

TRS - Supply Air Diffuser for Large Space



- Selection of narrow or wide jet and adjustment of direction by rotating the central cones.
- Circular duct connection D200...500mm.
- Possible to install in a duct one size smaller than the nominal device size.



QUICK SELECTION

TRS (narrow and horizontal throw pattern)

Model	Δ _{ptot} LQ2	20	30	50	100	200	300	500	1000
TRS-500(CN)							19	40	85
							36.2	52.3	75.7
TRS-400(CN)						20	40	78	
						29.6	41.4	58.0	
TRS-315(CN)					22	43	85		
					23.1	32.4	45.4		
TRS-250(CN)				24	46	88			
				17.9	24.8	34.6			
TRS-200(CN)		25	48	91					
		14.3	19.7	27.3					

ΔT=0.0

20 30 50 100 200 300 500 1000 qv [l/s]

100 200 300 500 1000 2000 3000 qv [m³/h]

ΔL_p = 4 [dB]

■ LpA < 25 [dB(A)]
 ■ LpA 25 - 35 [dB(A)]
 ■ LpA 35 - 45 [dB(A)]

FUNCTION

The supply air is introduced into the space at high velocity. Rotating the central cones modifies the throw pattern. The cones are rotated around a central axis, until the required narrow (or wide) supply air jet is achieved.



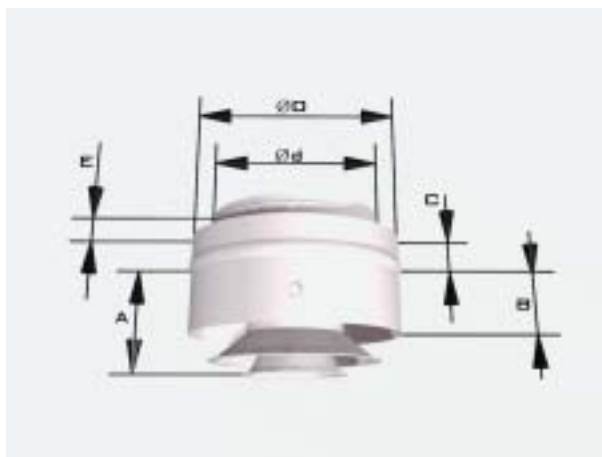
MATERIAL AND FINISHING

The diffuser is manufactured in two sections, an outer sleeve and two inner concentric cones. Finished with an epoxy-painted white (RAL 9010) standard colour.

ACCESSORIES

It is recommended that the TRS be used in conjunction with a TRI balancing plenum.

DIMENSIONS



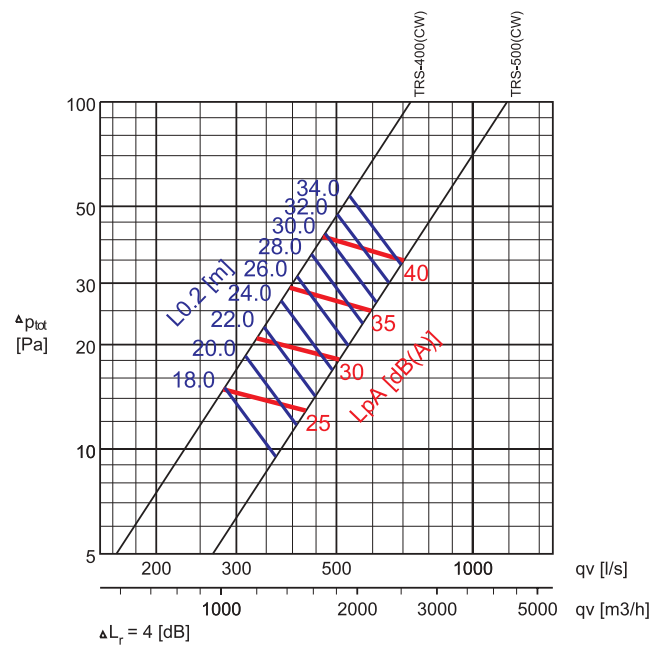
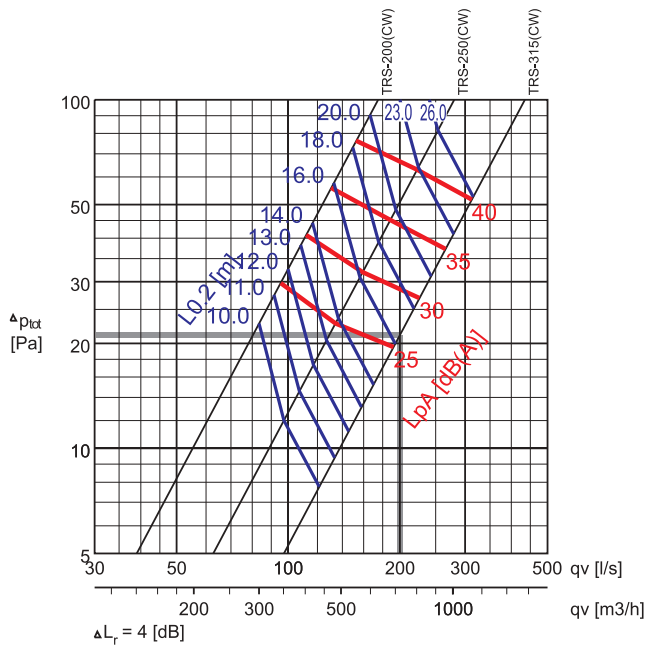
NS	A	B	C	D	d	E
200	100	62	30	198	159	26
250	130	85	30	248	199	34
315	170	94	50	313	249	35
400	215	124	50	398	314	38
500	270	160	50	498	399	43

