

## Type PWX



### HORIZONTAL CHASSIS TYPE WATERSIDE FANCOILS FOR CONCEALED OR EXPOSED INSTALLATIONS

- Nominal sizes 60, 90, 120, 150, 180 and 205
- Volume flow rate range 50 - 636 l/s or 180 - 2289 m<sup>3</sup>/h
- Casing manufactured with 1.2 mm galvanised steel with powder-coat finish
- Condensate drip tray made of galvanised steel with powder-coat finish
- Heat exchanger for cooling (2-pipe) or cooling and heating (4-pipe) systems
- Easy filter change, no tools required
- Access hatch with integrated hinge
- Acoustically optimised EC/DC fans with low specific fan powers and variable supply air volume control (0-10v signal)

#### Optional equipment and accessories

- Integrated controls package
- Inlet attenuator
- Discharge attenuator
- Inlet plenum
- Electric heating
- Circular or rectangular discharge connection

## APPLICATION

### Application

- Waterside fancoil Type PWX designed to provide cooling and heating for comfort and industrial applications
- Acoustically optimised EC/DC fans with low specific fan powers and adjustable supply air volume control (0 - 10v signal)
- Acoustically lined inlet and discharge plenums provide low sound power levels and improved thermal insulation
- 2-pipe or 4-pipe heat exchangers enable high comfort levels
- For horizontal installation in ceiling voids, floor voids or exposed applications

### Special characteristics

- Removable access hatch with integrated hinge to facilitate inspection and maintenance
- Independent fan mounting enable individual removal or replacement
- Fire resistant 'Class O' acoustic insulation provides low operating noise levels and improved thermal insulation

### Nominal sizes

- PWX-60: 600 x 900 x 270 mm (W x L x H)
- PWX-90: 900 x 900 x 270 mm (W x L x H)
- PWX-120: 1200 x 900 x 270 mm (W x L x H)
- PWX-150: 1500 x 900 x 270 mm (W x L x H)
- PWX-180: 1800 x 900 x 270 mm (W x L x H)
- PWX-205: 2050 x 900 x 270 mm (W x L x H)

## DESCRIPTION

### Variants

- F7: Individual pod fans (single fan per motor)
- F10: Deck fans (2 or 3 fans per motor)

### Parts and characteristics

- Heat exchanger is 2-pipe or 4-pipe system with Ø 15 mm or Ø 22 mm OD plain copper tails
- 200 mm wide condensate drip tray with Ø 15 mm OD drain connection
- EU2/G2 fabric inlet filter
- Ø 200 mm, Ø 250 mm or rectangular discharge connections

### Attachments

- Controls enclosure

### Accessories

- Inlet attenuator for noise critical applications
- Inlet plenum for ducted return air applications
- Discharge attenuator (rectangular spigot only)

### Special characteristics

- Removable access hatch with integrated hinge to facilitate inspection and maintenance
- Independent fan mounting enables individual removal or replacement
- Fire resistant 'Class O' acoustic insulation provides low operating noise levels and improved thermal insulation

## CONSTRUCTION

### Casing

- PWX casing manufactured from 1.2 mm galvanised steel. Manufacturing process provides rigid, vibration free design with integrated supporting flanges.

#### Access hatch

- Access hatch manufactured from 1.2 mm galvanised steel
- Integrated hinge mechanism enables the panel to swing down without removal
- High density mesh-enforced gasket seal

#### Condensate drip tray

- Condensate drip tray manufactured from 1.2 mm galvanised steel with powder-coat finish, EAL 9005 (black)
- Unique, 2-way sloping design ensures effective removal of condensate along the full length of the tray
- Extended width design of 200 mm as standard provides condensate cover for pre-installed valve assemblies
- Externally insulated with 3 mm, fire resistant 'Class O' closed cell insulation

#### Acoustic insulation

- Fire resistant 'Class O' acoustic insulation tested to BS476 Parts 6 & 7
- Low thermal conductivity of 0.036 W/m.K provides improved thermal resistance

