

PAKTERMO

by  Instantor[®]



CSST

**CORRUGATED
STAINLESS STEEL
TUBE & FITTINGS**

STAINLESS STEEL CORRUGATED PIPE AND COMPATIBLE FITTINGS FOR GAS INSTALLATIONS ONLY.

PAKTERMO

by  Instantor®

CORRUGATED STAINLESS STEEL TUBE & FITTINGS

10
YEAR
WARRANTY

PAKTERMO by Instantor is the solution when you want to save on time, carry less tools and avoid installation errors.

Featuring a range of corrugated stainless-steel tube and fittings, which when combined create a faster install solution for gas systems. The system is suitable for all gas installations, both indoors and outdoors, eliminating the need to solder fittings near a gas meter box.

All components of the system must consist of PAKTERMO branded products.

Installation is up to 70% faster when compared to conventional plumbing methods. By removing the need for a variety of tools, it provides a safer, more convenient installation process.

NOTE: Training and competency certification by Instantor is required to carry out installations using the Paktermo CSST system.



SCAN TO
REGISTER



QUICK & EASY INSTALLATION

The PAKTERMO DUO CSST System enables an easier more efficient installation compared to traditional piping systems.



ROBUST & DURABLE

The system features tubing made from high-quality stainless steel and fittings manufactured from copper alloy, providing enhanced durability and robustness.



SAFE

The PAKTERMO DUO CSST System is safer against gas leaks because it uses fewer joints compared to traditional rigid pipe installations.



EASY TO STORE & HANDLE

The system requires minimal storage space due to its flexible structure, making handling and transportation easier compared to rigid pipe systems.



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The PAKTERMO DUO CSST system features a stainless steel pliable corrugated tubing kit designed for gas installations with an operating pressure of up to 0.5 bar. It provides a very easy, quick, and safe installation process. This system significantly reduces labor time and offers a more practical and secure installation due to its efficient connection method.

It is manufactured and supplied to the market with a total quality approach, ensuring excellence from production through to installation.

INSTALLATION

The PAKTERMO DUO CSST System is designed for use with second and third family gases, suitable for both new installations and replacement of existing systems.

PAKTERMO DUO CSST may be connected directly to fixed appliances, including water heaters, furnaces, boilers, and island cook-tops.

The installation of the heat shrink sleeves should only be carried out after the leak test, provided it meets the criteria of the standard or local regulations.

STORAGE

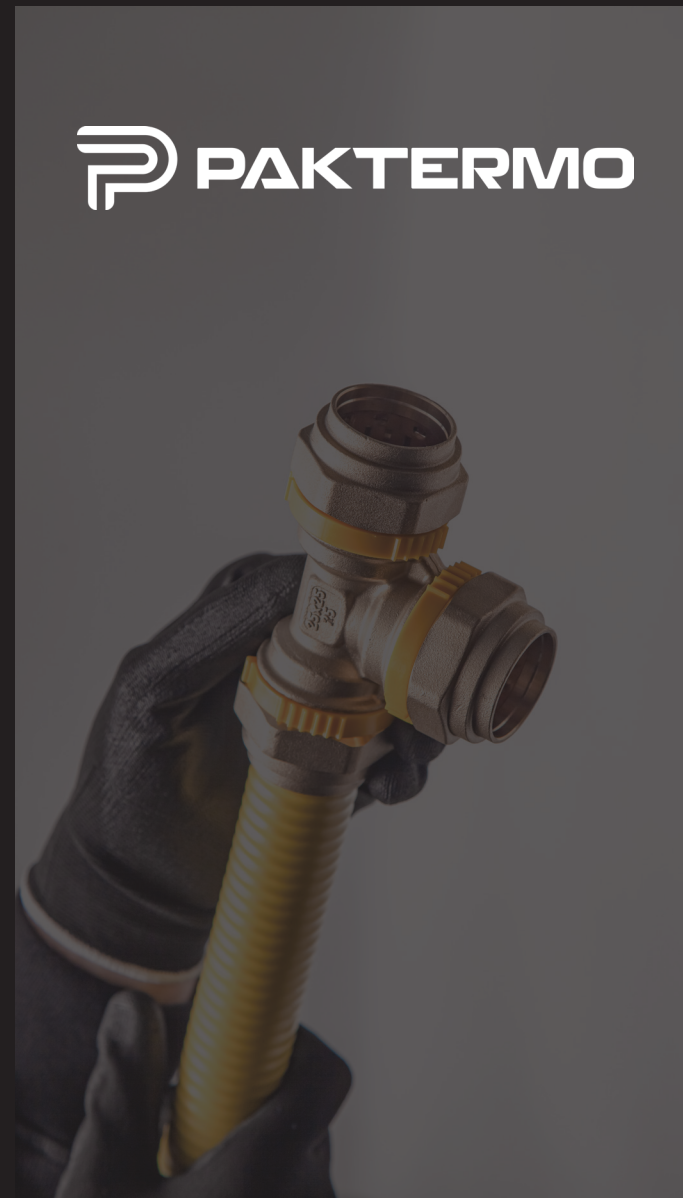
PAKTERMO DUO CSST kit components should be stored in their original packaging for as long as possible before use.

