



TLT-Turbo GmbH

Am Weinberg 68 · D-36251 Bad Hersfeld/Germany
Phone: +49.6621.950-0 · Fax: +49.6621.950-100

**PLASTIC ROOF UNITS
VERTICAL OUTLET
DRVF-K SERIES
TECHNICAL DESCRIPTION / RANGE OVERVIEW**

097



Range

11 sizes
33 types
Volume flow up to 30.000 m³/h
Pressure increase up to about 1.000 Pa

Uses / Overview of types

We supply vertical-outlet centrifugal roof units (DRVF-K) in 11 sizes, with inlet diameters ranging from 160 to 710 mm. The range provides maximum flexibility for every industrial demand situation.

Volume flow: 200 - 30000 m³/h

Pressure increase: 50 - 1000 Pa

The ability to adapt fans retroactively to performance changes in the individual air handling system and their rugged compact design are the key features of these products.

Design

DRVF-K series centrifugal roof units are designed as vertical-outlet, direct driven fans for use in aggressive gas and vapour environments. The medium is axially aspirated, after leaving the horizontal impeller axially deflected around the enclosed drive motor and driven to the outlet duct. Casings of size 160 to 315 fans are made by deep-drawing and are split horizontally. Sizes 160 and 200 share the same casing, as do our 250 and 315 size units. The complete drive assembly comprises the motor bearing bracket, drive motor, motor cover, cooling air duct and impeller. The motor bearing bracket is designed to accommodate four B5 style motor sizes (63 to 112); the impeller is mounted overhung on the motor shaft.

Sizes 355 to 710 are of welded construction; the unit comprising casing, motor support, impeller, bellmouth, and inlet duct. Motor support and the top and bottom casing sections are joined by welding. Size 355 and 400, 450 and 500 and 560 and 630 use an identical casing. Once supplied and installed, they can thus be adapted retroactively to changing needs simply by replacing the impeller and bellmouth section.

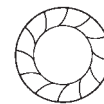
The motor support can accommodate six B5 style motor sizes (71 to 132). The motor is shielded against the medium, receiving its cooling air via flexible air supply hoses. Casing, motor support and impeller are made of thermoplastic material. Maximum acceptable operating temperatures, that must not be exceeded, depend on the plastic material and are as follows:

PVC 50 °C
PP 70 °C

As a rule, these fans require inlet ducting to attain their nominal performance (please refer to the characteristic curves).

Types

DRVK-K fans are available as series 45 (sizes 160 to 250) and series 63 (sizes 160 to 710) units, differing in terms of impeller design.



Series 45

Impeller with 12 forward curved blades, impeller diameter = 1.4 times the inlet diameter.



Series 63

Impeller with 8 backward curved blades, impeller diameter = 1.25 times the inlet diameter.

All impellers are statically and dynamically balanced in two planes, at least to ISO 1940 grade Q 6.3.



TLT-Turbo GmbH

Am Weinberg 68 · D-36251 Bad Hersfeld/Germany
Phone: +49.6621.950-0 · Fax: +49.6621.950-100

**PLASTIC ROOF UNITS
VERTICAL OUTLET
DRVF-K SERIES
TECHNICAL DESCRIPTION**

098

Drive

In their standard version, these centrifugal roof units are powered by three-phase a.c. motors conforming to IEC recommendations, protection class IP 54 or Eexe, style B5. Fans are generally supplied with drive motor installed. A post-assembly trial run attests to each fan's functionality and operating safety. Installation of a drive motor by the customer results in forfeiture of our product liability.

Conversion options

DRVF-K series fans are designed to permit changes in impeller rpm by replacing the motor in order to accommodate changing performance requirements within the air handling system. In addition, the

following conversion options exist for all sizes (160 to 630)

Impeller change:

Example: conversion of a fan to another series, e.g., DRVF-K 45-200 to DRVF-K 63-200 or vice versa

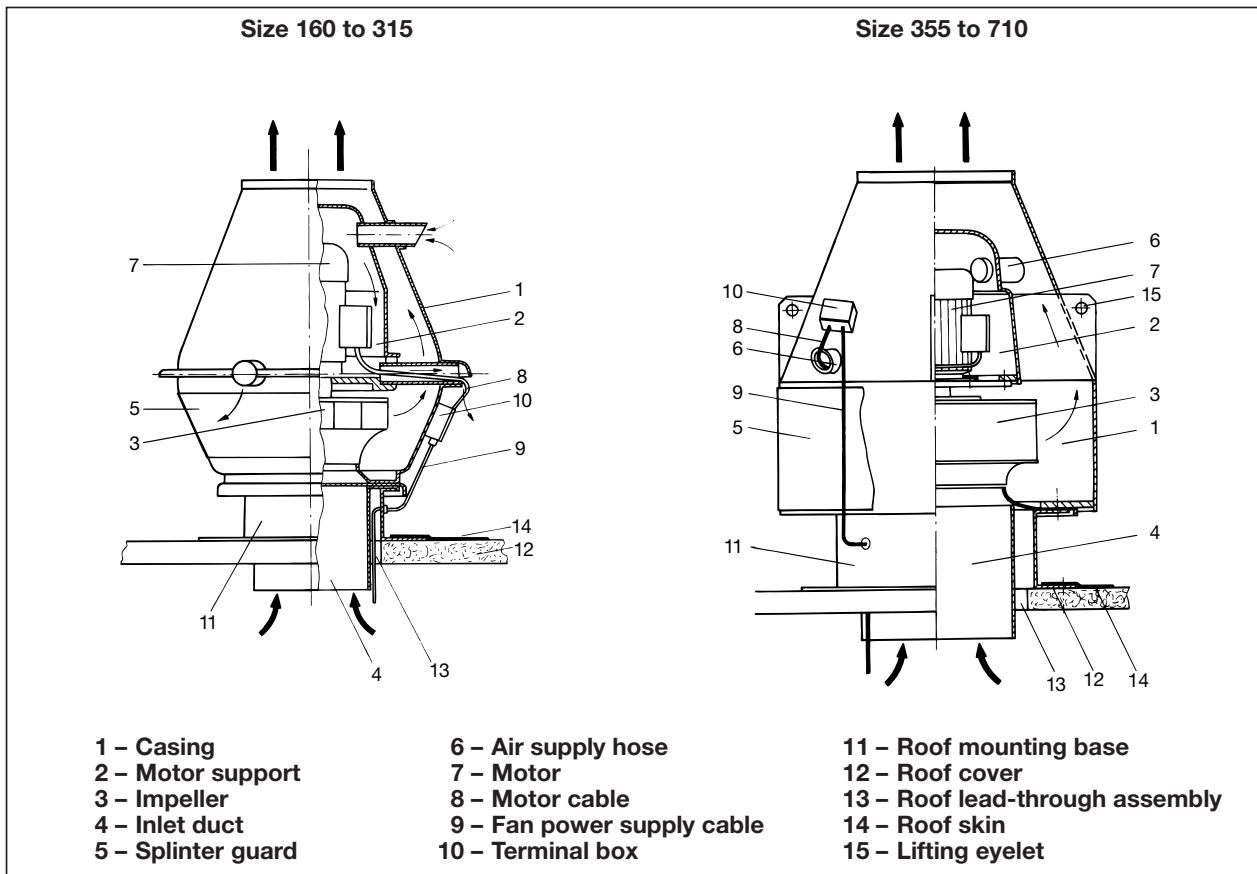
Impeller change with inlet duct replacement:

