

FAST MOVING TECHNOLOGY

*STÄUBLI*

# HCB quick-release couplings

**All fluids**



Safety,  
an essential quality...





# ... performance, an operational quality

**Eliminate leaks, to ensure the integrity of fluids and to keep the workplace clean.**

Our flat face technology ensures continuity of sealing during connection and disconnection:

- no pollution can enter your fluid circuits.
- safety for the user, no contamination of the workplace.

**Lock your circuits and work in perfect safety.**

Locking is ensured by a quick and easy push and turn movement. This technology is totally reliable and provides excellent resistance to vibration.

**By preventing leaks in your circuits, we improve their efficiency.**

- excellent efficiency (flow/pressure loss ratio) regardless of the fluid flow direction.
- compatibility with a large number of fluids, thanks to a stainless steel construction and a wide range of seal materials.

**Identify your circuits to prevent wrong connections:**

Lock/key sets:

- thanks to foolproof mechanical matching (coloured pin), the socket can only be connected to its own plug (and vice versa).
- each safety key is associated with a colour providing visual identification of the circuits.
- coloured plates for flush fitting sockets.

**Ergonomic: HCB couplings are easy to handle.**

The special design of the locking ring provides comfortable manipulation and is easy to grip.

The absence of sharp edges or rough surfaces means that:

- the ring can be handled with gloves without any risk of tearing.
- the coupling is easy to clean.

Handwheel option (VT) available for diameters 16 and 20, for a better gripping and easier locking (see page 6).

**Material traceability:**

We can supply a 3.1 certificate of analysis on request.

**Thanks to its compact design, the HCB range suits all configurations.**

- flush fitting sockets.
- space saving and improved cleanliness—when the socket and the plug are connected, their respective dust caps fit together.

**CAD drawing available on request.**

**Possibility of having HCB sockets and plugs with Clamp profiles, “Clamp”, on request.**



The opportunity to spend less and contribute more to a sustainable development programme.

With Stäubli, you can rely on:

- the performance of your equipment
- reliability of long-term investments
- no workplace pollution

## TECHNICAL CHARACTERISTICS

### Construction

- Mainly stainless steel 316 series with electrolytic polishing + passivation. For more information, consult us.
- Flush socket plate materials:
  - standard, stainless steel
  - optional, coloured anodised light alloy
- Protective dust caps:
  - standard: POM H
  - optional: stainless steel 316 series

### Usage recommendations

- For fluids with degreasing properties: please contact us.

### KES sealing-kit


Composed of a retaining ring and an O-ring seal, the KES ensures a perfect sealing between the socket and your interface.



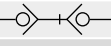
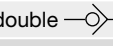
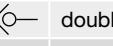
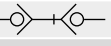
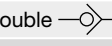
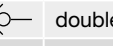
Bore diameter	
Shut off	
Max. working pressure *	
Max. static pressure with the four safety lock/key sets	
Operating temperature** (without dust caps or with stainless steel dust caps) depending on the seal material	Nitrile
	Fluorocarbon
	Ethylene-propylene
	- For FDA option
	- For USP option
	Perfluoroelastomer
	Fluorosilicon: max. working pressure = 50 bar
Max. temperatures of polyamide dust caps	
Compressed air flow/pressure loss tables	
Direction of flow: plug > socket	
Test conditions:	Water Density: 998 kg/m <sup>3</sup> Viscosity: 1.08 cSt

\*Other pressures and other conditions of use: please consult us.

