FAST MOVING TECHNOLOGY

STÄUBLI

Hydraulic applications

Connectors | Railway

OUR APPLICATIONS

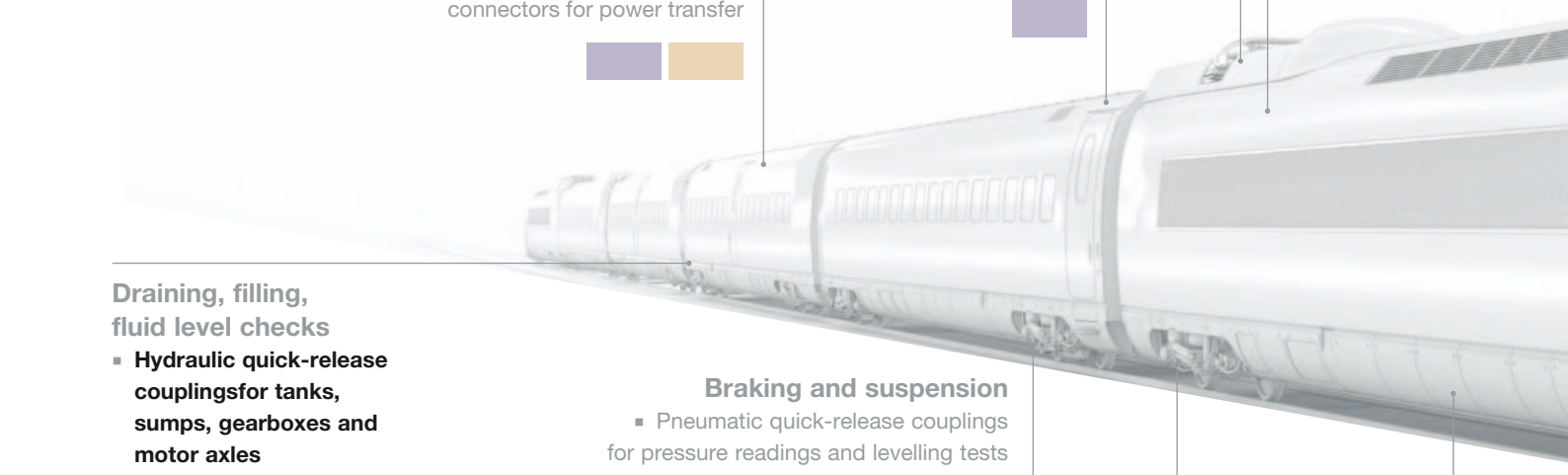
Connections: a key link in the railway transport chain

Pantograph systems
- Pneumatic quick-release couplings

Control systems
- Modular system for the electrical connection of control or communication systems

Inter-body connections
- Pneumatic quick-release couplings for air lines
- System of modular electrical connectors for power transfer

Rheostats
- Modular power electrical connectors for inputs/outputs



Draining, filling, fluid level checks
- **Hydraulic quick-release couplingsfor tanks, sumps, gearboxes and motor axles**

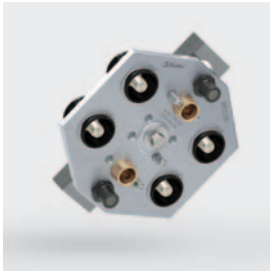
Braking and suspension
- Pneumatic quick-release couplings for pressure readings and levelling tests

Car / bogie / engine or carrier connections
- Pneumatic connections for flanged-lubricating devices, braking circuits, etc.
- **Hydraulic quick-release couplings for brake calipers, accumulators and hydraulic pressure units**
- System of modular electrical connectors for power transfer
- **Multi-connection systems for quick bogie connections**

Earthing solutions
- Electric hinges between boxes / cabinets and doors
- Earthing block with distribution

Other applications
- Quick-release couplings for automated door systems, drinking water circuits, air conditioning, sirens, etc.
- Quick-release couplings for fuel circuits

