

COOLING IT SAFELY

HANSA FLEX

The artificial intelligence workload fundamentally alters the cooling requirements of data centers. As chip power densities increase, liquid cooling technology is evolved from a "high-end option" to a "survival necessity" in AI data centers.

When engineers were designing the cooling systems, their attention naturally focused on the cold plates, pumps and coolant distribution units. However, there was one component that quietly determined the reliability of the entire system over the course of many years of operation: the flexible hoses and tubes that connected everything together.



Website



Official Account



Online Catalog

Company Introduction

Founded in Bremen in 1962, HANSA-FLEX AG is Europe's leading system provider for fluid technology. The key to its success is system partnership. Starting out as a supplier of spare parts for hydraulic hose lines, HANSA-FLEX has evolved over more than 60 years to become one of the leading system providers in the field of hydraulics and pneumatics. With over 471 branches and 430 service vehicles and 5,200 employees in 43 countries worldwide, HANSA-FLEX is a global player serving over 150,000 customers worldwide.

Why HANSA-FLEX?

HANSA-FLEX has more than ten years' liquid cooling application experience in data centers, as well as over 30 years' of experience of cooling applications in other industries, such as wind energy, machine tool and so on. Based on 60 years' experience in fluid, HANSA-FLEX offers customers optimal solution.

Why should EPDM hoses be used for liquid cooling in data centers?

EPDM is highly suitable for direct-to-chip liquid cooling because it is resistant to thermal aging, has low permeability to water vapor, and remains flexible without plasticizers, which helps maintain stable cooling performance over a long service life.

However, merely indicating "EPDM" in the data sheet is not sufficient. The long-term reliability of the liquid cooling system largely depends on the formulation, curing, and manufacturing process of EPDM.

Why peroxide-cured EPDM is more suitable than sulfur-cured EPDM?

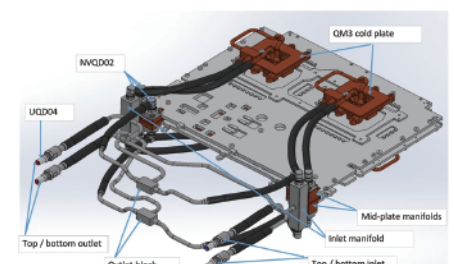
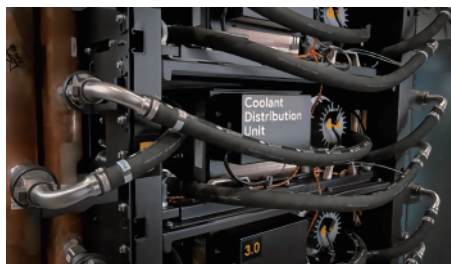
EPDM rubber is usually vulcanized using one of two curing systems: sulfur or peroxide. The sulfur-cured EPDM has good initial mechanical properties and cost advantages. However, during the curing process, compounds may remain in the rubber matrix.

The peroxide-cured EPDM is more stable, typically resulting in a purer polymer structure and fewer residual by-products.

HANSA-FLEX peroxide-cured EPDM is highly suitable for circulating through the complex circuit paths within the server infrastructure in cooling fluids. More than ten years' successful experience in cloud providers has proved that HANSA-FLEX peroxide-cured EPDM is the best choice for liquid cooling.



Manifold



CHEM EPDM

Chemical hose, UL 94 HB



Properties

Application	chemical industries sea and industrial waste water
Special features	suitable for use as pressure hose in the chemical industry
Standard	DIN EN 12115 TRbF 131/2:1992
Inner	chemical resistant, black, smooth EPDM rubber
Reinforcement	two high resistant textile inserts and two anti- static copper braids
Cover	abrasion resistant, ozone and weather resistant EPDM rubber, UL 94 HB
Colour	black
Temp. range	min. flexible to -40 °C max. 100°C (depending on the medium) temperature peaks up to 120 °C
Customs tariff number	40093100



Note

Steam cleaning pressure less up to 130 °C (max. 30 minutes)

Items

Identification	Inside Ø		Outside Ø	Working pressure	Burst pressure	Bending radius min.	Weight	Roll length	Order unit
	(mm)	(inch)							
CHEM 19-6 EPDM	19	3/4	31	16	64	80	0.54	40	Reel
CHEM 25-6 EPDM	25.4	1	37	16	64	100	0.63	40	Reel
CHEM 32-6 EPDM	32	1.1/4	44	16	64	125	0.854	40	Reel
CHEM 38-6.5 EPDM	38	1.1/2	51	16	64	175	0.97	40	Meter
CHEM 51-8 EPDM	50	2	66	16	64	225	1.57	40	Meter
K-CHEM 51-8 EPDM	50.8	2	67	16	64	225	1.61	40	Meter
CHEM 63-8 EPDM	63.5	2.1/2	79	16	64	275	2.02	40	Meter

CHEM EPDM N



Chemical hose, peroxide cured, UL 94 V-0, halogen-free

Properties

Application	chemical industries, suitable for air, water, water-glycol, antifreeze
Special features	the cover meets the UL 94 V-0 flame retardant rating, halogen-free material for inner and cover, peroxide cured process for inner
Standard	DIN EN 12115 TRbF 131/2:1992
Inner	chemical resistant, black, smooth EPDM rubber
Reinforcement	high resistant textile inserts and two anti-static copper braids
Cover	abrasion resistant, flame retardant, ozone and weather resistant EPDM rubber
Colour	black
Tem. range	-40°C~+100°C (-40°F~+212°F)
Customs tariff number	40093100



