

# FCZ-USP

## Fan coil unit for ducted installations

Cooling capacity 3.0 - 29.0 MBTU/h  
Heating capacity 3.4 - 58.3 MBTU/h

- Very quiet
- Vertical and horizontal installation



### DESCRIPTION

fan coil can be installed in any 2/4 pipe system and operates with any heat generator even at low temperatures, and thanks to varied versions and settings, it is easy to pick the ideal solution for any need.

### FEATURES

#### Ventilation group

Consisting of double suction centrifugal fans that are particularly silent, statically and dynamically balanced, and directly coupled with the motor shaft.

The motor is wired for single phase and has three speeds, with capacitor. The motor is fitted on sealed for life bearings and is secured on anti-vibration and self-lubricating mountings.

Extractable shrouds for easy, effective cleaning

**In the standard configuration there is no useful static pressure available. If necessary for canaled installations, you must act on the engine dip switches, for more details refer to the technical documentation.**

*For data with high static pressure, refer to the selection program.*

#### Heat exchanger coil

With copper pipes and aluminium louvers, the standard or oversized heat exchanger and the possible secondary heat exchanger have female gas water connections on the left side and the manifolds have air vents.

The coil is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion.

The unit is supplied with nipple adapters with male gas type thread on the exchanger side and NPT female type on the system side.

**Reversibility of hydraulic connections when ordering.**

#### Condensate drip

Provided standard in plastic and fixed to the interior structure; with external condensate discharge.

### OPTIONS

Without options

**M** With transformer for 208/220/277 V

**T** With electronic control board

**MT** With transformer and control board

### Air filter

Air filter easily removed and cleaned.

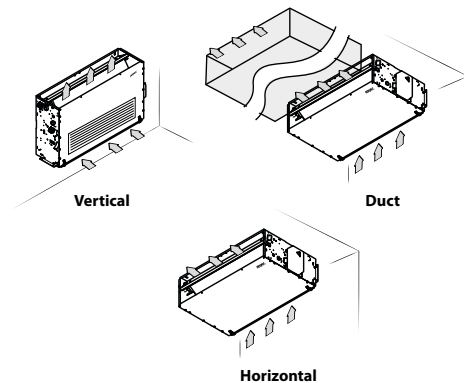
### VERSIONS

**USP** Concealed ceiling mounting without casing (no external static pressure available)

**USPAF** Recessed wall installation, with frontal return air

**USPO** Ducted installation, with external static pressure

### Flush-mounting and duct-type versions



**In the standard configuration there is no useful static pressure available. If necessary for canaled installations, you must act on the engine dip switches, for more details refer to the technical documentation.**

### TYPES OF INSTALLATION

HORIZONTAL INSTALLATION	VERTICAL INSTALLATION
USP	USP
USPO	USPO
	USPAF

## CONFIGURATOR

Field	Description
1,2,3	<b>FCZ</b>
4	<b>Size</b> 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
5	<b>main heat exchanger</b>
0	Standard 3-row
5	Oversized 4-row
6	<b>Secondary heat exchanger</b>
0	Absent
1	Standard 1-row (only heating) (1)
7,8,9,10	<b>Power supply</b>
/120	120V
11,12,13	<b>Version</b>
USP	Concealed ceiling mounting without casing (no external static pressure available)
USPAF	Recessed wall intallation, with frontal return air
USPO	Ducted installation, with external static pressure
14	<b>Options</b>
.	Without options
M	With transformer for 208/220/277 V
MT	With transformer and control board
T	With electronic control board

(1) 1-row secondary coil is available with the standard 3-row main coil only

## ACCESSORIES

### Control panels

**TX24:** Wall-mounting thermostat for controlling 2/4 tube fan coils with brushless motors.

### Water valves

**VCZ4124:** 3-way motorised valve kit for the main coil. The kit is made up of a valve with its insulating shell, actuator and relative hydraulic fittings. It can be installed on fan coils with both right and left connections. If the valve is combined with the BCZ5 or BCZ6 condensate drain pan, to ensure a better housing it is possible to remove the insulating shell.

**VCZ4224:** 3-way motorised valve kit for the main coil. The kit is made up of a valve with its insulating shell, actuator and relative hydraulic fittings. It can be installed on fan coils with both right and left connections. If the valve is combined with the BCZ5 or BCZ6 condensate drain pan, to ensure a better housing it is possible to remove the insulating shell.

**VCZ4324:** 3-way motorised valve kit for the main coil. The kit is made up of a valve with its insulating shell, actuator and relative hydraulic fittings. It can be installed on fan coils with both right and left connections. If the valve is combined with the BCZ5 or BCZ6 condensate drain pan, to ensure a better housing it is possible to remove the insulating shell.

**VCZD124:** 2-way motorised valve kit. The kit consists of a valve, an actuator and the relative pipe fittings. It can be installed on fan coils with both right and left connections.

**VCZD224:** 2-way motorised valve kit. The kit consists of a valve, an actuator and the relative pipe fittings. It can be installed on fan coils with both right and left connections.

**VCZD324:** 2-way motorised valve kit. The kit consists of a valve, an actuator and the relative pipe fittings. It can be installed on fan coils with both right and left connections.

**VCF4424:** The 3-way motorised valve kit for the secondary coil heat only. The kit consists of a valve with its insulating shell, actuator and relevant water fittings; it is suitable to be installed on the fan coils with right and left water connections.

## ACCESSORIES COMPATIBILITY

### Control panels

<b>Accessory</b>	FCZ100USP	FCZ150USP	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP
TX24	.	.	.	.	.	.	.
<b>Accessory</b>	FCZ450USP	FCZ500USP	FCZ550USP	FCZ600USP	FCZ650USP	FCZ700USP	FCZ750USP
TX24	.	.	.	.	.	.	.
<b>Accessory</b>	FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP	
TX24	.	.	.	.	.	.	.