#### Heat exchanger

- Heat exchangers manufactured from seamless Ø 3/8" copper tube , expanded on to profiled aluminium fins
- All heat exchangers tested to 30 bar
- Max. operating pressure: 10 bar
- Max. test pressure for factory fitted control valves: 7 bar
- Key operated vents and drains incorporated within header block
- 4-pipe coil assembly provides optimised cooling & heating control
- 2-pipe coil assembly provides optimised cooling control. Can be used in conjunction with electric heating

#### Controls enclosure

- Controls enclosure manufactured from 1.0 mm galvanised steel
- Constructed in accordance with BS7671 , IET wiring regulations
- Top cover to IP4X, all other surfaces to IP2X
- Enclosure mechanically fixed to PWX casing using pre-formed backplate

- Removable lid provides access to installed controls
- Supply voltage: 230 V AC  $\pm$  10%, 50/60 Hz

#### Inlet plenum

- Inlet plenum manufactured from 1.2 mm galvanised steel
- Fire resistant 'Class O' acoustic insulation applied to internal surfaces
- $\varnothing$  198 mm or  $\varnothing$  248 mm spigots
- Installation bracket for quick coupling to PWX fancoil on site

#### Inlet attenuator

- Inlet attenuator manufactured from 1.2 mm galvanised steel
- Fire rated 'Class A1' mineral wool acoustic lining
- Installation bracket for quick coupling to PWX fancoil on site

#### Discharge attenuator

- Discharge attenuator manufactured from 1.2 mm galvanised steel
- Fire rated 'Class A1' mineral wool acoustic lining
- Installation bracket for quick coupling to PWX fancoil on site
- For use with rectangular spigot variant only

#### Inlet filter

- S: Fabric filter, EU2/G2
- F: Washable foam filter, Class O, EU2/G2
- M: Washable mesh screen, stainless steel

## TECHNICAL INFORMATION

## FUNCTION

- Waterside fancoil Type PWX designed to provide cooling and heating for comfort and industrial applications
- Acoustically optimised EC/DC fans with low specific fan powers and adjustable supply air volume control (0 - 10v signal)
- Acoustically lined inlet and discharge plenums provide low sound power levels and improved thermal insulation
- 2-pipe or 4-pipe heat exchangers enable high comfort levels
- For horizontal installation in ceiling voids, floor voids or exposed applications

## TECHNICAL DATA

<b>Nominal Sizes</b>	<b>60, 90, 120, 150, 180 and 205</b>
<b>Volume flow rate range (l/s)</b>	<b>50 – 636 l/s</b>
<b>Volume flow rate range (m<sup>3</sup>/h)</b>	<b>180 – 2289 m<sup>3</sup>/h</b>

## QUICK SIZING

The quick sizing tables provide reference outputs for Type PWX under typical design conditions.

For specific enquiries relating to project specific performance, please contact your TROX representative.

Quick sizing performance criteria:

Air entering temperature (cooling): 23 °C

Air entering temperature (heating): 21 °C

Relative humidity: 50%

CHW flow/return: 6 °C / 12 °C

LTHW flow/return: 80 °C / 60 °C

External static pressure: 30 Pa

Fan type: F7

Model	Airside		Cooling				Heating			SFP
	FCU Supply Volume		Total	Sens.	Water flow	Water ΔPt	Total	Water flow	Water ΔPt	
	(l/s)	(m <sup>3</sup> /hr)	(kW)	(kW)	(kg/s)	(kPa)	(kW)	(kg/s)	(kPa)	
PWX-60/1	84	302	1.43	1.17	0.057	6.7	1.67	0.020	0.7	0.17
PWX-90/1	120	432	2.14	1.75	0.085	6.6	2.78	0.033	2.2	0.18
PWX-90/2	149	536	2.57	2.10	0.103	9.3	3.18	0.038	2.9	0.17
PWX-120/2	195	702	3.40	2.78	0.135	9.5	3.92	0.047	1.0	0.16
PWX-120/3	188	676	3.28	2.68	0.131	9.0	3.82	0.046	0.9	0.15
PWX-150/3	216	777	3.82	3.12	0.152	6.4	4.74	0.057	1.6	0.16
PWX-180/3	272	979	4.80	3.93	0.191	7.1	6.08	0.073	2.8	0.17
PWX-180/4	279	1004	4.09	4.09	0.195	7.4	6.17	0.074	2.9	0.16
PWX-205/4	343	1234	5.94	4.85	0.237	8.0	7.53	0.090	4.5	0.17

