HKV Push-in anchor, Single anchor application

	Anchor version	Benefits
	HKV Carbon steel without lip	- simple and well proven - approved, tested and confirmed by everyday jobsite experience - reliable setting thanks to simple visual check - versatile - for medium-duty fastening with bolts or threaded rods - available in various materials and sizes for maximized coverage of possible applications


Concrete

Basic loading data (for a single anchor)

All data in this section applies to
- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Concrete as specified in the table
- Minimum base material thickness
- Concrete C 20/25, $f_{ck,cube}$ = 25 N/mm²
- screw or rod with steel strength 5.8 (carbon steel) and/or A4-70 (stainless steel)

Mean Ultimate Resistance

Anchor size		M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Tensile $N_{Ru,m}$	[kN]	5,6	7,8	7,8	12,1	16,9	35,3
Shear $V_{Ru,m}$	[kN]	5,5	9,4	11,0	12,2	20,1	37,1

Characteristic Resistance

Anchor size		M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Tensile N_{Rk}	[kN]	4,2	5,9	5,9	9,1	12,7	26,5
Shear V_{Rk}	[kN]	5,0	8,6	10,0	11,0	18,3	33,8

Design Resistance

Anchor size		M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Tensile N_{Rd}	[kN]	2,8	3,9	3,9	6,1	8,5	17,6
Shear V_{Rd}	[kN]	4,0	6,9	8,0	8,8	14,6	27,0

Recommended loads [a)]

Anchor size		M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Tensile N_{rec}	[kN]	2,0	2,8	2,8	4,3	6,0	12,6
Shear V_{rec}	[kN]	2,9	4,9	5,7	6,3	10,5	19,3

b) With overall partial safety factor for action γ = 1,4. The partial safety factors for action depend on the type of loading and shall be taken from national regulations.

Materials

Mechanical properties of HKV

Anchor size		M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Nominal tensile strength f_{uk}	[N/mm²]	570	570	570	570	570	640
Yield strength f_{yk}	[N/mm²]	460	460	460	460	460	510
Stressed cross-section A_s	[mm²]	20,7	26,7	32,7	32,7	60,1	105
Moment of resistance W	[mm³]	32,3	54,6	82,9	82,9	184	431
Char. bending resistance for rod or bolt $M^0_{Rk,s}$ with 5.8 Steel Strength	[Nm]	7,6	18,7	37,4	37,4	65,5	167

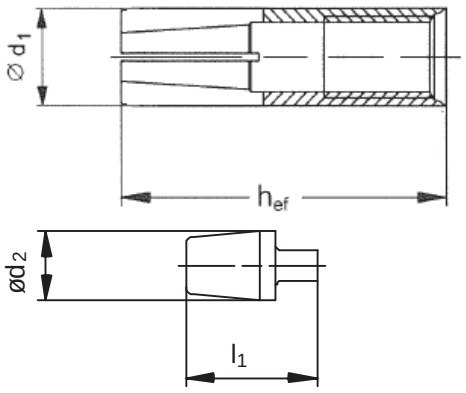
Material quality

Part	Material
Anchor Body	Steel Fe/Zn5 galvanised to min. 5 µm
expansion plug	Steel material

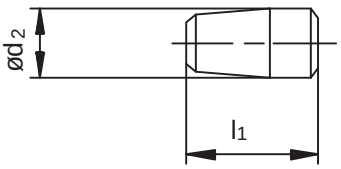
Anchor dimensions

Anchor size			M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Effective anchorage depth	h_{ef}	[mm]	25	30	30	40	50	65
Anchor diameter	d_1	[mm]	7,9	9,95	11,8	11,95	14,9	19,75
Plug diameter	d_2	[mm]	5,1	6,5	8,2	8,2	10,3	13,8
Plug length	l_1	[mm]	10	12	12	16	20	29

