

The background of the entire page is a close-up, vertical view of several large coils of metal sheet. The coils are stacked, creating a strong sense of depth and repetition. The lighting highlights the metallic texture and the curved surfaces of the coils, with a color palette dominated by various shades of blue and purple.

# arlo

*Express Sheetmetals*

## Product Catalogue

# Intro

Welcome to ARLO Express Sheetmetals where the words “customer satisfaction” really mean just that. We pride ourselves on finding a solution to fit your needs whatever the size and scope of the project, and deliver a service that you, our customer, is satisfied with.

Some of our high profile clients projects include; Auckland Airport, Te Kaha Stadium, ASB Bank, Fonterra, University of Auckland, Pak ‘N Save, the NZ International Conference Centre, to name but a few.

The combined strength of cutting-edge European methods with Kiwi ingenuity makes ARLO Express Sheetmetals a valuable offer for both the New Zealand, Australian and international marketplace.

We house a full installation team and manufacture for companies as far reaching as the USA and Fiji.



## About Us

Acquired in 2007 by the ambitious duo, Gaspar Lalovich and Mike Arcari, ARLO Express Sheetmetals (NZ) Ltd has grown into the multi-faceted industry leader it is today. Express Sheetmetals' annual turnover has increased more than 6-fold since 2007. Cutting edge European methods combined with the Kiwi can-do attitude, eco-friendly practices, and a focus on customer satisfaction has assured the company's continued success.

With almost 50 years combined experience in the European and Australasian marketplaces, within supply, manufacturing, and installation of Air-conditioning systems, the duo have steadily grown Express Sheetmetal into a market leader within New Zealand.

The company head office and factory is located in Otahuhu, Auckland, with a new factory recently opened in Brisbane, Australia and a third factory in Christchurch, New Zealand. The team comprises professional, experienced, and highly trained tradesman with an industry reputation for prompt, reliable service and above all else, producing top quality products.

ARLO Express Sheetmetals has a unique relationship with, Spiro International, a Swiss based European market leader in the development of machines for the production of circular and oval ducting and other sheetmetal products. ARLO Express Sheetmetals is the only company in New Zealand producing rubber sealed spiral ducting and fittings using the Spiro System. The Spiro system is already pressure tested to Swiss and international standards (including Eurovent 2 Class D), and eliminates the need to further seal the installed product greatly simplifying and reducing the cost of installation, and allowing maximum efficiency from the entire HVAC system

ARLO Express Sheetmetals manufacture and supply products from its three factories in Auckland, Brisbane and Christchurch and ship them across New Zealand and internationally, more recently to Nevada, USA, and Fiji.



### Key Benefits& Points of Difference

- The only company in New Zealand that manufactures a range of standard and custom spiral, circular, oval and rectangular ducting and fittings and provides complete installation services ... a true one-stop-shop.
- Australasian partner of Spiro International using the Spiro System to provide Eurovent Class D compliant “leak proof” ducting systems.
- Serving a diverse range of customer needs with extensive “off the shelf” availability of ducting and fittings from our Auckland, Brisbane and Christchurch factories.

### Our People





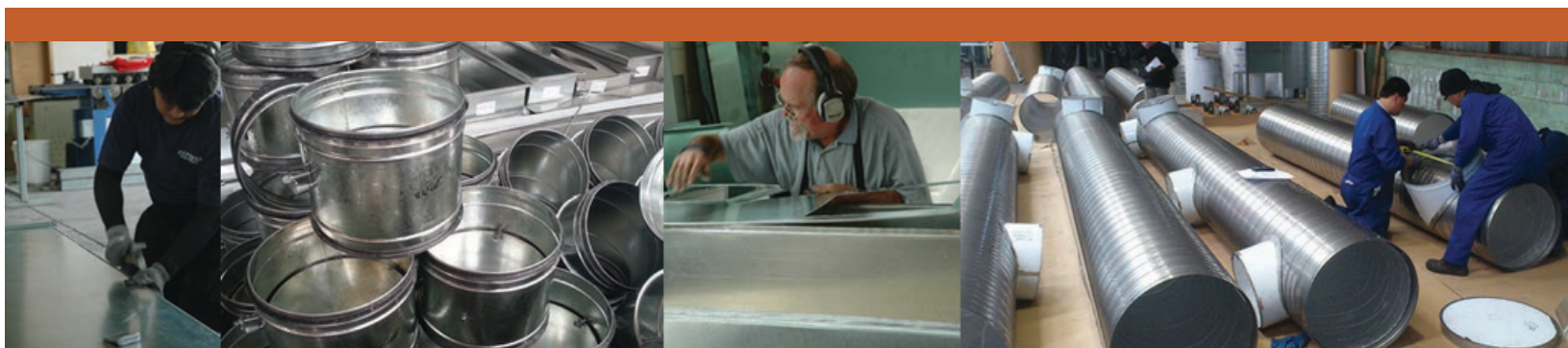
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## SECTION 1

# Custom Manufacture



## Custom Manufacturing

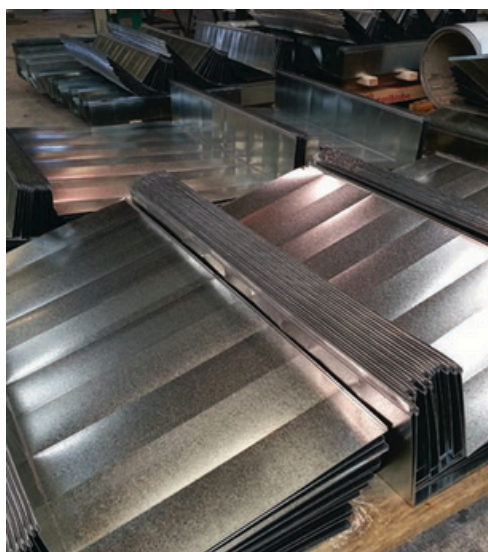
We use the latest software, technology and machinery to produce our duct components and custom sheet metal products in our three factories

We are specialists in high capacity manufacturing with a quick turnaround of rectangular and circular custom ducting in galvanised, stainless steel and aluminium.

All our rectangular, circular and oval products can be fitted with various types of internal/ external insulation, additional fittings and we can arrange custom paint or powder-coat finishes.

### Custom Products include:

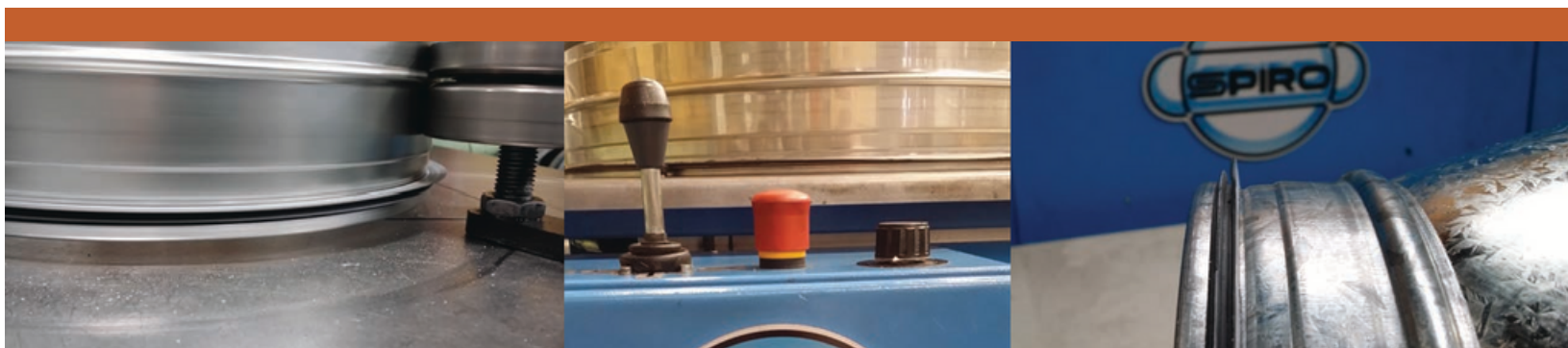
- \* Galvanised and Stainless steel rectangular duct
- \* Huge library of customised circular and ovalised products
- \* Filter sections \* Plenums and grille boxes
- \* Electric heater housings
- \* Welded roof upstands and flashings
- \* AC condenser security cages





## SECTION 2

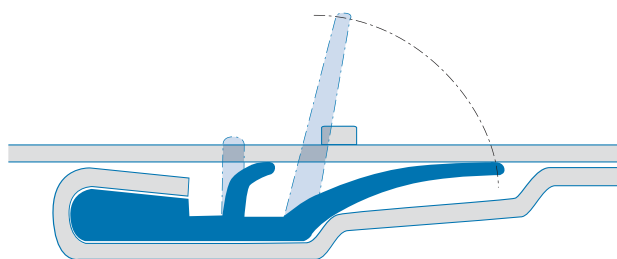
# Spiro System





## The SPIRO® System

### The sealing gasket



The SPIRO® system sealing system is based on a profile of homogeneous EPDM rubber. The rubber gasket is located in a groove at the end of the fitting and is securely attached by means of an return edge. This design ensures that the rubber gasket is always held in its correct position.

The sealing gasket must comply to our strict quality requirements, so we have chosen EPDM rubber. This material is very resistant to ozone and UV rays, and at the same time unaffected by temperature fluctuations.

### Economical air conditioning

Great demands are made on air-conditioning systems these days, and it is expensive to process air. So it is vital that the duct systems used must be tightly sealed to keep operating costs and overall economy at a reasonable level. Leaks mean higher operating costs, adjustment problems and over-dimensioned units and duct systems. To deal with these risks, SPIRO INTERNATIONAL S.A. has developed its complete SPIRO® system range.

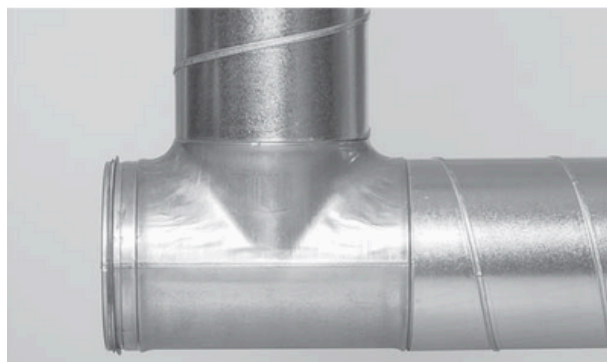
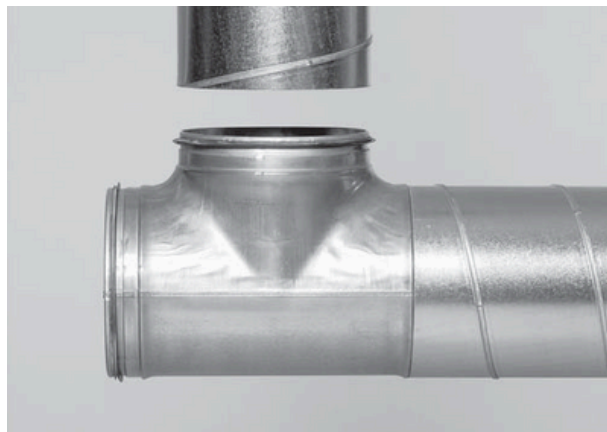
### SPIRO® system

#### - the leakproof duct system

SPIRO system is an approved range of quick-fitting sealing gasket of EPDM rubber. The sealing gasket provides a tight and reliable joint. SPIRO® system is available as a complete range with dimensions Ø100mm up to Ø 2500mm.

SPIRO® system complies with DW 142 Class C (Eurovent 2.2 =IV (DIN 24194)) specification.

The high, uniform quality and the effective factory-fitted sealing system means that installation is fast and easy. SPIRO® system is leakproof when fitted and does not require any additional sealing.



## The SPIRO-system

The SPIRO-system incorporates a sealing strip of age-resistant EPDM rubber, ensuring an air tight and lasting joint seal, immune to variations in temperature. Meeting the requirements of air tightness, Class C, the range extends from components with a diameter of 100 mm up to those with a diameter of 2500mm.

Because of the totally dependable quality of the factory-mounted sealing strips, SPIRO-system installation is quick and easy. Each application is fully sealed at the outset, no additional sealing is necessary.

The spirally wound tubes produced by our tubeformers feature a patented seam cavity, which both stabilises the tubes and locks the seams into place, ensuring that tolerances are maintained even during handling and transport. This "bubble" guarantees the high quality performance of SPIRO-systems.

The tubes are also stamped with the registered trademark "SPIRO-system". Both the trademark and "bubble" guarantee the high-quality performance of SPIRO-system.

## Benefits of the SPIRO-system

- Fast and easy installation.
- Factory fitted gasket without any loose parts.
- Adjustable - twisting and fine adjustment mean there's no risk of leakage.
- Environmentally friendly - the system is fitted with solvent-free sealant.
- Can be installed in all kinds of weather.
- Temperature resistant from -30 to +100 C
- Withstands positive pressure up to 3000 Pa.

## Type approval

Approval no1358/88 means that the SPIRO-system complies with the requirements for tightness class D without any demand for pressure testing after installation. The approval is only valid on condition that all fittings are marked by us in accordance with the example and are installed in accordance with the accompanying installation instruction.

## Dimensions

Almost all products in the SPIRO-programme can also be delivered in intermediate dimensions.

## Economy – Tightness

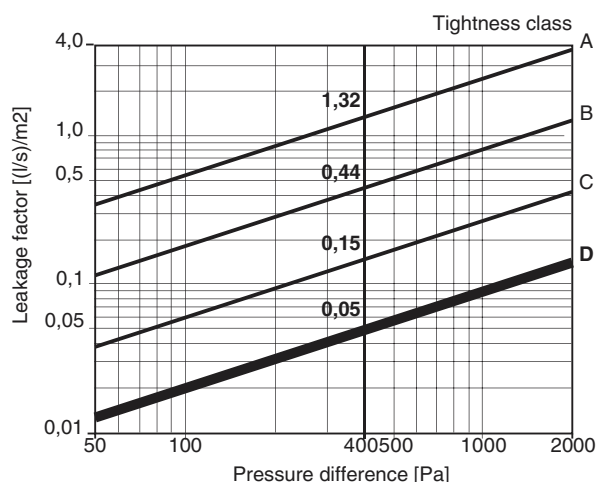
Present-day stringent demands for interior climate entail expensive air treatment. Leakage leads to uneconomical operation, adjustment difficulties and over-dimensioned equipment. For this reason, it is important that ventilation systems are very well sealed, to keep overall costs down.

This is why official requirements for sealing vary with the size and use of systems.

## Tightness

An duct system will never be "completely tight". The system will normally have some leaks at joints between ducts and fittings. The leakage will also increase as the pressure difference between the in- and outside of the duct sides increases.

The leakage factor in (l/s)/m<sup>2</sup> is always specified in relation to the pressure difference in Pa. (The unit (l/s)/m<sup>2</sup> denotes the leakage flow in l/s in or out of the system in relation to its duct area in m<sup>2</sup>.) The graph below shows the leakage factor for the sealing classes A–D as a function of the pressure difference.



The graph shows that sealing class D is 3 times better than class C, which in turn is 3 times better than class B etc. Class D thus entails demands on not only the seal moulding but also the fittings and how well the system is installed.

This is one reason why we have given all fittings a turned-over edge and have given still more fittings a stop bead. This gives us stable products which are better suited to withstand handling on site at the same time as the risk of skewed assembly falls.

## Negative pressure

At big negative pressure there is a risk for a ventilation system to collapse. This risk is greater the bigger dimensions you have. In order to increase the strength of the ducts you can e.g. increase their sheet metal thickness. This is a simple way but the effect is rather small. It exists other ways with higher result. For bigger dimensions then the ducts may be stronger than the fittings. In order to increase the strength of the fittings other ways than thicker sheet metal thickness are more suitable. We can, as special, deliver duct systems that can withstand at least 5000 Pa negative pressure.

## SECTION

3

# Installation



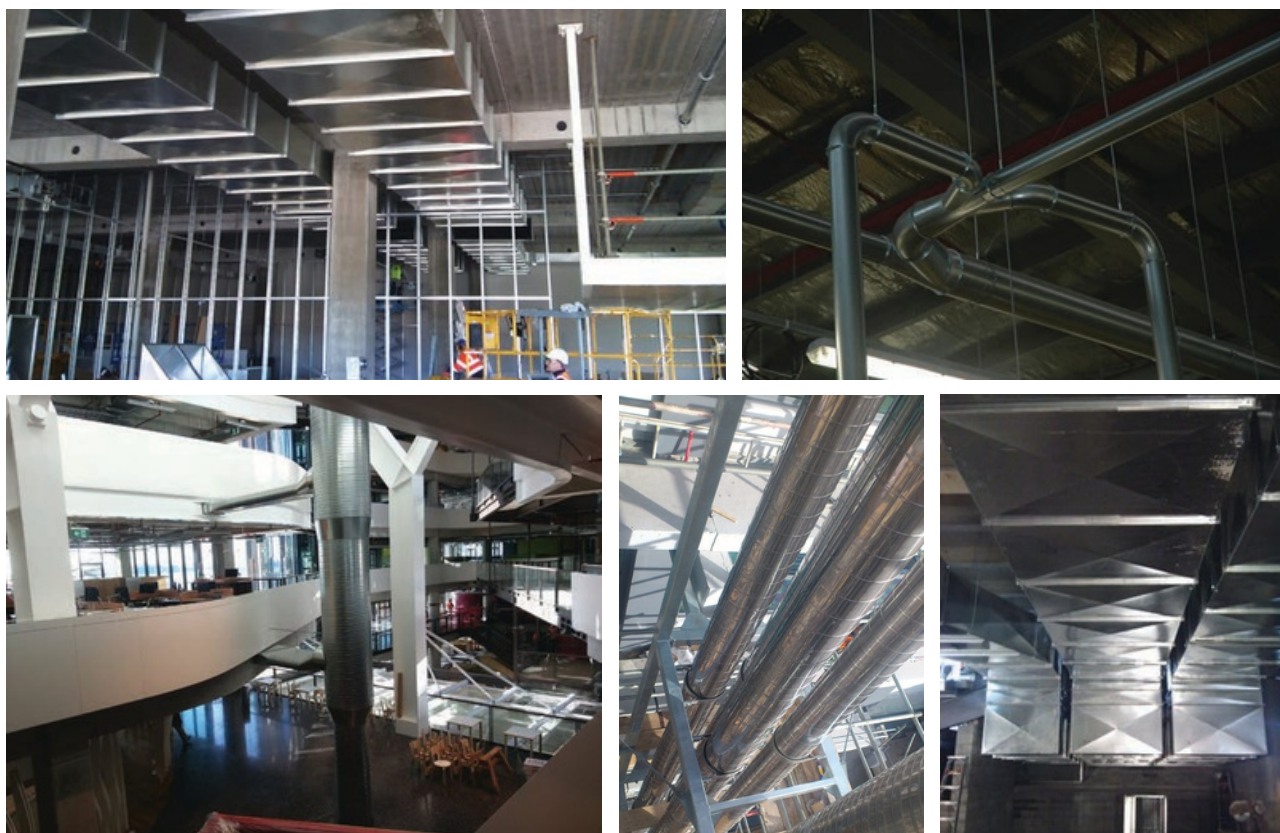


## Express Sheet Metals Installation

ARLO Express Sheetmetals has built up the most sought after Installation Team in New Zealand! With approximately 30 installation experts, the team is qualified, experienced, reputable, friendly, and highly trained. We continually run competency training for employees and have implemented rigorous health and safety measures.

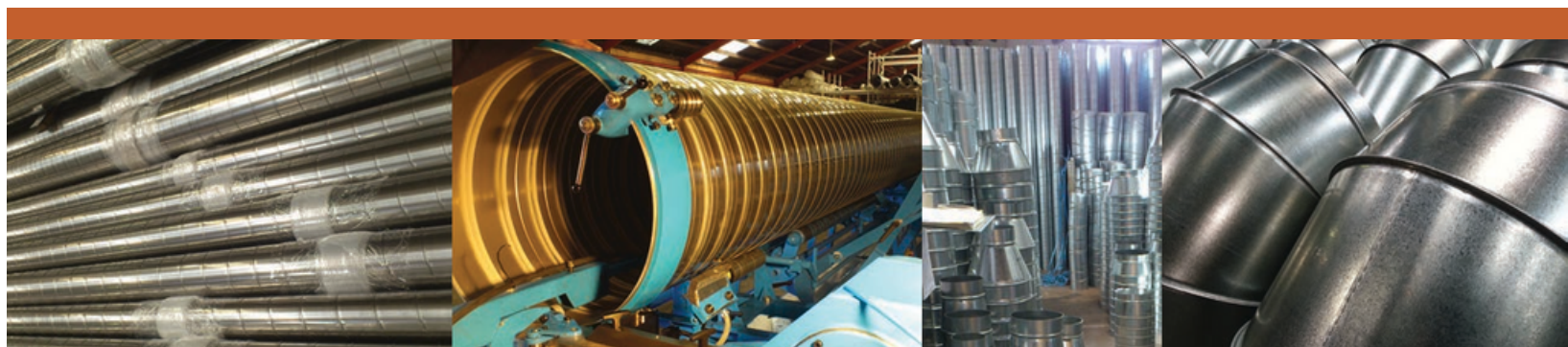
ARLO Express Sheetmetals believes in the 'Customer Satisfaction' ethos, and proves so by holding high training standards as evidenced by our membership of Site Safe and Site Wise ([www.sitesafe.org.nz/](http://www.sitesafe.org.nz/)) and accreditation by ACC for Workplace Safety Management Practices ([www.acc.co.nz/for-business/small-medium-and-large-business/how-to-pay-less/workplace-safety-management-practices/index.htm](http://www.acc.co.nz/for-business/small-medium-and-large-business/how-to-pay-less/workplace-safety-management-practices/index.htm)).

ARLO Express Sheetmetals is affiliated with Competenz – Skills for Industry ([www.competenz.org.nz/](http://www.competenz.org.nz/)), and believes in offering skilled training for local Kiwis



## SECTION 4

# Products





#### Ordering information

G= Galvanised A=Aluminium

S= Stainless304 M=Stainless 316

SPD G 3 Ø150

|          |       |       |       |       |
|----------|-------|-------|-------|-------|
| Code     | _____ | _____ | _____ | _____ |
| material | _____ | _____ | _____ | _____ |
| length   | _____ | _____ | _____ | _____ |
| Ødia     | _____ | _____ | _____ | _____ |

## Spiral Duct / Spiro Pipe

Circular spiral lock seamed pipe Certified manufacturing process for air tight guarantee Rigid construction with no unwinding when cut Stamped and dimple locked with Spiro and Express certification Can be produced with or without corrugation on request Standard length is 3m but any lengths can be made to suit specific orders sizes range from Ø100mm-Ø2500mm Stainless pipes are in 304 2B grade (grade 316 requires a minimum order qty)

Technical data refer Section 6



#### Ordering information

FB 90 Ø250

|       |       |       |       |
|-------|-------|-------|-------|
| Code  | _____ | _____ | _____ |
| Angle | _____ | _____ | _____ |
| Ødia  | _____ | _____ | _____ |

## Fixed Bends 90deg and 45deg

Seam locked bend with a fixed angle  
solid construction and superior stitch welded seams  
Rubber gasket fitted as standard  
45deg and 90deg Standard sizes range from Ø125mm-Ø1250mm  
Item can be custom made to suit any angle or radius on request

Technical data refer Section 6



#### Ordering information

Code \_\_\_\_\_ PB 90 Ø150  
Angle \_\_\_\_\_  
Ødia \_\_\_\_\_

## Pressed bends 90deg and 45deg

Fixed angle bend that has a smooth curved flow

Stitch welded seam

Rubber gasket fitted as standard

Standard sizes range from 100mm-180mm

Technical data refer Section 6



#### Ordering information

Code \_\_\_\_\_ SAB 90 Ø200  
Angle \_\_\_\_\_  
Ødia \_\_\_\_\_

## Adjustable Bends

Circular bend that can be easily adjusted to make various angles

45deg comes with 3 segments - 90deg comes with 4 segments

Not recommended for use in air tight systems

Sizes range from Ø100mm-Ø400mm

Technical data refer Section 6





#### Ordering information

RED Ø300 Ø200

|                   |       |
|-------------------|-------|
| Code              | _____ |
| Ødia <sub>1</sub> | _____ |
| Ødia <sub>2</sub> | _____ |

## Reducer

Equal tapered reducer to join 2 different sized spiro pipes together

Ball swaged connector joints for solid air tight construction

Stitch welded seams

Rubber gasket fitted as standard

Standard sizes range from Ø100mm-Ø1250mm

This item can be custom manufactured to any size

Technical data refer Section 6



#### Ordering information

FB 135 Ø250

|       |       |
|-------|-------|
| Code  | _____ |
| Angle | _____ |
| Ødia  | _____ |

## Fixed Bend 135deg

Seam locked swan neck bend

Bird mesh fitted on 1 end

Solid construction and superior stitch welded seams

Standard sizes range from Ø125mm-Ø1250mm

Item can be custom made to suit any angle or radius on request

Technical data refer Section 6



#### Ordering information

EC Ø200

Code \_\_\_\_\_

Ødia \_\_\_\_\_

## End Cap

Seam locked end cap Hassle free installation

Rubber gasket fitted as standard

Standard sizes range from Ø100mm-Ø1250mm

This item can be custom manufactured to any size

Technical data refer Section 6



#### Ordering information

ID Ø250

Code \_\_\_\_\_

Ødia \_\_\_\_\_

## Inline Damper

Manual adjustment volume control damper

connects into spiro pipe

Solid construction

Rubber gasket fitted as standard

Standard sizes range from Ø100mm-Ø600mm

Technical data refer Section 6



#### Ordering information

Code \_\_\_\_\_ J Ø250  
Ødia \_\_\_\_\_

### **Spiro Joiner (Male)**

Internal connector used to join 2 spiro pipes together

Rubber gasket fitted as standard

Standard sizes range from Ø100mm-Ø1250mm

This item can be custom manufactured to any size on request

Technical data refer Section 6



#### Ordering information

Code \_\_\_\_\_ JE Ø300  
Ødia \_\_\_\_\_

### **Spiro Joiner (Female)**

External connector used to join 2 fittings together

Fits over rubber gasket as standard

Standard sizes range from Ø100mm-Ø1250mm

Technical data refer Section 6



#### Ordering information

FTOS 90 Ø250

Code

Angle

Ødia

## Flat Take Off Shoe 90deg

Circular shoe type spigot attached to a flat plate

Standard sizes range from Ø100mm-Ø1250mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6