PRESSURE DROP, THROW PATTERN AND SOUND DATA

Wide jet, horizontal pattern (wall installation)

TRS-200, TRS-250, TRS-315

TRS-400, TRS-500



Selection example:

Requirements : $q_v = 200$ l/s Selection : TRS-315
 $L_{pA} \leq 30$ dB(A) $L_{pA} = 26$ dB(A)
 $L_{p0.2} \leq 17.0$ m $L_{p0.2} = 16.5$ m
 Wide jet, wall installation $\Delta p_{tot} = 21$ Pa

SOUND LEVEL DATA

TRS (CW) Wide Jet	q_v		ΔP_{st} (Pa)	ΔP_{tot} (Pa)	F (Hz)						L_{pA} [dB(A)]	NR	NC
	(l/s)	(m ³ /h)			125	250	500	1000	2000	4000			
TRS-200(CW)	95	342	24	30	30	26	24	26	21	11	25	22	20
	112	403	33	41	35	31	29	31	26	16	30	27	26
	130	468	45	56	40	36	34	36	31	21	35	32	31
	152	547	62	76	45	41	39	41	36	26	40	37	36
TRS-250(CW)	134	482	18	23	31	26	24	27	20	9	25	23	21
	159	572	26	32	36	31	29	32	25	14	30	28	26
	188	677	36	45	41	36	34	37	30	19	35	33	31
	223	803	51	63	46	41	39	42	35	24	40	38	37
TRS-315(CW)	192	691	16	19	28	25	24	28	16	7	25	24	22
	226	814	22	27	33	30	29	33	21	12	30	29	27
	266	958	30	37	38	35	34	38	26	17	35	34	32
	313	1127	42	52	43	40	39	43	31	22	40	39	38
TRS-400(CW)	281	1012	12	15	28	25	27	27	18	6	25	23	21
	333	1199	17	21	33	30	32	32	23	11	30	28	26
	394	1418	23	29	38	35	37	37	28	16	35	33	31
	466	1678	33	41	43	40	42	42	33	21	40	38	36
TRS-500(CW)	427	1537	10	13	27	23	27	27	15	4	25	23	21
	506	1822	14	18	32	28	32	32	20	9	30	28	26
	595	2142	20	25	37	33	37	37	25	14	35	33	31
	703	2531	27	35	42	38	42	42	30	19	40	38	37

