

# FURAÇÃO

Sumário

# F

## F1 - F9



FURAÇÃO



[www.virtus.ind.br](http://www.virtus.ind.br)

**BROCAS ESPADA**  
COM PONTA INTERCAMBIÁVEL

**HASTES**





F1 - F7

**INSERTOS**

F9

# Vantagens das Pontas Intercambiáveis.



-  Insetos podem ser simplesmente substituídos (já na máquina por exemplo), reduzindo assim o tempo de preset/checkagem.
-  Usa a afiação da borda do cinzel XR para melhorar a resistência da aresta melhorar a estabilidade.
-  Usa duas superfícies de flanco traseiro para reduzir o atrito com peças de trabalho de forma eficaz, pois tem melhor auto-centragem.
-  Comparando com as brocas em geral, esta pode reduzir 20% da resistência axial.

## Substratos por Classe



Para perfuração normal aplicar para aço e ferro fundido



**Materiais - Classe 15**

Aplique para materiais com alta resistência à perfuração, como ligas com alto teor de níquel.



**Materiais - Classe 25**

Aplique para perfuração de material difícil de usar, como ligas de alta temperatura.

**Diâmetros Standard - Página 9.**

## Coberturas



TiAlN

Oferece elevada tenacidade e estabilidade anti-oxidação. Ideal para velocidades e avanços maiores, mantendo a vida útil da ferramenta. Recomendado para usinagem a seco.

Nitreto de Titânio e Alumínio







AlCrN

Resistência suprema ao desgaste.

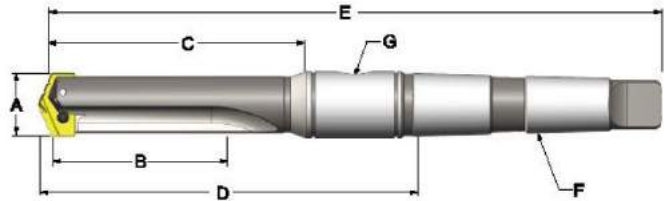
Ideal para elevadas tensões mecânicas e térmicas. A resistência ao calor e à oxidação do revestimento são duas propriedades únicas.

Nitreto de Alumínio e Cromo

Cobertura	Código de Cobertura	Material Classe 15	Material Classe 25
C300	A		
C500	H		

# Cone Morse Canal Reto

Séries 20 - 90



## Série 20

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F CM	G Conector (polegada)	Acces. de Refrigeração		
Y0	SGS-Y0-MMMT2-20N	9.5 ~ 11.0	31.8	51.5	88.0	160.3	#2	1/16"	SH-1905B	2102047	2502018
Z0	SGS-Z0-MMMT2-20N	11.5 ~ 12.5	31.8	51.5	88.0	160.3	#2	1/16"	SH-1905B	2102048	
00	SGS-00-MMMT2-20N	13.0 ~ 17.5	35.0	55.5	92.4	164.3	#2	1/16"	SH-1905B	2102046	2502017
05	SGS-05-MMMT2-20N	15.5 ~ 17.5	35.0	55.5	92.4	164.3	#2	1/16"	SH-1905B		
10	SGS-10-MMMT3-20N	18.0 ~ 24.0	69.8	98.4	142.5	232.5	#3	1/8"	SH-2540B	2102049	2502016
15	SGS-15-MMMT3-20N	22.0 ~ 24.0	69.8	98.4	142.5	232.5	#3	1/8"	SH-2540B		
20	SGS-20-MMMT4-20N	25.0 ~ 35.0	85.7	114.3	160.4	273.8	#4	1/8"	SH-2540B	2102045	2502020
25	SGS-25-MMMT4-20N	30.0 ~ 35.0	85.7	114.3	167.6	281.0	#4	1/4"	SH-3175B		
30	SGS-30-MMMT4-20N	36.0 ~ 47.0	120.6	152.4	206.4	319.1	#4	1/4"	SH-3175B	2102044	2502015
35	SGS-35-MMMT4-20N	42.0 ~ 47.0	120.6	152.4	206.4	319.1	#4	1/4"	SH-3175B		
40	SGS-40-MMMT5-20N	48.0 ~ 65.0	130.1	165.1	219.1	363.5	#5	1/4"	SH-4445B		
45	SGS-45-MMMT5-20N	56.0 ~ 65.0	130.1	165.1	219.1	363.5	#5	1/4"	SH-4445B		
50	SGS-50-MMMT5-20N	64.0 ~ 88.0	171.5	215.9	287.3	430.2	#5	1/2"	SH-5715B	2102043	2502019
55	SGS-55-MMMT5-20N	78.0 ~ 88.0	171.5	215.9	287.3	430.2	#5	1/2"	SH-5715B		
70	SGS-70-MMMT5-20N	90.0 ~ 114.0	171.5	225.4	296.8	439.7	#5	1/2"	SH-5715B		
80	SGS-80-MMMT5-20N	102.0 ~ 114.0	171.5	215.9	296.8	439.7	#5	1/2"	SH-5715B		

