

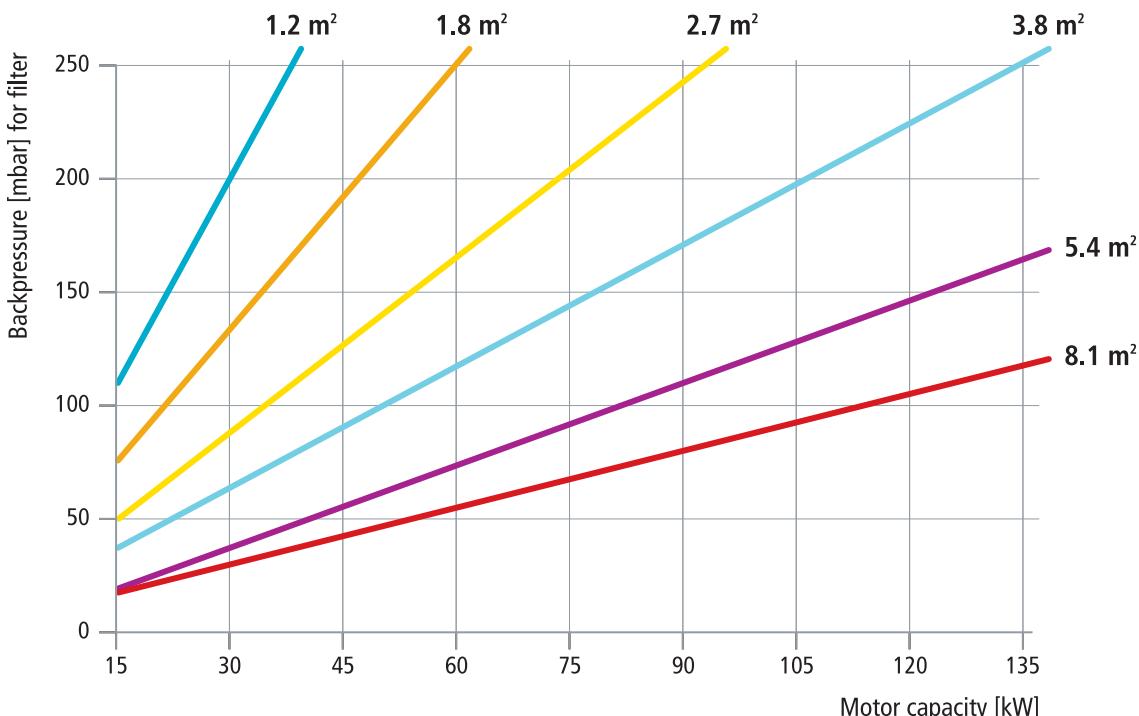
Dimensioning the filter

HJS offers SMF®-AR systems with filter surface areas ranging from 1.2 m^2 to 8.1 m^2 .

To help you choose the right size of filter, the diagram below shows the exhaust backpressure generated by each size of filter (not taking the inlet and outlet modules into account).



Filter surface areas* from 1.2 m^2 to 8.1 m^2



*Refers to a filter module with a maximum temperature upstream of the DPF® of 200°C

• Backpressure of the individual filter units

Example calculation

In the case of a construction machine with a power output of e.g. 75 kW and a maximum permissible exhaust backpressure of 150 mbar (as specified by the engine manufacturer), a filter with a surface area of 3.8 m^2 can be installed. In this simplified example, it should be noted that the backpressure flow of the inlet and outlet modules is disregarded. Radial modules tend to result in a slightly higher backpressure. Further technical data are required if the filter is to be dimensioned more precisely (see Section HJS Enquiry Form).

5. Modular SMF®-AR System

Considering the installation space available for SMF®-AR systems

After determining the size of the filter, it's time to see how much space is available for installing them.

As a rule, the filter system replaces the original silencer. Alternatively, the particulate filter system can be installed upstream of the silencer.

When selecting the installation position, make sure that there is sufficient clearance between the filter and other components and that the filter can be removed easily for servicing and maintenance work.

The filter unit can be installed horizontally or vertically. The matching inlet and outlet modules must be selected in line with the amount of installation space available in the machine (AXIAL-AXIAL, AXIAL-RADIAL, RADIAL-AXIAL, RADIAL-RADIAL).

To secure the filter, system mounts must be used. The insulating materials available from HJS are designed for use with two system mounts for filter installation.

The dimension tables contain the data of the:

- > Inlet module
- > SMF®-AR
- > Outlet module

Scope of delivery

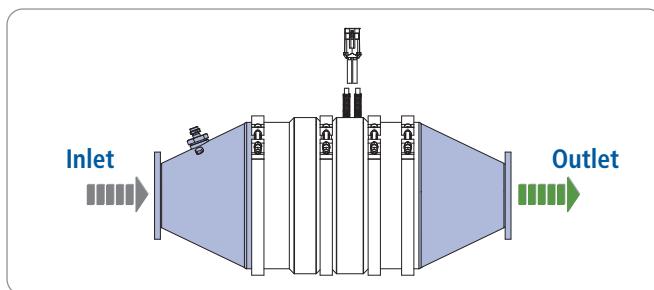
The item numbers listed describe fully assembled filter units with inlet and outlet module, regeneration unit, system clamp, gasket set, wire mesh set, dosing pump (12V/24V) and HJS Service Unit. In addition, all relevant technical documentations, such as the installation guidelines and maintenance manual, are included in the scope of delivery.

The system mounts, additive, air mass flow meter/EFS, transformer, insulation set and additive tank must be ordered separately. (see page 35 / 36)

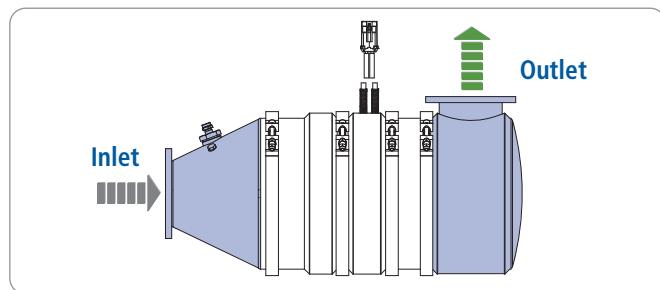
Dimension tables

The dimension tables contain all dimensions of relevance to installation. All dimensions are stated in millimetres (mm). This section describes and illustrates the different versions of filter systems with a surface area of 1.2 m² to 8.1 m².

