



MONOFORCE

High precision
ultra-tight
toolholder

Präzisionsspannzangenfutter
mit hochfester
Werkzeugspannung

Oprawka precyzyjna
o dużej sile zacisku

Porte-outil de
précision à
serrage fort

Portautensile di
precisione a
forte serraggio



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MONOforce

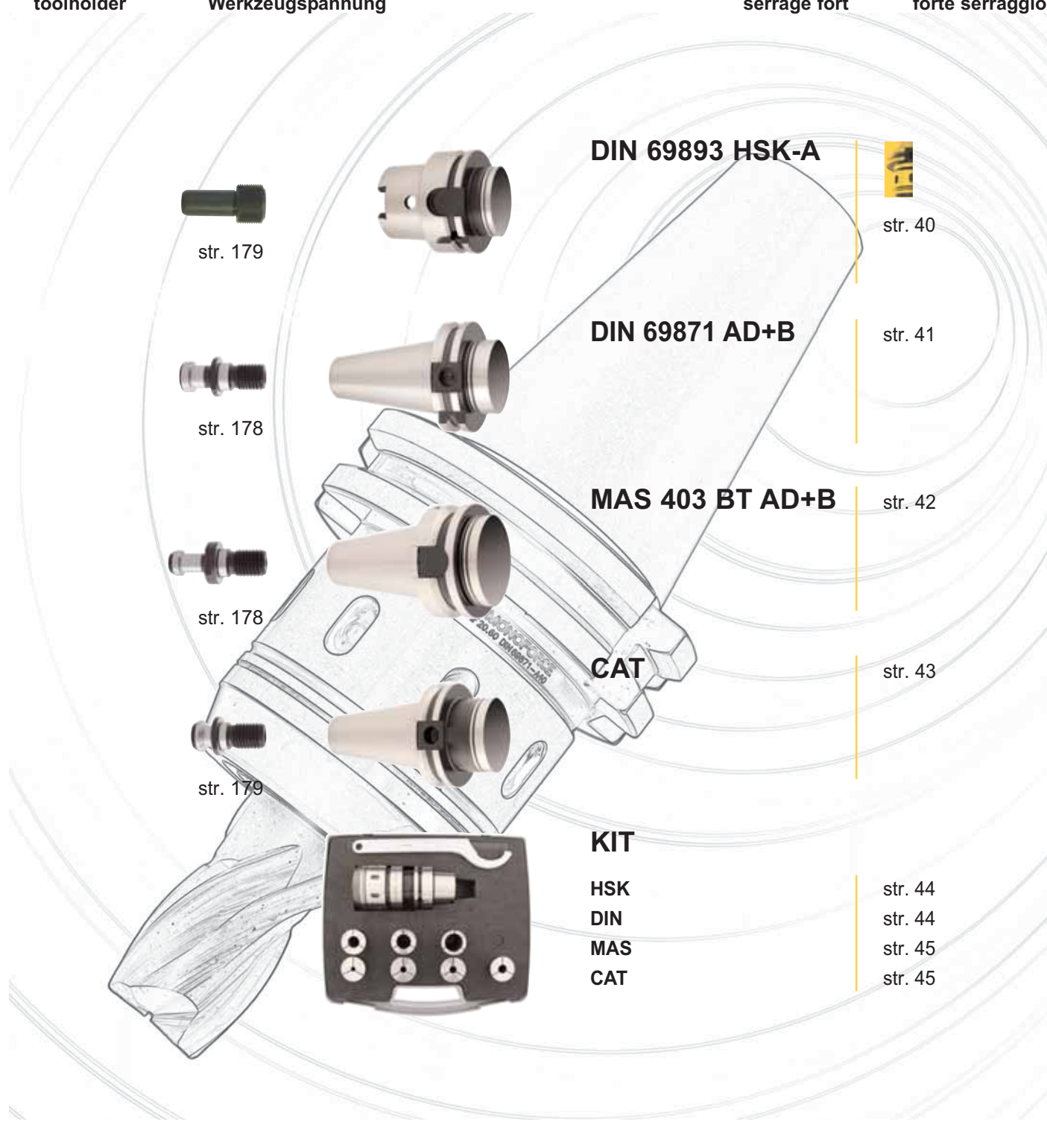
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MONOforce is a new addition to D'Andrea range of tool holders, which complements the existing balanceable FORCE chuck from Toprun family. This new chuck provides an economical and innovative solution for tool holding, where precision and high clamping forces for the cutting tool are required.

