

5.5 Static Spray Balls

Static Spray Balls is recommended for less demanding cleaning duties and storage tanks with a low cleaning frequency.



Product leaflet

LKRK Static Spray Balls	5.5.1236
SSB Retractor – A Retractable Targeted Static Spray Ball	5.5.1238

Price lists

LKRK, static spray balls	5.5.1240
SSB Retractor	5.5.1242

For Simple Tank Cleaning

Alfa Laval LKRK Static Spray Balls

5.5

Application

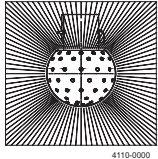
The LKRK is a fixed spray ball used for cleaning storage tanks in the food and beverage industries. Fixed spray balls are used for less demanding cleaning duties.



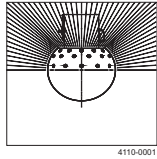
TECHNICAL DATA

Spray pattern for LKRK

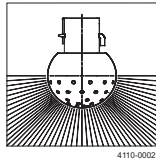
The 64 mm spray ball is available with 2 mm holes.
 The 94 mm spray ball is available with 2 mm or 3 mm holes.
 (See capacity diagrams).



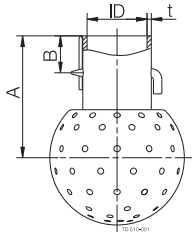
F-version



T-version



B-version



OD = Outside diameter

ID = Inside diameter

PHYSICAL DATA

Materials

Housing and sprayhead assembly: 316L (UNS S31603)
 Finish: Bright

Connections LKRK

Type LKRK 64:

ISO tube: 25 mm
 DIN tube: DN25 - pipe range 1 and 2

Type LKRK 94:

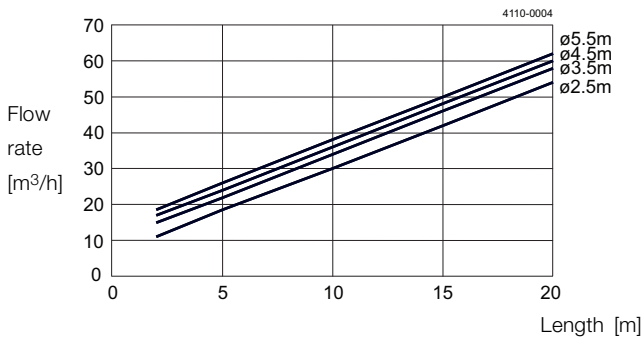
ISO tube: 51 mm
 DIN tube: DN50 - pipe range 1 and 2

Dimensions (mm)

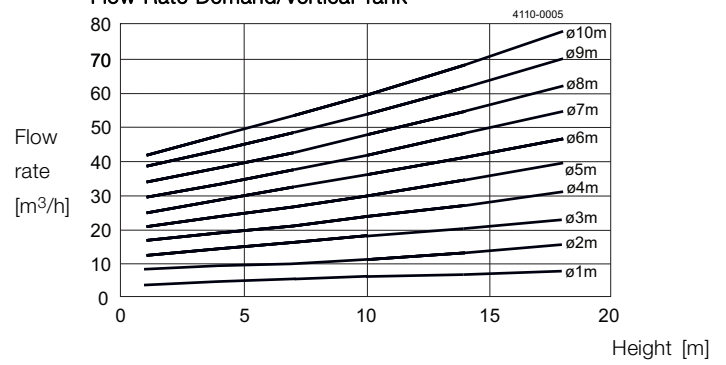
Size	64 (1")	94 (2")
A	58	77.5
B	17.5	22.5
US tube ID	25.7	51.6
ISO tube OD/ID/t	28.5/25.5/1.5	54.4/51.4/1.5
DIN tube OD/ID/t	32.5/28.5/2	54.4/52.4/1
Pipe range 1		
DIN tube OD/ID/t	34.2/29.5/2.35	57.4/53.4/2
Pipe range 2		
Weight, kg	0.2	0.3

Sizing/selection and installation drawing are available in Alfa Laval CAS tool for Tank Cleaning Equipment.