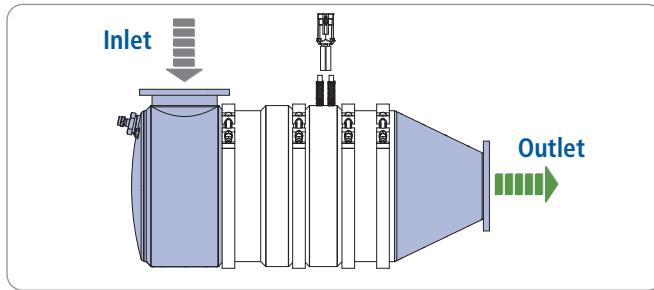
AXIAL - AXIAL



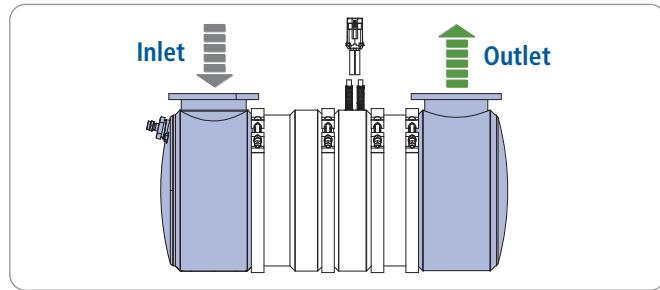
AXIAL - RADIAL



RADIAL - AXIAL

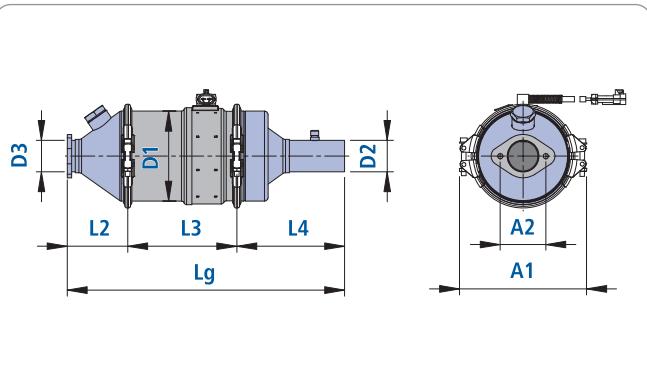


RADIAL - RADIAL

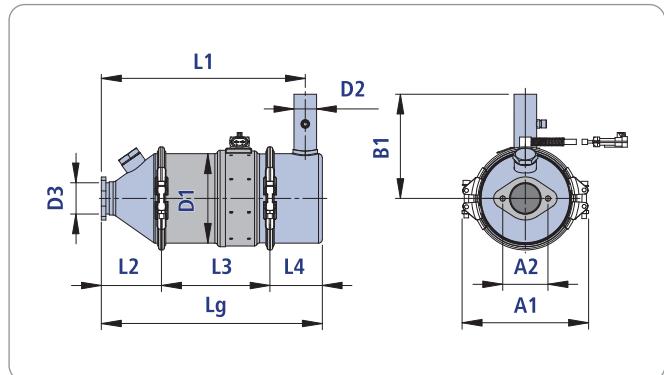


1.2-m² SMF®-AR system

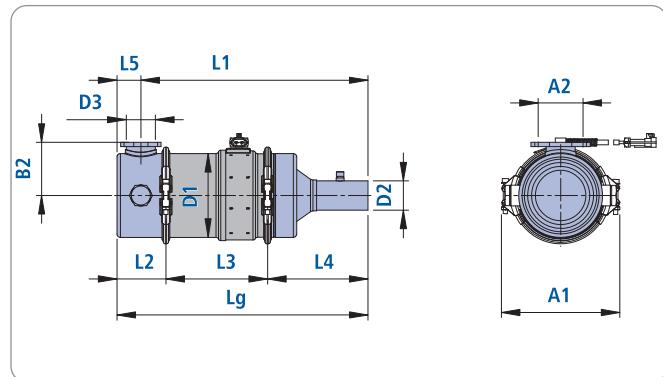
AXIAL - AXIAL



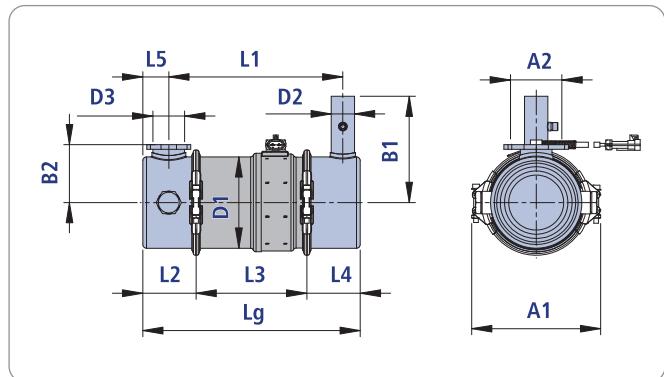
AXIAL - RADIAL



RADIAL - AXIAL



RADIAL - RADIAL



Dimension table for 1.2-m² SMF®-AR system

Item No.* ¹	System	Config- uration	Lg	L1	L2	L3	L4	L5	A1	A2	B1	B2	ø D1	ø D2	ø D3
93 71 3001	SMF®-AR 1.2 m ²	AX - AX	487	-	106	192	189	-	220	80	-	-	Ø 158	Ø 55	Ø 55
93 71 3002	SMF®-AR 1.2 m ²	AX - RAD	390	360	106	192	92	-	220	80	184	-	Ø 158	Ø 40	Ø 55
93 71 3003	SMF®-AR 1.2 m ²	RAD - AX	473	428	92	192	189	45	220	80	-	100	Ø 158	Ø 55	Ø 55
93 71 3004	SMF®-AR 1.2 m ²	RAD - RAD	367	301	92	192	92	45	220	80	184	100	Ø 158	Ø 40	Ø 55

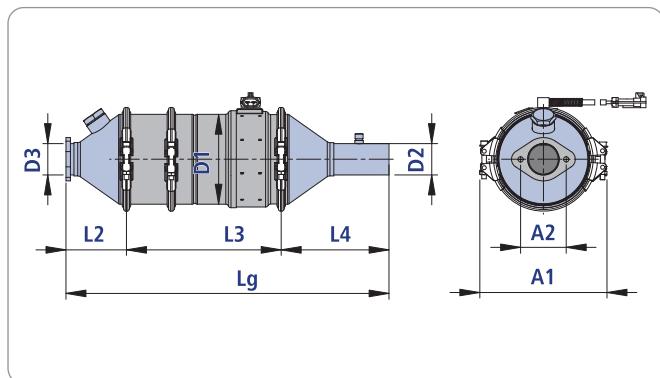
*¹ Scope of delivery does not include the system mounts, insulation, additive, air mass flow meter/EFS and tank.

