



Pipe enlarging type fitting for light gauge stainless steel pipe

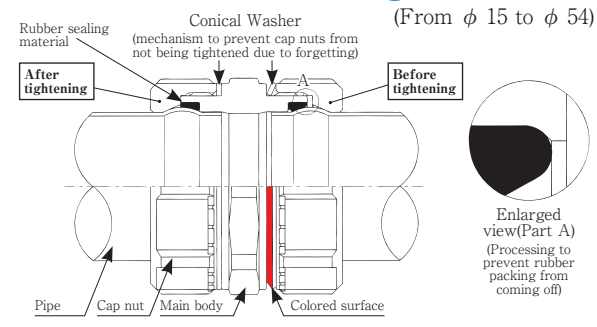


No use of heat or flame
No specialized technology required
Not press type fitting

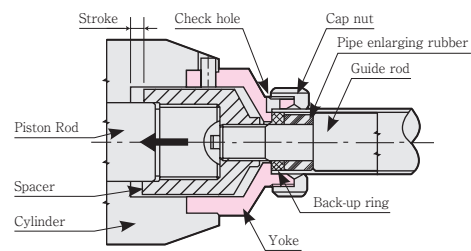


 **O.N. INDUSTRIES LTD.**

◆ Structure of Connecting section



◆ Pipe enlarging principle



Structure: A cap nut and flange are mounted to the expanded pipe end, connected to the fitting. Rubber packing is inserted into a triangle chamber surrounded by the fitting and pipe to seal out liquid.

Pipe enlarging principle: Expanding pipe enlarging rubber when compressed load is applied in the axis (arrow) direction with oil pressure. The pipe inserted into guide rod is enlarged by a force where the pipe enlarging rubber expands in the circumferential direction.

Features

(1) Easy

Easy to install. Not much time is needed to get the required skills.
Easy to avoid forgetting to tighten the cap nut.
Tightening can be checked visually through conical washer.

(2) Quick

Faster processing time with using dedicated pipe expansion machine, anyone can handle the installation work easily.
Prefabrication by cutting and expansion of pipes according to drawings can be done in a piping factory, so assembling a unit and final assembly on site is not so complicated.

(3) Strong

Excellent durability and withstands even huge earthquakes.
Unique structure, pipe enlargement system, proved seismic tests.
The secret is the unique expanded pipe structure and expanding the end of pipe that has stronger resistance with cap nut.

(4) Light

O.N. Fitting system uses thin wall thickness stainless steel pipe.
Light, easy and amazingly fast.
It is easy to carry, handle and operate even in narrow places, workability is high.

(5) Eco-friendly

Hygienic stainless steel does not create red or blue water due to corrosion of steel pipes.
Stainless steel is environmentally friendly and has a long service life.
As open flames are not used, it is convenient for repairs.

Cautions in installation

1. Always keep in mind that the pipe is thin.
2. Carefully perform cutting and chamfering.
3. Mount pipe expansion machine parts correctly.
4. When enlarging the pipe, insert pipe correctly.
5. Keep the correct pipe enlarging amount.
6. Do not forget rubber sealing material.
7. Tighten the cap nut completely.
8. Do not apply an excessive piping stress.
9. Be sure to take measures against corrosion and freezing.
10. Fix the support securely.

***Please connect the next process with the extension of piping after completely tightening cap nut.**

Operation procedures with NE40C pipe expander (From $\phi 15$ to $\phi 54$)



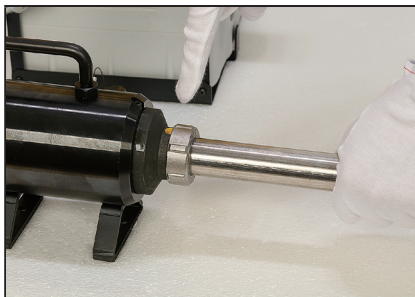
1. Referring to the pipe cutting dimension table, cut the pipe at a right angle to the axis core with a metal saw or band saw.



2. Carefully, remove burrs from both the inner and outer chamfered surfaces carefully using reamer, sand paper and grinder.



3. Tighten the cap nut to the yoke.



4. Insert the pipe into the guide rod completely.



5. For the pipe expansion work, keep pressing "UP" button until the motor stops. Then, pressing "DOWN" button around two seconds to release the pressure.



6. Insert the enlarged pipe into the fitting and tighten the cap nut.



7. In case rubber sealing material is dropped, be sure to mount it to the fitting main body.



8. Set the conical washer to a section where the cap nut side surface comes in contact with the fitting and tighten the nut until the colored surface is not visible.

⚠ Safety Precautions
Check instruction and installation manual before the work.

