0	70.0	4	1	7648870	7648884
12.00	0.4724	12.0	25.0	75.0	4	1	7648869	7648885

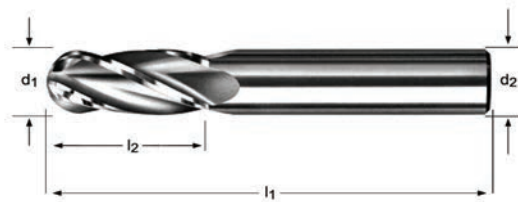
Solid Carbide 4 Flute End Mill



Long Length, Ball Nose, 30° Helix

S146 Ball nose for cutting internal part radius. Bright finish improves chip flow in soft or non-ferrous materials.

S246 Ball nose for cutting internal part radius. AlTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.

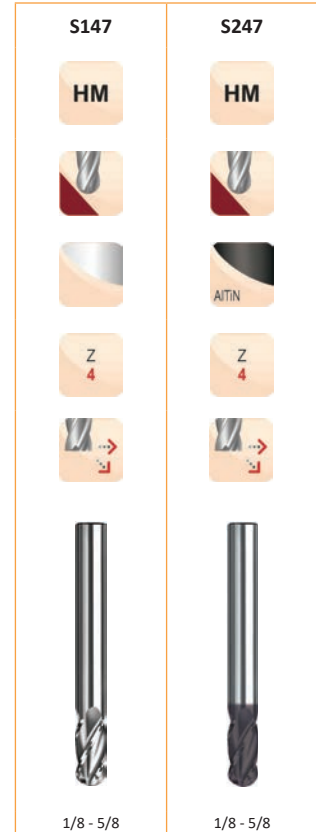


d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S146	S246
1/4	0.2500	1/4	1.1/8	3"	4	1	7648886	7648890
3/8	0.3750	3/8	1.1/8	3"	4	1	7648887	7648891
1/2	0.5000	1/2	2"	4"	4	1	7648888	7648892
5/8	0.6250	5/8	2.1/4	5"	4	1	7648889	7648893

Extra Long Length, Ball Nose, 30° Helix

S147 Ball nose for cutting internal part radius. Bright finish improves chip flow in soft or non-ferrous materials.

S247 Ball nose for cutting internal part radius. AlTiN coating increases surface hardness, improves chip flow and tool life allowing higher metal removal rates.



d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	# of Flutes	Pack Qty	S147	S247
1/8	0.1250	1/8	1"	3"	4	1	7648894	7648901
3/16	0.1875	3/16	1.1/8	3"	4	1	7648895	7648902
1/4	0.2500	1/4	1.1/2	4"	4	1	7648896	7648903
5/16	0.3125	5/16	1.5/8	4"	4	1	7648897	7648904
3/8	0.3750	3/8	1.3/4	4"	4	1	7648898	7648905
1/2	0.5000	1/2	3"	6"	4	1	7648899	7648906
5/8	0.6250	5/8	3"	6"	4	1	7648900	7648907

Solid Carbide 4 Flute End Mill



Regular length, Corner Radius, Unequal Helix

S223HA ALTiN coating increases hardness, and improves tool life allowing higher metal removal rates. These unequal helix cutters with corner radii are designed for higher speeds and deeper cuts. Provides superior workpiece finishes by eliminating vibrations and harmonics. Excellent for milling tough alloys and hardened steels.

S223HB S223HB has a Weldon shank.



