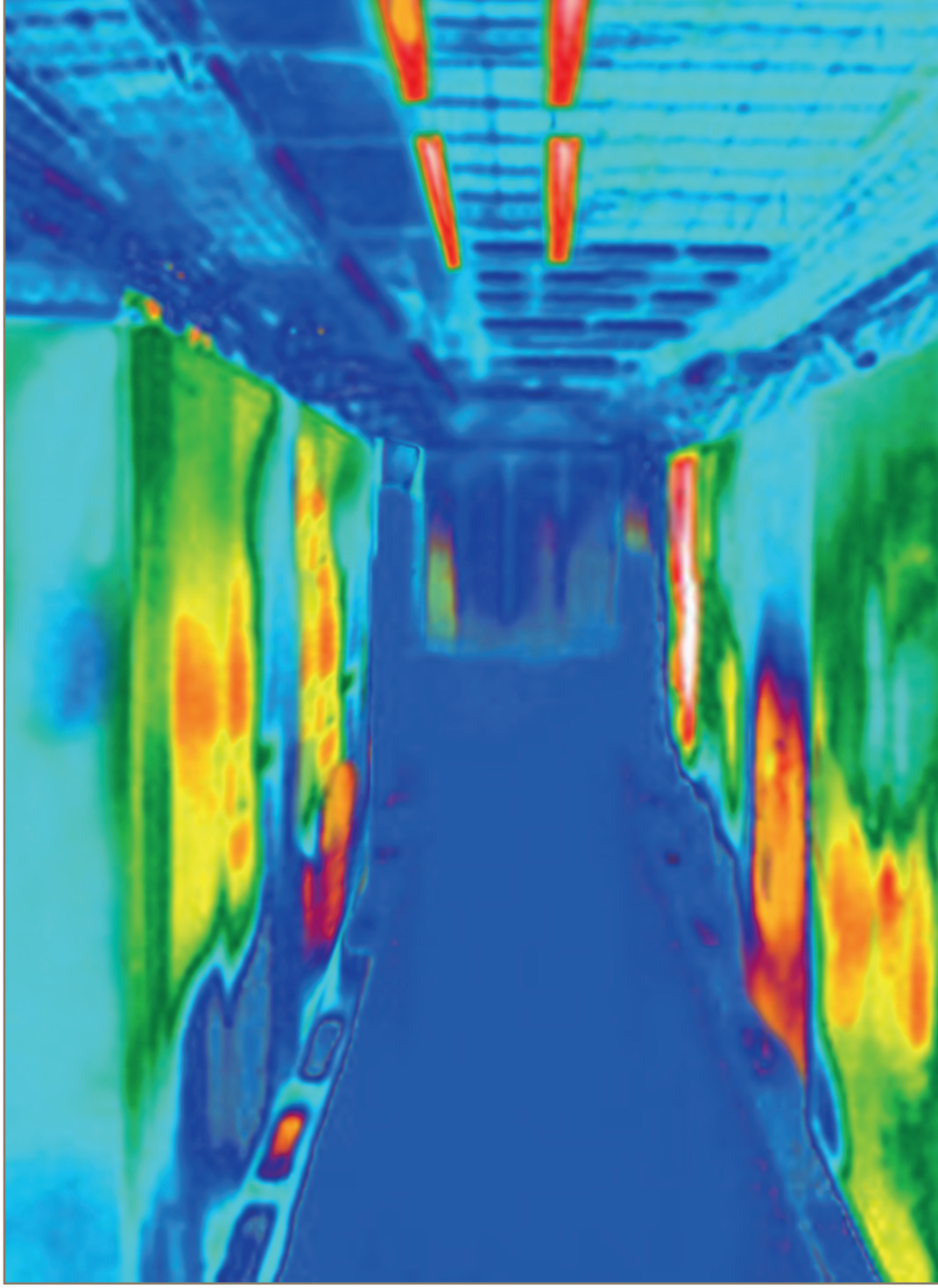


Thermal Management

Quick Connect Couplings for Tempering and Cooling

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker

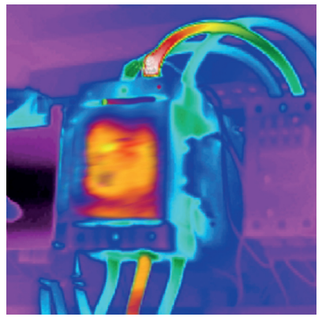
ENGINEERING YOUR SUCCESS.

