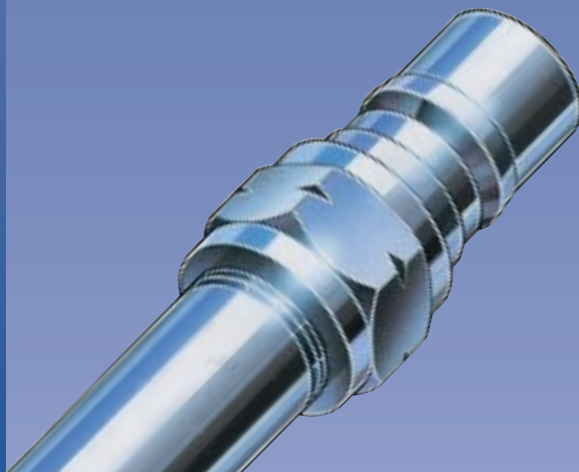




# HANSEN



QUICK-CONNECTING  
SELF-SEALING COUPLINGS



FS 28046



HANSEN HK SERIES

## QUICK-CONNECTING

The connecting mechanism is of the ball-locking type, in which a ring of stainless steel balls in the socket half of the coupling locate in an accurately machined groove in the plug half; a spring-loaded external release sleeve on the socket controls the locking balls:



### TO CONNECT

simply pull back the spring-loaded sleeve and push the socket on to the plug – the sleeve then snaps forward to lock the coupling securely.

### TO DISCONNECT

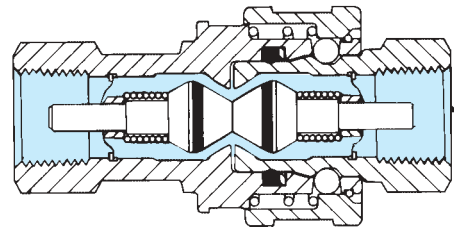
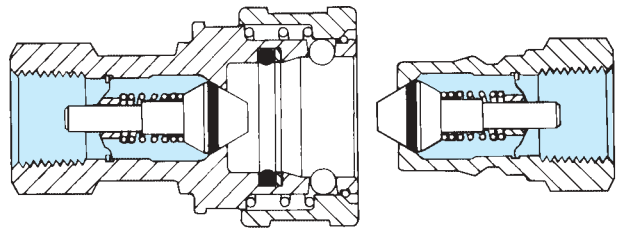
just pull the sleeve back to unlock the coupling.

This quick-acting feature gives substantial advantages over conventional screwed connections:

- Tools are not needed and unskilled personnel can operate Hansen HK Couplings.
- Connection or disconnection is fast, needing no more than a second, and saves expensive labour costs and plant shut-down.
- Joints are guaranteed leak-free every time.
- Connections are foolproof – Hansen HK couplings cannot be wrongly or only partially connected, even in the most careless hands.
- The couplings can swivel through 360° when connected, thus increasing hose life by eliminating torsional stress, and facilitating installation.
- The locking mechanism is robust, reliable and maintenance-free.

## SELF-SEALING

Spring-operated valves in both the socket and plug halves open automatically to allow full flow of liquid or gas on connection, and give automatic, positive shut-off on disconnection, eliminating all chances of fluid escape due to error.

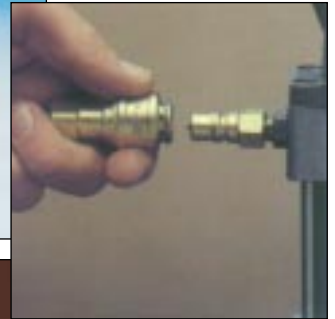


HK Couplings are so designed that, when the coupling is being connected, the seal is made before the valves open to allow fluid to flow. On disconnection the valves close to seal off both ends of the line before the main coupling seal is broken.

- Shut-off against escape of fluid is automatic, it is not subject to error or forgetfulness by the operator and there is no 'half-way' point.
- Loss or spillage of fluid on connection and disconnection is negligible.
- The cost, bulk and complication of separate manually-operated valves can often be avoided.
- Cleanliness in the working area is increased and risk of contamination of the fluid being carried is reduced.
- Increased safety in handling inflammable, corrosive or other dangerous fluids is assured by eliminating the possibility of open pipe ends.

## HANSEN COUPLINGS IN ACTION

Hansen HK series couplings give flexibility in system design or plant lay-out by allowing fluid line connections to be made in a variety of different configurations, according to system



requirements. They can be used for connecting a flexible hose to a fixed pipe, vessel, cylinder, etc., connecting a hose between two fixed points, plugging-in an instrument (e.g. a pressure gauge) to test points, or connecting two hoses together. Where one hose may need to be connected to several outlets, or several hoses to one outlet, the hoses or outlets not in use remain automatically sealed.