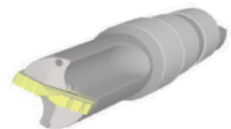
Unidade: milímetros

## Série 50



Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F CM	G Conector (polegada)	Acces. de Refrigeração		
30	SGS-30-MMMT4-50N	36.0 ~ 47.0	349.3	381.0	435	547.7	#4	1/4"	SH-3175B	2102044	2502015
35	SGS-35-MMMT4-50N	42.0 ~ 47.0	349.3	381.0	435	547.7	#4	1/4"	SH-3175B		
40	SGS-40-MMMT5-50N	48.0 ~ 65.0	422.3	457.2	511.2	655.6	#5	1/4"	SH-4445B		
45	SGS-45-MMMT5-50N	56.0 ~ 65.0	422.3	457.2	511.2	655.6	#5	1/4"	SH-4445B		
50	SGS-50-MMMT5-50N	64.0 ~ 88.0	463.6	508.0	579.4	722.3	#5	1/2"	SH-5715B	2102043	2502019
55	SGS-55-MMMT5-50N	78.0 ~ 88.0	463.6	508.0	579.4	722.3	#5	1/2"	SH-5715B		
70	SGS-70-MMMT5-50N	90.0 ~ 114.0	555.6	609.6	681.1	823.9	#5	1/2"	SH-5715B		
80	SGS-80-MMMT5-50N	102.0 ~ 114.0	555.6	609.6	681.1	823.9	#5	1/2"	SH-5715B		

Unidade: milímetros

# Brocas com Ponta Intercambiável





## Série 70

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F CM	G Conector (polegada)	Acess. de Refrigeração		
30	SGS-30-MMMT4-70N	36.0 ~ 47.0	558.8	590.6	644.6	757.2	#4	1/4"	SH-3175B	2102044	2502015
40	SGS-40-MMMT5-70N	48.0 ~ 65.0	625	660.4	714.4	858.8	#5	1/4"	SH-4445B		
45	SGS-45-MMMT5-70N	56.0 ~ 65.0	625	660.4	714.4	858.8	#5	1/4"	SH-4445B		
50	SGS-50-MMMT5-70N	64.0 ~ 88.0	660	704.8	776.2	919.1	#5	1/2"	SH-5715B	2102043	2502019
55	SGS-55-MMMT5-70N	78.0 ~ 88.0	660	704.8	776.2	919.1	#5	1/2"	SH-5715B		
70	SGS-70-MMMT5-70N	90.0 ~ 114.0	685	739.7	811.2	954	#5	1/2"	SH-5715B		
80	SGS-80-MMMT5-70N	102.0 ~ 114.0	685	739.7	811.2	954	#5	1/2"	SH-5715B		

Unidade: milímetros

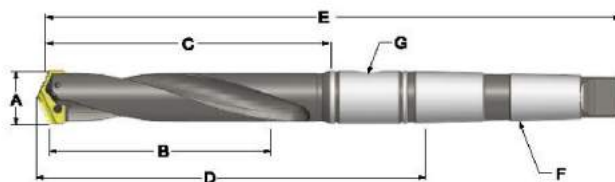
## Série 90

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F CM	G Conector (polegada)	Acess. de Refrigeração		
30	SGS-30-MMMT4-90N	36.0 ~ 47.0	787.4	819.2	873.2	985.8	#4	1/4"	SH-3175B	2102044	2502015
40	SGS-40-MMMT5-90N	48.0 ~ 65.0	879	914.4	968.4	1112.8	#5	1/4"	SH-4445B		
45	SGS-45-MMMT5-50N	56.0 ~ 65.0	879	914.4	968.4	1112.8	#5	1/4"	SH-4445B		
50	SGS-50-MMMT5-90N	64.0 ~ 88.0	889	933.4	1004.6	1147.7	#5	1/2"	SH-5715B	2102043	2502019
55	SGS-55-MMMT5-50N	78.0 ~ 88.0	889	933.4	1004.6	1147.7	#5	1/2"	SH-5715B		
70	SGS-70-MMMT5-90N	90.0 ~ 114.0	939	993.7	1065.2	1208	#5	1/2"	SH-5715B		
80	SGS-80-MMMT5-90N	102.0 ~ 114.0	939	993.7	1065.2	1208	#5	1/2"	SH-5715B		



