

VULCAN

*INSTALLATION, SERVICE &
PARTS MANUAL FOR
M7806 & M7809 MAGIC-FIN
HEAVY DUTY GAS
CHAR BROILERS*



VULCAN-HART COMPANY, P.O. BOX 696, LOUISVILLE, KY 40201-0696, TEL. (502) 778-2791

FORM 114587 (03-89)



IMPORTANT

OPERATING, INSTALLATION AND SERVICE PERSONNEL

Operating information for this equipment has been prepared for use by qualified and/or authorized operating personnel.

All installation and service on this equipment is to be performed by qualified, certified, licensed and/or authorized installation or service personnel, with the exception of any marked with a □ in front of the part number.

Service may be obtained by contacting the Factory Service Department, Factory Representative or Local Service Agency.

DEFINITIONS

QUALIFIED AND/OR AUTHORIZED OPERATING PERSONNEL

Qualified or authorized operating personnel are those who have carefully read the information in this manual and are familiar with the equipment's functions or have had previous experience with the operation of the equipment covered in this manual.

QUALIFIED INSTALLATION PERSONNEL

Qualified installation personnel are individuals, a firm, corporation or company which either in person or through a representative are engaged in, and are responsible for:

1. The installation of gas piping from the outlet side of the gas meter, or the service regulator when the meter is not provided, and the connection and installation of the gas appliance. Qualified installation personnel must be experienced in such work, be familiar with all precautions required, and have complied with all requirements of state or local authorities having jurisdiction. Reference in the United States of America - National Fuel Gas code ANSI Z223.1 (Latest Edition) In Canada-Canadian Standard CAN1-B149.1 NAT. GAS (Latest Edition) or CAN1-B149.2 PROPANE (Latest Edition).
2. The installation of electrical wiring from the electric meter, main control box or service outlet to the electric appliance. Qualified installation personnel must be experienced in such work, be familiar with all precautions required, and have complied with all requirements of state or local authorities having jurisdiction. Reference: In the United States of America-National Electrical Code ANSI NFPA No. 70 (Latest Edition). In Canada-Canadian Electrical Code Part 1 CSA-C22.1 (Latest Edition).

QUALIFIED SERVICE PERSONNEL

Qualified service personnel are those who are familiar with Vulcan equipment who have been endorsed by the Vulcan-Hart Corporation. All authorized service personnel are required to be equipped with a complete set of service parts manuals and stock a minimum amount of parts for Vulcan equipment.

SHIPPING DAMAGE CLAIM PROCEDURE

For your protection, please note that equipment in this shipment was carefully inspected and packed by skilled personnel before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of this shipment.

If shipment arrives damaged:

1. **VISIBLE LOSS OR DAMAGE** — Be certain this is noted on freight bill or express receipt and signed by person making delivery.
2. **FILE CLAIM FOR DAMAGES IMMEDIATELY** — Regardless of extent of damage.
3. **CONCEALED LOSS OR DAMAGE** — If damage is unnoticed until merchandise is unpacked, notify transportation company or carrier immediately, and file "concealed damage" claim with them. This should be done within (15) days of date of delivery is made to you. Be sure to retain container for inspection.

We cannot assume responsibility for damage or loss incurred in transit. We will, however, be glad to furnish you with necessary documents to support your claim.

PLEASE RETAIN THIS MANUAL FOR FUTURE REFERENCE

IMPORTANT NOTES FOR ALL VULCAN APPLIANCES

1. These units are produced with the best possible workmanship and material. Proper installation is vital if best performance and appearance are to be achieved. Installer must follow the installation instructions carefully.
2. Information on the construction and installation of ventilating hoods may be obtained from the "Standard for the installation of equipment for the removal of smoke and grease laden vapors from commercial cooking equipment," NFPA No 96 (latest edition) available from the National Fire Protection Association, Battery March Park, Quincy MA 02269.
3. For an appliance equipped with a flexible electric supply cord, the cord is equipped with a three prong (grounding) plug. This grounding plug is for your protection against shock hazard and should be plugged directly into a properly grounded three prong receptacle. Do not cut or remove the grounding prong from this plug. If the appliance is not equipped with a grounding plug, and electric supply is needed, ground the appliance by using the ground lug provided (refer to the wiring diagram).

(FOR GAS APPLIANCES ONLY)

4. Do not obstruct the air flow into and around the appliance. This air flow is necessary for proper combustion of gases and for ventilation of the appliance. Provisions for ventilation of incoming air supply for the equipment in the room must be in accordance with National Fuel Gas Code ANSI Z223.1 (latest edition).
5. Do not obstruct the flow of flue gases from the flue duct (when so equipped) located on the rear (or sides) of the appliance. It is recommended that the flue gases be ventilated to the outside of the building through a ventilation system installed by qualified personnel.
6. For an appliance equipped with casters, (1) the installation shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 (latest edition), and Addenda, Z21.69a (latest edition), and a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41 (latest edition), and Addenda, Z21.41a (latest edition) and Z21.41b (latest edition), and (2) adequate means must be provided to limit the movement of the appliance without depending on the connector and the quick-disconnect device or its associated piping to limit the appliance movement.
If disconnection of the restraint is necessary, reconnect this restraint after the appliance has been returned to its originally installed position.
7. The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of ½ psig (3.45 k Pa).
8. The appliance must be isolated from the gas supply system by closing its individual manual shutoff valve during any pressure testing of the gas supply system at test pressures equal to or less than ½ psig (3.45 k Pa).

