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1969

CATALOG

MACHINE VICES

AND MILLING HEADS

CONFIDENCE

INNOVATION



Zástupce pro Českou republiku

FALCON CZECH s.r.o.

Osvoboditelů 2649

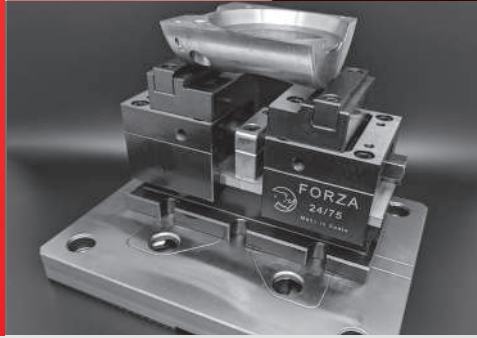
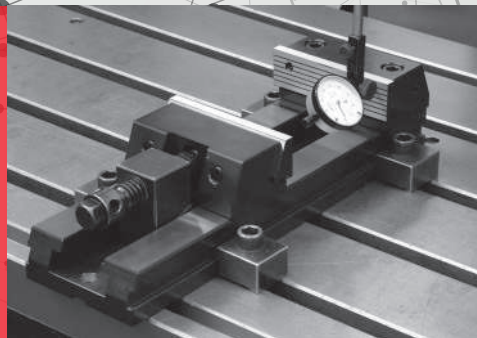
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50 YEARS GAINING EXPERIENCE ON DESIGNING AND MANUFACTURING HAND TOOLS

Antonio Sampedro founded Forza, a family owned business pioneer in the Spanish special tools manufacturing market. Mr. Sampedro was not only an entrepreneur but most importantly, he had a passion for metal working combined with a continued thirst for new products and tools and manufacturing process development.

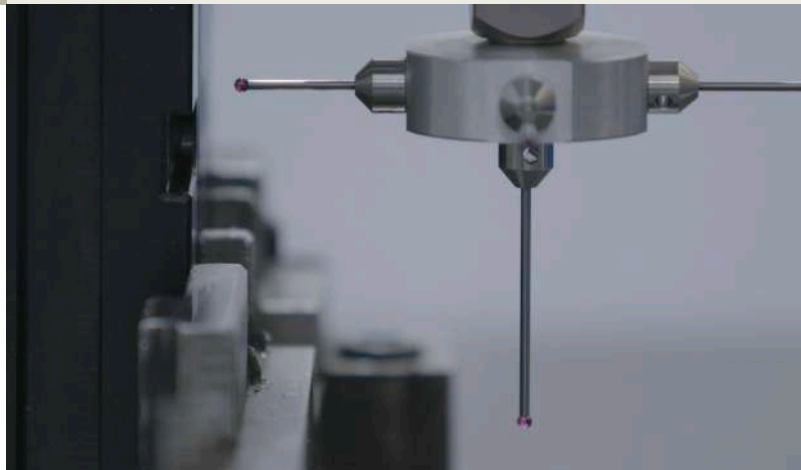
Throughout this time, Forza has been faithful to the values that inspired him.

THE TOP QUALITY OF THE TOOLS IT IS OUR BEST GUARANTEE

50 years banking on quality in design, manufacturing and service. The prestige of our products lies in a strategic focus on innovation, tailor made tools and over the top raw material.

Forza is a leading manufacturer of Special tools relied on a team of committed young professional bringing a large breath of experience.

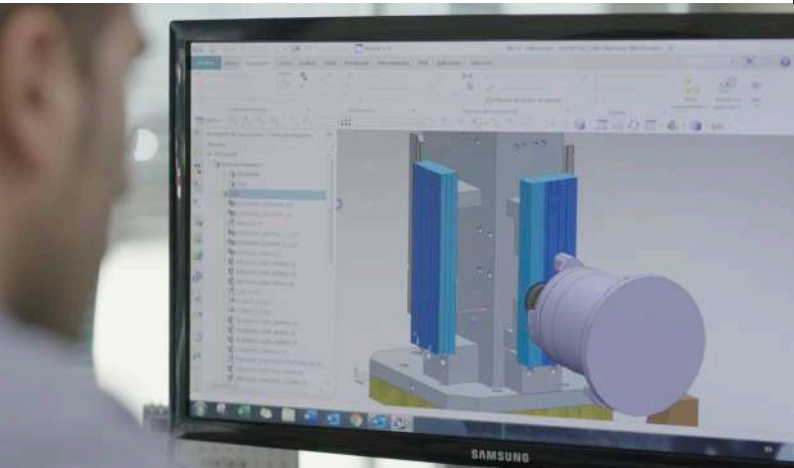
We have a deep sense of quality that it is reflected into a full warranty on all the parts we produce.



“UNLIMITED” MANUFACTURING CAPABILITY OF CUSTOMIZED PRODUCTS.

The enthusiasm and hard work of our I+D department together with Engineering are expressed on our complete catalogue that includes an extensive range of demanded hand tools (specialized on pulling solutions) but also knockout metal punches, Automotive tools and machine vices as well.

Our customers and potential customer's needs are our high priority and we are completely opened for the designing and manufacturing of new customized products.



ENVIROMENTAL SUSTAINABILITY COMPROMISE

At FORZA we proudly follow stringent environmental, energy saving, waste selection and raw material recycling principals.

Thanks to our 3 plants, we generate more than 100KW/h annually through our solar panels installation. This figure amounts to approximately 1607 trees/year for carbon dioxide consumption.





STRONG BUSINESS HISTORY



Iconographie

6

INDEX

21

5 axis vices



PERFECT



30-30G Descending machine vices

8

INDEX

22

31 serie vices



CLASIC



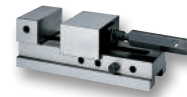
Multitask vices

9

INDEX

23

Grinding machine vices



Machine vice for large pieces - 30P

10

INDEX

23

Multi-agular position vices



High jaw vices for large pieces

11

INDEX

24

Sinus machine vices



Machine vices square

11

INDEX

25-36

Accessories



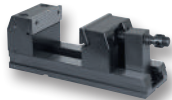
Vices for cubes

12

INDEX

37-42

Internal milling heads for key way



High jaw machine vices

13

INDEX

43-46

KM nut spanners



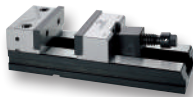
Lifting block for machine vices

13

INDEX

47-50

Integrated clamping vice towers



Straight jaws vices - 29

14

INDEX

52-55

Drilling vices



PROFESSIONAL



Vices with protected spindle

15

INDEX

56-59

Clampings and vices



Twin self centering vices

16-18

INDEX

60-61

Magnetic holders and Quicks



Double position vices


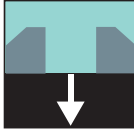
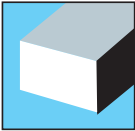













19-21

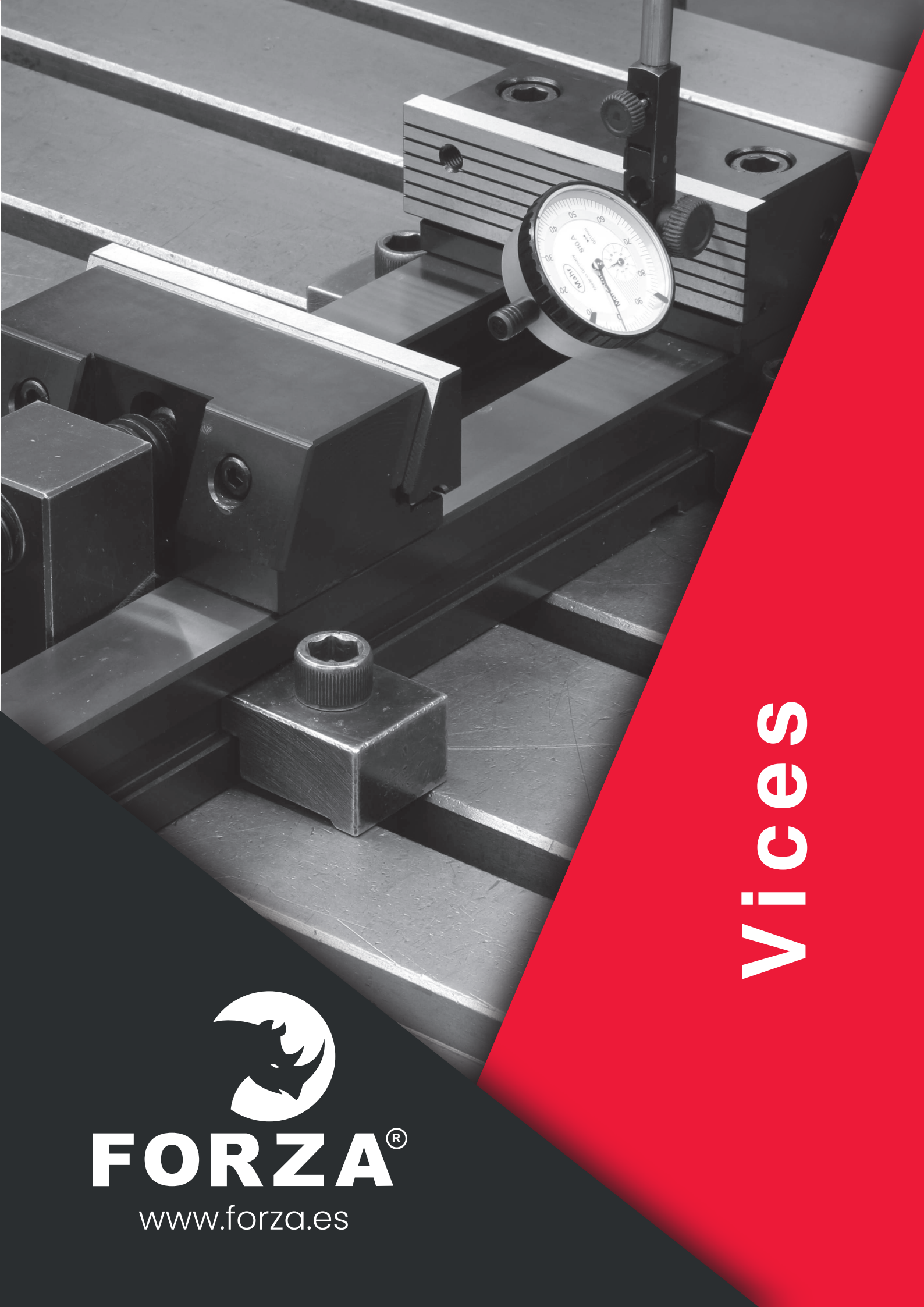
INDEX

62-66

Toolholders and knurling tools



Nodular casting material			Jaws with descending effect
Hardened steel			Soft jaws
Quick course selection			Control certificate
Finishing tolerance			With alineation keyways
Interchangeable lock			Paralelism < 0,02 mm
Swivel base admitted			DOESN'T admit swivel base
Guide movable jaws support			Oscillating movable jaws support
Mechanical lock			Clamps



Vices



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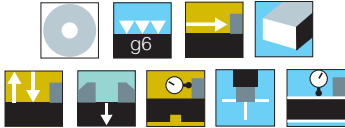
PERFECT MACHINE VICES

High precision vices for all machining works including milling, drilling and grinding
 Manufactured in hardened steel 60 HRC (F155).
 The vices can be fastened either to a T slot table or for zero point upon request.



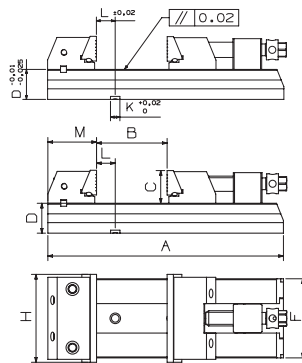
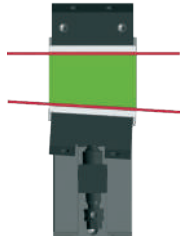
Bullet points

- Non guided vice with oscillating jaw holder for a better fastening adjustment. The non guided mechanism allows the fastening of irregular pieces.
- While fastening, the descending jaw effect perfectly places the working piece over the vice body or parallel.
- Interchangeable locks.
- Hex head spindle with a hole for fastening with a handle as well.
- 2 sets of clamps are included.

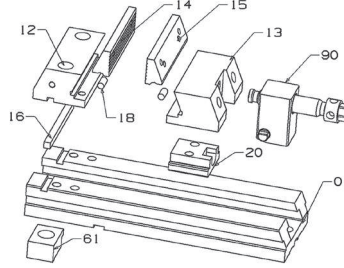
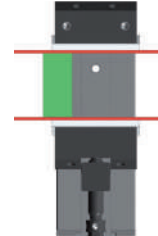


Each vice includes a certificate with measurements of the main dimensions, made with a Zeiss machine.

NON guided vices with oscillating effect



Guided vices without oscillating effect



Ref. No Guided	A	B	C	D	F	H	L	M					Ref. Guided	
30/100	250	109	33,5	37	90	100	18,6	51,5	12561	12	B/100	8,9	30/100G	7,5
30/100L	296	150	33,5	37	90	100	18,60	51,5	12561	12	B/100	8,0	30/100GL	8,65
30/125	300	130	40	42	110	125	22,0	66	12561	12	B/125	14,1	30/125G	13,9
30/125L	346	175	40	42	110	125	22,0	66	12561	12	B/125	14,6	30/125GL	15,4
30/125R	345	140	53	49	115	125	3,0	82,5	15061	16		28,6	-	-
30/125RL	395	189	53	49	115	125	3,0	82,5	15061	16		29,7	-	-
30/125S	371	200	40	42	110	125	22,0	66	12561	12	B/125	14,8	-	-
30/125RS	418	218	53	49	115	125	3,0	82,5	15061	16		27,0	-	-
30/150	402	200	56	51	135	150	32,2	83	15061	16	B/150	27,0	30/150G	29,2
30/150L	452	250	56	51	135	150	32,2	83	15061	16	B/150	28,0	30/150GL	30,9
30/150S	503	300	56	51	135	150	32,2	83	15061	16	B/150	31,7	30/150GS	31,0
30/150X	527	325	56	51	135	150	32,2	83	15061	16	B/150	32,8	30/150GX	33,1
30/175	432	225	58	56	135	175	35,0	85	15061	16	B/150	34,0	30/175G	34,3
30/175L	482	275	58	56	135	175	35,0	85	15061	16	B/150	36,5	30/175GL	36,5
30/175S	556	350	58	56	135	175	35,0	85	15061	16	B/150	39,9	30/175GS	43,7
30/175X	610	400	58	56	135	175	35	85	15061	16	B/150	42,4	30/175GX	43,0
30/200	470	250	66	61	160	200	52,2	92,5	20061	16	B/200	48,6	30/200G	47,0
30/200L	520	300	66	61	160	200	52,2	92,5	20061	16	B/200	51,5	30/200GL	52,0
30/200S	570	350	66	61	160	200	52,2	92,5	20061	16	B/200	53,7	30/200GS	54,6
30/200X	595	375	66	61	160	200	52,2	92,5	20061	16	B/200	55,2	30/200GX	56,1
30/200XL	675	455	66	61	160	200	52,2	92,5	20061	16	B/200	57,8	-	-
30/250	530	300	76	66	200	250	47,5	97,5	20061	20		70,0	30/250G	70,0
30/250L	580	350	76	66	200	250	47,5	97,5	20061	20		75,0	30/250GL	75,0
30/250S	680	450	76	66	200	250	47,5	97,5	20061	20		85,0	30/250GS	85,0
30/250X	755	525	76	66	200	250	47,5	97,5	20061	20		92,0	30/250GX	93,0
30/300	670	390	83	79	245	300	38,5	121,5	30061	20		130,0	-	-
30/300L	770	490	83	79	245	300	38,5	121,5	30061	20		145,0	-	-
30/300S	870	590	83	79	245	300	38,5	121,5	30061	20		160,0	-	-

Price without swivel base. / The vice with a 300 mm jaw it has only cross keyways.
 The guided jaw includes an oscillating T to make it non-guided.



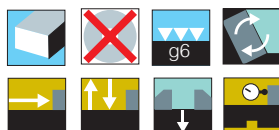
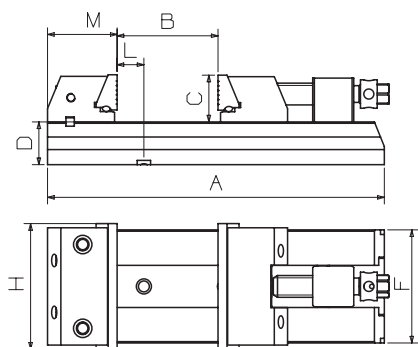
MULTITASK VICES FOR T SLOT TABLES

Universal vices for a huge range of machining operations.
Specially designed for the second operation at the 5 axes machines.
Series for T slot or zero point tables.
Clamping force of 5T.



Bullet points

- Highly compact at maximum opening.
- Jaws with descending effect.
- Manufactured in alloy Steel with a IONIT OX treatment which increases the surface hardness of the wear and corrosion resistance.
- Spindle with electroless nickel coating, corrosion and wear resistance.



Series for T-slotted tables

Ref.	A	B	C	D	M	H		
30/125RB	345	150	52	49	82,5	125	96	20,0
30/125LRB	400	200	52	49	82,5	125	96	21,0



Series for zero point tables

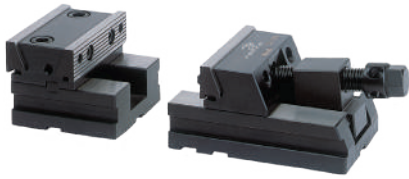
Ref.	A	B	C	D	M	H	L	Zero point	
30/125RA1	345	150	52	49	85	125	15	96	18,0
30/125LRA1	400	200	52	49	85	125	15	96	19,0





MACHINE VICES FOR LARGE PIECES

30P

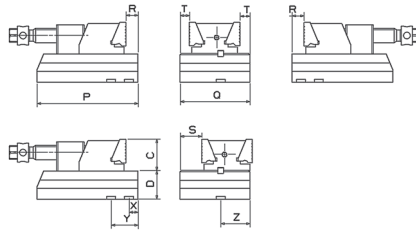
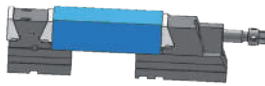
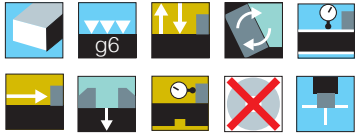





Split vice suitable for machining large pieces. Manufactured in hardened steel 60 HRC (F155). 2 sets of clamps are included.



Bullet points

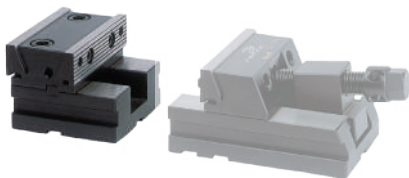
- The fixed part is reversible so 2 different clamping alternatives are available.
- Interchangeable locks.
- Descending jaws effect.



Ref.	C	D	P	Q	R	S	T	X	y			
30/100P	33,5	37	140	90	50	30	13	17	42	12	1251261	10,0
30/125P	40	42	150	103	55	35	16	22	50	12	1251261	13,5
30/150P	56	51	180	125	58	40	20	26	58	16	1501261	25,1
30/200P	66	61	190	140	63	44	22	26	58	16	2001261	44,4

FIXED PART VICE

30PF






Fix part of the split vice suitable for machining large pieces. Manufactured in hardened steel 60 HRC (F155).



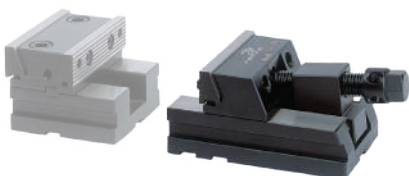
Bullet points

- Descending jaw effect.
- The fixed part is reversible so 2 different clamping alternatives available.

Ref.	C	Q	T			
30/100PF	33,5	90	13	12	1251261	4,6
30/125PF	41	103	16	12	1251261	8,3
30/150PF	56	125	20	16	1501261	12,3
30/200PF	66	140	22	16	2001261	20,5

MOBILE PART VICE

30PM






Movable part of the split vice suitable for machining large pieces. Manufactured in hardened steel 60 HRC (F155).