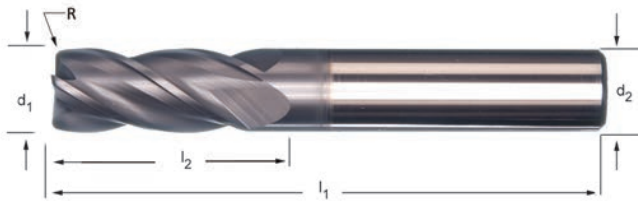
d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	R Radius	# of Flutes	Pack Qty	S223HA	S223HB
1/8	0.1250	1/8	3/8	1-1/2	.015	4	1	7648675	7648697
1/8	0.1250	1/8	3/8	1-1/2	.030	4	1	7648676	7648698
3/16	0.1875	3/16	7/16	2"	.015	4	1	7648677	7648699
3/16	0.1875	3/16	7/16	2"	.030	4	1	7648678	7648700
1/4	0.2500	1/4	5/8	2-1/2	.015	4	1	7648679	7648701
1/4	0.2500	1/4	5/8	2-1/2	.030	4	1	7648680	7648702
5/16	0.3125	1/4	1/2	2"	.015	4	1	7648681	7648703
5/16	0.3125	1/4	1/2	2"	.030	4	1	7648682	7648704
3/8	0.3750	3/8	7/8	2-1/2	.015	4	1	7648683	7648705
3/8	0.3750	3/8	7/8	2-1/2	.030	4	1	7648684	7648706
7/16	0.4375	7/16	5/8	2-1/2	.020	4	1	7648685	7648707
7/16	0.4375	7/16	5/8	2-1/2	.045	4	1	7648686	7648708
1/2	0.5000	1/2	1-1/4	3"	.030	4	1	7648687	7648709
1/2	0.5000	1/2	1-1/4	3"	.060	4	1	7648688	7648710
9/16	0.5625	9/16	1-1/8	3-1/2	.045	4	1	7648689	7648711
9/16	0.5625	9/16	1-1/8	3-1/2	.060	4	1	7648690	7648712
5/8	0.6250	5/8	1-1/4	3-1/2	.060	4	1	7648691	7648713
5/8	0.6250	5/8	1-1/4	5"	.090	4	1	7648692 *	7648714 *
3/4	0.7500	3/4	1-1/2	4"	.030	4	1	7648693	7648715
3/4	0.7500	3/4	1-1/2	4"	.060	4	1	7648694	7648716
1"	1.0000	1"	2-1/4	5"	.030	4	1	7648695 *	7648717 *
1"	1.0000	1"	2-1/4	5"	.090	4	1	7648696 *	7648718 *

* Will require a reduction of 30% - 60% in cutting speed.

Regular length, Corner Radius, Unequal Helix

S248HA ALTiN coating increases hardness, and improves tool life allowing higher metal removal rates. These unequal helix cutters with corner radii are designed for higher speeds and deeper cuts. Provides superior workpiece finishes by eliminating vibrations and harmonics. Excellent for milling tough alloys and hardened steels.

S248HB S248HB has Weldon Shank



d_1 Ø Inch	d_1 decimal Inch	d_2 Ø Inch	l_2 Inch	l_1 Inch	R Radius	# of Flutes	Pack Qty	S248HA	S248HB
5/16	0.3125	5/16	13/16	2-1/2	.015	5	1	7648908	7648927
5/16	0.3125	5/16	13/16	2-1/2	.030	5	1	7648909	7648928
3/8	0.3750	3/8	7/8	2-1/2	.015	5	1	7648910	7648929
3/8	0.3750	3/8	7/8	2-1/2	.030	5	1	7648911	7648930
7/16	0.4375	7/16	5/8	2-1/2	.020	5	1	7648912	7648931
7/16	0.4375	7/16	5/8	2-1/2	.045	5	1	7648913	7648932
1/2	0.5000	1/2	1	3	.030	5	1	7648914	7648933
1/2	0.5000	1/2	1-1/4	3	.030	5	1	7648915	7648934
1/2	0.5000	1/2	1-1/4	3	.060	5	1	7648916	7648935
9/16	0.5625	9/16	1-1/8	3-1/2	.020	5	1	7648917	7648936
9/16	0.5625	9/16	1-1/8	3-1/2	.045	5	1	7648918	7648937
9/16	0.5625	9/16	1-1/8	3-1/2	.060	5	1	7648919	7648938
5/8	0.6250	5/8	1-1/4	3-1/2	.045	5	1	7648920	7648939
5/8	0.6250	5/8	1-1/4	3-1/2	.060	5	1	7648921	7648940
5/8	0.6250	5/8	1-1/4	3-1/2	.090	5	1	7648922	7648941
3/4	0.7500	3/4	1-1/2	4	.030	5	1	7648923	7648942
3/4	0.7500	3/4	1-1/2	4	.060	5	1	7648924	7648943
1	1.0000	1	2-1/4	5	.030	5	1	7648925 *	7648944 *
1	1.0000	1	2-1/4	5	.090	5	1	7648926 *	7648945 *

* Will require a reduction of 30% - 60% in cutting speed.

SIMPLY RELIABLE

As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being **Simply Reliable**.