CAUTIONS

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS EQUIPMENT OR ANY OTHER APPLIANCE.

1. **KEEP THE APPLIANCE FREE AND CLEAR FROM ALL COMBUSTIBLE SUBSTANCES.**
2. **IN THE EVENT A GAS ODOR IS DETECTED, SHUT UNIT(S) DOWN AT THE MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.**
3. **POST IN A PROMINENT LOCATION, INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION MAY BE OBTAINED FROM A LOCAL GAS SUPPLIER.**

INDEX

Your Vulcan heavy duty gas char broiler is produced with the best possible workmanship and material. Proper usage and maintenance will result in many years of satisfactory performance.

The manufacturer suggests that you thoroughly read this entire manual and carefully follow all of the instructions provided.

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REVISION BLOCK	(Inside Back Cover)

A rating plate is located on the lower front panel of this unit stating the model number, serial number, type of gas.

For use in Fire-Resistive locations.

CAUTION

From the termination of the appliance flue vent to the fitters of the hood venting system, an 18 inch minimum clearance must be maintained.

Reference: ANSI/NFPA 96 (Latest Edition) of the National Fire Protection Association, Inc., Batterymarch Park, Quincy, MA 02269, and National Building Code 1976 Sec. 1015.7b (2) of The American Insurance Association. Engineering and Safety Service, 85 John Street, New York, NY 10038

INSTALLATION INSTRUCTION I - UNCRATING

Carefully uncrate unit as close to final resting place as possible. Remove all shipping wire, wood blocking, top

grid grates, burner radiants, burners, manifold cover. Grease collector and lower panel.

INSTALLING UNIT

Place appliance in exact position it is to occupy. If unit is to be used in battery, it is recommended that it be installed on either end of the battery due to the intense heat and adequate ventilation. Using a carpenter's level, even up appliances from front to rear, also from side to side. This operation is one of the most important installation practices. No floor is level and variations of from one to three inches in a room is common. Unless appliances are level, difficulty will be encountered in lining up the manifold pipe and appliances will not butt tightly.

Move next appliance into position and level up as above (when used on end of battery or when two or more units are being installed). Engage union nut on manifold pipe with male fitting on next appliance and draw union hand tight. Be sure appliances butt both front and rear. If manifolds do not line up, units are not level. Do not adjust manifold brackets to make manifold line up, except in extreme cases because this will cause gas valves not to line up properly with manifold cover holes.

If unit is installed on end of battery and top of front top does not line up with adjacent unit, adjust front tops by means of bolts on the underside before replacing the manifold cover and installing the valve handles.

The gas manifold of this appliance or battery of which it is a part must be connected to a pressure regulator with a pre-set outlet pressure of 6 in. W.C. (water column) for natural gas and 10" W.C. for propane gas.

The pressure regulator must be A.G.A. design certified. The regulator must have a maximum regulation capacity to handle the total connected load and must have an adjustment range for manifold pressure marked on the rating plate, if the manifold pressure of the connected

appliances are not the same, a separate regulator must be supplied for units operating under different manifold pressures.

NOTE: The unit and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 PSIG (3.45 K Pa.).

The appliance must also be isolated from the gas supply piping system by closing it's individual manual shut-off valves during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 PSIG (3.45L Pa.) as stated by the American National Standards Z83,1 11a-1987 Copies of this Standard are available from the American Gas Association, 1515 Wilson Blvd., Arlington, Virginia 22209.

Pipe joint compounds used when connecting appliances to gas should be resistant to the action of L.P. gases.

Pipe joints should be tested for leaks with a soap and water solution before operating the unit.

Continue to level up and connect manifold pipe until all appliances in the battery are connected. Then tighten manifold unions gas tight and connect to gas supply in accordance with applicable local code.

Be sure all burner and pilot valves are in a closed position. Turn on gas supply and check for leaks using a soap and water solution or other acceptable methods **WARNING** matches, candles or other sources of ignition should not be used for this purpose.

Adjust burners making sure they line up with burner nozzles and that all burner baffle plates are hanging in the proper position.

LIGHTING AND SHUTDOWN INSTRUCTIONS

LIGHTING CHAR-BROILER

- A. Turn the main gas supply on.
- B. Turn the burner valve on and purge air from lines. Turn the valve off. Wait 5 minutes.
- C. Using a taper, light the pilot. Turn burner valve on.
- D. If the pilot fails to light, turn off the gas, wait 5 minutes and repeat steps A thru C.

