

Belt Driven 3-Phase Extract Units



A range of powerful acoustically lined three phase twin and single fan extract units for both in-duct and external applications

ermirrotec

Belt Driven 3-Phase Extract Fans

Why use BRU & BDU Extract Units?

Two ranges of acoustically lined three phase extract units have been specifically designed to be totally flexible, with each unit tailored to meet individual client requirements. The first type 'BRU' is designed for external mounting, while the second type 'BDU' is primarily designed for internal installations. Both types are fitted with a belt and pulley drive, which offers the following advantages:

- Each unit is selected to meet precise design criteria.
- By changing pulleys on site, the commissioning engineer will also be able to adjust the output if necessary.
- Future changes in the site usage need not mean a completely new unit is required. By simply altering the belt & pulley configuration lower or higher duties may also be accommodated.

Where can the BRU & BDU Extract Units be used?

Although both unit types are designed around the same fan, motor and drive arrangement, the application denotes the unit type. These are denoted thus:

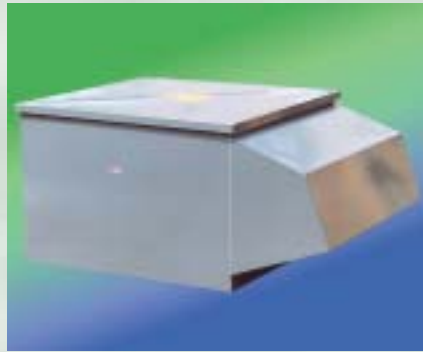
- **BRU:** Externally mounted extract designed specifically for kerb mounting. A spigot is supplied on the underside of the unit for the extract air, with exhaust air discharged through a weather cowl.
- **BDU:** Internally mounted extract, designed for either floor or ceiling void mounting. Spigot duct connections are provided on the inlet and outlet of the unit.
- **X-BDU:** An alternative externally mounted extract designed for floor mounting. A spigot is supplied on the rear of the unit for the extract air, with exhaust air discharged through a weather cowl.



A BDU 4T complete with run and standby fans and motors. Note the non-return flaps fitted to prevent short circuiting of the extract air.

Unit Construction

- Cases of small to medium sized units are manufactured using galvanized steel, powder-coated to any RAL or BS number. As standard, units are finished Goose Grey, BS00A05.
- Larger single or twin units are manufactured using an aluminium penta-post and pre-formed corner construction, with 'Plastisol' coated steel infill panels. Again our standard colour finish is Goose Grey, unless otherwise requested.
- Outlet cowls fitted to externally mounted units are complete with 'bird mesh'.
- All units are insulated with 25mm 'class O' acoustic liner



A BRU 5T designed for external kerb mounting. A return air spigot would be fitted on the underside of this unit.

Fan options

Units are usually fitted with a forward curved DIDW fan, unless either the specification or duty dictates that a backward curved fan should be installed. All unit types can be supplied as either single or twin fan extracts depending on the application.

- The single fan and motor type is designed for general extract.
- The twin fan and twin motor arrangement is designed for more sensitive environments such as toilet extract.

To denote a single or twin fan arrangement, the suffix 'S' or 'T' are added to the end of the unit reference.

As an example, a 'BRU - T' would denote a kerb mounted externally mounted unit with run and standby fans.

Mounting

- BRU units can be mounted directly to the building structure, without the need for anti-vibration mountings or flexible connections.
- X-BDU units can also be mounted directly to the building structure, without the need for anti-vibration mountings or flexible connections. However, flexible connections and anti-vibration mountings can be supplied if required.
- BDU units can be supplied with a/v mounts and flexible connections as an option.

Access

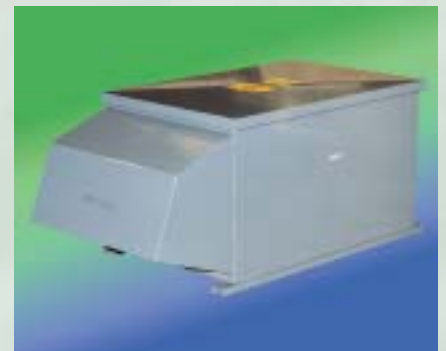
- BRU units have a removable roof section which enables easy access to the unit components.
- X-BDU units can also have a removable roof section which enables easy access to the unit components.
- BDU units can be supplied with either top or bottom access, depending on whether they are floor or ceiling mounted.
- Larger units with penta-post construction will be fitted with side access panels in place of the top access panel.

Wiring and Controls Options

All units are wired to an externally mounted 3-phase isolator.