Bullet points

- Interchangeable locks.
- Descending jaws effect.

Ref.	C	P	R			
30/100PM	33,5	140	50	12	1251261	5,4
30/125PM	41	150	55	12	1251261	8,3
30/150PM	56	180	58	16	1501261	14,6
30/200PM	66	190	63	16	2001261	24,1



HIGH SPLIT MACHINE VICES

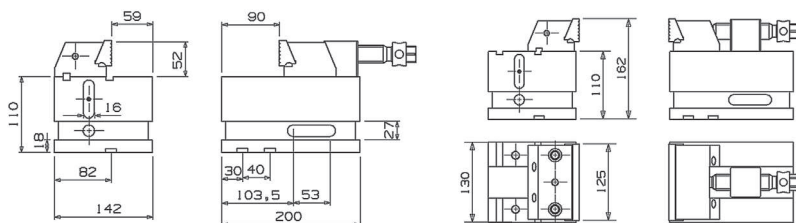
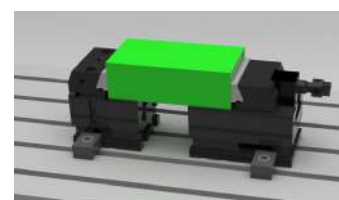
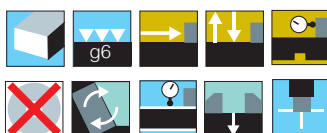
30VP

Suitable vice for clamping large pieces, specially high ones. Manufactured in hardened steel 60 HRC (F155). 2 sets of clamps are included.



Bullet points

- Two clamping heights:
110mm height placing the piece to the vice body.
150mm height placing the piece on the T table.
- Jaws with descending effect.



Ref.	A			
30V125P	390	15061	16	48,0

MACHINE VICE TO SQUARE

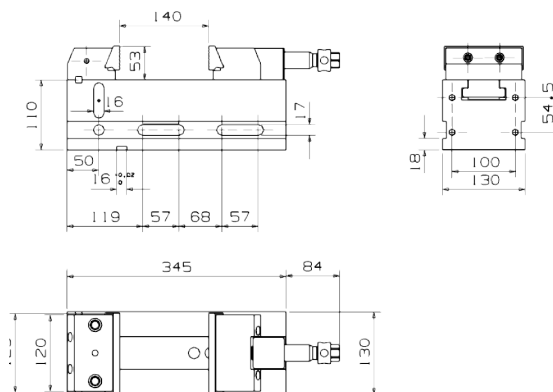
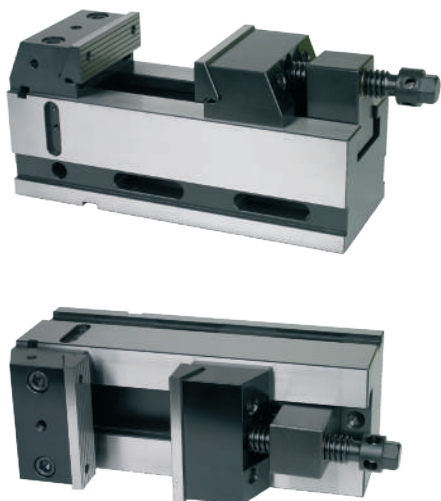
30V

Vice that guarantees a perfect square of the piece on an easy way. Manufactured in hardened steel HRc 60 (F155).



Bullet points

- Interchangeable locks.
- Descending effect jaws.



Steps to follow for perfect squaring

Ref.	A	B			
30V125	345	140	15061	16	45,0

Requires 2 sets of clamps

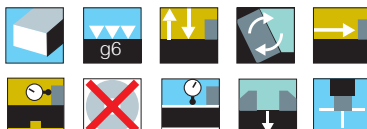



High precision vices suitable for horizontal machining centers with a multi-pallet automation.
Manufactured in hardened steel 60 HRC (F155).

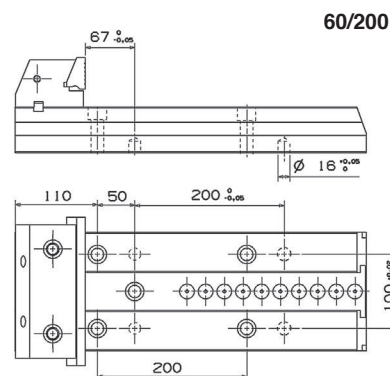
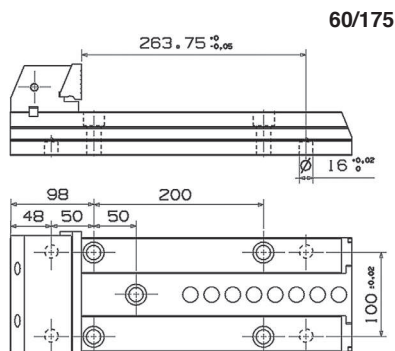
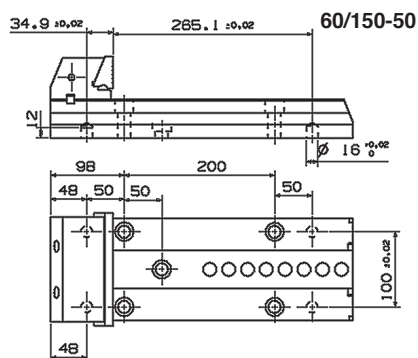
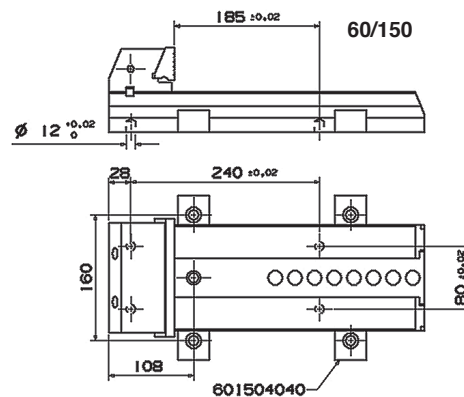
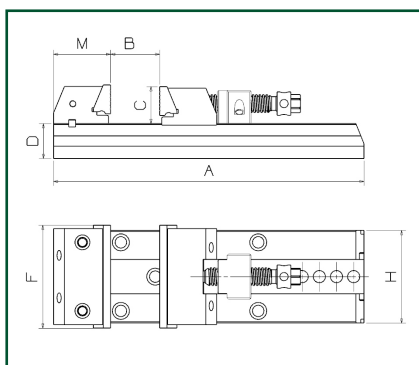
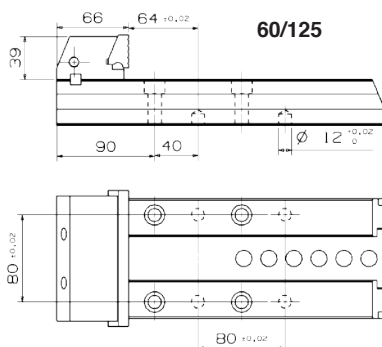


Bullet points

- The tie bars position is also customizable for zero point.
- Descending effect jaws.
- Movable jaw holder with oscillating effect for a better piece adjustment.
- Interchangeable locks.



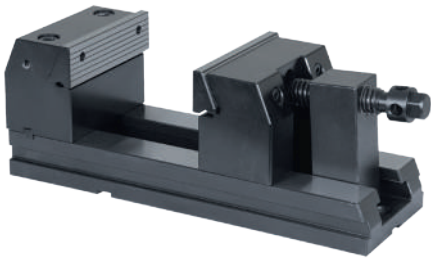
Ref.	A	B	D	C	F	H	P	
60/125	328	130	42	40	110	125	40	14,0
60/125L	346	175	42	40	110	125	40	15,0
60/150	402	200	51	56	135	150	40	28,0
60/150-50	403	200	51	56	135	150	50	27,0
60/150L	452	250	51	56	135	150	40	30,0
60/150L-50	452	250	51	56	135	150	50	29,0
60/175	432	225	56	58	135	175	50	34,0
60/175L	482	275	56	58	135	175	50	37,0
60/200	470	250	61	66	160	200	50	44,0
60/200L	520	300	61	66	160	200	50	49,0
60/200XL	830	600	61	66	160	200	50	69,0





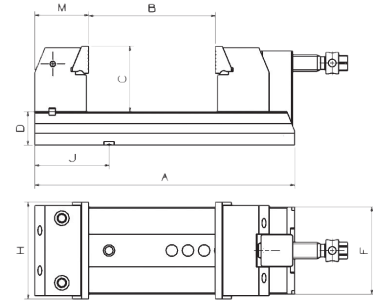
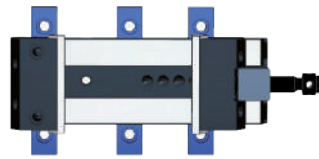
HIGH JAW MACHINE VICE **300**

Vices for machining high height pieces.
Manufactured in hardened steel 60 HRC (F155).



Bullet points

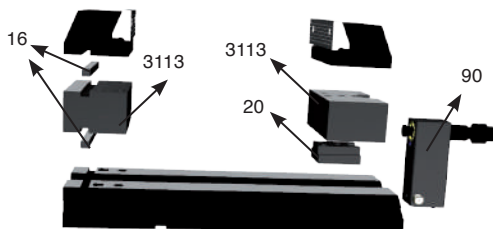
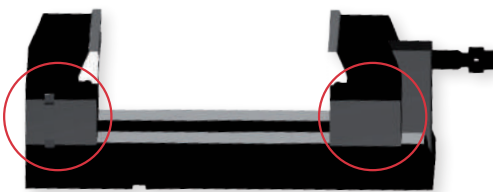
- Jaws with descending effect. While fastening, the descending jaw effect perfectly place the working piece over the vice body or parallel.
- Oscillating movable jaw holder for a better piece adjustment.
- It is strongly suggested to assemble the vice with 3 set of clamps.



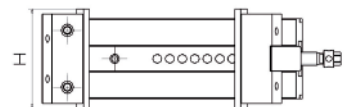
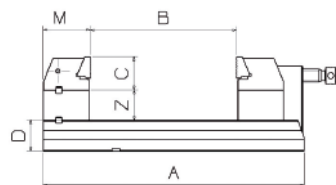
Ref.	A	B	C	D	F	H	J	M			
300/150	402	200	101	51	135	150	115	83	15061	16	35,0
300/150L	452	250	101	51	135	150	115	83	15061	16	37,0
300/200	470	250	130	61	160	200	145	93	20061	16	62,6
300/200L	520	300	130	61	160	200	145	93	20061	16	66,0
300/200S	570	350	130	61	160	200	145	92,5	20061	16	68,0
300/200X	595	375	130	61	160	200	145	93	20061	16	69,0

LIFTING BLOCK **15031**

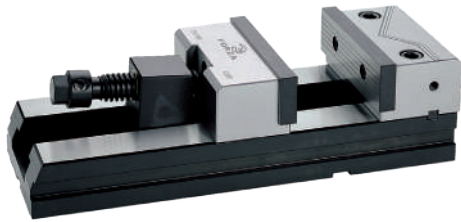
Lifting blocks for serie 30 perfect vices
Non guided blocks suitable for non guided vices.
In case of guided vices it is necessary to get a non guided T.



Ref.	Z	H	
15031	60	150	12,9
20031	60	200	18,5
25031	60	250	21,5
30030031	60	300	34,5



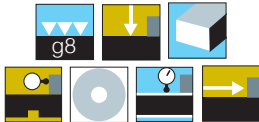
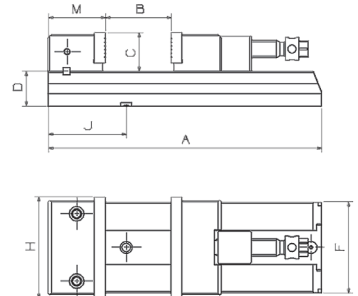
Set of 2 lifting block, spindle blocks keynut and screws are included.



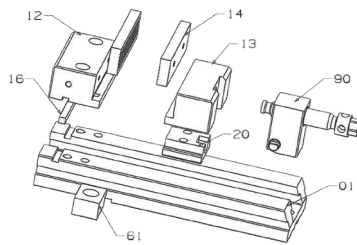
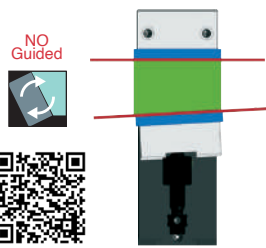
Straight jaws mechanical vices.
By tightening the spindle the work piece does not lift.
Interchangeable locks.
The jaw adapts to the piece.
It is possible to be assembled in a swivel base.

Bullet points

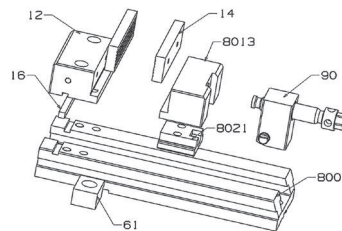
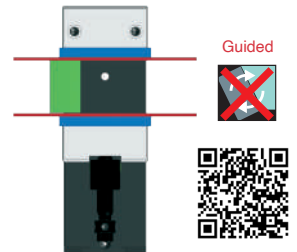
- Non guided vice for a better clamping of irregular pieces.







NO guided machine vice



Guided machine vice



Ref. NO guided	A	B	C	D	F	H	J	M					Ref. Guided	A
29/100	250	109	34	37	90	100	70	50	12561	12	B/100	10,1	29/100G	10,0
29/100L	296	150	34	37	90	100	70	50	12561	12	B/100	9,1	29/100GL	9,0
29/125	300	130	40	42	110	125	88	64	12561	12	B/125	14,1	29/125G	13,2
29/125L	346	175	40	42	110	125	88	64	12561	12	B/125	14,6	29/125GL	14,7
29/125S	371	200	40	42	110	125	88	64	12561	12	B/125	14,9	-	-
29/150	402	200	56	51	135	150	115	84	15061	16	B/150	29,0	29/150G	27,5
29/150L	452	250	56	51	135	150	115	84	15061	16	B/150	27,0	29/150GL	29,2
29/150S	503	300	56	51	135	150	115	84	15061	16	B/150	30,7	29/150GS	31,8
29/150X	528	335	56	51	135	150	115	84	15061	16	B/150	31,8	-	-
29/175	432	225	58,5	56	135	175	120	86	15061	16	B/150	34,0	29/175G	34,0
29/175L	482	275	58,5	56	135	175	120	86	15061	16	B/150	36,5	29/175GL	36,5
29/175S	556	350	58,5	56	135	175	120	86	15061	16	B/150	40,0	29/175GS	40,0
29/175X	610	400	58,5	56	135	175	120	86	15061	16	B/150	42,5	-	-
29/200	470	250	65,5	61	160	200	145	92,5	20061	16	B/200	47,0	29/200G	44,0
29/200L	520	300	65,5	61	160	200	145	92,5	20061	16	B/200	50,0	29/200GL	49,0
29/200S	570	350	65,5	61	160	200	145	92,5	20061	16	B/200	52,1	29/200GS	56,4
29/200X	595	375	65,5	61	160	200	145	92,5	20061	16	B/200	53,6	-	-
29/200XL	675	455	65,5	61	160	200	145	92,5	20061	16	B/200	54,9	-	-

Requires 2 sets of clamps

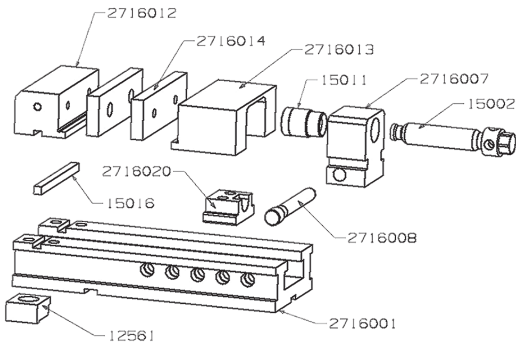
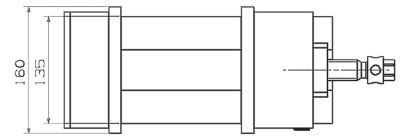
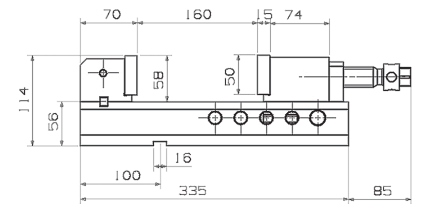
VICES WITH PROTECTED SPINDLE 27

Vices with a protected spindle that avoids from being damaged. Manufactured in hardened steel 60 HRC (F155).



Bullet points

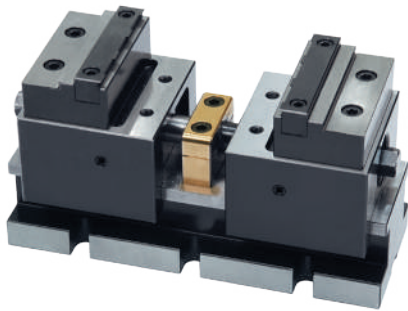
- Opening position selection with lateral a lateral bolt.
- Tight clamping of the pieces without lifting them from the base.
- Non guided vice for a better clamping of the irregular pieces.



Ref.	Opening	Width	Height	Weight
27/160	160	160	114	26,5



SELF CENTERING 5 AXIS MACHINE VICES **24**

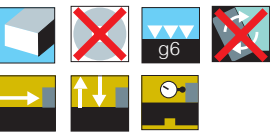




Versatile precision vices suitable for automation on 5-axis machines.
The compact design, technical characteristics and jaw holders and jaws geometry allow to fasten a big range of pieces.v
Manufactured in hardened steel 60 HRC (F155).



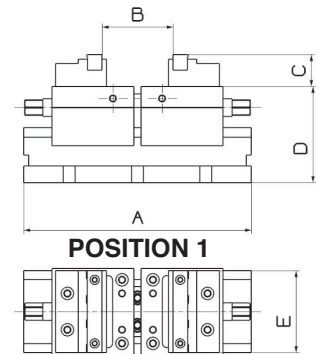
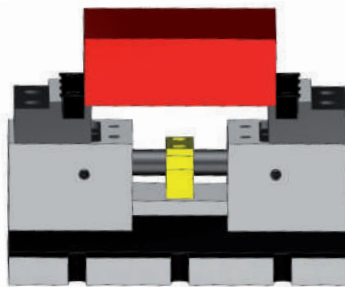
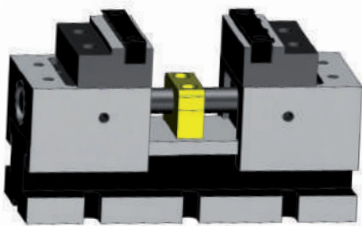
Bullet points

- Reversible jaws holder that enable two different fastening solutions.
- Reversible jaws, straight on one side and grip jaw-plates on the other.
- Trapezoidal thread spindle.