Conversion of the fan to another size, e.g., 160 to 200, 250 to 315, or vice versa. This can be combined with a retrofit to another series, e.g., DRVF-K 45-160 to DRVF-K 63-200, etc.

All conversion options listed above can also be carried out following installation of the fan.

Accessories

- Roof mounting bases for flat, pitched, and corrugated roofs
- Inlet ducts for passage through the roof
- Soft PVC sleeves with and without clamping bands for connection to the ducting
- Automatic louvre-type dampers
- Impellers and inlet ducts for the respective conversion options



Mounting

On flat and pitched roofs the DRVF-K fan is installed on a roof-mounting base sealed by the roof skin.

The fan-inlet is connected to the inlet duct passed through the roof lead-through assembly; for this connection flexible connectors (compensator) are compulsory.



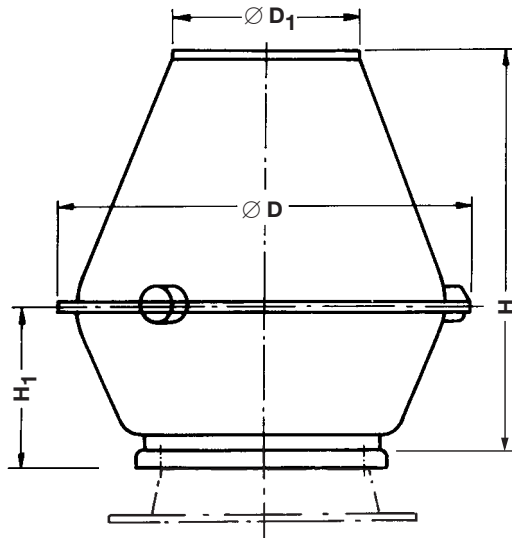
TLT-Turbo GmbH

Am Weinberg 68 · D-36251 Bad Hersfeld/Germany
Phone: +49.6621.950-0 · Fax: +49.6621.950-100

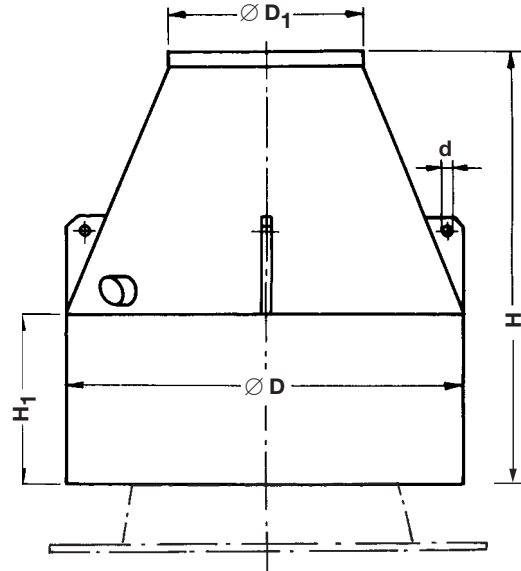
**PLASTIC ROOF UNITS
SERIES DRVF-K 45+63
MAIN DIMENSIONS
FANS + ROOF BASE**

099

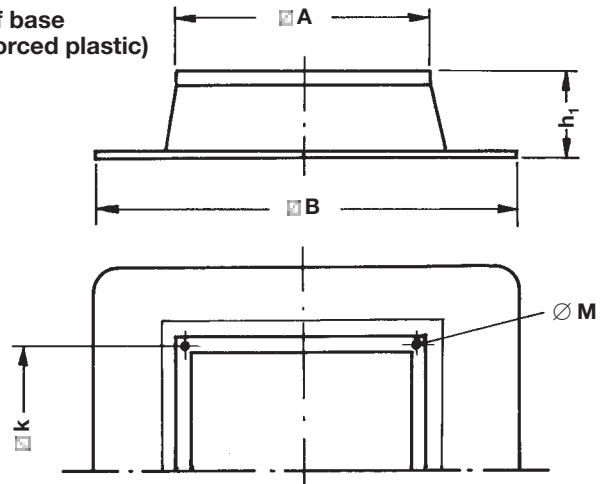
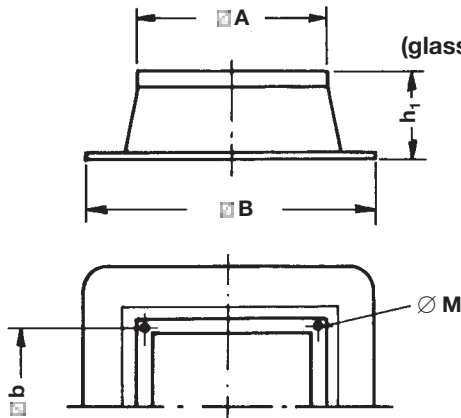
Sizes 160 to 315
(Deep-drawn casing)



Sizes 355 to 710
(Welded casing)



Roof base
(glass-reinforced plastic)



Size	$\varnothing D$	$\varnothing D_1$	H	H_1	A	B	h_1	$\varnothing d$	b	M						
160	550	250	550	220	270	550	350	-	245	M8						
200	550	250	550	220	270	550	350	-	245	M8						
250	740	315	730	305	370	720	350	-	330	M8						
315	740	315	730	305	370	720	350	-	330	M8						
355	800	400	870	340	680	1020	200	25	590	M8						
400	800	400	870	340	680	1020	200	25	590	M8						
450	1000	500	1040	390	870	1210	200	25	750	M8						
500	1000	500	1040	390	870	1210	200	25	750	M8						
560	1200	630	1210	470	1195	1460	200	25	1050	M8						
630	1200	630	1210	470	1195	1460	200	25	1050	M8						
710	1400	710	1420	530	1195	1460	200	30	1050	M8						

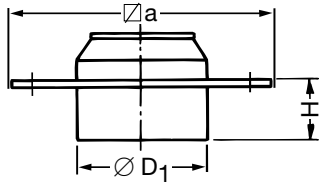
Changes in dimensions and design reserved.