#### Ordering information

FTOSD 90 Ø350

Code

Angle

Ødia

## Flat Take Off Shoe 90deg with Balancing Damper

Circular shoe type spigot with damper control attached to a flat plate

Standard sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6





Ordering information

Code \_\_\_\_\_ FTO 90 Ø250  
Angle \_\_\_\_\_  
Ødia \_\_\_\_\_

## Flat Take Off 90deg

Circular shoe type spigot attached to a flat plate

Standard sizes range from Ø100mm-Ø1250mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6



Ordering information

Code \_\_\_\_\_ FTOD 90 Ø350  
Angle \_\_\_\_\_  
Ødia \_\_\_\_\_

## Flat Take Off 90deg with Balancing Damper

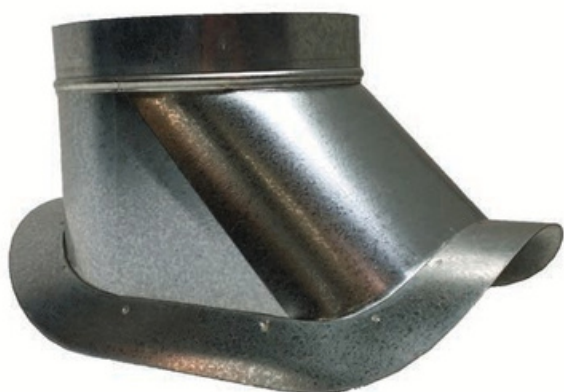
Circular shoe type spigot with damper control attached to a flat plate

Standard sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6



#### Ordering information

STOS90 Ø150 Ø300

Code

Ødia 1

Ødia 2

## Saddle Take Off Shoe 90deg

Shoe type branch fitted onto a saddle plate at 90deg for attaching to Spiro pipe

Item can be ordered with various dimensions of branch and pipe

Standard branch sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6



#### Ordering information

STOSD90 Ø150 Ø300

Code

Ødia 1

Ødia 2

## Saddle Take Off Shoe 90deg with Balancing Damper

Shoe type branch with damper fitted onto a saddle plate at 90deg for attaching to Spiro pipe

Item can be ordered with various dimensions of branch and pipe

Standard branch sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6



#### Ordering information

STOD90 Ø150 Ø300

Code

Ødia<sub>1</sub>

Ødia

### Saddle Take Off 90deg with Balancing Damper

Straight branch with damper fitted onto a saddle plate at 90deg for attaching to Spiro pipe

Item can be ordered with various dimensions of branch and pipe

Standard branch sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6



#### Ordering information

STO90 Ø200 Ø350

Code

Ødia<sub>1</sub>

Ødia<sub>2</sub>

### Saddle Take Off 90deg

Angled branch fitted onto a saddle plate at 90deg for attaching to Spiro pipe

Item can be ordered with various dimensions of branch and pipe

Standard branch sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6



#### Ordering information

STO45 Ø200 Ø300

Code

Ødia<sub>1</sub>

Ødia<sub>2</sub>

### Saddle Take Off 45deg

Angled branch fitted onto a saddle plate at 45deg for attaching to Spiro pipe

Item can be ordered with various dimensions of branch and pipe

Standard branch sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6



#### Ordering information

STOD45 Ø200 Ø300

Code

Ødia<sub>1</sub>

Ødia<sub>2</sub>

### Saddle Take Off 45deg with Balancing Damper

Angled branch with damper fitted onto a saddle plate at 45deg for attaching to Spiro pipe

Item can be ordered with various dimensions of branch and pipe

Standard branch sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6





#### Ordering information

Code \_\_\_\_\_ FTO 45 Ø250  
Angle \_\_\_\_\_  
Ødia \_\_\_\_\_

### Flat Take Off 45deg

Circular spigot attached to a flat plate

Fitted with rubber gasket on request

Standard sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Technical data refer Section 6



#### Ordering information

Code \_\_\_\_\_ FTOD 45 Ø350  
Angle \_\_\_\_\_  
Ødia \_\_\_\_\_

### Flat Take Off 45deg with Balancing Damper

Circular spigot with damper control attached to a flat plate

Standard sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Fitted with rubber gasket on request

Technical data refer Section 6



#### Ordering information

T Ø250

Code \_\_\_\_\_

Ødia \_\_\_\_\_

## T Section

Standard Tee section with 3 equal connectors

Solid construction

Rubber gasket fitted as standard

Standard sizes range from Ø100mm-Ø600mm

Technical data refer Section 6



#### Ordering information

TC Ø250 Ø150 Ø150

Code \_\_\_\_\_

Ødia<sub>1</sub> \_\_\_\_\_

Ødia<sub>2</sub> \_\_\_\_\_

Ødia<sub>3</sub> \_\_\_\_\_

## T Combined

Tee section with tapered sides for improved airflow

Solid construction

Item can be manufactured with various connector dimensions

Rubber gasket fitted as standard

Standard sizes range from Ø100mm-Ø600mm

Technical data refer Section 6



#### Ordering information

Y Ø250

Code \_\_\_\_\_

Ødia \_\_\_\_\_

### Y Section Equal

Standard Y section with 3 equal connectors

Item can be made equal or

Solid construction

Rubber gasket fitted as standard

Standard sizes range from Ø100mm-Ø600mm

Technical data refer Section 6



#### Ordering information

YU Ø250 Ø150 Ø150

Code \_\_\_\_\_

Ødia<sub>1</sub> \_\_\_\_\_

Ødia<sub>2</sub> \_\_\_\_\_

Ødia<sub>3</sub> \_\_\_\_\_

### Y Section Unequal

Unequal Y section with 3 varying sized connectors

Solid construction

Rubber gasket fitted as standard

Standard sizes range from Ø100mm-Ø600mm

Item can be custom manufactured with various end size combinations

Technical data refer Section 6



#### Ordering information

Code types- P=Plain I=Insulated A=Accoustic

FD A Ø250

Code \_\_\_\_\_

Type \_\_\_\_\_

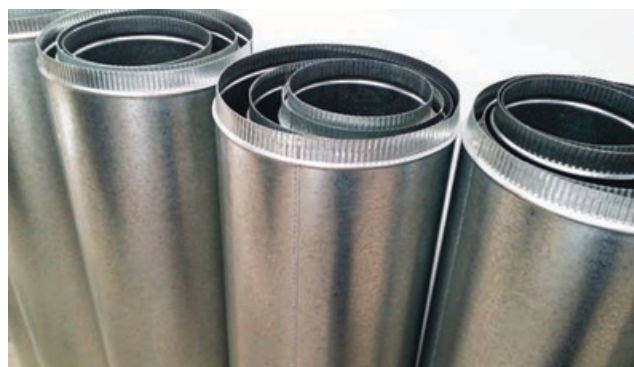
Ødia \_\_\_\_\_

## Flexible Ducting

Available as plain, insulated or accoustically insulated

Comes in 3m and 6m lengths as standard

Technical data refer Section 6



#### Ordering information

G= Galvanised SS= Stainless

RP G Ø250

Code \_\_\_\_\_

Material \_\_\_\_\_

Ødia \_\_\_\_\_

## Rolled Pipe

Circular rolled pipe with stitch welded seam

Ball swaged and crimped 1 end

Fitted with rubber gasket on request

Standard length is 1200mm

Standard sizes range from Ø100mm-Ø600mm

Technical data refer Section 6



Ordering information

WC Ø250

Code \_\_\_\_\_

Ødia \_\_\_\_\_

## Weather Cowl

Circular weather cowl

Lightweight solid construction

Birdmesh fitted on request

Technical data refer Section 6



Ordering information

WCAD Ø250

Code \_\_\_\_\_

Ødia \_\_\_\_\_

## Weather Cowl Anti Downdraft

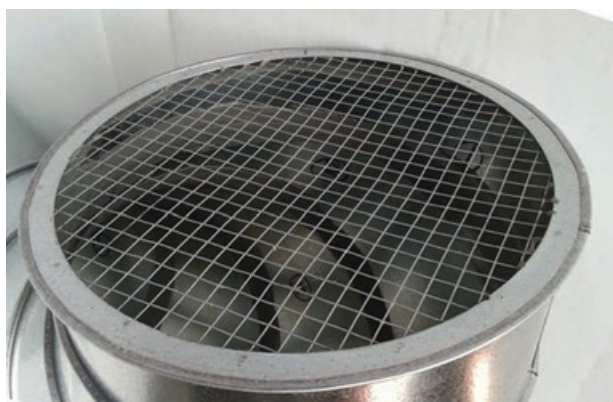
Circular weather cowl fitted with external wind shield

Lightweight solid construction

Birdmesh fitted on request

Technical data refer Section 6





#### Ordering information

ECBM Ø200

Code \_\_\_\_\_

Ødia \_\_\_\_\_

## End Cap with Bird Mesh

Seam locked end cap with 10x10 bird mesh

Hassle free installation

Standard sizes range from Ø100mm-Ø600mm

This item can be custom manufactured to any size

Technical data refer Section 6



#### Ordering information

G= Galvanised A=Aluminium

DP G Ø1250

Code \_\_\_\_\_

material \_\_\_\_\_

Ødia \_\_\_\_\_

## Culvert / Duraduct

Heavy duty pipes design for underground purposes Extra large ball swage

corrugation ensures pipes are extremely rigid Manufactured with specialised long

life materials Available in steel or Aluminium Can be produced with or without

corrugation on request Various fittings can be custom made to suit projects

Standard sizes range from Ø300mm-Ø2100mm

Technical data refer Section 6



## **Stainless Steel Products**

The majority of our catalogue parts can be manufactured in stainless steel

Rubber gasket is also available on stainless products

Technical data refer Section 6



## **Oval Ducting**

Ovalised spiro ducting and fittings can be custom manufactured on request

Photo: ASB Head Office project

Technical data refer Section 6

## SECTION 5

# Our Projects







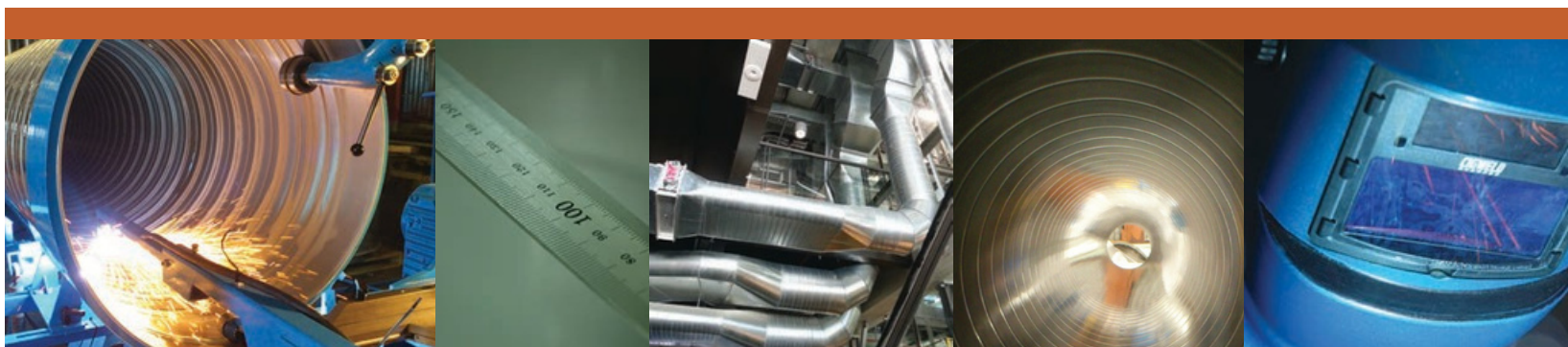
## Our Projects

- Te Kaha, Christchurch Stadium
- Auckland Airport
- NZ International Convention Centre
- Waitakere Hospital
- ASB Headquarters North wharf
- The Cloud, Queens Wharf
- ASB Lincoln road
- ASB Greenlane
- Auckland airport domestic terminal
- Auckland airport international terminal
- UOA Medical school
- Countdown, Stoddard road
- Fonterra Dairy plant's, NZ wide
- Fonterra headquarters, Wynard quarter
- Burger King, Auckland wide
- Z Energy, NZ wide
- Luna apartments
- The grand apartments
- LDS church, Auckland
- Botany town shopping centre
- Cadbury distribution, Auckland
- Cadbury factory, Dunedin
- UOA Sector 300
- West wave Aquatic centre
- Otahuhu recreation centre
- Nosh supermarket
- Westfield, Manukau
- Silvia park shopping mall
- Telecom towers, Auckland
- North shore hospital
- The Warehouse, NZ wide
- Pak n save, NZ wide
- New world, Howick
- NZ correction facility, Wiri
- NZ correction facility, Springhill
- NZ correction facility upgrade, Paremoremo
- Hobsonville point high school
- Hobsonville point primary school
- The Base mall, Terapa
- Hoyts cinema, Hamilton
- Whangarei court
- Whangarei police station
- Whangarei hospital
- North tech, Whangarei



## SECTION 6

# Technical Data





## SPIRO SYSTEM GASKET

### The SPIRO<sup>®</sup> System

#### Resistance of seal mouldings to various substances

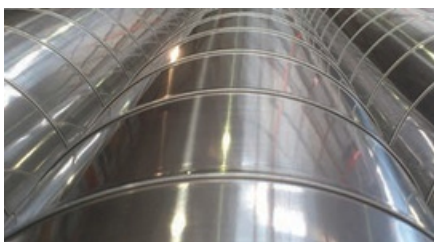
The table below gives a basic guide to how the rubber is affected by various substances.  
A figure for each type of rubber indicates its suitability.

- 4 Scarcely affected
- 3 Lightly affected
- 2 Strongly affected
- 1 Badly affected
- No information

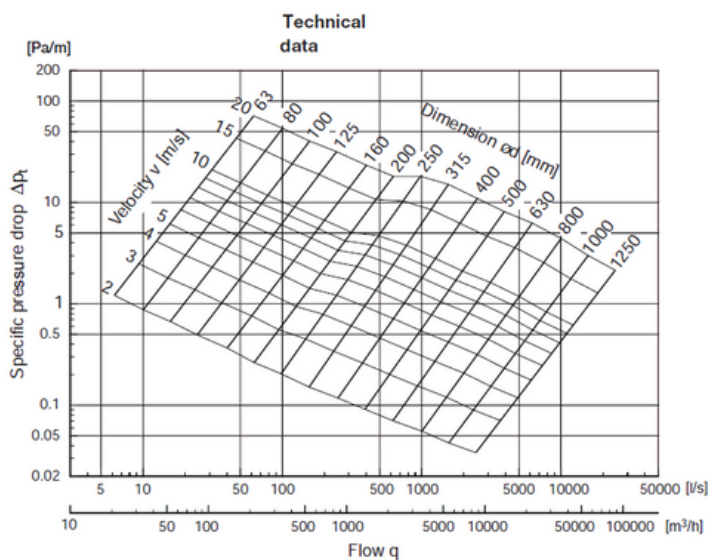
Recommended  
Normally usable  
Only useable in certain cases  
Unsuitable

|                                              | EPDM | Silicone |                                        | EPDM | Silicone |                                        | EPDM | Silicone |
|----------------------------------------------|------|----------|----------------------------------------|------|----------|----------------------------------------|------|----------|
| <b>A</b>                                     |      |          | Ethylene chloride                      | 1    | –        | Oxalic acid                            | 4    | 3        |
| Acetaldehyde                                 | 4    | 4        | Ethyl glycol, cellosolve               | 3    | –        | Ozone                                  | 4    | 4        |
| Acetic acid dilute 30%                       | 4    | 3        | Ethyl chloride                         | 4    | 1        | Oxygen                                 | 4    | 4        |
| crystalline acetic acid                      | 4    | 3        | Ethane, ethylene                       | 1    | –        |                                        |      |          |
| Acetic anhydride                             | 3    | 2        | <b>F</b>                               |      |          | <b>P</b>                               |      |          |
| Acetone                                      | 4    | 3        | Fluoric silicate                       | 4    | 2        | Palmitic acid                          | 3    | –        |
| Acetylene                                    | 3    | 3        | Formic acid                            | 4    | 2        | Paraffin (kerosine)                    | 1    | 1        |
| Aluminium salts (non-oxidizing)              | 4    | 4        | Formaldehyde, formalin                 | 4    | –        | Perchloroethylene                      | 1    | 3        |
| Alun                                         | 4    | 4        | Freon, see CFC                         | –    | –        | Perchloric acid                        | 3    | 1        |
| Ammonia, liquid                              | 4    | 1        | Furan, furfuran                        | 2    | –        | Petrol (gasoline), 65 octane           | 1    | 1        |
| Ammonia gas, cold                            | 4    | 4        | Furfural                               | 3    | –        | Petrol (gasoline), 100 octane          | 1    | 1        |
| Ammonia gas, hot 85 °C                       | 3    | 3        |                                        |      |          | Petroleum ether                        | 1    | 1        |
| Ammonium hydroxide, dil. ammonia             | 3    | 3        | <b>G</b>                               |      |          | Petroleum oils high aromatic content   | 1    | 1        |
| Ammonium salts (non-oxidising)               | 4    | 3        | Glucose                                | 4    | 4        | low aromatic content                   | 1    | 3        |
| Amyl acetate                                 | 4    | 1        | Glycerine, glycerol                    | 4    | 4        | Phenol                                 | 3    | 2        |
| Aniline                                      | 3    | –        | Green liquor, white liquor             | 4    | 3        | Phosphoric acid 45%                    | 4    | 1        |
| Aniline dyes                                 | 4    | –        |                                        |      |          | Phosphoric acid 85%                    | 4    | 1        |
| Animal fats                                  | 2    | 3        | <b>H</b>                               |      |          | Plating solutions without chromium     | 4    | 3        |
| Arsenic acid                                 | 4    | 4        | Heating oil                            | 1    | 2        | Potassium hypochlorite,                |      |          |
| Asphalt                                      | 1    | 1        | Hydraulic oil, mineral oil based       | 1    | 3        | pH 7 below 10 g/l                      | 4    | 1        |
|                                              |      |          | Hydraulic oil, phosphate ester based   | 4    | 4        | over 10 g/l                            | 3    | 1        |
| <b>B</b>                                     |      |          | Hydrogen                               | 4    | 4        | Potassium hydroxide, potash            | 4    | 3        |
| Barium salts (non-oxidizing)                 | 4    | 4        | Hydrogen peroxide 3%                   | 4    | 4        | Potassium salts (non-oxidizing)        | 4    | 3        |
| Beer                                         | 4    | 4        | 30% 20 °C                              | 4    | 4        | Propane, LPG                           | 1    | 1        |
| Benzene, bensol                              | 1    | 1        | 90% 20 °C                              | 2    | 4        | Propanol, Propyl alcohol               | 4    | 4        |
| Black liquor                                 | 1    | –        | Hydrochloric acid dilute               | 4    | 1        |                                        |      |          |
| Black water, waste water                     | 4    | 3        | conc 37% room temp                     | 4    | 1        | <b>R</b>                               |      |          |
| Bleaching liquor, see Potassium hypochlorite |      |          | conc 37% 70 °C                         | 2    | 1        | Radioactive radiation                  | 3    | 2        |
| Borax                                        | 4    | 3        | Hydrogen sulphide dry, room temp       | 4    | 4        | Rape seed oil (canola oil)             | 4    | 4        |
| Boric acid                                   | 4    | 4        | damp, room temp                        | 4    | 2        | Rosin oil                              | 1    | 1        |
| Bromide, liquid                              | –    | 1        | damp, hot                              | 3    | 1        |                                        |      |          |
| Bromic acid                                  | 4    | 1        | Hydrofluosilicic acid                  | 4    | 1        | <b>S</b>                               |      |          |
| Butane                                       | 1    | 4        | Hydrofluoric acid 50%                  | 4    | 1        | Salicylic acid                         | 4    | 4        |
| Butanol, butyl alcohol                       | 4    | 3        | Hydrofluoric acid, conc.               | 4    | 1        | Sodium salts (non-oxidizing)           | 4    | 4        |
| Butter oils                                  | 1    | 1        |                                        |      |          | Sodium hydroxide, sodium hydrate       | 4    | 2        |
| Butyl acetate                                | 4    | 1        | <b>I</b>                               |      |          | Sodium hypochlorite max 10 g/l free Cl | 4    | –        |
|                                              |      |          | Iodine                                 | –    | –        | over 10 g/l free Cl                    | 3    | –        |
| <b>C</b>                                     |      |          | Iron salts (non-oxidizing)             | 4    | 3        | Sugar solutions                        | 4    | 4        |
| Caustic soda, sodium hydroxide               | 4    | 2        |                                        |      |          | Styrene                                | 1    | 1        |
| Calcium salts (non-oxidizing)                | 4    | 3        | <b>L</b>                               |      |          | Sulphur, melted                        | 4    | 4        |
| Cellosolve, ethylene glycol                  | 3    | –        | Lactic acid                            | 4    | 4        | Sulphur dioxide, dry gas               | 4    | 3        |
| Cellosolve acetate                           | 3    | –        | Lead salts (non-oxidizing)             | 4    | 2        | Sulphur chloride                       | 1    | –        |
| Chlorine gas dry                             | 2    | –        | Linseed oil                            | 3    | 4        | Sulphuric acid 60% room temp.          | 4    | 1        |
| damp                                         | 2    | –        | Liquid manure                          | 4    | 3        | 60% 50 °C                              | 4    | 1        |
| Chlorine solutions 0,1 g/l free chlorine     | 4    | –        | LPG (Propane/butane)                   | 1    | 1        | 60-75% 50 °C                           | 3    | 1        |
| 0,1-1 g/l free chlorine                      | 4    | –        |                                        |      |          | 75-80% 50 °C                           | 2    | 1        |
| 1-10 g/l free chlorine                       | 3    | –        | <b>M</b>                               |      |          | 85-98% 50 °C                           | 1    | 1        |
| over 10 g/l free chlorine                    | 2    | –        | Magnesium salts (non-oxidizing)        | 4    | 4        | fuming, Oleum                          | 1    | 1        |
| Chlorine sulphate acid                       | 1    | 1        | Manganese salts (non-oxidizing)        | 4    | 4        | Sulphurous acid                        | 4    | 1        |
| Chromic acid                                 | 2    | 2        | Mercury                                | 4    | 4        | Sulphur trioxide, dry gas              | 3    | 2        |
| CFC (e.g. Freon) 11                          | 1    | 1        | Mercury salts (non-oxidizing)          | 4    | 4        |                                        |      |          |
| 12                                           | 3    | 1        | Methanol, methyl alcohol, wood alcohol | 4    | 4        | <b>T</b>                               |      |          |
| 13                                           | 4    | –        | Methylene chloride                     | 1    | 1        | Tar                                    | 1    | 2        |
| 21                                           | 1    | –        | Methyl chloride                        | 2    | 1        | Tannic acid                            | 4    | 1        |
| 22                                           | 4    | 1        | Methyl ethyl ketone MEK                | 4    | –        | Terpentine, terpenes                   | 1    | 1        |
| 31                                           | 4    | –        | Methyl isobutyl ketone                 | 3    | 2        | Toluene, toluol                        | 1    | 1        |
| 32                                           | 4    | –        | Methyl isopropyl ketone                | 3    | 2        | Trichlorethane, "thinner"              | 1    | 2        |
| 112                                          | 1    | –        | Milk                                   | 4    | 4        | Transformer oil mineral oil based      | 1    | 3        |
| 113                                          | 1    | 1        |                                        |      |          | chlorated hydrocarbon                  | 1    | 1        |
| 114                                          | 4    | 1        | <b>N</b>                               |      |          |                                        |      |          |
| 115                                          | 4    | –        | Natural gas                            | 1    | 4        | <b>V</b>                               |      |          |
| Copper salts (non-oxidizing)                 | 4    | 4        | Nickel salts (non-oxidizing)           | 4    | 4        | Vegetable oils                         | 4    | 4        |
| Citric acid                                  | 4    | 4        | Nitrobenzene, Nitrobenzol              | 2    | 1        |                                        |      |          |
|                                              |      |          | Nitric acid 20% room temp.             | 4    | –        | <b>W</b>                               |      |          |
| <b>D</b>                                     |      |          | 20% 50 °C                              | 3    | 1        | Water fresh                            | 4    | 4        |
| Detergent                                    | 4    | 4        | 40% 50 °C                              | 3    | 1        | distilled                              | 4    | 4        |
| Diesel oil                                   | 1    | 2        | 50% 50 °C                              | 2    | 1        | salt                                   | 4    | 4        |
| Dilutin (White spirit)                       | 1    | 1        | 60% room temp.                         | 2    | 1        | fresh & dist. 100 °C                   | 4    | 2        |
| Developing solutions                         | 3    | –        | 70% room temp.                         | 1    | 1        | White spirit (Dilutin)                 | 1    | 1        |
|                                              |      |          | red fuming                             | 1    | 1        | Wine                                   | 4    | 4        |
| <b>E</b>                                     |      |          | Nitrogen                               | 4    | 4        |                                        |      |          |
| Ethanol, ethyl alcohol                       | 4    | 4        | Nitrous gases                          | 2    | 2        | <b>X</b>                               |      |          |
| "Ether", diethyl ether, ethyl ether          | 2    | –        |                                        |      |          | Xylene, xylol                          | 1    | 1        |
| Ethyl acetate                                | 3    | 2        | <b>O</b>                               |      |          |                                        |      |          |
| Ethylene glycol                              | 4    | 3        | Olive oil                              | 3    | 3        | <b>Z</b>                               |      |          |
|                                              |      |          | Oleic acid                             | 4    | –        | Zinc salts (non-oxidizing)             | 4    | 4        |

## SPIRO PIPE



| Order code | End 1 Ød | Length (m) | Weight (kg) |
|------------|----------|------------|-------------|
| SPDG3-100  | 100      | 3          | 3.9         |
| SPDG3-125  | 125      | 3          | 4.9         |
| SPDG3-150  | 150      | 3          | 5.8         |
| SPDG3-180  | 180      | 3          | 7           |
| SPDG3-200  | 200      | 3          | 7.7         |
| SPDG3-225  | 225      | 3          | 8.7         |
| SPDG3-250  | 250      | 3          | 9.7         |
| SPDG3-275  | 275      | 3          | 12.2        |
| SPDG3-300  | 300      | 3          | 13.1        |
| SPDG3-350  | 350      | 3          | 15.2        |
| SPDG3-400  | 400      | 3          | 17.5        |
| SPDG3-450  | 450      | 3          | 27.7        |
| SPDG3-500  | 500      | 3          | 30.8        |
| SPDG3-550  | 550      | 3          | 33.8        |
| SPDG3-600  | 600      | 3          | 36.9        |
| SPDG3-650  | 650      | 3          | 39.9        |
| SPDG3-700  | 700      | 3          | 43          |
| SPDG3-750  | 750      | 3          | 46.1        |
| SPDG3-800  | 800      | 3          | 49.2        |
| SPDG3-850  | 850      | 3          | 64.8        |
| SPDG3-900  | 900      | 3          | 68.6        |
| SPDG3-950  | 950      | 3          | 72.5        |
| SPDG3-1000 | 1000     | 3          | 76.2        |
| SPDG3-1100 | 1100     | 3          | 83.9        |
| SPDG3-1250 | 1250     | 3          | 117.5       |
| SPDG3-1300 | 1300     | 3          | 122.3       |
| SPDG3-1500 | 1500     | 3          | 182.9       |
| SPDG3-1775 | 1775     | 3          | 277.8       |
| SPDG3-2000 | 2000     | 3          | 313         |
| SPDG3-2100 | 2100     | 3          | 328.7       |



## SPIRO PIPE

### Special versions

We can supply ducts with the following special designs:

- In intermediate dimensions.
- Extra tight, with nitrile rubber seal in the lock seam
- In other sheet metal thicknesses

#### Extra tight, with seam seal

When extremely good sealing is required in the spiral seam, the ducts can also be supplied with a special rubber seal in the seam.

