



Thermal Management

Liquid Cooling Solutions for Electronics,
Data Centers, Servers and Supercomputers

November 2023

PDF Update: October 2, 2024



ENGINEERING YOUR SUCCESS.

We Developed a Cool Solution!

Quick connect coupling system – efficient components in the area of thermal management

The requirements for quick connect couplings for thermal management are extremely high.

Our systems stand out for their high level of compatibility with the broadest range of liquids and the application environment.

Likewise, their resistance to mechanical stresses is vital. One of the most important requirements in the cooling of electronic systems is the avoidance of any fluid loss, as this is the only way to guarantee fault-free function of the installation.

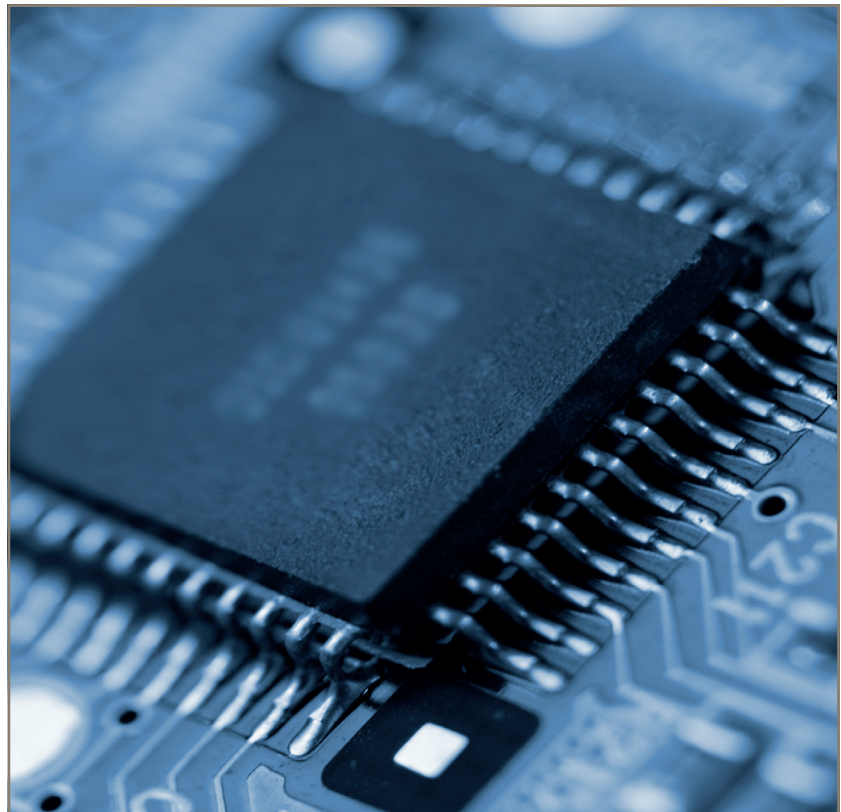
Our Value added:

- Wide experience on various thermal management applications
- A global presence
- Customer engineering intimacy
- In-house engineering and manufacturing



Liquid Cooling Solutions

Leak-Free Connections.
Reliable Performance.



▲ Flat-sealing valve design prevents spillage.

60 Years of Know-How

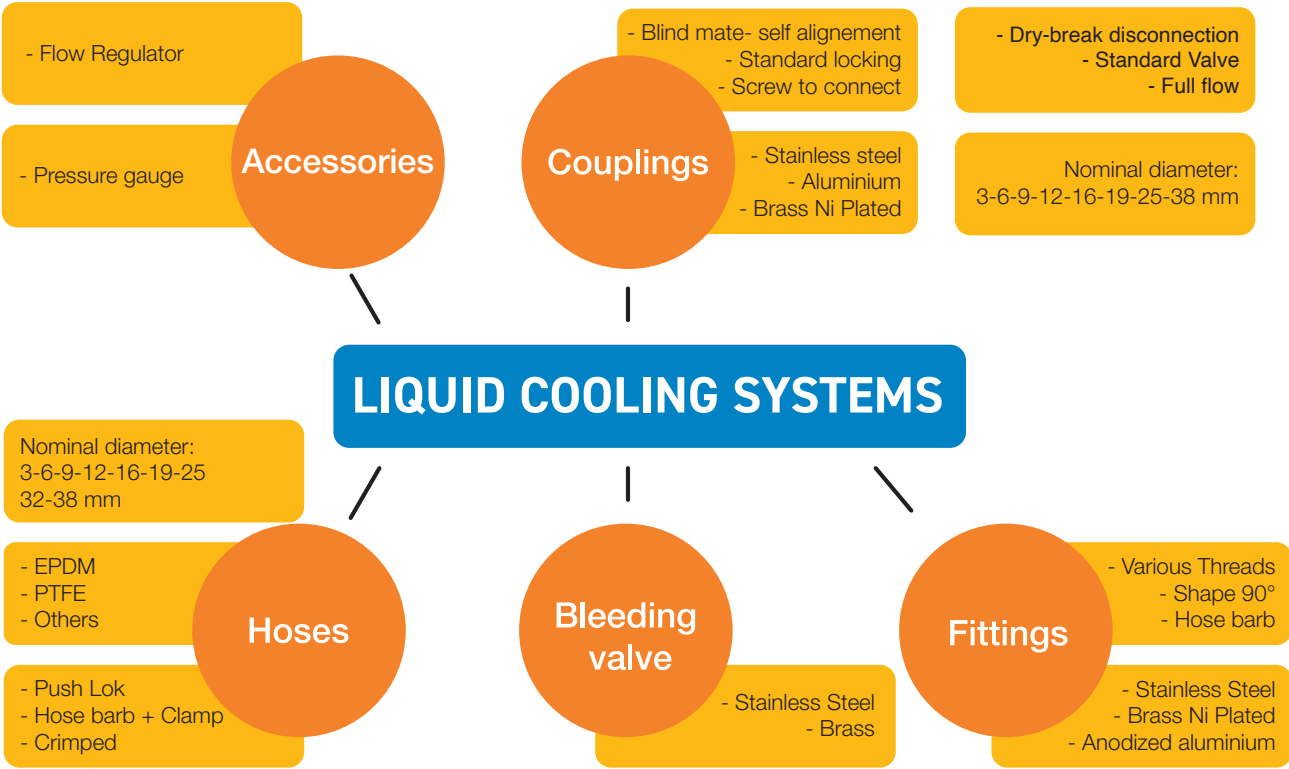
From standard product to customized solution – we meet your requirements