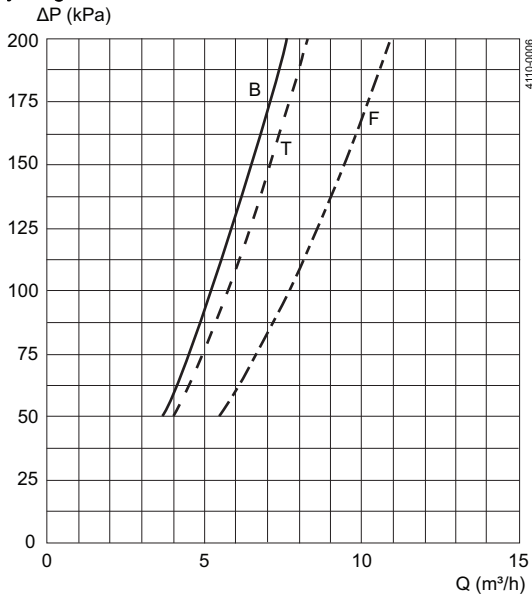
Flow Rate Demand/Horizontal Tank



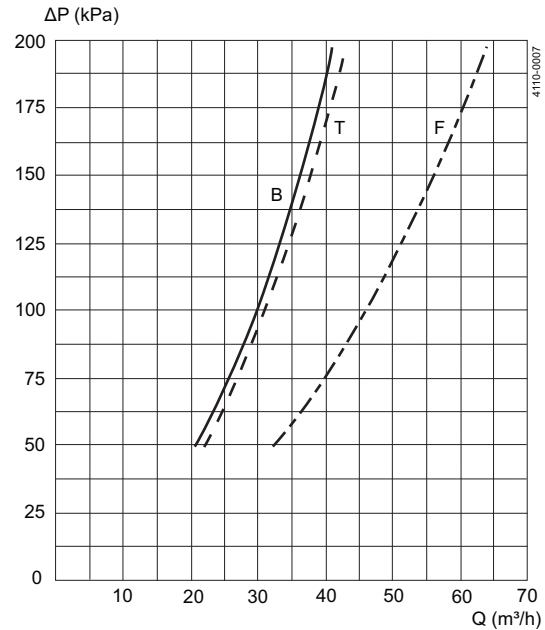
Flow Rate Demand/Vertical Tank



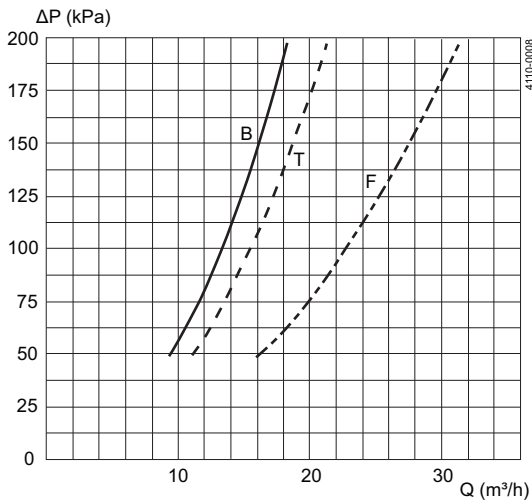
Capacity diagrams - LKRK



Type LKRK 64 with 2 mm holes:
bottom drilled, top drilled, fully drilled



Type LKRK 94 with 3 mm holes, 51 mm (DN50) tube:
bottom drilled, top drilled, fully drilled



Type LKRK 94 with 2 mm holes, 51 mm (DN50) tube:
bottom drilled, top drilled, fully drilled

B = Bottom drilled
T = Top drilled
F = Fully drilled

Safe production – non intrusive cleaning equipment

Alfa Laval SSB Retractor – A Retractable Targeted Static Spray Ball

5.5

Applications

The SSB Retractor is used for cleaning different types of installations from simple tanks and duct work, to complex process applications with agitators where built-in dynamic cleaning heads are impractical to use. Storage tanks, reactors, mixers and spray dryers etc. including surrounding duct work and vent lines are cleaned by SSB Retractor units. The SSB Retractor is widely used in applications within the biopharma, cosmetic, dairy, food and beverage industries.

Working Principle

The unit can be installed in ducts and small tanks, where the process is disturbed by any internal components including fixed cleaning equipment. Three versions available:

- “Air to Spring” where the extension is activated by pneumatic and retraction is spring-activated
- “Air to Air” where both the extension and the retraction are activated by pneumatic
- Alternatively as “media to spring” operated

The Retractor unit is designed with inlet and cleaner head in a telescopic system, which allows for easy installation and ensures effective self draining. Self cleaning is easily done due to the simple design and minimum wetted surface area. After cleaning it is possible to keep the Retractor extended to purge the cleaning system dry. By targeted drilling of the spray ball, the unit can be customized to improve the cleaning efficiency for specific applications.