**VCF4524:** The 3-way motorised valve kit for the secondary coil heat only. The kit consists of a valve with its insulating shell, actuator and relevant water fittings; it is suitable to be installed on the fan coils with right and left water connections.

**VCFD124:** Motorized 2-way valve kit without insulating shell, can be installed on the main or secondary battery or a battery that is only warm. The kit is made up of a valve, actuator and relative hydraulic fittings. It can be installed on fan coils with connections on the right and on the left.

**VCFD224:** Motorized 2-way valve kit without insulating shell, can be installed on the main or secondary battery or a battery that is only warm. The kit is made up of a valve, actuator and relative hydraulic fittings. It can be installed on fan coils with connections on the right and on the left.

**VCFD324:** Motorized 2-way valve kit without insulating shell, can be installed on the main or secondary battery or a battery that is only warm. The kit is made up of a valve, actuator and relative hydraulic fittings. It can be installed on fan coils with connections on the right and on the left.

**VCFD424:** Motorized 2-way valve kit without insulating shell, can be installed on the main or secondary battery or a battery that is only warm. The kit is made up of a valve, actuator and relative hydraulic fittings. It can be installed on fan coils with connections on the right and on the left.

**The actuator is 24 Volt for all valves.**

### Installation accessories

**BC:** Condensate drip.

**BCZ:** Condensate drip. If the valve is paired with the BCZ5 or BCZ6 condensate drip tray, the insulating shell can be removed to ensure better housing.

**RD:** Straight delivery coupling for canalisation.

**RDA:** Straight suction coupling for canalisation.

**RPA:** 90° suction coupling.

**FIKIT200:** Structural bracket in floor installation.

**FIKIT300:** Structural bracket in floor installation.

**FIKIT500:** Structural bracket in floor installation.

**FIKIT800:** Structural bracket in floor installation.

## Water valves

### 3 way valve kit

	100	101	102	150	200	201	202	250	300	301	302	350	400	401	402	450
<b>Main coil</b>	VCZ4124	VCZ4124	VCZ4124	VCZ4124	VCZ4124	VCZ4124	VCZ4124	VCZ4124	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224
<b>Secondary coil</b>	-	VCF4424	VCF4424	-	-	VCF4424	VCF4424	-	-	VCF4424	VCF4424	-	-	VCF4424	VCF4424	-
	<b>500</b>	<b>501</b>	<b>502</b>	<b>550</b>	<b>600</b>	<b>601</b>	<b>602</b>	<b>650</b>	<b>700</b>	<b>701</b>	<b>702</b>	<b>750</b>	<b>800</b>	<b>801</b>	<b>802</b>	<b>850</b>
<b>Main coil</b>	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224	VCZ4224
<b>Secondary coil</b>	-	VCF4424	VCF4424	-	-	VCF4424	VCF4424	-	-	VCF4424	VCF4424	-	-	VCF4424	VCF4424	-
	<b>900</b>	<b>901</b>	<b>950</b>	<b>1000</b>	<b>1001</b>											
<b>Main coil</b>	VCZ4324	VCZ4324	VCZ4324	VCZ4324	VCZ4324											
<b>Secondary coil</b>	-	VCF4524	-	-	VCF4524											

### 2 way valve kit

	100	101	102	150	200	201	202	250	300	301	302	350	400	401	402	450
<b>Main coil</b>	VCZD124	VCZD124	VCZD124	VCZD124	VCZD124	VCZD124	VCZD124	VCZD124	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224
<b>Secondary coil</b>	-	VCFD424	VCFD424	-	-	VCFD424	VCFD424	-	-	VCFD424	VCFD424	-	-	VCFD424	VCFD424	-
	<b>500</b>	<b>501</b>	<b>502</b>	<b>550</b>	<b>600</b>	<b>601</b>	<b>602</b>	<b>650</b>	<b>700</b>	<b>701</b>	<b>702</b>	<b>750</b>	<b>800</b>	<b>801</b>	<b>802</b>	<b>850</b>
<b>Main coil</b>	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224	VCZD224
<b>Secondary coil</b>	-	VCFD424	VCFD424	-	-	VCFD424	VCFD424	-	-	VCFD424	VCFD424	-	-	VCFD424	VCFD424	-
	<b>900</b>	<b>901</b>	<b>950</b>	<b>1000</b>	<b>1001</b>											
<b>Main coil</b>	VCZD324	VCZD324	VCZD324	VCZD324	VCZD324											
<b>Secondary coil</b>	-	VCFD424	-	-	VCFD424											

## Installation accessories

### Condensate drip

Accessory	FCZ100USP	FCZ150USP	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP	FCZ450USP	FCZ500USP	FCZ550USP
BCZ4	.	.	.	.	.	.	.	.	.	.
BCZ5		.	.	.	.	.	.	.	.	.
BCZ6								.	.	.
Accessory	FCZ600USP	FCZ650USP	FCZ700USP	FCZ750USP	FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP
BCZ4	.	.	.	.	.	.	.	.	.	.
BCZ5	.	.	.	.	.	.	.	.	.	.
BCZ6								.	.	.
Accessory	FCZ100USP	FCZ150USP	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP	FCZ450USP	FCZ500USP	FCZ550USP
BC8	.	.	.	.	.	.	.	.	.	.
BC9										
Accessory	FCZ600USP	FCZ650USP	FCZ700USP	FCZ750USP	FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP
BC8	.	.	.	.	.	.	.	.	.	.
BC9							.	.	.	.

### FIKIT

Accessory	FCZ100USP	FCZ150USP	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP	FCZ450USP	FCZ500USP	FCZ550USP
FIKIT100	.	.								
FIKIT200			.	.						
FIKIT300					.	.				
FIKIT500							.	.	.	.
FIKIT800								.	.	.
Accessory	FCZ600USP	FCZ650USP	FCZ700USP	FCZ750USP	FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP
FIKIT100										
FIKIT200										
FIKIT300										
FIKIT500										
FIKIT800	.	.	.	.	.	.	.	.	.	.

