

THERMA-TEK RANGE CORPORATION
“QUALITY AND STRENGTH”

**GAS COUNTER EQUIPMENT
PARTS / SERVICE MANUAL**

Models covered in this manual include:

Open Top Hot Plates:

TCHP12-1, TCHP12-2, TCHP24-2, TCHP24-4, TCHP36-6, TCHP48-8,
TCHP60-10, TCHP72-12.

Open Top Step-Up Hot Plates:

TCHP12SU-2, TCHP24SU-4, TCHP36SU-6, TCHP48SU-8, TCHP60SU-
10, TCHP72SU-12.

Manual and Thermostatic Griddles:

TC12-12G/TG, TC24-24G/TG, TC36-36G/TG, TC48-48G//TG,
TC60-60G/TG, TC72-72G/TG.

Radiant and Char-Rock Broilers:

TC12-12RB/CRB, TC24-24RB/CRB, TC36-36RB/CRB, TC48-48RB/CRB,
TC60-60RB/CRB, TC72-72RB/CRB.

**THERMA-TEK RANGE CORPORATION
115 ROTARY DRIVE – VALMONT IND. PARK
WEST HAZLETON, PA**

TEL: 570-455-3000 FAX: 570-455-9491 WEB: WWW.THERMA-TEK.COM

INTRODUCTION

The Gas Counter Equipment Parts / Service manual contains Installation & Operation Recommendations. It also includes Troubleshooting and Technical Data such as Orifice Hood Sizing and Gas Pressure Requirements.

The material presented should be used in conjunction with the Owners Manual, Professional Training, Service Experience, and Industry Standard Practices.

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MODEL NUMBER IDENTIFICATION



OPEN TOP

AND STEP-UP

HOT PLATES:

EXAMPLE: **TCHP24-4N**

T (Therma) **C** (Counter) **H** (Hot) **P** (Plate)

12, 24, 36, 48, 60, 72 (The Width of the Unit)

-1, -2, -4, -6, -8, -10, -12 (The Number of Open Burners)

The Final Character **N** or **L** (NATURAL or LP Gas).

The STEP-UP HOT PLATE has the same description with the letters **SU** (STEP-UP) ADDED.

EXAMPLE: **TCHP24SU-4N**



MANUAL AND THERMOSTATIC GRIDDLES:

EXAMPLE: **TC24-24GN**

T (Therma) **C** (Counter)

12, 24, 36, 48, 60, 72 (The Width of the Unit)

G (Manual Valve) or **TG** (Thermostatic Control)

The Final Character **N** or **L** (NATURAL or LP Gas).



RADIANT AND CHAR-ROCK BROILERS:

EXAMPLE: **TC24-24RBN**

T (THERMA) **C** (COUNTER)

12, 24, 36, 48, 60, 72 (The Width of the Unit)

RB (Radiant Broiler) – or – **CRB** (Char-Rock broiler).

The Final Character **N** or **L** (NATURAL or LP Gas).

Gas Counter Equipment Standard Features

- All gas counter series consist of a welded frame construction.
- Fully stainless steel exterior.
- 4" (101.5 mm) adjustable legs.
- Gas pressure regulator provided.
- One year limited parts and labor warranty.

Open Top Burners

- Cast iron lift off burner heads for easy cleaning.
- Rated at 30,000 BTU's (8.79 kW).
- Top grate supports located every 12" assuring structural integrity.
- Spill-proof pilot ignition system.
- Individual 12" (305 mm) x 12" (305 mm) cast iron top grates.
- Controlled by a brass valve with infinite adjustment.

Griddles

- 5/8" thick polished steel plate.
- Spatula width grease trough.
- One heavy-duty, steel tube burner per 12" section; at 30,000 BTU/hr.
- Each 12" section is controlled by a valve.
- Each 24" section is controlled by a thermostat.
- Manual valve control is standard. Thermostat control is optional.
- Large capacity grease container.