1) When ordering please advise height of base

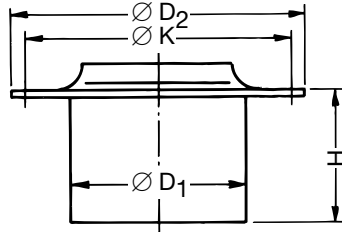
Dimensions in mm.

DRVF-K

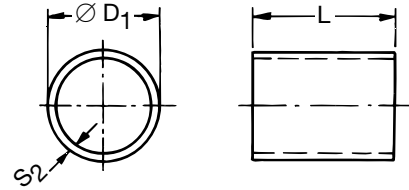
Inlet duct (sizes 160 + 250)



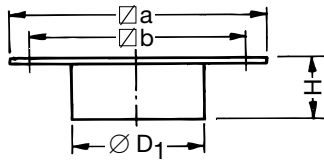
Inlet duct (sizes 355 - 500)



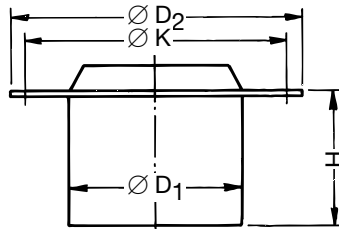
**Sleeve (sizes 160 to 710)
 Material: soft PVC**



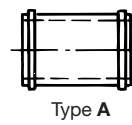
Inlet duct (sizes 200 + 315)



Inlet duct (sizes 560 - 710)

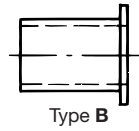


With and without
 clamping bands

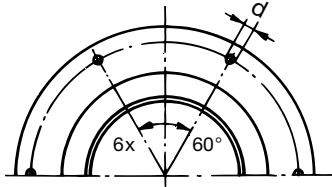
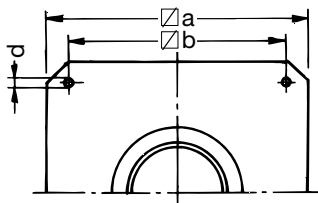


Type A

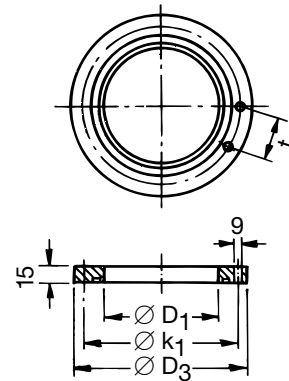
Flanged on
 one side



Type B



Flange (sizes 160 to 710)



Size	$\varnothing D_1$	$\varnothing D_2$	$\varnothing D_3$	H	$\varnothing d$	L	S_2	$\varnothing a$	$\varnothing b$	$\varnothing K$	$\varnothing k_1$	n x t			
160	160	-	238	300	9	160	2	310	270	-	200	8 x 76,5			
200	200	-	279	300	9	160	2	310	270	-	241	8 x 92,2			
250	250	-	330	300	9	160	2	410	330	-	292	12 x 75,6			
315	315	-	406	300	9	160	2	410	330	-	366	12 x 94,7			
355	355	680	445	350	14	160	3	-	-	620	405	16 x 79			
400	400	680	488	350	14	200	3	-	-	620	448	12 x 116			
450	450	860	530	420	14	200	3	-	-	792	497	16 x 97			
500	500	860	580	420	14	200	3	-	-	792	551	16 x 107,5			
560	560	1150	660	420	17	200	3	-	-	1020	628	18 x 109			
630	630	1150	730	500	17	200	3	-	-	1020	697	24 x 91			
710	710	1270	810	500	17	200	3	-	-	1130	774	24 x 101			

