

PRISMATIC AND CYLINDRICAL DUCT TYPE HEATER DTE-01/DTE-01A



DTE-01

DTE-01A

MATERIAL : It is manufactured from frame 1 mm thickness galvanised or stainless material with stainless heater resistance.

DESCRIPTION : DTE type ventilation system is designed for special purposes. It is manufactured based on prismatic conduit dimensions.

PROPERTIES : DTE type electrical heater which is made of prismatic and cylindric conduits assisting to save energy by converting extreme cold air to transform into warm and blow into machine. If this used with energy recydic machine, it is supporting temperature of vacumed air this lead to use energy economically.

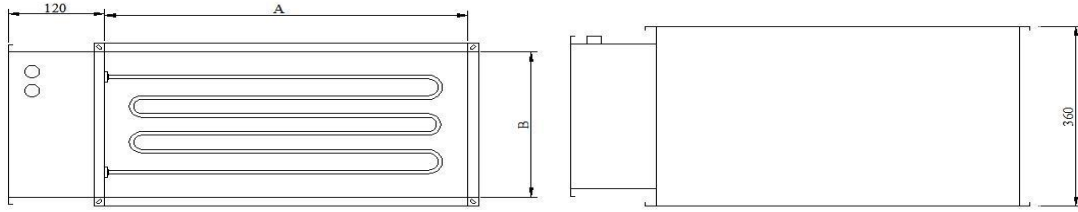
SURFACE COVERING : It s not required paint, as its galvanised or stainless material.

ACCESSORY : Thermostat with 70 degress 110 C° thermostat (reset)

TECHNICAL SPECIFICATIONS : DTE-01-01A type electrical heater operating between 550 C° to 110 C°. Thermostat located on machine controlling temperatues. Its running when the tempetatures falls to 50 C°, stopping when its reaches to 70 C°. If this thermostat goes to out of service for any reason temperatures rise to 110 C°. Thermostat runs and machine stop running. Reset requires to start machine. Machine assembling easily without and additional tools by using flashes located on top of machine. Its same for air-handling.

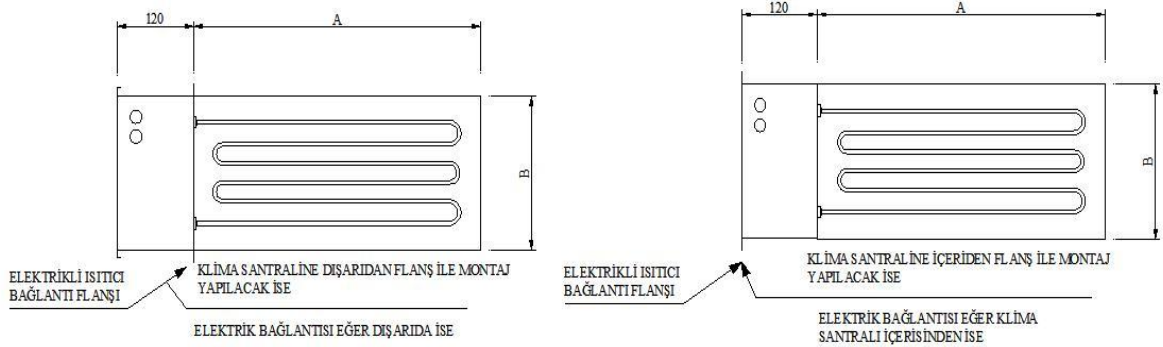


ELECTRICAL HEATERS FOR PRISMATIC CONDUITS:



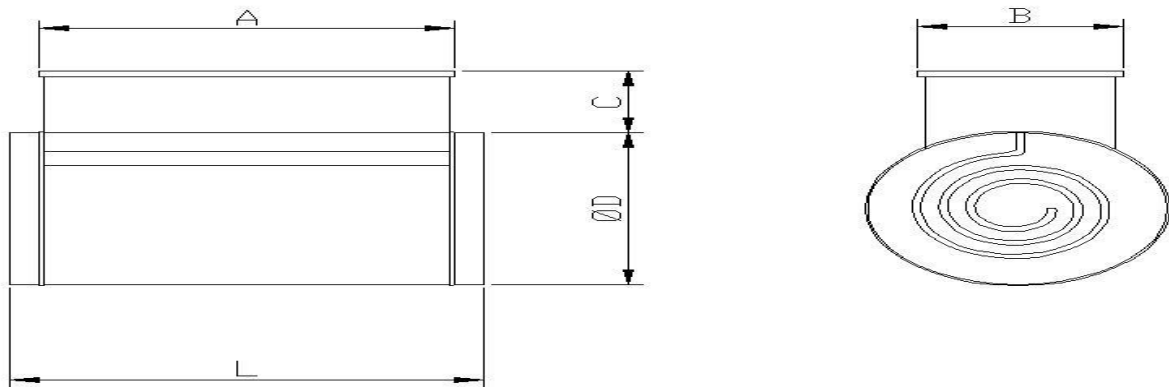
Electrical heater for prismatic conduits manufactured with dimensions starting from 200*200 (mm) with 50 mm pitch desired capacity. Depth calculated by using number of rods and KW.

