# TNSD/TNDD

## Duct Mounted Grille

## Quick Facts

- Exposed circular duct mounted grille
- Single or double set of air deflection blades
- Suitable for duct sizes 150Ø – 2400Ø
- Volume flow rate range 5.6 l/s – 778 l/s (based on maximum size at NR 35 maximum)
- Available in Untreated Galvanised steel or a range of RAL colours

WATERLOO by Swegon

# Contents

# Technical Description

## Design

The TNSD & TNDD are designed to fit directly onto the side of an exposed circular duct without the need for a stub duct or transition piece. The flange is supplied complete with a foam sealing gasket on all 4 sides to minimise leakage. The TNSD model is supplied with a single row of vertical air deflection blades while the TNDD model is supplied with a set of vertical & horizontal air deflection blades. There is a range of sizes for each model to suit ducts sizes 150Ø-2400Ø.

## Material and Surface Treatment

Constructed from galvanised sheet steel

Mill finish as standard – Untreated

Alternative Polyester powder coated finish to all external surfaces;

- RAL 9010 Matt (20%) finish – white
- RAL 9016 Matt (20%) finish - White
- RAL 9003 Matt (40%) finish - White
- RAL 9006 Matt (40%) finish - Silver
- RAL 9005 Matt (30%) finish - Black

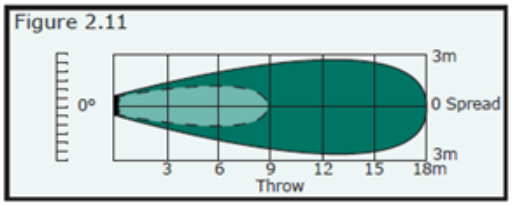
## Project Planning

The aerodynamic blades ensure vibration-free and quiet operation. Due to the adjustability the blades can produce different air patterns from a concentrated jet to diffused pattern. and thus different throwing distances can be realized. It is therefore good practice to select for the required throw at the mid-point of the diffusers range.

## 0° deflection

Space between ATD should be equal to 1/3 of the throw, see figure 2.11

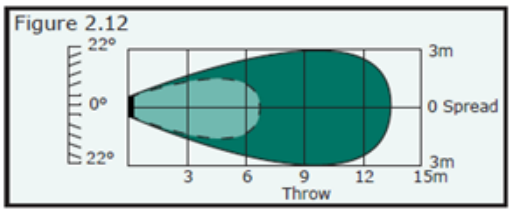
Figure 2.11




## 22° deflection

Space between ATD should be equal to ½ of the throw, see figure 2.12

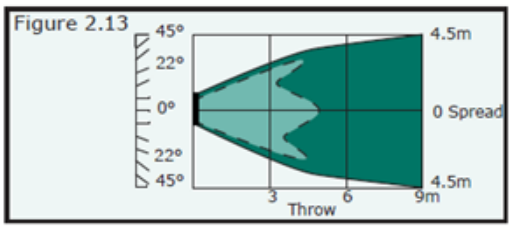
Figure 2.12




## 45° deflection

Space between ATD should be equal to the throw, see figure 2.13

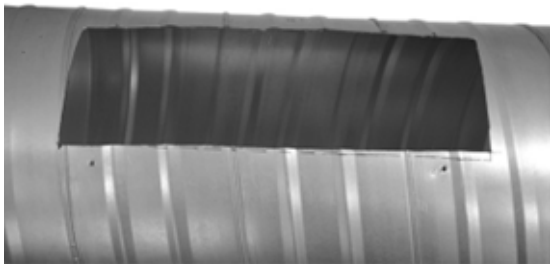
Figure 2.13



# TN

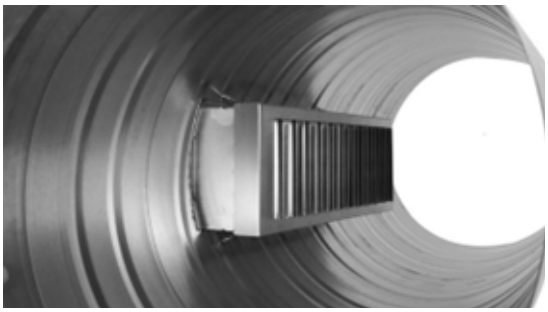
## Installation

Cut nominal opening in duct



Place grille & damper combination into duct opening

Fix to duct using suitable fixing



## Maintenance

These are static units therefore maintenance is confined to cleaning. Powder coated surfaces should be washed with a warm water solution of mild detergent or suitable proprietary cleaning agent. Abrasive cleaners or those containing ketones, esters, acids, alkali or alcohol should not be used.

## Environment

Our standard power coating process is suitable for a C2 Internal environment classification, ISO 12944-2. Design life >25 years.