## Wall mounting and duct type installation accessories

### Condensate drip

Accessory	FCZ100USP	FCZ150USP	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP	FCZ450USP	FCZ500USP	FCZ550USP
BCZ4	.	.	.	.	.	.	.	.	.	.
BCZ5		.	.	.	.	.	.	.	.	.
BCZ6								.	.	.
Accessory	FCZ600USP	FCZ650USP	FCZ700USP	FCZ750USP	FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP
BCZ4	.	.	.	.	.	.	.	.	.	.
BCZ5	.	.	.	.	.	.	.	.	.	.
BCZ6								.	.	.
Accessory	FCZ100USP	FCZ150USP	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP	FCZ450USP	FCZ500USP	FCZ550USP
BC8	.	.	.	.	.	.	.	.	.	.
BC9										

<b>Accessory</b>	FCZ600USP	FCZ650USP	FCZ700USP	FCZ750USP	FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP
BC8	.	.	.	.	.	.	.	.	.	.
BC9							.	.	.	.

**Straight delivery coupling**

<b>Accessory</b>	FCZ100USP	FCZ150USP	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP	FCZ450USP	FCZ500USP	FCZ550USP
RD17	.	.								
RD22			.	.						
RD32					.	.				
RD42							.	.	.	.
RD62										

<b>Accessory</b>	FCZ600USP	FCZ650USP	FCZ700USP	FCZ750USP	FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP
RD17										
RD22										
RD32										
RD42										
RD62	.	.	.	.	.	.	.	.	.	.

**Straight suction coupling**

<b>Accessory</b>	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP	FCZ450USP	FCZ500USP	FCZ550USP	FCZ600USP	FCZ650USP
RDA22	.	.								
RDA32			.	.						
RDA42					.	.	.	.		
RDA62									.	.

<b>Accessory</b>	FCZ700USP	FCZ750USP	FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP
RDA22								
RDA32								
RDA42								
RDA62	.	.	.	.	.	.	.	.

**90° suction coupling.**

<b>Accessory</b>	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP	FCZ450USP	FCZ500USP	FCZ550USP	FCZ600USP	FCZ650USP
RPA22	.	.								
RPA32			.	.						
RPA42					.	.	.	.		
RPA62									.	.

<b>Accessory</b>	FCZ700USP	FCZ750USP	FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP
RPA22								
RPA32								
RPA42								
RPA62	.	.	.	.	.	.	.	.

**PERFORMANCE SPECIFICATIONS**

**2-pipe**

	FCZ100USP			FCZ150USP			FCZ200USP			FCZ250USP			FCZ300USP			FCZ350USP			FCZ400USP		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H

**Heating performance 158 °F / 140 °F (1)**

Heating capacity	MBH	5.0	6.8	8.2	5.3	7.5	9.0	6.9	10.1	12.6	7.5	10.9	13.8	11.8	15.2	18.8	12.9	16.8	21.0	14.7	19.6	24.4
Water flow rate system side	gpm	0.6	0.8	0.9	0.6	0.8	1.0	0.8	1.1	1.4	0.8	1.2	1.6	1.3	1.7	2.1	1.5	1.9	2.4	1.7	2.2	2.8
Pressure drop system side	ft H <sub>2</sub> O	1.30	2.00	2.90	2.00	3.40	4.90	2.01	4.01	6.02	2.34	5.02	7.69	2.34	4.01	6.02	2.68	4.68	6.69	3.01	5.35	8.03

**Heating performance 113 °F / 104 °F (2)**

Heating capacity	MBH	2.5	3.4	4.1	2.6	3.7	4.5	3.4	5.0	6.3	3.7	5.4	6.9	5.9	7.5	9.3	6.4	8.3	10.4	7.3	9.7	12.1
Water flow rate system side	gpm	0.6	0.8	0.9	0.6	0.8	1.0	0.8	1.1	1.4	0.8	1.2	1.5	1.3	1.7	2.1	1.4	1.9	2.3	1.6	2.2	2.7
Pressure drop system side	ft H <sub>2</sub> O	1.30	2.30	2.90	1.60	2.90	3.90	2.01	4.01	6.02	2.68	5.02	7.36	2.68	4.01	6.02	3.01	4.68	7.03	3.35	5.35	8.03

**Cooling performances 44.6 °F / 53.6 °F (3)**

Cooling capacity	MBH	2.2	2.9	3.4	2.7	3.6	4.3	3.0	4.4	5.5	3.6	5.3	6.6	5.7	7.4	9.0	6.4	8.4	10.3	7.5	10	12.3
Sensible cooling capacity	MBH	1.7	2.4	2.8	1.9	2.7	3.3	2.4	3.6	4.5	2.7	4.1	5.2	4.3	5.6	7.0	4.5	6.0	7.4	5.4	7.3	9.1
Water flow rate system side	gpm	0.5	0.6	0.8	0.6	0.8	1.0	0.7	1.0	1.2	0.8	1.2	1.5	1.3	1.6	2.0	1.5	2.0	2.5	1.7	2.2	2.7
Pressure drop system side	ft H <sub>2</sub> O	1.30	2.00	2.70	2.00	3.90	4.30	2.01	4.01	6.02	2.68	5.69	8.36	2.68	4.35	6.02	3.68	6.02	8.36	3.35	5.69	8.03

**Fan**

Type	type	Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal					
Fan motor	type	Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous					
Number	no.	1			1			1			1			2			2					
Air flow rate	cfm	65	94	118	65	94	118	82	129	171	82	129	171	153	206	265	153	206	265	194	271	353

