

# TORNEAMENTO



Sumário

# A

## A1 - A21

### SUportes

A2 - A3 **EXTERNOS**

A3 - A5 **INTERNOS**

### INsertos

A6- A11 **NEGATIVOS**

A12 - A16 **POSITIVOS**

A17 **PCD e CBN**

### BEDAMES

A18 - A19

### ROSQUEAMENTO

A20 - A21

TORNEAMENTO



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

2019 - 01

# Guia de Escolha



O primeiro passo é identificar qual material pretende torneare.

- 1 Material**
- Aços 
  - Inox 
  - Ferro Fundido 

Saber qual operação deseja efetuar.

- 2 Operação**
- Acabamento
  - Desbaste Médio
  - Desbaste Pesado

E identificar qual a condição em que se encontra a peça.

- 3 Condição**
- Resistência (Corte contínuo)  
  - Médio (Leve interrupção)   
  - Tenacidade (Corte interrompido)  

**É um prazer apresentar a primeira edição do catálogo de Torneamento Virtus.**

**Agora você tem em mãos um resumo das ferramentas mais utilizadas na Usinagem de manutenção.**

Vale lembrar que fornecemos produtos para produção em alta escala e, também para lotes pequenos com necessidades especiais.

Esperamos poder atender você!

Para ferramentas e soluções especiais entre em contato conosco pelas mídias sociais.

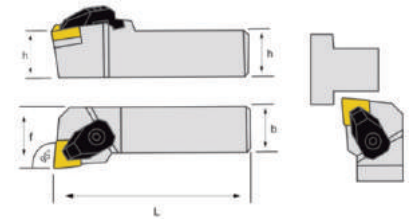
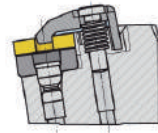
É sempre um prazer atendê-los!



## Suportes Externos

R/L (Right/Left - Tradução: Direita/Esquerda).

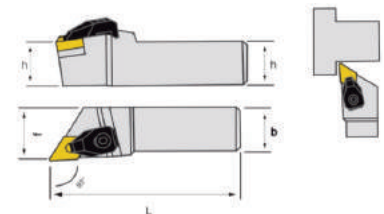
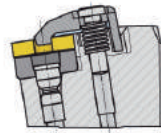
### DCLNR/L



PÁG. 6

Modelo	h	b	L	f	Inserto	Grampo	Calço	Parafuso do Calço	Chave Torx
DCLNR/L 2020K 12	20	20	125	25	CN__1204__	5412 028-021	5322 234-01	5513 020-02	5680 049-01
DCLNR/L 2525M 12	25	25	150	32					

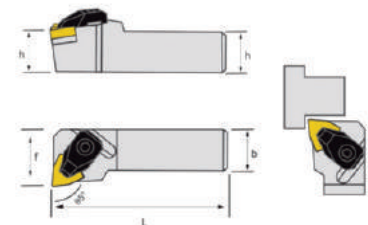
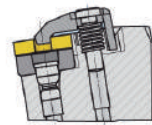
### DDJNR/L



PÁG. 7

Modelo	h	b	L	f	Inserto	Grampo	Calço	Parafuso do Calço	Chave Torx
DDJNR/L 2020K 15	20	20	125	25	DN__1506__	5412 028-021	5322 266-02	5513 020-02	5680 049-01
DDJNR/L 2525M 15	25	25	150	32					

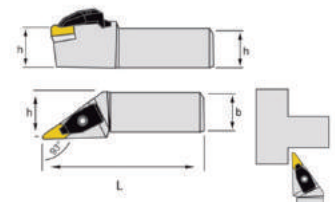
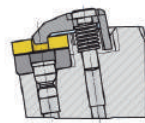
### DWLNR/L



PÁG. 11

Modelo	h	b	L	f	Inserto	Grampo	Calço	Parafuso do Calço	Chave Torx
DWLNR/L 2020K 06	20	20	125	25	WN__0604__	5412 028-011	5322 328-01	5513 020-04	5680 051-03
DWLNR/L 2525M 06	25	25	150	32					
DWLNR/L 2020K 08	20	20	125	25	WN__0804__	5412 028-021	5322 331-12	5513 020-02	5680 049-01
DWLNR/L 2525M 08	25	25	150	32					

### DVJNR/L



PÁG. 10

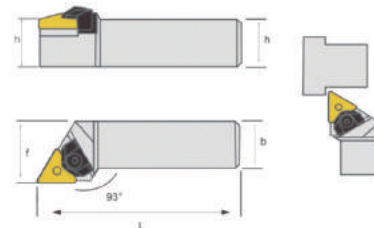
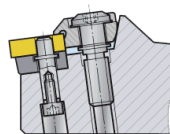
Modelo	h	b	L	f	Inserto	Grampo	Calço	Parafuso do Calço	Chave Torx
DVJNR/L 2020K 16	20	20	125	25	VN__1604__	5412 028-061	5322 269-01	5513 020-09	5680 049-01
DVJNR/L 2525M 16	25	25	150	32					

Unidade: milímetros

Outras dimensões estão disponíveis sob encomenda.

# A SUPORTES

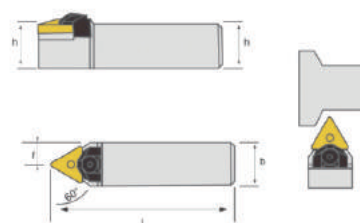
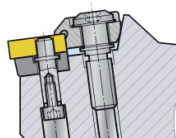
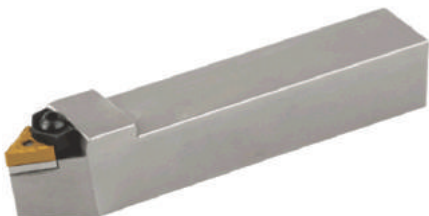
## MTJNR/L



PÁG. 9

Modelo	h	b	L	f	Inserto 	Grampo 	Calço 	Pino + Parafuso 	Chave Allen 
MTJNR/L 2020K 16	20	20	125	25	TN__1604__	170.38-820-1	170.3-852	5313 021-02	174.1-863
MTJNR/L 2525M 16	25	20	150	25					
MTJNR/L 2525M 22	25	20	150	25	TN__2204__	170.38-821-1	170.3-855	181.38-840	174.1-864

## MTJNN

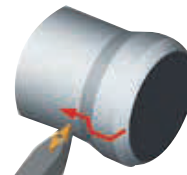
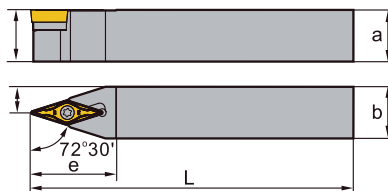