MONOforce is available with tapers conforming to DIN 69871, MAS-BT and CAT both in ISO 40 and 50 sizes, and also HSK 63. The chuck accepts reduction bushes to suit cutters having shank sizes ranging from 3 mm to 25 mm.

MONOforce can also be supplied in kit form, which includes of a set of reduction bushes and clamping wrench. **MONOforce** toolholders are manufactured by D'Andrea in their modern manufacturing plants in Italy.

MONOforce ist eine weitere Ergänzung der D'Andrea – Werkzeughalterpalette, welche die existierende, auswuchtbare FORCE-Spannzange aus der Toprun-Familie vervollständigt. Diese neue Futter bietet eine wirtschaftliche und innovative Lösung der Werkzeugspannung, wo Präzision und hohe Spannkraft für Fräswerkzeuge erforderlich sind.

MONOforce gibt es sowohl mit Aufnahmekegeln nach DIN 69871, MAS-BT, CAT beide in ISO 40 und ISO 50, als auch in HSK 63. Das Futter kann durch Reduzierhülsen für Fräser von 3-25 mm eingesetzt werden.

MONOforce wird auch in Kit-Form angeboten, welcher einen Satz Reduzierhülsen und Klemmschrauben beinhaltet. **MONOforce** Werkzeughalter werden in den modernen Produktionsräumen bei D'Andrea in Italien hergestellt.

MONOforce jest nowym, idealnym i tanim rozwiązaniem do wyposażenia wszystkich typów obrabiarek, wszędzie tam, gdzie wymaga się dużej dokładności i niezbędny jest zacisk narzędzi podlegających dużym obciążeniom skrętnym.

MONOforce dołącza się do już znanego Force z rodziny Toprun, opatentowanego systemu wyrównoważalnych opravek monolitycznych.

Program **MONOforce** dostępny jest w wersji ze stożkami HSK 63, DIN 69871, MAS-BT i CAT wykonanymi w wielkościach ISO 40 i ISO 50. Oprawki pozwalają wykorzystywać tuleje redukcyjne ze średnic 12, 20 i 32 mm. Do dyspozycji mamy tuleje redukcyjne umożliwiające mocowanie narzędzi ze standardowymi chwytami o średnicach od Ø 3 mm do Ø 25 mm. Oprawki **MONOforce**, w całości wykonywane są w firmie D'Andrea. Są do nabycia także w praktycznych zestawach zawierających oprawkę, tuleje redukcyjne i klucze zaciskowe.

Le **MONOforce** vient agrandir la série de produits D'Andréa dans la gamme des attachements appartenant à la famille Toprun et concernant les attachements équilibrables Force.

Ce nouvel attachement est une solution économique et innovatrice dans le domaine des outils de serrage où précision et grande force de clamage sont nécessaires pour les outils coupants.

MONOforce est disponible avec des cônes conformément aux normes DIN 69871, MAS-BT, CAT toutes les deux en ISO 40, 50 et également HSK 63. Les attachements acceptent des pinces de réduction afin de pouvoir appliquer des outils coupants ayant des queues entre 3 et 25 mm. **MONOforce** peut être fourni en kit, comprenant un set de pinces de réduction ainsi que la clé de serrage. Les attachements **MONOforce** sont fabriqués par D'Andréa dans leur nouvelle usine située en Italie.

MONOforce rappresenta la nuova soluzione ideale ed economica per l'attrezzatura di tutte le macchine utensili ove sussistano esigenze di precisione e necessità di serraggio utensili sollecitati a elevati carichi torsionali.

MONOforce si affianca al già noto Force della famiglia Toprun, il sistema brevettato di portautensili integrali bilanciabili.

Il programma **MONOforce** è costruito nella versione per mandrini macchina HSK 63, nonché DIN 69871, MAS-BT e CAT realizzati nelle grandezze ISO 40 e 50 e permette l'impiego di bussole di riduzione da 12 mm, 20 mm. e 32 mm. disponibili standard in tutta la gamma diametrale compatibile con questi diametri d'alloggiamento per serraggi da Ø 3 mm. a Ø 25 mm. I portautensili **MONOforce** – interamente prodotti dalla D'Andrea – sono disponibili anche in pratici kit completi di bussole di riduzione e chiave di serraggio.



