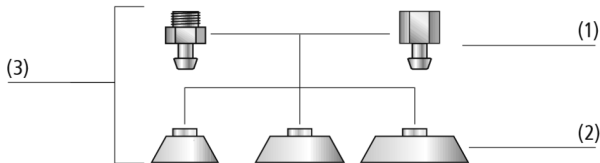


Flat Suction Cups SHFN

Suction area (Ø) from 50 mm to 85 mm



Flat Suction Cups SHFN



System design Flat Suction Cups SHFN



Flat suction cups SHFN being used for handling chipboards

Suitability for industry specific applications

Application

- Round flat suction cup for handling furniture parts, parquet flooring, laminated and unlaminated chipboard, etc.
- Version with vulcanized insert, for vacuum systems in rough operating conditions, where the suction cups are not always fully covered or may be placed directly on the edge of the workpiece
- Handling of objects with very rough surfaces with sealing ring made of special foam

Design

- Adaptable suction cup SHFN (3), consisting of cup SHF (2) and connection nipple (1)
- Nipple plugged into cup; version SHFN...E with nipple screwed into vulcanized insert
- Ribs on the upper surface of the cup for higher stability on the version without insert
- Optionally available with sealing ring made of special foam and/or with touch valve
- Individual deactivation of unused suction cups with optional touch valve to prevent entry of air

Product highlights

- Soft sealing lip adapts optimally to uneven workpieces
- Sealing lip with internal sealing edge provides optimum sealing on rough and smooth surfaces
- Special structure of the suction cup bottom enables dynamic applications with short cycle times
- Version SHFN...E with integrated insert increases stability under tough operating conditions
- Optional with dirt filter for use in dusty environments

Flat Suction Cups SHFN

Suction area (Ø) from 50 mm to 85 mm

Designation code Flat Suction Cups SHFN

SHFN	–	70	–	NK-45	–	G1/4-AG	–	E	–	MOS
1		2		3		4		5		6

1 – Abbreviated designation

Code	Version
SHFN	Flat

2 – Suction area

Code	Diameter in mm
50...85	ø 50 to 85

3 – Material

Code	Material
NK-45	Natural rubber

4 – Connection

Code	Connection
G1/4-AG	G1/4-AG (AG = male (M))
G1/4-IG	G1/4-IG (IG = female (F))

5 – Type of construction

Code	Type
–	Pluggable metal inlay
E	Vulcanized metal inlay

6 – Product addition

Code	Type
MOS	Sealing ring made of special foam
TV	Touch valve

Suction cup SHFN (elastomer part + connection nipple) is delivered assembled.
The assembly consists of:

- Suction cup of type SHF – elastomer part, available in various diameters
- Connection nipple of type SA-NIP – available with various threads
- Optional product addition: sealing ring and touch valve

Available spare parts: suction cup SHF, connection nipple SA-NIP and RED-NIP, sealing ring, touch valve
Available accessories: filter screen (sieve, round)

Ordering data Flat Suction Cups SHFN

Type				Vacuum connection:	
				G1/4-AG	G1/4-IG
SHFN	50	-	-	10.01.01.11693	10.01.01.11694
SHFN	50	-	MOS	10.01.01.11695	10.01.01.11696
SHFN	50	-	TV	10.01.01.11699	-
SHFN	50	-	MOS-TV	10.01.01.11700	-
SHFN	70	-	-	10.01.01.11689	10.01.01.11690
SHFN	70	E	-	10.01.01.12197	10.01.01.12216
SHFN	70	-	MOS	10.01.01.11691	10.01.01.11692
SHFN	70	E	MOS	10.01.01.12217	10.01.01.12218
SHFN	70	-	TV	10.01.01.11697	-
SHFN	70	E	TV	10.01.01.12221	-
SHFN	70	-	MOS-TV	10.01.01.11698	-
SHFN	70	E	MOS-TV	10.01.01.12222	-
SHFN	85	-	-	10.01.01.11775	10.01.01.11776
SHFN	85	E	-	10.01.01.12210	10.01.01.12211
SHFN	85	-	MOS	10.01.01.11777	10.01.01.11778
SHFN	85	E	MOS	10.01.01.12212	10.01.01.12213
SHFN	85	-	TV	10.01.01.11779	-
SHFN	85	E	TV	10.01.01.12224	-
SHFN	85	-	MOS-TV	10.01.01.11780	-
SHFN	85	E	MOS-TV	10.01.01.12225	-