This seal is very effective at stopping leakage of vegetable oils and greases, and most petroleum products including white spirit.

#### Other sheet metal thicknesses

If extra stability is needed in ducts, because of high negative pressure etc., they can be supplied with thicker sheet metal than standard. Remember that the thickness increase always reduces the inner diameter. Fittings for such special ducts must be specified separately and sometimes have to be made specially.

#### Reinforcement corrugations

Ducts of Ø250 mm and above are normally given stiffening corrugations to increase radial stiffness.

### Strength

#### Positive pressure

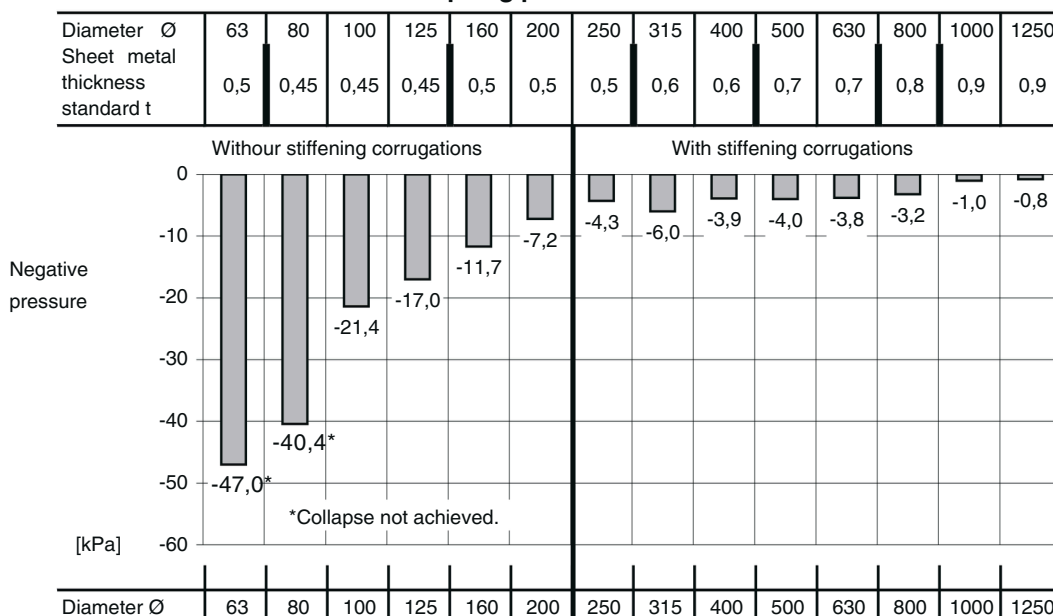
In case of high positive pressure, the seal moulding lips will first start to whistle. At considerably higher pressure, the joints between the ducts will be forced apart. If you manage to fix the connections very well, the ducts will burst at their seams at even higher pressure. The high pressures needed for this to happen are not relevant to ventilation installations.

#### Negative pressure

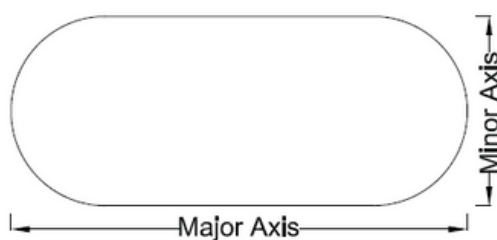
In installations with high negative pressure, there is a risk that the ducts could collapse.

This phenomenon is referred to as buckling, and can suddenly happen at the weakest point in the system. Buckling wanders along the duct, which can be completely flattened. The weakest point is frequently a "transport dent" on a duct. For this reason, only use undamaged ducts in systems which are close to the critical pressure!

**Collapsing pressure for duct SR**



## SPIRO OVAL



| Order code      | Pipe Ød | Length (m) | Minor axis | Major axis | Weight (kg) |
|-----------------|---------|------------|------------|------------|-------------|
| SPDOG3-150-389  | 300     | 3          | 150        | 389        | 13.1        |
| SPDOG3-150-467  | 350     | 3          | 150        | 467        | 15.2        |
| SPDOG3-150-547  | 400     | 3          | 150        | 547        | 17.5        |
| SPDOG3-150-624  | 450     | 3          | 150        | 624        | 27.7        |
| SPDOG3-150-703  | 500     | 3          | 150        | 703        | 30.8        |
| SPDOG3-150-781  | 550     | 3          | 150        | 781        | 33.8        |
| SPDOG3-150-860  | 600     | 3          | 150        | 860        | 36.9        |
| SPDOG3-150-938  | 650     | 3          | 150        | 938        | 39.9        |
| SPDOG3-150-1017 | 700     | 3          | 150        | 1017       | 43          |
| SPDOG3-150-1092 | 750     | 3          | 150        | 1092       | 46.1        |
| SPDOG3-150-1175 | 800     | 3          | 150        | 1175       | 49.2        |

|                 |     |   |     |      |    |
|-----------------|-----|---|-----|------|----|
| SPDOG3-200-441  | 350 | 3 | 200 | 441  | 15 |
| SPDOG3-200-519  | 400 | 3 | 200 | 519  | 18 |
| SPDOG3-200-597  | 450 | 3 | 200 | 597  | 28 |
| SPDOG3-200-672  | 500 | 3 | 200 | 672  | 31 |
| SPDOG3-200-754  | 550 | 3 | 200 | 754  | 34 |
| SPDOG3-200-832  | 600 | 3 | 200 | 832  | 37 |
| SPDOG3-200-911  | 650 | 3 | 200 | 911  | 40 |
| SPDOG3-200-990  | 700 | 3 | 200 | 990  | 43 |
| SPDOG3-200-1068 | 750 | 3 | 200 | 1068 | 46 |
| SPDOG3-200-1147 | 800 | 3 | 200 | 1147 | 49 |

|                 |     |   |     |      |    |
|-----------------|-----|---|-----|------|----|
| SPDOG3-250-488  | 400 | 3 | 250 | 488  | 18 |
| SPDOG3-250-568  | 450 | 3 | 250 | 568  | 28 |
| SPDOG3-250-644  | 500 | 3 | 250 | 644  | 31 |
| SPDOG3-250-724  | 550 | 3 | 250 | 724  | 34 |
| SPDOG3-250-804  | 600 | 3 | 250 | 804  | 37 |
| SPDOG3-250-881  | 650 | 3 | 250 | 881  | 40 |
| SPDOG3-250-961  | 700 | 3 | 250 | 961  | 43 |
| SPDOG3-250-1040 | 750 | 3 | 250 | 1040 | 46 |
| SPDOG3-250-1118 | 800 | 3 | 250 | 1118 | 49 |

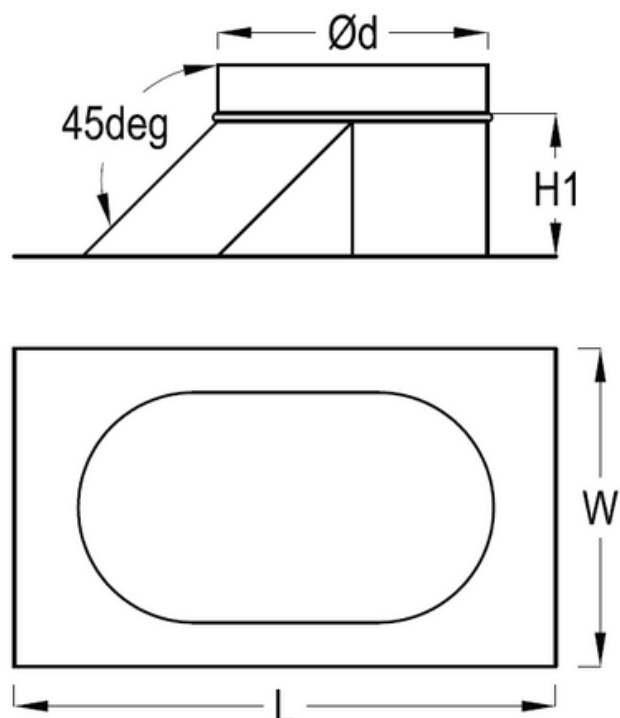
|                 |     |   |     |      |    |
|-----------------|-----|---|-----|------|----|
| SPDOG3-300-460  | 400 | 3 | 300 | 460  | 18 |
| SPDOG3-300-539  | 450 | 3 | 300 | 539  | 28 |
| SPDOG3-300-615  | 500 | 3 | 300 | 615  | 31 |
| SPDOG3-300-696  | 550 | 3 | 300 | 696  | 34 |
| SPDOG3-300-775  | 600 | 3 | 300 | 775  | 37 |
| SPDOG3-300-853  | 650 | 3 | 300 | 853  | 40 |
| SPDOG3-300-949  | 700 | 3 | 300 | 949  | 43 |
| SPDOG3-300-1010 | 750 | 3 | 300 | 1010 | 46 |
| SPDOG3-300-1091 | 800 | 3 | 300 | 1091 | 49 |

|                 |     |   |     |      |    |
|-----------------|-----|---|-----|------|----|
| SPDOG3-350-510  | 450 | 3 | 350 | 510  | 28 |
| SPDOG3-350-587  | 500 | 3 | 350 | 587  | 31 |
| SPDOG3-350-667  | 550 | 3 | 350 | 667  | 34 |
| SPDOG3-350-747  | 600 | 3 | 350 | 747  | 37 |
| SPDOG3-350-824  | 650 | 3 | 350 | 824  | 40 |
| SPDOG3-350-920  | 700 | 3 | 350 | 920  | 43 |
| SPDOG3-350-981  | 750 | 3 | 350 | 981  | 46 |
| SPDOG3-350-1062 | 800 | 3 | 350 | 1062 | 49 |

|                 |     |   |     |      |    |
|-----------------|-----|---|-----|------|----|
| SPDOG3-400-639  | 550 | 3 | 400 | 639  | 34 |
| SPDOG3-400-718  | 600 | 3 | 400 | 718  | 37 |
| SPDOG3-400-796  | 650 | 3 | 400 | 796  | 40 |
| SPDOG3-400-892  | 700 | 3 | 400 | 892  | 43 |
| SPDOG3-400-953  | 750 | 3 | 400 | 953  | 46 |
| SPDOG3-400-1034 | 800 | 3 | 400 | 1034 | 49 |

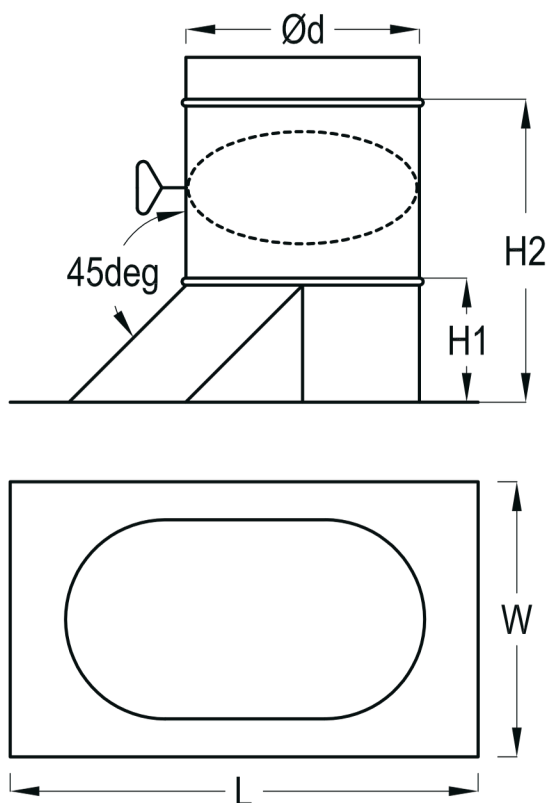


## Flat Take off Shoe 90



| Order code  | End 1 $\varnothing d$ | Height | Plate length | Plate width | Weight (kg) |
|-------------|-----------------------|--------|--------------|-------------|-------------|
| FTOS90-100  | 100                   | 100    | 250          | 200         | 0.5         |
| FTOS90-125  | 125                   | 100    | 275          | 225         | 0.6         |
| FTOS90-150  | 150                   | 100    | 350          | 250         | 0.8         |
| FTOS90-180  | 180                   | 100    | 380          | 280         | 0.9         |
| FTOS90-200  | 200                   | 100    | 400          | 300         | 1           |
| FTOS90-225  | 225                   | 100    | 425          | 325         | 1.1         |
| FTOS90-250  | 250                   | 100    | 450          | 350         | 1.3         |
| FTOS90-275  | 275                   | 100    | 475          | 375         | 2.1         |
| FTOS90-300  | 300                   | 100    | 500          | 400         | 2.2         |
| FTOS90-350  | 350                   | 100    | 555          | 450         | 2.6         |
| FTOS90-400  | 400                   | 100    | 600          | 500         | 3           |
| FTOS90-450  | 450                   | 125    | 725          | 575         | 4           |
| FTOS90-500  | 500                   | 125    | 775          | 625         | 4.4         |
| FTOS90-550  | 550                   | 125    | 825          | 675         | 6.6         |
| FTOS90-600  | 600                   | 125    | 875          | 725         | 7.2         |
| FTOS90-650  | 650                   | 150    | 950          | 800         | 8.6         |
| FTOS90-700  | 700                   | 150    | 1000         | 850         | 9.2         |
| FTOS90-750  | 750                   | 150    | 1050         | 900         | 9.9         |
| FTOS90-800  | 800                   | 150    | 1200         | 1000        | 12.8        |
| FTOS90-850  | 850                   | 150    | 1250         | 1050        | 13.6        |
| FTOS90-900  | 900                   | 150    | 1300         | 1100        | 14.5        |
| FTOS90-950  | 950                   | 150    | 1350         | 1150        | 15.3        |
| FTOS90-1000 | 1000                  | 150    | 1400         | 1200        | 16.1        |
| FTOS90-1100 | 1100                  | 200    | 1500         | 1300        | 22          |
| FTOS90-1250 | 1250                  | 200    | 1650         | 1450        | 25.2        |

## Flat Take off Shoe 90 with damper



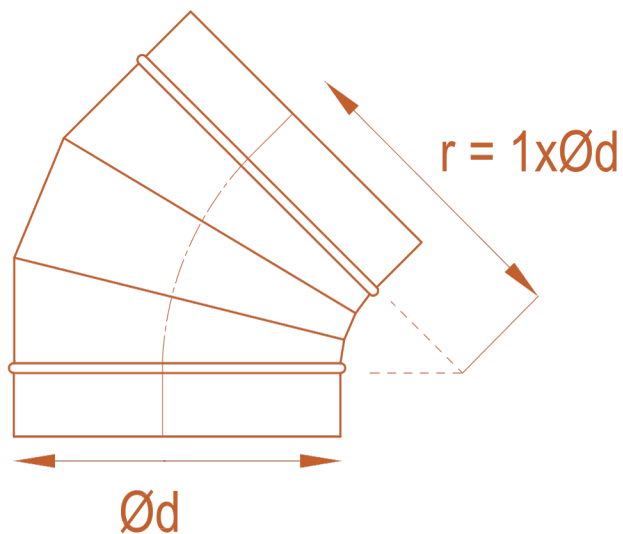
| Order code  | End 1 Ød | Height 1 | Height 2 | Plate length | Plate width | Weight (kg) |
|-------------|----------|----------|----------|--------------|-------------|-------------|
| FTOSD90-100 | 100      | 100      | 157      | 250          | 150         | 0.5         |
| FTOSD90-125 | 125      | 100      | 157      | 275          | 175         | 0.5         |
| FTOSD90-150 | 150      | 100      | 170      | 350          | 250         | 0.6         |
| FTOSD90-180 | 180      | 100      | 190      | 380          | 280         | 0.7         |
| FTOSD90-200 | 200      | 100      | 205      | 400          | 300         | 0.8         |
| FTOSD90-225 | 225      | 100      | 224      | 425          | 325         | 0.9         |
| FTOSD90-250 | 250      | 100      | 243      | 450          | 350         | 0.9         |
| FTOSD90-275 | 275      | 100      | 240      | 475          | 375         | 1.5         |
| FTOSD90-300 | 300      | 100      | 259      | 500          | 400         | 1.6         |
| FTOSD90-350 | 350      | 100      | 297      | 555          | 455         | 1.8         |
| FTOSD90-400 | 400      | 100      | 334      | 600          | 500         | 2.1         |
| FTOSD90-450 | 450      | 125      | 397      | 675          | 550         | 2.9         |
| FTOSD90-500 | 500      | 125      | 434      | 725          | 600         | 3.2         |
| FTOSD90-550 | 550      | 125      | 452      | 775          | 660         | 4.4         |
| FTOSD90-600 | 600      | 125      | 489      | 825          | 700         | 4.8         |

## End Cap

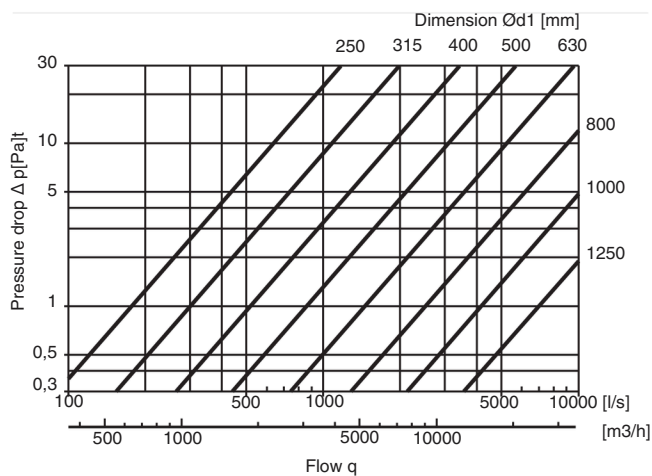


| Order code | End 1 Ød | Weight(kg) |
|------------|----------|------------|
| EC100      | 100      | 0.2        |
| EC125      | 125      | 0.2        |
| EC150      | 150      | 0.3        |
| EC180      | 180      | 0.3        |
| EC200      | 200      | 0.4        |
| EC225      | 225      | 0.4        |
| EC250      | 250      | 0.5        |
| EC275      | 275      | 1.1        |
| EC300      | 300      | 1.2        |
| EC350      | 350      | 1.5        |
| EC400      | 400      | 1.8        |
| EC450      | 450      | 2.2        |
| EC500      | 500      | 2.5        |
| EC550      | 550      | 4.2        |
| EC600      | 600      | 4.8        |
| EC650      | 650      | 5.4        |
| EC700      | 700      | 6          |
| EC750      | 750      | 6.7        |
| EC800      | 800      | 7.4        |
| EC850      | 850      | 8.1        |
| EC900      | 900      | 8.9        |
| EC950      | 950      | 9.7        |
| EC1000     | 1000     | 10.5       |
| EC1100     | 1100     | 15.1       |
| EC1250     | 1250     | 18.6       |

## Fixed Bend 30

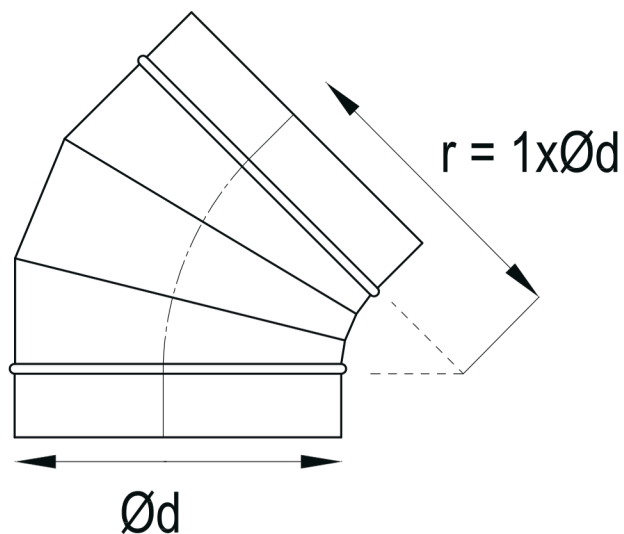


### Technical data

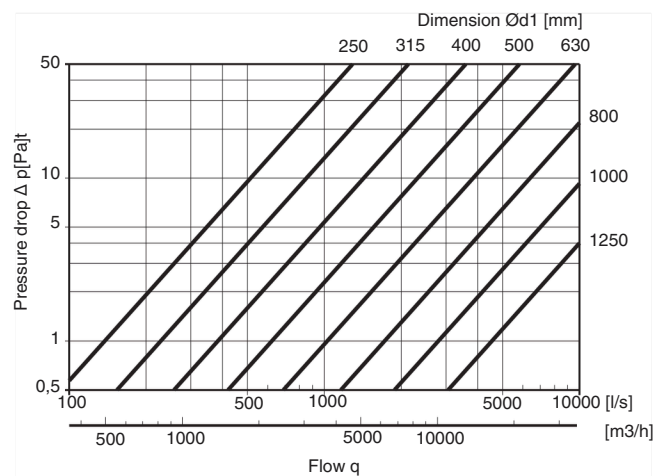


| Order code | End 1 Ød | Angle | Weight (kg) |
|------------|----------|-------|-------------|
| FB30-125   | 125      | 30°   | 0.5         |
| FB30-150   | 150      | 30°   | 0.6         |
| FB30-180   | 180      | 30°   | 0.8         |
| FB30-200   | 200      | 30°   | 0.9         |
| FB30-225   | 225      | 30°   | 1           |
| FB30-250   | 250      | 30°   | 1.1         |
| FB30-275   | 275      | 30°   | 1.3         |
| FB30-300   | 300      | 30°   | 2.1         |
| FB30-350   | 350      | 30°   | 2.2         |
| FB30-400   | 400      | 30°   | 2.6         |
| FB30-450   | 450      | 30°   | 3           |
| FB30-500   | 500      | 30°   | 4           |
| FB30-550   | 550      | 30°   | 4.4         |
| FB30-600   | 600      | 30°   | 6.6         |
| FB30-650   | 650      | 30°   | 7.2         |
| FB30-700   | 700      | 30°   | 8.6         |
| FB30-750   | 750      | 30°   | 9.2         |
| FB30-800   | 800      | 30°   | 9.9         |
| FB30-850   | 850      | 30°   | 12.8        |
| FB30-900   | 900      | 30°   | 13.6        |
| FB30-950   | 950      | 30°   | 14.5        |
| FB30-1000  | 1000     | 30°   | 15.3        |
| FB30-1100  | 1100     | 30°   | 16.1        |
| FB30-1250  | 1250     | 30°   | 22          |