## HANSEN QUALITY

Hansen couplings have a world-wide reputation for quality of design and manufacture. Hansen's renowned quality standards – tight tolerances on mating parts,



micro-finished sealing surfaces, and precision elastomer seals – means that Hansen couplings give long, dependable service, even in the most difficult industrial applications. Although many copy Hansen designs, few duplicate the high standards of materials specification and manufacturing quality which Hansen steadfastly maintains.

## WIDE CHOICE OF MATERIALS

Hansen HK couplings are available in an extensive choice of material specifications giving an unrivalled range of fluid compatibility.

### STEEL, BRASS, STAINLESS STEEL

are the standard body metals available – in each case machined from solid bar. Steel parts are hardened in critical areas and selected couplings use special alloy steels with differential through-hardening to give maximum service life under tough conditions of pressure and handling.

### ALTERNATIVE SEALS

extend the versatility of Hansen couplings to cover most industrial liquids and gases; the list below shows some of the many diverse fluids successfully conveyed. The availability of the pick of seal technology in Hansen couplings means reliable, leak-free sealing can often be obtained under the most difficult application conditions.

### WIDE RANGE OF FLUIDS HANDLED

Hydraulic Fluids	Ammonia	Methanol
Compressed air	CO <sup>2</sup>	Methyl ethyl ketone
Water	Brake Fluid	Nitrogen
Lubricants	Butane	Oxygen
Vacuum	Caustic solutions	Propane
Solvents	Beer	Skydrol
Steam	Diesel fuel	Soft Drinks
Refrigerants	Ethanol	Natural gas
Acetone	Ethylene glycol	Toluene
Acetylene	Fuel oils	Trichlorethylene
Acids	Helium	Whisky
Alkalies	Jet Fuel	

Check exact specifications with Guyson Technical Department

## HOW TO SELECT

### METALS

All Hansen HK series couplings are readily available in steel, brass and stainless steel versions as standard. Irrespective of the basic metal of construction, critical parts such as locking balls, valve, springs, etc, are of stainless steel.

Pressure ratings (see following pages) may influence choice of body material.

Pressure ratings shown are valid for Group 2 fluids only [per Pressure Equipment Directive 97/23/EC, Art.9 (2)].

Consult Guyson Technical Department for Group 1 (dangerous) fluids ratings.

### SEALS

Hansen HK couplings incorporate high-grade elastomeric seals. The nitrile seal material supplied as standard gives excellent resistance to oil, air, water and many other liquids and gases. In addition, various optional seal compounds such as Viton, EPDM, Kalrez, PTFE etc. are readily available as alternatives where arduous operating conditions such as elevated temperatures apply. This choice of seal materials, in conjunction with the alternative metals available, allows Hansen HK couplings to give service in an unrivalled range of applications (see examples opposite).

### SIZES

Hansen HK couplings are available in nine basic sizes with end connections ranging from 1/8" to 3", covering most commonly-used hose bore sizes. Because of smooth flow-path design and generous proportions, a Hansen HK coupling have an appropriate size of end connection to fit a system's hose or pipe will give ample flow of liquid or gas in most applications. If flow rates are unusual or critical, the pressure drop figures can be checked as indicated on the back cover or by consulting Guyson Technical Department.

## PART NUMBERS

SERIES	STANDARD		HIGH PRESSURE		THREAD
	SOCKET	PLUG	SOCKET	PLUG	
1HK	1H11	1K11	-	-	1/8" NPTF
2HK	2H16-BS	2K16-BS	-	-	1/4" BSP
	2H16	2K16	2H16C	2K16C	1/4" NPTF
3HK	3H21-BS	3K21-BS	-	-	3/8" BSP
	3H21	3K21	3H21C	3K21C	3/8" NPTF
4HKP	4HP26-BS	4KP26-BS	-	-	1/2" BSP
	4HP26	4KP26	-	-	1/2" NPTF
6HKP	6HP31-BS	6KP31-BS	-	-	3/4" BSP
	6HP31	6KP31	-	-	3/4" NPTF
8HKP	8HP36-BS	8KP36-BS	-	-	1" BSP
	8HP36	8KP36	-	-	1" NPTF
10HK	10H41	10K41	-	-	1.1/4" NPTF
12HK	12H41-BS	12K41-BS	12H41C-BS	12K41C-BS	1.1/4" BSP
	12H41	12K41	12H41C	12K41C	1.1/4" NPTF
12HK	12H46-BS	12K46-BS	12H46C-BS	12K46C-BS	1.1/2" BSP
	12H46	12K46	12H46C	12K46C	1.1/2" NPTF
20HK	20H51-BS	20K51-BS	20H51C-BS	20K51C-BS	2" BSP
	20H51	20K51	20H51C	20K51C	2" NPTF
20HK	20H56-BS	20K56-BS	20H56C-BS	20K56C-BS	2.1/2" BSP
	20H56	20K56	20H56C	20K56C	2.1/2" NPTF
20HK	20H61-BS	20K61-BS	20H61C-BS	20K61C-BS	3" BSP
	20H61	20K61	20H61C	20K61C	3" NPTF