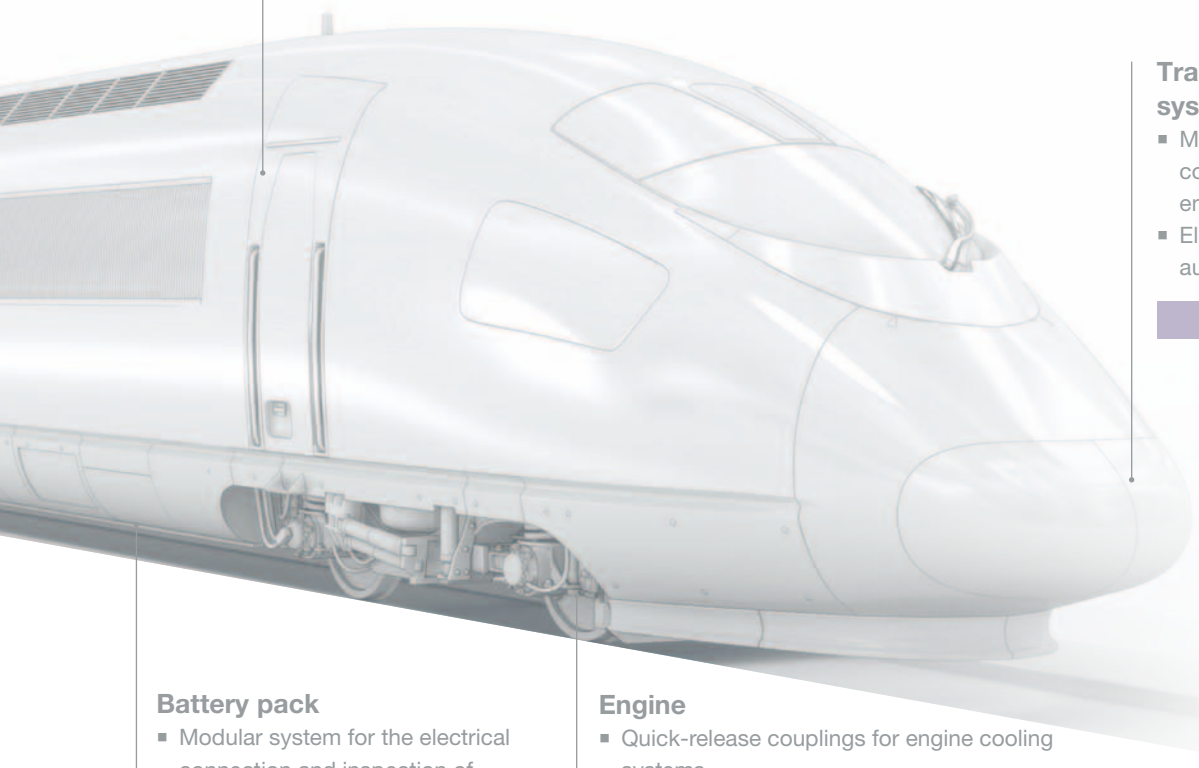
Bespoke solutions for infrastructure applications:
- Tunnels
- Substations
- Battery chargers
- Engine power supply in case of maintenance



Power converter / auxiliary converters / transformers

- Quick-release mono or multi-connections for cooling on-board electronic circuits
- Connection solutions for laminated insulated bipolar busbars
- Insulated and uninsulated fork connectors for quick connections to bays
- Pin / socket assemblies for the quick connection of power modules
- Modular power electrical connectors for converter inputs / outputs

Hydraulic
Electric
Compressed Air
Cooling



Trainset coupling systems

- Multi-pole electrical connectors for extreme environments
- Electrical contacts for automatic couplers

