TU VAV TERMINAL UNIT

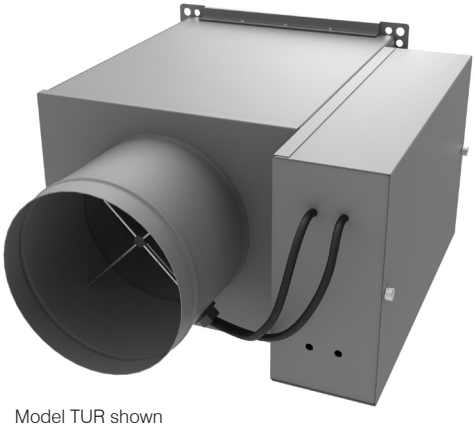
DESCRIPTION

Shapeair TU VAV terminal units are a volume flow rate controller for supply air on variable air volume system. These units are designed to control the air flow of conditioned air into an occupied space in response to a control signal from a thermostat or Building Automation System (BAS). They can be used in stand alone systems or interfaced.

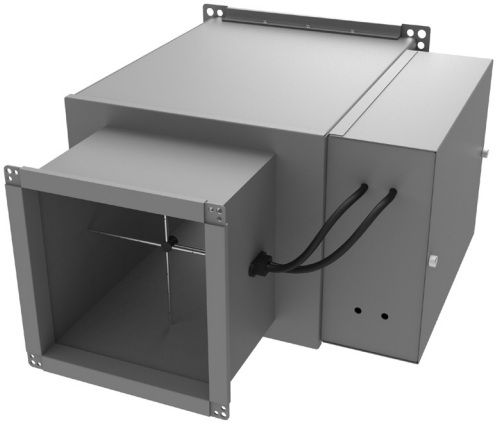
Shapeair VAV terminal units consist of a casing with circular spigot or square inlet, rectangular outlet connection with integral of fibreglass with black matt tissue for noise reduction, damper blade for air volume control and cross flow differential pressure sensor for measuring air volume.

Shapeair VAV terminal units can also incorporate control components, such as controller actuator and transformer, which can be factory fitted. Shapeair can factory fit and calibrate free issue controls using in-house testing facilities.

Controllers allow the terminal units to regulate the flow rate as dictated by the thermostat or BAS and compensate instantly for any changes in supply air pressure that may alter the supply air volume. Hence, the net result is a pressure independent variable air volume system.



Model TUR shown



Model TUS shown

CONSTRUCTION

Casing: 0.9mm thickness galvanised steel

Damper blade: Double layer heavy gauge galvanised steel with peripheral EPDM gasket

Internal insulation: 25mm thick, 48kg/m^3 density insulation with perforated metal lining

Bearing: Engineered polymer

Shaft: Electroplated shaft with blade positioning locator

Differential pressure sensor: Drawn aluminium tube

SEISMIC COMPLIANCE

Shapeair TU range have been tested and approved for seismic conditions. Terminal units are fully compliant. Test certificates available upon request.

Due to our policy of continuous improvement, we reserve the right to discontinue or change product specification or designs at any time without notice.

Terminal Unit

PERFORMANCE

MODEL	Air Flow Rate Range (l/s)		Inlet Velocty (m/s)	
	Min	Max	Min	Max
TU100	12	106	1.2	13.5
TU150	29	212	1.3	12.0
TU200	52	378	1.3	12.0
TU250	85	637	1.4	13.0
TU300	127	991	1.4	14.0
TU350	189	1510	1.5	15.7
TU400	269	1888	1.7	15.0
TU6040	1800	3775	7.5	15.7

FEATURES

- Oval shape damper for optimal flow management
- Neoprene peripheral gasket, which prevents leakage
- Multi-point averaging inlet differential pressure sensor
- 25mm thick, 48kg/m^3 density insulation with perforated metal lining
- Round or square inlet for easy duct connection
- Round shaft for superior grip mounting of actuator
- Shaft indicator showing damper position
- Concealed tube
- Double layer, heavy gauge damper blade
- Accessible protective metal casing for control component mounting
- Low pressure drop construction with round or square inlet and rectangular outlet for static regain
- Can also be used in Constant Air Volume (CAV) applications
- Rectangular discharge opening with slip and drive cleat or duct flange connection
- Sound attenuation duct section can be integrated for noise ciritical applications
- Reheat hot water coil available upon request
- Reheat electric heater bank available upon request

OTHER MODELS

Variable Air Volume (VAV) Pressure Dependent Control

- Without differential pressure sensor
- Pressure dependent
- No monitoring of air volume

Variable Air Volume (VAV) Pressure Independent Control

- With differential pressure sensor
- Pressure independent
- Air volume varies depending on design flow and signal by controller
- Air volume can be monitored

Constant Air Volume (CAV) Pressure Independent Control

- With differential pressure sensor.
- Pressure independent
- Air volume is constant (design flow), provided the minimum static pressure is achieved
- Air volume can be monitored