Radiant Broilers

- One heavy-duty cast-iron H-Type burner per 12" section; 30,000 BTU/hr.
- Heavy cast-iron radiants with multiple heat sinks - (2) radiants per burner.
- Heavy-duty cast-iron cooking grates.
- Single piece precision brass valves with infinite heat control.
- Easy to remove drip pans

Char-Rock Broilers

- One heavy-duty cast-iron H-Type burner per 12" section; 30,000 BTU/hr.
- High quality lava rocks on cast iron supports provide maximum heat.
- Burners protected by heat shield to prevent blockage of ports and pilot.
- Heavy-duty cast-iron cooking grates.
- Single piece precision brass valves with infinite heat control.
- Easy to remove drip pans.

RATING PLATE LOCATION

The Rating Plate on all Gas Counter Models is located at the right front – below the front panel.

See the handle of the pull-out drawer. Pull forward to see the rating plate (sticker).

WARRANTY SERIAL NUMBER THERMA-TEK SERIAL NUMBER & DATE CODE

Date of manufacture is a date code and is part of the serial number.

(a) (c)
Example: **09J00001A**
(b) (d)

(a) Year Code: Use the last two digits of the year.

07 = 2007

08 = 2008

09 = 2009

(b) Month Code: A=Jan, B=Feb, C=Mar, D=Apr, E=May, F=Jun, G=Jul, H=Aug, I=Sep **J=Oct**, K=Nov, L=Dec

(c) 5 Digit Serial Number: This number is reset to zero on the new year.

(d) Engineering Digit: “A” is used for new release. Anytime a design element is changed that would affect service, this digit would be changed to “B”. Each time a change is made, the letter is changed going down through the alphabet.

RESTAURANT RANGE GAS SPECIFICATIONS

BURNER TYPE	BTU / kW	NAT Hood Orifice #	PRO Hood Orifice #
Open Top	30,000 / 8.79	40	53
Griddle	30,000 / 8.79	48	55
Raised Griddle / Broiler	15,000 / 4.39	51	57
Hot Top	20,000 / 5.86	48	55
Char-Rock Broiler	30,000 / 8.79	39	52
Radiant Broiler	30,000 / 8.79	39	52

PRESSURE REGULATOR

A Pressure Regulator is provided with every Gas Counter Unit and must be installed prior to start up.

GAS PRESSURE

Natural 5.0" Water Column / 12.45 mbar
Liquefied Propane 10.0" Water Column / 24.90 mbar

MANIFOLD SIZE 3/4" N.P.T. on all Counter Models.

LOCATION

Gas manifold inlet is left facing, inboard 1 13/16".

LIGHTING THE PILOTS

OPEN TOP BURNER:

- Remove top grates
- Make sure pilot adjust valve located on the manifold is open.
- Light the pilot.
- With a thin bladed screwdriver, adjust flame to approximately 1/2”.

GRIDDLE:

- Looking through slot in the valve panel, locate pilot lighting holes in the burner front shield.
- Make sure pilot adjust valve located on the manifold is open.
- Light the pilot
- With a thin bladed screwdriver, adjust flame to approximately 3/4”.