Battery pack

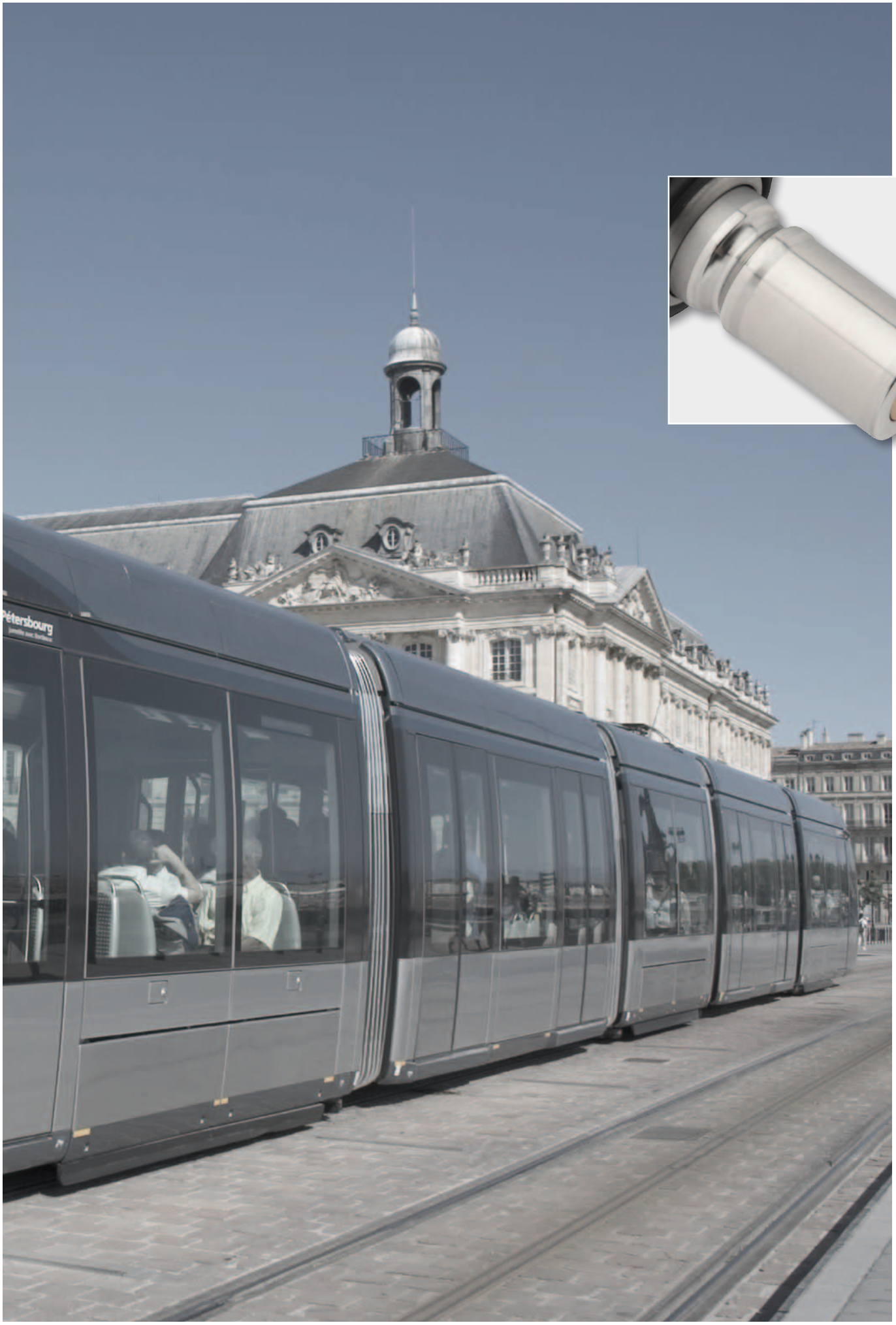
- Modular system for the electrical connection and inspection of battery packs
- Quick-release couplings for battery cooling

Engine

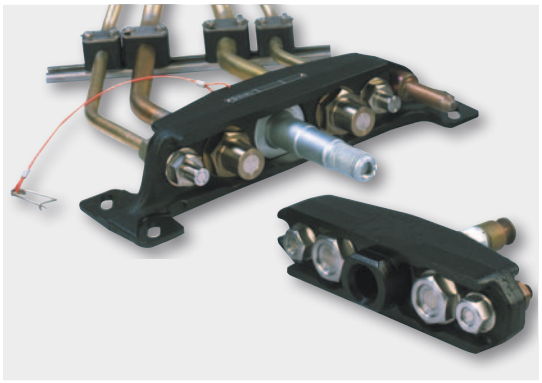
- Quick-release couplings for engine cooling systems
- Modular electrical connectors for power transfer
- Junction boxes for the quick connection of converter inputs / engine outputs












Go up a gear

SPI with protector couplings range

Applications

- **Car / bogie connections:**
  - Hydraulic quick-release couplings for brake calipers, accumulators and hydraulic pressure units, etc.
  - Multi-connection for hydraulic tilting system, quick bogie connections.
- **Draining, filling, fluid level checks:**
  - Hydraulic quick-release couplings for tanks, sumps, gearboxes and motor axles.