Items

Identification	Inside Ø		Outside Ø	Working pressure	Burst pressure	Bending radius min.	Weight
	(mm)	(inch)					
CHEM 25-6 EPDM N	25.0	1	37.0	16	64	100	0.63
CHEM 32-6 EPDM N	32.0	1.1/4	44.0	16	64	125	0.85
CHEM 38-6.5 EPDM N	38.0	1.1/2	51.0	16	64	175	0.97
CHEM 51-8 EPDM N	51.0	2	67.0	16	64	200	1.61
CHEM 63-8 EPDM N	63.5	2.1/2	79.0	16	64	275	2.02
CHEM 76-8 EPDM N	76.0	3	92.0	16	64	350	2.72

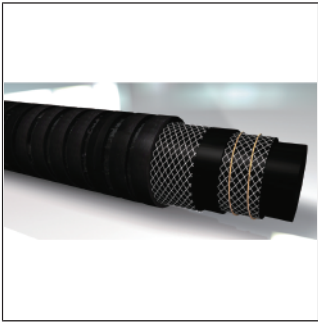
SG 100 RI EPN



Suction hose, corrugated cover, flexible,UL 94 V-0

Properties

Application	suitable for water, glycol, propylene glycol solutions of liquid cooling system
Special features	corrugated cover
Inner	black and smooth EPDM, peroxide cured, halogen-free
Reinforcement	multiple plies with helix wire
Cover	black synthetic rubber,UL 94 V-0 flame retardant rating, square corrugated
Temp. range	-40°C~+100°C (-40°F~+212°F)
Length of per reel	40 meters



Items

Identification	Special features		Inside Ø		Outside Ø	Working pressure	Burst pressure	Bending radius min.	Vacuum
			(mm)	(inch)					
SG 125 RI EPN	corrugated	cover	25	1	35	10	40	50	-0.9
SG 132 RI EPN	corrugated	cover	32	1.1/4	42	10	40	60	-0.9
SG 140 RI EPN	corrugated	cover	38	1.1/2	50	10	40	76	-0.9
SG 150 RI EPN	corrugated	cover	51	2	62	10	40	100	-0.9
SG 163 RI EPN	corrugated	cover	63.5	2.1/2	76	10	40	125	-0.9
SG 176 RI EPN	corrugated	cover	76	3	92	10	40	145	-0.9
SG 1102 RI EPN	corrugated	cover	101.6	4	118	10	40	200	-0.9

DN = nominal diameter, nominal width

WAS EPDM



Peroxide cured, UL 94 V-0, halogen-free, plug-lok, for cold plate

Properties

Application	suitable for air, water, glycol, propylene glycol based coolant solutions, phosphate ester based fluid.
Inner	black EPDM synthetic rubber, peroxide cured, halogen-free
Reinforcement	layers of synthetic fiber braided reinforcement
Outer	weather, and wear-resistant black synthetic rubber
Temp. range	-40°C~+100°C (-40°F~+212°F)
Industry standard	the outer layer meets the UL 94 V-0 flame retardant rating



Items

Identification	Inside Ø		Outside Ø	Working pressure	Burst pressure	Bending radius min.	Weight
	(mm)	(inch)					
WAS 06-2.5 EPDMK	6.4	1/4	11.2	10.3	41.2	19	0.11
WAS 06-2.5 EPDM	6.4	1/4	12.1	13.8	55.2	25	0.13
WAS 08-3.0 EPDM	7.9	5/16	14.5	13.8	55.2	32	0.18
WAS 10-3.0 EPDM	9.5	3/8	15.9	13.8	55.2	38	0.19
WAS 13-3.5 EPDM	12.7	1/2	20.2	10.3	41.2	70	0.25
WAS 16-3.5 EPDM	15.9	5/8	23.1	10.3	41.2	89	0.30
WAS 19-4.0 EPDM	19.1	3/4	27.0	10.3	41.2	115	0.35
WAS 25-4.5 EPDM	25.4	1	34.2	10.3	41.2	150	0.52

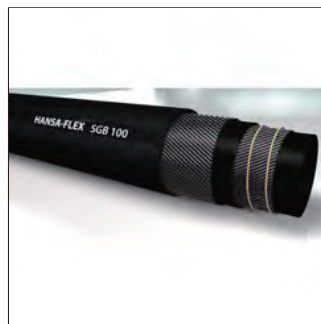
SGB 100

Suction hose, exceeds SAE 100 R4

HANSA FLEX

Properties

Application	hose for suction and return lines with restricted installation space
Media	mineral oil water-glycol emulsions water-oil-emulsions
Standard	exceeds SAE 100 R4
Inner	oil resistant, synthetic rubber
Reinforcement	two high-tensile textile braids and one embedded spring steel wire spiral
Cover	synthetic rubber with high ozone, abrasion, and weather resistance
Colour	black
Temp. range	-40°C~+100°C (-40°F~+212°F)
Customs tariff number	40092100



Note

The recommended flow velocity for media in suction hoses is a maximum 1m/s.