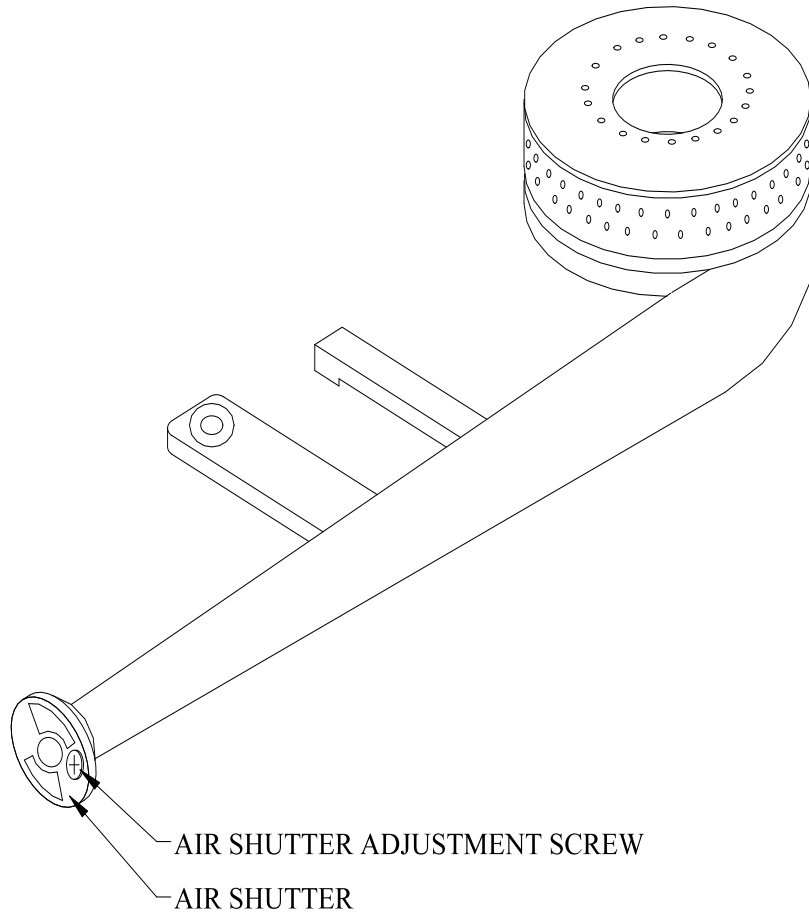
BROILER:

- Remove grates.
- Make sure pilot adjust valve located on the manifold is open.
- Light the pilot.
- With a thin bladed screwdriver, adjust flame to approximately 3/4”.

SHUTDOWN

- Nightly shutdown:
Turn burner valves or thermostats to off position.
Pilots will remain lit.
- Complete shutdown:
Turn burner valves or thermostats to off position.
Turn main gas supply to range off.

OPEN TOP BURNER AIR SHUTTER ADJUSTMENT



Top grates must be in place on range when these adjustments are being made.
All burners have a primary air adjustment by means of an air shutter on the front of the burner.
Loosen the screw and rotate the air shutter until a stable blue flame is obtained.
The flame should not be yellow tipped, nor should it blow off the burner ports.
The burner should light consistently when the air shutter is positioned, if it does not,
readjust the air shutter until it lights consistently.

THERMA-TEK
RANGE CORP.

Griddle Thermostat Operation

When a Griddle reaches the temperature at which the dial was set, the control cuts down the flow of gas to the amount required to maintain that temperature. This minimum burner flame is called the bypass flame. The control must provide enough bypass gas to keep the entire burner lighted. If not, the bypass must be set carefully and accurately as follows:

Setting the Bypass Flame

1. With the pilot lighted, turn the thermostat dial to “Full On”.
2. After 5 minutes, turn the dial clockwise to the point slightly beyond the first mark on the dial.
3. Carefully remove the dial.
4. With a straight-bladed screw driver, turn the bypass adjustment screw counter-clockwise to increase the flame, clockwise to decrease the flame, until there is a minimum flame (approximately 1/8” high) on the entire burner. This flame should be stable without lifting.

With a good bypass established, we can check the thermostat’s calibration. An accurate pyrometer or other reliable test instrument is required.

Checking Calibration

1. Set the thermostat dial to 400° F mark. That’s 204 C.
2. To allow the temperature to stabilize, the control must cycle at least three times (min. 15 minutes) before taking a meter reading.
3. Continue to check temperature at 5 minute intervals until two successive readings are within 5 degrees of each other. If readings are not within 20 degrees of the dial setting, calibration is required.