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Performance

MODEL	Air Flow (l/s)	Min. ΔPs (Pa)		Min. ΔPt (Pa)	Discharge Noise NR										Radiated Noise NR				
		Basic Unit	Attenuator	Basic Unit	Basic Unit					Attenuator					Basic Unit				
		ΔPs Across Unit			Min.	125	250	500	750	Min.	125	250	500	750	Min.	125	250	500	750
TU100	37	2	2	14	-	-	-	-	22	-	-	-	-	20	-	-	-	-	-
	60	2	2	35	-	-	-	-	26	-	-	-	-	24	-	-	-	-	20
	83	5	5	67	-	-	-	26	31	-	-	-	24	29	-	-	-	21	24
	106	10	10	112	-	20	24	29	32	-	-	22	27	30	-	-	22	24	28
TU150	74	2	2	11	-	-	-	-	25	-	-	-	-	20	-	-	-	-	20
	120	7	7	31	-	-	-	22	29	-	-	-	-	24	-	-	-	-	23
	166	25	25	71	-	-	21	28	34	-	-	-	23	29	-	-	20	23	28
	213	53	53	128	-	21	26	30	35	-	-	21	25	30	-	20	23	28	32
TU200	132	2	2	10	-	-	-	23	30	-	-	-	-	22	-	-	-	-	23
	214	2	2	24	-	-	-	26	32	-	-	-	-	24	-	-	-	23	27
	296	6	6	47	-	-	23	30	37	-	-	-	22	29	-	-	23	27	32
	378	16	16	83	-	23	28	32	38	-	-	20	24	30	-	23	27	32	35
TU250	223	2	2	11	-	-	20	27	33	-	-	-	22	28	-	20	23	27	30
	361	2	2	26	-	-	23	29	35	-	-	-	24	30	-	22	27	30	35
	499	6	6	53	-	-	25	30	36	-	-	20	25	31	22	27	30	35	38
	638	16	16	92	-	25	29	33	37	-	20	24	28	32	26	31	33	36	39
TU300	347	2	2	13	-	-	-	24	33	-	-	-	-	27	-	-	22	25	29
	508	2	2	25	-	-	22	26	35	-	-	-	20	29	-	23	25	29	32
	669	2	2	41	-	-	24	28	37	-	-	-	22	31	-	24	29	33	37
	831	4	4	65	-	20	27	30	38	-	-	23	26	34	24	29	33	37	40
	992	10	10	96	21	27	30	33	39	-	23	26	29	35	28	33	35	38	42
TU350	529	2	2	16	-	-	-	26	32	-	-	-	22	28	-	20	23	27	30
	774	2	2	32	-	-	22	27	34	-	-	-	23	30	-	25	28	32	34
	1020	2	2	53	-	-	24	30	36	-	-	20	26	32	24	29	32	35	38
	1266	6	6	85	-	20	27	32	37	-	-	23	28	33	27	32	35	39	43
	1511	16	16	128	21	27	30	34	38	-	23	26	30	34	30	35	37	40	44
TU400	661	2	2	14	-	-	20	25	31	-	-	-	19	25	-	-	20	24	28
	907	2	2	25	-	-	22	28	34	-	-	-	22	28	-	22	24	28	31
	1152	2	2	39	-	-	24	30	36	-	-	-	24	30	22	27	29	33	35
	1398	2	2	57	-	20	27	32	38	-	-	23	28	34	25	30	33	36	39
	1643	5	5	81	-	22	28	34	39	-	-	24	30	35	28	33	36	40	44
	1889	12	12	112	23	28	32	36	40	-	24	28	32	36	31	36	38	42	45
TU6040	1322	2	2	14	-	23	25	30	37	-	21	23	28	35	20	25	28	32	34
	1813	5	5	27	-	24	28	33	40	-	22	26	31	38	24	29	32	35	37
	2304	9	9	45	22	27	30	35	42	20	25	28	33	40	29	34	36	39	42
	2796	15	15	68	23	28	32	37	44	21	26	30	35	42	32	37	39	43	48
	3287	24	24	97	24	29	34	37	45	22	27	32	35	43	34	39	43	48	52
	3778	40	40	136	30	35	37	40	46	28	33	35	38	44	38	43	45	49	53

NOTES

- NR values are derived from sound power level, which are obtained in accordance with ARI standard 885-98
- ΔPs = static pressure from inlet to discharge of the unit
- ΔPt = total pressure from inlet to discharge of the unit
- Where dash(-) is shown, indicates NR less than 20