PÁG. 9

Modelo	h	b	L	f	Inserto 	Grampo 	Calço 	Pino + Parafuso 	Chave Allen 
MTJNN 2020K 16	20	20	125	10,0	TN__1604__	170.38-821-1	170.3-855	181.38-840	174.1-864
MTJNN 2525M 16	25	20	150	10,0					

## SVVBN

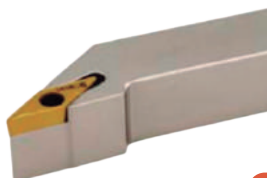
Kr: 72°30'



PÁG. 15

Modelo	a	b	L	h	s	e	Inserto 	Parafuso 	Chave Torx 	Calço 	Parafuso do Calço 
SVVBN 2020K 11	20	20	125	20	10	30	VB__1102__	5513 020-03	5680 051-02	—	—
SVVBN 2020K 16	20	20	125	20	10	33	VB__1604__	5513 020-01	5680 049-01	5322 270-01	5512 090-01
SVVBN 2525M 16	25	25	150	25	12.5	38					

## SVVBR/L



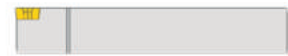
PÁG. 15

Modelo	a	b	L	h	s	e	Inserto 	Parafuso 	Chave Torx 	Calço 	Parafuso do Calço 
SVVBR/L 2020K 11	20	20	125	20	10	30	VB__1102__	5513 020-03	5680 051-02	—	—
SVVBR/L 2020K 16	20	20	125	20	10	33	VB__1604__	5513 020-01	5680 049-01	5322 270-01	5512 090-01
SVVBR/L 2525M 16	25	25	150	25	12.5	38					

☞ Unidade: milímetros

☞ Outras dimensões estão disponíveis sob encomenda.

## SDJCR/L



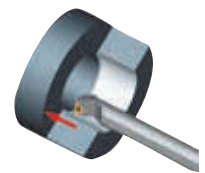
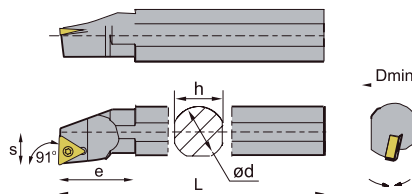
PÁG. 13

Modelo	a	b	L	h	s	e	Inserto	Parafuso	Chave Torx	Calço	Parafuso do Calço
SDJCR/L 2020K 07	20	20	125	20	10	30	DC__0702__	5513 020-03	5680 051-02	—	—
SDJCR/L 2020K 11	20	20	125	20	10	33	DC__11T3__	5513 020-01	5680 049-01	5322 263-01	5512 090-01
SDJCR/L 2525M 11	25	25	150	25	12.5	38					

## Suportes Internos

### STFCR/L

Kr: 91°



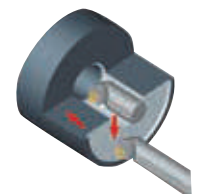
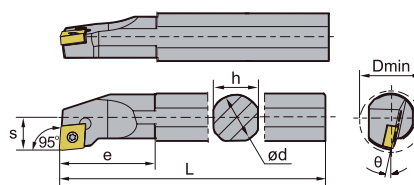
PÁG. 14



Modelo	ød	L	h	s	e	D <sub>min</sub>	θ	Inserto	Parafuso	Chave Torx
S12M STFCR/L 11	12	150	11	9	30	16	-10	TC_1102_	5513 020-03	5680 051-02
S16R STFCR/L 11	16	200	15	11	35	20	-6	TC_1102_	5513 020-03	5680 051-02
S20S STFCR/L 11	20	250	18	13	36	25	-3	TC_1102_	5513 020-03	5680 051-02
S25T STFCR/L 16	25	300	23	17	49	32	-6	TC_16T3_	5513 020-10	5680 049-01

### SCLCR/L

Kr: 95°



PÁG. 12



Modelo	ød	L	h	s	e	D <sub>min</sub>	θ	Inserto	Parafuso	Chave Torx
S08K SCLCR/L 06	8	125	7	5	14	10	-15	CC_0602_	5513 020-46	5680 051-02
S10M SCLCR/L 06	10	150	9	6	14	12	-13	CC_0602_	5513 020-46	5680 051-02
S12M SCLCR/L 06	12	150	11	9	25	16	-10	CC_0602_	5513 020-46	5680 051-02
S16R SCLCR/L 09	16	200	15	11	32.5	20	-12	CC_09T3_	5513 020-09	5680 049-01
S20R SCLCR/L 09	20	250	18	13	38	25	-8	CC_09T3_	5513 020-09	5680 049-01

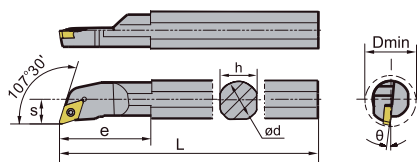
Outras dimensões estão disponíveis sob encomenda.

Unidade: milímetros



## SDQCR/L

Kr: 107° 30'



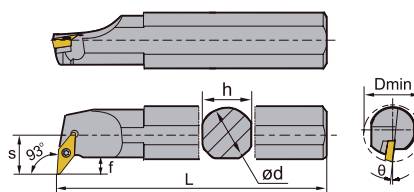
PÁG. 13



Modelo	ød	L	h	s	e	D <sub>min</sub>	θ	Inserto	Parafuso	Chave Torx
S10M SDQCR/L 07	10	150	9	7	20	13	-8	DC__0702__	5513 020-03	5680 051-02
S12R SDQCR/L 07	12	150	11	9	22	16	-8	DC__0702__	5513 020-03	5680 051-02
S16S SDQCR/L 07	16	150	15	11	27	20	-6	DC__0702__	5513 020-03	5680 051-02

## SVUBR/L

Kr: 93°

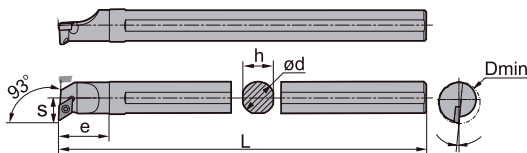


PÁG. 15

Modelo	ød	L	h	s	e	f	D <sub>min</sub>	θ	Inserto	Parafuso	Chave Torx	Calço	Parafuso do Calço
S32U SVUBR/L 16	32	350	30	22	49	8.4	40	-8	VB__1604__	5513 020-01	5680 049-01	5322 270-01	5512 090-01

