

# Features of TONISCO Drilling devices

At the moment we offer four different Drilling Equipment to cover all under pressure branching needs in the branch range 20 mm - 700 mm.

## TONISCO Jr. DN 20 - DN 100



**TONISCO Jr.** A universal drilling machine for the relatively small drillings most frequently needed. The device can be used in drilling branches up to diameter 100 mm. Special kits are available for use in water supply, process industry and hot water / steam heating systems or at chemical / petrochemical plants. If the pressure is very high or if the technical conditions are such, that a very long drill spindle is required, a heavier TONISCO drilling Machine is recommended.

### TECHNICAL SPECIFICATIONS

#### TONISCO Jr25-100

*Branching range:* DN 20 - DN 100  
*Drive alternatives:* Electric drive 220-240 V / 50 - 60 Hz 1000 VA  
Pneumatic 6 - 7 bar / 1500l / min

#### **Materials:**

*Equipment* high strength steel  
*feed unit* high strength steel / light metal alloy  
*spindle sealings* EPDM (Viton)  
*O-ring sealings* EPDM (Viton)

*Constructions inspection* pressure test and functional control  
*Test pressure* 60 bar  
*Max. operating pressure* 25 bar  
*Max. operating temp.* 200 °C ( 240 °C Viton sealings )

## TONISCO B30 DN 40 - DN 200

**TONISCO B30.** A drilling machine for small- to medium-size under pressure branchings. This device is used in drilling branches diameter up to 200 mm. The construction is heavy enough to allow operation within high pressure networks. Special sets are available for use in water supply, process industry, hot water / steam heating systems or at chemical / petrochemical plants.

### TECHNICAL SPECIFICATIONS

#### TONISCO B 30

*Branching range:* DN 40 - DN 200  
*Drive alternatives:* Electric drive  
 220-240 V / 50 - 60 Hz 1000VA  
 Pneumatic 6 - 7 bar / 1500 l / min

#### **Materials:**

*equipment* high strength steel  
*feed unit* light metal alloy  
*spindle sealings* EPDM ( Viton )  
*O-ring sealings* EPDM ( Viton )

*Constructions inspection* pressure test and functional control  
*Test pressure* 60 bar  
*Max. operating pressure* 40 bar  
*Max. operating temp.* 200 °C ( 240 °C Viton sealings )

### TONISCO B 30 Drilling machine

#### Dimensions for DN 150 Branching

*Length* 950 mm  
*Width* 150/350 mm  
*Weight* 32 kg



## TONISCO B40 DN 80 - DN 400

**TONISCO B40.** A versatile drilling machine for medium- to large-diameter under pressure branchings. The device is a lightweighted giant for drilling branches diameter up to 400 mm. The construction is heavy enough to accomplish all branching also within high pressure networks. Special sets are available for use in water supply, process industry, heating systems or in chemical / petrochemical plants.

### TECHNICAL SPECIFICATIONS

#### TONISCO B 40

*Branching range:* DN 125 - DN 400

*Drive alternatives:*  
 Electric drive  
 220-240 V / 50 - 60 Hz 1400 VA  
 Pneumatic 6 - 7 bar / 3000 l / min  
 Hydraulic 35 l / min / 140 bar



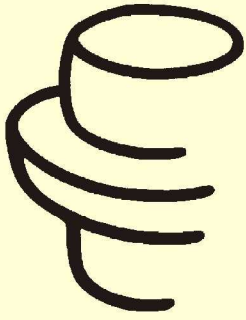
#### **Materials:**

*Device structure* high strength light metal alloy  
*Feed equipment* high strength steel  
 / high strength light metal alloy  
*Spindle sealings* EPDM ( Viton )  
*O-ring sealings* EPDM ( Viton )  
*Constructions inspection* pressure test and functional control  
*Test pressure* 60 bar  
*Max. operating pressure* 40 ( 60 ) bar  
*Max. operating temp.* 160 °C ( 200 °C Viton sealings )

### TONISCO B 40 Drilling Machine

#### Dimensions for DN 300 Branching

*Length* 1400 mm  
*Width* 250/450 mm  
*Weight* 63 kg



# **TONISCO**

Branching  
under pressure

# **System**

## TONISCO B70

for Branching  
DN 250 - DN 700

### **TONISCO B 70 Drilling Machine**

#### Dimensions for DN 600 Branching

Length 1480 mm  
Width 350/600 mm  
Weight 218 kg



**TONISCO B70.** The most powerful drilling machine for large-diameter branchings. The device is a all-steel constructed machine to accomplish drillings of diameter up to 700 mm. The construction allows branching under high pressure. Special sets of hole saws and connecting adapters are available for use in water supply, process industry, heating systems or in chemical / petrochemical plants.