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Performance

DISCHARGE NOISE

MODEL	Air Flow (l/s)	Sound Power Level, Lw dB, re 10-12 watts																							
		125Pa ΔPs						250Pa ΔPs						500Pa ΔPs						750Pa ΔPs					
Octave Band		2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
TU100	37	43	42	40	36	34	30	46	47	45	43	41	37	50	51	49	49	47	43	53	56	54	56	54	50
	60	47	46	44	40	38	34	50	51	49	47	45	41	54	55	53	53	51	47	57	60	58	60	58	54
	83	51	51	52	50	45	41	55	56	57	55	51	47	59	60	61	61	58	54	63	65	66	66	64	60
	106	55	56	58	55	49	48	59	59	62	60	55	52	63	62	65	64	61	57	67	65	69	69	67	61
TU150	74	47	46	41	37	36	31	50	51	46	44	42	38	54	55	50	50	49	46	57	60	55	57	55	53
	120	51	50	45	41	40	35	54	55	50	48	46	42	58	59	54	54	53	50	61	64	59	61	59	57
	166	55	55	53	51	47	42	59	60	58	56	53	49	63	64	62	62	59	56	67	69	67	67	65	63
	213	59	60	59	56	51	49	63	63	63	61	57	54	67	66	66	65	62	59	71	69	70	70	68	64
TU200	132	52	51	46	42	41	36	55	56	51	49	47	43	59	60	55	55	54	51	62	65	60	62	60	58
	214	55	54	49	45	44	39	58	59	54	52	50	46	62	63	58	58	57	54	65	68	63	65	63	61
	296	58	58	54	52	48	43	62	63	59	57	54	51	66	67	63	63	60	58	70	72	68	68	66	66
	378	62	63	60	57	52	50	66	66	64	62	58	56	70	69	67	66	63	61	74	72	71	71	69	67
TU250	223	58	57	52	48	47	42	61	62	57	55	53	49	65	66	61	61	60	57	68	71	66	68	66	64
	361	59	59	54	52	49	45	63	64	59	58	55	52	66	68	63	63	61	59	70	73	68	69	67	66
	499	61	61	55	53	50	46	65	66	60	58	56	53	69	70	64	64	61	60	73	75	69	69	67	67
	638	65	66	61	58	54	53	69	69	65	63	59	58	73	72	68	67	65	63	77	75	72	72	70	68
TU300	347	58	56	52	48	47	41	62	61	57	55	54	49	64	64	60	60	58	54	69	70	67	69	67	64
	508	60	58	54	50	49	43	64	63	59	57	56	51	66	66	62	62	60	56	71	72	69	71	69	66
	669	62	60	56	54	51	46	65	65	61	60	57	53	68	68	64	64	62	58	73	74	71	72	70	68
	831	63	62	57	55	52	47	67	67	62	61	58	54	70	70	65	64	62	59	76	76	72	72	70	69
	992	67	67	63	60	56	54	71	70	67	65	62	59	74	72	70	68	65	63	80	76	75	75	73	70
TU350	529	60	57	54	50	49	43	64	62	59	57	56	50	67	66	64	64	62	58	71	71	69	71	69	65
	774	62	59	56	52	51	44	66	64	61	59	58	52	69	68	66	66	64	59	73	73	71	73	71	67
	1020	63	61	58	56	53	47	67	66	63	62	59	54	71	70	68	68	66	62	75	75	73	74	72	69
	1266	65	63	59	57	54	48	69	68	64	63	60	55	74	72	69	68	66	63	78	77	74	74	72	70
	1511	69	68	65	62	58	55	73	71	69	67	64	60	78	74	73	72	69	66	82	77	77	77	75	71
TU400	661	62	59	56	52	51	44	65	63	60	58	57	52	67	66	64	64	63	60	70	70	68	70	69	68
	907	64	60	58	54	53	45	67	64	62	60	59	54	70	69	67	67	66	62	73	73	71	73	72	71
	1152	65	62	60	58	55	48	68	66	64	64	62	56	72	71	69	69	68	64	75	75	73	75	75	72
	1398	66	63	61	59	56	49	70	68	65	64	61	55	73	72	70	70	66	61	77	77	75	76	71	67
	1643	67	64	61	59	56	49	71	69	66	65	62	56	76	74	71	70	67	62	80	79	76	76	73	69
	1889	71	69	67	64	60	56	75	72	71	69	65	61	80	76	75	74	69	66	84	79	79	79	74	71
TU6040	1322	68	65	62	58	57	50	69	67	66	64	63	58	73	70	70	70	69	66	71	72	74	76	75	74
	1813	70	66	64	60	59	51	71	69	68	66	65	60	73	72	73	73	72	68	74	75	77	79	78	77
	2304	71	68	66	64	61	54	73	71	70	70	68	62	74	74	75	75	74	70	76	77	79	81	81	78
	2796	72	69	67	65	62	55	74	72	71	70	67	61	76	76	76	76	72	67	78	79	81	82	77	73
	3287	73	70	67	65	62	55	76	74	72	71	68	62	78	77	77	76	73	68	81	81	82	82	79	75
	3778	77	75	73	70	66	62	80	77	77	75	71	67	82	79	81	80	75	72	85	81	85	85	80	77

