

easy-quick HT

Das Schnellwechselsystem von **heimatec**[®]
für angetriebene und feste Werkzeuge

*The fast change system of **heimatec**[®]
for driven and static tools*





Hinweis zu den AGBs:

Diese finden Sie in unserem Internetauftritt unter

www.heimatec.de

Home/Impressum/AGB

Terms and conditions:

You will find them on our website

www.heimatec.com

Home/Imprint/Terms and Conditions

Das Katalog-Werk einschließlich aller seiner Teile ist urheberrechtlich geschützt. Jede Verwertung außerhalb der engen Grenzen des Urheberrechtsgesetzes ist ohne Zustimmung der Rechteeinhaber unzulässig und strafbar. Das gilt insbesondere für Vervielfältigungen, Übersetzungen, Mikroverfilmungen und die Einspeicherung und Verarbeitung in elektronischen Systemen.

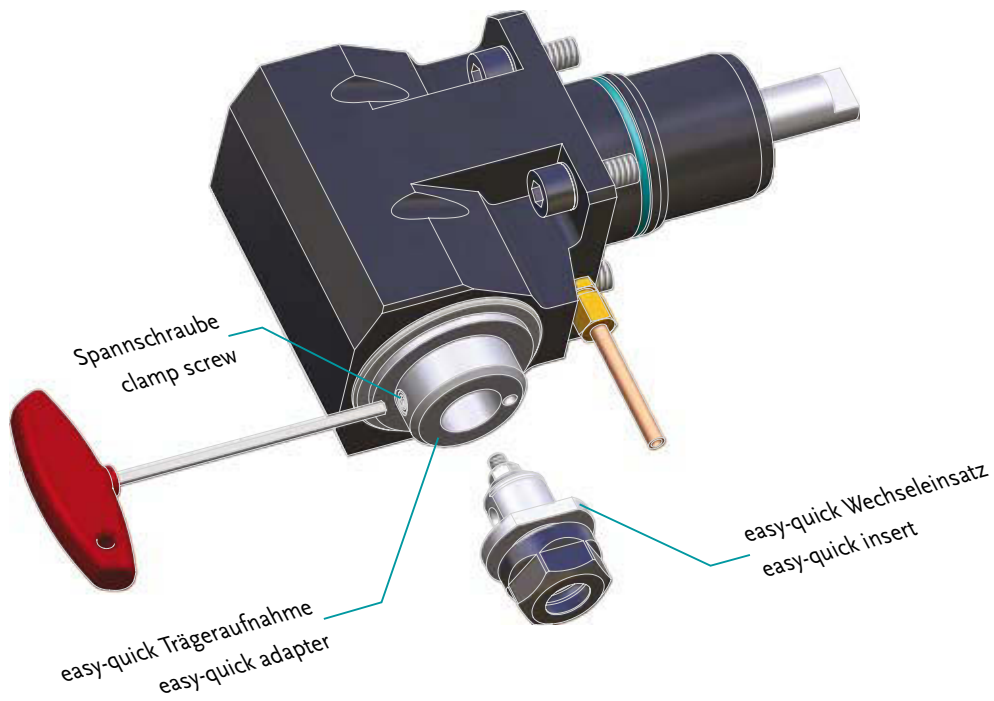
heimatec® GmbH behält sich Änderungen technischer Art jederzeit ohne Vorankündigung vor. Dies gilt insbesondere bei Anpassungen an neue oder geänderte internationale Normen oder bei Weiterentwicklungen unserer Produkte oder Herstellungsprozesse.

This catalogue, including all its parts, is protected by copyright. Each use outside the restricted limitations of the Copyright Act is inadmissible and liable to prosecution without the consent of heimatec. This is particularly valid for duplication, translation, microfilming and feeding and processing in electronic systems.

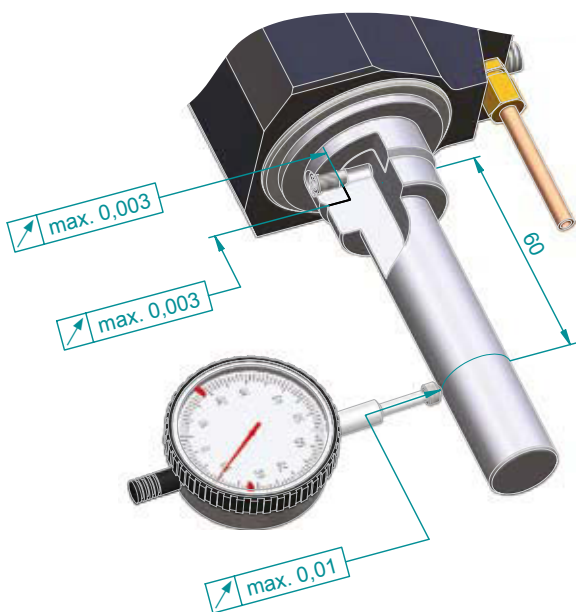
heimatec® GmbH reserves the right of technical changes everytime without advance notice, which is particularly valid for adaptions to new or changed international standards, or to developments of our products or manufacturing processes.

Bezeichnung type	Seite side
<i>easy-quick</i> Info / Montageblock HT <i>easy-quick</i> info / mounting device HT	2
<i>easy-quick</i> HT 2	5
<i>easy-quick</i> HT 3	9
<i>easy-quick</i> HT 4	13
<i>easy-quick</i> HT 5	19
<i>easy-quick</i> HT 6	25
<i>easy-quick</i> HT 7	31
Symbolbeschreibung description of symbol	36

„Ein Schnellwechselsystem das seinen Namen verdient!“



„A quick change system that it is worth to own its name!“



- ▶ Einhandbedienung
single-hand operation
- ▶ Voreinstellbar
presetable
- ▶ Höchste Wiederhol- und Rundlaufgenauigkeit
highest repeatability and radial run-out precision
- ▶ Enorme Steifigkeit und Stabilität
tremendous rigidity and solidity



Unser Schnellwechselsystem spart Zeit und Geld!

Zeitersparnis:

Durch das Lösen von nur einer einzigen Schraube lässt sich der easy-quick HT-Einsatz auswechseln.
Exakte Voreinstellbarkeit der Wechseleinsätze ausserhalb der Maschine.
Das Werkzeug verbleibt auf der Maschine, zeitaufwendiges Ausrichten der Werkzeuge entfällt.
Maschinenstillstandzeiten werden so auf ein Minimum reduziert.

Kostensparnis:

Niedrige Anschaffungskosten
Minimierung der Rüstkosten
Reduzierung der Gesamtwerkzeugkosten
Geringe Lagerhaltungskosten

Das Verletzungsrisiko beim Werkzeugwechsel wird minimiert.

easy-quick bietet Ihnen ein Höchstmaß an Flexibilität!

Unser Schnellwechselsystem ist derzeit in 6 verschiedenen Größen erhältlich:

HT2 HT3 HT4 HT5 HT6 HT7

Die Einsätze sind in allen gängigen Werkzeugaufnahmen erhältlich, z.B.:

- Spannzangenaufnahmen (auch verlängert)
- Spannzangenaufnahmen mit Längenausgleich zum Gewindeschneiden
- Weldon/Whistle Notch (auch verlängert)
- Kombidorner
- Rohlinge

Kombinierte Kühlmittelzufuhr bei allen Größen und Werkzeugaufnahmen!

Die Wechseleinsätze sind nicht nur auf angetriebenen, sondern auch auf festen Werkzeugen einsetzbar.

Selbstverständlich erarbeiten wir mit Ihnen auch Sonderlösungen, speziell auf Ihre Anforderungen zugeschnitten.