TECHNICAL DATA

Flow rate: 2.9 m³/h at 3 bar
Standard strokes: 60 or 120 mm

Pressure

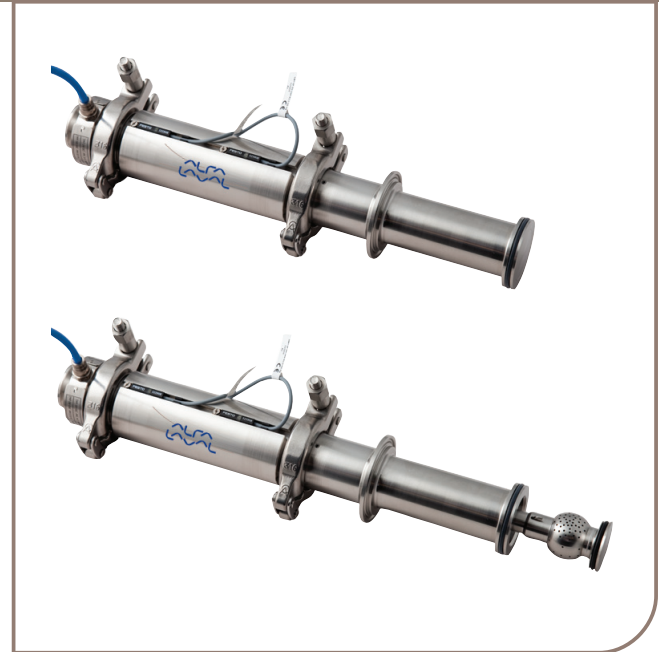
Cleaning fluid pressure: 2-4 bar
Recommended operating pressure: . . . 3 bar
Cleaning fluid pressure when retracted: Pressureless

Standard Design

The units are available with two stroke length: 60 mm or 120 mm. The SSB Retractor is available as standard with all wetted stainless steel components manufactured from AISI 316L. Seals are made from EPDM and PTFE / Viton envelope gaskets; both in compliance with FDA regulation and USP Class VI.

As standard documentation, the SSB Retractor can be supplied with “Declaration of Conformity” for material specification or Q-doc.

Note: Q-doc product contacted parts only



PHYSICAL DATA

Materials

Components: Stainless steel 316L
Spring: Stainless steel 301S81
Seals: EPDM, carbon filled PTFE
Gaskets: Carbon filled PTFE
Surface finish: Product contact surface:
Ra = 0.5µm

Temperature

Max. cleaning fluid temp.: 95°C
Max. process temp.: 140°C - standard seals

Connections

Air connections: 1/8" BSP parallel - internal thread
fitted as standard, including a push fit
connector for 6 mm air tube
Cleaning media connection: . . . Flanged/clamped to 1 1/2" ISO 2852,
(DIN 32676 DIN 40)
Vessel mounting: Flanged/clamped to 2", ISO 2852,
(Always use special Alfa Laval weld
adapter)

Options - Materials

Wetted components: Hastelloy C22*
Wetted seals: FFKM (perfluoroelastomer)*
Max. process temp.: 180°C - special seals*
* Product contact parts only
Proximity sensor: For position indication

Pressure: Air to Air (AA)

Tank/duct pressure: Vacuum to 10 bar
 Air supply pressure: 3-4 bar
 Purging possible: Yes

Pressure: Air to Spring (AS)

Tank/duct pressure: Atm. to 10 bar
 Air supply pressure: 3-4 bar
 Purging possible: Yes

Pressure: Media to Spring (MS)

Tank/duct pressure: Atm. to 10 bar
 Purging possible: No

Special weld in pads

Weld in pads can be delivered tailor-made to the actual duct / vessel shape and size, ensuring a very smooth and hygienic surface internally.

Blanking plugs

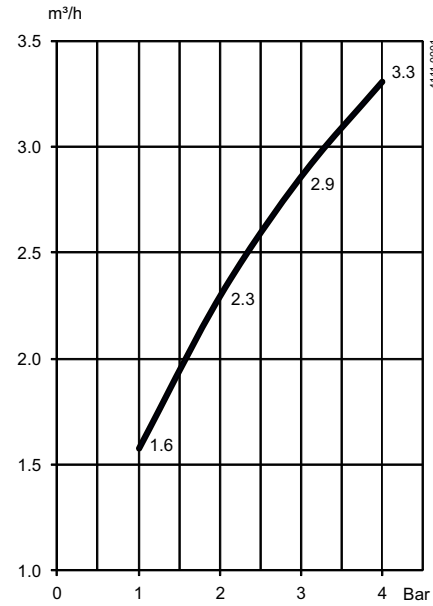
Blanking plugs are used when the unit is taken out for maintenance.