We are Developing a Cool Solution!

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

The requirements for quick connect couplings for tempering and thermal management are extremely high and exacting. Whether for applications in the area of renewable energies, for computer cooling, in transport, for industrial applications or in the food/beverage industry, the coupling systems from Parker offer optimally tailored solutions.

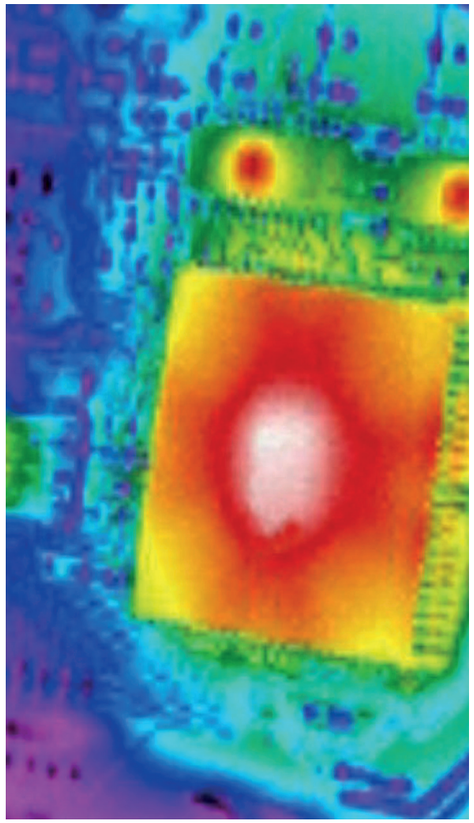
Our systems stand out for their high level of compatibility with the broadest range of liquids (for example water or heat exchange oils) and the application environment. Likewise, their resistance to mechanical influences is vital. One of the most important requirements in the cooling of electronic systems is the avoidance of leaks, as this is the only way to guarantee fault-free function of the installation.



▲ Picture of a liquid cooling system with the thermal imaging camera.

▲ RNS series for installation in computer racks.

▲ 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 leakage during the coupling and uncoupling process, thereby protecting the sensitive electronics and all electrical connections. For switchboards, we have developed a special coupling system (RNS series), which makes coupling and lock-ing the cooling circuits on the racks considerably easier. Highly resistant materials and surface finishes equip our products for use under high mechanical loads.

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.

Maximum Precision and Reliability

The product advantages at a glance:

- **Maximum safety for operator and environment when coupling and uncoupling, due to the FlatFace design** – giving optimum protection of the electronics and electrical connections.
- **Low pressure drop** for maximum energy efficiency.
- **Various sizes (3, 6, 9, 12 and 19 mm)** for optimal adjustment to the liquid circuits.
- **Compact design** for installation in applications where little space is available.
- Materials in nickel-plated brass or stainless steel for **extreme durability** in use with the broadest range of liquids (no corrosion).
- **Broad selection of sealing materials** for optimal co-ordination with temperature and flow medium.
- **High resistance to vibrations and rotation.**
- **No leakage when disconnected** due to the specially developed valve design – even after a long time and pressurisation.
- **Push-pull function –** pull-off function for system safety and time saving, particularly with systems in motion. (RNS)
- **Simple adjustment** of coupling and plug when coupling up – even if both are fitted on rigid devices. Time-saving. (RNS and 200KLEK).
- Special coupling systems for **block and plate installation** guarantee maximum flexibility in planning and installation. (200KLEK)
- **Modular systems** for individual combination options of all sizes (from 3 to 19 mm) allow maximum efficiency of your systems. (200KLEK)

The Right Solution for Every Sector

Complex tasks demand complex results – not least in the area of quick connect coupling systems

The topic of cooling is a critical production factor in virtually all industries. It is responsible for adequate temperatures in the turbine, in the electronic racks, on the tool or on the machine itself. All production and the product lifecycle of elements and machines are based on how effectively the cooling process is configured and ensures ideal operating temperatures. In these cooling circuits, it comes down not least to the efficient performance of all components. Companies demand maximum reliability and maximum efficiency coupled with durability and compact design. At first glance, these are often contradictory objectives, which demand solutions that include modern materials and complex structures in line with the latest technology.

This is a big task, which we have set ourselves in recent decades to meet the requirements of our customers.

