



WRC/WRO WIDE RANGE BURNERS

Maximum fuel capacity can be varied with the amount of secondary air available in the application. Secondary air is air supplied external to the Wide range Unit.

Based on the application, decide on the percentage of combustion air through the burner plenum unit and obtain the capacity selector from TABLE NO. 1.

Calculate the heat release required and convert into cubic feet of 1040 Btu natural gas and/or gallons of 138,000 Btu oil.

With the capacity selector chosen, use the column in TABLE NO. 2 with the same selector heading and find the line which satisfies your heat requirement.

TABLE NO. 1

TOTAL COMBUSTION AIR		CAPACITY	
% Through Burner & Plenum	% Secondary Air	Selector	Code
100%	0%	S	6
66 2/3%	33 1/3%	1.5X	7
50%	50%	2.0X	8
40%	60%	2.5X	9

TABLE NO. 2

Burner Size	CAPACITY SELECTORS								Total Burner-Plenum Air Cap. High Fire 20 OSIG S.C.F.M.
	Sealed in Capacity		OPEN FIRING CAPACITIES (Multiples of Stoichiometric Table S)						
	S		1.5X		2.0X		2.5X		
Code No.	OIL GPH	GAS CFH	OIL GPH	GAS CFH	OIL GPH	GAS CFH	OIL GPH	GAS CFH	
0 (780)	6.5	908	9.7	1360	13	1815	16.2	2270	146
1 (781)	12.2	1710	18.3	2570	24.4	3420	30.5	4275	275
2 (782)	20.8	2920	31.2	4380	41.6	5840	52	7300	470
3 (783)	29.5	4140	44.2	6200	59	8280	73.7	10,350	666
4 (784)	57.8	8140	86.6	12,200	115	16,300	144	20,300	1308
5 (785)	90.3	12,700	135	19,000	180	25,400	225	31,700	2040
6 (786)	160	22,500	240	33,800	320	45,000	400	56,200	3620

The capacity figures for the percentage of secondary air introduced other than through the burner and the plenum (i.e., 1.5X, 2.0X, 2.5X) are to be used only as a guide in determining the burner range required. They are not to be interpreted as the actual limit of the burner-plenum unit. In most instances, the percentage of secondary air for open firing is difficult to determine. Unless the means are available for very accurate measuring of the secondary air, the percentage figures may vary with different applications and conditions and, thus, affect the capacity figures.

Capacities are based upon the use of 20 osig air. For other air pressures, use TABLE NO. 3 to find the multiplier factor for new air, oil, and gas capacities.

Example: You wish to use a 783 burner with 24 osig air for sealed-in capacity,. From Table No. 3, we find the factor to be 1.093. $1.093 \times 29.5 = 32.2$ gph oil; $1.093 \times 4140 = 4525$ cfh gas; $1.093 \times 666 = 728$ cfm air.

TABLE NO. 3

New Air Press.	8 OSIG	12 OSIG	16 OSIG	24 OSIG	32 OSIG
Multi. Factor	.632	.775	.895	1.093	1.265

SELECTION

1. Select either an oil fired WRO or a combination fired WRC unit.
2. Select the Series No.
 Series 100 – For customers providing their own ignition chamber.
 Series 500 – Includes an Ignition Chamber Unit (ICU).
3. Select the capacity selector code no. from Table No. 1.
4. Select the burner size code no. from Table No. 2.

Selection examples on reverse side.