Items

Identification	Inside Ø		Outside Ø	Burst pressure	Bending radius min.	Vacuum
	(mm)	(inch)	(mm)	(bar)	(mm)	(bar)
SGB 116	16	5/8	26	63	35	-0.8
SGB 120	19	3/4	29	63	40	-0.8
SGB 125	25.4	1	35	51	55	-0.8
SGB 132	32	1.1/4	42	42	70	-0.8
SGB 140	38	1.1/2	50	30	80	-0.8
SGB 145	45	1.3/4	56	30	100	-0.8
SGB 150	50.8	2	62	30	100	-0.8
SGB 160	60	2.3/8	72	30	145	-0.8
SGB 163	63.5	2.1/2	75	30	170	-0.8
SGB 170	70	2.3/4	82	30	210	-0.8
SGB 176	76.2	3	88	30	225	-0.8
SGB 180	80	3.1/8	94	30	240	-0.8
SGB 1102	102	4	116	30	305	-0.8
SGB 1110	110	4.3/8	125	30	335	-0.6
SGB 1127	127	5	145	30	460	-0.6
SGB 1152	152	6	170	30	580	-0.6

DN = nominal diameter, nominal width

Burst pressure: safety factor = 3:1

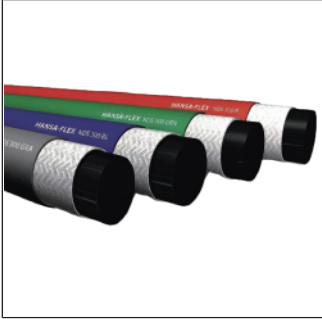
Plug-Lok® NDS300

Smooth surface insert hose



Properties

Application	automotive assembly plants, semi conductor, cooling lines
Fluid	air, water, water-oil-emulsions, water-glycol-emulsions, hydraulic and lubrication oil
Special features	high working pressure to 2.4 MPa (24bar) high temperature up to 100°C easy assembly (no tools or clamps required) full range of fittings : DIN, BSP, SAE, JIC and ORFS wide range size (-4 ~ -16): 1/4"-1"
Inner	synthetic rubber
Reinforcement	one fiber braid
Cover	synthetic rubber
Colour	black, blue, red
Temp. range	petroleum base hydraulic fluid, lubricating oils and anti-freeze solutions -40 °C to 100 °C water, water/oil emulsion and water glycol fluids up to 85 °C air up to 70 °C



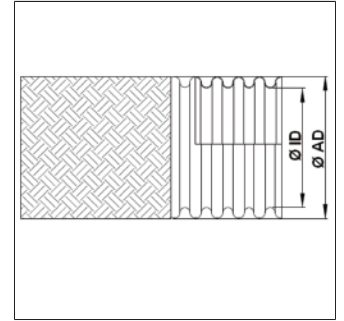
Items

Identification	Inside Ø		Outside Ø	Working pressure	Burst pressure	Bending radius min.	Weight
	(mm)	(inch)					
NDS306XXX	6.3	1/4	12.7	24	96	65	130
NDS308XXX	7.9	5/16	14.7	24	96	75	150
NDS310XXX	9.5	3/8	16.4	24	96	75	220
NDS313XXX	12.7	1/2	19.8	21	84	127	260
NDS316XXX	15.9	5/8	23.3	21	84	152	350
NDS320XXX	19.1	3/4	26.3	21	84	177	370
NDS325XXX	25.4	1	33.6	21	84	254	580

Note: XXX= color, BLK=black, BL=blue, R=red example: NDS310 BLK BLACK

Properties

Application	use in gas technology, on rail vehicles and in the marine sector
Approval	ABS
Braiding	1 braided layer in 1.4301
Special features	parallel corrugation single wall normal corrugation
Hose material	stainless steel 1.4541
Standard	DIN EN ISO 10380
Temp. range	-200°C~+550 °C
Customs tariff number	83071000



Note

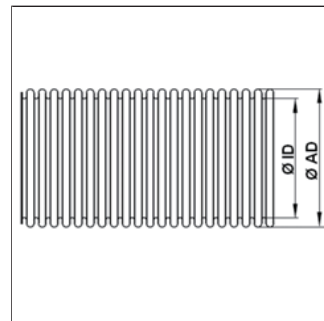
Please take into account the dynamic and thermal reduction factors with respect to the pressure values. The life of the hose can be substantially decreased due to statistical pressure overlapping pressure impulses or changing/swelling pressure loads.

Items

Identification	Inside Ø (mm)	Outside Ø (mm)	Working pressure 20 °C (stat.) (bar)	Bending radius stat. (mm)	Bending radius dyn. (mm)	Tolerances of ID /AD (mm)	Weight (kg/m)	Production length (m)
ICA 010	10.6	17.5	75	35	190	0.3	0.25	upon request
ICA 013	12.3	19.5	70	35	210	0.3	0.29	upon request
ICA 016	15.7	25.2	65	45	285	0.4	0.37	upon request
ICA 020	19.8	30.3	50	55	310	0.4	0.5	upon request
ICA 025	25.8	36	40	70	375	0.4	0.64	upon request
ICA 032	33	45.7	35	80	405	0.4	1	upon request
ICA 040	40	54	30	100	480	0.5	1.2	10 to 12
ICA 050	51.6	67.5	25	130	550	0.5	1.54	10 to 12
ICA 065	66	87.9	20	175	675	0.6	2.55	10 to 12
ICA 080	76.6	100	18	200	750	0.6	2.9	10 to 12
ICA 100	103	128	14	250	920	1	4.2	10 to 12
ICA 125	127.5	154.5	12.5	325	1,160	1	5.8	10 to 12
ICA 150	151.5	180	10	375	1,320	1	6.8	10 to 12
ICA 200	200	232	6	260	1,400	1.6	11	10 to 12
ICA 250	250	287	3.5	340	1,650	1.6	13.5	10 to 12
ICA 300	300	340	2	420	2,000	2	17.6	10 to 12

Properties

Application	standard hose for a wide range of applications
Special features	parallel corrugation single wall flat corrugation
Hose material	stainless steel 1.4404
Braiding	without braided layers
Standard	DIN EN ISO 10380
Temp. range	-200°C~+550 °C
Customs tariff number	83071000



Note

Please take into account the dynamic and thermal reduction factors with respect to the pressure values. The life of the hose can be substantially decreased due to statistical pressure overlapping pressure impulses or changing/swelling pressure loads.

