



Your technology partner for cost-effective machining

FixReam 700

FixReam 700

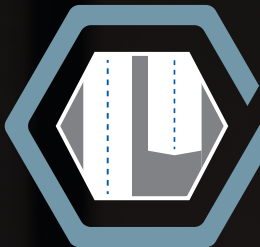
Sustainable high-performance reamers

With the FixReam 700 reamers, BECK is launching a sustainable tool onto the market. The cylindrical shank reamers with brazed cutting edges are characterised by their reusability, which is achieved by replacing the cutting edges and regrinding.

A tool can be reground up to twice before new cutting edges have to be brazed in. After this, two regrinds, another change of cutting edge and a further two regrinds are possible. One reamer therefore has a service life of nine times.

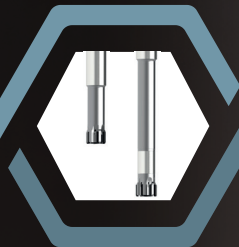
During servicing, the tool is minimally widened with an expansion screw, allowing the chamfer and diameter to be precisely reground. This reduces tool costs by up to 15 per cent compared to versions without an expansion function.

2 VARIANTS



Through bore
and blind bore

2 LENGTHS



Short and long
design

CONFIGURATION



Diameter range
from 9.9 to 32.2 mm

MATERIAL SUITABILITY

Suitable for all material groups **P M K N S**

NEW

M



NEW

N



NEW

S





UP TO 9 TOOL USES POSSIBLE

Sustainable, resource-saving and cost-effective



FixReam 700 life cycle



Article overview FixReam 700

Product-class	Type of bore	Material suitability												
		P					M	K	N			S		
		1-2	3	4	5	6	1-3	1-2	1	2	3	1-3	4-5	
Performance TUNE	 Through bore													
														
														
														
														
	 Blind bore													
														
														
														
														

* For surfaces Ra < 2 µm

Configurable features



Diameter



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6



G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 / 3 µm (G variant, see page 35)



B042700

Expanding design, long, for through bore

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	110	6
15,900 - 18,899	16	180	12	50	130	125	6
18,900 - 25,899	20	200	12	60	140	135	6
25,900 - 32,200	25	210	12	60	150	145	6

B042200

Expanding design, short, for through bore

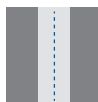
Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,899	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

Step 1:
Type of bore



Step 2:
Material suitability



Step 3:
Design



Step 4:
Product category



Step 5:
Preconfigured diameters or configuration



	Design			Preferred series			
	d ₁	Lead	Cutting material	Long version	Page	Short version	Page
	9.900 - 32.200	LA1G	CU111	B042700 	7	B042200 	13
		LC1G	HP421		8		14
		LA1G	HP905		9		15
		LA1G	CP905		10		16
		LA1G	HP622		11		17
		LC1G	HP625		12		18
	9.900 - 32.200	LB1G	CU111	B042701 	19	B042201 	25
		LD1G	HP421		20		26
		LB1G	HP905		21		27
		LB1G	CP905		22		28
		LB1G	HP622		23		29
		LD1G	HP625		24		30

B042701

Expanding design, long, for blind bore

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	100	6
15,900 - 18,990	16	180	12	50	130	113	6
18,900 - 25,899	20	200	12	60	140	120	6
25,900 - 32,200	25	210	12	60	150	130	6

B042201

Expanding design, short, for blind bore

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	38	6
15,899 - 18,899	16	100	12	50	50	38	6
18,900 - 25,899	20	120	12	60	60	45	6
25,900 - 32,200	25	135	12	60	75	60	6

FixReam 700

Reconditioning enables the cost per part to be considerably reduced

The FixReam 700 was developed to increase economic efficiency through effective reconditioning. Thanks to an expansion screw, the multi-bladed reamer can be expanded in diameter before regrinding. As a result, all functional surfaces can be reground, both on the lead as well as on the tool diameter. This allows the reamer to be reused up to 9 times.

1 30% better roundness and cylindrical form

- Thanks to patented geometry

2 Optimal chip shape

- New, innovative leads enable better chip shape

3 Up to 9 uses

- Possible through expansion screw for compensation before regrinding



Features

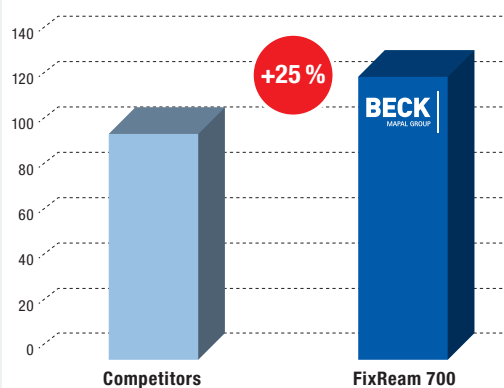
Configurable features:

- Ø area: 9.900 - 32.200 mm
- Bore diameter: Tolerance $\geq$ IT6
- Tool diameter: Tolerance $\geq 3 \mu\text{m}$ in increments of 0.001 mm

Dimensions:

- Available as a short and long design
- For through bores and blind bores
- Preferred series available from stock in H7: 10.000 - 32.000 mm

TOOL LIFE ACHIEVED [%]



Workpiece material: 42CrMoS4
 Machining length: 45.000 mm
 Nominal ø: 12.000 mm
 n: 3448 rpm
 v_f : 3448 mm/min
 v_c : 130 m/min
 z: 6

FixReam 700

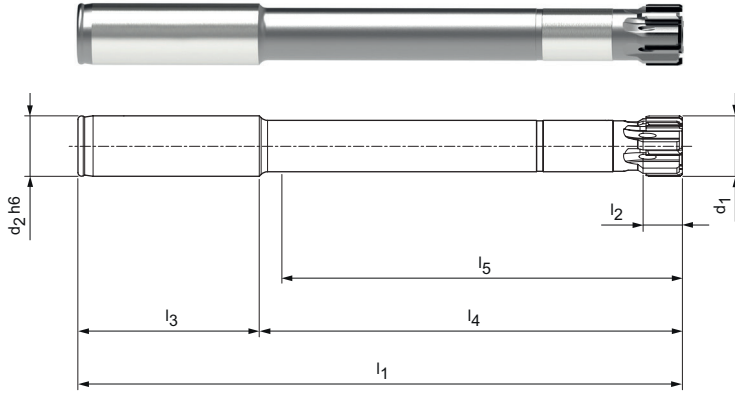
Expanding design, long, for through bore
B042700

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LA1G
Cutting material: CU111
Uncoated cermet

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Preferred series in H7

d ₁ H7	Dimensions						z	Specification	Order no.
	d ₂ h6	l ₁	l ₂	l ₃	l ₄	l ₅			
10,000	12	160	8	45	115	110	6	B042700010.00H7	31449035
12,000	12	160	8	45	115	110	6	B042700012.00H7	31449036
14,000	12	160	8	45	115	110	6	B042700014.00H7	31449037
16,000	16	180	12	50	130	125	6	B042700016.00H7	31449038
18,000	16	180	12	50	130	125	6	B042700018.00H7	31449039
20,000	20	200	12	60	140	135	6	B042700020.00H7	31449040
22,000	20	200	12	60	140	135	6	B042700022.00H7	31449041
24,000	20	200	12	60	140	135	6	B042700024.00H7	31449042
25,000	20	200	12	60	140	135	6	B042700025.00H7	31449043
28,000	25	210	12	60	150	145	6	B042700028.00H7	31449045
30,000	25	210	12	60	150	145	6	B042700030.00H7	31449046
32,000	25	210	12	60	150	145	6	B042700032.00H7	31449047

Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:

B0427000[Diameter][Tolerance]

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 3 μm (G variant, see cutting data)

G variant specification:

B0427000[Diameter][Tolerance]

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	110	6
15,900 - 18,899	16	180	12	50	130	125	6
18,900 - 25,899	20	200	12	60	140	135	6
25,900 - 32,200	25	210	12	60	150	145	6

IT6 tolerance example:

B042700016.350H6

Bore diameter d₁ = 16.350 H6

G variant example:

B042700016.350-3μm

Special tool diameter d₁ = 16.350 -3 μm

Dimensions in mm.