Fan type: F10

Model	Airside		Cooling				Heating			SFP
	FCU Supply Volume		Total	Sens.	Water flow	Water ΔPt	Total	Water flow	Water ΔPt	
	(l/s)	(m <sup>3</sup> /hr)	(kW)	(kW)	(kg/s)	(kPa)	(kW)	(kg/s)	(kPa)	
PWX-60/1	-	-	-	-	-	-	-	-	-	-
PWX-90/1	-	-	-	-	-	-	-	-	-	-
PWX-90/2	180	648	3.04	2.48	0.121	12.4	3.61	0.043	3.6	0.18
PWX-120/2	249	896	4.19	3.43	0.167	13.9	4.60	0.055	1.3	0.20
PWX-120/3	292	1051	4.80	3.93	0.192	17.7	5.09	0.061	1.5	0.17
PWX-150/3	317	1141	5.34	4.37	0.213	11.8	6.10	0.073	2.5	0.18
PWX-180/3	323	1162	5.58	4.56	0.222	9.3	6.80	0.081	3.4	0.19
PWX-180/4	383	1378	6.46	5.29	0.258	12.0	7.60	0.091	4.2	0.19
PWX-205/4	415	1494	7.01	5.73	0.279	10.8	8.54	0.102	5.6	0.18

## Fan type: F7

Model	Airside		Cooling				Heating			SFP
	FCU Supply Volume		Total	Sens.	Water flow	Water ΔPt	Total	Water flow	Water ΔPt	
	(l/s)	(m <sup>3</sup> /hr)	(kW)	(kW)	(kg/s)	(kPa)	(kW)	(kg/s)	(kPa)	
PWX-60/1	131	471	2.10	1.71	0.084	13.5	2.24	0.027	1.1	0.20
PWX-90/1	158	568	2.71	2.21	0.108	10.2	3.31	0.040	3.1	0.23
PWX-90/2	211	759	3.47	2.84	0.138	15.7	4.00	0.048	4.3	0.19
PWX-120/2	285	1026	4.71	3.85	0.188	17.1	5.02	0.060	1.5	0.21
PWX-120/3	320	1152	5.18	4.24	0.207	20.2	5.39	0.065	1.7	0.20
PWX-150/3	354	1274	5.87	4.80	0.234	14.0	6.56	0.078	2.8	0.19
PWX-180/3	396	1425	6.65	5.43	0.265	12.5	7.76	0.093	4.3	0.21
PWX-180/4	442	1591	7.30	5.97	0.291	14.6	8.33	0.100	4.9	0.19
PWX-205/4	465	1674	7.73	6.32	0.308	12.9	9.20	0.110	6.4	0.19

## Fan type: F10

Model	Airside		Cooling				Heating			SFP
	FCU Supply Volume		Total	Sens.	Water flow	Water ΔPt	Total	Water flow	Water ΔPt	
	(l/s)	(m <sup>3</sup> /hr)	(kW)	(kW)	(kg/s)	(kPa)	(kW)	(kg/s)	(kPa)	
PWX-60/1	-	-	-	-	-	-	-	-	-	-
PWX-90/1	-	-	-	-	-	-	-	-	-	-
PWX-90/2	239	860	3.86	3.16	0.154	19.0	4.33	0.052	4.9	0.21
PWX-120/2	312	1123	5.08	4.15	0.202	19.3	5.31	0.064	1.7	0.24
PWX-120/3	373	1342	5.87	4.80	0.234	24.7	5.92	0.071	2.0	0.22
PWX-150/3	409	1472	6.62	5.42	0.264	17.3	7.18	0.086	3.3	0.23
PWX-180/3	443	1594	7.31	5.98	0.291	14.6	8.34	0.100	4.9	0.26
PWX-180/4	497	1789	8.05	6.58	0.321	17.1	8.96	0.107	5.6	0.22
PWX-205/4	524	1886	8.55	7.00	0.341	15.5	9.93	0.119	7.4	0.21