Ordering information

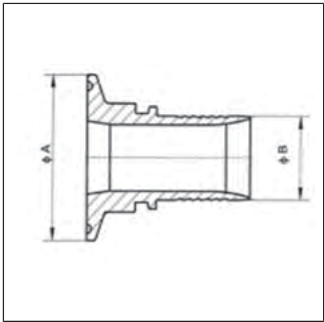
Other designs and metal hose assemblies are available on request.
Solution annealing metal hoses are available.

Items

Identification	InsideØ	OutsideØ	Working pressure 20 °C (stat.)	Weight	Bending radius stat.	Bending radius dyn.	Tolerances of ID /AD	Production length
	(mm)	(mm)	(bar)	(kg/m)	(mm)	(mm)	(mm)	(m)
KBO 006	6.1	9.8	24	0.072	15	80	0.2	10 to 100
KBO 008	8.2	12.3	17	0.086	16	125	0.2	10 to 100
KBO 010	10.05	14.3	9	0.101	18	129	0.2	10 to 100
KBO 013	12.2	16.7	9	0.116	20	140	0.2	10 to 100
KBO 016	16.2	21.6	7	0.176	28	160	0.2	10 to 100
KBO 020	20.2	26.8	6	0.252	32	170	0.2	10 to 100
KBO 025	25.4	32.2	3	0.336	40	190	0.3	10 to 100
KBO 032	34.3	41.1	2.5	0.428	50	260	0.3	10 to 100
KBO 040	40	49.8	2.5	0.706	60	300	0.3	10 to 100
KBO 050	50.2	60.3	1.6	0.894	70	320	0.4	10 to 100

Properties

Application	food and medical industries; liquid cooling tubing for data centers and cloud computing
Overall Dimensions of TC Tri-Clamp Fitting	TC Tri-Clamp Quick-Connect Fitting, Material - SUS304; smooth and hygienic surface treatment



Note
316 stainless steel material can be provided if necessary.
According to customers' requirements, we can provide matching crimping sleeves, fixed clamps and EPDM sealing rings.

Items

Identification	Inch	A	B
PN20TCVAI	3/4	34	19
PN20TC25VAI	3/4	50.5	19
PN25TCVAI	1	50.5	25.4
PN32TC25VAI	1-1/4	50.5	32.0
PN38TC25VAI	1-1/2	50.5	38.1
PN50TCVAI	2	64	50.8
PN63TCVAI	2-1/2	77.5	63.5
PN63TC76VAI	2-1/2	91	63.5
PN76TCVAI	3	91	76.2

Properties

Application	for suction and return
Construction	hoses hinge bolt clamp
Type material	stainless steel 1.4301
Standard	similar DIN 3017
Customs tariff number	73269098



Items

Identification	Clamping range (mm)	Bandwidth (mm)	SW (mm)
MRSS 17-19	17 - 19	18	8
MRSS 19-21	19 - 21	18	8
MRSS 21-23	21 - 23	18	8
MRSS 23-25	23 - 25	18	8
MRSS 25-27	25 - 27	18	8
MRSS 27-29	27 - 29	18	8
MRSS 29-31	29 - 31	20	10
MRSS 31-34	31 - 34	20	10
MRSS 34-37	34 - 37	20	10
MRSS 37-40	37 - 40	20	10
MRSS 40-43	40 - 43	20	10
MRSS 43-47	43 - 47	20	10
MRSS 47-51	47 - 51	20	10
MRSS 51-55	51 - 55	20	10
MRSS 55-59	55 - 59	20	10
MRSS 59-63	59 - 63	20	10
MRSS 63-68	63 - 68	20	10
MRSS 68-73	68 - 73	24	13
MRSS 73-79	73 - 79	24	13
MRSS 79-85	79 - 85	24	13
MRSS 85-91	85 - 91	24	13
MRSS 91-97	91 - 97	24	13
MRSS 97-104	97 - 104	24	13
MRSS 104-112	104 - 112	24	13
MRSS 112-121	112 - 121	24	13
MRSS 121-130	121 - 130	24	13
MRSS 130-140	130 - 140	28	17
MRSS 140-150	140 - 150	28	17
MRSS 150-162	150 - 162	28	17
MRSS 162-174	162 - 174	28	17
MRSS 174-187	174 - 187	28	17
MRSS 187-200	187 - 200	28	17
MRSS 200-213	200 - 213	28	17
MRSS 213-226	213 - 226	28	17
MRSS 226-239	226 - 239	28	17
MRSS 239-252	239 - 252	28	17

Properties

Construction type	gear hose clamps hexagon
Construction type addition	screw with slot
Material	stainless steel 1.4301
Customs tariff number	73269098



Items

Identification	Bandwidth (mm)	Clamping range (mm)
ESK 11-17	9	11 - 17
ESK 15-24	12	15 - 24
ESK 19-28	12	19 - 28
ESK 22-32	12	22 - 32
ESK 26-38	12	25 - 40
ESK 32-44	12	32 - 44
ESK 38-50	12	38 - 50
ESK 44-56	12	44 - 56
ESK 50-65	12	50 - 65
ESK 58-75	12	58 - 75
ESK 68-85	12	68 - 85
ESK 77-95	12	77 - 95
ESK 87-112	12	87 - 112
ESK 104-138	12	104 - 138
ESK 136-165	12	136 - 165
ESK 150-180	12	150 - 180
ESK 175-205	12	175 - 205
ESK 200-231	12	200 - 231
ESK 226-256	12	226 - 256
ESK 251-282	12	251 - 282
ESK 277-307	12	277 - 307

Additional versions

ESK W2	Hose clamp
ESK W5	Hose clamp

UQDC

Universal quick-disconnect coupling

HANSA FLEX

HANSA-FLEX UQDC is designed for thermal management applications, available in 4 sizes and has 2 color options. It complies with OCP (Open Compute Project) and exceeds requirements of specified performance characteristics.

