GB0802
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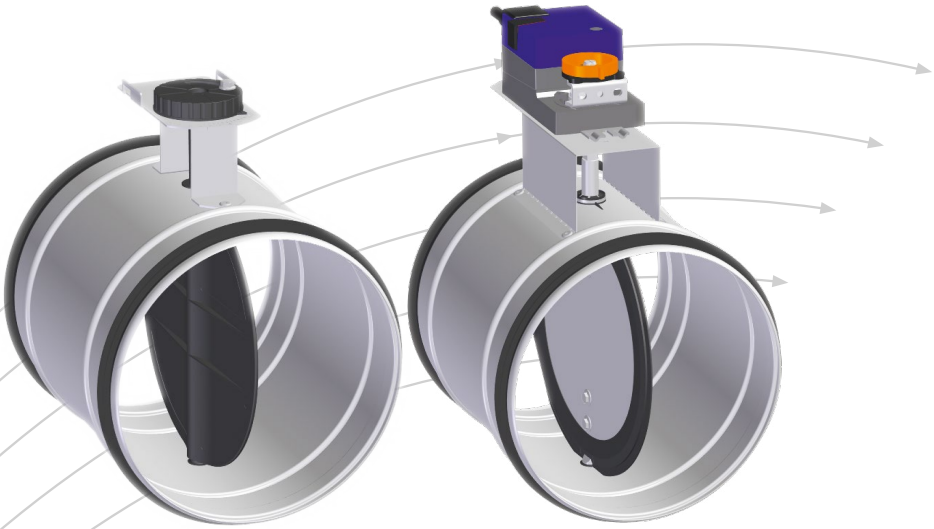
DRS/DRS-T

Circular commissioning and shut-off dampers



DRS for commissioning
- Manual, or with damper actuator
- Graded and lockable commissioning solution
- Air permeability class 0 and C, EN 1751 compliant
- Damper position indication

DRS-T for shut-off
- Manual, or with damper actuator
- Air permeability class 4 and C, EN 1751 compliant
- Damper position indication

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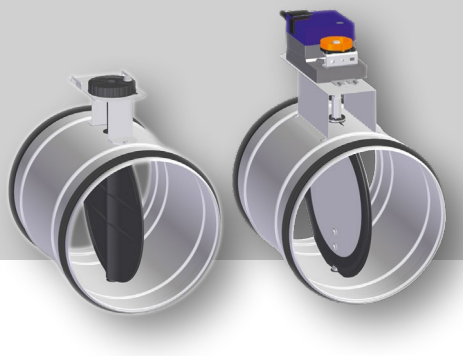
DRS/DRS-T



APPLICATION

DRS Ø100 – Ø630 is a manual commissioning damper, at dim. 100 – 315 actuator type CM can be mounted.
DRS-M Ø400 – Ø 630 is an actuator-controlled commissioning damper.
DRS and DRS-M satisfy the EN 1751 requirements for air permeability class 0 and C.
DRS-T Ø100 – Ø 630 is a manual commissioning and shut-off damper.
DRS-T-M Ø100 – Ø 630 is an actuator-controlled commissioning and shut-off damper.
DRS-T and DRS-T-M (M = actuator bracket) satisfy the EN 1751 requirements for air permeability class 4 and C.
The damper's operating temperature is max. 100°C.

DESIGN

DRS and DRS-T are supplied with graduated scale and lockable commissioning solution. DRS-M and DRS-T-M are equipped with actuator bracket, and the dampers are available with actuator mounted.
On the DRS Ø100 – Ø315 (fig. 1), provisions have been made for subsequent installation of Belimo CM actuators.
On DRS 400 - 630 and on DRS-T 100 - 630 actuator can be retrofitted. You must use a retrofit kit, EMK. EMK-F is used together with LF- and SF actuators.
Video showing the assembly, is available on our web. site: www.trox.no
DRS-T 100-630 has round shaft Ø12mm
DRS-M/TM 100-315 has square shaft 8x8mm
DRS-M/TM 400-630 has round shaft Ø12mm

MATERIALS AND SURFACE COATING

DRS Ø100 – Ø315 has galvanised steel casing, bracket and scale, whereas the damper, support and commissioning solution come in a plastic design.