Renewable Energies

Our knowledge in the use of quick connect couplings in the area of solar and wind energy allows the development of bespoke solutions for everything to do with the subject of efficient cooling circuits. For example, intelligent solutions are vital because of the constantly improving performance of the new generation of wind energy plants based on high-performance cooling circuits with water cooling. Here, our systems are optimally geared to the parameters of pressure, flow and temperature. As the systems are often used in salty sea air, corrosion-resistant materials are essential.

- **Solar energy plants** – high-performance cooling of technically highly sophisticated inverters
- Cooling of high-performance converters as an essential element of **wind turbines**

Computer Cooling

Processors (microprocessors) generate waste heat during operation. This results in overheating of the unit, which can cause malfunction even to the point of destruction of components. The basis is therefore optimal cooling that guarantees rapid dissipation of the waste heat. Small dissipation areas and high temperatures demand highly efficient solutions.

- **Water cooling –** Dissipation energy from the processors is discharged via a water mass flow
- Instruments for **radar measurement**
- Liquid cooling in the **microelectronics**

Transportation

Rapidly increasing flows of goods and further increases in mobility demand extremely reliable and efficient vehicle concepts, even and particularly in rail transport. Here, the cooling of diesel-powered and electrically driven rail vehicles is a big challenge, which our coupling systems resolve brilliantly. Parker systems are also used in the area of cooling in lorries, in aeroplanes and on container ships.

- Cooling of **on-board power supply inverters**
- Cooling of **traction current inverters**
- Cooling in the area of **on-board electronics** (power and microelectronics)

Industrial Applications

From the individual machine to production lines and high-performance lasers, cooling is an issue in industry. Quick connect couplings are used in liquid cooling systems both for cooling tools in the production process and for cooling work pieces or the machine itself.

- Liquid cooling solutions for medical and industrial **high-performance lasers**
- Safe and reliable cooling of critical process fluids in the **semiconductor industry**, generally under cleanroom conditions
- **Tool/pressure machines, plastics industry, surface technology** and the **packaging industry**
- Cooling of **power electronics** such as frequency inverters

Food and Beverage Industry

Proper cooling of food and drinks is a top priority both in the production process and during transport. The strict regulations in this area mean that reliable and efficient circuits are required in order to achieve a continuous cold chain.

- **Beer production** – the top priority in the production of beer is consistently high, microbiologically flawless quality. As an important process parameter, the temperature is monitored during the entire brewing process.
- **Cooling and tempering of the food ingrediants** during the production and packaging.

Thermal Management Range at a Glance

Find the ideal product for your application

							
	NSI-Series	**NSP-Series**	**RNS-Series**	**NSA-Series**	**NSE-Series**	**Series 200KLEK**	
Molding	X	X				X	**Molding**
Electronic cabinets	X		X		X		**Electronic cabinets**
Laser	X	X		X	X		**Laser**
Converters / Inverters		X	X		X		**Converters / Inverters**
Radar	X			X	X		**Radar**
Computer / Data centers	X		X			X	**Computer / Data centers**
Transportation		X		X		X	**Transportation**
Valves[1)]							**Valves**[1)]
Working Pressure	60 bar	60 bar	60 bar	20 bar	15 bar	15 bar	**Working Pressure**
Nominal Diameter (mm)	3/6/9/12	6/9/12	6	10/12	19	3/4/6/9/12/19	**Nominal Diameter (mm)**
Technical Description	• Two-hand operation	• Single-hand operation • Push-to-Connect function	• Push-Pull conncetion/disconnection • Break-away function • Connection guiding system and compensation of misalignment during connection	• Extreme lightweight (Aluminium)	• Two-hand operation • Reduced dimensions compared to flow capacities	• Cartridge couplings without locking mechanism • Tolerates deviations in axial alignment when installing	**Technical Description**
Material (Coupling Body)	Brass/Stainless Steel	Brass/Stainless Steel	Brass/Stainless Steel	Anodized Aluminium	Stainless Steel	Stainless Steel	**Material (Coupling Body)**
Seals (other seal variants on request)	FKM	FKM	NBR	Flourosilicone	FKM	FKM	**Seals** (other seal variants on request)
Working Temperature	-20°C up to +200°C (FKM)	-20°C up to +200°C (FKM)	-30°C up to +100°C (NBR)	-50°C up to +175°C (Flourosilicone)	-20°C up to +200°C (FKM)	-15°C up to +200°C (FKM)	**Working Temperature**

[1)] **Valve types:** straight-through (KF) single shut-off (KA) double shut-off (KB) dry-break (KL)

Nominal Diameter

3/6/9/12

Parker Series

NSI

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.