Our quick change system saves time and money!

time saving:

The easy-quick adapter insert can be changed by unthreading just one bolt.
Precise pre-setting of interchangeable inserts outside the machine.
The tool remains in the machine, which eliminates the rather time-consuming adjustment of tools.
Thus machine downtimes are minimized.

cost saving:

low acquisition costs
minimized tooling times
reduction of total tool expenses
low storage costs

Minimized risk of injury involved with tool changes.

easy-quick offers the highest degree of flexibility

Our quick change system is obtainable in six variant sizes:

HT2 HT3 HT4 HT5 HT6 HT7

Inserts are obtainable with all common tool holders such as e.g.:

- collet chucks (also extended type)
- collet chucks with length compensation for tapping
- Weldon/Whistle Notch (also extended type)
- universal arbor
- blanks

Combined coolant supply for all sizes and tool holders!

The interchangeable inserts are suitable for both driven and static tools.

We will be pleased to offer you special solutions tailored to your requirements.

Montageblock HT 8 710 95 001

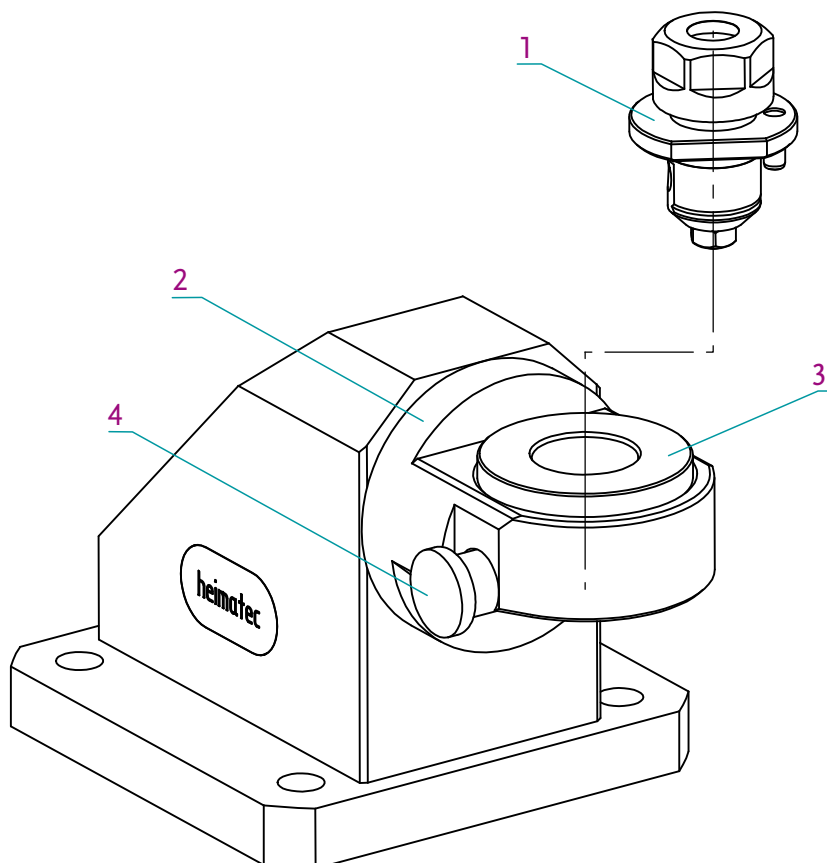
Zur Montage der Schneidwerkzeuge in verschiedenen Wechseleinsätzen (1). Der Montageblock muss sicher aufgestellt werden, z.B. vorzugsweise durch festes Verschrauben am Arbeitstisch oder durch sicheres Klemmen im Schraubstock. Der Aufsatz (2) kann verstellt und in 30° Schritten positioniert werden. Die Aufnahme / Wechselbuchse (3) wird über den umsetzbaren Rastbolzen (4) gehalten. (linksseitige oder rechtsseitige Bedienung)

Optional sind weitere Aufnahmen / Wechselbuchsen (3) für Werkzeugeinsätze (1) in verschiedener Größe und Art erhältlich.

mounting device HT 8 710 95 001

For mounting cutters in various adaptors (1). Please place mounting device safely, in vice or mount on bench. The attachment (2) can be adjusted in 30° steps. The holding fixture (3) is held by locator pin (4). (left and right side operation)

More holding fixtures (3) available as options for adaptors (1) in various sizes and types.



- Wechselbuchsen (3) erhältlich:
interchangeable bushings (3) available:

HT2 - 8 732 54 007
HT3 - 8 732 55 005
HT4 - 8 732 56 005
HT5 - 8 732 57 004
HT6 - 8 732 58 003
HT7 - 8 732 59 003

Empfohlene Anzugsdrehmomente für HT - Spanschraube recommended clamping torque for HT clamping bolt

HT 2	HT 3	HT 4	HT 5	HT 6	HT 7
2,5 Nm	4 Nm	8 Nm	12 Nm	28 Nm	52 Nm

Warnung! Das maximale Anzugsdrehmoment darf nicht mehr als 15% über den empfohlenen Werten liegen.

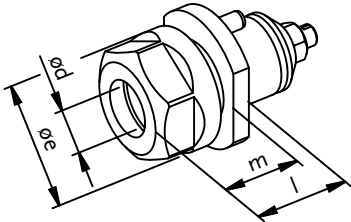
Warning! The maximum clamping torque should not extend more than 15% of the recommended clamp torque.

easy-quick



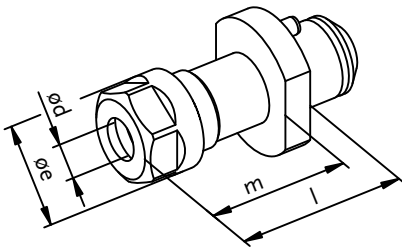
HT 2

► Schnittstelle: *easy-quick* HT 2
interface: *easy-quick* HT 2



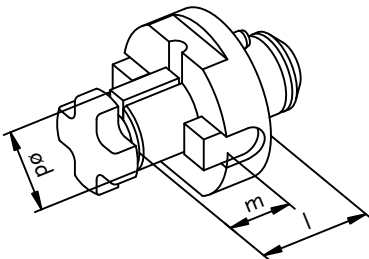
► Spannzangenaufnahme
collet chuck

Spannsystem clamping system	Bestell-Nr. ref.-no.	$\varnothing d$ [mm]	$\varnothing e$ [mm]	l [mm]	m [mm]
ER 8 M	8 779 42 003	0,5 - 5,0	12,0	17,0	13,0
ER 11	8 779 43 002	0,5 - 7,0	19,0	17,5	13,5



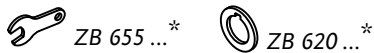
► Spannzangenaufnahme lang
collet chuck long

Spannsystem clamping system	Bestell-Nr. ref.-no.	$\varnothing d$ [mm]	$\varnothing e$ [mm]	l [mm]	m [mm]
ER 8 M	8 779 42 005	0,5 - 5,0	12,0	40,0	36,0



► Fräsdorn
arbor

Spannsystem clamping system	Bestell-Nr. ref.-no.	$\varnothing d$ [mm]	l [mm]	m [mm]
Fräsdorn 10 / arbor 10	8 779 42 001	10,0	21,0	16,0
Fräsdorn 13 / arbor 13	8 779 43 001	13,0	26,0	21,0
Kombidorn 1/2" / universal arbor 1/2"	8 779 43 026	1/2"	34,0	14,3



Darstellung symbolisch
symbolic drawing

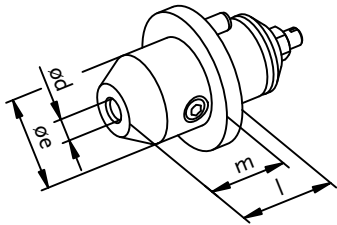
► Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

ZB HT 2 4 000

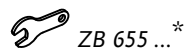
Wechseleinsätze für *easy-quick* inserts for *easy-quick*