Benefits

- Air operated to allow full draining and purging
- Sealed cleaning house and telescopic air cylinder ensures minimum wetted area and achieves compact length
- Available with different stroke lengths ensuring optimum positioning of the spray ball
- Air cylinder joints fitted with safety clamps
- Air closing versions ensures no leakage in closed position
- Minimum consumption of cleaning media and energy.

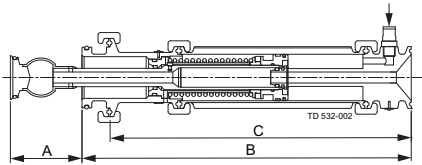
The Static Spray Ball Retractor (SSB Retractor) is a pneumatically operated retractable and targeted spray ball that is non-intrusive during production. It is designed in accordance to best practice in order to achieve fast and effective cleaning of equipment used in the production process, especially where access is difficult or where intrusive cleaning equipment interferes with production.

Flow rate

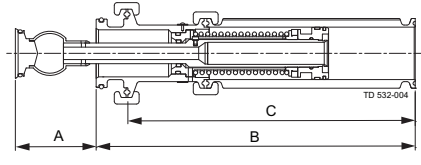


Dimensions

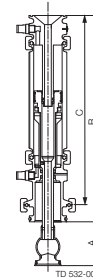
Air - Spring



Media - Spring



Air - Air



	Dimension (mm)		
	A	B	C
Media/spring	60	231	208
Air/Spring	60	269	246
Air/Air	60	276	253
Media/Spring	120	351	328
Air/Spring	120	389	366
Air/Air	120	396	373

Spray balls
Product code: 5522

Surface finish: Bright

5.5

Item No.	PPL EUR	Flow at 2 bar m ³ /h	Type	Dimension (mm)			Clip-on (1" ISO 2037)
				A	B	ID	
9611710851	146	7.5	LKRK-2B ø64	58	17.5	25.5	
9611710861	146	8.5	LKRK-2T ø64	58	17.5	25.5	
9611710871	146	11	LKRK-2F ø64	58	17.5	25.5	
							Clip-on (2" ISO 2037/US tube)
9611710951	219	18	LKRK-2B ø94	77.5	22.5	51.4	
9611710961	219	21	LKRK-2T ø94	77.5	22.5	51.4	
9611710971	219	31	LKRK-2F ø94	77.5	22.5	51.4	
							Clip-on (2" ISO 2037/US tube)
9611710952	219	42	LKRK-3B ø94	77.5	22.5	51.4	
9611710962	219	44	LKRK-3T ø94	77.5	22.5	51.4	
9611710972	219	64	LKRK-3F ø94	77.5	22.5	51.4	

NOTE! "B" means Bottom half drilled

- "T" means Top half drilled

- "F" means Fully drilled.

Item No.	PPL EUR	Flow at 2 bar m ³ /h	Type	Pipe- range	Dimension (mm)			
					A	B	ID	
Stainless Steel								Clip-on (DN25 DIN11850 R1)
9611710852	146	7.5	LKRK-2B ø64	1	58	17.5	28.5	
9611710862	146	8.5	LKRK-2T ø64	1	58	17.5	28.5	
9611710872	146	11	LKRK-2F ø64	1	58	17.5	28.5	
								Clip-on (DN25 DIN11850 R2)
9611710855	146	7.5	LKRK-2B ø64	2	58	17.5	29.5	
9611710865	146	8.5	LKRK-2T ø64	2	58	17.5	29.5	
9611710875	146	11	LKRK-2F ø64	2	58	17.5	29.5	
								Clip-on (DN50 DIN11850 R1)
9611710953	219	18	LKRK-2B ø94	1	77.5	22.5	52.4	
9611710963	219	21	LKRK-2T ø94	1	77.5	22.5	52.4	
9611710973	219	31	LKRK-2F ø94	1	77.5	22.5	52.4	
								Clip-on (DN50 DIN11850 R2)
9611710955	219	18	LKRK-2B ø94	2	77.5	22.5	53.4	
9611710965	219	21	LKRK-2T ø94	2	77.5	22.5	53.4	
9611710975	219	31	LKRK-2F ø94	2	77.5	22.5	53.4	
								Clip-on (DN50 DIN11850 R1)
9611710954	219	42	LKRK-3B ø94	1	77.5	22.5	52.4	
9611710964	219	44	LKRK-3T ø94	1	77.5	22.5	52.4	
9611710974	219	64	LKRK-3F ø94	1	77.5	22.5	52.4	
								Clip-on (DN50 DIN11850 R2)
9611710956	219	42	LKRK-3B ø94	2	77.5	22.5	53.4	
9611710966	219	44	LKRK-3T ø94	2	77.5	22.5	53.4	
9611710976	219	64	LKRK-3F ø94	2	77.5	22.5	53.4	

