



Workpiece Clamping

Collets for Workpiece Clamping
Collet Chucks for Workpiece Clamping

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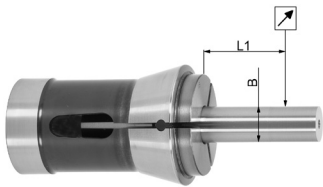
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Concentricity Charts Collets DIN 6341 and DIN 6343

Concentricity DIN 6341 and DIN 6343



B mm	L1 mm	DIN Class 2
up to 1,0	3	0,015
over 1,0 to 1,6	6	0,020
1,6 to 3,0	10	
3,0 to 6,0	16	
6,0 to 10,0	25	0,030
10,0 to 18,0	40	
18,0 to 24,0	50	
24,0 to 30,0	60	0,040
30,0 to 50,0	80	
50,0 to 60,0	100	

For applications which require highest concentricity, it is absolutely necessary to pay attention to the complete system (machine spindle, collet acceptance, clamping nut, collet and cutting tool).

Draw-in Collets

Concentricity and repeatability: To DIN 6341 on page 2

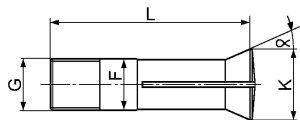
Application: To clamp work pieces after turning, e.g. grinding and devices with high accuracy and clamping forces, best results are obtained when using close toleranced material and the correct size collet

Bore execution: Plain, see B in the chart

Collapse: h8, i.e. only nominal size can be clamped

Special features: Higher clamping forces as dead length collets, but axial movement while clamping

Draw-in Collets DI



E-No. FM-No. DIN 6341	Order-No.	F	K	L	α	B	Profile	from-to	steps
355E FM845e	1030801	20	28	117,5	17°30'	G	●	1,5-18,0	0,5
		G	SG20x2						
386E FM613 DIN 6341 K32	1031901	32	45	110	20°	G	●	1,0-29,0	0,5
	1032100	G	TR32x1,5				●	29,5-30,0 *	0,5
		Set 27parts						●	3,0-29,0
	1032200	Set 53parts					●	3,0-29,0	0,5

* max. insertion depth 11 mm (drilling at the top)

Ordering examples:

173E FM1148-IA = Order-No. 1417300

386E FM613 ● 20,0 mm = Order-No. 10319012000

386E FM613 Set 27parts = Order-No. 1032100

Dead Length Collets

Concentricity and repeatability: To DIN 6343 on page 2

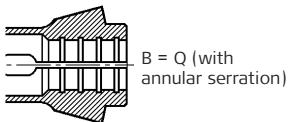
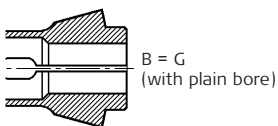
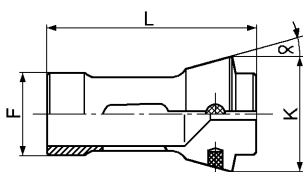
Application: For workpiece clamping (bar or chuck work) in conventional single spindle lathes and CNC-turning machines directly in the spindle or in a collet chuck (see pages 6 and 7) • plain bores are mainly used in counter spindle of CNC-turning machines

Bore execution: See B in the chart • with plain bore or annular serration

Collapse: hg, i.e. only nominal size can be clamped

Special features: Minimal axial movement of the collet while clamping, therefore component positioning when clamping is axially consistent

Remark: Interchangeable multi-range collets (see page 5) marked with * are available • dead length collets are designed for clamping bars • when clamping short components we recommend reducing the clamping pressure to help eliminate the risk of premature breakage