Fan type: F7

Model	Airside		Cooling				Heating			SFP
	FCU Supply Volume		Total	Sens.	Water flow	Water ΔPt	Total	Water flow	Water ΔPt	
	(l/s)	(m <sup>3</sup> /hr)	(kW)	(kW)	(kg/s)	(kPa)	(kW)	(kg/s)	(kPa)	
PWX-60/1	159	572	2.47	2.02	0.099	18.2	2.53	0.030	1.4	0.24
PWX-90/1	189	680	3.16	2.58	0.126	13.4	3.72	0.045	3.8	0.30
PWX-90/2	281	1011	4.40	3.60	0.175	23.5	4.77	0.057	5.8	0.23
PWX-120/2	352	1267	5.60	4.58	0.223	22.8	5.72	0.068	1.9	0.28
PWX-120/3	432	1555	6.59	5.39	0.263	29.9	6.42	0.077	2.3	0.25
PWX-150/3	460	1656	7.28	5.95	0.290	20.5	7.70	0.092	3.7	0.24
PWX-180/3	531	1911	8.49	6.94	0.338	18.5	9.33	0.112	6.0	0.30
PWX-180/4	575	2070	9.06	7.41	0.361	20.4	9.78	0.117	6.5	0.25
PWX-205/4	624	2246	9.87	8.07	0.393	20.0	11.04	0.132	8.9	0.26

Fan type: F10

Model	Airside		Cooling				Heating			SFP
	FCU Supply Volume		Total	Sens.	Water flow	Water ΔPt	Total	Water flow	Water ΔPt	
	(l/s)	(m <sup>3</sup> /hr)	(kW)	(kW)	(kg/s)	(kPa)	(kW)	(kg/s)	(kPa)	
PWX-60/1	-	-	-	-	-	-	-	-	-	-
PWX-90/1	-	-	-	-	-	-	-	-	-	-
PWX-90/2	307	1105	4.72	3.86	0.188	26.5	5.01	0.060	6.3	0.27
PWX-120/2	380	1368	5.96	4.87	0.238	25.4	5.98	0.072	2.0	0.31
PWX-120/3	466	1677	6.98	5.71	0.278	32.6	6.68	0.080	2.5	0.30
PWX-150/3	524	1886	8.08	6.61	0.322	24.6	8.30	0.099	4.2	0.32
PWX-180/3	588	2116	9.22	7.54	0.367	20.8	9.91	0.118	6.7	0.39
PWX-180/4	636	2289	9.80	8.01	0.390	22.7	10.35	0.124	7.2	0.28
PWX-205/4	632	2275	9.97	8.16	0.397	20.4	11.13	0.133	9.0	0.26

## SPECIFICATION TEXT

Waterside fancoil Type PWX designed to provide cooling and heating for comfort and industrial applications. Acoustically optimised EC/DC fans with low specific fan powers and adjustable supply air volume control (0-10v signal). Acoustically lined inlet and discharge plenum provide low sound power levels and improved thermal isolation. 2-pipe or 4-pipe heat exchangers enable high comfort levels. For horizontal installation in ceiling voids, floor voids or exposed applications.

#### Special characteristics:

- Removable access hatch with integrated hinge to facilitate inspection and maintenance
- Independent fan mounting enables individual removal or replacement
- Fire resistant 'Class O' acoustic insulation provides low operating noise levels
- Low thermal conductivity of 0.036 W/m.K provides improved thermal insulation
- Unique 2-way sloping condensate tray design ensures effective removal of condensate along the full length of the tray

#### Materials and surfaces:

- Casing manufactured from 1.2mm galvanised steel
- Condensate drip tray manufactured from 1.2mm galvanised steel, powder-coat finish, RAL 9005 (black), 3mm thick 'Class O', closed cell insulation
- Fire resistant 'Class O' acoustic insulation tested to BS476 Parts 6 & 7

