



# ECODUO



## Installation Instruction for Tubes and Fittings

Patented

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**EcoDuo** Copper tube

**EcoDuo** Fittings

# General Information

## System design, installation and use

These products are designed for hot and cold water services and vented or unvented closed circuit heating, within the advised pressure and temperature limits

All systems should be designed, installed and used in accordance with appropriate specifications or codes of practice and Water-Kinetics technical recommendations

Electrical continuity - all installations must be correctly earthed. Water-Kinetics fittings provide electrical continuity when correctly assembled. After an installation is complete ensure continuity checks are conducted by a qualified electrician in accordance with current regulations

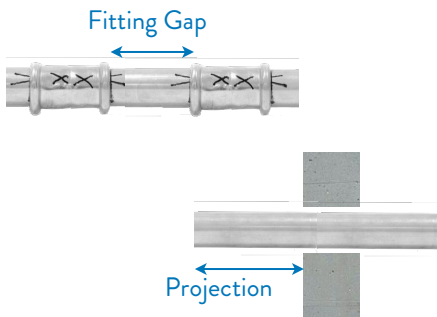
It is important that thermal movement is taken into account when designing a system as pipework will expand and contract. Avoid stress concentrations between fixed points particularly radiators, valves and similar fittings. Expansion loops should be included in the system to resolve thermal movement issues

Installations should be supported to make sure that there is the minimum stress possible added to tubes and joints

The insulation requirements specified in the current Water Supply (Water Fittings) Regulations and Building Regulations should be used

Provision for thermal movement where pipework is installed under screed, plaster or passes through brick/block work. Pass tubes and fittings through sleeves, conduits or in ducts with loose, inert non-rigid materials

When designing a Water-Kinetics system take care that all joints can be accessed. Allow clearance around fittings for press-fit jaws. Minimum gaps and insertion distances ensure sufficient access for the pressing tool. Sufficient space must be left between fittings to allow jaws/slings to be used (table A1). Also take care over the distance pipe stubs project through walls/bulkheads (table A1).



Product size	Fitting Gap min.	Projection min.
mm	mm	mm
15	10	40
22	10	40
28	10	60
35	10	70
42	20	70
54	20	70
66.7	30	70
76.1	40	80

# General Information

## Regulations

Water-Kinetics tubes and fittings are tested and comply with the requirements of the current United Kingdom Water Regulations / Bye-laws (Scotland)

- **EcoDuo** copper tube conforms to BS-EN1057
  - Tube diameters 15 to 54mm are half hard (R250)
  - Tube diameters 66.7 and 76.1 mm are hard (R290)
- **EcoDuo** copper press-fit fittings conform to EN1254 (EN1282 when threaded)
- All products carry WRAS and KIWA certification



## Product performance

- Operating temperatures between -30°C to 120°C
- Pressure rated to a maximum 16 bar (across temperature range)
- All copper is Cu-DHP grade giving excellent corrosion and very high fire resistance
- Copper acts as a bactericide helping to suppress bacterial growth
- 90% of copper scrap is recycled. At the end of the products life copper can be reclaimed
- No hot works permits or insurance are required due to heat free jointing
- The pre-fitted gasket material for all **EcoDuo** fittings is EPDM (black)
- **EcoDuo** tube ring components are manufactured from stainless steel grade 316L
- **EcoDuo** tube is supplied pre-cleaned and with ends capped

## Guarantee

Water-Kinetics products carry a guarantee against manufacturing defects when installed as part of a system comprised wholly of Water-Kinetics pipeline components to the correct specification



25 year guarantee for **EcoDuo** tubes

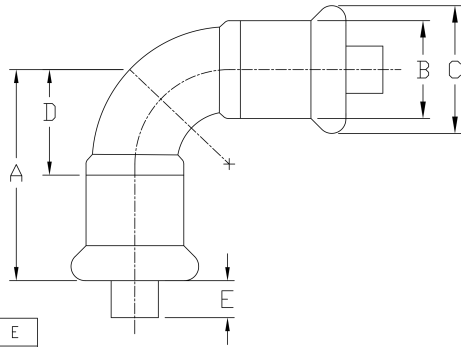
10 year guarantee for **EcoDuo** fittings

# Product Detail

## EcoDuo Copper Tube

SKU	Description	Length
W1501 CP	15mm	3 metres
W1502 CP	22mm	3 metres
W1503 CP	28mm	3 metres
W1504 CP	35mm	3 metres
W1505 CP	42mm	3 metres
W1506 CP	54mm	3 metres
W1507 CP	66.7mm	3 metres
W1508 CP	76.1mm	3 metres

