

SPF Air conditioning





Frequent connections and disconnections of air conditioning systems ...

The SPF quick-release couplings ensure modularity of cooling systems

Easy to connect and disconnect, they ensure quick assembly and immediate use of modular cooling systems.

They withstand a large number of connections/disconnections even under residual pressure: up to 400 connections under normal conditions of use.

High level of leaktightness

Double sealing barriers for:

- a large number of connections/disconnections without refilling the circuits with coolant,
- preloading and prolonged storage of cooling components.

Leaktight dust caps to hold this double sealing barrier in disconnected position.

Lighter weight

Materials specially selected and design studied to fulfil the requirements of equipment on board aircraft, helicopters, motorsports competition vehicles, portable air conditioning units for occasional use.

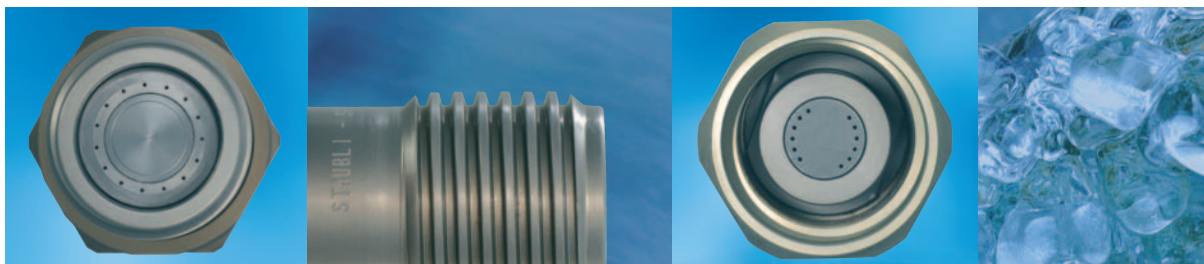
Safe connections

Reliable screw locking mechanism.

Locking pin safety feature even in the case of high levels of vibration (VS option).

Non-spill, flush face design

- Protection of circuits and the environment
- flush faces easy to clean before connection
 - limited fluid losses
 - reduced operating costs



Patented



... without refilling the circuits with coolant

Considerable gains in maintenance of vehicles and machines

Quick assembly and disassembly of cooling system components not requiring qualified maintenance personnel for draining and refilling with coolant.

Easy-to-handle

Screw locking mechanism with quick start for greater ease of connection even at extreme temperatures and under residual pressure.

Anti-twisting function of the hose

The plug direction in the socket reduces any potential twisting of the hose.

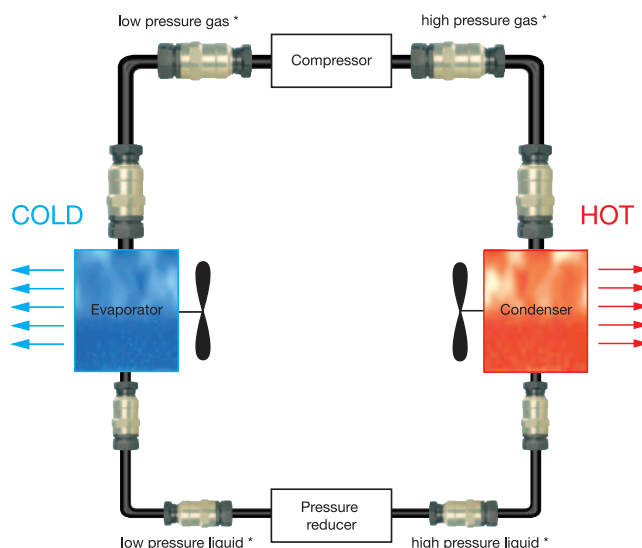


Several types of seal

Depending on the type of coolant and/or mixture of coolant/compressor oil. Please contact us for further details.

Qualification and specific tests

Our qualification criteria for SPF quick-release couplings are defined to fulfil requirements of a large number of connections/disconnections. Please contact us for other tests which can be performed specifically for aeronautics.



* Mainly liquid or gaseous phase. In each phase (liquid or gaseous), a small proportion of the other phase still lingers.