#### Technical data:

##### *Nominal sizes:*

- PWX-60: 600 x 900 x 270 mm (W x L x H)
- PWX-90: 900 x 900 x 270 mm (W x L x H)
- PWX-120: 1200 x 900 x 270 mm (W x L x H)
- PWX-150: 1500 x 900 x 270 mm (W x L x H)
- PWX-180: 1800 x 900 x 270 mm (W x L x H)
- PWX-205: 2050 x 900 x 270 mm (W x L x H)

##### *Minimum volume flow rate (supply air):*

50 – 343 l/s or 180 – 1234 m<sup>3</sup>/h

##### *Maximum volume flow rate (supply air), at NR 40 (standard room corrections) without attachments:*

159 – 636 l/s or 572 - 2289 m<sup>3</sup>/hr

#### Sizing data

- Sensible cooling [kW]
- Total heating [kW]
- CHW flow / return [°C]
- LTHW flow / return [°C]
- Entering air temperature [°C]
- External static pressure [Pa]
- Room noise level [NR]

## ORDER CODE

Order code example:

PWX - 90/2 - F7 - R - 4 - 2 - T15 - 25A - 23 - S - 1 - P2 - 1

1 2 3 4 5 6 7 8 9 10 11 12

### 1 Unit size

60/1	150/3
90/1	180/3
90/2	180/4
120/2	205/4
120/3	

### 2 Fan type

F7	Pod fans (1 fan per motor)
F10	Deck fans (Up to 3 fans per motor)

### 3 Unit handing

L	Left hand controls
R	Right hand controls

### 4 Heat exchanger type

4	3 1/2 row cooling + 1/2 row heating
2	4 row cooling
E2	4 row cooling + electric heating

### 5 Valve package

0	Without valves
1	Cooling only valve (coil types 2, E2 only)
2	Cooling & heating valves (coil type 4 only)
F	Factory-fit free issue valves

### 6 Condensate tray

T15	Epoxy painted galvanised tray with horizontal end outlet (Ø15mm)
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### 7 Discharge outlet type

20A	Ø198 spigots
25A	Ø248 spigots
20R	198mm high rectangular spigot

### 8 Active spigots

PWX-60	1,2,3,4
PWX-90	1,2,3,4
PWX-120	1,2,3,4,5
PWX-150	1,2,3,4,5,6
PWX-180	1,2,3,4,5,6
PWX-205	1,2,3,4,5,6,7

### 9 Inlet filter

S	Standard (fabric) EU2/G2
M	Mesh screen (S/steel)
F	Foam EU2/G2 'Class O'

### 10 Accessory fixing

0	Standard
1	PWX inlet with fittings to accept inlet plenum / attenuator
2	PWX discharge with fittings to accept discharge attenuator
3	PWX inlet and discharge with fittings to accept inlet plenum / attenuator and discharge attenuator

### 11 Condensate pump

0	Without
P1	Condensate pump, supplied loose for installation, wiring & commissioning (by others)
P2	Condensate pump, supplied loose for installation, wiring & commissioning (by others). Pump power cable pre-wired to controls enclosure.

### 12 Controls

0	Controls enclosure with provision for site fitted controls
1	BACnet controls
2	Room control (standalone)

**F** Factory-fit free issue controls

## Order example

### PWX-90/2-F7-R-4-2-T15-25A-23-S-1-P2-1

Unit size	PWX-90/2
Fan type	F7 (Pod fans)
Unit handing	Right hand
Heat exchanger type	4-pipe, heating & cooling
Valve package	Cooling & heating valves factory supplied & fitted
Condensate tray	Epoxy painted
Discharge outlet type	Ø248mm spigots
Active spigots Inlet	2, 3
Filter	Washable fabric, EU2/G2
Inlet type	Inlet with fixings to accept inlet attenuator/plenum
Condensate pump	Supplied loose for site fitting, pre-wired power cable
Controls	BACnet controls, factory supplied & fitted

## Variants and accessories, Dimensions, Spigot handing and weight

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### VARIANTS AND ACCESSORIES

#### Variants

- F7: Individual pod fans (single fan per motor)
- F10: Deck fans (2 or 3 fans per motor)