## Fixed Bend 45



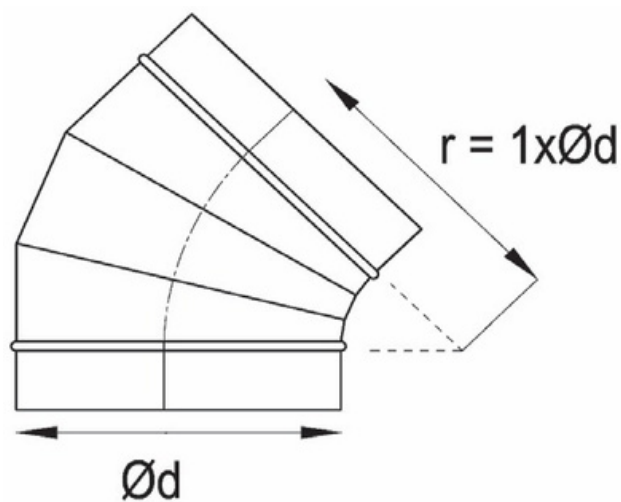
### Technical data



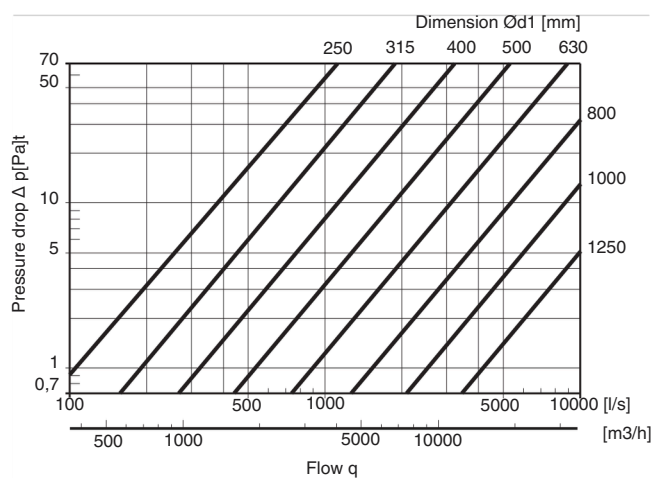
| Order code | End 1 Ød | Angle | Weight (kg) |
|------------|----------|-------|-------------|
| FB45-125   | 125      | 45°   | 0.5         |
| FB45-150   | 150      | 45°   | 0.6         |
| FB45-180   | 180      | 45°   | 0.8         |
| FB45-200   | 200      | 45°   | 1           |
| FB45-225   | 225      | 45°   | 1.1         |
| FB45-250   | 250      | 45°   | 1.3         |
| FB45-275   | 275      | 45°   | 2.2         |
| FB45-300   | 300      | 45°   | 2.6         |
| FB45-350   | 350      | 45°   | 3.3         |
| FB45-400   | 400      | 45°   | 4.2         |
| FB45-450   | 450      | 45°   | 5           |
| FB45-500   | 500      | 45°   | 6           |
| FB45-550   | 550      | 45°   | 9           |
| FB45-600   | 600      | 45°   | 10.5        |
| FB45-650   | 650      | 45°   | 12.1        |
| FB45-700   | 700      | 45°   | 13.6        |
| FB45-750   | 750      | 45°   | 15.3        |
| FB45-800   | 800      | 45°   | 17.2        |
| FB45-850   | 850      | 45°   | 19.1        |
| FB45-900   | 900      | 45°   | 21.1        |
| FB45-950   | 950      | 45°   | 24.3        |
| FB45-1000  | 1000     | 45°   | 26.6        |
| FB45-1100  | 1100     | 45°   | 39          |
| FB45-1250  | 1250     | 45°   | 48.9        |



## Fixed Bend 60



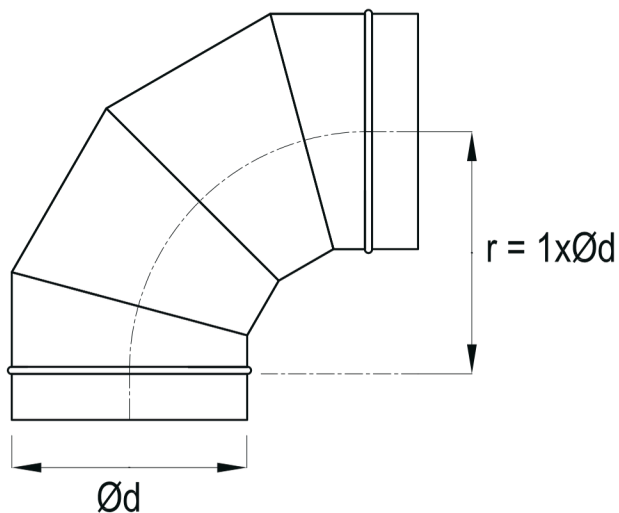
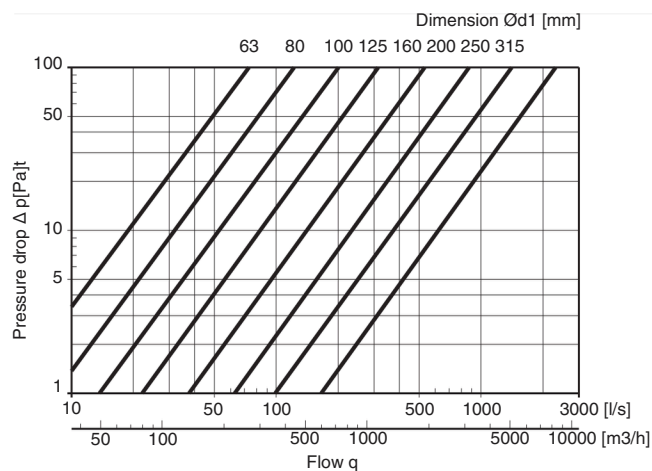
### Technical data



| Order code | End 1 Ød | Angle | Weight (kg) |
|------------|----------|-------|-------------|
| FB60-125   | 125      | 60°   | 0.5         |
| FB60-150   | 150      | 60°   | 0.7         |
| FB60-180   | 180      | 60°   | 0.9         |
| FB60-200   | 200      | 60°   | 1.1         |
| FB60-225   | 225      | 60°   | 1.3         |
| FB60-250   | 250      | 60°   | 1.5         |
| FB60-275   | 275      | 60°   | 2.6         |
| FB60-300   | 300      | 60°   | 3.1         |
| FB60-350   | 350      | 60°   | 4           |
| FB60-400   | 400      | 60°   | 5.1         |
| FB60-450   | 450      | 60°   | 6.2         |
| FB60-500   | 500      | 60°   | 7.4         |
| FB60-550   | 550      | 60°   | 11.4        |
| FB60-600   | 600      | 60°   | 13.3        |
| FB60-650   | 650      | 60°   | 15.4        |
| FB60-700   | 700      | 60°   | 17.4        |
| FB60-750   | 750      | 60°   | 19.6        |
| FB60-800   | 800      | 60°   | 22          |
| FB60-850   | 850      | 60°   | 24.6        |
| FB60-900   | 900      | 60°   | 27.2        |
| FB60-950   | 950      | 60°   | 32.1        |
| FB60-1000  | 1000     | 60°   | 35.1        |
| FB60-1100  | 1100     | 60°   | 51.7        |
| FB60-1250  | 1250     | 60°   | 64.9        |

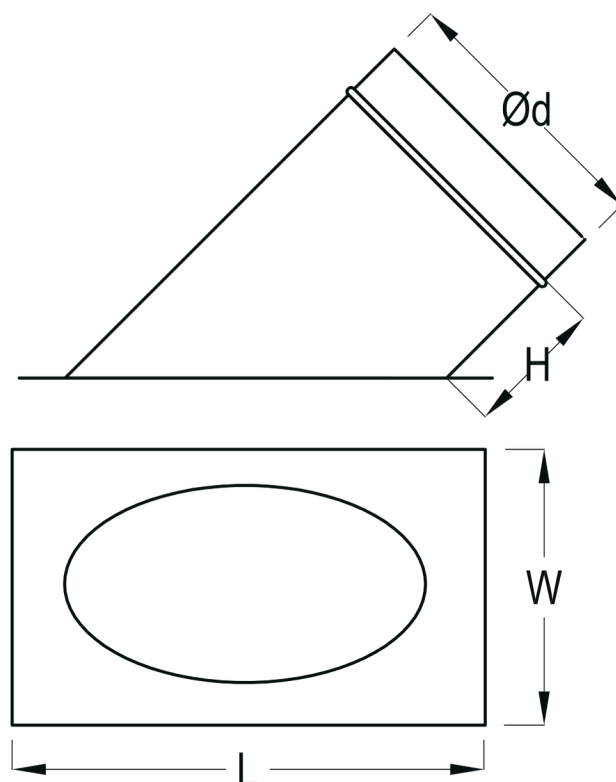
## Fixed Bend 90

### Technical data



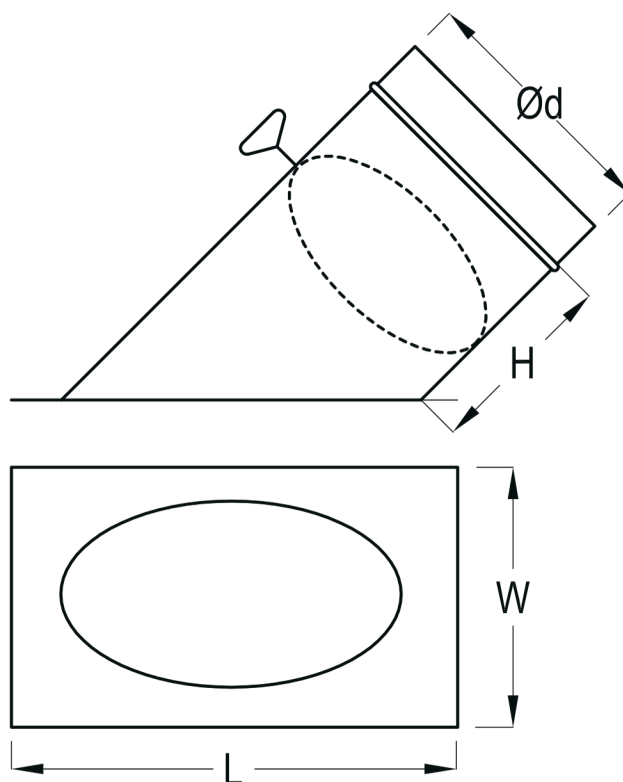
| Order code | End 1 Ød | Angle | Weight (kg) |
|------------|----------|-------|-------------|
| FB90-125   | 125      | 90°   | 0.7         |
| FB90-150   | 150      | 90°   | 0.9         |
| FB90-180   | 180      | 90°   | 1.2         |
| FB90-200   | 200      | 90°   | 1.4         |
| FB90-225   | 225      | 90°   | 1.7         |
| FB90-250   | 250      | 90°   | 2.1         |
| FB90-275   | 275      | 90°   | 3.6         |
| FB90-300   | 300      | 90°   | 4.3         |
| FB90-350   | 350      | 90°   | 5.5         |
| FB90-400   | 400      | 90°   | 7           |
| FB90-450   | 450      | 90°   | 8.6         |
| FB90-500   | 500      | 90°   | 10.4        |
| FB90-550   | 550      | 90°   | 15.8        |
| FB90-600   | 600      | 90°   | 18.5        |
| FB90-650   | 650      | 90°   | 21.5        |
| FB90-700   | 700      | 90°   | 24.5        |
| FB90-750   | 750      | 90°   | 27.7        |
| FB90-800   | 800      | 90°   | 31.1        |
| FB90-850   | 850      | 90°   | 34.9        |
| FB90-900   | 900      | 90°   | 38.7        |
| FB90-950   | 950      | 90°   | 44.9        |
| FB90-1000  | 1000     | 90°   | 49.2        |
| FB90-1100  | 1100     | 90°   | 72.8        |
| FB90-1250  | 1250     | 90°   | 91.9        |

## Flat Take off 45



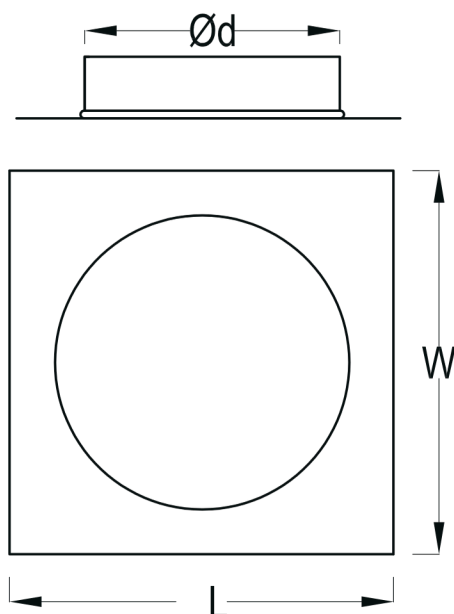
| Order code | End 1 Ød | Height | Plate length | Plate width | Weight (kg) |
|------------|----------|--------|--------------|-------------|-------------|
| FTO45-100  | 100      | 100    | 200          | 150         | 0.4         |
| FTO45-125  | 125      | 100    | 237.5        | 175         | 0.5         |
| FTO45-150  | 150      | 100    | 275          | 200         | 0.6         |
| FTO45-180  | 180      | 100    | 320          | 230         | 0.7         |
| FTO45-200  | 200      | 100    | 350          | 250         | 0.9         |
| FTO45-225  | 225      | 100    | 375          | 275         | 1           |
| FTO45-250  | 250      | 100    | 475          | 350         | 1.4         |
| FTO45-275  | 275      | 100    | 500          | 375         | 2.5         |
| FTO45-300  | 300      | 100    | 550          | 400         | 2.8         |
| FTO45-350  | 350      | 100    | 625          | 450         | 3.5         |
| FTO45-400  | 400      | 100    | 700          | 500         | 4.2         |
| FTO45-450  | 450      | 125    | 775          | 550         | 5           |
| FTO45-500  | 500      | 125    | 850          | 600         | 5.9         |
| FTO45-550  | 550      | 125    | 940          | 660         | 8.6         |
| FTO45-600  | 600      | 125    | 1000         | 700         | 9.7         |
| FTO45-650  | 650      | 150    | 1075         | 750         | 11.9        |
| FTO45-700  | 700      | 150    | 1165         | 810         | 13.5        |
| FTO45-750  | 750      | 150    | 1225         | 850         | 14.9        |
| FTO45-800  | 800      | 150    | 1300         | 900         | 16.5        |
| FTO45-850  | 850      | 150    | 1375         | 950         | 18.2        |
| FTO45-900  | 900      | 150    | 1450         | 1050        | 20.5        |
| FTO45-950  | 950      | 150    | 1525         | 1100        | 22.4        |
| FTO45-1000 | 1000     | 150    | 1600         | 1150        | 24.4        |
| FTO45-1100 | 1100     | 200    | 1800         | 1250        | 35.9        |
| FTO45-1250 | 1250     | 200    | 2025         | 1400        | 44.4        |

## Flat Take off 45 with Damper



| Order code | End 1 Ød | Height | Plate length | Plate width | Weight (kg) |
|------------|----------|--------|--------------|-------------|-------------|
| FTOD45-100 | 100      | 100    | 200          | 150         | 0.4         |
| FTOD45-125 | 125      | 100    | 237.5        | 175         | 0.5         |
| FTOD45-150 | 150      | 100    | 275          | 200         | 0.7         |
| FTOD45-180 | 180      | 100    | 320          | 230         | 0.9         |
| FTOD45-200 | 200      | 100    | 350          | 250         | 1           |
| FTOD45-225 | 225      | 100    | 375          | 275         | 1.3         |
| FTOD45-250 | 250      | 100    | 475          | 350         | 1.7         |
| FTOD45-275 | 275      | 100    | 500          | 375         | 2.9         |
| FTOD45-300 | 300      | 100    | 550          | 400         | 3.4         |
| FTOD45-350 | 350      | 100    | 625          | 450         | 4.4         |
| FTOD45-400 | 400      | 100    | 700          | 500         | 5.5         |
| FTOD45-450 | 450      | 125    | 775          | 550         | 6.7         |
| FTOD45-500 | 500      | 125    | 850          | 600         | 8           |
| FTOD45-550 | 550      | 125    | 940          | 660         | 11.8        |
| FTOD45-600 | 600      | 125    | 1000         | 700         | 13.6        |

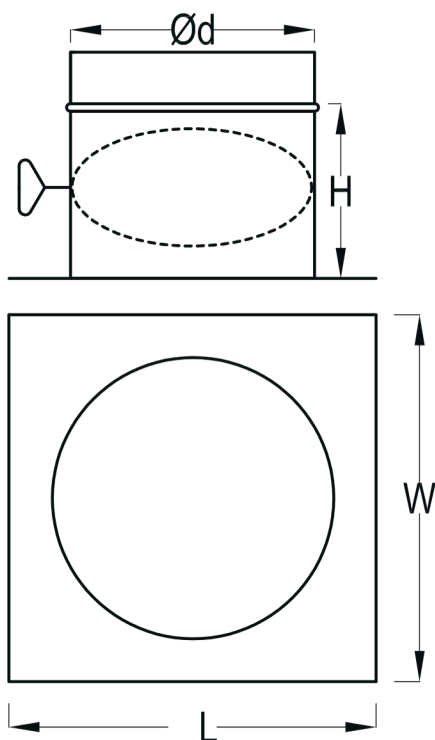
## Flat Take off 90



| Order code | End 1 Ød | Plate length | Plate width | Weight (kg) |
|------------|----------|--------------|-------------|-------------|
| FTO90-100  | 100      | 150          | 150         | 0.3         |
| FTO90-125  | 125      | 175          | 175         | 0.3         |
| FTO90-150  | 150      | 250          | 250         | 0.4         |
| FTO90-180  | 180      | 280          | 280         | 0.5         |
| FTO90-200  | 200      | 300          | 300         | 0.7         |
| FTO90-225  | 225      | 325          | 325         | 0.7         |
| FTO90-250  | 250      | 350          | 350         | 0.9         |
| FTO90-275  | 275      | 375          | 375         | 1.2         |
| FTO90-300  | 300      | 400          | 400         | 1.5         |
| FTO90-350  | 350      | 450          | 450         | 1.7         |
| FTO90-400  | 400      | 500          | 500         | 2           |
| FTO90-450  | 450      | 550          | 550         | 2.3         |
| FTO90-500  | 500      | 600          | 600         | 2.5         |
| FTO90-550  | 550      | 650          | 650         | 3.6         |
| FTO90-600  | 600      | 700          | 700         | 3.9         |
| FTO90-650  | 650      | 750          | 750         | 4.2         |
| FTO90-700  | 700      | 800          | 800         | 6           |
| FTO90-750  | 750      | 850          | 850         | 6.4         |
| FTO90-800  | 800      | 900          | 900         | 6.9         |
| FTO90-850  | 850      | 950          | 950         | 7.3         |
| FTO90-900  | 900      | 1000         | 1000        | 7.9         |
| FTO90-950  | 950      | 1050         | 1050        | 8.4         |
| FTO90-1000 | 1000     | 1100         | 1100        | 8.9         |
| FTO90-1100 | 1100     | 1200         | 1200        | 12.3        |
| FTO90-1250 | 1250     | 1350         | 1350        | 14.3        |

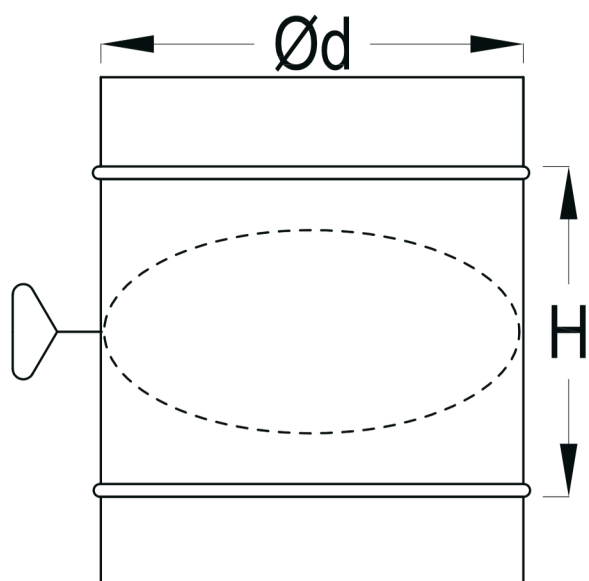


## Flat Take off 90 with Damper



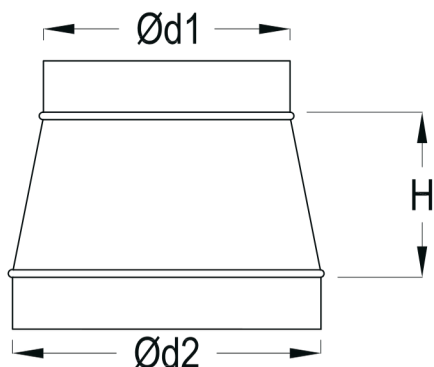
| Order code | End 1 Ød | Height | Plate length | Plate width | Weight (kg) |
|------------|----------|--------|--------------|-------------|-------------|
| FTOD90-100 | 100      | 100    | 150          | 150         | 0.3         |
| FTOD90-125 | 125      | 100    | 175          | 175         | 0.4         |
| FTOD90-150 | 150      | 100    | 250          | 250         | 0.5         |
| FTOD90-180 | 180      | 125    | 280          | 280         | 0.6         |
| FTOD90-200 | 200      | 150    | 300          | 300         | 0.8         |
| FTOD90-225 | 225      | 175    | 325          | 325         | 0.9         |
| FTOD90-250 | 250      | 200    | 350          | 350         | 1.1         |
| FTOD90-275 | 275      | 200    | 375          | 375         | 1.7         |
| FTOD90-300 | 300      | 225    | 400          | 400         | 2.1         |
| FTOD90-350 | 350      | 250    | 450          | 450         | 2.7         |
| FTOD90-400 | 400      | 300    | 500          | 500         | 3.5         |
| FTOD90-450 | 450      | 300    | 550          | 550         | 4.2         |
| FTOD90-500 | 500      | 350    | 600          | 600         | 4.9         |
| FTOD90-550 | 550      | 400    | 650          | 650         | 7           |
| FTOD90-600 | 600      | 450    | 700          | 700         | 8.2         |

## Inline Damper



| Order code | End 1 Ød | Height | Weight (kg) |
|------------|----------|--------|-------------|
| ID100      | 100      | 100    | 0.3         |
| ID125      | 125      | 100    | 0.3         |
| ID150      | 150      | 113    | 0.4         |
| ID180      | 180      | 135    | 0.5         |
| ID200      | 200      | 150    | 0.6         |
| ID225      | 225      | 169    | 0.7         |
| ID250      | 250      | 188    | 0.8         |
| ID275      | 275      | 206    | 1.3         |
| ID300      | 300      | 225    | 1.6         |
| ID350      | 350      | 263    | 2           |
| ID400      | 400      | 300    | 2.7         |
| ID450      | 450      | 338    | 3.5         |
| ID500      | 500      | 375    | 4.4         |
| ID550      | 550      | 413    | 6.7         |
| ID600      | 600      | 450    | 8.1         |

## Reducer



| Order code | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|------------|----------|----------|--------|-------------|
| RED125-100 | 125      | 100      | 125    | 0.4         |
| RED150-100 | 150      | 100      | 150    | 0.5         |
| RED150-125 | 150      | 125      | 125    | 0.5         |
| RED180-100 | 180      | 100      | 180    | 0.6         |
| RED180-125 | 180      | 125      | 155    | 0.6         |
| RED180-150 | 180      | 150      | 130    | 0.6         |
| RED200-100 | 200      | 100      | 200    | 0.7         |
| RED200-125 | 200      | 125      | 175    | 0.7         |
| RED200-150 | 200      | 150      | 150    | 0.7         |
| RED200-180 | 200      | 180      | 120    | 0.7         |
| RED225-100 | 225      | 100      | 225    | 0.8         |
| RED225-125 | 225      | 125      | 200    | 0.8         |
| RED225-150 | 225      | 150      | 175    | 0.8         |
| RED225-180 | 225      | 180      | 145    | 0.8         |
| RED225-200 | 225      | 200      | 125    | 0.8         |
| RED250-100 | 250      | 100      | 250    | 1           |
| RED250-125 | 250      | 125      | 225    | 1           |
| RED250-150 | 250      | 150      | 200    | 0.9         |
| RED250-180 | 250      | 180      | 170    | 0.9         |
| RED250-200 | 250      | 200      | 150    | 0.9         |
| RED275-100 | 275      | 100      | 275    | 1.7         |
| RED275-125 | 275      | 125      | 250    | 1.7         |
| RED275-150 | 275      | 150      | 225    | 1.7         |
| RED275-180 | 275      | 180      | 195    | 1.6         |
| RED275-200 | 275      | 200      | 175    | 1.6         |
| RED275-225 | 275      | 225      | 150    | 1.5         |
| RED300-100 | 300      | 100      | 300    | 1.9         |
| RED300-125 | 300      | 125      | 275    | 1.9         |
| RED300-150 | 300      | 150      | 250    | 1.9         |
| RED300-180 | 300      | 180      | 220    | 1.8         |
| RED300-200 | 300      | 200      | 200    | 1.8         |
| RED300-225 | 300      | 225      | 175    | 1.7         |
| RED300-250 | 300      | 250      | 150    | 1.7         |
| RED300-275 | 300      | 275      | 125    | 1.7         |
| RED350-100 | 350      | 100      | 350    | 2.4         |
| RED350-125 | 350      | 125      | 325    | 2.4         |
| RED350-150 | 350      | 150      | 300    | 2.4         |
| RED350-180 | 350      | 180      | 270    | 2.3         |
| RED350-200 | 350      | 200      | 250    | 2.3         |
| RED350-225 | 350      | 225      | 225    | 2.2         |
| RED350-250 | 350      | 250      | 200    | 2.1         |

| Order code | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|------------|----------|----------|--------|-------------|
| RED450-100 | 450      | 100      | 450    | 3.6         |
| RED450-125 | 450      | 125      | 425    | 3.6         |
| RED450-150 | 450      | 150      | 400    | 3.5         |
| RED450-180 | 450      | 180      | 370    | 3.5         |
| RED450-200 | 450      | 200      | 350    | 3.5         |
| RED450-225 | 450      | 225      | 325    | 3.4         |
| RED450-250 | 450      | 250      | 300    | 3.3         |
| RED450-275 | 450      | 250      | 275    | 3.1         |
| RED450-300 | 450      | 300      | 250    | 3.2         |
| RED450-350 | 450      | 350      | 200    | 3           |
| RED450-400 | 450      | 400      | 150    | 2.7         |
| RED500-100 | 500      | 100      | 500    | 4.3         |
| RED500-125 | 500      | 125      | 475    | 4.2         |
| RED500-150 | 500      | 150      | 450    | 4.2         |
| RED500-180 | 500      | 180      | 420    | 4.2         |
| RED500-200 | 500      | 200      | 400    | 4.1         |
| RED500-225 | 500      | 225      | 375    | 4.1         |
| RED500-250 | 500      | 250      | 350    | 4           |
| RED500-275 | 500      | 275      | 325    | 4           |
| RED500-300 | 500      | 300      | 300    | 3.9         |
| RED500-350 | 500      | 350      | 250    | 3.7         |
| RED500-400 | 500      | 400      | 200    | 3.4         |
| RED500-450 | 500      | 450      | 150    | 3           |
| RED550-100 | 550      | 100      | 550    | 6.5         |
| RED550-125 | 550      | 125      | 525    | 6.4         |
| RED550-150 | 550      | 150      | 500    | 6.4         |
| RED550-180 | 550      | 180      | 470    | 6.4         |
| RED550-200 | 550      | 200      | 450    | 6.3         |
| RED550-225 | 550      | 225      | 425    | 6.2         |
| RED550-250 | 550      | 250      | 400    | 6.1         |
| RED550-275 | 550      | 275      | 375    | 6.2         |
| RED550-300 | 550      | 300      | 350    | 6           |
| RED550-350 | 550      | 350      | 300    | 5.7         |
| RED550-400 | 550      | 400      | 250    | 5.4         |
| RED550-450 | 550      | 450      | 200    | 4.9         |
| RED550-500 | 550      | 500      | 150    | 4.5         |
| RED600-100 | 600      | 100      | 600    | 7.5         |
| RED600-125 | 600      | 125      | 575    | 7.4         |
| RED600-150 | 600      | 150      | 550    | 7.4         |
| RED600-180 | 600      | 180      | 520    | 7.4         |
| RED600-200 | 600      | 200      | 500    | 7.3         |
| RED600-225 | 600      | 225      | 475    | 7.2         |
| RED600-250 | 600      | 250      | 450    | 7.1         |
| RED600-275 | 600      | 275      | 425    | 7.2         |
| RED600-300 | 600      | 300      | 400    | 7           |
| RED600-350 | 600      | 350      | 350    | 6.7         |
| RED600-400 | 600      | 400      | 300    | 6.4         |