Flat Suction Cups SHFN

Suction area (Ø) from 50 mm to 85 mm

Ordering data Spare parts Flat Suction Cups SHFN

Type				Spare parts		Part no.
SHFN	50	-	-	Flat suction cup (round)	SHF 50 NK-45 N041	10.01.01.11687
SHFN	50	-	MOS	Flat suction cup (round)	SHF 50 NK-45 N041 MOS	10.01.01.11688
SHFN	70	-	-	Flat suction cup (round)	SHF 70 NK-45 N041	10.01.01.11682
SHFN	70	-	MOS	Flat suction cup (round)	SHF 70 NK-45 N041 MOS	10.01.01.11686
SHFN	70	E	-	Flat suction cup (round)	SHF 70 NK-45 M10x1.25-IG E	10.01.01.12165
SHFN	70	E	MOS	-	-	-
SHFN	85	-	-	Flat suction cup (round)	SHF 85 NK-45 N041	10.01.01.11773
SHFN	85	-	MOS	Flat suction cup (round)	SHF 85 NK-45 N041 MOS	10.01.01.11774
SHFN	85	E	-	Flat suction cup (round)	SHF 85 NK-45 M10x1.25-IG E	10.01.01.12209
SHFN	85	E	MOS	Flat suction cup (round)	SHF 85 NK-45 M10x1.25-IG E MOS	10.01.01.12223

Type	Spare parts				Part no.
SHFN	50	MOS	Sealing ring	DR 28/21x3 C03 EPDM-15 KE	10.01.06.01679
SHFN	70	MOS	Sealing ring	DR 46/36x5 S05 EPDM-15 KE	10.01.06.01678
SHFN	85	MOS	Sealing ring	DR 60/50x5 S05 EPDM-15 KE	10.01.06.01720