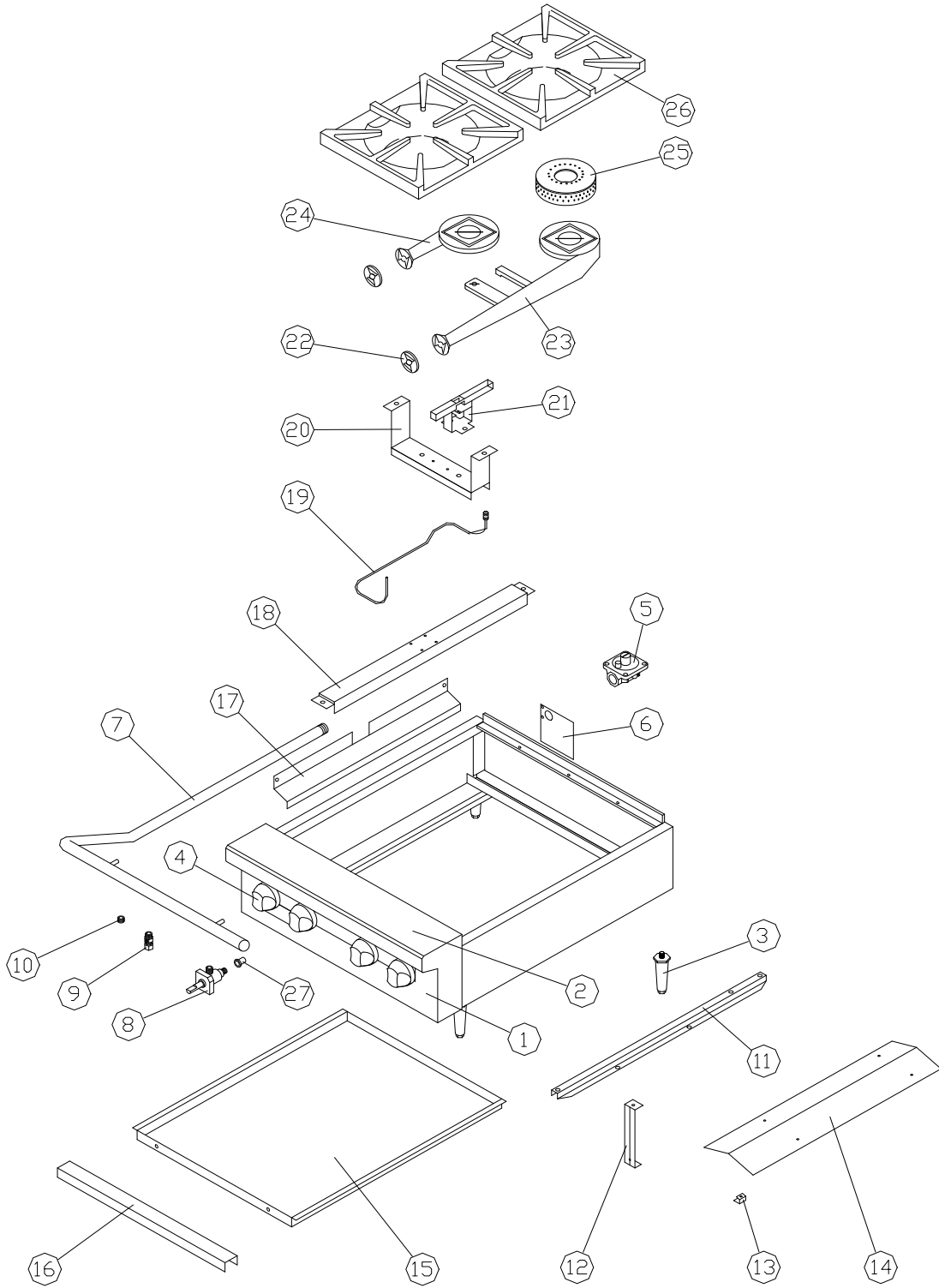
Calibrating the Control

1. With the dial insert removed, hold the dial firmly.
2. With a straight bladed screwdriver, push and hold the calibration screw located down the center of the stem. Do not turn the screw.
3. While holding the calibration screw firmly, turn the dial to the set point matching the actual temperature shown on your test instrument. Remove the screwdriver. Replace the dial insert.
4. Set the temperature at 400° (204° C). After 15 minutes, check temperature. It should be within 20 degrees of the dial setting.
5. A control exhibiting temperature 50 or more degrees “out” should be replaced.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Burner flame too large.	Incorrect pressure setting or orifice.	Check pressure setting and orifice.
Burner flame soft and yellow tipping.	Insufficient primary air.	Check air shutter setting.
Flame lifts off burner ports	Excessive primary air.	Check air shutter setting.
Flame lights back to orifice	Excessive primary air	Check air shutter setting.
Delayed ignition	1) Pilot flame too small. 2) Burner ports blocked. 3) Incorrect air shutter setting. 4) Incorrect pressure setting. 5) Pilot lighter tube dirty or blocked.	1) Check pilot flame length. 2) Clean burner ports. 3) Check air shutter setting. 4) Check pressure setting. 5) Clean tube.
Pilot burner will not ignite	1) Pilot blocked or dirty. 2) Pilot adjusting screw closed.	1) Clean pilot. 2) Open & adjust flame length.
Griddle too hot or not hot enough.	Thermostat out of calibration.	Check calibration.