Non-spill, flat faces
No lost of liquid on disconnection.

Safe locking
Quick and safe locking with a large number of locking balls for high strength under severe conditions of use (vibrations, oscillations).

Long guiding of plug into the socket
for a constant tightness even under severe conditions of use.

Protected sealing and locking
Chloroprene protection avoids any penetration of external agents: water, dust, that could block the locking mechanism.

Easy to handle
Ergonomic locking sleeve for excellent grip even with gloves.

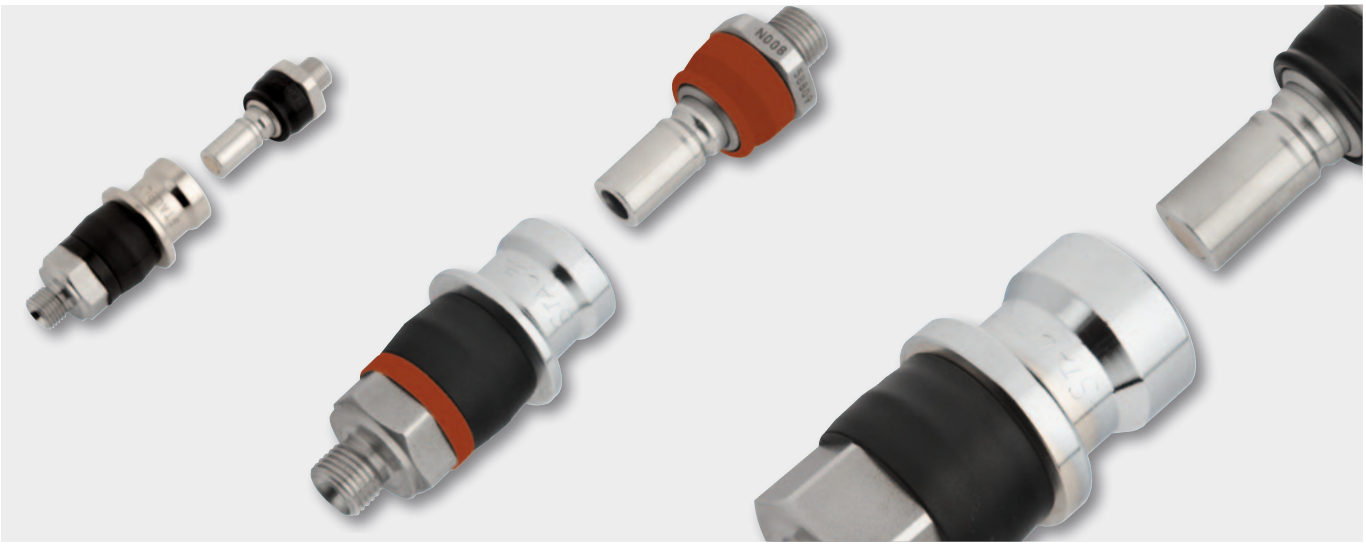
Visual circuit identification
thanks to coloured rings.

Complete connection solutions
Quick-release couplings also available directly assembled on hoses (see pages 10-11).

Multi-connection solutions for simultaneous connection of several circuits
Stäubli analyses, designs and manufactures multi-connection systems comprising fluid and electric connections, guiding and centring elements, coupling and locking systems, perfectly integrated into your applications.

Technical characteristics

SPI/PP couplings (with protector)



		SPI 03/PP	SPI 06/PP	SPI 09/PP	SPI 12/PP
Nominal diameter DN (mm)		3	6	9	12
Maximum allowable pressure PS[1] (bar)		160	160	160	160
Shut-off	double				

KES sealing-kit

Available on all the BSP parallel male threads.
Part-numbers of the KES sealing-kits:

G 1/8 ..... KES 01.9100
G 1/4 ..... KES 01.9101
G 3/8 ..... KES 01.9102

Construction

- Stainless steel and brass.
- Protective dust caps:
  - socket: aluminium with black treatment + Chloroprene (CR)
  - plug: Chloroprene (CR)

Sealing

Nitrile seals (NBR).
Other seal materials available on request.

