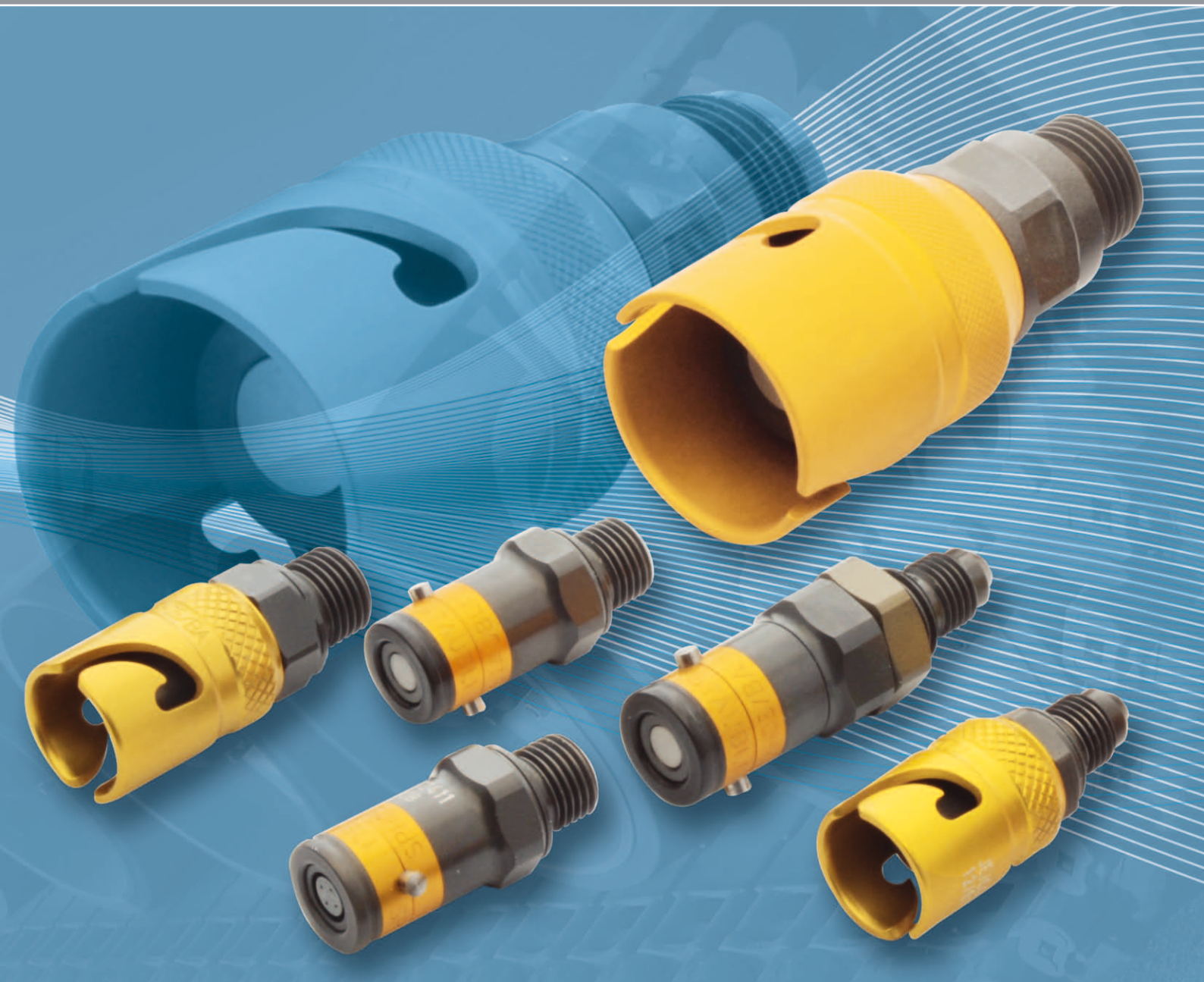


SPH/BA/CG
Cooling and thermal management





Combine resistance and lightweight...

Fluids

- glycol water
- heat transfer oils
- esters
- cooling water
- kerosene
- ...