Comment: The specified dimensions [in mm] are subject to tolerances. Precise dimensions on request.

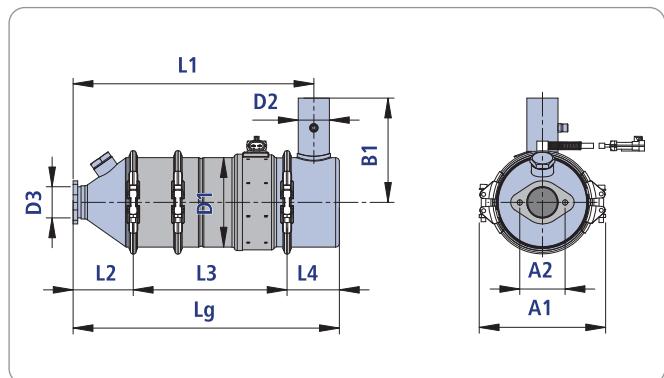
5. Modular SMF®-AR System

1.8-m² SMF®-AR system

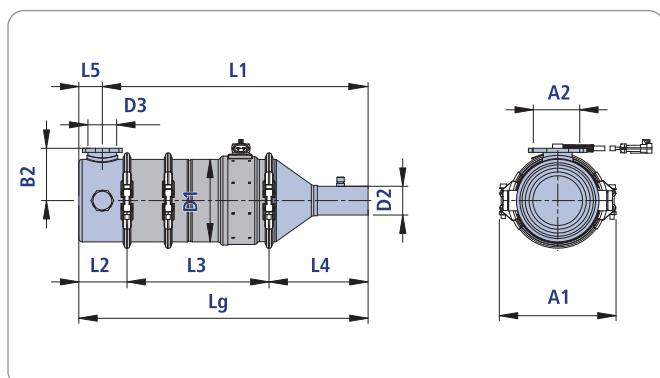
AXIAL - AXIAL



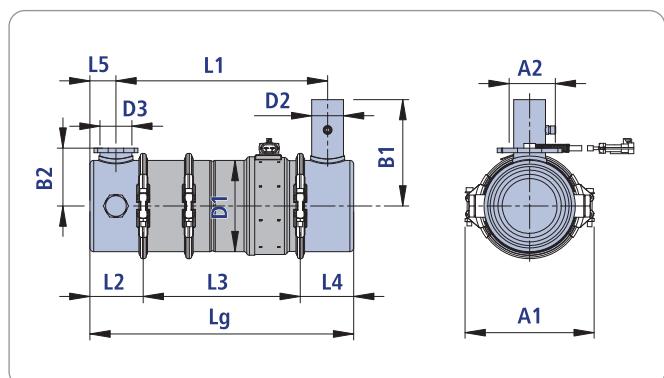
AXIAL - RADIAL



RADIAL - AXIAL



RADIAL - RADIAL



Dimension table for 1.8-m² SMF®-AR system

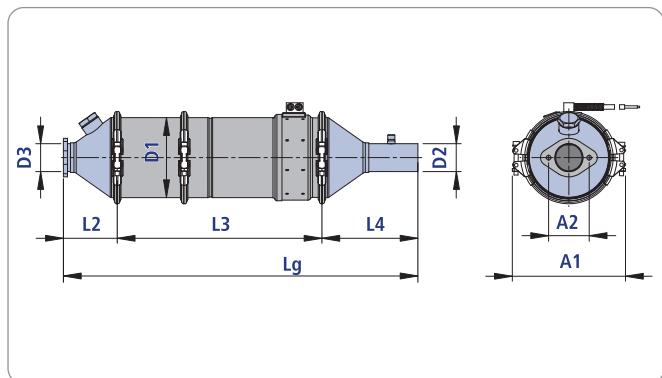
Item No.* ¹	System	Config- uration	Lg	L1	L2	L3	L4	L5	A1	A2	B1	B2	ø D1	ø D2	ø D3
93 71 3005	SMF®-AR 1.8 m ²	AX - AX	567	-	106	272	189	-	220	80	-	-	Ø 158	Ø 55	Ø 55
93 71 3006	SMF®-AR 1.8 m ²	AX - RAD	470	424	106	272	92	-	220	80	184	-	Ø 158	Ø 55	Ø 55
93 71 3007	SMF®-AR 1.8 m ²	RAD - AX	553	508	92	272	189	45	220	80	-	100	Ø 158	Ø 55	Ø 55
93 71 3008	SMF®-AR 1.8 m ²	RAD - RAD	456	366	92	272	92	45	220	80	184	100	Ø 158	Ø 55	Ø 55

*¹ Scope of delivery does not include the system mounts, insulation, additive, air mass flow meter/EFS and tank.

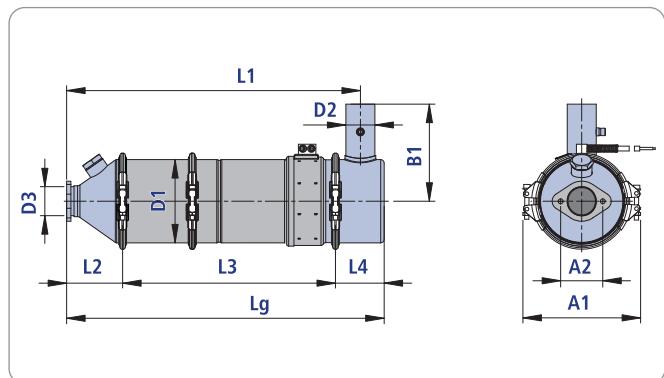
Comment: The specified dimensions [in mm] are subject to tolerances. Precise dimensions on request.