# Sizing

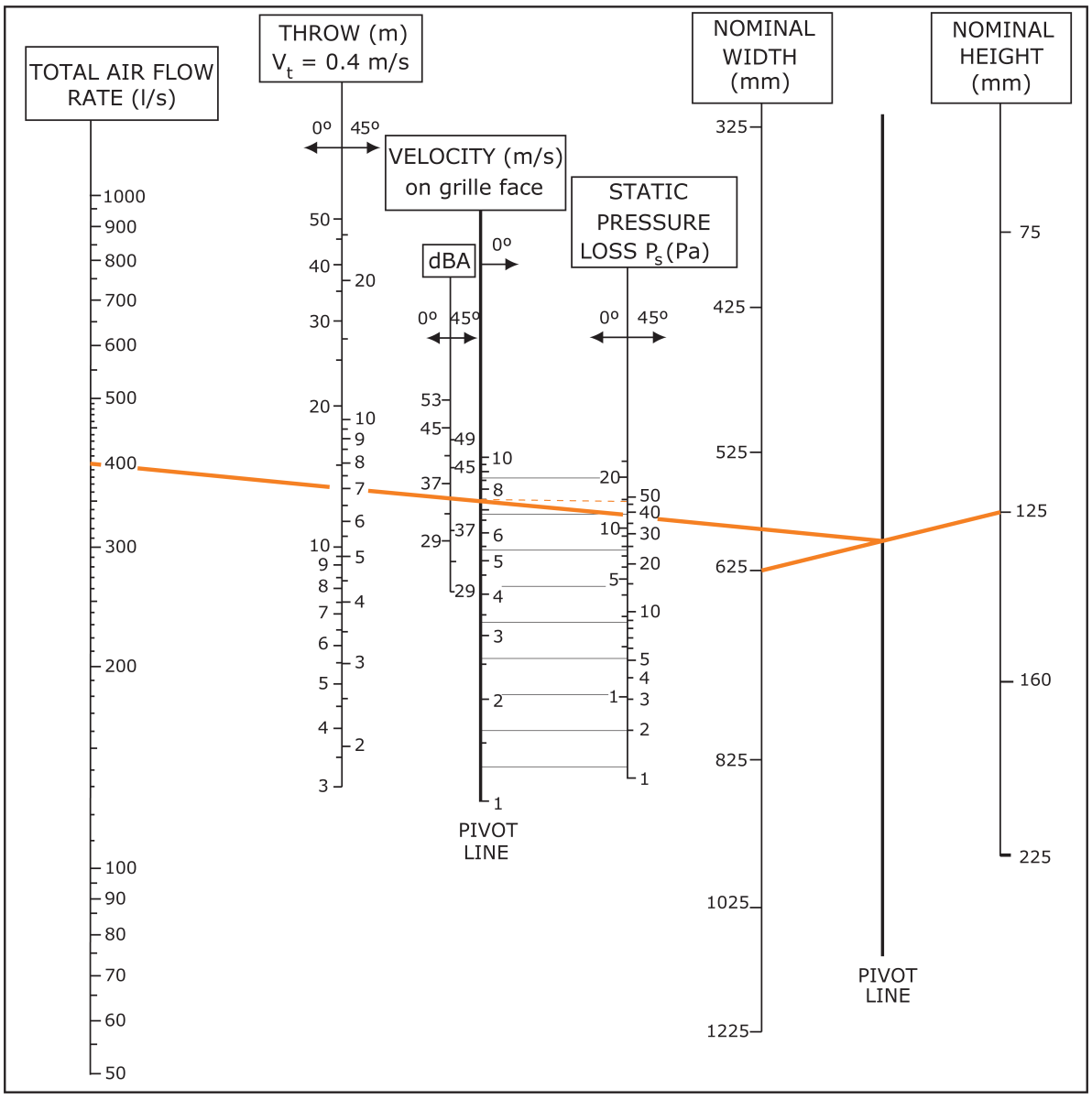
- Throw data is based on a temperature differential of 11°C cooling to a terminal velocity of 0.4 m/s
- Noise level is based on sound power level less 8dB room absorption
- Throw is based on a free jet application
- Aerodynamic testing carried out in general accordance to BS EN 12238:2001 (Ventilation for buildings - Air terminal devices – Aerodynamic testing and rating for mixed flow applications).
- Acoustic testing carried out in general accordance to BS EN ISO 5135:1999 acoustics. Determination of sound power levels of noise from air-terminal devices, air-terminal units, dampers and valves by measurement in a reverberation room.

| Jet Terminal Velocity Correction Factors | | | |
|---|---|---|---|
| 0.6 m/s x 0.65 | 0.5 m/s x 0.80 | 0.4 m/s x 1.0 | 0.3 m/s x 1.3 |

**Selection Example**

| | |
|---|---|
| Air flow rate | - 400 l/s |
| Throw @ 0.4m/s Vt | - 7m-14m |
| Static pressure loss (Ps) | - 15pa |
| Noise Level | - 35dB(A) |
| Face Velocity | - 7.5m/s |