Applications

- Safe connection of the cooling circuits under conditions of use with severe environmental constraints
- In board material: planes, civilian and military land vehicles
- Cooling of KERS systems



Non-spill flush faces to guarantee the integrity of the fluids and ensure the safety of installations and operators

- no pollution enters the circuits on connection
- no contamination of the environment due to fluid loss at disconnection.



High resistance locking system

Even when subject to extreme vibrations, your connections are perfectly safe thanks to the bayonet locking system.

Optimal flow

The internal design of SPH/BA/CG couplings ensures minimum pressure drop for maximum flow rate.



... with performance and safety

Compact and light

Compact size and light weight is achieved by dedicated design and materials: high resistance aluminum alloys.

Automatic quick connection

Just push the plug into the socket to make a secure connection.

Secure disconnection

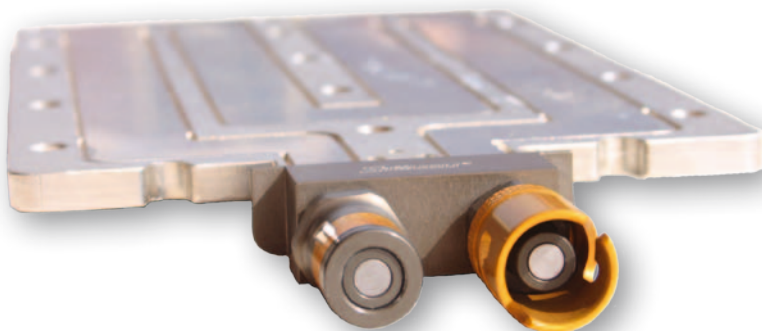
By the combined action: push and twist of the plug in the socket.

Wide range

- 6 bore diameters
- 3 types of seals in accordance to your fluids and applications
- several possible colours for easy identification of the circuits

Safety of the installations

On request, a relief valve, socket side only, prevents any increase of pressure if, during storage, the circuit is exposed to a heat source.



The opportunity to spend less and contribute 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

	SPH 03	SPH 05	SPH 08	SPH 10	SPH 12	SPH 16
Bore diameter (mm)	03	05	08	10	12	16
Max. working pressures (bar)						
max. working temperature < 150 °C and all types of seals except Fluorosilicone seals (FMQ)	80	80	80	50	50	50
max. working temperature < 150 °C and Fluorosilicone seals (FMQ)	50	50	50	50	50	50
max. working temperatures > 150 °C and all types of seals	25	25	25	16	16	16
Shut-off	Double	Double	Double	Double	Double	Double
Mass (g)						
socket, BSP male thread	10	25	34	64	105	167
plug, BSP male thread	11	20	34	58	91	160