2.7-m² SMF®-AR system

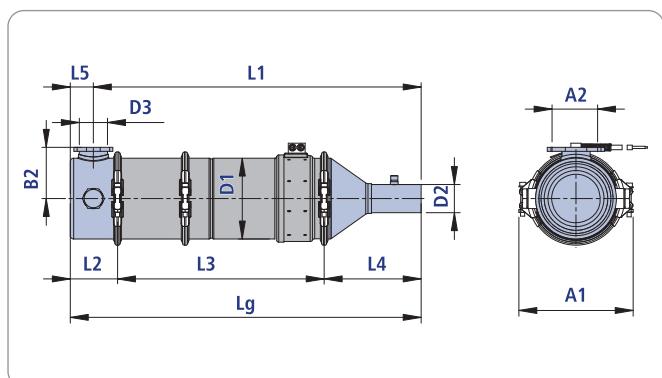
AXIAL - AXIAL



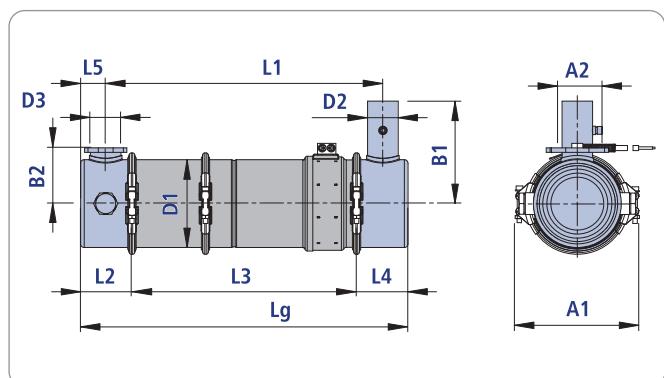
AXIAL - RADIAL



RADIAL - AXIAL



RADIAL - RADIAL



Dimension table for 2.7-m² SMF®-AR system

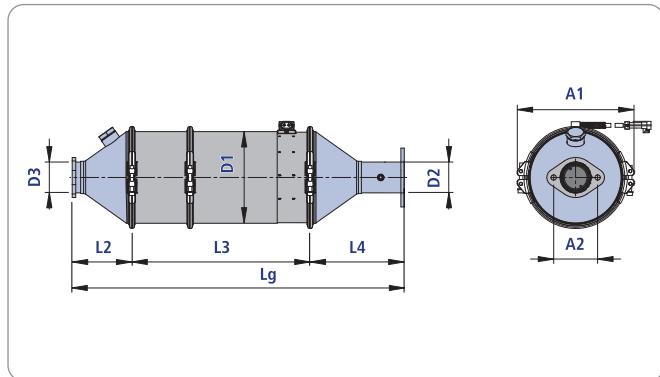
Item No.* ¹	System	Config- uration	Lg	L1	L2	L3	L4	L5	A1	A2	B1	B2	ø D1	ø D2	ø D3
93 71 3009	SMF®-AR 2.7 m ²	AX - AX	699	-	106	404	189	-	220	80	-	-	Ø 158	Ø 55	Ø 55
93 71 3010	SMF®-AR 2.7 m ²	AX - RAD	602	557	106	404	92	-	220	80	184	-	Ø 158	Ø 55	Ø 55
93 71 3011	SMF®-AR 2.7 m ²	RAD - AX	685	640	92	404	189	45	220	80	-	100	Ø 158	Ø 55	Ø 55
93 71 3012	SMF®-AR 2.7 m ²	RAD - RAD	588	498	92	404	92	45	220	80	184	100	Ø 158	Ø 55	Ø 55

*¹ Scope of delivery does not include the system mounts, insulation, additive, air mass flow meter/EFS and tank.
Comment: The specified dimensions [in mm] are subject to tolerances. Precise dimensions on request.

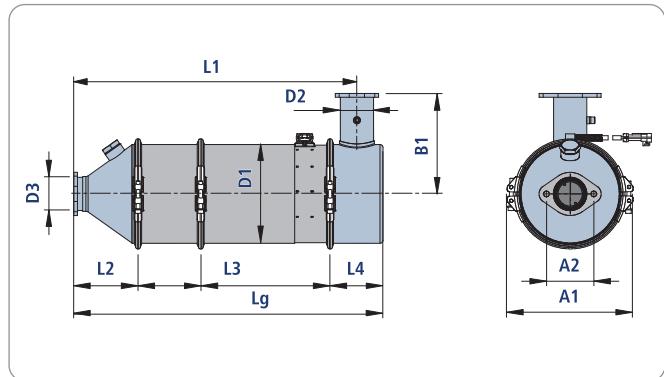
5. Modular SMF®-AR System

3.8-m² SMF®-AR system

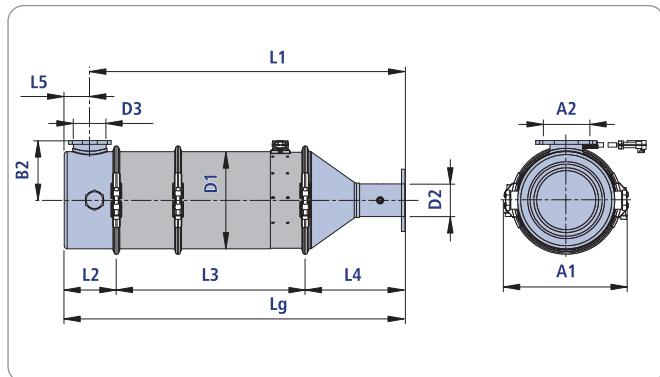
AXIAL - AXIAL



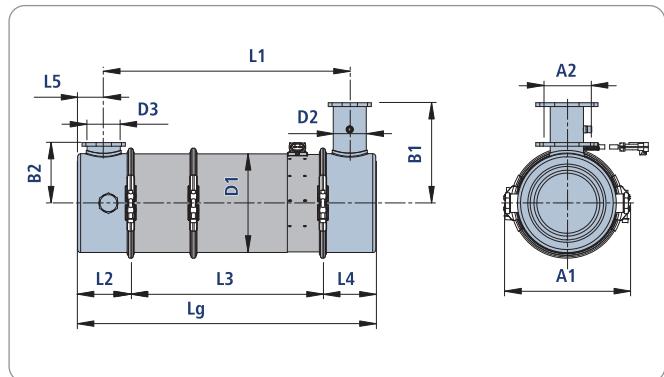
AXIAL - RADIAL



RADIAL - AXIAL



RADIAL - RADIAL



Dimension table for 3.8-m² SMF®-AR system

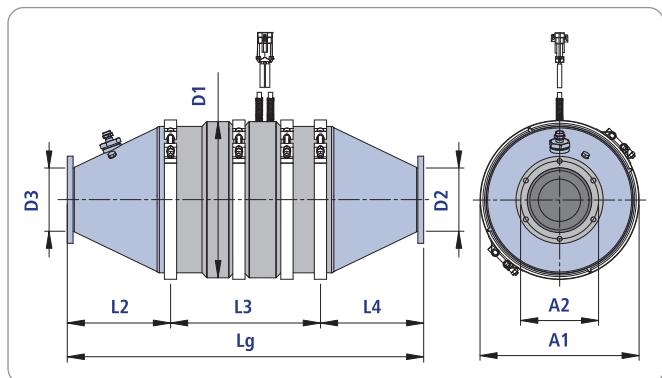
Item No.* ¹	System	Bauform	Lg	L1	L2	L3	L4	L5	A1	A2	B1	B2	ø D1	ø D2	ø D3
93 71 3013	SMF®-AR 3.8 m ²	AX - AX	755	-	135	405	215	-	266	100	-	-	Ø 208	Ø 70	Ø 70
93 71 3014	SMF®-AR 3.8 m ²	AX - RAD	653	598	135	405	113	-	266	100	216	-	Ø 208	Ø 70	Ø 70
93 71 3015	SMF®-AR 3.8 m ²	RAD - AX	731	643	111	405	215	55	266	100	-	127	Ø 208	Ø 70	Ø 70
93 71 3016	SMF®-AR 3.8 m ²	RAD - RAD	629	519	111	405	113	55	266	100	216	127	Ø 208	Ø 70	Ø 70