#### Attachments

- Controls enclosure

#### Accessories

- Inlet attenuator for noise critical applications
- Inlet plenum for ducted return air applications
- Discharge attenuator (rectangular spigot only)

### DIMENSIONS

#### Type PWX Dimensions

**Dimensions**

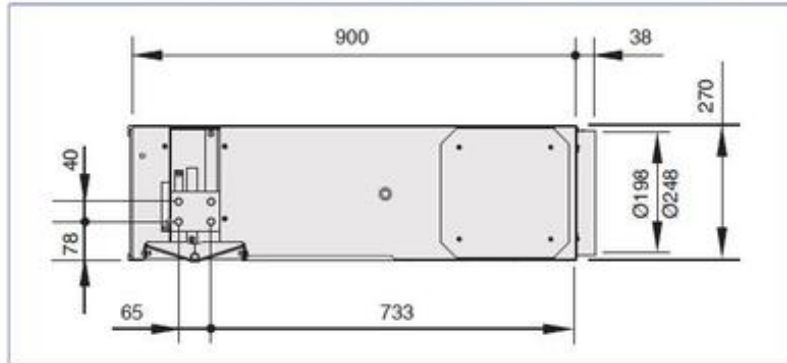
Unit shown within catalogue diagrams depict right hand control (...-R). For left hand control, drip tray and coil connections will be on opposite side.

Handing is defined as the side on which coil connections and drip tray are located when looking into the FCU inlet.

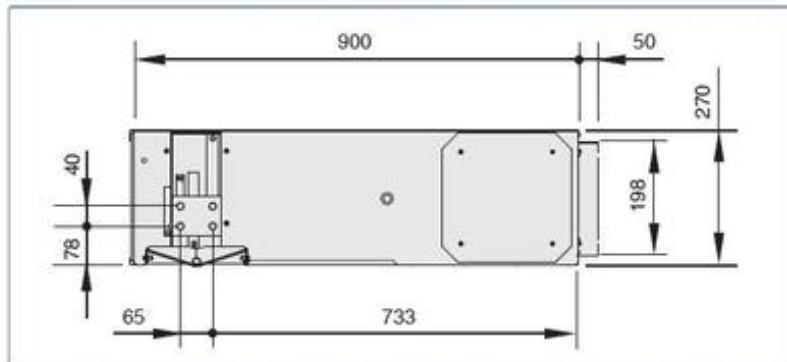
For 2-pipe & 4-pipe variants, electrical controls enclosure will be mounted on the same side as coil connections.

Where electric heating is specified (...-E2), controls enclosure will be mounted on opposite side to coil connections.

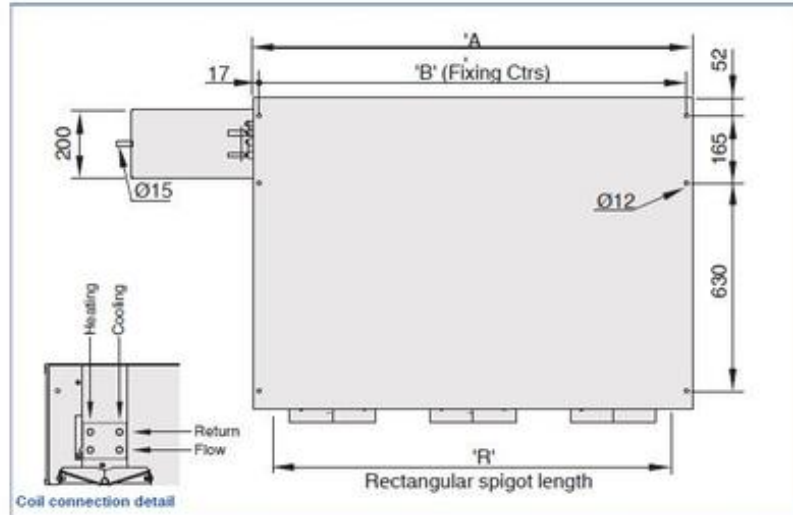
**PWX - \* ... / R ... / \*\*A (Circular discharge spigots)**



**PWX - \* ... / R ... / 20R (Rectangular discharge spigot)**



Right hand (...-R) coil connection detail shown. For left hand units (...-L), cooling & heating positions are reversed.