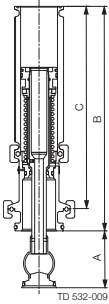
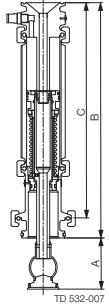
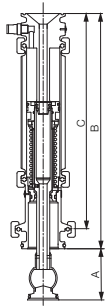
NOTE! "B" means Bottom half drilled- "T" means Top half drilled- "F" means Fully drilled.

SSB Retractor

Static Spray Balls

Product code: 5559
 TE75P507 & TE75P596-70 - Product code: 5546
 TE75P299 - Product code: 5548


5.5

Item No.	PPL EUR	Flow at 3 bar (m ³ /h)	Spraypattern	Inlet	Tank	Dimension [mm]			Connection
						A	B	C	
Stainless steel - Media extend - spring retract (MS)									Clamp x Clamp (1½" x 2" ISO 2852)
TE75P030	*	2.8	270°U	1½"/DN40	2" ISO	60	231	208	 <p>TD 532-009</p>
TE75P031	*	2.8	270°U	1½"/DN40	2" ISO	120	351	328	
TE75P050	*	2.6	Duct Directed	1½"/DN40	2" ISO	60	231	208	
TE75P051	*	2.6	Duct Directed	1½"/DN40	2" ISO	120	351	328	
Stainless steel - Air extend - spring retract (AS)									Clamp x Clamp (1½" x 2" ISO 2852)
TE75P230	*	2.8	270°U	1½"/DN40	2" ISO	60	269	246	 <p>TD 532-007</p>
TE75P231	*	2.8*	270°U	1½"/DN40	2" ISO	120	389	366	
TE75P250	*	2.6	Duct Directed	1½"/DN40	2" ISO	60	269	246	
TE75P251	*	2.6	Duct Directed	1½"/DN40	2" ISO	120	389	366	
Stainless steel - Air extend - spring retract (AS)									Clamp x Clamp (1½" x 2" ISO 2852)
TE75P130	*	2.8	270°U	1½"/DN40	2" ISO	60	269	246	 <p>TD 532-007</p>
TE75P131	*	2.8*	270°U	1½"/DN40	2" ISO	120	389	366	
TE75P150	*	2.6	Duct Directed	1½"/DN40	2" ISO	60	269	246	
TE75P151	*	2.6	Duct Directed	1½"/DN40	2" ISO	120	389	366	

*On request

Product code: 5559
 TE75P507 & TE75P596-70 - Product code: 5546
 TE75P299 - Product code: 5548

Item No.	PPL EUR	Description
Tools		
TE75P299	1000	Seal installation tool kit
Sensor:		
TE75P507		Stroke sensor Standard (1 pc.)
TE75P59670		Stroke sensor with ATEX (1 pc.)
Add-on price		
TE75XXXX90	614	Q-doc
TE75XXXX70	270	ATEX
TE75XXXX80	884	ATEX + Q-doc
TE75XXXXX4	1205	FFKM seal (Product contact affected)
9690006001	...	Weld adapter

Documentation specification		Explanation to Add-on
Q-doc	Equipment Documentation includes: Note: : Q-doc product contacted parts only. -EN 10204 type 3.1 Material Inspection certificate -USP Class VI certificate -FDA Declaration of Conformity -TSE Declaration -QC Declaration of Conformity	
ATEX	ATEX approved machine for use in explosive atmospheres. Category 1 for installation in zone 0/20 in accordance to Ex II 1 GD c T140°C (EPDM) Ex II 1 GD c T(variable) Tamb -10°C to + 140°C (FFKM) Ex II 1 GD c T(variable) Tamb -10°C to + 180°C;	