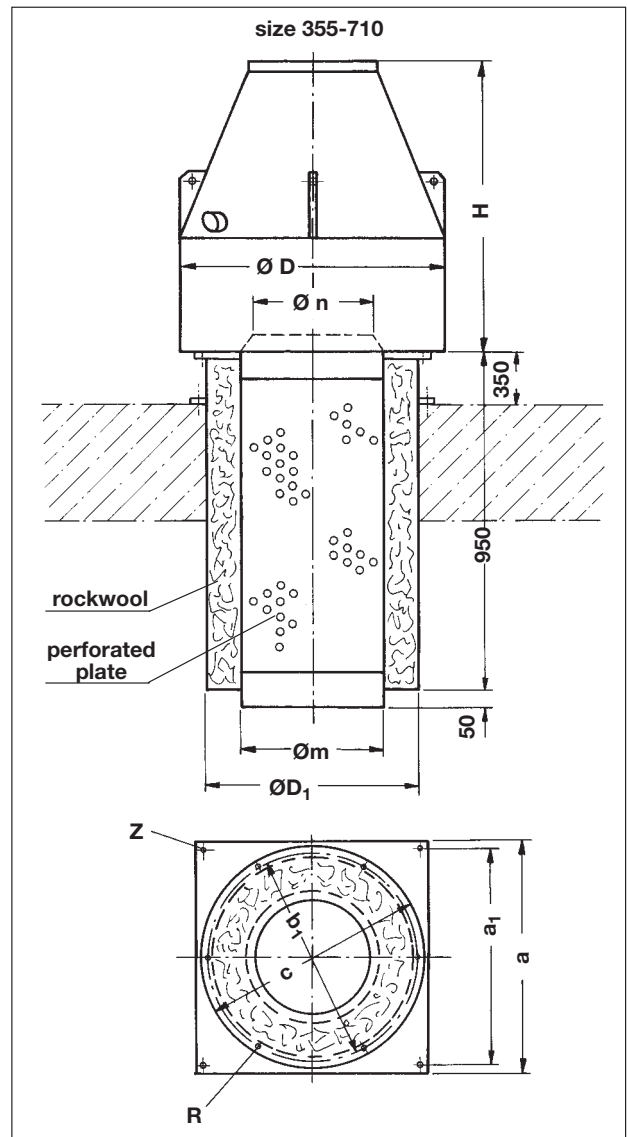
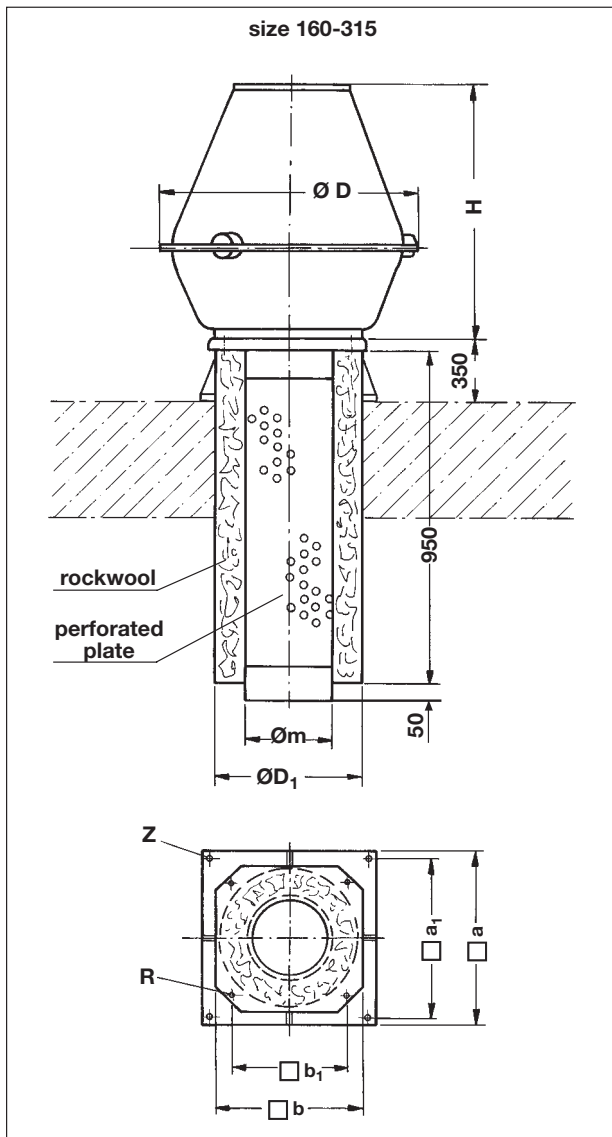


TLT-Turbo GmbH

Am Weinberg 68 · D-36251 Bad Hersfeld/Germany
Phone: +49.6621.950-0 · Fax: +49.6621.950-100