Unidade: milímetros

# Cone Morse Canal Helicoidal

## Séries 30 - 60





## Série 30

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F CM	G Conector (polegada)	Acess. de Refrigeração		
10	SGH-10-MMMT3-30N	18.0 ~ 24.0	120.7	149.2	193.3	283.3	#3	1/8"	SH-2540B	2102049	2502016
15	SGH-15-MMMT3-30N	22.0 ~ 24.0	120.7	149.2	193.3	283.3	#3	1/8"	SH-2540B		
20	SGH-20-MMMT4-30N	25.0 ~ 35.0	136.5	165.1	211.2	324.6	#4	1/8"	SH-2540B	2102045	2502020
25	SGH-25-MMMT4-30N	30.0 ~ 35.0	136.5	165.1	218.4	331.8	#4	1/4"	SH-3175B		
30	SGH-30-MMMT4-30N	36.0 ~ 47.0	165.1	196.9	250.9	363.6	#4	1/4"	SH-3175B	2102044	2502015
35	SGH-35-MMMT4-30N	42.0 ~ 47.0	165.1	196.9	250.9	363.6	#4	1/4"	SH-3175B		



Unidade: milímetros

## Série 40

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F CM	G Conector (polegada)	Acces. de Refrigeração		
Y0	SGH-Y0-MMMT2-40N	9.5 ~ 11.0	60.3	80.2	116.7	188.9	#2	1/16"	SH-1905B	2102047	2502018
Z0	SGH-Z0-MMMT2-40N	11.5 ~ 12.5	60.3	80.2	116.7	188.9	#2	1/16"	SH-1905B	2102048	
00	SGH-00-MMMT2-40N	13.0 ~ 17.5	63.5	84.1	121.0	192.9	#2	1/16"	SH-1905B	2102046	2502017
05	SGH-05-MMMT2-40N	15.5 ~ 17.5	63.5	84.1	121.0	192.9	#2	1/16"	SH-1905B	2102049	2502016
10	SGH-10-MMMT3-40N	18.0 ~ 24.0	171.5	200.0	244.1	334.2	#3	1/8"	SH-2540B		
15	SGH-15-MMMT3-40N	22.0 ~ 24.0	171.5	200.0	244.1	334.2	#3	1/8"	SH-2540B	2102049	2502016
20	SGH-20-MMMT4-40N	25.0 ~ 35.0	187.3	215.9	262.0	375.4	#4	1/8"	SH-2540B	2102045	2502020
25	SGH-25-MMMT4-40N	30.0 ~ 35.0	187.3	215.9	269.2	382.6	#4	1/4"	SH-3175B		
30	SGH-30-MMMT4-40N	36.0 ~ 47.0	209.5	241.3	295.3	408.0	#4	1/4"	SH-3175B	2102044	2502015
35	SGH-35-MMMT4-40N	42.0 ~ 47.0	209.5	241.3	295.3	408.0	#4	1/4"	SH-3175B		
40	SGH-40-MMMT5-40N	48.0 ~ 65.0	231.8	266.7	320.7	465.1	#5	1/4"	SH-4445B		
45	SGH-45-MMMT5-40N	56.0 ~ 65.0	231.8	266.7	320.7	465.1	#5	1/4"	SH-4445B	2102043	2502019
50	SGH-50-MMMT5-40N	64.0 ~ 88.0	273.1	317.5	388.9	531.8	#5	1/2"	SH-5715B		
55	SGH-55-MMMT5-40N	78.0 ~ 88.0	273.1	317.5	388.9	531.8	#5	1/2"	SH-5715B		
70	SGH-70-MMMT5-40N	90.0 ~ 114.0	273.1	327.0	398.5	541.3	#5	1/2"	SH-5715B	2102043	2502019
80	SGH-80-MMMT5-40N	102.0 ~ 114.0	273.1	327.0	398.5	541.3	#5	1/2"	SH-5715B		



Unidade: milímetros

## Série 50

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F CM	G Conector (polegada)	Acces. de Refrigeração		
Y0	SGH-Y0-MMMT2-50N	9.5 ~ 11.0	111.1	130.9	167.4	239.7	#2	1/16"	SH-1905B	2102047	2502018
Z0	SGH-Z0-MMMT2-50N	11.5 ~ 12.5	111.1	130.9	167.4	239.7	#2	1/16"	SH-1905B	2102048	
00	SGH-00-MMMT2-50N	13.0 ~ 17.5	114.3	135.0	171.8	243.7	#2	1/16"	SH-1905B	2102046	2502017
05	SGH-05-MMMT2-50N	15.5 ~ 17.5	114.3	135.0	171.8	243.7	#2	1/16"	SH-1905B	2102049	2502016
10	SGH-10-MMMT3-50N	18.0 ~ 24.0	273.1	301.6	345.7	435.8	#3	1/8"	SH-2540B		
15	SGH-15-MMMT3-50N	22.0 ~ 24.0	273.1	301.6	345.7	435.8	#3	1/8"	SH-2540B	2102049	2502016
20	SGH-20-MMMT4-50N	25.0 ~ 35.0	289.0	317.5	363.6	477.0	#4	1/8"	SH-2540B	2102045	2502020
25	SGH-25-MMMT4-50N	30.0 ~ 35.0	289.0	317.5	370.8	484.2	#4	1/4"	SH-3175B		