NIGHTLY SHUTDOWN

- A. Turn the burner valve off, the pilot will remain lit.

SEASONAL SHUTDOWN

- A. Turn the burner valve off, the pilot will remain lit.
- B. Extinguish the pilot.
- C. Turn the main gas supply off.

ADJUSTMENTS

Gas adjustments on all burners should be checked for correct input and the air shutters should be adjusted to give the best ignition and the sharpest flame without lifting. Every effort should be made to have maximum burner consumption correspond with B.T.U. rating of the burner as given on the rating plate.

Pilot flame should be adjusted to a point where only a trace of yellow tip remains. This adjustment assures the best operating conditions to adjust pilot see below.

A. With top grates lifted, check pilot tubing to insure that tubing is resting properly (straighten, if necessary).

B. Use a screwdriver to reach through manifold pilot adjustment holes and adjust each pilot as follows: (Clockwise to decrease and counter-clockwise to increase flame.)

1. Turn the pilot adjustment clockwise to increase the flame.
2. Turn the pilot adjustment counter-clockwise to decrease the pilot flame.

Replace top grates in a sloped or flat position depending on desired broiling results.

RATING & ORIFICE DATA

Orifice Data	Natural	Propane
M7806 & M78	A44	F56

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE/SOLUTION
1. No heat or slow cooking results.	Check gas supply & burner combustion.
2. Excessive valve handle temperatures.	Check for improper ventilation or a possible over-rated burner combustion.
3. Sticky burner valve.	Check for soot blockage of burner valve.
4. Poor ignition.	Insufficient gas input.
	Poor air-gas adjustment.
	Restriction in pilot orifice.
	Restriction in burner ignition port.

PARTS III

REPLACEMENT PARTS ORDERING: The following information must accompany a replacement parts order or it cannot be filled.

A. Model and Style or Serial Number.

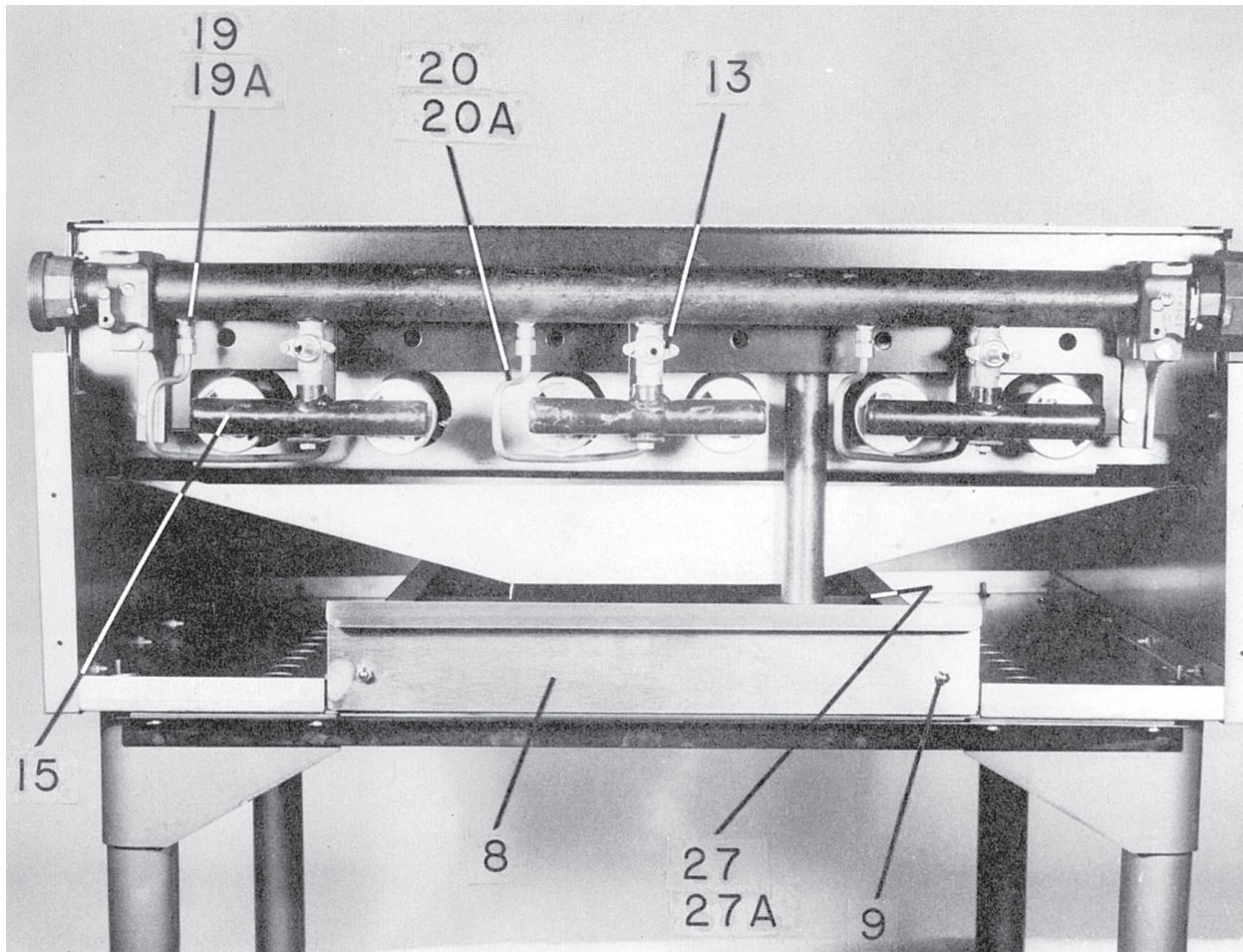
B. Appliance Finish, Black, Stainless Steel, etc. (if applicable to part to be replaced.)