Where twin fan and motors are requested, the following options are available:

- Motors wired to the isolator for controls by others.
- A full auto-changeover package can be supplied, with a control panel supplied loose for remote mounting on site by others (Envirotec model 'AC3' refers)



An X-BDU 4S designed for external mounting. Note the channel base under the unit. A return air spigot would be on the rear (hidden) end of this unit.

Single Phase Units

For single-phase units, with both twin or single fans and designed for either internal or external installations, please refer to our brochure 'Series RE & DE'.

Kerb Mounted Extract Fan Specifications

Unit Type	Case			Inlet Spigot		Outlet Spigot		Cowl Depth	Kerb						Unit Weight
	Length	Width	Height	Height	Width	Height	Width		Length O/D	Width O/D	Length I/D	Width I/D	Wall Thickness	Height	
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)		J (mm)	K (mm)	L (mm)	M (mm)	N (mm)	P (mm)	

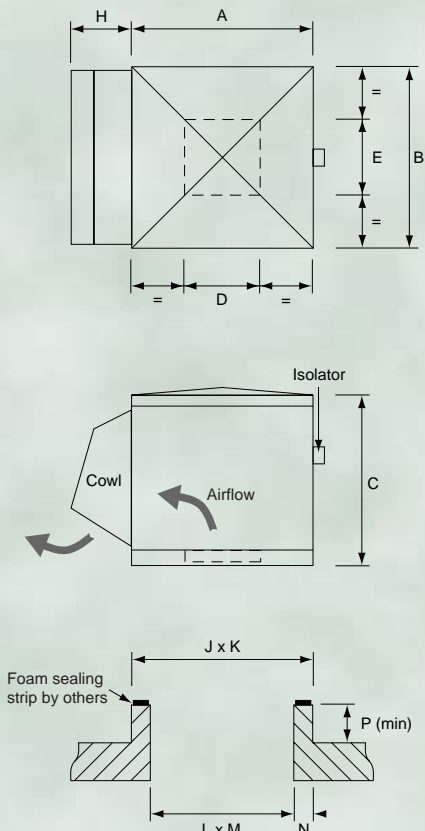
BRU-S Single Kerb Mounted Extract Fan, External Installation

BRU 1S	700	700	460	300	300	n/a	n/a	235	690	690	540	540	75	100	45
BRU 2S	700	700	460	300	300	n/a	n/a	235	690	690	540	540	75	100	46
BRU 3S	900	900	560	450	450	n/a	n/a	330	890	890	740	740	75	100	62
BRU 4S	900	900	560	450	450	n/a	n/a	330	890	890	740	740	75	100	69
BRU 5S	1000	1000	660	600	600	n/a	n/a	430	990	990	790	790	100	150	83
BRU 6S	1000	1000	660	600	600	n/a	n/a	430	990	990	790	790	100	150	95
BRU 7S	1060	1060	850	750	750	n/a	n/a	700	1050	1050	850	850	100	150	113
BRU 8S	1060	1060	850	750	750	n/a	n/a	700	1050	1050	850	850	100	150	132
BRU 9S	1060	1060	850	750	750	n/a	n/a	700	1050	1050	850	850	100	150	169
BRU 10S	1060	1160	950	750	750	n/a	n/a	700	1050	1050	850	850	100	150	193

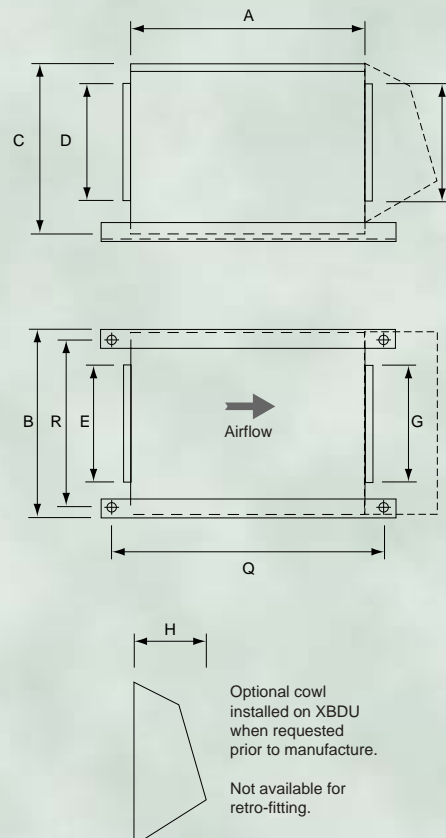
BRU-T Twin Curb Mounted Extract Fan, External Installation