Unidade: milímetros

## Série 60

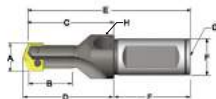
Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F CM	G (polegada)	Acces. de Refrigeração		
00	SGH-00-MMMT2-60N	13.0 ~ 17.5	177.8	198.5	235.3	307.2	#2	1/16"	SH-1905B	2102046	2502017
05	SGH-05-MMMT2-60N	15.5 ~ 17.5	177.8	198.5	235.3	307.2	#2	1/16"	SH-1905B		

Unidade: milímetros



## Haste Cilíndrica Canal Reto

Séries 10 - 90



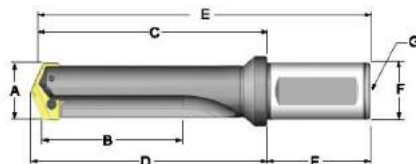
### Série 10

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F Haste		G Conector		Haste	Conector
							diam	compr	Pear	Side		
Y0	SGS-Y0-MK016-10N	9.5 ~ 11.0	19.1	47.6	50.0	89.5	16	41.9	1/16"	1/8"	2102047	2502018
Z0	SGS-Z0-MK016-10N	11.5 ~ 12.5	19.1	45.6	48.0	87.5	16	41.9	1/16"	1/8"	2102048	
00	SGS-00-MK020-10N	13.0 ~ 17.5	22.2	47.6	50.4	89.5	20	41.9	1/8"	1/8"	2102046	2502017
05	SGS-05-MK020-10N	15.5 ~ 17.5	22.2	47.6	50.4	89.5	20	41.9	1/8"	1/8"		
10	SGS-10-MK025-10N	18.0 ~ 24.0	47.6	75.8	79.4	128.9	25	53.1	1/8"	1/8"	2102049	2502016
15	SGS-15-MK025-10N	22.0 ~ 24.0	57.2	88.5	92.1	141.6	25	53.1	1/8"	1/8"		
20	SGS-20-MK032-10N	25.0 ~ 35.0	57.2	88.5	92.1	146.4	32	57.9	1/4"	1/8"	2102045	2502020
25	SGS-25-MK032-10N	30.0 ~ 35.0	92.1	123.4	127	181.3	32	57.9	1/4"	1/8"		
30	SGS-30-MK040-10N	36.0 ~ 47.0	76.2	125	129.8	195.1	40	70.1	1/4"	1/4"	2102044	2502015

Unidade: milímetros

## Haste Cilíndrica Canal Reto

### Série 20



Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F Haste		G Conector (polegada)	Haste	Conector
							diam	compr			
Y0	SGS-Y0-MK020-20N	9.5 ~ 11.0	31.8	61.1	63.5	103.0	20	41.9	1/8"	2102047	2502018
Z0	SGS-Z0-MK020-20N	11.5 ~ 12.5	31.8	61.1	63.5	103.0	20	41.9	1/8"	2102048	
00	SGS-00-MK020-20N	13.0 ~ 17.5	34.9	63.5	66.3	105.4	20	41.9	1/8"	2102046	2502017
05	SGS-05-MK020-20N	15.5 ~ 17.5	34.9	63.5	66.3	105.4	20	41.9	1/8"		
10	SGS-10-MK025-20N	18.0 ~ 24.0	66.7	107.2	110.7	160.2	25	53.1	1/8"	2102049	2502016
15	SGS-15-MK025-20N	22.0 ~ 24.0	66.7	107.2	110.7	160.2	25	53.1	1/8"		
20	SGS-20-MK032-20N	25.0 ~ 35.0	85.7	128.6	132.2	186.5	32	57.9	1/4"	2102045	2502020
25	SGS-25-MK032-20N	30.0 ~ 35.0	85.7	128.6	132.2	186.5	32	57.9	1/4"		
30	SGS-30-MK040-20N	36.0 ~ 47.0	120.7	173	177.8	243.1	40	70.1	1/4"	2102044	2502015
35	SGS-35-MK040-20N	42.0 ~ 47.0	120.7	173	177.8	243.1	40	70.1	1/4"		
40	SGS-40-MK040-20N	48.0 ~ 65.0	130.2	179.4	184.2	249.5	40	70.1	1/4"		
45	SGS-45-MK040-20N	56.0 ~ 65.0	130.2	179.4	184.2	249.5	40	70.1	1/4"		



Unidade: milímetros

### Série 50

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F Haste		G Conector (polegada)	Haste	Conector
							diam	compr			
30	SGS-30-MK040-50N	36.0 ~ 47.0	349.3	401.6	406.4	471.7	40	70.1	1/4"	2102044	2502015
35	SGS-35-MK040-50N	42.0 ~ 47.0	349.3	401.6	406.4	471.7	40	70.1	1/4"		
40	SGS-40-MK040-50N	48.0 ~ 65.0	422.3	471.5	476.3	541.6	40	70.1	1/4"		
45	SGS-45-MK040-50N	56.0 ~ 65.0	422.3	471.5	476.3	541.6	40	70.1	1/4"		