## SVUCR/L

Kr: 93°

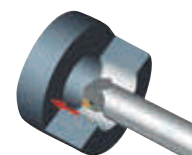
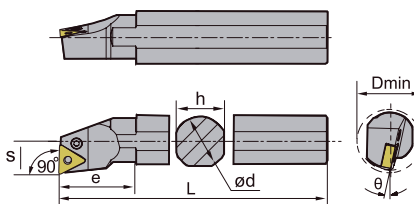


PÁG. 16



Modelo	ød	L	h	s	e	D <sub>min</sub>	θ	Inserto	Parafuso	Chave Torx
S16Q SVUCR/L 11	16	180	15	15	25	24	-6	VC__1103__	5513 020-03	5680 051-02
S20R SVUCR/L 11	20	200	18	17	30	28	-4	VC__1103__	5513 020-03	5680 051-02

## PTFNR/L



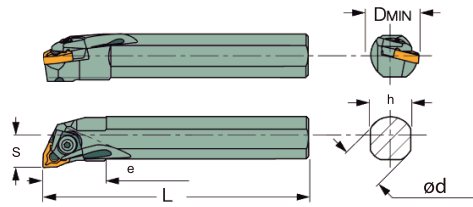
PÁG. 9

Modelo	ød	L	h	s	e	D <sub>min</sub>	θ	Inserto	Pino + Parafuso	Chave Allen	Grampo
S25T PTFNR/L 16	25	300	23	17	42	32	-12	TN__1604__	5313 021-01	174.1-864	170.38-820-1




☞ Outras dimensões estão disponíveis sob encomenda.

☞ Unidade: milímetros

**MWLNR/L**



PÁG. 11

Modelo	ød	L	h	s	e	D <sub>min</sub>	Inserto 	Pino + Parafuso 	Chave Allen 	Grampo 
S20S MWLNR/L 06	20	250	18	13	28	25	WN_0604_	5313 022-02	170.3-860	5431.125.011

Outras dimensões estão disponíveis sob encomenda.  
Unidade: milímetros.

**ANOTAÇÕES**

---



---



---



---

**OBSERVAÇÕES GERAIS**

- Para mais dimensões ou quaisquer dúvidas basta entrar em contato com a gente pelas mídias sociais.
- A sigla “GL” no final de algumas chaves de código significa que a peça é similar ao código de referência.
- Faltou alguma coisa? Entre em contato com a gente!

**Fique por dentro!**

@virtusbrasil

www.virtus.ind.br



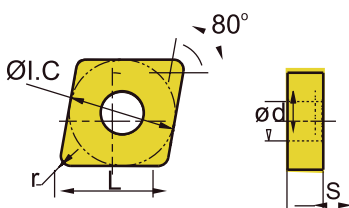
@virtusbroficial

@virtusbrasil



## INSERTOS NEGATIVOS

CN\_\_



CN__	L	I.C	S	d
09 03	9.7	9.525	3.18	3.81
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35
19 06	19.3	19.05	6.35	7.94

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
CNMG090304-PM	0.4	0.4-4.0	0.1-0.3	025P
CNMG090308-PM	0.8	0.5-4.0	0.15-0.50	
CNMG120404-PM	0.4	0.4-5.5	0.1-0.3	
CNMG120408-PM	0.8	0.5-5.5	0.15-0.50	
CNMG120412-PM	1.2	0.8-5.5	0.18-0.60	
CNMG160608-PM	0.8	0.5-7.2	0.15-0.50	
CNMG160612-PM	1.2	0.8-7.2	0.18-0.60	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO M (Inox)
CNMG120404-NN	0.4	0.5-4.0	0.05-0.30	025M
CNMG120408-NN	0.8	0.5-5.7	0.15-0.45	
CNMG120412-NN	1.2	0.5-5.7	0.25-0.60	
CNMG160608-NN	0.8	0.5-7.2	0.15-0.45	
CNMG160612-NN	1.2	0.5-7.2	0.25-0.60	

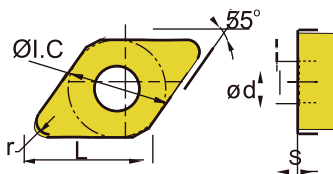
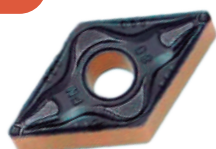
CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO K (Ferro Fundido)
CNMA120404	0.4	0.2-5.0	0.05-0.40	015K
CNMA120408	0.8	0.2-5.0	0.05-0.50	
CNMA120412	1.2	0.2-5.0	0.1-0.6	
CNMA160608	0.8	0.2-7.0	0.1-0.5	
CNMA160612	1.2	0.2-7.0	0.1-0.6	



☞ Suportes para estes insertos: Externos: Pág. 1.



DN\_\_

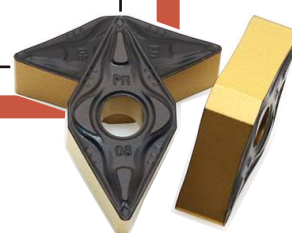


DN__	L	I.C	S	d
15 04	15.5	12.7	4.76	5.16
15 06	15.5	12.7	6.35	5.16

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
DNMG110404-PM	0.4	0.4-5.0	0.1-0.3	025P
DNMG110408-PM	0.8	0.5-5.0	0.15-0.50	
DNMG110412-PM	1.2	0.8-5.0	0.18-0.50	
DNMG150404-PM	0.4	0.4-6.0	0.1-0.3	
DNMG150408-PM	0.8	0.5-6.0	0.15-0.50	
DNMG150412-PM	1.2	0.8-6.0	0.18-0.60	
DNMG150604-PM	0.4	0.4-6.0	0.1-0.3	
DNMG150608-PM	0.8	0.5-6.0	0.15-0.50	
DNMG150612-PM	1.2	0.8-6.0	0.18-0.60	

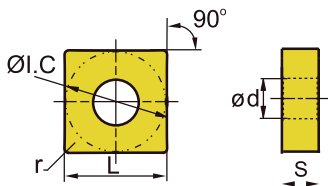
CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO M (Inox)
DNMG110404-NN	0.4	0.5-4.4	0.05-0.30	025M
DNMG110408-NN	0.8	0.5-4.4	0.10-0.45	
DNMG110412-NN	1.2	0.5-4.4	0.1-0.6	
DNMG150404-NN	0.4	0.5-6.4	0.05-0.30	
DNMG150408-NN	0.8	0.5-6.4	0.10-0.45	
DNMG150412-NN	1.2	0.5-6.4	0.1-0.6	
DNMG150604-NN	0.4	0.2-6.4	0.05-0.30	
DNMG150608-NN	0.8	0.5-6.4	0.10-0.45	
DNMG150612-NN	1.2	0.5-6.4	0.1-0.6	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO K (Ferro Fundido)
DNMA150404	0.4	0.2-6.0	0.1-0.3	015K
DNMA150408	0.8	0.2-6.0	0.1-0.6	
DNMA150604	0.4	0.2-6.0	0.1-0.3	
DNMA150604	0.4	0.2-6.0	0.1-0.3	
DNMA150608	0.8	0.2-6.0	0.1-0.6	
DNMA150612	1.2	0.2-6.0	0.15-0.70	



☞ Suportes para estes inserts: Externos: Pág. 1.