PWX Dimensions			
Unit	'A'	'B'	'R'
PWX-60	668	634	498
PWX-90	968	934	798
PWX-120	1268	1234	1098
PWX-150	1568	1534	1398
PWX-180	1868	1834	1698
PWX-205	2118	2084	1948

Coil Connection [mm]		
Unit	Cooling	Heating
PWX-60	Ø15	Ø15
PWX-90	Ø15	Ø15
PWX-120	Ø15	Ø15
PWX-150	Ø22	Ø15
PWX-180	Ø22	Ø15
PWX-205	Ø22	Ø15

## SPIGOT HANDING AND WEIGHT

Type PWX spigot handing and weight

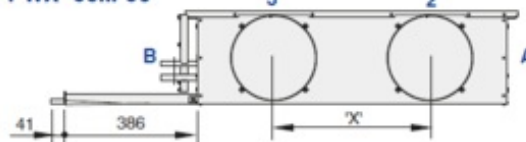
### PWX spigot handing

Spigot handing is defined using the adjacent diagrams when looking into the discharge.

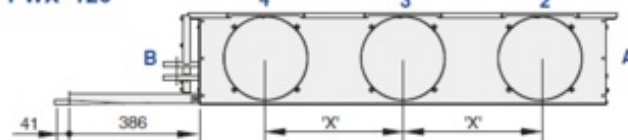
Unless specified, PWX units will be delivered with all front facing spigots active.

Additional spigots or spigot blanking plates can be supplied on request.

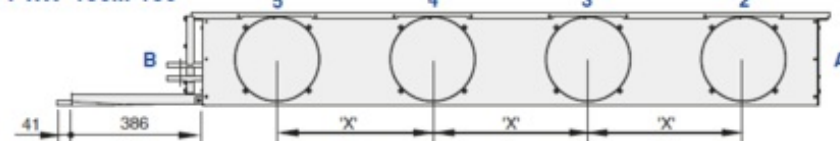
**PWX -60...-90**



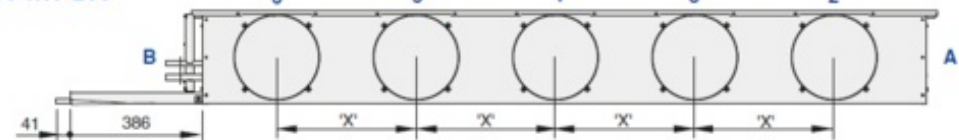
**PWX -120**



**PWX -150...-180**



**PWX -205**



PWX Dimensions		
Unit	'X'	Spigot Opt.
PWX-60	300	1,2,3,4
PWX-90	455	1,2,3,4
PWX-120	405	1,2,3,4,5
PWX-150	375	1,2,3,4,5,6
PWX-180	455	1,2,3,4,5,6
PWX-205	405	1,2,3,4,5,6,7

PWX Weight	
Unit	kg
PWX-60	25.0
PWX-90	40.0
PWX-120	55.0
PWX-150	70.0
PWX-180	85.0
PWX-205	100.0

Installation examples

## INSTALLATION EXAMPLES







Images: Ben Blossom

## TROX UK Ltd

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Caxton Way,  
Thetford, Norfolk, IP24 3SQ, UK  
Tel: +44 (0) 1842 754545  
Fax: +44 (0) 1842 763051

General Enquiries –

[info@troxuk.co.uk](mailto:info@troxuk.co.uk)

Sales & Customer Services –

[sales@troxuk.co.uk](mailto:sales@troxuk.co.uk)

Accounts –

[accounts@troxuk.co.uk](mailto:accounts@troxuk.co.uk)

## Online-Services

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TROX Academy

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Your contact partner

---

Our Office London

---

Our Office Thetford

---

## Service-Hotlines

---

Sales:

+44 (0)1842 754545

[Contact](#)

Service:

+44 (0)1842 754545

[Contact](#)

Technical service

+44 (0)1842 754545

[Contact](#)