Energy efficiency and compact design play a major role in thermal management applications. As a result of the low pressure drop of our coupling systems, we take energy saving into account at the same time as optimal performance. Reducing the sizes of our couplings allows their use in the most confined spaces.

The flat-sealing valve design reliably prevents any fluid loss during the coupling and uncoupling process, thereby protecting the sensitive electronics and all electrical connections.

You can be sure that the know how we have acquired from

over 60 years in the development and production of quick connect couplings guarantees a reliable and efficient solution for your requirement.



Thermal Management Range at a Glance

Find the ideal product for your application



	NSG Series	NSI Series	NSP1 Series	UQD Series
Working Pressure	150 psi / 10.3 bar	290 psi / 20 bar	150 psi / 10.3 bar	150 psi / 10.3 bar
Working Temperature	0°C to 70°C	-40°C to 70°C -20°C to 200°C (FKM)	0°C to 70°C	0°C to 70°C
Storage Temperature	-40°C to 120°C		-40°C to 120°C	-40°C to 120°C
Nominal Diameter	3mm	3/6/9/12mm	6mm	02/04/06/08in
Materials	Body: Stainless Steel Seals: EPDM	Body: Brass, Stainless Steel Seals: FKM/EPDM	Body: Stainless Steel Seals: EPDM	Body: Stainless Steel Seals: EPDM
Functionality	<ul style="list-style-type: none"> Two-hand operation 	<ul style="list-style-type: none"> Two-hand operation 	<ul style="list-style-type: none"> Push to connect 	<ul style="list-style-type: none"> Push to connect Fully interchangeable with other Intel-approved UQD suppliers



UQDB Series	ORV Series	CDT Series	NSE Series
150 psi / 10.3 bar	50 psi / 3.4 bar	174 psi / 12 bar	217 psi / 15 bar
0°C to 70°C	0°C to 60°C	10°C to 60°C	-20°C to 200°C (FKM)
-40°C to 120°C	-40°C to 120°C	-40°C to 120°C	
02/04/06/08in	5mm	25mm	16/19/25mm
Body: Stainless Steel, Zinc Plated Steel Seals: EPDM	Body: Stainless Steel Seals: EPDM	Body: Stainless Steel Seals: EPDM	Body: Stainless Steel Seals: FKM/EPDM
<ul style="list-style-type: none"> • Blind connection • Fully interchangeable with other Intel-approved UQDB suppliers 	<ul style="list-style-type: none"> • Blind connection • ± 5mm misalignment allowed • 2.7° angular misalignment allowed 	<ul style="list-style-type: none"> • Two-hand operation • Screw-to-Connect 	<ul style="list-style-type: none"> • Two-hand operation • Reduced dimensions compared to flow capacities

Dry-Break



Technical Description

The NSG are dry-break couplings with flat face valves. The compact design makes them suitable for reduced spaces. Coupling system with two-hand operation, i.e. both hands are required when connect/disconnect.

Advantages

- No spillage during connection/disconnection
- Low pressure drop
- Advanced internal design for cooling applications

Max. Working Pressure

150 psi / 10.3 bar

Working Temperature

0°C to 70°C (Extended temperature range is possible, contact Parker for more information.)

Material

Socket: Stainless Steel
Plug: Stainless Steel
Seals: EPDM

Connect Force

14 psi = 15 lbs
 100 psi = 19 lbs

CV Values

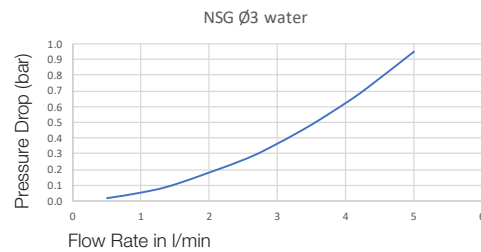
Socket to Plug - .363
 Plug to Socket - .414
 Average - .392