SN\_ \_



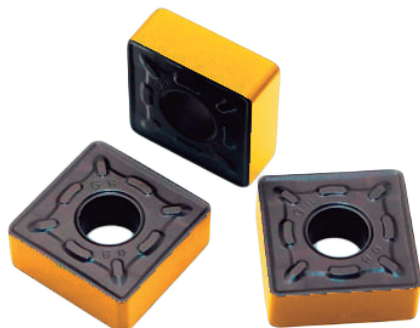
SNMG	L	I.C	S	d
09 03	9.525	9.525	3.18	3.81
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35
19 06	19.05	19.05	6.35	7.94

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
SNMG090304-PM	0.4	0.4-4.5	0.1-0.3	025P
SNMG090308-PM	0.8	0.5-4.5	0.15-0.50	
SNMG090312-PM	1.2	0.6-4.5	0.2-0.6	
SNMG120404-PM	0.4	0.4-6.0	0.1-0.3	
SNMG120408-PM	0.8	0.5-6.0	0.15-0.50	
SNMG120412-PM	1.2	0.8-6.0	0.18-0.60	

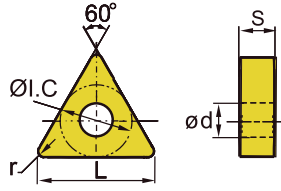
CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO M (Inox)
SNMG120404-NN	0.4	0.50-6.35	0.05-0.30	025M
SNMG120408-NN	0.8	0.50-6.35	0.20-0.45	
SNMG120412-NN	1.2	0.50-6.35	0.25-0.60	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO K (Ferro Fundido)
SNMA120408	0.8	0.5-5.0	0.1-0.5	015K
SNMA120412	1.2	0.5-5.0	0.2-0.7	

☞ Suportes sob consulta.



TN\_ \_

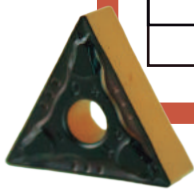


TNMG	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16

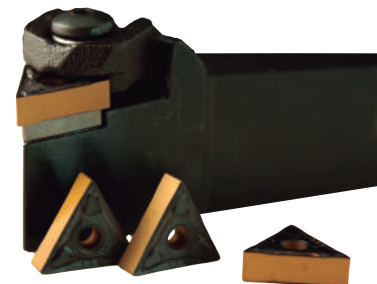
CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
TNMG160404-PM	0.4	0.4-5.0	0.1-0.3	025P
TNMG160408-PM	0.8	0.5-5.0	0.15-0.50	
TNMG160412-PM	1.2	0.8-5.0	0.18-0.60	
TNMG220408-PM	0.8	0.5-6.6	0.15-0.50	
TNMG220412-PM	1.2	0.8-6.6	0.18-0.60	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO M (Inox)
TNMG160404-NN	0.4	0.5-4.8	0.05-0.30	025M
TNMG160408-NN	0.8	0.5-4.8	0.10-0.45	
TNMG160412-NN	1.2	0.5-4.8	0.1-0.6	
TNMG220408-NN	0.8	0.5-6.6	0.10-0.45	
TNMG220412-NN	1.2	0.5-6.6	0.1-0.6	

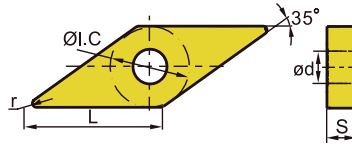
CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO K (Ferro Fundido)
TNMA160404	0.4	0.2-4.0	0.05-0.20	015K
TNMA160408	0.8	0.2-4.0	0.08-0.30	
TNMA160412	1.2	0.2-4.0	0.1-0.4	
TNMA220404	0.4	0.2-6.0	0.05-0.20	
TNMA220408	0.8	0.2-6.0	0.1-0.3	
TNMA220412	1.2	0.2-6.0	0.1-0.4	



☞ Suportes para estes inserts:  
Externos: Pág. 2 | Internos: Pág. 4.



VN\_ \_



VNMG	L	I.C	S	d
16 04	16.6	9.525	4.76	3.81

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
VNMG160408-PM	0.8	0.5-4.0	0.15-0.50	025P

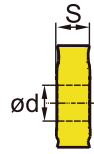
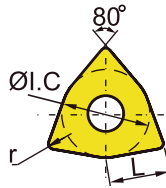
CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO M (Inox)
VNMG160404-NN	0.4	0.2-3.0	0.05-0.30	025M
VNMG160408-NN	0.8	0.5-4.0	0.10-0.45	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO K (Ferro Fundido)
VNMA150404	0.4	0.2-6.0	0.1-0.3	015K
VNMA150408	0.8	0.2-6.0	0.1-0.6	

☞ Suportes para estes insertos:  
Externos: Pág. 1.



WN\_\_



WNMG	L	I.C	S	d
06 04	6.5	9.525	4.76	3.81
08 04	8.7	12.7	4.76	5.16

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
WNMG060408-PM	0.8	0.5-3.0	0.15-0.50	025P
WNMG060412-PM	1.2	0.8-3.0	0.18-0.60	
WNMG080404-PM	0.4	0.4-4.0	0.12-0.40	
WNMG080408-PM	0.8	0.5-4.0	0.15-0.50	
WNMG080412-PM	1.2	0.8-4.0	0.18-0.60	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO M (Inox)
WNMG060404-NN	0.4	0.5-3.0	0.05-0.30	025M
WNMG060408-NN	0.8	0.5-3.0	0.1-0.5	
WNMG080404-NN	0.4	1-4	0.05-0.30	
WNMG080408-NN	0.8	1-4	0.1-0.5	
WNMG080412-NN	1.2	1-4	0.1-0.7	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO K (Ferro Fundido)
WNMA060408	0.8	0.5-3.0	0.1-0.3	015K
WNMA060412	1.2	0.5-3.0	0.15-0.30	
WNMA080404	0.4	0.5-4.0	0.08-0.25	
WNMA080408	0.8	0.5-4.0	0.15-0.30	
WNMA080412	1.2	0.5-5.0	0.15-0.30	

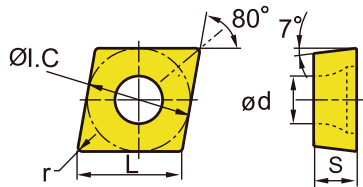
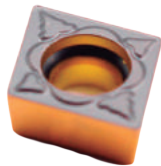
☞ Suportes para estes insertos:  
Externos: Pág. 1 | Internos: Pág. 5.