SELECTION EXAMPLES

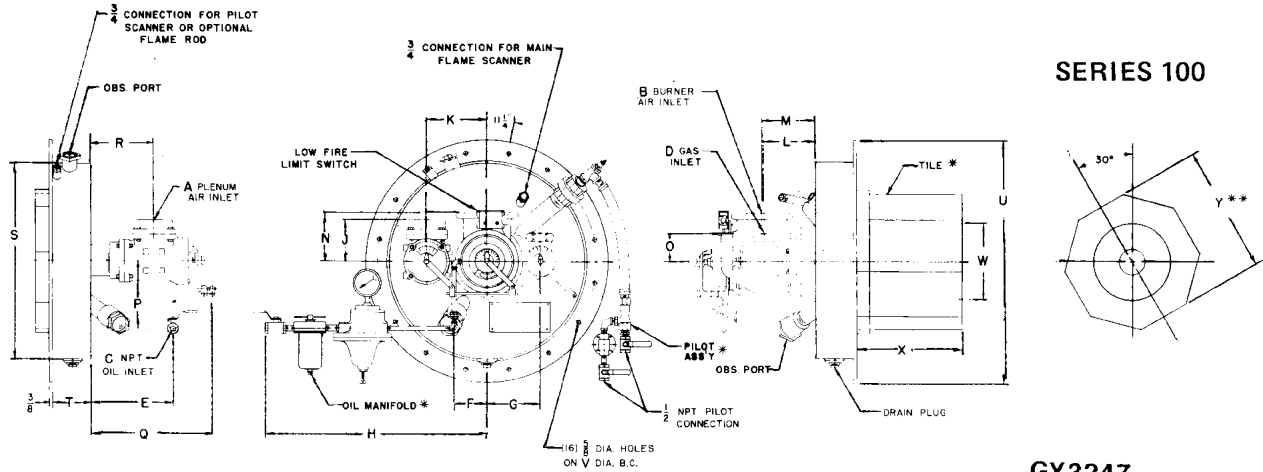
WRC164 – The WRC indicates a combination fired unit. The "1" indicates a Series 100 chamber. The "6" indicates the code no. for the capacity selector "S" from Table No. 1. The "4" indicates the code no. for 784 burner from Table 2.

WRO573 – The WRO indicates an oil fired unit. The "5" indicates a Series 500 chamber. The "7" indicates the code no. for the capacity selector "1.5" from Table No. 1. The "3" indicates the code no. for a 783 burner from Table No. 2.



DIMENSIONS

WRC/WRO WIDE RANGE BURNERS

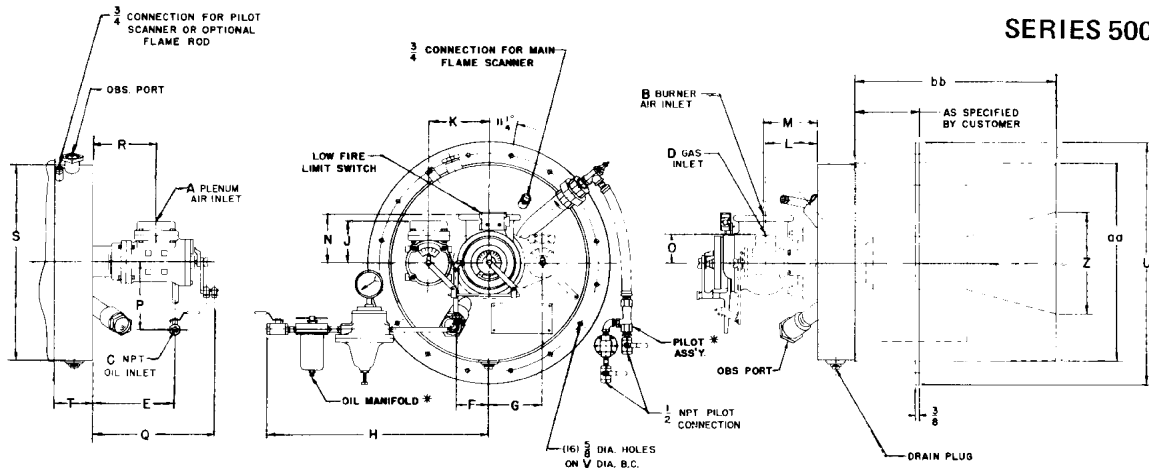


SERIES 100

GY3247

NOTES

- **1) Dimension across flats for 100-103 tiles Dimension across Dia. for 104 tile.
- 2) Components shown in phantom are for combination firing.
- 3) See sheet 2 for data not shown (GW3247).
- *4) Components shipped loose.
- *5) Ignition chamber supplied by customer to conform to Dimensions of Hauck 500 Series.