NOTES

- ΔPs = static pressure from inlet to discharge of the unit

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Performance

RADIATED NOISE

MODEL	Air Flow (l/s)	Sound Power Level, Lw dB, re 10^{-12} watts																					
		125Pa ΔPs						250Pa ΔPs						500Pa ΔPs						750Pa ΔPs					
Octave Band		2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
TU100	37	44	42	33	29	21	12	45	44	37	33	26	17	47	45	40	36	30	23	48	47	44	40	35	28
	60	47	45	36	32	24	15	48	47	40	36	29	20	50	48	43	39	33	26	51	50	47	43	38	31
	83	51	46	42	39	31	25	53	49	45	41	34	28	54	52	48	43	38	31	56	55	51	45	41	34
	106	54	50	46	44	37	30	56	53	48	45	39	32	57	55	50	46	41	34	59	58	52	47	43	36
TU150	74	45	43	34	30	22	13	47	45	38	34	27	19	49	48	43	39	33	25	51	50	47	43	38	31
	120	48	46	37	33	25	16	50	48	41	37	30	22	52	51	46	42	36	28	54	53	50	46	41	34
	166	52	47	43	40	32	26	54	51	47	43	36	30	57	54	50	45	40	33	59	58	54	48	44	37
	213	55	51	47	45	38	31	57	54	50	47	41	34	60	58	52	48	43	36	62	61	55	50	46	39
TU200	132	48	46	37	33	25	16	50	48	41	37	30	22	52	51	46	42	36	28	54	53	50	46	41	34
	214	51	49	40	36	28	19	53	51	44	40	33	25	55	54	49	45	39	31	57	56	53	49	44	37
	296	55	50	46	43	35	29	57	54	50	46	39	33	60	57	53	48	43	36	62	61	57	51	47	40
	378	58	54	50	48	41	34	60	57	53	50	44	37	63	61	55	51	46	39	65	64	58	53	49	42
TU250	223	54	52	43	39	31	22	56	54	47	43	36	28	58	57	52	48	42	34	60	59	56	52	47	40
	361	58	53	49	46	38	32	60	57	53	49	42	36	63	60	56	51	46	39	65	64	60	54	50	43
	499	61	57	53	51	44	37	63	60	56	53	47	40	66	64	58	54	49	42	68	67	61	56	52	45
	638	62	58	57	54	48	43	65	61	59	55	50	44	67	65	60	57	52	46	70	68	62	58	54	47
TU300	347	52	51	42	38	29	20	54	53	46	42	34	26	56	56	51	47	40	32	58	58	55	51	45	38
	508	55	54	45	41	32	23	57	56	49	45	37	29	59	59	54	50	43	35	61	61	58	54	48	41
	669	59	55	51	48	39	33	61	59	55	51	43	37	64	62	58	53	47	40	66	66	62	56	51	44
	831	62	59	55	53	45	38	64	62	58	55	48	41	67	66	60	56	50	43	69	69	63	58	53	46
	992	63	60	59	56	49	44	66	63	61	57	51	45	68	67	62	59	53	47	71	70	64	60	55	48
TU350	529	53	52	43	39	30	21	55	54	47	43	35	27	57	57	52	48	41	33	59	59	56	52	46	39
	774	57	56	47	43	34	25	59	58	51	47	39	31	61	61	56	52	45	37	63	63	60	56	50	43
	1020	61	59	52	49	41	33	63	61	56	52	45	37	65	64	59	55	49	41	67	67	63	58	53	46
	1266	64	61	57	55	47	40	66	64	60	57	50	43	69	68	62	58	52	45	71	71	65	60	55	48
	1511	65	62	61	58	51	46	68	65	63	59	53	47	70	69	64	61	55	49	73	72	66	62	57	50
TU400	661	51	50	41	39	30	21	53	52	45	43	35	27	55	55	50	48	41	33	57	57	54	52	46	39
	907	54	53	44	42	33	24	56	55	48	46	38	30	58	58	53	51	44	36	60	60	57	55	49	42
	1152	58	57	48	46	37	28	60	59	52	50	42	34	62	62	57	55	48	40	64	64	61	59	53	46
	1398	62	60	53	52	44	36	64	62	57	55	48	40	66	65	60	58	52	44	68	68	64	61	56	49
	1643	65	62	58	58	50	43	67	65	61	60	53	46	70	69	63	61	55	48	72	72	66	63	58	51
	1889	66	63	62	61	54	49	69	66	64	62	56	50	71	70	65	64	58	52	74	73	67	65	60	53
TU6040	1322	57	56	47	45	36	27	59	58	51	49	41	33	61	61	56	54	47	39	63	63	60	58	52	45
	1813	60	59	50	48	39	30	62	61	54	52	44	36	64	64	59	57	50	42	66	66	63	61	55	48
	2304	64	63	54	52	43	34	66	65	58	56	48	40	68	68	63	61	54	46	70	70	67	65	59	52
	2796	68	66	59	58	50	42	70	68	63	61	54	46	72	71	66	64	58	50	74	74	70	67	62	55
	3287	70	67	63	61	53	46	72	70	66	63	56	49	75	74	68	64	58	51	77	77	71	66	61	54
	3778	71	68	67	64	57	52	74	71	69	65	59	53	76	75	70	67	61	55	79	78	72	68	63	56