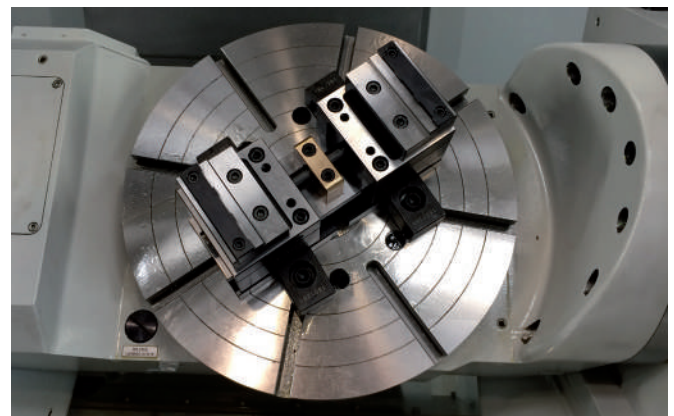
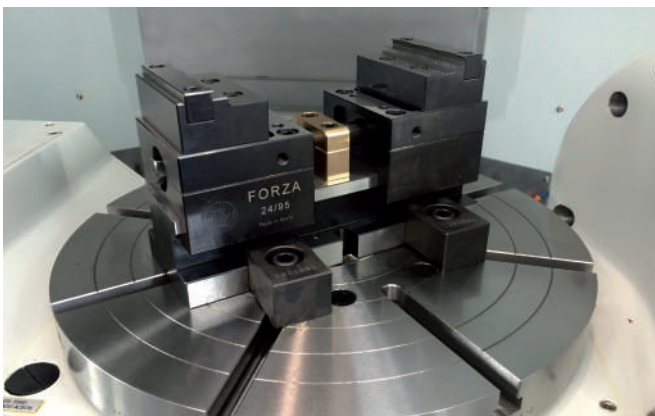
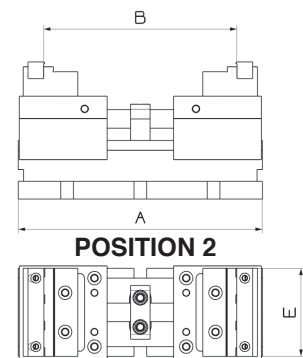
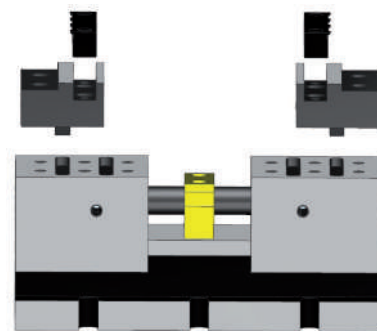
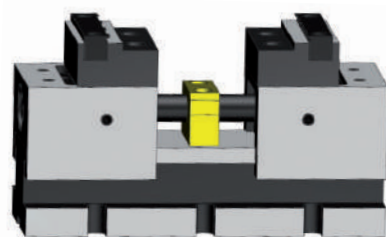


Ref.	A	Opening pos.1	Opening pos.2	C	D	E		
24/75	192	12-110	60-155	28	90	70	12561	9,0
24/95	250	20-140	80-200	35	105	90	15061	20,0
24/100	394	45-285	105-345	38	105	100	15061	24,0

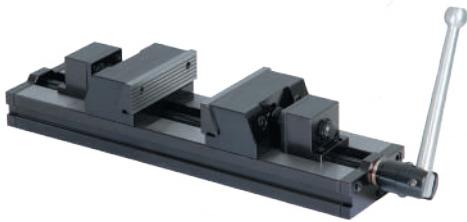
Position 1



Position 2



SELF CENTERING VICES 26

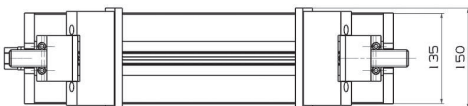
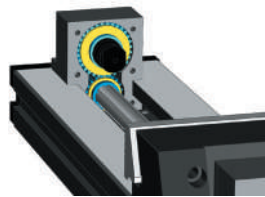
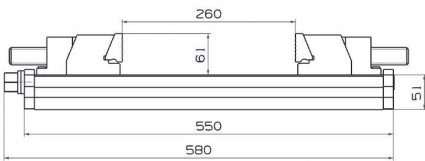


High strength vice with self centering mechanism suitable for any machining work or even grinding. Manufactured in hardened steel 60 HRC (F155).



Bullet points

- Multiplier system in the spindle block which reduce the fastening effort.
- Selfcentering mechanism that assures the fastening center.
- Descending jaws effect.



Ref.	A	BC	B	C1	D	E		
26/150	710	74	520	150	76	122	15061	37,4

Are required 2 sets of clamps

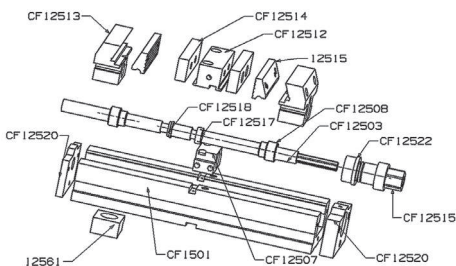
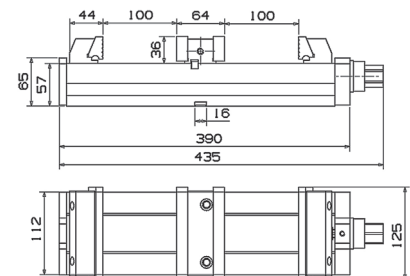
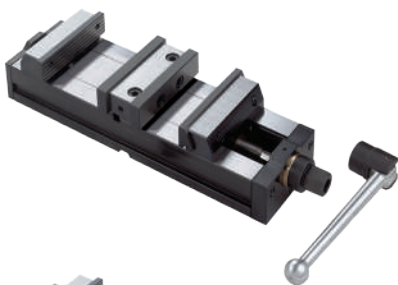
TWIN-SELF CENTERING VICES CF

High precision selfcentering vices appropriate for manufacturing either two pieces or two operations. Manufactured in hardened steel 60 HRC (F155).



Bullet points

- Fixed position spindle for a more convenient handling. It does not change the vice maximum opening.
- Removable fixed part for fastening one big size piece.
- Selfcentering mechanism that assures the fastening center.
- Descending effect jaws.



Ref.	A	B	Maximum distance mouth	Width			
CF/125	435	100	260	125	12	12561	21,0

Are required 2 sets of clamps

SOFT JAWS MACHINE VICES

CFA

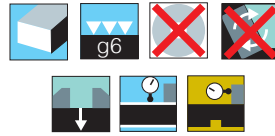
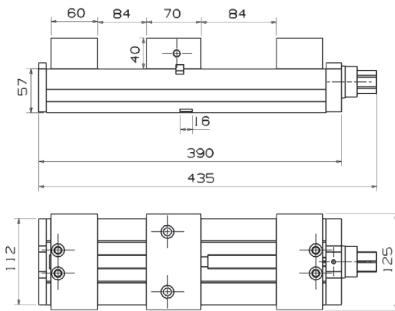


Twin vice with selfcentering mechanism with aluminium jaw holders for machining depending on the geometry of the manufactured piece Vice body and jaws manufactured in hardened steel 60 HRC (F155). Vices can be fastened either with clamps to the T table and valid as well under request for zero point.






Bullet points

- Aluminium jaws help the fastening tooling manufacture.
- Fixed position spindle for a more convenient handling. It does not change the vice maximum opening.
- Selfcentering mechanism that secures the fastening center.



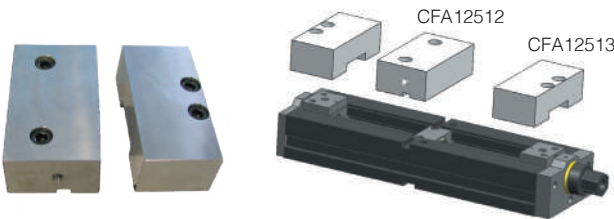
Aplication CFA/125




Ref.	A	B	Width	Base height			
CFA125	435	84	125	57	16	12561	20,0

JAWS HOLDERS

CFA12510

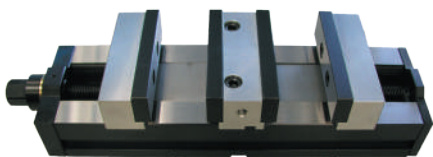


Aluminum jaw holders to machining them according to the geometry of the parts to be manufactured

Ref.	
CFA12512	0,9
CFA12513	0,8

ALUMINIUM JAWS MACHINE VICE

SCFB



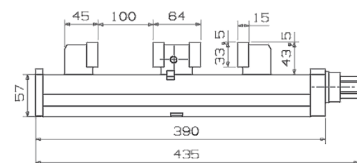
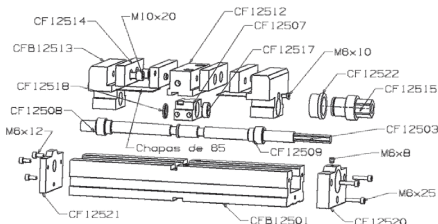
Twin vices with selfcentering mechanism with aluminium jaw holders and tempered straight jaws.




Vice body and jaws manufactured in hardened steel 60 HRC (F155). Vices can be fastened either with clamps to the T table and valid as well under request for zero point.



Bullet points

- Tempered straight jaws up to 60 HRC for a better fastening of the piece.
- Fix positioning spindle for change the vice maximum opening. The total length does not more convenient handling.
- Selfcentering mechanism for assuring the fastening center.



Ref.	A	B	Width	Base height			
CFB125	435	100	125	57	16	12561	20,0



DOUBLE POSITION 125MM DESCENDING MACHINE VICES

125D

High precision double vice with 125mm jaws width and descending effect designed for machining 2 pieces at the same time. Manufactured in hardened steel 60 HRC (F155).



Bullet points

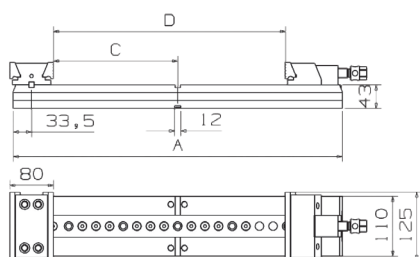
- Two different ways of working with the same vice.
- Double vice: It is possible to fasten 2 pieces at the same time or it is also possible to fix the central jaw holder and fasten two pieces independently.
- Standard vice: It can be modified to a normal vice for machining big size pieces while removing the central jaw holder.
- The 4 jaws have a descending effect.



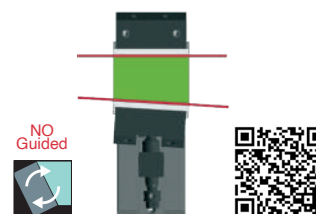
Double vice



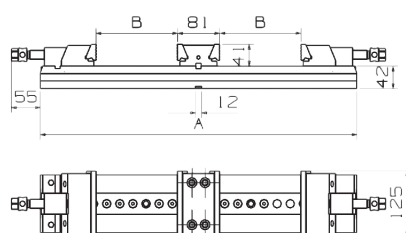
Simple vice



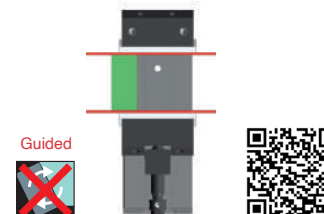
Non-guided jaws with oscillating effect



Ref.	A	B	D	C	Type		
DD125/500	504	102	-		Double	12561	24,5
DD125/500-1	504	-	320	178	Simple	12561	19,5
DD125/600	604	152	-		Double	12561	25,0
DD125/600-1	604	-	425	228	Simple	12561	21,0



Guided jaws without oscillating effect



Ref.	A	B	Includes	D	C	Type		
DD125/500G	504	102	2 T oscilatings			Double	12561	22,0
DD125/500G-1	504	-	1 T oscilating	320	178	Simple	12561	19,7
DD125/600G	604	152	2 T oscilatings			Double	12561	25,0
DD125/600G-1	604	-	1 T oscilating	425	228	Simple	12561	21,0

Double position vice includes 2 oscillating T and simple vices includes 1 oscillating T

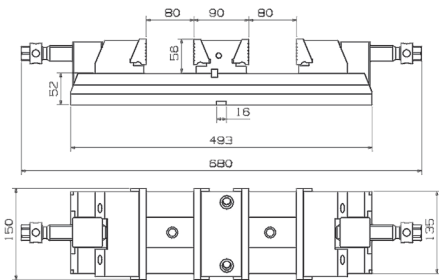
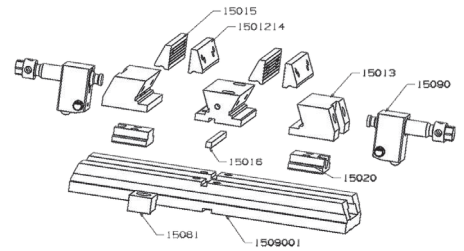
DOUBLE POSITION 150MM MACHINE VICE **30D**




High precision double vice with 150mm jaws with descending effect. Designed for machining 2 pieces at the same time. Manufactured in hardened steel 60 HRC (F155).



Bullet points

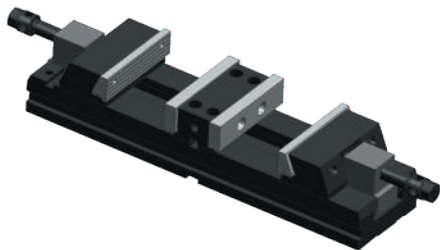
- Very compact vices.
- Oscillating jaws holders which adapt to the piece geometry.
- Suitable vices for working with oil neumatic cylinderes (reference 15080).



Ref.	A	B	C	Width			
30/150D	680	90	56	150	16	15061	40,0

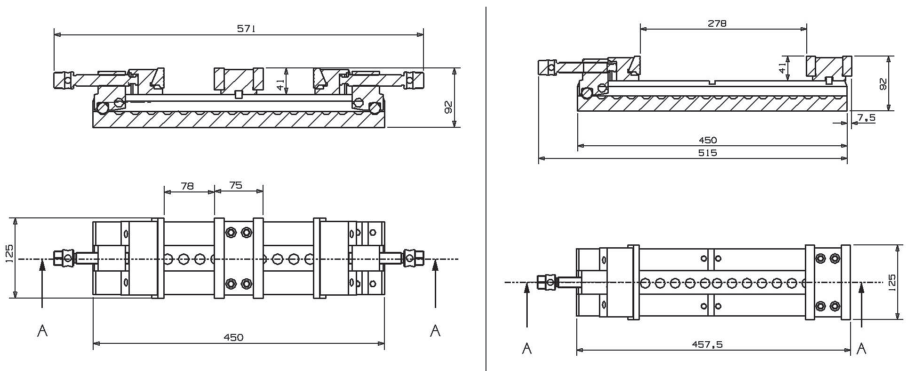
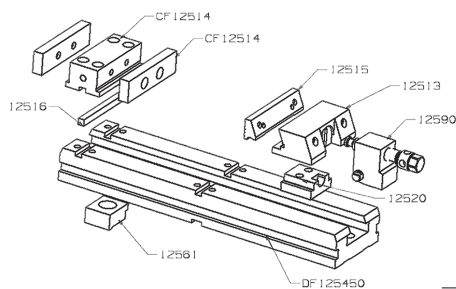
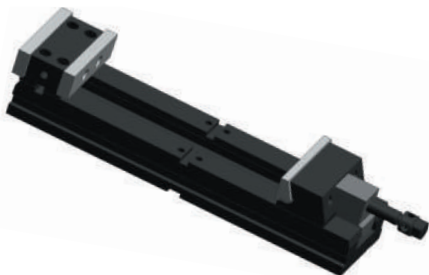
DOUBLE POSITION 125MM MACHINE VICE **30DF**



Double vice with straight jaws and descending effect. The central jaw holder can be fastened in the central part and it allows to fasten two pieces independently. It is also possible to place at the end of the vice body. In this way, it will be a normal vice with a wide opening. 2 sets of clamps are required.



Bullet points

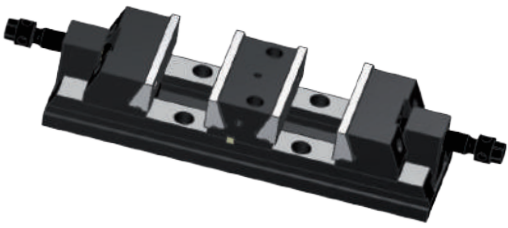
- Non guided vice for a better fastening of irregular pieces
- Two different uses with the same vice
- Oscillating jaws holder for a better piece adjustment.



Ref.	A	B	2xb	Length	Maximum mouths distance pos.1	Maximum mouths distance pos.2		
DF125/450	450	278	78	450	78	278	12561	24,0

DOBLE POSITION VICE FOR PALLETS SERIE 60D

60/150D

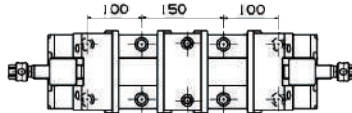
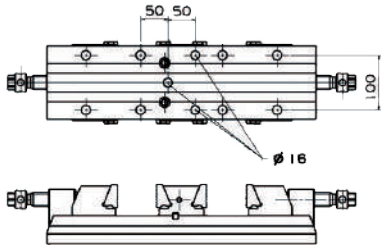


High precision double vice with 150mm jaws with descending effect. Designed for machining 2 pieces at the same time on horizontal machining centers with pallets. Manufactured in hardened steel 60 HRC (F155).



Bullet points

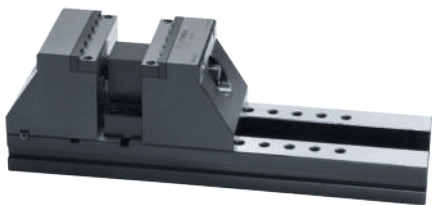
- Double vice: this vices fastens two pieces independently.
- The 4 jaws have a descending effect.
- Oscillating jaw holders that adapt to the piece geometry.



Ref.	Step	
60/150D	50	40,0

5 AXIS MACHINE VICES

25

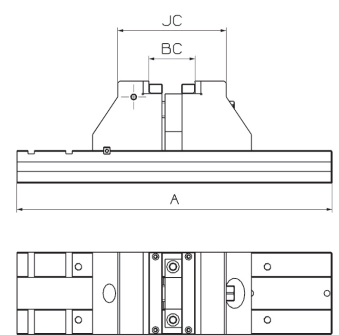
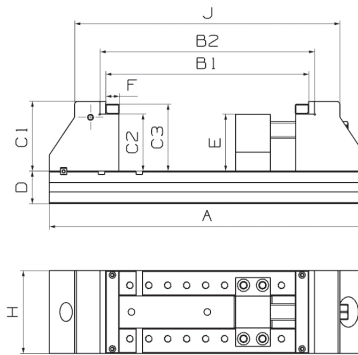
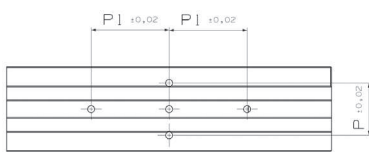


Vice specially designed for 5 axes machines where the piece is clamping only on a few millimeters.



Bullet points

- The fix jaw holder has 3 different clamping positions.
- The spindle is completely hidden and it incorporates bearings that improve the clamping.
- The jaws holder can be machined for regulating the jaws step height.
- Reversible jaws, straight on one side and grip jaw-plates on the other.



Ref.	A	BC	B1	B2	C1	C2	C3	D	E	F	H	JC	J	P	P1		
25/130	500	74	320	340	110	90	105	51	90	21	130	171	420	80	120	20061	42,0
25/130L	600	74	420	440	110	90	105	51	90	21	130	171	520	80	120	20061	45,0
25/160	470	-	220	270	190	150	160	61	150	30	160		360			20061	77,0
25/175	590	74	370	400	150	125	140	76	122	25	175	182	480	100	100	20061	89,0
25/175L	710	74	490	520	150	125	140	76	122	25	175	182	600	100	100	20061	98,0

GRIP JAW-PLATES

Indented jaws that facilitate the machining piece clamping A set consists on 2 units. Valid for all vices serie 25



Ref.		
2513024	25/130	0,2
2517524	25/175	0,5

MECHANICAL MACHINE VICES

31

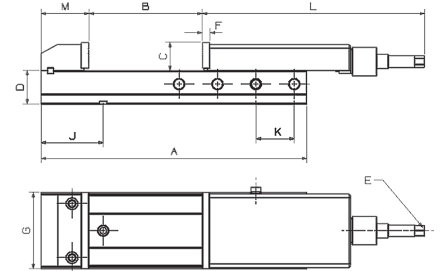
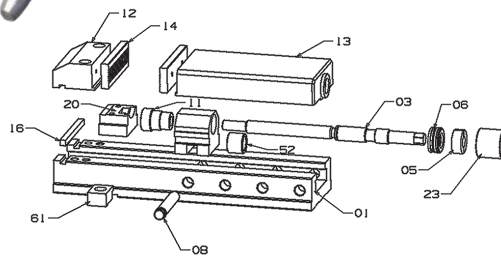






Master vices with a mechanical spindle for machining operations in milling machines.