**Fan coil sound data (4)**

Sound pressure level	dB(A)	23.0	30.0	37.0	23.0	30.0	37.0	23.0	35.0	42.0	23.0	35.0	42.0	26.0	33.0	40.0	26.0	33.0	40.0	29.0	36.0	43.0
Sound power level	dB(A)	31.0	38.0	45.0	31.0	38.0	45.0	31.0	43.0	50.0	31.0	43.0	50.0	34.0	41.0	48.0	34.0	41.0	48.0	37.0	44.0	51.0

**Diameter hydraulic fittings**

Main heat exchanger	Ø	1/2"			-			1/2"			-			3/4"			-			3/4"		
---------------------	---	------	--	--	---	--	--	------	--	--	---	--	--	------	--	--	---	--	--	------	--	--

	FCZ450USP			FCZ500USP			FCZ550USP			FCZ600USP			FCZ650USP			FCZ700USP			FCZ750USP			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	
<b>Heating performance 158 °F / 140 °F (1)</b>																						
Heating capacity	MBH	15.6	21.5	26.7	18.0	24.9	29.0	19.9	28.5	33.3	22.2	27.6	34.1	24.5	31.2	39.2	27.6	33.4	37.5	31.1	38.6	42.7
Water flow rate system side	gpm	1.8	2.4	3.0	2.0	2.8	3.3	2.2	3.2	3.8	2.5	3.1	3.9	2.8	3.5	4.4	3.1	3.8	4.2	3.4	4.4	4.8
Pressure drop system side	ft H <sub>2</sub> O	2.01	3.68	5.35	4.01	7.03	9.37	3.35	6.69	8.70	3.90	5.90	8.70	4.30	6.60	10.30	5.69	7.69	9.70	3.60	5.02	6.02
<b>Heating performance 113 °F / 104 °F (2)</b>																						
Heating capacity	MBH	7.7	10.6	13.2	8.9	12.4	14.4	9.9	14.1	16.5	11.0	13.8	17.0	12.2	15.5	19.5	13.8	16.6	18.7	15.4	19.1	21.2
Water flow rate system side	gpm	1.7	2.4	3.0	2.0	2.8	3.2	2.2	3.2	3.7	2.5	3.1	3.8	2.7	3.5	4.4	3.1	3.7	4.2	3.5	4.3	4.8
Pressure drop system side	ft H <sub>2</sub> O	2.01	3.68	5.35	4.01	7.03	9.37	3.35	6.69	8.70	3.90	5.70	8.30	4.30	6.60	10.30	5.69	8.03	9.70	3.35	5.02	6.02
<b>Cooling performances 44.6 °F / 53.6 °F (3)</b>																						
Cooling capacity	MBH	8.2	11.0	13.8	9.1	12.6	14.5	9.9	14.1	16.3	11.0	13.3	15.9	13.5	16.4	19.3	13.4	16.7	18.8	14.6	18.2	21.0
Sensible cooling capacity	MBH	5.8	7.8	9.9	6.6	9.3	10.9	7.1	10.2	11.9	8.7	10.8	13.4	9.5	11.7	14.1	10.2	12.8	14.7	10.9	13.8	16.1
Water flow rate system side	gpm	1.8	2.4	3.1	2.0	2.8	3.2	2.2	3.1	3.6	2.4	3.0	3.5	2.6	3.6	4.3	3.0	3.7	4.2	3.2	4.0	4.6
Pressure drop system side	ft H <sub>2</sub> O	3.01	5.02	7.36	4.35	7.69	9.70	4.01	7.36	9.37	4.30	6.40	8.70	5.00	6.90	9.40	5.69	8.36	10.04	3.35	5.02	6.36
<b>Fan</b>																						
Type	type	Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal		
Fan motor	type	Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous		
Number	no.	2			2			2			3			3			3			3		
Air flow rate	cfm	194	271	353	235	353	424	235	353	424	306	424	541	306	424	541	412	547	671	412	547	671
<b>Fan coil sound data (4)</b>																						
Sound pressure level	dB(A)	29.0	36.0	43.0	34.0	43.0	48.0	34.0	43.0	48.0	34.0	43.0	49.0	34.0	43.0	49.0	42.0	49.0	54.0	42.0	49.0	54.0
Sound power level	dB(A)	37.0	44.0	51.0	42.0	51.0	56.0	42.0	51.0	56.0	42.0	51.0	57.0	42.0	51.0	57.0	50.0	57.0	62.0	50.0	57.0	62.0
<b>Diameter hydraulic fittings</b>																						
Main heat exchanger	Ø	-			3/4"			-			3/4"			-			3/4"			-		
<b>FCZ800USP</b>																						
<b>FCZ850USP</b>																						
<b>FCZ900USP</b>																						
<b>FCZ950USP</b>																						
<b>FCZ1000USP</b>																						
<b>FCZ1050USP</b>																						
<b>Heating performance 158 °F / 140 °F (1)</b>																						
Heating capacity	MBH	33.4	36.9	40.9	38.6	42.1	47.8	36.7	45.6	51.7	38.2	49.2	58.3	42.9	52.0	58.1	47.8	57.5	64.7			
Water flow rate system side	gpm	3.7	4.1	4.5	4.3	4.7	5.3	4.2	5.2	5.8	4.3	5.6	6.6	4.8	5.9	6.6	5.4	6.5	7.3			
Pressure drop system side	ft H <sub>2</sub> O	9.60	11.70	14.00	5.30	6.40	8.00	4.01	5.69	7.36	5.35	8.36	11.04	8.00	11.30	14.30	9.40	13.10	16.10			
<b>Heating performance 113 °F / 104 °F (2)</b>																						
Heating capacity	MBH	16.6	18.3	20.4	19.2	21.0	23.7	18.3	22.7	25.7	19.0	24.5	29.0	21.3	25.9	28.9	23.8	28.6	32.2			
Water flow rate system side	gpm	3.7	4.1	4.6	4.3	4.7	5.3	4.1	5.1	5.8	4.3	5.5	6.5	4.8	5.8	6.5	5.3	6.4	7.2			
Pressure drop system side	ft H <sub>2</sub> O	7.30	8.70	10.60	5.70	6.40	8.30	4.01	5.69	7.36	5.02	8.03	11.04	7.30	10.30	12.40	8.90	12.60	15.60			
<b>Cooling performances 44.6 °F / 53.6 °F (3)</b>																						
Cooling capacity	MBH	16.5	19.3	20.8	17.9	21.5	23.6	14.6	17.1	23.6	19.7	25	29.3	19.4	23.5	16.0	24.3	28.9	32.4			
Sensible cooling capacity	MBH	12.7	15.1	16.5	13.6	16.5	18.3	10.1	12.9	19.4	13.0	16.6	19.7	15.1	18.2	18.9	16.2	19.4	21.9			
Water flow rate system side	gpm	3.7	4.3	4.6	4.0	4.8	5.2	3.2	3.8	5.2	4.4	5.5	6.5	4.3	5.2	5.8	5.4	6.4	7.2			
Pressure drop system side	ft H <sub>2</sub> O	6.60	8.70	10.10	4.60	6.40	7.60	3.35	4.35	7.36	5.02	7.69	10.04	7.30	10.30	12.40	7.30	10.10	11.90			
<b>Fan</b>																						
Type	type	Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal		
Fan motor	type	Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous		
Number	no.	3			3			3			3			3			3			3		
Air flow rate	cfm	530	659	765	530	659	765	412	547	671	412	547	671	530	659	765	530	659	765			
<b>Fan coil sound data (4)</b>																						
Sound pressure level	dB(A)	48.0	53.0	58.0	48.0	53.0	58.0	43.0	49.0	53.0	43.0	49.0	53.0	48.0	53.0	58.0	48.0	53.0	58.0			
Sound power level	dB(A)	56.0	61.0	66.0	56.0	61.0	66.0	51.0	57.0	61.0	51.0	57.0	61.0	56.0	61.0	66.0	56.0	61.0	66.0			
<b>Diameter hydraulic fittings</b>																						
Main heat exchanger	Ø	3/4"			-			3/4"			-			3/4"			-			-		

