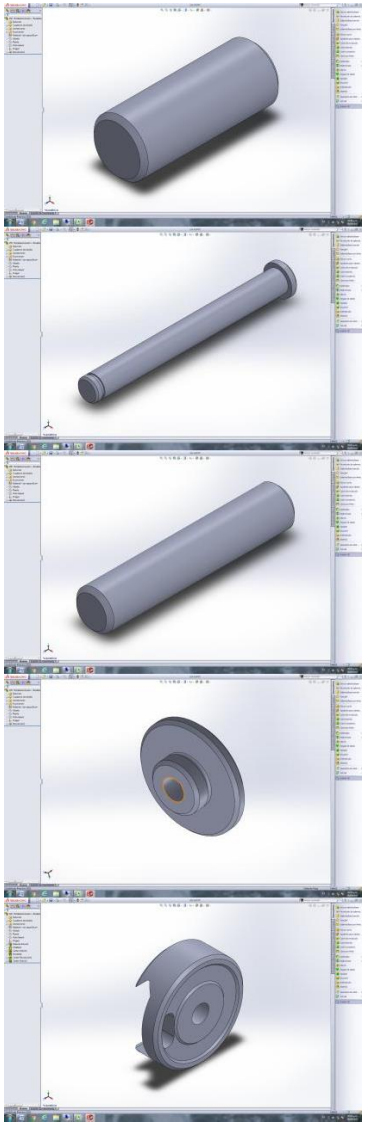
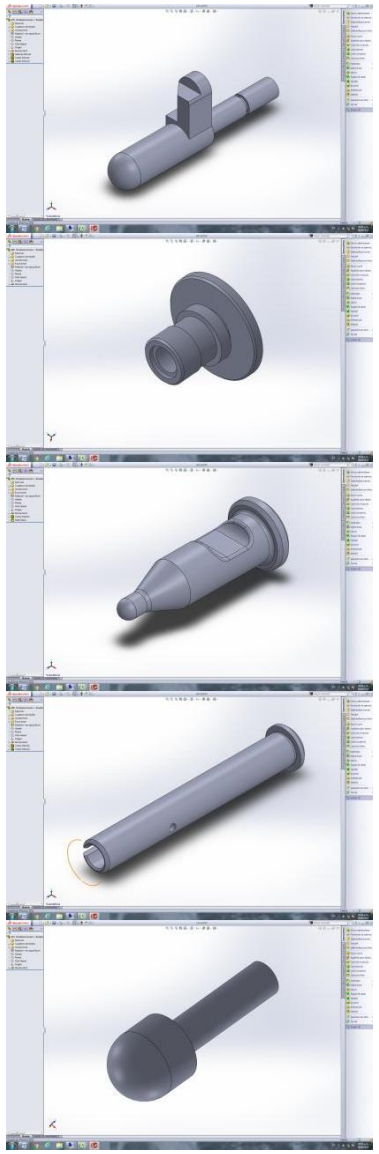
DESARROLLO DE INGENIERÍA PARA LA FABRICACIÓN DE 10 COMPONENTES EN DOS TIPOS DE TORNOS TIPO SUIZO

EL PRESENTE DESARROLLO DE INGENIERÍA ES PROPUESTO PARA LA FABRICACIÓN DE LOS SIGUIENTES COMPONENTES:

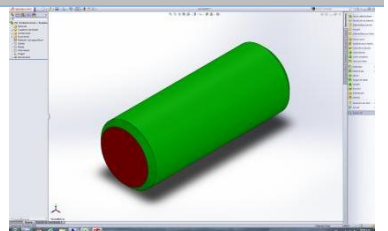
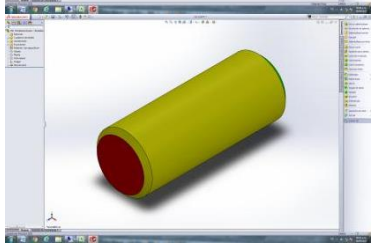
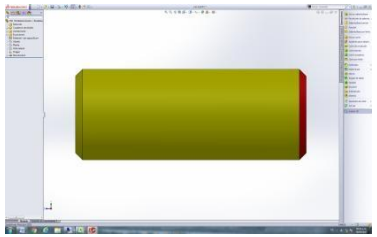
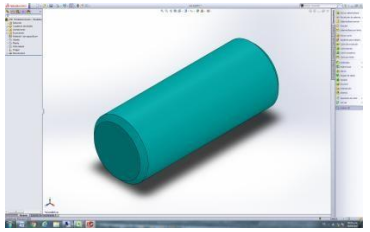
MAQUINA	PIEZA	TIEMPO (seg)	CAPACIDAD DE PRODUCCIÓN MENSUAL
TORNO TIPO SUIZO CONFIGURACIÓN "1"	LG10.01-M.150	45	10,667
	LG10.01-M.155	55	9,290
	LG10.01-M.190	45	32,000
	LG10.01-M.225	75	15,158
	LG10.01-M.220	110	28,800

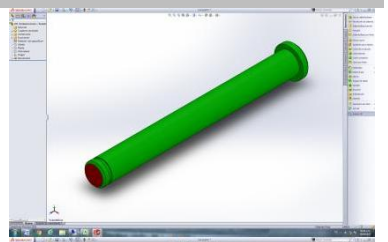
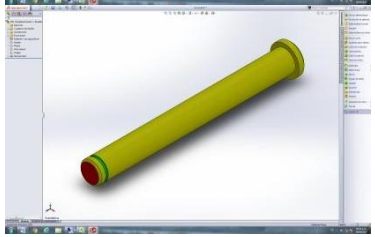
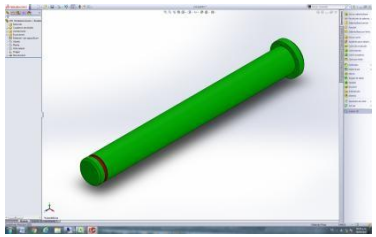
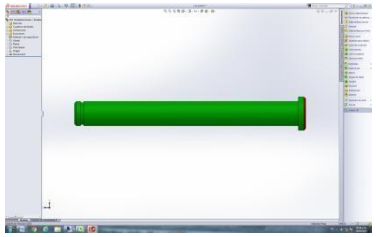


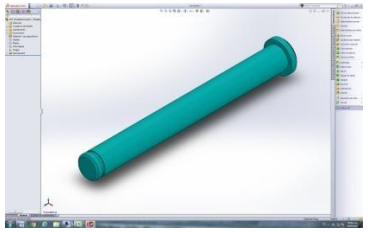
MAQUINA	PIEZA	TIEMPO (seg)	CAPACIDAD DE PRODUCCIÓN MENSUAL
TORNO TIPO SUIZO CONFIGURACIÓN "2"	LG10.01-M.070	135	32,000
	LG10.01-M.080	155	26,182
	LG10.02-M.085	45	32,000
	LG10.01-M.090	95	19,200
	LG10.01-M.110	50	13,091
Total general		**810**	

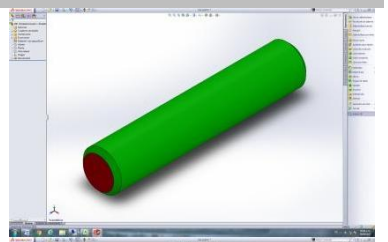
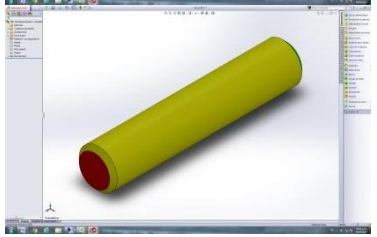
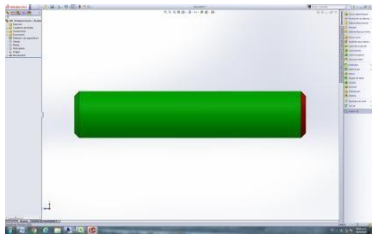
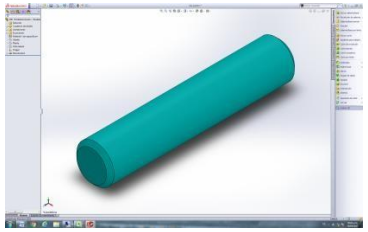


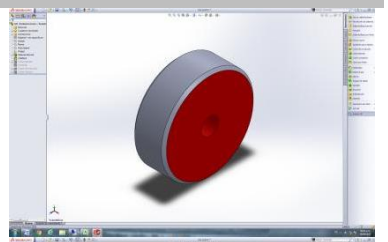
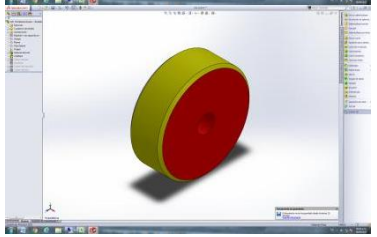
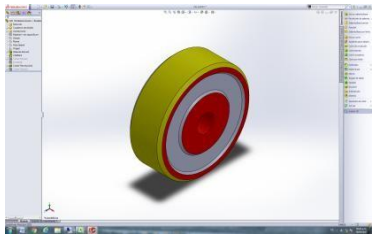
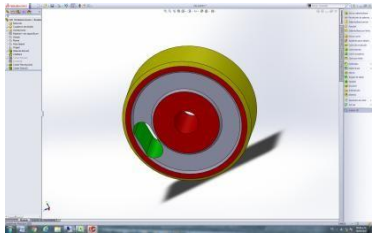
ESTUDIO DE TIEMPOS

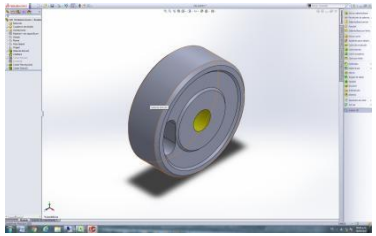
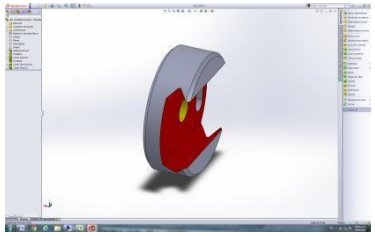
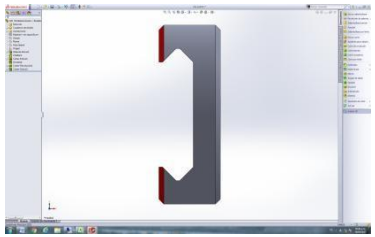
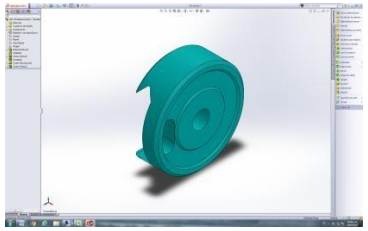
MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "1"	**LG10.01-M.150**	0	**CARGA**	CARGA	TOPE	5	
		1	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	25	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
		2	**TRONZADO**	DESGASTE	INSERTO PARA TRONZADO DGR 2200JS-15D, IC328 MARCA ISCAR	10	
				FIJA	PORTA INSERTO DE TRONZADO DGAD 2N, MCA. ISCAR.		
		3	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