DRS Ø400 – Ø630 features a casing, damper, shaft, bracket and scale in galvanised steel. Support and spacer are in a plastic design.

DRS-M Ø400 – Ø630 has galvanised steel casing, damper, shaft and actuator bracket, whereas the support come in a plastic design.

DRS-T has galvanised steel casing, damper, bracket and scale. The damper blade is fitted with rubber gasket, and the supports are in a plastic design.

DRS-T-M has galvanised steel casing, damper, actuator bracket and shaft.
The damper blade is fitted with rubber gasket, and the supports are in a plastic design.

All damper types are equipped with EPDM rubber gasket.

ORDER CODE, DRS

DRS - 160 / TM – 51 / 0

Product:

Dimension Ø100 – Ø630

T = Sealed design
M = Actuator bracket fitted
TM = Sealed design with actuator bracket fitted

L = Painted finish

Actuator option:
0 = Without actuator
50 = CM230-F-R.1 AU
51 = CM24-F-R.1 AU
52 = CM24-SR
53 = LM230A-F
54 = LM24A-F
55 = LM24A-SRF
56 = LM230A-SRF
57 = NM230A
58 = NM24A
59 = NM24A-SR
60 = NM230A-SR
61 = SM230A
62 = SM24A
63 = SM24A-SR
64 = SM230A-SR
65 = LF230
66 = LF24
67 = SFA 1TR 230V
68 = SFA 1TR 24V
69 = LM24A-MOD
70 = NM24A-MOD
71 = SM24A-MOD

Example:
DRS-160 / T-51/0
Explanation:
DRS dim. Ø160 sealed design equipped with actuator bracket and CM24 SR actuator.

DIMENSIONS AND WEIGHT

Dim.	D	L	B1	Weight [kg]
100	99	230	70	0,5
125	124	230	70	0,6
160	159	230	70	0,9
200	199	230	70	1,1
250	249	285	70	1,3
315	314	285	70	2,0

Table1: DRS dim 100-315

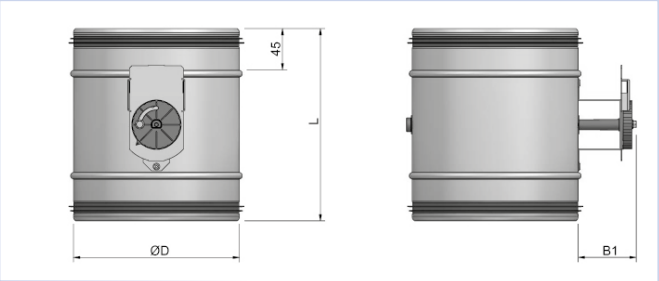


Fig. 1, DRS dim 100-315

Dim.	D	L	B2	C	Weight excl. actuator [kg]
100	99	230	100	47	0,9
125	124	230	100	47	1,1
160	159	230	100	47	1,3
200	199	230	100	47	1,5
250	249	285	100	50	2,3
315	314	285	100	50	2,9
400	399	285	100	50	3,9
500	498	285	100	50	5,2
630	628	285	100	50	7,2

Table 2, DRS / DRS-M 400-630 and DRS-T / DRS-T-M 100-630.

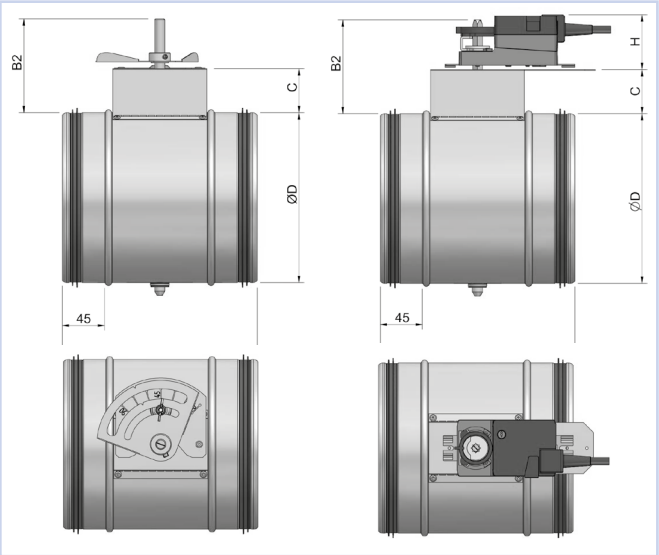


Fig. 2, DRS / DRS-M 400-630 and DRS-T / DRS-T-M 100-630.
(H-dimensions, see table 3)

DRS/DRS-T

ACCESSORIES

DAMPER ACTUATOR AND FUNCTION

The dampers in table 3 are ready for mounting of Belimo brands.