**PLASTIC ROOF UNITS
SERIES DRVF-K 45+63
MAIN DIMENSIONS
TUBULAR SILENCER ***

101



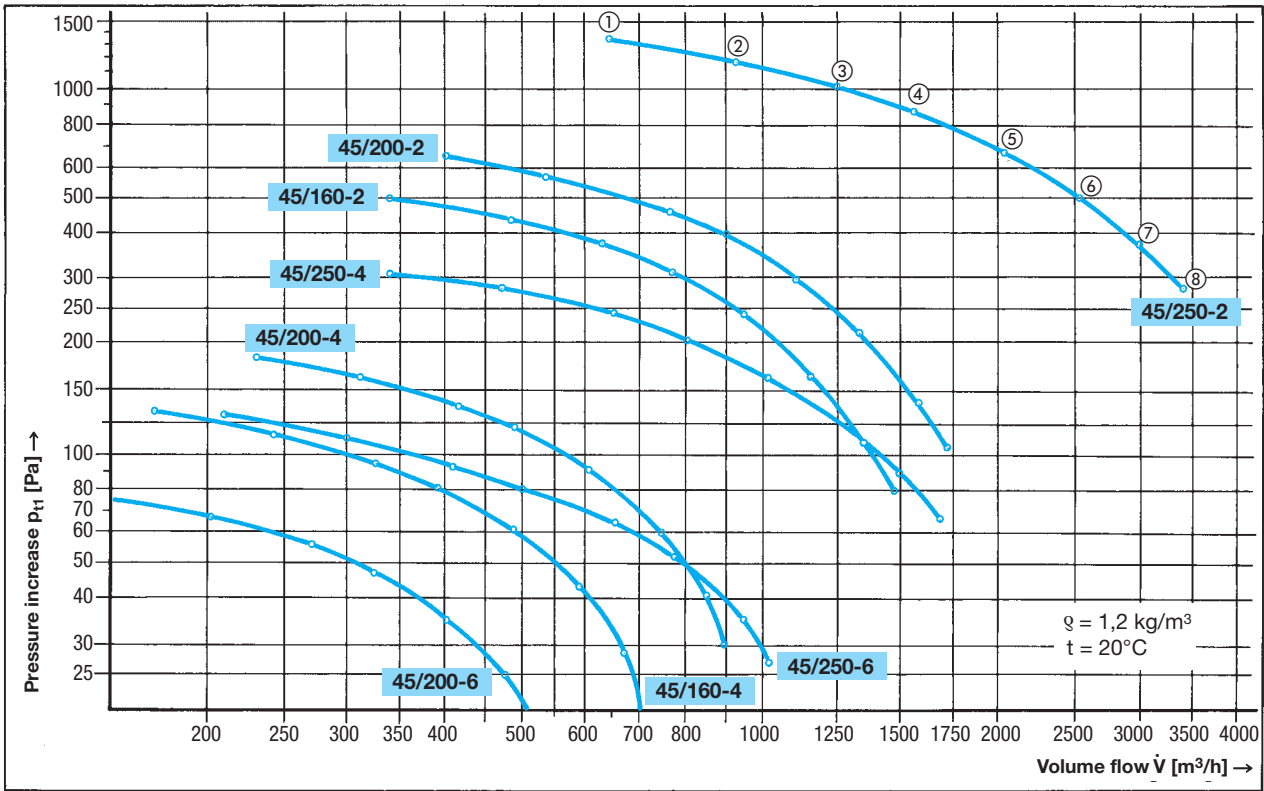
* Attenuation appr. 8 dB

size	Ø D	H	Ø D ₁	Ø m	Ø n	a	a ₁	b	b ₁	Ø c	Ø b ₁	R	Z	Weight [kg]
160	550	550	355	160	133	400	360	315	270			4 x M8	4 x 10	
200	550	550	400	200		470	360	315	270			4 x M8	4 x 10	
250	740	730	450	250	218	500	450	420	330			4 x M8	6 x 10	
315	740	730	500	315		605	550	400	330			4 x M8	4 x 10	
355	800	870	560	355	331	690	640			670	620	6 x 14	8 x 12	
400	800	870	600	400	331	690	640			670	620	6 x 14	8 x 12	
450	1000	1040	650	450	370	880	830			850	792	6 x 14	8 x 12	
500	1000	1040	700	500	433	880	830			880	792	6 x 14	8 x 12	
560	1200	1210	760	560	490	1170	1110			1130	1020	6 x 20	6 x 15	
630	1200	1210	800	630	560	1170	1110			1130	1020	6 x 20	6 x 15	
710	1400	1420	900	710	620	1290	1230			1250	1130	6 x 20	6 x 15	

Changes in dimensions and design reserved

Dimensions in mm

DRVF-K



Type	Nominal speed [rpm]	IP 55 motors		EExe (hazardous duty) motors		Approx. weight [kg]	
		Output [kW]	Nominal current [A] at 400 V	Output [kW]	Nominal current [A] at 400 V	PVC	PPS
DRVF-K 45/160 - 2	3000	0,37	0,9	0,37	0,95	16,5	15,5
DRVF-K 45/160 - 4	1500	0,18	0,6	0,18	0,63	15,5	14,5
DRVF-K 45/200 - 2	3000	1,1	2,6	1,1	2,6	21	20
DRVF-K 45/200 - 4	1500	0,25	0,81	0,25	0,76	15,5	15,5
DRVF-K 45/200 - 6	1000	0,18	0,71	0,37	1,25	16,5	15,5
DRVF-K 45/250 - 2	3000	1,5	3,3	1,3	2,75	28	26,5
DRVF-K 45/250 - 4	1500	0,55	1,5	0,55	1,51	24	22,5
DRVF-K 45/250 - 6	1000	0,18	0,71	0,37	1,25	20,5	19

Type	Nominal speed [rpm]	Total acoustic power level $L_{W \text{ vent}}$ [dB] at point								A-weighted acoustic power level L_{PA}^* [dB] at point							
		①	②	③	④	⑤	⑥	⑦	⑧	①	②	③	④	⑤	⑥	⑦	⑧
DRVF-K 45/160 - 2	3000	76	77	78	80	81	83	85	87	43	44	45	47	48	50	52	54
DRVF-K 45/160 - 4	1500	62	63	64	66	66	68	70	71	29	30	31	33	35	37	38	40
DRVF-K 45/200 - 2	3000	81	83	84	87	89	90	91	93	48	50	51	54	56	57	58	60
DRVF-K 45/200 - 4	1500	68	70	71	74	75	77	78	80	35	37	38	41	42	44	45	47
DRVF-K 45/200 - 6	1000	60	62	64	66	68	69	71	73	27	29	31	33	35	36	38	40
DRVF-K 45/250 - 2	3000	88	90	91	93	95	97	99	101	55	57	58	60	62	64	66	68
DRVF-K 45/250 - 4	1500	76	78	79	82	84	85	86	88	43	45	46	46	49	51	53	55
DRVF-K 45/250 - 6	1000	68	70	72	74	76	77	78	80	35	37	39	41	43	44	45	47

* Measured above roof level at a distance of 4 m. Values are stated with a tolerance of ± 3 dB (A)