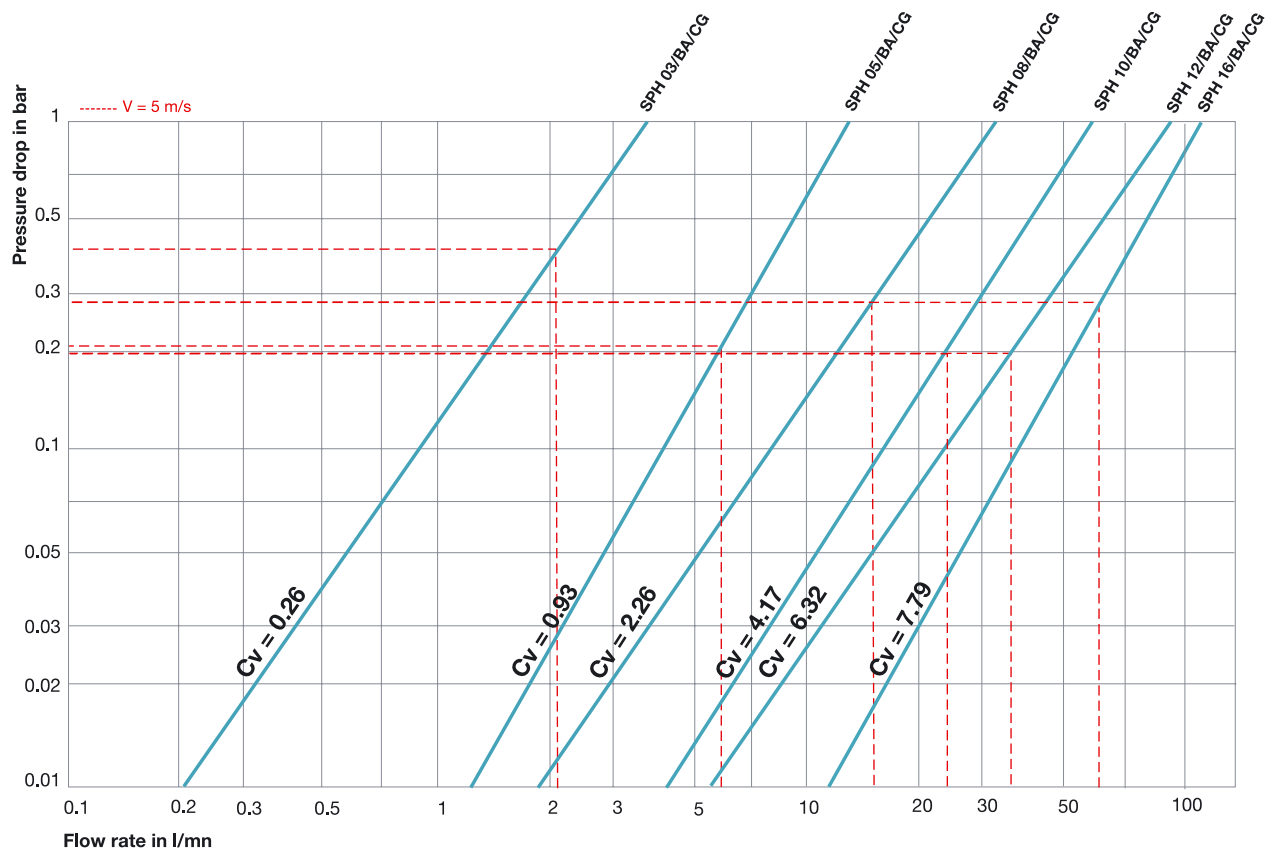
Construction

High resistance aluminum

Types of seals	Code	Max. working temperatures (°C)
Fluorosilicone (FMQ)	JS3	- 40 to + 175 °C
Ethylene-Propylene (EPDM)	JE	- 20 to + 150 °C
Fluorocarbon (FPM)	JV	- 10 à + 200 °C



Hydraulic flow rate / pressure drop charts

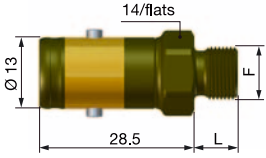
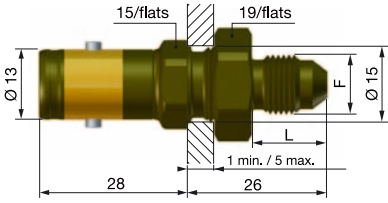
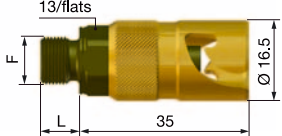
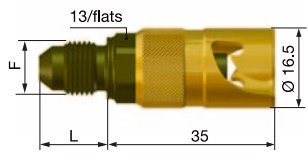


Conditions of test:
 Direction of flow: plug → socket
 Fluid: water

Max. recommended flow rate

Model	SPH 03	SPH 05	SPH 08	SPH 10	SPH 12	SPH 16
Flow rate in l/mn at 5 m/s	2.1	5.9	15.1	23.5	33.9	60.3

Ø 3 mm

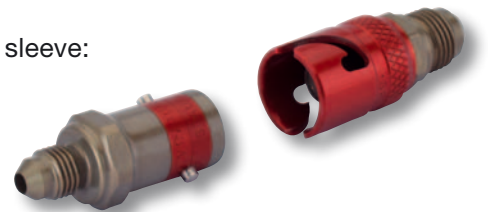
Sockets	F	L (mm)	Part-numbers
Sockets, BSP male thread 	G 1/8 with 60° cone	8	SPH 03.1150/BA/L/KJ/Jx/CG
Sockets, UNF – JIC 37° male thread 	UNF 7/16-20 DASH 4	14	SPH 03.1653/BA/L/KJ/Jx/CG
Built-in sockets, UNF – JIC 37° male thread 	UNF 7/16-20 DASH 4	14	SPH 03.2653/BA/L/KJ/Jx/CG
Plugs	F	L (mm)	Part-numbers
Plugs, BSP male thread 	G 1/8 with 60° cone	8	SPH 03.7150/BA/L/KJ/Jx/CG
Plugs, UNF – JIC 37° male thread 	UNF 7/16-20 DASH 4	14	SPH 03.7653/BA/L/KJ/Jx/CG