Products

(Unit : mm)



90° Elbow

size	Qty per carton
φ 15 / 1.0	48
φ 18 / 1.0	42
φ 22 / 1.2	30
φ 28 / 1.2	20
φ 35 / 1.5	24
φ 42 / 1.5	16
φ 54 / 1.5	8



Equal Tees

size	Qty per carton
φ 15 / 1.0	36
φ 18 / 1.0	36
φ 22 / 1.2	24
φ 28 / 1.2	20
φ 35 / 1.5	12
φ 42 / 1.5	10
φ 54 / 1.5	6



Socket

size	Qty per carton
φ 15 / 1.0	64
φ 18 / 1.0	56
φ 22 / 1.2	48
φ 28 / 1.2	30
φ 35 / 1.5	32
φ 42 / 1.5	28
φ 54 / 1.5	12



Male Adapter

size	Qty per carton
φ 15/1.0 × R ¹ / ₂	64
φ 18/1.0 × R ¹ / ₂	56
φ 22/1.2 × R ³ / ₄	48
φ 28/1.2 × R1	30
φ 35/1.5 × R1 ¹ / ₄	32
φ 42/1.5 × R1 ¹ / ₂	28
φ 54/1.5 × R2	12



Female Adapter

size	Qty per carton
φ 15/1.0 × Rp ¹ / ₂	64
φ 18/1.0 × Rp ¹ / ₂	56
φ 22/1.2 × Rp ³ / ₄	48
φ 28/1.2 × Rp1	30
φ 35/1.5 × Rp1 ¹ / ₄	32
φ 42/1.5 × Rp1 ¹ / ₂	28
φ 54/1.5 × Rp2	12



Flange Adapter

size	Qty per carton
φ 15/1.0 × DN15	4
φ 18/1.0 × DN15	4
φ 22/1.2 × DN20	4
φ 28/1.2 × DN25	4
φ 35/1.5 × DN32	4
φ 42/1.5 × DN40	4
φ 54/1.5 × DN50	2

(Unit : mm)



size	Qty per carton
ϕ 18/1.0 \times ϕ 15/1.0	42
ϕ 22/1.2 \times ϕ 18/1.0	30
ϕ 28/1.2 \times ϕ 22/1.2	20
ϕ 35/1.5 \times ϕ 28/1.2	24
ϕ 42/1.5 \times ϕ 35/1.5	16
ϕ 54/1.5 \times ϕ 42/1.5	8



size	Qty per carton
ϕ 18/1.0 \times ϕ 15/1.0	36
ϕ 22/1.2 \times ϕ 15/1.0	24
ϕ 22/1.2 \times ϕ 18/1.0	24
ϕ 28/1.2 \times ϕ 18/1.0	20
ϕ 28/1.2 \times ϕ 22/1.2	20
ϕ 35/1.5 \times ϕ 22/1.2	12
ϕ 35/1.5 \times ϕ 28/1.2	12
ϕ 42/1.5 \times ϕ 28/1.2	10
ϕ 42/1.5 \times ϕ 35/1.5	10
ϕ 54/1.5 \times ϕ 35/1.5	6
ϕ 54/1.5 \times ϕ 42/1.5	6



size	Qty per carton
ϕ 18/1.0 \times ϕ 15/1.0	56
ϕ 22/1.2 \times ϕ 15/1.0	48
ϕ 22/1.2 \times ϕ 18/1.0	48
ϕ 28/1.2 \times ϕ 18/1.0	30
ϕ 28/1.2 \times ϕ 22/1.2	30
ϕ 35/1.5 \times ϕ 22/1.2	32
ϕ 35/1.5 \times ϕ 28/1.2	32
ϕ 42/1.5 \times ϕ 28/1.2	28
ϕ 42/1.5 \times ϕ 35/1.5	28
ϕ 54/1.5 \times ϕ 35/1.5	12
ϕ 54/1.5 \times ϕ 42/1.5	12

Pipe expander

◆NE30C-Type



Electrical requirement	Lithium ion battery
Pipe expansion range	15mm to 28mm (4sizes)
Weight	4.3kg

◆NE40C-Type



Electrical requirement	AC230V
Pipe expansion range	15mm to 54mm (7sizes)
Weight	21kg

⚠ Warning: Machine designed exclusively for O.N. Fitting system

1. Using these machines for the expansion of mechanical fittings other than O.N. Fitting will cause trouble.
2. Expanding tubes with pipe enlarging machines other than the dedicated ones will affect the performance of O.N. Fitting.

Specification

(1) Scope of usage



O.N. Fitting is suitable for portable water, cooling water, cold and hot water, and compressed air etc.