SERIES 500

GY3249

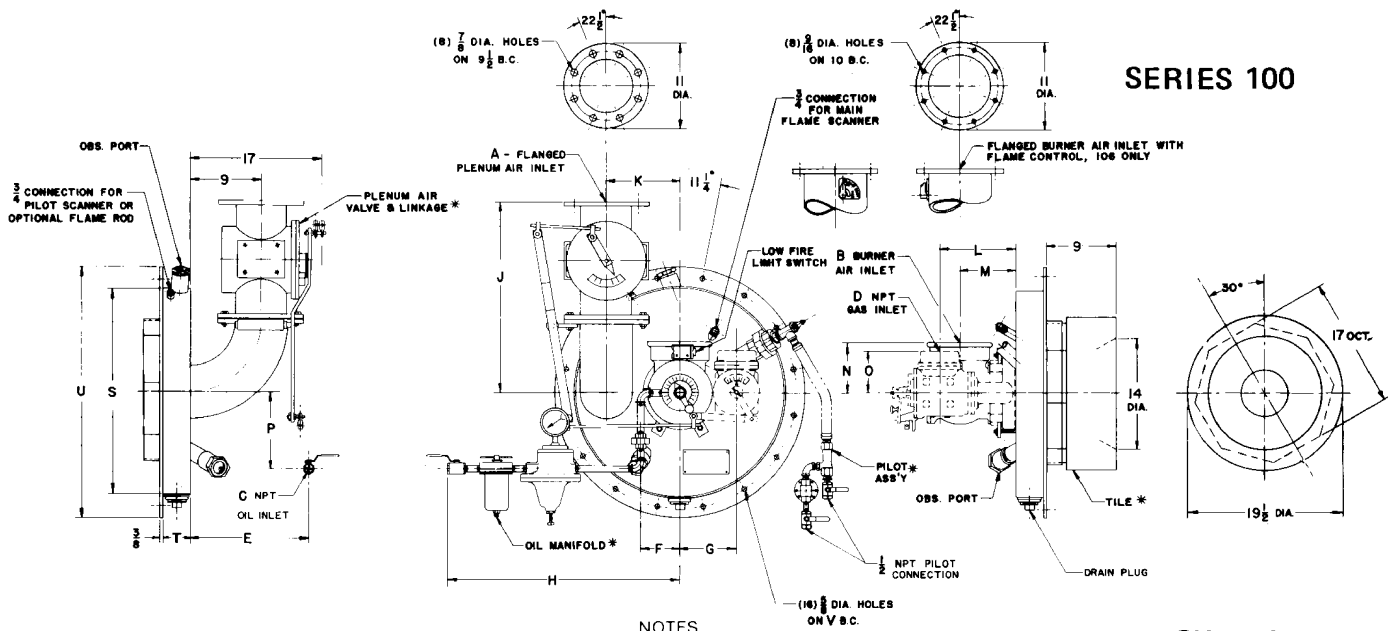
NOTES

- *1) Components shipped loose.
- 2) Components shown in phantom are for combination firing.
- 3) See sheet 2 for data not shown (GW3249).