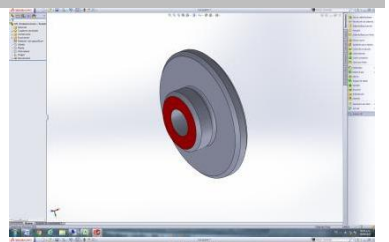
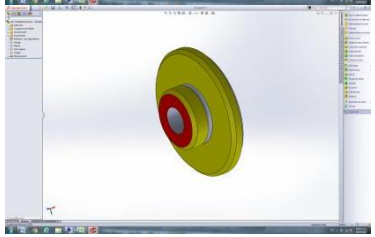
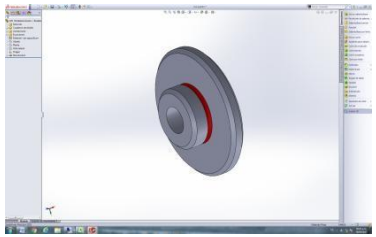
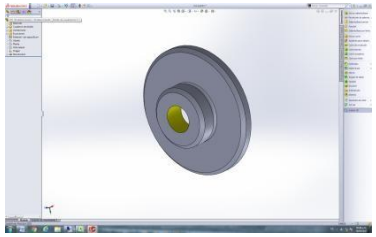
MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "1"	**LG10.01-M.155**	0	**CARGA**	CARGA	TOPE	5	
		1	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	25	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
		2	**RANURADO**	DESGASTE	INSERTO PARA RANURADO PENTA PENTA 24-0.50-ISO IC908 MARCA ISCAR No. 6004658	10	
				FIJA	PORTA INSERTO DE TORNEADO PCHL 25-24, MARCA ISCAR		
		3	**TRONZADO**	DESGASTE	INSERTO PARA TRONZADO DGR 2200JS-15D, IC328 MARCA ISCAR	10	
				FIJA	PORTA INSERTO DE TRONZADO DGAD 2N, MCA. ISCAR.		

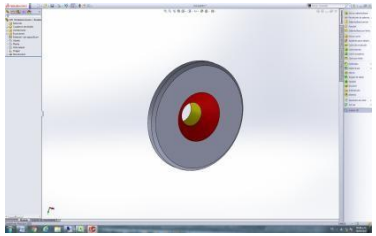
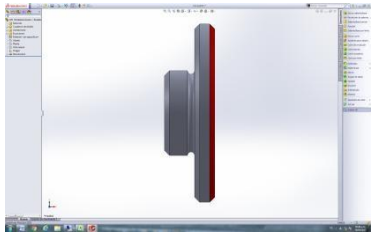
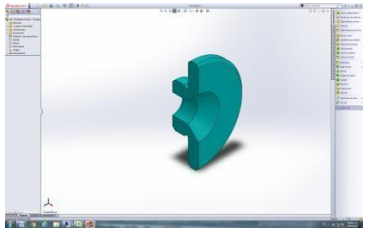
4	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

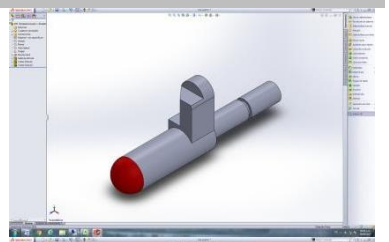
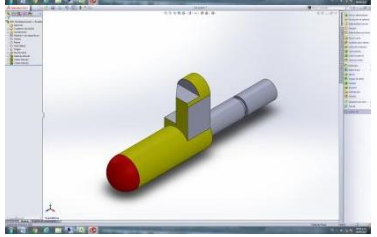
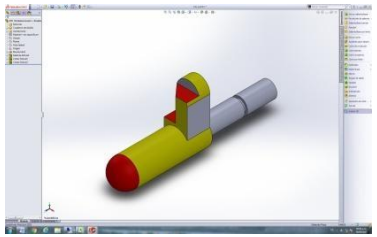
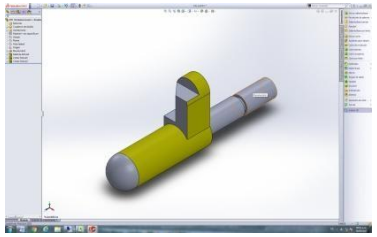
MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "1"	**LG10.01-M.190**	0	**CARGA**	CARGA	TOPE	5	
		1	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	25	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
		2	**TRONZADO**	DESGASTE	INSERTO PARA TRONZADO DGR 2200JS-15D, IC328 MARCA ISCAR	10	
				FIJA	PORTA INSERTO DE TRONZADO DGAD 2N, MCA. ISCAR.		
		3	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

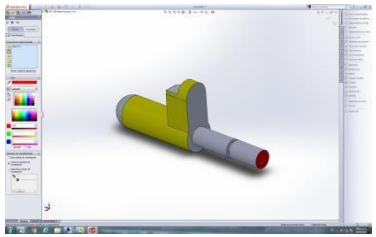
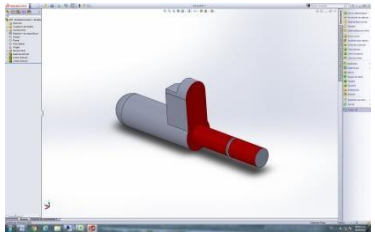
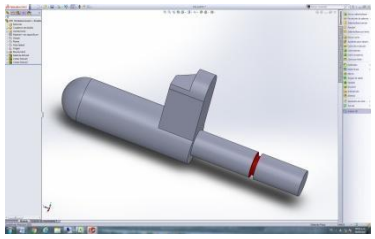
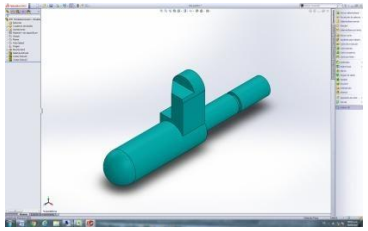
MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "1"	**LG10.01-M.220**	0	**CARGA**	CARGA	TOPE	5	
		1	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	25	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
		2	**RANURADO**	DESGASTE	INSERTO PARA RANURADO PENTA PENTA PENTA 34F400-0.40-22L IC908 MARCA ISCAR No. 6003628	10	
				FIJA	PORTA INSERTO DE TORNEADO PCHPL 16-24, 2302430, MARCA ISCAR		
		3	**FRESADO**	DESGASTE	CORTADOR DE 4 mm CODIGO 0 8707004001 00 MARCA MK	15	
				FIJA	PINZA DE SUJECION ER 16, 4-5 mm MARCA REGOFIX		

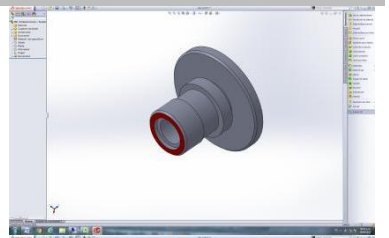
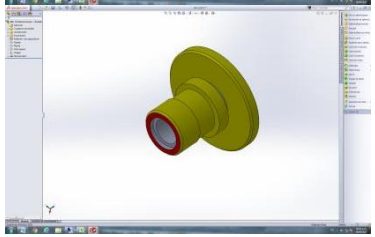
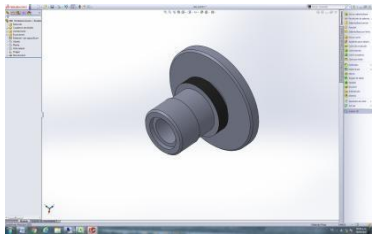
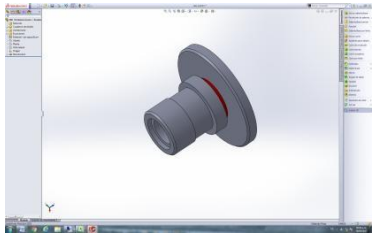
4	**CHAFLAN**	DESGASTE	BROCA DE 5.50 mm CODIGO 0 672700550100, MARCA MK	10	
		FIJA	PINZA DE SUJECION ER 16, 5-6 mm MARCA REGOFIX		
6	**FRESADO**	DESGASTE	CORTADOR WOODROOF 21.4 mm, FABRICACION ESPECIAL MARCA MK	30	
		FIJA	PINZA DE SUJECION ER 16, 15-16 mm MARCA REGOFIX		
5	**TRONZADO**	DESGASTE	INSERTO PARA TRONZADO DGR 2200JS-15D, IC328 MARCA ISCAR	10	
		FIJA	PORTA INSERTO DE TRONZADO DGAD 2N, MCA. ISCAR.		
7	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

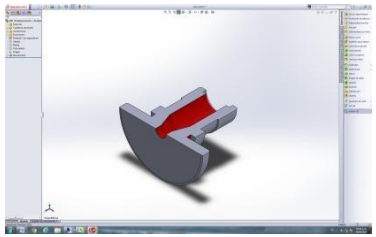
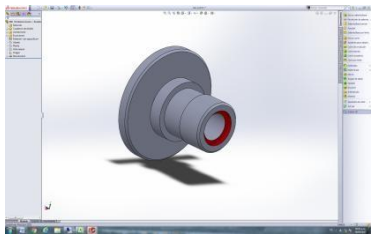
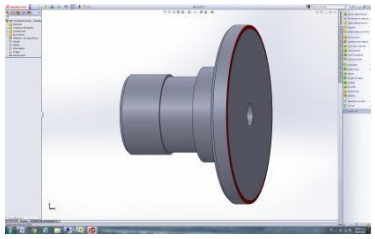
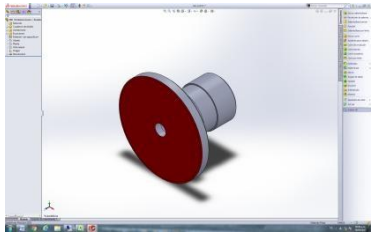
MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "1"	**LG10.01-M.225**	0	**CARGA**	CARGA	TOPE	5	
		1	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	25	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
		2	**RANURADO**	DESGASTE	INSERTO PARA RANURADO PENTA PENTA 24-0.50-ISO IC908 MARCA ISCAR No. 6004658	10	
				FIJA	PORTA INSERTO DE TORNEADO PCHL 25-24, MARCA ISCAR		
		3	**BARRENADO**	DESGASTE	BROCA DE 5.30 mm CODIGO 0 6727005301 00, MARCA MK	10	
				FIJA	PINZA DE SUJECION ER 16, 5-6 mm MARCA REGOFIX		