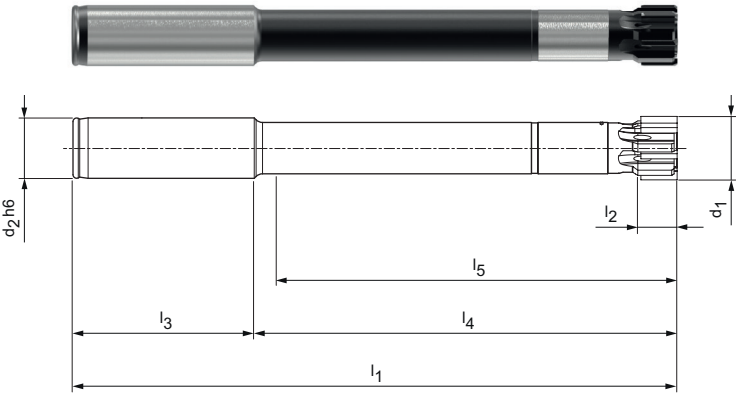
For cutting data recommendations, see end of chapter.

FixReam 700

Expanding design, long, for through bore
B042730

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LC1G
Cutting material: HP421
Coated solid carbide

Application:
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042730Ø[Diameter][Tolerance]LC1G-HP421

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042730GØ[Diameter][Tolerance]LC1G-HP421

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	110	6
15,900 - 18,899	16	180	12	50	130	125	6
18,900 - 25,899	20	200	12	60	140	135	6
25,900 - 32,200	25	210	12	60	150	145	6

IT6 tolerance example:
B042730Ø16.350H6LC1G-HP421

Bore diameter d₁ = 16.350 H6

G variant example:
B042730GØ16.350-5LC1G-HP421

Special tool diameter d₁ = 16.350 -5 µm

FixReam 700

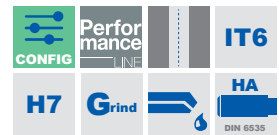
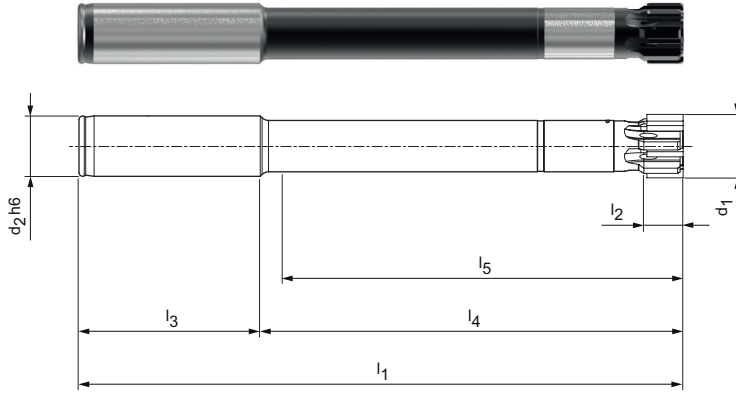
Expanding design, long, for through bore
B042710

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LA1G
Cutting material: HP905
Coated solid carbide

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Preferred series in H7

d ₁ H7	Dimensions						z	Specification	Order no.
	d ₂ h6	l ₁	l ₂	l ₃	l ₄	l ₅			
10,000	12	160	8	45	115	110	6	B042710010.00H7	31553844
12,000	12	160	8	45	115	110	6	B042710012.00H7	31553845
14,000	12	160	8	45	115	110	6	B042710014.00H7	31553846
16,000	16	180	12	50	130	125	6	B042710016.00H7	31553847
18,000	16	180	12	50	130	125	6	B042710018.00H7	31553848
20,000	20	200	12	60	140	135	6	B042710020.00H7	31553849
22,000	20	200	12	60	140	135	6	B042710022.00H7	31553850
24,000	20	200	12	60	140	135	6	B042710024.00H7	31553851
25,000	20	200	12	60	140	135	6	B042710025.00H7	31553852
28,000	25	210	12	60	150	145	6	B042710028.00H7	31553853
30,000	25	210	12	60	150	145	6	B042710030.00H7	31553854
32,000	25	210	12	60	150	145	6	B042710032.00H7	31553855

Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:

B0427100[Diameter][Tolerance]LA1G-HP905

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 μm (G variant, see page 35)

G variant specification:

B042710G0[Diameter][Tolerance]LA1G-HP905

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	100	6
15,900 - 18,990	16	180	12	50	130	113	6
18,900 - 25,899	20	200	12	60	140	120	6
25,900 - 32,200	25	210	12	60	150	130	6

IT6 tolerance example:

B042710016.350H6LA1G-HP905

Bore diameter d₁ = 16.350 H6

G variant example:

B042710G016.350-5LA1G-HP905

Special tool diameter d₁ = 16.350 -5 μm

Dimensions in mm.

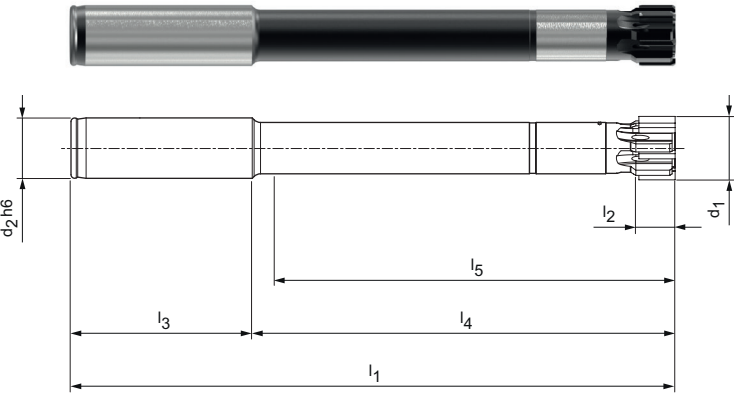
For cutting data recommendations, see end of chapter.

FixReam 700

Expanding design, long, for through bore
B042720

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LA1G
Cutting material: CP905
Coated cermet

Application:
For surfaces Ra < 2 µm.
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042720Ø[Diameter][Tolerance]LA1G-CP905

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042720GØ[Diameter][Tolerance]LA1G-CP905

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	110	6
15,900 - 18,899	16	180	12	50	130	125	6
18,900 - 25,899	20	200	12	60	140	135	6
25,900 - 32,200	25	210	12	60	150	145	6

IT6 tolerance example:
B042720Ø16.350H6LA1G-CP905

Bore diameter d₁ = 16.350 H6

G variant example:
B042720GØ16.350-5LA1G-CP905

Special tool diameter d₁ = 16.350 -5 µm

FixReam 700

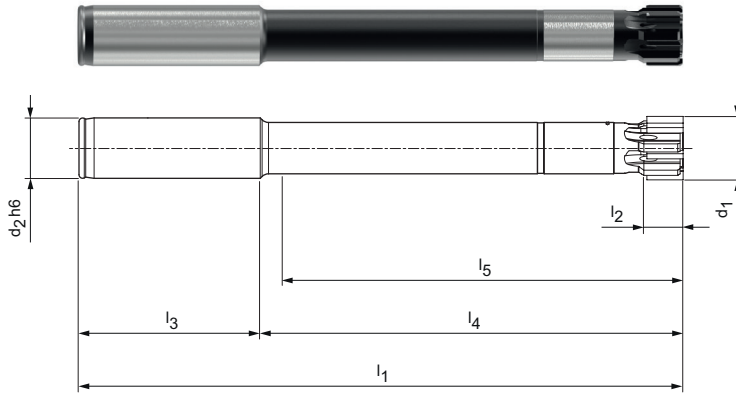
Expanding design, long, for through bore
B042750

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LA1G
Cutting material: HP622
Coated solid carbide

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance $\geq$ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance $\geq$ IT6

Specification:

B042750Ø[Diameter][Tolerance]LA1G-HP622

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances $\geq 5 \mu\text{m}$ (G variant, see page 35)

G variant specification:

B042750GØ[Diameter][Tolerance]LA1G-HP622

Dimensions of configurable series IT6

d_1	d_2	l_1	l_2	l_3	l_4	l_5	z
9,900 - 15,899	12	160	8	45	115	110	6
15,900 - 18,899	16	180	12	50	130	125	6
18,900 - 25,899	20	200	12	60	140	135	6
25,900 - 32,200	25	210	12	60	150	145	6

IT6 tolerance example:

B042750Ø16.350H6LA1G-HP622

Bore diameter $d_1 = 16.350 \text{ H6}$

G variant example:

B042750GØ16.350-5LA1G-HP622

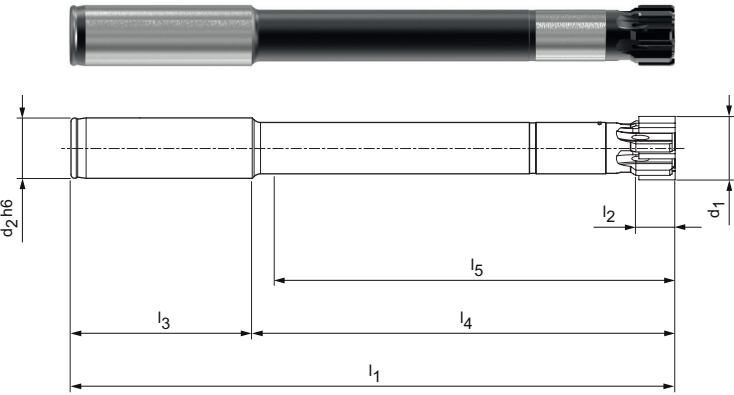
Special tool diameter $d_1 = 16.350 -5 \mu\text{m}$

FixReam 700

Expanding design, long, for through bore
B042740

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LC1G
Cutting material: HP625
Coated solid carbide

Application:
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042740Ø[Diameter][Tolerance]LC1G-HP625

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042740GØ[Diameter][Tolerance]LC1G-HP625

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	110	6
15,900 - 18,899	16	180	12	50	130	125	6
18,900 - 25,899	20	200	12	60	140	135	6
25,900 - 32,200	25	210	12	60	150	145	6

IT6 tolerance example:
B042740Ø16.350H6LC1G-HP625

Bore diameter d₁ = 16.350 H6

G variant example:
B042740GØ16.350-5LC1G-HP625

Special tool diameter d₁ = 16.350 -5 µm

FixReam 700

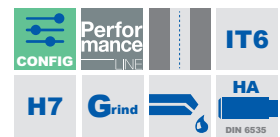
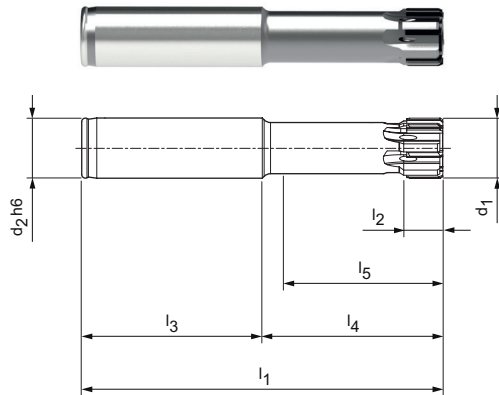
Expanding design, short, for through bore
B042200

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LA1G
Cutting material: CU111
Uncoated cermet

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Preferred series in H7

d ₁ H7	Dimensions						z	Specification	Order no.
	d ₂ h6	l ₁	l ₂	l ₃	l ₄	l ₅			
10,000	12	95	8	45	50	45	6	B042200010.00H7	31449002
12,000	12	95	8	45	50	45	6	B042200012.00H7	31449003
14,000	12	95	8	45	50	45	6	B042200014.00H7	31449004
16,000	16	100	12	50	50	45	6	B042200016.00H7	31449005
18,000	16	100	12	50	50	45	6	B042200018.00H7	31449006
20,000	20	120	12	60	60	55	6	B042200020.00H7	31449007
22,000	20	120	12	60	60	55	6	B042200022.00H7	31449008
24,000	20	120	12	60	60	55	6	B042200024.00H7	31449009
25,000	20	120	12	60	60	55	6	B042200025.00H7	31449030
28,000	25	135	12	60	75	70	6	B042200028.00H7	31449032
30,000	25	135	12	60	75	70	6	B042200030.00H7	31449033
32,000	25	135	12	60	75	70	6	B042200032.00H7	31449034

Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:

B0422000[Diameter][Tolerance]LA1G-CU111

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 3 μm (G variant, see page 35)

G variant specification:

B042200G0[Diameter][Tolerance]LA1G-CU111

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,899	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:

B042200016.350H6LA1G-CU111

Bore diameter d₁ = 16.350 H6

G variant example:

B042200G016.350-3LA1G-CU111

Special tool diameter d₁ = 16.350 -3 μm

Dimensions in mm.

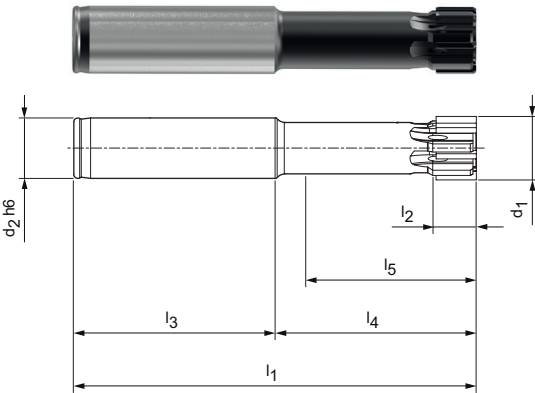
For cutting data recommendations, see end of chapter.

FixReam 700

Expanding design, short, for through bore
B042230

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LC1G
Cutting material: HP421
Coated solid carbide

Application:
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance $\geq$ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance $\geq$ IT6

Specification:
B042230Ø[Diameter][Tolerance]LC1G-HP421

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances $\geq 5 \mu\text{m}$ (G variant, see page 35)

G variant specification:
B042230GØ[Diameter][Tolerance]LC1G-HP421

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,990	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:
B042230Ø16.350H6LC1G-HP421

Bore diameter d₁ = 16.350 H6

G variant example:
B042230GØ16.350-5LC1G-HP421

Special tool diameter d₁ = 16.350 -5 μm

FixReam 700

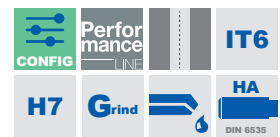
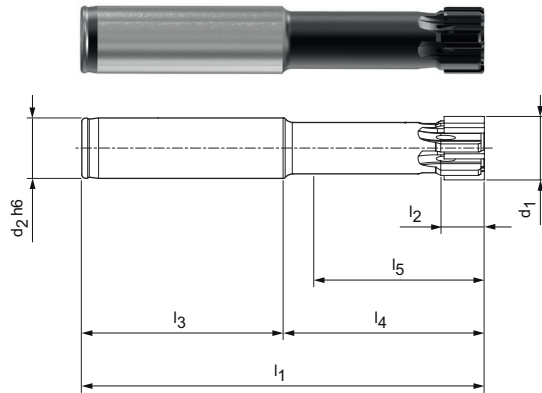
Expanding design, short, for through bore
B042210

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LA1G
Cutting material: HP905
Coated solid carbide

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Preferred series in H7

d ₁ H7	Dimensions						z	Specification	Order no.
	d ₂ h6	l ₁	l ₂	l ₃	l ₄	l ₅			
10,000	12	95	8	45	50	45	6	B042210010.00H7	31553856
12,000	12	95	8	45	50	45	6	B042210012.00H7	31553857
14,000	12	95	8	45	50	45	6	B042210014.00H7	31553858
16,000	16	100	12	50	50	45	6	B042210016.00H7	31553859
18,000	16	100	12	50	50	45	6	B042210018.00H7	31553860
20,000	20	120	12	60	60	55	6	B042210020.00H7	31553861
22,000	20	120	12	60	60	55	6	B042210022.00H7	31553862
24,000	20	120	12	60	60	55	6	B042210024.00H7	31553863
25,000	20	120	12	60	60	55	6	B042210025.00H7	31553865
28,000	25	135	12	60	75	70	6	B042210028.00H7	31553866
30,000	25	135	12	60	75	70	6	B042210030.00H7	31553867
32,000	25	135	12	60	75	70	6	B042210032.00H7	31553868

Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:

B0422100[Diameter][Tolerance]LA1G-HP905

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 μm (G variant, see page 35)

G variant specification:

B042210G0[Diameter][Tolerance]LA1G-HP905

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,899	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:

B042210016.350H6LA1G-HP905

Bore diameter d₁ = 16.350 H6

G variant example:

B042210G016.350-5LA1G-HP905

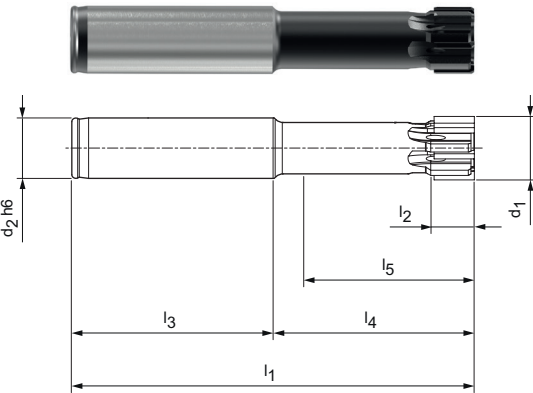
Special tool diameter d₁ = 16.350 -5 μm

Dimensions in mm.