Dead Length Collets DL

E-No. FM-No. DIN 6343	Order-No.	F	K	L	α	B	Pro- file	from-to	steps
173E FM1148 * DIN 6343 48-R42	1012801	48	60	94	15°	G	●	1,0-8,0	0,5
	1012810					Q	●	8,5-42,0	0,5
	1012803					G	●	9,0-42,0	1,0
							●	6,0-12,0	1,0
							●	13,0-17,0	1,0
1012802	Q	■	19,0•22,0•24,0•27,0• 30,0•32,0•36,0	1,0					
185E FM1149 * DIN 6343 66-R60	1013001	66	84	110	15°	G	●	4,0-8,0	1,0
	1013003					Q	●	9,0-60,0	1,0
						G	●	8,0-12,0	1,0
							●	13,0-17,0	1,0
	1013002					Q	●	19,0•22,0•24,0•27,0• 30,0•32,0•36,0•38,0• 41,0•46,0•50,0	1,0
						G	■	7,0-12,0	1,0
						Q	■	13,0•14,0•16,0•18,0• 20,0•22,0•25,0•28,0• 30,0•32,0•36,0•40,0	1,0

Emergency Dead Length Collets

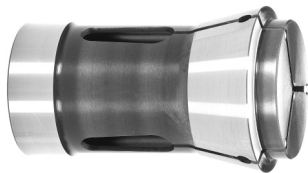
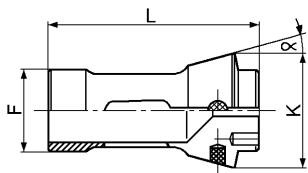
Concentricity and repeatability: Best concentricity with high flexibility

Application: For workpiece clamping (bar or chuck work) as per series 100 dead length collets (see pages 6 and 7) • emergency collets are not intended for volume production

Bore execution: Plain and pre-drilled as the chart

Collapse: h₉, i.e. only nominal size can be clamped

Special features: Hardened and tempered to 45 HRC • completely ground and pre-drilled (Ø see chart) • enable the customer to machine the collet bore to suit their requirement • minimum axial movement of collet while clamping



Emergency Dead Length Collets DL-V

E-No. FM-No.	Order-No.	F	K	L	α	B	Profile	Bore (pre-drilled)
173E FM1148-V	1012801	48	60	94	15°	G	●	3,0
185E FM1149-V	1013001	66	84	110	15°	G	●	4,0

Operating instructions:

By means of three fixing pins, which can be inserted from the grinding face, the emergency collet can be clamped in the collet chuck and be machined directly in the machine to the required bore-Ø or to a step bore.

Ordering examples:

173E FM1148 ■ 20,0 mm = Order-No. 10128022000

173E FM1148-V = Order-No. 1012801

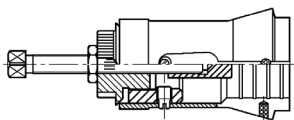
Inner Stops for Dead Length Collets

Application: For collets DIN 6343

Special features: Simple, low priced and in spite of this a fully functional inner stop for collets to DIN 6343 • can be used for ●, ● and ■

• absolutely firm seat • quick assembly • collet shanks are not deformed

• clamping of the collet is not effected • can also be used as stop for hollow parts



Inner Stop for Dead Length Collets DL-IA

for E-No. FM-No.	Order-No.
173E FM1148-IA	1417300
185E FM1149-IA	1418500

Assembly:

Screw in the three (resp. four) cross screws totally and insert the stop into the collet, so that the cross screws are visible in the slots of the collet. Now screw out the cross screws and tighten the stop with the lock-nut.

Multi-Range Collets Rubber-Flex®

Concentricity and repeatability: To DIN 6343 on page 2

Application: For workpiece clamping (bar or chuck work) in conventional single spindle lathes and CNC-turning machines directly in the spindle or in a collet chuck (see pages 6 and 7)

Collapse: Nominal size reduced by T

Special features: Interchangeable with the corresponding DIN 6343 steel collet, i.e. a different pressure sleeve, cap nut or additional clamping device is not required • minimal axial movement of the collet while

clamping, therefore component positioning when clamping is axially consistent • collet external taper corresponds to the taper of the chuck pressure sleeve or machine tool spindle, which guarantees an axially parallel clamping pressure along the entire bore length and results in a higher grip force compared to dead-length collets • safe opening by high rubber tension, which prevents the segmented collet from sticking • resistant against coolant and heat up to 100° C • provides a perfect seal against coolant and swarf



T = collapse
 B = G (with Plain Bore)