HANSA-FLEX UQDC offers color identification (red and blue) and guarantees 100% leak testing.



Properties

- Designed per OCP (Open Compute Project) UQDC specification
- Push-to-connect design
- High flow and no spillage
- Double shut off—flat face valves
- Exceeds OCP flow ratings at least by 25% resulting in reduction in overall energy consumption
- Best in class force to connect
- Standard material: 316 stainless steel provides broad fluid compatibility
- Standard seal material: EPDM
- Color anodized aluminum sleeves
- Color coded (red/blue) sleeves on socket and O-rings on plug
- Wide range of terminal end options: BSPP on plug and push on hose on socket.
- Additional configurations available upon request
- Operating temperature -40°C to + 150°C
- Typical working pressure: 16 bar



UQDC Universal quick disconnect coupling

Designed for high flow rate and no spillage, the UQDC coupling is perfect for in-rack applications with smaller hose lines.

Pressure & Flow

Size	Body Size	Nominal Flow Diameter	Max operating pressure			Min burst pressure			Rated Flow		Cv Value	Air Inclusion	Fluid Loss
			Connected	Socket / Female Half	Plug / Male Half	Connected	Socket / Female Half	Plug / Male Half					
		(mm)	(bar)	(bar)	(bar)	(bar)	(bar)	(bar)	(lpm)	(gpm)	-	cc. max.	cc. max.
UQDC02		2.8	20	20	20	60	60	60	2.1	0.6	0.33	0.004	0.007
UQDC04		5.5	16	16	16	48	48	48	6.4	1.7	1.37	0.024	0.01
UQDC06		6.3	6.9	6.9	6.9	20.7	20.7	20.7	11.4	3.0	2.37	0.027	0.022
UQDC08		8.9	6.9	6.9	6.9	20.7	20.7	20.7	17.8	4.7	5.32	0.029	0.03

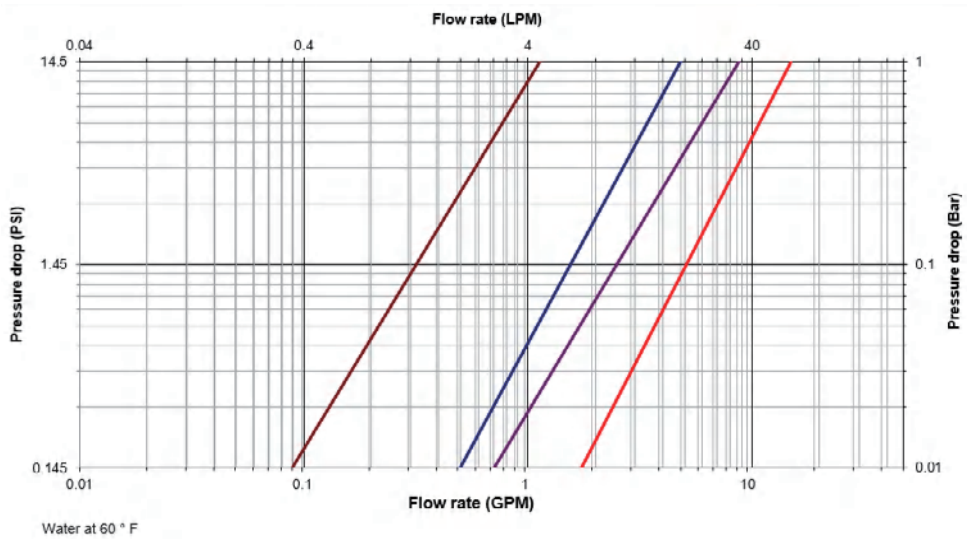
Size	Force to Connect	Performance Parameters		
		N	Recommended	BSP Size
UQDC02	48		Torque	1/8"
UQDC04	50			3/8"
UQDC06	73			3/8"
UQDC08	87			1/2"
				N-m
				8-9
				18-20
				18-20
				34-37

- Applications & Markets
- Liquid cooling application
 - Data center application

Seal Elastomer Data

Seal Elastomer	P/N Code	Operation Temperature Range	
		°C	°F
EPDM	-	-40°C +150°C	-40°F +302°F

Flow Data



Dimensions

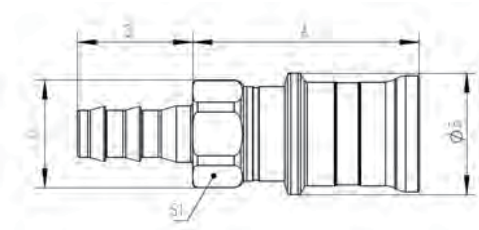


Figure 1
Push on socketless fitting



Figure 2
Male ORB ISO 1179-3

DN	Part number	Details		Dimensions				
		Thread / end size	Fig.	A	B	C	D	S1
		Hose Tail	n°	(mm)	(mm)	(mm)	(mm)	(mm)
DN02	SKM-UQDC-02-PN-E-VA	1/4	1	40	18.8	16.5	19.5	15
DN04	SKM-UQDC-04-PN-E-VA	3/8	1	48	26	23	24.5	21
DN06	SKM-UQDC-06-PN-E-VA	1/2	1	53.5	29.5	27.5	27.8	25
DN08	SKM-UQDC-08-PN-E-VA	5/8	1	60	37	34	38	30

