



## HKV Push-in anchor

	Anchor version	Benefits
	HKV Carbon steel	- simple and well proven - approved, tested and confirmed by everyday jobsite experience - reliable setting thanks to simple visual check - versatile
	HKV – R2 Stainless steel, Steel Grade A2	- 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,  $f_{ck,cube} = 25\text{N/mm}^2$
- screw or rod with steel grade 5.8 (carbon steel) and/or A2-70 (stainless steel)

#### Mean Ultimate Resistance

Anchor size		M6x25 (1/4"x25)	M8x30 (5/16"x30)	M10x30 (3/8"x30)	M10x40 (3/8"x40)	M12x50 (1/2"x50)	M16x65 (5/8"x65)
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 (1/4"x25)	M8x30 (5/16"x30)	M10x30 (3/8"x30)	M10x40 (3/8"x40)	M12x50 (1/2"x50)	M16x65 (5/8"x65)
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 (1/4"x25)	M8x30 (5/16"x30)	M10x30 (3/8"x30)	M10x40 (3/8"x40)	M12x50 (1/2"x50)	M16x65 (5/8"x65)
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 <sup>a)</sup>

Anchor size		M6x25 (1/4"x25)	M8x30 (5/16"x30)	M10x30 (3/8"x30)	M10x40 (3/8"x40)	M12x50 (1/2"x50)	M16x65 (5/8"x65)
Tensile $N_{rec}$	[kN]	1,4	2,0	2,0	3,0	4,2	8,8
Shear $V_{rec}$	[kN]	1,7	2,9	3,3	3,7	6,1	11,3

a) With overall global safety factor  $\gamma = 3$ . The recommended loads vary according to the safety factor requirement from national regulations.

### Materials

#### Mechanical properties of HKV

Anchor size	M6x25	M8x30	M10x30	M10x40	M12x50	M16x65
Nominal tensile strength $f_{uk}$ [N/mm <sup>2</sup> ]	570	570	570	570	570	640
Yield strength $f_{yk}$ [N/mm <sup>2</sup> ]	460	460	460	460	460	510
Stressed cross-section $A_s$ [mm <sup>2</sup> ]	20,7	26,7	32,7	32,7	60,1	105
Moment of resistance $W$ [mm <sup>3</sup> ]	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 Grade [Nm]	7,6	18,7	37,4	37,4	65,5	167

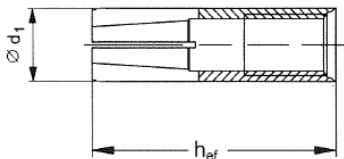
#### Material quality

Part	Material	
Anchor Body	HKV	Steel Fe/Zn5 galvanised to min. 5 µm
	HKV – R2	Stainless steel, A2
expansion plug	HKV	Steel material
	HKV – R2	Stainless steel, A2

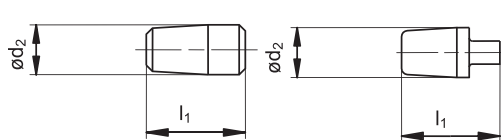
#### Anchor dimensions

Anchor size	M6x25 (1/4"x25)	M8x30 (5/16"x30)	M10x30 (3/8"x30)	M10x40 (3/8"x40)	M12x50 (1/2"x50)	M16x65 (5/8"x65)
Effective anchorage depth $h_{ef}$ [mm]	25	30	30	40	50	60
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

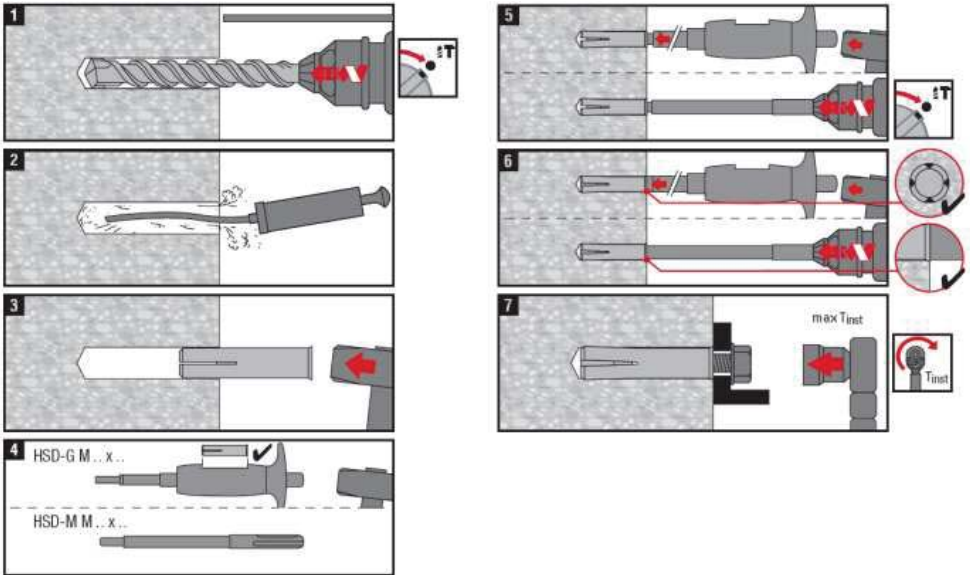


### Setting

#### Installation equipment

Anchor size	M6x25 (1/4"x25)	M8x30 (5/16"x30)	M10x30 (3/8"x30)	M10x40 (3/8"x40)	M12x50 (1/2"x50)	M16x65 (5/8"x65)
Rotary hammer	TE 2 – TE 16				TE 16 – TE 50	
Machine setting tool	HSD-M					
Hand Setting tool	HSD-G					
Other tools	hammer, torque wrench, blow out pump					

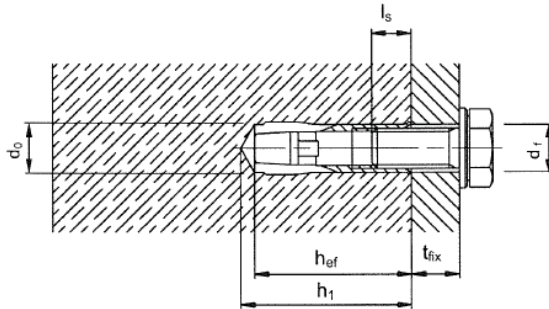
**Setting instruction**



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 (1/4"x25)	M8x30 (5/16"x30)	M10x30 (3/8"x30)	M10x40 (3/8"x40)	M12x50 (1/2"x50)	M16x65 (5/8"x65)
Nominal diameter of drill bit $d_o$ [mm]	8	10	12	12	15/16*	20
Cutting diameter of drill bit $d_{cut} \leq$ [mm]	8,45	10,5	13	12,5	15,5/16,5*	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	12	16
	$l_{s,max}$ [mm]	12	14,5	13	18	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

\* Drill bit diameter for HKV 1/2" x 50 is 16 mm, for HKV M12x 50 is 15mm

### Base material thickness, anchor spacing and edge distances

Anchor size	M6x25 (1/4"x25)	M8x30 (5/16"x30)	M10x30 (3/8"x30)	M10x40 (3/8"x40)	M12x50 (1/2"x50)	M16x65 (5/8"x65)
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	130
	$c_{min}$ [mm]	140	105	105	140	230