BRU 1T	700	900	460	300	300	n/a	n/a	235	690	890	540	740	75	100	70
BRU 2T	700	900	460	300	300	n/a	n/a	235	690	890	540	740	75	100	72
BRU 3T	900	1100	560	450	450	n/a	n/a	330	890	1090	740	940	75	100	112
BRU 4T	900	1100	560	450	450	n/a	n/a	330	890	1090	740	940	75	100	126
BRU 5T	1000	1400	660	600	600	n/a	n/a	430	990	1390	790	1190	100	150	153
BRU 6T	1000	1400	660	600	600	n/a	n/a	430	990	1390	790	1190	100	150	177
BRU 7T	1060	1700	850	750	750	n/a	n/a	700	1050	1690	850	1490	100	150	217
BRU 8T	1060	1700	850	750	750	n/a	n/a	700	1050	1690	850	1490	100	150	254
BRU 9T	1060	1950	850	750	750	n/a	n/a	700	1050	1940	850	1740	100	150	298
BRU 10T	1060	1950	950	750	750	n/a	n/a	700	1050	1940	850	1740	100	150	340

BRU



BDU



Ducted Extract Fan Specifications

Unit Type	Case			Inlet Spigot		Outlet Spigot		Cowl Depth (if fitted)	Angle Centres		Total Unit Weight (no cowl) (kg)	Extra Cowl Weight (if fitted) (kg)
	Length	Width	Height	Height	Width	Height (if fitted)	Width (if fitted)		Q	R		
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	Q (mm)	R (mm)	(kg)	(kg)

BDU S Single Ducted Extract Fan, Internal Installation

BDU 1S	900	600	400	350	500	350	500	n/a	940	560	43	n/a
BDU 2S	900	600	400	350	500	350	500	n/a	940	560	44	n/a
BDU 3S	900	600	500	450	500	450	500	n/a	1040	560	48	n/a
BDU 4S	900	600	500	450	500	450	500	n/a	1040	560	55	n/a
BDU 5S	1000	700	600	550	600	550	600	n/a	1140	660	66	n/a
BDU 6S	1000	700	600	550	600	550	600	n/a	1140	660	78	n/a
BDU 7S	1250	900	750	700	800	700	800	n/a	1390	860	104	n/a
BDU 8S	1250	900	750	700	800	700	800	n/a	1390	860	122	n/a
BDU 9S	1300	1000	800	750	900	750	900	n/a	1440	960	169	n/a
BDU 10S	1300	1100	900	750	900	750	900	n/a	1440	960	193	n/a

BDU T Twin Ducted Extract Fan, Internal Installation

BDU 1T	900	900	400	350	500	350	850	n/a	940	860	71	n/a
BDU 2T	900	900	400	350	500	350	850	n/a	940	860	73	n/a
BDU 3T	1100	1100	500	450	500	450	1050	n/a	1140	1060	111	n/a
BDU 4T	1100	1100	500	450	500	450	1050	n/a	1140	1060	126	n/a
BDU 5T	1300	1400	620	520	600	520	1300	n/a	1340	1360	160	n/a
BDU 6T	1300	1400	620	520	600	520	1300	n/a	1340	1360	184	n/a
BDU 7T	1600	1700	770	670	800	670	1600	n/a	1640	1660	236	n/a
BDU 8T	1600	1700	770	670	800	670	1600	n/a	1640	1660	273	n/a
BDU 9T	1800	1950	820	720	900	720	1850	n/a	1840	1910	335	n/a
BDU 10T	1800	2050	920	720	900	720	1850	n/a	1840	1910	377	n/a