Damper type	Dim.	Actuator	Function	Torque [Nm]	H-diml [mm]	weight [kg]
DRS	100-315	CM24-F-R	On/Off	2	40	0,2
DRS	100-315	CM230-F-R	On/Off	2	40	0,2
DRS	100-315	CM24-SR-FR.2	Modulating	2	40	0,2
DRS-M	400-630	NM24A/NM230A	On/Off	10	62	0,8
DRS-M	400-630	NM24A-SR/NM230A-SR/NM24A-MOD	Modulating	10	62	0,8
DRS-M	400-630	NM24A-MP	MP-Bus	10	62	0,7
DRS-M	400-630	SFA 1TR 24/230V	On/Off spring return	20	93	2,2
DRS-M	400-630	SF24A-SR	Modulating spring return	20	98	2,7
DRS-M	400-630	SF24A-MP	MP-Bus spring return	20	98	2,7
DRS-T-M	100-315	LM24A-F/LM230A-F	On/Off	5	64	0,5
DRS-T-M	100-315	LM24A-SR-F/LM230A-SR-F/LM24A-MOD	Modulating	5	64	0,5 / 0,7
DRS-T-M	100-315	LM24A-MP-F	MP-Bus	5	64	0,5
DRS-T-M	100-315	LF24/LF230	On/Off spring return	4	82	1,4 / 1,6
DRS-T-M	100-315	LF24-SR	Modulating spring return	4	82	1,4
DRS-T-M	100-315	LF24-MFT2	MP-Bus spring return	4	82	1,4
DRS-T-M	400-630	SM24A/SM230A	On/Off	20	64	1,0 / 1,1
DRS-T-M	400-630	SM24A-SR/SM230A-SR/SM24A-MOD	Modulating	20	64	1,1 / 1,2
DRS-T-M	400-630	SM24A-MP	MP-Bus	20	64	0,9
DRS-T-M	400-630	SFA 1TR 24/230V	On/Off spring return	20	93	2,2
DRS-T-M	400-630	SF24A-SR	Modulating spring return	20	98	2,7
DRS-T-M	400-630	SF 24A-MP	MP-Bus spring return	20	98	2,7

Table 3. (Alternative type damper and actuator for DRS 100-315, is DRS-T-M 100-315)

P.S. If you choose another type of actuator than CM, be aware of that actuator brackets have different constructions depending on actuator type, we recommend: damper and actuator mounted together at factory.
Alternatively, specify type of actuator wich will be used afterwards.

ACOUSTIC DATA FOR DRS AND DRS-T

The diagrams provide a summary of the A-weighted sound power level from damper to duct, L_{WA}. Correction factors in tables 4 and 5, page 7, are used to calculate emitted sound power level at the respective frequencies, $L_W = L_{WA} + KO$. KO for two different damper settings is provided. Intermediary points can be estimated as shown in the example below.

Example:
DRS Ø200, 100 l/s, 100 Pa
According to the diagram, L_{WA} = 47 dB(A). We aim to find:
Emitted sound power level at 250 Hz. The correction factor is -6dB for closed damper and 2dB for open damper. As our point is halfway between the two, we use the average which is -2dB. Emitted sound power level at 250 Hz is thus: $L_W = L_{WA} + KO = 47 + (2) = 45$ dB