BURNER SIZE	A PLENUM AIR INLET	B BURNER AIR INLET	C OIL INLET	D GAS INLET	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	aa	bb
0 (780)	2"	1 1/2"	3/8"	1"	6 5/32	3	5	2 1/4	3 1/2	6	3 3/4	3 3/8	3	3	6 13/16	8	3 1/4	17 7/8	1 15/16	24	21 3/4	7 1/2	10 1/2	12 1/2	10	19	20
1 (781)	2"	2"	3/8"	1/4"	7 3/32	4	5 1/2	22 1/4	3 1/2	7	4 7/8	4 1/8	3 1/2	3	6 13/16	8	3 1/4	19 7/8	2 9/16	26	23 3/4	9	13 1/2	14	12	21	23
2 (782)	3"	3"	3/8"	1/2"	9 1/32	4 1/2	7	25 5/16	4 1/2	8	5 1/2	5 1/4	3 7/8	3 5/8	8 5/8	10 1/8	3 1/2	2 7/8	2 15/16	28	25 3/4	10	15	17	14	23	24 1/2
3 (783)	4"	4"	3/8"	2"	10 7/32	4 1/2	7	25 5/16	5 1/2	8	7	6	4 3/8	3 5/8	8 5/8	11	4	22 7/8	3 1/16	29	26 3/4	11	15	17	15	24	24 1/2
4 (784)	4"	6"	1/2"	3"	12 1/4	1/2	7	29 5/16	3	9 3/4	9 3/8	7 3/8	6 3/8	4 3/8	10 13/16	14 5/8	8	25 3/8	3	31	28 3/4	14	9	19 1/2	16 3/4	26	27 1/2

(OVER)

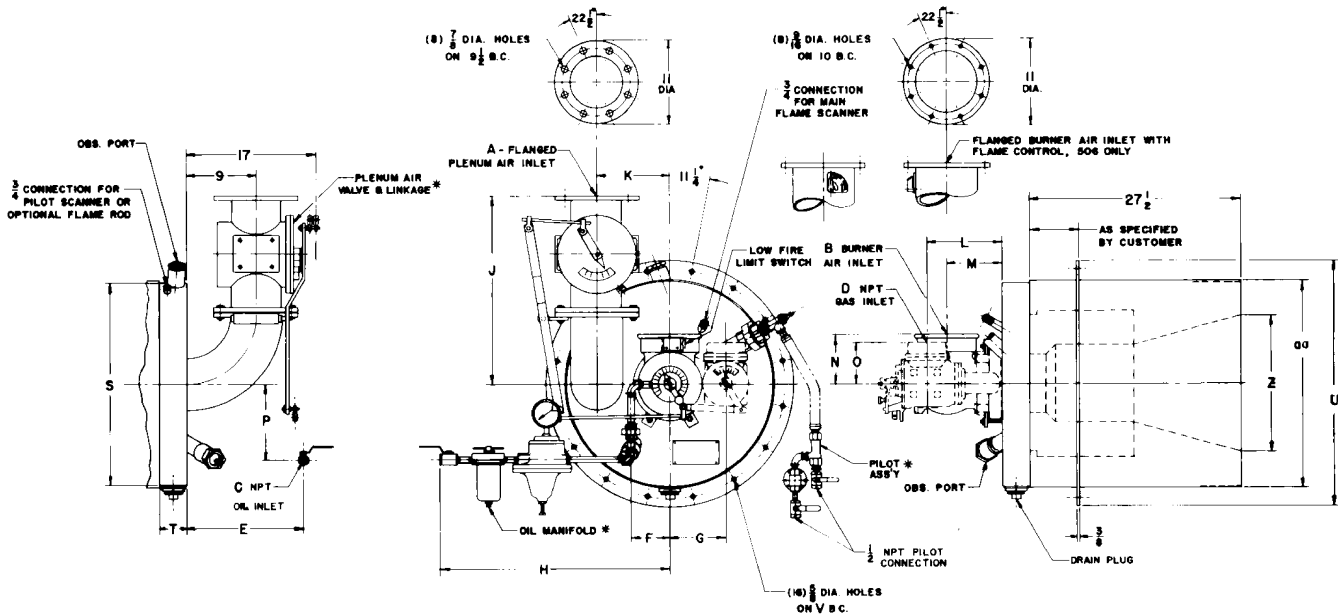
SERIES 100



GY3248

- NOTES
- 1) Components shown in phantom are for combination firing.
 - 2) See sheet 2 for data not shown (GW3248).
 - *3) Components shipped loose.
 - 4) Ignition chamber supplied by customer to conform to Dimensions of Hauck 500 Series.