*¹ Scope of delivery does not include the system mounts, insulation, additive, air mass flow meter/EFS and tank.

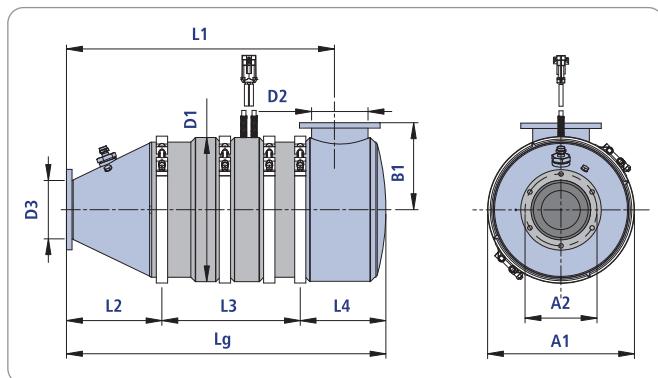
Comment: The specified dimensions [in mm] are subject to tolerances. Precise dimensions on request.

5.4-m² SMF®-AR system

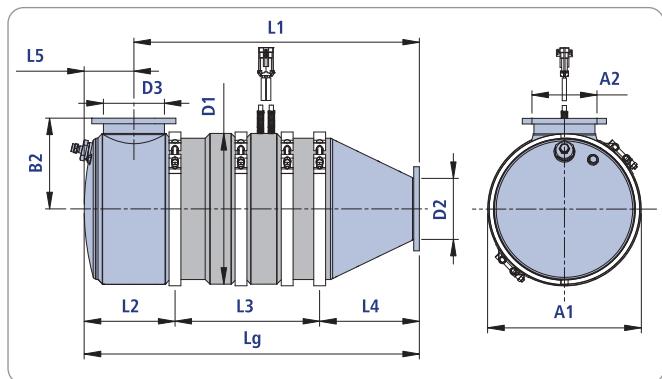
AXIAL - AXIAL



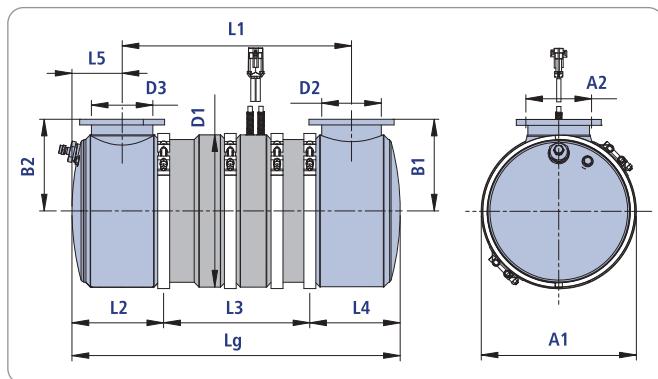
AXIAL - RADIAL



RADIAL - AXIAL



RADIAL - RADIAL



Dimension table for 5.4-m² SMF®-AR system

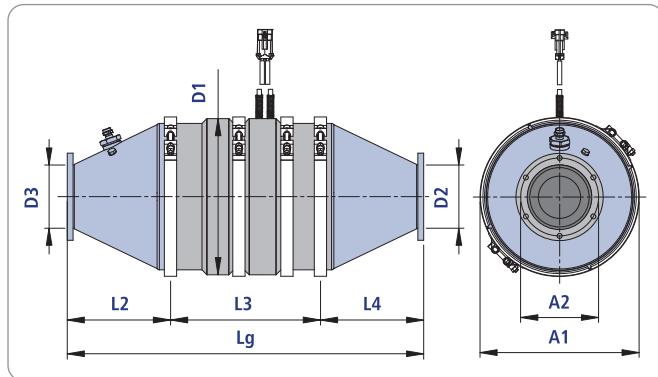
Item No.* ¹	System	Config- uration	Lg	L1	L2	L3	L4	L5	A1	A2	B1	B2	ø D1	ø D2	ø D3
93 71 3017	SMF®-AR 5.4 m ²	AX - AX	728	-	211	306	211	-	Ø 325	Ø 159	-	-	Ø 319	Ø 129	Ø 129
93 71 3018	SMF®-AR 5.4 m ²	AX - RAD	706	605	211	306	189	-	Ø 325	Ø 159	192	-	Ø 319	Ø 129	Ø 129
93 71 3019	SMF®-AR 5.4 m ²	RAD - AX	709	604	192	306	211	105	Ø 325	Ø 159	-	192	Ø 319	Ø 129	Ø 129
93 71 3020	SMF®-AR 5.4 m ²	RAD - RAD	687	480	192	306	189	105	Ø 325	Ø 159	192	192	Ø 319	Ø 129	Ø 129

*¹ Scope of delivery does not include the system mounts, insulation, additive, air mass flow meter/EFS, tank and transformer.
Comment: The specified dimensions [in mm] are subject to tolerances. Precise dimensions on request.