CALCULATION DIAGRAMS

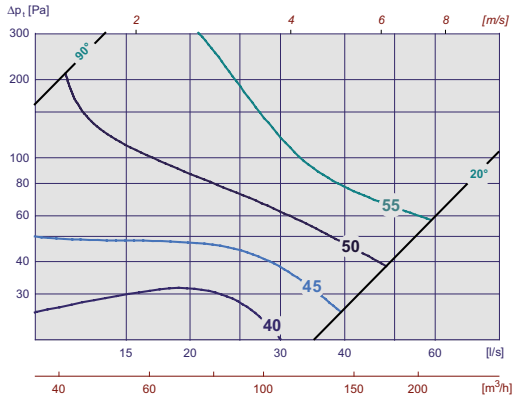


Diagram 1, DRS Ø 100

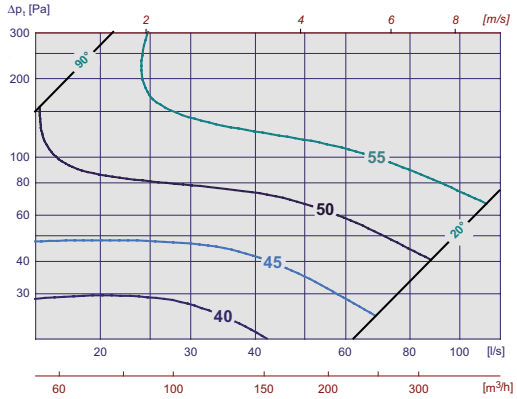


Diagram 2, DRS Ø 125

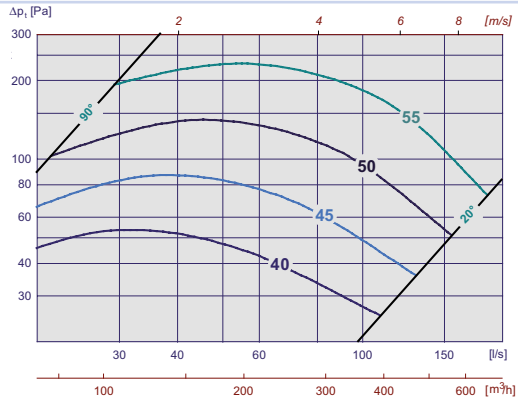


Diagram 3, DRS Ø 160

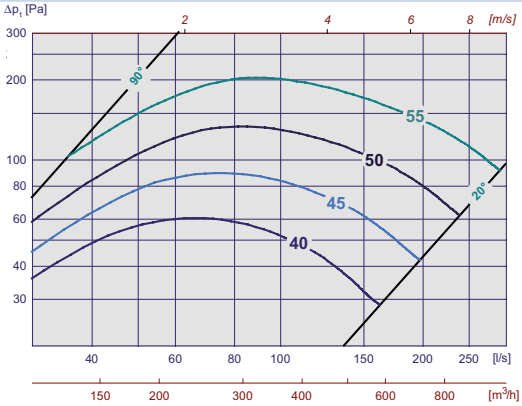


Diagram 4, DRS Ø 200

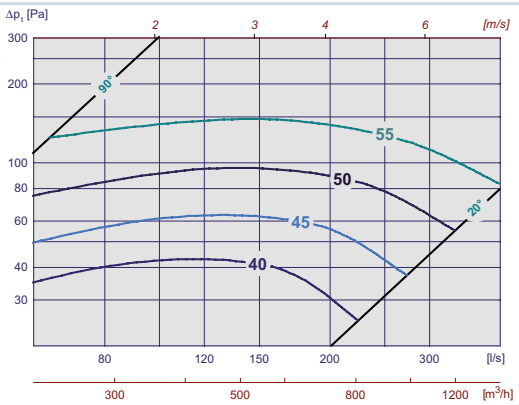


Diagram 5, DRS Ø 250

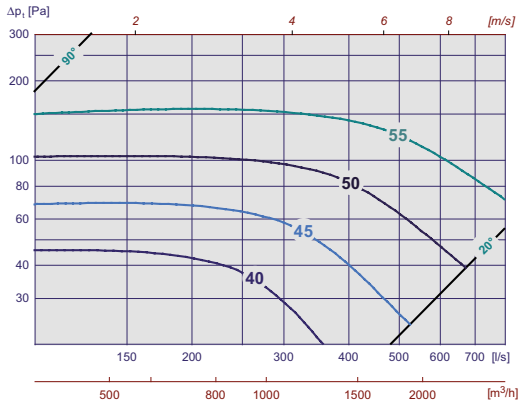


Diagram 6, DRS Ø 315

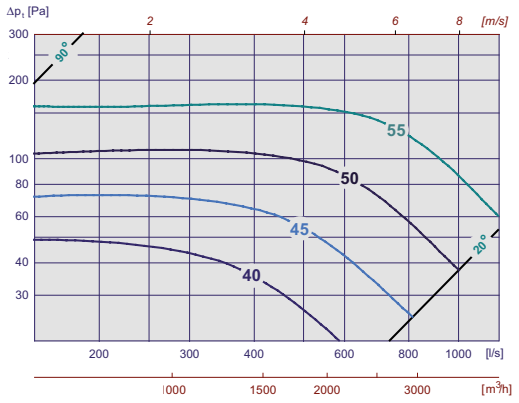


Diagram 7, DRS Ø 400

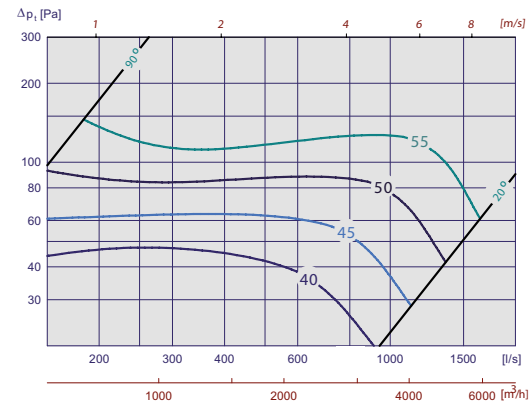


Diagram 8, DRS Ø 500

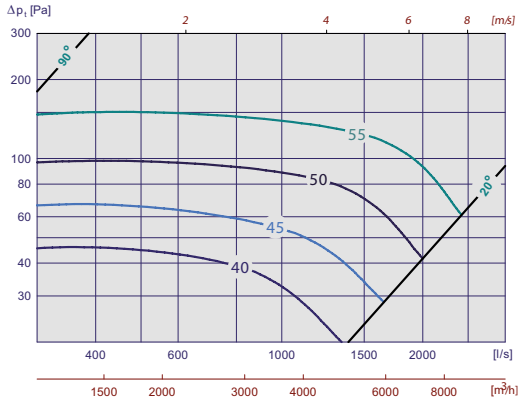


Diagram 9, DRS Ø 630

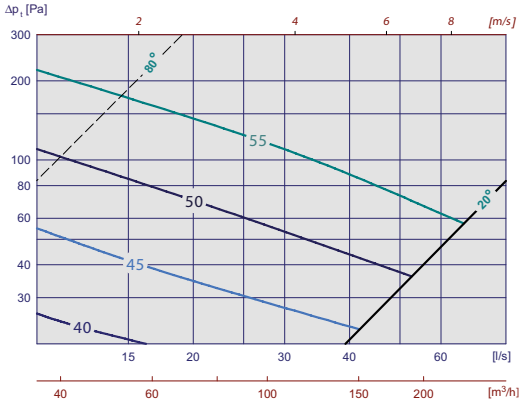


Diagram 10, DRS-T Ø 100

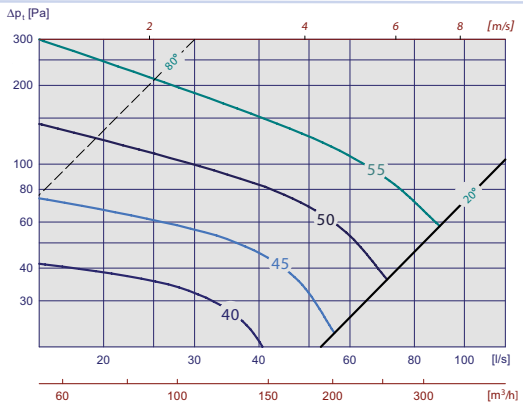