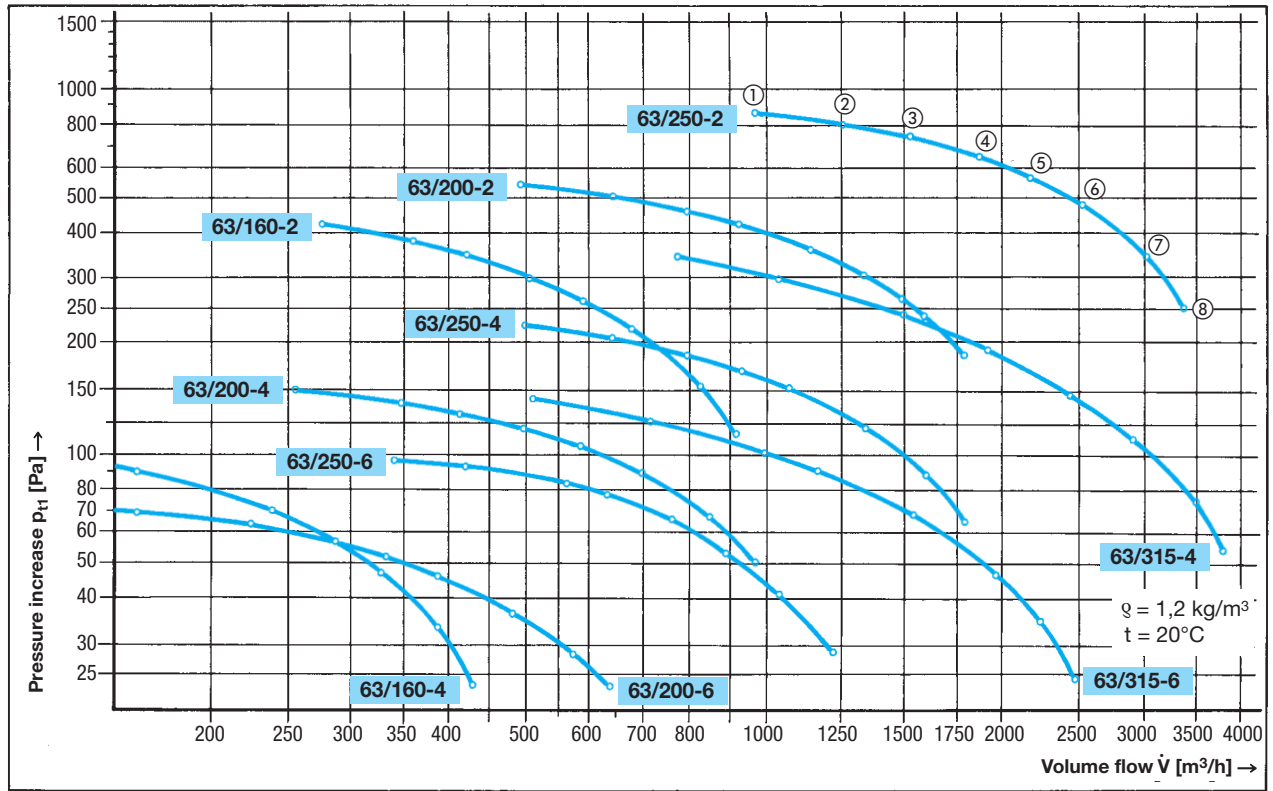


TLT-Turbo GmbH

Am Weinberg 68 · D-36251 Bad Hersfeld/Germany
Phone: +49.6621.950-0 · Fax: +49.6621.950-100

**PLASTIC ROOF UNITS
SERIES DRVF-K 63/160-315
CHARACTERISTIC CURVES · SPECIFICATIONS**

103

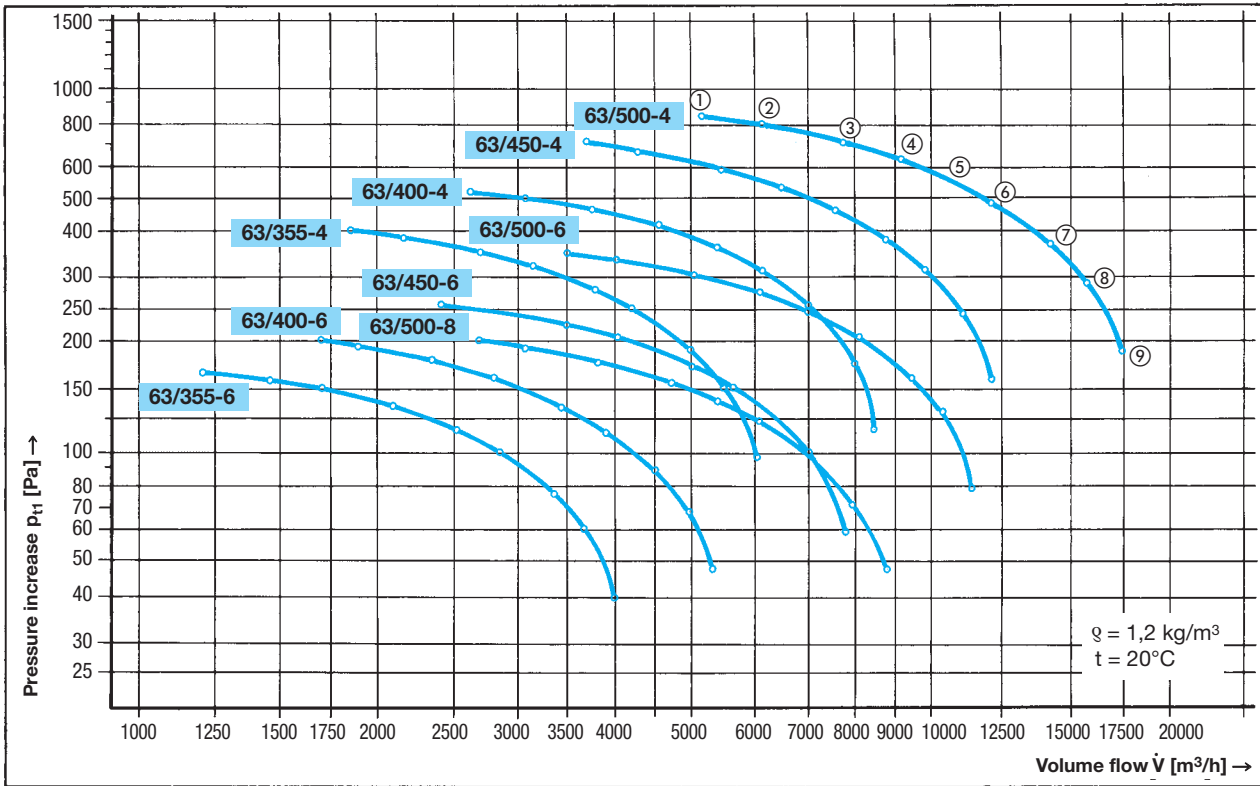


Type	Nominal speed [rpm]	IP 55 motors		EExe (hazardous duty) motors		Approx. weight [kg]	
		Output [kW]	Nominal current [A] at 400 V	Output [kW]	Nominal current [A] at 400 V	PVC	PPS
DRVF-K 63/160 - 2	3000	0,18	0,52	0,18	0,53	15	14
DRVF-K 63/160 - 4	1500	0,12	0,47	0,12	0,45	15	14
DRVF-K 63/200 - 2	3000	0,37	0,9	0,37	0,95	16,5	15,5
DRVF-K 63/200 - 4	1500	0,12	0,47	0,12	0,45	15,5	14,5
DRVF-K 63/200 - 6	1000	0,18	0,71	0,37	1,25	16,5	15,5
DRVF-K 63/250 - 2	3000	0,75	1,8	0,75	1,76	20	19
DRVF-K 63/250 - 4	1500	0,18	0,6	0,18	0,63	15,5	18
DRVF-K 63/250 - 6	1000	0,18	0,71	0,37	1,25	20,5	19
DRVF-K 63/315 - 4	1500	0,55	1,5	0,55	1,51	26	24,5
DRVF-K 63/315 - 6	1000	0,18	0,71	0,37	1,25	22,5	21