This information can be found on the rating plate of the unit.

Parts may be ordered from your service agency.

PARTS: (Continued)

FRONT VIEW

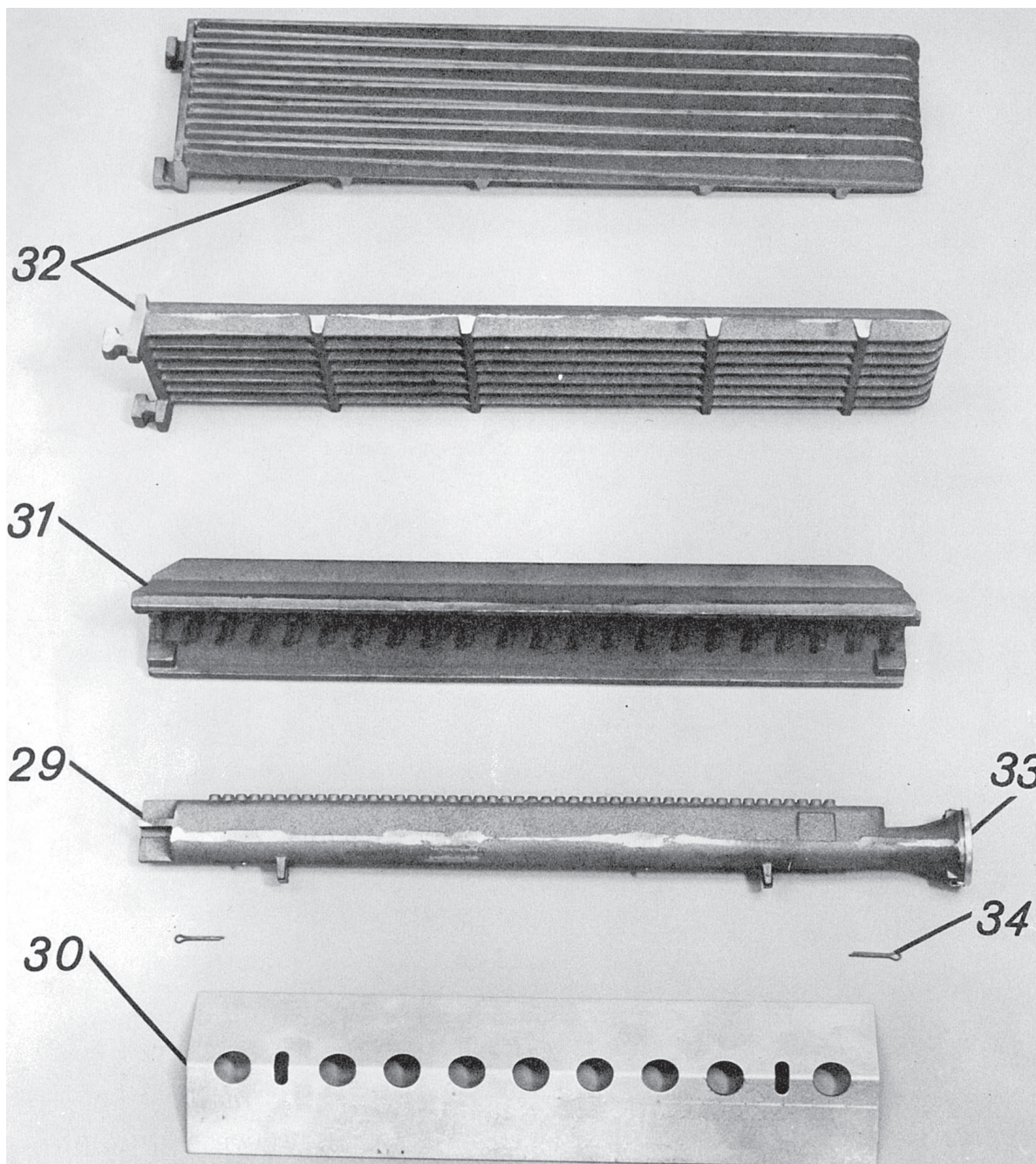


ITEM NO.	DESCRIPTION	M7806	QTY.	M7809	QTY.
		PART NUMBER		PART NUMBER	
8	Panel Grease Collector	110593-1	1	110593-2	1
9	1/4-20 Cap Nut (Plated)	3.0129-1	2	3.0129-1	2
13	High-Low Valve (Nat., Mixed & L.P. Gas)	110610-5	3	110610-6	3
15	Sub Manifold Pipe	111442-1	3	111444-1	3
19	Pilot Valve	104738-3	3	104738-3	5
19A	Filter (Not Shown)	104951-1	3	104951-1	5
20	Pilot Tubing	112087-1	3	112087-1	5
20A	Pilot Tubing with Filter (NS)	112088-1	3	112088-1	5