UNF threads in accordance with ISO 8434-2

Visual identification of the circuits by colour sleeve

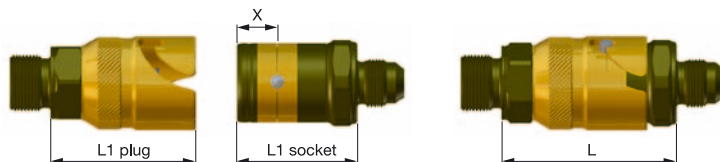
All SPH 03, 05 and 08 sockets and plugs are available with a red coloured sleeve: replace the KJ code by the **KR** code in the part-numbers.

Other colours available on request.



Overall length socket / plug in connected position

$$L = (L1 \text{ socket}) + (L1 \text{ plug}) - X$$



Model	X (mm)
SPH 03	18.1
SPH 05	18.75
SPH 08	23.3

Model	X (mm)
SPH 10	30.5
SPH 12	36.2
SPH 16	37

Ø 5 mm

Sockets	F	L (mm)	Part-numbers
Sockets, BSP male thread 	G 1/4 with 60° cone	11	SPH 05.1151/BA/L/KJ/Jx/CG
Sockets, UNF – JIC 37° male thread 	UNF 7/16-20 DASH 4	14	SPH 05.1653/BA/L/KJ/Jx/CG
	UNF 9/16-18 DASH 6	14	SPH 05.1655/BA/L/KJ/Jx/CG
Built-in sockets, UNF – JIC 37° male thread 	UNF 7/16-20 DASH 4	14	SPH 05.2653/BA/L/KJ/Jx/CG
	UNF 9/16-18 DASH 6	14	SPH 05.2655/BA/L/KJ/Jx/CG
Plugs	F	L (mm)	Part-numbers
Plugs, BSP male thread 	G 1/4 with 60° cone	11	SPH 05.7151/BA/L/KJ/Jx/CG
Plugs, UNF – JIC 37° male thread 	UNF 7/16-20 DASH 4	14	SPH 05.7653/BA/L/KJ/Jx/CG
	UNF 9/16-18 DASH 6	14	SPH 05.7655/BA/L/KJ/Jx/CG

UNF threads in accordance with ISO 8434-2

Part-number construction:

with Fluorosilicone (FMQ) seals: replace the Jx code by the **JS3** code in the part-numbers above
 with Ethylene-Propylene (EPDM) seals: replace the Jx code by the **JE** code in the part-numbers above
 with Fluorocarbon (FPM) seals: replace the Jx code by the **JV** code in the part-numbers above

Ø 8 mm

Sockets	F	L (mm)	Part-numbers
Sockets, BSP male thread 	G 3/8 with 60° cone	12	SPH 08.1152/BA/L/KJ/Jx/CG
Sockets, UNF – JIC 37° male thread 	UNF 9/16-18 DASH 6	14	SPH 08.1655/BA/L/KJ/Jx/CG
	UNF 3/4-16 DASH 8	17	SPH 08.1656/BA/L/KJ/Jx/CG
Built-in sockets, UNF – JIC 37° male thread 	UNF 9/16-18 DASH 6	14	SPH08.2655/BA/L/KJ/Jx/CG
	UNF 3/4-16 DASH 8	19,5	SPH 08.2656/BA/L/KJ/Jx/CG
Plugs	F	L (mm)	Part-numbers
Plugs, BSP male thread 	G 3/8 with 60° cone	12	SPH 08.7152/BA/L/KJ/Jx/CG
Plugs, UNF – JIC 37° male thread 	UNF 9/16-18 DASH 6	14	SPH 08.7655/BA/L/KJ/Jx/CG
	UNF 3/4 DASH 8	19,5	SPH 08.7656/BA/L/KJ/Jx/CG