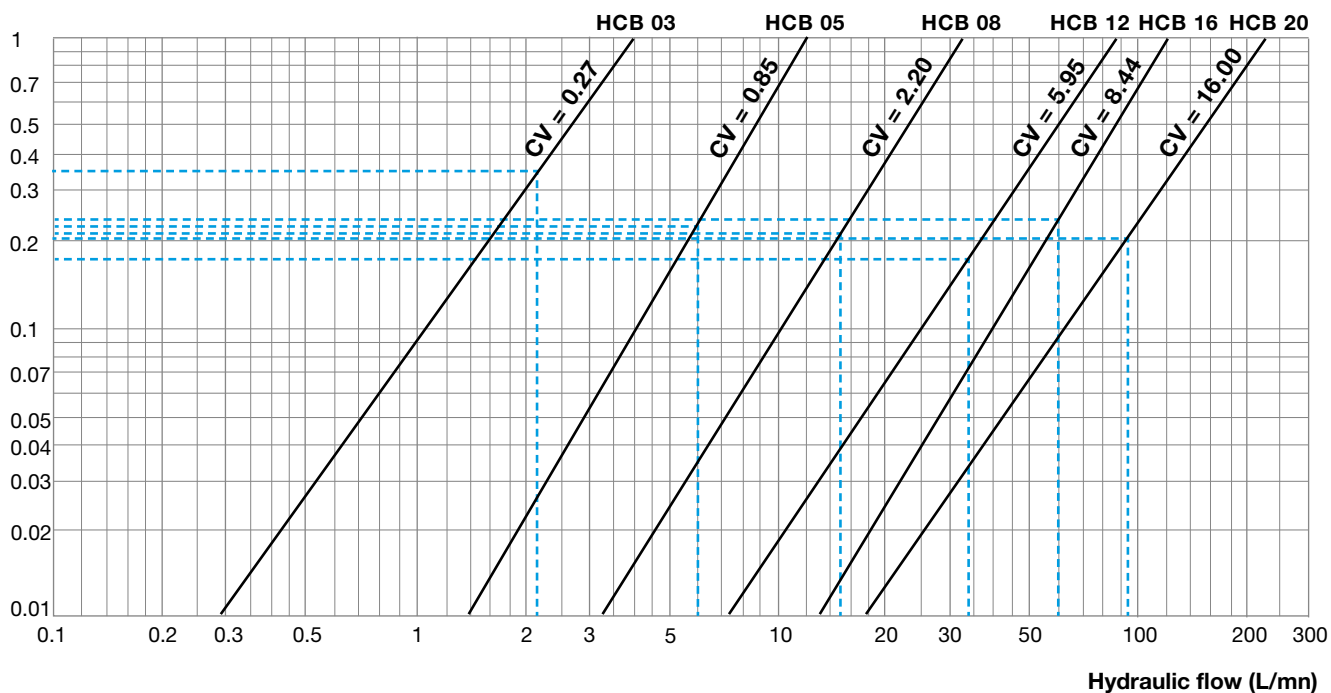
\*\*The minimal temperatures of use are given for static conditions and exempt from mechanical stress.

The compatible part-numbers with this option are characterized by the symbol  in part-number boards pages 7 to 11. For more information about KES, please consult our documentation RP0030600.



	HCB 03	HCB 05	HCB 08	HCB 12	HCB 16	HCB 20
	3 mm	5 mm	8 mm	12 mm	16 mm	20 mm
	double 	double 	double 	double 	double 	double 
	350 bar	160 bar	80 bar	50 bar	50 bar	50 bar
	350 bar	160 bar	80 bar	50 bar	50 bar	50 bar
<b>(NBR)</b>	-15°C to +100°C	-15°C to +100°C	-15°C to +100°C	-15°C to +100°C	-15°C to +100°C	-15°C to +100°C
<b>(FPM)</b>	-10°C to +200°C	-10°C to +200°C	-10°C to +200°C	-10°C to +200°C	-10°C to +200°C	-10°C to +200°C
<b>(EPDM)</b>	-20°C to +150°C	-20°C to +150°C	-20°C to +150°C	-20°C to +150°C	-20°C to +150°C	-20°C to +150°C
	-20°C to +70°C steam: until 150°C	-20°C to +70°C steam: until 150°C	-20°C to +70°C steam: until 150°C	-20°C to +70°C steam: until 150°C	-20°C to +70°C steam: until 150°C	-20°C to +70°C steam: until 150°C
<b>(FFKM)</b>	0°C to +250°C	0°C to +250°C	0°C to +250°C	0°C to +250°C	0°C to +250°C	0°C to +250°C
<b>(FMQ)</b>	-40°C to +175°C	-40°C to +175°C	-40°C to +175°C	-40°C to +175°C	-40°C to +175°C	-40°C to +175°C
	-20°C to +100°C	-20°C to +100°C	-20°C to +100°C	-20°C to +100°C	-20°C to +100°C	-20°C to +100°C

Pressure drop (bar)



Length of the socket/plug combination in the coupled position:

Socket length + plug length - L1

Model	HCB 03	HCB 05	HCB 08	HCB 12	HCB 16	HCB 20
Length L1 (mm)	18	19	23.5	36.3	37	39.6

# OPTIONS



To construct your part-number, add to the standard part-number (in the order shown below) the type of seal and any options.

