

High Clean Break coupling – HCB

All fluids



Applications

- Sampling
- Thermoregulation
- Utilities, laboratory connections
- Hydraulic
- Test bench
- ...

Summary

Product overview	P.2
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Clean break, vibration resistant stainless-steel automatic coupling for all fluids



How Stäubli design enhances your performance

Non-spill & flat faces

No air introduction into the circuits on connection and no loss of liquid on disconnection.

Bayonet lock

Totally reliable and provides excellent resistance to vibration.

Internal design

Optimum flow and high-quality surface finish (Ra 0.8) in the fluid path for easy and efficient cleaning.

Ergonomic design

Compact and easy to handle.

Options

A large choice of options to enhance even more security and ergonomomy.

Elastomers

A large choice of elastomers for a wide compatibility with the majority of fluids and ranges of temperature.

Key advantages



Guarantee the safety of users and installations



Adapted to large applications even harsh ones



Optimize efficiency of your processes



Enhance user experience




The opportunity to spend less and contribute to a sustainable development program

With Stäubli, you can rely on:

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

Technical characteristics

	HCB 03	HCB 05	HCB 08	HCB 12	HCB 16	HCB 20
Nominal diameter DN (mm)	3	5	8	12	16	20
Maximum allowable pressure PS (bar) ^{(1) (2) (3)}	350	160	80	50	50	50
Shut-off	double 					

⁽¹⁾ When using JS3 seals, limited to 50 bar

⁽²⁾ For other pressures, please contact us

⁽³⁾ For hazardous gases, as defined in the directive 2014/68/UE, please consult us for the maximum operating pressure

Operating temperature (TS) ^{(1) (2) (3)}	All HCB products
Nitrile (NBR)	-15°C to +100°C
Fluorocarbone (FPM)	-10°C to +200°C
Ethylène-Propylène (EPDM) ^{(4) (5)}	-20°C to +150°C
Perfluoroelastomer (FFKM) ⁽⁴⁾	0°C to +250°C
Fluorosilicon - MWP: 50 bar (FMQ)	-40°C to +175°C

⁽¹⁾ Without dust caps or with stainless steel dust caps, depending on the seal material.

Temperature range of plastic dust cap -20°C to +100 °C

⁽²⁾ For use out of the indicated temperature range, please consult us

⁽³⁾ Important ! Never use Ethylene-Propylene seals with fluids of mineral origin (oil, fat etc...)

⁽⁴⁾ Elastomer available with FDA requirements

⁽⁵⁾ Elastomer available with USP requirements for class VI - 70°C of the in vivo §<88> tests according to USP34, National Formulary 29 of 2011

Construction

Mainly stainless steel 316 series with electrolytic polishing + passivation.

For more information, consult us.

Bulkhead socket plate materials:

- standard: stainless steel
- optional: colored anodised light alloy

Protective dust caps:

- standard: POM H
- optional: stainless steel 316 series

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.

The compatible part numbers with this option are characterized by the symbol in part number boards pages.

For more information, consult our KES brochure.

Material traceability:

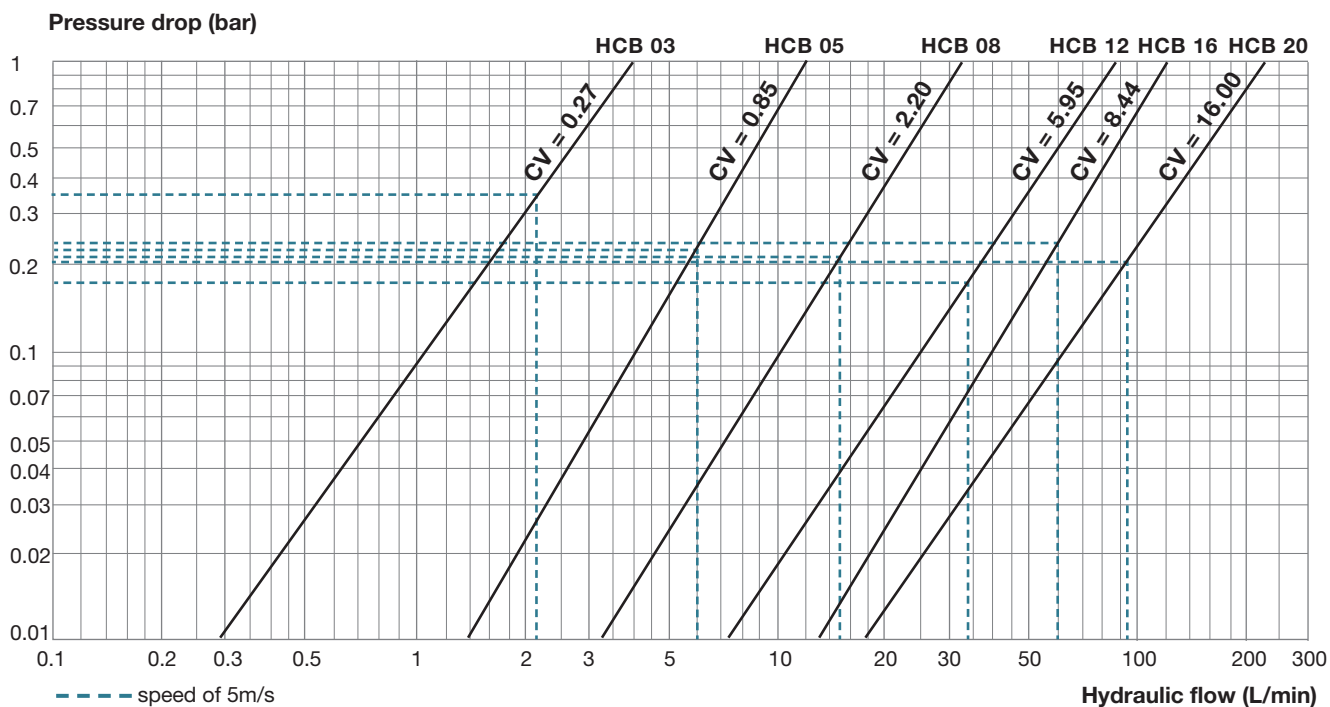


We can supply a 3.1 certificate of analysis on request.



Technical characteristics

Flow rate / pressure drop hydraulic charts



Test conditions

- Fluid: water
- Density: 998 kg/m³
- Viscosity: 1,08 cSt
- Flow direction: plug to socket



Part numbers

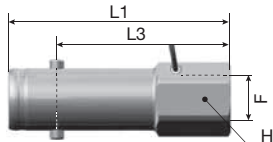
Socket

Female thread BSP

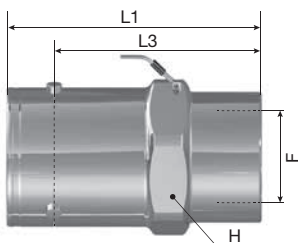
Female thread NPT

Female thread UNF*

Models HCB 03, 05, 08 and 12



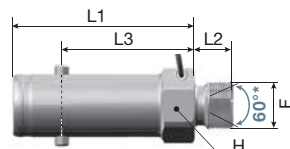
Models HCB 16 and 20



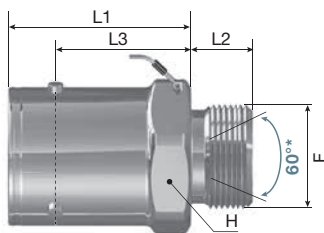
Male BSP thread with 60° sealing cone

Male thread NPT

Models HCB 03, 05, 08 and 12

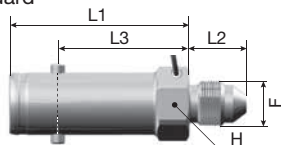


Models HCB 16 and 20



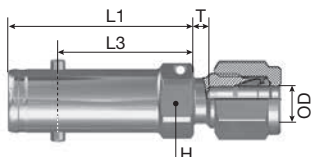
Male thread UNF JIC 37° flared fitting

To ISO 8434 standard



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)



"Triclamp" profile: on request.

Model	F thread	Dimensions (mm)			Standard part numbers
		L1	L3	H/flats	
HCB 03	G 1/8	47	37	14	HCB 03.1100 / IC
	NPT 1/8	45.5	35.5	14	HCB 03.1200 / IC
	UNF 3/8 - 24 *	47	37	14	HCB 03.1309 / IC
HCB 05	G 1/4	47	37.5	19	HCB 05.1101 / IC
	NPT 1/4	46.5	37	19	HCB 05.1201 / IC
	UNF 1/2 - 20 *	44.5	35	19	HCB 05.1313 / IC
HCB 08	G 3/8	50	38	27	HCB 08.1102 / IC
	NPT 3/8	50	38	27	HCB 08.1202 / IC
	UNF 3/4 - 16 *	51	39	27	HCB 08.1319 / IC
HCB 12	G 1/2	69.4	52.5	36	HCB 12.1103 / IC
	NPT 1/2	68.4	51.5	36	HCB 12.1203 / IC
HCB 16	G 3/4	76.2	61.1	46	HCB 16.1104 / IC
	NPT 3/4	73.7	58.6	46	HCB 16.1204 / IC
HCB 20	G 1	86.5	71.9	50	HCB 20.1105 / IC
	NPT 1	84	69.4	50	HCB 20.1205 / IC