Minimum and maximum allowable temperatures TS

-25 and +80 °C [2]

[1] Other possible pressures: consult us
[2] For use outside the indicated temperature range: consult us.

The working pressures and temperatures are given for the Stäubli socket / plug set only.
It is essential to ensure that the other components of the circuit (hoses, connections...) are appropriate for the application.

End connection standards

- BSP parallel male thread with 60° cone: profile according to the ISO 8434-6 standard.
- Metric male thread with 24° cone: profile according to the ISO 8434-1/L standard.
- UN JIC male thread: profile according to the ISO 8434-2 standard.

Coloured rings for visual circuit identification

Only available for 6 mm diameter:

- Black ..... standard
- Blue ..... consult us
- Red ..... consult us
- Green ..... consult us

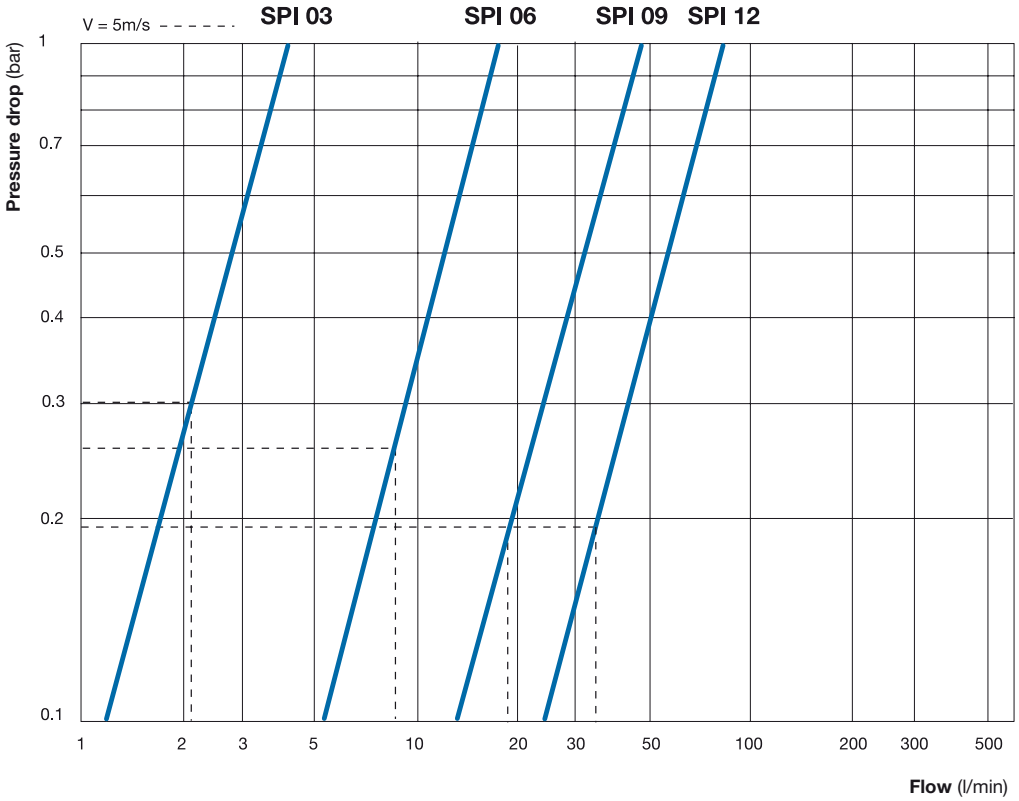
Safety key

Option only available for 6 mm diameter: consult us.

Standard for shock and vibration tests

Compliant with CEI 61373 : 2010 Category 2 standard.