Technical characteristics

			SPF 06	SPF 09	SPF 14	SPF 17
Max. working pressure (bar)			80	80	80	80
Passage diameter (mm)			6	9	14	17
Shutoff	double					
Max. differential pneumatic pressure at connection and disconnection (bar)			40			
Direction of fluid flow			in both directions			
Weight (g)	socket	male thread	65	115	323	512
		panel mount	72	131	348	603
	plug	male thread	52	102	261	458
		panel mount	59	118	286	510

Construction

High performance treated aluminium alloy.

Protective dust caps

- standard
 - POM.H with Neoprene clamp.
- optional
 - POM.H with metal cable attachment.

Tightness

- standard
 - Ethylene-Propylene seals (EPDM)
- optional
 - Hydrogenated Nitrile rubber seals (HNBR)

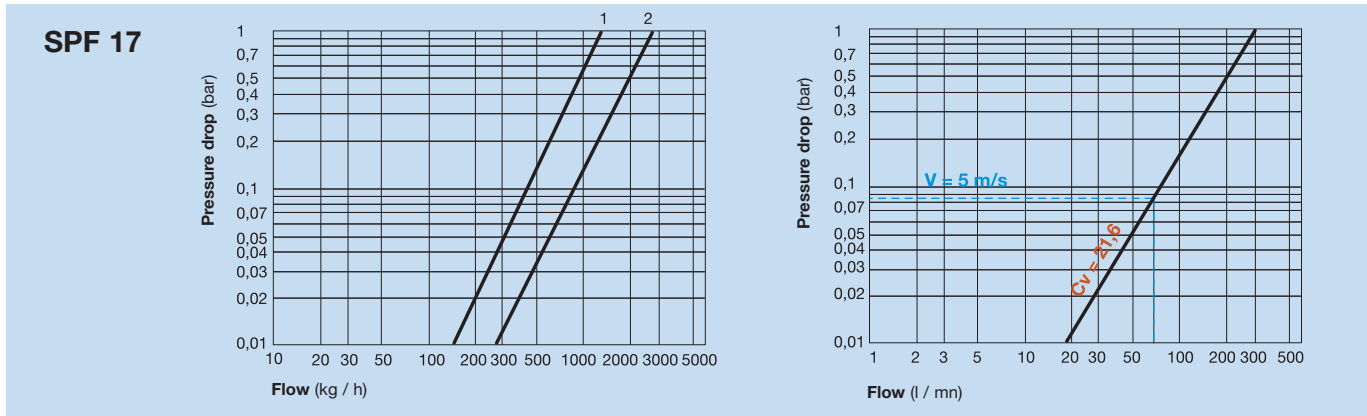
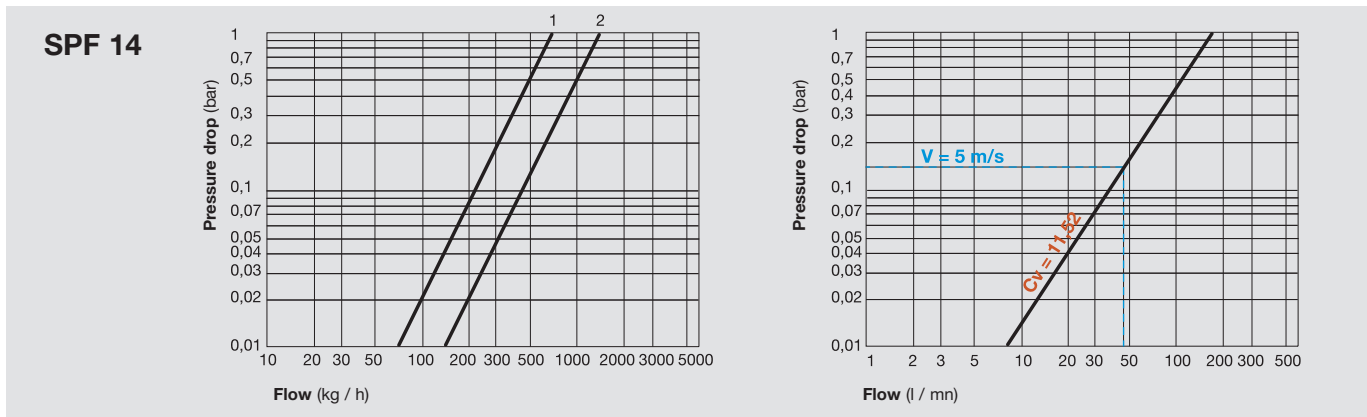
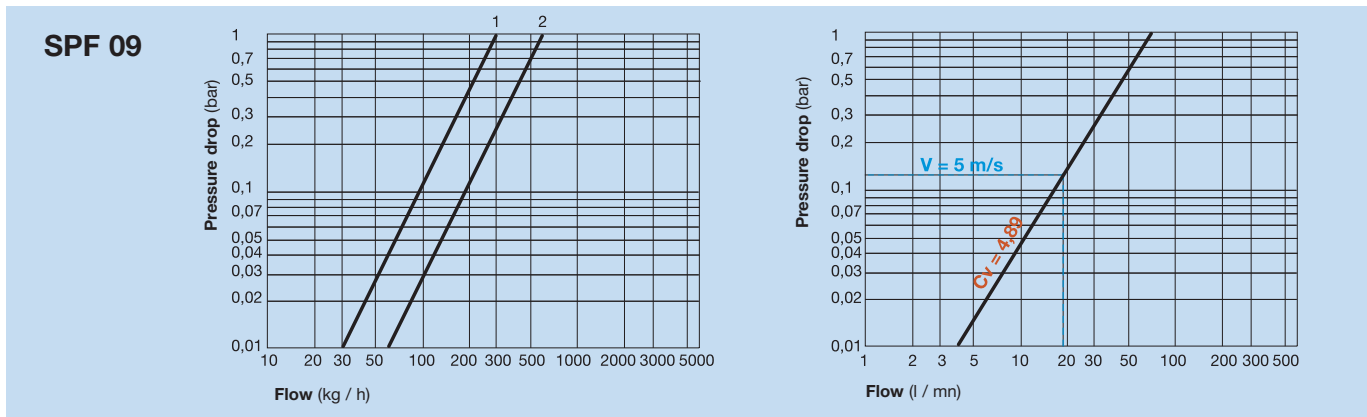
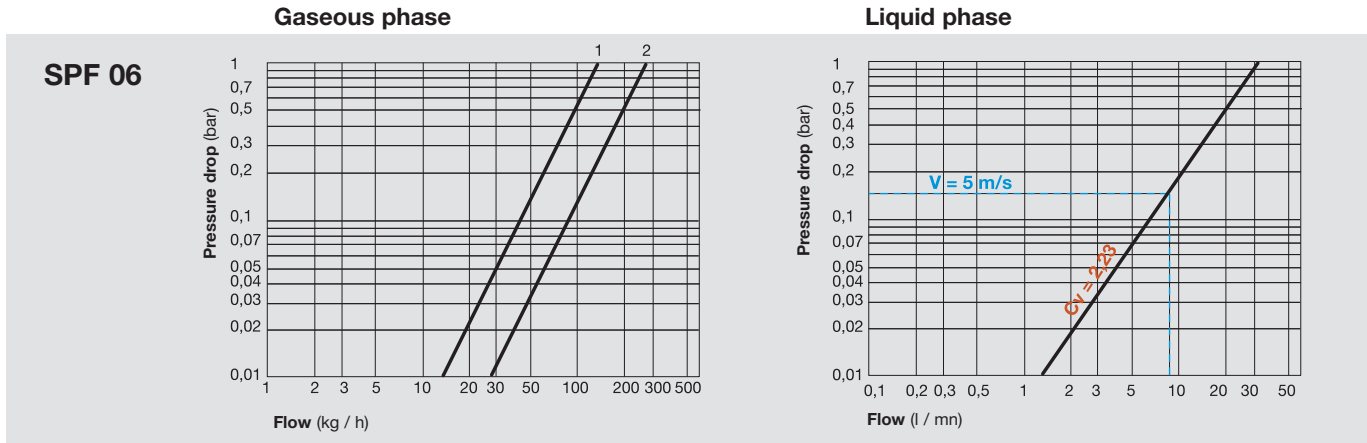
Please contact us for the other types of seal available.

For precise definition of the most suitable seal for your application, please indicate the type of compressor oil used.