Type	Spare parts			Part no.
SHFN 50 NK-45 G1/4-AG	Suction cup connection nipple	SA-NIP N041 G1/4-AG DN440		10.01.01.11772
SHFN 50 NK-45 G1/4-AG MOS	Suction cup connection nipple	SA-NIP N041 G1/4-AG DN440		10.01.01.11772
SHFN 50 NK-45 G1/4-IG	Suction cup connection nipple	SA-NIP N041 G1/4-IG DN440		10.01.01.11822
SHFN 50 NK-45 G1/4-IG MOS	Suction cup connection nipple	SA-NIP N041 G1/4-IG DN440		10.01.01.11822
SHFN 70 NK-45 G1/4-AG	Suction cup connection nipple	SA-NIP N041 G1/4-AG DN440		10.01.01.11772
SHFN 70 NK-45 G1/4-AG MOS	Suction cup connection nipple	SA-NIP N041 G1/4-AG DN440		10.01.01.11772
SHFN 70 NK-45 G1/4-AG E	Reduction nipple with hexagon	RED-NIP G1/4-AG M10x1.25-AG AL		10.01.01.12194
SHFN 70 NK-45 G1/4-AG E MOS	Reduction nipple with hexagon	RED-NIP G1/4-AG M10x1.25-AG AL		10.01.01.12194
SHFN 70 NK-45 G1/4-IG	Suction cup connection nipple	SA-NIP N041 G1/4-IG DN440		10.01.01.11822
SHFN 70 NK-45 G1/4-IG MOS	Suction cup connection nipple	SA-NIP N041 G1/4-IG DN440		10.01.01.11822
SHFN 70 NK-45 G1/4-IG E	Suction cup connection nipple	SA-NIP N009 G1/4-IG DN440		10.01.01.12192
SHFN 70 NK-45 G1/4-IG E MOS	-	-		-
SHFN 85 NK-45 G1/4-AG	Suction cup connection nipple	SA-NIP N041 G1/4-AG DN440		10.01.01.11772
SHFN 85 NK-45 G1/4-AG MOS	Suction cup connection nipple	SA-NIP N041 G1/4-AG DN440		10.01.01.11772
SHFN 85 NK-45 G1/4-AG E	Reduction nipple with hexagon	RED-NIP G1/4-AG M10x1.25-AG AL		10.01.01.12194
SHFN 85 NK-45 G1/4-AG E MOS	Reduction nipple with hexagon	RED-NIP G1/4-AG M10x1.25-AG AL		10.01.01.12194
SHFN 85 NK-45 G1/4-IG	Suction cup connection nipple	SA-NIP N041 G1/4-IG DN440		10.01.01.11822
SHFN 85 NK-45 G1/4-IG MOS	Suction cup connection nipple	SA-NIP N041 G1/4-IG DN440		10.01.01.11822
SHFN 85 NK-45 G1/4-IG E	Suction cup connection nipple	SA-NIP N009 G1/4-IG DN440		10.01.01.12192
SHFN 85 NK-45 G1/4-IG E MOS	Suction cup connection nipple	SA-NIP N009 G1/4-IG DN440		10.01.01.12192

Type	Spare parts		Part no.
SHFN 50 NK-45 G1/4-AG TV	Touch Valve	TVN G1/4-AG 8.4 N041	10.05.10.00058
SHFN 50 NK-45 G1/4-AG MOS-TV	Touch Valve	TVN G1/4-AG 8.4 N041	10.05.10.00058
SHFN 70 NK-45 G1/4-AG TV	Touch Valve	TVN G1/4-AG 8.4 N041	10.05.10.00058
SHFN 70 NK-45 G1/4-AG MOS-TV	Touch Valve	TVN G1/4-AG 8.4 N041	10.05.10.00058
SHFN 70 NK-45 G1/4-AG E TV	Touch Valve	TVN G1/4-AG 9 N009	10.05.10.00065
SHFN 70 NK-45 G1/4-AG E MOS-TV	Touch Valve	TVN G1/4-AG 9 N009	10.05.10.00065
SHFN 85 NK-45 G1/4-AG TV	Touch Valve	TVN G1/4-AG 8.4 N041	10.05.10.00058
SHFN 85 NK-45 G1/4-AG MOS-TV	Touch Valve	TVN G1/4-AG 8.4 N041	10.05.10.00058
SHFN 85 NK-45 G1/4-AG E TV	Touch Valve	TVN G1/4-AG 9 N009	10.05.10.00065
SHFN 85 NK-45 G1/4-AG E MOS-TV	Touch Valve	TVN G1/4-AG 9 N009	10.05.10.00065