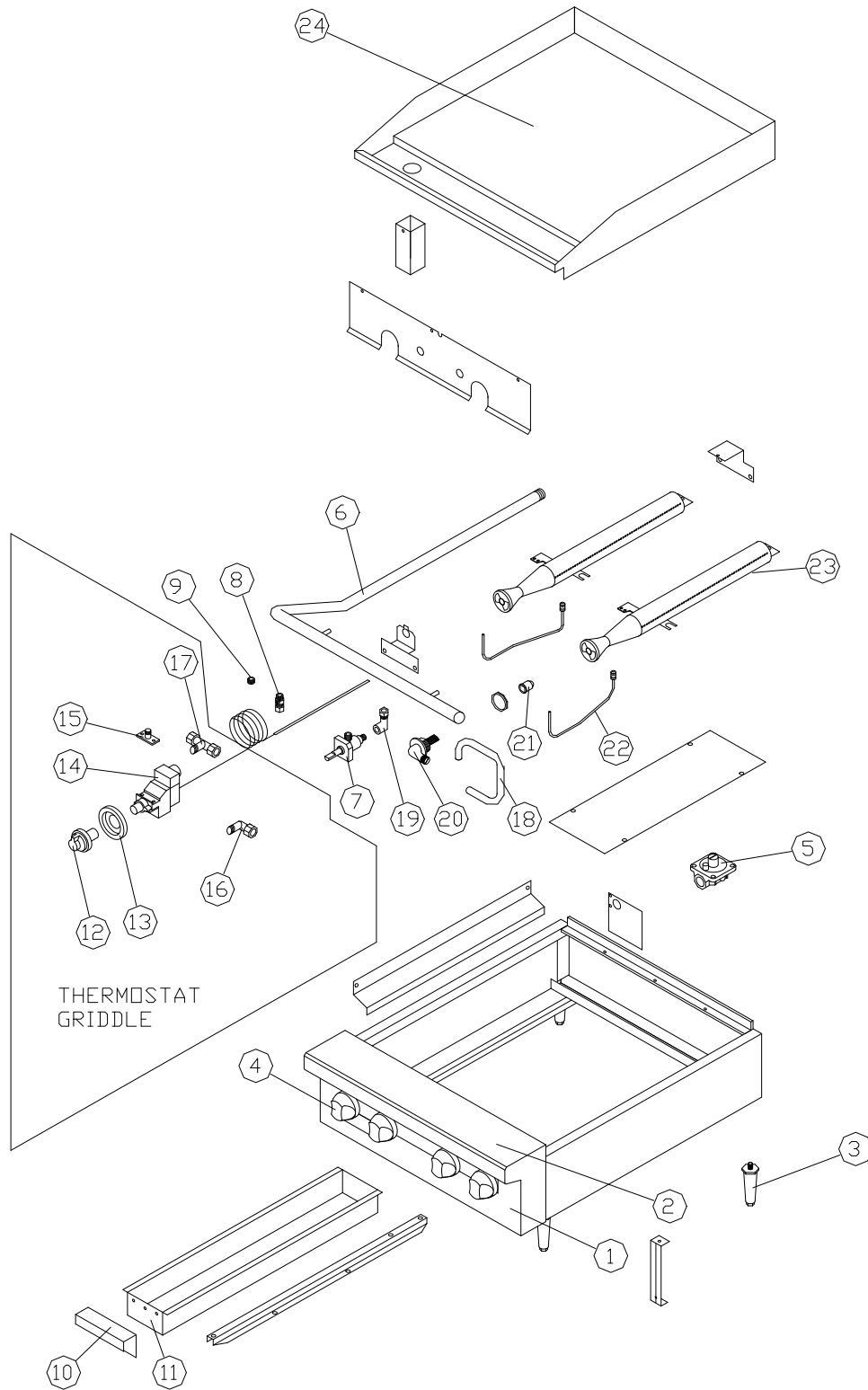
Hot Plate



Hotplate

Item Number	Part No.	Description	Qty Required					
			12"	24"	36"	48"	60"	72"
1	30198-01	Front Panel 12"	1					
	30198-02	Front Panel 24"		1				
	30198-03	Front Panel 36"			1			
	30198-04	Front Panel 48"				1		
	30198-05	Front Panel 60"					1	
	30198-06	Front Panel 72"						1
2	30103-01	Front Rail W/A 12"	1					
	30103-02	Front Rail W/A 24"		1				
	30103-03	Front Rail W/A 36"			1			
	30103-04	Front Rail W/A 48"				1		
	30103-05	Front Rail W/A 60"					1	
	30103-06	Front Rail W/A 72"						1
3	80034	4" leg	4	4	4	4	6	6
4	80000	Plastic Knob	2	4	6	8	10	12
5	80026-01	Regulator 5" Nat	1	1	1	1	1	1
	80026-02	Regulator 10" LP	1	1	1	1	1	1
6	30192	Tailpipe Bracket	1	1	1	1	1	1
7	81021-01	Manifold Pipe 12"	1					
	81021-02	Manifold Pipe 24"		1				
	81021-03	Manifold Pipe 36"			1			
	81021-04	Manifold Pipe 48"				1		
	81021-05	Manifold Pipe 60"					1	
	81021-06	Manifold Pipe 72"						1
8	80030	Manual Gas Valve	2	4	6	8	10	12
9	81018	Pilot Adjust Valve	1	2	3	4	5	6