Anchor body



Expansions plugs

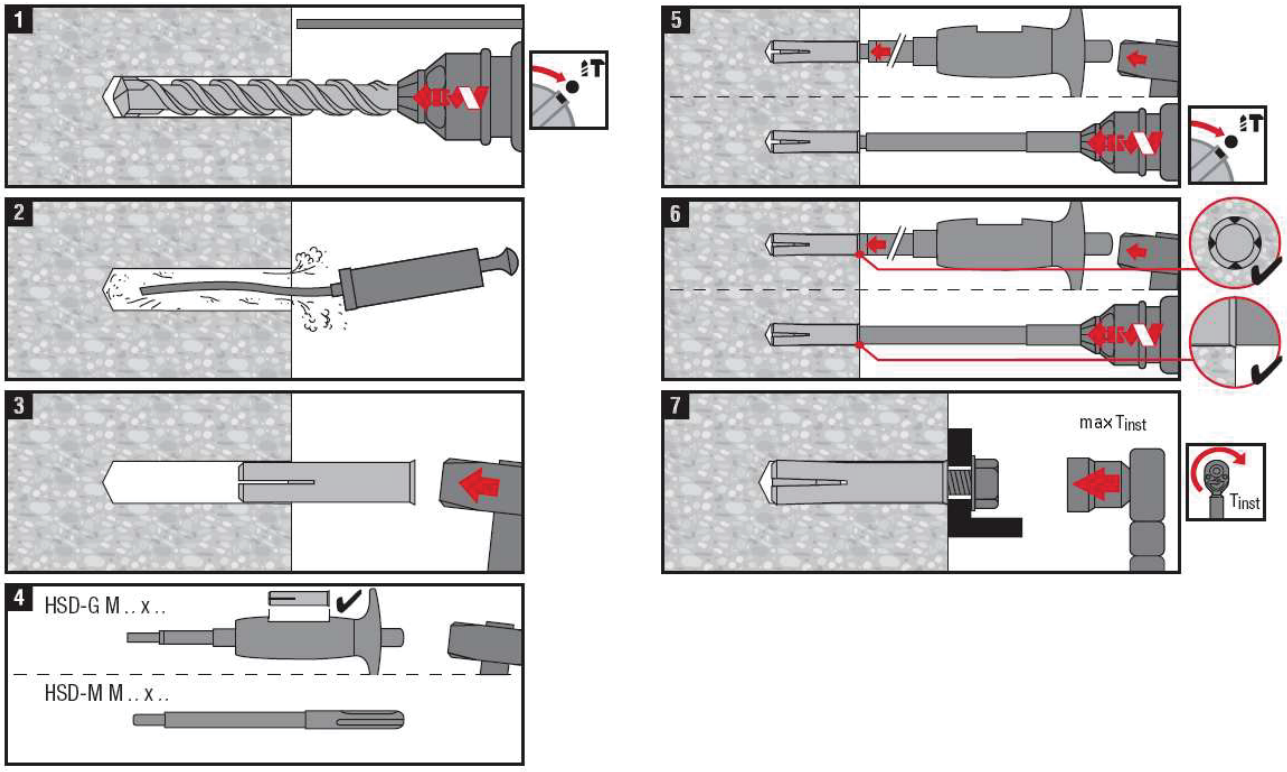


Setting

Installation equipment

Anchor size		M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Rotary hammer		TE 2 – TE 16				TE 16 – TE 50	
Machine setting tool	HSD-M	6x25/30	8x25/30	10x25/30	10x40	12x50	16x65
Hand Setting tool	HSD-G						
Other tools		hammer, torque wrench, blow out pump					

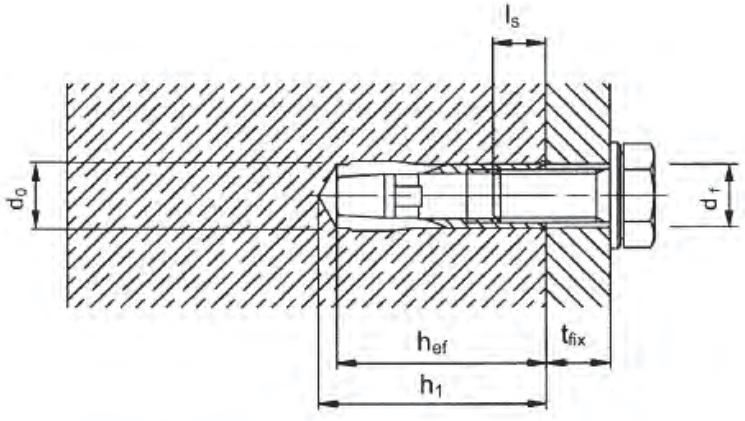
Setting instruction



For detailed information on installation see instruction for use given with the package of the product.

For technical data for anchors in diamond drilled holes please contact the Hilti Technical advisory service.

Setting details: depth of drill hole h_1 and effective anchorage depth h_{ef}



Setting details

Anchor size			M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Nominal diameter of drill bit	d_o	[mm]	8	10	12	12	15	20
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	8,45	10,5	13	12,5	15,5	20,5
Depth of drill hole	$h_1 \geq$	[mm]	27	33	33	43	54	70
Screwing depth	$l_{s,min}$	[mm]	6	8	10	10	12	16
	$l_{s,max}$	[mm]	12	14,5	13	18	22	30,5
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	7	9	12	12	14	18
Effective anchorage depth	h_{ef}	[mm]	25	30	30	40	50	65
Max. torque moment	T_{inst}	[Nm]	4	8	15	15	35	60

Base material thickness, anchor spacing and edge distances

Anchor size			M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Minimum base material thickness	h_{min}	[mm]	100	100	100	100	100	130
Minimum spacing and minimum edge distance	s_{min}	[mm]	80	60	60	80	125	130
	c_{min}	[mm]	140	105	105	140	175	230