Spillage/Air Inclusion

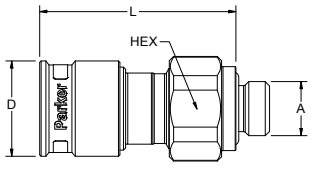
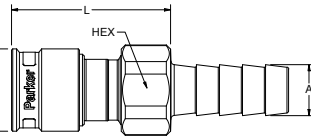
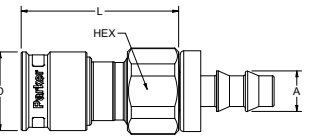
.002 mL

Flow diagrams

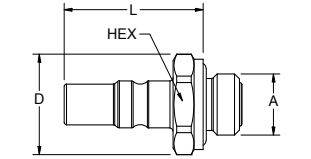
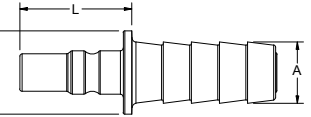
Water



Sockets **Series NSG**

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	3mm	G 1/8	17.5	34.8	17.0	NSG-121-2MB
 <p>Hose Barb</p>	3mm	3/8" Hose Barb	17.5	33.3	17.0	NSG-121-6HB
 <p>Parker Push-Lok</p>	3mm	1/4" Pushlok	17.5	34.1	17.0	NSG-121-4PL

Plugs **Series NSG**

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	3mm	G 1/8	14.3	22.7	15.9	NSG-122-2MB
 <p>Hose Barb</p>	3mm	3/8 Barb	N/A	19.3	14.3	NSG-122-6HB

All parts available in Red (-RD) or Blue (-BU)

Dry-Break



Max. Working Pressure*

290 psi / 20 bar
* maximum static working pressure with design factor 4 to 1.

Working Temperature

-40°C to 70°C
-20°C to 200°C (FKM)

Material

Socket: Brass/Stainless Steel
Plug: Brass/Stainless Steel
Seals: FKM
Other materials available on request

Technical Description

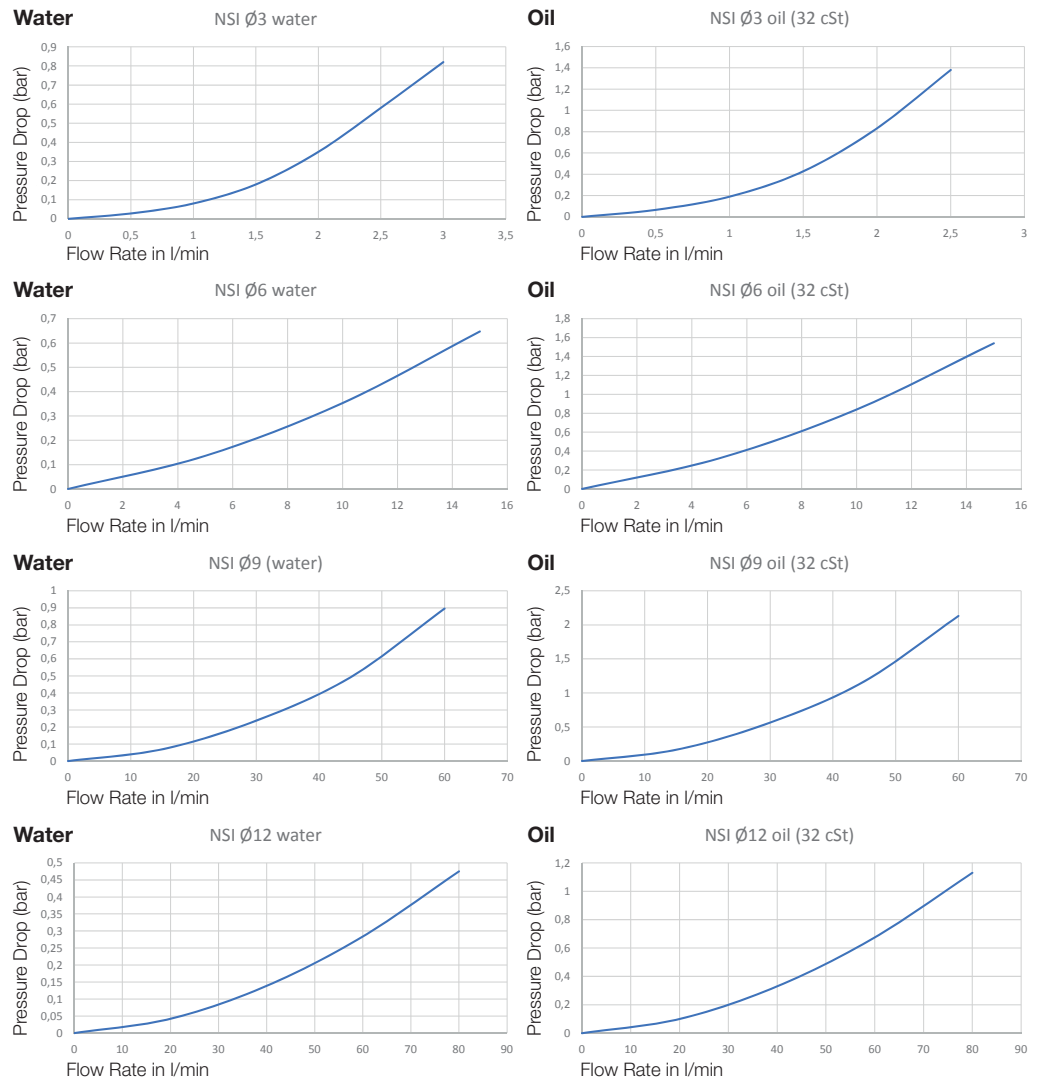
The NSI are dry-break couplings with flat face valves. The compact design make them suitable for reduced spaces. Coupling system with two-hand operation, i.e. both hands are required when connect/disconnect.