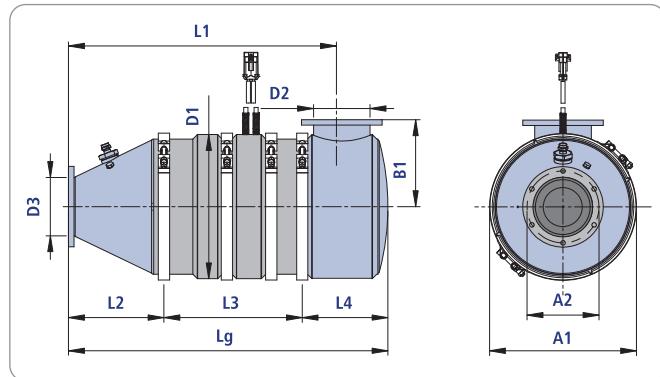
5. Modular SMF®-AR System

8.1-m² SMF®-AR system

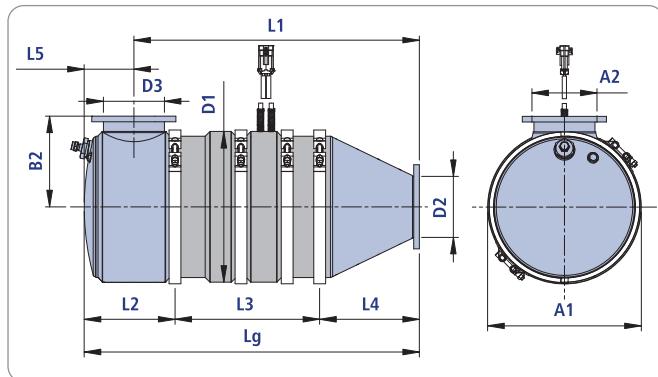
AXIAL - AXIAL



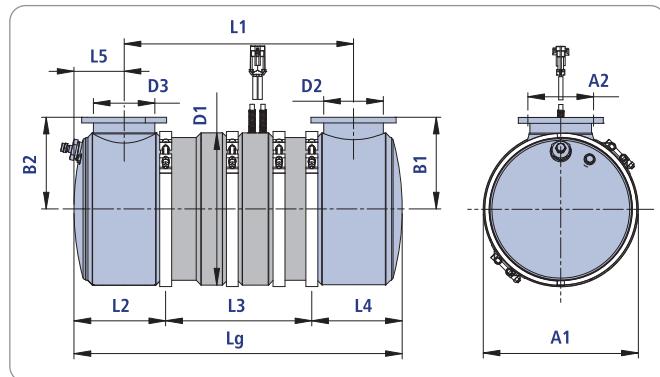
AXIAL - RADIAL



RADIAL - AXIAL



RADIAL - RADIAL



Dimension table for 8.1-m² SMF®-AR system

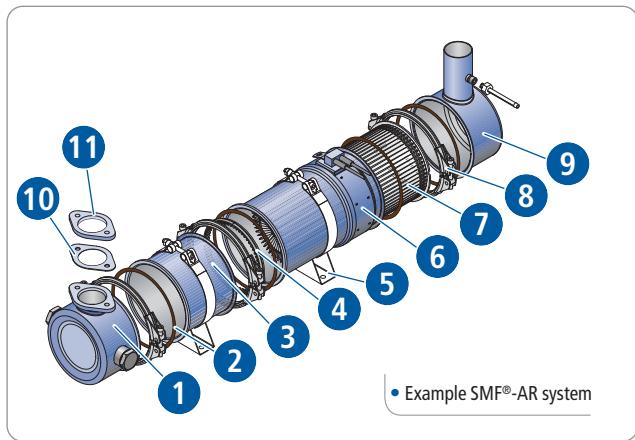
Item No.* ¹	System	Config- uration	Lg	L1	L2	L3	L4	L5	A1	A2	B1	B2	ø D1	ø D2	ø D3
93 71 3021	SMF®-AR 8.1 m ²	AX - AX	863	-	211	441	211	-	Ø 325	Ø 159	-	-	Ø 319	Ø 129	Ø 129
93 71 3022	SMF®-AR 8.1 m ²	AX - RAD	842	740	211	441	189	-	Ø 325	Ø 159	192	-	Ø 319	Ø 129	Ø 129
93 71 3023	SMF®-AR 8.1 m ²	RAD - AX	844	739	192	441	211	105	Ø 325	Ø 159	-	192	Ø 319	Ø 129	Ø 129
93 71 3024	SMF®-AR 8.1 m ²	RAD - RAD	823	616	192	441	189	105	Ø 325	Ø 159	192	192	Ø 319	Ø 129	Ø 129

*¹ Scope of delivery does not include the system mounts, insulation, additive, air mass flow meter/EFS, tank and transformer.

Comment: The specified dimensions [in mm] are subject to tolerances. Precise dimensions on request.

Individual components

The table below contains the data of the individual components of a SMF®-AR system.



- 1 Inlet Module
- 2 System Gasket
- 3 Middle Module
- 4 Wire Mesh
- 5 System Mount
- 6 Heating cabinet
- 7 SMF® Filter
- 8 System Clamp
- 9 Outlet Module
- 10 Flange gasket
- 11 Flange

SMF®-AR system	Weight [kg]
SMF® 1.2 m ²	9
SMF® 1.8 m ²	11
SMF® 2.7 m ²	15
SMF® 3.8 m ²	20
SMF® 5.4 m ²	35
SMF® 8.1 m ²	45

Additive	
1 liter	94 60 0250
5 liter	94 60 0258

Additive tank, incl. venting valve	
2 liter	93 02 4272
3 liter	93 02 4273
5 liter	93 02 4275