Type	Nominal speed [rpm]	Total acoustic power level $L_{W \text{ vent}}$ [dB] at point								A-weighted acoustic power level L_{PA}^* [dB] at point							
		①	②	③	④	⑤	⑥	⑦	⑧	①	②	③	④	⑤	⑥	⑦	⑧
DRVF-K 63/160 - 2	3000	77	75	73	73	75	77	78	80	44	42	40	40	42	44	45	47
DRVF-K 63/160 - 4	1500	63	62	60	60	61	62	64	65	30	29	27	27	28	29	31	32
DRVF-K 63/200 - 2	3000	81	79	78	78	79	81	82	84	48	46	45	45	46	48	49	51
DRVF-K 63/200 - 4	1500	66	65	64	64	65	66	67	68	33	32	31	31	32	33	34	35
DRVF-K 63/200 - 6	1000	59	58	57	57	58	59	60	62	26	25	24	24	25	26	27	29
DRVF-K 63/250 - 2	3000	79	77	76	76	77	78	79	81	46	44	43	43	44	45	46	48
DRVF-K 63/250 - 4	1500	74	72	71	72	72	73	74	76	41	39	38	39	39	40	41	43
DRVF-K 63/250 - 6	1000	67	65	63	64	64	65	66	68	34	32	30	31	31	32	33	35
DRVF-K 63/315 - 4	1500	79	78	76	77	79	80	81	83	48	50	49	47	48	50	51	54
DRVF-K 63/315 - 6	1000	71	70	69	70	71	72	73	75	42	41	40	41	42	43	44	46

* Measured above roof level at a distance of 4 m. Values are stated with a tolerance of ± 3 dB (A)

DRVF-K



Type	Nominal speed [rpm]	IP 55 motors		EExe (hazardous duty) motors		Approx. weight [kg]	
		Output [kW]	Nominal current [A] at 400 V	Output [kW]	Nominal current [A] at 400 V	PVC	PPS
DRVF-K 63/355 - 4	1500	0,75	2,0	0,75	2,0	55	50
DRVF-K 63/355 - 6	1000	0,25	0,9	0,37	1,25	51,5	46,5
DRVF-K 63/400 - 4	1500	1,5	3,6	1,35	3,05	65,5	60,5
DRVF-K 63/400 - 6	1000	0,37	1,15	0,37	1,25	59	54
DRVF-K 63/450 - 4	1500	2,2	5,2	2,5	5,6	100	95
DRVF-K 63/450 - 6	1000	0,75	2,2	0,65	1,96	73	68
DRVF-K 63/500 - 4	1500	4,0	8,2	3,6	7,9	116	110
DRVF-K 63/500 - 6	1000	1,1	3,1	0,95	2,7	86	80
DRVF-K 63/500 - 8	750	0,75	2,15	0,65	2,25	106	96

Type	Nominal speed [rpm]	Total acoustic power level $L_{W \text{ vent}}$ [dB] at point									A-weighted acoustic power level L_{PA}^* [dB] at point								
		①	②	③	④	⑤	⑥	⑦	⑧	⑨	①	②	③	④	⑤	⑥	⑦	⑧	⑨
DRVF-K 63/355 - 4	1500	87	86	86	87	88	89	89	91	93	58	57	57	58	59	60	60	62	64
DRVF-K 63/355 - 6	1000	78	77	77	78	79	81	81	83	84	49	48	48	49	50	52	52	54	55
DRVF-K 63/400 - 4	1500	90	89	89	90	91	92	92	93	95	61	60	60	61	62	63	63	64	66
DRVF-K 63/400 - 6	1000	82	81	81	82	83	84	84	85	86	53	52	52	53	54	55	55	56	57
DRVF-K 63/450 - 4	1500	93	92	92	93	94	95	95	96	98	63	62	62	63	64	65	65	66	68
DRVF-K 63/450 - 6	1000	83	82	82	83	84	85	85	87	89	53	52	52	53	54	55	55	57	59
DRVF-K 63/500 - 4	1500	97	96	96	97	99	100	100	101	103	67	66	66	67	69	70	70	71	73
DRVF-K 63/500 - 6	1000	87	86	86	87	89	91	91	93	95	57	56	56	57	59	61	61	63	65
DRVF-K 63/500 - 8	750	84	83	83	84	85	87	87	88	90	54	53	53	54	55	57	57	58	60

* Measured above roof level at a distance of 4 m. Values are stated with a tolerance of ± 3 dB (A)