Push to connect version available on request: NSP series

Advantages

- No spillage during connection/disconnection.
- Low pressure drop.
- Advanced internal design for cooling applications.
- Can be used either with water and heat transfer oils.
- Excellent resistance to vibrations and mechanical stresses.

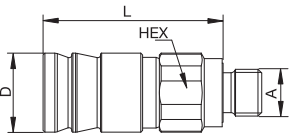
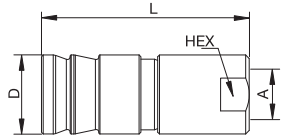
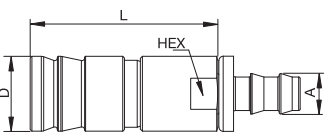
Flow diagrams





Sockets

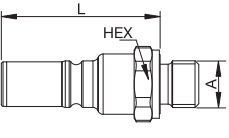
Series NSI

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	3mm	G 1/8	14	38	17	NSI-121-2MBE ¹
	6mm	M 16 x 1.5	20	44.8	22	NSI-251-16MCL-2 ²
	9mm	G 3/8	27	63	30	NSI-371-6MBO
	12mm	G 1/2	35	90.4	42	NSI-501-8MBO
 <p>Female Thread</p>	6mm	G 1/4	20	57.9	22	NSI-251-4FB
	9mm	G 3/8	27	72	30	NSI-371-6FB
	12mm	G 1/2	35	99.4	42	NSI-501-8FB
 <p>Parker Push-Lok</p>	6mm	10 mm	20	55.2	22	NSI-251-6PL



Plugs

Series NSI

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	3mm	G 1/8	14	36.5		NSI-122-2MBE ¹
	6mm	G 1/4	19	44		NSI-252-4MBE ¹
	6mm	9/16-18 UNF	20.6	72		NSP-252-6MO
	9mm	G 3/8	24	60.2		NSI-372-6MBO
	12mm	G 1/2	32	79.1		NSI-502-8MBO

¹ End connection according to ISO1179-2 ED seal

² End connection according to DIN 2353 24°cone

All parts available in Red (-RD) or Blue (-BU)



Dry-Break

Max. Working Pressure* 150 psi / 10.3 bar	Working Temperature 0°C to 70°C
Material Socket: Stainless Steel Plug: Stainless Steel Seals: EPDM	Connect Force 0 psi = 25 lbs 100 psi = 45 lbs
CV Values Socket to Plug - 1.11 Plug to Socket - 1.22 Average - 1.16	Spillage .01 mL

Technical Description

The NSP1 are dry-break couplings with flat face valves. The compact design make them suitable for reduced spaces. NSP1 features a push-to-connect design for ease of operation, and is offered in red and blue colors for system identification.

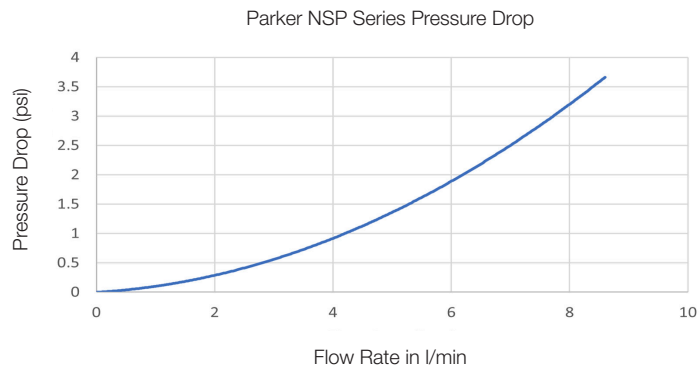
NSP (Parker HPCE) and NSP1 (Parker QCD) are fully interchangeable.

Advantages

- No spillage during connection/disconnection.
- Low pressure drop.
- Push-to-connect design for one-handed operation.
- Advanced internal design for cooling applications.

Flow diagrams

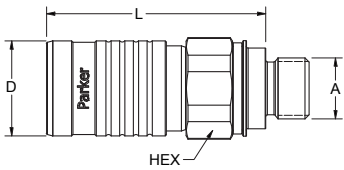
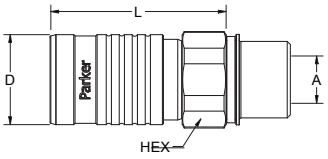
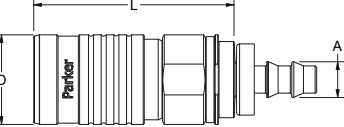
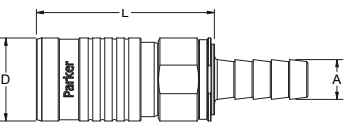
Water