## INSERTOS POSITIVOS

CC\_ \_



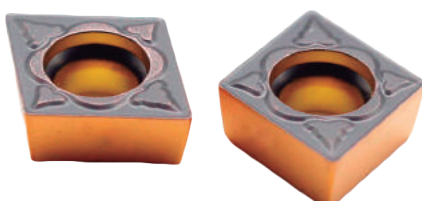
CC_ _	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4
12 04	12.9	12.7	4.76	5.56

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
CCMT060204-PM	0.4	0.2-2.4	0.06-0.17	025P
CCMT060208-PM	0.8	0.2-3.0	0.08-0.20	
CCMT09T304-PM	0.4	0.25-3.00	0.08-0.23	
CCMT09T308-PM	0.8	0.5-3.0	0.1-0.3	

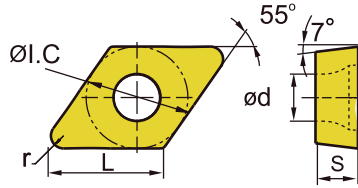
CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO M (Inox)
CCMT060204-NN	0.4	0.2-2.4	0.06-0.17	025M
CCMT060208-NN	0.8	0.4-2.4	0.08-0.23	
CCMT09T304-NN	0.4	0.25-3.00	0.08-0.23	
CCMT09T308-NN	0.8	0.5-3.0	0.1-0.3	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO K (Ferro Fundido)
CCMT060204 -T	0.4	0.5-3.0	0.1-0.3	015K
CCMT09T304 -T	0.4	0.5-3.0	0.1-0.3	
CCMT09T308-T	0.8	0.5-3.0	0.1-0.4	

☞ Suportes para estes insertos:  
Internos: Pág. 3.



DC\_\_



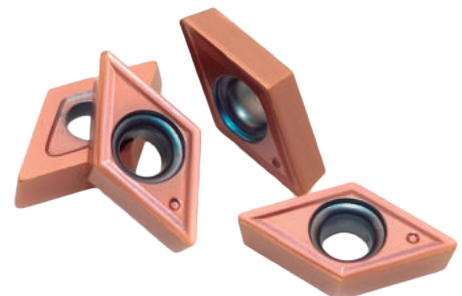
DCMT	L	I.C	S	d
07 02	78	6.35	2.38	2.8
11 T3	11.6	9525	3.97	4.4

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
DCMT070204-PM	0.4	0.19-2.25	0.06-0.17	025P
DCMT070208-PM	0.8	0.38-2.25	0.08-0.23	
DCMT11T304-PM	0.4	0.25-3.00	0.08-0.23	
DCMT11T308-PM	0.8	0.5-3.0	0.1-0.3	
DCMT11T312-PM	1.2	0.6-3.0	0.12-0.36	

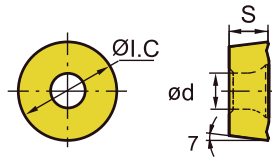
CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO M (Inox)
DCMT070204-NN	0.4	0.19-2.25	0.06-0.17	025M
DCMT070208-NN	0.8	0.38-2.25	0.08-0.23	
DCMT11T304-NN	0.4	0.25-3.00	0.08-0.23	
DCMT11T308-NN	0.8	0.5-3.0	0.1-0.3	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO K (Ferro Fundido)
DCMT070204	0.4	0.19-2.25	0.06-0.17	015K
DCMT070208	0.8	0.38-2.25	0.08-0.23	
DCMT11T304	0.4	0.25-3.00	0.08-0.23	
DCMT11T308	0.8	0.5-3.0	0.1-0.3	
DCMT11T312	1.2	0.6-3.0	0.12-0.36	

☞ Suportes para estes insertos:  
Externos: Pág. 3 | Internos: Pág. 4.



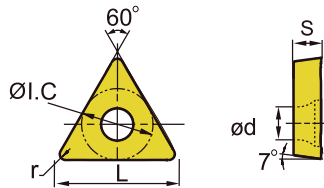
RC\_\_



RC__	L	I.C	S	d
08 03	8	8	3.18	3.36
10 T3	10	10	3.97	3.6
12 04	12	12	4.76	4.4
16 06	16	16	6.35	5.5

CÓDIGO	$a_p$	f	CLASSE ISO P (AÇO)
RCMT0803MO	0.5-3.0	0.1-0.4	025P
RCMT10T3MO	0.5-4.0	0.1-0.5	
RCMT1204MO	0.8-5.0	0.1-0.6	
RCMT1606MO	1-6	0.1-0.8	

TC\_\_



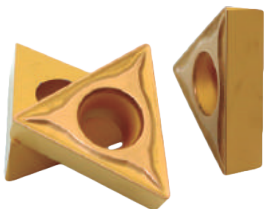
TC__	L	I.C	S	d
09 02	9.63	5.56	2.38	2.5
11 02	11	6.35	2.38	2.8
16 T3	16.5	9.525	3.97	4.4
22 04	22	12.7	4.76	5.5

☞ Suportes sob consulta.

CÓDIGO	r	$a_p$	f	CLASSE ISO P (AÇO)
TCMT110204-PM	0.4	0.2-2.7	0.07-0.20	015P
TCMT110208-PM	0.8	0.5-2.7	0.1-0.3	
TCMT16T304-PM	0.4	0.25-3.00	0.08-0.23	
TCMT16T308-PM	0.8	0.5-3.0	0.1-0.3	
TCMT16T312-PM	1.2	0.6-3.0	0.12-0.36	

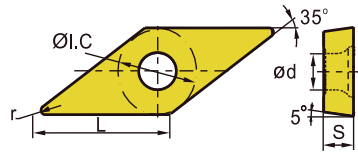
CÓDIGO	r	$a_p$	f	CLASSE ISO M (Inox)
TCMT110204-NN	0.4	0.2-2.7	0.05-0.30	025M
TCMT110208-NN	0.8	0.8-2.7	0.08-0.30	
TCMT16T304-NN	0.4	0.25-3.00	0.08-0.23	
TCMT16T308-NN	0.8	0.5-3.0	0.1-0.3	

CÓDIGO	r	$a_p$	f	CLASSE ISO K (Ferro Fundido)
TCMT110204	0.4	0.2-2.7	0.07-0.20	015K
TCMT110208	0.8	0.5-2.7	0.1-0.3	
TCMT16T304	0.4	0.25-3.00	0.08-0.23	
TCMT16T308	0.8	0.5-3.0	0.1-0.3	



☞ Suportes para estes insertos:  
Internos: Pág. 3.