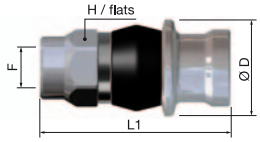
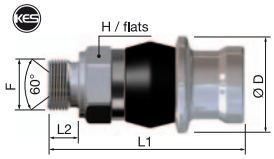
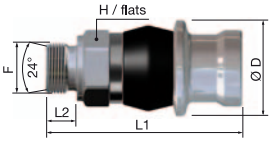
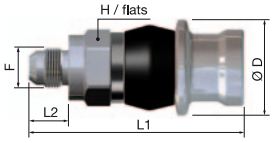
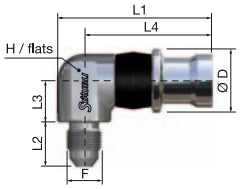
Flow rate / pressure drop charts



Test conditions:
- Fluid: water
- Direction of flow: plug ⟶ socket

Part-numbers

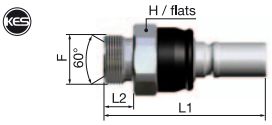
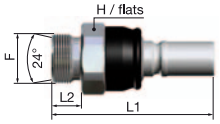
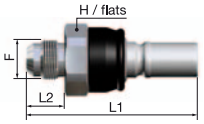
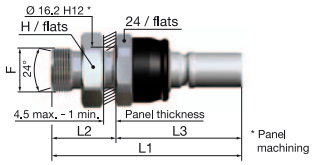
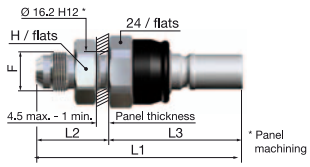
SPI/PP sockets (with protector)

Designation	Model	End connection F or Ø	Dimensions (mm)						Part-numbers
			Ø D	L1	L2	H/flats	L3	L4	
Female thread	**SPI 06/PP ***	G 1/4	34	67,5		24			**N 008 585 09**
									
BSP male thread according to the ISO 8434-6 (60° cone) standard	**SPI 03/PP**	G 1/8	20	50.5	8	16			**N 002 516 09**
	SPI 06/PP *	G 1/4	34	68.5	11	24			**N 008 578 09**
	SPI 09/PP	G 3/8	39	82	12	29			**N 008 606 09**
	SPI 12/PP	G 3/4	53	119	16	34			**N 006 554 18**
									
BSP male thread according to the ISO 8434-1/L (24° cone) standard	**SPI 03/PP**	M 12 x 1,5 for tube Ø 6 mm	20	52.5	10	16			**N 008 562 09**
	SPI 06/PP *	M 14 x 1,5 for tube Ø 8 mm	34	66.5	10	24			**N 002 654 08**
		M 16 x 1,5 for tube Ø 10 mm	34	67.5	11	24			**N 001 575 09**
		M 18 x 1,5 for tube Ø 12 mm	34	69.5	11	24			**N 006 167 09**
	SPI 09/PP	M 18 x 1,5 for tube Ø 12 mm	39	80	11	29			**N 008 608 09**
		M 22 x 1,5 for tube Ø 15 mm	39	81	12	29			**N 001 519 09**
	SPI 12/PP	M 26 x 1,5 for tube Ø 18 mm	53	115	12	34			**N 006 555 18**
									
JIC male thread according to the ISO 8434-2 standard	**SPI 03/PP**	UN 7/16-20 for tube 1/4	20	56.5	14	16			**N 008 565 09**
	SPI 06/PP *	UN 9/16-18 for tube 3/8	34	76	14	24			**N 008 583 09**
	SPI 09/PP	UN 3/4-16 for tube 1/2	39	88.5	16.5	29			**N 008 611 09**
									
90° JIC male thread according to the ISO 8434-2 standard	**SPI 03/PP**	UN 7/16-20 for tube 1/4	20	49	14	17	13	40.5	**N 008 567 09**
									

Other end connections, consult us.
Overall dimensions in coupled position: see page 9.

* Coloured rings for visual identification of available circuits: contact us.

SPI/PP plugs (with protector)