SERIES 500



GY3250

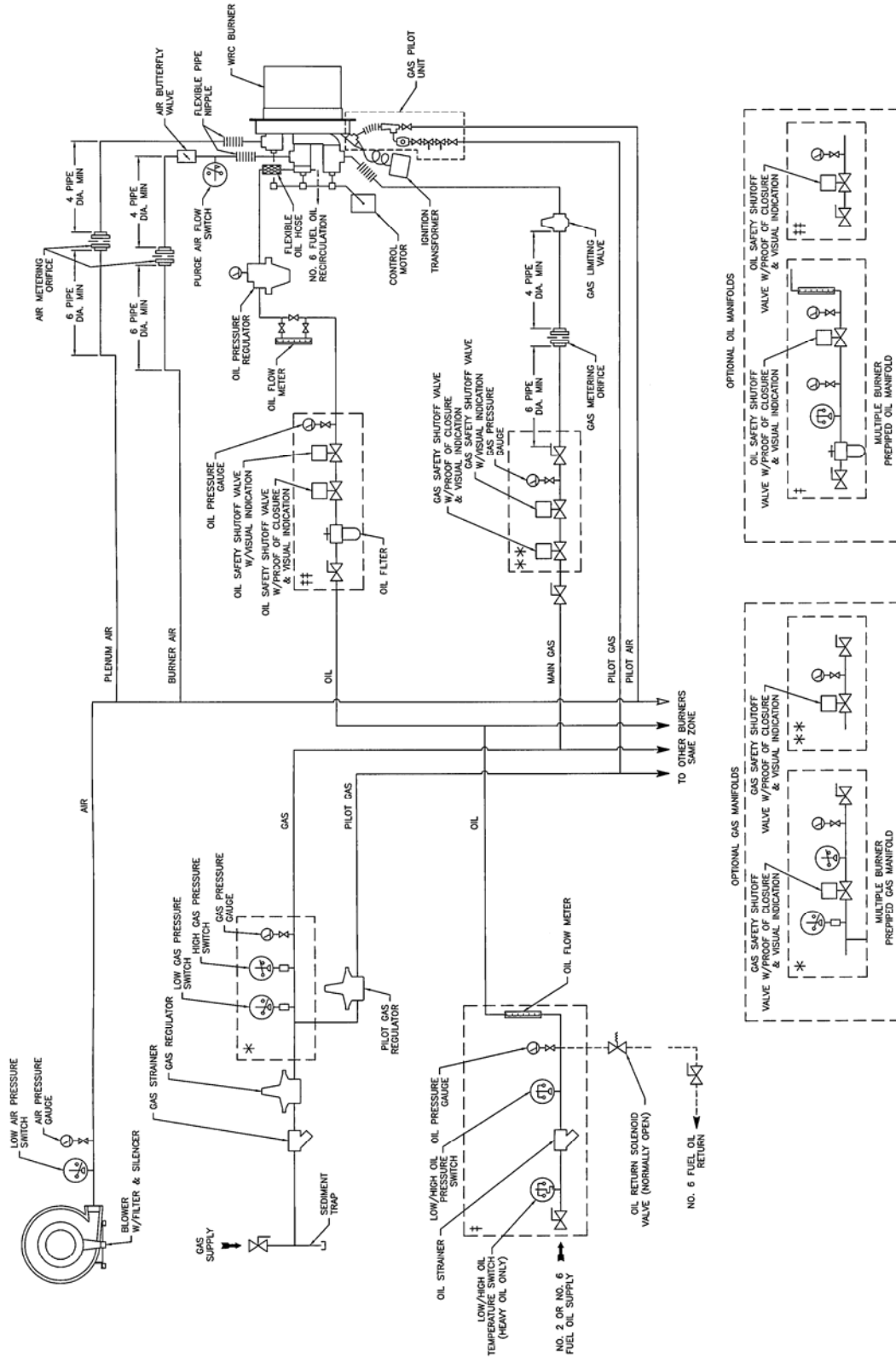
- NOTES
- 1) Components shown in phantom are for combination firing.
 - 2) See sheet 2 for data not shown (GW3250).
 - *3) Components shipped loose.