Working temperatures

- Ethylene-Propylene seals (EPDM): - 40 °C to + 125 °C
- Hydrogenated Nitrile rubber seals (HNBR): - 15 °C to + 125 °C

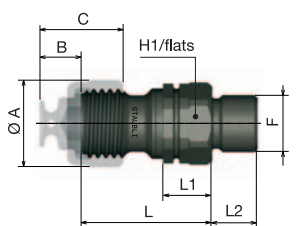
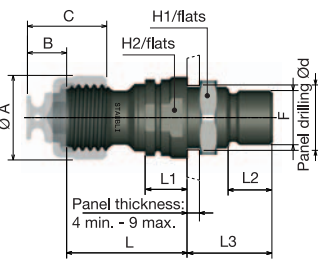
Flow rate / pressure drop charts (R134a)



Direction of flow: socket → plug
 Fluid: Fréon R134a at 17 °C
 • chart 1: inlet pressure 4,14 bar
 • chart 2: inlet pressure 20 bar
 Other temperature and pressure conditions: consult us

Direction of flow: socket → plug
 Fluid: Freon R134a liquid phase at 67 °C, 19 bar
 Density: 1015 kg/m³
 Kinematic viscosity : 0,14 cSt

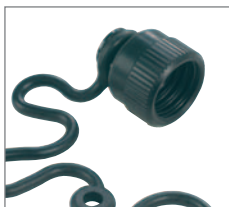
Part-numbers

Designation	Model	End connection		Dimensions (mm)										Part-numbers
		F	Profile	L	L1	L2	L3	H1/flats	H2/flats	Ø d	Ø A	B	C	
1. Sockets male thread 	SPF 06	UN 5/8 - 18	TUBO	41	17	12		23			26	14,5	28	SPF 06.1416/L/JE/TB
	SPF 09	UN 7/8 - 14	TUBO	51	19	18		29			34	16	33	SPF 09.1422/L/JE/TB
	SPF 14	UN 1 1/16 - 14	TUBO	75	31	21		42			47	18	39	SPF 14.1427/L/JE/TB
	SPF 17	UN 1 7/16 - 12	ORS	89,5	32,5	17,5		55			54	19	50	SPF 17.1437/L/JE/FS
2. Panel mount sockets male thread 	SPF 06	UN 5/8 - 18	TUBO	39	15	12	27	22	23 (2 flats)	19	26	14,5	28	SPF 06.2416/L/JE/TB
	SPF 09	UN 7/8 - 14	TUBO	49,5	17,5	18	34,5	30	29 (2 flats)	26	34	16	33	SPF 09.2422/L/JE/TB
	SPF 14	UN 1 1/16 - 14	TUBO	68	24	21	41	38	42 (2 flats)	35	47	18	39	SPF 14.2427/L/JE/TB
	SPF 17	UN 1 7/16 - 12	ORS	81	24	17,5	37,5	54	55 (2 flats)	49	54	19	50	SPF 17.2437/L/JE/FS

Tightness

- Ethylene-Propylene seals (EPDM): code **JE** in the part-numbers of the sockets and plugs pages 6 and 7
- Hydrogenated Nitrile rubber seals (HNBR): replace code JE with code **JH** in the part-numbers of sockets and plugs pages 6 and 7.
E.g.: SPF 06.1416/L/**JH**/TB

Protective dust caps



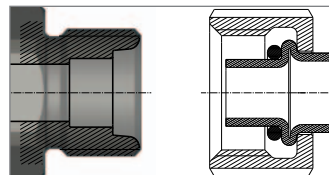
- Standard: attachment with Neoprene clam: part-numbers of the sockets and plugs pages 6 and 7.