Argentina

T: 54 (11) 6777-6777
F: 54 (11) 4441-4467
info.ar@dormerpramet.com

Australia

T: 1300 131 274
F: 1300 809 510
info.au@dormerpramet.com

Austria

T: +31 10 2080 240
info.at@dormerpramet.com

Belgium & Luxembourg

T: +32 3 440 59 01
info.be@dormerpramet.com

Brazil

T: +55 11 5660 3000
F: +55 11 5667 5883
info.br@dormerpramet.com

Canada

T: (888) 336 7637
En Français: (888) 368 8457
F: (905) 542 7000
cs.canada@dormerpramet.com

China

T: +86 21 2416 0508
info.cn@dormerpramet.com

Croatia

T: +385 98 407 489
info.hr@dormerpramet.com

Czech Republic

T: +420 583 381 111
F: +420 583 215 401
info.cz@dormerpramet.com

Denmark

T: 808 82106
F: +46 35 16 52 90
info.se@dormerpramet.com

Finland

T: 0205 44 7003
F: 0205 44 7004
info.fi@dormerpramet.com

France

T: +33 (0)2 47 62 57 01
F: +33 (0)2 47 62 52 00
info.fr@dormerpramet.com

Germany

T: +49 9131 933 08 70
F: +49 9131 933 08 742
info.de@dormerpramet.com

Hungary

T: +36-96 / 522-846
F: +36-96 / 522-847
info.hu@dormerpramet.com

India

T: +91 11 4601 5686
info.in@dormerpramet.com

Italy

T: +39 02 38 04 51
F: +39 02 38 04 52 43
info.it@dormerpramet.com

Kazakhstan

T: +7 771 305 11 45
info.kz@dormerpramet.com

Mexico

T: +52 (555) 7293981
F: +52 (555) 7293981
cs.mexico@dormerpramet.com

Netherlands

T: +31 10 2080 240
info.nl@dormerpramet.com

New Zealand

T: 0800 800 922
info.int@dormerpramet.com

Norway

T: 800 10 113
F: +46 35 16 52 90
info.se@dormerpramet.com

Poland

T: +48 32 78-15-890
F: +48 32 78-60-406
info.pl@dormerpramet.com

Portugal

T: +351 21 424 54 21
F: +351 21 424 54 25
info.pt@dormerpramet.com

Romania

T: +4(0)730 015 885
info.ro@dormerpramet.com

Russia

T: +7 (495) 775 10 28
Ф: +7 (499) 763 38 90
info.ru@dormerpramet.com

Slovakia

T: +421 (41) 764 54 60
F: +421 (41) 763 74 49
info.sk@dormerpramet.com

Slovenia

T: +385 98 407 489
info.si@dormerpramet.com

Spain

T: +34 935717722
F: +34 935717765
info.es@dormerpramet.com

Sweden

responsible for **Iceland**
T: +46 35 16 52 96
F: +46 35 16 52 90
info.se@dormerpramet.com

Switzerland

T: +31 10 2080 240
info.ch@dormerpramet.com

Turkey

T: +90 533 212 45 47
info.tr@dormerpramet.com

Ukraine

T: +38 056 736 30 21
F: +38 067 220 97 48
info.ua@dormerpramet.com

United Kingdom

responsible for **Ireland**
T: 0870 850 4466
F: 0870 850 8866
info.uk@dormerpramet.com

United States of America

T: (800) 877-3745
F: (847) 783-5760
cs@dormerpramet.com

Other countries

South America

T: +55 11 5660 3000
F: +55 11 5667 5883
info.br@dormerpramet.com

Central and Eastern Europe

T: +420 583 381 526
F: +420 583 381 401
info.rcee@dormerpramet.com

Rest of the World

Dormer Pramet International UK
T: +44 1246 571338
F: +44 1246 571339
info.int@dormerpramet.com

Dormer Pramet International CZ
T: +420 583 381 520
F: +420 583 215 401
info.int.cz@dormerpramet.com



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End Mills para Acabado



S526



S226



S525



S225



S527



S227

End Mills con Radio en El Filo de corte



S524



S521



S523

Zanco con tolerancia
DIN 6535HA

Ahorra Dinero y tiempo seleccionando la mejor herramienta.

Los End Mill de carburo que se destacan en esta página se han fabricado específicamente para soportar la tensión y el alto calor generado al cortar acero endurecido a 63 HRC.