*To SAE J 1926 standard

Model	F thread	Dimensions (mm)				Standard part numbers
		L1	L2	L3	H/flats	
HCB 03	G 1/8	38	8	28	14	HCB 03.1150 / IC
	NPT 1/8	38	9.5	28	14	HCB 03.1250 / IC
HCB 05	G 1/4	33.5	11	24	19	HCB 05.1151 / IC
	NPT 1/4	33.5	14.5	24	19	HCB 05.1251 / IC
HCB 08	G 3/8	37.5	12	25.5	27	HCB 08.1152 / IC
	NPT 3/8	37.5	14.5	25.5	27	HCB 08.1252 / IC
HCB 12	G 1/2	55.9	14	39	36	HCB 12.1153 / IC
	NPT 1/2	53.9	18.5	37	36	HCB 12.1253 / IC
HCB 16	G 3/4	58.2	16	43.1	46	HCB 16.1154 / IC
	NPT 3/4	58.2	18.5	43.1	46	HCB 16.1254 / IC
HCB 20	G 1	64.5	20	49.9	50	HCB 20.1155 / IC
	NPT 1	64.5	23.5	49.9	50	HCB 20.1255 / IC

*Sealing cone only available on Male BSP thread

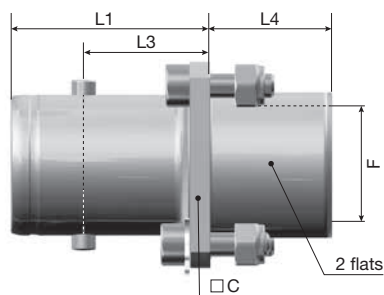
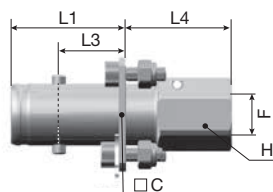
Model	F thread	Dimensions (mm)				Standard part numbers
		L1	L2	L3	H/flats	
HCB 03	UNF 3/8 - 24 (DASH 3)	38	12	28	14	HCB 03.1652 / IC
HCB 05	UNF 9/16 - 18 (DASH 6)	33.5	14	24	19	HCB 05.1655 / IC
HCB 08	UNF 3/4 - 16 (DASH 8)	37.5	16.5	25.5	27	HCB 08.1656 / IC

Model	Tube OD	Dimensions (mm)				Standard part numbers
		L1	L3	H/flats	T	
HCB 03	Ø 6 mm	38	28	14	3	HCB 03.1766 / IC
	Ø 1/4 "	38	28	14	3	HCB 03.1753 / IC
HCB 05	Ø 8 mm	33.5	24	19	3.3	HCB 05.1768 / IC
	Ø 3/8 "	33.5	24	19	2.5	HCB 05.1755 / IC
HCB 08	Ø 12 mm	38.5	26.5	27	0	HCB 08.1772 / IC
	Ø 1/2 "	38.5	26.5	27	0	HCB 08.1756 / IC

Part numbers

Bulkhead socket

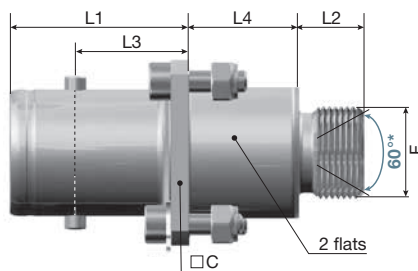
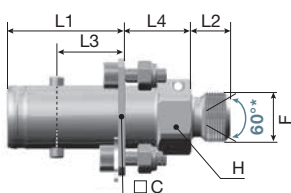
Female thread BSP
Female thread NPT
Female thread UNF*