Bullet points

- Mechanical spindle equipped with an axial bearing to reduce the effort.
- Protected spindle prevents damage.
- Four or five opening positions selectable with a bolt.
- Aluminum trolley with hard anodizing, same strength as steel but three times lighter.



Ref.	A	B	C	D	E	F	G	J	K	L	M				
31/125-	430	210	48	66	14	12	125	115	60	355	85	15061	16	GN/125	26,0
31/125L	490	270	48	66	14	12	125	115	60	355	85	15061	16	GN/125	28,5
31/160	554	325	59	70	22	16	160	130	80	465	107	1501261	16	GN/160	49,0
31/160L	634	400	59	70	22	16	160	130	80	465	107	1501261	16	GN/160	53,7

HYDRAULIC MACHINE VICES

31H

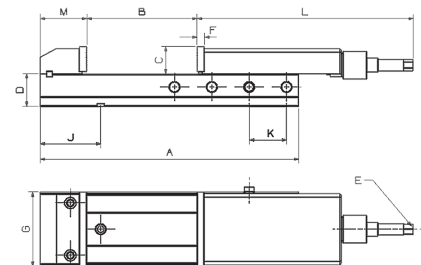
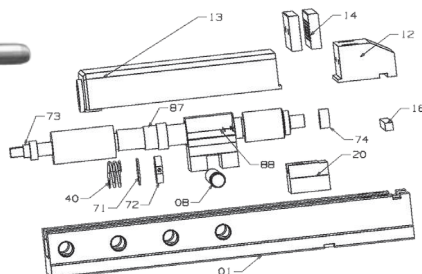






Master vices with an hydraulical spindle for machining operations in milling machines.



Bullet points

- Protected spindle that prevents damage.
- Four or five opening positions selectable with a bolt.
- Aluminum trolley with hard anodizing, same strength as steel but three times lighter.



Ref.	A	B	C	D	E	F	G	J	K	L	M				
31/125H-	430	210	48	66	14	12	125	115	60	355	85	15061	16	GN/125	26,0
31/125HL	490	270	48	66	14	12	125	115	60	355	85	15061	16	GN/125	28,5
31/160H	554	295	59	70	16	16	160	130	80	482	107	1501261	16	GN/160	49,0
31/160HL	634	375	59	70	16	16	160	130	80	482	107	1501261	16	GN/160	53,7

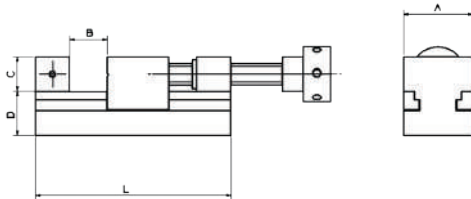
GRINDING MACHINE VICES


32D

Vices for grinding machine.

Bullet points

- Manufactured in hardened steel F155 at 60HRc.
- Trapezoidal spindle that improves the clamping.



Ref.	A	B	L	D	
32/60D	60	55	110	25	2,4
32/80D	80	100	220	40	6,5
32/100D	100	125	260	45	13,0
32/125D	125	160	300	50	19,5
32/150D	150	175	315	50	23,8

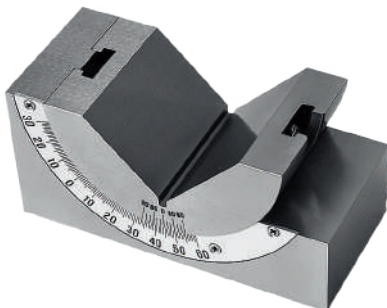
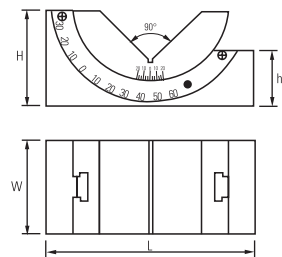
MULTI-ANGULAR POSITION


32M

Perfect item for the angular positioning of the pieces

Bullet points

- Pieces clamping in different angular positions.



Ref.	H	W	L	h	
32/25M	32	25	75	22	0,5
32/30M	46	30	102	28	1,0
32/46M	47	46	102	28	1,5

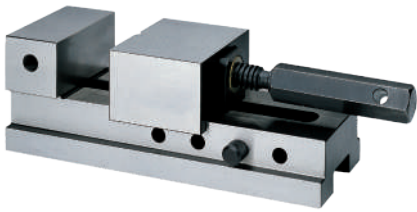
GUARANTEED QUALITY

Video of a vice on a three dimensional ZEISS machine



HIGH PRECISION VICES

32N




Suitable professional vices designed for high precision grinding work.

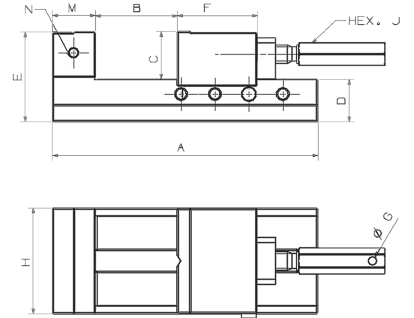


Bullet points

- Manufactured in hardened steel F155 at 60HRc.
- Perfect fastening in regards to adjustable positions by a bolt.
- Tolerance in parallelism and perpendicularity of $\pm 0,01$ mm.



Ref.	A	B	C	D	E	F	ØG	H	J	M	
32/50N	148	70	25	25	50	45	8	50	14	25	2,0
32/75N	194	91	34	34	68	57	8	75	19	35	4,5
32/100N	250	123	45	40	85	75	6	100	22	40	9,5



SINUS MACHINE VICES

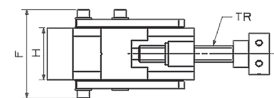
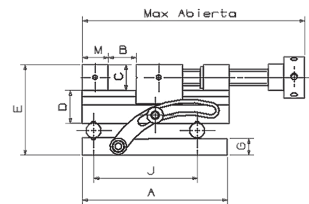
32S




Perfect vices for the angular positioning of the pieces.

Bullet points

- Vice with an inclination from 0 to 45°.
- The angle is achieved by introducing gage blocks into the support.



Ref.	A	B	C	D	E	F	G	H	J	M	TR	MAX. A	
32/50S	140	60	25	32	87	87	20	50	100	25	20X4	350	5,0
32/80S	200	95	40	44	121	122	26	80	100	34	24X5	433	8,0
32/100S	245	125	45	50	139	145	16	100	100	38	25516X4	255	15,0





Accessories for vices



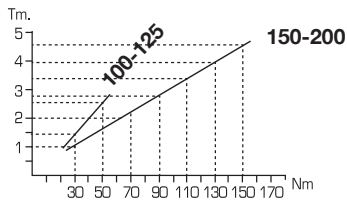
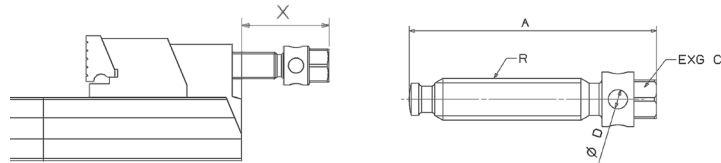
FORZA[®]



www.forza.es

MECHANICAL COMPLETE SPINDLE



Complete mechanical block with spindle included.
It can be assembled on vices serie 30, 29 and 60.

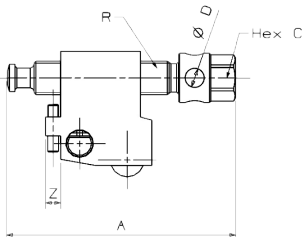


Ref.	A	C	ØD	R	X1 Spindle standar			
					X1	X2		
10090	120	22	10	M18x2,5	65	50	100	0,7
12590	120	22	10	M18x2,5	60	50	125	1,0
15090	154	24	12	TR26x5	95	75	150-175-200	2,0
25090	154	24	12	TR26x5	85	65	250	3,1
3030090	189	28	18	TR30x5	100	-	300300	4,3

VERTICAL POSITION SPINDLE





Complete mechanical block with spindle included.
It can be assembled on vices serie 30, 29 and 60.
When this spindle is assembled into the vice, the maximum opening is reduced to **F**.



Bullet points

- It is suggested when the vice is in a vertical position in horizontal machining centers.

Ref.	A	C	ØD	R	X	F		
12594	120	22	10	M18x2,5	55	9	125	1,0
15094	154	24	12	TR26x5	85	11	150 - 175 - 200	2,0
25094	255	24	18	TR26x5	85	11	250	3,1

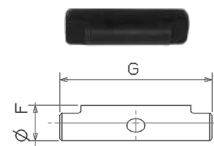
COMPLETE SPINDLE SPARE PARTS

Standard spindle

Short spindle

Replacement bolt

Bronze sleeve





Vice Ref.	Standard spindle					Short spindle		Replacement bolt			Bronze sleeve		
	Ref.	A	R	C	Ø	Ref.	A	Ref.	A	F	G	Ref.	Ø
100	10002	120	M18X2,5	22	10	10022	104	10008	13	13	44	-	-
125	10002	120	M18X2,5	22	10	10022	104	12508	14	14	55	-	-
150-175-200	15002	154	TR26X5	24	12	15022	134	15008	16	16	68	15011	0,1
250	15002	154	TR26X5	24	12	15022	134	25008	18	18	87	15011	0,13
300	3030002	189	TR30X5	26	18	-	-	3030008	18	18	87	3030011	0,4

MECHANICAL BLOCK WITHOUT SPINDLE



Horizontal spindle



Ref.		
10091	100	0,4
12591	125	0,8
15091	150-200	1,4
25091	250	1,6
3030091	300	3,5

Vertical spindle





Ref.		
125942	125	0,4
150942	150-200	1,1
250942	250	2,5

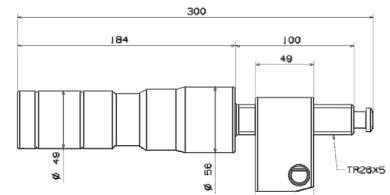
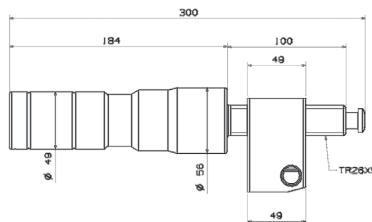
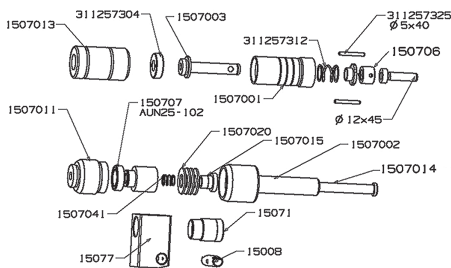
HYDRAULIC SPINDLE



This 5 T spindle works with an oil closed tank. While introducing the piston, the force is multiplied because of the diameters difference. For machine vices serie 29,30 y 60.



Ref.		Stroke	
15070	150-175-200	2mm	8,2



TORQUE MULTIPLIER

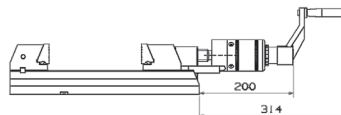
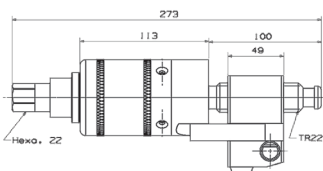




The torque multiplication system is carried out by an internal planetary gear mechanism that multiplies the clamping force by 4. It can be assembled on vices serie 30, 29 and 60.



Bullet points

- It includes an angular measurement system to measure the fastening tons.
- Unlimited fastening stroke.

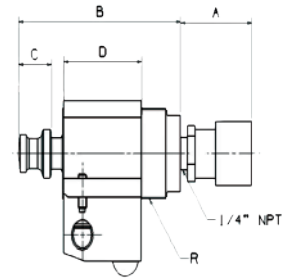




Ref.		Stroke	
15092	150-175-200	2mm	5,8

COMPLETE HYDRAULIC SPINDLE



When this spindle is assembled into the vice, the maximum opening is reduced to **F**. It is essential to use an oleo-pneumatic pump to operate the spindles.




Ref.	A	B	C	D	R	TON		F	
10080	53	95	23	45	M36x 1,5	2	100	7	0,9
12580	53	95	23	48	M36 x 1,5	2	125	10	1,2
15080	53	128	25	58	M48 x 1,5	5	150-200	27	2,4
25080	53	128	25	51	M48 x 1,5	5	250	20	3,1

AIR HYDRAULIC PUMP AND ACCESSORIES



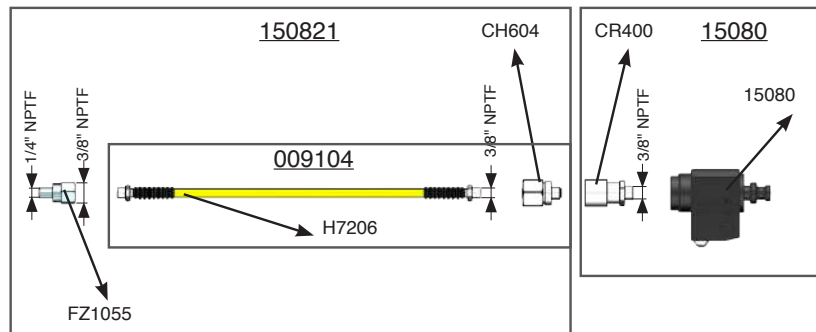
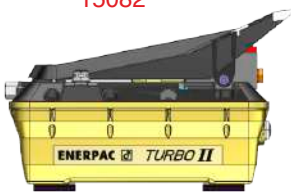
Pump to operate the oilpneumatic spindles. It works for all type of vices. Hose included.



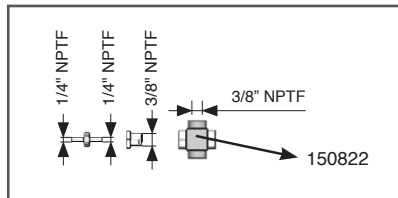
Ref.	Psi	Ref.	Description	
09105	700	150821	Manguera con racores	1,1
		150822	Distribuidor 2 salidas + racores	0,2
		150823	Distribuidor 3 salidas + racores	0,3

ONE PUMP ONE VICE

15082

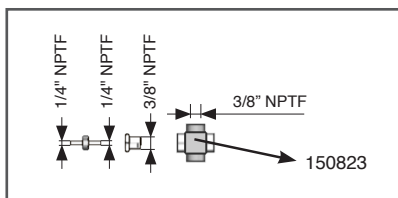


ONE PUMP TWO VICES



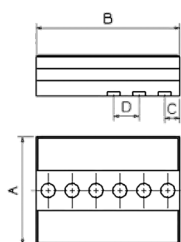
+	09104	+	15080
+	09104	+	15080

ONE PUMP THREE VICES



+	09104	+	15080
+	09104	+	15080
+	09104	+	15080

VICE BODIES EXTENSIONS



Body vice extensions.
 Note: the extensions are valid for Serie 30, 29 and 60.
 The extensions are not guided, they can not be used for guided vices.



Bullet points

- Manufactured in hardened steel F155 at 60HRc.
- Reversibles: Three keyways on each side so 6 different fastening positions are achieved in the machine.

Ref.	A	B	C	D			
1252211	110	150	15	21	1251261	125	3,6
1502211	135	180	19	32	15061	150	6,5
1752211	135	180	19	32	15061	175	7,5
2002211	160	200	24	32	2001261	200	11,7
2502211	200	242	31	36	20061	250	19,5

ELBOWED HANDLE



Articulated rod for vices serie 29,30 y 60.

Bullet points

- 24mm hexagonal wrench very comfortable on machines with lack of space.



Ref.	Description	
15004	150 - 175 - 200 - 250	0,9

CLAMPS FOR MACHINE VICES



Clamps for standard vices serie 29, 30 and 60.
 All the clamps are supplied for M16 screws.
 Set of 2 units.



Ref.		
12561	100 - 125	0,5
15061	150 - 175	0,8
20061	200 - 250	0,8
3030061	300	2,7

CLAMPS FOR SPLIT VICES



Clamps for split vices.
 All the clamps supplied for M16 screws.
 Set of 2 units.
 For machine vices serie 30P y 30VP.



Ref.		
1251261	100 - 125	0,5
1501261	150	0,8
2001261	200	1,0

ALIGNEMENT KEYNUTS

15041





15042



Alignment keynuts for machine vices serie 29, 30 and 60.
Keynuts are indispensable for a perfect vice alignment.
Set of 2 units.



Ref.	Metric	
12540	12/12	0,1
12541	12/14	0,1
12544	12/16	0,1
12547	12/18	0,1
12549	12/22	0,1
12543	14/14	0,1
12545	14/16	0,1
15040	16/14	0,1
15041	16/16	0,1
15042	16/18	0,1
15043	16/20	0,1
15044	16/22	0,1
15048	16/28	0,2

Ref.	Metric	
15045	18/18	0,1
15046	18/20	0,1
15049	18/22	0,1
25043	20/18	0,1
25044	20/20	0,1
25045	20/22	0,1
25048	20/28	0,2


T SLOTS

Slot nuts for fastening the vices to the T table.

Bullet points

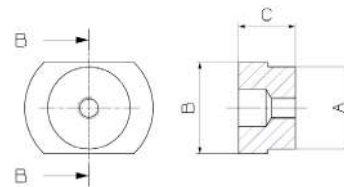
- Manufactured for not damaging the channels of the T tables.





Ref.	A	B	Metric	
150T16	16	25	M-14	0,1
395644	18	28	M-16	0,1
395645	20	32	M-16	0,1
395646	22	35	M-16	0,2
395647	24	40	M-16	0,3

EYEBOLT

To safely lift vices.
Locking system in order not to slide.
For machine vices serie 29,30 and 60.





Ref.	A	B	C		
15035	45	50	31	150 - 200	0,8

SQUARE RUBBERS



Set of 4 units for machine vices with descending effect serie 30 and 60.
Note: It is suggested to change yearly the rubbers.

Ref.		
10018	100	0,1
12518	125	0,1
15018	150 - 175	0,1
20018	200	0,1
25018	250 - 300	0,1





T SUPPORTS

100T

Lower T support of the mobile jaw.
For machine vices serie 29,30 and 60.



Tipo 1



Tipo 2



Tipo 3

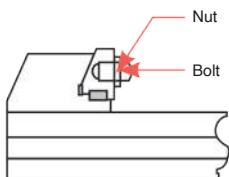
Ref.	Type	Description	A	B	C	⚖️
10020	1	Standard oscillating T	8	20	32.5	0,2
12520	1	Standard oscillating T	10	23	39	0,4
15020	1	Standard oscillating T	12.5	27	49	0,6
20020	2	Standard oscillating T	12.5	27	49	0,7
25020	2	Standard oscillating T	16	29	69	1,0
3030020	3	Standard oscillating T	18	33	69	1,5
1008021	1	Guided T	11	23	32.9	0,4
1258021	1	Guided T	13	26	40.9	0,4
1508021	1	Guided T	16	28.5	50.9	0,7
2008021	2	Guided T.	16	28.5	50.9	0,9
2508021	2	Guided T	16	29	70.9	0,9
1008020	1	T oscillating guided vice	11	23	32.5	0,3
1258020	1	T oscillating guided vice	13	26	40.9	0,4
1508020	1	T oscillating guided vice	16	28.5	50.9	0,6
2008020	2	T oscillating guided vice	16	28.5	50.9	0,9

POSITIONING BOLT

10059



To fasten irregular or very coarse working pieces (forged, iron cast, metal plasma and oxyacetylene cutting...).



Ref.	⚙️	Locknut	⚖️
10059	100 - 125	M-8	0,1
15059	rest	M-10	0,1

WORK STOP

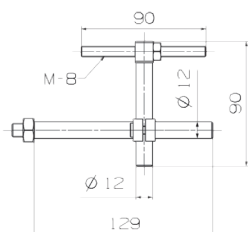
10058



Essential side work stop in any kind of vice for lateral positioning.
For machine vices serie 29,30 and 60.

Bullet points

- Available in normal and long length (L)
- With an easy to use design and extremely precise.