- Carburo Sólido
- Recubierto con AlTiN o TiSiN
- Zanco con Norma DIN 6535HA
- Tamaños Métricos

Estilo
S536

End Mills Nariz de Bola 4 Flautas



S534



S535

End Mills Nariz de bola 2 Flautas



S529



S531



S533

Recubrimiento TiSiN

4 Flautas

End Mills de Alta Velocidad

Carburo Sólido

S225 - End Mills para Acabado

- Carburo sólido
- AlTiN
- Corte Lateral



Diá mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
3.00	6.00	8	50	6	20	2.8	S2253.0
4.00	6.00	11	50	6	20	3.7	S2254.0
6.00	6.00	15	50	6	20	5.5	S2256.0
8.00	8.00	20	64	6	30	7.4	S2258.0
10.00	10.00	22	70	6	32	9.2	S22510.0
12.00	12.00	25	75	6	37	11.0	S22512.0
14.00	14.00	30	90	6	44	13.0	S22514.0
16.00	16.00	30	90	8	46	15.0	S22516.0
18.00	18.00	35	100	8	53	17.0	S22518.0

S525 - End Mills para Acabado

- Carburo sólido
- TiSiN
- Corte Lateral



Diá mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
3.00	6.00	8	50	6	20	2.8	S5253.0
4.00	6.00	11	50	6	20	3.7	S5254.0
6.00	6.00	15	50	6	20	5.5	S5256.0
8.00	8.00	20	64	6	30	7.4	S5258.0
10.00	10.00	22	70	6	32	9.2	S52510.0
12.00	12.00	25	75	6	37	11.0	S52512.0
14.00	14.00	30	90	6	44	13.0	S52514.0
16.00	16.00	30	90	8	46	15.0	S52516.0
18.00	18.00	35	100	8	53	17.0	S52518.0

S226 - End Mills para Acabado

- Carburo sólido
- AlTiN
- Corte Lateral



Diá mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
3.00	6.00	19	75	6	30	2.8	S2263.0
4.00	6.00	19	75	6	32	3.7	S2264.0
6.00	6.00	31	75	6	40	5.5	S2266.0
8.00	8.00	31	75	6	40	7.4	S2268.0
10.00	10.00	45	100	6	60	9.2	S22610.0
12.00	12.00	50	100	6	60	11.0	S22612.0
14.00	14.00	57	125	6	85	13.0	S22614.0
16.00	16.00	57	125	8	85	15.0	S22616.0
18.00	18.00	57	125	8	85	17.0	S22618.0
20.00	20.00	57	125	8	85	19.0	S22620.0

S526 - End Mills para Acabado

- Carburo sólido
- AlTiN
- Corte Lateral



Diá mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
3.00	6.00	19	75	6	30	2.8	S5263.0
4.00	6.00	19	75	6	32	3.7	S5264.0
6.00	6.00	31	75	6	40	5.5	S5266.0
8.00	8.00	31	75	6	40	7.4	S5268.0
10.00	10.00	45	100	6	60	9.2	S52610.0
12.00	12.00	50	100	6	60	11.0	S52612.0
14.00	14.00	57	125	6	85	13.0	S52614.0
16.00	16.00	57	125	8	85	15.0	S52616.0
18.00	18.00	57	125	8	85	17.0	S52618.0
20.00	20.00	57	125	8	85	19.0	S52620.0

S227 - End Mills para Acabado

- Carburo sólido
- AlTiN
- Corte Lateral



Diá mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
6.00	6.00	38	100	6	60	5.5	S2276.0
8.00	8.00	41	100	6	60	7.4	S2278.0
10.00	10.00	57	125	6	85	9.2	S22710.0
12.00	12.00	75	150	6	110	11.0	S22712.0
14.00	14.00	75	150	6	110	13.0	S22714.0
16.00	16.00	75	150	8	110	15.0	S22716.0
18.00	18.00	75	150	8	110	17.0	S22718.0
20.00	20.00	75	150	8	110	19.0	S22720.0
18.00	18.00	57	125	8	85	17.0	S22618.0
20.00	20.00	57	125	8	85	19.0	S22620.0

S527 - End Mills para Acabado

- Carburo sólido
- AlTiN
- Corte Lateral



Diá mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
3.00	6.00	25	100	6	60	2.8	S5273.0
4.00	6.00	31	100	6	60	3.7	S5274.0
6.00	6.00	38	100	6	60	5.5	S5276.0
8.00	8.00	41	100	6	60	7.4	S5278.0
10.00	10.00	57	125	6	85	9.2	S52710.0
12.00	12.00	75	150	6	110	11.0	S52712.0
14.00	14.00	75	150	6	110	13.0	S52714.0
16.00	16.00	75	150	8	110	15.0	S52716.0
18.00	18.00	75	150	8	110	17.0	S52718.0
20.00	20.00	75	150	8	110	19.0	S52720.0