BURNER SIZE	A PLENUM AIR INLET	B BURNER AIR INLET	C OIL INLET	D GAS INLET	E	F	G	H	J	K	L	M	N	O	P	S	T	U	V	Z	aa
5 (785)	6"	6"	1/2"	3"	12 21/32	4 29/32	7	30 11/32	24 1/2	9 1/2	10	7 3/8	6 1/2	5 1/2	10 13/16	26 3/8	3 5/8	32	29 3/4	17 3/4	27
6 (786)	6"	8"	1/2"	4"	17 1/32	4 29/32	8	30 11/32	27	10 1/8	13 1/8	10 1/4	8	5 3/8	10 13/16	27 7/8	5 7/8	34	31 3/4	19 3/4	29



WRC/WRO WIDE RANGE BURNERS

TYPICAL MULTIPLE BURNER SYSTEM SELF-PROPORTIONING CONTROL



NOTES:

1. HEAVY FUEL OIL SUPPLY SYSTEM (NOT SHOWN) IS AN INTEGRAL PART OF ANY HEAVY OIL BURNER SYSTEM. TYPICAL COMPONENTS INCLUDE SUCTION HEATER, SUPPLY PUMPING UNIT, LINE HEATER, AND OIL PRESSURE REGULATOR OR PRESSURE RELIEF VALVE. HOWEVER, REQUIREMENTS ARE DEPENDENT UPON THE SPECIFIC BURNER SYSTEM (CONSULT HAUCK).
2. ALL HEAVY FUEL OIL PIPING MUST BE TRACED (ELECTRIC OR STEAM) AND INSULATED. SELF-REGULATING HEAT TRACING IS RECOMMENDED TO MAINTAIN THE DESIRED TEMPERATURE OF A GIVEN FUEL OIL TO ACHIEVE 90 SSU (1.8 X 10⁻⁵ M²/SEC) AT THE BURNER. ELECTRICAL HEAT TRACING WITH A NOMINAL RATING OF 12 W/FT (39W/M) COVERED WITH A NOMINAL 2" (51MM) FIBERGLASS TYPE INSULATION IS SUFFICIENT FOR MOST APPLICATIONS.
3. OPTIONAL OIL MANIFOLDS CAN BE UTILIZED FOR MULTIPLE BURNERS FIRING INTO A COMMON HEATING CHAMBER. HOWEVER, SPECIAL FEATURES ARE REQUIRED IN THE ASSOCIATED CONTROL SYSTEM (SEE HAUCK APPLICATION SHEET G477).

Y8175
(NOT TO SCALE)