Ref.	⚙️	Length	⚖️
10058	100	90	0,4
10058L	100	120	0,5
15058	resto	90	0,4
15058L	resto	120	0,5

SWIVEL BASE FOR DESCENDING VICES



Swivel base for descending effect vices serie 29 and 30.
It allows to rotate the vice and slide for changing the center.





Ref.				
B/100	100	14	12560	6,5
B/125	125	14	12560	9,5
B/150	150-175	16	15060	14,0
B/200	200	16	15060	20,0

CLAMP FOR SWIVEL BASE



Clamps for fastening the swivel base to the T table
Set of 2 units
All the clamps are supplied for M16 screws
For machine vices serie 29 and 30.



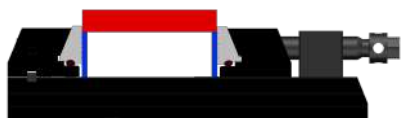
Ref.		
12560	B/100 - B/125	0,5
15060	B/150 - B/200	0,8



You can see complete assembly and accesories



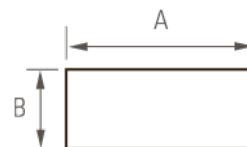
PARALLELS WITH SIMPLE FORM CLAMPS



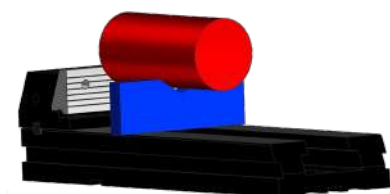
All the parallels include the fastening clamp
The clamp holds the parallel in order to avoid any movement while working.
16mm thickness.
For machine vices serie 29,30 and 60.



Ref.	A	B	⚖️
150P40	150	40	0,8
150P45	150	45	0,8
150P50	150	50	0,8
175P42	175	42	0,9
175P47	175	47	0,9
175P52	175	52	0,9
200P52	200	52	1,3
200P57	200	57	1,3
200P62	200	62	1,3



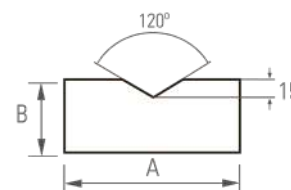
PARALLELS WITH CLAMPS V FORM



All the parallels include the fastening clamp
The clamp holds the parallel in order to avoid any movement while working.
16mm thickness.
For machine vices serie 29,30 and 60.



Ref.	A	B	⚖️
150P40V	150	40	0,8
150P45V	150	45	0,8
150P50V	150	50	0,8
175P42V	175	42	0,9
175P47V	175	47	1,0
175P52V	175	52	1,0
200P52V	200	52	1,3
200P57V	200	57	1,3
200P62V	200	62	1,3



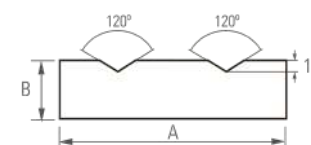
PARALLELS WITH CLAMPS W FORM



All the parallels include the fastening clamp
The clamp holds the parallel in order to avoid any movement while working.
16mm thickness.
For machine vices serie 29,30 and 60.



Ref.	A	B	⚖️
150P40W	150	40	0,8
150P45W	150	45	0,8
150P50W	150	50	0,9
175P42W	175	42	1,0
175P47W	175	47	1,0
175P52W	175	52	1,0
200P52W	200	52	1,3
200P57W	200	57	1,3
200P62W	200	62	1,3



PARALLELS WITH SUPPORT

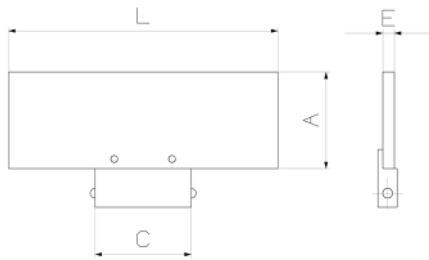



Parallels with support for vices serie 29, 30 and 60.
Supplied in sets of 2 units..



Bullet points

- It is assembled to the vice central slot with a “click”. thanks to a fastening spring.
- It is more precise than working with stepped jaws.



Ref.	A	L	E	
12599930	30	110	4	0,3
12599935	35	110	4	0,3
15099940	40	140	6	0,6
15099950	50	140	6	0,7
20099950	50	180	6	0,9
20099958	58	180	6	1,1

SOFT JAWS





Soft machining and tempered jaws in steel F140
Supplied in sets of 2 units.
Valid for all vices serie 30 and 60.

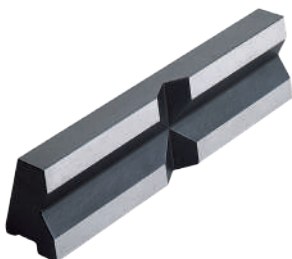


Bullet points

- Designed to custom machine them in order to clamp specific geometry parts.

Ref.		
10050	100	0,9
12550	125	1,6
15050	150	3,0
17550	175	3,5
20050	200	4,0

PRISMATIC JAWS

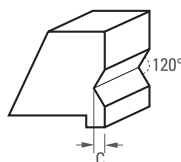




Prismatic jaws made of hardened steel 60 HRC (F155).
A set consists on 2 units.
Valid for all vices serie 30 and 60.



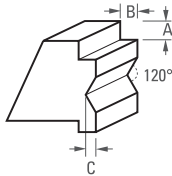
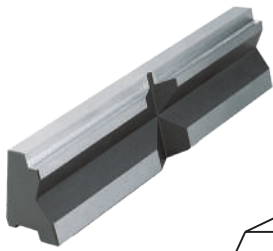
Bullet points

- Specially designed for fastening cylindrical pieces.



Ref.		C	
10053	100	3	0,5
12553	125	4	1,0
15053	150	5	2,1
17553	175	5	2,5
20053	200	5	2,4

STEPPED PRISMATIC JAWS





Stepped prismatic jaws made of hardened steel 60 HRC (F155).
A set consists on 2 units.
Valid for all vices serie 30 and 60.

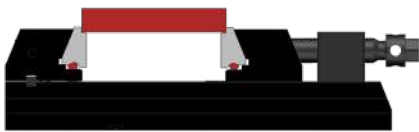
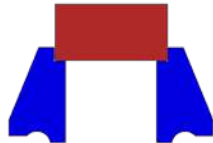


Bullet points

- Designed to clamp pieces avoiding lifting blocks or parallels.
- Designed to clamp cylindrical parts.

Ref.		A	B	C	
10051	100	4	3	3	0,5
12551	125	4	4	4	1,0
15051	150	6	5	5	4,2
17551	175	6	5	5	2,4
20051	200	6	5	5	2,7

STEPPED SMOOTH JAWS





Stepped smooth jaws manufactured of hardened steel 60 HRC (F155).

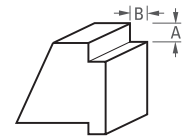
A set consists on 2 units.
Valid for all vices serie 30 and 60.



Bullet points

- Designed for clamping parts avoiding lifting blocks or parallel.

Ref.		A	B	
10052	100	4	3	0,6
12552	125	4	4	0,8
15052	150	6	5	1,7
17552	175	6	5	2,0
20052	200	6	6	2,2





SMOOTH JAWS



Smooth jaws manufactured of hardened steel 60 HRC (F155).

A set consists on 2 units
Valid for all vices serie 30 and 60.

Ref.		
10054	100	0,6
12554	125	0,8
15054	150	1,8
17554	175	1,9
20054	200	2,3
25054	250	3,3
3030054	300	6,0





STANDARD JAWS



Standard jaws manufactured of hardened steel 60 HRC (F155).

A set consists on 2 units
Valid for all vices serie 30 and 60.

Ref.		
10055	100	0,3
12555	125	0,8
15055	150	1,8
17555	175	1,9
20055	200	2,3
25055	250	3,3
3030055	300	6,0



JAWS WITH POSITING PINS

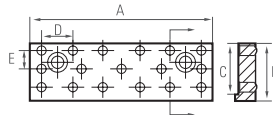
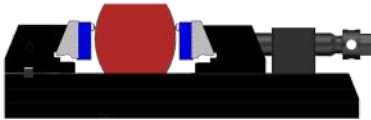




Positioning pins jaws.
Supplied in a set of 2 units + 12 pins and 2 fastening screws.
Valid for all vices serie 30 and 60.



Bullet points

- Designed to achieve a better clamping, especially in irregular geometries without the need of pre-machining.
- Interchangeable pins for flexible positioning.



Ref.		
12556	30/100	1,0
15056	30/150	1,6
17556	30/175	1,9
20056	20/200	2,1

GRIP JAW-PALTES FOR SERIE 24





Grip jaw plates.
Supplied per unit.



Bullet points

- Designed to achieve a better clamping, especially in irregular geometries without the need of pre-machining.

Ref.		
2407514	24/75	0,1
2409514	24/95	0,2
2410014	24/100	0,2

GRIP JAW-PLATES

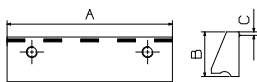



Grip jaw-plates
A set consists on 2 units
Valid for all vices serie 30 and 60.

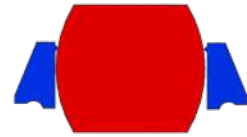
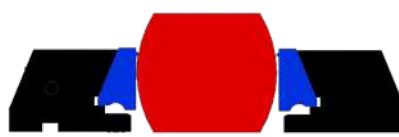


Bullet points

- Designed to achieve a better clamping, especially in irregular geometries without the need of pre-machining.



Ref.	A	B	C	
10057	100	24	1.5	0,2
12557	125	29.5	1.5	0,7
15057	150	40	3	1,8
17557	175	40	3	2,0
20057	200	40	3	2,2
25057	250	40	3	3,8





Milling heads
to make keyways



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COMPLETE INTERNAL MILLING HEAD **CAFN**



See manual

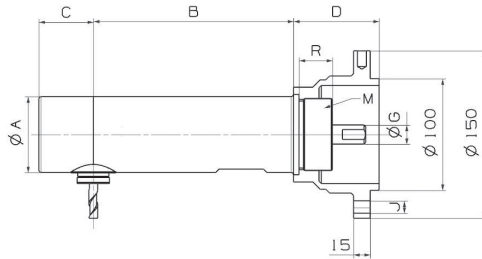
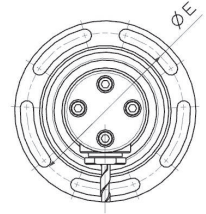


Internal milling head designed for machining keyways
 To set up the CAF in to the milling head, it's necessary the manufacturing of an adaptation plate (see operating instructions)
 it's supplied with drawing cone (ISO 40 or 50), the biggest diameter collet and all drives
 Transmission relation 1:2.
 Maximum input speed 3.000 r.p.m.

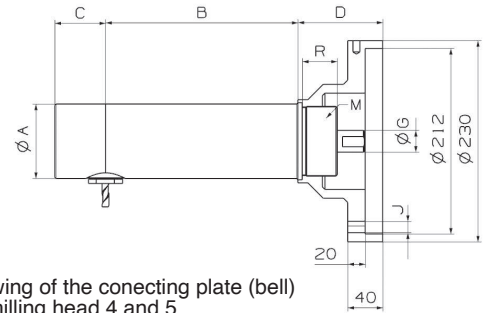


Bullet points


- There are two kinds of fastening for the cutters: collet and drivers
- Supplied together with ER type collets and drivers.



Drawing of the connecting plate (bell) for milling head 1, 2 and 3.




Drawing of the connecting plate (bell) for milling head 4 and 5.

Ref.	Ømin	ØA	B	C	ØE	ØG	E/P	ØJ	M	R	Mooring	
CAFN1	42	35	106	16	130	14	11	11	M35x1,5	16	Collet	5,6
CAFN2	54	47	132	35	130	15	13	11	M45x1,5	18	Collet	6,7
CAFN3	78	68	180	50	130	18	15	11	M65x2	30	Collet and mill holder	12,4
CAFN4	95	85	220	58	196	25	22	13	M80x2	40	Collet and mill holder	26,4
CAFN5	130	113	282	76	196	30	25	13	M105x2	42	Collet and mill holder	42,5


INTERNAL MILLING HEAD WITHOUT ADAPTOR PLATE **71000**

It is the main part of the milling head
 Neither the drivers not the plate are included



Ref.	
71110	1,0
71210	2,0
71310	6,0
71410	11,5
71510	24,0



Video of milling head working 





DRIVERS WITH KEYway



Driver with a keyway.
All drives are included in CAF 3, 4 and 5.



Ref.	ØShaft	Milling head	⚖
714216	16	CAFN4	0,2
715216	16	CAFN5	0,3
715222	22	CAFN5	0,3

DRIVERS



Drivers and threaded milling cutters
All drives are included in CAF 3, 4 and 5.



Ref.	Thread	Milling head	⚖
713110	M10	CAFN3	0,1
714110	M10	CAFN4	0,2
714112	M12	CAFN4	0,2
715110	M10	CAFN5	0,3
715112	M12	CAFN5	0,3
715116	M13	CAFN5	0,3

COLLETS



Standard collets high precision ER type.
The largest diameter collet is included together with the milling head.




Ref.	Diameter	Milling head	ER	⚖
711904	4	1		0,1
711905	5	1		0,1
711906	6	1		0,1
712904	4	2	11	0,1
712905	5	2	11	0,1
712906	6	2	11	0,1
712907	7	2	11	0,1
712908	8	2	11 special	0,1
713906	6	3	16	0,1
713907	7	3	16	0,1
713908	8	3	16	0,1
713910	10	3	16	0,1
714904	4	4	20	0,1
714906	6	4	20	0,1
714907	7	4	20	0,1
714908	8	4	20	0,1
714910	10	4	20	0,1
714912	12	4	20	0,1
715906	6	5	25	0,1
715908	8	5	25	0,1
715909	9	5	25	0,1
715910	10	5	25	0,1
715912	12	5	25	0,1
715914	14	5	25	0,1
715916	16	5	25	0,1



CONES



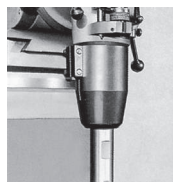
Ref.	ISO	
711130	30	0,4
711140	40	1,1
711150	50	2,7
712130	30	0,4
712140	40	1,1
712150	50	2,7
713140	40	1,1
713150	50	2,7
714140	40	1,1
714150	50	2,7
715140	40	1,1
715150	50	2,7




VERTICAL JOINT



Mounting on a turret milling machine



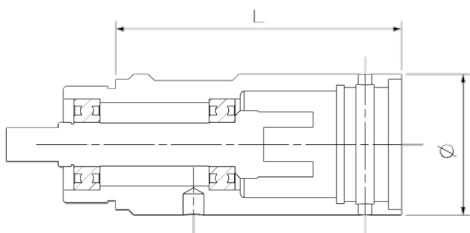
Ref.	CAF	
711000	For CAF 1	0,8
712000	For CAF 2	4,1




EXTENSIONS



They lengthen the maximum length milling of the heads
2 consecutive extensions can be mounted
Other extensions measures can be manufactured upon request.

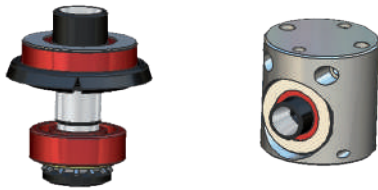


Ref.	L	Diameter	Milling head	
711020	90	45	1	1,0
711030	120	45	1	1,3
712020	100	54	2	1,3
712030	150	54	2	1,9
713020	125	78	3	3,6
713030	175	78	3	3,9
714020	150	95	4	6,1
714030	220	95	4	8,9
715020	200	128	5	17,5
715030	320	128	5	26,7





QUICK REPAIR KIT HEAD OF TRANSMISSION COMPLETE GROUP



It includes all necessary pieces to change the toothed rim. Once the milling head cover has been opened, extract the damaged part and replace it with this new one. Easy and without regulation repair.



Ref.	Milling head	
712012	2	0,5
713012	3	1,0
714012	4	1,9
715012	5	7,0

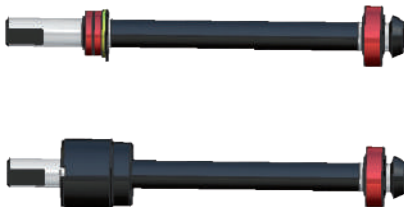
Head	Ref. Content	Description	Quantity
CAF 3	713012	Full support	1
	713002	Gear	1
	713303	Gear block	1
	713304	Washer	1
	713402	Nut KM-2	1
	713513	Bearing 51103	1
	713600	Bearing 16004	1
	713622	Bearing 6202	1
	MB2	Safety plate	1

Head	Ref. Content	Description	Quantity
CAF 3	713011	Complete sprocket	1
	713001	Sprocket	1
	713307	Bearing holder	1
	713317	Bearing carrier washer	1
	713618	Bearing 61803	1
	713623	Bearing 6003	1
	DJ28	Internal ring 28 mm	1
	SW17	External ring 17 mm	1

Example CAF3

Transmission head can be returned to be fixed thus keeping it as a spare.

QUICK REPAIR KIT COMPLETE SHAFT GROUP



All necessary parts to change the trasmission shaft of the head quickly and easily.

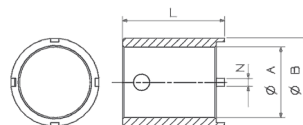
Just unscrew the damaged one (it comes out complete) and insert the new one.

It is necessary to adjust the attack of the gears by advancing the thread.



Ref.	Milling head	
712011	2	0,5
713011	3	0,7
714011	4	1,4
715011	5	2,6

KM SPANNERS FOR MILLING HEADS



These wrenches are essential for repairing the milling heads.

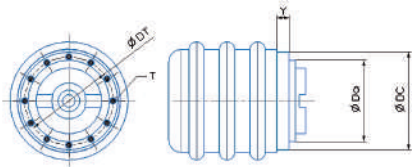


Ref.	Milling head	External diameter	Internal diameter	N	Length	Castellated	
711701	1	25	22	4	122	2	0,6
711702	1	35	27	6	77	2	0,5
712701	2	28	21	4	70	2	0,7
712702	2	38	28,5	6	62	2	0,6
713701	3	44	25	6	140	2	1,1
714701	4	48	35	6	140	2	1,2
715701	5	62	45	6	165	2	2,0

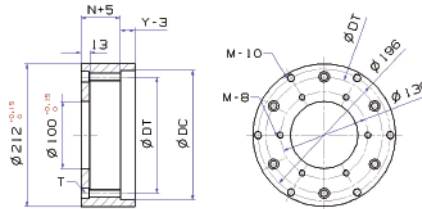


Manufacture the coupling plate

Head



Coupling plate



DC

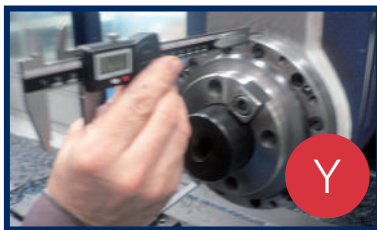
Measure the milling head DC dimension.



DT

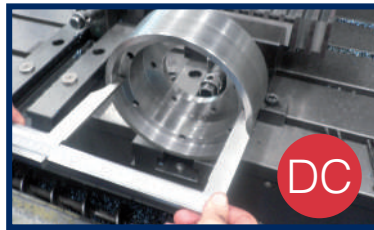
Measure the milling head DT dimension.

Video of how to make coupling plate 



Y

Measure the milling head depth.



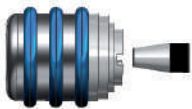
DC

The DC dimension of the head is the same as the one of the plate.



Assembly milling head

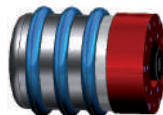
1



Mount the ISO cone on the machine.



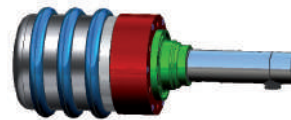
2



Assemble the coupling plate.



3



Assemble the milling head.