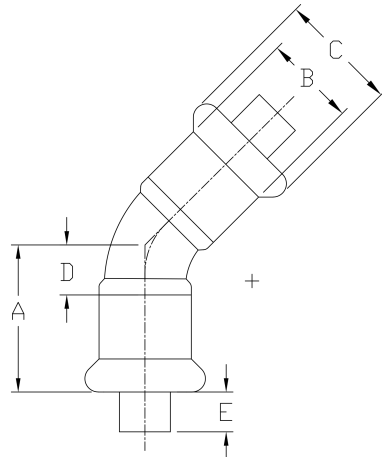
### EcoDuo 90° Elbow



#### EcoDuo 90° Elbow

WK PART NO.	SIZE	A	B	C	D	E
W1509CP	15-6	38	15	23	17	5
W1510CP	22-8	47	22	31	26	6
W1511CP	28-10	56	28	37	34	8
W1512CP	35-15	68	35	44	42	10
W1513CP	42-15	80	42	53	50	10
W1514CP	54-22	100	54	65	65	12
W1515CP	66.7-22	132	67	83	87	12
W1516CP	76.1-28	142	76	94	92	12

### EcoDuo 45° Elbow

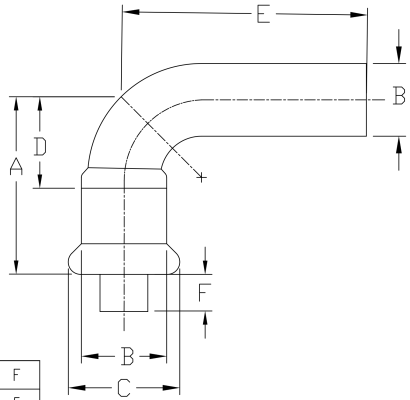


#### EcoDuo 45° Elbow

WK PART NO.	SIZE	A	B	C	D	E
W1525CP	15-6	28	15	23	8	5
W1526CP	22-8	31	22	31	12	6
W1527CP	28-10	37	28	37	16	8
W1528CP	35-15	44	35	44	18	10
W1529CP	42-15	51	42	53	21	10
W1530CP	54-22	62	54	65	27	12
W1531CP	66.7-22	85	67	83	35	12
W1532CP	76.1-28	91	76	94	45	12

# Product Detail

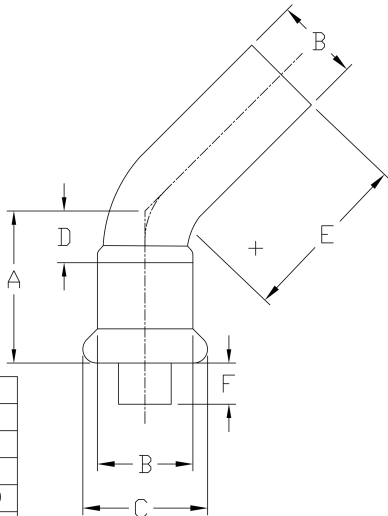
## EcoDuo 90° Street Elbow



EcoDuo 90° Street Elbow

WK PART NO.	SIZE	A	B	C	D	E	F
W1517CP	15-6	36	15	23	16	50	5
W1518CP	22-8	47	22	31	27	58	6
W1519CP	28-10	58	28	37	34	64	8
W1520CP	35-15	69	35	44	44	82	10
W1521CP	42-15	81	42	53	52	101	10
W1522CP	54-22	100	54	65	66	120	12
W1523CP	66.7-22	130	67	83	93	175	12
W1524CP	76.1-28	143	76	94	93	150	12

## EcoDuo 45° Street Elbow

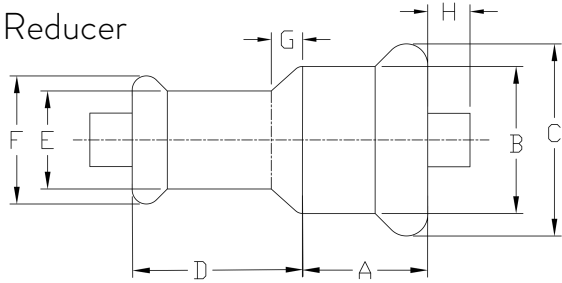


EcoDuo 45° Street Elbow

WK PART NO.	SIZE	A	B	C	D	E	F
W1533CP	15-6	28	15	23	8	37	5
W1534CP	22-8	32	22	31	11	44	6
W1535CP	28-10	37	28	37	14	47	8
W1536CP	35-15	43	35	44	17	58	10
W1537CP	42-15	51	42	53	21	71	10
W1538CP	54-22	62	54	65	27	82	12
W1539CP	66.7-22	85	67	83	35	88	12
W1540CP	76.1-28	90	76	94	40	97	12