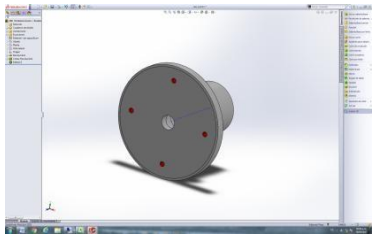
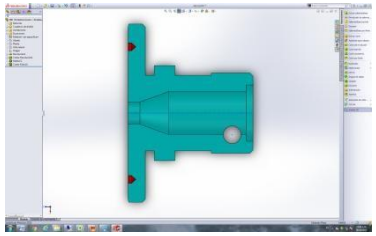
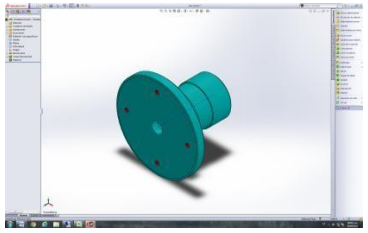
	5	**CHAFLAN**	DESGASTE	BROCA DE PUNTEAR NC 00 564016001 00 MARCA MK	10	
			FIJA	PINZA DE SUJECION ER 16, 15-16 mm MARCA REGOFIX		
	4	**TRONZADO**	DESGASTE	INSERTO PARA TRONZADO DGR 2200JS-15D, IC328 MARCA ISCAR	10	
			FIJA	PORTA INSERTO DE TRONZADO DGAD 2N, MCA. ISCAR.		
	6	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

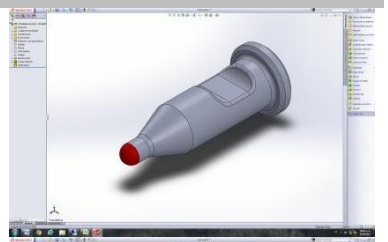
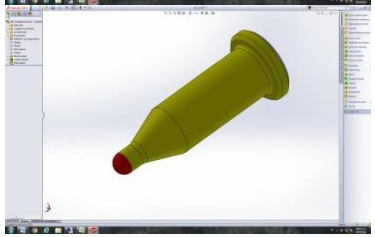
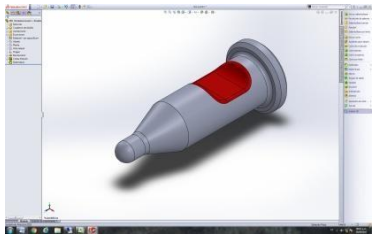
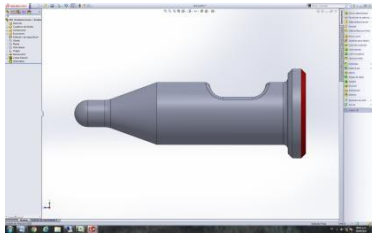
MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "2"	**LG10.01-M.070**	0	**CARGA**	CARGA	TOPE	5	
		1	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	25	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
		2	**FRESADO**	DESGASTE	CORTADOR DE 6 mm CODIGO 0 8707006001 00 MARCA MK	30	
				FIJA	PINZA DE SUJECION ER 16, 5-6 mm MARCA REGOFIX		
		3	**FRESADO**	DESGASTE	CORTADOR DE 8 mm CODIGO 0 8707008001 00 MARCA MK	30	
				FIJA	PINZA DE SUJECION ER 16, 7-8 mm MARCA REGOFIX		

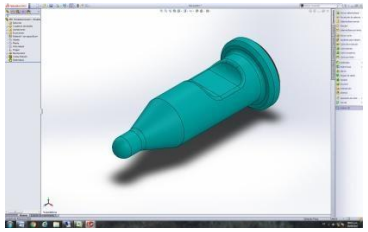
4	**TRONZADO**	DESGASTE	INSERTO GRIP 3002 Y IC908, MARCA ISCAR	15	
		FIJA	PORTA INSERTO DE TORNEADO HELIL 2525-3T20, MARCA ISCAR		
5	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	15	
		FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
6	**RANURADO**	DESGASTE	INSERTO PARA RANURADO PENTA PENTA 24-0.75-ISO IC908 MARCA ISCAR No. 6004678	10	
		FIJA	PORTA INSERTO DE TORNEADO PCHL 25-24, MARCA ISCAR		
7	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

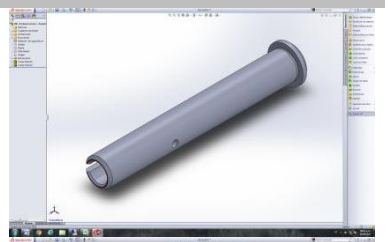
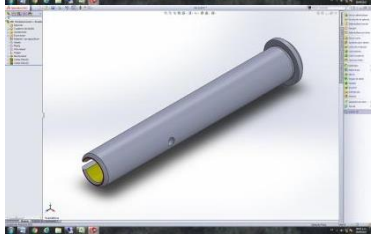
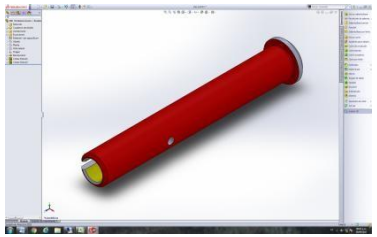
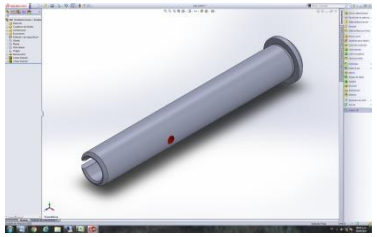
MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "2"	**LG10.01-M.080**	0	**CARGA**	CARGA	TOPE	5	
		1	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	25	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
		2	**ROSCADO**	DESGASTE	INSERTO PARA ROSCADO 16ERM AG 60 IC808 MARCA ISCAR, No. CAT. 5903266	20	
				FIJA	PORTAINSERTO DE ROSCADO SER 2525 M16, MARCA ISCAR No. CAT. 3800006		
		3	**RANURADO**	DESGASTE	INSERTO PARA RANURADO PENTA 24N150J010 IC908 MARCA ISCAR No. 6003226	10	
				FIJA	PORTA INSERTO DE TORNEADO PCHL 25-24, MARCA ISCAR		

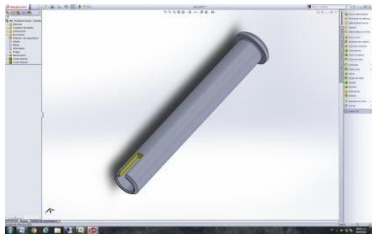
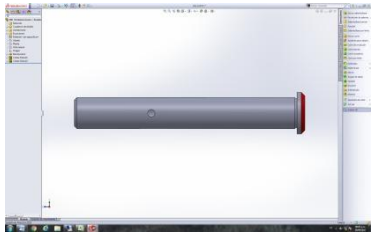
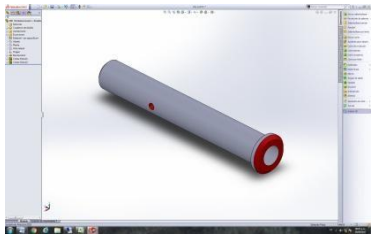
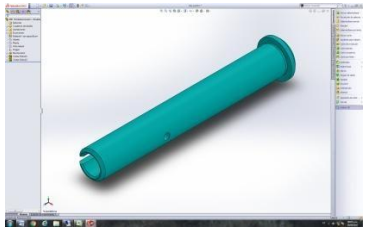
4	**BARRENADO**	DESGASTE	BROCA DE BARRENADO PROFUNDO NORMA DIN 6535 DIÁMETRO 3.2 Y 7.3 mm, MARCA GÜHRING SOBO 302486845	10	
	BARRENADO	FIJA	PINZA DE SUJECION ER 16, 7-8 mm MARCA REGOFIX		
5	**CAJA**	DESGASTE	CORTADOR DE 8 mm CODIGO 0 8707008001 00 MARCA MK	30	
		FIJA	PINZA DE SUJECION ER 16, 7-8 mm MARCA REGOFIX		
6	**TRONZADO**	DESGASTE	INSERTO GRIP 3002 Y IC908, MARCA ISCAR	15	
		FIJA	PORTA INSERTO DE TORNEADO HELIL 2525-3T20, MARCA ISCAR		
7	**CAREADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	25	
		FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		

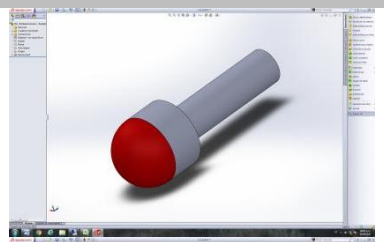
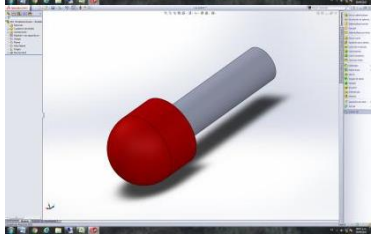
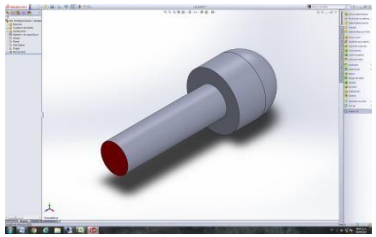
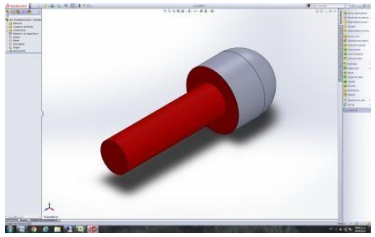
8	**PUNTEADO**	DESGASTE	BROCA DE 3.02 mm CODIGO 0 6727003021 00, MARCA MK	5	
		FIJA	PINZA DE SUJECION ER 16, 3-4 mm MARCA REGOFIX		
9	**BARRENADO**	DESGASTE	BROCA DE 3.02 mm CODIGO 0 6727003021 00, MARCA MK	5	
		FIJA	PINZA DE SUJECION ER 16, 3-4 mm MARCA REGOFIX		
10	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

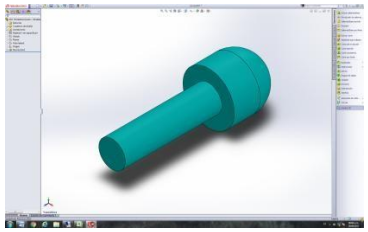
MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "2"	**LG10.02-M.085**	0	**CARGA**	CARGA	TOPE	5	
		1	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR MABR 3 020 1025	15	
				FIJA	PORTA INSERTO SMALR 1212 K3 CÓDIGO SMALR 1212 K3 MARCA SANDVIK		
		2	**RANURADO**	DESGASTE	CORTADOR DE 3 mm CODIGO 0 8707003001 00 MARCA MK	10	
				FIJA	PINZA DE SUJECION ER 16, 3-4 mm MARCA REGOFIX		
		3	**TRONZADO**	DESGASTE	INSERTO PARA TORNEADO INTERIOR GRIP 3002Y, IC908 MARCA ISCAR	10	
				FIJA	PORTA INSERTO DE TORNEADO HELIL 1616-3T12, MARCA ISCAR		