20B	Pilot Tubing with Filter (NS)	112088-2	3	112088-2	5
26	Polished Cock Handle (NS)	102957	3	102957	3
27	Grease Collector Assembly	110592-G1	1	11059-G3	1
27A	Grease Collector Assembly (SS)	110592-G2	1	110592-G4	1

(NS) Not Shown On Photograph
(SS) Stainless Steel

PARTS: (Continued)

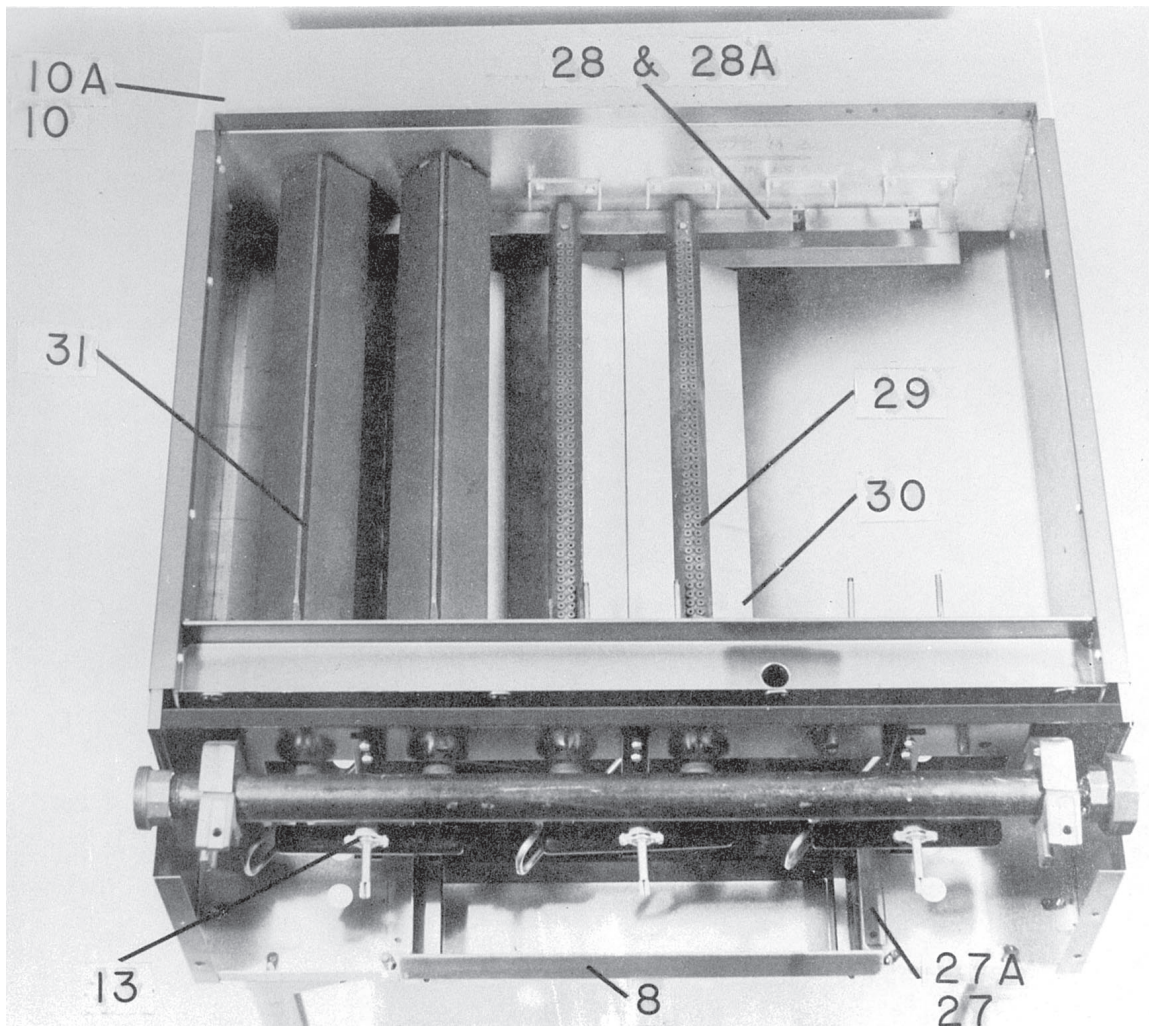
BURNER—RADIANT—GRID GRATE ARRANGEMENT



ITEM NO.	DESCRIPTION	M7806		M7809	
		PART NUMBER	QTY.	PART NUMBER	QTY.
29	Burner Assembly	110600-G2	6	110600-G2	9
30	Burner Baffle Plate	110601-1	6	110601-1	9
31	Burner Radiant	110602-1	6	110602-1	9
32	Top Grid Plate	112852-1	6	112852-1	9
33	Air Shutter	104060-1	6	104060-1	9
34	Cotter Pin	3.0136.4	12	3.0136.4	18