Rubber-Flex RFG with Plain Bore

E-No. FM-No.	Order-No.	Series	T	B	Profile	from-to	steps
775E FM1148-RFG	1703610	36	-2,0	G	●	9,0-43,0	2,0
780E FM1149-RFG	1705210	52	-2,0	G	●	21,0-61,0	2,0

Bore execution: With plain bore

Special features: The 775E FM1148-RFG can be used on the Index synchronised spindle (clamping tolerance -1 mm, max. stroke is 2,1 mm) • when clamping short parts the collet must be supported in the rear



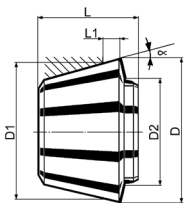
T = collapse
 B = Z (with Full-Grip Serration)

Rubber-Flex RF with Full-Grip Serration

E-No. FM-No.	Order-No.	Series	T	B	Profile	from-to	steps
775E FM1148-RF	1703601	36	-2,0	Z	●	13,0-43,0	2,0
780E FM1149-RF	1705201	52	-2,0	Z	●	21,0-61,0	2,0

Bore execution: With Full-Grip serration for highest axial and radial clamping forces

Special features: Especially intended for gripping black bar on bar machines



Technical Data

E-No. equivalent	FM-No.	L	L1 min.	L1 max.	D min. approx.	D max. approx.	D1	D2	α	max.-Ø
173E	FM1148-RF+G	39/36	1	6,5	59,5	62,4	59	51	14°45'	45 *
185E	FM1149-RF+G	48	1	6,5	83,5	86,4	83	75	14°45'	65 *

* Plain bore diameters can be enlarged by re-grinding to the maximum stated diameter
 Intermediate dimensions are available on request!

Ordering examples:

770E FM1145-RFG Ø 26,0 mm (Collapse 2 mm – clamping range 24-26 mm) = Order-No. 17024102600

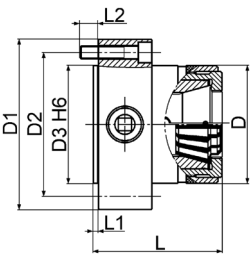
780E FM1149-RF Ø 61,0 mm (Collapse 2 mm – clamping range 59-61 mm) = Order-No. 17052016100

Manually Operated Collet Chucks with Safety Key

Application: Various possibilities on conventional as well as on CNC-machines, e.g. lathes, drills, mills and grinders • ideal for small production batches • can be used on pallets and machining centre tables (see examples at the bottom)

Special features: Wear resistant construction • durable, simple design • contamination and dirt ingress almost eliminated • higher clamping force and improved concentricity due to holding workpieces with collets

(see concentricity table on page 3) compared with 3 jaw chucks • large clamping range with free bar passage for bar material • low surface stresses due to large clamping surface area of the collets – thus no pressure marks on the workpiece profile • standard-, emergency-, multi-range- and profiled collets can be inserted • profiled collets eliminate the time wasting exchange of chucks and/or jaws when changing from round to profiled material • no problem using on machines with CE-mark



Manually Operated Collet Chucks with Flat Back Mounting

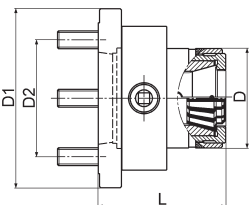
Description	Order-No.	Mount	Clamping range	Collets Pages 3, 4 and 5
HSPF40Z/130	7124000	cyl. Ø 130 mm	1,0-42,0 mm	FM1148•V•RF
HSPF60Z/170*	7136000	cyl. Ø 170 mm	4,0-60,0 mm	FM1149•V•RF

Flange execution: Universal application due to flat back mounting for mounting on special or intermediate flanges
Extend of delivery: With safety key • without collets

Technical Data

Description	Speed max. r.p.m.	L	L1	L2	D	D1	D2	D3 H6	Number of Fixing Screws DIN 912 12.9
HSPF40Z/130	5000	95	4	15	90	130	110	90	3xM10x45
HSPF60Z/170*	4000	125	6	15	118	180	133,4	170	3xM12x50

* cyl. mount inwards (see data sheet)