4	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "2"	**LG10.01-M.090**	0	**CARGA**	CARGA	TOPE	5	
		1	**BARRENADO**	DESGASTE	BROCA DE 4.02 mm CODIGO 0 6727004021 00, MARCA MK	5	
				FIJA	PINZA DE SUJECION ER 16, 4-5 mm MARCA REGOFIX		
		2	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	15	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
		3	**BARRENADO**	DESGASTE	BROCA DE 1.40 mm CODIGO 0 6727001401 00, MARCA MK	5	
				FIJA	PINZA DE SUJECION ER 16, 1-2 mm MARCA REGOFIX		

4	**RANURADO**	DESGASTE	CORTADOR DE DISCO DIN 1840 A (80 X 1.5 X 22 mm, Z:100) MARCA DIXI, No. 1533	25	
		FIJA	VASTAGO DE SUJECION 10 mm, MARCA DIXI		
5	**TRONZADO**	DESGASTE	INSERTO PARA TRONZADO DGR 2200JS-15D, IC328 MARCA ISCAR	10	
		FIJA	PORTA INSERTO DE TRONZADO DGAD 2N, MCA. ISCAR.		
6	**CONTRAOPERACION**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	25	
		FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
7	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

MAQUINA	PIEZA	OPERACIÓN	DESCRIPCION	TIPO	DESCRIPCION2	Suma de TIEMPO	
TORNO TIPO SUIZO CONFIGURACION "2"	**LG10.01-M.110**	0	**CARGA**	CARGA	TOPE	5	
		1	**TORNEADO**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	15	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		
		2	**TRONZADO**	DESGASTE	INSERTO PARA TRONZADO DGR 2200JS-15D, IC328 MARCA ISCAR	10	
				FIJA	PORTA INSERTO DE TRONZADO DGAD 2N, MCA. ISCAR.		
		3	**CONTRAOPERACION**	DESGASTE	INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA	15	
				FIJA	PORTA INSERTO SDNCN 1616 H1.1, MARCA SANDVIK		

4	**DESCARGA**	DESCARGA	CHAROLA DE DESCARGA	5	

HERRAMIENTAS

Condiciones de corte especificadas conforme a fabricante de herramientas, considerando resistencia mecánica de los materiales en < 850 N/mm²

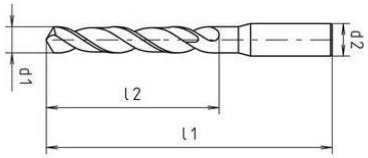
Rótulos de fila	DESCRIPCION2
CARGA	TOPE
DESCARGA	CHAROLA DE DESCARGA
DESGASTE	BROCA DE 1.40 mm CODIGO 0 6727001401 00, MARCA MK

Technical information

Art.-Nr.:	0672700140100
Material:	UNI / Free cutting steels < 850 N/mm²
Drilling depth:	3xd Universal, without internal coolant supply

Tool details:

d1 [diameter]	1.40 mm
d2 [shank]	4.0 mm
l1 [total length]	45.0 mm
l2 [length of cut]	7.0 mm
z [flutes]	2
Coating:	Alunit-S
Coolant:	emulsion



Cutting data:

Cutting speed [Vc]	105 m/min	Feedrate [Vf]	1383 mm/min
Spindle speed [n]	23051 rev/min	Feed per revolution [fn]	0.06 mm/rev

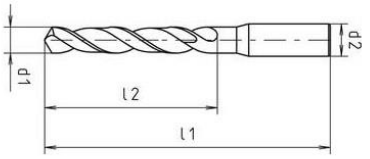
BROCA DE 3.02 mm CODIGO 0 6727003021 00, MARCA MK

Cutting parameters

SPEED-DRILL Universal, Ø3,02 DIN 6537K, 3xd, shank DIN 6535-HA, ALUNIT-S

Technical information	
Art.-Nr.:	0672700302100
Material:	UNI / Free cutting steels < 850 N/mm²
Drilling depth:	3xd Universal, without internal coolant supply

Tool details:	
d1 [diameter]	3.02 mm
d2 [shank]	6.0 mm
l1 [total length]	62.0 mm
l2 [length of cut]	20.0 mm
z [flutes]	2
Coating:	Alunit-S
Coolant:	emulsion



Cutting data:			
Cutting speed [Vc]	105 m/min	Feedrate [Vf]	1202 mm/min
Spindle speed [n]	7511 rev/min	Feed per revolution [fn]	0.16 mm/rev

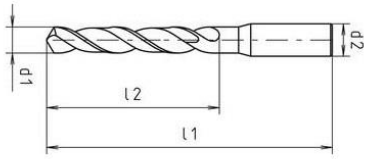
BROCA DE 4.02 mm CODIGO 0 6727004021 00, MARCA MK

Technical information

Art.-Nr.:	0672700402100
Material:	UNI / Free cutting steels < 850 N/mm²
Drilling depth:	3xd Universal, without internal coolant supply

Tool details:

d1 [diameter]	4.02 mm
d2 [shank]	6.0 mm
l1 [total length]	66.0 mm
l2 [length of cut]	24.0 mm
z [flutes]	2
Coating:	Alunit-S
Coolant:	emulsion



Cutting data:

Cutting speed [Vc]	105 m/min	Feedrate [Vf]	1202 mm/min
Spindle speed [n]	7511 rev/min	Feed per revolution [fn]	0.16 mm/rev

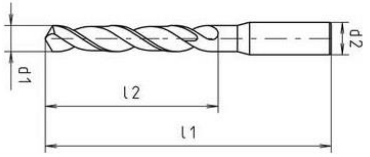
BROCA DE 5.30 mm CODIGO 0 6727005301 00, MARCA MK

Cutting parameters

SPEED-DRILL Universal, Ø5,3 DIN 6537K, 3xd, shank DIN 6535-HA, ALUNIT-S

Technical information	
Art.-Nr.:	0672700530100
Material:	UNI / Free cutting steels < 850 N/mm²
Drilling depth:	3xd Universal, without internal coolant supply

Tool details:	
d1 [diameter]	5.30 mm
d2 [shank]	6.0 mm
l1 [total length]	66.0 mm
l2 [length of cut]	28.0 mm
z [flutes]	2
Coating:	Alunit-S
Coolant:	emulsion



Cutting data:			
Cutting speed [Vc]	105 m/min	Feedrate [Vf]	1202 mm/min
Spindle speed [n]	7511 rev/min	Feed per revolution [fn]	0.16 mm/rev

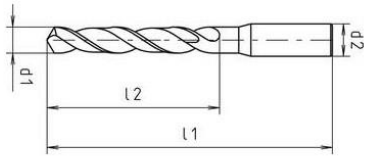
BROCA DE 5.50 mm CODIGO 0 6727005501 00, MARCA MK

Cutting parameters

SPEED-DRILL Universal, Ø5,5 DIN 6537K, 3xd, shank DIN 6535-HA, ALUNIT-S

Technical information	
Art.-Nr.:	0672700550100
Material:	UNI / Free cutting steels < 850 N/mm²
Drilling depth:	3xd Universal, without internal coolant supply

Tool details:	
d1 [diameter]	5.50 mm
d2 [shank]	6.0 mm
l1 [total length]	66.0 mm
l2 [length of cut]	28.0 mm
z [flutes]	2
Coating:	Alunit-S
Coolant:	emulsion



Cutting data:			
Cutting speed [Vc]	105 m/min	Feedrate [Vf]	1202 mm/min
Spindle speed [n]	7511 rev/min	Feed per revolution [fn]	0.16 mm/rev

BROCA DE BARRENADO PROFUNDO NORMA DIN 6535 DIÁMETRO 3.2 Y 7.3 mm, MARCA GÜHRING SOBO 302486845 FABRICACIÓN ESPECIAL

METRIC

(Specials)

METRIC CARBIDE STEP DRILLS

Material	Property	Vc : m/min AlTiN	Feed : (mm/t) Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø16
P Steel <200HBC	<800 MPa	60 – 120	0.07	0.09	0.12	0.14	0.20	0.24	0.29	0.35
P Steel 200–400HBC	<1,000 MPa	40 – 80	0.05	0.06	0.08	0.09	0.12	0.14	0.17	0.23
	<1,300 MPa	20 – 40	0.04	0.04	0.05	0.06	0.07	0.09	0.11	0.16
M Stainless Steel	-	40 – 70	0.04	0.05	0.06	0.07	0.09	0.11	0.13	0.18
S Nickel / Cobalt	-	15 – 30	0.04	0.05	0.06	0.07	0.09	0.11	0.13	0.18
S Titanium Alloy	<900 MPa	15 – 30	0.05	0.06	0.08	0.09	0.12	0.14	0.17	0.23
	>900 MPa									
K Cast Iron	<180 HB	40 – 100	0.07	0.09	0.12	0.14	0.20	0.24	0.29	0.35
	>180 HB	40 – 80	0.06	0.09	0.11	0.13	0.16	0.21	0.24	0.28
N Aluminum	-	120 – 150	0.06	0.09	0.11	0.13	0.16	0.21	0.24	0.28
N Copper Alloy	Bronze	60 – 100	0.07	0.09	0.12	0.14	0.20	0.24	0.29	0.35
	Brass	40 – 80	0.05	0.06	0.08	0.09	0.12	0.14	0.17	0.23