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**High precision
ultra-tight
toolholder**
INSTRUCTIONS

- After lightly tightening by hand, tighten further by spanner (fig. 1).
- Tighten by hand. Don't use hammer!
- Only for finishing operations and when higher run-out accuracy is required, return chuck ring just a little (1-2°) after face contact (fig. 2).
- Don't clamp without end mill

**Präzisionsspannzangenfutter
mit hochfester
Werkzeugspannung**
GEBRAUCHSANLEITUNG

- Nach leichtem Anziehen von Hand, weiter mit dem Schlüssel anziehen. (fig. 1).
- Ziehen Sie mit der Hand an. Verwenden Sie keinen Hammer!
- Drehen Sie nur für Schlichtbearbeitungen und wenn eine höhere Rundlaufgenauigkeit gefordert wird, die Spannmutter nachdem Flächenkontakt ein wenig (max. 1° - 2°) zurück (fig. 2).
- Klemmen Sie die Spannmutter nicht ohne einen Schaftfräser

**Oprapka precyzyjna
o dużej sile zacisku**
INSTRUKCJE

- Po lekkim, ręcznym dokręceniu nakrętki, zablokować do końca za pomocą odpowiedniego klucza (fig. 1).
- Dokręcać ręcznie. Nigdy nie używać młotka ani dźwigni!
- Tylko przy obróbkach wykończeniowych, tam gdzie żąda się większej dokładności i mniejszego bicia narzędzia, po dokręceniu odpowiednim kluczem, rozluźnić ponownie o około 1-2°, po zetknięciu nakrętki z korpusem (fig. 2).
- Nie dokręcać nakrętki przed wprowadzeniem narzędzia!

**Porte-outil de précision
à serrage fort**
INSTRUCCIONES

- Après un léger serrage manuel, continuez à serrer à l'aide de la clé de serrage. (fig. 1).
- Serrer à la main. Ne pas utiliser un marteau!
- Seulement pour des opérations de finition et uniquement lorsqu'une plus grande précision est requise, faire tourner très légèrement le joint du mandrin, (1° - 2° maximum), après le contact (fig. 2).
- Ne serrer pas le joint du mandrin sans la fraise.

**Portautensile di
precisione a forte
serraggio**
ISTRUZIONI

- Dopo aver serrato a mano la ghiera, bloccare a fondo con l'apposita chiave di serraggio (fig. 1).
- Serrare a mano. Non usare mai martello o tubo di prolunga!
- Solo per operazioni di finitura, ove è richiesto una maggiore precisione di run-out, dopo il serraggio con l'apposita chiave, allentare nuovamente di 1-2° dopo il contatto (fig. 2).
- Non serrare la ghiera senza utensile inserito.



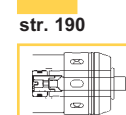
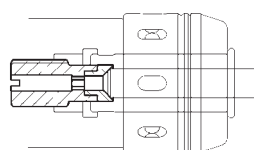
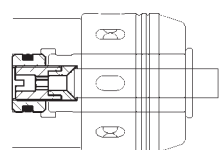
fig.1



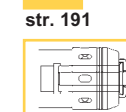
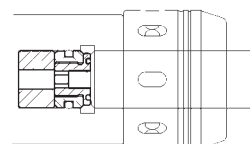
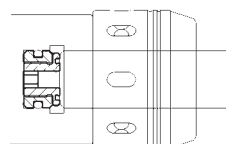
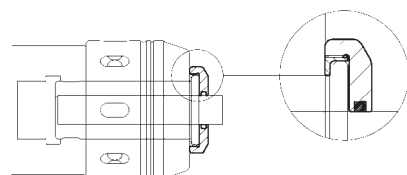
fig.2



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**SETTING SCREW FOR
INTERNAL COOLANT
SUPPLY**
**EINSTELLSCHRAUBE
FÜR INNERE
KÜHLMITTELZUFUHR**
**ŚRUBA REGULACYJNA
Z DOPROWADZENIEM
CHŁODZIWA**
**VIS DE RÉGLAGE POUR
L'ALIMENTATION
DE REFRROIDISSEMENT.**
**VITE REGOLAZIONE
CON PASSAGGIO
REFRIGERANTE**


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**SEALING DEVICE FOR
HIGH PRESSURE
COOLANT SUPPLY**
**DICHTVORRICHTUNG
FÜR HOCHDRUCK-
KÜHLMITTELZUFUHR**
**USZCZELNIENIE POD
CHŁODZENIE
WYSOKOCIŚNIENIOWE**
**SYSTÈME D'ÉTANCHÉITÉ
POUR L'ALIMENTATION
DE REFRROIDISSEMENT
HAUTE PRESSION.**
**DISPOSITIVI A TENUTA
PER REFRIGERANTE AD
ALTA PRESSIONE**