Flat Suction Cups SHFN

Suction area (Ø) from 50 mm to 85 mm

Ordering data Accessories Flat Suction Cups SHFN

Type	Accessories		Part no.
SHFN 50 NK-45 G1/4-AG	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 50 NK-45 G1/4-AG MOS	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 50 NK-45 G1/4-IG	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 50 NK-45 G1/4-IG MOS	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 70 NK-45 G1/4-AG	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 70 NK-45 G1/4-AG MOS	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 70 NK-45 G1/4-AG E	Sieve, round	SIEB 14.5x1 MS-A2 0.103/0.15	10.05.03.00023
SHFN 70 NK-45 G1/4-AG E MOS	Sieve, round	SIEB 14.5x1 MS-A2 0.103/0.15	10.05.03.00023
SHFN 70 NK-45 G1/4-IG	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 70 NK-45 G1/4-IG MOS	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 70 NK-45 G1/4-IG E	Sieve, round	SIEB 14.5x1 MS-A2 0.103/0.15	10.05.03.00023
SHFN 70 NK-45 G1/4-IG E MOS	-	-	-
SHFN 85 NK-45 G1/4-AG	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 85 NK-45 G1/4-AG MOS	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 85 NK-45 G1/4-AG E	Sieve, round	SIEB 14.5x1 MS-A2 0.103/0.15	10.05.03.00023
SHFN 85 NK-45 G1/4-AG E MOS	Sieve, round	SIEB 14.5x1 MS-A2 0.103/0.15	10.05.03.00023
SHFN 85 NK-45 G1/4-IG	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 85 NK-45 G1/4-IG MOS	Sieve, round	SIEB 15x0.8 MS-A2 0.103/0.07	10.07.01.00211
SHFN 85 NK-45 G1/4-IG E	Sieve, round	SIEB 14.5x1 MS-A2 0.103/0.15	10.05.03.00023
SHFN 85 NK-45 G1/4-IG E MOS	Sieve, round	SIEB 14.5x1 MS-A2 0.103/0.15	10.05.03.00023

Technical data Flat Suction Cups SHFN

Type*				Suction force d2 [N]**	Suction force (-600 mbar) [N]***	Lateral force [N]	Volume [cm³]	Workpiece radius min. (convex) [mm]	Hose inner diameter (recom.) d [mm]****	Nipple family
SHFN	50	-	-	40	110	95	7.3	41	4	N 041
SHFN	50	-	TV	40	110	95	7.3	41	4	N 041
SHFN	70	E	-	100	200	145	16.0	95	6	N 009
SHFN	70	E	TV	100	200	145	16.0	95	6	N 009
SHFN	70	-	-	100	200	145	16.0	95	6	N 041
SHFN	70	-	TV	100	200	145	16.0	95	6	N 041
SHFN	85	E	-	175	300	210	25.0	176	6	N 009
SHFN	85	E	TV	175	300	210	25.0	176	6	N 009
SHFN	85	-	-	175	300	210	25.0	176	6	N 041
SHFN	85	-	TV	175	300	210	25.0	176	6	N 041

*For technical data on the touch valves, see Chapter "Valve Technology"

**Suction force referred to the sealing-edge diameter d2

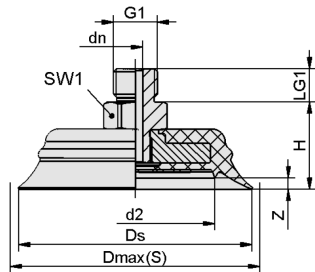
***The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

****The recommended hose diameter is based on a hose length of approx. 2 m

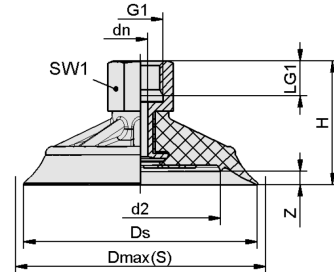
Flat Suction Cups SHFN

Suction area ($\varnothing$) from 50 mm to 85 mm

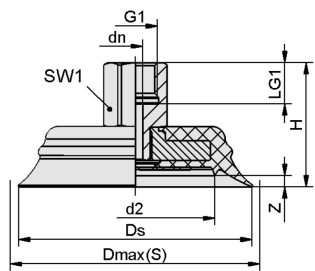
Design data Flat Suction Cups SHFN



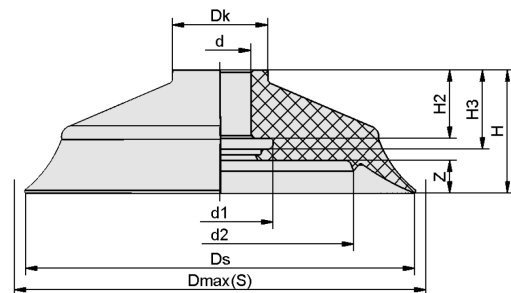
SHFN 70 - 85 G1/4-AG E (TV)