PROHIBITIONS

- Do not use an open flame to solder or braze on a PAKTERMO System. The use of Instantor Copper Press Fittings is advisable.
- Only use components specified for use within a Paktermo System. The use of non-specified components will void the warranty.

OUTDOOR INSTALLATION

PAKTERMO DUO CSST products are approved for outdoor installations. To protect any exposed stainless steel from corrosive damage, it must be sleeved using the heat shrink material.



INSTALLATION INSTRUCTIONS



1. Trim the tubing to the desired length using a tube cutters positioned between two corrugations. Gradually increase roller pressure after each turn. If the tube end isn't smooth and contains burrs, trim it again.



2. Place the sleeve remover tool around the tube, ensuring it's approximately 80mm from the cut end. Rotate it at least three times to slice through the outer layer while preserving the inner covering intact.



3. To remove the outer sleeve, firmly hold one end with one hand, and twist and pull it off the pipe with your other hand.



4. Use a utility knife or a sleeve remover tool to cut the inner cover from the tubing end. Cut at the 6th corrugation for DN15, DN20, DN25, and DN32, and at the 5th corrugation for DN40 and DN50. Pay close attention to the number of corrugations.



5. Insert the tube into the fittings securely until the metal part of the tube is no longer visible.



6. Remove the yellow rings between the nut and fitting.



7. Hand-tighten the nut after inserting the tube into the fittings. Then, use a wrench to further tighten the nut. Ensure that the tubing remains fixed while tightening the nut. Tighten the nuts until they are securely in place ensuring not to over tighten.



8. Trim the heat shrink tube to match the length needed to cover the fittings and pipe connection area. Once the end connection is assembled, slide the heat shrink tube onto it.

NB: Minimum length of 300mm heat shrink required to ensure full protection of fitting & tube.



9. Apply a hot air gun to shrink the tube over the pipe and fittings.

NOTE - Do not use a naked flame



10. Trim and tidy up the heat shrink parts that extend toward the teeth of the fittings using a utility knife.

NOTE

PAKTERMO DUO CSST must be sleeved when passing through walls or floors. At the meter box, it should pass through the provided sleeve/spigot, ensuring proper sealing within the meter box.

Fittings

Straight Coupler

CODE	SIZE
P26.F2.01	DN15
P26.F2.02	DN20
P26.F2.03	DN25
P26.F2.04	DN32
P26.F2.05	DN40
P26.F2.06	DN50



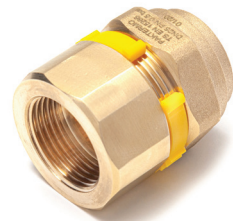
Male Connector

CODE	SIZE
P26.F1.01	DN15 x R 1/2"
P26.F1.06	DN20 x R 1/2"
P26.F1.02	DN20 x R 3/4"
P26.F1.03	DN25 x R 3/4"
P26.F1.04	DN25 x R 1"
P26.F1.07	DN32 x R 1"
P26.F1.05	DN32 x R 1 1/4"
P26.F1.21	DN40 x R 1 1/2"
P26.F1.24	DN50 x R 2"