VB\_ \_



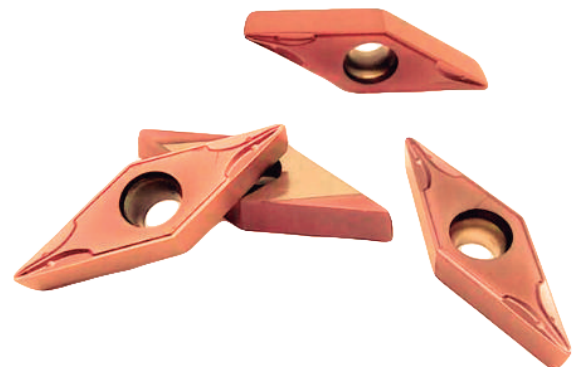
VB_ _	L	I.C	S	d
11 03	11	6.35	3.18	2.8
16 04	16.5	9.525	4.76	4.4

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
VBMT110304-PM	0.4	0.15-2.00	0.07-0.20	025P
VBMT110308-PM	0.8	0.2-2.0	0.09-0.27	
VBMT160404-PM	0.4	0.23-2.70	0.07-0.20	
VBMT160408-PM	0.8	0.45-2.70	0.09-0.27	
VBMT160411-PM	1.2	0.54-2.70	0.11-0.32	
VBMT160412-PM	1.2	0.54-2.70	0.11-0.32	

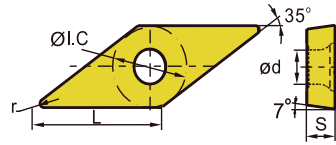
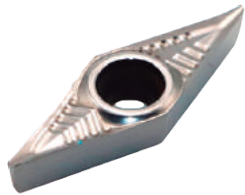
CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO M (Inox)
VBMT110304-NN	0.4	0.15-2.00	0.07-0.20	025M
VBMT110308-NN	0.8	0.2-2.0	0.09-0.27	
VBMT160404-NN	0.4	0.23-2.70	0.07-0.20	
VBMT160408-NN	0.8	0.45-2.70	0.09-0.27	

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO K (Ferro Fundido)
VBMT160408	0.8	0.45-2.70	0.09-0.27	015K

☞ Suportes para estes insertos:  
Externos: Pág. 2 | Internos: Pág. 4.



VC\_\_

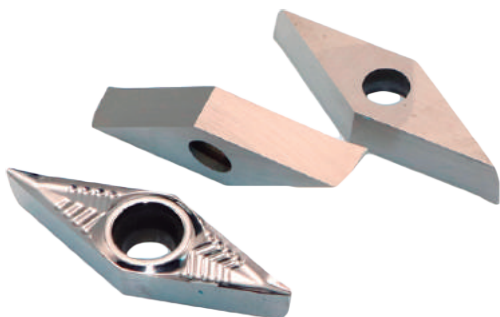


VCGX	L	I.C	S	d
11 03	11	6.35	3.18	2.8
16 04	16.6	9.525	4.76	4.4
22 05	22	12.7	5.56	5.5

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO P (AÇO)
VCGT110304-PM	0.4	0.2-2.0	0.05-0.30	025P

CÓDIGO	r	a <sub>p</sub>	f	CLASSE ISO N (Alumínio)
VCGX110304	0.4	0.5-3.0	0.1-0.3	AL
VCGX110308	0.8	1-3	0.1-0.5	
VCGX160412	1.2	0.5-5.0	0.15-0.80	

☞ Suportes para estes insertos:  
Internos: Pág. 4.





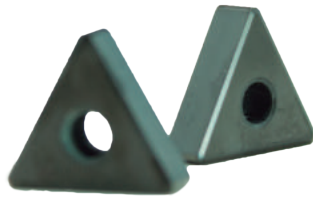
## CBN

Nitreto Cúbico de Boro  
 Aplica-se para materiais extremamente duros,  
 os chamados Temperados e também Ferro Fundido.



Indicado para  
 Acabamento.

Corpo inteiro de  
 Nitreto Cúbico de Boro  
 Perfeito para processos  
 com profundidade!

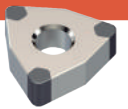


**INTEIRIÇOS**

DE PONTA



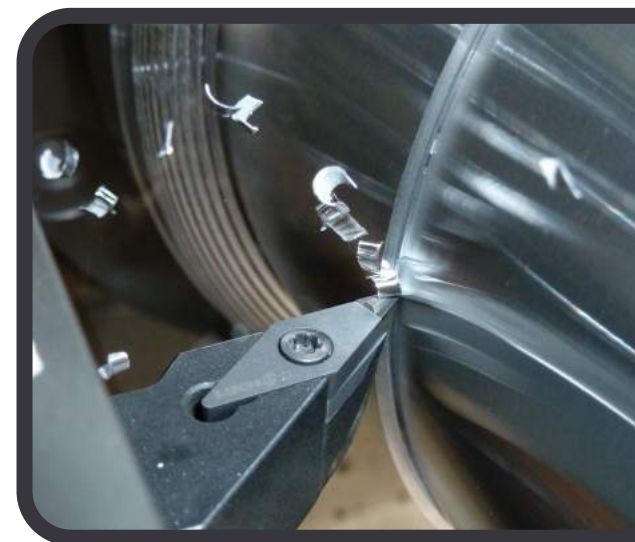
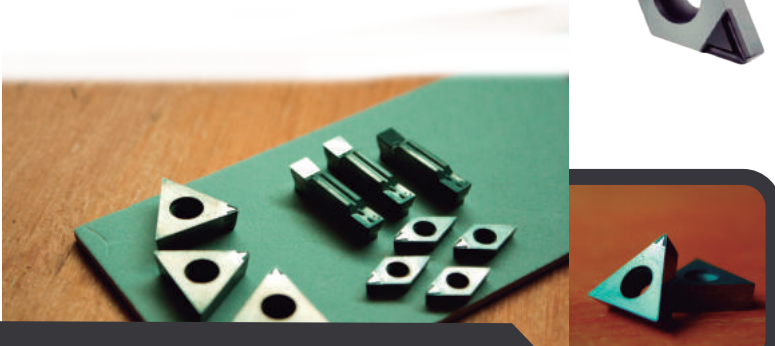
Apresente qualidade ao seu cliente!