Unidade: milímetros

## Série 70

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F Haste		G Conector (polegada)		
							diam	compr			
Y0	SGS-Y0-MK020-70N	9.5 ~ 11.0	222.0	251.7	254.1	293.6	20	41.9	1/8"	2102047	2502018
Z0	SGS-Z0-MK020-70N	11.5 ~ 12.5	222.3	251.7	254.1	293.6	20	41.9	1/8"	2102048	
00	SGS-00-MK020-70N	13.0 ~ 17.5	295	323.9	326.7	365.8	20	41.9	1/8"	2102046	2502017
10	SGS-10-MK025-70N	18.0 ~ 24.0	457	494.5	498.1	547.6	25	53.1	1/8"	2102049	2502019
20	SGS-20-MK032-70N	25.0 ~ 35.0	511	554.1	557.7	612	32	57.9	1/4"	2102045	2502020
25	SGS-25-MK032-70N	30.0 ~ 35.0	692	735.1	738.7	793	32	57.9	1/4"		
30	SGS-30-MK040-70N	36.0 ~ 47.0	558.8	611.1	615.9	681.2	40	70.1	1/4"	2102044	2502015
35	SGS-35-MK040-70N	42.0 ~ 47.0	558.8	611.1	615.9	681.2	40	70.1	1/4"		
40	SGS-40-MK040-70N	48.0 ~ 65.0	625	674.7	679.5	744.8	40	70.1	1/4"		
45	SGS-45-MK040-70N	56.0 ~ 65.0	625	674.7	679.5	744.8	40	70.1	1/4"		

Unidade: milímetros

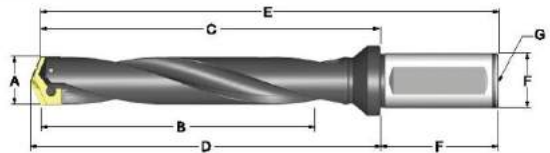
## Série 90

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F Haste		G Conector (polegada)		
							diam	comp			
Y0	SGS-Y0-MK020-90N	9.5 ~ 11.0	290.0	319.9	322.3	361.8	20	41.9	1/8"	2102047	2502018
Z0	SGS-Z0-MK020-90N	11.5 ~ 12.5	290.5	319.9	322.3	361.8	20	41.9	1/8"	2102048	
00	SGS-00-MK020-90N	13.0 ~ 17.5	387	416	418.8	457.9	20	41.9	1/8"	2102046	2502017
10	SGS-10-MK025-90N	18.0 ~ 24.0	569	602.5	606.1	655.6	25	53.1	1/8"	2102049	2502019
20	SGS-20-MK032-90N	25.0 ~ 35.0	692	735.1	738.7	793	32	57.9	1/4"	2102045	2502020
25	SGS-25-MK032-90N	30.0 ~ 35.0	692	735.1	738.7	793	32	57.9	1/4"		
30	SGS-30-MK040-90N	36.0 ~ 47.0	787.4	839.7	844.5	909.8	40	70.1	1/4"	2102044	2502015
35	SGS-35-MK040-90N	42.0 ~ 47.0	787.4	839.7	844.5	909.8	40	70.1	1/4"		
40	SGS-40-MK040-90N	48.0 ~ 65.0	879	928.7	933.5	998.8	40	70.1	1/4"		
45	SGS-45-MK040-90N	56.0 ~ 65.0	879	928.7	933.5	998.8	40	70.1	1/4"		



Unidade: milímetros

# Haste Cilíndrica Canal Helicoidal

## Séries 30 - 60





## Série 30

Grupo	Código	A Ponta de broca	B Comp. Útil	C	D	E	F Haste		G Conector (polegada)		
							diam	compr			
10	SGH-10-MK025-30N	18.0 ~ 24.0	117.5	154.8	158.4	207.9	25.0	53.1	1/8"	2102049	2502016
15	SGH-15-MK025-30N	22.0 ~ 24.0	117.5	154.8	158.4	207.9	25.0	53.1	1/8"	2102045	2502020
20	SGH-20-MK032-30N	25.0 ~ 35.0	136.5	179.4	183.0	237.3	32.0	57.9	1/4"		
25	SGH-25-MK032-30N	30.0 ~ 35.0	136.5	179.4	183.0	237.3	32.0	57.9	1/4"	2102044	2502015
30	SGH-30-MK040-30N	36.0 ~ 47.0	165.1	217.5	222.3	287.6	40.0	70.1	1/4"		
35	SGH-35-MK040-30N	42.0 ~ 47.0	165.1	217.5	222.3	287.6	40.0	70.1	1/4"		