### ONE-WAY SHUT-OFF:

Any socket or plug can be supplied in a version which does not self-seal on disconnection, allowing draining or venting, yet which still actuates the valve in the other coupling half.

To order, add the suffix '-VAA' to the listed part number, e.g. 1H11-VAA

### PRESSURE RATINGS

SERIES	STANDARD		FAILURE	HIGH PRESSURE		
	LIQUID SERVICE	GAS SERVICE		LIQUID SERVICE	GAS SERVICE	FAILURE
1HK	440 bar	275	1100	-	-	-
2HK	410	255	1020	825+	515+	2070+
				410*	255*	1020*
3HK	410	255	1020	410	255	1020
4HKP	550	345	1380	-	-	-
6HKP	440	275	1100	-	-	-
8HKP	440	275	1100	-	-	-
10HK	185	117	470	-	-	-
12HK	240	150	600	240	150	600
20HK	160	100	400	160	100	400

+Connected      \* Disconnected

**Service pressure** ratings provide maximum safe pressures in bar for liquid (e.g hydraulic) and gas applications. Longer service life may be obtained at lower system pressures.

**Failure pressure** is based on actual test; it is the pressure in bar at which a new coupling became inoperative or started to leak during a single pressure application.

Except where noted otherwise the pressure ratings above are valid for couplings in both the connected and disconnected states. Pressures at which the couplings can be manually connected are considerably lower - consult Guyson Technical Department for information if required.

For dimensions, flow capacities and dust caps see back cover.

## STEEL COUPLINGS



Hansen HK Series couplings in carbon steel have a corrosion-resistant zinc-plated finish. They are generally suitable for hydraulic oils, compressed air, vacuum, lubricants, refrigerants, solvents, etc. The high-pressure versions help give longer service life at elevated pressures or in particularly arduous hydraulic system conditions.



## BRASS COUPLINGS



Hansen HK Series couplings in brass are commonly preferred for water, steam, liquid and gaseous fuels, etc., where complete freedom from rusting is required.

### PART NUMBERS

SERIES	SOCKET	PLUG	THREAD
1HK	B1H11	B1K11	1/8" NPTF
2HK	B2H16-BS B2H16	B2K16-BS B2K16	1/4" BSP 1/4" NPTF
3HK	B3H21-BS B3H21	B3K21-BS B3K21	3/8" BSP 3/8" NPTF
4HKP	B4HP26-BS B4HP26	B4KP26-BS B4KP26	1/2" BSP 1/2" NPTF
6HKP	B6HP31-BS B6HP31	B6KP31-BS B6KP31	3/4" BSP 3/4" NPTF
8HKP	B8HP36-BS B8HP36	B8KP36-BS B8KP36	1" BSP 1" NPTF
10HK 12HK	B10H41 B12H41-BS B12H41	B10K41 B12K41-BS B12K41	1 1/4" NPTF 1 1/4" BSP 1 1/4" NPTF
12HK	B12H46-BS B12H46	B12K46-BS B12K46	1 1/2" BSP 1 1/2" NPTF
20HK	B20H51-BS B20H51	B20K51-BS B20K51	2" BSP 2" NPTF
20HK	B20H56-BS B20H56	B20K56-BS B20K56	2 1/2" BSP 2 1/2" NPTF
20HK	B20H61-BS B20H61	B20K61-BS B20K61	3" BSP 3" NPTF

### ONE-WAY SHUT-OFF:

Any socket or plug can be supplied in a version which does not self-seal on disconnection, allowing draining or venting, yet which still actuates the valve in the other coupling half.