### **TECHNICAL SPECIFICATIONS**

#### TONISCO B 70

#### *Branching range:*

DN 250 - DN 700

#### *Drive alternatives:*

Electric drive  
220-240 V / 50 - 60 Hz 1400 VA  
Hydraulic 35 l / min / 140 bar

#### *Materials:*

#### *Equipment:*

high strength steel

#### *Feed equipment:*

high strength steel

#### *Spindle sealings:*

EPDM ( Viton )

#### *O-ring sealings:*

EPDM ( Viton )

#### *Inspections:*

pressure test and functional control

#### *Test pressure:*

60 bar

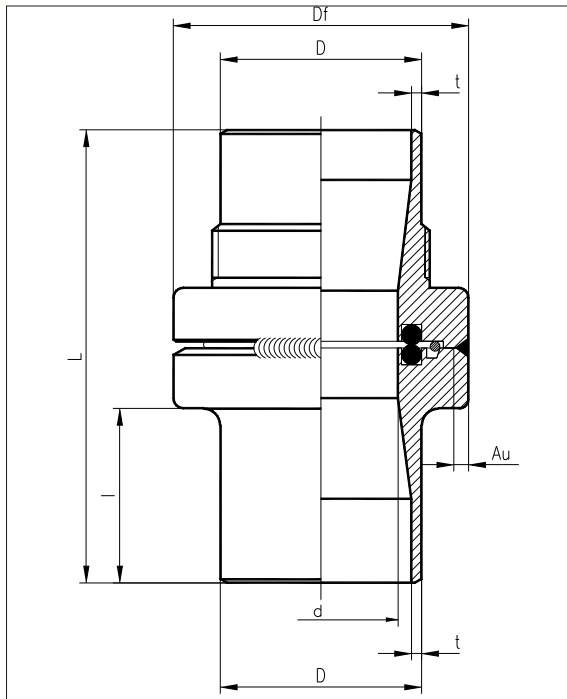
#### *Max. oper. pressure:*

40 ( 60 ) bar

#### *Max. oper. Temp.:*

160 °C ( 200 °C Viton sealings )

# TONISCO drilling Valves for Branching under pressure



## TONISCO Valves

Weldable *TONISCO Drilling Valves* are a part of *TONISCO system* to perform under pressure drilling on weldable lines.

These valves have been specially designed keeping in mind the requirements of ease of use and safety, approved material properties and trustworthy operation as well as the minimum space demand in making the actual branching work. The short length of the Drilling Valve and its shallow form also makes it very easy to isolate after the drilling.

## Operation Characteristics

Steel Material: EN S355J2G4 (or AISI 316)  
 Sealing material: EPDM  
 Max oper. Temp: 160 °C  
 Max oper. Pressure: 25 Bar