Example of a complete part-number with options:

HCB XX.XXX / IC / JV / 3 / KR / BM / VT

1
2
3
4
5
6

**1 Standard part-number** with Nitrile seal (pages 7 to 11)

2 Seal material (other than Nitrile)	code
Fluorocarbon (FPM)	JV
Ethylene-propylene (EPDM)	JE
Ethylene-propylene with FDA* option	JE/FDA
Ethylene-propylene with USP** option	JE/USP
Perfluoroelastomer (FFKM)	JK
Fluorosilicon (FMQ)	JS3

\*In compliance with "FDA requirements".  
 \*\* In compliance with requirements of the class VI - 70 °C in vivo tests § <88> according to USP34, National Formulary 29 of 2011.

**3 Mechanical & colour key locking**

for HCB 03, 05, 08, 12 and 16	code
Red	3
Green	45
Blue	6
Black	9



**4 Coloured plates for flush bulkhead sockets**

for HCB 03, 05 and 08	code
Red	KR
Green	KV
Blue	KB
Black	KN



**5 Stainless steel dust caps** BM code

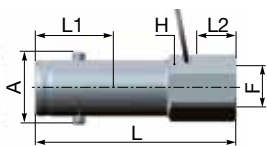
**6 Handwheel** (only for HCB 16 and 20) VT code



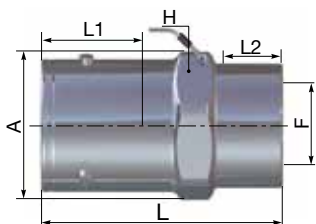
## SOCKET PART NUMBERS

### Female thread

Models HCB 03, 05, 08 and 12



Models HCB 16 and 20

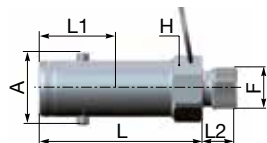


\*To SAE J 1926 standard

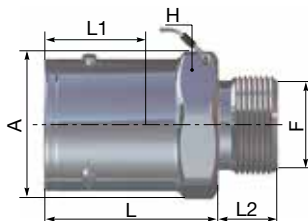
Model	F thread	Dimensions (mm)				Standard part numbers
		A	L	L2	H/flats	
HCB 03	G 1/8	16.5	47	9	14	HCB 03.1100 / IC
	NPT 1/8	16.5	45.5	7	14	HCB 03.1200 / IC
	UNF 3/8 - 24 *	16.5	47	10	14	HCB 03.1309 / IC
HCB 05	G 1/4	21.5	47	12	19	HCB 05.1101 / IC
	NPT 1/4	21.5	46.5	11	19	HCB 05.1201 / IC
	UNF 1/2 - 20 *	21.5	44.5	11.5	19	HCB 05.1313 / IC
HCB 08	G 3/8	28	50	13	27	HCB 08.1102 / IC
	NPT 3/8	28	50	11	27	HCB 08.1202 / IC
	UNF 3/4 - 16 *	28	51	14.5	27	HCB 08.1319 / IC
HCB 12	G 1/2	39.5	64.9	15	36	HCB 12.1103 / IC
	NPT 1/2	39.5	68.4	14	36	HCB 12.1203 / IC
HCB 16	G 3/4	51	76.2	17	46	HCB 16.1104 / IC
	NPT 3/4	51	73.7	14	46	HCB 16.1204 / IC
HCB 20	G 1	56	86.5	21	50	HCB 20.1105 / IC
	NPT 1	56	84	18	50	HCB 20.1205 / IC