- ▶ Schnittstelle: *easy-quick* HT 2
interface: *easy-quick* HT 2



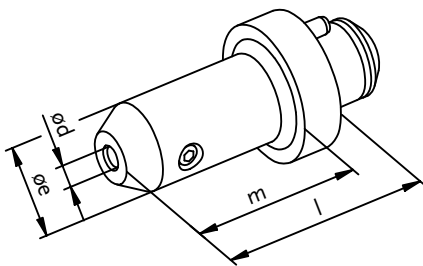
- ▶ Weldon
Weldon

Spannsystem clamping system	Bestell-Nr. ref.-no.	$\varnothing d$ [mm]	$\varnothing e$ [mm]	l [mm]	m [mm]
Weldon 6	8 779 42 000	6,0	24,0	17,0	–
Weldon 8	8 779 43 000	8,0	24,0	18,0	–
Weldon ¼"	8 779 42 017	¼"	24,0	17,0	–



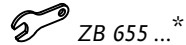
- ▶ Weitere Abmessungen ab $\varnothing d=3$ mm auf Anfrage
further dimension from $\varnothing d=3$ mm on request

easy-quick HT 2

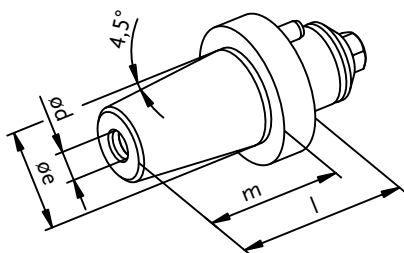


- ▶ Weldon lang
Weldon long

Spannsystem clamping system	Bestell-Nr. ref.-no.	$\varnothing d$ [mm]	$\varnothing e$ [mm]	l [mm]	m [mm]
Weldon 6	8 779 42 004	6,0	25,0	40,0	–
Weldon ¼"	8 779 42 018	¼"	25,0	40,0	–

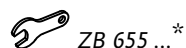


- ▶ Weitere Abmessungen ab $\varnothing d=3$ mm auf Anfrage
further dimension from $\varnothing d=3$ mm on request



- ▶ Schrumpffutter
shrinking chuck

Nenngröße nominal size	Bestell-Nr. ref.-no.	$\varnothing d$ [mm]	$\varnothing e$ [mm]	l [mm]	m [mm]
6	8 779 42 006	6,0	24,0	38,0	34,0
8	8 779 43 004	8,0	24,0	38,0	34,0



- ▶ Weitere Abmessungen ab $\varnothing d=3$ mm auf Anfrage
further dimension from $\varnothing d=3$ mm on request



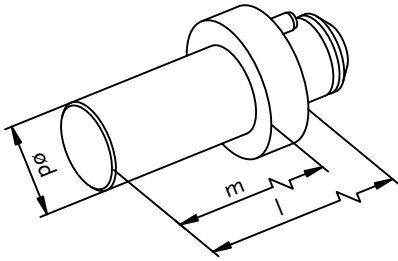
Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

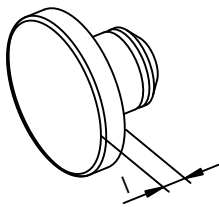
ZB HT 2 4 000

- ▶ Schnittstelle: *easy-quick* HT 2
interface: *easy-quick* HT 2



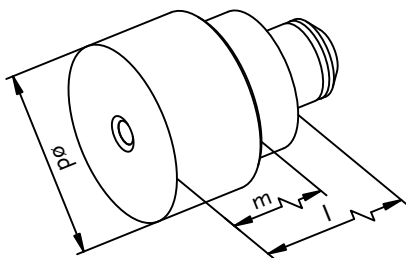
- ▶ Prüfdorn
test mandrel

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
15	8 208 44 000	15,0	80,0	70,0



- ▶ Verschlussstopfen
plug

Bestell-Nr. ref.-no.	l [mm]
8 779 49 000	5,0



- ▶ Rohling
blank

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
30	8 779 49 001	30,0	80,0	72,0



Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

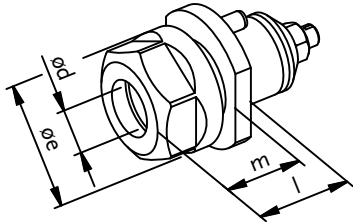
ZB HT 2 4 000

easy-quick



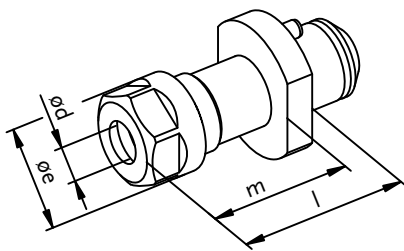
HT 3

- Schnittstelle: *easy-quick* HT 3
interface: *easy-quick* HT 3



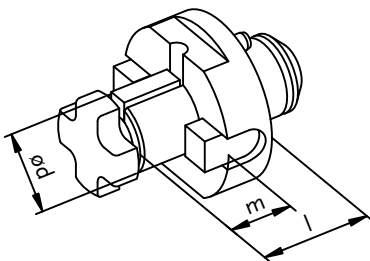
- Spannzangenaufnahme
collet chuck

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
ER 11	8 779 53 005	0,5 - 7,0	19,0	19,0	15,0
ER 16	8 779 54 000	0,5 - 10,0	28,0	25,5	21,5



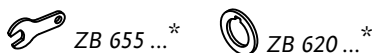
- Spannzangenaufnahme lang
collet chuck long

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
ER 8 M	8 779 52 004	0,5 - 5,0	12,0	60,0	56,0
ER 11	8 779 53 007	0,5 - 7,0	19,0	60,0	56,0



- Fräsdorn
arbor

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
Fräsdorn 10 / arbor 10	8 779 52 005	10,0	21,0	16,0
Fräsdorn 13 / arbor 13	8 779 53 001	13,0	26,0	21,0
Kombidorn 16 / universal arbor 16	8 779 54 001	16,0	31,0	17,0
Kombidorn ½" / universal arbor ½"	8 779 53 026	½"	34,0	14,3



Darstellung symbolisch
symbolic drawing

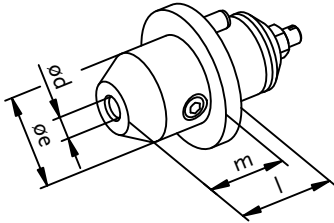
- Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

ZB HT 3 5 000

Wechseleinsätze für *easy-quick* inserts for *easy-quick*

- ▶ Schnittstelle: *easy-quick* HT 3
interface: *easy-quick* HT 3



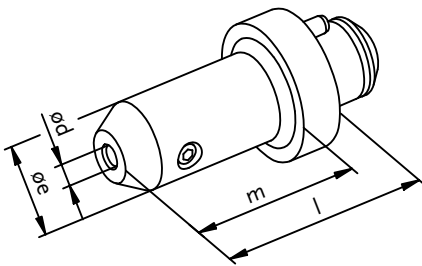
- ▶ Weldon
Weldon

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 52 000	6,0	25,0	28,0	22,5
Weldon 8	8 779 53 003	8,0	28,0	28,0	23,0
Weldon 10	8 779 54 002	10,0	31,0	28,0	–
Weldon 12	8 779 54 003	12,0	34,0	28,0	–
Weldon ¼"	8 779 52 017	¼"	25,0	28,0	22,5
Weldon ⅜"	8 779 53 028	⅜"	31,0	28,0	–
Weldon ½"	8 779 54 043	½"	34,0	28,0	–

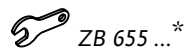


- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request

- ▶ Weldon lang
Weldon long

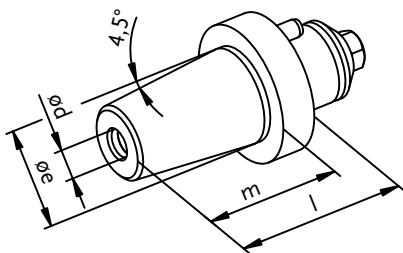


Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 52 003	6,0	25,0	60,0	54,0
Weldon 8	8 779 53 006	8,0	28,0	60,0	54,0
Weldon 10	8 779 54 009	10,0	35,0	60,0	–
Weldon ¼"	8 779 52 018	¼"	25,0	60,0	54,0
Weldon ⅜"	8 779 53 030	⅜"	35,0	60,0	–



- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request

- ▶ Schrumpffutter
shrinking chuck



Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
6	8 779 52 006	6,0	27,0	38,0	34,0
8	8 779 53 008	8,0	27,0	38,0	34,0
10	8 779 54 010	10,0	27,0	38,0	34,0
12	8 779 54 011	12,0	30,0	43,0	39,0



- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request



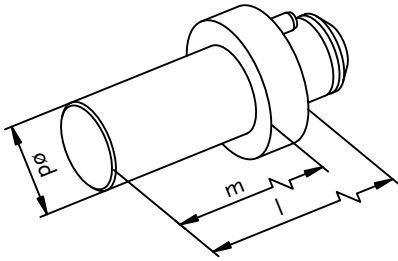
Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

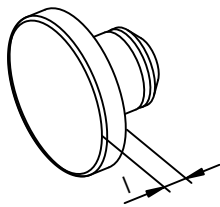
ZB HT 3 5 000

- Schnittstelle: *easy-quick* HT 3
interface: *easy-quick* HT 3



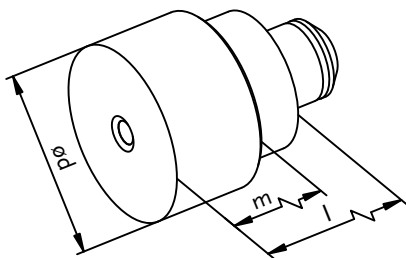
- Prüfdorn
test mandrel

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
20	8 208 56 000	20,0	100,0	90,0



- Verschlussstopfen
plug

Bestell-Nr. ref.-no.	l [mm]
8 779 59 000	6,0



- Rohling
blank

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
40	8 779 59 001	40,0	100,0	92,0



Darstellung symbolisch
symbolic drawing

- Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

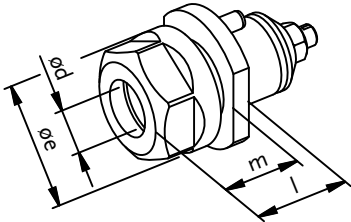
ZB HT 3 5 000

easy-quick



HT 4

► Schnittstelle: *easy-quick* HT 4
interface: *easy-quick* HT 4

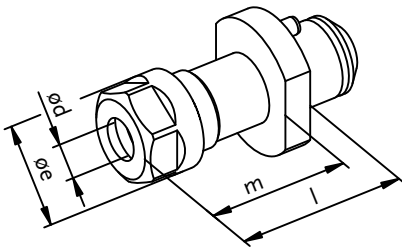


► Spannzangenaufnahme
collet chuck

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
ER 16	8 779 64 000	0,5 - 10,0	28,0	26,0	21,0
ER 20	8 779 64 001	0,5 - 13,0	34,0	28,0	23,0
ER 25	8 779 65 001	0,5 - 16,0	42,0	44,0	–

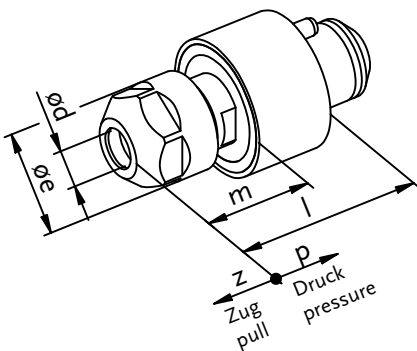


easy-quick HT 4



► Spannzangenaufnahme lang
collet chuck long

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
ER 11	8 779 63 009	0,5 - 7,0	19,0	70,0	62,0
ER 16	8 779 64 016	0,5 - 10,0	28,0	70,0	62,0
ER 20	8 779 64 012	0,5 - 13,0	34,0	70,0	62,0
ER 25	8 779 65 004	0,5 - 16,0	42,0	70,0	–



► softtap (Gewindefutter)
softtap (tapping chuck)

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]	z [mm]	p [mm]
ER 16	8 779 64 027	0,5 - 10,0	28,0	55,0	32,0	0,5	0,5



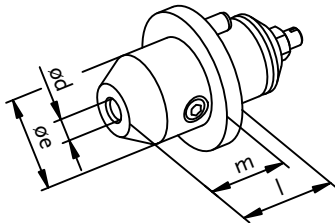
Darstellung symbolisch
symbolic drawing

► Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

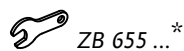
ZB HT 4 6 000

- ▶ Schnittstelle: *easy-quick* HT 4
interface: *easy-quick* HT 4



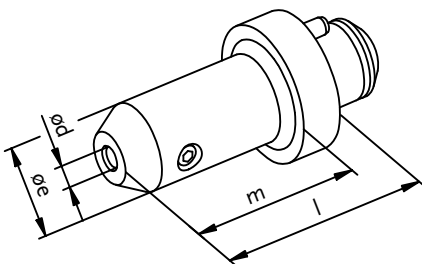
- ▶ Weldon
Weldon

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 62 000	6,0	25,0	28,0	23,0
Weldon 8	8 779 63 000	8,0	28,0	28,0	23,0
Weldon 10	8 779 64 002	10,0	39,0	28,0	–
Weldon 12	8 779 64 004	12,0	42,0	34,0	–
Weldon 14	8 779 64 007	14,0	42,0	34,0	–
Weldon 16	8 779 65 000	16,0	48,0	34,0	–
Weldon ¼"	8 779 62 014	¼"	25,0	28,0	23,0
Weldon ⅜"	8 779 63 016	⅜"	39,0	28,0	–
Weldon ½"	8 779 64 032	½"	42,0	34,0	–
Weldon ⅝"	8 779 64 033	⅝"	48,0	34,0	–

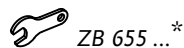


- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request

- ▶ Weldon lang
Weldon long



Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 62 006	6,0	25,0	70,0	60,0
Weldon 8	8 779 63 008	8,0	28,0	70,0	60,0
Weldon 10	8 779 64 014	10,0	32,0	70,0	60,0
Weldon 12	8 779 64 018	12,0	32,0	70,0	60,0
Weldon ¼"	8 779 62 025	¼"	25,0	70,0	60,0
Weldon ⅜"	8 779 63 027	⅜"	32,0	70,0	60,0
Weldon ½"	8 779 64 056	½"	32,0	70,0	60,0



- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request



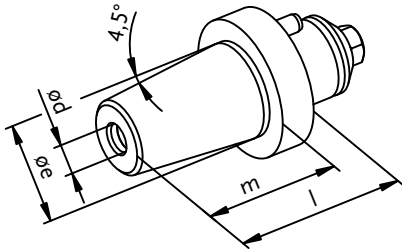
Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

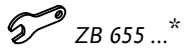
ZB HT 4 6 000

- Schnittstelle: *easy-quick* HT 4
interface: *easy-quick* HT 4

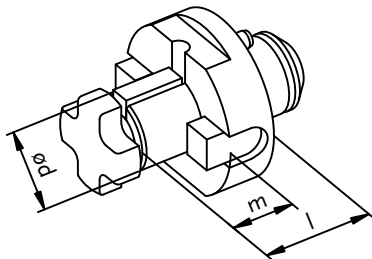


- Schrumpffutter
shrinking chuck

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
6	8 779 62 007	6,0	27,0	40,0	34,0
8	8 779 63 003	8,0	27,0	40,0	34,0
10	8 779 64 009	10,0	27,0	40,0	34,0
12	8 779 64 017	12,0	30,0	45,0	39,0
14	8 779 64 019	14,0	32,0	50,0	44,0
16	8 779 65 005	16,0	34,0	50,0	44,0

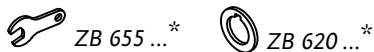


- Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request



- Fräsdorn
arbor

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
Fräsdorn 10 / arbor 10	8 779 62 005	10,0	26,0	16,0
Fräsdorn 13 / arbor 13	8 779 63 007	13,0	31,0	21,0
Kombidorn 16 / universal arbor 16	8 779 64 005	16,0	31,0	17,0
Kombidorn 22 / universal arbor 22	8 779 65 002	22,0	33,0	19,0
Kombidorn ½" / universal arbor ½"	8 779 63 028	½"	36,0	14,3
Kombidorn ¾" / universal arbor ¾"	8 779 64 057	¾"	40,0	17,45