S529 - End Mill Nariz de Bola

- Carburo sólido
- TiSiN
- Maquinado de ranuras y rampeado



Diá mm	Radio +/-0.02 mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
1.50	0.75	6	3	50	2	6.0	1.4	S5291.5
2.00	1.00	4	4	40	2	8.0	1.9	S5292.0XD4
2.00	1.00	6	4	50	2	8.0	1.9	S5292.0XD6
3.00	1.50	3	5	40	2	14.0	2.8	S5293.0XD3
3.00	1.50	6	5	50	2	14.0	2.8	S5293.0XD6
4.00	2.00	4	8	50	2	20.0	3.7	S5294.0XD4
4.00	2.00	6	8	50	2	20.0	3.7	S5294.0XD6
5.00	2.50	5	9	50	2	20.0	4.6	S5295.0XD5
5.00	2.50	6	9	50	2	20.0	4.6	S5295.0XD6
6.00	3.00	6	10	50	2	20.0	5.5	S5296.0
8.00	4.00	8	12	64	2	30.0	7.4	S5298.0
10.00	5.00	10	14	70	2	32.0	9.2	S52910.0
12.00	6.00	12	16	75	2	38.0	11.0	S52912.0
14.00	7.00	14	32	90	2	44.0	13.0	S52914.0
16.00	8.00	16	32	90	2	46.0	15.0	S52916.0

S531 - End Mill Nariz de Bola

- Carburo sólido
- TiSiN
- Maquinado de ranuras y rampeado



Diá mm	Radio +/-0.02 mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
1.50	0.75	6	3	75	2	10.0	1.4	S5311.5
2.00	1.00	4	4	75	2	14.0	1.9	S5312.0XD4
2.00	1.00	6	4	75	2	14.0	1.9	S5312.0XD6
3.00	1.50	3	5	60	2	21.0	2.8	S5313.0XD3
3.00	1.50	6	5	75	2	21.0	2.8	S5313.0XD6
4.00	2.00	4	8	60	2	28.0	3.7	S5314.0XD4
4.00	2.00	6	8	75	2	28.0	3.7	S5314.0XD6
5.00	2.50	5	9	60	2	32.0	4.6	S5315.0XD5
5.00	2.50	6	9	75	2	32.0	4.6	S5315.0XD6
6.00	3.00	6	10	75	2	40.0	5.5	S5316.0
8.00	4.00	8	12	75	2	40.0	7.4	S5318.0
10.00	5.00	10	14	75	2	40.0	9.2	S53110.0
12.00	6.00	12	16	100	2	60.0	11.0	S53112.0
14.00	7.00	14	32	125	2	80.0	13.0	S53114.0
16.00	8.00	16	32	125	2	80.0	15.0	S53116.0

S533 - End Mill Nariz de Bola

- Carburo sólido
- TiSiN
- Maquinado de ranuras y rampeado



Diá mm	Radio +/-0.02 mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
2.00	1.00	4	4	100	2	20.0	1.9	S5332.0XD4
2.00	1.00	6	4	100	2	20.0	1.9	S5332.0XD6
3.00	1.50	4	5	100	2	30.0	2.8	S5333.0XD4
3.00	1.50	6	5	100	2	30.0	2.8	S5333.0XD6
4.00	2.00	4	8	100	2	40.0	3.7	S5334.0XD4
4.00	2.00	6	8	100	2	40.0	3.7	S5334.0XD6
5.00	2.50	5	9	100	2	50.0	4.6	S5335.0XD5
5.00	2.50	6	9	100	2	50.0	4.6	S5335.0XD6
6.00	3.00	6	10	100	2	60.0	5.5	S5336.0
8.00	4.00	8	12	100	2	60.0	7.4	S5338.0
10.00	5.00	10	14	125	2	85.0	9.2	S53310.0
12.00	6.00	12	16	125	2	85.0	11.0	S53312.0
14.00	7.00	14	32	150	2	110.0	13.0	S53314.0
16.00	8.00	16	32	150	2	110.0	15.0	S53316.0
16.00	8.00	16	32	125	2	80.0	15.0	S53116.0