$\Delta L_r = 4$ dB

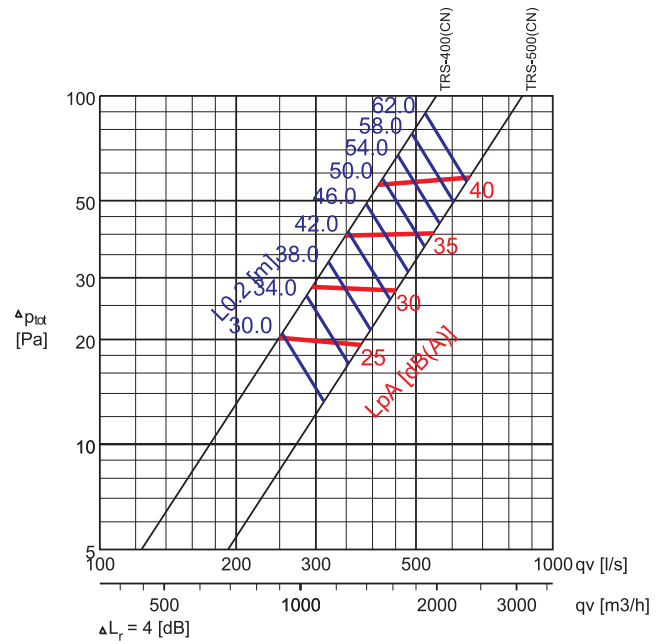
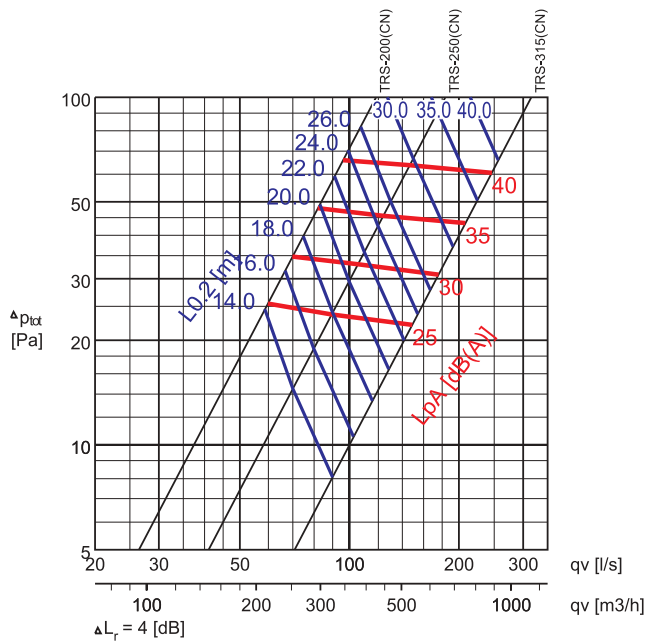


PRESSURE DROP, THROW PATTERN AND SOUND DATA

Narrow jet, horizontal pattern (wall installation)

TRS-200, TRS-250, TRS-315

TRS-400, TRS-500



SOUND LEVEL DATA

TRS (CN) Narrow Jet	q_v		ΔP_{st} (Pa)	ΔP_{tot} (Pa)	F (Hz)						L_{pA} [dB(A)]	NR	NC
	(l/s)	(m ³ /h)			125	250	500	1000	2000	4000			
TRS-200(CN)	60	216	23	26	29	27	25	25	21	9	25	21	20
	70	252	32	35	34	32	30	30	26	14	30	26	25
	82	295	44	48	39	37	35	35	31	19	35	31	30
	96	346	60	66	44	42	40	40	36	24	40	36	35
TRS-250(CN)	89	320	22	24	31	30	26	26	17	6	25	22	20
	106	382	30	33	36	35	31	31	22	11	30	27	25
	124	446	42	46	41	40	36	36	27	16	35	32	30
	147	529	58	64	46	45	41	41	32	21	40	37	36
TRS-315(CN)	149	536	20	22	32	28	25	27	17	7	25	23	21
	176	634	28	31	37	33	30	32	22	12	30	28	26
	209	752	39	43	42	38	35	37	27	17	35	33	31
	247	889	55	61	47	43	40	42	32	22	40	38	37
TRS-400(CN)	249	896	18	20	32	28	26	26	18	6	25	22	20
	295	1062	25	28	37	33	31	31	23	11	30	27	25
	349	1256	35	40	42	38	36	36	28	16	35	32	31
	413	1487	49	56	47	43	41	41	33	21	40	37	36
TRS-500(CN)	377	1357	17	19	33	25	27	26	19	7	25	22	20
	452	1627	24	28	38	30	32	31	24	12	30	27	25
	546	1966	36	40	43	35	37	36	29	17	35	32	30
	656	2362	52	58	48	40	42	41	34	22	40	37	36

$\Delta L_r = 4$ dB



THROW PATTERN INFORMATION

- Throw patterns shown in the diagrams are based on isothermal air, wall installation, close to a ceiling surface (i.e. with ceiling or COANDA effect).
- When the TRS is installed so that there is no ceiling effect (distance >200 mm from ceiling surface, or ceiling installation with vertical jet), the throw pattern values in diagrams can be reduced by approximately 30 %.
- When heated or chilled air jets are considered, the throw patterns change due to air density. Please refer to the HALTON H.I.T. CD-rom calculation program.
- With installations of parallel diffusers of equal size, throw patterns increase with unchanged airflow rates as follows:

Number of diffusers	2	3	4
Correction coefficient	1,4	1,7	1,9

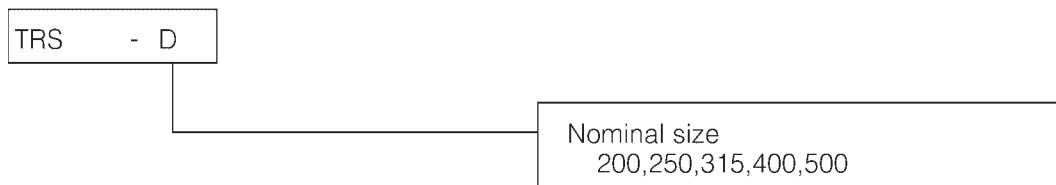
The actual throw length is obtained by multiplying the distance given in the diagrams by the correction coefficient.