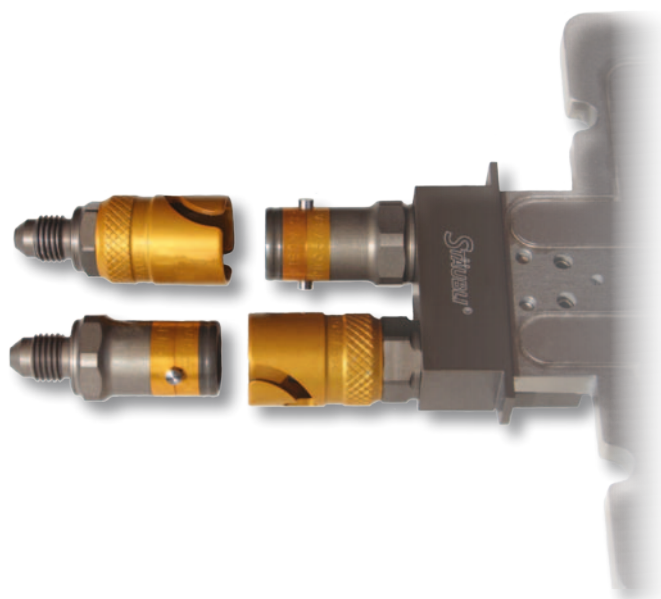
UNF threads in accordance with ISO 8434-2



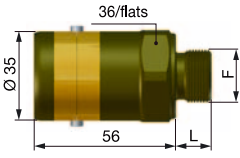
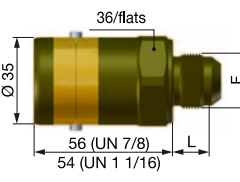
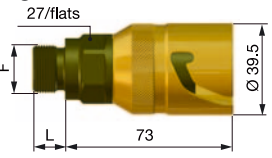
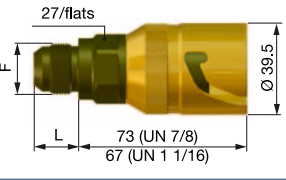
Ø 10 mm

Sockets	F	L (mm)	Part-numbers
Sockets, BSP male thread 	G 3/8 with 60° cone	12	SPH 10.1152/BA/L/KJ/Jx/CG
	G 1/2 with 60° cone	14	SPH 10.1153/BA/L/KJ/Jx/CG
Sockets, UNF - JIC 37° male thread 	UNF 3/4-16 DASH 8	17	SPH 10.1656/BA/L/KJ/Jx/CG
	UNF 7/8-14 DASH 10	19,5	SPH 10.1657/BA/L/KJ/Jx/CG
Plugs	F	L (mm)	Part-numbers
Plugs, BSP male thread 	G 3/8 with 60° cone	12	SPH 10.7152/BA/L/KJ/Jx/CG
	G 1/2 with 60° cone	14	SPH 10.7153/BA/L/KJ/Jx/CG
Plugs, UNF - JIC 37° male thread 	UNF 3/4-16 DASH 8	17	SPH 10.7656/BA/L/KJ/Jx/CG
	UNF 7/8-14 DASH 10	19.5	SPH 10.7657/BA/L/KJ/Jx/CG

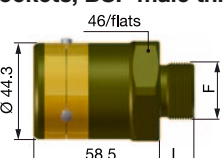
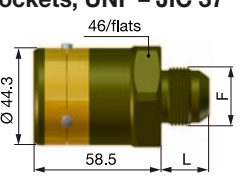
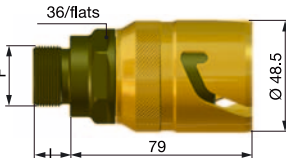
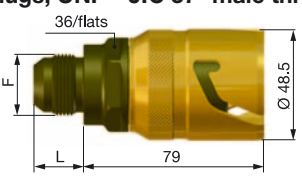
UNF threads in accordance with ISO 8434-2



Ø 12 mm

Sockets	F	L (mm)	Part-numbers
Sockets, BSP male thread 	G 1/2 with 60° cone	14	SPH 12.1153/BA/L/KJ/Jx/CG
Sockets, UNF – JIC 37° male thread 	UNF 7/8-14 DASH 10	19,5	SPH 12.1657/BA/L/KJ/Jx/CG
	UNF 1 1/16-12 DASH 12	22	SPH 12.1658/BA/L/KJ/Jx/CG
Plugs	F	L (mm)	Part-numbers
Plugs, BSP male thread 	G 1/2 with 60° cone	14	SPH 12.7153/BA/L/KJ/Jx/CG
Plugs, UNF – JIC 37° male thread 	UNF 7/8-14 DASH 10	19,5	SPH 12.7657/BA/L/KJ/Jx/CG
	UNF 1 1/16-12 DASH 12	22	SPH 12.7658/BA/L/KJ/Jx/CG