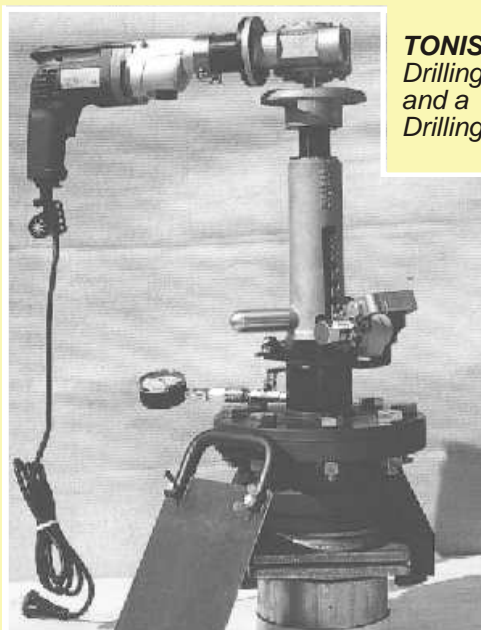
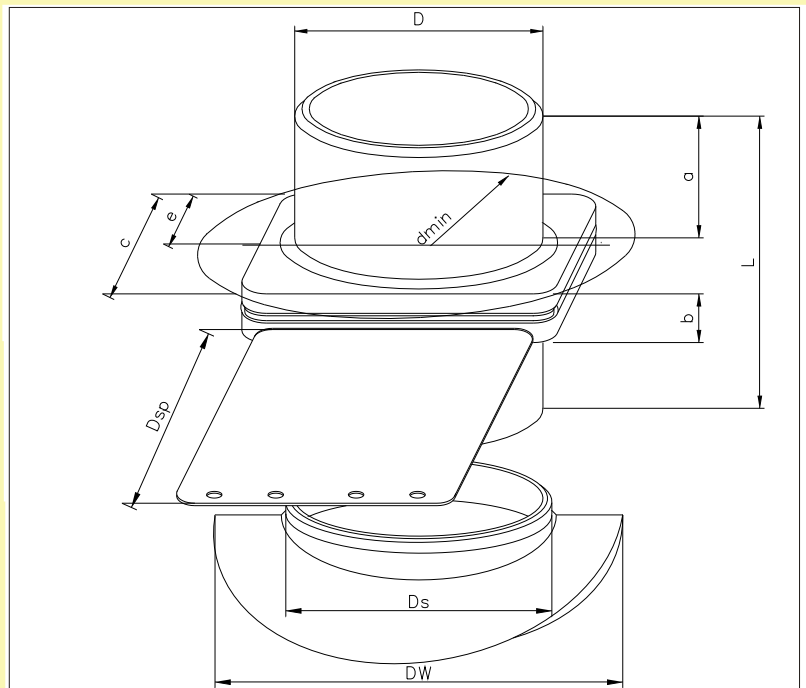
Operation applications:

District Heating and Cooling, different Pipe Networks in Process Plants.

Applicable fluids:

Non-flammable or non-explosive fluid.

DN	D x t	Df	d	l	L
DN 20	26,9 x 3,2	68	27,3	47	130
DN 25	33,7 x 3,2	68	27,3	47	130
DN 32	42,4 x 3,2	76	36,0	47	130
DN 40	48,3 x 3,2	78	39,0	47	130
DN 50	60,3 x 3,2	88	46,0	52	135
DN 65	76,1 x 3,6	105	60,0	55	145
DN 80	88,9 x 4,0	117	71,0	63	155
DN 100	114,3 x 3,2	148	100,0	73	175



**TONISCO B30**  
 Drilling Machine  
 and a DN 150  
 Drilling Valve

DN	D x t	L	a	b	c	dmin	Dw	Dsp
DN 125	139,7 x 4,5	204	90	33	195	260	300	225
DN 150	168,3 x 6,3	243	105	33	220	292	320	255
DN 200	219,1 x 6.3	287	120	47	285	386	400	315
DN 250	273,0 x 6.3	287	120	47	350	490	440	375
DN 300	323,9 x 10	315	120	52	425	555	490	465



# TONISCO

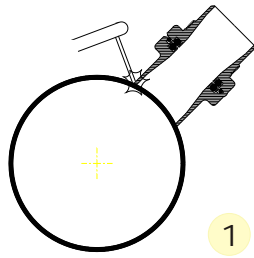
P.O. Box 36 FIN 33531 Tampere  
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# system