### Male thread, with 60° cone and integrated tightness

Models HCB 03, 05, 08 and 12



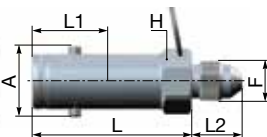
Models HCB 16 and 20



Model	F thread	Dimensions (mm)				Standard part numbers
		A	L	L2	H/flats	
HCB 03	G 1/8	16.5	38	8	14	HCB 03.1150 / IC
	NPT 1/8	16.5	38	9.5	14	HCB 03.1250 / IC
HCB 05	G 1/4	21.5	33.5	11	19	HCB 05.1151 / IC
	NPT 1/4	21.5	33.5	14.5	19	HCB 05.1251 / IC
HCB 08	G 3/8	28	37.5	12	27	HCB 08.1152 / IC
	NPT 3/8	28	37.5	14.5	27	HCB 08.1252 / IC
HCB 12	G 1/2	39.5	55.9	14	36	HCB 12.1153 / IC
	NPT 1/2	39.5	53.9	18.5	36	HCB 12.1253 / IC
HCB 16	G 3/4	51	58.2	16	46	HCB 16.1154 / IC
	NPT 3/4	51	58.2	18.5	46	HCB 16.1254 / IC
HCB 20	G 1	56	64.5	20	50	HCB 20.1155 / IC
	NPT 1	56	64.5	23.5	50	HCB 20.1255 / IC

### Male thread: JIC 37°

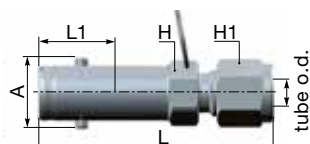
To ISO 8434 standard



Model	F thread	Dimensions (mm)				Standard part numbers
		A	L	L2	H/flats	
HCB 03	UNF 3/8 - 24 (DASH 3)	16.5	38	12	14	HCB 03.1652 / IC
HCB 05	UNF 9/16 - 18 (DASH 6)	21.5	33.5	14	19	HCB 05.1655 / IC
HCB 08	UNF 3/4 - 16 (DASH 8)	28	37.5	16.5	27	HCB 08.1656 / IC

### For calibrated stainless steel tubes

Characteristics of the stainless tubes:  
according to standards ISO 1127 class D4  
and ASTM A 269 class 1  
(assembling instruction RV1300100)



Model	Tube o.d./thickness	Dimensions (mm)				Standard part numbers
		A	L	H/flats	H1/flats	
HCB 03	Ø 6 mm/1 mm	16.5	55.5	14	14	HCB 03.1766 / IC
	Ø 1/4 "/1.25 mm	16.5	55	14	14	HCB 03.1753 / IC
HCB 05	Ø 8 mm/1.50 mm	21.5	52	19	17	HCB 05.1768 / IC
	Ø 3/8 "/1.65 mm	21.5	54	19	19	HCB 05.1755 / IC
HCB 08	Ø 12 mm/1.50 mm	28	60	27	22	HCB 08.1772 / IC
	Ø 1/2 "/2.10 mm	28	59	27	22	HCB 08.1756 / IC

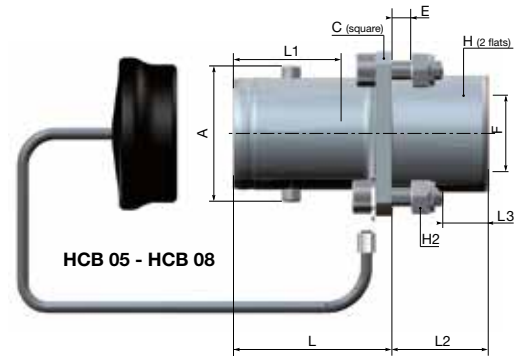
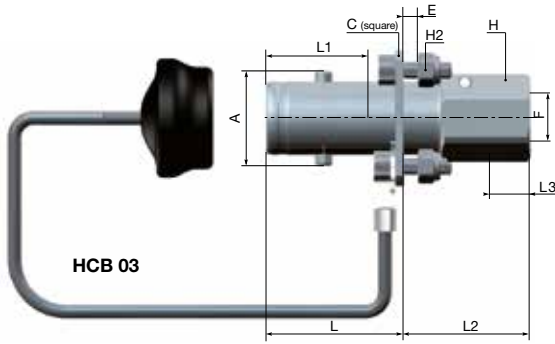
"Clamp" profile: on request.