(1) Room air temperature 68 °F d.b.; Water (in/out) 158 °F/140 °F

(2) Room air temperature 68 °F d.b.; Water (in/out) 113 °F/104 °F

(3) Room air temperature 80.6 °F d.b./66.2 °F w.b.; Water (in/out) 44.6 °F/53.6 °F

(4) Aermec determines the sound power value on the basis of measurements taken in accordance with standard UNI EN 16583.

**The unit is supplied with nipples for hydraulic connections.**

4-pipe

	FCZ101USP			FCZ201USP			FCZ301USP			FCZ401USP			FCZ501USP			FCZ601USP		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H

**Heating performance 149 °F / 131 °F (1)**

Heating capacity	MBH	2.6	3.5	4.0	3.5	4.6	5.5	6.1	7.4	8.7	7.5	9.0	10.6	8.8	11.4	12.7	8.6	12.5	14.9
Water flow rate system side	gpm	0.3	0.4	0.4	0.4	0.5	0.6	0.7	0.8	1.0	0.8	1.0	1.2	1.0	1.3	1.4	1.0	1.4	1.7
Pressure drop system side	ft H <sub>2</sub> O	0.60	1.00	1.30	1.67	2.68	3.68	5.69	7.69	10.37	1.67	2.34	3.01	2.01	3.01	3.68	2.30	3.60	5.30

**Cooling performances 44.6 °F / 53.6 °F (2)**

Cooling capacity	MBH	2.2	2.9	3.4	3.0	4.4	5.5	5.7	7.4	9.0	7.5	10.0	12.3	9.1	12.6	14.5	11.0	13.3	15.9
Sensible cooling capacity	MBH	1.7	2.4	2.8	2.4	3.6	4.5	4.3	5.6	7.0	5.4	7.3	9.1	6.6	9.3	10.9	8.7	10.8	13.4
Water flow rate system side	gpm	0.5	0.6	0.8	0.7	1.0	1.2	1.3	1.6	2.0	1.7	2.2	2.7	2.0	2.8	3.2	2.4	3.0	3.5
Pressure drop system side	ft H <sub>2</sub> O	1.30	2.00	2.60	2.34	4.35	6.02	2.68	4.35	6.02	4.68	8.03	11.37	4.35	7.69	9.70	4.30	6.30	8.60

**Fan**

Type	type	Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal					
Fan motor	type	Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous					
Number	no.	1			1			2			2			3					
Air flow rate	cfm	65	94	118	82	129	171	153	206	265	194	271	353	235	353	424	306	424	541

**Fan coil sound data (3)**

Sound power level	dB(A)	31.0	38.0	45.0	31.0	43.0	50.0	34.0	41.0	48.0	39.0	44.0	51.0	42.0	51.0	56.0	42.0	51.0	57.0
Sound pressure level	dB(A)	23.0	30.0	37.0	23.0	35.0	42.0	26.0	33.0	40.0	31.0	36.0	43.0	34.0	43.0	48.0	34.0	43.0	49.0

**Diametre hydraulic fittings**

Main heat exchanger	Ø	1/2"			1/2"			3/4"			3/4"			3/4"		
Secondary heat exchanger	Ø	1/2"			1/2"			1/2"			1/2"			1/2"		

	FCZ701USP			FCZ801USP			FCZ901USP			FCZ1001USP		
	1	2	3	1	2	3	1	2	3	1	2	3
	L	M	H	L	M	H	L	M	H	L	M	H

**Heating performance 149 °F / 131 °F (1)**

Heating capacity	MBH	12.5	14.6	16.9	14.4	16.3	18.2	16.1	19.2	19.5	16.5	19.0	20.8
Water flow rate system side	gpm	1.4	1.7	1.9	1.6	1.8	2.0	1.8	2.2	2.2	1.8	2.1	2.3
Pressure drop system side	ft H <sub>2</sub> O	3.68	5.02	6.36	4.00	6.30	7.70	3.01	4.01	4.01	3.30	4.30	5.00