Configuration	Inlet Module 1	System Gasket 2	Middle Module 3	Wire Mesh 4	System Mount 5	Heating cabinet 6	SMF®-Filter 7	System Clamp 8	Outlet Module 9	Flange gasket 10	Flange 11	Regeneration unit	Insulation set	
SMF® 1.2 m ²	AX - AX	93 02 4184	93 02 4189	-	-	93 02 4365	93 02 6001	93 02 4378	93 02 4179	93 02 4215	93 02 4194	93 02 4191	93 02 6026	93 02 4352
	AX - RAD	93 02 4184	93 02 4189	-	-	93 02 4365	93 02 6001	93 02 4378	93 02 4179	93 02 4218	93 02 4194	93 02 4191	93 02 6026	93 02 4353
	RAD - AX	93 02 4190	93 02 4189	-	-	93 02 4365	93 02 6001	93 02 4378	93 02 4179	93 02 4215	93 02 4194	93 02 4191	93 02 6026	93 02 4354
	RAD - RAD	93 02 4190	93 02 4189	-	-	93 02 4365	93 02 6001	93 02 4378	93 02 4179	93 02 4218	93 02 4194	93 02 4191	93 02 6026	93 02 4351
SMF® 1.8 m ²	AX - AX	93 02 4184	93 02 4189	93 02 4168	93 02 4178	93 02 4365	93 02 6001	93 02 4177	93 02 4179	93 02 4186	93 02 4194	93 02 4191	93 02 6026	93 02 4315
	AX - RAD	93 02 4184	93 02 4189	93 02 4168	93 02 4178	93 02 4365	93 02 6001	93 02 4177	93 02 4179	93 02 4188	93 02 4194	93 02 4191	93 02 6026	93 02 4316
	RAD - AX	93 02 4190	93 02 4189	93 02 4168	93 02 4178	93 02 4365	93 02 6001	93 02 4177	93 02 4179	93 02 4186	93 02 4194	93 02 4191	93 02 6026	93 02 4318
	RAD - RAD	93 02 4190	93 02 4189	93 02 4168	93 02 4178	93 02 4365	93 02 6001	93 02 4177	93 02 4179	93 02 4188	93 02 4194	93 02 4191	93 02 6026	93 02 4317
SMF® 2.7 m ²	AX - AX	93 02 4184	93 02 4189	93 02 4193	93 02 4178	93 02 4365	93 02 6003	93 02 4175	93 02 4179	93 02 4186	93 02 4194	93 02 4191	93 02 6026	93 02 4319
	AX - RAD	93 02 4184	93 02 4189	93 02 4193	93 02 4178	93 02 4365	93 02 6003	93 02 4175	93 02 4179	93 02 4188	93 02 4194	93 02 4191	93 02 6026	93 02 4320
	RAD - AX	93 02 4190	93 02 4189	93 02 4193	93 02 4178	93 02 4365	93 02 6003	93 02 4175	93 02 4179	93 02 4186	93 02 4194	93 02 4191	93 02 6026	93 02 4322
	RAD - RAD	93 02 4190	93 02 4189	93 02 4193	93 02 4178	93 02 4365	93 02 6003	93 02 4175	93 02 4179	93 02 4188	93 02 4194	93 02 4191	93 02 6026	93 02 4321
SMF® 3.8 m ²	AX - AX	93 02 4196	93 02 4202	93 02 4211	93 02 4204	93 02 4357	93 02 6004	93 02 4174	93 02 4201	93 02 4197	93 02 4207	93 02 4206	93 02 6026	93 02 4323
	AX - RAD	93 02 4196	93 02 4202	93 02 4211	93 02 4204	93 02 4357	93 02 6004	93 02 4174	93 02 4201	93 02 4199	93 02 4207	93 02 4206	93 02 6026	93 02 4324
	RAD - AX	93 02 4198	93 02 4202	93 02 4211	93 02 4204	93 02 4357	93 02 6004	93 02 4174	93 02 4201	93 02 4197	93 02 4207	93 02 4206	93 02 6026	93 02 4326
	RAD - RAD	93 02 4198	93 02 4202	93 02 4211	93 02 4204	93 02 4357	93 02 6004	93 02 4174	93 02 4201	93 02 4199	93 02 4207	93 02 4206	93 02 6026	93 02 4325
SMF® 5.4 m ²	AX - AX	94 62 4006	94 03 0006	93 02 9453	93 02 4345	93 02 4358	93 02 6005	93 02 9522	94 62 2033	93 02 4167	94 03 0026	94 20 2200	93 02 6026	93 02 4580
	AX - RAD	94 62 4006	94 03 0006	93 02 9453	93 02 4345	93 02 4358	93 02 6005	93 02 9522	94 62 2033	93 02 4169	94 03 0026	94 20 2200	93 02 6026	93 02 4581
	RAD - AX	94 11 4012	94 03 0006	93 02 9453	93 02 4345	93 02 4358	93 02 6005	93 02 9522	94 62 2033	93 02 4167	94 03 0026	94 20 2200	93 02 6026	93 02 4582
	RAD - RAD	94 11 4012	94 03 0006	93 02 9453	93 02 4345	93 02 4358	93 02 6005	93 02 9522	94 62 2033	93 02 4169	94 03 0026	94 20 2200	93 02 6026	93 02 4583
SMF® 8.1 m ²	AX - AX	94 62 4006	94 03 0006	93 02 9453	93 02 4345	93 02 4358	93 02 6006	93 02 9454	94 62 2033	93 02 4167	94 03 0026	94 20 2200	93 02 6026	93 02 4584
	AX - RAD	94 62 4006	94 03 0006	93 02 9453	93 02 4345	93 02 4358	93 02 6006	93 02 9454	94 62 2033	93 02 4169	94 03 0026	94 20 2200	93 02 6026	93 02 4585
	RAD - AX	94 11 4012	94 03 0006	93 02 9453	93 02 4345	93 02 4358	93 02 6006	93 02 9454	94 62 2033	93 02 4167	94 03 0026	94 20 2200	93 02 6026	93 02 4586
	RAD - RAD	94 11 4012	94 03 0006	93 02 9453	93 02 4345	93 02 4358	93 02 6006	93 02 9454	94 62 2033	93 02 4169	94 03 0026	94 20 2200	93 02 6026	93 02 4587

A 130 - 100 mm reducing flange (HJS No. 94 01 2235) can be used for the SMF® 5.4 m² and 8.1 m² systems.

5. Modular SMF®-AR System

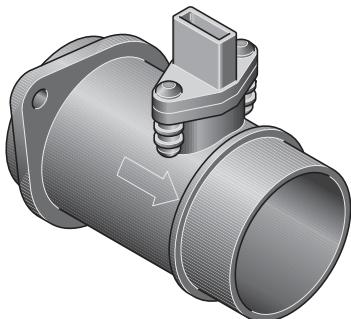
Selecting the air mass flow meter (AMFM) or exhaust flow sensor (EFS)

1.2 m² - 8.1 m² regeneration unit

(part of the complete system)

Item No. 93 02 6026

Air mass flow meter (AMFM)



Item No.	AMFM inside Ø [mm]	AMFM inlet outside Ø [mm]	AMFM outlet outlet Ø [mm]	Mass flow rate range min. [kg/h]	Rated power output [kW]
93 02 0133	50	60	60	65 430	15 - 70
93 02 4404	60	70	70	50 580	30 - 100
93 02 0132	62	70	70	105 540	20 - 90
93 02 0130	71	80	80	170 795	30 - 135
93 02 0131	78	86	84	230 860	40 - 145
93 02 0134	82	92	92	250 1140	100 - 135

Note: All data stated must be checked against the actual mass flow values of the respective engine. System serviceability is guaranteed only if the engine's mass flow is within the measurement range of the air mass flow meter.