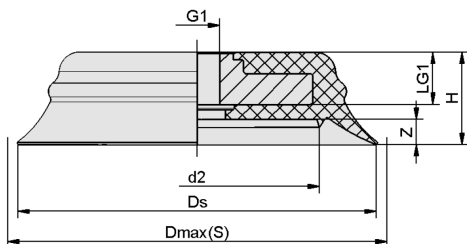
SHFN 50 - 85 G1/4-IG



SHFN 70 - 85 G1/4-IG E



SHF 50 - 85



SHF 70 E - 85 E

Flat Suction Cups SHFN

Suction area (Ø) from 50 mm to 85 mm

Design data Flat Suction Cups SHFN

Type*				d2 [mm]	Dmax(S) [mm]**	dn [mm]	Ds [mm]	G1	H [mm]	LG1 [mm]	SW1 [mm]	Z (Stroke) [mm]
SHFN	50	-	-	30	55	4.4	52.0	G1/4"-M	26.2	11	17	3
SHFN	50	-	-	30	55	4.4	52.0	G1/4"-F	37.2	11	17	3
SHFN	50	-	TV	30	55	4.4	52.0	G1/4"-M	32.2	11	17	3
SHFN	70	-	-	48	74	4.4	70.0	G1/4"-M	26.2	11	17	4
SHFN	70	E	-	48	74	4.4	70.0	G1/4"-M	26.2	10	17	4
SHFN	70	-	-	48	74	4.4	70.0	G1/4"-F	37.2	11	17	4
SHFN	70	E	-	48	74	4.4	70.0	G1/4"-F	37.2	13	17	4
SHFN	70	-	TV	48	74	4.4	70.0	G1/4"-M	32.2	11	17	4
SHFN	70	E	TV	48	74	4.4	70.0	G1/4"-M	33.4	10	17	4
SHFN	85	-	-	62	89	4.4	85.0	G1/4"-M	26.2	11	17	4
SHFN	85	E	-	62	89	4.4	85.0	G1/4"-M	26.4	10	17	4
SHFN	85	-	-	62	89	4.4	85.0	G1/4"-F	37.2	11	17	4
SHFN	85	E	-	62	89	4.4	85.0	G1/4"-F	37.4	13	17	4
SHFN	85	-	TV	62	89	4.4	85.0	G1/4"-M	32.2	11	17	4
SHFN	85	E	TV	62	89	4.4	85.0	G1/4"-M	33.4	10	17	4

*Acceptable dimensional tolerances for rubber parts concerning to DIN ISO 3302-1 E3

**External dimension of the suction cup when it is pressed against the workpiece by the vacuum

Type*				d [mm]	d1 [mm]	d2 [mm]	Dk [mm]	Dmax(S) [mm]**	Ds [mm]	G1	H [mm]	H2 [mm]	H3 [mm]	LG1 [mm]	Z (Stroke) [mm]
SHF	50	-	-	7.5	17.0	30	17.0	55.0	52.0	-	22.2	12.8	14.3	-	3.0
SHF	70	-	-	7.5	17.0	48	17.0	74.0	70.0	-	22.2	12.8	14.3	-	4.0
SHF	70	E	-	-	-	48	-	74.0	70.0	M10x1.25-F	18.1	-	-	10	4.0
SHF	85	-	-	7.5	17.0	62	17.0	89.0	85.0	-	22.2	12.8	14.3	-	4.0
SHF	85	E	-	-	-	50	-	89.0	85.0	M10x1.25-F	18.1	-	-	10	4.0

*Acceptable dimensional tolerances for rubber parts concerning to DIN ISO 3302-1 E3

**External dimension of the suction cup when it is pressed against the workpiece by the vacuum