Female Connector

CODE	SIZE
P26.FM.01	DN15 x 1/2" F
P26.FM.07	DN20 x 1/2" F
P26.FM.02	DN20 x 3/4" F
P26.FM.08	DN25 x 1/2" F
P26.FM.03	DN25 x 3/4" F
P26.FM.04	DN25 x 1" F
P26.FM.09	DN32 x 3/4" F
P26.FM.06	DN32 x 1" F
P26.FM.05	DN32 x 1 1/4" F



Copper Compression Straight

CODE	SIZE
P26.F25.01	DN 15 x 15mm
P26.F25.02	DN 20 x 15mm
P26.F25.03	DN 20 x 22mm
P26.F25.04	DN 25 x 22mm
P26.F25.05	DN 25 x 28mm
P26.F25.06	DN 32 x 28mm
P26.F25.07	DN 32 x 35mm
P26.F25.08	DN 32 x 22mm



Tee

CODE	SIZE
P26.F3.01	DN 20 x 15 x 20mm
P26.F3.02	DN 20 x 20 x 20mm
P26.F3.03	DN 25 x 15 x 20mm
P26.F3.04	DN 25 x 25 x 25mm
P26.F3.05	DN 32 x 25 x 25mm
P26.F3.06	DN 25 x 20 x 25mm
P26.F3.07	DN 15 x 15 x 15mm
P26.F3.08	DN 20 x 15 x 15mm
P26.F3.10	DN 25 x 20 x 15mm
P26.F3.12	DN 25 x 20 x 20mm
P26.F3.13	DN 20 x 25 x 20mm
P26.F3.14	DN 25 x 25 x 20mm



Tube

CODE	SIZE
P26.D1.30	DN15 - 30M Coil
P26.D1.75	DN15 - 75M Coil
P26.D2.30	DN20 - 30M Coil
P26.D2.75	DN20 - 75M Coil
P26.D3.30	DN25 - 30M Coil
P26.D3.75	DN25 - 75M Coil
P26.D4.30	DN32 - 30M Coil
P26.D4.75	DN32 - 75M Coil
P26.D5.30	DN40 - 30M Coil
P26.D5.75	DN40 - 75M Coil
P26.D6.30	DN50 - 30M Coil
P26.D6.75	DN50 - 75M Coil



Packs

CODE	CONTENTS
Y68ST15D05	Duo Hose DN15x5M, 2 x Male Connection DN15 x R 1/2", 2 x 30cm DN15 Heat Shrink
Y68ST15D10	Duo Hose DN15x10M, 2 x Male Connection DN15 X R 1/2", 2 x 30cm DN15 Heat Shrink
Y68ST15D15	Duo Hose DN15x15M, 2 x Male Connection DN15 X R 1/2", 2 x 30cm DN15 Heat Shrink
Y68ST20D05	Duo Hose DN20x5M, 2 x Male Connection DN20 X R 3/4", 2 x 30cm DN20 Heat Shrink
Y68ST20D10	Duo Hose DN20x10M, 2 x Male Connection DN20 X R 3/4", 2 x 30cm DN20 Heat Shrink
Y68ST20D15	Duo Hose DN20x15M, 2 x Male Connection DN20 X R 3/4", 2 x 30cm DN20 Heat Shrink

Heat Shrink

CODE	SIZE
PLC.01	Ø40 DN15 - 3M Length
PLC.02	Ø50 DN20-25 - 3M Lengths
PLC.03	Ø70 DN32 - 3M Lengths
PLC.04	Ø80 DN40 - 3M Lengths

Tools

CODE	SIZE
PSA01	Sleeve Removal Tool DN15-DN25
PKA01	Pipe Cutter DN15-DN50

PLANNING & SIZING

All piping systems introduce pressure loss, which depends on the piping size and gas flow (m³/h). When sizing a system, the installer determines the smallest size piping that will deliver the required flow given the allowable amount of pressure drop. Sizing tables provide the maximum load for a run based on the gas pressure, allowable pressure drop, pipe size, and the length of the run. Different sizing tables are used for each combination of system pressure and pressure drop (see Table A.1).

Allowable pressure drop is the maximum pressure loss that can occur while maintaining supply pressure for proper equipment or appliance operation. For natural gas, the pressure at the meter outlet should be 21 mbar, and the pressure drop between the outlet of the meter and the points to be connected shall not exceed 1 mbar at maximum flow conditions. Low-pressure 3rd family gas supplies should be regulated at 28 mbar (butane) or 37 mbar (propane), with a pressure drop not exceeding 2.5 mbar.