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MONOFORCE

DIN 69893 HSK-A

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Portautensile di
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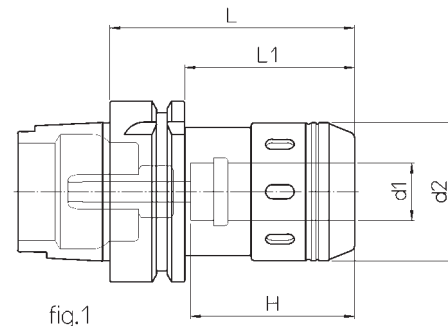


fig.1

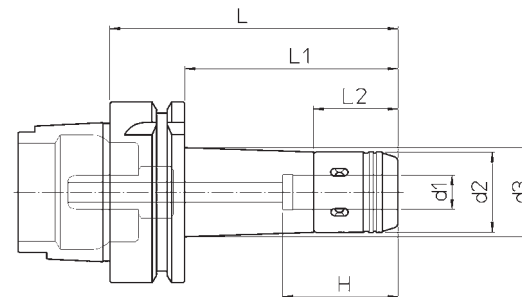


fig.2

Supplied with coolant
tube - without
clamping wrench

Lieferung inklusive
Kühlmittelrohr. Ohne
Spannzangen und
Spannschlüssel.

Wyposażona w złączkę
do chłodziwa
- Nie zawiera klucza

Pourvu de raccord
pour liquide
d'arrosage - Sans clef
de serrage

Completo di raccordo
per il refrigerante -
Chiave di serraggio
esclusa

HSK-A	ARTYKUŁ	KOD	d ₁	d ₂	d ₃	H	L	L ₁	L ₂	kg	fig.
63	HSK-A63 MF12.70	71HSK-A63MF1207	12	28	-	46	70	44	-	0.8	1
	HSK-A63 MF12.100	71HSK-A63MF1210	12	28	31	46	100	74	29.5	1.1	2
	HSK-A63 MF20.85	71HSK-A63MF2008	20	48	-	60	85	59	-	1.2	1
	HSK-A63 MF20.125	71HSK-A63MF2012	20	48	-	60	125	99	-	1.7	2
	HSK-A63 MF32.105	71HSK-A63MF3210	32	66	-	80	105	-	-	2	1
	HSK-A63 MF32.140	71HSK-A63MF3214	32	66	-	80	140	-	-	2.6	2

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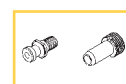
str. 190



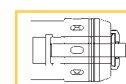
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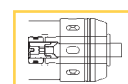
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DIN 69871 AD+B



High precision
ultra-tight toolholder

Präzisionsspannzangenfutter
mit hochfester
Werkzeugspannung

Oprawka precyzyjna
o dużej sile zacisku

Porte-outil de
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fort

Portautensile di
precisione a forte
serraggio

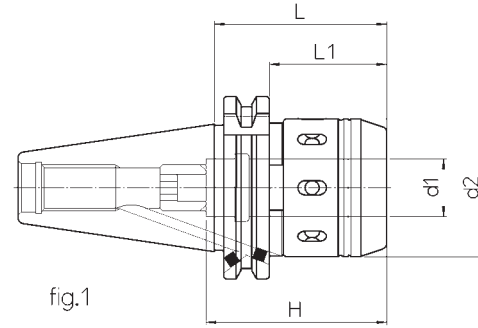


fig.1

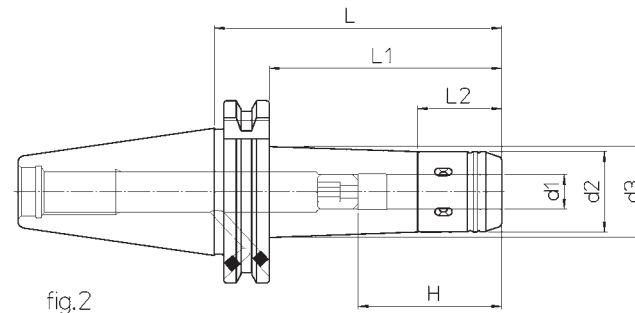


fig.2



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without
clamping wrench

Ohne Spannschlüssel.