# BULKHEAD SOCKET PART NUMBERS

Length of the socket/plug combination in the coupled position:

Socket length + plug length - L1

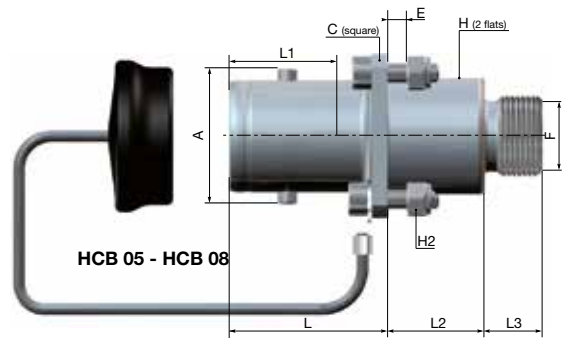
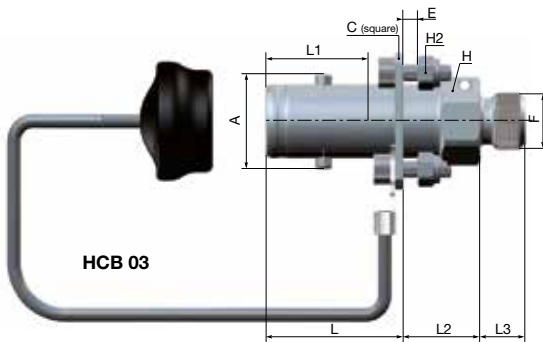
Model	HCB 03	HCB 05	HCB 08	HCB 12	HCB 16	HCB 20
Length L1 (mm)	18	19	23.5	36.3	37	39,6



## Female thread

Model	F thread	Dimensions (mm)								Standard part numbers
		A	C	L	L2	L3	E min./max.	H/flats	H2/flats	
HCB 03	G 1/8	16.5	24	24.5	22.5	9	1 / 3.5	14	5.5	HCB 03.2100 / IC
	NPT 1/8	16.5	24	24.5	21	7	1 / 3.5	14	5.5	HCB 03.2200 / IC
	UNF 3/8 - 24 *	16.5	24	24.5	22.5	10	1 / 3.5	14	5.5	HCB 03.2309 / IC
HCB 05	G 1/4	21.5	28	29.5	22.5	12	1 / 5	19	5.5	HCB 05.2101 / IC
	NPT 1/4	21.5	28	29.5	22	11	1 / 5	19	5.5	HCB 05.2201 / IC
	UNF 1/2 - 20 *	21.5	28	29.5	21.5	11.5	1 / 5	19	5.5	HCB 05.2313 / IC
HCB 08	G 3/8	28	34	33	20	13	1 / 5	24	7	HCB 08.2102 / IC
	NPT 3/8	28	34	33	20	11	1 / 5	24	7	HCB 08.2202 / IC
	UNF 3/4 - 16 *	28	34	33	20	14.5	1 / 5	24	7	HCB 08.2319 / IC