**Cooling performances 44.6 °F / 53.6 °F (2)**

Cooling capacity	MBH	13.4	16.7	18.8	16.5	19.3	16.5	14.6	17.1	23.6	19.4	23.5	26.0
Sensible cooling capacity	MBH	10.2	12.8	14.7	12.7	15.1	12.7	10.1	12.9	19.4	15.1	18.2	18.9
Water flow rate system side	gpm	3.0	3.7	4.2	3.7	4.3	3.7	3.2	3.8	5.2	4.3	5.2	5.8
Pressure drop system side	ft H <sub>2</sub> O	5.69	8.36	10.04	6.60	8.60	6.60	3.35	4.01	7.36	7.30	10.30	12.30

**Fan**

Type	type	Centrifugal			Centrifugal			Centrifugal			Centrifugal		
Fan motor	type	Asynchronous			Asynchronous			Asynchronous			Asynchronous		
Number	no.	3			3			3			3		
Air flow rate	cfm	412	547	671	530	659	765	412	547	671	530	659	765

**Fan coil sound data (3)**

Sound power level	dB(A)	51.0	57.0	61.0	56.0	61.0	66.0	51.0	57.0	61.0	56.0	61.0	66.0
Sound pressure level	dB(A)	43.0	49.0	53.0	48.0	53.0	58.0	43.0	49.0	53.0	48.0	53.0	58.0

**Diametre hydraulic fittings**

Main heat exchanger	Ø	3/4"			3/4"			3/4"			3/4"		
Secondary heat exchanger	Ø	1/2"			1/2"			1/2"			1/2"		

(1) Room air temperature 68 °F d.b.; Water (in/out) 149 °F/131 °F

(2) Room air temperature 80.6 °F d.b./66.2 °F w.b.; Water (in/out) 44.6 °F/53.6 °F

(3) Aermec determines the sound power value on the basis of measurements taken in accordance with standard UNI EN 16583.

**The unit is supplied with nipples for hydraulic connections.**

## PERFORMANCE SPECIFICATIONS (PO)

### 2-pipe

	FCZ200USPO			FCZ250USPO			FCZ300USPO			FCZ350USPO			FCZ400USPO			FCZ450USPO			FCZ500USPO		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H

#### Heating performance 158 °F / 140 °F (1)

Heating capacity	MBH	7.2	10.2	11.3	7.8	11.1	12.3	11.9	17.2	18.6	13.0	19.1	20.8	15.3	20.5	23.0	16.3	22.6	25.2	18.0	24.6	25.9
Water flow rate system side	gpm	0.8	1.1	1.3	0.9	1.2	1.4	1.3	1.9	2.1	1.4	2.1	2.3	1.7	2.3	2.6	1.8	2.5	2.8	2.0	2.7	2.9
Pressure drop system side	ft H <sub>2</sub> O	2.30	3.90	5.00	2.90	5.30	6.40	2.70	5.00	5.90	2.90	5.90	6.90	3.60	5.90	7.30	2.30	3.90	5.00	3.90	6.90	7.60

#### Heating performance 113 °F / 104 °F (2)

Heating capacity	MBH	3.6	5.1	5.6	3.9	5.5	6.1	5.9	8.5	9.2	6.4	9.5	10.3	7.6	10.2	11.4	8.1	11.2	12.6	8.9	12.2	12.9
Water flow rate system side	gpm	0.8	1.1	1.3	0.9	1.2	1.4	1.3	1.9	2.1	1.4	2.1	2.3	1.7	2.3	2.5	1.8	2.5	2.8	2.0	2.7	2.9
Pressure drop system side	ft H <sub>2</sub> O	2.00	3.90	4.60	2.70	5.00	5.90	2.70	5.00	5.70	2.90	5.70	6.60	3.40	5.70	6.90	2.30	3.90	5.00	3.90	6.60	7.30

#### Cooling performances 44.6 °F / 53.6 °F (3)

Cooling capacity	MBH	3.2	4.4	4.9	3.8	5.4	5.9	5.8	8.2	6.9	6.5	9.5	10.2	7.8	10.4	11.6	8.6	11.5	12.9	9.1	12.5	13.0
Sensible cooling capacity	MBH	2.5	3.9	4.0	2.8	4.2	4.6	4.3	6.3	9.0	4.6	6.8	7.4	5.7	7.6	8.6	6.0	8.3	9.3	6.6	9.2	9.7
Water flow rate system side	gpm	0.7	1.0	1.1	0.8	1.2	1.3	1.3	1.8	2.0	1.4	2.1	2.3	1.7	2.3	2.6	1.9	2.6	2.9	2.0	2.8	2.9
Pressure drop system side	ft H <sub>2</sub> O	2.70	4.30	5.00	2.90	5.70	6.90	2.70	5.30	5.90	3.60	6.90	8.30	3.60	5.90	7.30	3.60	5.30	6.60	4.30	7.30	8.00

#### Fan

Type	type	Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal					
Fan motor	type	Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous					
Number	no.	1			1			2			2			2			2					
Air flow rate	cfm	87	133	149	87	133	149	155	238	263	155	238	263	204	287	329	204	287	329	235	348	369

#### Duct type fan coil sound data (4)

Sound power level (outlet)	dB(A)	37.0	52.0	55.0	37.0	52.0	55.0	35.0	47.0	49.0	35.0	47.0	49.0	40.0	50.0	52.0	40.0	50.0	52.0	41.0	51.0	53.0
Sound power level (inlet + radiated)	dB(A)	41.0	56.0	59.0	41.0	56.0	59.0	39.0	51.0	54.0	39.0	51.0	54.0	44.0	54.0	55.0	44.0	54.0	55.0	45.0	55.0	57.0