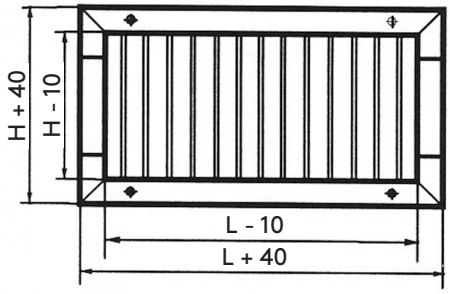
## Performance Nomogram

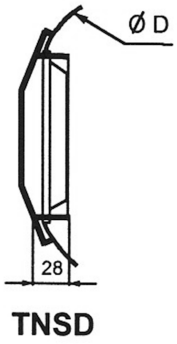


TN

# Dimensions & Weights

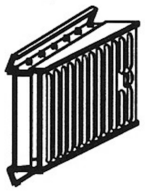
## TNSD



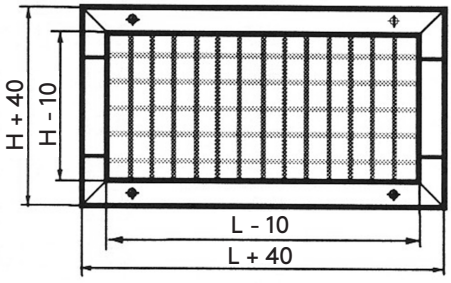

TNSD

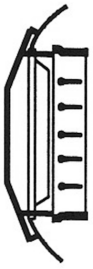
TNSD



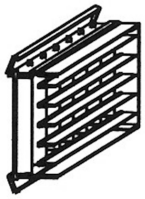
TNSD + RGI

## TNDD



TNDD



TNDD

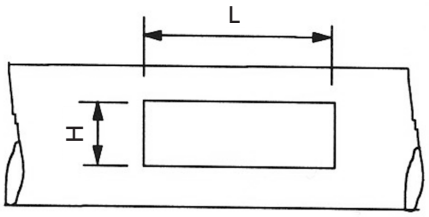
TNDD + RGI

For product weight please consult technical support

## Nominal Sizing

| L (mm) | H (mm) | To suit duct diameter (mm) |
|---|---|---|
| 225, 325, 425, 525, 625, 825, 1025, 1225 | 75 | 150 - 400 |
| 225, 325, 425, 525, 625, 825, 1025, 1225 | 125 | 300 - 900 |
| 225, 325, 425, 525, 625, 825, 1025, 1225 | 160 | 500 - 1200 |
| 225, 325, 425, 525, 625, 825, 1025, 1225 | 225 | 600 - 2400 |
| 325, 425, 525, 625, 825, 1025, 1225 | 325 | 900 - 2400 |

Nominal size = opening size



# Order Key

Composite Reference: TNDD/SF/425/125/DD315/MILL/RGI

| Diffuser Order Key | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| **Order example:** | | TNDD | SF | 425 | 125 | DD315 | MILL | RGI |
| **Grille Type:** | | | | | | | | |
| TNSD | Single vertical set of blades | | | | | | | |
| TNDD | One set of vertical, one set of horizontal blades | | | | | | | |
| **Fixings:** | | | | | | | | |
| SF | Screw fix only | | | | | | | |
| **Nominal Width:** | | | | | | | | |
| 225 | | | | | | | | |
| 325 | | | | | | | | |
| 425 | | | | | | | | |
| 525 | | | | | | | | |
| 625 | | | | | | | | |
| 825 | | | | | | | | |
| 1025 | | | | | | | | |
| 1225 | | | | | | | | |
| **Nominal Height:** | | | | | | | | |
| 75 | | | | | | | | |
| 125 | | | | | | | | |
| 160 | | | | | | | | |
| 225 | | | | | | | | |
| 325 | | | | | | | | |
| **Duct Size:** | | | | | | | | |
| **DD000** | | | | | | | | |
| **Finish:** | | | | | | | | |
| Mill | Untreated Galvanised Steel | | | | | | | |
| 9010 | White 9010 Matt (20%) finish | | | | | | | |
| 9005 | Black 9005 Matt (30%) finish | | | | | | | |
| 9006 | Silver 9006 Matt (40%) finish | | | | | | | |
| 9016 | White 9016 Matt (20%) finish | | | | | | | |
| 9003 | White 9003 Matt (40%) finish | | | | | | | |
| SPC | Other colours available to special order | | | | | | | |
| **Damper:** | | | | | | | | |
| | No damper | | | | | | | |
| RGI | Air scoop + hit & miss damper | | | | | | | |
| OBSS | Opposed bladed damper | | | | | | | |

# Specification Text

- Ventilation grille of steel manufacture for duct installation
- Individually adjustable blades
- TNSD has a single set of vertical adjustable air deflection blades
- TNDD has a vertical & horizontal set of adjustable air deflection blades
- Acoustic testing carried out in general accordance to BS EN ISO 5135:1999 acoustics. Determination of sound power levels of noise from air-terminal devices, air-terminal units, dampers and valves by measurement in a reverberation room.
- All round foam gasket sealing
- RGI sliding plate damper & air scoop for self-balancing
- Galvanised steel finish or Polyester powder coated to all external surfaces.