To order, add the suffix '-VAA' to the listed part number, e.g. B1H11-VAA

### PRESSURE RATINGS

SERIES	LIQUID SERVICE	GAS SERVICE	FAILURE
1HK	330 bar	205	825
2HK	300	185	745
3HK	240	150	605
4HKP	240	150	605
6HKP	220	140	550
8HKP	160	100	400
10HK	130	80	330
12HK	160	100	400
20HK	75	48	190

**Service pressure** ratings provide maximum safe pressures in bar for liquid (e.g hydraulic) and gas applications. Longer service life may be obtained at lower system pressures.

**Failure pressure** is based on actual test; it is the pressure in bar at which a new coupling became inoperative or started to leak during a single pressure application.

The pressure ratings above are valid for couplings in both the connected and disconnected states. Pressures at which the couplings can be manually connected are considerably lower - consult Guyson Technical Department for information if required.

For dimensions, flow capacities and dust caps see back cover.

## PART NUMBERS

SERIES	TYPE 303		TYPE 316		THREAD
	SOCKET	PLUG	SOCKET	PLUG	
1HK	LL1H11-BS	LL1K11-BS	-	-	1/8" BSP
	LL1H11	LL1K11	ML1H11	ML1K11	1/8" NPTF
2HK	LL2H16-BS	LL2K16-BS	ML2H16-BS	ML2K16-BS	1/4" BSP
	LL2H16	LL2K16	ML2H16	ML2K16	1/4" NPTF
3HK	LL3H21-BS	LL3K21-BS	ML3H21-BS	ML3K21-BS	3/8" BSP
	LL3H21	LL3K21	ML3H21	ML3K21	3/8" NPTF
4HKP	LL4HP26-BS	LL4KP26-BS	ML4HP26-BS	ML4KP26-BS	1/2" BSP
	LL4HP26	LL4KP26	ML4HP26	ML4KP26	1/2" NPTF
6HKP	LL6HP31-BS	LL6KP31-BS	ML6HP31-BS	ML6KP31-BS	3/4" BSP
	LL6HP31	LL6KP31	ML6HP31	ML6KP31	3/4" NPTF
8HKP	LL8HP36-BS	LL8KP36-BS	ML8HP36-BS	ML8KP36-BS	1" BSP
	LL8HP36	LL8KP36	ML8HP36	ML8KP36	1" NPTF
10HK	LL10H41	LL10K41	-	-	1.1/4" NPTF
12HK	LL12H41-BS	LL12K41-BS	-	-	1.1/4" BSP
	LL12H41	LL12K41	-	-	1.1/4" NPTF
12HK	LL12H46-BS	LL12K46-BS	ML12H46-BS	ML12K46-BS	1.1/2" BSP
	LL12H46	LL12K46	-	-	1.1/2" NPTF
20HK	LL20H51-BS	LL20K51-BS	-	-	2" BSP
	LL20H51	LL20K51	-	-	2" NPTF
20HK	LL20H56-BS	LL20K56-BS	-	-	2.1/2" BSP
	LL20H56	LL20K56	-	-	2.1/2" NPTF
20HK	LL20H61-BS	LL20K61-BS	-	-	3" BSP
	LL20H61	LL20K61	-	-	3" NPTF

### ONE-WAY SHUT-OFF:

Any socket or plug can be supplied in a version which does not self-seal on disconnection, allowing draining or venting, yet which still actuates the valve in the other coupling half.

To order, add the suffix '-VAA' to the listed part number, e.g. LL1H11-BS-VAA

### PRESSURE RATINGS

SERIES	LIQUID SERVICE	GAS SERVICE	FAILURE
1HK	550 bar	345	1380
2HK	410	255	1020
3HK	410	255	1020
4HKP	465	290	1160
6HKP	384	240	960
8HKP	275	170	690
10HK	185	115	470
12HK	240	150	600
20HK	160	100	400

**Service pressure** ratings provide maximum safe pressures in bar for liquid (e.g hydraulic) and gas applications. Longer service life may be obtained at lower system pressures.

**Failure pressure** is based on actual test; it is the pressure in bar at which a new coupling became inoperative or started to leak during a single pressure application.

The pressure ratings above are valid for couplings in both the connected and disconnected states. Pressures at which the couplings can be manually connected are considerably lower - consult Guyson Technical Department for information if required.

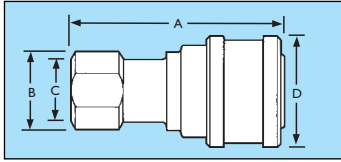
For dimensions, flow capacities and dust caps see back cover.