# Product Detail

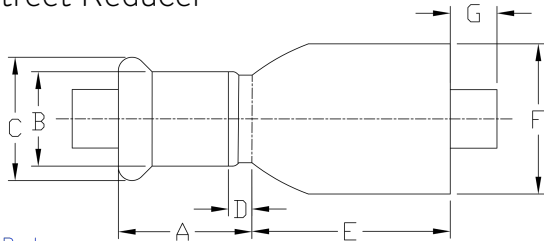
## EcoDuo Coupler Reducer



### EcoDuo Coupler Reducer

WK PART NO.	SIZE	A	B	C	D	E	F	G	H
W1549CP	22-15	28	22	31	25	15	23	5	6
W1550CP	28-15	35	28	37	23	15	23	3	8
W1649CP	28-22	29	28	37	26	22	31	5	8
W1650CP	35-28	33	35	44	28	28	37	5	10
W1651CP	42-35	37	42	53	31	35	44	5	10
W1652CP	54-42	46	54	65	34	42	53	4	12

## EcoDuo Coupler Street Reducer



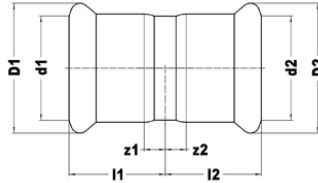
### EcoDuo Coupler Street Reducer

WK PART NO.	SIZE	A	B	C	D	E	F	G
W1551CP	28-15	25	15	23	4	37	28	8
W1552CP	35-22	29	22	31	9	39	35	10
W1553CP	35-28	28	28	37	5	35	35	10
W1554CP	42-22	25	22	31	4	49	42	10
W1555CP	42-28	27	28	37	4	44	42	10
W1556CP	42-35	35	35	44	8	38	42	10
W1557CP	54-35	35	35	44	9	53	54	12
W1558CP	54-42	40	42	30	9	47	54	12
W1559CP	67.7-28	37	28	37	14	72	67	12
W1560CP	67.7-35	40	35	44	14	69	67	12
W1561CP	67.7-42	37	42	53	7	75	67	12
W1562CP	67.7-54	39	54	65	4	64	67	12
W1563CP	76.1-35	39	35	44	13	74	76	12
W1564CP	76.1-42	43	42	53	13	70	76	12
W1565CP	76.1-54	42	54	65	7	75	76	12
W1566CP	76.1-66.7	57	67	83	7	65	76	12

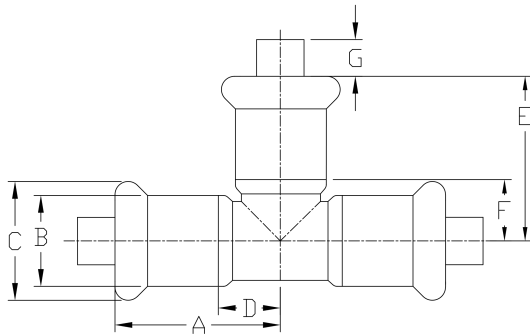
# Product Detail

## EcoDuo Straight Coupling

SKU	Description	l1	d1	D1	es1	z1	l2	d2	D2	es2	z2	DN1	DN2
W1567 CP	15mm	22	15	23	20	2	22	15	23	20	2	DN12	DN12
W1568 CP	22mm	23	22	31	21	2	23	22	31	21	2	DN20	DN20
W1569 CP	28mm	25	28	37	23	2	25	28	37	23	2	DN25	DN25
W1570 CP	35mm	28	35	44	26	2	28	35	44	26	2	DN32	DN32
W1571 CP	42mm	36	42	53	32	4	36	42	53	32	4	DN40	DN40
W1572 CP	54mm	42	54	65	37	5	42	54	65	37	5	DN50	DN50
W1573 CP	66.7mm	55	67	83	50	5	55	67	83	50	5	DN65	DN65
W1574 CP	76.1mm	55	76	94	50	5	55	76	94	50	5	DN65	DN65