## Reducer

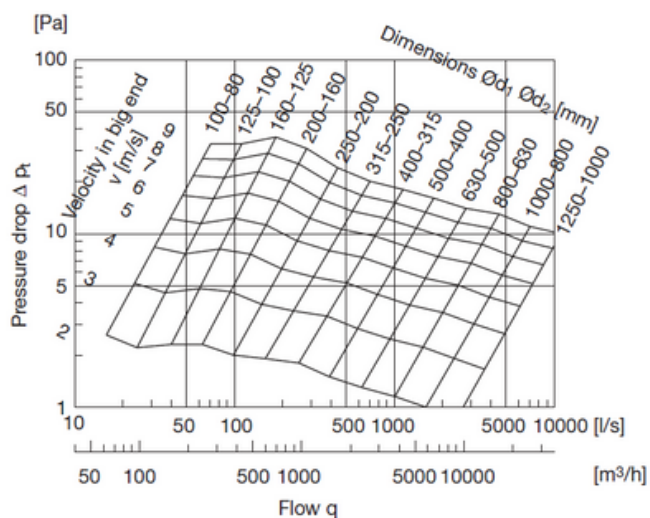
| Order code  | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|-------------|----------|----------|--------|-------------|
| RED600-450  | 600      | 450      | 250    | 5.9         |
| RED600-500  | 600      | 500      | 200    | 5.4         |
| RED600-550  | 600      | 550      | 150    | 5.2         |
| RED650-350  | 650      | 350      | 400    | 7.8         |
| RED650-400  | 650      | 400      | 350    | 7.5         |
| RED650-450  | 650      | 450      | 300    | 7           |
| RED650-500  | 650      | 500      | 250    | 6.5         |
| RED650-550  | 650      | 550      | 200    | 6.2         |
| RED650-600  | 650      | 600      | 150    | 5.6         |
| RED700-500  | 700      | 500      | 300    | 7.6         |
| RED700-550  | 700      | 550      | 250    | 7.3         |
| RED700-600  | 700      | 600      | 200    | 6.7         |
| RED700-650  | 700      | 650      | 150    | 6.1         |
| RED750-550  | 750      | 550      | 300    | 8.5         |
| RED750-600  | 750      | 600      | 250    | 7.9         |
| RED750-650  | 750      | 650      | 200    | 7.2         |
| RED750-700  | 750      | 700      | 125    | 6           |
| RED800-550  | 800      | 550      | 350    | 9.8         |
| RED800-600  | 800      | 600      | 300    | 9.2         |
| RED800-650  | 800      | 650      | 250    | 8.5         |
| RED800-700  | 800      | 700      | 200    | 7.8         |
| RED800-750  | 800      | 750      | 150    | 6.9         |
| RED850-600  | 850      | 600      | 350    | 10.5        |
| RED850-650  | 850      | 650      | 300    | 9.9         |
| RED850-700  | 850      | 700      | 250    | 9.1         |
| RED850-750  | 850      | 750      | 200    | 8.3         |
| RED850-800  | 850      | 800      | 150    | 7.4         |
| RED900-400  | 900      | 450      | 600    | 14.2        |
| RED900-650  | 900      | 650      | 350    | 11.3        |
| RED900-700  | 900      | 700      | 300    | 10.5        |
| RED900-750  | 900      | 750      | 250    | 9.7         |
| RED900-800  | 900      | 800      | 200    | 8.8         |
| RED900-850  | 900      | 850      | 150    | 7.8         |
| RED950-700  | 950      | 700      | 350    | 13          |
| RED950-750  | 950      | 750      | 300    | 12.2        |
| RED950-800  | 950      | 800      | 250    | 11.3        |
| RED950-850  | 950      | 850      | 200    | 10.3        |
| RED950-900  | 950      | 900      | 150    | 9.3         |
| RED1000-750 | 1000     | 750      | 350    | 13.8        |
| RED1000-800 | 1000     | 800      | 300    | 12.9        |
| RED1000-850 | 1000     | 850      | 250    | 11.9        |
| RED1000-900 | 1000     | 900      | 200    | 10.9        |
| RED1000-950 | 1000     | 950      | 150    | 10.8        |
| RED1100-800 | 1100     | 800      | 400    | 20.2        |
| RED1100-850 | 1100     | 850      | 350    | 19          |

| Order code   | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|--------------|----------|----------|--------|-------------|
| RED1100-900  | 1100     | 900      | 300    | 17.7        |
| RED1100-950  | 1100     | 950      | 250    | 17.6        |
| RED1100-1000 | 1100     | 1000     | 200    | 16.2        |
| RED1250-850  | 1250     | 850      | 500    | 26.1        |
| RED1250-900  | 1250     | 900      | 450    | 24.7        |
| RED1250-950  | 1250     | 950      | 400    | 24.6        |
| RED1250-1000 | 1250     | 1000     | 350    | 23.2        |
| RED1250-1100 | 1250     | 1100     | 250    | 20.1        |

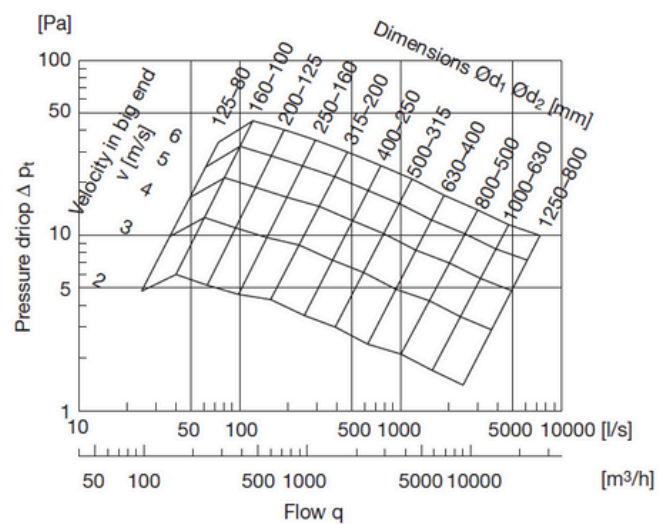
## Reducer

### Technical data

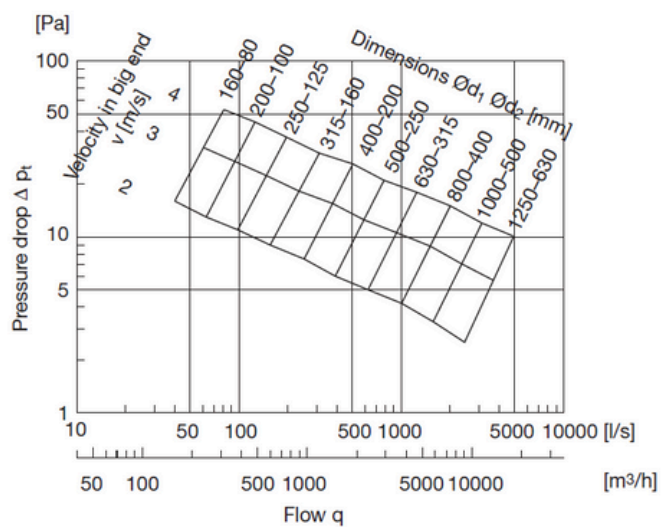
#### 1 dimension step



#### 2 dimension steps



#### 3 dimension steps

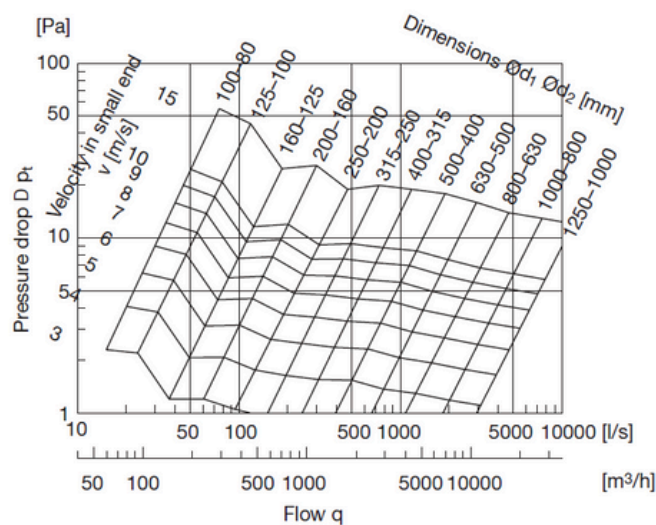
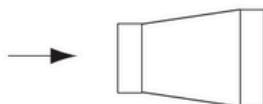




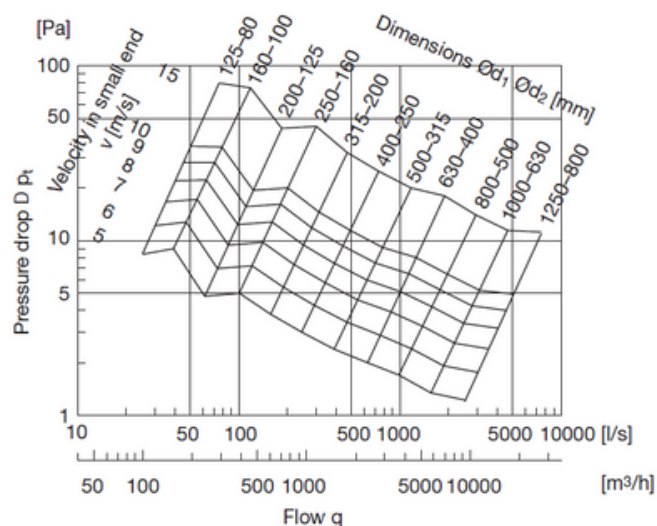
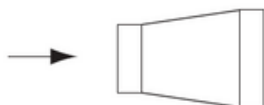
## Reducer

### Technical data

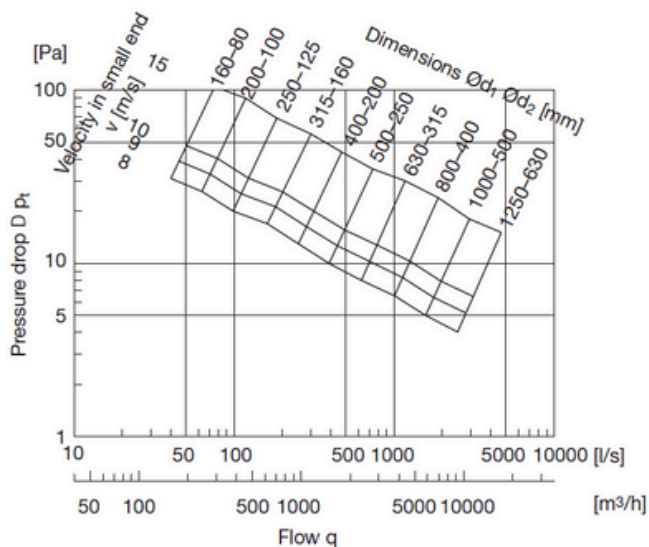
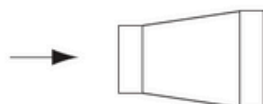
1 dimension step



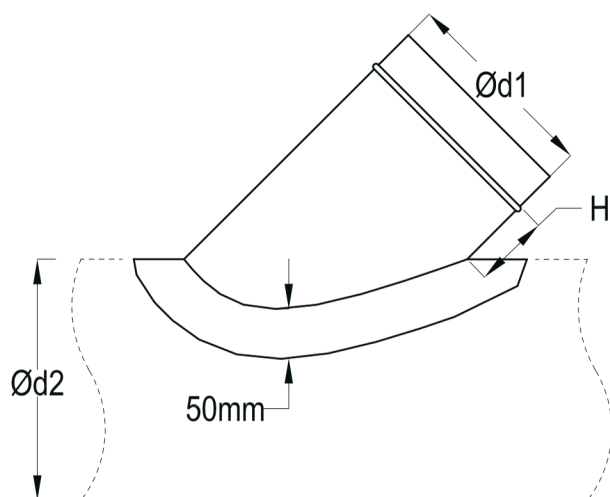
2 dimension steps



3 dimension steps



## Saddle take-off 45



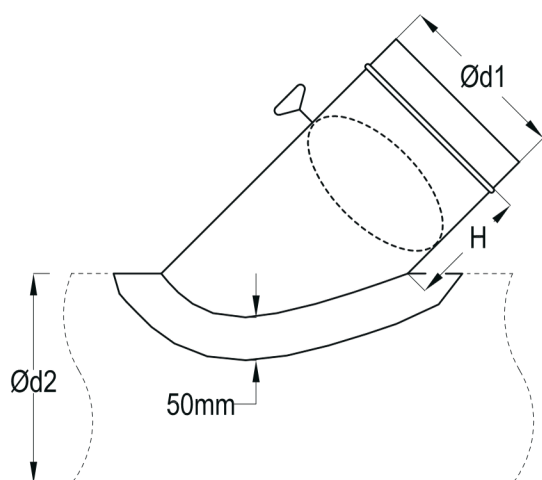
| Order code    | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|---------------|----------|----------|--------|-------------|
| STO45-100-100 | 100      | 100      | 100    | 0.3         |
| STO45-100-125 | 100      | 125      | 100    | 0.3         |
| STO45-100-150 | 100      | 150      | 100    | 0.3         |
| STO45-100-180 | 100      | 180      | 100    | 0.3         |
| STO45-100-200 | 100      | 200      | 100    | 0.3         |
| STO45-100-225 | 100      | 225      | 100    | 0.3         |
| STO45-100-250 | 100      | 250      | 100    | 0.3         |
| STO45-100-275 | 100      | 275      | 100    | 0.3         |
| STO45-100-300 | 100      | 300      | 100    | 0.3         |
| STO45-100-350 | 100      | 350      | 100    | 0.3         |
| STO45-100-400 | 100      | 400      | 100    | 0.3         |
| STO45-100-450 | 100      | 450      | 100    | 0.3         |
| STO45-100-500 | 100      | 500      | 100    | 0.3         |
| STO45-100-550 | 100      | 550      | 100    | 0.3         |
| STO45-100-600 | 100      | 600      | 100    | 0.3         |
| STO45-125-125 | 125      | 125      | 100    | 0.4         |
| STO45-125-150 | 125      | 150      | 100    | 0.4         |
| STO45-125-180 | 125      | 180      | 100    | 0.4         |
| STO45-125-200 | 125      | 200      | 100    | 0.4         |
| STO45-125-225 | 125      | 225      | 100    | 0.4         |
| STO45-125-250 | 125      | 250      | 100    | 0.4         |
| STO45-125-275 | 125      | 275      | 100    | 0.4         |
| STO45-125-300 | 125      | 300      | 100    | 0.4         |
| STO45-125-350 | 125      | 350      | 100    | 0.4         |
| STO45-125-400 | 125      | 400      | 100    | 0.4         |
| STO45-125-450 | 125      | 450      | 100    | 0.4         |
| STO45-125-500 | 125      | 500      | 100    | 0.4         |
| STO45-125-550 | 125      | 550      | 100    | 0.4         |

| Order code    | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|---------------|----------|----------|--------|-------------|
| STO45-125-600 | 125      | 600      | 100    | 0.4         |
| STO45-150-150 | 150      | 150      | 100    | 0.6         |
| STO45-150-180 | 150      | 180      | 100    | 0.5         |
| STO45-150-200 | 150      | 200      | 100    | 0.5         |
| STO45-150-225 | 150      | 225      | 100    | 0.5         |
| STO45-150-250 | 150      | 250      | 100    | 0.5         |
| STO45-150-275 | 150      | 275      | 100    | 0.5         |
| STO45-150-300 | 150      | 300      | 100    | 0.5         |
| STO45-150-350 | 150      | 350      | 100    | 0.5         |
| STO45-150-400 | 150      | 400      | 100    | 0.5         |
| STO45-150-450 | 150      | 450      | 100    | 0.5         |
| STO45-150-500 | 150      | 500      | 100    | 0.5         |
| STO45-150-550 | 150      | 550      | 100    | 0.5         |
| STO45-150-600 | 150      | 600      | 100    | 0.5         |
| STO45-180-180 | 180      | 180      | 100    | 0.7         |
| STO45-180-200 | 180      | 200      | 100    | 0.7         |
| STO45-180-225 | 180      | 225      | 100    | 0.7         |
| STO45-180-250 | 180      | 250      | 100    | 0.7         |
| STO45-180-275 | 180      | 275      | 100    | 0.7         |
| STO45-180-300 | 180      | 300      | 100    | 0.7         |
| STO45-180-350 | 180      | 350      | 100    | 0.7         |
| STO45-180-400 | 180      | 400      | 100    | 0.7         |
| STO45-180-450 | 180      | 450      | 100    | 0.7         |
| STO45-180-500 | 180      | 500      | 100    | 0.6         |
| STO45-180-550 | 180      | 550      | 100    | 0.6         |
| STO45-180-600 | 180      | 600      | 100    | 0.6         |
| STO45-200-200 | 200      | 200      | 100    | 0.9         |
| STO45-200-225 | 200      | 225      | 100    | 0.8         |
| STO45-200-250 | 200      | 250      | 100    | 0.8         |
| STO45-200-275 | 200      | 275      | 100    | 0.8         |
| STO45-200-300 | 200      | 300      | 100    | 0.8         |
| STO45-200-350 | 200      | 350      | 100    | 0.8         |
| STO45-200-400 | 200      | 400      | 100    | 0.8         |
| STO45-200-450 | 200      | 450      | 100    | 0.8         |
| STO45-200-500 | 200      | 500      | 100    | 0.8         |
| STO45-200-550 | 200      | 550      | 100    | 0.8         |
| STO45-200-600 | 200      | 600      | 100    | 0.8         |
| STO45-225-225 | 225      | 250      | 100    | 1           |
| STO45-225-275 | 225      | 275      | 100    | 1           |
| STO45-225-300 | 225      | 300      | 100    | 0.9         |
| STO45-225-350 | 225      | 350      | 100    | 0.9         |
| STO45-225-400 | 225      | 400      | 100    | 0.9         |
| STO45-225-450 | 225      | 450      | 100    | 0.9         |
| STO45-225-500 | 225      | 500      | 100    | 0.9         |
| STO45-225-550 | 225      | 550      | 100    | 0.9         |
| STO45-225-600 | 225      | 600      | 100    | 0.9         |
| STO45-250-250 | 250      | 250      | 100    | 1.2         |
| STO45-250-275 | 250      | 275      | 100    | 1.2         |
| STO45-250-300 | 250      | 300      | 100    | 1.1         |
| STO45-250-350 | 250      | 350      | 100    | 1.1         |

## Saddle take-off 45

| Order code    | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|---------------|----------|----------|--------|-------------|
| STO45-250-400 | 250      | 400      | 100    | 1.1         |
| STO45-250-450 | 250      | 450      | 100    | 1.1         |
| STO45-250-500 | 250      | 500      | 100    | 1.1         |
| STO45-250-550 | 250      | 550      | 100    | 1.1         |
| STO45-250-600 | 250      | 600      | 100    | 1.1         |
| STO45-275-300 | 275      | 300      | 100    | 2           |
| STO45-275-350 | 275      | 350      | 100    | 1.9         |
| STO45-275-400 | 275      | 400      | 100    | 1.9         |
| STO45-275-450 | 275      | 450      | 100    | 1.8         |
| STO45-275-500 | 275      | 500      | 100    | 1.8         |
| STO45-275-550 | 275      | 550      | 100    | 1.8         |
| STO45-275-600 | 275      | 600      | 100    | 1.8         |
| STO45-300-300 | 300      | 300      | 100    | 2.3         |
| STO45-300-350 | 300      | 350      | 100    | 2.2         |
| STO45-300-400 | 300      | 400      | 100    | 2.1         |
| STO45-300-450 | 300      | 450      | 100    | 2.1         |
| STO45-300-500 | 300      | 500      | 100    | 2           |
| STO45-300-550 | 300      | 550      | 100    | 2           |
| STO45-300-600 | 300      | 600      | 100    | 2           |
| STO45-350-350 | 350      | 350      | 100    | 2.9         |
| STO45-350-400 | 350      | 400      | 100    | 2.8         |
| STO45-350-450 | 350      | 450      | 100    | 2.7         |
| STO45-350-500 | 350      | 500      | 100    | 2.6         |
| STO45-350-550 | 350      | 550      | 100    | 2.6         |
| STO45-350-600 | 350      | 600      | 100    | 2.6         |
| STO45-400-400 | 400      | 400      | 125    | 3.9         |
| STO45-400-450 | 400      | 450      | 125    | 3.7         |
| STO45-400-500 | 400      | 500      | 125    | 3.6         |
| STO45-400-550 | 400      | 550      | 125    | 3.5         |
| STO45-400-600 | 400      | 600      | 125    | 3.5         |
| STO45-450-450 | 450      | 450      | 125    | 4.7         |
| STO45-450-500 | 450      | 650      | 125    | 4.2         |
| STO45-450-550 | 450      | 550      | 125    | 4.3         |
| STO45-450-600 | 450      | 600      | 125    | 4.3         |
| STO45-500-500 | 500      | 650      | 125    | 5.1         |
| STO45-500-550 | 500      | 550      | 125    | 5.3         |
| STO45-500-600 | 500      | 600      | 125    | 5.2         |
| STO45-550-550 | 550      | 550      | 125    | 8.2         |
| STO45-550-600 | 550      | 650      | 125    | 7.6         |
| STO45-600-600 | 600      | 600      | 125    | 10.6        |

## Saddle take-off 45 with damper



| Order code     | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|----------------|----------|----------|--------|-------------|
| STOD45-100-100 | 100      | 100      | 100    | 0.5         |
| STOD45-100-125 | 100      | 125      | 100    | 0.5         |
| STOD45-100-150 | 100      | 150      | 100    | 0.5         |
| STOD45-100-180 | 100      | 180      | 100    | 0.5         |
| STOD45-100-200 | 100      | 200      | 100    | 0.5         |
| STOD45-100-225 | 100      | 225      | 100    | 0.5         |
| STOD45-100-250 | 100      | 250      | 100    | 0.5         |
| STOD45-100-275 | 100      | 275      | 100    | 0.5         |
| STOD45-100-300 | 100      | 300      | 100    | 0.5         |
| STOD45-100-350 | 100      | 350      | 100    | 0.5         |
| STOD45-100-400 | 100      | 400      | 100    | 0.5         |
| STOD45-100-450 | 100      | 450      | 100    | 0.5         |
| STOD45-100-500 | 100      | 500      | 100    | 0.5         |
| STOD45-100-550 | 100      | 550      | 100    | 0.5         |
| STOD45-100-600 | 100      | 600      | 100    | 0.5         |
| STOD45-125-125 | 125      | 125      | 125    | 0.7         |
| STOD45-125-150 | 125      | 150      | 125    | 0.7         |
| STOD45-125-180 | 125      | 180      | 125    | 0.7         |
| STOD45-125-200 | 125      | 200      | 125    | 0.7         |
| STOD45-125-225 | 125      | 225      | 125    | 0.7         |
| STOD45-125-250 | 125      | 250      | 125    | 0.7         |
| STOD45-125-275 | 125      | 275      | 125    | 0.7         |
| STOD45-125-300 | 125      | 300      | 125    | 0.7         |
| STOD45-125-350 | 125      | 350      | 125    | 0.7         |
| STOD45-125-400 | 125      | 400      | 125    | 0.7         |
| STOD45-125-450 | 125      | 450      | 125    | 0.7         |
| STOD45-125-500 | 125      | 500      | 125    | 0.7         |