## STAINLESS STEEL COUPLINGS

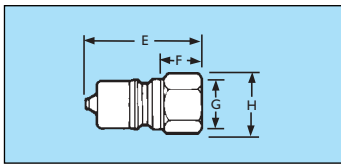


Hansen HK Series couplings in stainless steel are chosen to handle many corrosive liquids and gases, fluids where high purity must be maintained, high vacuum, etc. They are also useful for non-aggressive fluids in corrosive environments.

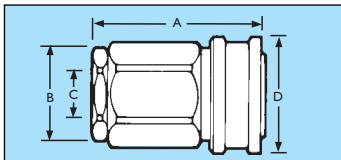
## DIMENSIONS



SOCKET	A	B	C thrd	D
1H11	49mm	18	1/8"	26
2H16	58	23	1/4"	31
3H21	65	26	3/8"	37
4HP26	75	33	1/2"	48
6HP31	89	40	3/4"	54
8HP36	105	43	1"	67

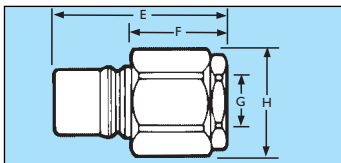


PLUG	E	F	G thrd	H
1K11	32mm	11	1/8"	17
2K16	39	14	1/4"	23
3K21	45	15	3/8"	26
4KP26	52	16	1/2"	33
6KP31	60	18	3/4"	39
8KP36	73	25	1"	48



SOCKET	A	B	C thrd	D
10H41	115mm	68	1.1/4"	70
12H41	122	77	1.1/4"	83
12H46	122	77	1.1/2"	83
20H51	140	102	2"	105
20H56	156	102	2.1/2"	105
20H61	178	102*	3"	105

Approx length connected = A + F



PLUG	E	F	G thrd	H
10K41	108mm	58	1.1/4"	68
12K41	121	68	1.1/4"	77
12K46	121	68	1.1/2"	77
20K51	140	75	2"	102
20K56	155	90	2.1/4"	102
20K61	177	112	3"	102*

\* Endpiece a/c 108

Dimensions given apply to sockets and plugs irrespective of body material.

## FLOW CAPACITIES

The flow co-efficients (Cv) in the list below enable the approximate pressure drop ( $\Delta p$ ) in bar across the connected coupling to be calculated as follows:

$$\Delta p = \left( \frac{\text{litres/min}}{C_v \times 3.8} \right)^2 \times 0.069 \text{ where water is the flow medium}$$

Example: Find approx. pressure drop across the 3HK coupling at a flow rate of 15 litres/min.

$$\Delta p = \left( \frac{15}{1.9 \times 3.8} \right)^2 \times 0.069 = 0.3 \text{ bar approx}$$

1HK	0.5
2HK	1.1
3HK	1.9
4HKP	3.2
6HKP	7.2

8HKP	10.3
10HK	16.9
12HK	24.0
20HK	50.0

For other liquids and for gases, consult Guyson Technical Department.

## DUST CAPS

Dust caps are available where protection is necessary against excessive flying grit or dust. The Socket Dust Cap is easily applied by pulling back the Socket Sleeve and inserting the Dust Cap. The Plug Dust Cap covers the entire machined surface of the Plug. It is applied and held in place by friction on the locking portion of the Plug. Metal dust caps are supplied with a chain and attachment ring. Plastic dust caps have an integral plastic strap and attachment loop.

SERIES	SOCKET DUST CAP		PLUG DUST CAP	
	METAL	PLASTIC	METAL	PLASTIC
1-HK	SDC-1HK	P-SDC-1HK	PDC-1HK	P-PDC-1HK
2-HK	SDC-2HK	P-SDC-2HK	PDC-2HK	P-PDC-2HK
3-HK	SDC-3HK	P-SDC-3HK	PDC-3HK	P-PDC-3HK
4-HK	SDC-4HK	P-SDC-4HK	PDC-4HK	P-PDC-4HK
6-HK	SDC-6HK	P-SDC-6HK	PDC-6HK	P-PDC-6HK
8-HK	SDC-8HK	P-SDC-8HK	PDC-8HK	P-PDC-8HK
10-HK	-	P-SDC-8HK	-	P-PDC-8HK
12-HK	SDC-12HK	-	PDC-12HK	-
20-HK	SDC-20HK	-	PDC-20HK	-

## GUYSON SERVICE

Guyson Technical Department offers immediate advice and assistance in selection of suitable Hansen couplings, fittings, hose assemblies, adaptors, etc., for any application, based on more than 90 years of specialist experience. Our Sales Office provides fast information on prices and deliveries and same-day despatch of your urgent requirements.

**GUYSON**

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