S534 - End Mill Nariz de Bola

- Carburo sólido
- TiSiN
- Maquinado de ranuras y rampeado



Diá mm	Radio +/-0.02 mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
3.00	1.50	6	5	50	4	14.0	2.8	S5343.0
4.00	2.00	6	8	50	4	20.0	3.7	S5344.0
5.00	2.50	6	9	50	4	20.0	4.6	S5345.0
6.00	3.00	6	10	50	4	20.0	5.5	S5346.0
8.00	4.00	8	12	64	4	30.0	7.4	S5348.0
10.00	5.00	10	14	70	4	32.0	9.2	S53410.0
12.00	6.00	12	16	75	4	38.0	11.0	S53412.0
14.00	7.00	14	32	90	4	44.0	13.0	S53414.0
16.00	8.00	16	32	90	4	46.0	15.0	S53416.0

S535 - End Mill Nariz de Bola

- Carburo sólido
- TiSiN
- Maquinado de ranuras y rampeado



Diá mm	Radio +/-0.02 mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Long. del cuerpo	Diá del cuello	Ecode
3.00	1.50	6	5	75	4	21.0	2.8	S5353.0
4.00	2.00	6	8	75	4	28.0	3.7	S5354.0
5.00	2.50	6	9	75	4	32.0	4.6	S5355.0
6.00	3.00	6	10	75	4	40.0	5.5	S5356.0
8.00	4.00	8	12	75	4	40.0	7.4	S5358.0
10.00	5.00	10	14	75	4	40.0	9.2	S53510.0
12.00	6.00	12	16	100	4	60.0	11.0	S53512.0
14.00	7.00	14	32	125	4	80.0	13.0	S53514.0
16.00	8.00	16	32	125	4	80.0	15.0	S53516.0

S523 - End Mills Con Radio en el filo de corte

- Carburo Sólido
- TiSiN
- Maquinado de ranuras y rampeado



Diá mm	Radio ± 0.01 mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Ecode
1.50	0.20	6	4.5	50	4	S5231.5XR0.2
2.00	0.20	6	6.5	50	4	S5232.0XR0.2
3.00	0.20	3	9	40	4	S5233.0XR0.2XD3
3.00	0.30	3	9	40	4	S5233.0XR0.3XD3
3.00	0.20	6	9	50	4	S5233.0XR0.2XD6
3.00	0.30	6	9	50	4	S5233.0XR0.3XD6
3.00	0.50	6	9	50	4	S5233.0XR0.5XD6
4.00	0.30	4	12	50	4	S5234.0XR0.3XD4
4.00	0.50	4	12	50	4	S5234.0XR0.5XD4
4.00	0.30	6	12	50	4	S5234.0XR0.3XD6
4.00	0.50	6	12	50	4	S5234.0XR0.5XD6
5.00	0.30	5	15	50	4	S5235.0XR0.3XD5
5.00	0.50	5	15	50	4	S5235.0XR0.5XD5
5.00	0.30	6	15	50	4	S5235.0XR0.3XD6
5.00	0.50	6	15	50	4	S5235.0XR0.5XD6
6.00	0.30	6	16	50	4	S5236.0XR0.3
6.00	0.50	6	16	50	4	S5236.0XR0.5
6.00	1.00	6	16	50	4	S5236.0XR1.0
8.00	0.30	8	20	64	4	S5238.0XR0.3
8.00	0.50	8	20	64	4	S5238.0XR0.5
8.00	1.00	8	20	64	4	S5238.0XR1.0
8.00	2.00	8	20	64	4	S5238.0XR2.0
10.00	0.50	10	22	70	4	S52310.0XR0.5
10.00	1.00	10	22	70	4	S52310.0XR1.0
10.00	1.50	10	22	70	4	S52310.0XR1.5
10.00	2.00	10	22	70	4	S52310.0XR2.0
12.00	0.50	12	25	75	4	S52312.0XR0.5
12.00	1.00	12	25	75	4	S52312.0XR1.0
12.00	2.00	12	25	75	4	S52312.0XR2.0
12.00	3.00	12	25	75	4	S52312.0XR3.0
16.00	0.50	16	32	90	4	S52316.0XR0.5
16.00	1.00	16	32	90	4	S52316.0XR1.0
16.00	2.00	16	32	90	4	S52316.0XR2.0
16.00	3.00	16	32	90	4	S52316.0XR3.0