Unidade: milímetros



# F BROCA ESPECIAL

## Série 40

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F Haste		G Conector (polegada)		
							diam	compr			
Y0	SGH-Y0-MK020-40N	9.5 ~ 11.0	60.3	89.7	92.1	131.6	20.0	41.9	1/8"	2102047	2502018
Z0	SGH-Z0-MK020-40N	11.5 ~ 12.5	60.3	89.7	92.1	131.6	20.0	41.9	1/8"	2102048	
00	SGH-00-MK020-40N	13.0 ~ 17.5	63.5	92.1	94.9	134.0	20.0	41.9	1/8"	2102046	2502017
05	SGH-05-MK020-40N	15.5 ~ 17.5	63.5	92.1	94.9	134.0	20.0	41.9	1/8"		
10	SGH-10-MK025-40N	18.0 ~ 24.0	168.3	205.6	209.2	258.7	25.0	53.1	1/8"	2102049	2502016
15	SGH-15-MK025-40N	22.0 ~ 24.0	168.3	205.6	209.2	258.7	25.0	53.1	1/8"		
20	SGH-20-MK032-40N	25.0 ~ 35.0	187.3	230.2	233.8	288.1	32.0	57.9	1/4"	2102045	2502020
25	SGH-25-MK032-40N	30.0 ~ 35.0	187.3	230.2	233.8	288.1	32.0	57.9	1/4"		
30	SGH-30-MK040-40N	36.0 ~ 47.0	209.6	261.9	266.7	332.0	40.0	70.1	1/4"	2102044	2502015
35	SGH-35-MK040-40N	42.0 ~ 47.0	209.5	261.9	266.7	332.0	40.0	70.1	1/4"		
40	SGH-40-MK040-40N	48.0 ~ 65.0	231.8	281.0	285.8	351.1	40.0	70.1	1/4"		
45	SGH-45-MK040-40N	56.0 ~ 65.0	231.8	281.0	285.8	351.1	40.0	70.1	1/4"		



Unidade: milímetros

## Série 50

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F Haste		G Conector (polegada)		
							diam	compr			
Y0	SGH-Y0-MK020-50N	9.5 ~ 11.0	111.1	140.5	142.9	182.4	20	41.9	1/8"	2102047	2502018
Z0	SGH-Z0-MK020-50N	11.5 ~ 12.5	111.1	140.5	142.9	182.4	20	41.9	1/8"	2102048	
00	SGH-00-MK020-50N	13.0 ~ 17.5	114.3	142.9	145.7	184.8	20	41.9	1/8"	2102046	2502017
05	SGH-05-MK020-50N	15.5 ~ 17.5	114.3	142.9	145.7	184.8	20	41.9	1/8"		
10	SGH-10-MK025-50N	18.0 ~ 24.0	269.9	307.2	310.8	360.3	25	53.1	1/8"	2102049	2502016
15	SGH-15-MK025-50N	22.0 ~ 24.0	269.9	307.2	310.8	360.3	25	53.1	1/8"		
20	SGH-20-MK032-50N	25.0 ~ 35.0	288.9	331.8	335.4	389.7	32	57.9	1/4"	2102045	2502020
25	SGH-25-MK032-50N	30.0 ~ 35.0	288.9	331.8	335.4	389.7	32	57.9	1/4"		

Unidade: milímetros

## Série 60

Grupo	Modelo	A Ponta de broca	B Comp. Útil	C	D	E	F Haste		G Conector (polegada)		
							diam	compr			
00	SGH-00-MK020-60N	13.0 ~ 17.5	177.8	206.4	209.1	248.3	20	41.9	1/8"	2102046	2502017
05	SGH-05-MK020-60N	15.5 ~ 17.5	177.8	206.4	209.1	248.3	20	41.9	1/8"		