Material group		Hardness	SFM	Feed Rate - IPR									
				1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700mm	5/8 in. 15.870mm	3/4 in. 19.050mm	1 in. 25.400mm	1 1/4 in. 31.75mm	1 1/2 in. 38.10mm
Common structural steels		≤ 20 HRC	245		0.0031	0.0049	0.0079	0.0079	0.0098	0.0124	0.0157		
		≤ 32 HRC	230		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
Free-cutting steels		≤ 25 HRC	260		0.0031	0.0049	0.0079	0.0079	0.0098	0.0124	0.0157		
		≤ 32 HRC	230		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
Unalloyed heat-treatable steels		≤ 20 HRC	260		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
		≤ 25 HRC	230		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
		≤ 32 HRC	195		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
Alloyed heat-treatable steels		≤ 32 HRC	195		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
		≤ 43 HRC	165		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
Unalloyed case hardened steels		≤ 25 HRC	260		0.0031	0.0049	0.0079	0.0079	0.0098	0.0124	0.0157		
Alloyed case hardened steels		≤ 32 HRC	195		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
		≤ 43 HRC	165		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
Nitriding steels		≤ 32 HRC	165		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
		≤ 43 HRC	130		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
Tool steels		≤ 25 HRC	165		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
		≤ 43 HRC	130		0.0016	0.0025	0.0039	0.0039	0.0049	0.0063	0.0079		
High speed steels		≤ 43 HRC	130		0.0016	0.0025	0.0039	0.0039	0.0049	0.0063	0.0079		
Spring steels		≤ 38 HRC	80		0.0016	0.0025	0.0039	0.0039	0.0049	0.0063	0.0079		
Stainless steels	sulphured	≤ 28 HRC	80		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
	austenitic	≤ 36 HRC	80		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
	martensitic	≤ 46 HRC	80		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
Hardened steels		≤ 48 HRC ≤ 66 HRC	65		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
Special alloys		≤ 54 HRC	50		0.0016	0.0025	0.0039	0.0039	0.0049	0.0063	0.0079		
Cast iron		≤ 23 HRC	295		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
		≤ 38 HRC	260		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
Speroidal graphite iron and malleable cast iron		≤ 23 HRC	260		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
		≤ 38 HRC	230		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
Chilled cast iron		≤ 38 HRC											
Ti and Ti-alloys		≤ 25 HRC	65		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
		≤ 43 HRC	50		0.0016	0.0025	0.0039	0.0039	0.0049	0.0063	0.0079		
Aluminum and Al-alloys		≤120HB	655		0.0049	0.0079	0.0124	0.0124	0.0157	0.0197	0.0248		
Al wrought alloys		≤200HB	655		0.0049	0.0079	0.0124	0.0124	0.0157	0.0197	0.0248		
Al cast alloys	≤ 10% Si	≤180HB	490		0.0039	0.0063	0.0098	0.0098	0.0124	0.0157	0.0197		
	≤ 24% Si	≤180HB	395		0.0039	0.0063	0.0098	0.0098	0.0124	0.0157	0.0197		
Magnesium alloys		≤120HB	590		0.0031	0.0049	0.0079	0.0079	0.0098	0.0124	0.0157		
Copper	low-alloyed	≤ 80 HB	260		0.0031	0.0049	0.0079	0.0079	0.0098	0.0124	0.0157		
Brass	short-chipping	≤180HB	590		0.0031	0.0049	0.0079	0.0079	0.0098	0.0124	0.0157		
	long-chipping	≤180HB	590		0.0031	0.0049	0.0079	0.0079	0.0098	0.0124	0.0157		
Bronze	short-chipping	≤180HB	395		0.0031	0.0049	0.0079	0.0079	0.0098	0.0124	0.0157		
		≤ 25 HRC	395		0.0031	0.0049	0.0079	0.0079	0.0098	0.0124	0.0157		
Bronze	long-chipping	≤ 25 HRC	230		0.0025	0.0039	0.0063	0.0063	0.0079	0.0098	0.0124		
		≤ 32 HRC	165		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
Duroplastics		-	130		0.0020	0.0031	0.0049	0.0049	0.0063	0.0079	0.0098		
Thermoplastics		-											

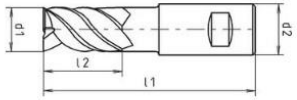
CORTADOR DE 3 mm CODIGO 0 8707003001 00 MARCA MK

Cutting parameters

SPEEDCUT 4.0 Universal, Ø 3.0 HPC end mill, Z=4, 35-38°, DIN 6527K, TWINDUR, weldon flat DIN 6535-HB

Technical information	
Art.-Nr.:	0870700300100
Material:	UNI / Free cutting steels < 850 N/mm²
Strategy:	Roughing slot

Tool details:	
d1 [diameter]	3.00 mm
d2 [shank]	6.0 mm
l1 [total length]	50.0 mm
l2 [length of cut]	5.0 mm
ef [corner bevel]	0.15 mm
z [flutes]	4
Coating:	Twindur
Coolant:	air + emulsion



Cutting data: MIN			
Cutting speed [Vc]	186 m/min	Feedrate [Vf]	1497 mm/min
Spindle speed [n]	20796 rev/min	Cutting width (a_e) [mm]	3 mm
feed per tooth [fz]	0.018 mm/tooth	Cutting depth (a_p) [mm]	3 mm

Cutting data: MAX			
Cutting speed [Vc]	357 m/min	Feedrate [Vf]	4394 mm/min
Spindle speed [n]	37878 rev/min	Cutting width (a_e) [mm]	3 mm
feed per tooth [fz]	0.029 mm/tooth	Cutting depth (a_p) [mm]	3 mm

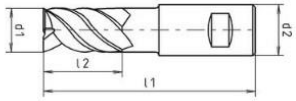
CORTADOR DE 4 mm CODIGO 0 8707004001 00 MARCA MK

Cutting parameters

SPEEDCUT 4.0 Universal, Ø 4.0 HPC end mill, Z=4, 35-38°, DIN 6527K, TWINDUR, weldon flat DIN 6535-HB

Technical information	
Art.-Nr.:	0870700400100
Material:	UNI / Free cutting steels < 850 N/mm²
Strategy:	Roughing slot

Tool details:	
d1 [diameter]	4.00 mm
d2 [shank]	6.0 mm
l1 [total length]	54.0 mm
l2 [length of cut]	8.0 mm
ef [corner bevel]	0.15 mm
z [flutes]	4
Coating:	Twindur
Coolant:	air + emulsion



Cutting data: MIN			
Cutting speed [Vc]	196 m/min	Feedrate [Vf]	1560 mm/min
Spindle speed [n]	15597 rev/min	Cutting width [a_e] [mm]	4 mm
feed per tooth [fz]	0.025 mm/tooth	Cutting depth [a_p] [mm]	4 mm

Cutting data: MAX			
Cutting speed [Vc]	357 m/min	Feedrate [Vf]	4659 mm/min
Spindle speed [n]	28409 rev/min	Cutting width [a_e] [mm]	4 mm
feed per tooth [fz]	0.041 mm/tooth	Cutting depth [a_p] [mm]	4 mm

CORTADOR DE 6 mm CODIGO 0 8707006001 00 MARCA MK

Cutting parameters

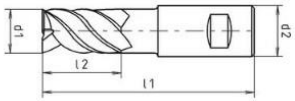
SPEEDCUT 4.0 Universal, Ø 6.0 HPC end mill, Z=4, 35-38°, DIN 6527K, TWINDUR, weldon flat DIN 6535-HB

Technical information

Art.-Nr.:	0870700600100
Material:	UNI / Free cutting steels < 850 N/mm²
Strategy:	Roughing slot

Tool details:

d1 [diameter]	6.00 mm
d2 [shank]	6.0 mm
l1 [total length]	54.0 mm
l2 [length of cut]	10.0 mm
ef [corner bevel]	0.25 mm
z [flutes]	4
Coating:	Twindur
Coolant:	air + emulsion



Cutting data: MIN

Cutting speed [Vc]	196 m/min	Feedrate [Vf]	1456 mm/min
Spindle speed [n]	10398 rev/min	Cutting width [a_e] [mm]	6 mm
feed per tooth [fz]	0.035 mm/tooth	Cutting depth [a_p] [mm]	6 mm

Cutting data: MAX

Cutting speed [Vc]	357 m/min	Feedrate [Vf]	4394 mm/min
Spindle speed [n]	18939 rev/min	Cutting width [a_e] [mm]	6 mm
feed per tooth [fz]	0.058 mm/tooth	Cutting depth [a_p] [mm]	6 mm

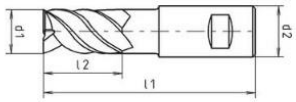
CORTADOR DE 8 mm CODIGO 0 8707008001 00 MARCA MK

Cutting parameters

SPEEDCUT 4.0 Universal, Ø 8.0 HPC end mill, Z=4, 35-38°, DIN 6527K, TWINDUR, weldon flat DIN 6535-HB

Technical information	
Art.-Nr.:	0870700800100
Material:	UNI / Free cutting steels < 850 N/mm²
Strategy:	Roughing slot

Tool details:	
d1 [diameter]	8.00 mm
d2 [shank]	8.0 mm
l1 [total length]	57.0 mm
l2 [length of cut]	12.0 mm
ef [corner bevel]	0.25 mm
z [flutes]	4
Coating:	Twindur
Coolant:	air + emulsion



Cutting data: MIN			
Cutting speed [Vc]	196 m/min	Feedrate [Vf]	1560 mm/min
Spindle speed [n]	7798 rev/min	Cutting width [a_e] [mm]	8 mm
feed per tooth [fz]	0.05 mm/tooth	Cutting depth [a_p] [mm]	8 mm

Cutting data: MAX			
Cutting speed [Vc]	357 m/min	Feedrate [Vf]	4602 mm/min
Spindle speed [n]	14204 rev/min	Cutting width [a_e] [mm]	8 mm
feed per tooth [fz]	0.081 mm/tooth	Cutting depth [a_p] [mm]	8 mm

CORTADOR DE DISCO DIN 1840 A (80 X 1.5 X 22 mm, Z:100) MARCA DIXI, No. 1533

DIXI 1531 - 1533 - 1534 - 1640

CONDITIONS DE COUPE

Matières à usiner			CARBURE Vc [m/min]	
P	Acier non allié / faiblement allié	< 600 N/mm²	80	140
P	Acier non allié / faiblement allié	600 – 1500 N/mm²	50	80
P	Acier de décolletage au plomb		120	160
P	Acier fortement allié	700 – 1500 N/mm²	50	80
M	Acier inoxydable	400 – 700 N/mm²	80	120
M	Acier inox. DUPLEX, acier austénitique inox. sans nickel	> 800 N/mm²	50	80
K	Fonte grise / Fonte à graphite sphéroïdal perlitique	< 250 HB	80	140
K	Fonte alliée / Fonte à graphite sphéroïdal perlitique	> 250 HB	50	80
K	Fonte à graphite sphéroïdal ferritique / Fonte malléable		50	80
S	Super alliages / Acier inox. réfractaire	Inconel Nimonic Hastelloy	20	30
S	Titane, alliage de titane		30	70
N	Alliage de cuivre / bonne usinabilité (laiton – bronze)		200	450
N	Alliage de cuivre / usinabilité difficile / Bronze à l'aluminium	(CuAlFe) (Ampco)	150	300
N	Alliage d'aluminium	Si < 8%	200	500
N	Fonte d'aluminium	Si > 8%	200	450
N	Plastique		130	200
N	Or, argent		140	180

$$n\ [tr/min] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

$$Vf\ [mm/min] = n\ [tr/min] \times fz\ [mm] \times z$$

Avance par dent fz [mm]

Ø D_1 15 - 30	Ø D_1 30 - 50	Ø D_1 50 - 80	Ø D_1 80 - 125	Ø D_1 125 - 160
0.002 - 0.004	0.003 - 0.007	0.004 - 0.008	0.004 - 0.012	0.004 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.002 - 0.004	0.003 - 0.007	0.004 - 0.01	0.004 - 0.01	0.004 - 0.01
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.002 - 0.004	0.003 - 0.007	0.004 - 0.01	0.004 - 0.01	0.004 - 0.01
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012
0.003 - 0.010	0.004 - 0.010	0.005 - 0.012	0.005 - 0.012	0.005 - 0.015
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012

CORTADOR WOODROOF 21.4 mm, FABRICACION ESPECIAL MARCA MK

RPM=(SFPM*3.82)/Cutter Diameter
IPM=IPT*RPM*#TeethIPT = Inches Per Tooth
IPM = Inches Per Minute
RPM = Rotations Per Minute
SFPM = Surface Feet Per Minute
Cutter Diameter = Diameter of the head in inches