Model	F thread	Dimensions (mm)					Standard part numbers
		□ C	L1	L3	L4	H/flats	
HCB 03	G 1/8	24	24.5	14.5	22.5	14	HCB 03.2100 / IC
	NPT 1/8	24	24.5	14.5	21	14	HCB 03.2200 / IC
	UNF 3/8 - 24 *	24	24.5	14.5	22.5	14	HCB 03.2309 / IC
HCB 05	G 1/4	28	29.5	20	22.5	19	HCB 05.2101 / IC
	NPT 1/4	28	29.5	20	22	19	HCB 05.2201 / IC
	UNF 1/2 - 20 *	28	29.5	20	21.5	19	HCB 05.2313 / IC
HCB 08	G 3/8	34	33	21	20	24	HCB 08.2102 / IC
	NPT 3/8	34	33	21	20	24	HCB 08.2202 / IC
	UNF 3/4 - 16 *	34	33	21	20	24	HCB 08.2319 / IC

*To SAE J 1926 standard

Male BSP thread with 60° sealing cone
Male thread NPT



Model	F thread	Dimensions (mm)						Standard part numbers
		□ C	L1	L2	L3	L4	H/flats	
HCB 03	 G 1/8	24	24.5	8	14.5	13.5	14	HCB 03.2150 / IC
	NPT 1/8	24	24.5	9.5	14.5	13.5	14	HCB 03.2250 / IC
HCB 05	 G 1/4	28	29.5	11	20	19	19	HCB 05.2151 / IC
	NPT 1/4	28	29.5	14.5	20	19	19	HCB 05.2251 / IC
HCB 08	 G 3/8	34	33	12	21	20	24	HCB 08.2152 / IC
	NPT 3/8	34	33	14.5	21	20	24	HCB 08.2252 / IC

*Sealing cone only available on Male BSP thread

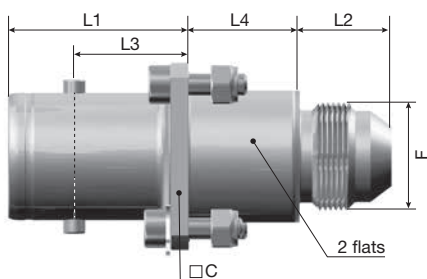
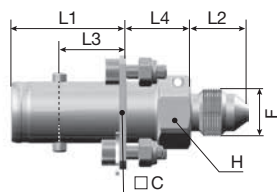
“Triclamp” profile: on request.

Part numbers

Bulkhead socket

Male thread UNF JIC 37° flared fitting

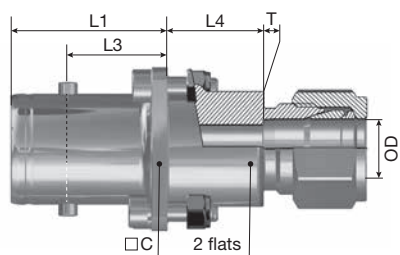
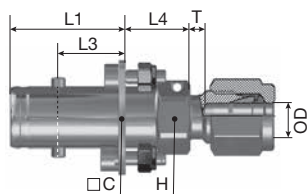
To ISO 8434 standard



Model	F thread	Dimensions (mm)						Standard part numbers
		□ C	L1	L2	L3	L4	H/flats	
HCB 03	UNF 3/8 - 24 (DASH 3)	24	24.5	12	14.5	13.5	14	HCB 03.2652 / IC
HCB 05	UNF 9/16 - 18 (DASH 6)	28	29.5	14	20	19	19	HCB 05.2655 / IC
HCB 08	UNF 3/4 - 16 (DASH 8)	34	33	16.5	21	20	24	HCB 08.2656 / IC

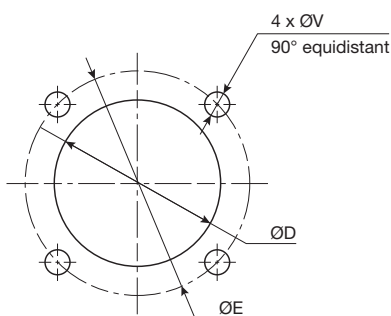
For calibrated stainless steel tubes

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



Model	Tube OD	Dimensions (mm)						Standard part numbers
		□ C	L1	L3	L4	H/flats	T	
HCB 03	Ø 6 mm	24	24.5	14.5	13.5	14	3	HCB 03.2766 / IC
	Ø 1/4 "	24	24.5	14.5	13.5	14	3	HCB 03.2753 / IC
HCB 05	Ø 8 mm	28	29.5	20	19	19	3.3	HCB 05.2768 / IC
	Ø 3/8 "	28	29.5	20	19	19	2.5	HCB 05.2755 / IC
HCB 08	Ø 12 mm	34	33	21	20	24	0	HCB 08.2772 / IC
	Ø 1/2 "	34	33	21	20	24	0	HCB 08.2756 / IC

Bulkhead socket installation



Model	Dimensions (mm)			
	ØD Panel drilling	Max. panel thickness	ØE	ØV
HCB 03	16,5	3,5	24	3,5
HCB 05	22,3	5	30	3,3
HCB 08	27,5	5	37	4,3



CAD files available via this link

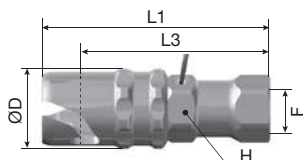
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"Triclamp" profile: on request.