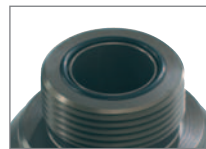
- Optional: attachment with metal cable in the case of considerable stress (low temperatures, frequent handling): add code **BR** to the part-numbers of the sockets and plugs pages 6 and 7.
E.g.: SPF 06.1416/L/JE/TB/**BR**

End connection

- Assembly on flexible hose, **TUBO** profile



- Assembly on flexible hose, **ORS** profile



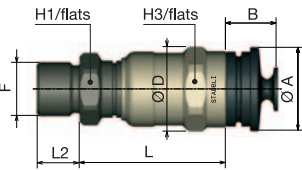
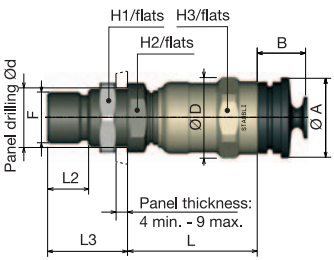
Seal originally mounted in the front groove of the socket or plug back adaptor

- Assembly on drilled unit, **O-ring** seal tightness



Seal to be ordered separately (see part-numbers in the table below)

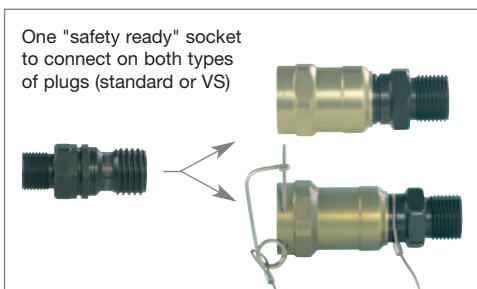
Model	EPDM (JE) seals	HNBR (JH) seals
SPF 06	R 601 014 37	R 601 014 41
SPF 09	R 601 115 37	R 601 115 41
SPF 14	R 601 119 37	R 601 119 41

Designation	Model	End connection		Dimensions (mm)										Part-numbers
		F	Profile	Ø D	H3/flats	L	L2	L3	H1/flats	H2/flats	Ø d	Ø A	B	
3. Plugs male thread 	SPF 06	UN 5/8 - 18	TUBO	26,5	24	49	12		22			28,5	21	SPF 06.7416/L/JE/TB
	SPF 09	UN 7/8 - 14	TUBO	35	32	61	18		27			35	21,5	SPF 09.7422/L/JE/TB
	SPF 14	UN 1 1/16 - 14	TUBO	49,5	46	80	21		35			42	27	SPF 14.7427/L/JE/TB
	SPF 17	UN 1 7/16 - 12	ORS	59,5	55	106,5	17,5		42			56	28	SPF 17.7437/L/JE/FS
4. Panel mount plugs male thread 	SPF 06	UN 5/8 - 18	TUBO	26,5	24	48	12	27,5	22	21 (2 flats)	19	28,5	21	SPF 06.5416/L/JE/TB
	SPF 09	UN 7/8 - 14	TUBO	35	32	57	18	35	30	25 (2 flats)	26	35	21,5	SPF 09.5422/L/JE/TB
	SPF 14	UN 1 1/16 - 14	TUBO	49,5	46	75,5	21	41	38	32 (2 flats)	35	42	27	SPF 14.5427/L/JE/TB
	SPF 17	UN 1 7/16 - 12	ORS	59,5	55	101	17,5	37,5	55	42 (2 flats)	49	56	28	SPF 17.5437/L/JE/FS

Length of connected socket and plug: add L1 of the socket to L of the corresponding plug

Locking pin safety feature

Add code **VS** to the plug part-numbers page 7
E.g.: SPF 06.7416/L/**VS**/JE/TB

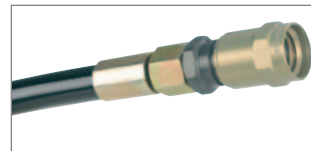


Locking pin safety feature between socket and plug

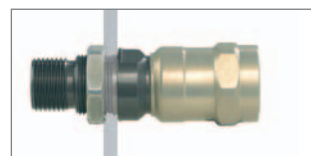


Locking pin safety feature of the protective dust cap

3 possibilities of socket and plug assembly



- On flexible hose



- Panel mounted



- On drilled unit: please contact us to define arrangement drawings and corresponding seals.

For contact details: www.staubli.com/connectors/contacts



Global presence of the Stäubli Group

- Stäubli units
- Agents

International sales coordination

Stäubli Faverges - CS 30070 - F - 74210 Faverges - Tel.: +33 4 50 65 67 97 - Fax: +33 4 50 65 60 69 - E-mail: connectors.sales@staubli.com
www.staubli.com

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