Designation	Model	End connection F or Ø	Dimensions (mm)						Part-numbers
			Ø D	L1	L2	H/flats	L3	L4	
BSP male thread according to the ISO 8434-6 (60° cone) standard 	**SPI 03/PP**	G 1/8 for tube Ø 6 mm		41	8	16			**N 002 515 09**
	SPI 06/PP *	G 1/4 for tube Ø 8 mm		57	11	24			**N 008 588 09**
	SPI 09/PP	G 3/8 for tube Ø 10 mm		69	12	29			**N 008 614 09**
	SPI 12/PP	G 3/4 for tube Ø 20 mm		93	16	36			**N 006 556 18**
BSP male thread according to the ISO 8434-1/L (24° cone) standard 	**SPI 03/PP**	M 12 x 1,5 for tube Ø 6 mm		43	10	16			**N 008 570 09**
	SPI 06/PP *	M 14 x 1,5 for tube Ø 8 mm		56	10	24			**N 009 960 08**
		M 16 x 1,5 for tube Ø 10 mm		57	11	24			**N 008 593 09**
		M 18 x 1,5 for tube Ø 12 mm		59.5	11	24			**N 008 598 09**
	SPI 09/PP	M 18 x 1,5 for tube Ø 12 mm		68	11	29			**N 008 617 09**
		M 22 x 1,5 for tube Ø 15 mm		71	12	29			**N 008 620 09**
	SPI 12/PP	M 26 x 1,5 for tube Ø 18 mm		89	12	36			**N 006 557 18**
JIC male thread according to the ISO 8434-2 standard 	**SPI 03/PP**	UN 7/16-20 for tube 1/4		44	11	16			**N 005 503 09**
	SPI 06/PP *	UN 9/16-18 for tube 3/8		60.5	12	24			**N 008 601 09**
	SPI 09/PP	UN 3/4-16 for tube 1/2		71	14	29			**N 008 626 09**
Panel mount BSP male thread according to the ISO 8434-1/L (24° cone) standard 	**SPI 03/PP**	M 12 x 1,5 for tube Ø 6 mm		54	21	17	33		**N 008 573 09**
	SPI 06/PP *	M 16 x 1,5 for tube Ø 10 mm		69.5	23.5	24	46		**N 005 351 09**
	SP 09I/PP	M 22 x 1,5 for tube Ø 15 mm		85	27.5	32	57		**N 008 623 09**
Panel mount JIC male thread according to the ISO 8434-2 standard 	**SPI 03/PP**	UN 7/16-20 for tube 1/4		58	25	17	33		**N 008 576 09**
	SPI 06/PP *	UN 9/16-18 for tube 3/8		75	26.5	21	48.5		**N 008 604 09**
	SPI 09/PP	UN 3/4-16 for tube 1/2		87	29.5	27	57		**N 008 629 09**

Other end connections, consult us.

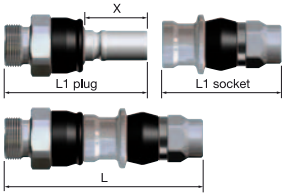
* Coloured rings for visual identification of available circuits: contact us.

Protective dust caps

Available for all the models.
Max. working temperature: 100 °C
Part-numbers: - socket dust cap: CBI xx.8500
- plug dust cap: CBI xx.8550
xx = passage flow diameter.
Ex. : CBI 03.8500 = dust cap for 3 mm passage flow diameter SPI socket.

Overall length in coupled position

L = (L1 socket + L1 plug) - X



Model	X (mm)
SPI 03	22
SPI 06	30.1
SPI 09	38.1

Complete connection solutions

Stäubli provide you with flexible hoses with or without protection against ballast impacts equipped with quick-release couplings

and ensures:

- **safety**: each complete system supplied is submitted to a unit test for function and tightness.
- **convenience,** secure supply from a single source supplier.

Full equipped flexible hoses, according to certification

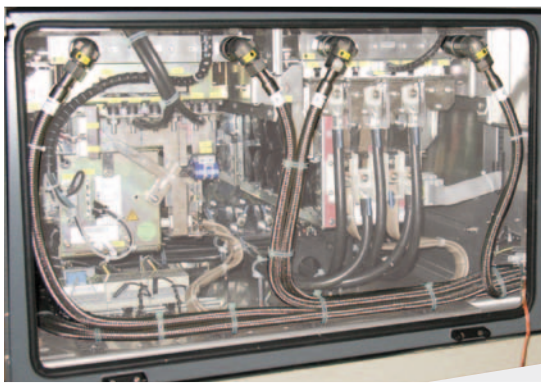
- **EN 45545-2 and ISO 15540**

These flexible hoses meet the specific requirements of railway vehicles.

- **Others certifications** on request.

We are able to produce other types of complete flexible hoses according to your requirements (consult us).



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■ Stäubli units ○ Agents

Global presence of the Stäubli Group

www.staubli.com

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