Unidade: milímetros





## Recomendação de Avanço

Material	Dureza	Classe	Velocidade de corte (M/min)		Avanço (mm/rev)						
	BHN		C300	C500	Φ 9.5 ~ 12.5	Φ 13 ~ 17.5	Φ 18 ~ 24	Φ 25 ~ 35	Φ 36 ~ 47	Φ 48 ~ 65	Φ 66 ~ 114
Usinagem livre de Aço 1213, 12L13, 1215, 12L14, 1118	100 - 150	15	86	90	0.16	0.23	0.31	0.40	0.48	0.55	0.67
	150 - 200	15	80	82.8	0.16	0.23	0.31	0.40	0.48	0.55	0.67
	200 - 250	15	73	77.4	0.14	0.23	0.31	0.38	0.48	0.57	0.69
Aço com baixo carbono 1015, 1020, 1140, 1025	85 - 125	15	76	80.1	0.15	0.22	0.28	0.37	0.46	0.56	0.67
	125 - 175	15	73	75.6	0.15	0.22	0.28	0.37	0.46	0.56	0.67
	175 - 225	15	69	72	0.13	0.19	0.24	0.34	0.43	0.50	0.57
	225 - 275	15	64	66.6	0.13	0.19	0.24	0.34	0.43	0.50	0.57
Aço com médio carbono 1035, 1050, 1045, 1055, 1140	125 - 175	15	73	75.6	0.14	0.22	0.28	0.35	0.45	0.55	0.65
	175 - 225	15	69	72	0.13	0.19	0.23	0.34	0.43	0.50	0.58
	225 - 275	15	64	66.6	0.13	0.19	0.23	0.34	0.43	0.50	0.58
	275 - 325	15,25	60	62.1	0.10	0.17	0.21	0.28	0.38	0.45	0.55
Liga de aço 8620, 4130, 4137, 4140, 6150	125 - 175	15	64	66.6	0.15	0.20	0.24	0.36	0.43	0.47	0.53
	175 - 225	15	60	62.1	0.13	0.20	0.24	0.36	0.42	0.46	0.55
	225 - 275	15	55	57.6	0.13	0.16	0.23	0.35	0.41	0.44	0.55
	275 - 325	15,25	52	54	0.09	0.15	0.22	0.28	0.38	0.41	0.50
Liga de Alta Temp. 9840, 4340, 4330	225 - 300	15,25	47	49.5	0.08	0.15	0.21	0.27	0.38	0.40	0.51
	300 - 350	15,25	34	34.2	0.13	0.18	0.23	0.24	0.36	0.43	0.50
	350 - 400	15,25	26	27.9	0.10	0.18	0.23	0.24	0.36	0.43	0.50
Aço Estrutural A36, A516, A812	100 - 150	15	61	64.8	0.14	0.23	0.29	0.35	0.44	0.50	0.63
	150 - 250	15	52	52.2	0.13	0.22	0.24	0.28	0.38	0.46	0.59
	250 - 350	15,25	43	44.1	0.10	0.20	0.22	0.24	0.34	0.40	0.48
Hastelloy b, Inconel 600	140 - 220	15,25	12	12.6	0.10	0.18	0.23	0.28	0.30	0.38	0.43
	220 - 310	25	11	10.8	0.10	0.15	0.20	0.25	0.25	0.30	0.36
Aço Inoxidável 310, 316, 410, 330	135 - 185	15	32	33.3	0.14	0.20	0.23	0.26	0.36	0.41	0.50
	185 - 275	15	28	28.8	0.12	0.18	0.20	0.24	0.30	0.36	0.46
Aço H13, H21, A2, S1	150 - 200	15	34	35.1	0.09	0.15	0.19	0.25	0.28	0.36	0.41
	200 - 250	15,25	28	28.8	0.09	0.15	0.19	0.25	0.28	0.36	0.41
Alumínio 2014, 6061, 7075	30	15	260	-	0.19	0.33	0.41	0.50	0.54	0.64	0.62
	180	0	138	-	0.19	0.33	0.41	0.46	0.54	0.64	0.62
Ferro Fundido, Ferro G A48-7 GR30/GR45, A536-72 60-40-18, A220-76 GR40010	120 - 150	15	76	80.1	0.16	0.30	0.40	0.49	0.59	0.69	0.75
	150 - 200	15	69	72	0.14	0.26	0.35	0.45	0.56	0.64	0.68
	200 - 220	15	60	62.1	0.14	0.23	0.30	0.41	0.46	0.52	0.60
	220 - 260	15,25	50	52.2	0.13	0.17	0.23	0.30	0.35	0.43	0.50
	260 - 320	15,25	41	43.2	0.10	0.15	0.16	0.28	0.28	0.35	0.40

## Fator de acordo com o comprimento útil

Parâmetros	Corpos de Broca com comprimentos diferentes de acordo com as séries abaixo:							
	20 Curto	30 Intermediário	40 Padrão	50 Comprimento Prolongado	60 Alongamento	70 Comprimento Extra	80	90 Ao longo do Comprimento
Velocidade de corte	Consulte a tabela acima			0.90	0.85	0.80	0.75	
Avanço	Consulte a tabela acima				0.95	0.90	0.90	

M/min = RPM - 0.003 - DIA

mm/min = RPM - (mm/rev)

RPM = M/min - 348.47/ DIA

**Legendas**

RPM = rotação por minuto

DIA = diâmetro da broca (mm)

M/min = superfície de contato por minuto

mm/rev = taxa de alimentação (mm/rev)