\*To SAE J 1926 standard

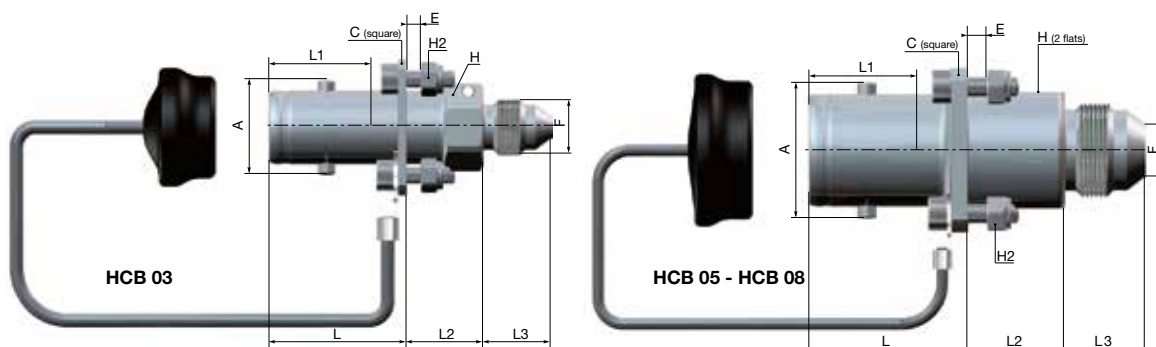
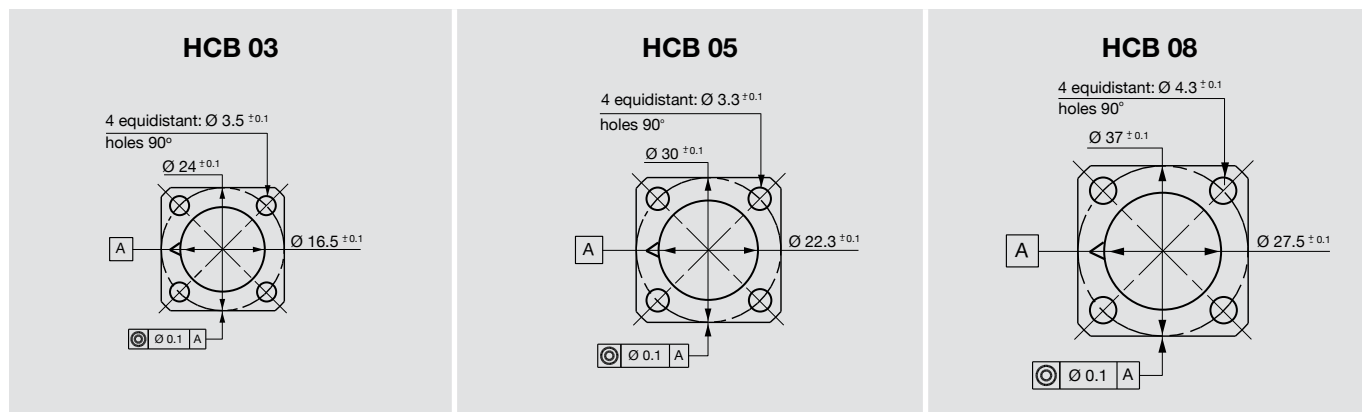


## Male thread, with 60° cone and integrated tightness

Model	F thread	Dimensions (mm)								Standard part numbers
		A	C	L	L2	L3	E min./max.	H/flats	H2/flats	
HCB 03	G 1/8	16.5	24	24.5	13.5	8	1 / 3.5	14	5.5	HCB 03.2150 / IC
	NPT 1/8	16.5	24	24.5	13.5	9.5	1 / 3.5	14	5.5	HCB 03.2250 / IC
HCB 05	G 1/4	21.5	28	29.5	19	11	1 / 5	19	5.5	HCB 05.2151 / IC
	NPT 1/4	21.5	28	29.5	19	14.5	1 / 5	19	5.5	HCB 05.2251 / IC
HCB 08	G 3/8	28	34	33	20	12	1 / 5	24	7	HCB 08.2152 / IC
	NPT 3/8	28	34	33	20	14.5	1 / 5	24	7	HCB 08.2252 / IC