Sockets

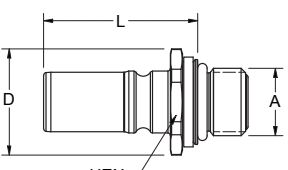
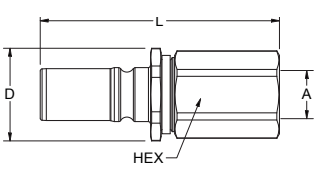
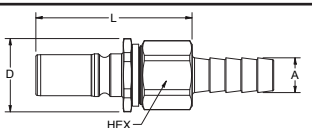
Series NSP1

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	6mm	1/4-18 NPT	22.2	48.3	22	NSP1-251-4MP
	6mm	9/16-18 UNF-2A	22.2	50.7	22	NSP1-251-6MO
 <p>Female Thread</p>	6mm	1/4-18 NPTF	22.2	58.5	22	NSP1-251-4FP
 <p>Parker Push-Lok</p>	6mm	1/4" Hose Barb	N/A	50.2	22	NSP1-251-4PL
 <p>Hosebarb</p>	6mm	3/8" Hose Barb	N/A	47.1	22	NSP1-251-6HB



Plugs

Series NSP1

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	6mm	G 1/4-19-A BSPP	20.6	50.9	22.2	NSP1-252-4MB
	6mm	1/4-18 NPTF	19.1	52.2	22.2	NSP1-252-4MP
	6mm	9/16-18 UNF - 2A	20.6	32.3	22.2	NSP1-252-6MO
 <p>Female Thread</p>	6mm	1/4-18 NPT	20.6	57.4	22.2	NSP1-252-4FP
 <p>Hosebarb</p>	6mm	3/8" Hose Barb	20.6	47.4	22.2	NSP1-252-6HB

To request custom port configuration please contact qcd.support@support.parker.com.

All parts available in Red (-RD) or Blue (-BU)



Dry-Break

Max. Working Pressure

150 psi / 10.3 bar

Working Temperature

0°C to 70°C (Extended temperature range is possible, contact Parker for more information.)

Material

Socket: Stainless Steel
Plug: Stainless Steel
Seals: EPDM

Connect Force

UQD02: 0 psi=14 lbs; 14 psi=15 lbs; 100 psi=20 lbs
 UQD04: 0 psi=20 lbs; 14 psi=22 lbs; 100 psi=35 lbs
 UQD06: Coming Soon
 UQD08: Coming Soon

CV Values

	Plug-Coupling	Coupling-Plug
UQD02:	0.34	0.30
UQD04:	1.25	1.13
UQD06:	2.21	1.90
UQD08:	4.78	4.33

Spillage/Air Inclusion

UQD02: .002mL / .011mL
 UQD04: .004mL / .08mL
 UQD06: Coming Soon
 UQD08: Coming Soon

Technical Description

Universal Quick Disconnect (UQD) based on an Intel inspired open specification. Developed in collaboration with Intel Corporation.

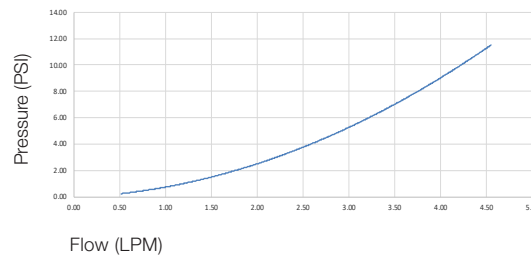
Advantages

- Fully interchangeable with other Intel-approved UQD suppliers
- No spillage during connection/disconnection
- Low pressure drop
- Advanced internal design for cooling applications

Flow Diagrams

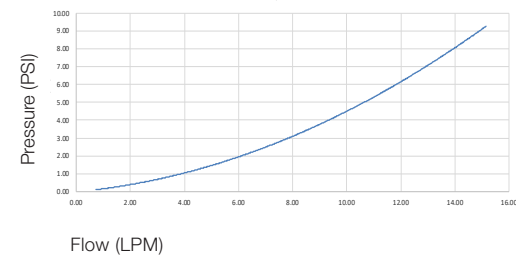
Water

UQD02



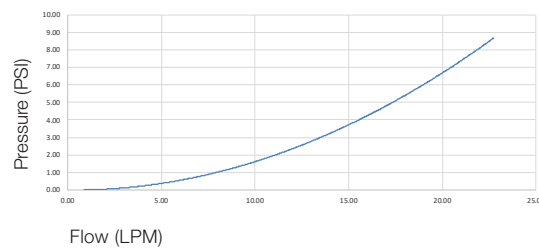
Water

UQD04



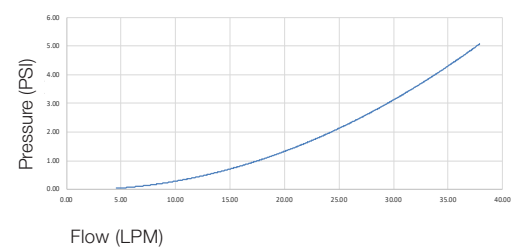
Water

UQD06



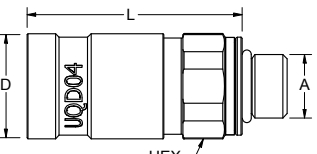
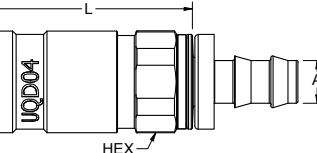
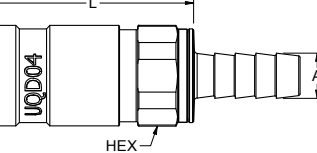
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UQD08