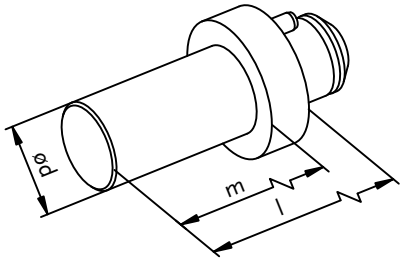
Darstellung symbolisch
symbolic drawing

- Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

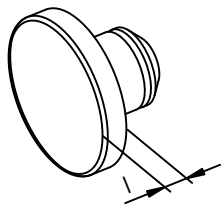
ZB HT 4 6 000

- ▶ Schnittstelle: *easy-quick* HT 4
interface: *easy-quick* HT 4



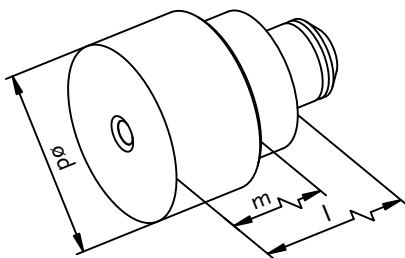
- ▶ Prüfdorn
test mandrel

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
25	8 208 67 000	25,0	120,0	108,0



- ▶ Verschlussstopfen
plug

Bestell-Nr. ref.-no.	l [mm]
8 779 69 000	7,0



- ▶ Rohling
blank

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
50	8 779 69 002	50,0	120,0	108,0



Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

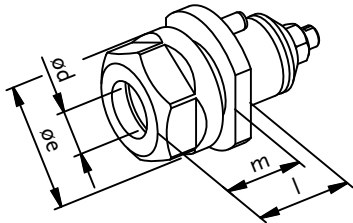
ZB HT 4 6 000

easy-quick



HT 5

- Schnittstelle: *easy-quick* HT 5
interface: *easy-quick* HT 5

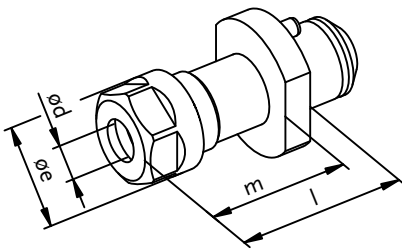


- Spannzangenaufnahme
collet chuck

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
ER 20	8 779 74 002	0,5 - 13,0	34,0	29,0	23,0
ER 25	8 779 75 001	0,5 - 16,0	42,0	30,0	24,0
ER 32	8 779 76 002	1,0 - 20,0	50,0	54,0	–



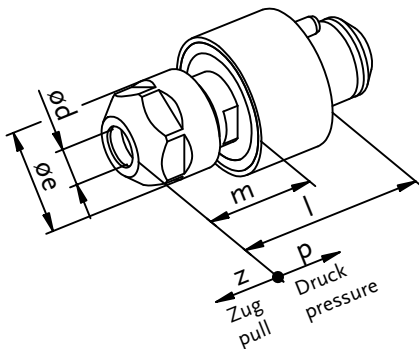
- Spannzangenaufnahme lang
collet chuck long



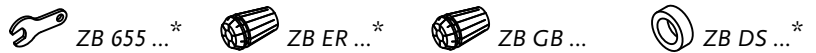
Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
ER 16	8 779 74 006	0,5 - 10,0	28,0	70,0	64,0
ER 20	8 779 74 018	0,5 - 13,0	34,0	70,0	64,0
ER 25	8 779 75 010	0,5 - 16,0	42,0	70,0	64,0



- softtap (Gewindefutter)
softtap (tapping chuck)



Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]	z [mm]	p [mm]
ER 16	8 779 74 021	0,5 - 10,0	28,0	55,0	32,0	0,5	0,5



Darstellung symbolisch
symbolic drawing

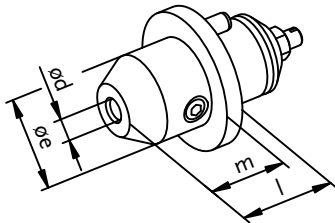
- Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

ZB HT 5 7 000

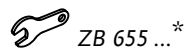
Wechseleinsätze für *easy-quick* inserts for *easy-quick*

- ▶ Schnittstelle: *easy-quick* HT 5
interface: *easy-quick* HT 5



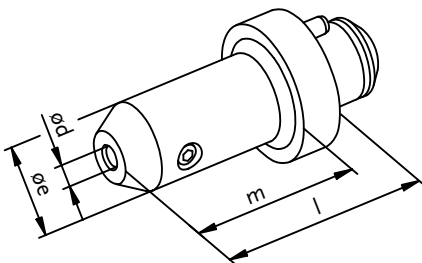
- ▶ Weldon
Weldon

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 72 000	6,0	25,0	28,0	23,0
Weldon 8	8 779 73 000	8,0	28,0	28,0	23,0
Weldon 10	8 779 74 001	10,0	49,0	28,0	–
Weldon 12	8 779 74 000	12,0	49,0	28,0	–
Weldon 14	8 779 74 005	14,0	50,0	28,0	–
Weldon 16	8 779 75 000	16,0	49,0	28,0	–
Weldon 18	8 779 75 002	18,0	50,0	34,0	–
Weldon 20	8 779 76 001	20,0	49,0	36,0	–
Weldon ¼"	8 779 72 012	¼"	25,0	28,0	23,0
Weldon ⅜"	8 779 73 015	⅜"	49,0	28,0	–
Weldon ½"	8 779 74 047	½"	49,0	28,0	–
Weldon ⅝"	8 779 74 048	⅝"	49,0	28,0	–
Weldon ¾"	8 779 75 024	¾"	49,0	36,0	–

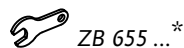


- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request

- ▶ Weldon lang
Weldon long



Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 72 001	6,0	25,0	70,0	60,0
Weldon 8	8 779 73 001	8,0	28,0	70,0	60,0
Weldon 10	8 779 74 007	10,0	32,0	70,0	60,0
Weldon 12	8 779 74 008	12,0	32,0	70,0	60,0
Weldon 14	8 779 74 017	14,0	44,0	70,0	60,0
Weldon 16	8 779 75 009	16,0	48,0	70,0	60,0
Weldon ¼"	8 779 72 013	¼"	25,0	70,0	60,0
Weldon ⅜"	8 779 73 017	⅜"	32,0	70,0	60,0
Weldon ½"	8 779 74 050	½"	32,0	70,0	60,0
Weldon ⅝"	8 779 74 051	⅝"	48,0	70,0	60,0



- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request



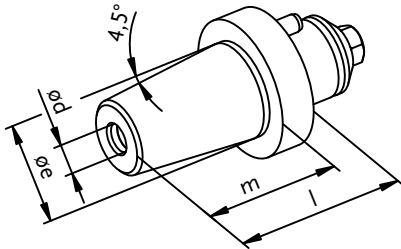
Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

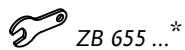
ZB HT 5 7 000

- ▶ Schnittstelle: *easy-quick* HT 5
interface: *easy-quick* HT 5

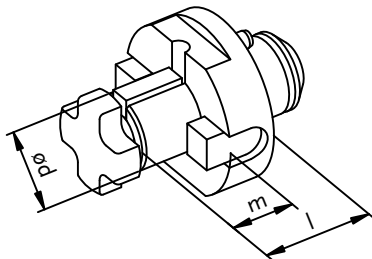


- ▶ Schrumpffutter
shrinking chuck

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
6	8 779 72 004	6,0	27,0	40,0	34,0
8	8 779 73 003	8,0	27,0	40,0	34,0
10	8 779 74 009	10,0	27,0	40,0	34,0
12	8 779 74 010	12,0	30,0	45,0	39,0
14	8 779 74 019	14,0	33,0	45,0	39,0
16	8 779 75 008	16,0	34,0	50,0	44,0
18	8 779 75 011	18,0	42,0	50,0	44,0
20	8 779 76 004	20,0	42,0	50,0	44,0