Milling head assembling 





KM LOCK NUT

removal wrenches



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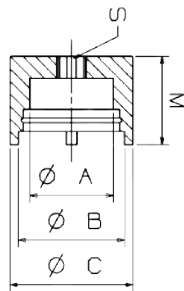
SHORT SPANNERS

96100C

Wrenches designed to remove crenellated Km nuts without damaging them.

Bullet points

- They practically have the same diameter as the nut.



Ref.	KM	ØA	ØB	ØC	M	Square Drive	⚖️
961021	2	12	21	25	35	Hex20	0,1
961011	1	12	18	22	30	Hex18	0,1
961031	3	18	25	28	40	1/2"	0,1
961041	4	18	28,5	34	40	1/2"	0,2
961051	5	24	34,5	40	40	1/2"	0,2
961061	6	31	42	47	40	1/2"	0,3
961071	7	36	49	54	40	1/2"	0,4
961081	8	42	54	60	40	1/2"	0,4
961091	9	47	58	67	40	1/2"	0,6
961101	10	52	65	72	40	1/2"	0,6
961111	11	57	70,5	77	50	3/4"	0,8
961121	12	62	76	82	50	3/4"	0,9
961131	13	67	80	87	50	3/4"	1,3
961141	14	74	86	94	50	3/4"	1,5
961151	15	80	89	102	80	1"	2,5
961161	16	87	98	109	80	1"	2,8
961171	17	92	104	114	80	1"	3,0
961181	18	102	114	124	80	1"	3,5
961191	19	107	119	129	80	1"	3,8
961201	20	112	121	136	80	1"	4,2
961211	21	122	133	146	80	1"	4,7
961231	23	132	141	156	80	1"	5,4
961241	24	137	146	161	80	1"	5,7
961301	30	177	186	201	90	1"	9,5

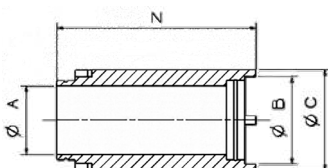
EXTENSION FOR SPANNERS

96100P

KM removal wrench extension for enlarge the wrench length.

Bullet points

- They practically have the same diameter as the nut.
- It allows extracting in deep and lack of space applications thanks to an extension.



Ref.	KM	ØA	ØB	ØC	N	⚖️
961042	4	18	28,5	34	100	0,4
961052	5	24	35	40	100	0,5
961062	6	31	42	47	100	0,7
961072	7	36	49	54	100	0,9
961082	8	52	54	60	100	1,1
961092	9	47	58	67	110	1,3
961102	10	52	65	72	110	1,4
961112	11	57	70,5	77	110	1,6
961122	12	62	76	82	110	1,7
961132	13	67	80	87	120	2,0
961142	14	74	86	94	120	2,2

COMPLETE SPANNERS 96101

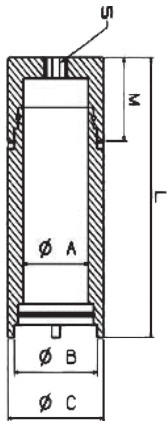


Wrenches designed to remove crenellated Km nuts without damaging them. It includes the short length removal wrench and the extension.



Bullet points

- They practically have the same diameter as the nut.
- It allows extracting in deep and lack of space applications thanks to the length of the extension.



Ref.	KM	ØA	ØB	ØC	L	M	N	Square Drive	⚖️
96104	4	18	28,5	34	124	40	100	1/2"	0,6
96105	5	24	34,5	40	124	40	100	1/2"	0,8
96106	6	31	41,5	47	134	40	100	1/2"	1,0
96107	7	36	48,5	54	134	40	100	1/2"	1,2
96108	8	42	53,5	60	134	40	100	1/2"	1,5
96109	9	47	58	67	144	40	110	1/2"	1,9
96110	10	52	65	72	144	40	40	1/2"	2,1
96111	11	57	70,5	77	144	50	110	3/4"	2,5
96112	12	62	76	82	144	50	110	3/4"	2,6
96113	13	67	80	87	153	50	120	3/4"	3,3
96114	14	74	86	94	153	50	120	3/4"	3,6

KM LOCK NUTS REMOVAL WRENCH EXHIBITOR 96700



Showroom metal display.



Bullet points

- They practically have the same diameter as the nut.
- It allows extracting in deep and lack of space applications thanks to an extension.

Ref.	Short spanner	Spanner and extension	Suitcase	⚖️
96700A	961081, 961091 and 961101	96104, 96105, 96106 and 96107		6,0
96700M	961081, 961091 and 961101	96104, 96105, 96106 and 96107	96800	29,0

DO YOU KNOW HOW TO USE KM NUT REMOVAL WRENCHES?

96800 SHORT KM SPANNER SET **96800**




Cases with a complete range of KM lock nut removal wrenches
High quality plastic case.



Bullet points

- They practically have the same diameter as the nut.

Ref.	Contains	
96800	KM4 to KM10	3,0

96801 COMPLETE KM SPANNER SET **96801**




Case with a complete range of KM lock nut removal wrenches
High quality plastic case.



Bullet points

- They practically have the same diameter as the nut.
- It allows extracting in deep and lack of space applications thanks to the length of the extension.

Ref.	Contains	
96801	KM4 to KM7 completes	4,0

96802 COMPLETE KM SPANNER SET **96802**




Case with a complete range of KM lock nut removal wrenches
High quality plastic case.



Bullet points

- They practically have the same diameter as the nut.
- It allows extracting in deep and lack of space applications thanks to the length of the extension.

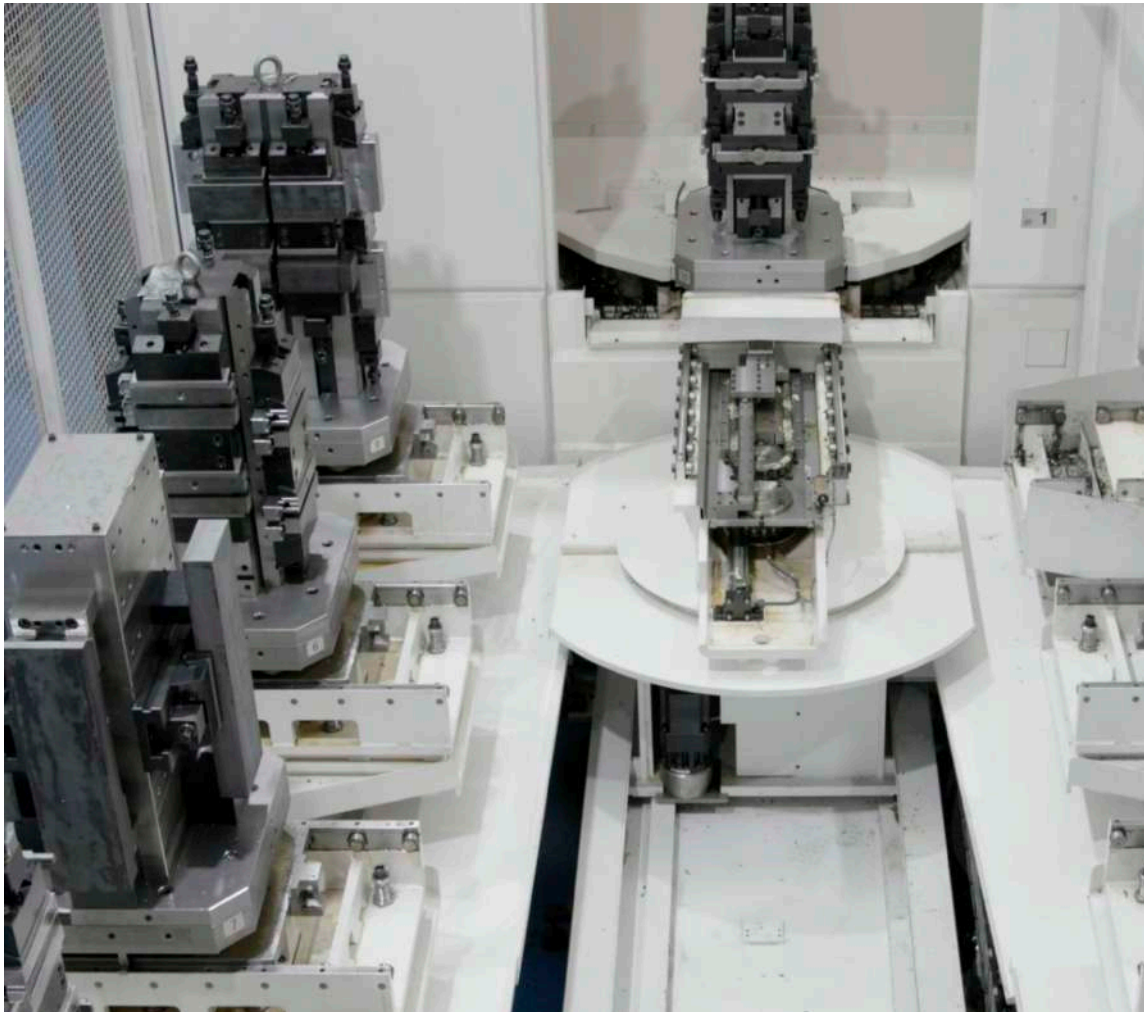
Ref.	Contains	
96802	KM4 to KM10 completes	5,0

Integrated clamping vice tower

Check out a few examples of towers that we have already manufactured

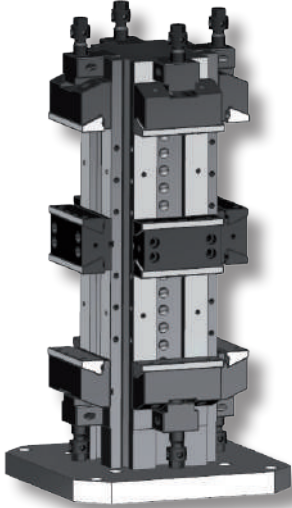
CUSTOM DESIGNED AND MANUFACTURED TOOLING

- In Forza we are manufacturing any kind of clamping vice towers or pyramids to meet your specific needs.
- A custom made clamping solutions meant to be installed and removed in minutes when required.
- We seek specific solutions more efficient and economic than the universal ones, with an easier and more ergonomic assembly.
- We quote incredibly attractive prices for custom made solutions. We make free solutions desing. All 3D are included in our offer.

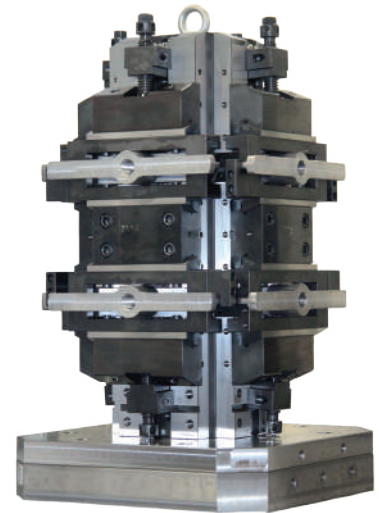
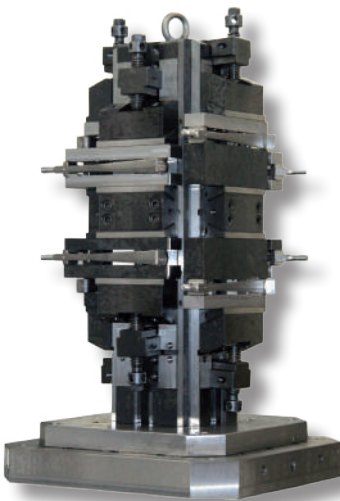
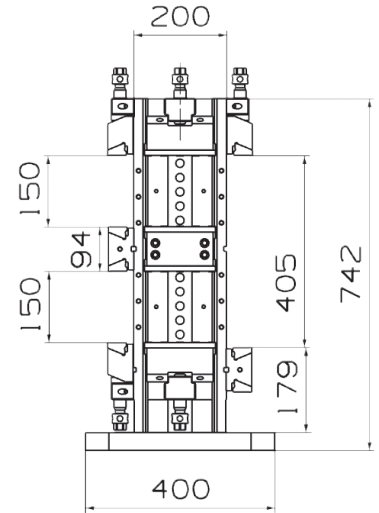


Clamping tower with 150mm jaws.

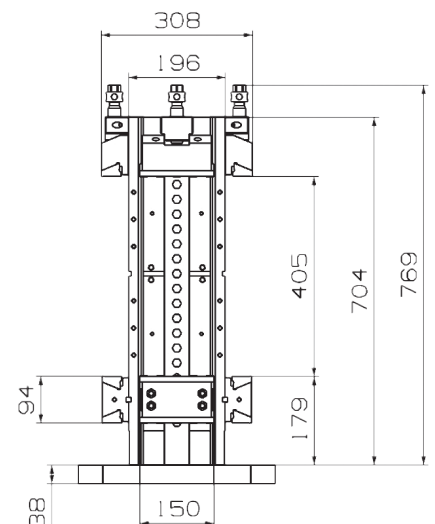
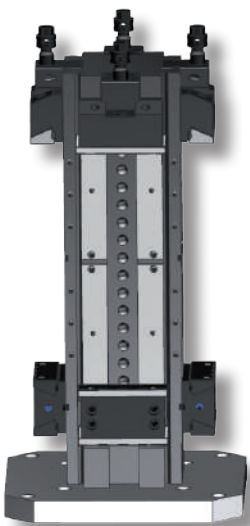
This set up allows the clamping of 8 pieces of 150mm long or 4 pieces of 405mm long.



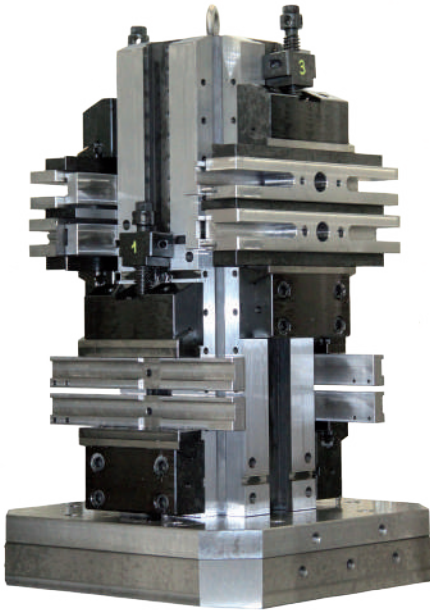
- Set up in a double station allowing the clamping of 8 workpieces.



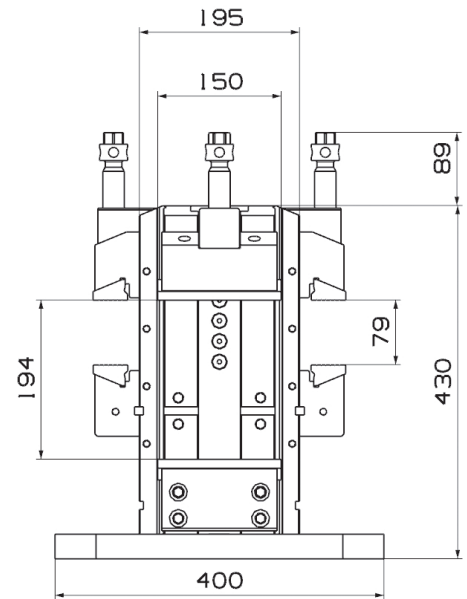
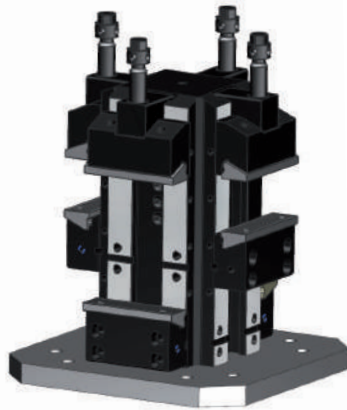
- One station set up in order to clamp 4 longer workpieces.



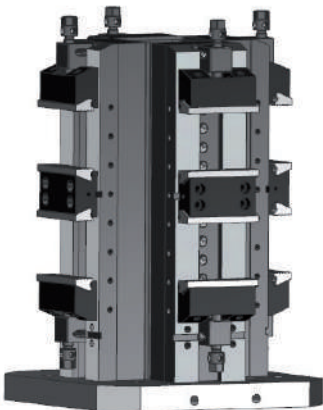
Clamping tower with 150mm jaws.



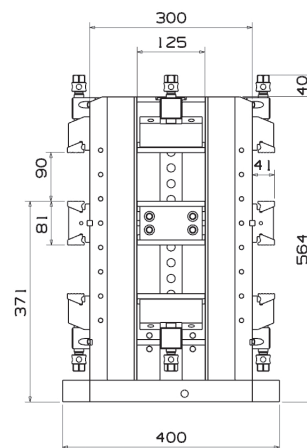
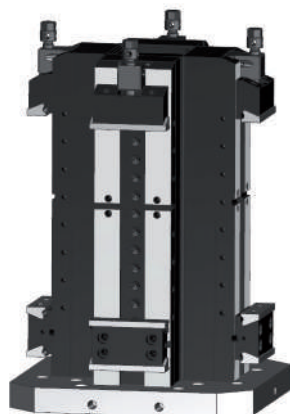
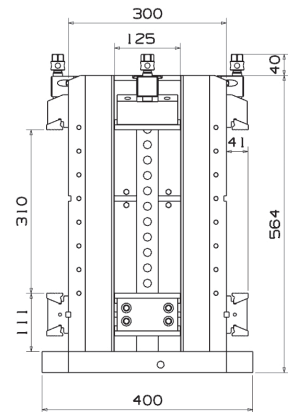
- Simple tower allowing the clamping of 4 different height workpieces.



Clamping vice tower with 125 mm jaw.