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

Working Temperature
-20°C up to +200°C (FKM) depending on the medium.

Special seals up to 250°C are available on request.

Dry-Break

Max. Working Pressure*

60 bar
* maximum static working pressure with safety factor 4 to 1.

Material

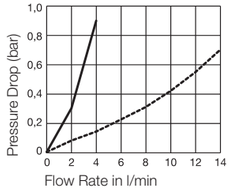
Coupling:	Brass/Stainless Steel
Plug:	Brass/Stainless Steel
Seals:	FKM

Applications

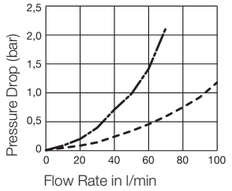
- Molding
- Electronic cabinets
- Laser
- Converters
- Radar, etc.

Flow diagrams

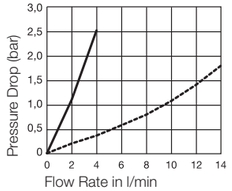
Water (3 and 6 mm)



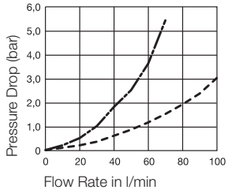
Water (9 and 12 mm)

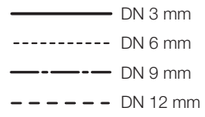


Oil (3 and 6 mm)

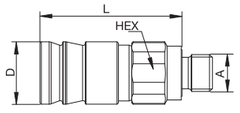
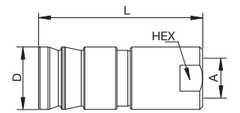
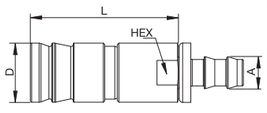


Oil (9 and 12 mm)

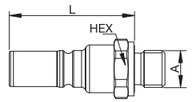




Couplings – flat-sealing — Series NSI

	DN	Connection A	HEX mm	L mm	D mm	Part Number
 Male Thread	3	G 1/8	14	38	17	NSI-121-2MBE [1]
	6	M 16 x 1,5	20	44,8	22	NSI-251-16MCL-2 [2]
	9	G 3/8	27	63	30	NSI-371-6MBO
	12	G 1/2	35	90,4	42	NSI-501-8MBO
 Female Thread	6	G 1/4	20	57,9	22	NSI-251-4FB
	9	G 3/8	27	72	30	NSI-371-6FB
	12	G 1/2	35	99,4	42	NSI-501-8FB
 Parker Push-Lok	6	10 mm	20	55,2	22	NSI-251-6PL

Plugs – flat-sealing — Series NSI

	DN	Connection A	HEX mm	L mm	D mm	Part Number
 Male Thread	3	G 1/8	14	36,5		NSI-122-2MBE [1]
	6	G 1/4	19	44		NSI-252-4MBE [1]
	9	G 3/8	24	60,2		NSI-372-6MBO
	12	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

⚠ Please consider our security advices in our main catalogues ⚠

Nominal Diameter

6/9/12

Parker Series

NSP

Technical Description
The NSP are dry-break couplings with flat face valves. The compact design make them suitable for reduced spaces. Coupling system with single-hand operation.

Advantages
No spillage during connection/disconnection. Push to connect function. Low pressure drop. Specific design for cooling applications. Can be used either with water and heat transfer oils. Excellent resistance to vibrations and mechanical stresses.

Working Temperature
-20°C up to +200°C (FKM) depending on the medium.

Special seals up to 250°C are available on request.

Dry-Break

Max. Working Pressure*

60 bar
* maximum static working pressure with safety factor 4 to 1.

Material

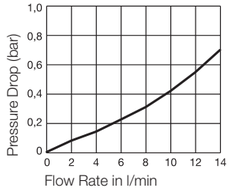
Coupling:	Brass/Stainless Steel
Plug:	Brass/Stainless Steel
Seals:	FKM

Applications

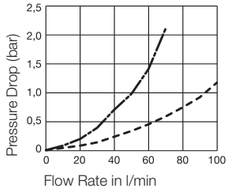
- Molding
- Electronic cabinets
- Laser
- Converters
- Radar, etc.