Diagram 11, DRS-T Ø 125

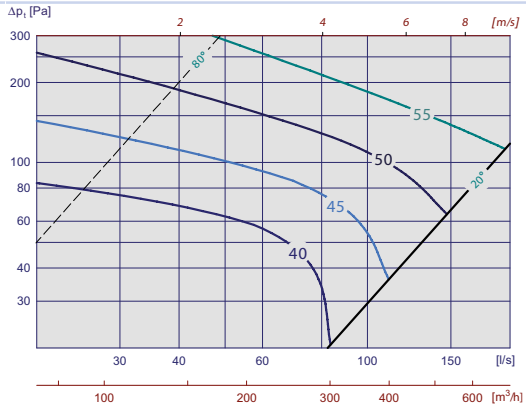


Diagram 12, DRS-T Ø 160

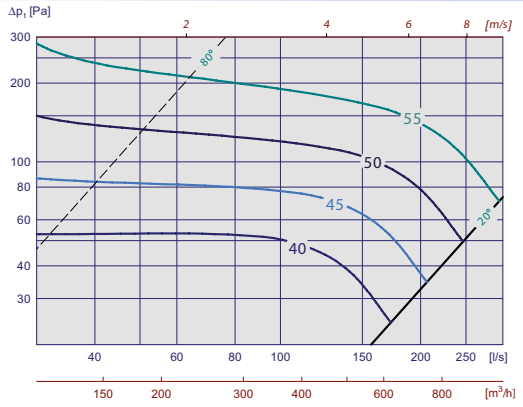


Diagram 13, DRS-T Ø 200

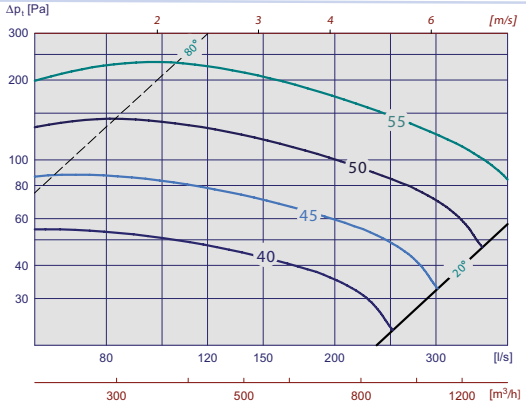


Diagram 14, DRS-T Ø 250

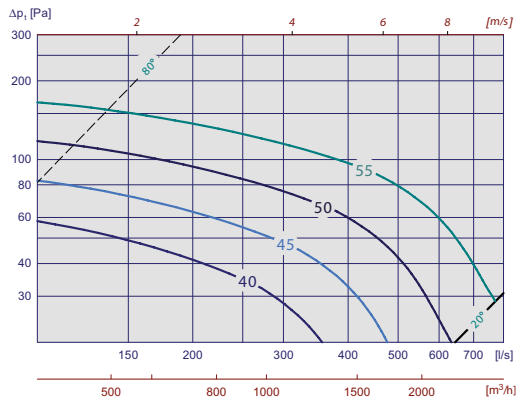


Diagram 15, DRS-T Ø 315

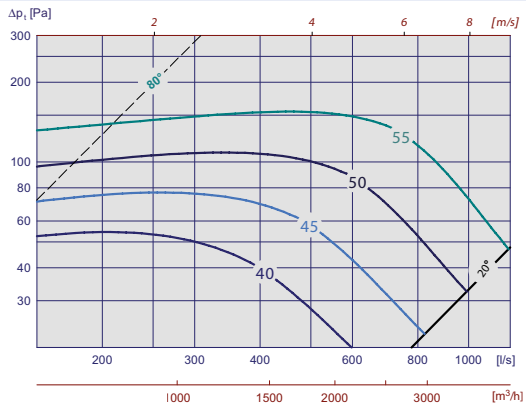


Diagram 16, DRS-T Ø 400

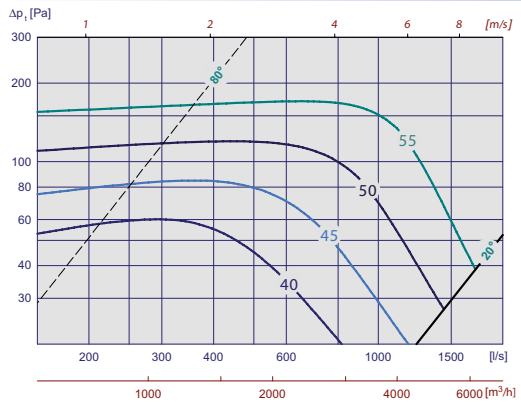


Diagram 17, DRS-T Ø 500

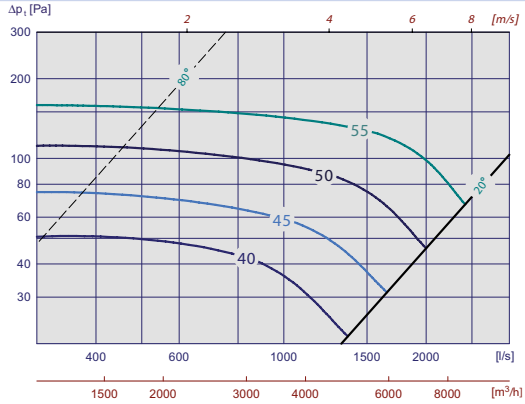


Diagram 18, DRS-T Ø 630

Correction factor [KO], DRS

	KO [dB]															
DRS	90° damper angle								20° damper angle							
Dim.	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8
100	15	5	-3	-2	-5	-13	-21	-26	9	11	4	-3	-11	-17	-26	-32