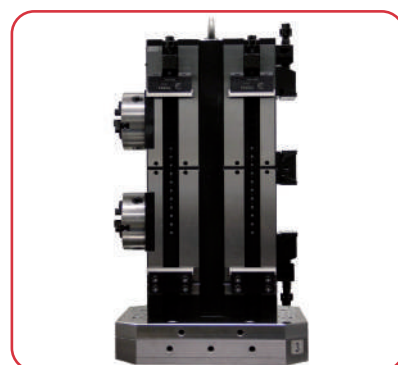
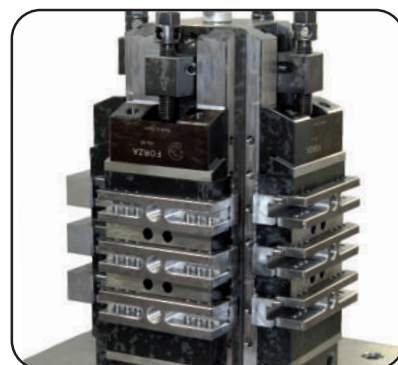
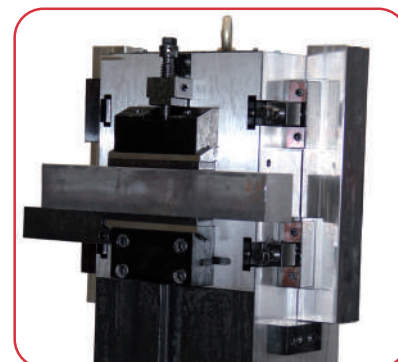
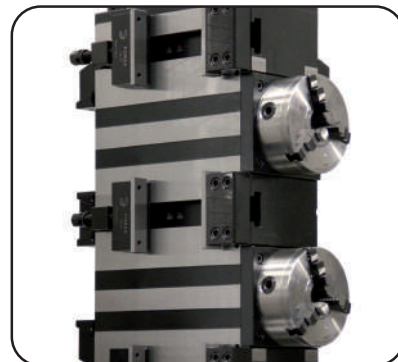
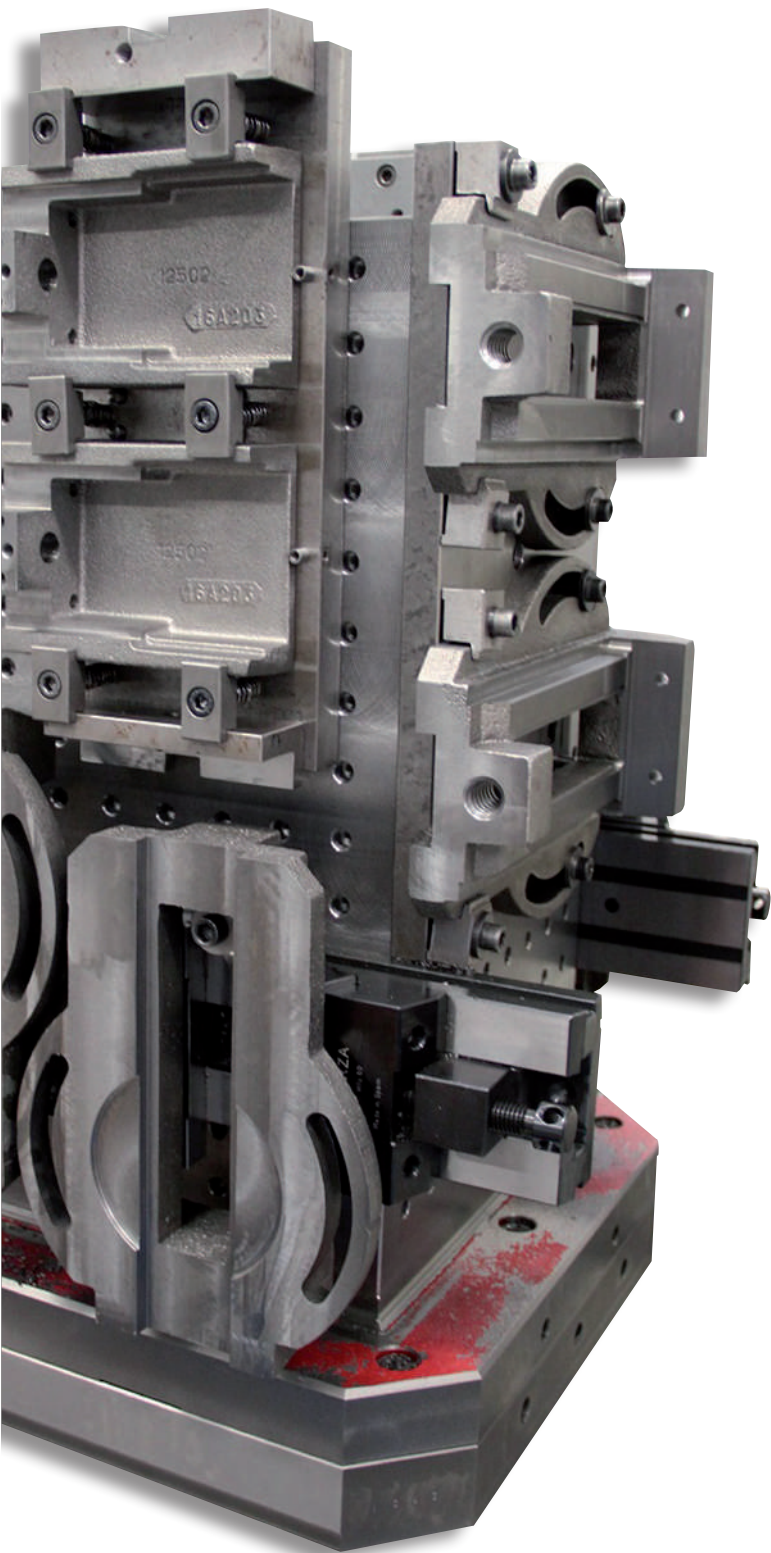


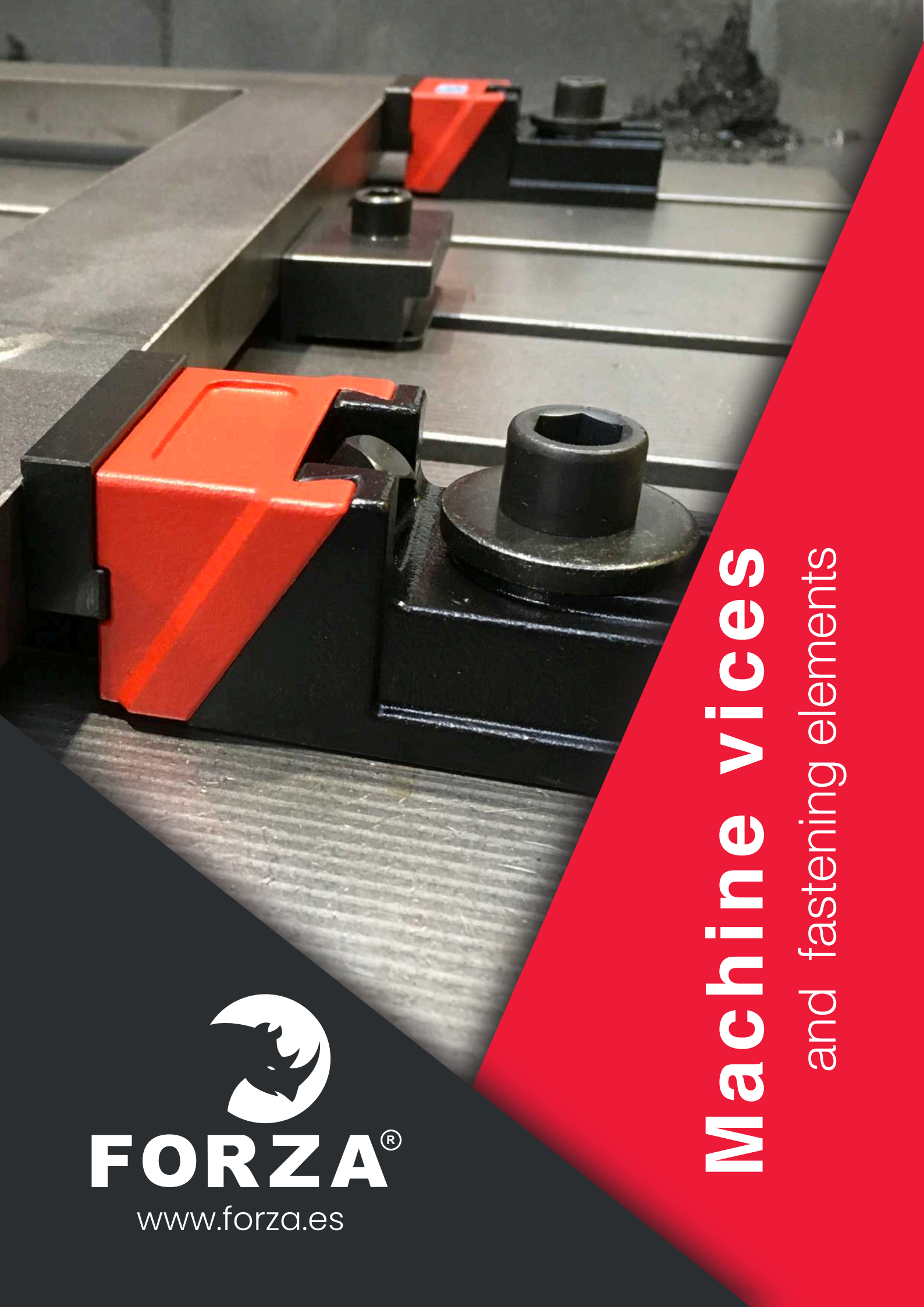
- A wide cube makes for smaller stiffer tools.
- The clamping of 8 pieces each 90mm or 4 pieces 310mm each is possible.



Clamping vice towers

Other special set ups





Machine vices

and fastening elements



FORZA[®]

www.forza.es



SERIE 28 DRILLING MACHINE VICE


28

Suitable vice for drilling and threading big pieces.



Bullet points

- Spindle protected to avoid damage.
- The rotating handle avoids colliding with any obstacle: milling T table, etc.
- Tempered steel body for greater resistance and aluminum jaw holder and clamping block.

Ref.	A	B	Width	C	D	Height	
28A150	403	150	160	150	70	120	28,5

SWIVEL BASE FOR 28A150

Swivel base for drilling vices 28A150.



Ref.	Base height	External diameter	
B28150	25,5	275	11,0

MASTER SERIE 33M

33M

Professional vice for any drilling and threading operations.

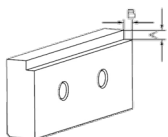
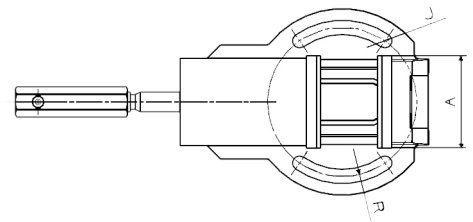
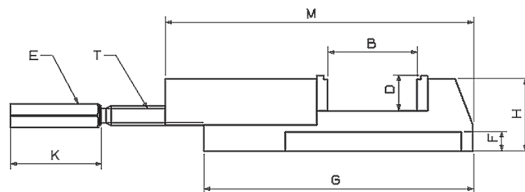




Bullet points

- Supplied with hardened stepped jaws.
- Protected spindle that prevents damage.
- Grooved channels for making the fastening easier.
- No clamps needed.



Nodular cast made.



Ref.	A	B	H	X	D	E	Length		
33/65M	65	76	49	3	26	19	207		2,8
33/85M	85	90	54	3	26	22	242		4,8
33/100M	105	116	66	4	32	24	310	12560	9,0
33/125M	125	157	83	4,5	42	27	395	12560	16,2
33/150M	150	190	95	6	52	27	470	12560	25,2

PROFESSIONAL 33P SERIE

33P

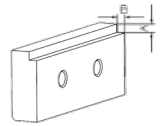


Professional vice for any drilling and threading operations. It includes: fastening rod, set of prismatic jaws, set of soft jaws and 2 T nuts 12/14 and 16/18.





Bullet points

- Supplied with hardened stepped jaws.
- Protected spindle that prevents damage.
- Grooved channel for making the fastening easier.
- No clamps needed.



Nodular cast made.

Ref.	A	B	H	X	D	E	Length		
33/85P	85	90	54	3	26	22	242		5,8
33/100P	125	116	66	4	32	24	310	12560	10,3
33/125P	125	157	83	4,5	42	27	395	12560	18,2

SERIE 82 ECONOMY

82



Light vice for any type of drilling and threading work. It contains the same parts as the serie 33 except for the jaw holder and the movable jaw. It is a monoblock piece.

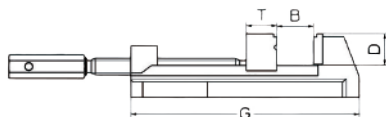



Bullet points

- Grooved channel for making the fastening easier.
- No clamps needed.
- Clamping block with two 90 degrees prisms and with a step.
- It is possible to use swivel base (optional).



Nodular cast made.

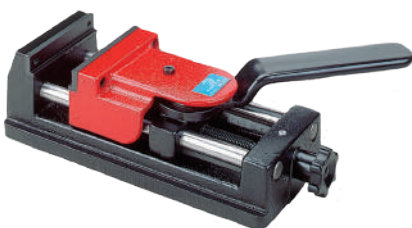


Ref.	A	B	D	G	T	X	
82/85	85	95	25,5	188	25	3	4,0
82/100	100	105	31,5	241	40	4	8,5
82/125	125	116	41,5	300	40	4,5	14,7
82/150	150	160	52,5	345	40	6	19,6

Other measures as series 33.

SERIE 38 QUICK CLAMP VICE

38

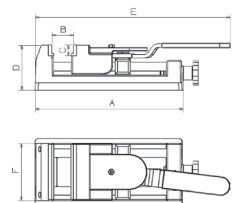




Quick fastening vice for drilling, threading and light milling works for mass production.



Bullet points

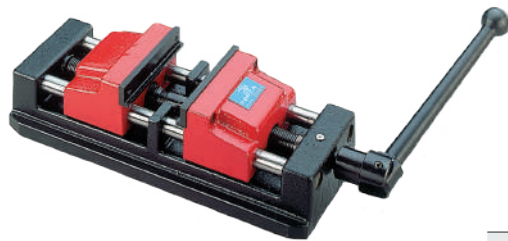
- Allows to clamp and release the part in tenths of second.
- Each vise is supplied with stepped jaws and two sets of soft jaws.



Ref.	A	B	C	D	E	F		
38/80	230	80	20	75	385	80	12561	7,0
38/103	275	90	20	85	420	103	12561	10,5
38/125	400	125	30	105	555	125	15061	25,0

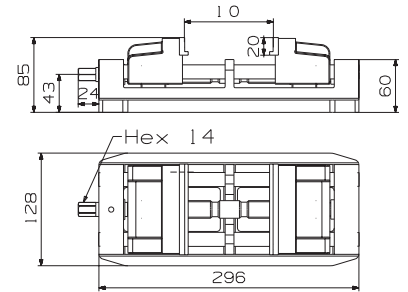
37 SERIE SELF CENTERING VICES



Selfcentering drilling vice for drilling, threading and light milling



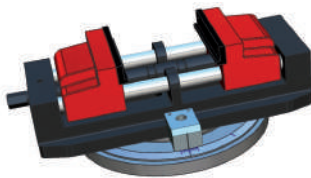
Bullet points

- It fastens the center of the piece.
- Swivel base could optionally be used.
- 2 sets of soft jaws included.
- Supplied with stepped jaws.






Ref.	Adjustment		Height	Mouth	Opening	
37/103	Handle		85	103	110	11,9
37/103B	Handle	3710398	85	103	110	17,5
37/103BP	Knob	3710398	85	103	110	16,7
37/103P	Knob		85	103	110	11,6

SWIVEL BASES



Swivel base for drilling vices for 33 and 82 serie. They can be used as two jaw chuck in lathe machines.





Ref.			
336598	336560	33/65	2,2
338598	336560	33/85 - 82/85	2,9
3310098	12560	33/100 - 82/100	6,0
3312598	12560	33/125 - 82/125	8,7
3315098	12560	33/150 - 82/150	9,5

PINS

Clamping rod for drilling vices for 33 and 82 serie.





Ref.		
336509	33/65	0,1
111893	Others	0,1



SET SOFT JAWS

Soft jaws set por drilling vices for serie 33.





Ref.		
336550	33/65	0,3
338550	33/85	0,4
3310050	33/100	0,6
3312550	33/125	0,9
3315050	33/150	1,9

NORMAL SET JAWS

Normal set of stepped jaws for drilling vices for serie 33.





Ref.	Step		
336514	3	33/65	0,1
338514	3	33/85	0,2
3310014	4	33/100	0,3
3312514	4,5	33/125	0,4
3315014	6	33/150	0,9

SET PRISMATIC JAWS WITH STEP

Prismatic stepped jaws for drilling vices for serie 33.




Ref.	Step		
336551	3	33/65	0,2
338551	3	33/85	0,4
3310051	4	33/100	0,5
3312551	4,5	33/125	0,8
3315051	6	33/150	1,7

T NUT

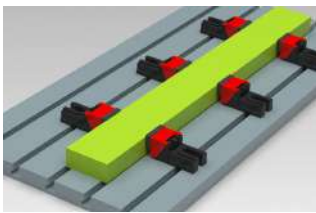
T nuts for drilling vices for 33 and 82 serie.



Ref.	Canal	M	
33121408	for 12-14	M8	0,1
33161808	for 16-18	M8	0,1
33121410	for 12 -14	M10	0,1
33161810	for 16 -18	M10	0,1
33161814	for 16 - 18	M14	0,1
33202214	for 20-22	M14	0,1

STANDARD VICES SERIE 34

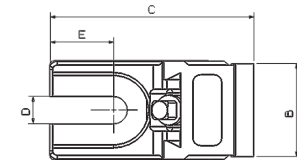
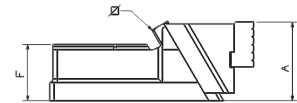
34





Vice for special works such as long pieces, dies and other specific fastening needs.
It is supplied in sets of 2 units plus a wrench.

Bullet points

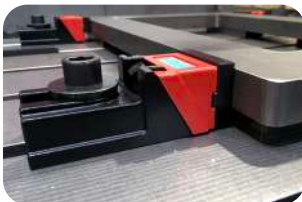
- Lathe machine wrench for a better fastening.
- The descending effect avoids any lift up of the piece.



Ref.	A	B	C	D	E	F		
34/60	52-60	62	138	19	42	34	12	4,2
34/62	82-92	62	175	19	74	57	12	8,0
34/79	66-78	82	170	24	53	45	12	9,2
34/112	90-105	115	240	31	84	65	17	26,5

INDIVIDUAL STANDARD VICES SERIE 34



346000



Descending effect vice, supplied individually.
The vice separately does not include the wrench.

Bullet points

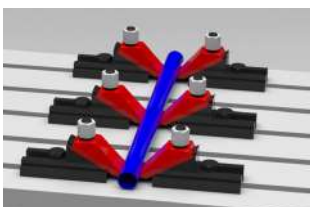
- Lathe machine wrench for a better fastening.
- The descending effect avoids any lift up of the piece.

Ref.	A	B	C	D	E	F		
346000	52-60	62	138	19	42	34	12	2,0
346200	82-92	62	175	19	74	57	12	3,9
347900	66-78	82	170	24	53	45	12	4,5
3411200	90-105	115	240	31	84	65	17	12,3



DOWNSLIDING VICES SERIE 35

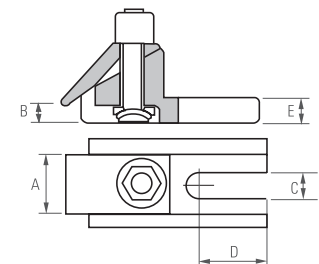
35




Designed vices for fastening thin or round pieces in milling or drilling machines.
Descending effect vice supplied in sets of 4 units/each.

Bullet points

- The descending effect avoids any lift up of the piece.
- Specifically designed for fastening big sizes sheets in different machines.



Ref.	A	B	C	D	E	
35/45	45	0-13	20	60	23	6,4



INDIVIDUAL SLIDING VICES

354000



Designed vices for fastening thin or round pieces in milling or drilling machines.



Bullet points

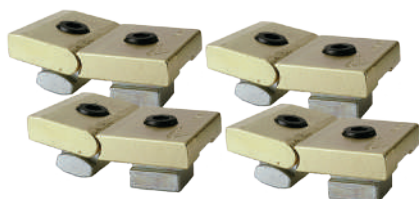
- The descending effect avoids any lift up of the piece.
- Specifically designed for fastening big sizes sheets in different machines.



Ref.	A	B	C	D	E	
354500	45	0-13	20	60	23	1,6

PLAIN VICES SERIE 36

36

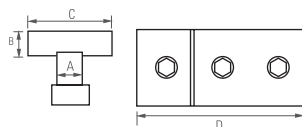
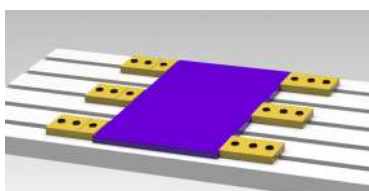


Plain vice for fastening very low height pieces. Specifically designed for fastening large metal sheets in machines. Low T-support for the movable jaw holder.



Bullet points

- The oscillating jaw allows to fasten very small height pieces.



Ref.	A	B	C	D	
36/60	15,5	12	60	75	2,3
36/64	17,5	15	60	105	4,0
36/65	19,5	15	60	105	4,3
36/66	21,5	15	60	105	4,6
36/78	17,5	15	80	125	8,1
36/79	19,5	15	80	125	7,2
36/80	21,5	15	80	125	7,1

INDIVIDUAL PLAIN VICES SERIE 36

366000

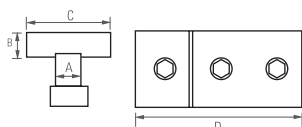


Plain vice for fastening very low height pieces. Specifically designed for fastening large metal sheets in machines.



Bullet points

- The oscillating jaw allows to fasten very small height pieces.