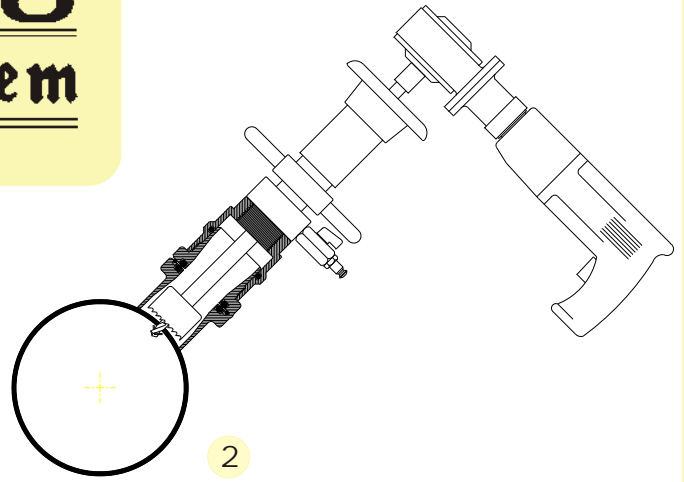
# TONISCO

principle of **system**  
TONISCO Valve



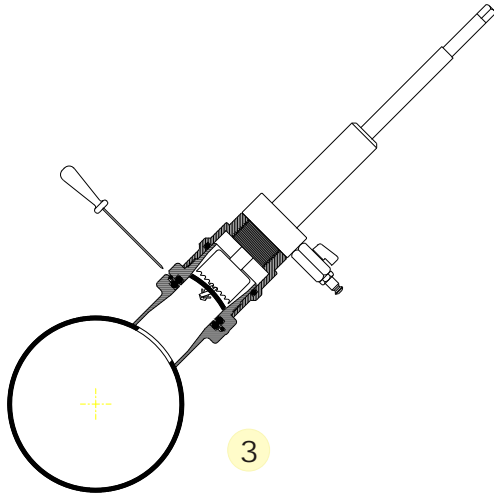
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The end of the TONISCO valve is formed according to the shape of the main line by grinding and welded electrically. The right position and direction are important. After welding the drilling machine is mounted..



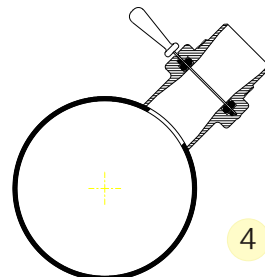
2

The tightness of the whole drilling assembly is controlled by a pressure test. Thereafter the actual drilling shall take place under pressure first using the central drill and then the hole saw.



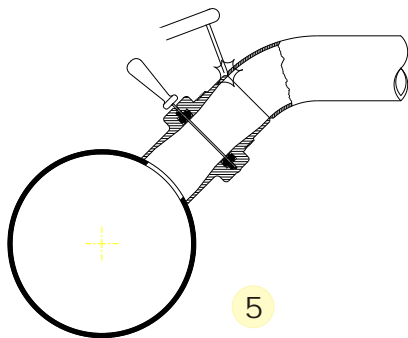
3

After completing the drilling the shaft with both central drill and hole saw with the loosened pipe wall piece shall be let to OUT-position.



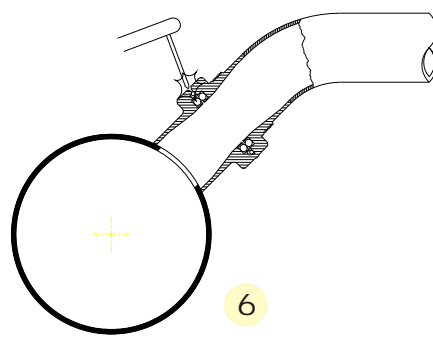
4

The sluice plate will be pushed into the TONISCO valve and the drilling machine can be dismantled.



5

The formerly prepared branch line shall be welded to the end of the TONISCO valve. The tightness of all welding seams can be controlled by test pressuring against the sluice plate.



6

As the final stage the sluice plate groove shall be welded solid electrically. Elastomer sealings inside the TONISCO valve ensure the tightness of the valve both sluice plate in or out -position.

## TONISCO System Drilling Service

TONISCO System has been founded since over 30 years ago. One of the most important tasks from the beginning has been the Branching work as a service to Customers, who do not have the capability to do it themselves. Branching service has been an excellent opportunity to introduce the Drilling devices to the Customers who have the need for them. At the same time this work has contributed the Personnel in TONISCO effectively since the actual branching opportunities let the designers find out how their designs work.

To introduce TONISCO System to new customers we in TONISCO are prepared show how the system works and how it benefits also those network operators who have only occasional need for under pressure branching. Personnel of TONISCO will carry out the drilling for the Customer. In that case specialized personnel execute the drilling and no specially skilled workers from the customer are required - branches are always made by experts using the most advanced equipments and right components - this ensures the best possible quality.



When ever there is a need for an under pressure branch in a pipe line, the operator of the network may contact the TONISCO office by phone or a fax. TONISCO technicians will gather all essential facts about the case and choose the proper components and methods for the under pressure connection in question, and - if so agreed - they will also carry out the actual branching. Normally the whole planning and branching work will not take more than one or two workdays.

### **Costs**

Should a pipe line in a process plant or indeed a section in a network of a municipal utility need to be shut off, this will result in significant losses through the time and effort required for turning the system off and on again. Accordingly, if such interruptions can be avoided, the savings thus achieved will also be remarkable. The reasonable expenses caused by using the TONISCO under pressure branching method will in each case be quickly compensated by such savings.