X BDU S Single Ducted Extract Fan, External Installation

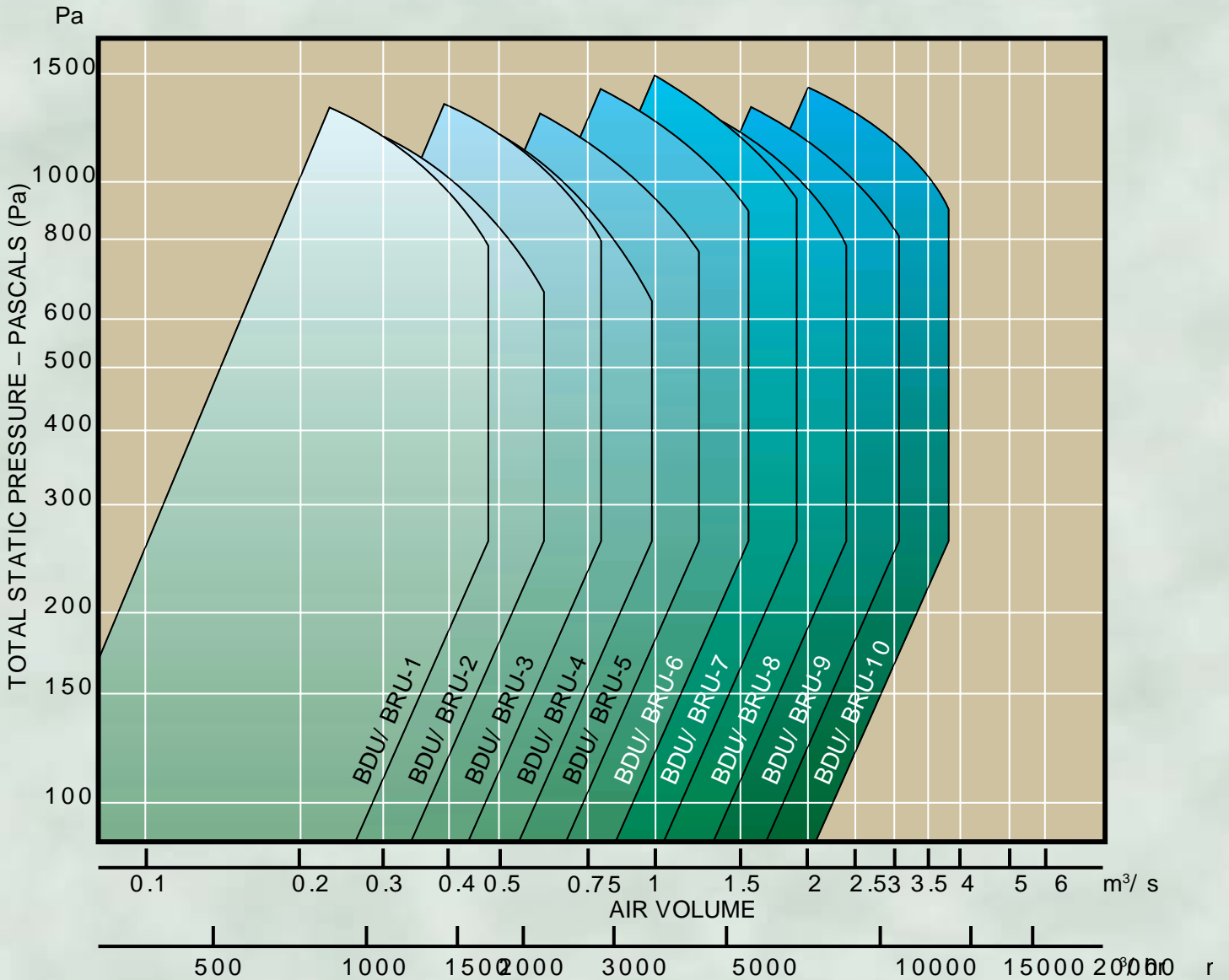
X BDU 1S	900	600	420	350	500	350	500	235	950	550	44	2
X BDU 2S	900	600	420	350	500	350	500	235	950	550	44	2
X BDU 3S	900	600	520	450	500	450	500	330	1050	550	49	3
X BDU 4S	900	600	520	450	500	450	500	330	1050	550	56	3
X BDU 5S	1000	700	620	550	600	550	600	430	1150	650	67	4
X BDU 6S	1000	700	620	550	600	550	600	430	1150	650	79	4
X BDU 7S	1250	900	770	700	800	700	800	700	1300	850	105	6
X BDU 8S	1250	900	770	700	800	700	800	700	1300	850	123	6
X BDU 9S	1300	1000	820	750	900	750	900	700	1350	950	147	6
X BDU 10S	1300	1100	920	750	900	750	900	700	1350	950	161	6

X BDU T Twin Ducted Extract Fan, External Installation

X BDU 1T	900	900	420	350	500	350	850	235	950	850	72	3
X BDU 2T	900	900	420	350	500	350	850	235	950	850	73	3
X BDU 3T	1100	1100	520	450	500	450	1050	330	1150	1050	113	7
X BDU 4T	1100	1100	520	450	500	450	1050	330	1150	1050	127	7
X BDU 5T	1300	1400	620	520	600	520	1300	430	1350	1350	160	7
X BDU 6T	1300	1400	620	520	600	520	1300	430	1350	1350	184	7
X BDU 7T	1600	1700	770	670	800	670	1600	700	1650	1650	236	11
X BDU 8T	1600	1700	770	670	800	670	1600	700	1650	1650	273	11
X BDU 9T	1800	1950	820	720	900	720	1850	700	1850	1900	335	13
X BDU 10T	1800	2050	920	720	900	720	1850	700	1850	1900	377	14