Flow diagrams

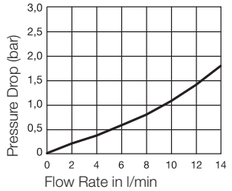
Water (6 mm)



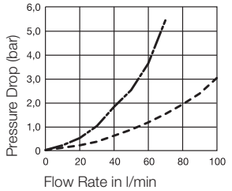
Water (9 and 12 mm)

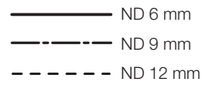


Oil (6 mm)

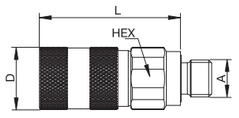
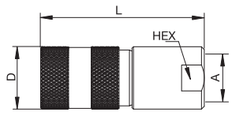
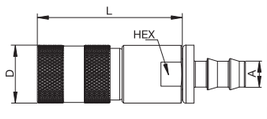


Oil (9 and 12 mm)

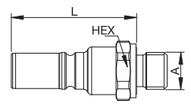




Couplings – flat-sealing — Series NSP

	DN	Connection A	HEX mm	L mm	D mm	Part Number
 Male Thread	6	G 1/4	21	49,8	22	NSP-251-4MBE [1]
	6	M 16 x 1,5	20	44,8	22	NSP-251-16MCL [2]
	9	G 3/8	27	63	30	NSP-371-6MBO
	12	G 1/2	32	90,4	42	NSP-501-8MBO
 Female Thread	6	G 1/4	20	57,9	22	NSP-251-4FB
	9	G 3/8	27	72	30	NSP-371-6FB
	12	G 1/2	35	99,4	42	NSP-501-8FB
 Hose Barb	6	10 mm	20	55,2	22	NSP-251-6PL

Plugs – flat-sealing — Series NSI

	DN	Connection A	HEX mm	L mm	D mm	Part Number
 Male Thread	6	G 1/4	19	44		NSI-252-4MBE [1]
	9	G 3/8	24	60,2		NSI-372-6MBO
	12	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

⚠ Please consider our security advices in our main catalogues ⚠

Nominal Diameter

6

Parker Series

RNS

Technical Description
The RNS are rigid couplings with flat face valves. They can be mounted on rigid manifolds or tubing and assure connection/disconnection without spillage. Base material is brass and stainless steel.

Advantages
Push-Pull connection/disconnection, break-away function. Dry-break connection/disconnection. Connection guiding system and compensation of misalignment during connection on rack systems (when both are mounted on rigid devices). Specific design for cooling applications.

Working Temperature
-30°C up to +100°C (NBR) depending on the medium.

Special seals are available on request.

Dry-Break

Max. Working Pressure*

60 bar
* maximum static working pressure with safety factor 4 to 1.

Material

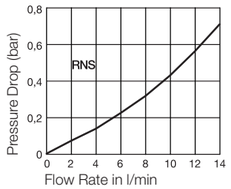
Coupling:	Brass/Stainless Steel
Plug:	Brass/Stainless Steel
Seals:	NBR

Applications

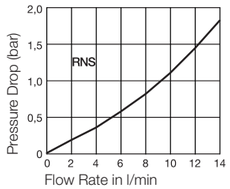
- All kind of cooling (electronic, mold, semiconductors).
- Where access for connection/ disconnection is difficult (e.g. electronic rack).

Flow diagrams

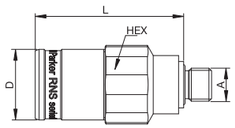
Water



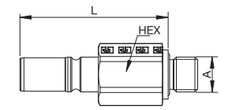
Oil



Couplings – flat-sealing — Series RNS

	DN	Connection A	HEX mm	L mm	D mm	Part Number
 Male Thread	6	G 1/4	30	58,6	28	RNS-251-4MBO

Plugs – flat-sealing — Series RNS

	DN	Connection A	HEX mm	L mm	D mm	Part Number
 Male Thread	6	G 1/4	21	44		RNS-252-4MBO

⚠ Please consider our security advices in our main catalogues ⚠

Nominal Diameter
10/12

Parker Series
NSA

Technical Description
Minimal fluid loss during disconnection. NSA couplings have minimal pressure drop and no inclusion of air or dust during connection.

Advantages
Dry-break poppet valve for reduced spillage during connection/disconnection. Light weight due to aluminium construction. Push-Lok connection for fast assembly - time saving.

Working Temperature
-50°C up to +175°C (Fluorosilicone) depending on the medium.

Special seals are available on request.