Note 1: To obtain connected length of coupling, add dimensions A (Fig. 1) and G (Fig. 2) together.
Note 2: For color options-R suffix corresponds to RED and-B suffix to BLUE

DN	Part number	Details		Dimensions				
		Thread / end size	Fig.	E	F	I	H	S2
		BSP	n°	(mm)	(mm)	(mm)	(mm)	(mm)
DN02	SKS-UQDC-02-HR02-E-VA	1/8	2	6.72	17.32	9.1	23.9	15
DN04	SKS-UQDC-04-HR06E-VA	3/8	2	11.19	18	10	35	16
DN06	SKS-UQDC-06-HR06-E-VA	3/8	2	14.3	23.8	11	43	21
DN08	SKS-UQDC-08-HR08-E-VA	1/2	2	17.48	27	12.7	48.3	24

Note 1: To obtain connected length of coupling, add dimensions A (Fig. 1) and G (Fig. 2) together.
Note 2: For color options—R suffix corresponds to RED and—B suffix to BLUE

The HFFD83 series couplings ensure the safety of pipeline connection. In the disconnected state, the ball valve can only be opened by pressing the handle button, preventing accidental operation. During the complete rotation process of the two end couplings, the ball valve cannot be opened. It is only after the complete rotation and positioning that the ball valve can be opened, ensuring a leak-free connection of the pipeline. Once connected, the end couplings can only be separated by fully closing the ball valves on both ends. The HFFD83 series coupling are applied to connect high-flow pipelines, facilitating quick connection and disconnection.

Physical Features

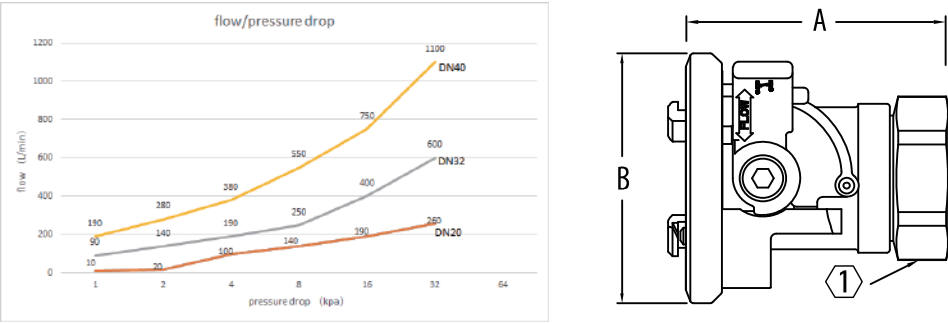
- ◆ Quick and convenient - Adopting a wire-wrapped connection method, it can rotate 360 degrees to prevent hose twisting.
- ◆ Double sealing configuration - After the two joints are combined, there is no leakage, and it can be sealed in both directions to ensure sealing safety and reliability.
- ◆ Strong wear resistance and corrosion resistance - The shell material is stainless steel, with high hardness and strong corrosion resistance.
- ◆ Symmetrical design - Easy for assembly and installation.
- ◆ Safety and reliability - Interlocking connection, the valve can only be opened after the connection is complete; the joint can only be disconnected after the valve is completely closed.



Physical Characteristics

Coupling Size	Max.Operating Pressure				Min.Burst			
	Connected		Socket/Female Half		Pressure Connected		Socket/Female Half	
	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)
DN25	16	232	16	232	64	928	64	928
DN32	16	232	16	232	64	928	64	928
DN40	16	232	16	232	64	928	64	928

Flow Data



Dimensions

Part Number	Port Size	Thread	Dimensions A mm	B mm	Hex mm
HFFD83-DN20-IG16VA	DN25	G1	Female 86	69.9	40
HFFD83-DN32-IG24VA	DN32	G1 1/2	Female 106.7	88	55
HFFD83-DN40-IG32VA	DN40	G2	Female 108	103	70

SYSTEMATIC FOR IMPROVED SAFETY!

HANSA-FLEX flame protected clamp is the ideal solution for the liquid cooling in data centers. This means improved safety and efficiency for data centers. The clamp body material is PA-V0, which means flame retardant polyamide materials in accordance with UL 94.

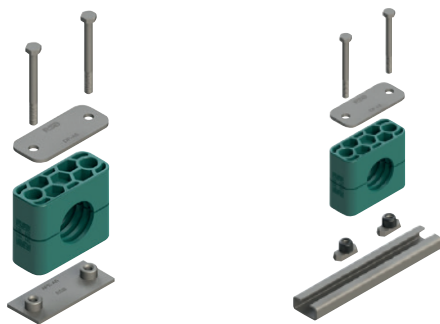
Typical features of the block clamps are:

- Highest V0 classification according to UL 94;
- High resistance to temperature, media, UV radiation and environmental influences;
- Compliance with DIN 3015 completely;
- Wide range of metric and imperial cable diameters.



PA-V0

Different assembly, such as on metal welding plates, or mounting rails, or else.