ELECTRICAL HEATER USED IN AIR-HANDLING:



DTE-01 A ve DTE-01 B type of electrical heater designed for air handling usage. Its easy to install on air handling. Helps to increase extra heating capacity and reduce the temperatures of vacuumed extreme cold air to be used by machine.

ELECTRICAL HEATER FOR CYLINDRIC CONDUIT:



STANDARD SIZE

TYPE	DIMENSION ØD mm	Lmm	Amm.	B mm.	Cmm.
DTE-01					
Ø 100	Ø 97	375	270	97	80
Ø 125	Ø 122	375	270	122	80
Ø 160	Ø 157	375	270	157	80
Ø 200	Ø 197	375	270	197	80
Ø 250	Ø 247	375	270	247	80
Ø 315	Ø 312	375	270	312	80
Ø 355	Ø 352	375	270	352	80
Ø 400	Ø 397	375	270	397	80
Ø 500	Ø 497	375	270	497	80

Standard measures given above and can be changed and manufactured if necessary. DTE type electric heater manufactured by single, double and triple phases.

DUCT TYPE HEATER PHASE TABLE

RANGE OF POWER		ELECTRIC
0,5 ~ 3,0	kW	230 volt 1 stage
3,1 ~ 6,0	kW	400 volt 2 stage
6,1 ~	kW	400 volt 3 stage

CABLE LENGTH BASED ON DIMENSIONS (230 V 1¹)

POWER (Kw)	INSURANCE (A)	CABLE SECTION (mm ²)							
		1	1,5	2,5	4	6	10	16	25
1	6	34	41	68	81	122			
2	16	17	20	34	41	61	101		
3	20	11	14	23	27	41	68	108	169
4	25		10	17	20	30	51	81	127
5	32			14	16	24	41	65	101
7,5	50				11	16	27	43	68
10	63					12	20	32	51

Recommended air speed in conduit type electrical heater is min 1,5 m/s to 5 m/s depth of machine calculated by using number of rods and capacity.

Electrical heater power capacity calculated by using airflow rate, temperature difference between in and out as below.

$$P = Q \times 0,36 \times (T_2 - T_1)$$

Q= airflow rate (m³/h)

P= electric heater power (Watt)

T₂=electric heater air outlet temperature (°C)

T₁= electric heater air inlet temperature (°C)

Example: Fresh air in İstanbul with 1500 m³/h, outside temp. -1°C what will be the power to made temp. to 25°C?