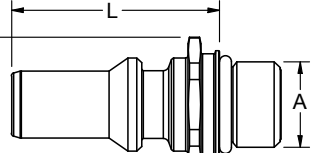
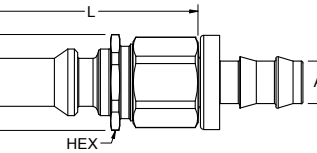
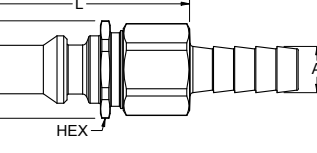
Sockets

Series UQD

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	02in	7/16-20 UNF-2A	15.9	36.2	18.5	UQD-121-4MO
	04in	9/16-18 UNF-2A	22.2	48	23.4	UQD-251-6MO
	04in	G 3/8-19-A BSPP	22.2	49.9	23.4	UQD-251-6MB
	06in	G 3/8-19-A BSPP	25.4	53.9	27.4	UQD-371-6MB
	06in	3/4-16 UNF-2A	25.4	52	27.4	UQD-371-8MO
	08in	7/8-14 UNF-2A	28.6	62.5	32.6	UQD-501-10MO
 <p>Parker Push-Lok</p>	02in	1/4"	14.3	35.6	18.5	UQD-121-4PL
	04in	1/4"	22.2	47.7	23.4	UQD-251-4PL
	04in	3/8"	22.2	47.7	23.4	UQD-251-6PL
	06in	1/2"	25.4	52	27.4	UQD-371-8PL
	08in	1/2"	28.6	62.5	32.6	UQD-501-8PL
	08in	5/8"	28.6	62.5	32.6	UQD-501-10PL
 <p>Hosebarb</p>	04in	3/8"	22.2	47.8	23.4	UQD-251-6HB

Plugs

Series UQD

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	02in	G 1/8-28-A BSPP	12.7	28.5	14.3	UQD-122-2MB
	02in	G 1/4-19-A BSPP	14.3	29.0	18.5	UQD-122-4MB
	02in	7/16-20-20 UNF-2A	14.3	26.7	15.5	UQD-122-4MO
	04in	G 3/8-19-A BSPP	25.4	35.0	28.6	UQD-252-6MB
	04in	9/16-18 UNF-2A	20.6	34.3	22.2	UQD-252-6MO
	06in	G 3/8-19-A BSPP	25.4	65.0	29.3	UQD-372-6MB
	06in	3/4-16 UNF-2A	23.8	40.4	26.7	UQD-372-8MO
	08in	7/8-14 UNF-2A	28.6	43.4	31.4	UQD-502-10MO
 <p>Parker Push-Lok</p>	02in	1/4"	15.9	39.3	17.5	UQD-122-4PL
	04in	1/4"	20.6	49.4	22.2	UQD-252-4PL
	04in	3/8"	20.6	49.4	22.2	UQD-252-6PL
 <p>Hosebarb</p>	02in	1/4"	15.9	40.6	17.3	UQD-122-4HB
	04in	3/8"	20.6	49.4	22.2	UQD-252-6HB

All parts available in Red (-RD) or Blue (-BU)

To request custom port configuration please contact qcd.support@support.parker.com.



Dry-Break

Max. Working Pressure

150 psi / 10.3 bar

Working Temperature

0° C to 70° C (Extended temperature range is possible, contact Parker for more information.)

Material

Socket: Stainless Steel
Plug: Stainless Steel and Zinc Plated Steel
Seals: EPDM

Connect Force

UQDB02: 0 psi=8 lbs; 14 psi=9 lbs; 100 psi=13 lbs
 UQDB04: 0 psi=14 lbs; 14 psi=16 lbs; 100 psi=29 lbs
 UQDB06: Coming Soon
 UQDB05: Coming Soon

CV Values

	Plug-Coupling	Coupling-Plug
UQD02:	0.32	0.31
UQD04:	1.18	1.09
UQD06:	2.30	2.03
UQD08:	4.73	4.33

Spillage/Air Inclusion

UQDB02: .003mL / .013mL
 UQDB04: .005mL / .08mL
 UQDB06: Coming Soon
 UQDB05: Coming Soon

Technical Description

Universal Quick Disconnect Blind Mate (UQDB) based on an Intel inspired open specification. Developed in collaboration with Intel Corporation.

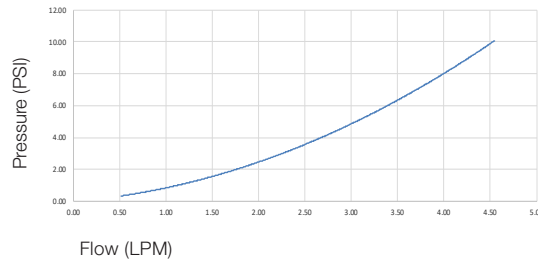
Flow diagrams

Advantages

- Fully interchangeable with other Intel-approved UQDB suppliers
- No spillage during connection/disconnection
- Low pressure drop
- Advanced internal design for cooling applications
- Excellent resistance to vibrations and mechanical stresses