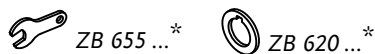


- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request



- ▶ Fräsdorn
arbor

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
Kombidorn 16	8 779 74 003	16,0	31,0	17,0
Kombidorn 22	8 779 75 003	22,0	33,0	19,0
Kombidorn 27	8 779 76 005	27,0	40,0	21,0
Kombidorn ½"	8 779 73 018	½"	36,0	14,3
Kombidorn ¾"	8 779 74 049	¾"	40,0	17,45
Kombidorn 1"	8 779 75 025	1"	42,0	17,45



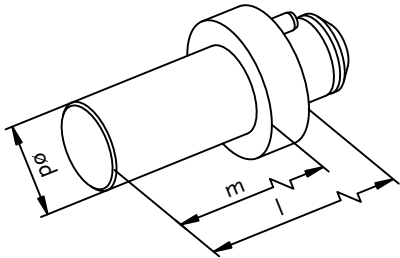
Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

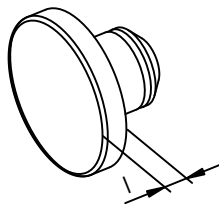
ZB HT 5 7 000

- ▶ Schnittstelle: *easy-quick* HT 5
interface: *easy-quick* HT 5



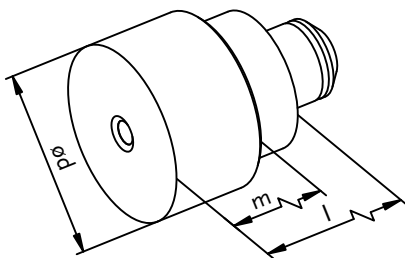
- ▶ Prüfdorn
test mandrel

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
30	8 208 77 000	30,0	150,0	138,0



- ▶ Verschlussstopfen
plug

Bestell-Nr. ref.-no.	l [mm]
8 779 79 002	7,0



- ▶ Rohling
blank

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
63	8 779 79 003	63,0	140,0	128,0



Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

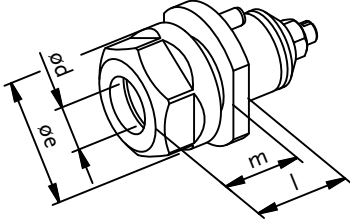
ZB HT 5 7 000

easy-quick



HT 6

- Schnittstelle: *easy-quick* HT 6
interface: *easy-quick* HT 6

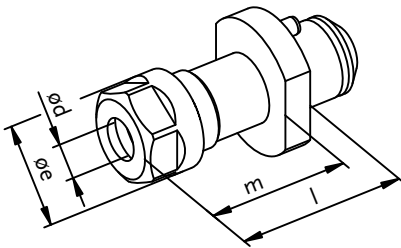


- Spannzangenaufnahme
collet chuck

Spannsystem clamping system	Bestell-Nr. ref.-no.	$\varnothing d$ [mm]	$\varnothing e$ [mm]	l [mm]	m [mm]
ER 20	8 779 84 000	0,5 - 13,0	34,0	31,5	23,5
ER 25	8 779 85 000	0,5 - 16,0	42,0	32,0	24,0
ER 32	8 779 86 000	1,0 - 20,0	50,0	35,0	27,0
ER 40	8 779 87 001	2,0 - 30,0	63,0	59,0	43,0



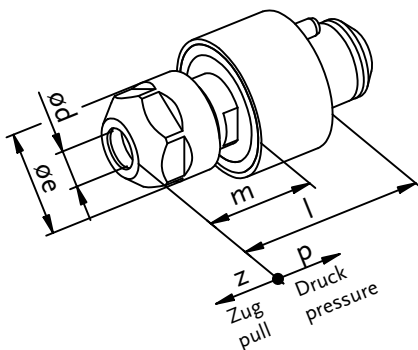
- Spannzangenaufnahme lang
collet chuck long



Spannsystem clamping system	Bestell-Nr. ref.-no.	$\varnothing d$ [mm]	$\varnothing e$ [mm]	l [mm]	m [mm]
ER 16	8 779 84 010	0,5 - 10,0	28,0	70,0	60,0
ER 20	8 779 84 011	0,5 - 13,0	34,0	70,0	60,0
ER 25	8 779 85 008	0,5 - 16,0	42,0	70,0	60,0
ER 32	8 779 86 005	1,0 - 20,0	50,0	70,0	60,0



- softtap (Gewindefutter)
softtap (tapping chuck)



Spannsystem clamping system	Bestell-Nr. ref.-no.	$\varnothing d$ [mm]	$\varnothing e$ [mm]	l [mm]	m [mm]	z [mm]	p [mm]
ER 16	8 779 84 014	0,5 - 10,0	28,0	48,0	31,7	0,5	0,5



Darstellung symbolisch
symbolic drawing

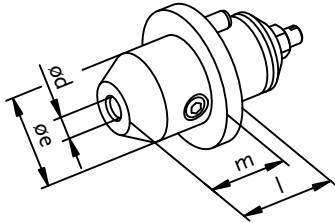
- Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

ZB HT 6 8 000

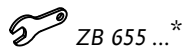
Wechseleinsätze für *easy-quick* inserts for *easy-quick*

- ▶ Schnittstelle: *easy-quick* HT 6
interface: *easy-quick* HT 6



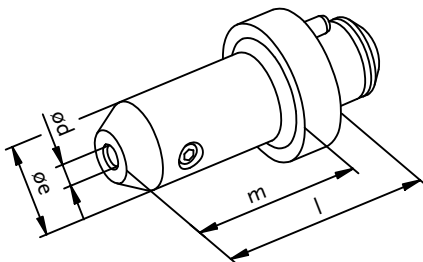
- ▶ Weldon
Weldon

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 82 000	6,0	25,0	28,0	23,0
Weldon 8	8 779 83 000	8,0	28,0	28,0	23,0
Weldon 10	8 779 84 001	10,0	35,0	28,0	22,0
Weldon 12	8 779 84 002	12,0	42,0	28,0	23,0
Weldon 14	8 779 84 004	14,0	44,0	28,0	22,0
Weldon 16	8 779 85 001	16,0	64,0	23,0	–
Weldon 18	8 779 85 004	18,0	64,0	23,0	–
Weldon 20	8 779 86 002	20,0	64,0	23,0	–
Weldon 25	8 779 87 000	25,0	65,0	35,0	–
Weldon 32	8 779 88 000	32,0	72,0	68,0	–
Weldon ¼"	8 779 82 005	¼"	25,0	28,0	23,0
Weldon ⅜"	8 779 83 004	⅜"	35,0	28,0	22,0
Weldon ½"	8 779 84 017	½"	42,0	28,0	23,0
Weldon ⅝"	8 779 84 019	⅝"	64,0	23,0	–
Weldon ¾"	8 779 85 011	¾"	64,0	23,0	–
Weldon 1"	8 779 87 004	1"	64,0	35,0	–
Weldon 1¼"	8 779 87 005	1¼"	72,0	68,0	–



- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request

- ▶ Weldon lang
Weldon long



Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 82 001	6,0	25,0	70,0	60,0
Weldon 8	8 779 83 002	8,0	28,0	70,0	60,0
Weldon 10	8 779 84 007	10,0	32,0	70,0	60,0
Weldon 12	8 779 84 008	12,0	32,0	70,0	60,0
Weldon 14	8 779 84 009	14,0	44,0	70,0	60,0
Weldon 16	8 779 85 006	16,0	48,0	70,0	54,0
Weldon 18	8 779 85 007	18,0	50,0	70,0	60,0
Weldon 20	8 779 86 004	20,0	52,0	70,0	60,0
Weldon ¼"	8 779 82 006	¼"	25,0	70,0	60,0
Weldon ⅜"	8 779 83 007	⅜"	32,0	70,0	60,0
Weldon ½"	8 779 84 020	½"	32,0	70,0	60,0
Weldon ⅝"	8 779 84 021	⅝"	48,0	70,0	54,0
Weldon ¾"	8 779 85 013	¾"	52,0	70,0	60,0



- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request



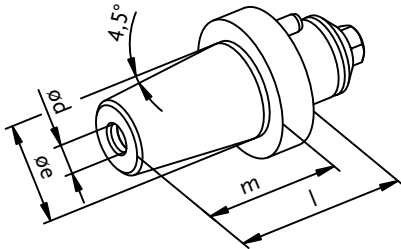
Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

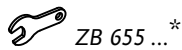
ZB HT 6 8 000

- ▶ Schnittstelle: *easy-quick* HT 6
interface: *easy-quick* HT 6

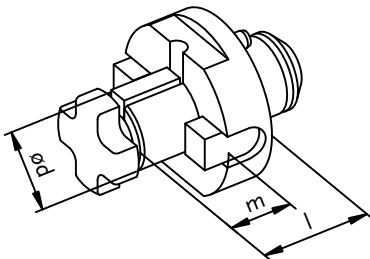


- ▶ Schrumpffutter
shrinking chuck

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
6	8 779 82 002	6,0	27,0	42,0	34,0
8	8 779 83 001	8,0	27,0	42,0	34,0
10	8 779 84 006	10,0	27,0	42,0	34,0
12	8 779 84 012	12,0	30,0	47,0	39,0
14	8 779 84 013	14,0	33,0	47,0	39,0
16	8 779 85 005	16,0	34,0	52,0	44,0
18	8 779 85 009	18,0	42,0	52,0	44,0
20	8 779 86 006	20,0	42,0	52,0	44,0
25	8 779 87 003	25,0	53,0	60,0	52,0
32	8 779 88 001	32,0	53,0	70,0	62,0

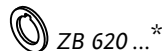
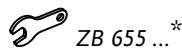


- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request



- ▶ Fräsdorn
arbor

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
Kombidorn 16 / universal arbor 16	8 779 84 005	16,0	33,0	17,0
Kombidorn 22 / universal arbor 22	8 779 85 002	22,0	35,0	19,0
Kombidorn 27 / universal arbor 27	8 779 86 003	27,0	40,0	21,0
Kombidorn 32 / universal arbor 32	8 779 87 002	32,0	47,0	24,0
Kombidorn ½" / universal arbor ½"	8 779 83 008	½"	40,0	14,3
Kombidorn ¾" / universal arbor ¾"	8 779 84 018	¾"	44,0	17,45
Kombidorn 1" / universal arbor 1"	8 779 85 012	1"	45,0	17,45
Kombidorn 1¼" / universal arbor 1¼"	8 779 86 008	1¼"	46,0	17,45



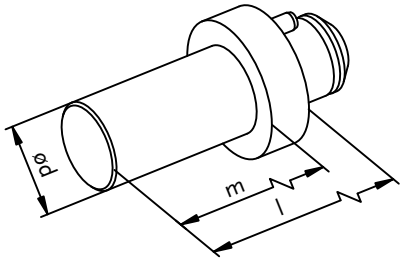
Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

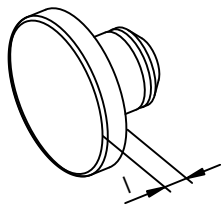
ZB HT 6 8 000

- ▶ Schnittstelle: *easy-quick* HT 6
interface: *easy-quick* HT 6



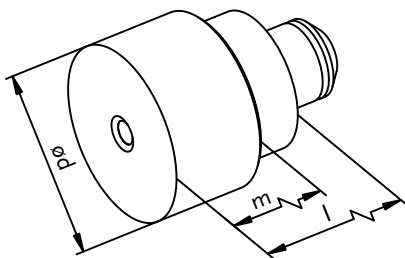
- ▶ Prüfdorn
test mandrel

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
40	8 208 89 000	40,0	200,0	184,0



- ▶ Verschlussstopfen
plug

Bestell-Nr. ref.-no.	l [mm]
8 779 89 000	10,0



- ▶ Rohling
blank

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
80	8 779 89 001	80,0	160,0	145,0



Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

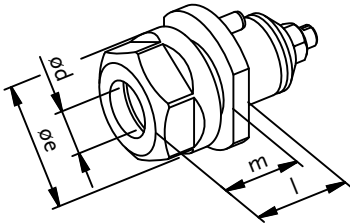
ZB HT 6 8 000

easy-quick



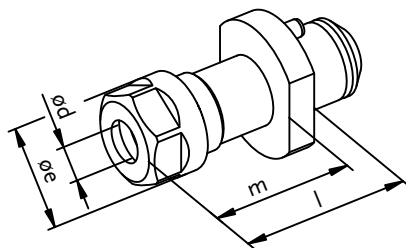
HT 7

- Schnittstelle: *easy-quick* HT 7
interface: *easy-quick* HT 7



- Spannzangenaufnahme
collet chuck

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
ER 25	8 779 95 001	0,5 - 16,0	42,0	38,0	30,0
ER 32	8 779 96 002	1,0 - 20,0	50,0	43,0	35,0
ER 40	8 779 97 002	2,0 - 30,0	63,0	44,0	36,0



- Spannzangenaufnahme lang
collet chuck long

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
ER 20	8 779 94 006	0,5 - 13,0	34,0	80,0	72,0
ER 25	8 779 95 004	0,5 - 16,0	42,0	80,0	72,0
ER 32	8 779 96 005	1,0 - 20,0	50,0	80,0	72,0



Darstellung symbolisch
symbolic drawing

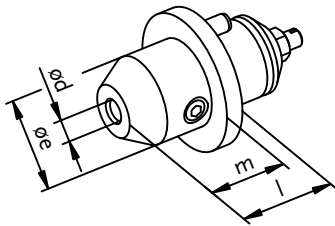
- Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

ZB HT 7 9 000

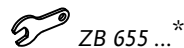
Wechseleinsätze für *easy-quick* inserts for *easy-quick*

- ▶ Schnittstelle: *easy-quick* HT 7
interface: *easy-quick* HT 7



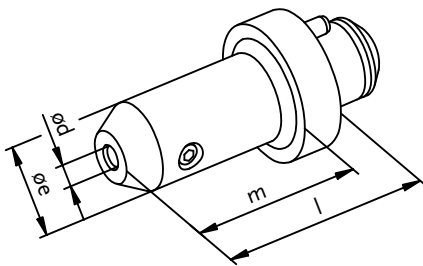
- ▶ Weldon
Weldon

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 92 000	6,0	25,0	32,0	24,0
Weldon 8	8 779 93 000	8,0	28,0	32,0	24,0
Weldon 10	8 779 94 001	10,0	35,0	35,0	27,0
Weldon 12	8 779 94 000	12,0	42,0	35,0	27,0
Weldon 14	8 779 94 002	14,0	44,0	35,0	27,0
Weldon 16	8 779 95 000	16,0	48,0	35,0	27,0
Weldon 18	8 779 95 003	18,0	50,0	35,0	27,0
Weldon 20	8 779 96 000	20,0	52,0	35,0	27,0
Weldon 25	8 779 97 000	25,0	72,0	38,0	30,0
Weldon 32	8 779 98 000	32,0	72,0	50,0	29,0
Weldon ¼"	8 779 92 003	¼"	25,0	32,0	24,0
Weldon ⅜"	8 779 93 004	⅜"	35,0	35,0	27,0
Weldon ½"	8 779 94 011	½"	42,0	35,0	27,0
Weldon ⅝"	8 779 94 012	⅝"	48,0	35,0	27,0
Weldon ¾"	8 779 95 009	¾"	52,0	35,0	27,0
Weldon 1"	8 779 97 004	1"	72,0	38,0	30,0
Weldon 1¼"	8 779 97 005	1¼"	72,0	50,0	29,0