MATERIAL CLASS	MATERIAL	BRINELL	SFPM	IPT	KEYSEAT CUTTER DIAMETER								
					½	¾	¾	⅞	1	1 ⅛	1 ¼	1 ⅜	1 ½
					IPM	IPM	IPM	IPM	IPM	IPM	IPM	IPM	IPM
NON-FERROUS (SOFT)	ALUMINUM ALLOY - WROUGHT	30-150 (500kg)	1200+	.002-.010	110	88	73	63	73	65	59	53	49
	MAGNESIUM ALLOY	50-90	1000+	.002-.010	92	73	61	52	61	54	49	44	41
	NON-METAL AND PLASTIC	–	1500+	.002-.006	138	110	92	79	92	81	73	67	61
	ZINC ALLOY - DIE CAST	80-100	750-1000	.002-.006	80	64	53	46	53	48	43	39	36
NON-FERROUS (HARD)	ALUMINUM BRONZE	40-175	200-600	.002-.006	37	29	24	21	24	22	20	18	16
	BRASS ALLOY - LEADED AND FREE CUTTING	10-100Rb	400-550	.002-.006	44	35	29	25	29	26	23	21	19
	NICKEL SILVER	10-100Rb	200-400	.002-.006	28	22	18	16	18	16	15	13	12
	COPPER ALLOY - TOUGH	40-200	200-500	.002-.006	32	26	21	18	21	19	17	16	14
CAST IRON	DUCTILE CAST IRON - AUSTENITIC	120-275	75-150	.002-.004	10	8	7	6	7	6	6	5	5
	DUCTILE CAST IRON - FERRITIC	140-270	200-400	.002-.007	28	22	18	16	18	16	15	13	12
	DUCTILE CAST IRON - MARTENSITIC	270-440	150-350	.002-.007	23	18	15	13	15	14	12	11	10
	GRAY - PEARLITIC	220-320	150-300	.002-.007	21	17	14	12	14	12	11	10	9
	GRAY - FERRITIC	110-240	220-410	.002-.006	29	23	19	17	19	17	15	14	13
	MALLEABLE CAST IRON - MARTENSITIC	200-320	130-300	.002-.004	20	16	13	11	13	12	11	10	9
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100-250	200-500	.001-.005	32	26	21	18	21	19	17	16	14
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100-375	200-400	.001-.005	28	22	18	16	18	16	15	13	12
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100-275	200-400	.001-.005	28	22	18	16	18	16	15	13	12
	LOW AND MEDIUM CARBON ALLOY STEEL	85-375	130-330	.001-.005	21	17	14	12	14	12	11	10	9
	STAINLESS STEEL - 400 SERIES	135-325	135-375	.002-.005	24	19	16	14	16	14	13	12	11
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135-275	250-500	.002-.005	34	28	23	20	23	20	18	17	15
HIGH STRENGTH STEELS	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175-400	75-200	.001-.004	13	28	23	20	23	20	18	17	15
HIGH TEMP. ALLOYS	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140-300	50-150	.001-.004	9	7	6	5	6	5	5	4	4
	STAINLESS STEEL - 300 SERIES	135-375	75-175	.001-.004	11	9	8	7	8	7	6	6	5
	STAINLESS STEEL - PH SERIES	150-440	75-175	.001-.004	11	9	8	7	8	7	6	6	5
	TITANIUM ALLOY	110-380	75-200	.002-.006	13	10	8	7	8	7	7	6	6

INSERTO GRIP 3002 Y IC908, MARCA ISCAR

Grade : IC908

A hard, fine grain substrate with excellent chipping resistance, combined with a TiAlN PVD coating. Provides high wear and oxidation resistance. Recommended for a very wide range of materials applications and machining conditions.

ISO Range - P/M/K	(P15-P30)(M20-M30)(K20-K40)
ISO Range - H/S/N	(H10-H20)(S15-S25)

Grade or Coating Type	PVD
Coating Layers	TiAlN

Find group of specific workpiece material (opens in a new window)

Cutting Speed for: GRIP 3002Y IC908 - 6200117

ISO	Material	Material Description	Material Condition	Cutting Speed Recommendations
P	1	Non-alloy steel and cast steel, free cutting steel <0.25%C	Annealed :125	120-183 m/min
P	2	Non-alloy steel and cast steel, free cutting steel >=0.25%C	Annealed :190	90-145 m/min
P	3	Non-alloy steel and cast steel, free cutting steel <0.55%C	Quench and tempered. :250	73-123 m/min
P	4	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Annealed :220	83-148 m/min
P	5	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Quenched & tempered. :300	65-118 m/min
P	6	Low alloy & cast steel (less than 5% of alloying elements)	Annealed :200	80-133 m/min
P	7	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :275	78-133 m/min
P	8	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :300	65-110 m/min
P	9	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :350	70-115 m/min
P	10	High alloyed steel, cast steel and tool steel	Annealed :200	80-123 m/min
P	11	High alloyed steel, cast steel and tool steel	Quenched & tempered :325	60-103 m/min
P	12	Stainless steel and cast steel	Ferritic/martensitic :200	70-160 m/min
P	13	Stainless steel and cast steel	Martensitic :240	63-148 m/min
M	14	Stainless steel and cast steel	Austenitic :180	55-140 m/min
K	15	Grey cast iron (GG)	Pearlitic/ferritic :180	105-185 m/min
K	16	Grey cast iron (GG)	Pearlitic/martensiti :260	100-145 m/min
K	17	Nodular cast iron (GGG)	Ferritic :160	110-200 m/min
K	18	Nodular cast iron (GGG)	Pearlitic :250	90-135 m/min
K	19	Malleable cast iron	Ferritic :130	130-215 m/min
K	20	Malleable cast iron	Pearlitic :230	110-170 m/min
S	31	High temp. alloys Fe based	Annealed :200	28-48 m/min
S	32	High temp. alloys Fe based	Cured :280	19-34 m/min
S	33	High temp. alloys. Ni or Co based	Annealed :250	19-27 m/min
S	34	High temp. alloys. Ni or Co based	Cured :350	18-24 m/min
S	35	High temp. alloys. Ni or Co based	Castr :320	18-23 m/min
S	36	Titanium (pure)	Pure :310	90-130 m/min
S	37	Titanium Ti alloys	Alpha+beta alloys cu :310	29-59 m/min
H	38	Hardened steel	Hardened :560	25-35 m/min
H	39	Hardened steel	Hardened :654	23-33 m/min
H	40	Chilled cast iron	Cast :400	28-43 m/min
H	41	Cast iron	Hardened :560	28-38 m/min

INSERTO PARA RANURADO PENTA 24N150J010 IC908 MARCA ISCAR No. 6003226

Grade : IC908

A hard, fine grain substrate with excellent chipping resistance, combined with a TiAlN PVD coating. Provides high wear and oxidation resistance. Recommended for a very wide range of materials applications and machining conditions.

ISO Range - P/M/K	(P15-P30)(M20-M30)(K20-K40)
ISO Range - H/S/N	(H10-H20)(S15-S25)

Grade or Coating Type	PVD
Coating Layers	TiAlN

Find group of specific workpiece material (opens in a new window)

Cutting Speed for: PENTA 24N150J010 IC908 - 6003226

ISO	Material	Material Description	Material Condition	Cutting Speed Recommendations
P	1	Non-alloy steel and cast steel, free cutting steel <0.25%C	Annealed :125	120-183 m/min
P	2	Non-alloy steel and cast steel, free cutting steel >=0.25%C	Annealed :190	90-145 m/min
P	3	Non-alloy steel and cast steel, free cutting steel <0.55%C	Quench and tempered. :250	73-123 m/min
P	4	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Annealed :220	83-148 m/min
P	5	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Quenched & tempered. :300	65-118 m/min
P	6	Low alloy & cast steel (less than 5% of alloying elements)	Annealed :200	80-133 m/min
P	7	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :275	78-133 m/min
P	8	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :300	65-110 m/min
P	9	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :350	70-115 m/min
P	10	High alloyed steel, cast steel and tool steel	Annealed :200	80-123 m/min
P	11	High alloyed steel, cast steel and tool steel	Quenched & tempered :325	60-103 m/min
P	12	Stainless steel and cast steel	Ferritic/martensitic :200	70-160 m/min
P	13	Stainless steel and cast steel	Martensitic :240	63-148 m/min
M	14	Stainless steel and cast steel	Austenitic :180	55-140 m/min
K	15	Grey cast iron (GG)	Pearlitic/ferritic :180	105-185 m/min
K	16	Grey cast iron (GG)	Pearlitic/martensiti :260	100-145 m/min
K	17	Nodular cast iron (GGG)	Ferritic :160	110-200 m/min
K	18	Nodular cast iron (GGG)	Pearlitic :250	90-135 m/min
K	19	Malleable cast iron	Ferritic :130	130-215 m/min
K	20	Malleable cast iron	Pearlitic :230	110-170 m/min
S	31	High temp. alloys Fe based	Annealed :200	28-48 m/min
S	32	High temp. alloys Fe based	Cured :280	19-34 m/min
S	33	High temp. alloys. Ni or Co based	Annealed :250	19-27 m/min
S	34	High temp. alloys. Ni or Co based	Cured :350	18-24 m/min
S	35	High temp. alloys. Ni or Co based	Castr :320	18-23 m/min
S	36	Titanium (pure)	Pure :310	90-130 m/min
S	37	Titanium Ti alloys	Alpha+beta alloys cu :310	29-59 m/min
H	38	Hardened steel	Hardened :560	25-35 m/min
H	39	Hardened steel	Hardened :654	23-33 m/min
H	40	Chilled cast iron	Cast :400	28-43 m/min
H	41	Cast iron	Hardened :560	28-38 m/min

INSERTO PARA RANURADO PENTA PENTA 24-0.50-ISO IC908 MARCA ISCAR No. 6004658

Grade : IC908

A hard, fine grain substrate with excellent chipping resistance, combined with a TiAlN PVD coating. Provides high wear and oxidation resistance. Recommended for a very wide range of materials applications and machining conditions.