For cutting data recommendations, see end of chapter.

FixReam 700

Expanding design, short, for through bore
B042220



Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042220Ø[Diameter][Tolerance]LA1G-CP905

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042220GØ[Diameter][Tolerance]LA1G-CP905

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,990	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:
B042220Ø16.350H6LA1G-CP905

Bore diameter d₁ = 16.350 H6

G variant example:
B042220GØ16.350-5LA1G-CP905

Special tool diameter d₁ = 16.350 -5 µm

FixReam 700

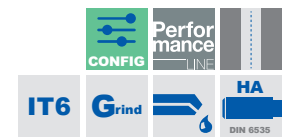
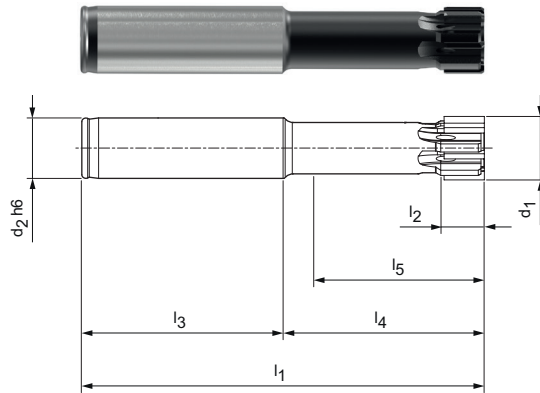
Expanding design, short, for through bore
B042250

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LA1G
Cutting material: HP622
Coated solid carbide

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance $\geq$ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance $\geq$ IT6

Specification:

B042250Ø[Diameter][Tolerance]LA1G-HP622

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances $\geq 5 \mu\text{m}$ (G variant, see page 35)

G variant specification:

B042250GØ[Diameter][Tolerance]LA1G-HP622

Dimensions of configurable series IT6

d_1	d_2	l_1	l_2	l_3	l_4	l_5	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,990	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:

B042250Ø16.350H6LA1G-HP622

Bore diameter $d_1 = 16.350 \text{ H6}$

G variant example:

B042250GØ16.350-5LA1G-HP622

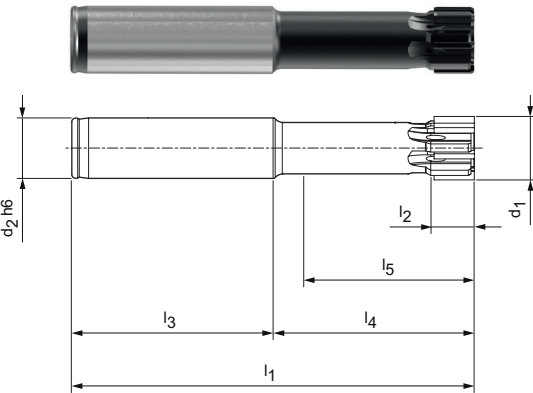
Special tool diameter $d_1 = 16.350 -5 \mu\text{m}$

FixReaam 700

Expanding design, short, for through bore
B042240

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LC1G
Cutting material: HP625
Coated solid carbide

Application:
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features

Bore diameter tolerance ≥ IT6:
- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042240Ø[Diameter][Tolerance]LC1G-HP625

G variants:
- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042240GØ[Diameter][Tolerance]LC1G-HP625

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,990	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:
B042240Ø16.350H6LC1G-HP625

Bore diameter d₁ = 16.350 H6

G variant example:
B042240GØ16.350-5LC1G-HP625

Special tool diameter d₁ = 16.350 -5 µm

FixReam 700

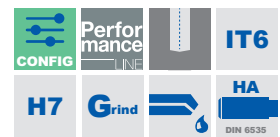
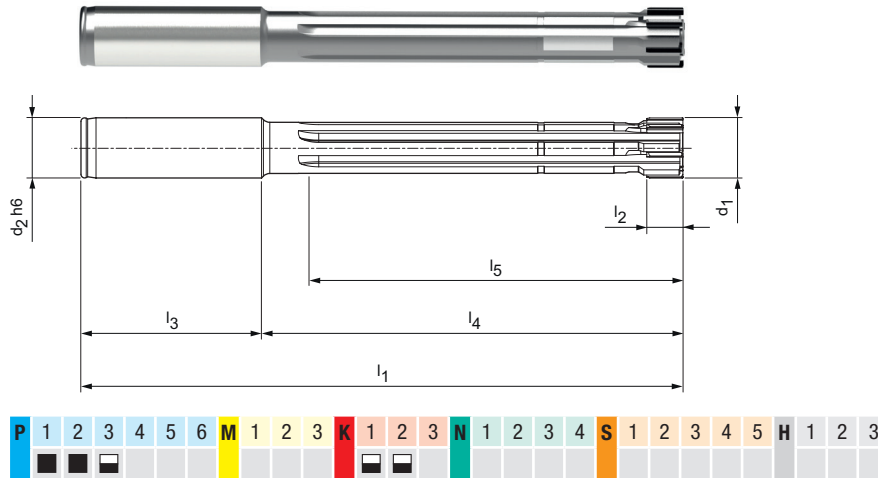
Expanding design, long, for blind bore
B042701

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LB1G
Cutting material: CU111
Uncoated cermet

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Preferred series in H7

d ₁ H7	Dimensions						z	Specification	Order no.
	d ₂ h6	l ₁	l ₂	l ₃	l ₄	l ₅			
10,000	12	160	8	45	115	100	6	B042701Ø10.00H7	31449061
12,000	12	160	8	45	115	100	6	B042701Ø12.00H7	31449062
14,000	12	160	8	45	115	100	6	B042701Ø14.00H7	31449063
16,000	16	180	12	50	130	114	6	B042701Ø16.00H7	31449064
18,000	16	180	12	50	130	115	6	B042701Ø18.00H7	31449065
20,000	20	200	12	60	140	120	6	B042701Ø20.00H7	31449066
22,000	20	200	12	60	140	120	6	B042701Ø22.00H7	31449067
24,000	20	200	12	60	140	120	6	B042701Ø24.00H7	31449068
25,000	20	200	12	60	140	120	6	B042701Ø25.00H7	31449069
28,000	25	210	12	60	150	130	6	B042701Ø28.00H7	31449071
30,000	25	210	12	60	150	130	6	B042701Ø30.00H7	31449072
32,000	25	210	12	60	150	130	6	B042701Ø32.00H7	31449073

Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:

B042701Ø[Diameter][Tolerance]LB1G-CU111

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 3 μm (G variant, see page 35)

G variant specification:

B042701GØ[Diameter][Tolerance]LB1G-CU111

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	100	6
15,900 - 18,990	16	180	12	50	130	113	6
18,900 - 25,899	20	200	12	60	140	120	6
25,900 - 32,200	25	210	12	60	150	130	6

IT6 tolerance example:

B042701Ø16.350H6LB1G-CU111

Bore diameter d₁ = 16.350 H6

G variant example:

B042701GØ16.350-3LB1G-CU111

Special tool diameter d₁ = 16.350 -3 μm

Dimensions in mm.

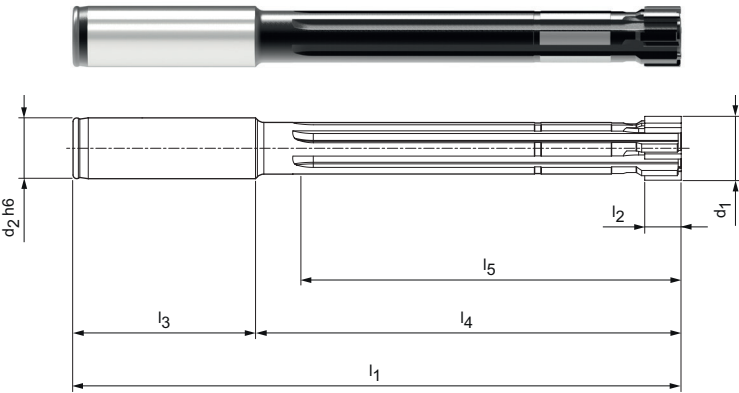
For cutting data recommendations, see end of chapter.