## Fluxo do fluido de corte

Material	Dureza BHN	Unidade de medida	Diâmetro / Pressão e Fluxo						
			Φ9,5 ~ 12,5	Φ 13 ~ 17,5	Φ18 ~ 24	Φ25 ~ 35	Φ36 ~ 47	Φ48 ~ 65	Φ66 ~ 114
Usinagem livre de Aço 1213, 12L13, 1215, 12L14, 1118	100-250	kg/cm	12.5	7.6	8.5	6.7	6	3	5.2
		L/min	9.6	10.9	18.2	28.5	49.4	118	151
Aço com baixo carbono 1015, 1020, 1140, 1025	85-275	kg/cm	11.6	5.7	5.9	4.9	4.5	2.2	3.8
		L/min	9.3	9.4	14.8	24.5	43.5	104	134
Aço com médio carbono 1035, 1050, 1045, 1055, 1140	125-325	kg/cm	11.2	5.3	5.5	4.5	4.1	2.3	3.8
		L/min	8.9	9.2	14.5	20.8	40.5	105	131
Aço Estrutural A36, A516, A812	100-350	kg/cm	11.2	5.5	5	3.3	3.1	2	3.1
		L/min	8.9	9.4	14	20.8	35	92	118
Liga de aço 8620, 4130, 4137, 4140, 6150	125-375	kg/cm	11.2	4.8	5	4.1	3.6	2.3	3.1
		L/min	8.9	8.7	14	20.8	36.5	101	119
Hastelloy b, Inconel 600	140-310	kg/cm	10.5	4.3	3.6	2.2	1.9	1.8	2.2
		L/min	8.9	8.5	11.9	17	28.2	42.3	48.2
Liga de Alta Temp. 9840, 4340, 4330	225-400	kg/cm	10.5	3.9	3.3	1.8	1.8	1.5	1.8
		L/min	8.9	8.1	11.3	17	28.4	83	92
Aço H13, H21, A2, S1	150-250	kg/cm	10.5	4	3.3	1.9	1.8	1.5	1.8
		L/min	8.9	8.1	11.3	17	28.4	82	92
Aço Inoxidável 310, 316, 410, 330	135-275	kg/cm	11.6	5.3	4.8	3.3	3.1	1.8	2.7
		L/min	9.3	9.2	14	20.8	36	92	110
Ferro Fundido, Ferro G A48-7 GR30/GR45, A536-72 60-40-18, A220-76 GR40010	120-320	kg/cm	10.8	4.3	3.8	2.4	2.2	1.8	2.2
		L/min	8.9	8.5	12.1	17	32.2	92	101
Alumínio 2014, 6061, 7075	30-180	kg/cm	13.8	11	13	9.4	7.3	3.1	4.8
		L/min	10	13.1	21	33	56	119	148

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# Como Escolher Seu Inserto

ex. de código:

## S P - Y - I 0750 - 15 X A

S	P	Y			I	0750	15	X	A
Tipo	Tipo	Código de conector			Métrica e Polegada	Diâmetro do Inserto	Material	Geometria	Cobertura
Corpo da Broca	Inserto	Grupo	Métrica	Polegada	I - Polegada M - Métrica	0750-3/4" 0750-75mm	15- Pó HSS de alto desempenho  25- Pó HSS de nível superior	X - Geometria Padrão  W - Multi-arestas  H - Ponta Step  P - Base Plana	H-C500 A-C300
		Y	9.5 ~ 11.0	3/8" ~ 27/64"					
		Z	11.5 ~ 12.5	7/16" ~ 1/2"					
		0	13 ~ 17.5	33/64" ~ 11/16"					
		1	18 ~ 24	45/64" ~ 15/16"					
		2	25 ~ 35	31/32" ~ 1-3/8"					
		3	36 ~ 47	1-13/32" ~ 1-7/8"					
		4	48 ~ 65	1-29/32" ~ 2-9/16"					
		5	64 ~ 76	2-1/2" ~ 3"					
6	77 ~ 89	3-1/32" ~ 3-1/2"							
7	90 ~ 100	3-17/32" ~ 4"							
8	102 ~ 114	4-1/64" ~ 4-1/2"							

**Materiais - Classe 15** (aço para alta velocidade com pó de alto desempenho) para perfuração de materiais de alta resistência, como liga com alto teor de níquel.

**Materiais - Classe 25** (aço para alta velocidade com pó de alto desempenho) para perfuração de material difícil de usinar, como liga de alta temperatura.

Cobertura	Número de ordem	Material Cobertura
C 300	XX-X-XXXXX-XXXX	TiAlN
C 500	XX-X-XXXXX-XXXX	ALCRN

## DIÂMETROS (mm)

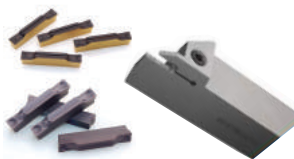
9.5	32.0
10.0	33.0
10.5	34.0
11.0	35.0
11.5	39.0
12.0	40.0
12.5	41.0
13.0	42.0
13.5	43.0
14.0	44.0
14.5	45.0
15.0	46.0
15.5	47.0
16.0	48.0
16.5	49.0
17.0	50.0
17.5	51.0
18.0	52.0
18.5	53.0
19.0	54.0
19.5	55.0
20.0	56.0
20.5	57.0
21.0	58.0
22.0	59.0
23.0	60.0
24.0	61.0
25.0	62.0
26.0	63.0
27.0	64.0
28.0	65.0
29.0	66.0
30.0	67.0
31.0	68.0

## Conheça nossas outras linhas:

### Torneamento



### Cortes e Canais



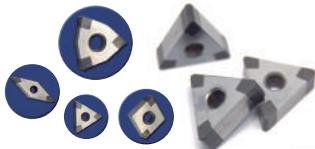
### Rosqueamento



### Fresamento



### CBN e PCB



### Especiais



Escritório/Main Office  
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