PARTS: (Continued)

PARTS: TOP VIEW BEGINNING STYLE 1272

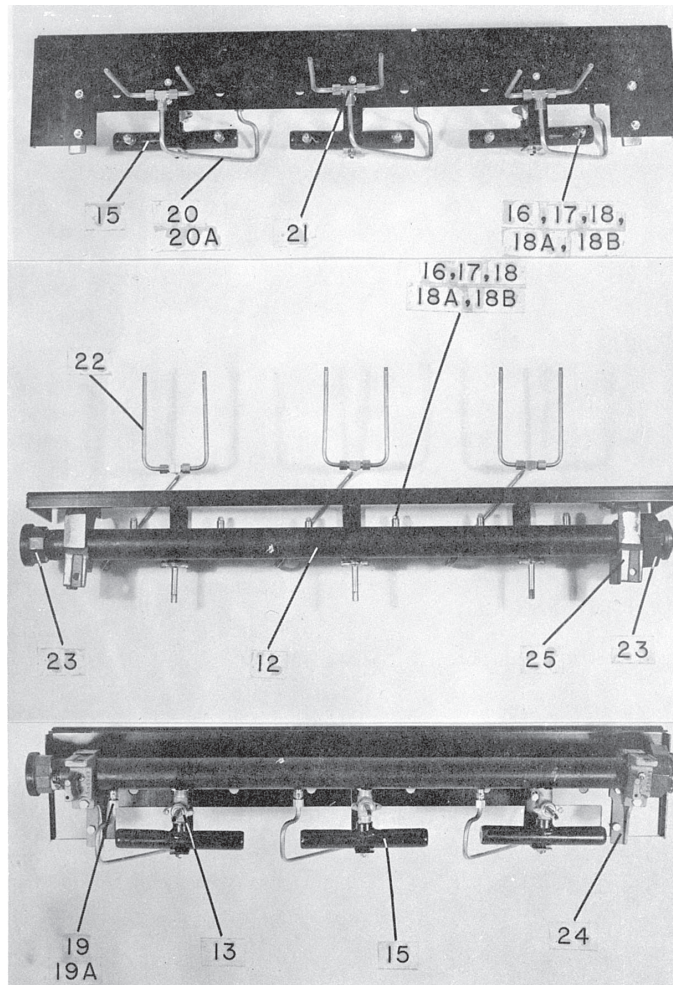


ITEM NO.	DESCRIPTION	M7806	QTY.	M7809	QTY.
		PART NUMBER		PART NUMBER	
8	Panel Grease Collector	110593-1	1	110593-2	1
10	Back Top With 17" Backguard (NS)	110594-1	1	110594-5	1
	Back Top Without 17" Backguard	110595-1	1	110595-5	1
10A	Back Top (SS) With 17" Backguard (NS)	110594-2	1	110594-6	1
	Back Top (SS) Without 17" Backguard	110595-2	1	110595-6	3
13	High-Low Valve (Nat. & Mixed & L.P. gas))	110610-5	3	110610-6	3
26	Polished Cock Handle (NS)	102957	3	102957	3
27	Grease Collector Assembly	110592-G1	1	110592-G3	1
27A	Grease Collector Assembly (SS)	110592-G2	1	110592-G4	1
28	Burner Support Plate	11313-1	1	1103013-3	1
28A	Burner Support Plate (SS)	113013-2	1	113013-4	1
29	Burner Assembly	110600-G2	6	110600-G2	9
30	Burner Baffle Plate	110601-1	6	110601-1	9
31	Burner Radiant	110602-1	6	110602-1	9

(NS) Not Shown On Photograph
(SS) Stainless Steel

PARTS: (Continued)