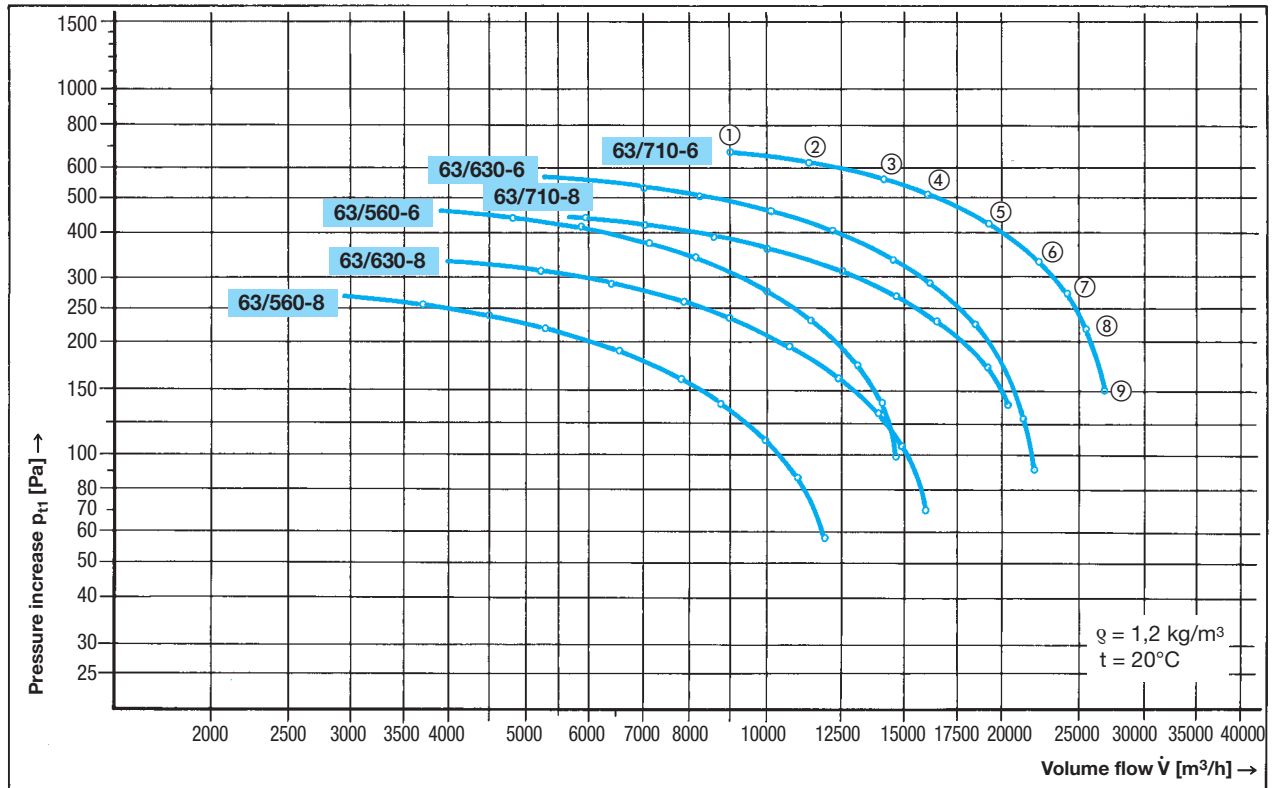


TLT-Turbo GmbH

Am Weinberg 68 · D-36251 Bad Hersfeld/Germany
Phone: +49.6621.950-0 · Fax: +49.6621.950-100

**PLASTIC ROOF UNITS
SERIES DRVF-K 63/560-710
CHARACTERISTIC CURVES · SPECIFICATION**

105



Type	Nominal speed [rpm]	IP 55 motors		EExe (hazardous duty) motors		Approx. weight [kg]	
		Output [kW]	Nominal current [A] at 400 V	Output [kW]	Nominal current [A] at 400 V	PVC	PPS
DRVF-K 63/560 - 6	1000	2,2	5,4	1,9	4,5	119	113
DRVF-K 63/560 - 8	750	1,1	2,9	0,95	2,75	105	99
DRVF-K 63/630 - 6	1000	4,0	9,2	3,5	8,1	155	149
DRVF-K 63/630 - 8	750	2,2	5,7	1,9	4,9	145	138
DRVF-K 63/710 - 6	1000	7,5	16,5	6,6	13,5	215	205
DRVF-K 63/710 - 8	750	3,0	7,5	2,6	6,5	177	167

Type	Nominal speed [rpm]	Total acoustic power level $L_{w \text{ vent}}$ [dB] at point								A-weighted acoustic power level L_{PA}^* [dB] at point									
		①	②	③	④	⑤	⑥	⑦	⑧	①	②	③	④	⑤	⑥	⑦	⑧		
DRVF-K 63/560 - 6	1000	91	90	90	91	93	94	94	95	96	61	60	60	61	63	64	64	65	66
DRVF-K 63/560 - 8	750	87	86	86	87	88	89	89	90	92	57	56	56	57	58	59	59	60	62
DRVF-K 63/630 - 6	1000	95	94	94	95	96	97	97	99	101	65	64	64	65	66	67	67	69	71
DRVF-K 63/630 - 8	750	90	89	89	90	91	93	93	94	96	60	59	59	60	61	63	63	64	66
DRVF-K 63/710 - 6	1000	97	96	96	97	98	100	100	101	103	68	67	67	68	69	71	71	72	74
DRVF-K 63/710 - 8	750	91	90	90	91	92	94	94	95	97	62	61	61	62	63	65	65	66	68

* Measured above roof level at a distance of 4 m. Values are stated with a tolerance of ± 3 dB (A)

DRVF-K

Item No.	Qty.	Description	Unit price €	Amount €
		<p>Plastic centrifugal roof fan, DRVF-K series Vertical outlet</p> <p>Made of corrosion-resistant plastic with enclosed drive motor.</p> <p>Centrifugal roof fan, consisting of high-grade certified thermoplastics. Structural elements are likewise made of synthetic material or plastic-coated steel, depending on fan size and load rating.</p> <p>The impeller is mounted overhung on the motor shaft and dynamically balanced to DIN ISO 1940, grade G 6.3 specifications.</p> <p>The IEC standard motor is fully and durably protected against the conveyed medium and weather influences. Cooling air is supplied to the motor via hollow section webbing and a ventilation duct.</p> <p>Accessories</p> <p>Inlet duct</p> <ul style="list-style-type: none"> <input type="checkbox"/> Standard PVC (hard) <input type="checkbox"/> PPs <input type="checkbox"/> Optional material <p>Automatic butterfly valve fitted in the inlet duct, made of the same material as the duct.</p> <p>Glass-reinforced plastic (GRP)/stainless steel roof-mounting base</p> <ul style="list-style-type: none"> <input type="checkbox"/> for flat roof (Glass-reinforced plastic) <input type="checkbox"/> for pitched roof (stainless steel) <p>Plastic roof-mounting base</p> <ul style="list-style-type: none"> <input type="checkbox"/> for corrugated roof <p>Sleeve with clamping band</p> <ul style="list-style-type: none"> <input type="checkbox"/> made of PVC (soft) material <input type="checkbox"/> Splinter guard 		
		carryover		

Item No.	Qty.	Description	Unit price €	Amount €
		<p>Materials:</p> <p>Housing <i>Standard material</i> <input type="checkbox"/> PVC (hard) <input type="checkbox"/> PP <input type="checkbox"/> PPs</p> <p><i>Optional material</i> <input type="checkbox"/> PVDF <input type="checkbox"/> PE</p> <p>Impeller <i>Standard material</i> <input type="checkbox"/> PVC (hard) <input type="checkbox"/> PP <input type="checkbox"/> PPs <input type="checkbox"/> Steel, painted <input type="checkbox"/> Steel, coated <input type="checkbox"/> CFTEE <input type="checkbox"/> Steel, rubberized <input type="checkbox"/> Tegon</p> <p><i>Optional material</i> <input type="checkbox"/> PVDF <input type="checkbox"/> Stainless steel</p> <p>Specifications Volume flow m³/h Temperature20 °C Pressure increase Pa Motor speed rpm Motor output kW Motor winding V Current consumption A Operating voltage V Frequency Hz Sound pressure level LpA, measured above roof level, r = 4 m dB Weight kg</p> <p>Manufacturer: TLT-Turbo GmbH Series / type: DRVF-K</p>		
		carryover		