## EcoDuo Equal Tee



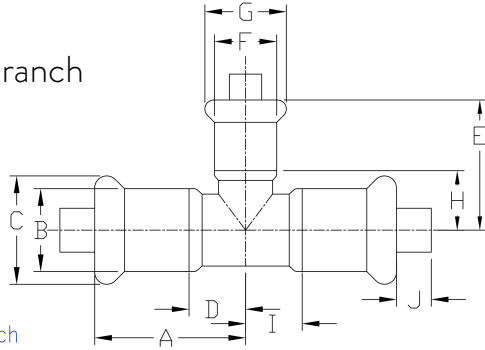
### EcoDuo Equal Tee

WK PART NO.	SIZE	A	B	C	D	E	F	G
W1541CP	15-6	32	15	23	12	32	12	5
W1542CP	22-8	37	22	31	16	37	16	6
W1543CP	28-10	42	28	37	19	42	19	8
W1544CP	35-15	50	35	44	24	50	24	10
W1545CP	42-15	58	42	53	28	58	28	10
W1546CP	54-22	69	54	65	34	69	34	12
W1547CP	66.7-22	95	67	83	45	111	61	12
W1548CP	76.1-28	101	76	94	51	119	69	12



# Product Detail

## EcoDuo Tee Reduced Branch



EcoDuo Tee Reduced Branch

WK PART NO.	SIZE	A	B	C	D	E	F	G	H	I	J
W1635CP	22-22-15	37	22	31	16	38	15	23	18	16	6
W1636CP	28-28-15	42	28	37	19	41	15	23	21	19	8
W1637CP	28-28-22	42	28	37	19	41	22	31	20	19	8
W1638CP	35-35-15	45	35	44	19	44	15	23	24	19	10
W1639CP	35-35-22	45	35	44	19	45	22	31	24	19	10
W1640CP	35-35-28	50	35	44	24	44	28	37	21	24	10
W1641CP	42-42-15	50	42	53	20	48	15	23	28	20	10
W1642CP	42-42-22	50	42	53	20	48	22	31	27	20	10
W1643CP	42-42-28	56	42	53	26	49	28	37	26	26	10
W1645CP	54-54-22	60	54	65	25	54	22	31	33	25	12
W1646CP	54-54-28	60	54	65	25	55	28	37	32	25	12
W1647CP	54-54-35	61	54	65	24	55	35	44	29	24	12
W1648CP	54-54-42	69	54	65	34	64	42	53	34	34	12
W1594CP	108-108-54	109	108	133	125	125	54	65	91	125	-
W1595CP	108-108-66.7	117	108	133	46	141	67	83	96	50	-
W1596CP	108-108-76.1	120	108	133	52	139	76	94	52	53	-

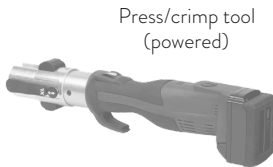
## EcoDuo Copper Press Slip Coupler

# Pre-Assembly

## Tools required (not supplied)

- Marker/pen
- Tape measure/ruler
- Hand tube cutter or powered tube cutting saw
- Tube de-burring tool
- Powered (advised) press/crimp tool with M profile jaws and slings
- Lubricant e.g. BRUNOX® Turbo-Spray® (applied every 50 operations)

Marker pen



## Notes

It is intended that a technically competent installer should undertake installation

When you are ready to start, make sure that you have the right tools to hand, plenty of space and a clean, dry area for assembly

# Assembly

**\* Note: Ensure the Pipe is cut square and de-burred to prevent stagnant water build up in fittings.\***

## EcoDuo copper tube

Select the correct size of **EcoDuo** tube ensuring that it is clean, in good condition and free from damage

### Step 1 - Mark correct length

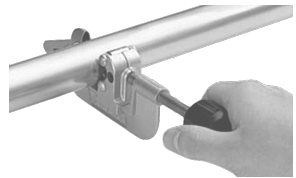
Measure and mark the **EcoDuo** tube using a clear marker/pen



### Step 2 - Cut EcoDuo tubes

Cut the **EcoDuo** tube square using a tube cutter or powered tube cutting saw

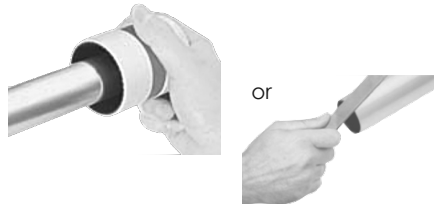
**Note:** A powered tube cutting saw can be used for all sizes of tube but is essential for diameters above 54mm. Always refer to the tool manufacturer's instructions for before using and observe the correct safety procedures



### Step 3 - De-burr EcoDuo tubes

Remove internal and external burrs caused by the tube cutting operation using appropriate deburring tools, then wipe clean of all swarf and debris to avoid damage to the fittings gasket when the tube is inserted.