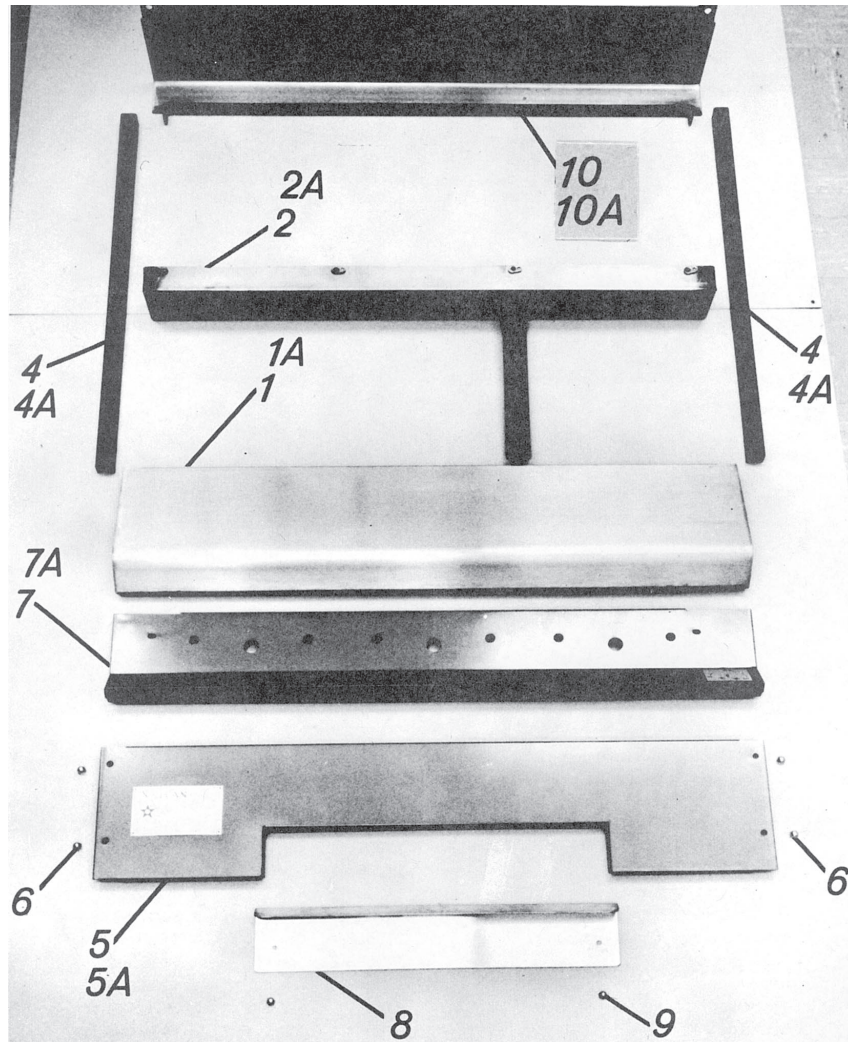
MANIFOLD BEGINNING STYLE 1272



ITEM NO.	DESCRIPTION	M7806	QTY.	M7809	QTY.
		PART NUMBER		PART NUMBER	
12	Manifold Pipe	110561-1	1	111550-1	1
13	High - Low Valve (Nat. & Mixed & L.P. gases)	110610-5	3	110610-3	1
15	Sub- Manifold	111442-1	3	111444-1	3
16	Straight Adj. Nozzle (Nat. Gas)	106478/12685-A44	6	106478/12685-A44	9
17	Straight Adj. Nozzle (Mixed Gas)	106478/12685-A37	6	106478/12685-A37	9
18	Straight Nozzle with Tapped Hood (L.P. Gas)	106478/14033Y	6	106478/14033Y	9
18A	Fixed Orifice Spud (Propane)	109923/10901-56	6	109923/10901-56	9
18B	Fixed Orifice Spud (Butane)	109923/10901-57	6	109923/10901-57	9
19	Pilot Valve	104738-3	3	104738-3	5
19A	Filter	104951-1	3	104951-1	5
20	Pilot Tubing	112087-1	3	112087-1	4
20A	Pilot Tubing with Filter (NS)	112088-1	3	112088-1	5
21	¼ x ¼ x ¼ Compression Tee	104366-1	3	104366-1	4
22	Pilot Tube with Tip (All Gases)	110607-G1	6	110607-G1	9
23	1¼ Ground Joint Union	3.0814/10939	1	3.0814/10939	1
24	Manifold Bracket	105880-1	2	105880-1	2
25	Manifold Cap	105881-1	2	105881-1	2
35	¼ CC Elbow	—	—	103638	1

PARTS: (Continued)