Part numbers

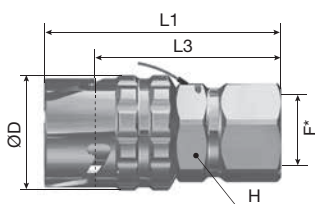
Plug

Female thread BSP
 Female thread NPT
 Female thread UNF*

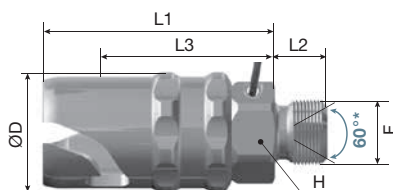


Model	F thread	Dimensions (mm)				Standard part numbers
		Ø D	L1	L3	H/flats	
HCB 03	G 1/8	19	52.5	44.5	14	HCB 03.7100 / IC
	NPT 1/8	19	50.5	42.5	14	HCB 03.7200 / IC
	UNF 3/8 - 24 *	19	53	45	14	HCB 03.7309 / IC
HCB 05	G 1/4	23.5	61.5	52	19	HCB 05.7101 / IC
	NPT 1/4	23.5	61	51.5	19	HCB 05.7201 / IC
	UNF 1/2 - 20 *	23.5	60.5	51	19	HCB 05.7313 / IC
HCB 08	G 3/8	30.5	68.5	57	22	HCB 08.7102 / IC
	NPT 3/8	30.5	66.5	55	22	HCB 08.7202 / IC
	UNF 3/4 - 16 *	30.5	70	58.5	22	HCB 08.7319 / IC
HCB 12	G 1/2	41.5	91.6	72.3	27	HCB 12.7103 / IC
	NPT 1/2	41.5	90.7	71.4	27	HCB 12.7203 / IC
HCB 16	G 3/4	52	100.5	78.8	36	HCB 16.7104 / IC
	NPT 3/4	52	97.6	75.9	36	HCB 16.7204 / IC
HCB 20	G 1	58	110.5	85.5	41	HCB 20.7105 / IC
	NPT 1	58	107.6	82.6	41	HCB 20.7205 / IC

*To SAE J 1926 standard



Male BSP thread with 60° sealing cone
 Male thread NPT



Model	F thread	Dimensions (mm)					Standard part numbers
		Ø D	L1	L2	L3	H/flats	
HCB 03	G 1/8	19	35.5	8	27.5	14	HCB 03.7150 / IC
	NPT 1/8	19	35.5	9.5	27.5	14	HCB 03.7250 / IC
HCB 05	G 1/4	23.5	37.5	11	28	19	HCB 05.7151 / IC
	NPT 1/4	23.5	37.5	14.5	28	19	HCB 05.7251 / IC
HCB 08	G 3/8	30.5	44	12	32.5	22	HCB 08.7152 / IC
	NPT 3/8	30.5	44	14.5	32.5	22	HCB 08.7252 / IC
HCB 12	G 1/2	41.5	72.9	14	53.6	27	HCB 12.7153 / IC
	NPT 1/2	41.5	72.9	18.5	53.6	27	HCB 12.7253 / IC
HCB 16	G 3/4	52	79.2	16	57.5	36	HCB 16.7154 / IC
	NPT 3/4	52	79.2	18.5	57.5	36	HCB 16.7254 / IC
HCB 20	G 1	58	84.6	20	59.6	41	HCB 20.7155 / IC
	NPT 1	58	84.6	23.5	59.6	41	HCB 20.7255 / IC

*Sealing cone only available on Male BSP thread

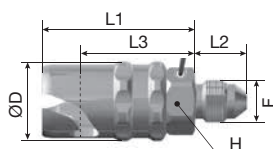
“Triclamp” profile: on request.