Manually Operated Collet Chucks with Short Taper DIN 55026/ISO 702/I

Description	Order-No.	Short Taper	Clamping range	Collets Pages 3, 4 and 5
HSPF40/5.1	7126500	Size 5	1,0-42,0 mm	FM1148•V•RF
HSPF40/6.1	7126600	Size 6		
HSPF60/6.1	7138600	Size 6	4,0-60,0 mm	FM1149•V•RF

Flange execution: Short taper DIN 55026/ISO 702/I

Extend of delivery: Chuck complete with adaptor plate, safety key and screws • without collets

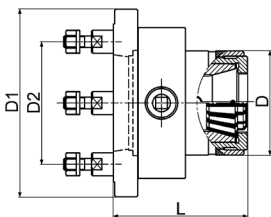
Technical Data

Description	Speed max. r.p.m.	L	D	D1	D2	Number of Screws
HSPF40/5.1	5000	123	90	137	104,8	4xM10-DIN912
HSPF40/6.1	5000	125		167	133,4	4xM12-DIN912
HSPF60/6.1	4000	157	118	186	133,4	4xM12-DIN912

Ordering example:

HSPF40/Z130 = Order-No. 7124000

Manually Operated Collet Chucks with Safety Key



Manually Operated Collet Chucks with Short Taper DIN 55027/ISO 702/III

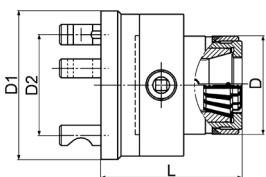
Description	Order-No	Short Taper	Clamping range	Collets Pages 3, 4 and 5
HSPF40/5	7124500	Size 5	1,0-42,0 mm	FM1148•V•RF
HSPF40/6	7124600	Size 6		
HSPF60/6	7136600	Size 6	4,0-60,0 mm	FM1149•V•RF

Flange execution: Short taper DIN 55027/ISO 702/III

Extend of delivery: Chuck complete with adaptor plate, safety key and screws • without collets

Technical Data

Description	Speed max. r.p.m.	L	D	D1	D2	Number of Screws
HSPF40/5	5000	116	90	137	104,8	4xM10
HSPF40/6	5000	127		167	133,4	4xM12
HSPF60/6	4000	152	118	186	133,4	4xM12



Manually Operated Collet Chucks with Short Taper DIN 55029/ISO 702/II (Camlock)

Description	Order-No	Short Taper	Clamping range	Collets Pages 3, 4 and 5
HSPF40/C4	7125400	C4"	1,0-42,0 mm	FM1148•V•RF
HSPF40/C5	7125500	C5"		
HSPF40/C6	7125600	C6"	4,0-60,0 mm	FM1149•V•RF
HSPF60/C6	7137600	C6"		

Flange execution: Short taper DIN 55029/ISO 702/II (Camlock)

Extend of delivery: Chuck complete with adaptor plate, safety key and Camlock bolts • without collets

Technical Data

Description	Speed max. r.p.m.	L	D	D1	D2	Number of Camlock Bolts
HSPF40/C4	5000	123	90	131	82,6	3xM10x1
HSPF40/C5	5000			137	104,8	6xM12x1
HSPF40/C6	5000	131	118	167	133,4	6xM16x1,5
HSPF60/C6	4000	158		180	133,4	6xM16x1,5

Ordering example:

HSPF40/C5 = Order-No. 7125500



And all runs smoothly.

FAHRION offers a wide selection of precision collets, precision collet chucks as well as precision products for workpiece clamping which fulfil maximum requirements in terms of concentricity, service life and manufacturing quality. In doing so, FAHRION pays particular attention to user-friendly technology oriented towards the practical requirements of the users, which is constantly advanced.

We reserve the right to change the design and specification of any product shown within this catalogue, which does not result in the adverse function of the corresponding tools.

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FAHRION Vertriebs-GmbH
Forststraße 54
73667 Kaisersbach
Germany
Phone +49 7184 9282-0
Fax +49 7184 9282-92
info@fahrion.de
www.fahrion.de
www.shop.fahrion.de