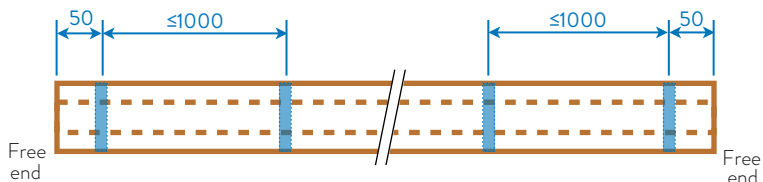
If a de-burrer is not available, use a fine file to prepare the tube end.



### Step 4 - Check correct EcoDuo tube ring distances

The inner tube is supported inside the outer tube using **EcoDuo** tube rings. These need to be in the correct positions before assembly of the system

**EcoDuo** tube rings should be positioned approximately 50mm in from both free/cut ends and at maximum of 1000mm intervals between. Every supplied length of **EcoDuo** tube comes with **EcoDuo** tube rings fitted in the correct positions, these must be re-adjusted when shorter lengths are cut



# Assembly

## EcoDuo fittings

### Step 1 - Mark fitting socket depth

Measure the required length given in table 1 and mark the tube. Using a 'V-Tail' mark will make it obvious if the fitting moves during the press/crimp process

**Note:** The correct socket depth/dimension must be achieved for joint integrity

See  
table 1



Use 'V-Tail'  
mark



Table 1

Product Size	Measure Depth
mm	mm
15	20
22	21
28	23
35	26
42	30
54	35
66.7	50
76.1	50

### Step 2 - Check gasket seals

After checking the **EcoDuo** gasket seals are in place push the tube fully into the fitting to it's full depth

**Note:** Only start the press/crimp operation when both components are in the correct position



# Assembly

## Step 3 - Ensure inner pipes connect

Before proceeding to the next step, ensure that both of the inner pipes within your joint connect. All EcoDuo pipes make use of inner pipes and it is vital for this step to be adhered to.



## Step 4 - Set press/crimp tool

Check the tool is isolated from the power supply by unplugging  
Select the correct M profile jaws/sling-jaw adaptor for the joint being made (refer to the press/crimp tool manufacturer's instructions for detailed information)

- No sling-jaw = 15 to 35mm tube
- Sling-jaws = 42 to 76mm tube

Reconnect the power supply when ready

**Note:** Check that the press tool and relevant jaws/slides have been maintained in accordance with their servicing/ calibration schedule and that they are free from damage



## Step 5 - Add lubrication (when required)

The profile groove of the sling jaws should be cleaned and lightly lubricated every 50 jointing operations

Lubricant must be applied between the main sling arms, pivot pins between arms and any moving parts

Wipe clean excess lubricant to avoid contact with

**EcoDuo** fitting gaskets



**Note:** Do not use lubricant on **EcoDuo** fitting gaskets

# Assembly

## Step 6 - Press/crimp joint

Clamp the jaws/sling jaws over the bead at the end of the EcoDuo fitting

- No sling jaw = 15 to 35mm tube
- Sling jaws = 42 to 76mm tube

### Note:

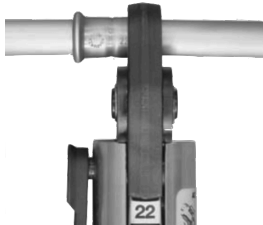
- The press/crimp tool must be supported i.e. not hanging from the pipework
- Keep a 90° angle between the **EcoDuo** tube and jaws
- Only operate when the **EcoDuo** tube is supported by brackets i.e. not when the tube is only suspended in the fitting
- Allow press/crimp jaws to attach without hindrance
- Keep your hands safely away from the joint

Press the trigger/button to start the jointing cycle

The joint is complete when the jaws/sling jaws are fully enclosed around the fitting Release the jaws from the **EcoDuo** fitting



Fit jaw/sling jaws round  
**EcoDuo** fitting



Keep 90° angle



Press trigger/button  
Complete when closed

## Step 7 - Check joint

Inspect the joint making sure everything has been completed correctly

- is the socket depth correct based on the mark made earlier
- do the fitting/pipe have witness marks from the jaws/sling jaws

If the joint has been made correctly mark the joint as complete with the marker/pen





## **Technical Helpline**

**0141 280 9585**

## **General Enquiries**

**0141 280 9585**

**info@water-kinetics.co.uk**

**www.water-kinetics.co.uk**

Water-Kinetics Limited  
7 Fairfield Place  
College Milton Industrial Estate  
East Kilbride  
G74 5LP  
Scotland  
Registered in Scotland SC634550

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