$$P = 0,36 \times 1500 \times (25 - (-1))$$

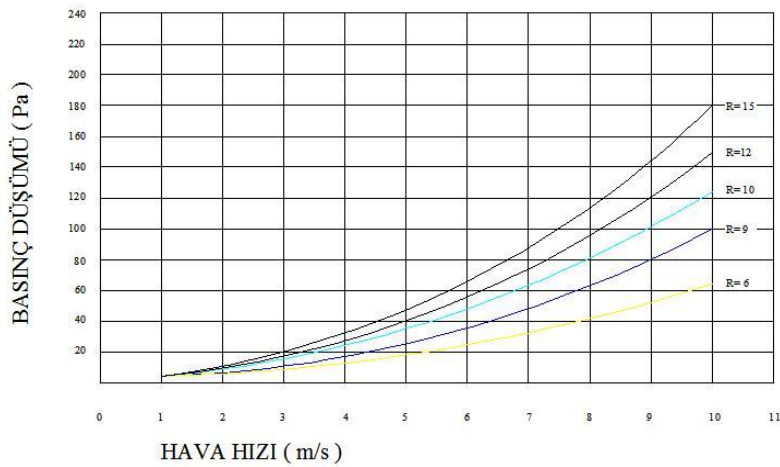
$$P = 540 \times 26$$

$$P = 14.040 \text{ W} = 14 \text{ kW.}$$

POWER (Kw)	INSURANCE (A)	CABLE SECTION (mm ²)															
		1	1,5	2,5	4	6	10	16	25	35	50	70	95	120	150	185	240
2	4	161	242														
3	6	108	161	235													
5	10	65	97	141	226												
7,5	16	43	65	94	151	194											
10	20	32	48	71	113	145	242										
15	32	22	32	47	75	97	161	215									
20	40		24	35	56	73	121	161	252								
25	50			28	45	58	97	129	202	226							
30	63				38	48	81	108	168	188	269						
50	100					29	48	65	101	113	161	226					
75	160						32	43	67	75	108	151	153	194	210		
100	200							32	50	56	81	113	115	145	157	179	194
125	250								40	45	65	90	92	116	126	143	155
150	315									38	54	75	77	97	105	119	129
200	400										40	56	57	73	79	90	97
250	500												46	58	63	72	77

*** All values given in m and max distance

PRESSURE FALLING :



COMPUTATION :

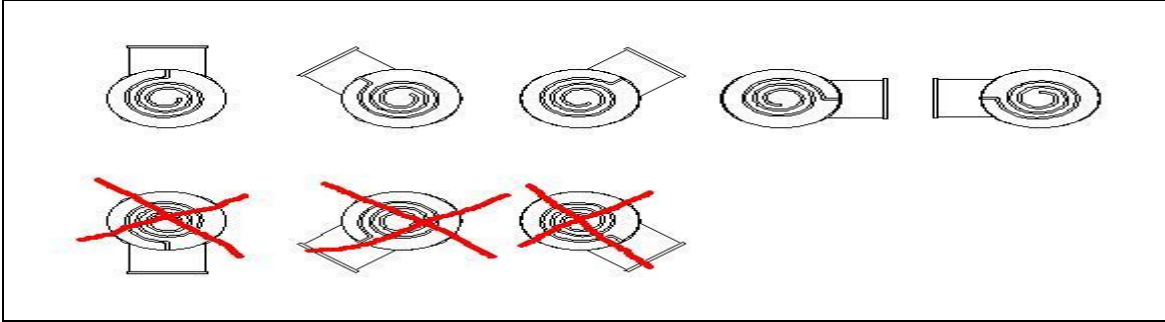
$X P / S \times 15$
 X : Number of heater resistance
 P : Total power (kW)
 S : Sectional area m²

ASSEMBLY :



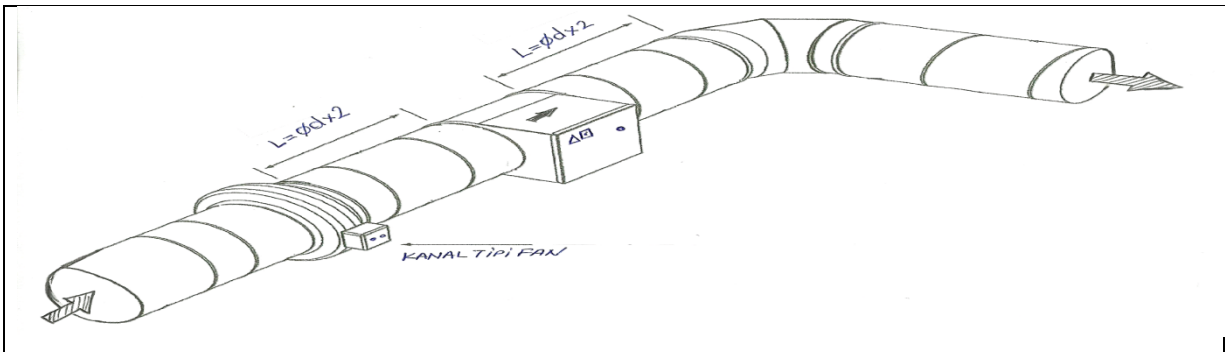
1- Conduit type electrical heater installs on conduit either vertical of horizontal positioning. Electrical heater service cap should install not faced down to avoid sweat to reach electrical connections.

Image 1



2- Important point on installation of conduit type electric heater to system is to leave space between heater input and output to fan, elbow and damper etc.

Image 2



L : Raund Duct ϕ çap $\times 2$ = prismatic channels is diagonal.



3- Conduit type electrical heater contains 70 C° and 110 C° types of cut-off limits. If the temperature reaches 70 C° limitation to be disable, its start to operate when the temperature falls to 50 C°. If 70 C° limitations to be out of service for any reason than new security limitation point will be 110 C°. At this point system will be shut down until reset system.



4- Step conductor should connect fan to system with serial connection when electrical connections to be done on conduit type electrical heater. Purpose of this operation to disable heater when fan out of running somehow. If heater continue to run machine will damage due to high temperature.