Table A.1

	1M	2M	3M	4M	5M	6M	7M	8M	9M	10M	12M	14M
DN15	6.05	4.28	3.49	3.03	2.71	2.47	2.29	2.14	2.02	1.91	1.75	1.62
DN20	10.69	7.56	6.17	5.35	4.78	4.36	4.04	3.78	3.56	3.38	3.09	2.86
DN25	18.85	13.33	10.89	9.43	8.43	7.70	7.13	6.67	6.28	5.96	5.44	5.04
DN32	35.69	25.24	20.61	17.85	15.96	14.57	13.49	12.62	11.90	11.29	10.30	9.54
DN40	63.61	44.98	36.73	31.81	28.45	25.97	24.04	22.49	21.20	20.12	18.36	17.00
DN50	113.72	80.41	65.65	56.85	50.85	46.42	42.98	40.20	37.90	35.96	32.83	30.39

	15M	16M	18M	20M	22M	24M	25M	26M	28M	30M	32M	32M
DN15	1.56	1.51	1.43	1.35	1.29	1.23	1.21	1.19	1.14	1.10	1.07	1.04
DN20	2.76	2.67	2.52	2.39	2.28	2.18	2.14	2.10	2.02	1.95	1.89	1.83
DN25	4.87	4.71	4.44	4.22	4.02	3.85	3.77	3.70	3.56	3.44	3.33	3.23
DN32	9.22	8.92	8.41	7.98	7.61	7.29	7.14	7.00	6.75	6.52	6.31	6.12
DN40	16.42	15.90	14.99	14.22	13.56	12.98	12.72	12.48	12.02	11.61	11.24	10.91
DN50	29.36	28.43	26.80	25.43	24.24	23.21	22.74	22.30	21.49	20.76	20.10	19.50

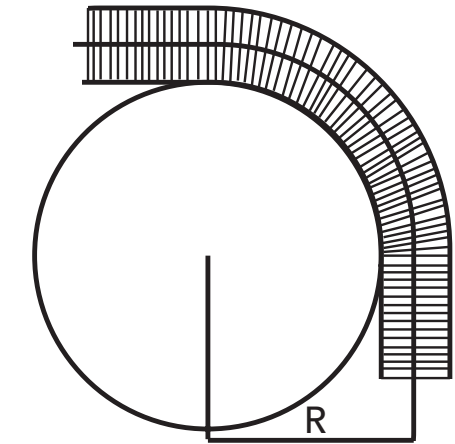
	35M	36M	38M	40M	45M	50M	60M	70M	75M	80M	90M	100M
DN15	1.02	1.01	0.98	0.96	0.90	0.86	0.78	0.72	0.70	0.68	0.64	0.60
DN20	1.81	1.78	1.73	1.69	1.59	1.51	1.38	1.28	1.23	1.19	1.13	1.07
DN25	3.19	3.14	3.06	2.98	2.81	2.67	2.43	2.25	2.18	2.11	1.99	1.88
DN32	6.03	5.95	5.79	5.64	5.32	5.05	4.61	4.27	4.12	3.99	3.76	3.57
DN40	10.75	10.60	10.32	10.06	9.48	9.00	8.21	7.60	7.34	7.11	6.70	6.36
DN50	19.22	18.95	18.45	17.98	16.95	16.08	14.68	13.59	13.13	12.71	11.99	11.37

Singular losses of charge:

For the radii of bending prescribed in the table below, no particular loss of load needs to be taken into account in the calculation of the equivalent lengths.

Pipe Size	Recommended Bending Radius R(mm)
DN15	75
DN20	90
DN25	125
DN32	140
DN40	140
DN50	150

Pipe Size	Minimum Bending Radius (mm)
DN15	25
DN20	30
DN25	45
DN32	60
DN40	76
DN50	100



A gloved hand is shown holding a white plastic pipe fitting. The fitting has two yellow bands around it. The fitting is a T-junction type, with one end being a straight pipe and the other end being a T-shaped connection. The background is dark and out of focus.

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