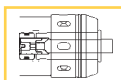
Nie zawiera klucza

Sans clef de serrage

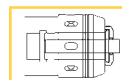
Chiave di serraggio
esclusa

ISO	ARTYKUŁ	KOD	d ₁	d ₂	d ₃	H	L	L ₁	L ₂	kg	fig.
40	DIN69871-AD+B40 MF12.50	71DIN-B40MF1205	12	28	-	46	50	31	-	0.8	1
	DIN69871-AD+B40 MF12.100	71DIN-B40MF1210	12	28	32	46	100	81	29.5	1.2	2
	DIN69871-AD+B40 MF20.60	71DIN-B40MF2006	20	48	-	63	60	41	-	1.1	1
	DIN69871-AD+B40 MF20.100	71DIN-B40MF2010	20	48	-	63	100	81	-	1.4	2
	DIN69871-AD+B40 MF32.95	71DIN-B40MF3209	32	66	-	80	95	-	-	1.6	1
	DIN69871-AD+B40 MF32.140	71DIN-B40MF3214	32	66	-	80	140	-	-	2.0	2
50	DIN69871-AD+B50 MF20.80	71DIN-B50MF2008	20	48	-	63	80	61	-	2.3	1
	DIN69871-AD+B50 MF20.125	71DIN-B50MF2012	20	48	-	63	125	106	-	2.7	2
	DIN69871-AD+B50 MF32.75	71DIN-B50MF3207	32	66	-	90	75	56	-	2.8	1
	DIN69871-AD+B50 MF32.160	71DIN-B50MF3216	32	66	-	90	160	141	-	3.2	2

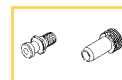
str. 190



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str. 178



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str. 210



MONOFORCE

MAS 403 BT AD+B

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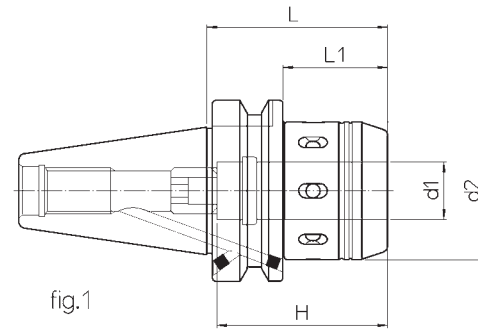


fig.1

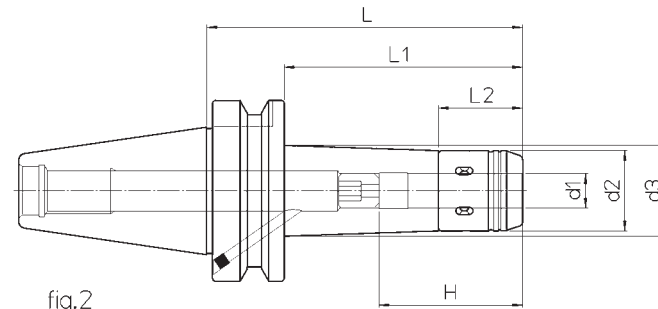


fig.2

without
clamping wrench

Ohne Spannschlüssel.

Nie zawiera klucza

Sans clef de serrage

Chiave di serraggio
esclusa

ISO	ARTYKUŁ	KOD	d ₁	d ₂	d ₃	H	L	L ₁	L ₂	kg	fig.
40	MAS403 BT40-AD+B MF12.60	71MBT-B40MF1206	12	28	-	46	60	33	-	0.9	1
	MAS403 BT40-AD+B MF12.100	71MBT-B40MF1210	12	28	31	46	100	73	29.5	1.4	2
	MAS403 BT40-AD+B MF20.63	71MBT-B40MF2006	20	48	-	63	63	36	-	1.3	1
	MAS403 BT40-AD+B MF20.100	71MBT-B40MF2010	20	48	-	63	100	73	-	1.9	2
	MAS403 BT40-AD+B MF32.90	71MBT-B40MF3209	32	66	-	80	90	-	-	2.1	1
	MAS403 BT40-AD+B MF32.140	71MBT-B40MF3214	32	66	-	80	140	-	-	3.1	2
50	MAS403 BT50-AD+B MF20.85	71MBT-B50MF2008	20	48	-	63	85	47	-	3.7	1
	MAS403 BT50-AD+B MF20.125	71MBT-B50MF2012	20	48	-	63	125	87	-	4.1	2
	MAS403 BT50-AD+B MF32.95	71MBT-B50MF3209	32	66	-	90	95	57	-	4.4	1
	MAS403 BT50-AD+B MF32.160	71MBT-B50MF3216	32	66	-	90	160	122	-	4.9	2

str. 211

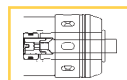
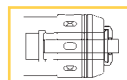
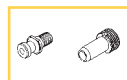
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CAT CALOWY