FixReam 700

Expanding design, long, for blind bore
B042731

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LD1G
Cutting material: HP421
Coated solid carbide

Application:
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042731Ø[Diameter][Tolerance]LD1G-HP421

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042731GØ[Diameter][Tolerance]LD1G-HP421

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	100	6
15,900 - 18,990	16	180	12	50	130	113	6
18,900 - 25,899	20	200	12	60	140	120	6
25,900 - 32,200	25	210	12	60	150	130	6

IT6 tolerance example:
B042731Ø**16.350**H6LD1G-HP421

Bore diameter d₁ = 16.350 H6

G variant example:
B042731GØ**16.350**-5LD1G-HP421

Special tool diameter d₁ = 16.350 -5 µm

FixReam 700

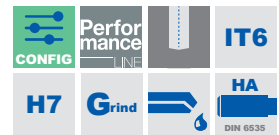
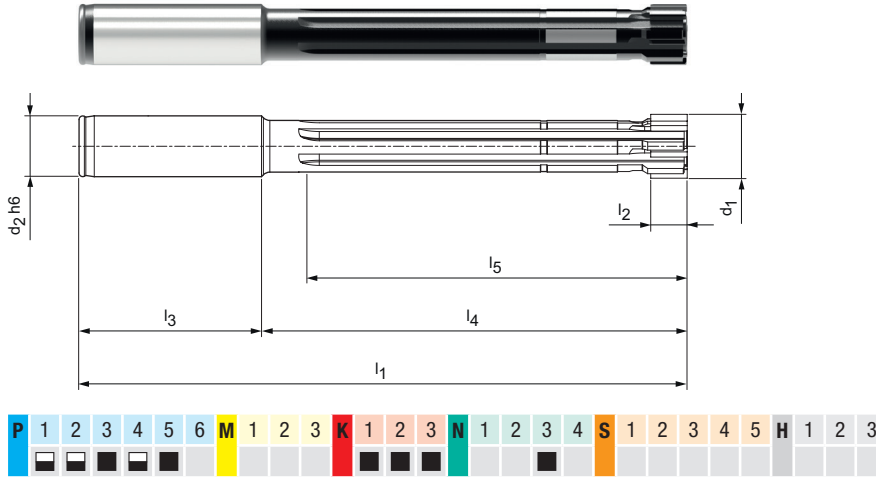
Expanding design, long, for blind bore
B042711

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LB1G
Cutting material: HP905
Coated solid carbide

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Preferred series in H7

d ₁ H7	Dimensions						z	Specification	Order no.
	d ₂ h6	l ₁	l ₂	l ₃	l ₄	l ₅			
10,000	12	160	8	45	115	100	6	B042711Ø10.00H7	31553881
12,000	12	160	8	45	115	100	6	B042711Ø12.00H7	31553882
14,000	12	160	8	45	115	100	6	B042711Ø14.00H7	31553883
16,000	16	180	12	50	130	114	6	B042711Ø16.00H7	31553884
18,000	16	180	12	50	130	115	6	B042711Ø18.00H7	31553885
20,000	20	200	12	60	140	120	6	B042711Ø20.00H7	31553886
22,000	20	200	12	60	140	120	6	B042711Ø22.00H7	31553887
24,000	20	200	12	60	140	120	6	B042711Ø24.00H7	31553888
25,000	20	200	12	60	140	120	6	B042711Ø25.00H7	31553889
28,000	25	210	12	60	150	130	6	B042711Ø28.00H7	31553890
30,000	25	210	12	60	150	130	6	B042711Ø30.00H7	31553891
32,000	25	210	12	60	150	130	6	B042711Ø32.00H7	31553892

Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:

B042711Ø[Diameter][Tolerance]LB1G-HP905

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:

B042711GØ[Diameter][Tolerance]LB1G-HP905

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	100	6
15,900 - 18,990	16	180	12	50	130	113	6
18,900 - 25,899	20	200	12	60	140	120	6
25,900 - 32,200	25	210	12	60	150	130	6

IT6 tolerance example:

B042711Ø16.350H6LB1G-HP905

Bore diameter d₁ = 16.350 H6

G variant example:

B042711GØ16.350-5LB1G-HP905

Special tool diameter d₁ = 16.350 -5 µm

Dimensions in mm.

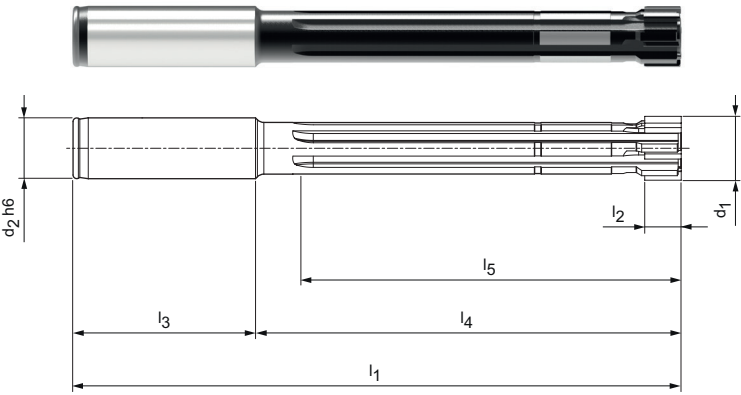
For cutting data recommendations, see end of chapter.

FixReam 700

Expanding design, long, for blind bore
B042721

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LB1G
Cutting material: CP905
Coated cermet

Application:
For surfaces Ra < 2 µm.
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042721Ø[Diameter][Tolerance]LB1G-CP905

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042721GØ[Diameter][Tolerance]LB1G-CP905

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	100	6
15,900 - 18,990	16	180	12	50	130	113	6
18,900 - 25,899	20	200	12	60	140	120	6
25,900 - 32,200	25	210	12	60	150	130	6

IT6 tolerance example:
B042721Ø16.350H6LB1G-CP905

Bore diameter d₁ = 16.350 H6

G variant example:
B042721GØ16.350-5LB1G-CP905

Special tool diameter d₁ = 16.350 -5 µm

FixReam 700

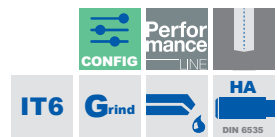
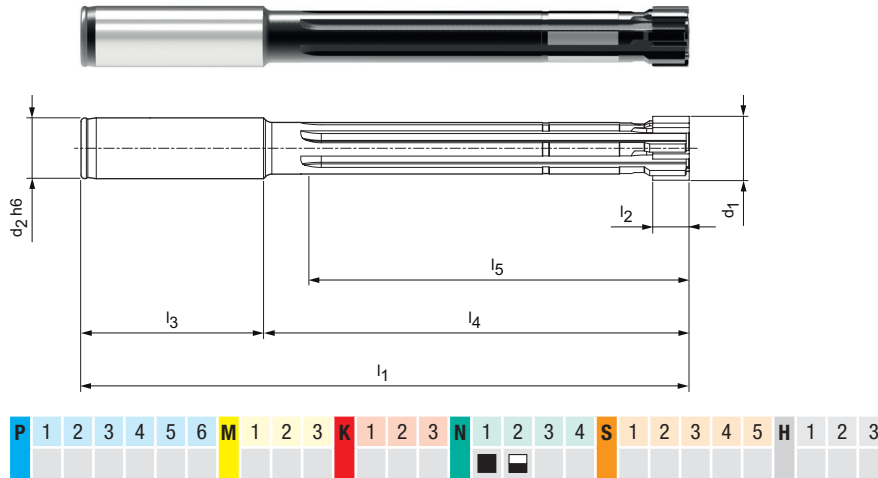
Expanding design, long, for blind bore
B042751

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LB1G
Cutting material: HP622
Coated solid carbide

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance $\geq$ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance $\geq$ IT6

Specification:

B042751Ø[Diameter][Tolerance]LB1G-HP622

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances $\geq 5 \mu\text{m}$ (G variant, see page 35)

G variant specification:

B042751GØ[Diameter][Tolerance]LB1G-HP622

Dimensions of configurable series IT6

d_1	d_2	l_1	l_2	l_3	l_4	l_5	z
9,900 - 15,899	12	160	8	45	115	100	6
15,900 - 18,990	16	180	12	50	130	113	6
18,900 - 25,899	20	200	12	60	140	120	6
25,900 - 32,200	25	210	12	60	150	130	6