Ref.	A	B	C	D	
366000	15.5	12	60	75	0,6
366400	17.5	15	60	105	0,9
366500	19.5	15	60	105	1,0
366600	21.5	15	60	105	1,1
367800	17.5	15	80	125	1,9
367900	19.5	15	80	125	1,8
368000	21.5	15	80	125	1,8

T SLOT VICES SERIE 37

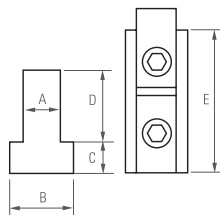
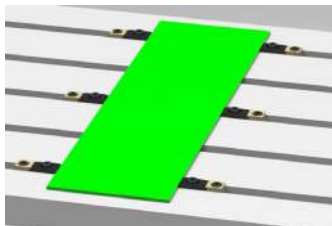
37 CANAL



Vices for clamping extremely thin parts.

Bullet points

- The jaw is practically hidden in the channel of the machine.
- The T slot vices are supplied in sets of 4 units each.



Ref.	A	B	C	D	E	⚖️
37/12	11,5	20	8	16	28	0,4
37/14	13,5	23	9	18	40	0,6
37/16	15,5	26	10	21	45	0,8
37/18	17,5	29	11	24	45	1,0
37/20	19,5	33	13	26	50	1,5
37/22	21,5	35	14	29	53	1,7

INDIVIDUAL T SLOT VICES SERIE 37

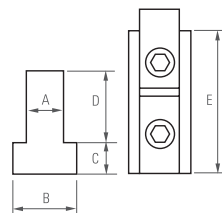
371200



Vices for clamping extremely thin parts.

Bullet points

- The jaw is practically hidden in the channel of the machine.
- The T slot vices are supplied in sets of 4 units each.



Ref.	A	B	E	C	D	⚖️
371200	11,5	20	8	16	28	0,1
371400	13,5	23	9	18	40	0,1
371600	15,5	26	10	21	45	0,2
371800	17,5	29	11	24	45	0,3
372000	19,5	33	13	26	50	0,4
372200	21,5	35	14	29	53	0,4

ARCHED CLAMPS

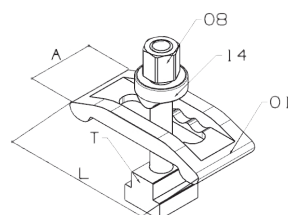
39



Suitable clamps for fastening tooling and molds.

Bullet points

- Clamp, that due to the design of the vice body and nut-shaped washer, does not need to work in horizontal position, and can also be assembled bended.
- Its design allows the use of lifting blocks of different sizes than the piece and it is perfect for placing toolings and dies.



Ref.	L	A	T	⚖️
39/56	123	56	18	1,0
39/57	123	56	20	1,1
39/58	123	56	22	1,2
39/59	123	56	24	1,2
39/70	160	70	22	1,9
39/71	160	70	24	2,1
39/72	160	70	28	2,2

BENCH VICES SERIE 88

88

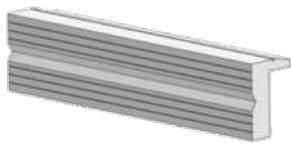


Manufactured in forged steel.
Steel hardness 45-51 HRC.
Square guide.
Tempered steel hardened jaws.
Induction tempered anvil base.



Ref.	Opening	Height	Anvil	⚖️
88/100N	100	65	35x40	6,4
88/125N	125	80	53x70	11,8
88/150N	200	100	66x80	19,0

SLOTTED ALUMINIUM JAWS

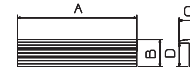


Magnetized aluminium jaws.
They protect the pieces while working.

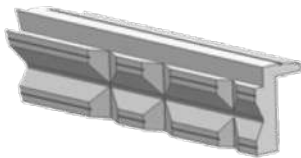
- Bullet points**
- Very easy to place.



Ref.	A	B	C	D	⚖️
8810051	102	29	20	25	0,1
8812551	128	29	20	25	0,2
8815051	153	29	20	25	0,2



PRISMATIC ALUMINIUM JAWS

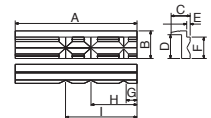


Magnetized aluminium jaws.
They protect the pieces while working.

- Bullet points**
- Very easy to place.
 - With V and stepped.



Ref.	A	B	C	D	E	F	G	H	⚖️
8810052	102	29	20	25	3	22	14	48	0,1
8812552	128	29	20	25	3	22	14	48	0,2
8815052	153	29	20	25	3	22	14	48	0,2



SPECIAL PLASTIC JAWS

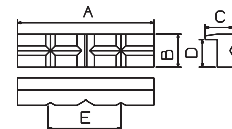


Magnetized aluminium jaws
They protect the pieces while working.

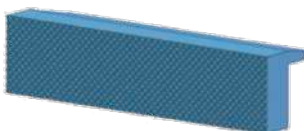
- Bullet points**
- Very easy to place.
 - With V and different positions.



Ref.	A	B	C	E	D	⚖️
8810053	100	30	25	49	25	0,1
8812553	124	30	25	49	25	0,2
8815053	148	30	25	64	25	0,2



PLASTIC JAWS

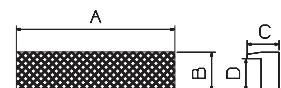


Magnetized aluminium jaws.
They protect the pieces while working.

- Bullet points**
- Very easy to place.
 - Knurled surface for improving the clamping.



Ref.	A	B	C	D	⚖️
8810054	123	30	25	25	0,1
8812554	100	30	25	25	0,2
8815054	148	30	25	25	0,2



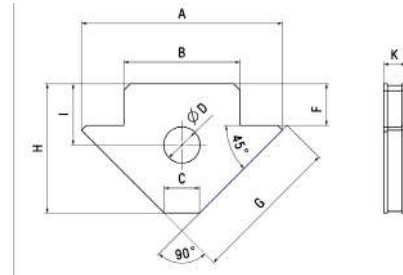
MAGNETIC HOLDERS **P29003**


Ferrite magnet protected with bakelite resistant to high temperatures.
For welding 45° and 90° angles.
2,5mm thick steel sheet joined with threaded screws.



Bullet points

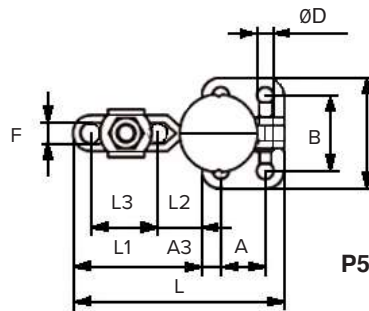
- Very useful for holding steel parts either in welding or measuring works.



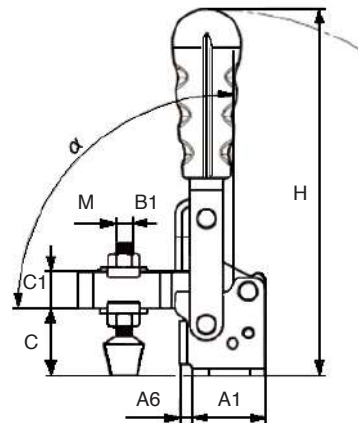
Ref.	A	B	C	ØD	F	G	H	I	K	
P29003	85	15	14	24	25	91	82	37	14.5	0,3
P29004	110	18	28	29	33	118	102.5	48.5	17.5	0,7
P29005	140	20	39	40	39	153	128	60	20.5	1,2

QUICK VERTICAL TOGGLE CLAMPS **P56001**

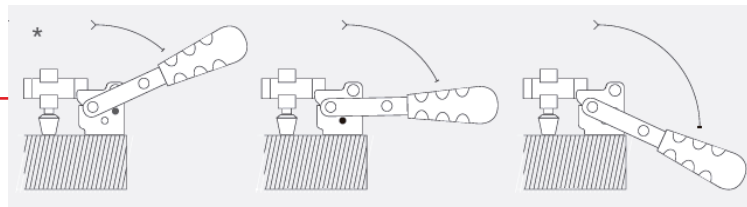
Quick clamping for tooling.
The handle rotates 90 degrees.
Vertical fastening.




P56001



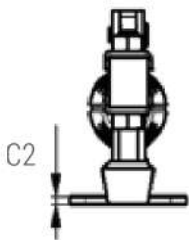
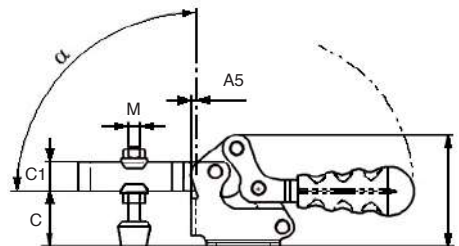
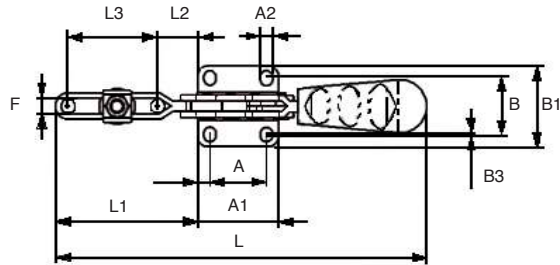
Other models



Ref.	Maximum strength	Degrees	A	A1	A3	A6	B	B1	C	C1	C2	D	F	H	L	L1	L3	
P56001	450N-45kg	67.40	16	26	5	-	23,4	33,4	19	8	2	4,4	5	77	50,4	24,4	16,4	0,1
P56002	1500N-150kg	93	12,7	27	7	-	26,9	37,9	23	11	3	5,1	6	111	70	42,9	21,5	0,2
P56003	2500N-250kg	90.40	19	35	8	5,5	32	47	32	17,5	3,2	7,1	8,9	175	90	55	28	0,4
P56004	3400N-340kg	90	32	50	9	10	45	64	42	22	4	8,3	10,6	218	143	92,8	60,5	0,8
P56005	3600N-360kg	101	32	50,8	9,5	12,2	45	64	50,8	22,5	3	8,6	13,4	224	176	125	82,5	1,1

QUICK HORIZONTAL TOGGLE CLAMPS **P56050**

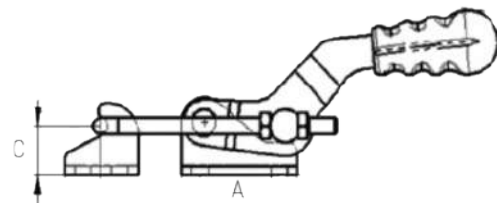
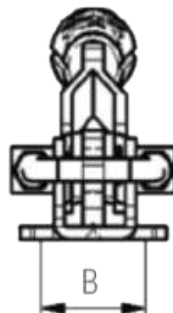
Quick clamping for tooling.
The handle rotates 90 degrees.
Vertical fastening.



Ref.	Maximum strength	Length	Degrees	A	B	C	⚖️
P56050	380N-38kg	68	87	11,1	19	7,4	0,1
P56051	700N-70kg	105	94	13,5	19	19	0,1
P56052	900N-90kg	162	96	26	28	25	0,2
P56053	2200N-220kg	189	95	26	31	34	0,4
P56054	3400N-340kg	269	95	41,2	43	45	0,9

QUICK CLAMP HOOK **P56201**

Quick clamping for tooling.
The handle rotates 90 degrees.
Vertical fastening.

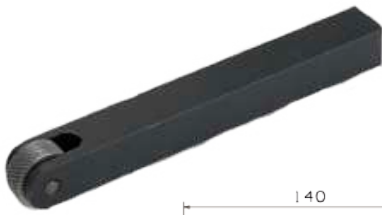


Ref.	A	B	C	⚖️
P56201	19	32	14	0,3



KNURLING TOOLS M1

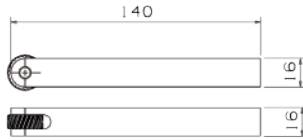
M1



1 mm helicoidal knurl included.

Bullet points

- Specifically for straight knurling on small lathe machines.
- It is possible to reach quite close to the lathe machine plate.



Ref.	A	B	C	
M1/8	16	16	140	0,4

KNURLING TOOLS M2

M2




1mm helicoidal knurl set included.

The head's turn allows to align the knurl to the working piece. Either straight or cross knurling are possible.

Bullet points

- For knurling parts where the slimness of the part allows to do it.



Ref.	A	B	C	
M2/20	25	20	185	0,8
MF2/20	19,5	20	185	0,8

KNURLING TOOLS M20

ME20

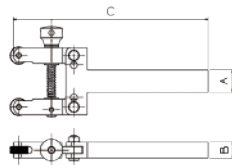


1mm helicoidal knurl set included.

Spindle for making pressure over the knurling. Either straight or cross knurling are possible.

Bullet points

- For knurling parts where the slimness does not allow pushing with the knurl.



Ref.	A	B	C	
ME20/50	25	18	210	1,1



HSS KNURLS

MA



Rectas


Helicoidales

HSS 8% Co knurls.
Supplied in sets of 2 units.
Diameter of the knurls 20mm and diameter of the hole of the knurl 6mm.



Bullet points

- It can knurl steel up to 125kg/mm².

Ref.	Knurl type	Knurl width	Step	
0,6	Straight	8	0,6	0,1
1,00	Straight	8	1	0,1
1,25	Straight	8	1,25	0,1
1,50	Straight	8	1,5	0,1
1,75	Straight	8	1,75	0,1
0,6H	Helicoidals set	8	0,6	0,1
0,6R	Straights set	8	0,6	0,1
1H	Helicoidals set	8	1	0,1
1R	Straights set	8	1	0,1
1,25H	Helicoidals set	8	1,25	0,1
1,25R	Straights set	8	1,25	0,1
1,50H	Helicoidals set	8	1,5	0,1
1,50R	Straights set	8	1,5	0,1
1,75H	Helicoidals set	8	1,75	0,1
1,75R	Straights set	8	1,75	0,1

TOOL HOLDERS



400

Toolholders with blades and hard metal chip included.

Bullet points

- It is very easy to sharpen the blade.



Ref.	A	B	C		
410	22	24	160	10x8x45	0,8
412	28	32	180	12x10x55	1,6

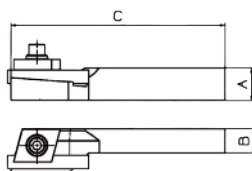
TOOL HOLDERS SERIE 500



500

Toolholders for rolling and counterering.
Angled blade position.
Angle of incidence 4 degrees.
Blades not included.

Bullet points

- There is no need to do "an exit" to the blade.



Ref.	A	B	C		
508D	20	14	125	6-8	0,3
508I	20	14	125	6-8	0,3
510D	24	18	155	8-10	0,6
510I	24	18	155	8-10	0,6
512D	30	24	180	10-12	1,1
512I	30	24	180	10-12	1,1



TOOL HOLDERS SERIE 600

600

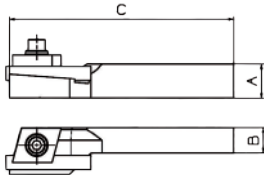




Toolholders for rolling and counterering.
Straight blade position.
Angle of incidence 4 degrees.
Blades not included.



Bullet points

- There is no need to do “an exit” to the blade.



Ref.	A	B	C		
608D	19	13,5	126	6-8	0,3
608I	19	13,5	126	6-8	0,3
610D	24	18	155	8-10	0,6
610I	24	18	155	8-10	0,6
612D	30	24	180	10-12	1,2
612I	30	24	180	10-12	1,2

CUT OFF TOOL HOLDER SERIE 700

700

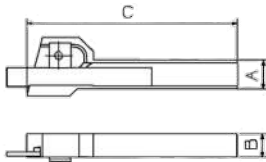




Toolholder with cutting blade.
Allows great use of the blade.
Blades not included.



Bullet points

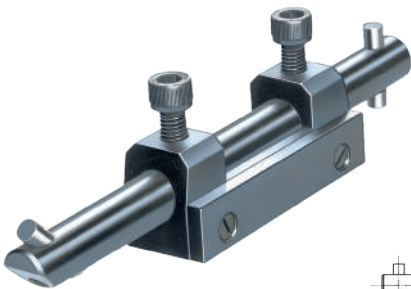
- Straight attack for rigid lathe machines.



Ref.	A	B	C		
701T	19,5	15	153	2,5x15-2x13	0,4
702T	26	13	153	2,5x15-2x13	0,4
703T	35	16	178	3,5x19-4x22	1,0

INTERNAL TOOL HOLDERS

800M

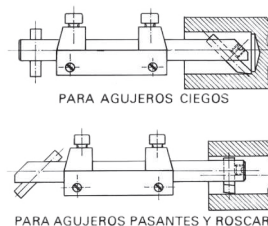



Equipped with two HSS high-speed steel blades.
For blind holes, through and thread.



Bullet points

- Inside boring.



Ref.	A diameter	B	Blade diameter	
809M	9	115	4	0,3
815M	15	170	8	0,6
818M	18	220	8	1,1
822M	22	260	10	1,8
826M	26	285	10	2,5
830M	30	330	12	3,5

TOOL HOLDERS SERIE 900

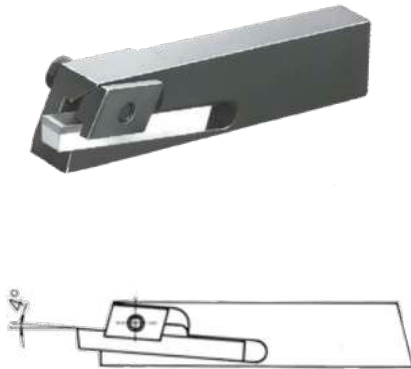
900



Toolholders for turning and facing.
Blades are not included.



Bullet points

- There is no need to wedge while looking for the center. Just take out the blades.



Ref.	A	B	C		
906RD	25	14	130	6-8	0,3
906RI	25	14	130	6-8	0,3
908RD	32	18	155	8-10	0,6
908RI	32	18	155	8-10	0,6
910RD	38	22	250	10-12	1,5
910RI	38	22	250	10-12	1,5

CUT OFF SERIE CC

CCN1

Toolholders for turning and facing.
Blades not included.



Bullet points

- There is no need to do "an exit" to the blade.



Ref.	A	B	C		
CCN1	17,5	16	158	2,5x15-2x13	0,6

SERIE L10

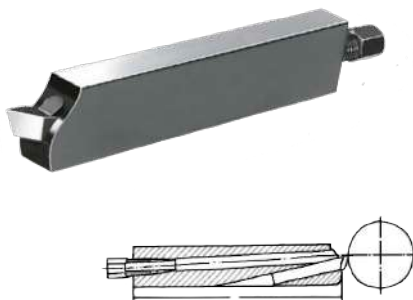
L10



For lathe and filing machine.
The clamping of the blade is very safe.
Blades are not included.



Bullet points

- There is no need to wedge while looking for the center. Just take out the blades.

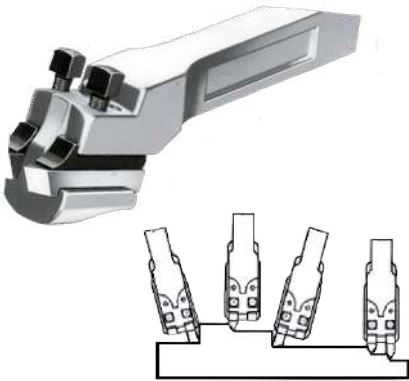


Ref.	A	B	C		
L10	18	34	175	10	0,8



CYLINDER AND FILING TOOL HOLDERS

L300





Specific tool holder for lathes
Blades are not included



Bullet points

- It can work either clockwise or anticlock wise
- I can rough down and finish at the same time.

Ref.	A	B	C		
L300	12	24	195	8	0,9
L500	20	28	210	10	1,3

TURNING AND FACING TOOL HOLDERS

TN





Lathe toolholder with steel chip breaker
Blades are not included



Bullet points

- The blade does not need an exit
- There is no need to wedge while looking for the center.

Ref.	A	B	C		
TN1	19	16	195	8	0,5
TN2	24	18	200	10	1,0
TN3	26	29	235	12	2,1

TOOL HOLDERS

WN2





Toolholder for rolling with widia chip breaker
Blades are not included



Bullet points

- There is no need to do "an exit" to the blade.

Ref.	A	B	C		
WN2	24	18	200	10	1,1
WN3	26	29	235	12	2,1



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