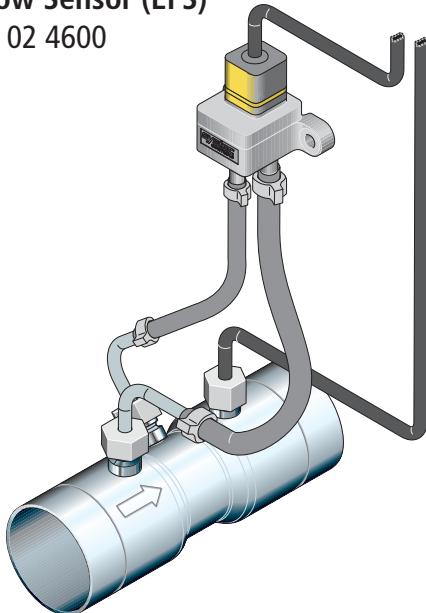
Dosing pump 12 V
(part of the complete system)
Item No. 94 60 0028

Dosing pump 24 V
(part of the complete system)
Item No. 94 60 0240

**Voltage transformer
for AMFM**
Item No. 93 02 4350

Exhaust Flow Sensor (EFS)

Item No. 93 02 4600



Venturi tube

Item No. Venturi tube	HJS-EFS outside Ø [mm]	Mass flow rate range min. [kg/h]	max. [kg/h]
93 02 4610	55,0	60	500
93 02 4611	60,0	75	600
93 02 4612	70,0	90	900
93 02 4613	105,0	220	1200

Dosing pump 12 V
(part of the complete system)
Item No. 94 60 0028

Dosing pump 24 V
(part of the complete system)
Item No. 94 60 0240

In the case of 24-V systems, a voltage transformer must be used in the power supply circuit for the air mass flow meter!

6. Enquiry Form

To ensure an HJS exhaust-gas aftertreatment system is dimensioned correctly for a particular application, please fill in the enquiry form below in full and send it to HJS or one of our authorised partners.

You can download the enquiry form from the Retrofit / Downloads section of our website at www.hjs.com.

Enquiry Form Exhaust Aftertreatment Systems for Mobile Machinery and Stationary Applications

To send by:
Fax: +49 2373 987-209

Company*		
Contact*		
Street/No.*		Postcode/Town*
Phone*		Fax
E-Mail		

*Mandatory fields

Machinery manufacturers*			Machinery type*				
Engine manufacturer*			Motor type*				
Year of construction		Engine capacity [cm ³]		Engine running time/annum [op. h]			
Power output [kW]*		Engine speed [rpm]		No. of cylinders			
Vehicle voltage*	12 V <input type="checkbox"/>	24 V <input type="checkbox"/>	Turbocharger*	yes <input type="checkbox"/>	no <input type="checkbox"/>		
Exhaust gas recirculation EGR*	yes <input type="checkbox"/>	no <input type="checkbox"/>					
Emission class*							
EU directive on emissions from non-road mobile machinery		Stage I <input type="checkbox"/>	Stage II <input type="checkbox"/>	Stage III A <input type="checkbox"/>	Stage III B <input type="checkbox"/>	Stage IV <input type="checkbox"/>	
U.S. EPA nonroad regulations		TIER 1 <input type="checkbox"/>	TIER 2 <input type="checkbox"/>	TIER 3 <input type="checkbox"/>	TIER 4 interim <input type="checkbox"/>	TIER 4 <input type="checkbox"/>	other <input type="checkbox"/>
Fuel (if different from DIN 590 Diesel)*							
Max. permissible exhaust backpressure [mbar]*					Max. exhaust-gas temperature [C°]		
Description of the application range (e.g. wheel loader for excavation work, forklift truck for logistics work, stationary applications,							
Operating times [%]		Idle <input type="text"/>	Part load <input type="text"/>	Full load <input type="text"/>			

Notes

© HJS Emission Technology GmbH & Co. KG, 58706 Menden/Sauerland, Germany

All information and data stated in this Product Range document has been compiled with utmost care. Nevertheless, HJS accepts no liability for any errors, omissions or other inaccuracies contained herein. Subject to change without notice. Reprinting or reproduction, in whole or in part, including of photographs, illustrations or graphics, is not permitted without the prior written consent of HJS Emission Technology. We reserve all rights in connection with this document.

The vehicle applications cited in this Product Range document may possibly be valid only up to the date printed on the last page of the document. All references made in this Product Range document to the item numbers of vehicle manufacturers and/or competitors are provided for the purpose of comparison only. Such information is not allowed to be used in invoices issued to vehicle owners.

Made in Germany

Deutschland in Qualität

INFO-HOTLINE

+49 2373 987-577

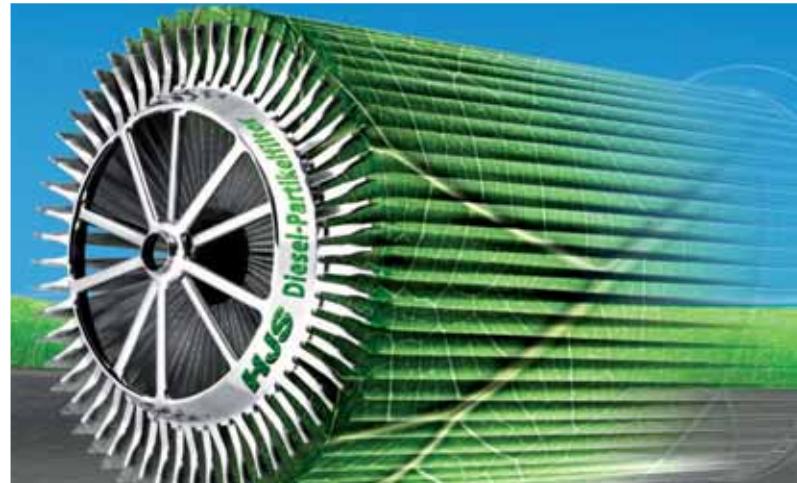
tech-support@hjs.com

tech-support@hjs.com

A clean future with HJS!

Put your trust in HJS DPF® and benefit from our many years of experience in the business

- 4 Minimal downtime
- 4 Extremely low-maintenance
- 4 Low servicing costs
- 4 Active protection of health and the environment



HJS Approved Distributor

John Ratcliffe

74 Commissioner Street • PO Box 467
Krugersdorp 1740
Tel: +27 11 953 3900 • Fax: +27 11 665 2674
www.johnratcliffe.co.za • Email: sales@johnratcliffe.co.za

Subject to change without notice.

Last update 07.05.2019

HJS Emission Technology
GmbH & Co. KG

Dieselweg 12
D-58706 Menden/Sauerland

Phone +49 2373 987-0
Fax +49 2373 987-199

E-Mail hjs@hjs.com
Internet www.hjs.com

HJS
Emission Technology