NOTES

- ΔPs = static pressure from inlet to discharge of the unit

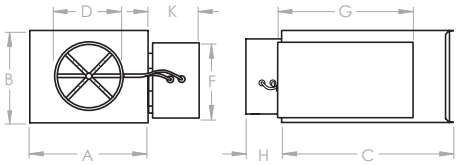
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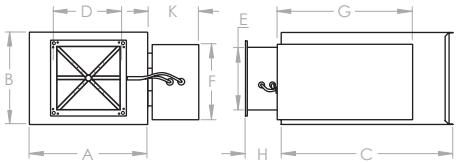
Dimensions

SECTION VIEWS

TUR - Round Inlet VAV Terminal Unit shown



TUS - Square Inlet VAV Terminal Unit shown



SPECIFICATIONS

Dimensions shown in mm.

MODEL	A	B	C	D	E	F	G	H	K
TU100	305	203	400	100	100	220	320	160	110
TU150	305	203	400	150	150	220	320	160	110
TU200	305	254	400	200	200	220	320	160	110
TU250	356	318	400	250	250	220	320	160	110
TU300	406	381	400	300	300	220	320	160	110
TU350	508	445	500	350	350	220	320	160	110
TU400	610	457	500	400	400	220	320	160	110
TU6040	965	460	500	609	406	220	320	160	110

NOTES

- 25mm 48kg/m^3 density insulation with perforated metal lining
- Galvanized steel housing
- Mechanically sealed leak resistant construction
- Rectangular discharge opening have drive and slip cleat duct connections or duct flange connection
- Right hand control location standard, as shown above
- Turbulent flow approaching the terminal will create additional noise, pressure drop and greater air flow variation. It is therefore recommended for optimum performance there should be a minimum of 4 duct diameters of straight inlet duct, same size as inlet, between the inlet and any transition, take off or fitting.

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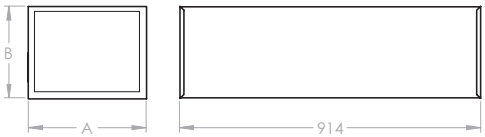
Terminal Unit Attenuator

DESCRIPTION

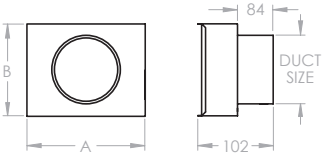
Shapeair offers engineering designed duct sections that integrate with our VAV terminal unit providing efficient sound attenuation solutions. The TU attenuator can be used in duct systems in order to mitigate the discharge and radiated noise travelling past the VAV terminal unit.

SECTION VIEWS

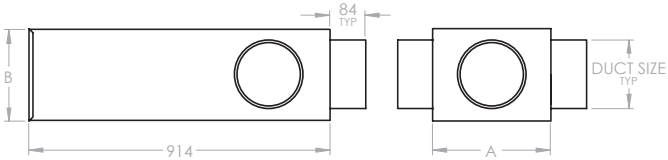
TUA - VAV Terminal Unit Attenuator shown

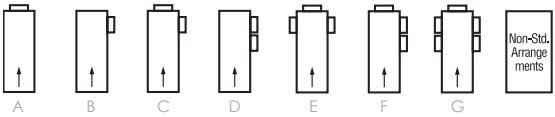


TUAR - Round Discharge Collar shown



TUAM - VAV Terminal Unit Attenuator Multi-Outlet shown





SPECIFICATIONS

Dimensions shown in mm.

MODEL	A	B
TUA100	305	203
TUA150	305	203
TUA200	305	254
TUA250	356	318
TUA300	406	381
TUA350	508	445
TUA400	610	457
TUA6040	965	460

- Only one outlet size to be specified per TUAM
- All round outlets complete with disc damper
- For special requirements, contact Shapeair

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Electric Heating Terminal Unit

DESCRIPTION

Shapeair offers factory supplied and mounted electric heater bank for VAV terminal units. The electric reheat extension comes in a separate unit which can be installed on the existing basic VAV terminal units.