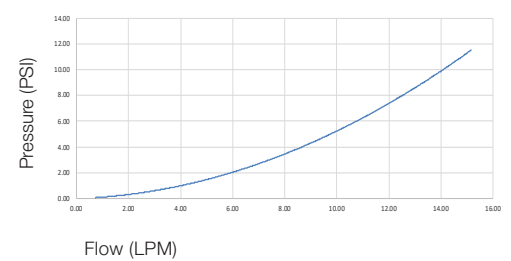
Water

UQDB02



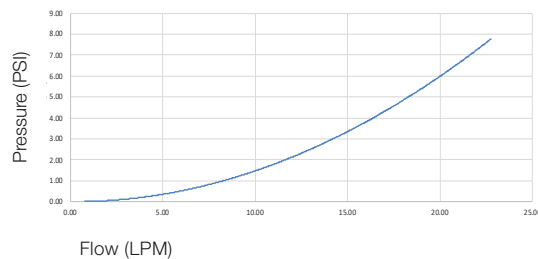
Water

UQDB04



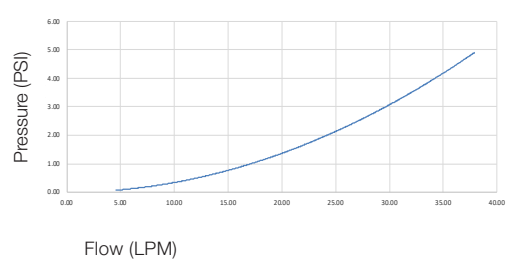
Water

UQDB06



Water

UQDB08





Sockets

Series UQDB

	Size	Connection A	HEX mm	L mm	D mm	Part Number
	02in	9/16-18 UNF-2A	17	23.6	18	UQDB-121-6MO
	04in	3/4-16 UNF-2A	23.8	28.5	24.7	UQDB-251-8MO
	06in	7/8-14 UNF-2A	27	31.8	28.3	UQDB-371-10MO
	08in	1 1/16-12 UN-2A	28	35.5	31.2	UQDB-501-12MO



Plugs

Series UQDB

	Size	Connection A	HEX mm	L mm	D mm	Part Number
	02in	7/16-20 UNF-2A	20	27	21.2	UQDB-122-4MO
	04in	9/16-18 UNF-2A	24	35.4	25.3	UQDB-252-6MO
	06in	3/4-16 UNF-2A	27	38.9	28.3	UQDB-372-8MO
	08in	7/8-14 UNF-2A	28	42.9	31.2	UQDB-502-10MO



Dry-Break

Max. Working Pressure	50 psi / 3.4 bar	Working Temperature	0°C to 60°C
Material	Socket: Stainless Steel Plug: Stainless Steel Seals: EPDM	Connect Force	
CV Values		Spillage/Air Inclusion	

Technical Description

ORV Series is based on OCP inspired BMQC open specification currently still under development. For more details, please use the link provided on this page.

For details on the technical guidelines for this product, please visit the OCP document located here:
https://drive.google.com/drive/folders/1-iLF98lebxls3CG2DRA3eAyN1cdc4c7y?usp=drive_link

Advantages

- High flow with low pressure drop.
- No spillage during connection/disconnection.
- Blind mate connection with high degrees of float to accommodate angular and radial misalignment.
- Self-centering plug to ensure repeatable connection sequences.



Sockets

Series ORV

	Size	Connection A	HEX mm	L mm	D mm	Part Number
	04in	3/4-16	22	75	31.5	ORV-251-8MO



Plugs

Series ORV

	Size	Connection A	HEX mm	L mm	D mm	Part Number
	04in	-6 Tube Barb		67.7	40	ORV-252-6TB



Technical Description

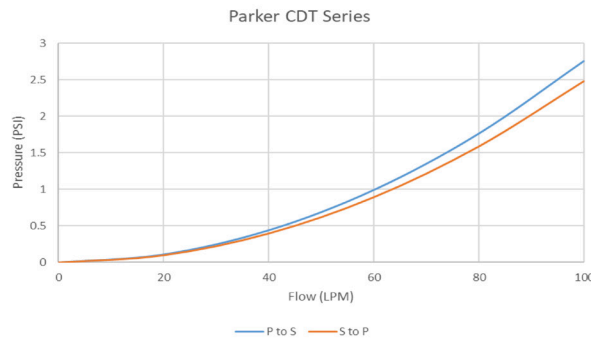
The CDT are dry-break, thread-to-connect quick disconnects for inlets and manifolds in liquid cooling systems. The threaded connection provides a mechanical advantage for safely connecting and disconnecting.

Advantages

- High flow with low pressure drop.
- No spillage during connection/disconnection.
- Threaded connection and disconnection

Max. Working Pressure* 174 psi / 12 bar * maximum static working pressure with safety factor 4 to 1.	Working Temperature 0°C to 60°C
Material Socket: Stainless Steel Plug: Stainless Steel Seals: EPDM	Connect Force 0 psi: 31 in-lbs (3.5 Nm)
CV Values 15.9	Spillage/Air Inclusion 0.10ml / 0.83ml

Flow diagrams





Technical Description

The NSE are dry-break couplings with flat face valves. The compact design makes it suitable for reduced spaces when high flow is needed. Coupling system with two-hand operation, i.e. both hands are required when connect/disconnect.