125	14	4	-5	0	-5	-16	-26	-27	17	10	4	-4	-11	-19	-26	-27
160	5	-2	-7	-4	-4	-8	-15	-25	15	10	3	-4	-8	-16	-23	-27
200	2	-5	-6	-1	-5	-12	-21	-29	13	10	2	-4	-7	-14	-20	-25
250	-1	-5	-7	-3	-4	-7	-14	-23	18	7	0	-4	-7	-11	-15	-21
315	-3	-5	-7	-5	-4	-7	-13	-22	20	10	0	-5	-9	-14	-20	-19
400	-7	-4	-6	-6	-4	-7	-12	-22	19	9	0	-4	-7	-12	-19	-24
500	-12	-9	-10	-9	-5	-5	-9	-17	17	9	2	-4	-7	-13	-19	-24
630	-14	-10	-11	-10	-5	-4	-7	-13	15	9	2	-4	-6	-12	-18	-23

Table 4

Correction factor [K0], DRS-T

	KO [dB]															
DRS-T	80° damper angle								20° damper angle							
Dim.	63	125	250	500	1k	2k	4k	8k	63	125	250	500	1k	2k	4k	8
100	8	7	2	-2	-7	-13	-21	-28	12	10	4	-3	-11	-16	-21	-24
125	17	4	-7	-6	-5	-10	-17	-24	19	10	4	-5	-10	-20	-27	-27
160	11	1	-6	-3	-5	-8	-18	-25	18	11	2	-5	-8	-18	-25	-26
200	3	-4	-8	-6	-4	-6	-12	-22	11	9	1	-4	-5	-12	-19	-27
250	10	4	-3	-7	-9	-9	-10	-14	18	8	0	-2	-9	-12	-18	-23
315	-10	-12	-12	-10	-7	-6	-11	-19	18	9	-2	-3	-7	-12	-20	-21
400	-10	-11	-12	-11	-6	-7	-8	-18	18	10	0	-4	-8	-13	-18	-20
500	-6	-7	-7	-8	-6	-7	-8	-17	15	9	3	-5	-7	-13	-20	-24
630	-4	-3	-4	-8	-6	-7	-9	-17	13	8	4	-6	-7	-13	-21	-25

Table 5

INSTALLATION

For noise reduction, straight ducting (min. ØDx2) prior to the damper is advisable.
Damper shaft positioning should be as shown in fig.3 and in accordance with bend and consequent change of direction. When installing DRS-M and DRS-T-M, a service clearance as illustrated in fig. 4 is recommended.