IT6 tolerance example:

B042751Ø16.350H6LB1G-HP622

Bore diameter $d_1 = 16.350 \text{ H6}$

G variant example:

B042751GØ16.350-5LB1G-HP622

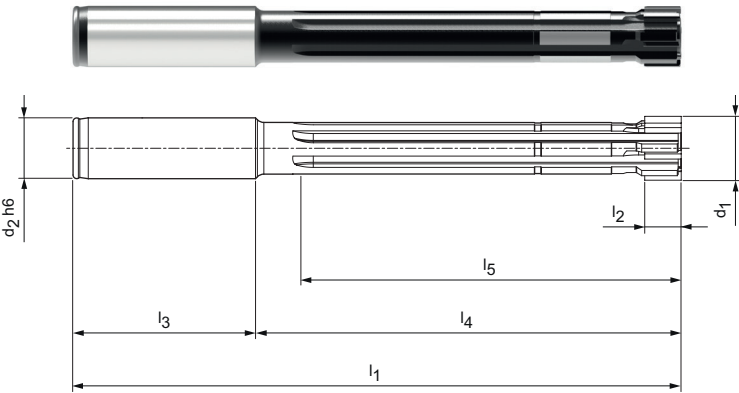
Special tool diameter $d_1 = 16.350 -5 \mu\text{m}$

FixReam 700

Expanding design, long, for blind bore
B042741

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LD1G
Cutting material: HP625
Coated solid carbide

Application:
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features

Bore diameter tolerance $\geq$ IT6:
- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance $\geq$ IT6

Specification:
B042741Ø[Diameter][Tolerance]LD1G-HP625

G variants:
- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances $\geq 5 \mu\text{m}$ (G variant, see page 35)

G variant specification:
B042741GØ[Diameter][Tolerance]LD1G-HP625

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	160	8	45	115	100	6
15,900 - 18,990	16	180	12	50	130	113	6
18,900 - 25,899	20	200	12	60	140	120	6
25,900 - 32,200	25	210	12	60	150	130	6

IT6 tolerance example:
B042741Ø16.350H6LD1G-HP625

Bore diameter d₁ = 16.350 H6

G variant example:
B042741GØ16.350-5LD1G-HP625

Special tool diameter d₁ = 16.350 -5 μm

FixReam 700

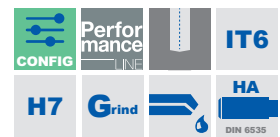
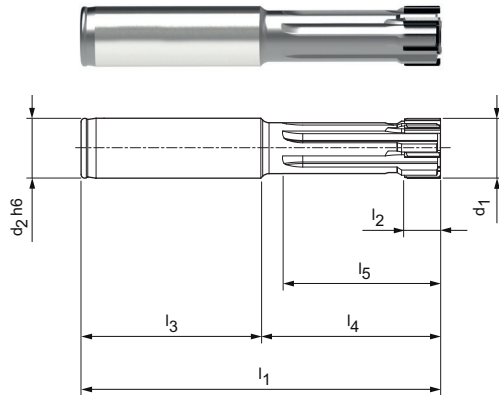
Expanding design, short, for blind bore
B042201

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LB1G
Cutting material: CU111
Uncoated cermet

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Preferred series in H7

d ₁ H7	Dimensions						z	Specification	Order no.
	d ₂ h6	l ₁	l ₂	l ₃	l ₄	l ₅			
10,000	12	95	8	45	50	38	6	B042201Ø10.00H7	31449048
12,000	12	95	8	45	50	39	6	B042201Ø12.00H7	31449049
14,000	12	95	8	45	50	39	6	B042201Ø14.00H7	31449050
16,000	16	100	12	50	50	38	6	B042201Ø16.00H7	31449051
18,000	16	100	12	50	50	39	6	B042201Ø18.00H7	31449052
20,000	20	120	12	60	60	45	6	B042201Ø20.00H7	31449053
22,000	20	120	12	60	60	45	6	B042201Ø22.00H7	31449054
24,000	20	120	12	60	60	45	6	B042201Ø24.00H7	31449055
25,000	20	120	12	60	60	45	6	B042201Ø25.00H7	31449056
28,000	25	135	12	60	75	60	6	B042201Ø28.00H7	31449058
30,000	25	135	12	60	75	60	6	B042201Ø30.00H7	31449059
32,000	25	135	12	60	75	60	6	B042201Ø32.00H7	31449060

Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:

B042201Ø[Diameter][Tolerance]LB1G-CU111

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 3 µm (G variant, see page 35)

G variant specification:

B042201GØ[Diameter][Tolerance]LB1G-CU111

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	38	6
15,899 - 18,899	16	100	12	50	50	38	6
18,900 - 25,899	20	120	12	60	60	45	6
25,900 - 32,200	25	135	12	60	75	60	6

IT6 tolerance example:

B042201Ø16.350H6LB1G-CU111

Bore diameter d₁ = 16.350 H6

G variant example:

B042201GØ16.350-3LB1G-CU111

Special tool diameter d₁ = 16.350 -3 µm

Dimensions in mm.

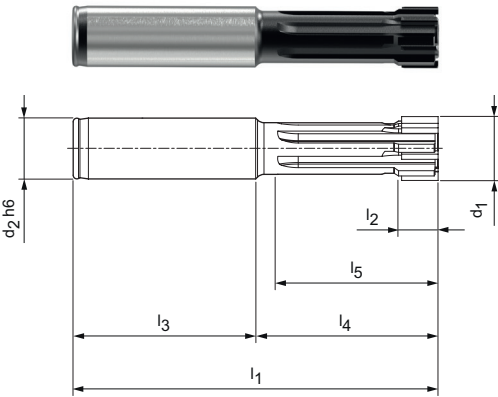
For cutting data recommendations, see end of chapter.

FixReam 700

Expanding design, short, for blind bore
B042231

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LD1G
Cutting material: HP421
Coated solid carbide

Application:
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042231Ø[**Diameter**][**Tolerance**]LD1G-HP421

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042231GØ[**Diameter**][**Tolerance**]LD1G-HP421

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,990	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:
B042231Ø**16.350**H6LD1G-HP421

Bore diameter d₁ = 16.350 H6

G variant example:
B042231GØ**16.350**-5LD1G-HP421

Special tool diameter d₁ = 16.350 -5 µm

FixReam 700

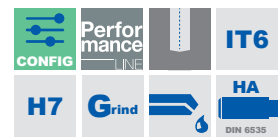
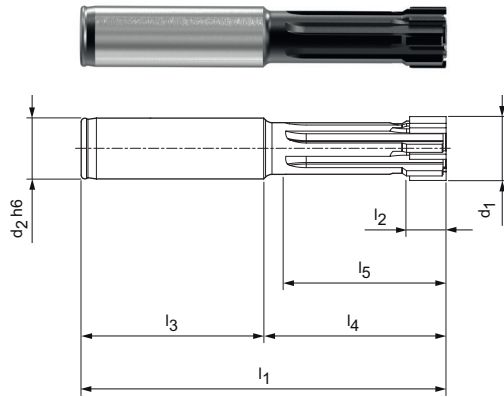
Expanding design, short, for blind bore
B042211

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LB1G
Cutting material: HP905
Coated solid carbide

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Preferred series in H7

d ₁ H7	Dimensions						z	Specification	Order no.
	d ₂ h6	l ₁	l ₂	l ₃	l ₄	l ₅			
10,000	12	95	8	45	50	38	6	B042211Ø10.00H7	31553869
12,000	12	95	8	45	50	39	6	B042211Ø12.00H7	31553870
14,000	12	95	8	45	50	39	6	B042211Ø14.00H7	31553871
16,000	16	100	12	50	50	38	6	B042211Ø16.00H7	31553872
18,000	16	100	12	50	50	39	6	B042211Ø18.00H7	31553873
20,000	20	120	12	60	60	45	6	B042211Ø20.00H7	31553874
22,000	20	120	12	60	60	45	6	B042211Ø22.00H7	31553875
24,000	20	120	12	60	60	45	6	B042211Ø24.00H7	31553876
25,000	20	120	12	60	60	45	6	B042211Ø25.00H7	31553877
28,000	25	135	12	60	75	60	6	B042211Ø28.00H7	31553878
30,000	25	135	12	60	75	60	6	B042211Ø30.00H7	31553879
32,000	25	135	12	60	75	60	6	B042211Ø32.00H7	31553880

Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:

B042211Ø[Diameter][Tolerance]LB1G-HP905

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 μm (G variant, see page 35)

G variant specification:

B042211GØ[Diameter][Tolerance]LB1G-HP905

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,899	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:

B042211Ø16.350H6LB1G-HP905

Bore diameter d₁ = 16.350 H6

G variant example:

B042211GØ16.350-5LB1G-HP905

Special tool diameter d₁ = 16.350 -5 μm

Dimensions in mm.