SPECIFICATION

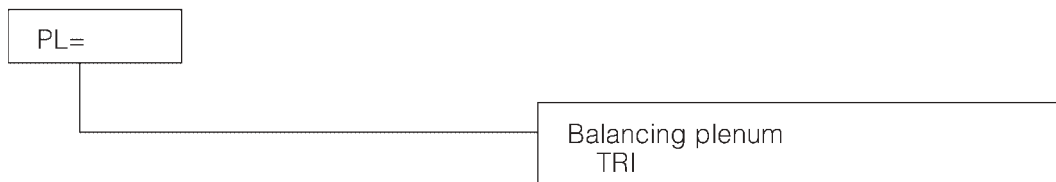
The Halton TRS shall be furnished and installed where shown on the working drawings. The diffuser shall be made of epoxy-painted steel with a white (RAL 9010) standard colour. The diffuser shall be made in two sections, an outer sleeve and two inner concentric cones.

Air shall be discharged with high velocity. A narrow flow pattern shall be selected for heating and a wider one for cooling, both selected by rotating the central core. The diffuser shall be installed in a circular duct one size smaller than the nominal size of the diffuser.

PRODUCT CODE



Specifics and accessories



Example

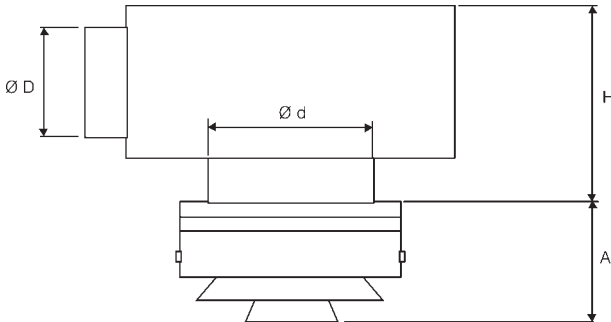
TRS-200; PL=TRI

INSTALLATION

The TRS is suitable for direct duct connection (normally one size smaller than nominal diffuser size). It is recommended however that the TRS be used in

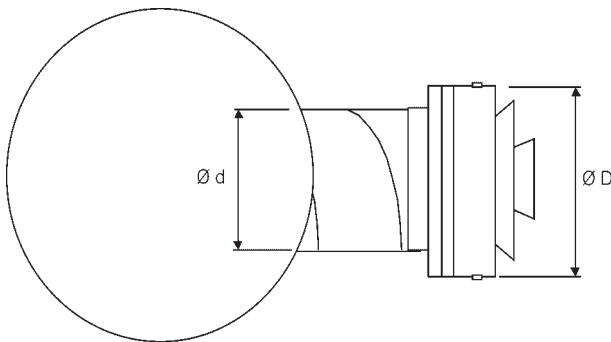
conjunction with a TRI balancing plenum. Especially when balancing, measurement and adjustment are required.

Installation with a TRI balancing plenum :



TRS	TRI (ØD-Ød)	H	A
200	TRI-125-160	249	130
250	TRI-160-200	289	160
315	TRI-200-250	339	220
400	TRI-250-315	403	265
500	TRI-315-400	449	320

Installation direct to supply air ductwork:



TRS	ØD	Ød
200	198	159
250	248	199
315	313	249
400	398	314
500	498	399

ADJUSTMENT

Adjustment must be carried out with TRS in place on TRI balancing plenum.. The supply volume flow rate is then determined using the measurement and adjustment device (MSM). The tubes and control spindle are passed through the diffuser front plate, which is then replaced. Using the pressure difference readings between the measurement taps and the k coefficient, (which can be seen on the control guide

or on the plastic label attached to one of the MSM pressure tubes) the corresponding volume flow rate can be calculated.

Rotating the control spindle adjusts the volume flow rate until the desired setting is achieved. The tubes and spindle are then placed back to the plenum box, the damper position locked with a screw and the diffuser replaced.

SERVICE

The TRS can be cleaned when needed by wiping the cones with a damp cloth. If used in conjunction with a TRI, remove the measurement and adjustment part, by pulling gently from the casing, not from the control spindle or measurement tubes. The parts should be wiped with a damp cloth, not immersed in water. The measurement and adjustment part is remounted by

pushing the body until it meets the stopper. The cone section is then screwed into the position.

The sound attenuation material within the plenum box can also be removed (the media is washable), to assist cleaning inside the plenum box. The material is detached by releasing the retaining brackets, which are replaced after washing.