(2) Temperature, pressure

Temperature : from 0°C (not frozen) to 100°C

Pressure : MAX 20bar

(3) Rubber sealing material

	Standard product
Front (Pipe side)	
Back (Fitting body side)	
Material	EPDM
Nominal size	From ϕ 15 to ϕ 54 (7 sizes)
Applications	Suitable for portable water, cooling water, cold and hot water, compressed air and etc.
Temperature	From 0°C (not frozen) to 100°C
Appearance	Black

(4) Scope of applicable pipes

Light gauge stainless steel pipes in accordance with EN10312 Table2 and DVGW W541



(5) Degreased and cleansed products

Degreased and cleansed O.N. Fitting is manufactured separately.

Safety Precautions

When you use our products under conditions other than those specified above, please contact us in advance. Be sure to read the Instruction manual before installation.



CERT

DVGW type examination certificate

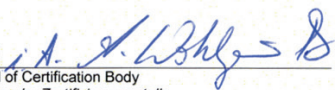
DVGW-Baumusterprüfzertifikat

DW-8511CU0344

Registration Number
Registriernummer

Field of Application <i>Anwendungsbereich</i>	products of water supply <i>Produkte der Wasserversorgung</i>
Owner of Certificate <i>Zertifikatinhaber</i>	O.N. Industries Ltd. Tsuayama, Okayama, JP-3235-2 Kamitanomura
Distributor <i>Vertreiber</i>	O.N. Industries Ltd. Tsuayama, Okayama, JP-3235-2 Kamitanomura
Product Category <i>Produktart</i>	installation systems and system joints: pipe joint for pipes in drinking water installation systems (8511)
Product Description <i>Produktbezeichnung</i>	mechanical connectors made from stainless steel for stainless steel pipes according to DVGW GW 541 (type M-MM)
Model <i>Modell</i>	O.N. Fitting
Test Reports <i>Prüfberichte</i>	type testing: K 19 0405 from 01.11.2019 (MPD)
Test Basis <i>Prüfgrundlagen</i>	DVGW W 534-(P) (01.07.2015) DVGW CERT ZP 8500 (09.03.2017) UBA METALLE (21.11.2018) UBA ELASTOM (16.03.2016) DVGW W 270 (01.11.2007)

Date of Expiry / File No. 01.11.2024 / 18-0464-WNE
Ablaufdatum / Aktenzeichen

12.11.2019 GI A-1/2 
Date, Issued by, Sheet, Head of Certification Body
Datum, Bearbeiter, Blatt, Leiter der Zertifizierungsstelle

DVGW CERT GmbH is an accredited body by DAkkS according to DIN EN ISO/IEC 17065:2013 for certification of products for energy and water supply industry.

DVGW CERT GmbH ist von der DAkkS nach DIN EN ISO/IEC 17065:2013 akkreditierte Stelle für die Zertifizierung von Produkten der Energie- und Wasserversorgung.



DVGW CERT GmbH
Zertifizierungsstelle

Josef-Wirmer-Str. 1-3
53123 Bonn

Tel. +49 228 91 88 - 888
Fax +49 228 91 88 - 993

www.dvgw-cert.com
info@dvgw-cert.com

We are dedicated to develop the seismic-resistant products

After Great Hanshin Awaji Earthquake, Great East Japan Earthquake and Kumamoto Earthquake, we visited sites where our products had been applied, such as hotels, universities, banks and waste disposal plants, etc. and confirmed that our products were safe.



High-end piping

O.N. Fitting

*It has been verified that our products can stand earthquakes up to about MSKⅡ by applying acceleration of 2000Gal to pipes.

O.N. INDUSTRIES LTD.

■Overseas Sales Division
(Contact)

Nakamura No.2 Building 3F NO.307, 3-4-18 Kikawahigashi,
Yodogawa-ku, Osaka City, 532-0012 Japan
Tel: +81-6-6829-6002 Fax:+81-6-6829-6866

■New Head Office and Factory 3235-2, Kamitanomura, Tsuyama City, Okayama, 708-0011 Japan
Hokkaido Business Office / Tohoku Business Office / Tokyo Business Office
Osaka Business Office / Chugoku and Shikoku Business Office / Kyushu Business Office

Website(English) <https://www.onk-net.co.jp/en/index.html>

Website(German) <https://www.onk-net.co.jp/de/index.html>

E-mail onk@onk-net.co.jp



Safety Precautions

Please read through "Instruction manual" before use to secure appropriate use of products listed in this catalogue.

Installation explanation sessions for O.N. Fitting are available.

*The installation will be provided in accordance with instruction manual.

*If you handle our products for the first time, be sure to take an installation explanation session.

*Please contact to sales representative for the sessions.

*A technical training certificate or certificate of completion will be issued if needed.

*Please apply for the installation explanation session as early as possible.