ISO Range - P/M/K	(P15-P30)(M20-M30)(K20-K40)
ISO Range - H/S/N	(H10-H20)(S15-S25)

Grade or Coating Type	PVD
Coating Layers	TiAlN

Find group of specific workpiece material (opens in a new window)

Cutting Speed for: PENTA 24-0.5-ISO IC908 - 6004658

ISO	Material	Material Description	Material Condition	Cutting Speed Recommendations
P	1	Non-alloy steel and cast steel, free cutting steel <0.25%C	Annealed :125	87-166 m/min
P	2	Non-alloy steel and cast steel, free cutting steel >=0.25%C	Annealed :190	84-160 m/min
P	3	Non-alloy steel and cast steel, free cutting steel <0.55%C	Quench and tempered. :250	80-155 m/min
P	4	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Annealed :220	78-149 m/min
P	5	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Quenched & tempered. :300	74-141 m/min
P	6	Low alloy & cast steel (less than 5% of alloying elements)	Annealed :200	92-140 m/min
P	7	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :275	85-128 m/min
P	8	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :300	80-123 m/min
P	9	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :350	74-119 m/min
P	10	High alloyed steel, cast steel and tool steel	Annealed :200	72-124 m/min
P	11	High alloyed steel, cast steel and tool steel	Quenched & tempered :325	60-110 m/min
P	12	Stainless steel and cast steel	Ferritic/martensitic :200	86-130 m/min
P	13	Stainless steel and cast steel	Martensitic :240	85-122 m/min
M	14	Stainless steel and cast steel	Austenitic :180	78-122 m/min
K	15	Grey cast iron (GG)	Pearlitic/ferritic :180	67-118 m/min
K	16	Grey cast iron (GG)	Pearlitic/martensiti :260	60-100 m/min
K	17	Nodular cast iron (GGG)	Ferritic :160	56-112 m/min
K	18	Nodular cast iron (GGG)	Pearlitic :250	52-95 m/min
K	19	Malleable cast iron	Ferritic :130	54-100 m/min
K	20	Malleable cast iron	Pearlitic :230	52-109 m/min
N	21	Aluminum-wrought alloy	Not cureable : 60	84-257 m/min
N	22	Aluminum-wrought alloy	Cured :100	80-204 m/min
N	23	Aluminum-cast, alloyed <12% Si	Not cureable : 75	118-300 m/min
N	24	Aluminum-cast, alloyed	Cured : 90	118-246 m/min
N	25	Aluminum-cast, alloyed >12% Si	High temperature :130	98-226 m/min
N	26	Copper alloys >1% Pb	Free cutting :110	94-271 m/min
N	27	Copper alloys	Brass : 90	94-271 m/min
N	28	Copper alloys	Electrolitic copper :100	94-271 m/min
N	29	Non metallic	Duro& fiber plastics : 60	72-278 m/min
N	30	Non metallic	Hard rubber : 55	68-262 m/min
S	31	High temp. alloys Fe based	Annealed :200	25-52 m/min
S	32	High temp. alloys Fe based	Cured :280	23-46 m/min
S	33	High temp. alloys. Ni or Co based	Annealed :250	20-34 m/min
S	34	High temp. alloys. Ni or Co based	Cured :350	15-29 m/min
S	35	High temp. alloys. Ni or Co based	Castr :320	17-31 m/min
S	36	Titanium (pure)	Pure :310	48-86 m/min
S	37	Titanium Ti alloys	Alpha+beta alloys cu :310	26-58 m/min
H	38	Hardened steel	Hardened :560	32-60 m/min
H	39	Hardened steel	Hardened :654	29-47 m/min
H	40	Chilled cast iron	Cast :400	32-60 m/min
H	41	Cast iron	Hardened :560	29-54 m/min

INSERTO PARA RANURADO PENTA PENTA 24-0.75-ISO IC908 MARCA ISCAR No. 6004678

Grade : IC908

A hard, fine grain substrate with excellent chipping resistance, combined with a TiAlN PVD coating. Provides high wear and oxidation resistance. Recommended for a very wide range of materials applications and machining conditions.

ISO Range - P/M/K	(P15-P30)(M20-M30)(K20-K40)
ISO Range - H/S/N	(H10-H20)(S15-S25)

Grade or Coating Type	PVD
Coating Layers	TiAlN

Find group of specific workpiece material (opens in a new window)

Cutting Speed for: PENTA 24-0.75-ISO IC908 - 6004678

ISO	Material	Material Description	Material Condition	Cutting Speed Recommendations
P	1	Non-alloy steel and cast steel, free cutting steel <0.25%C	Annealed :125	87-166 m/min
P	2	Non-alloy steel and cast steel, free cutting steel >=0.25%C	Annealed :190	84-160 m/min
P	3	Non-alloy steel and cast steel, free cutting steel <0.55%C	Quench and tempered. :250	80-155 m/min
P	4	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Annealed :220	78-149 m/min
P	5	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Quenched & tempered. :300	74-141 m/min
P	6	Low alloy & cast steel (less than 5% of alloying elements)	Annealed :200	92-140 m/min
P	7	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :275	85-128 m/min
P	8	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :300	80-123 m/min
P	9	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :350	74-119 m/min
P	10	High alloyed steel, cast steel and tool steel	Annealed :200	72-124 m/min
P	11	High alloyed steel, cast steel and tool steel	Quenched & tempered :325	60-110 m/min
P	12	Stainless steel and cast steel	Ferritic/martensitic :200	86-130 m/min
P	13	Stainless steel and cast steel	Martensitic :240	85-122 m/min
M	14	Stainless steel and cast steel	Austenitic :180	78-122 m/min
K	15	Grey cast iron (GG)	Pearlitic/ferritic :180	67-118 m/min
K	16	Grey cast iron (GG)	Pearlitic/martensiti :260	60-100 m/min
K	17	Nodular cast iron (GGG)	Ferritic :160	56-112 m/min
K	18	Nodular cast iron (GGG)	Pearlitic :250	52-95 m/min
K	19	Malleable cast iron	Ferritic :130	54-100 m/min
K	20	Malleable cast iron	Pearlitic :230	52-109 m/min
N	21	Aluminum-wrought alloy	Not cureable : 60	84-257 m/min
N	22	Aluminum-wrought alloy	Cured :100	80-204 m/min
N	23	Aluminum-cast, alloyed <12% Si	Not cureable : 75	118-300 m/min
N	24	Aluminum-cast, alloyed	Cured : 90	118-246 m/min
N	25	Aluminum-cast, alloyed >12% Si	High temperature :130	98-226 m/min
N	26	Copper alloys >1% Pb	Free cutting :110	94-271 m/min
N	27	Copper alloys	Brass : 90	94-271 m/min
N	28	Copper alloys	Electrolitic copper :100	94-271 m/min
N	29	Non metallic	Duro& fiber plastics : 60	72-278 m/min
N	30	Non metallic	Hard rubber : 55	68-262 m/min
S	31	High temp. alloys Fe based	Annealed :200	25-52 m/min
S	32	High temp. alloys Fe based	Cured :280	23-46 m/min
S	33	High temp. alloys. Ni or Co based	Annealed :250	20-34 m/min
S	34	High temp. alloys. Ni or Co based	Cured :350	15-29 m/min
S	35	High temp. alloys. Ni or Co based	Castr :320	17-31 m/min
S	36	Titanium (pure)	Pure :310	48-86 m/min
S	37	Titanium Ti alloys	Alpha+beta alloys cu :310	26-58 m/min
H	38	Hardened steel	Hardened :560	32-60 m/min
H	39	Hardened steel	Hardened :654	29-47 m/min
H	40	Chilled cast iron	Cast :400	32-60 m/min
H	41	Cast iron	Hardened :560	29-54 m/min

INSERTO PARA RANURADO PENTA PENTA PENTA 34F400-0.40-22L IC908 MARCA ISCAR No. 6003628

Grade : IC908

A hard, fine grain substrate with excellent chipping resistance, combined with a TiAlN PVD coating. Provides high wear and oxidation resistance. Recommended for a very wide range of materials applications and machining conditions.

ISO Range - P/M/K	(P15-P30)(M20-M30)(K20-K40)
ISO Range - H/S/N	(H10-H20)(S15-S25)

Grade or Coating Type	PVD
Coating Layers	TiAlN

Find group of specific workpiece material (opens in a new window)

Cutting Speed for: PENTA 34F400-0.40-22L IC908 - 6003628

ISO	Material	Material Description	Material Condition	Cutting Speed Recommendations
P	1	Non-alloy steel and cast steel, free cutting steel <0.25%C	Annealed :125	120-183 m/min
P	2	Non-alloy steel and cast steel, free cutting steel >=0.25%C	Annealed :190	90-145 m/min
P	3	Non-alloy steel and cast steel, free cutting steel <0.55%C	Quench and tempered. :250	73-123 m/min
P	4	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Annealed :220	83-148 m/min
P	5	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Quenched & tempered. :300	65-118 m/min
P	6	Low alloy & cast steel (less than 5% of alloying elements)	Annealed :200	80-133 m/min
P	7	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :275	78-133 m/min
P	8	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :300	65-110 m/min
P	9	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :350	70-115 m/min
P	10	High alloyed steel, cast steel and tool steel	Annealed :200	80-123 m/min
P	11	High alloyed steel, cast steel and tool steel	Quenched & tempered :325	60-103 m/min
P	12	Stainless steel and cast steel	Ferritic/martensitic :200	70-160 m/min
P	13	Stainless steel and cast steel	Martensitic :240	63-148 m/min
M	14	Stainless steel and cast steel	Austenitic :180	55-140 m/min
K	15	Grey cast iron (GG)	Pearlitic/ferritic :180	105-185 m/min
K	16	Grey cast iron (GG)	Pearlitic/martensitic :260	100-145 m/min
K	17	Nodular cast iron (GGG)	Ferritic :160	110-200 m/min
K	18	Nodular cast iron (GGG)	Pearlitic :250	90-135 m/min
K	19	Malleable cast iron	Ferritic :130	130-215 m/min
K	20	Malleable cast iron	Pearlitic :230	110-170 m/min
S	31	High temp. alloys Fe based	Annealed :200	28-48 m/min
S	32	High temp. alloys Fe based	Cured :280	19-34 m/min
S	33	High temp. alloys. Ni or Co based	Annealed :250	19-27 m/min
S	34	High temp. alloys. Ni or Co based	Cured :350	18-24 m/min
S	35	High temp. alloys. Ni or Co based	Castr :320	18-23 m/min
S	36	Titanium (pure)	Pure :310	90-130 m/min
S	37	Titanium Ti alloys	Alpha+beta alloys cu :310	29-59 m/min
H	38	Hardened steel	Hardened :560	25-35 m/min
H	39	Hardened steel	Hardened :654	23-33 m/min
H	40	Chilled cast iron	Cast :400	28-43 m/min
H	41	Cast iron	Hardened :560	28-38 m/min

INSERTO PARA ROSCADO 16ERM AG 60 IC808 MARCA ISCAR, No. CAT. 5903266

Grade : IC808

A hard, fine grain substrate with excellent chipping resistance, combined with a new 'SUMO TEC' TiAlN PVD coating. Provides high wear resistance. Recommended for a very wide range of materials.