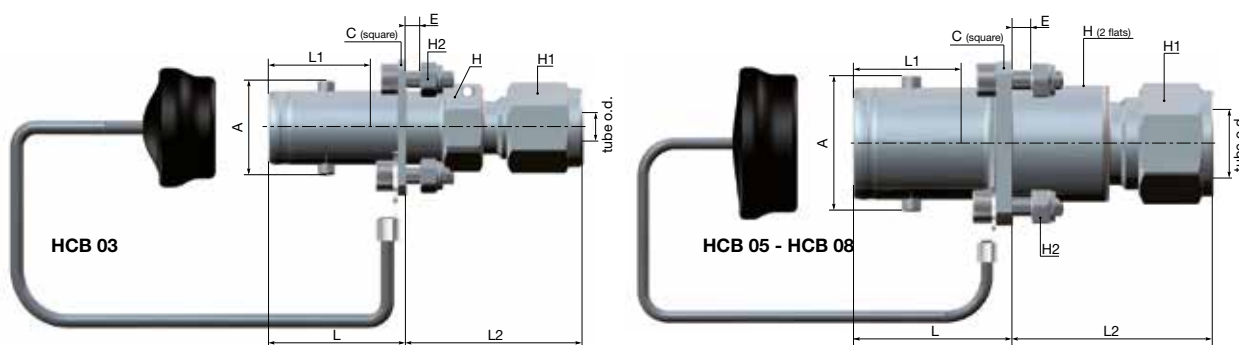


Bulkhead socket installation



Male thread: JIC  $37^\circ$  To ISO 8434 standard

Model	F thread	Dimensions (mm)								Standard part numbers
		A	C	L	L2	L3	E min./max.	H/flats	H2/flats	
<b>HCB 03</b>	UNF 3/8 - 24 (DASH 3)	16.5	24	24.5	13.5	12	1 / 3.5	14	5.5	<b>HCB 03.2652 / IC</b>
<b>HCB 05</b>	UNF 9/16 - 18 (DASH 6)	21.5	28	29.5	19	14	1 / 5	19	5.5	<b>HCB 05.2655 / IC</b>
<b>HCB 08</b>	UNF 3/4 - 16 (DASH 8)	28	34	33	20	16.5	1 / 5	24	7	<b>HCB 08.2656 / IC</b>



For calibrated stainless steel tubes: Characteristics of the stainless tubes (according to standards ISO 1127 class D4 and ASTM A 269 class 1 - assembling instruction RV1300100)

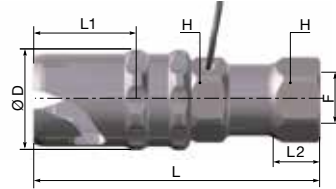
Model	$\varnothing$ ext. tube/épaisseur	Dimensions (mm)								Standard part numbers
		A	C	L	L2	E min./max.	H/flats	H1/flats	H2/flats	
<b>HCB 03</b>	$\varnothing 6$ mm/1 mm	16.5	24	24.5	31	1 / 3.5	14	14	5.5	<b>HCB 03.2766 / IC</b>
	$\varnothing 1/4$ "/1.25 mm	16.5	24	24.5	30.5	1 / 3.5	14	14	5.5	<b>HCB 03.2753 / IC</b>
<b>HCB 05</b>	$\varnothing 8$ mm/1.50 mm	21.5	28	29.5	37.5	1 / 5	19	17	5.5	<b>HCB 05.2768 / IC</b>
	$\varnothing 3/8$ "/1.65 mm	21.5	28	29.5	39.5	1 / 5	19	19	5.5	<b>HCB 05.2755 / IC</b>
<b>HCB 08</b>	$\varnothing 12$ mm/1.50 mm	28	34	33	41.5	1 / 5	24	22	7	<b>HCB 08.2772 / IC</b>
	$\varnothing 1/2$ "/2.10 mm	28	34	33	40.5	1 / 5	24	22	7	<b>HCB 08.2756 / IC</b>

"Clamp" profile: on request.

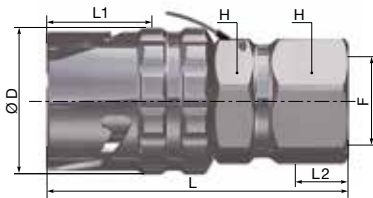
## PLUG PART NUMBERS

### Female thread

Models HCB 03, 05, 08 and 12



Model HCB 16 and 20

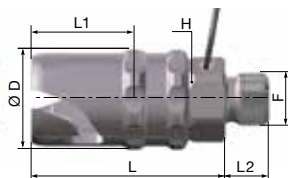


Model	F thread	Dimensions (mm)				Standard part numbers
		Ø D	L	L2	H/flats	
HCB 03	G 1/8	19	52.5	9	14	HCB 03.7100 / IC
	NPT 1/8	19	50.5	7	14	HCB 03.7200 / IC
	UNF 3/8 - 24 *	19	53	10	14	HCB 03.7309 / IC
HCB 05	G 1/4	23.5	61.5	12	19	HCB 05.7101 / IC
	NPT 1/4	23.5	61	11	19	HCB 05.7201 / IC
	UNF 1/2 - 20 *	23.5	60.5	11.5	19	HCB 05.7313 / IC
HCB 08	G 3/8	30.5	68.5	13	22	HCB 08.7102 / IC
	NPT 3/8	30.5	66.5	11	22	HCB 08.7202 / IC
	UNF 3/4 - 16 *	30.5	70	14.5	22	HCB 08.7319 / IC
HCB 12	G 1/2	41.5	91.6	15	27	HCB 12.7103 / IC
	NPT 1/2	41.5	90.7	14	27	HCB 12.7203 / IC
HCB 16	G 3/4	52	100.5	17	36	HCB 16.7104 / IC
	NPT 3/4	52	97.6	14	36	HCB 16.7204 / IC
HCB 20	G 1	58	110.5	21	41	HCB 20.7105 / IC
	NPT 1	58	107.6	18	41	HCB 20.7205 / IC