#### Diameter hydraulic fittings

Main heat exchanger	Ø	1/2"			-			3/4"			-			3/4"			-			3/4"		
---------------------	---	------	--	--	---	--	--	------	--	--	---	--	--	------	--	--	---	--	--	------	--	--

	FCZ550USPO			FCZ600USPO			FCZ650USPO			FCZ700USPO			FCZ750USPO			FCZ900USPO			FCZ950USPO		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H

#### Heating performance 158 °F / 140 °F (1)

Heating capacity	MBH	19.8	28.2	29.6	23.4	29.2	34.1	26.0	33.2	39.3	29.9	34.5	35.9	34.2	39.8	41.3	40.3	47.1	49.3	42.4	51.4	54.6
Water flow rate system side	gpm	2.2	3.1	3.3	2.6	3.2	3.8	2.9	3.7	4.4	3.3	3.8	4.0	3.8	4.4	4.6	4.5	5.2	5.5	4.7	5.7	6.1
Pressure drop system side	ft H <sub>2</sub> O	3.40	6.40	6.90	4.30	6.60	8.70	5.00	7.60	10.30	6.40	8.30	8.90	3.90	5.00	5.30	4.60	5.90	6.60	6.40	8.70	9.60

#### Heating performance 113 °F / 104 °F (2)

Heating capacity	MBH	9.9	14.0	14.7	11.6	14.5	17.0	12.9	16.5	19.5	14.9	17.1	17.8	17.0	19.8	20.5	20.0	23.4	24.5	21.1	25.6	27.1
Water flow rate system side	gpm	2.2	3.1	3.3	2.6	3.2	3.8	2.9	3.7	4.3	3.3	3.8	4.0	3.8	4.4	4.6	4.4	5.2	5.4	4.7	5.7	6.0
Pressure drop system side	ft H <sub>2</sub> O	3.40	6.40	6.90	4.30	6.40	8.30	4.60	7.30	10.30	6.40	8.00	8.70	3.90	5.00	5.30	4.60	5.90	6.60	5.90	8.70	9.60

#### Cooling performances 44.6 °F / 53.6 °F (3)

Cooling capacity	MBH	9.9	13.9	14.6	11.5	13.9	15.9	14.2	17.1	19.3	14.5	17.0	17.7	16.0	18.9	19.8	14.9	18.2	20.3	21.7	26	27.5
Sensible cooling capacity	MBH	7.1	10.0	10.5	9.2	11.4	13.4	10	12.3	14.1	11.1	13.1	13.7	12.0	14.3	15.0	10.6	14.0	16.1	14.3	17.3	18.4
Water flow rate system side	gpm	2.2	3.1	3.2	2.6	3.1	3.5	3.1	3.8	4.3	3.2	3.8	3.9	3.6	4.2	4.4	3.3	4.0	4.5	4.8	5.8	6.1
Pressure drop system side	ft H <sub>2</sub> O	3.90	6.90	7.60	5.00	6.90	8.70	5.30	16.80	9.40	6.40	8.70	9.40	3.60	5.00	5.70	3.40	4.60	5.70	5.70	8.00	8.90

#### Fan

Type	type	Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal					
Fan motor	type	Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous			Asynchronous					
Number	no.	2			3			3			3			3			3					
Air flow rate	cfm	235	348	369	334	453	541	334	453	541	462	576	618	462	576	618	462	576	618	462	576	618

#### Duct type fan coil sound data (4)

Sound power level (outlet)	dB(A)	41.0	51.0	53.0	44.0	54.0	60.0	44.0	54.0	60.0	52.0	59.0	61.0	52.0	59.0	61.0	52.0	59.0	61.0	52.0	59.0	61.0
Sound power level (inlet + radiated)	dB(A)	45.0	55.0	57.0	46.0	56.0	61.0	46.0	56.0	61.0	54.0	60.0	62.0	54.0	60.0	62.0	54.0	60.0	62.0	54.0	60.0	62.0

#### Diameter hydraulic fittings

Main heat exchanger	Ø	-			3/4"			-			3/4"			-			3/4"			-		
---------------------	---	---	--	--	------	--	--	---	--	--	------	--	--	---	--	--	------	--	--	---	--	--

(1) Room air temperature 68 °F d.b.; Water (in/out) 158 °F/140 °F

(2) Room air temperature 68 °F d.b.; Water (in/out) 113 °F/104 °F

(3) Room air temperature 80.6 °F d.b./66.2 °F w.b.; Water (in/out) 44.6 °F/53.6 °F

(4) Aermec determines the sound power value on the basis of measurements taken in accordance with standard UNI EN 16583.