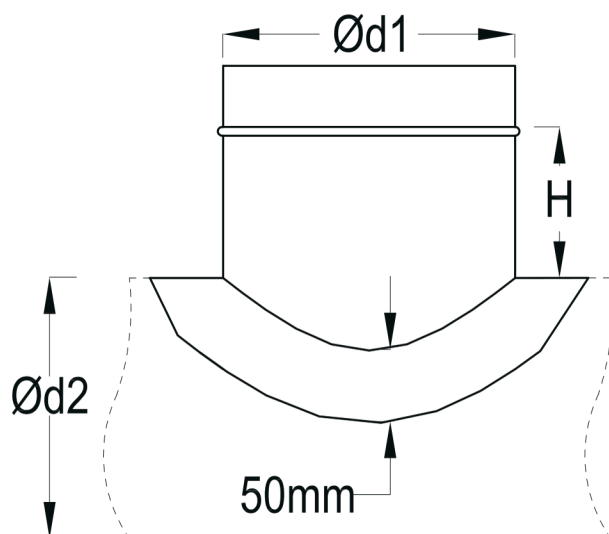
| Order code     | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|----------------|----------|----------|--------|-------------|
| STOD45-125-550 | 125      | 550      | 125    | 0.7         |
| STOD45-125-600 | 125      | 600      | 125    | 0.7         |
| STOD45-150-150 | 150      | 150      | 150    | 1           |
| STOD45-150-180 | 150      | 180      | 150    | 0.9         |
| STOD45-150-200 | 150      | 200      | 150    | 0.9         |
| STOD45-150-225 | 150      | 225      | 150    | 0.9         |
| STOD45-150-250 | 150      | 250      | 150    | 0.9         |
| STOD45-150-275 | 150      | 275      | 150    | 0.9         |
| STOD45-150-300 | 150      | 300      | 150    | 0.9         |
| STOD45-150-350 | 150      | 350      | 150    | 0.9         |
| STOD45-150-400 | 150      | 400      | 150    | 0.9         |
| STOD45-150-450 | 150      | 450      | 150    | 0.9         |
| STOD45-150-500 | 150      | 500      | 150    | 0.9         |
| STOD45-150-550 | 150      | 550      | 150    | 0.9         |
| STOD45-150-600 | 150      | 600      | 150    | 0.9         |
| STOD45-180-180 | 180      | 180      | 180    | 1.3         |
| STOD45-180-200 | 180      | 200      | 180    | 1.3         |
| STOD45-180-225 | 180      | 225      | 180    | 1.2         |
| STOD45-180-250 | 180      | 250      | 180    | 1.2         |
| STOD45-180-275 | 180      | 275      | 180    | 1.2         |
| STOD45-180-300 | 180      | 300      | 180    | 1.2         |
| STOD45-180-350 | 180      | 350      | 180    | 1.2         |
| STOD45-180-400 | 180      | 400      | 180    | 1.2         |
| STOD45-180-450 | 180      | 450      | 180    | 1.2         |
| STOD45-180-500 | 180      | 500      | 180    | 1.2         |
| STOD45-180-550 | 180      | 550      | 180    | 1.2         |
| STOD45-180-600 | 180      | 600      | 180    | 1.2         |
| STOD45-200-200 | 200      | 200      | 180    | 1.5         |
| STOD45-200-225 | 200      | 225      | 180    | 1.4         |
| STOD45-200-250 | 200      | 250      | 180    | 1.4         |
| STOD45-200-275 | 200      | 275      | 180    | 1.4         |
| STOD45-200-300 | 200      | 300      | 180    | 1.4         |
| STOD45-200-350 | 200      | 350      | 180    | 1.4         |
| STOD45-200-400 | 200      | 400      | 180    | 1.4         |
| STOD45-200-450 | 200      | 450      | 180    | 1.4         |
| STOD45-200-500 | 200      | 500      | 180    | 1.4         |
| STOD45-200-550 | 200      | 550      | 180    | 1.3         |
| STOD45-200-600 | 200      | 600      | 180    | 1.3         |
| STOD45-225-225 | 225      | 250      | 200    | 1.7         |
| STOD45-225-250 | 225      | 250      | 200    | 1.7         |
| STOD45-225-275 | 225      | 275      | 200    | 1.7         |
| STOD45-225-300 | 225      | 300      | 200    | 1.7         |
| STOD45-225-350 | 225      | 350      | 200    | 1.7         |
| STOD45-225-400 | 225      | 400      | 200    | 1.6         |
| STOD45-225-450 | 225      | 450      | 200    | 1.6         |
| STOD45-225-500 | 225      | 500      | 200    | 1.6         |
| STOD45-225-550 | 225      | 550      | 200    | 1.6         |
| STOD45-225-600 | 225      | 600      | 200    | 1.6         |
| STOD45-250-250 | 250      | 250      | 200    | 2.1         |
| STOD45-250-275 | 250      | 275      | 200    | 2           |

## Saddle take-off 45 with damper

| Order code     | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|----------------|----------|----------|--------|-------------|
| STOD45-250-300 | 250      | 300      | 200    | 2           |
| STOD45-250-350 | 250      | 350      | 200    | 1.9         |
| STOD45-250-400 | 250      | 400      | 200    | 1.9         |
| STOD45-250-450 | 250      | 450      | 200    | 1.9         |
| STOD45-250-500 | 250      | 500      | 200    | 1.9         |
| STOD45-250-550 | 250      | 550      | 200    | 1.9         |
| STOD45-250-600 | 250      | 600      | 200    | 1.9         |
| STOD45-275-300 | 275      | 300      | 225    | 2.4         |
| STOD45-275-350 | 275      | 350      | 225    | 2.4         |
| STOD45-275-400 | 275      | 400      | 225    | 2.3         |
| STOD45-275-450 | 275      | 450      | 225    | 2.3         |
| STOD45-275-500 | 275      | 500      | 225    | 2.3         |
| STOD45-275-550 | 275      | 550      | 225    | 2.3         |
| STOD45-275-600 | 275      | 600      | 225    | 2.3         |
| STOD45-300-300 | 300      | 300      | 250    | 2.8         |
| STOD45-300-350 | 300      | 350      | 250    | 2.7         |
| STOD45-300-400 | 300      | 400      | 250    | 2.7         |
| STOD45-300-450 | 300      | 450      | 250    | 2.6         |
| STOD45-300-500 | 300      | 500      | 250    | 2.6         |
| STOD45-300-550 | 300      | 550      | 250    | 2.6         |
| STOD45-300-600 | 300      | 600      | 250    | 2.6         |
| STOD45-350-350 | 350      | 350      | 275    | 5.1         |
| STOD45-350-400 | 350      | 400      | 275    | 4.9         |
| STOD45-350-450 | 350      | 450      | 275    | 4.8         |
| STOD45-350-500 | 350      | 500      | 275    | 4.7         |
| STOD45-350-550 | 350      | 550      | 275    | 4.7         |
| STOD45-350-600 | 350      | 600      | 275    | 4.7         |
| STOD45-400-400 | 400      | 400      | 300    | 6.4         |
| STOD45-400-450 | 400      | 450      | 300    | 6.1         |
| STOD45-400-500 | 400      | 500      | 300    | 6           |
| STOD45-400-550 | 400      | 550      | 300    | 5.9         |
| STOD45-400-600 | 400      | 600      | 300    | 5.9         |
| STOD45-450-450 | 450      | 450      | 325    | 7.7         |
| STOD45-450-500 | 450      | 650      | 325    | 7.1         |
| STOD45-450-550 | 450      | 550      | 325    | 7.3         |
| STOD45-450-600 | 450      | 600      | 325    | 7.2         |
| STOD45-500-500 | 500      | 650      | 350    | 8.6         |
| STOD45-500-550 | 500      | 550      | 350    | 8.9         |
| STOD45-500-600 | 500      | 600      | 350    | 8.7         |
| STOD45-550-550 | 550      | 550      | 375    | 13.4        |
| STOD45-550-600 | 550      | 650      | 375    | 12.8        |
| STOD45-600-600 | 600      | 600      | 400    | 15.6        |



## Saddle take-off 90



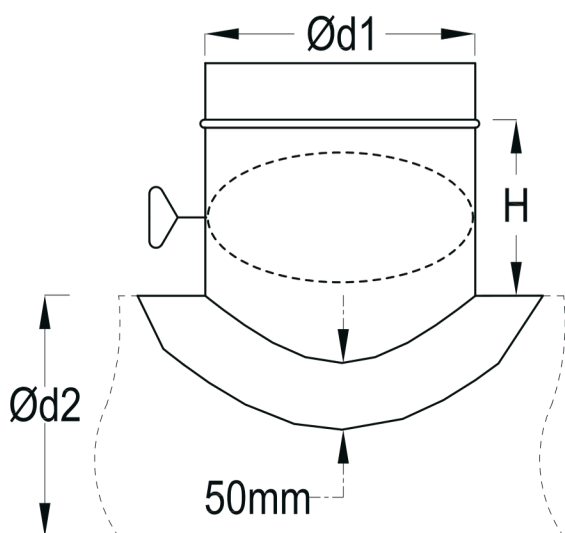
| Order code    | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|---------------|----------|----------|--------|-------------|
| STO90-100-125 | 100      | 125      | 75     | 0.4         |
| STO90-100-150 | 100      | 150      | 75     | 0.4         |
| STO90-100-180 | 100      | 180      | 75     | 0.3         |
| STO90-100-200 | 100      | 200      | 75     | 0.3         |
| STO90-100-225 | 100      | 225      | 75     | 0.3         |
| STO90-100-250 | 100      | 250      | 75     | 0.3         |
| STO90-100-275 | 100      | 275      | 75     | 0.3         |
| STO90-100-300 | 100      | 300      | 75     | 0.3         |
| STO90-100-350 | 100      | 350      | 75     | 0.3         |
| STO90-100-400 | 100      | 400      | 75     | 0.3         |
| STO90-100-450 | 100      | 450      | 75     | 0.3         |
| STO90-100-500 | 100      | 500      | 75     | 0.3         |
| STO90-100-550 | 100      | 550      | 75     | 0.3         |
| STO90-100-600 | 100      | 600      | 75     | 0.3         |
| STO90-125-125 | 125      | 125      | 100    | 0.5         |
| STO90-125-150 | 125      | 150      | 100    | 0.5         |
| STO90-125-180 | 125      | 180      | 100    | 0.5         |
| STO90-125-200 | 125      | 200      | 100    | 0.5         |
| STO90-125-225 | 125      | 225      | 100    | 0.5         |
| STO90-125-250 | 125      | 250      | 100    | 0.5         |
| STO90-125-275 | 125      | 275      | 100    | 0.5         |
| STO90-125-300 | 125      | 300      | 100    | 0.5         |
| STO90-125-350 | 125      | 350      | 100    | 0.5         |
| STO90-125-400 | 125      | 400      | 100    | 0.5         |
| STO90-125-450 | 125      | 450      | 100    | 0.4         |
| STO90-125-500 | 125      | 500      | 100    | 0.4         |
| STO90-125-550 | 125      | 550      | 100    | 0.4         |
| STO90-125-600 | 125      | 600      | 100    | 0.4         |
| STO90-150-150 | 150      | 150      | 100    | 0.6         |

| Order code    | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|---------------|----------|----------|--------|-------------|
| STO90-150-180 | 150      | 180      | 100    | 0.6         |
| STO90-150-200 | 150      | 200      | 100    | 0.6         |
| STO90-150-225 | 150      | 225      | 100    | 0.6         |
| STO90-150-250 | 150      | 250      | 100    | 0.6         |
| STO90-150-275 | 150      | 275      | 100    | 0.5         |
| STO90-150-300 | 150      | 300      | 100    | 0.5         |
| STO90-150-350 | 150      | 350      | 100    | 0.5         |
| STO90-150-400 | 150      | 400      | 100    | 0.5         |
| STO90-150-450 | 150      | 450      | 100    | 0.5         |
| STO90-150-500 | 150      | 500      | 100    | 0.5         |
| STO90-150-550 | 150      | 550      | 100    | 0.5         |
| STO90-150-600 | 150      | 600      | 100    | 0.5         |
| STO90-180-180 | 180      | 180      | 100    | 0.7         |
| STO90-180-200 | 180      | 200      | 100    | 0.7         |
| STO90-180-225 | 180      | 225      | 100    | 0.7         |
| STO90-180-250 | 180      | 250      | 100    | 0.7         |
| STO90-180-275 | 180      | 275      | 100    | 0.7         |
| STO90-180-300 | 180      | 300      | 100    | 0.7         |
| STO90-180-350 | 180      | 350      | 100    | 0.7         |
| STO90-180-400 | 180      | 400      | 100    | 0.7         |
| STO90-180-450 | 180      | 450      | 100    | 0.6         |
| STO90-180-500 | 180      | 500      | 100    | 0.6         |
| STO90-180-550 | 180      | 550      | 100    | 0.6         |
| STO90-180-600 | 180      | 600      | 100    | 0.6         |
| STO90-200-200 | 200      | 200      | 100    | 0.8         |
| STO90-200-225 | 200      | 225      | 100    | 0.8         |
| STO90-200-250 | 200      | 250      | 100    | 0.8         |
| STO90-200-275 | 200      | 275      | 100    | 0.8         |
| STO90-200-300 | 200      | 300      | 100    | 0.7         |
| STO90-200-350 | 200      | 350      | 100    | 0.7         |
| STO90-200-400 | 200      | 400      | 100    | 0.7         |
| STO90-200-450 | 200      | 450      | 100    | 0.7         |
| STO90-200-500 | 200      | 500      | 100    | 0.7         |
| STO90-200-550 | 200      | 550      | 100    | 0.7         |
| STO90-200-600 | 200      | 600      | 100    | 0.7         |
| STO90-225-225 | 225      | 250      | 100    | 0.9         |
| STO90-225-275 | 225      | 275      | 100    | 0.9         |
| STO90-225-300 | 225      | 300      | 100    | 0.9         |
| STO90-225-350 | 225      | 350      | 100    | 0.8         |
| STO90-225-400 | 225      | 400      | 100    | 0.8         |
| STO90-225-450 | 225      | 450      | 100    | 0.8         |
| STO90-225-500 | 225      | 500      | 100    | 0.8         |
| STO90-225-550 | 225      | 550      | 100    | 0.8         |
| STO90-225-600 | 225      | 600      | 100    | 0.8         |
| STO90-250-250 | 250      | 250      | 100    | 1           |
| STO90-250-275 | 250      | 275      | 100    | 1           |
| STO90-250-300 | 250      | 300      | 100    | 1           |
| STO90-250-350 | 250      | 350      | 100    | 0.9         |
| STO90-250-400 | 250      | 400      | 100    | 0.9         |
| STO90-250-450 | 250      | 450      | 100    | 0.9         |

## Saddle take-off 90

| Order code    | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|---------------|----------|----------|--------|-------------|
| STO90-250-500 | 250      | 500      | 100    | 0.9         |
| STO90-250-550 | 250      | 550      | 100    | 0.9         |
| STO90-250-600 | 250      | 600      | 100    | 0.9         |
| STO90-275-300 | 275      | 300      | 100    | 1.7         |
| STO90-275-350 | 275      | 350      | 100    | 1.7         |
| STO90-275-400 | 275      | 400      | 100    | 1.6         |
| STO90-275-450 | 275      | 450      | 100    | 1.6         |
| STO90-275-500 | 275      | 500      | 100    | 1.6         |
| STO90-275-550 | 275      | 550      | 100    | 1.6         |
| STO90-275-600 | 275      | 600      | 100    | 1.6         |
| STO90-300-300 | 300      | 300      | 100    | 1.9         |
| STO90-300-350 | 300      | 350      | 100    | 1.8         |
| STO90-300-400 | 300      | 400      | 100    | 1.8         |
| STO90-300-450 | 300      | 450      | 100    | 1.7         |
| STO90-300-500 | 300      | 500      | 100    | 1.7         |
| STO90-300-550 | 300      | 550      | 100    | 1.7         |
| STO90-300-600 | 300      | 600      | 100    | 1.7         |
| STO90-350-350 | 350      | 350      | 100    | 2.3         |
| STO90-350-400 | 350      | 400      | 100    | 2.2         |
| STO90-350-450 | 350      | 450      | 100    | 2.1         |
| STO90-350-500 | 350      | 500      | 100    | 2.1         |
| STO90-350-550 | 350      | 550      | 100    | 2           |
| STO90-350-600 | 350      | 600      | 100    | 2           |
| STO90-400-400 | 400      | 400      | 100    | 2.7         |
| STO90-400-450 | 400      | 450      | 100    | 2.5         |
| STO90-400-500 | 400      | 500      | 100    | 2.5         |
| STO90-400-550 | 400      | 550      | 100    | 2.4         |
| STO90-400-600 | 400      | 600      | 100    | 2.4         |
| STO90-450-450 | 450      | 450      | 100    | 3.1         |
| STO90-450-500 | 450      | 650      | 100    | 2.7         |
| STO90-450-550 | 450      | 550      | 100    | 2.8         |
| STO90-450-600 | 450      | 600      | 100    | 2.8         |
| STO90-500-500 | 500      | 650      | 125    | 3.4         |
| STO90-500-550 | 500      | 550      | 125    | 3.6         |
| STO90-500-600 | 500      | 600      | 125    | 3.5         |
| STO90-550-550 | 550      | 550      | 125    | 5.6         |
| STO90-550-600 | 550      | 650      | 125    | 5.1         |
| STO90-600-600 | 600      | 600      | 125    | 6.3         |

## Saddle take-off 90 with damper



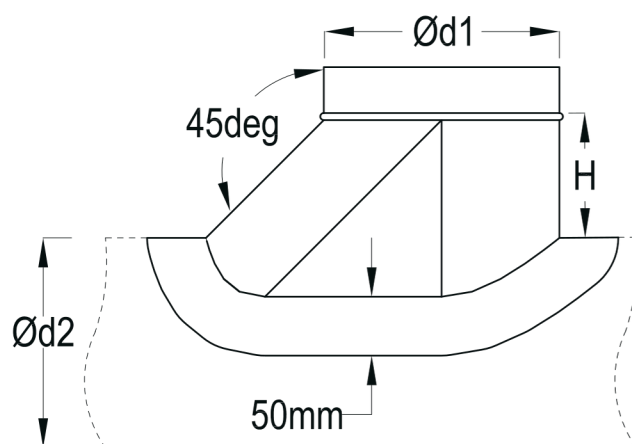
| Order code     | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|----------------|----------|----------|--------|-------------|
| STOD90-100-100 | 100      | 100      | 125    | 0.4         |
| STOD90-100-125 | 100      | 125      | 125    | 0.4         |
| STOD90-100-150 | 100      | 150      | 125    | 0.4         |
| STOD90-100-180 | 100      | 180      | 125    | 0.3         |
| STOD90-100-200 | 100      | 200      | 125    | 0.3         |
| STOD90-100-225 | 100      | 225      | 125    | 0.3         |
| STOD90-100-250 | 100      | 250      | 125    | 0.3         |
| STOD90-100-275 | 100      | 275      | 125    | 0.3         |
| STOD90-100-300 | 100      | 300      | 125    | 0.3         |
| STOD90-100-350 | 100      | 350      | 125    | 0.3         |
| STOD90-100-400 | 100      | 400      | 125    | 0.3         |
| STOD90-100-450 | 100      | 450      | 125    | 0.3         |
| STOD90-100-500 | 100      | 500      | 125    | 0.3         |
| STOD90-100-550 | 100      | 550      | 125    | 0.3         |
| STOD90-100-600 | 100      | 600      | 125    | 0.3         |
| STOD90-125-125 | 125      | 125      | 125    | 0.5         |
| STOD90-125-150 | 125      | 150      | 125    | 0.4         |
| STOD90-125-180 | 125      | 180      | 125    | 0.4         |
| STOD90-125-200 | 125      | 200      | 125    | 0.4         |
| STOD90-125-225 | 125      | 225      | 125    | 0.4         |
| STOD90-125-250 | 125      | 250      | 125    | 0.4         |
| STOD90-125-275 | 125      | 275      | 125    | 0.4         |
| STOD90-125-300 | 125      | 300      | 125    | 0.4         |
| STOD90-125-350 | 125      | 350      | 125    | 0.4         |
| STOD90-125-400 | 125      | 400      | 125    | 0.4         |
| STOD90-125-450 | 125      | 450      | 125    | 0.4         |
| STOD90-125-500 | 125      | 500      | 125    | 0.4         |
| STOD90-125-550 | 125      | 550      | 125    | 0.4         |

| Order code     | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|----------------|----------|----------|--------|-------------|
| STOD90-125-600 | 125      | 600      | 125    | 0.4         |
| STOD90-150-150 | 150      | 150      | 150    | 0.6         |
| STOD90-150-180 | 150      | 180      | 150    | 0.6         |
| STOD90-150-200 | 150      | 200      | 150    | 0.6         |
| STOD90-150-225 | 150      | 225      | 150    | 0.6         |
| STOD90-150-250 | 150      | 250      | 150    | 0.6         |
| STOD90-150-275 | 150      | 275      | 150    | 0.6         |
| STOD90-150-300 | 150      | 300      | 150    | 0.6         |
| STOD90-150-350 | 150      | 350      | 150    | 0.6         |
| STOD90-150-400 | 150      | 400      | 150    | 0.6         |
| STOD90-150-450 | 150      | 450      | 150    | 0.6         |
| STOD90-150-500 | 150      | 500      | 150    | 0.5         |
| STOD90-150-550 | 150      | 550      | 150    | 0.5         |
| STOD90-150-600 | 150      | 600      | 150    | 0.5         |
| STOD90-180-180 | 180      | 180      | 150    | 0.7         |
| STOD90-180-200 | 180      | 200      | 150    | 0.7         |
| STOD90-180-225 | 180      | 225      | 150    | 0.7         |
| STOD90-180-250 | 180      | 250      | 150    | 0.7         |
| STOD90-180-275 | 180      | 275      | 150    | 0.7         |
| STOD90-180-300 | 180      | 300      | 150    | 0.7         |
| STOD90-180-350 | 180      | 350      | 150    | 0.7         |
| STOD90-180-400 | 180      | 400      | 150    | 0.7         |
| STOD90-180-450 | 180      | 450      | 150    | 0.7         |
| STOD90-180-500 | 180      | 500      | 150    | 0.7         |
| STOD90-180-550 | 180      | 550      | 150    | 0.7         |
| STOD90-180-600 | 180      | 600      | 150    | 0.7         |
| STOD90-200-225 | 200      | 225      | 150    | 0.8         |
| STOD90-200-225 | 200      | 225      | 150    | 0.8         |
| STOD90-200-250 | 200      | 250      | 150    | 0.8         |
| STOD90-200-275 | 200      | 275      | 150    | 0.8         |
| STOD90-200-300 | 200      | 300      | 150    | 0.8         |
| STOD90-200-350 | 200      | 350      | 150    | 0.8         |
| STOD90-200-400 | 200      | 400      | 150    | 0.7         |
| STOD90-200-450 | 200      | 450      | 150    | 0.7         |
| STOD90-200-500 | 200      | 500      | 150    | 0.7         |
| STOD90-200-550 | 200      | 550      | 150    | 0.7         |
| STOD90-200-600 | 200      | 600      | 150    | 0.7         |
| STOD90-225-225 | 225      | 250      | 175    | 1           |
| STOD90-225-250 | 225      | 250      | 175    | 1           |
| STOD90-225-275 | 225      | 275      | 175    | 1           |
| STOD90-225-300 | 225      | 300      | 175    | 1           |
| STOD90-225-350 | 225      | 350      | 175    | 0.9         |
| STOD90-225-400 | 225      | 400      | 175    | 0.9         |
| STOD90-225-450 | 225      | 450      | 175    | 0.9         |
| STOD90-225-500 | 225      | 500      | 175    | 0.9         |
| STOD90-225-550 | 225      | 550      | 175    | 0.9         |
| STOD90-225-600 | 225      | 600      | 175    | 0.9         |
| STOD90-250-250 | 250      | 250      | 200    | 1.3         |
| STOD90-250-275 | 250      | 275      | 200    | 1.2         |
| STOD90-250-300 | 250      | 300      | 200    | 1.2         |

## Saddle take-off 90 with damper

| Order code     | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|----------------|----------|----------|--------|-------------|
| STOD90-250-350 | 250      | 350      | 200    | 1.2         |
| STOD90-250-400 | 250      | 400      | 200    | 1.1         |
| STOD90-250-450 | 250      | 450      | 200    | 1.1         |
| STOD90-250-500 | 250      | 500      | 200    | 1.1         |
| STOD90-250-550 | 250      | 550      | 200    | 1.1         |
| STOD90-250-600 | 250      | 600      | 200    | 1.1         |
| STOD90-275-300 | 275      | 300      | 225    | 1.5         |
| STOD90-275-350 | 275      | 350      | 225    | 1.4         |
| STOD90-275-400 | 275      | 400      | 225    | 1.4         |
| STOD90-275-450 | 275      | 450      | 225    | 1.4         |
| STOD90-275-500 | 275      | 500      | 225    | 1.4         |
| STOD90-275-550 | 275      | 550      | 225    | 1.4         |
| STOD90-275-600 | 275      | 600      | 225    | 1.3         |
| STOD90-300-300 | 300      | 300      | 250    | 1.8         |
| STOD90-300-350 | 300      | 350      | 250    | 1.7         |
| STOD90-300-400 | 300      | 400      | 250    | 1.6         |
| STOD90-300-450 | 300      | 450      | 250    | 1.6         |
| STOD90-300-500 | 300      | 500      | 250    | 1.6         |
| STOD90-300-550 | 300      | 550      | 250    | 1.6         |
| STOD90-300-600 | 300      | 600      | 250    | 1.6         |
| STOD90-350-350 | 350      | 350      | 275    | 3.1         |
| STOD90-350-400 | 350      | 400      | 275    | 2.9         |
| STOD90-350-450 | 350      | 450      | 275    | 2.9         |
| STOD90-350-500 | 350      | 500      | 275    | 2.8         |
| STOD90-350-550 | 350      | 550      | 275    | 2.8         |
| STOD90-350-600 | 350      | 600      | 275    | 2.8         |
| STOD90-400-400 | 400      | 400      | 300    | 3.8         |
| STOD90-400-450 | 400      | 450      | 300    | 3.6         |
| STOD90-400-500 | 400      | 500      | 300    | 3.6         |
| STOD90-400-550 | 400      | 550      | 300    | 3.5         |
| STOD90-400-600 | 400      | 600      | 300    | 3.5         |
| STOD90-450-450 | 450      | 450      | 325    | 4.6         |
| STOD90-450-500 | 450      | 650      | 325    | 4.2         |
| STOD90-450-550 | 450      | 550      | 325    | 4.3         |
| STOD90-450-600 | 450      | 600      | 325    | 4.2         |
| STOD90-500-500 | 500      | 650      | 350    | 5           |
| STOD90-500-550 | 500      | 550      | 350    | 5.2         |
| STOD90-500-600 | 500      | 600      | 350    | 5.1         |
| STOD90-550-550 | 550      | 550      | 375    | 7.9         |
| STOD90-550-600 | 550      | 650      | 375    | 7.4         |
| STOD90-600-600 | 600      | 600      | 400    | 9.2         |