Ø 16 mm

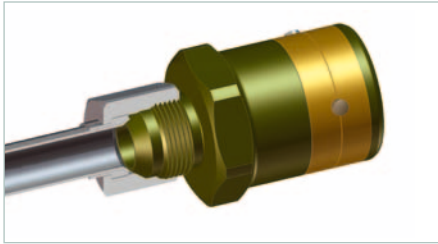
Sockets	F	L (mm)	Part-numbers
Sockets, BSP male thread 	G 3/4 with 60° cone	16	SPH 16.1154/BA/L/KJ/Jx/CG
Sockets, UNF – JIC 37° male thread 	UNF 1 1/16-12 DASH 12	22	SPH 16.1658/BA/L/KJ/Jx/CG
	UNF 1 5/16-12 DASH 16	23	SPH 16.1659/BA/L/KJ/Jx/CG
Plugs	F	L (mm)	Part-numbers
Plugs, BSP male thread 	G 3/4 with 60° cone	16	SPH 16.7154/BA/L/KJ/Jx/CG
Plugs, UNF – JIC 37° male thread 	UNF 1 1/16-12 DASH 12	22	SPH 16.7658/BA/L/KJ/Jx/CG
	UNF 1 5/16-12 DASH 16	23	SPH 16.7659/BA/L/KJ/Jx/CG

UNF threads in accordance with ISO 8434-2

Possibilities of socket and plug assemblies

1/ On tube or flexible hose

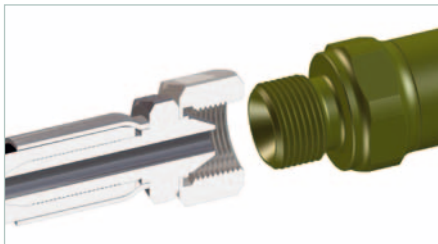
UNF - JIC 37° end connection
in accordance with
ISO 8434-2 standard



Tube dimensions

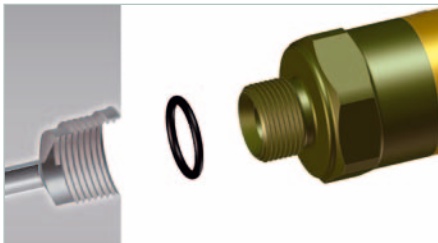
External tube Ø		End connection	
Inches	mm	DASH	UNF
1/4	6	4	UNF 7/16 - 20
3/8	10	6	UNF 9/16 - 18
1/2	12	8	UNF 3/4 - 16
5/8	16	10	UNF 7/8 - 14
3/4	20	12	UNF 1 1/16 - 12
1	25	16	UNF 1 5/16 - 12

BSP male thread with 60° cone
Female thread swivel fitting



2/ On drill unit

O-ring seal tightness



Female thread with sealing groove

O-ring seal part-numbers (should be ordered separately)

End connection	Type of seal		
	Fluorosilicone	Ethylene-Propylene	Fluorocarbon
G 1/8	R 601 011 20	R 601 011 18	R 601 011 13
G 1/4	R 601 013 20	R 601 013 18	R 601 013 13
G 3/8	R 601 015 20	R 601 015 18	R 601 015 13
G 1/2	R 601 116 20	R 601 116 18	R 601 116 13
G 3/4	R 601 119 20	R 601 119 18	R 601 119 13