BRU & BDU Selection

Quick Selection Chart



Selection Notes

The above graph plots the required air volume against the total static pressure. The total static pressure is the sum of the external static pressure (specified by the client) and the pressure resulting from the unit itself. Therefore, when selecting the unit's size, you must add your external static pressure to the following unit pressure figures:

BDU S	(Internal single fan)	15 Pascals (Pa)	X BDU S	(External single fan, with cowl)	35 Pascals (Pa)
BDU T	(Internal twin fan)	40 Pascals (Pa)	X BDU T	(External twin fan, with cowl)	60 Pascals (Pa)
X BDU S	(External single fan, no cowl)	15 Pascals (Pa)	BRU S	(External single fan, with cowl)	35 Pascals (Pa)
X BDU T	(External twin fan, no cowl)	40 Pascals (Pa)	BRU T	(External twin fan, with cowl)	60 Pascals (Pa)



A BDU 6T. Note the black control panel mounted on the outside, designed to house the twin motor terminal. Auto changeover panels are available and supplied loose.



A BDU 3T designed for internal mounting. Note the channel base under the unit.

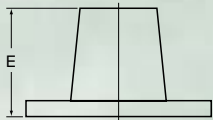
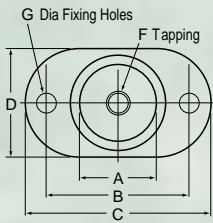


The style of multi-pole isolators fitted to all unit types.

Vibration Isolation

Type A: Turret

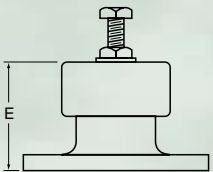
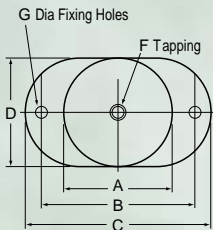
For use with small to medium sized 'floor mounted' units.
Manufactured in neoprene rubber, they are designed to give high mechanical strength through an efficient rubber to metal bonding technique



A/V Mount Reference	Colour Code	Weight Range kg	Deflection mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm
T1	Blue	9 – 18	4.0	29	59	74	41	32	8	7
T2	Green	20 – 40	4.0	29	59	74	41	32	8	7
T3	White	27 – 54	4.0	29	59	74	41	32	8	7
T4	Red	36 – 72	4.0	29	59	74	41	32	8	7
T5	Green	54 – 108	5.0	43	75	98	61	39	12	11
T6	White	90 – 180	5.0	43	75	98	61	39	12	11
T7	Red	135 – 270	5.0	43	75	98	61	39	12	11
T8	Black	180 – 360	5.0	43	75	98	61	39	12	11

Type B: Turret

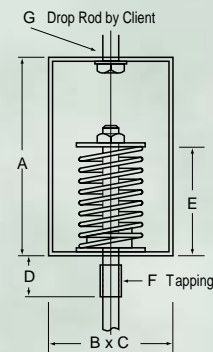
For use with medium to large sized 'floor mounted' units.
The base is manufactured in neoprene rubber, onto which is mounted a high strength, low stress, steel helical spring. The spring is fully enclosed inside a plated steel casing.



A/V Mount Reference	Colour Code	Weight Range kg	Deflection mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm
CS100	n/a	23 – 46	15.0	64	83	102	64	59	10	10
CS180	n/a	41 – 82	15.0	64	83	102	64	59	10	10
CS300	n/a	68 – 137	15.0	64	83	102	64	59	10	10
CS380	n/a	86 – 173	15.0	64	83	102	64	59	10	10

Type C: Hanger

For use with units that will be suspended from drop rods (to be supplied by client).
The simple open spring design offers an effective anti-vibration mount, designed to accommodate the client's drop rods or if space is at a premium, can be bolted directly to the ceiling structure.



A/V Mount Reference	Colour Code	Weight Range kg	Deflection mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm
CH30	Yellow	7 – 14	15.0	100	50	50	30	60	12	12
CH100	Blue	23 – 46	15.0	100	50	50	30	60	12	12
CH180	White/Black	41 – 82	15.0	100	50	50	30	60	12	12
CH300	Green	68 – 137	15.0	100	50	50	30	60	12	12

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