## Saddle take-off shoe



| Order code     | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|----------------|----------|----------|--------|-------------|
| STOS90-100-100 | 100      | 100      | 100    | 0.6         |
| STOS90-100-125 | 100      | 125      | 100    | 0.6         |
| STOS90-100-150 | 100      | 150      | 100    | 0.5         |
| STOS90-100-180 | 100      | 180      | 100    | 0.5         |
| STOS90-100-200 | 100      | 200      | 100    | 0.5         |
| STOS90-100-225 | 100      | 225      | 100    | 0.5         |
| STOS90-100-250 | 100      | 250      | 100    | 0.5         |
| STOS90-100-275 | 100      | 275      | 100    | 0.5         |
| STOS90-100-300 | 100      | 300      | 100    | 0.5         |
| STOS90-100-350 | 100      | 350      | 100    | 0.5         |
| STOS90-100-400 | 100      | 400      | 100    | 0.5         |
| STOS90-100-450 | 100      | 450      | 100    | 0.5         |
| STOS90-100-500 | 100      | 500      | 100    | 0.5         |
| STOS90-100-550 | 100      | 550      | 100    | 0.5         |
| STOS90-100-600 | 100      | 600      | 100    | 0.5         |
| STOS90-125-125 | 125      | 125      | 100    | 0.7         |
| STOS90-125-150 | 125      | 150      | 100    | 0.7         |
| STOS90-125-180 | 125      | 180      | 100    | 0.7         |
| STOS90-125-200 | 125      | 200      | 100    | 0.6         |
| STOS90-125-225 | 125      | 225      | 100    | 0.6         |
| STOS90-125-250 | 125      | 250      | 100    | 0.6         |
| STOS90-125-275 | 125      | 275      | 100    | 0.6         |
| STOS90-125-300 | 125      | 300      | 100    | 0.6         |
| STOS90-125-350 | 125      | 350      | 100    | 0.6         |
| STOS90-125-400 | 125      | 400      | 100    | 0.6         |
| STOS90-125-450 | 125      | 450      | 100    | 0.6         |
| STOS90-125-500 | 125      | 500      | 100    | 0.6         |
| STOS90-125-550 | 125      | 550      | 100    | 0.6         |
| STOS90-125-600 | 125      | 600      | 100    | 0.6         |
| STOS90-150-150 | 150      | 150      | 100    | 0.9         |

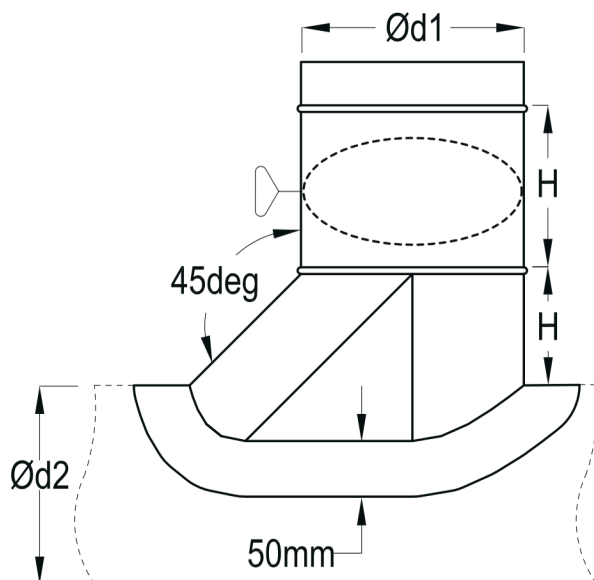
| Order code     | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|----------------|----------|----------|--------|-------------|
| STOS90-150-180 | 150      | 180      | 100    | 0.8         |
| STOS90-150-200 | 150      | 200      | 100    | 0.8         |
| STOS90-150-225 | 150      | 225      | 100    | 0.8         |
| STOS90-150-250 | 150      | 250      | 100    | 0.7         |
| STOS90-150-275 | 150      | 275      | 100    | 0.7         |
| STOS90-150-300 | 150      | 300      | 100    | 0.7         |
| STOS90-150-350 | 150      | 350      | 100    | 0.7         |
| STOS90-150-400 | 150      | 400      | 100    | 0.7         |
| STOS90-150-450 | 150      | 450      | 100    | 0.7         |
| STOS90-150-500 | 150      | 500      | 100    | 0.7         |
| STOS90-150-550 | 150      | 550      | 100    | 0.7         |
| STOS90-150-600 | 150      | 600      | 100    | 0.7         |
| STOS90-180-180 | 180      | 180      | 100    | 1           |
| STOS90-180-200 | 180      | 200      | 100    | 1           |
| STOS90-180-225 | 180      | 225      | 100    | 0.9         |
| STOS90-180-250 | 180      | 250      | 100    | 0.9         |
| STOS90-180-275 | 180      | 275      | 100    | 0.9         |
| STOS90-180-300 | 180      | 300      | 100    | 0.9         |
| STOS90-180-350 | 180      | 350      | 100    | 0.9         |
| STOS90-180-400 | 180      | 400      | 100    | 0.9         |
| STOS90-180-450 | 180      | 450      | 100    | 0.8         |
| STOS90-180-500 | 180      | 500      | 100    | 0.8         |
| STOS90-180-550 | 180      | 550      | 100    | 0.8         |
| STOS90-180-600 | 180      | 600      | 100    | 0.8         |
| STOS90-200-200 | 200      | 200      | 100    | 1.1         |
| STOS90-200-225 | 200      | 225      | 100    | 1.1         |
| STOS90-200-250 | 200      | 250      | 100    | 1           |
| STOS90-200-275 | 200      | 275      | 100    | 1           |
| STOS90-200-300 | 200      | 300      | 100    | 1           |
| STOS90-200-350 | 200      | 350      | 100    | 1           |
| STOS90-200-400 | 200      | 400      | 100    | 0.9         |
| STOS90-200-450 | 200      | 450      | 100    | 0.9         |
| STOS90-200-500 | 200      | 500      | 100    | 0.9         |
| STOS90-200-550 | 200      | 550      | 100    | 0.9         |
| STOS90-200-600 | 200      | 600      | 100    | 0.9         |
| STOS90-225-225 | 225      | 250      | 100    | 1.2         |
| STOS90-225-250 | 225      | 250      | 100    | 1.2         |
| STOS90-225-275 | 225      | 275      | 100    | 1.1         |
| STOS90-225-300 | 225      | 300      | 100    | 1.1         |
| STOS90-225-350 | 225      | 350      | 100    | 1.1         |
| STOS90-225-400 | 225      | 400      | 100    | 1.1         |
| STOS90-225-450 | 225      | 450      | 100    | 1           |
| STOS90-225-500 | 225      | 500      | 100    | 1           |
| STOS90-225-550 | 225      | 550      | 100    | 1           |
| STOS90-225-600 | 225      | 600      | 100    | 1           |
| STOS90-250-250 | 250      | 250      | 100    | 1.5         |
| STOS90-250-275 | 250      | 275      | 100    | 1.3         |
| STOS90-250-300 | 250      | 300      | 100    | 1.3         |
| STOS90-250-350 | 250      | 350      | 100    | 1.2         |
| STOS90-250-400 | 250      | 400      | 100    | 1.2         |

## Saddle take-off shoe

| Order code     | End 1 Ød | End 2 Ød | Height | Weight (kg) |
|----------------|----------|----------|--------|-------------|
| STOS90-250-450 | 250      | 450      | 100    | 1.2         |
| STOS90-250-500 | 250      | 500      | 100    | 1.2         |
| STOS90-250-550 | 250      | 550      | 100    | 1.2         |
| STOS90-250-600 | 250      | 600      | 100    | 1.1         |
| STOS90-275-300 | 275      | 300      | 100    | 2.4         |
| STOS90-275-350 | 275      | 350      | 100    | 2.3         |
| STOS90-275-400 | 275      | 400      | 100    | 2.2         |
| STOS90-275-450 | 275      | 450      | 100    | 2.1         |
| STOS90-275-500 | 275      | 500      | 100    | 2.1         |
| STOS90-275-550 | 275      | 550      | 100    | 2.1         |
| STOS90-275-600 | 275      | 600      | 100    | 2.1         |
| STOS90-300-300 | 300      | 300      | 100    | 2.8         |
| STOS90-300-350 | 300      | 350      | 100    | 2.5         |
| STOS90-300-400 | 300      | 400      | 100    | 2.4         |
| STOS90-300-450 | 300      | 450      | 100    | 2.3         |
| STOS90-300-500 | 300      | 500      | 100    | 2.3         |
| STOS90-300-550 | 300      | 550      | 100    | 2.2         |
| STOS90-300-600 | 300      | 600      | 100    | 2.2         |
| STOS90-350-350 | 350      | 350      | 100    | 3.3         |
| STOS90-350-400 | 350      | 400      | 100    | 2.9         |
| STOS90-350-450 | 350      | 450      | 100    | 2.8         |
| STOS90-350-500 | 350      | 500      | 100    | 2.7         |
| STOS90-350-550 | 350      | 550      | 100    | 2.7         |
| STOS90-350-600 | 350      | 600      | 100    | 2.6         |
| STOS90-400-400 | 400      | 400      | 100    | 3.8         |
| STOS90-400-450 | 400      | 450      | 100    | 3.4         |
| STOS90-400-500 | 400      | 500      | 100    | 3.3         |
| STOS90-400-550 | 400      | 550      | 100    | 3.2         |
| STOS90-400-600 | 400      | 600      | 100    | 3.1         |
| STOS90-450-450 | 450      | 450      | 125    | 4.8         |
| STOS90-450-500 | 450      | 500      | 125    | 3.9         |
| STOS90-450-550 | 450      | 550      | 125    | 4.1         |
| STOS90-450-600 | 450      | 600      | 125    | 4           |
| STOS90-500-500 | 500      | 500      | 125    | 4.5         |
| STOS90-500-550 | 500      | 550      | 125    | 4.9         |
| STOS90-500-600 | 500      | 600      | 125    | 4.7         |
| STOS90-550-550 | 550      | 550      | 125    | 8.1         |
| STOS90-550-600 | 550      | 600      | 125    | 7           |
| STOS90-600-600 | 600      | 600      | 125    | 9           |



## Saddle take-off shoe with damper



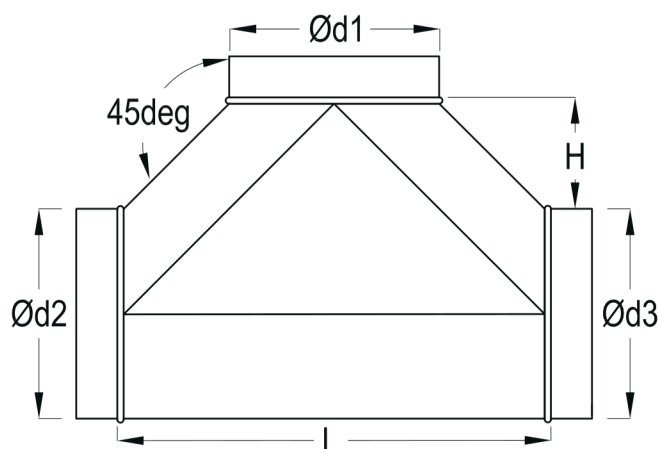
| Order code      | End 1 Ød | End 2 Ød | Height 1 | Height 2 | Weight (kg) |
|-----------------|----------|----------|----------|----------|-------------|
| STOSD90-100-100 | 100      | 100      | 100      | 157      | 0.7         |
| STOSD90-100-125 | 100      | 125      | 100      | 157      | 0.6         |
| STOSD90-100-150 | 100      | 150      | 100      | 157      | 0.6         |
| STOSD90-100-180 | 100      | 180      | 100      | 157      | 0.6         |
| STOSD90-100-200 | 100      | 200      | 100      | 157      | 0.6         |
| STOSD90-100-225 | 100      | 225      | 100      | 157      | 0.6         |
| STOSD90-100-250 | 100      | 250      | 100      | 157      | 0.6         |
| STOSD90-100-275 | 100      | 275      | 100      | 157      | 0.6         |
| STOSD90-100-300 | 100      | 300      | 100      | 157      | 0.6         |
| STOSD90-100-350 | 100      | 350      | 100      | 157      | 0.6         |
| STOSD90-100-400 | 100      | 400      | 100      | 157      | 0.6         |
| STOSD90-100-450 | 100      | 450      | 100      | 157      | 0.6         |
| STOSD90-100-500 | 100      | 500      | 100      | 157      | 0.6         |
| STOSD90-100-550 | 100      | 550      | 100      | 157      | 0.6         |
| STOSD90-100-600 | 100      | 600      | 100      | 157      | 0.6         |
| STOSD90-125-125 | 125      | 125      | 100      | 157      | 0.9         |
| STOSD90-125-150 | 125      | 150      | 100      | 157      | 0.8         |
| STOSD90-125-180 | 125      | 180      | 100      | 157      | 0.8         |
| STOSD90-125-200 | 125      | 200      | 100      | 157      | 0.8         |
| STOSD90-125-225 | 125      | 225      | 100      | 157      | 0.8         |
| STOSD90-125-250 | 125      | 250      | 100      | 157      | 0.8         |
| STOSD90-125-275 | 125      | 275      | 100      | 157      | 0.8         |
| STOSD90-125-300 | 125      | 300      | 100      | 157      | 0.8         |
| STOSD90-125-350 | 125      | 350      | 100      | 157      | 0.8         |
| STOSD90-125-400 | 125      | 400      | 100      | 157      | 0.8         |
| STOSD90-125-450 | 125      | 450      | 100      | 157      | 0.8         |
| STOSD90-125-500 | 125      | 500      | 100      | 157      | 0.8         |

| Order code      | End 1 Ød | End 2 Ød | Height 1 | Height 2 | Weight (kg) |
|-----------------|----------|----------|----------|----------|-------------|
| STOSD90-125-550 | 125      | 550      | 100      | 157      | 0.8         |
| STOSD90-125-600 | 125      | 600      | 100      | 157      | 0.8         |
| STOSD90-150-150 | 150      | 150      | 100      | 170      | 1.1         |
| STOSD90-150-180 | 150      | 180      | 100      | 170      | 1           |
| STOSD90-150-200 | 150      | 200      | 100      | 170      | 1           |
| STOSD90-150-225 | 150      | 225      | 100      | 170      | 0.9         |
| STOSD90-150-250 | 150      | 250      | 100      | 170      | 0.9         |
| STOSD90-150-275 | 150      | 275      | 100      | 170      | 0.9         |
| STOSD90-150-300 | 150      | 300      | 100      | 170      | 0.9         |
| STOSD90-150-350 | 150      | 350      | 100      | 170      | 0.9         |
| STOSD90-150-400 | 150      | 400      | 100      | 170      | 0.9         |
| STOSD90-150-450 | 150      | 450      | 100      | 170      | 0.9         |
| STOSD90-150-500 | 150      | 500      | 100      | 170      | 0.9         |
| STOSD90-150-550 | 150      | 550      | 100      | 170      | 0.9         |
| STOSD90-150-600 | 150      | 600      | 100      | 170      | 0.9         |
| STOSD90-180-180 | 180      | 180      | 100      | 190      | 1.3         |
| STOSD90-180-200 | 180      | 200      | 100      | 190      | 1.2         |
| STOSD90-180-225 | 180      | 225      | 100      | 190      | 1.2         |
| STOSD90-180-250 | 180      | 250      | 100      | 190      | 1.2         |
| STOSD90-180-275 | 180      | 275      | 100      | 190      | 1.2         |
| STOSD90-180-300 | 180      | 300      | 100      | 190      | 1.2         |
| STOSD90-180-350 | 180      | 350      | 100      | 190      | 1.1         |
| STOSD90-180-400 | 180      | 400      | 100      | 190      | 1.1         |
| STOSD90-180-450 | 180      | 450      | 100      | 190      | 1.1         |
| STOSD90-180-500 | 180      | 500      | 100      | 190      | 1.1         |
| STOSD90-180-550 | 180      | 550      | 100      | 190      | 1.1         |
| STOSD90-180-600 | 180      | 600      | 100      | 190      | 1.1         |
| STOSD90-200-200 | 200      | 200      | 100      | 205      | 1.5         |
| STOSD90-200-225 | 200      | 225      | 100      | 205      | 1.4         |
| STOSD90-200-250 | 200      | 250      | 100      | 205      | 1.3         |
| STOSD90-200-275 | 200      | 275      | 100      | 205      | 1.3         |
| STOSD90-200-300 | 200      | 300      | 100      | 205      | 1.3         |
| STOSD90-200-350 | 200      | 350      | 100      | 205      | 1.3         |
| STOSD90-200-400 | 200      | 400      | 100      | 205      | 1.3         |
| STOSD90-200-450 | 200      | 450      | 100      | 205      | 1.3         |
| STOSD90-200-500 | 200      | 500      | 100      | 205      | 1.2         |
| STOSD90-200-550 | 200      | 550      | 100      | 205      | 1.2         |
| STOSD90-200-600 | 200      | 600      | 100      | 205      | 1.2         |
| STOSD90-225-225 | 225      | 225      | 100      | 224      | 1.6         |
| STOSD90-225-250 | 225      | 250      | 100      | 224      | 1.5         |
| STOSD90-225-275 | 225      | 275      | 100      | 224      | 1.5         |
| STOSD90-225-300 | 225      | 300      | 100      | 224      | 1.5         |
| STOSD90-225-350 | 225      | 350      | 100      | 224      | 1.4         |
| STOSD90-225-400 | 225      | 400      | 100      | 224      | 1.4         |
| STOSD90-225-450 | 225      | 450      | 100      | 224      | 1.4         |
| STOSD90-225-500 | 225      | 500      | 100      | 224      | 1.4         |
| STOSD90-225-550 | 225      | 550      | 100      | 224      | 1.4         |
| STOSD90-225-600 | 225      | 600      | 100      | 224      | 1.4         |
| STOSD90-250-250 | 250      | 250      | 100      | 243      | 2           |
| STOSD90-250-275 | 250      | 275      | 100      | 243      | 1.9         |

## Saddle take-off shoe with damper

| Order code      | End 1 Ød | End 2 Ød | Height 1 | Height 2 | Weight (kg) |
|-----------------|----------|----------|----------|----------|-------------|
| STOSD90-250-300 | 250      | 300      | 100      | 243      | 1.9         |
| STOSD90-250-350 | 250      | 350      | 100      | 243      | 1.8         |
| STOSD90-250-400 | 250      | 400      | 100      | 243      | 1.8         |
| STOSD90-250-450 | 250      | 450      | 100      | 243      | 1.8         |
| STOSD90-250-500 | 250      | 500      | 100      | 243      | 1.7         |
| STOSD90-250-550 | 250      | 550      | 100      | 243      | 1.7         |
| STOSD90-250-600 | 250      | 600      | 100      | 243      | 1.7         |
| STOSD90-275-275 | 275      | 275      | 100      | 240      | 3.4         |
| STOSD90-275-300 | 275      | 300      | 100      | 240      | 3.1         |
| STOSD90-275-350 | 275      | 350      | 100      | 240      | 2.9         |
| STOSD90-275-400 | 275      | 400      | 100      | 240      | 2.8         |
| STOSD90-275-450 | 275      | 450      | 100      | 240      | 2.8         |
| STOSD90-275-500 | 275      | 500      | 100      | 240      | 2.8         |
| STOSD90-275-550 | 275      | 550      | 100      | 240      | 2.7         |
| STOSD90-275-600 | 275      | 600      | 100      | 240      | 2.7         |
| STOSD90-300-300 | 300      | 300      | 100      | 259      | 3.5         |
| STOSD90-300-350 | 300      | 350      | 100      | 259      | 3.2         |
| STOSD90-300-400 | 300      | 400      | 100      | 259      | 3.1         |
| STOSD90-300-450 | 300      | 450      | 100      | 259      | 3           |
| STOSD90-300-500 | 300      | 500      | 100      | 259      | 3           |
| STOSD90-300-550 | 300      | 550      | 100      | 259      | 2.9         |
| STOSD90-300-600 | 300      | 600      | 100      | 259      | 2.9         |
| STOSD90-350-350 | 350      | 350      | 100      | 297      | 4.4         |
| STOSD90-350-400 | 350      | 400      | 100      | 297      | 4.1         |
| STOSD90-350-450 | 350      | 450      | 100      | 297      | 4           |
| STOSD90-350-500 | 350      | 500      | 100      | 297      | 3.9         |
| STOSD90-350-550 | 350      | 550      | 100      | 297      | 3.8         |
| STOSD90-350-600 | 350      | 600      | 100      | 297      | 3.8         |
| STOSD90-400-400 | 400      | 400      | 100      | 334      | 5.2         |
| STOSD90-400-450 | 400      | 450      | 100      | 334      | 4.8         |
| STOSD90-400-500 | 400      | 500      | 100      | 334      | 4.6         |
| STOSD90-400-550 | 400      | 550      | 100      | 334      | 4.5         |
| STOSD90-400-600 | 400      | 600      | 100      | 334      | 4.5         |
| STOSD90-450-450 | 450      | 450      | 100      | 372      | 6.6         |
| STOSD90-450-500 | 450      | 650      | 100      | 372      | 5.8         |
| STOSD90-450-550 | 450      | 550      | 100      | 372      | 6           |
| STOSD90-450-600 | 450      | 600      | 100      | 372      | 5.8         |
| STOSD90-500-500 | 500      | 650      | 100      | 409      | 6.6         |
| STOSD90-500-550 | 500      | 550      | 100      | 409      | 6.9         |
| STOSD90-500-600 | 500      | 600      | 100      | 409      | 6.7         |
| STOSD90-550-550 | 550      | 550      | 125      | 452      | 11.6        |
| STOSD90-550-600 | 550      | 650      | 125      | 452      | 10.5        |
| STOSD90-600-600 | 600      | 600      | 125      | 489      | 12.8        |