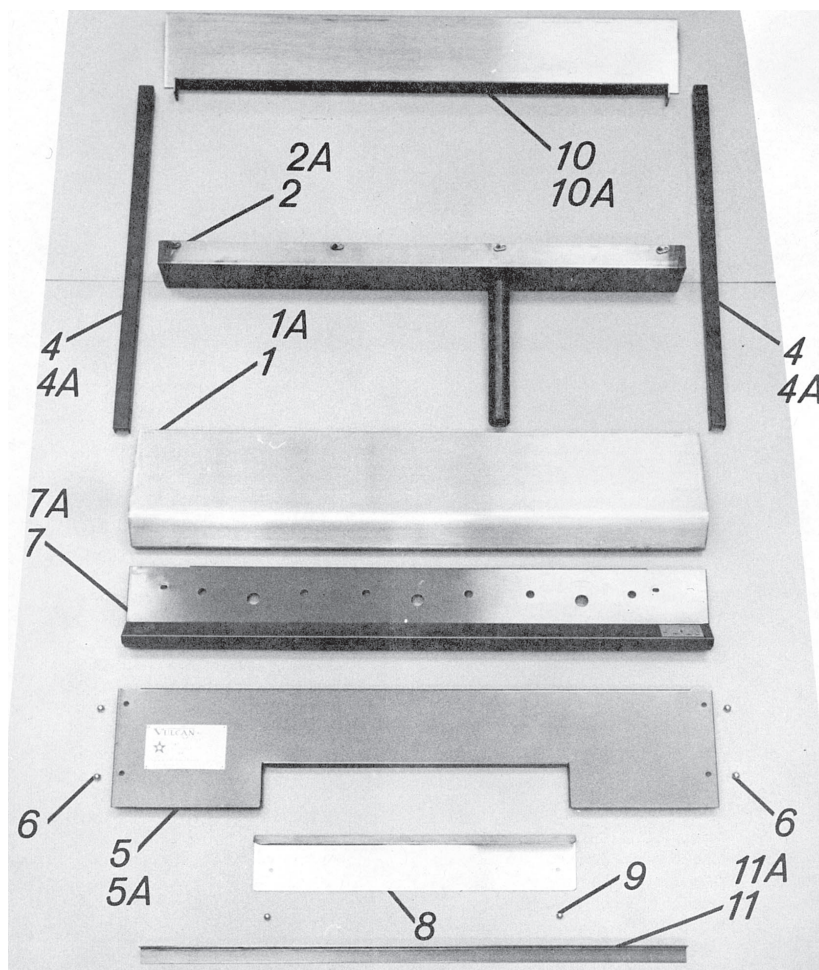
FRONT AND TOP COMPONENTS WITH BACKGUARD



ITEM NO.	DESCRIPTION	M7806	QTY.	M7809	QTY.
		PART NUMBER		PART NUMBER	
1	Front Top Assembly	110587-G1	1	110587-G5	1
1A	Front Top Assembly (SS)	110587-G2	1	110587-G6	1
2	Grease Trough Assembly	110583-G1	1	110583-G5	1
2A	Grease Trough Assembly (SS)	110583-G2	1	110583-G6	1
4	Top Finishing Piece	110586-1	2	110586-1	2
4A	Top Finishing Piece (SS)	110586-2	2	110586-2	2
5	Lower Front Panel	110588-1	1	110588-5	1
5A	Lower Front Panel (SS)	110588-2	1	110588-6	1
6	1/4-20 Cap Nut (Plated)	3.0129-2	4	3.0129-4	4
7	Manifold Cover	110598-1	1	111546-1	1
7A	Manifold Cover (SS)	110598-2	1	111546-2	1
8	Panel Grease Collector	110593-1	1	110593-2	1
9	10-24 Cap Nut (Plated)	3.0129-1	2	3.0129-1	2
10	Back Top with 17" Backguard	110594-1	1	110594-5	1
10A	Back Top SS with 17" Backguard	110594-2	1	110594-6	1

(SS) Stainless Steel

PARTS: (Continued) FRONT AND TOP COMPONENTS WITHOUT BACKGUARD



ITEM NO.	DESCRIPTION	M7806	QTY.	M7809	QTY.
		PART NUMBER		PART NUMBER	
1	Front Top Assembly	110587-G1	1	110587-G5	1
1A	Front Top Assembly (SS)	110587-G2	1	110587-G6	1
2	Grease Trough Assembly	110583-G1	1	110583-G5	1
2A	Grease Trough Assembly (SS)	110583-G2	1	110583-G6	1
4	Top Finishing Piece	110586-1	2	110586-1	2
4A	Top Finishing Piece (SS)	110586-2	2	10586-2	2
5	Lower Front Panel	110588-1	1	110588-5	1
5A	Lower Front Panel (SS)	110588-2	1	110588-6	1
6	1/4-20 Cap Nut (Plated)	3.0129-2	4	3.0129-2	4
7	Manifold Cover	110598-1	1	111546-1	1
7A	Manifold Cover (SS)	110598-2	1	111546-2	1
8	Panel, Grease Collector	110593-1	1	110593-2	1
9	10-24 Cap Nut (Plated)	3.0129-1	2	3.0129-1	2
10	Back Top (Without 17" Backguard)	110595-1	1	110595-5	1
10A	Back Top (SS) (Without 17" Backguard)	110595-2	1	110595-6	1
11	Leg Brace	110574-1	1	—	—
11A	Leg Brace (SS)	110574-2	1	—	—

(SS) Stainless Steel

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MANUAL ASSEMBLY: 114587-G1

I.S.P. MANUAL FOR M7806 & M7809 CHAR-BROILERS

SIGN	MANUAL 114587-G1 SUB NO.	SHEET PART NUMBER AFFECTED	DATE
DML	4	114587-1 thru-19	12-26-84
DML	5	114587-1 thru-18	05-17-88
DML	6	114587-1 thru 17	03-01-89
LSA			01-15-01

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