FEATURES

- Heaters are factory wired and tested ensuring a high level of quality
- Electric element configuration and air flow is matched to eliminate hot spots, provide efficient heat transfer and to maintain element life
- Reheat units come with manual reset thermal cut-out to protect unit from overheating
- 25mm thick, 48kg/m^3 density insulation with perforated metal lining
- Magnetic contactors are provided as standard on heating coils for de-energising or disconnecting power to heating coils.
- An optional air flow switch can be provided to ensure air is passing over the coil before energising. This is to ensure that the electric coil will not energise when the system fan is shut-down or fails.

PERFORMANCE

MODEL	Air Flow Rate Range (l/s)		Heating Stages	Max. Capacity Allowable (kW)	
	Min	Max	(1 - 2 - 3)	Single Phase (240V)	3 Phase (415V)
TUEH100	12	106	1 - 2	3.0	3.0
TUEH150	29	212	1 - 2	6.0	6.0
TUEH200	52	378	1 - 2 - 3	9.5	11.0
TUEH250	85	637	1 - 2 - 3	11.5	17.0
TUEH300	127	991	1 - 2 - 3	11.5	30.0
TUEH350	189	1510	1 - 2 - 3	11.5	34.5
TUEH400	269	1888	1 - 2 - 3	11.5	34.5
TUEH6040	1800	3775	1 - 2 - 3	11.5	34.5

SPECIFICATIONS

- Minimum kW;
  - single phase = 0.5 kW/stage
  - 3 phase = 2.5 kW/stage
- Minimum air velocity = 1m/s
- Minimum air volume must be greater than minimum air volume listed or 33l/s per kW
- Static pressure loss of coil is negligible; refer to TU perfomance table (ΔPs) for basic unit value

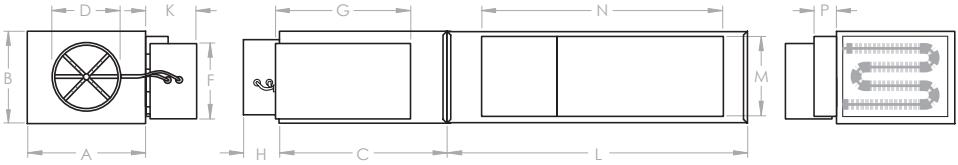
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TUEH

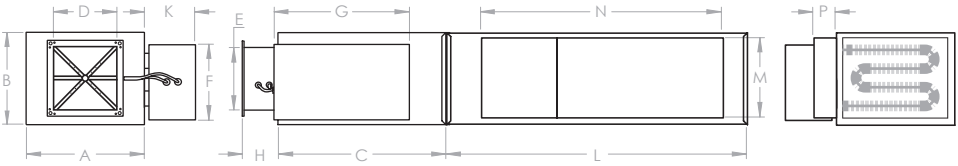
Dimensions

SECTION VIEWS

TUEHR - Round Inlet VAV Terminal Unit with Electric Heating shown



TUEHS - Square Inlet VAV Terminal Unit with Electric Heating shown



SPECIFICATIONS

Dimensions shown in mm.

MODEL	A	B	C	D	E	F	G	H	K	L	M	N	P
TUEH100	305	203	400	100	100	220	320	160	110	700	250	630	110
TUEH150	305	203	400	150	150	220	320	160	110	700	250	630	110
TUEH200	305	254	400	200	200	220	320	160	110	700	250	630	110
TUEH250	356	318	400	250	250	220	320	160	110	700	250	630	110
TUEH300	406	381	400	300	300	220	320	160	110	700	250	630	110
TUEH350	508	445	500	350	350	220	320	160	110	700	250	630	110
TUEH400	610	457	500	400	400	220	320	160	110	700	250	630	110
TUEH6040	965	460	500	609	406	220	320	160	110	700	250	630	110

NOTES

- 25mm 48kg/m³ density insulation with perforated metal lining
- Galvanized steel housing
- Mechanically sealed leak resistant construction
- Rectangular discharge opening have drive and slip cleat duct connections or duct flange connection
- Right hand control location standard, as shown above
- Turbulent flow approaching the terminal will create additional noise, pressure drop and greater air flow variation. It is therefore recommended for optimum performance there should be a minimum of 4 duct diameters of straight inlet duct, same size as inlet, between the inlet and any transition, take off or fitting.

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Hot Water Coil Terminal Unit

DESCRIPTION

For HW hot water reheat applications, Shapeair offers factory supplied and mounted hot water coils for VAV terminal units. The hot water coil reheat section comes in separate unit fitted on the existing basic VAV terminal unit.