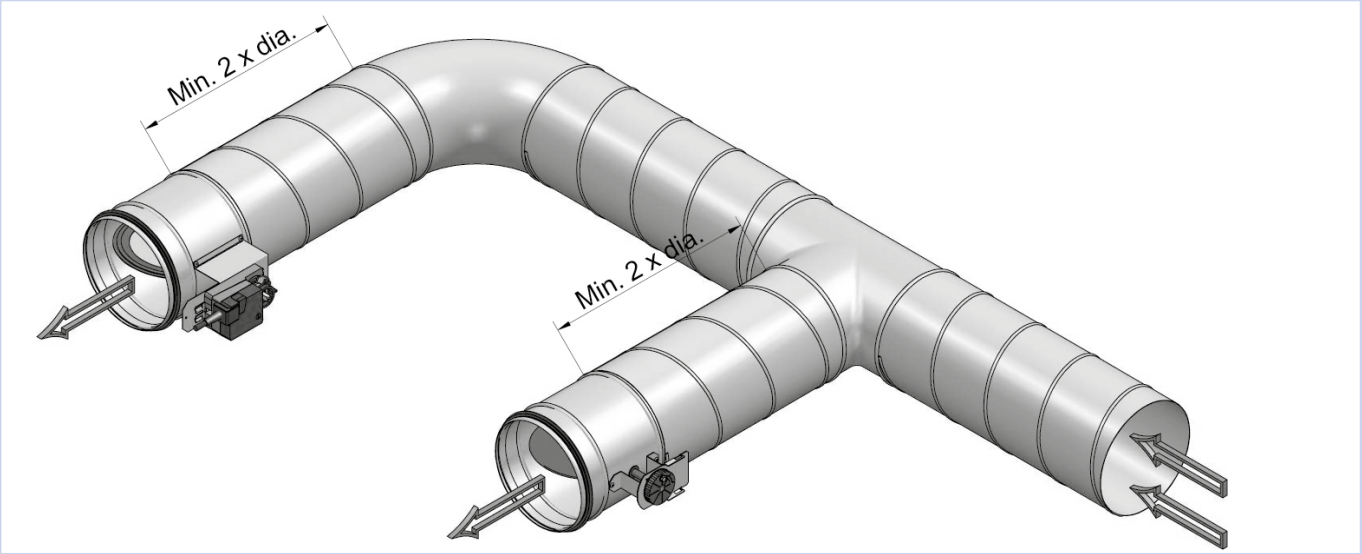


Fig. 3, Installation

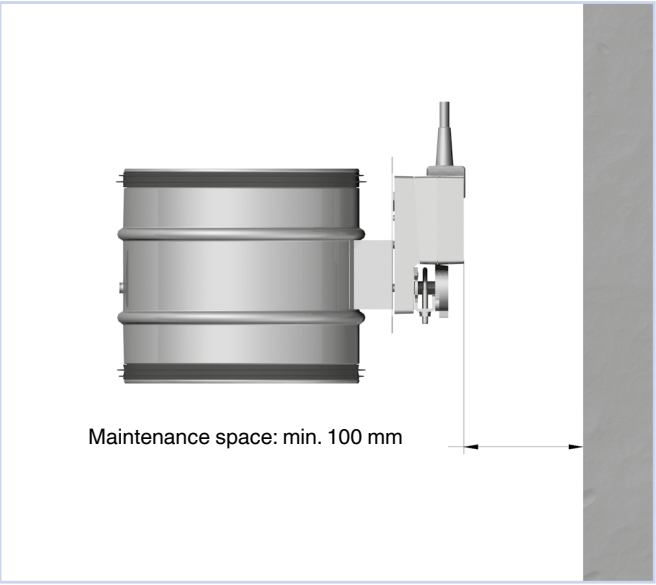


Fig. 4, Installation

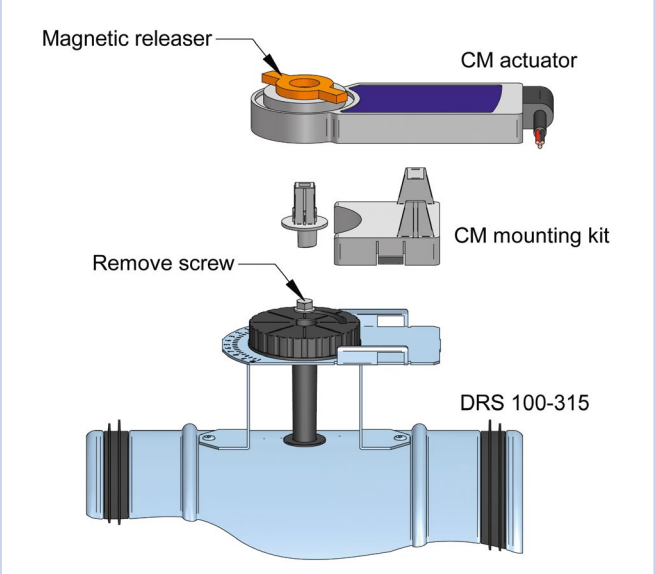


Fig. 5, Installation: CM actuator.

MAINTENANCE

No specific maintenance requirements.

ENVIRONMENT

Enquiries regarding product declaration can be directed to our sales team, or information can be found at our website: www.trox.no

DRS and DRS-T is developed and manufactured by:

The company reserves the right to make amendments without prior notice.