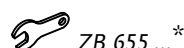


- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request

- ▶ Weldon lang
Weldon long



Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
Weldon 6	8 779 92 001	6,0	25,0	80,0	72,0
Weldon 8	8 779 93 001	8,0	28,0	80,0	72,0
Weldon 10	8 779 94 003	10,0	35,0	80,0	72,0
Weldon 12	8 779 94 004	12,0	42,0	80,0	72,0
Weldon 14	8 779 94 005	14,0	44,0	80,0	72,0
Weldon 16	8 779 95 005	16,0	48,0	80,0	72,0
Weldon 18	8 779 95 006	18,0	50,0	80,0	72,0
Weldon 20	8 779 96 004	20,0	52,0	80,0	72,0
Weldon ¼"	8 779 92 004	¼"	25,0	80,0	72,0
Weldon ⅜"	8 779 93 006	⅜"	35,0	80,0	72,0
Weldon ½"	8 779 94 013	½"	42,0	80,0	72,0
Weldon ⅝"	8 779 94 014	⅝"	48,0	80,0	72,0
Weldon ¾"	8 779 95 010	¾"	52,0	80,0	72,0
Weldon 1"	8 779 97 006	1"	72,0	80,0	72,0



- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request



Darstellung symbolisch
symbolic drawing

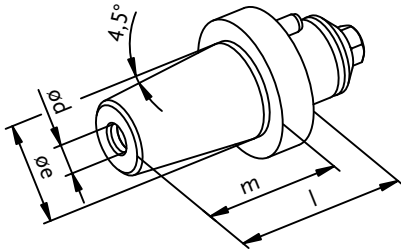
- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

ZB HT 7 9 000

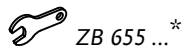
easy-quick HT 7

- ▶ Schnittstelle: *easy-quick* HT 7
interface: *easy-quick* HT 7

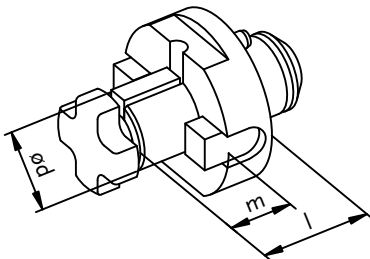


- ▶ Schrumpffutter
shrinking chuck

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	ø e [mm]	l [mm]	m [mm]
6	8 779 92 002	6,0	27,0	42,0	34,0
8	8 779 93 002	8,0	27,0	42,0	34,0
10	8 779 94 007	10,0	27,0	42,0	34,0
12	8 779 94 008	12,0	30,0	47,0	39,0
14	8 779 94 009	14,0	32,0	52,0	44,0
16	8 779 95 007	16,0	34,0	52,0	44,0
18	8 779 95 008	18,0	42,0	52,0	44,0
20	8 779 96 006	20,0	42,0	52,0	44,0
25	8 779 97 003	25,0	53,0	60,0	52,0
32	8 779 98 001	32,0	53,0	70,0	62,0

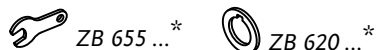


- ▶ Weitere Abmessungen ab ød=3 mm auf Anfrage
further dimension from ød=3 mm on request



- ▶ Fräsdorn
arbor

Spannsystem clamping system	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
Kombidorn 22 / universal arbor 22	8 779 95 002	22,0	42,0	19,0
Kombidorn 27 / universal arbor 27	8 779 96 001	27,0	44,0	21,0
Kombidorn 32 / universal arbor 32	8 779 97 001	32,0	47,0	24,0
Kombidorn 40 / universal arbor 40	8 779 98 002	40,0	50,0	27,0
Kombidorn ½" / universal arbor ½"	8 779 93 007	½"	40,0	14,3
Kombidorn ¾" / universal arbor ¾"	8 779 94 015	¾"	44,0	17,45
Kombidorn 1" / universal arbor 1"	8 779 95 011	1"	46,0	17,45
Kombidorn 1¼" / universal arbor 1¼"	8 779 96 009	1¼"	46,0	17,45
Kombidorn 1½" / universal arbor 1½"	8 779 97 007	1½"	54,0	23,8



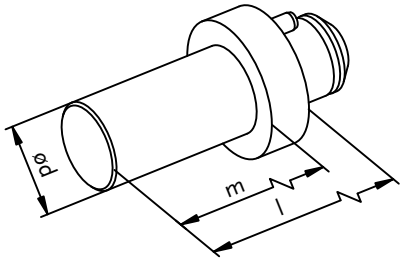
Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

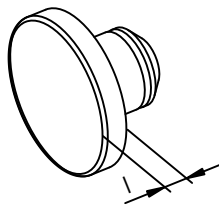
ZB HT 7 9 000

- ▶ Schnittstelle: *easy-quick* HT 7
interface: *easy-quick* HT 7



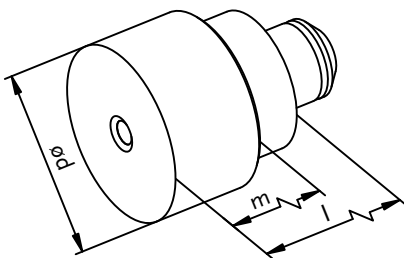
- ▶ Prüfdorn
test mandrel

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
40	8 208 99 000	40,0	200,0	182,0



- ▶ Verschlussstopfen
plug

Bestell-Nr. ref.-no.	l [mm]
8 779 99 000	12,0



- ▶ Rohling
blank

Nenngröße nominal size	Bestell-Nr. ref.-no.	ø d [mm]	l [mm]	m [mm]
100	8 779 99 001	100,0	180,0	165,0













Darstellung symbolisch
symbolic drawing

- ▶ Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

ZB HT 7 9 000

Symbole symbols	Zubehörblatt accessory sheet
 ZB 655 ... *	Bedienwerkzeuge set of wrenches
 ZB ER ... *	Spannzangen ER-DIN 6499 collets ER-DIN 6499
 ZB ET ... *	Gewindebohrzangen ET-DIN 6499 tapping collets ET-DIN 6499
 ZB GB ... *	Gewindebohrzangen GB tapping collets GB
 ZB 741 ... *	Dichtscheiben seal disks
 ZB 620 ... *	Fräsdornringe milling arbor spacers
 ZB HT ... *	<i>easy-quick</i>
 ZB UT ... *	u-tec
 ZB 776 ... *	Spannzangenfutter collet chuck
 ZB 73. ... *	Reduzierbuchsen reducing sleeves



Darstellung symbolisch
symbolic drawing

► Weitere Ausführungen auf Anfrage
further versions on request

* Nicht im Lieferumfang enthalten
* not included in delivery

CENTRALA TECHNICZNA
ELTECH® 

V, 5b^•d^`à`q |K

Ô^} d a^&@ & } a ŠVÒPÁ] È Á È È

~ |È a!^& } a È È Ì È È Á , ã) æ
c |È Á Á Ì Á È È Á Á Á Á Ì Á È È

^|c&@ ^|c&@ { È |ÁÁ , , È|c&@ { È |

Hauptsitz/headquarters

heimatec® GmbH
Präzisionswerkzeuge
Carl-Benz-Straße 4
D- 77871 Renchen
Postfach 11 36
D- 77867 Renchen
Tel.: +49 (78 43) 94 66 0
Fax: +49 (78 43) 94 66 66
www.heimatec.de
info@heimatec.de

heimatec® Inc.
16 E. Piper Lane Suite 121
USA- 60070 Prospect Heights IL
Tel.: +1 (847) 749 0633
Fax: +1 (847) 749 2445
www.heimatecinc.com
info@heimatecinc.com

heimatec® - Ost, JSC
ul. Kozjubinskogo 4 office 209
RUS- 121351 Moskau
Tel.: +7 (495) 648 69 19
Fax: +7 (495) 648 69 19
www.heimatec-ost.ru
sales@heimatec-ost.ru