High precision
ultra-tight toolholder

Präzisionsspannzangenfutter
mit hochfester
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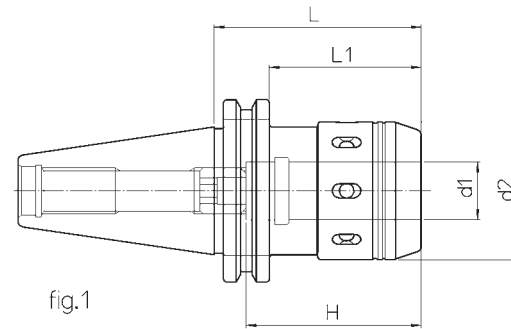


fig.1

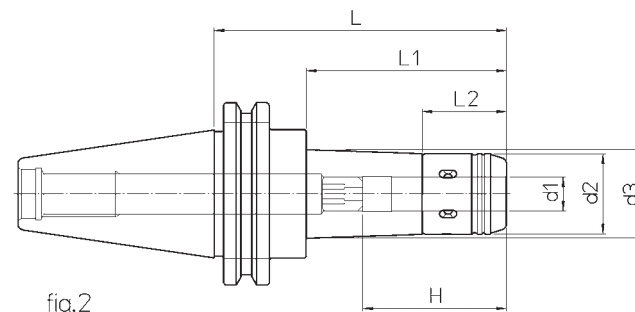


fig.2



43

without
clamping wrench

Ohne Spannschlüssel.

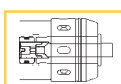
Nie zawiera klucza

Sans clef de serrage

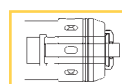
Chiave di serraggio
esclusa

40	CAT40 UNC MF1/2 2.50	71CAT-40-MF1306	1/2"	1.10"	-	1.81"	2.50"	1.25"	-	0.6	1	
	CAT40 UNC MF1/2 4.00	71CAT-40-MF1310	1/2"	1.10"	1.21"	1.81"	4.00"	2.75"	1.16"	1.2	2	
	CAT40 UNC MF3/4 3.00	71CAT-40-MF1907	3/4"	1.89"	-	2.48"	3.00"	2.25"	-	1.1	1	
	CAT40 UNC MF3/4 5.00	71CAT-40-MF1912	3/4"	1.89"	-	2.48"	5.00"	4.25"	-	1.7	2	
	CAT40 UNC MF1-1/4 4.25	71CAT-40-MF3110	1-1/4"	2.59"	-	3.15"	4.25"	-	-	1.6	1	
	CAT40 UNC MF1-1/4 5.50	71CAT-40-MF3114	1-1/4"	2.59"	-	3.15"	5.50"	-	-	2.5	2	
50	CAT50 UNC MF3/4 3.00	71CAT-50-MF1907	3/4"	1.89"	-	2.48"	3.00"	1.56"	-	2.3	1	
	CAT50 UNC MF3/4 6.00	71CAT-50-MF1915	3/4"	1.89"	-	2.48"	6.00"	4.56"	-	2.9	2	
	CAT50 UNC MF1-1/4 3.25	71CAT-50-MF3108	1-1/4"	2.59"	-	3.54"	3.25"	2.50"	-	2.8	1	
	CAT50 UNC MF1-1/4 6.50	71CAT-50-MF3116	1-1/4"	2.59"	-	3.54"	6.50"	5.75"	-	3.9	2	

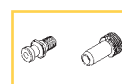
str. 190



str. 191



str. 179



str. 186



str. 190



str. 212





MONOFORCE

KIT



44

			HSK
	KIT K01 MONOFORCE 12	KIT K01 MONOFORCE 20	KIT K01 MONOFORCE 32
	1 MONOFORCE 12	1 MONOFORCE 20	1 MONOFORCE 32
	1 RC 12.04	1 RC 20.06	1 RC 32.06
	1 RC 12.06	1 RC 20.08	1 RC 32.08
	1 RC 12.08	1 RC 20.10	1 RC 32.10
	1 RC 12.10	1 RC 20.12	1 RC 32.12
	1 CHV 28	1 RC 20.16	1 RC 32.16
		1 CHV 50	1 RC 32.20
			1 RC 32.25
			1 CHV 75
HSK-A	ARTYKUŁ	KOD	
63	KIT K01 MONOFORCE 12.70 HSK63	7KHSK-A63MF1207	
	KIT K01 MONOFORCE 20.85 HSK63	7KHSK-A63MF2008	
	KIT K01 MONOFORCE 32.105 HSK63	7KHSK-A63MF3210	