## PCD

Diamante Policristalino  
 Aplica-se para materiais não ferrosos, como  
 o Alumínio.

Destaca-se pelo acabamento/polimento  
 brilhante.



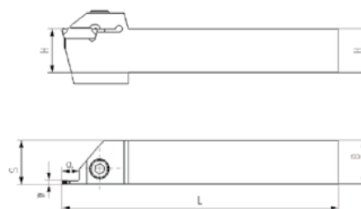
## Bedames

### R/L123 \_\_

Corte/Canal Externo



R/L (Right/Left - Tradução: Direita/Esquerda).

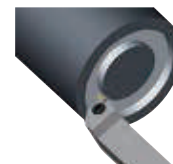
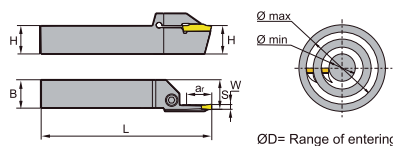


PÁG. 19

Modelo	HxB	L	S	W	ar <sub>max</sub>	Inserto	Parafuso	Chave Allen
R/LF123E15-2020B GL	20x20	150	20.17	2	20	N123E2-02 __	3212 012-259	5680 043-14
R/LF123G20-2020B GL	20x20	125	18.8	3	20	N123G2-03 __	3212 012-310	5680 043-15
R/LF123G20-2525B GL	25x25	150	23.8	3	20	N123G2-03 __	3212 012-310	5680 043-15
R/LF123H25-2020B GL	20x20	140	18.5	4	25	N123H2-04 __	3212 012-360	5680 043-17
R/LF123H25-2525B GL	25x25	150	23.5	4	25	N123H2-04 __	3212 012-360	5680 043-17

### R/L123 \_\_

Canal Frontal

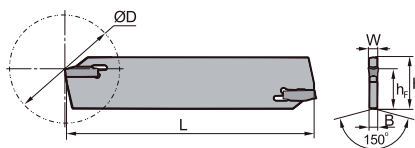


PÁG. 19

Modelo	HxB	L	S	W	ar <sub>max</sub>	ØD (min-max)	Inserto	Parafuso	Chave Allen
R/LF123G13-2020B-042B GL	20x20	150	26	3	17	42 - 60	N123G2-03 __	3212 012-310	5680 043-15
R/LF123G22-2525B-067B GL	25x25	150	19	3	10	67 - 100	N123G2-03 __	3212 012-310	5680 043-15
R/LF123H13-2020B-040B GL	20x20	150	19	4	15	40 - 60	N123H2-04 __	5512 044-01	5680 043-17
R/LF123H13-2525B-040B GL	25x25	150	24	4	22	40 - 60	N123H2-04 __	5512 044-01	5680 043-17

### N123 \_\_

Lâmina



PÁG. 19

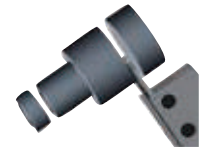
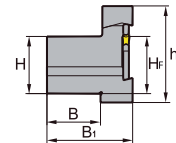
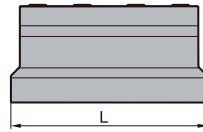
Modelo	H	L	h <sub>F</sub>	B	W	ØD <sub>max</sub>	Inserto	Chave Allen
N123G55-25A2 GL	31.9	150	25	2.25	3	110	N123G2-03 __	5680 058-01
N123H55-25A2 GL	31.9	150	25	3.675	4	110	N123H2-04 __	5680 058-01

Unidade: milímetros

Outras dimensões estão disponíveis sob encomenda.

## BLOCO DE FIXAÇÃO PARA LÂMINA DE CORTE

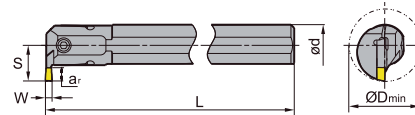
### Acessório



Modelo	H	L	h <sub>2</sub>	H <sub>F</sub>	B1	Lâmina	Parafuso	Chave Allen	Grampo
151.2-2020-25 GL	20	120	52.5	25	38,1	N123__-25	3212 010-411	3021 010-060	5412 120-02
151.2-2520-25 GL	25	120	52.5	25	38	N123__-25	3212 010-411	3021 010-060	5412 120-02
151.2-3232-25 GL	32	120	54.5	25	50	N123__-25	3212 010-411	3021 010-060	5412 120-02

## R/L AG123\_\_

### Canal Interno



PÁG. 19

Modelo	ØD <sub>min</sub>	ød	L	S	W	ar <sub>max</sub>	Inserto	Parafuso	Chave Allen
R/LAG123E05-20B GL	32	20	180	15,25	2	6	N123E2-02__	5512 031-03	5680 043-13
R/LAG123G07-25B GL	32	25	200	19,75	3	7	N123G2-03__	3212 012-309	5680 043-15
R/LAG123G06-20B GL	32	20	180	15,25	3	6	N123G2-03__	5512 031-03	5680 043-13
R/LAG123H07-25B GL	32	25	200	19,25	4	7	N123H2-04__	3212 012-309	5680 043-15

## INSERTOS para Bedames

### CLASSES ISO

INSERTO	CÓDIGO	S±0.10	R±0.1	La max	f	P (AÇO)	M (INOX)
	N123E2-0200-0002-CM	2.0	0.2	17	0.03-0.1	TP834	
	N123G2-0300-0003-CR	3.0	0.3	17	0.04-0.13		
	N123H2-0400-0003-CR	4.0	0.3	22	0.07-0.18		

☞ Outras dimensões estão disponíveis sob encomenda.

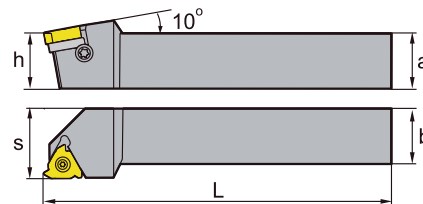
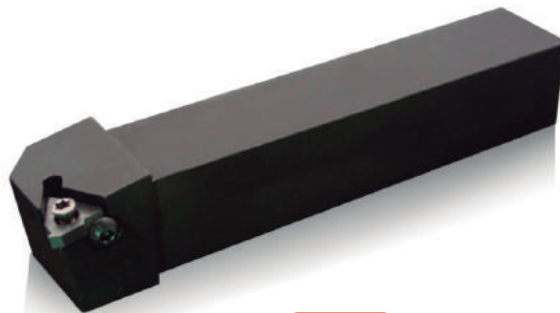
☞ Unidade: milímetros

## Rosqueamento

R/L (Right/Left - Tradução: Direita/Esquerda).