**The unit is supplied with nipples for hydraulic connections.**

4-pipe

		FCZ201USPO			FCZ301USPO			FCZ401USPO			FCZ501USPO			FCZ601USPO			FCZ701USPO			FCZ901USPO		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H
<b>Heating performance 149 °F / 131 °F (1)</b>																						
Heating capacity	MBH	3.6	4.7	5.0	6.2	8.2	8.7	7.5	9.4	10.2	8.8	11.3	11.4	10.7	13.1	14.8	14.1	15.0	15.7	17.6	19.5	19.7
Water flow rate system side	gpm	0.4	0.5	0.6	0.7	0.9	1.0	0.8	1.0	1.1	1.0	1.3	1.3	1.2	1.5	1.6	1.6	1.7	1.7	2.0	2.2	2.2
Pressure drop system side	ft H <sub>2</sub> O	1.60	2.70	2.90	2.70	3.90	4.30	1.60	2.30	2.70	1.60	2.70	2.90	2.90	4.30	5.30	5.00	5.00	5.30	3.40	3.90	3.90
<b>Cooling performances 44.6 °F / 53.6 °F (2)</b>																						
Cooling capacity	MBH	3.2	4.5	4.9	5.8	8.3	9.0	7.8	10.4	11.6	9.1	12.5	13.0	11.5	13.9	15.9	14.5	17.0	17.7	14.9	18.2	20.3
Sensible cooling capacity	MBH	2.5	3.7	4.0	4.3	6.3	6.9	5.7	7.6	8.6	6.6	9.2	9.7	9.2	11.4	13.4	11.1	13.1	13.7	10.6	14.0	16.1
Water flow rate system side	gpm	0.7	1.0	1.1	1.3	1.8	2.0	1.7	2.3	2.6	2.0	2.8	2.9	2.6	3.1	3.5	3.2	3.8	3.9	3.3	4.0	4.5
Pressure drop system side	ft H <sub>2</sub> O	2.30	4.30	5.00	2.70	5.30	5.90	3.60	5.90	7.30	4.30	7.30	8.00	5.00	6.90	8.70	6.40	8.70	9.40	3.40	4.60	5.70
<b>Fan</b>																						
Type	type	Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal			Centrifugal		
Fan motor	type	Inverter			Inverter			Inverter			Inverter			Inverter			Inverter			Inverter		
Number	no.	1			2			2			2			3			3			3		
Air flow rate	cfm	87	133	149	155	238	263	204	287	329	541	235	348	618	334	453	618	462	576	-	462	576
<b>Duct type fan coil sound data (3)</b>																						
Sound power level (outlet)	dB(A)	37.0	52.0	55.0	35.0	47.0	49.0	40.0	50.0	52.0	41.0	51.0	53.0	44.0	54.0	60.0	52.0	59.0	61.0	52.0	59.0	61.0
Sound power level (inlet + radiated)	dB(A)	41.0	56.0	59.0	39.0	51.0	54.0	44.0	54.0	55.0	45.0	55.0	57.0	46.0	56.0	61.0	54.0	60.0	62.0	54.0	60.0	62.0
<b>Diameter hydraulic fittings</b>																						
Main heat exchanger	Ø	1/2"			1/2"			1/2"			1/2"			1/2"			1/2"			1/2"		
Secondary heat exchanger	Ø	1/2"			3/4"			3/4"			3/4"			3/4"			3/4"			3/4"		

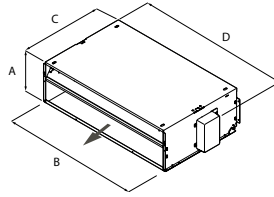
(1) Room air temperature 68 °F d.b.; Water (in/out) 149 °F/131 °F

(2) Room air temperature 80.6 °F d.b./66.2 °F w.b.; Water (in/out) 44.6 °F/53.6 °F

(3) Aermecc determines the sound power value on the basis of measurements taken in accordance with standard UNI EN 16583.

**The unit is supplied with nipples for hydraulic connections.**

## DIMENSIONS - 2 PIPE

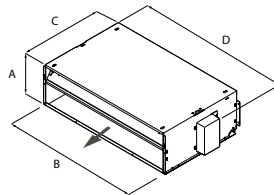


		FCZ100USP	FCZ150USP	FCZ200USP	FCZ250USP	FCZ300USP	FCZ350USP	FCZ400USP
<b>Dimensions and weights</b>								
A	in	8.5	8.5	8.5	8.5	8.5	8.5	8.5
B	in	16.2	16.2	20.6	20.6	29.7	29.7	38.3
C	in	17.8	17.8	17.8	17.8	17.8	17.8	17.8
D	in	17.8	17.8	22.1	22.1	31.2	31.2	39.9
Empty weight	lb	26	29	26	31	31	35	44

		FCZ450USP	FCZ500USP	FCZ550USP	FCZ600USP	FCZ650USP	FCZ700USP	FCZ750USP
<b>Dimensions and weights</b>								
A	in	8.5	8.5	8.5	8.5	8.5	8.5	8.5
B	in	38.3	38.3	38.3	44.2	44.2	44.2	44.2
C	in	17.8	17.8	17.8	17.8	17.8	17.8	17.8
D	in	39.9	39.9	39.9	45.2	45.2	45.2	45.2
Empty weight	lb	49	51	53	64	68	57	62

		FCZ800USP	FCZ850USP	FCZ900USP	FCZ950USP	FCZ1000USP	FCZ1050USP
<b>Dimensions and weights</b>							
A	in	8.5	8.5	8.5	8.5	8.5	8.5
B	in	44.2	44.2	44.2	44.2	44.2	44.2
C	in	17.8	17.8	22.0	22.0	22.0	22.0
D	in	45.2	45.2	45.2	45.2	45.2	45.2
Empty weight	lb	57	62	71	71	71	71

## DIMENSIONS - 4 PIPE



		FCZ101USP	FCZ201USP	FCZ301USP	FCZ401USP	FCZ501USP	FCZ601USP	FCZ701USP	FCZ801USP	FCZ901USP	FCZ1001USP
<b>Dimensions and weights</b>											
A	in	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
B	in	16.2	20.6	29.7	38.3	38.3	44.2	44.2	44.2	44.2	44.2
C	in	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	22.0	22.0
D	in	17.8	22.1	31.2	39.9	39.9	45.2	45.2	45.2	45.2	45.2
Empty weight	lb	26	29	33	46	51	66	60	60	71	71

Aermec reserves the right to make any modifications deemed necessary. All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

**Aermec S.p.A.**  
Via Roma, 996 - 37040 Bevilacqua (VR) - Italia  
Tel. 0442633111 - Telefax 044293577  
www.aermec.com



A series of horizontal dotted lines spanning the width of the page, providing a guide for handwriting practice.



A series of horizontal dotted lines spanning the width of the page, providing a guide for handwriting practice. There are 20 such lines, evenly spaced from top to bottom.



A series of horizontal dotted lines spanning the width of the page, providing a guide for handwriting practice. There are 20 such lines, evenly spaced from top to bottom.