Assembly with KES sealing kit



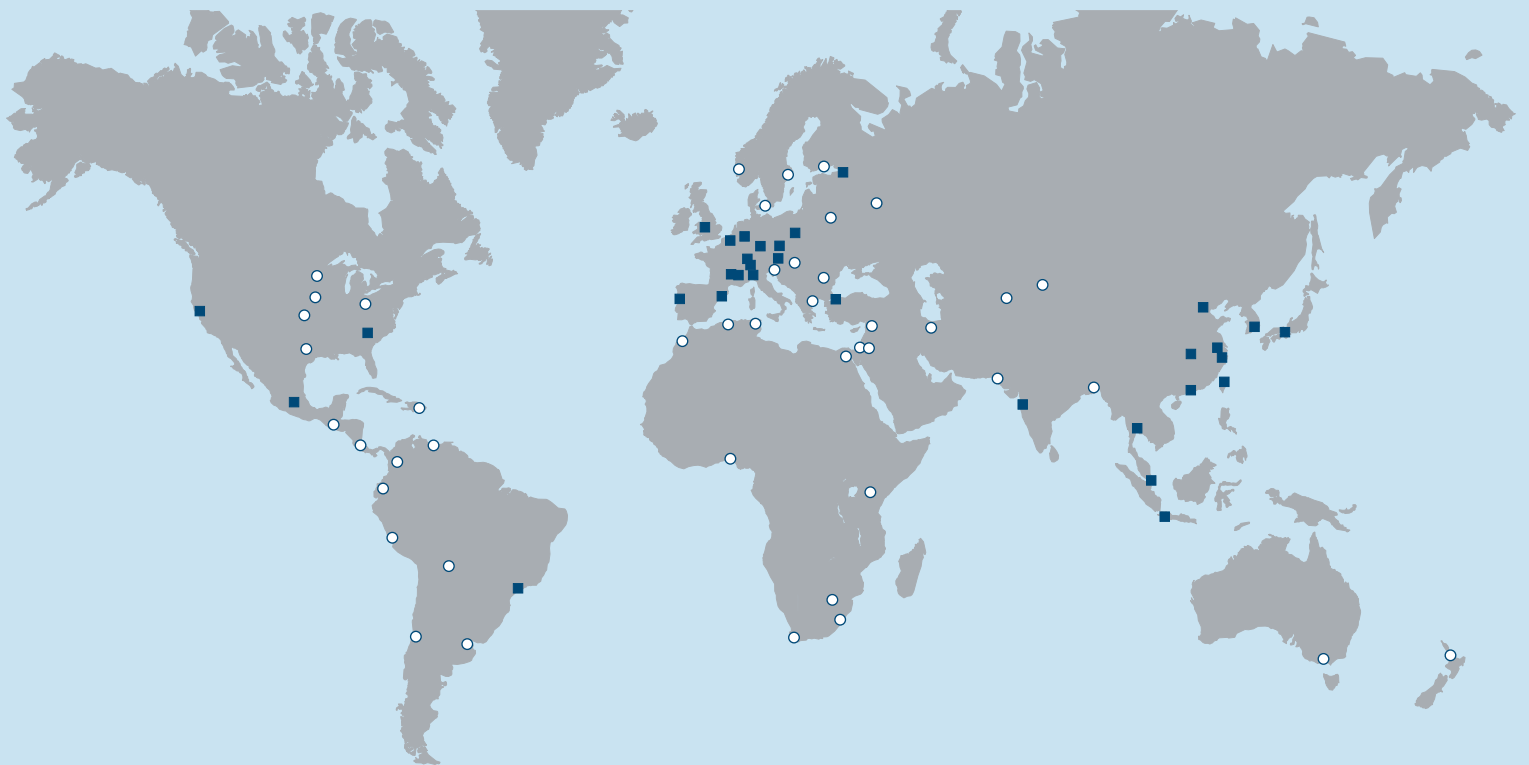
KES sealing kit part-numbers (should be ordered separately)

End connection	Type of seal		
	Fluorosilicone	Ethylene-Propylene	Fluorocarbon
G 1/8	KES 01.9100/L/JS3	KES 01.9100/L/JE	KES 01.9100/L/JV
G 1/4	KES 01.9101/L/JS3	KES 01.9101/L/JE	KES 01.9101/L/JV
G 3/8	KES 01.9102/L/JS3	KES 01.9102/L/JE	KES 01.9102/L/JV
G 1/2	KES 01.9103/L/JS3	KES 01.9103/L/JE	KES 01.9103/L/JV
G 3/4	KES 01.9104/L/JS3	KES 01.9104/L/JE	KES 01.9104/L/JV



Comprising a treated aluminum retaining sleeve and an O-ring seal, KES kits provide perfect sealing between the sockets and your base.

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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