ISO Range - P/M/K	(P15-P30)(M20-M30)(K20-K40)
ISO Range - H/S/N	(H10-H20)(S10-S25)

Grade or Coating Type	PVD
Coating Layers	TiAlN/AlTiN+TiN

Find group of specific workpiece material (opens in a new window)

Cutting Speed for: 16ERM AG 60 IC808 - 5903266

ISO	Material	Material Description	Material Condition	Cutting Speed Recommendations
P	1	Non-alloy steel and cast steel, free cutting steel <0.25%C	Annealed :125	109-202 m/min
P	2	Non-alloy steel and cast steel, free cutting steel >=0.25%C	Annealed :190	104-192 m/min
P	3	Non-alloy steel and cast steel, free cutting steel <0.55%C	Quench and tempered, :250	95-182 m/min
P	4	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Annealed :220	92-172 m/min
P	5	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Quenched & tempered, :300	85-159 m/min
P	6	Low alloy & cast steel (less than 5% of alloying elements)	Annealed :200	115-179 m/min
P	7	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :275	104-157 m/min
P	8	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :300	95-149 m/min
P	9	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :350	85-142 m/min
P	10	High alloyed steel, cast steel and tool steel	Annealed :200	89-157 m/min
P	11	High alloyed steel, cast steel and tool steel	Quenched & tempered :325	69-132 m/min
P	12	Stainless steel and cast steel	Ferritic/martensitic :200	99-160 m/min
P	13	Stainless steel and cast steel	Martensitic :240	97-147 m/min
M	14	Stainless steel and cast steel	Austenitic :180	92-147 m/min
K	15	Grey cast iron (GG)	Pearlitic/ferritic :180	89-147 m/min
K	16	Grey cast iron (GG)	Pearlitic/martensiti :260	75-117 m/min
K	17	Nodular cast iron (GGG)	Ferritic :160	69-137 m/min
K	18	Nodular cast iron (GGG)	Pearlitic :250	62-109 m/min
K	19	Malleable cast iron	Ferritic :130	65-115 m/min
K	20	Malleable cast iron	Pearlitic :230	62-132 m/min
N	21	Aluminum-wrought alloy	Not cureable : 60	109-304 m/min
N	22	Aluminum-wrought alloy	Cured :100	102-212 m/min
N	23	Aluminum-cast, alloyed <12% Si	Not cureable : 75	169-377 m/min
N	24	Aluminum-cast, alloyed	Cured : 90	169-284 m/min
N	25	Aluminum-cast, alloyed >12% Si	High temperature :130	135-250 m/min
N	26	Copper alloys >1% Pb	Free cutting :110	125-325 m/min
N	27	Copper alloys	Brass : 90	125-325 m/min
N	28	Copper alloys	Electrolitic copper :100	125-325 m/min
N	29	Non metallic	Duroß fiber plastics : 60	88-318 m/min
N	30	Non metallic	Hard rubber : 55	82-309 m/min
S	31	High temp. alloys Fe based	Annealed :200	30-62 m/min
S	32	High temp. alloys Fe based	Cured :280	25-52 m/min
S	33	High temp. alloys. Ni or Co based	Annealed :250	20-30 m/min
S	34	High temp. alloys. Ni or Co based	Cured :350	12-22 m/min
S	35	High temp. alloys. Ni or Co based	Castr :320	15-25 m/min
S	36	Titanium (pure)	Pure :310	70-120 m/min
S	37	Titanium Ti alloys	Alpha+beta alloys cu :310	32-72 m/min
H	38	Hardened steel	Hardened :560	34-62 m/min
H	39	Hardened steel	Hardened :654	30-49 m/min
H	40	Chilled cast iron	Cast :400	34-62 m/min
H	41	Cast iron	Hardened :560	30-55 m/min

INSERTO PARA TORNEADO EXTERIOR DCMT 11T302-24, T9015 MARCA TOSHIBA

Reset | New Search | Search Path | Tung-Navi Tool Navigator | Machine Power

Grade : T9125

Main CVD coated grade for steel turning & heavy cutting. T9125 demonstrates excellent chipping resistance. Applicable for medium to heavy cutting.

ISO Range - P/M/K	(P20-P30)
ISO Range - H/S/N	
HRA	90.00

TRS	
HRA	90.00

Find group of specific workpiece material (opens in a new window)

Cutting Speed for: DCMT11T302-24 T9125 - 6865096

ISO	Material	Material Description	Material Condition	Cutting Speed Recommendations
P	1	Non-alloy steel and cast steel, free cutting steel <0.25%C.	Annealed :125	**230-380 m/min**
P	2	Non-alloy steel and cast steel, free cutting steel >=0.25%C.	Annealed :190	**200-340 m/min**
P	3	Non-alloy steel and cast steel, free cutting steel <0.55%C.	Quench and tempered. :250	**170-300 m/min**
P	4	Non-alloy steel and cast steel, free cutting steel >=0.55%C.	Annealed :220	**190-320 m/min**
P	5	Non-alloy steel and cast steel, free cutting steel >=0.55%C.	Quenched & tempered. :300	**160-280 m/min**
P	6	Low alloy & cast steel (less than 5% of alloying elements).	Annealed :200	**170-300 m/min**
P	7	Low alloy & cast steel (less than 5% of alloying elements).	Quenched & tempered :275	**160-280 m/min**
P	8	Low alloy & cast steel (less than 5% of alloying elements).	Quenched & tempered :300	**140-250 m/min**
P	9	Low alloy & cast steel (less than 5% of alloying elements).	Quenched & tempered :350	**120-220 m/min**
P	10	High alloyed steel, cast steel and tool steel.	Annealed :200	**170-280 m/min**
P	11	High alloyed steel, cast steel and tool steel.	Quenched & tempered :325	**120-220 m/min**

INSERTO PARA TORNEADO EXTERIOR MABR 3 020 1025

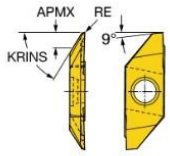
Search results for: *MABR 3 020 1025* (2)

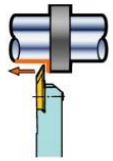
Filter

Sorting and column selection

	Ordering Code	Material classification level 1 (TMC1ISO)	Product family (PRODFAM)	Chip breaker manufacturer's designation (CBMO)
	MABL 3 020 1025	P M K N S	CoroCut XS	

This is a generic representation and should only be used as an appearance approximation.





MABL 3 020 1025

CoroCut® XS insert for turning

View product details

ISO
MABL 3 020 1025

Material id
5735261

ANSI
MABL 3 020 1025

EAN
12328363

Price information

\- 1 + Add

Availability

Life cycle state (LCS)
Released

Log in for more information about price and availability

Package quantity
5

Downloads

Product details
Download

Product data

Material classification level 1 (TMC1ISO)
P M K N S

Operation type (CTPT)
Finishing

Insert size and shape (CUTINTSIZESHAPE)
CoroCut XS -size 3L

Depth of cut maximum (APMX)
4 mm

Cutting edge count (CEDC)
2

Corner radius (RE)
0.2 mm

Wiper edge property (WEP)
false

Major cutting edge angle (KRINS)
59 deg

Hand (HAND)
L

Grade (GRADE)
1025

Substrate (SUBSTRATE)
HC

Coating (COATING)
PVD (Ti,Al)N+TiN

Show more

Start values

P	ap 1.4 mm(0.1-3) fn 0.05 mm/r(0.01-0.09) vc 280 m/min(1800-165)	M	ap 1.4 mm(0.1-3) fn 0.05 mm/r(0.01-0.09) vc 225 m/min(225-225)
S	ap 0.7 mm(0.05-1.5) fn 0.03 mm/r(0.01-0.05) vc 35 m/min(35-20)	N	ap 1.4 mm(0.1-3) fn 0.05 mm/r(0.01-0.09) vc 695 m/min(870-85)

	MABR 3 020 1025	P M K N S	CoroCut XS	

MAB

INSERTO PARA TRONZADO DGR 2200JS-15D, IC328 MARCA ISCAR

Grade : IC328

A thin PVD coated TiCN layer on a tough substrate, for milling, parting and grooving on stainless and alloy steels at low to medium cutting speeds and for unstable machining conditions.

ISO Range - P/M/K	(P25-P40)(M30-M40)
ISO Range - H/S/N	(S20-S30)

Grade or Coating Type	PVD
Coating Layers	TiCN

Find group of specific workpiece material (opens in a new window)

Cutting Speed for: DGR 2200JS-15D IC328 - 6002583

ISO	Material	Material Description	Material Condition	Cutting Speed Recommendations
P	1	Non-alloy steel and cast steel, free cutting steel <0.25%C	Annealed :125	87-127 m/min
P	2	Non-alloy steel and cast steel, free cutting steel >=0.25%C	Annealed :190	77-110 m/min
P	3	Non-alloy steel and cast steel, free cutting steel <0.55%C	Quench and tempered. :250	64-90 m/min
P	4	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Annealed :220	67-104 m/min
P	5	Non-alloy steel and cast steel, free cutting steel >=0.55%C	Quenched & tempered. :300	50-84 m/min
P	6	Low alloy & cast steel (less than 5% of alloying elements)	Annealed :200	64-97 m/min
P	7	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :275	54-84 m/min
P	8	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :300	50-84 m/min
P	9	Low alloy & cast steel (less than 5% of alloying elements)	Quenched & tempered :350	40-67 m/min
P	10	High alloyed steel, cast steel and tool steel	Annealed :200	57-84 m/min
P	11	High alloyed steel, cast steel and tool steel	Quenched & tempered :325	40-60 m/min
P	12	Stainless steel and cast steel	Ferritic/martensitic :200	57-110 m/min
P	13	Stainless steel and cast steel	Martensitic :240	49-97 m/min
M	14	Stainless steel and cast steel	Austenitic :180	40-97 m/min
S	31	High temp. alloys Fe based	Annealed :200	25-40 m/min
S	32	High temp. alloys Fe based	Cured :280	18-25 m/min
S	33	High temp. alloys. Ni or Co based	Annealed :250	18-25 m/min
S	34	High temp. alloys. Ni or Co based	Cured :350	18-23 m/min
S	35	High temp. alloys. Ni or Co based	Castr :320	18-23 m/min
S	36	Titanium (pure)	Pure :310	70-110 m/min
S	37	Titanium Ti alloys	Alpha+beta alloys cu :310	23-45 m/min

FIJA

PINZA DE SUJECION ER 16, 1-2 mm MARCA REGOFIX

PINZA DE SUJECION ER 16, 15-16 mm MARCA REGOFIX

PINZA DE SUJECION ER 16, 3-4 mm MARCA REGOFIX

PINZA DE SUJECION ER 16, 4-5 mm MARCA REGOFIX

PINZA DE SUJECION ER 16, 5-6 mm MARCA REGOFIX

PINZA DE SUJECION ER 16, 7-8 mm MARCA REGOFIX

PORTA INSERTO DE TORNEADO HELIL 1616-3T12, MARCA ISCAR

PORTA INSERTO DE TORNEADO HELIL 2525-3T20, MARCA ISCAR

PORTA INSERTO DE TORNEADO PCHL 25-24, MARCA ISCAR

PORTA INSERTO DE TORNEADO PCHPL 16-24, 2302430, MARCA ISCAR

PORTA INSERTO DE TRONZADO DGAD 2N, MCA. ISCAR.

PORTA INSERTO SDNCN 1616 H11, MARCA SANDVIK

PORTA INSERTO SMALR 1212 K3 CÓDIGO SMALR 1212 K3 MARCA SANDVIK

PORTAINSERTO DE ROSCADO SER 2525 M16, MARCA ISCAR No. CAT. 3800006

VASTAGO DE SUJECION 10 mm, MARCA DIXI

Total general