Dry-Break

Max. Working Pressure
20 bar

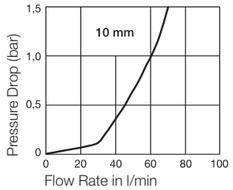
Material

Coupling:	Anodized Aluminium
Plug:	Anodized Aluminium
Seals:	Fluorosilicone

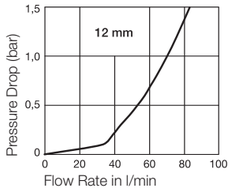
Applications
- Cooling of onboard electronic equipment, engines and tranformers
- Cooling for converters, data centers, military equipment and medical imaging equipment.

Flow diagrams

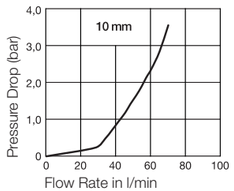
Water



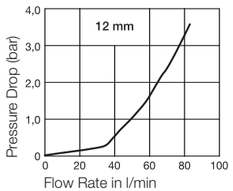
Water



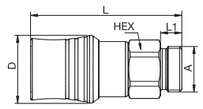
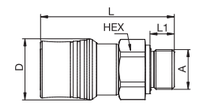
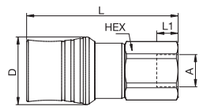
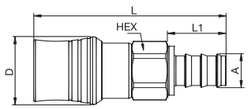
Oil



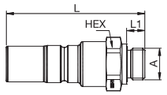
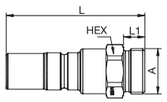
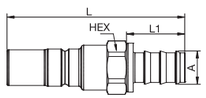
Oil



Couplings – flat sealing — Series NSA

	DN	Connection A	HEX mm	L mm	L1 mm	D mm	Weight gr.	Part Number
 Male Thread metric DIN 2353	12	M 30 x 1,5	35	99,4	14	44,5	231	NSA-501-30MCL
 Male Thread BSPP	10	G 3/4	35	88	16	40	167	NSA-391-12MBO
 Female Thread BSPP	12	G 1/2	35	99,4	14	44,5	249	NSA-501-8FB
 Parker Push-Lok	12	12 mm	35	126,40	38,30	44,5	239	NSA-501-12PL

Plugs – flat sealing — Series NSA

	DN	Connection A	HEX mm	L mm	L1 mm	D mm	Weight gr.	Part Number
 Male Thread BSPP with O-ring Seal	10	G 1/2	27	81	14		67	NSA-392-8MBO
	12	G 1/2	32	91,1	12		88	NSA-502-8MBO
 Male Thread BSPP	12	M 30 x 1,5	32	91,1	14		93	NSA-502-30MCL
 Parker Push-Lok	12	12 mm	32	117,1	38,3		97	NSA-502-12PL

⚠ Please consider our security advices in our main catalogues ⚠

Nominal Diameter

16/19/25

Parker Series

NSE

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.

Working Temperature
-20°C up to +200°C (FKM) depending on the medium.

Special seals up to 250°C are available on request.

Dry-Break

Max. Working Pressure*

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

Material

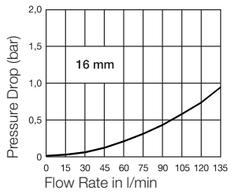
Coupling: Stainless Steel
Plug: Stainless Steel
Seals: FKM

Applications

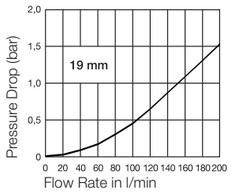
- Molding
- Electronic cabinets
- Laser
- Converters
- Radar, etc.

Flow diagrams

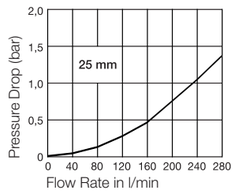
Water



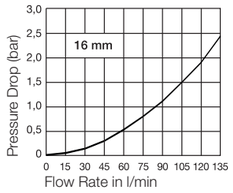
Water



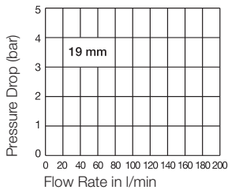
Water



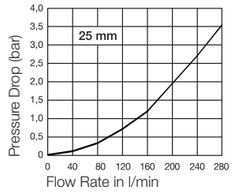
Oil



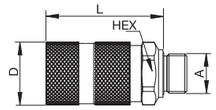
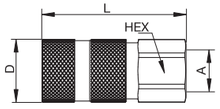
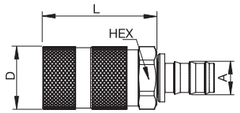
Oil