### SER/L

#### Parte Externa

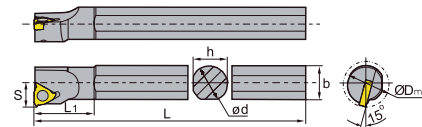


PÁG. 21

Modelo	a	b	L	h	s	Inserto	Parafuso	Parafuso (CALÇO)	Chave Torx	Calço
SER/L1616H16 GL	16	16	100	16	20	16 ER __	5513.020.01	5512.090.01	T15	5322.321.11
SER/L2020K16 GL	20	20	125	20	25	16 ER __	5513.020.01	5512.090.01	T15	5322.321.11
SER/L2525M16 GL	25	25	150	25	32	16 ER __	5513.020.01	5512.090.01	T15	5322.321.11
SER/L3232P16 GL	32	32	170	32	40	16 ER __	5513.020.01	5512.090.01	T15	5322.321.11
SER/L2525M22 GL	25	25	150	25	32	22 ER __	5513.020.18	M4x6 cab. Abaul.	T15	5322.365.11

### SIR/L

#### Parte Interna



PÁG. 21

Modelo	ød	b	L	h	s	L <sub>1</sub>	D <sub>min</sub>	Inserto	Parafuso	Chave Torx
SIR/L0016K11 GL	16	16	125	15	10	20.9	12	11NR __	5513.020.03	T7
SIR/L0016M11 GL	16	15.5	150	15	10.5	25.9	16	11NR __	5513.020.03	T7
SIR/L0016M16 GL	16	15.5	150	15	12	27	20	16NR __	5513.020.10	T15
SIR/L0020M16 GL	20	19	150	18	14	28.7	25	16NR __	5513.020.10	T15
SIR/L0025M16 GL	25	24	150	23	17	28.8	32	16NR __	5513.020.10	T15
SIR/L0020Q22 GL	20	21.5	180	18	15	35	25	22NR __	5513.020.18	T15
SIR/L0025R22 GL	25	24	200	23	19	39	32	22NR __	5513.020.18	T15

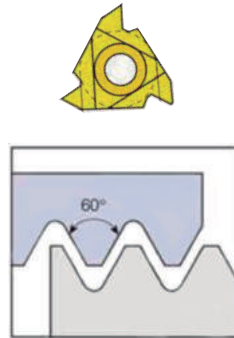
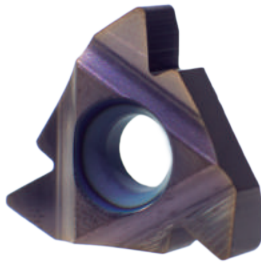
Outras dimensões estão disponíveis sob encomenda.

Unidade: milímetros



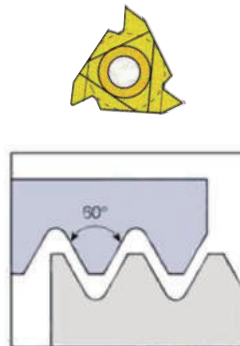
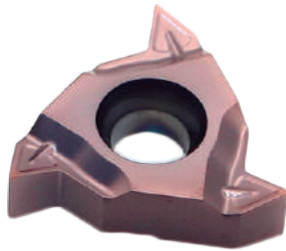
## INSERTOS PARA ROSCA Rosca métrica 60°

### Modelo Externo



ISO	mm	TPI	Modelo	Classe
11	0.5~1.5	48~16	<b>11ER A60</b>	U300
16	0.5~1.5	48~16	<b>16ER A60</b>	
	0.5~3.0	48~8	<b>16ER AG60</b>	
	1.75~3.0	14~8	<b>16ER G60</b>	
22	3.5~5.0	7~5	<b>22ER N60</b>	

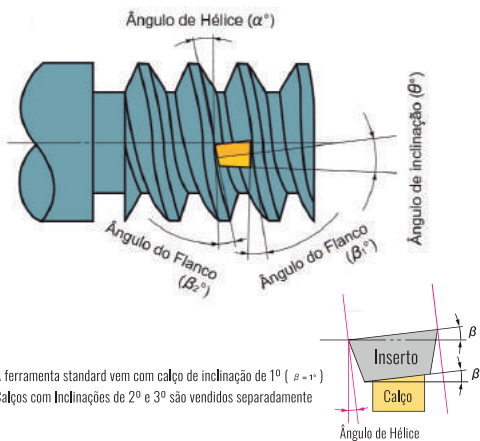
### Modelo Interno



ISO	mm	TPI	Modelo	Classe
06	0.5~1.5	48~16	<b>06NR A60</b>	U300
08	0.5~1.5	48~16	<b>08NR A60</b>	
11	0.5~3.0	48~8	<b>11NR A60</b>	
16	1.75~3.0	14~8	<b>16NR A60</b>	
	3.5~5.0	7~5	<b>16NR AG60</b>	
	1.75~3.0	14~8	<b>16NR G60</b>	
22	3.5~5.0	7~5	<b>22NR N60</b>	

☞ Outras dimensões estão disponíveis sob encomenda.

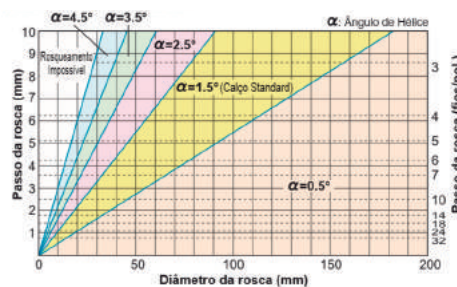
☞ Unidade: milímetros



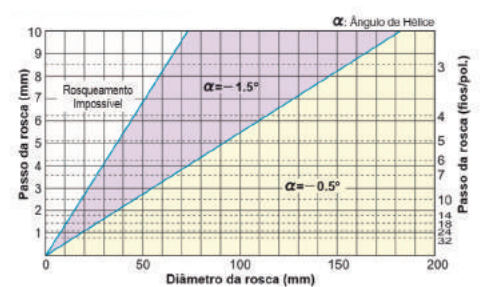
A ferramenta standard vem com calço de inclinação de  $1^\circ$  ( $\beta = 1^\circ$ )  
 Calços com Inclinações de  $2^\circ$  e  $3^\circ$  são vendidos separadamente

### Gráfico de referência de calço (ângulo do perfil da rosca 60° e 55°)

#### Rosca Direita



#### Rosca Esquerda







REPRESENTANTE  
AUTORIZADO