S524 - End Mills Con Radio en el filo de corte

- Carburo Sólido
- TiSiN
- Maquinado de ranuras y rampeado



Diá mm	Radio ± 0.01 mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Ecode	Neck Dia mm	Ecode
3.00	0.30	6	5	75	4	30.0	2.8	S5243.0XR0.3
4.00	0.30	6	8	75	4	32.0	3.7	S5244.0XR0.3
4.00	0.50	6	8	75	4	32.0	3.7	S5244.0XR0.5
5.00	0.30	6	9	75	4	32.0	4.6	S5245.0XR0.3
5.00	0.50	6	9	75	4	32.0	4.6	S5245.0XR0.5
6.00	0.30	6	10	75	4	40.0	5.5	S5246.0XR0.3
6.00	0.50	6	10	75	4	40.0	5.5	S5246.0XR0.5
6.00	1.00	6	10	75	4	40.0	5.5	S5246.0XR1.0
8.00	0.30	8	12	75	4	40.0	7.4	S5248.0XR0.3
8.00	0.50	8	12	75	4	40.0	7.4	S5248.0XR0.5
8.00	1.00	8	12	75	4	40.0	7.4	S5248.0XR1.0
10.00	0.50	10	14	75	4	40.0	9.2	S52410.0XR0.5
10.00	1.00	10	14	75	4	40.0	9.2	S52410.0XR1.0
10.00	2.00	10	14	75	4	40.0	9.2	S52410.0XR2.0
12.00	0.50	12	16	100	4	60.0	11.0	S52412.0XR0.5
12.00	1.00	12	16	100	4	60.0	11.0	S52412.0XR1.0
12.00	2.00	12	16	100	4	60.0	11.0	S52412.0XR2.0
16.00	0.50	16	22	125	4	85.0	15.0	S52416.0XR0.5
16.00	1.00	16	22	125	4	85.0	15.0	S52416.0XR1.0
16.00	2.00	16	22	125	4	85.0	15.0	S52416.0XR2.0
16.00	3.00	16	22	125	4	85.0	15.0	S52416.0XR3.0

S536 - End Mills de Alta Velocidad

- Carburo Sólido
- TiSiN
- Acabado



Diá mm	Radio ± 0.01 mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Ecode	Neck Dia mm	Ecode
6.00	1.00	6	6	60	4	20.0	5.5	S5366.0XR1.0
8.00	2.00	8	8	64	4	24.0	7.4	S5368.0XR2.0
10.00	2.00	10	10	70	4	30.0	9.2	S53610.0XR2.0
12.00	2.00	12	12	75	4	30.0	11.0	S53612.0XR2.0

S521 - End Mills Con Radio en el filo de corte

- Carburo Sólido
- TiSiN
- Maquinado de ranuras y rampeado



Diá mm	Radio ± 0.01 mm	Diá del Zanco mm	Long. de Corte mm	Proy.	# de Flautas	Ecode	Neck Dia mm	Ecode
3.00	0.30	6	4	60	4	14.0	2.8	S5213.0XR0.3
4.00	0.30	6	5	60	4	16.0	3.7	S5214.0XR0.3
4.00	0.50	6	5	60	4	16.0	3.7	S5214.0XR0.5
5.00	0.30	6	6	60	4	18.0	4.6	S5215.0XR0.3
5.00	0.50	6	6	60	4	18.0	4.6	S5215.0XR0.5
6.00	0.50	6	7	60	4	20.0	5.5	S5216.0XR0.5
6.00	1.00	6	7	60	4	20.0	5.5	S5216.0XR1.0
8.00	0.50	8	9	64	4	26.0	7.4	S5218.0XR0.5
8.00	1.00	8	9	64	4	26.0	7.4	S5218.0XR1.0
10.00	1.00	10	11	70	4	31.0	9.2	S52110.0XR1.0
10.00	2.00	10	11	70	4	31.0	9.2	S52110.0XR2.0
12.00	1.00	12	13	75	4	37.0	11.0	S52112.0XR1.0
12.00	2.00	12	13	75	4	37.0	11.0	S52112.0XR2.0
16.00	1.00	16	17	90	4	43.0	15.0	S52116.0XR1.0
16.00	2.00	16	17	90	4	43.0	15.0	S52116.0XR2.0
16.00	3.00	16	17	90	4	43.0	15.0	S52116.0XR3.0