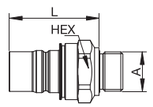
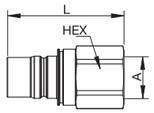
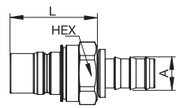
Oil



Couplings – flat-sealing — Series NSE

	DN	Connection A	HEX mm	L mm	D mm	Part Number
 Male Thread	16	G 3/4	34	68,8	37	NSE-621-12MBO
	19	G 3/4	38	78,5	42	NSE-751-12MBO
 Female Thread	19	G 1	38	96,6	42	NSE-751-16FB
	25	G 1 1/4	50	120,5	53	NSE-1001-20FB
 Parker Push-Lok	19	8 mm	38	76,4	42	NSE-751-8PL
	19	12 mm	38	76,4	42	NSE-751-12PL

Plugs – flat-sealing — Series NSE

	DN	Connection A	HEX mm	L mm	D mm	Part Number
 Male Thread	16	G 3/4	34	56,5		NSE-622-12MBO
	19	G 3/4	38	60,3		NSE-752-12MBO
 Female Thread	19	G 1	38	78,4		NSE-752-16FB
	25	G 1 1/4	50	96,8		NSE-1002-20FB
 Parker Push-Lok	19	8 mm	38	58,2		NSE-752-8PL
	19	12 mm	38	58,2		NSE-752-12PL

⚠ Please consider our security advices in our main catalogues ⚠

Nominal Diameter

3 / 4 / 6 / 9 / 12 / 19

Cartridge Couplings Parker Series

200KLEK

Technical Description
Dry-break cartridge couplings without locking mechanism made of stainless steel. Available in six different sizes for modular block/plate assembly in sensitive environments. Different coupling sizes can be combined to one multicoupling depending on the application requirements.

Dry-Break

Working Pressure*
15 bar
* maximum static working pressure with safety factor of 4 to 1.

Material

Coupling:	AISI 316 L
Plug:	AISI 316 L
Seals:	FKM

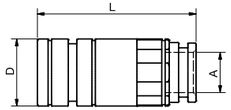
Applications
- Cooling systems (Computer, Semiconductors)
- Analysing Technology

Advantages
No spillage and minimum dead space volume. No air inclusion when connecting. Tolerates deviations in axial alignment when installing.

Working Temperature
-15°C up to +200°C (FKM) depending on the medium.

Special seals up to 250°C are available on request.

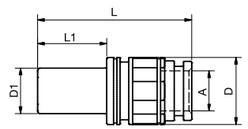
Couplings – flat-sealing — Series 200KLEK



Female Thread

DN	Connection A	L mm	L1 mm	D mm	D1 mm	Part Number
3	G 1/16	21,50		11,00		203KLIW08EVXEK
4	G 1/8	35,70		16,00		204KLIW10EVXEK
6	G 1/4	53,70		21,00		206KLIW13EVXEK
9	G 3/8	59,10		25,00		209KLIW17EVXEK
12	G 1/2	70,90		32,00		212KLIW21EVXEK
19	G 3/4	77,00		44,00		219KLIW26EVXEK

Plugs – flat-sealing — Series 200KLEK

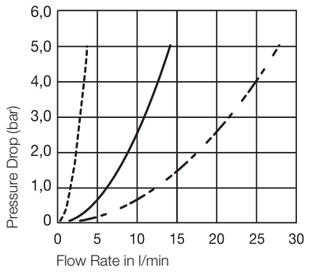


Female Thread

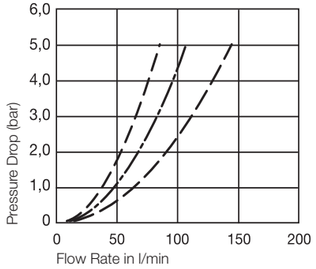
DN	Connection A	L mm	L1 mm	D mm	D1 mm	Part Number
3	G 1/16	28,70	10,75	11,00	5,30	203SLIW08EVXEK
4	G 1/8	41,90	15,00	16,00	8,40	204SLIW10EVXEK
6	G 1/4	51,15	19,00	21,00	12,50	206SLIW13EVXEK
9	G 3/8	57,40	25,80	25,00	17,00	209SLIW17EVXEK
12	G 1/2	69,70	28,00	30,00	20,00	212SLIW21EVXEK
19	G 3/4	82,40	32,45	41,00	30,00	219SLIW26EVXEK