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

WRC/WRO WIDE RANGE BURNERS

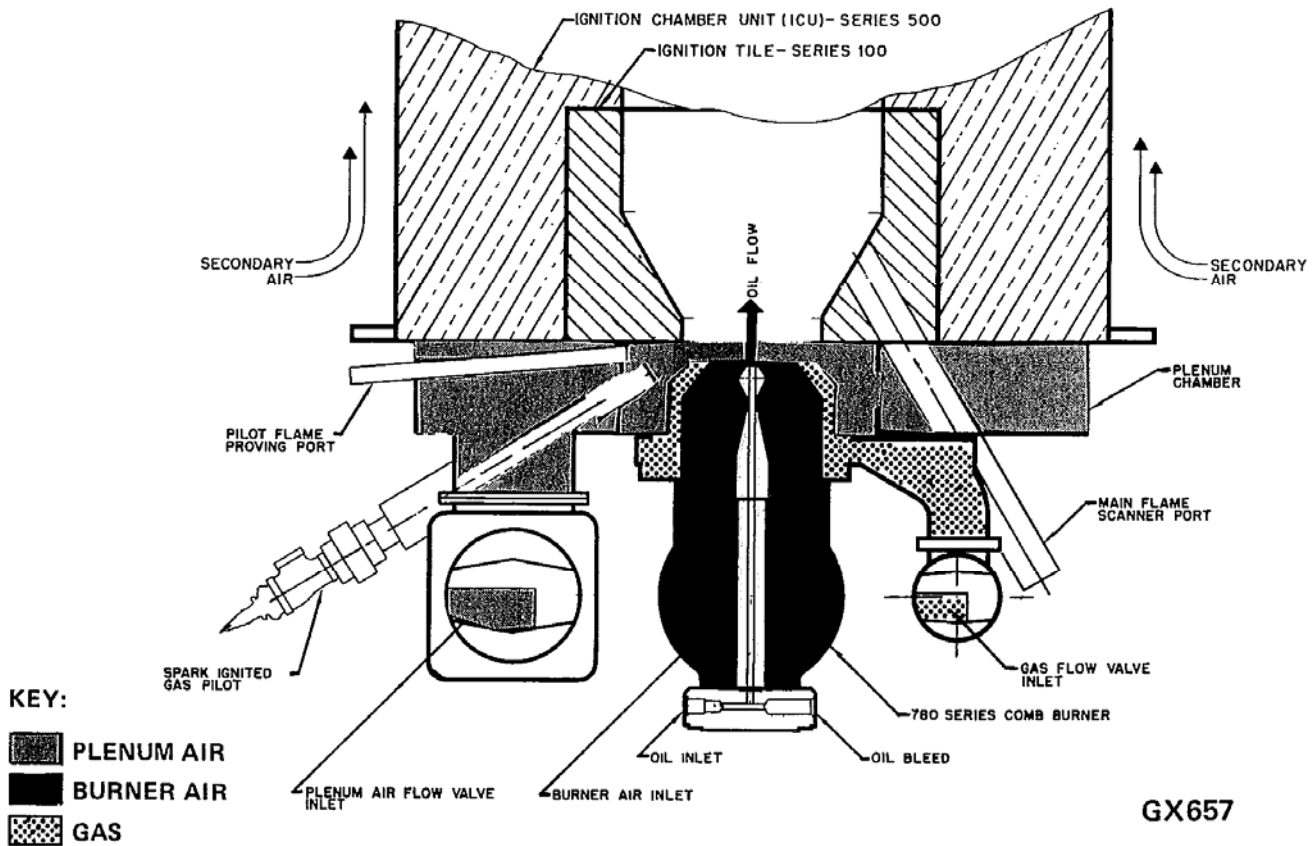
Series 100 – Includes a mounting flange on the face of the plenum chamber and separate tile for customers providing the ignition chamber.

Series 500 – Includes a steel jacketed combustion chamber and a circular mounting flange (provided loose or welded to customer-supplied dimension).

ALL WRO UNITS INCLUDE: Burner ass’y w/micro switch; lube attachment; presized micro oil valve; oil tube and nozzle; air straightners on burner sizes 783, 784, 785, 786; plenum air flow valve; pre-sized oil regulator set-up ass’y; spark gas pilot ass’y and plenum chamber w/2 observation ports and refractory.

ALL WRC UNITS INCLUDE: All components listed under WRO units plus gas flow valve and gas nozzle.

FLOW DIAGRAM WIDE RANGE BURNER



CONTROL MOTOR CHARACTERISTICS (ALL BURNERS)

Radius of Operating Point	3½" (88.9 mm)
Angle of Operation	90°
Length of Stroke	5" (127 mm)
Torque Requirement	
779-785 Series	200 in-lb (23 N-m)
786 Series	300 in-lb (34 N-m)

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