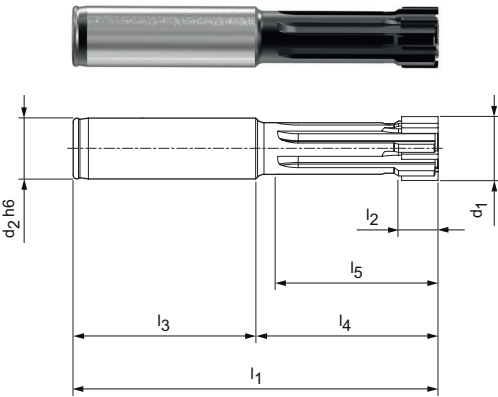
For cutting data recommendations, see end of chapter.

FixReam 700

Expanding design, short, for blind bore
B042221

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LB1G
Cutting material: CP905
Coated cermet

Application:
For surfaces Ra < 2 µm.
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042221Ø[Diameter][Tolerance]LB1G-CP905

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042221GØ[Diameter][Tolerance]LB1G-CP905

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,990	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:
B042221Ø**16.350**H6LB1G-CP905

Bore diameter d₁ = 16.350 H6

G variant example:
B042221GØ**16.350**-5LB1G-CP905

Special tool diameter d₁ = 16.350 -5 µm

FixReam 700

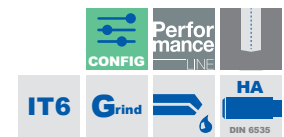
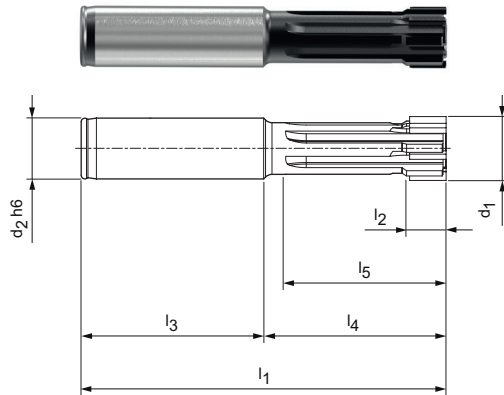
Expanding design, short, for blind bore
B042251

Design:

Reamer diameter: 9.900 - 32.200 mm
Lead: LB1G
Cutting material: HP622
Coated solid carbide

Application:

The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance $\geq$ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance $\geq$ IT6

Specification:

B042251Ø[Diameter][Tolerance]LB1G-HP622

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances $\geq 5 \mu\text{m}$ (G variant, see page 35)

G variant specification:

B042251GØ[Diameter][Tolerance]LB1G-HP622

Dimensions of configurable series IT6

d_1	d_2	l_1	l_2	l_3	l_4	l_5	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,990	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:

B042251Ø16.350H6LB1G-HP622

Bore diameter $d_1 = 16.350 \text{ H6}$

G variant example:

B042251GØ16.350-5LB1G-HP622

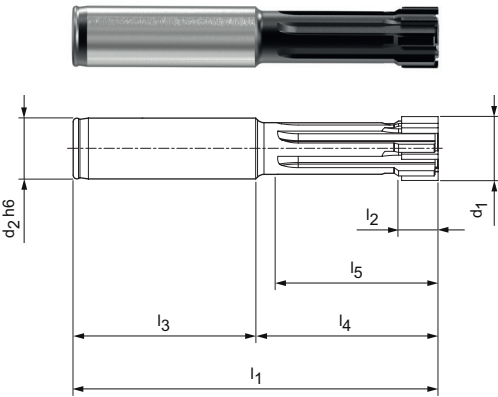
Special tool diameter $d_1 = 16.350 -5 \mu\text{m}$

FixReam 700

Expanding design, short, for blind bore
B042241

Design:
Reamer diameter: 9.900 - 32.200 mm
Lead: LD1G
Cutting material: HP625
Coated solid carbide

Application:
The expansion system is therefore only suitable for compensation prior to re-grinding and not for setting or re-adjusting the diameter.



Configurable features



Bore diameter tolerance ≥ IT6:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered in tolerance ≥ IT6

Specification:
B042241Ø[**Diameter**][**Tolerance**]LD1G-HP625

G variants:

- Diameter freely selectable in increments of 0.001 mm
- Can be ordered from tolerances ≥ 5 µm (G variant, see page 35)

G variant specification:
B042241GØ[**Diameter**][**Tolerance**]LD1G-HP625

Dimensions of configurable series IT6

d ₁	d ₂	l ₁	l ₂	l ₃	l ₄	l ₅	z
9,900 - 15,899	12	95	8	45	50	45	6
15,900 - 18,990	16	100	12	50	50	45	6
18,900 - 25,899	20	120	12	60	60	55	6
25,900 - 32,200	25	135	12	60	75	70	6

IT6 tolerance example:
B042241Ø**16.350**H6LD1G-HP625

Bore diameter d₁ = 16.350 H6

G variant example:
B042241GØ**16.350**-5LD1G-HP625

Special tool diameter d₁ = 16.350 -5 µm

Cutting data recommendation for FixReam 700

Feed and cutting speed

B042700 | B042701

Cutting material: CU111 | Lead: LA1G | LB1G

BMG*			Workpiece material	Strength/ Hardness [N/mm ²] [HRC]	Cutting speed v _c [m/min]	Feed f _z	Stock removal a _p [mm] for tool diameter	
						z 6	9.900 - 15.899	15.900 - 32.200
					Internal cooling	9.900 - 32.200		
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	120	0.15	0.10	0.15
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	120	0.15	0.10	0.15
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	120	0.15	0.10	0.15
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	100	0.10	0.10	0.15
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	100	0.15	0.10	0.15
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	100	0.15	0.10	0.15
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	80	0.10	0.10	0.15
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	120	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	120	0.20	0.10	0.15

B042200 | B042201

Cutting material: CU111 | Lead: LA1G | LB1G

BMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v _c [m/min]	Feed f _z	Stock removal a _p [mm] for tool diameter	
						z 6	9.900 - 15.899	15.900 - 32.200
						Internal cooling		
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	150	0.15	0.10	0.15
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	150	0.15	0.10	0.15
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	150	0.15	0.10	0.15
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	130	0.10	0.10	0.15
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	130	0.15	0.10	0.15
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	130	0.15	0.10	0.15
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	120	0.10	0.10	0.15
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	150	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	150	0.20	0.10	0.15

* BECK Machining Groups

** If the alloy parts Cr, Mo, Ni, V, W in total > 8%, then select the next highest MAPAL machining group.

The specified cutting data are guide values.

The optimum data for the respective machining task should be determined during the test or machining.