Flow diagrams

Water ((3, 4 und 6 mm)



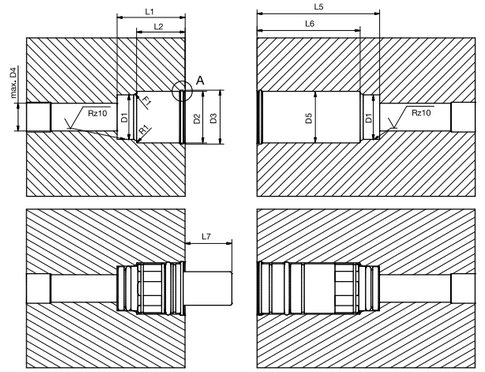
Water (9, 12 und 19 mm)



3 mm — 9 mm
4 mm — 12 mm
6 mm — 19 mm

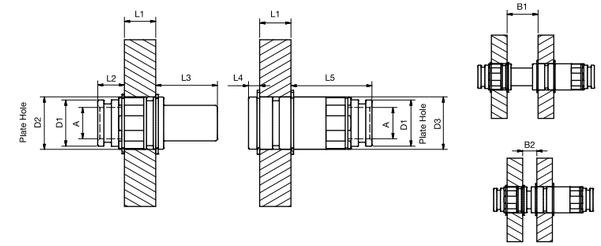
Technical Features for block- and plate assembly – Tolerances for production of the holder on request.

Block Assembly

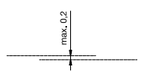


Misalignment for block assembly

Plate Assembly



Misalignment for plate assembly



Block Assembly

DN	L1 mm	L2 mm	L3 mm	L4 mm	L5 mm	L6 mm	L7 mm	D1 mm	D2 mm	D3 mm	D4 max. mm	D5 mm	R1 max. mm	F1	F2	F3	B1	B2
3	20,10	15,00	2,10	1,10	23,60	18,50	8,75	10,00	12,00	12,50	8,00	12,00	0,50	0,8x30°	–	0,5x45°	5,00	0
4	29,00	22,50	2,10	1,10	37,80	31,35	13,00	14,00	17,00	17,80	10,00	17,00	0,50	1,2x30°	0,5x30°	0,5x45°	8,65	0
6	34,25	26,65	2,10	1,10	55,80	48,20	17,00	18,50	22,00	23,00	12,00	22,00	0,50	1,3x30°	0,5x30°	0,5x45°	11,40	0
9	33,80	24,30	2,30	1,30	61,30	51,80	23,60	22,50	26,00	27,20	14,00	26,00	0,50	1,5x30°	0,5x30°	0,5x45°	16,30	0
12	44,00	34,40	2,30	1,30	73,20	63,60	25,80	28,00	31,00	32,70	16,00	33,00	0,50	1,5x30°	0,8x30°	0,5x45°	15,80	0
19	53,15	41,50	3,15	1,85	80,20	68,50	29,25	33,00	42,00	44,50	23,00	45,00	1,50	1,5x30°	1,0x30°	0,8x45°	20,30	0

Plate Assembly

DN	L1 mm	L2 mm	L3 mm	L4 mm	L5 mm	L6 mm	L7 mm	D1 mm	D2 mm	D3 mm	Connecton A	F1	F2	F3	B1	B2
3	5,00	11,00	12,75	5,50	11,00			9,80	11,2	11,2	G 1/16				16,70	11,70
4	15,00	9,80	17,20	5,50	15,35			13,80	16,2	16,2	G 1/8				20,50	12,70
6	15,00	13,15	23,00	5,50	33,20			18,30	21,2	21,2	G 1/4				25,00	13,50
9	15,00	12,80	29,60	5,30	38,80			22,30	25,2	25,2	G 3/8				29,80	13,50
12	15,00	22,90	31,80	5,30	50,60			27,80	30,2	32,2	G 1/2				29,40	12,30
19	15,00	32,00	35,40	4,40	57,60			32,80	41,2	44,2	G 3/4				33,85	12,30

⚠ Please consider our security advices in our main catalogues ⚠

MB/3800-ThermalManagement/UK 11/2016

Parker Hannifin Manufacturing
Germany GmbH & Co. KG
Quick Coupling Division Europe
Daimlerstr. 7
71735 Eberdingen – Germany
Phone +49 7042 100 0
Fax +49 7042 100 147
www.parker.com

Your Local Authorized Parker Distributor