FEATURES

- Designed, manufactured and tested ensuring a high level of quality
- Aluminium fin construction with die-formed spacer collars for uniform spacing
- Mechanically expanded copper tubes leak tested to 3000kPa air pressure and rated to 2000kPa working pressure at 95°C
- Male sweat type water connections
- 1 row single circuit or 2 row multi-circuit configurations

PERFORMANCE

TUHW150

Hot Water Coil				Air Flow (l/s)								
Rows	Water Flow (l/s)	Water ΔP (kPa)		59	71	83	94	106	116	142	165	189
1-Row Single Circuit	0.03	0.24	Heating Capacity (kW)	1.99	2.14	2.29	2.40	2.49	2.58	2.73	2.87	2.99
	0.06	0.84		2.23	2.43	2.61	2.75	2.90	3.02	3.22	3.43	3.58
	0.13	2.85		2.40	2.61	2.81	2.99	3.17	3.31	3.53	3.81	4.02
	0.25	9.60		2.49	2.75	2.96	3.14	3.34	3.49	3.73	4.04	4.28
2-Row Multi-Circuit	0.06	0.24		3.58	3.96	4.28	4.54	4.81	5.04	5.42	5.77	6.07
	0.13	0.84		3.90	3.90	4.78	5.13	4.54	5.74	6.27	6.71	7.12
	0.25	2.85		4.10	4.10	5.07	5.48	5.83	6.21	6.83	7.39	7.85
	0.32	4.20		4.13	4.13	5.13	5.54	5.95	6.30	6.95	7.53	8.03

TUHW200

Hot Water Coil				Air Flow (l/s)								
Rows	Water Flow (l/s)	Water ΔP (kPa)		94	118	142	165	189	236	283	330	378
1-Row Single Circuit	0.03	0.33	Heating Capacity (kW)	2.75	2.96	3.17	3.31	3.46	3.66	3.84	3.99	4.13
	0.06	1.14		3.17	3.49	3.75	3.99	4.19	4.51	4.81	5.04	5.25
	0.13	3.87		3.36	3.84	4.16	4.45	4.69	5.13	5.48	5.80	6.07
	0.25	13.02		3.63	4.04	4.40	4.72	5.01	5.51	5.92	6.30	6.65
2-Row Multi-Circuit	0.06	0.33		5.07	5.66	6.13	5.54	6.89	7.47	7.94	8.32	8.65
	0.13	1.14		5.71	6.45	7.09	7.65	8.15	8.97	9.67	10.26	10.72
	0.32	5.73		6.18	7.06	7.85	8.56	9.17	10.26	11.20	11.99	12.72
	0.63	19.23		6.36	7.30	8.15	8.91	9.58	10.79	11.84	12.75	13.57

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Performance

TUHW250

Hot Water Coil				Air Flow (l/s)								
Rows	Water Flow (l/s)	Water ΔP (kPa)		142	189	236	283	330	378	425	472	566
1-Row Single Circuit	0.06	0.24	Heating Capacity (kW)	4.25	4.72	5.10	5.39	5.66	5.86	6.07	6.24	6.54
	0.13	0.78		4.81	5.45	5.95	6.36	6.74	7.06	7.36	7.59	8.06
	0.25	2.58		5.19	5.92	6.54	7.06	7.50	7.88	8.26	8.59	9.17
	0.50	8.73		5.42	6.21	6.89	7.47	7.97	8.44	8.85	9.23	9.91
2-Row Multi-Circuit	0.13	0.54		7.97	9.23	10.23	11.05	11.75	12.37	12.90	13.36	14.18
	0.19	1.08		8.47	9.91	11.08	12.07	12.92	13.66	14.30	14.92	15.94
	0.32	2.61		8.94	10.52	11.87	13.01	14.01	14.92	15.71	16.44	17.73
	0.63	8.79		9.32	11.08	12.57	13.89	15.03	16.06	17.03	17.88	19.40

TUHW300

Hot Water Coil				Air Flow (l/s)								
Rows	Water Flow (l/s)	Water ΔP (kPa)		189	236	283	330	378	472	866	661	755
1-Row Single Circuit	0.06	0.30	Heating Capacity (kW)	5.48	5.95	6.33	6.62	6.89	7.36	7.71	8.00	8.26
	0.13	1.02		6.36	6.98	7.50	7.97	8.35	9.03	9.58	10.08	10.49
	0.25	3.45		6.92	7.68	8.32	8.88	9.38	10.23	10.96	11.61	12.16
	0.50	11.61		7.27	8.09	8.82	9.47	10.02	11.02	11.87	12.63	13.28
2-Row Multi-Circuit	0.13	0.69		10.37	11.58	12.31	13.45	14.18	15.42	16.38	17.23	17.94
	0.19	1.38		11.14	12.57	13.75	14.80	15.71	17.26	18.52	19.61	20.54
	0.32	3.39		11.84	13.45	14.86	16.09	17.17	19.08	20.66	22.04	23.24
	0.63	11.43		12.43	14.24	15.86	17.26	18.52	20.75	22.65	24.32	25.82