Cutting data recommendation for FixReam 700

Feed and cutting speed

B042710 | B042711

Cutting material: HP905 | Lead: LA1G | LB1G

BMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v _c [m/min]	Feed f _z		Stock removal a _p [mm] for tool diameter	
						z 6	9.900 - 32.200	9.900 - 15.899	15.900 - 32.200
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	120	0.15	0.10	0.15	
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	120	0.15	0.10	0.15	
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	110	0.15	0.10	0.15	
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	110	0.10	0.10	0.15	
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	100	0.15	0.10	0.15	
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	100	0.15	0.10	0.15	
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	80	0.10	0.10	0.15	
	P4	P4.1	Stainless steels, ferritic and martensitic		40	0.08	0.10	0.10	
	P5	P5.1	Cast steel		110	0.15	0.10	0.15	
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	120	0.20	0.10	0.15	
		K2.1	Cast iron with spheroidal graphite, GJS	< 500	120	0.20	0.10	0.15	
	K2	K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	90	0.20	0.10	0.15	
		K2.3	Cast iron with spheroidal graphite, GJS	> 800	90	0.15	0.10	0.15	
	K3	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500	90	0.15	0.10	0.15	
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500	90	0.15	0.10	0.15	
N	N3	N3.1	Graphite > 8 µm		80	0.08	0.10	0.15	
		N3.2	Graphite < 8 µm		80	0.08	0.10	0.15	

B042220 | B042221

Cutting material: HP905 | Lead: LA1G | LB1G

BMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v _c [m/min]	Feed f _z	Stock removal a _p [mm] for tool diameter	
						z 6	9.900 - 15.899	15.900 - 32.200
						Internal cooling		
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 700	140	0.15	0.10	0.15
		P1.2	Structural, free-cutting, case hardened and heat-treated steels, non-alloy	< 1,200	140	0.15	0.10	0.15
	P2	P2.1	Nitrided, case hardened and heat-treated steels, alloy	< 900	130	0.15	0.10	0.15
		P2.2	Nitrided, case hardened and heat-treated steels, alloy	< 1,400	130	0.10	0.10	0.15
	P3	P3.1	Tool, bearing, spring and high-speed steels**	< 800	120	0.15	0.10	0.15
		P3.2	Tool, bearing, spring and high-speed steels**	< 1,000	120	0.15	0.10	0.15
		P3.3	Tool, bearing, spring and high-speed steels**	< 1,500	100	0.10	0.10	0.15
	P4	P4.1	Stainless steels, ferritic and martensitic		40	0.08	0.10	0.10
	P5	P5.1	Cast steel		130	0.15	0.10	0.15
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	140	0.20	0.10	0.15
		K2.1	Cast iron with spheroidal graphite, GJS	< 500	140	0.20	0.10	0.15
	K2	K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	110	0.20	0.10	0.15
		K2.3	Cast iron with spheroidal graphite, GJS	> 800	110	0.15	0.10	0.15
	K3	K3.1	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	< 500	110	0.15	0.10	0.15
		K3.2	Cast iron with spheroidal graphite, GJV; malleable cast iron, GJM	> 500	110	0.15	0.10	0.15
N	N3	N3.1	Graphite > 8 µm		80	0.08	0.10	0.15
		N3.2	Graphite < 8 µm		80	0.08	0.10	0.15

* BECK Machining Groups
** If the alloy parts Cr, Mo, Ni, V, W in total > 8%, then select the next highest MAPAL machining group.
The specified cutting data are guide values.
The optimum data for the respective machining task should be determined during the test or machining.

Cutting data recommendation for FixReam 700

Feed and cutting speed

B042720 | B042721

Cutting material: CP905 | Lead: LA1G | LB1G

BMG*			Workpiece material	Strength/ Hardness [N/mm ²] [HRC]	Cutting speed v _c [m/min]	Feed f _z	Stock removal a _p [mm] for tool diameter	
						z 6	9.900 - 15.899	15.900 - 32.200
					Internal cooling	9.900 - 32.200		
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	120	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	120	0.20	0.10	0.15
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	100	0.20	0.10	0.15

B042220 | B042221

Cutting material: CP905 | Lead: LA1G | LB1G

BMG*			Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v _c [m/min]	Feed f _z	Stock removal a _p [mm] for tool diameter	
						z 6	9.900 - 15.899	15.900 - 32.200
					Internal cooling	9.900 - 32.200		
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), GJL	< 300	140	0.20	0.10	0.15
	K2	K2.1	Cast iron with spheroidal graphite, GJS	< 500	140	0.20	0.10	0.15
		K2.2	Cast iron with spheroidal graphite, GJS	≤ 800	120	0.20	0.10	0.15

B042730 | B042230 | B042231 | B042731

Cutting material: HP421 | Lead: LC1G | LD1G

BMG*			Workpiece material	Strength/ Hardness [N/mm ²] [HRC]	Cutting speed v _c [m/min]	Feed f _z	Stock removal a _p [mm] for tool diameter	
						z 6	9.900 - 15.899	15.900 - 32.200
					Internal cooling	9.900 - 32.200		
P	P4	P4.1	Stainless steels, ferritic and martensitic		40	0.08	0.10	
	P6	P6.1	Stainless cast steel, ferritic and martensitic		40	0.08	0.10	
M	M1	M1.1	Stainless steels, austenitic	< 700	40	0.08	0.10	
		M1.2	Stainless steels, ferritic/austenitic (duplex)	< 1,000	20	0.08	0.10	
	M2	M2.1	Stainless/heat-resistant cast steel, austenitic	< 700	40	0.08	0.10	
	M3	M3.1	Stainless cast steel, ferritic/austenitic (duplex)	< 1,000	20	0.08	0.10	

* BECK Machining Groups

The specified cutting data are guide values.

The optimum data for the respective machining task should be determined during the test or machining.

Cutting data recommendation for FixReam 700

Feed and cutting speed

B042740 | B042240 | B042241 | B042741

Cutting material: HP625 | Lead: LC1G | LD1G

BMG*		Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v _c [m/min]	Feed f _z	Stock removal a _p [mm] for tool diameter	
					z 6	9.900 - 15.899	15.900 - 32.200
					Internal cooling		
S	S1	S1.1	Titanium, titanium alloys	< 400	20	0.08	0.10
	S2	S2.1	Titanium, titanium alloys	< 1,200	20	0.08	0.10
		S2.2	Titanium, titanium alloys	> 1,200	20	0.08	0.10
	S3	S3.1	Nickel, non-alloy and alloy	< 900	20	0.08	0.10
		S3.2	Nickel, non-alloy and alloy	> 900	20	0.08	0.10
	S4	S4.1	High-temperature super alloy Ni, Co and Fe-based		20	0.08	0.10
	S5	S5.1	Tungsten and molybdenum alloys		20	0.08	0.10

B042750 | B042751

Cutting material: HP622 | Lead: LA1G | LB1G

BMG*		Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v _c [m/min]	Feed f _z	Stock removal a _p [mm] for tool diameter	
					z 6	9.900 - 15.899	15.900 - 32.200
					Internal cooling		
N	N1	N1.1	Aluminium, unalloyed and alloyed < 3 % Si		150	0.20	0.10
		N1.2	Aluminium, alloyed ≤ 7 % Si		150	0.20	0.15
		N1.3	Aluminium, alloyed > 7-12 % Si		150	0.20	0.15
	N2	N2.1	Copper, non-alloy and low-alloy	< 300	100	0.20	0.15
		N2.2	Copper, alloy	> 300	100	0.20	0.15
		N2.3	Brass, bronze, gunmetal	< 1,200	100	0.10	0.15

B042250 | B042251

Cutting material: HP622 | Lead: LA1G | LB1G

BMG*		Workpiece material	Strength/ Hardness [N/mm²] [HRC]	Cutting speed v _c [m/min]	Feed f _z	Stock removal a _p [mm] for tool diameter	
					z 6	9.900 - 15.899	15.900 - 32.200
					Internal cooling		
N	N1	N1.1	Aluminium, unalloyed and alloyed < 3 % Si		200	0.20	0.10
		N1.2	Aluminium, alloyed ≤ 7 % Si		200	0.20	0.15
		N1.3	Aluminium, alloyed > 7-12 % Si		150	0.20	0.15
	N2	N2.1	Copper, non-alloy and low-alloy	< 300	150	0.20	0.15
		N2.2	Copper, alloy	> 300	150	0.20	0.15
		N2.3	Brass, bronze, gunmetal	< 1,200	100	0.10	0.15

* BECK Machining Groups
The specified cutting data are guide values.
The optimum data for the respective machining task should be determined during the test or machining.

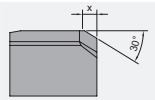
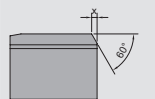
G variant

Tolerances, lead geometry, chip shape and rake angle

Tolerances for the G variant/fixed variant FXRXX

Cutting material	Diameter range
	Ø 9.900 - 32.200 mm
Uncoated	-0.003
CU111	
Coated	-0.005
HP421	
HP625	
HP622	
HP905	
CP905	

Lead geometry and rake angles

Geometry	Lead geometry			
	Name	Ø area	Lead length x	Geometry
	LA / LC**	9.900 - 11.700 mm	0.80 mm	30°
		11.701 - 32.200 mm	1.00 mm	
	LB / LD**	9.900 - 32.000 mm	0.25 mm	60°

** VA geometry

G variant

The G variant indicates the tool diameter of the reamer with our manufacturing tolerances. The manufacturing tolerances depend on the cutting material (see permissible smallest tolerances for the G variant).

Chip shape / rake angle

Rake angle	
Name	Angle
1G	6°

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