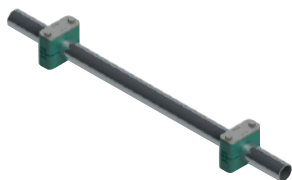


Clamp body material properties (PA 6 for liquid cooling)

MECHANICAL PROPERTIES	Polypropylene (PP)	Polyamide (PA 6)	Aluminium (Al)	Thermoplastic elastomer
Density	0,90 g/cm ³	1,10 g/cm ³	2,65 g/cm ³	0,97 g/cm ³
Impact value at 23 °C	7 kJ/m ² (ISO 179/1eA)	8 kJ/mm ² (ISO 179/1eA)		
Impact value at -20 °C	3 kJ/m ² (ISO 179/1eA)			
Modulus of elasticity	1.400 N/mm ² (ISO 527)	2.000 N/mm ² (ISO 527)	72.000 N/mm ²	
Yield stress resp. tensile strength (Rm)	28 N/mm ² (ISO 527)	50 N/mm ² (ISO 527)	>240 N/mm ²	5,2 ... 8,8 N/mm ² (ASTM D412)
Temperature resistance	-30 ... +90°C	-40 ... +120°C	-40 ... +300°C	-50 ... +120°C

Recommend clamp pitch

The clamp pitches assigned to the respective outside pipe diameters are standard values for static load.



Pipe bend assembly

Pipe bends must be fixed with clamps immediately in front of and behind the bend.



Rack Manifold

Piping assemblies

HANSA-FLEX offers all types of hose and pipeline systems to the customers, whether its EPDM hoses or stainless steel pipes, whether it's manifold or secondary pipeline. We provide our customers with the most optimal system solution. A properly designed manifold enhances overall cooling efficiency, reduces downtime, and extends the lifecycle of IT equipment.



Manifolds are piping assemblies used to distribute coolant (usually water, ethylene glycol mixture or coolant fluid) from central coolant distribution unit (CDU) to each server rack within the data center. These manifolds form part of the secondary fluid network, also known as the cooling system, which act as bridges between the CDU and the internal cold plates of the servers.



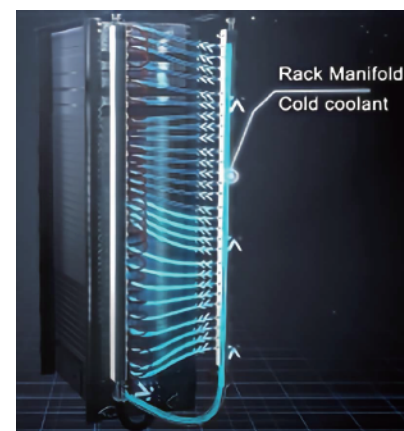
HANSA-FLEX precision manufacturing processes are the key to ensure the required tolerances and performance of manifold.

Our key manufacturing process include:

Machining and Welding: High-quality machining ensures proper dimensions and smooth sealing surfaces. Welded joints are robust and corrosion-resistant.

Surface Finishing: Treatments like electro-polishing and passivation reduce the risk of corrosion and improve longevity.

Cleaning: Effective ultrasonic cleaning processes removes machining debris and contaminants inside.



Pipe Connector Parts

High quality sanitary

HANSA/FLEX

HANSA-FLEX offers a comprehensive range of pipe connection series, including DIN, 3A, SMS, ISO/IDF, BSRJT, DS, and other standard products. The sanitary pipe fittings include 45° /90° /180 ° Elbow series; T or K shape series; the concentric (eccentric) reducer series. The diverse fittings enable the pipe system to be optimized, no matter big or small pipes.



All the pipes and fittings can be connected through: threaded and flanged, quick-installation, welding, which can ensure connected safely and no leakage.



HANSA-FLEX products include clamp series (heavy pressure clamp, normal clamp and three piece clamps etc.), flange connect series, hoops, and pipe joint series. All the parts are from forged rods and manufactured by CNC machines, and suitable for sealing at high pressure, or high clean requirements. It is easy and flexible to change the parts.



3BKTC ND VA

Three-piece ball valve

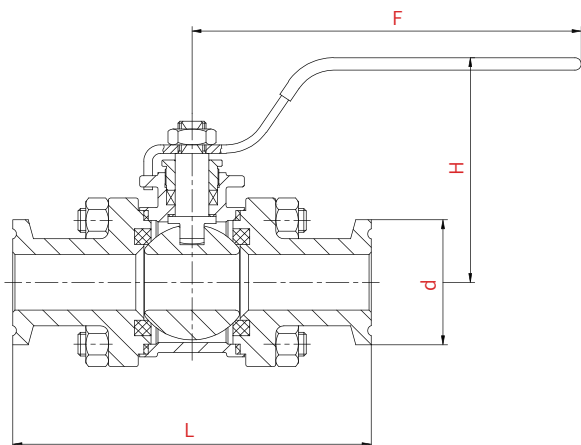


Valve

Design Standard: GB/T 12237
Structural : MFG
Connection : ISO 2852
Test: GB/T 13927
Size : 15mm(1/2")~65mm(2-1/2")

Technical Specifications

Orperation Pressure: PN16
Test Pressure: shell: 2.4MPa
Seal: 1.8MPa
Air seal: 0.6MPa
Medium: Water, Oil, and Gas
Temperature: -29°C ~+150°C



Material

Components	Material	ASTM Standard
Body	Stainless Steel	A351 CF8
Cover	Stainless Steel	A351 CF8
Ball	Stainless Steel	A182 F304
Seat	PTFE	
Stem	Stainless Steel	A276 304
Gasket	PTFE	
Nut	Stainless Steel	A194 8
Handle	Stainless Steel+PVC	SS201
Thrust Washer	PTFE	
Padding	PTFE	
Padding Cover	Stainless Steel	A276 304

Specifications (mm)

Size (mm)	15	20	25	32	40	50	65
DN (inch)	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
L	96	108	113	126	140	155	178
H	46	54	64	69	76	86	130
F	105	110	130	140	160	160	210
d	50.5	50.5	50.5	50.5	64	77.5	91