Part numbers

Plug

Male thread UNF JIC 37° flared fitting

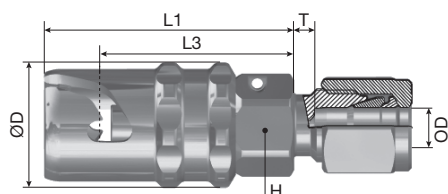
To ISO 8434 standard



Model	F thread	Dimensions (mm)					Standard part numbers
		Ø D	L1	L2	L3	H/flats	
HCB 03	UNF 3/8 - 24 (DASH 3)	19	35.5	12	27.5	14	HCB 03.7652 / IC
HCB 05	UNF 9/16 - 18 (DASH 6)	23.5	37.5	14	28	19	HCB 05.7655 / IC
HCB 08	UNF 3/4 - 16 (DASH 8)	30.5	44	16.5	32.5	22	HCB 08.7656 / IC

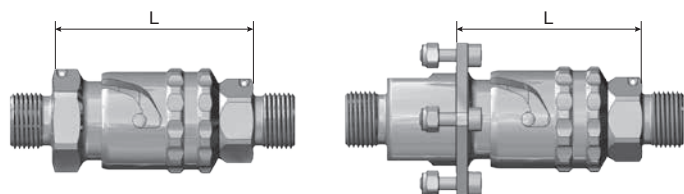
For calibrated stainless steel tubes

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



Model	Tube OD	Dimensions (mm)					Standard part numbers
		Ø D	L1	L3	H/plats	T	
HCB 03	Ø 6 mm	19	38	30	14	3	HCB 03.7766 / IC
	Ø 1/4 "	19	38	30	14	3	HCB 03.7753 / IC
HCB 05	Ø 8 mm	23.5	42	32	19	3.25	HCB 05.7768 / IC
	Ø 3/8 "	23.5	44.5	35	19	2.5	HCB 05.7755 / IC
HCB 08	Ø 12 mm	30.5	52	40.5	22	0	HCB 08.7772 / IC
	Ø 1/2 "	30.5	52	40.5	22	0	HCB 08.7756 / IC

Overall dimensions in connected position



L = L3 socket + L3 plug



CAD files available
via this link

www.staubli.com

“Triclamp” profile: on request.

Options & additional equipment



Mechanical and color key locking

3, 45, 6 or 9 option

Thanks to visual and mechanical coding, these security options allow you to avoid any cross connections.



Colored plates for bulkhead sockets

KR, KV, KB or KN option

This option allows immediate visual identification of your circuits for recessed connectors.



Seals

JV, JE, JK or JS3 option

We offer a wide variety of elastomers to best meet your needs.



Stainless steel dust caps

BM option

These caps are made to best suit to corrosive environment.



Handwheel

VT option

This stainless steel handwheel was developed for greater handling comfort. Available for plug DN16 and 20.



Regulations

- **OX:** product prepared for use of oxygen*
- **FDA:** product prepared for compliance with FDA requirement**
- **USP:** product prepared for compliance with USP requirement**
- **TSE:** product prepared for compliance with TSE requirement**
- **UC:** product prepared for compliance with PMUC requirement***

* OX is available with JV and JE seal / ** FDA, USP and TSE are available with JE and JK seal / *** UC is available with JE seal.

How to build your part number

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 / OX / 3 / 45 / KR / BM / VT



Socket

HCB XX.XXX /

JV /

OX /

45 /

KB /

BM /

VT



1 Standard part number → P.5
 • Seals: nitrile

2 Seal grades → P.3
 other than Nitrile
 • Fluorocarbon (FPM) code **JV**
 • Ethylene-propylene (EPDM) JE
 • Perfluoroelastomer (FFKM) JK
 • Fluorosilicon (FMQ) JS3

3 Regulatory option → P.10
 code
 • OX for JE and JV **OX**
 • FDA for JE and JK FDA
 • USP for JE and JK USP
 • TSE for JE and JK TSE
 • PMUC for JE UC

4 Mechanical & color key locking → P.10
 code
 • Red 3
 • Green 45
 • Blue 6
 • Black 9

5 Colored plates for bulkhead sockets for HCB 03, 05 and 08 → P.10
 code
 • Red KR
 • Green KV
 • Blue KB
 • Black KN

6 dust caps → P.10
 code
 • Stainless steel dust caps **BM**

7 Handwheel → P.10
 only for HCB 16 and 20
 • Stainless steel handwheel code **VT**



● Staubli Units ○ Representatives/Agents

Global presence of the Staubli Group

www.staubli.com