			DIN
	KIT K01 MONOFORCE 12	KIT K01 MONOFORCE 20	KIT K01 MONOFORCE 32
	1 MONOFORCE 12	1 MONOFORCE 20	1 MONOFORCE 32
	1 RC 12.04	1 RC 20.06	1 RC 32.06
	1 RC 12.06	1 RC 20.08	1 RC 32.08
	1 RC 12.08	1 RC 20.10	1 RC 32.10
	1 RC 12.10	1 RC 20.12	1 RC 32.12
	1 CHV 28	1 RC 20.16	1 RC 32.16
		1 CHV 50	1 RC 32.20
			1 RC 32.25
			1 CHV 75
ISO	ARTYKUŁ	KOD	
40	KIT K01 MONOFORCE 12.50 DIN40AD+B	7KDIN-B40MF1205	
	KIT K01 MONOFORCE 20.60 DIN40AD+B	7KDIN-B40MF2006	
	KIT K01 MONOFORCE 32.95 DIN40AD+B	7KDIN-B40MF3209	
50	KIT K01 MONOFORCE 20.80 DIN50AD+B	7KDIN-B50MF2008	
	KIT K01 MONOFORCE 32.75 DIN50AD+B	7KDIN-B50MF3207	

KIT



MAS



KIT K01 MONOFORCE 12

1 MONOFORCE 12
1 RC 12.04
1 RC 12.06
1 RC 12.08
1 RC 12.10
1 RC 12.10
1 CHV 28

KIT K01 MONOFORCE 20

1 MONOFORCE 20
1 RC 20.06
1 RC 20.08
1 RC 20.10
1 RC 20.12
1 RC 20.16
1 CHV 50

KIT K01 MONOFORCE 32

1 MONOFORCE 32
1 RC 32.06
1 RC 32.08
1 RC 32.10
1 RC 32.12
1 RC 32.16
1 RC 32.20
1 RC 32.25
1 CHV 75



45

ISO	ARTYKUŁ	KOD
40	KIT K01 MONOFORCE 12.60 BT40AD+B	7KMBT-B40MF1206
	KIT K01 MONOFORCE 20.63 BT40AD+B	7KMBT-B40MF2006
	KIT K01 MONOFORCE 32.90 BT40AD+B	7KMBT-B40MF3209
50	KIT K01 MONOFORCE 20.85 BT50AD+B	7KMBT-B50MF2008
	KIT K01 MONOFORCE 32.95 BT50AD+B	7KMBT-B50MF3209

CAT



KIT K01 MONOFORCE 1/2

1 MONOFORCE 1/2
1 RC 1/2.1/4
1 RC 1/2.5/16
1 RC 1/2.3/8
1 CHV 28

KIT K01 MONOFORCE 3/4

1 MONOFORCE 3/4
1 RC 3/4.1/4
1 RC 3/4.5/16
1 RC 3/4.3/8
1 RC 3/4.1/2
1 RC 3/4.5/8
1 CHV 50

KIT K01 MONOFORCE 1-1/4

1 MONOFORCE 1-1/4
1 RC 1-1/4.3/8
1 RC 1-1/4.1/2
1 RC 1-1/4.5/8
1 RC 1-1/4.3/4
1 RC 1-1/4.1
1 CHV 75

CAT	ARTYKUŁ	KOD
40	KIT K01 MONOFORCE 1/2 2.50 CAT40	7KCAT-40-MF1306
	KIT K01 MONOFORCE 3/4 3.00 CAT40	7KCAT-40-MF1907
	KIT K01 MONOFORCE 1 1/4 4.25 CAT40	7KCAT-40-MF3110
50	KIT K01 MONOFORCE 3/4 3.00 CAT50	7KCAT-50-MF1907
	KIT K01 MONOFORCE 1 1/4 3.25 CAT50	7KCAT-50-MF3108