## T Combined



| Order code | End 1 Ød | End 2 Ød | End 3 Ød | Height 1 | Length | Weight (kg) |
|------------|----------|----------|----------|----------|--------|-------------|
| TC100-100  | 100      | 100      | 100      | 100      | 300    | 0.9         |
| TC125-100  | 125      | 100      | 100      | 100      | 325    | 1           |
| TC125-125  | 125      | 125      | 125      | 100      | 325    | 1.1         |
| TC150-100  | 150      | 100      | 100      | 100      | 350    | 1.1         |
| TC150-125  | 150      | 125      | 125      | 100      | 350    | 1.2         |
| TC150-150  | 150      | 150      | 150      | 100      | 350    | 1.4         |
| TC180-100  | 180      | 100      | 100      | 100      | 375    | 1.2         |
| TC180-125  | 180      | 125      | 125      | 100      | 375    | 1.3         |
| TC180-150  | 180      | 150      | 150      | 100      | 375    | 1.5         |
| TC180-180  | 180      | 180      | 180      | 100      | 375    | 1.7         |
| TC200-100  | 200      | 100      | 100      | 100      | 400    | 1.2         |
| TC200-125  | 200      | 125      | 125      | 100      | 400    | 1.4         |
| TC200-150  | 200      | 150      | 150      | 100      | 400    | 1.6         |
| TC200-180  | 200      | 180      | 180      | 100      | 400    | 1.8         |
| TC200-200  | 200      | 200      | 200      | 100      | 400    | 1.9         |
| TC225-100  | 225      | 100      | 100      | 100      | 425    | 1.3         |
| TC225-125  | 225      | 125      | 125      | 100      | 425    | 1.5         |
| TC225-150  | 225      | 150      | 150      | 100      | 425    | 1.7         |
| TC225-180  | 225      | 180      | 180      | 100      | 425    | 1.9         |
| TC225-200  | 225      | 200      | 200      | 100      | 425    | 2           |
| TC225-225  | 225      | 225      | 225      | 100      | 425    | 2.2         |
| TC250-125  | 250      | 125      | 125      | 100      | 450    | 1.6         |
| TC250-150  | 250      | 150      | 150      | 100      | 450    | 1.8         |
| TC250-180  | 250      | 180      | 180      | 100      | 450    | 2           |
| TC250-200  | 250      | 200      | 200      | 100      | 450    | 2.2         |
| TC250-225  | 250      | 225      | 225      | 100      | 450    | 2.3         |
| TC275-150  | 275      | 150      | 150      | 100      | 475    | 2.8         |
| TC275-180  | 275      | 180      | 180      | 100      | 475    | 3.1         |
| TC275-200  | 275      | 200      | 200      | 100      | 475    | 3.4         |

| Order code | End 1 Ød | End 2 Ød | End 3 Ød | Height 1 | Length | Weight (kg) |
|------------|----------|----------|----------|----------|--------|-------------|
| TC275-225  | 275      | 225      | 225      | 100      | 475    | 3.6         |
| TC275-250  | 275      | 250      | 250      | 100      | 475    | 3.9         |
| TC275-275  | 275      | 275      | 275      | 100      | 475    | 4.5         |
| TC300-150  | 300      | 150      | 150      | 100      | 500    | 3           |
| TC300-180  | 300      | 180      | 180      | 100      | 500    | 3.3         |
| TC300-200  | 300      | 200      | 200      | 100      | 500    | 3.5         |
| TC300-225  | 300      | 225      | 225      | 100      | 500    | 3.8         |
| TC300-250  | 300      | 250      | 250      | 100      | 500    | 4.1         |
| TC300-275  | 300      | 275      | 275      | 100      | 500    | 4.7         |
| TC300-300  | 300      | 300      | 300      | 100      | 500    | 4.9         |
| TC350-150  | 350      | 150      | 150      | 100      | 550    | 3.3         |
| TC350-180  | 350      | 180      | 180      | 100      | 550    | 3.6         |
| TC350-200  | 350      | 200      | 200      | 100      | 550    | 3.9         |
| TC350-225  | 350      | 225      | 225      | 100      | 550    | 4.2         |
| TC350-250  | 350      | 250      | 250      | 100      | 550    | 4.5         |
| TC350-275  | 350      | 275      | 275      | 100      | 550    | 5.1         |
| TC350-300  | 350      | 300      | 300      | 100      | 550    | 5.3         |
| TC350-350  | 350      | 350      | 350      | 100      | 550    | 6           |
| TC400-200  | 400      | 200      | 200      | 100      | 600    | 4.3         |
| TC400-225  | 400      | 225      | 225      | 100      | 600    | 4.6         |
| TC400-250  | 400      | 250      | 250      | 100      | 600    | 4.9         |
| TC400-275  | 400      | 275      | 275      | 100      | 600    | 5.5         |
| TC400-300  | 400      | 300      | 300      | 100      | 600    | 5.8         |
| TC400-350  | 400      | 350      | 350      | 100      | 600    | 6.5         |
| TC400-400  | 400      | 400      | 400      | 100      | 600    | 7.2         |
| TC450-200  | 450      | 200      | 200      | 125      | 700    | 5.2         |
| TC450-225  | 450      | 225      | 225      | 125      | 700    | 5.5         |
| TC450-250  | 450      | 250      | 250      | 125      | 700    | 5.9         |
| TC450-275  | 450      | 275      | 275      | 125      | 700    | 6.6         |
| TC450-300  | 450      | 300      | 300      | 125      | 700    | 6.9         |
| TC450-350  | 450      | 350      | 350      | 125      | 700    | 7.6         |
| TC450-400  | 450      | 400      | 400      | 125      | 700    | 8.4         |
| TC450-450  | 450      | 450      | 450      | 125      | 700    | 9.2         |
| TC500-200  | 500      | 200      | 200      | 125      | 750    | 5.6         |
| TC500-225  | 500      | 225      | 225      | 125      | 750    | 6           |
| TC500-250  | 500      | 250      | 250      | 125      | 750    | 6.4         |
| TC500-275  | 500      | 275      | 275      | 125      | 750    | 7           |
| TC500-300  | 500      | 300      | 300      | 125      | 750    | 7.4         |
| TC500-350  | 500      | 350      | 350      | 125      | 750    | 8.2         |
| TC500-400  | 500      | 400      | 400      | 125      | 750    | 9           |
| TC500-450  | 500      | 450      | 450      | 125      | 750    | 9.8         |
| TC500-500  | 500      | 500      | 500      | 125      | 750    | 10.7        |
| TC550-300  | 550      | 300      | 300      | 125      | 800    | 10.1        |
| TC550-350  | 550      | 350      | 350      | 125      | 800    | 11.1        |
| TC550-400  | 550      | 400      | 400      | 125      | 800    | 12.1        |
| TC550-450  | 550      | 450      | 450      | 125      | 800    | 13.2        |
| TC550-500  | 550      | 500      | 500      | 125      | 800    | 14.3        |
| TC550-550  | 550      | 550      | 550      | 125      | 800    | 16          |
| TC600-350  | 600      | 350      | 350      | 125      | 850    | 11.8        |

## T Combined

| Order code | End 1 Ød | End 2 Ød | End 3 Ød | Height 1 | Length | Weight (kg) |
|------------|----------|----------|----------|----------|--------|-------------|
| TC600-400  | 600      | 400      | 400      | 125      | 850    | 12.9        |
| TC600-450  | 600      | 450      | 450      | 125      | 850    | 14          |
| TC600-500  | 600      | 500      | 500      | 125      | 850    | 15.1        |
| TC600-550  | 600      | 550      | 550      | 125      | 850    | 16.8        |
| TC600-600  | 600      | 600      | 600      | 125      | 850    | 18.1        |
| TC650-300  | 650      | 300      | 300      | 150      | 950    | 12.3        |
| TC650-350  | 650      | 350      | 350      | 150      | 950    | 13.5        |
| TC650-400  | 650      | 400      | 400      | 150      | 950    | 14.7        |
| TC650-450  | 650      | 450      | 450      | 150      | 950    | 15.9        |
| TC650-500  | 650      | 500      | 500      | 150      | 950    | 17.1        |
| TC650-550  | 650      | 550      | 550      | 150      | 950    | 18.9        |
| TC650-600  | 650      | 600      | 600      | 150      | 950    | 20.2        |
| TC650-650  | 650      | 650      | 650      | 150      | 950    | 21.6        |
| TC700-400  | 700      | 400      | 400      | 150      | 1000   | 15.5        |
| TC700-450  | 700      | 450      | 450      | 150      | 1000   | 16.7        |
| TC700-500  | 700      | 500      | 500      | 150      | 1000   | 18          |
| TC700-550  | 700      | 550      | 550      | 150      | 1000   | 19.8        |
| TC700-600  | 700      | 600      | 600      | 150      | 1000   | 21.2        |
| TC700-650  | 700      | 650      | 650      | 150      | 1000   | 22.6        |
| TC700-700  | 700      | 700      | 700      | 150      | 1000   | 23.9        |
| TC750-400  | 750      | 400      | 400      | 150      | 1050   | 16.3        |
| TC750-450  | 750      | 450      | 450      | 150      | 1050   | 17.6        |
| TC750-500  | 750      | 500      | 500      | 150      | 1050   | 18.9        |
| TC750-550  | 750      | 550      | 550      | 150      | 1050   | 20.8        |
| TC750-600  | 750      | 600      | 600      | 150      | 1050   | 22.2        |
| TC750-650  | 750      | 650      | 650      | 150      | 1050   | 23.6        |
| TC750-700  | 750      | 700      | 700      | 150      | 1050   | 25          |
| TC750-750  | 750      | 750      | 750      | 150      | 1050   | 26.4        |
| TC800-500  | 800      | 500      | 500      | 150      | 1100   | 19.8        |
| TC800-550  | 800      | 550      | 550      | 150      | 1100   | 21.7        |
| TC800-600  | 800      | 600      | 600      | 150      | 1100   | 23.2        |
| TC800-650  | 800      | 650      | 650      | 150      | 1100   | 24.7        |
| TC800-700  | 800      | 700      | 700      | 150      | 1100   | 26.1        |
| TC800-750  | 800      | 750      | 750      | 150      | 1100   | 27.5        |
| TC800-800  | 800      | 800      | 800      | 150      | 1100   | 29          |
| TC850-500  | 850      | 500      | 500      | 150      | 1150   | 20.8        |
| TC850-550  | 850      | 550      | 550      | 150      | 1150   | 22.7        |
| TC850-600  | 850      | 600      | 600      | 150      | 1150   | 24.2        |
| TC850-650  | 850      | 650      | 650      | 150      | 1150   | 25.7        |
| TC850-700  | 850      | 700      | 700      | 150      | 1150   | 27.2        |
| TC850-750  | 850      | 750      | 750      | 150      | 1150   | 28.7        |
| TC850-800  | 850      | 800      | 800      | 150      | 1150   | 30.2        |
| TC850-850  | 850      | 850      | 850      | 150      | 1150   | 31.8        |
| TC900-600  | 900      | 600      | 600      | 150      | 1200   | 25.2        |
| TC900-650  | 900      | 650      | 650      | 150      | 1200   | 26.8        |
| TC900-700  | 900      | 700      | 700      | 150      | 1200   | 28.3        |
| TC900-750  | 900      | 750      | 750      | 150      | 1200   | 29.8        |
| TC900-800  | 900      | 800      | 800      | 150      | 1200   | 31.3        |
| TC900-850  | 900      | 850      | 850      | 150      | 1200   | 33          |
| TC900-900  | 900      | 900      | 900      | 150      | 1200   | 34.5        |

| Order code  | End 1 Ød | End 2 Ød | End 3 Ød | Height 1 | Length | Weight (kg) |
|-------------|----------|----------|----------|----------|--------|-------------|
| TC950-650   | 950      | 650      | 650      | 150      | 1250   | 28.9        |
| TC950-700   | 950      | 700      | 700      | 150      | 1250   | 30.4        |
| TC950-750   | 950      | 750      | 750      | 150      | 1250   | 32          |
| TC950-800   | 950      | 800      | 800      | 150      | 1250   | 33.6        |
| TC950-850   | 950      | 850      | 850      | 150      | 1250   | 35.2        |
| TC950-900   | 950      | 900      | 900      | 150      | 1250   | 36.8        |
| TC950-950   | 950      | 950      | 950      | 150      | 1250   | 40.5        |
| TC1000-700  | 1000     | 700      | 700      | 150      | 1300   | 31.6        |
| TC1000-750  | 1000     | 750      | 750      | 150      | 1300   | 33.2        |
| TC1000-800  | 1000     | 800      | 800      | 150      | 1300   | 34.8        |
| TC1000-850  | 1000     | 850      | 850      | 150      | 1300   | 36.5        |
| TC1000-900  | 1000     | 900      | 900      | 150      | 1300   | 38.2        |
| TC1000-950  | 1000     | 950      | 950      | 150      | 1300   | 41.9        |
| TC1000-1000 | 1000     | 1000     | 1000     | 150      | 1300   | 43.7        |
| TC1100-750  | 1100     | 750      | 750      | 200      | 1500   | 48.3        |
| TC1100-800  | 1100     | 800      | 800      | 200      | 1500   | 50.6        |
| TC1100-850  | 1100     | 850      | 850      | 200      | 1500   | 52.9        |
| TC1100-900  | 1100     | 900      | 900      | 200      | 1500   | 55.2        |
| TC1100-950  | 1100     | 950      | 950      | 200      | 1500   | 60          |
| TC1100-1000 | 1100     | 1000     | 1000     | 200      | 1500   | 62.5        |
| TC1100-1100 | 1100     | 1100     | 1100     | 200      | 1500   | 66          |
| TC1250-800  | 1250     | 800      | 800      | 200      | 1650   | 55.7        |
| TC1250-850  | 1250     | 850      | 850      | 200      | 1650   | 58.2        |
| TC1250-900  | 1250     | 900      | 900      | 200      | 1650   | 60.6        |
| TC1250-950  | 1250     | 950      | 950      | 200      | 1650   | 65.6        |
| TC1250-1000 | 1250     | 1000     | 1000     | 200      | 1650   | 68.2        |
| TC1250-1100 | 1250     | 1100     | 1100     | 200      | 1650   | 73.6        |
| TC1250-1250 | 1250     | 1250     | 1250     | 200      | 1650   | 81.7        |

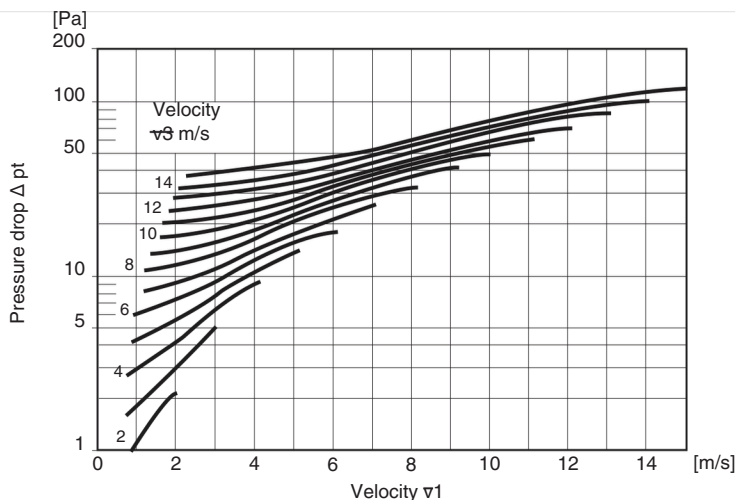
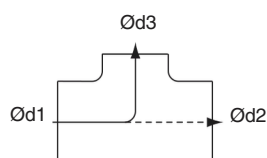
## T Combined

# T-piece and saddle

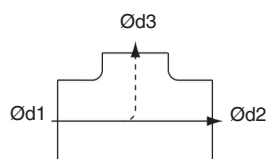
Technical data

### Supply air

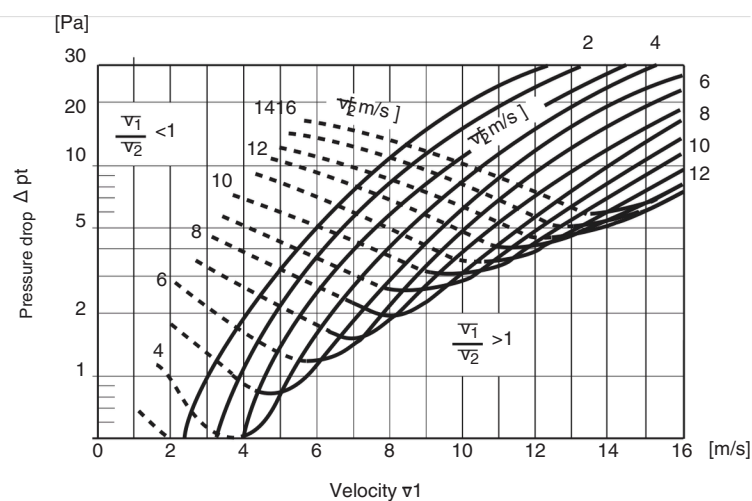
#### Diverging flow



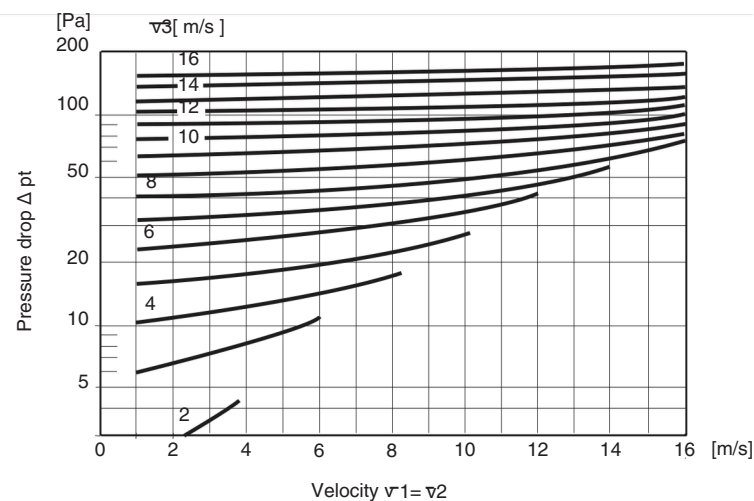
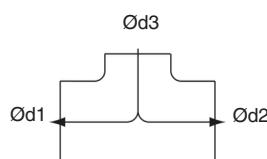
#### Diverging flow



The diagram is also applicable to reduction in Ød2.



#### Diverging flow



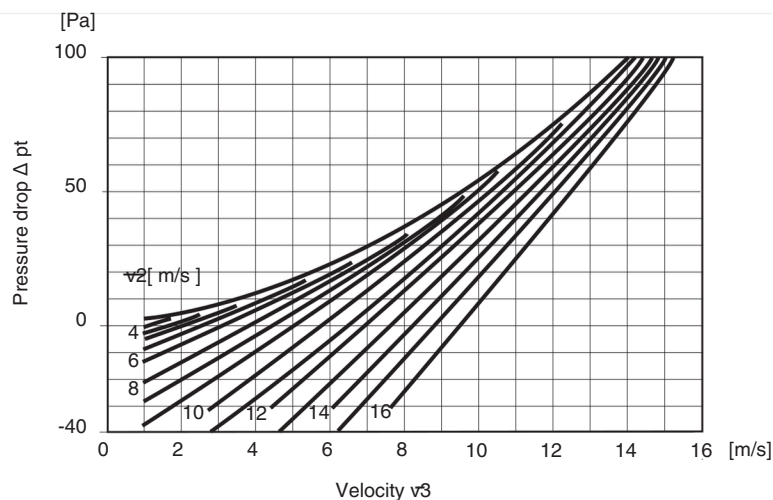
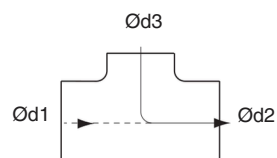
## T Combined

# T-piece and saddle

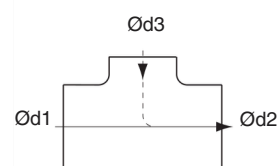
### Technical data

#### Exhaust air

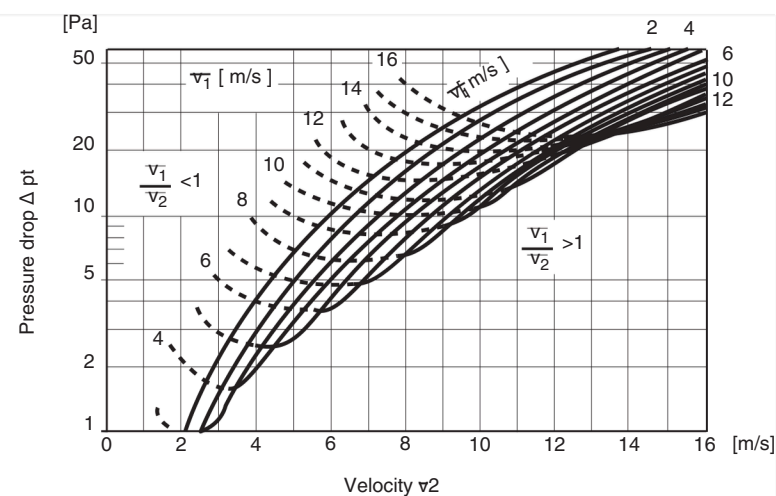
##### Converging flow



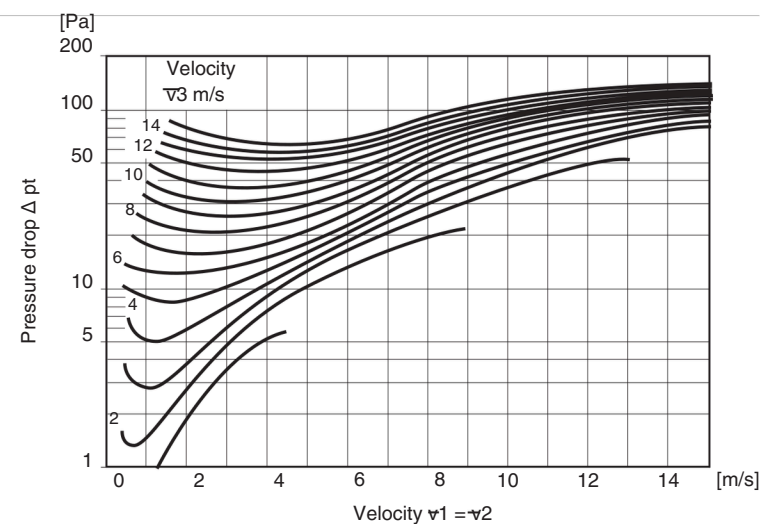
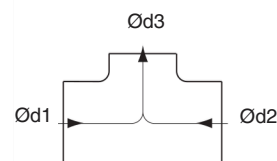
##### Converging flow



The diagram is also applicable to reduction in Ød1.

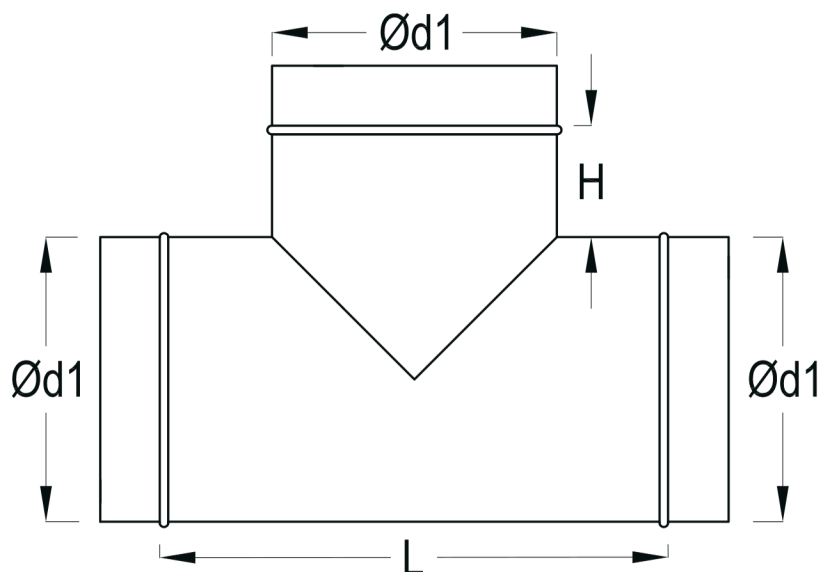


##### Converging flow



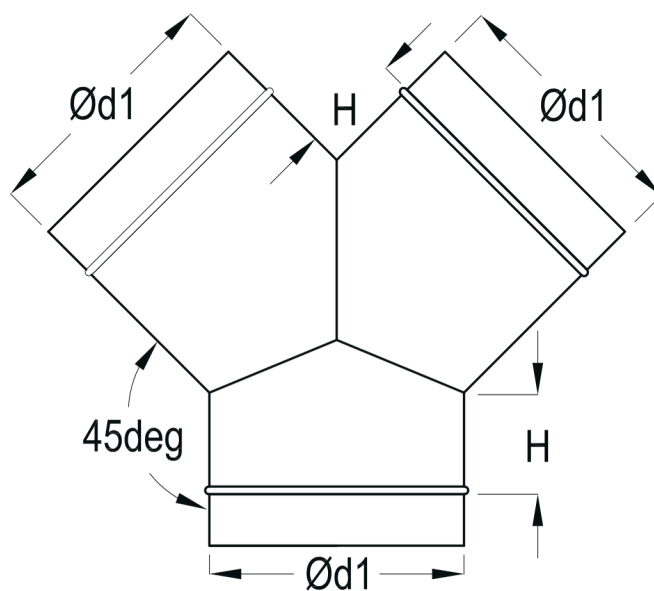


## T90 Equal



| Order code | End 1 Ød | Height h | Length L | Weight (kg) |
|------------|----------|----------|----------|-------------|
| T90-100    | 100      | 75       | 250      | 0.8         |
| T90-125    | 125      | 75       | 275      | 1.1         |
| T90-150    | 150      | 75       | 300      | 1.3         |
| T90-180    | 180      | 75       | 330      | 1.7         |
| T90-200    | 200      | 75       | 350      | 1.9         |
| T90-225    | 225      | 75       | 375      | 2.3         |
| T90-250    | 250      | 75       | 400      | 2.5         |
| T90-275    | 275      | 75       | 425      | 4.7         |
| T90-300    | 300      | 75       | 450      | 5.4         |
| T90-350    | 350      | 75       | 500      | 6.5         |
| T90-400    | 400      | 100      | 600      | 8.5         |
| T90-450    | 450      | 100      | 650      | 9.9         |
| T90-500    | 500      | 100      | 700      | 11.5        |
| T90-550    | 550      | 100      | 750      | 17.9        |
| T90-600    | 600      | 100      | 800      | 20.2        |
| T90-650    | 650      | 100      | 850      | 22.7        |
| T90-700    | 700      | 100      | 910      | 25.3        |
| T90-750    | 750      | 100      | 950      | 27.7        |
| T90-800    | 800      | 150      | 1100     | 33.5        |
| T90-850    | 850      | 150      | 1150     | 36.6        |
| T90-900    | 900      | 150      | 1200     | 39.6        |
| T90-950    | 950      | 150      | 1250     | 42.9        |
| T90-1000   | 1000     | 150      | 1300     | 46.2        |
| T90-1100   | 1100     | 150      | 1400     | 66.1        |
| T90-1250   | 1250     | 150      | 1550     | 80.1        |

## Y EQUAL



| Order code | End 1 Ød | Collar height | Weight (kg) |
|------------|----------|---------------|-------------|
| Y100       | 100      | 75            | 0.8         |
| Y125       | 125      | 75            | 1.1         |
| Y150       | 150      | 75            | 1.3         |
| Y180       | 180      | 75            | 1.7         |
| Y200       | 200      | 75            | 1.9         |
| Y225       | 225      | 75            | 2.3         |
| Y250       | 250      | 75            | 2.5         |
| Y275       | 275      | 75            | 4.7         |
| Y300       | 300      | 75            | 5.4         |
| Y350       | 350      | 75            | 6.5         |
| Y400       | 400      | 100           | 8.5         |
| Y450       | 450      | 100           | 9.9         |
| Y500       | 500      | 100           | 11.5        |
| Y550       | 550      | 100           | 17.9        |
| Y600       | 600      | 100           | 20.2        |
| Y650       | 650      | 100           | 22.7        |
| Y700       | 700      | 100           | 25.3        |
| Y750       | 750      | 100           | 27.7        |
| Y800       | 800      | 150           | 33.5        |
| Y850       | 850      | 150           | 36.6        |
| Y900       | 900      | 150           | 39.6        |
| Y950       | 950      | 150           | 42.9        |
| Y1000      | 1000     | 150           | 46.2        |
| Y1100      | 1100     | 150           | 66.1        |
| Y1250      | 1250     | 150           | 80.1        |

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