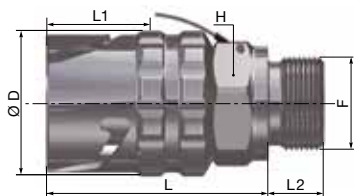
\*To SAE J 1926 standard







### Male thread, with 60° cone and integrated tightness

Models HCB 03, 05, 08 and 12



Model HCB 16 and 20



Model	F thread	Dimensions (mm)				Standard part numbers
		Ø D	L	L2	H/flats	
HCB 03	 G 1/8	19	35.5	8	14	HCB 03.7150 / IC
	NPT 1/8	19	35.5	9.5	14	HCB 03.7250 / IC
HCB 05	 G 1/4	23.5	37.5	11	19	HCB 05.7151 / IC
	NPT 1/4	23.5	37.5	14.5	19	HCB 05.7251 / IC
HCB 08	 G 3/8	30.5	44	12	22	HCB 08.7152 / IC
	NPT 3/8	30.5	44	14.5	22	HCB 08.7252 / IC
HCB 12	 G 1/2	41.5	72.9	14	27	HCB 12.7153 / IC
	NPT 1/2	41.5	72.9	18.5	27	HCB 12.7253 / IC
HCB 16	 G 3/4	52	79.2	16	36	HCB 16.7154 / IC
	NPT 3/4	52	79.2	18.5	36	HCB 16.7254 / IC
HCB 20	 G 1	58	84.6	20	41	HCB 20.7155 / IC
	NPT 1	58	84.6	23.5	41	HCB 20.7255 / IC



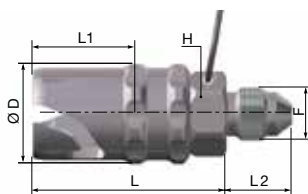
**Length of the socket/plug combination in the coupled position:**

Socket length + plug length - L1

Model	HCB 03	HCB 05	HCB 08	HCB 12	HCB 16	HCB 20
Length L1 (mm)	18	19	23.5	36.3	37	39.6

**Male thread: JIC 37°**

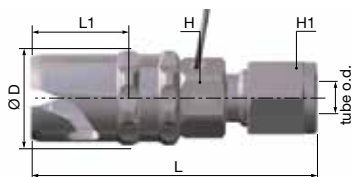
To ISO 8434 standard



Model	F thread	Dimensions (mm)				Standard part numbers
		Ø D	L	L2	H/flats	
HCB 03	UNF 3/8 - 24 (DASH 3)	19	35.5	12	14	HCB 03.7652 / IC
HCB 05	UNF 9/16 - 18 (DASH 6)	23.5	37.5	14	19	HCB 05.7655 / IC
HCB 08	UNF 3/4 - 16 (DASH 8)	30.5	44	16.5	22	HCB 08.7656 / IC

**For calibrated stainless steel tubes**

Characteristics of the stainless tubes: according to standards ISO 1127 class D4 and ASTM A 269 class 1 (assembling instruction RV1300100)



Model	Tube o.d./ thickness	Dimensions (mm)				Standard part numbers
		Ø D	L	H/plats	H1/flats	
HCB 03	Ø 6 mm/1 mm	19	55.5	14	14	HCB 03.7766 / IC
	Ø 1/4 "/1.25 mm	19	55	14	14	HCB 03.7753 / IC
HCB 05	Ø 8 mm/1.50 mm	23.5	60.5	19	17	HCB 05.7768 / IC
	Ø 3/8 "/1.65 mm	23.5	62.5	19	19	HCB 05.7755 / IC
HCB 08	Ø 12 mm/1.50 mm	30.5	73	22	22	HCB 08.7772 / IC
	Ø 1/2 "/2.10 mm	30.5	72	22	22	HCB 08.7756 / IC

"Clamp" profile: on request.



● Staubli Units ○ Representatives/Agents

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