Example: 3BKTC 20 ND VA

BV ND WD

Lug type butterfly valve



Valve Standard:

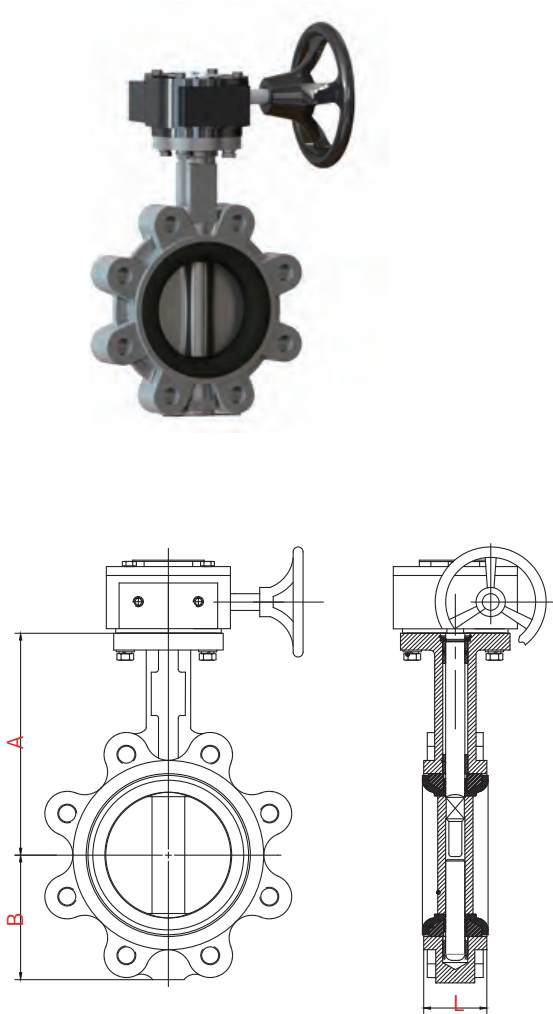
- Design Standard: GB/T 12238
- Structural Standard: GB 12221
- Flange Connection Standard: GB/T 9124.1
- PN16 Inspection Standard: GB/T 13927

Technical Specifications:

- Operating Pressure: 10bar/16bar
- Specifications: DN50~DN350 Test
- Pressure: Shell: 15bar/24bar
- Seal: 11bar/17.6bar
- Temperature: - 10°C~100°C

Product Features:

- The main body is constructed of stainless steel, providing excellent wear resistance.
- It features high flow capacity with low pressure drop.
- A self-lubricating bushing on the stem prevents stem deflection.
- Four flange pilot holes ensure proper alignment during installation, allowing installation in any orientation.
- Maintenance-free.



Material Specifications:

Components	Material	Standard
valve body	Stainless Steel	A351 CF8
valve shaft	Stainless Steel	BS970 420 S 37
valve seat	PTFE, EPDM available	
valve board	Stainless Steel	A351 CF8
Actuator: malleable cast Iron, cast Iron, carbon Steel		

DN	mm inch	50 2	65 2-1/2	80 3	100 4	125 5	150 6	200 8	250 10	300 12	350 14
A		110	120	130	145	170	185	230	254	280	370
B		70	75	85	105	115	130	170	203	240	260
L		43	46	46	52	56	56	60	68	78	78

Example: BV 50 ND WD

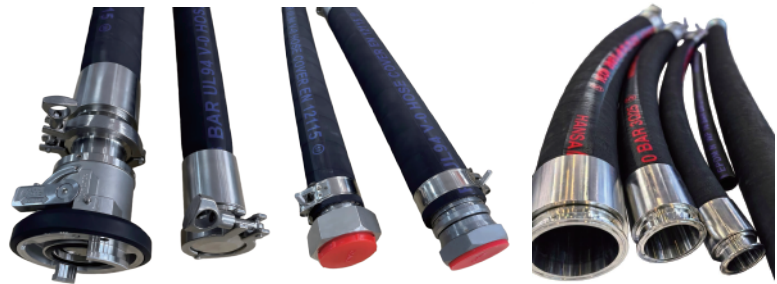
WAS 10 EPDM + TC clamp
& CHEM38 EPDMN+ TC Clamp



CHEM76 EPDMN +
Customized fittings



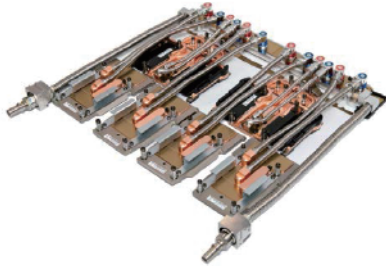
Hose with Couplings & Clamps



Production & Cleaning



HANSA-FLEX metal hose for liquid cooling in data center



HANSA-FLEX metal hoses are used widely in many industries, such as cooling system for wind energy and so on. HANSA-FLEX offers customer various types of metal hoses with different sizes and pressure, solution annealing as well.

Metal hoses offer several benefits when used for data center cooling systems.

1. **Adaptability and Durability**
Metal hoses are compatible with various cooling fluids.
Stainless steel material resists corrosion from cooling fluids.
2. **Flexibility in Design**
The flexibility allows easy installation in tight or complex layouts.
3. **Leak Prevention**
Metal hoses with welded connections significantly reduce the risk of leaks.
4. **Fire Safety**
Metal hoses are nonflammable, enhancing fire safety in data center.
5. **Lower Maintenance Cost**
Metal hoses require less maintenance and fewer replacements.



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