Volume calculation
for
Combustion Chamber Size

MODEL	PTR 92	JOB NUMBER							
VOLUME CALCULATION FOR AFTERBURNER CAPACITY OF FURNACES									
BASIC CALCULATION FOR VOLUME IS (P1/P2)X(T1XT2)=(V1/V2)								CELCIUS	KELVIN
PRESSURE ESTIMATE AS MEAN FOR STD ATMOSPHERE			1015		TEMPERATURE ESTIMATE FOR STANDARD OPERATING			25	298
PRESSURE ESTIMATE AS MEAN FOR FURNACE INTERIOR			996		REQUIRED AFTERBURNER TEMPERATURE			850	1123
RATIO OF VOLUME INCREASE THROUGH FURNACE					3.8403		66		
FURNACE FUEL USAGE PER HOUR					6				
SPLIT 55% SECONDARY/45% PRIMARY									
			STOICHIOMETRIC		50% EXCESS		100% EXCESS		TOTALS
BURNER		GAS	AIR		AIR		AIR		
PRIMARY		3.3	33		0		33		69.3
SECONDARY		2.7	27		13.5		0		43.2
TOTAL GASES PASSING THROUGH FURNACE PER HOUR			112.5		VOLUME AT INCREASED TEMP		432.0388		
SPEED OF GASES PER SECOND			0.12001	M3/SEC					
REQUIRED HOLD TIME			2	SECONDS					
REQUIRED AFTERBURNER CAPACITY									
SQUARE SECTIO		LENGTH							
300 X 300		2.67	METRES						
350 X 350		1.96	METRES						
400 X 400		1.50	METRES						
550 x 400		1.09	METRES						
450 X 450		1.19	METRES						
500 X 500		0.96	METRES						
550 X 550		0.79	METRES						
600 X 600		0.67	METRES						
680 X 680		0.52	METRES						
750 X 750		0.43	METRES						
800 X 800		0.38	METRES						
1000 X 400		0.60	METRES						
ROUND SECTION		LENGTH							
300 DIA		3.39	METRES						
350 DIA		2.50	METRES						
400 DIA		1.909479216	METRES						
450 DIA		1.50	METRES						
460 DIA		1.44	METRES						
500 DIA		1.22	METRES						
550 DIA		1.01	METRES						
600 DIA		0.85	METRES						