Advantages

- High flow with low pressure drop.
- No spillage during connection/disconnection.
- Specific design for cooling applications.
- Reduced dimensions compared to flow capacities.

Max. Working Pressure*

217 psi / 15 bar
* maximum static working pressure with safety factor 4 to 1.

Working Temperature

-20°C up to 200°C (FKM)
depending on the medium.
Other seals materials are available on request.

Material

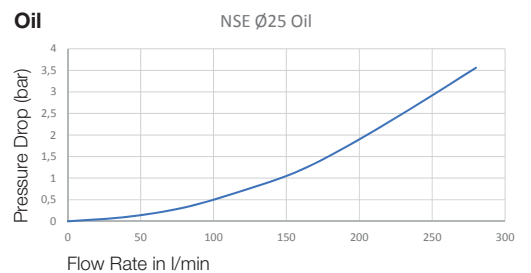
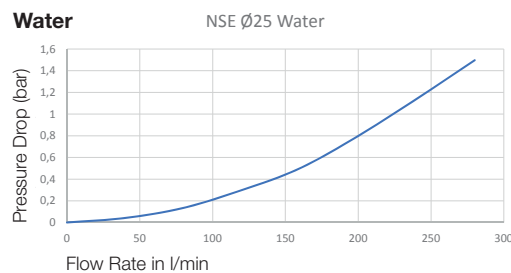
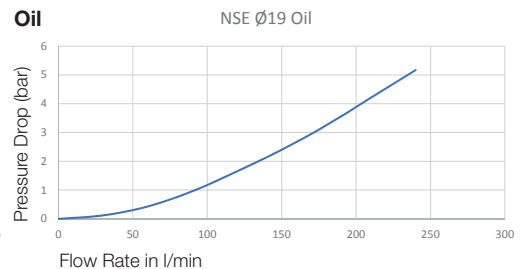
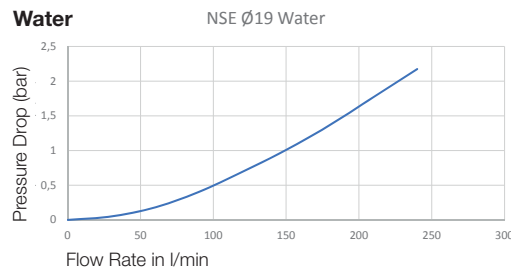
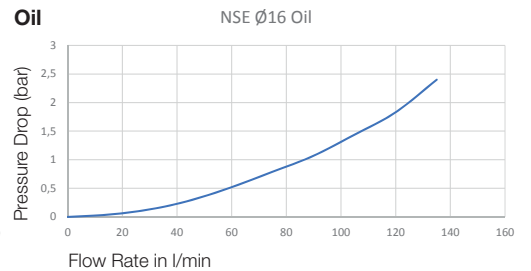
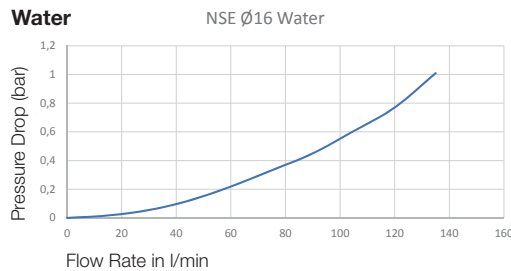
Socket: Stainless Steel
Plug: Stainless Steel
Seals: FKM

Connect Force

CV Values

Spillage/Air Inclusion

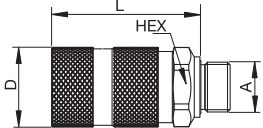
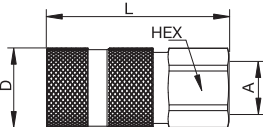
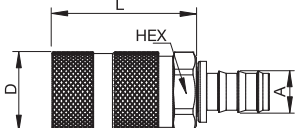
Flow diagrams





Sockets

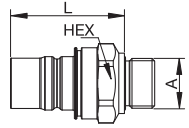
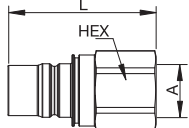
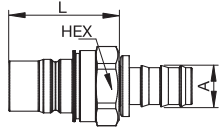
Series NSE

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	16mm	G 3/4	34	68.8	37	NSE-621-12MBO
	19mm	G 3/4	38	78.5	42	NSE-751-12MBO
 <p>Female Thread</p>	19mm	G 1	38	96.6	42	NSE-751-16FB
	25mm	G 1 1/4	50	120.5	53	NSE-1001-20FB
 <p>Parker Push-Lok</p>	19mm	12,5 mm	38	76.4	42	NSE-751-8PL
	19mm	19 mm	38	76.4	42	NSE-751-12PL



Plugs

Series NSE

	Size	Connection A	HEX mm	L mm	D mm	Part Number
 <p>Male Thread</p>	16mm	G 3/4	34	56.5		NSE-622-12MBO
	19mm	G 3/4	38	60.3		NSE-752-12MBO
 <p>Female Thread</p>	19mm	G 1	38	78.4		NSE-752-16FB
	25mm	G 1 1/4	50	96.8		NSE-1002-20FB
 <p>Parker Push-Lok</p>	19mm	12 mm	38	58.2		NSE-752-8PL
	19mm	19 mm	38	58.2		NSE-752-12PL

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