TUHW350

Hot Water Coil				Air Flow (l/s)								
Rows	Water Flow (l/s)	Water ΔP (kPa)		283	378	472	566	661	755	850	1033	1227
1-Row Single Circuit	0.13	0.48	Heating Capacity (kW)	8.73	9.73	10.52	11.17	11.72	12.19	12.63	13.33	13.95
	0.19	0.96		9.41	10.61	11.58	12.37	13.04	13.66	14.13	15.09	15.88
	0.32	2.31		10.05	11.46	12.57	13.54	14.36	15.09	15.74	16.91	17.88
	0.63	7.77		10.64	12.22	13.51	14.62	15.59	16.47	17.23	18.64	19.84
2-Row Multi-Circuit	0.13	0.42		14.13	16.00	17.44	18.58	19.55	20.34	21.04	22.19	23.09
	0.19	0.87		15.53	17.88	19.72	21.25	22.54	23.65	24.59	26.23	27.58
	0.32	2.10		16.88	19.72	22.04	23.97	25.64	27.11	28.40	30.36	32.53
	0.63	7.05		18.08	21.39	24.18	26.55	28.63	30.51	32.18	35.11	37.51

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Performance

TUHW400

Hot Water Coil				Air Flow (l/s)										
Rows	Water Flow (l/s)	Water ΔP (kPa)	Heating Capacity (kW)	378	472	566	661	755	849	944	1038	1133	1321	1510
1-Row Single Circuit	0.13	0.54		10.61	11.52	12.22	12.84	13.36	13.84	14.27	14.63	14.98	15.59	16.09
	0.19	1.09		11.61	12.66	13.57	14.33	15.01	15.60	15.15	16.63	17.09	17.88	18.55
	0.32	2.64		12.51	13.80	14.89	15.80	16.65	17.39	18.05	18.68	19.25	20.28	21.19
	0.63	8.94		13.36	14.33	16.09	17.20	18.17	19.09	19.90	20.64	21.34	22.63	23.77
2-Row Multi-Circuit	0.19	0.33		18.55	20.46	22.04	23.36	24.50	25.48	26.35	27.12	27.81	29.04	30.07
	0.25	0.54		19.81	22.04	23.89	25.47	26.85	28.03	29.10	30.08	30.95	32.47	33.79
	0.32	0.78		20.63	23.09	25.15	26.90	28.46	29.82	31.04	32.17	33.18	34.90	36.49
	0.63	2.64		22.60	25.59	28.16	30.42	32.44	34.25	35.90	37.42	38.80	41.29	43.52

NOTES

- Tables are based upon a temperature differential of 70°C between entering water and entering air.
- Tabulated values are in kW
- Air and water flow values are based on ASHRAE recommendations
- Connections: single circuit 13mm OD
- Connections: multi-circuit 22mm OD

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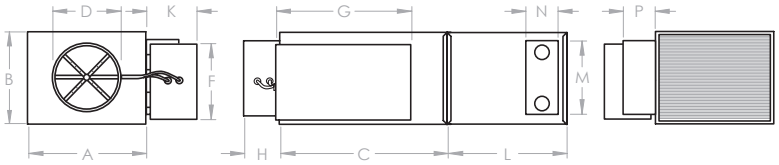
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TUHW

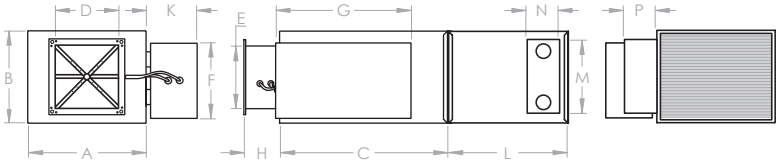
Dimensions

SECTION VIEWS

TUHWR - Round Inlet VAV Terminal Unit with Hot Water Coil shown



TUHWS - Square Inlet VAV Terminal Unit with Hot Water Coil shown



SPECIFICATIONS

Dimensions shown in mm.

MODEL	A	B	C	D	E	F	G	H	K	L	M	N	P
TUHW100	305	203	400	100	100	220	320	160	110	300	250	95	90
TUHW150	305	203	400	150	150	220	320	160	110	300	250	95	90
TUHW200	305	254	400	200	200	220	320	160	110	300	250	95	90
TUHW250	356	318	400	250	250	220	320	160	110	300	250	95	90
TUHW300	406	381	400	300	300	220	320	160	110	300	250	95	90
TUHW350	508	445	500	350	350	220	320	160	110	300	250	95	90
TUHW400	610	457	500	400	400	220	320	160	110	300	250	95	90
TUHW6040	965	460	500	609	406	220	320	160	110	300	250	95	90

NOTES

- 25mm 48kg/m³ density insulation with perforated metal lining
- Galvanized steel housing
- Mechanically sealed leak resistant construction
- Rectangular discharge opening have drive and slip cleat duct connections or duct flange connection
- Right hand control location standard, as shown above
- Turbulent flow approaching the terminal will create additional noise, pressure drop and greater air flow variation. It is therefore recommended for optimum performance there should be a minimum of 4 duct diameters of straight inlet duct, same size as inlet, between the inlet and any transition, take off or fitting.

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