10	81003-01	1/8 NPT Pipe Plug	1	1	3	3	3	5
11	30194	Drip Tray Slide				1	1	1
12	30193	Center Support Bracket				2	4	4
13	30200	Center Drip Shield Bracket				4	4	4
14	30199	Center Drip Shield				1	1	1
15	30195-01	12" Drip Tray	1					
	30195-02	24" Drip Tray		1		2		
	30195-03	36" Drip Tray			1			2
	30195-04	29 5/8" Drip Tray					1	
	30195-05	23 1/2" Drip Tray					1	
	30195-06	12" Drip Tray Handle	1					
16	30195-07	24" Drip Tray Handle		1		2		
	30195-08	36" Drip Tray Handle			1			2
	30195-09	29 5/8" Drip Tray Handle					1	
	30195-10	23 1/2" Drip Tray Handle					1	
17	30197	Drip Shield	1	1	1	1	1	1
18	30196	Grate Support		1	2	3	4	5
19	90002	Open Top Pilot Assy	1	2	3	4	5	6
20	30102	Burner Rest	1	2	3	4	5	6
21	30473	Open Top Pilot Tube W/A	1	2	3	4	5	6
22	80029-01	Air Shutter	2	4	6	8	10	12
23	82001	Rear Venturi	1	2	3	4	5	6
24	82002	Front Venturi	1	2	3	4	5	6
25	82000	Burner Head	2	4	6	8	10	12
26	82306	Top Grate	2	4	6	8	10	12
27	81022-40	Orifice Drill #40 (Nat)	2	4	6	8	10	12
	81022-53	Orifice Drill #53 (LP)	2	4	6	8	10	12

Griddle

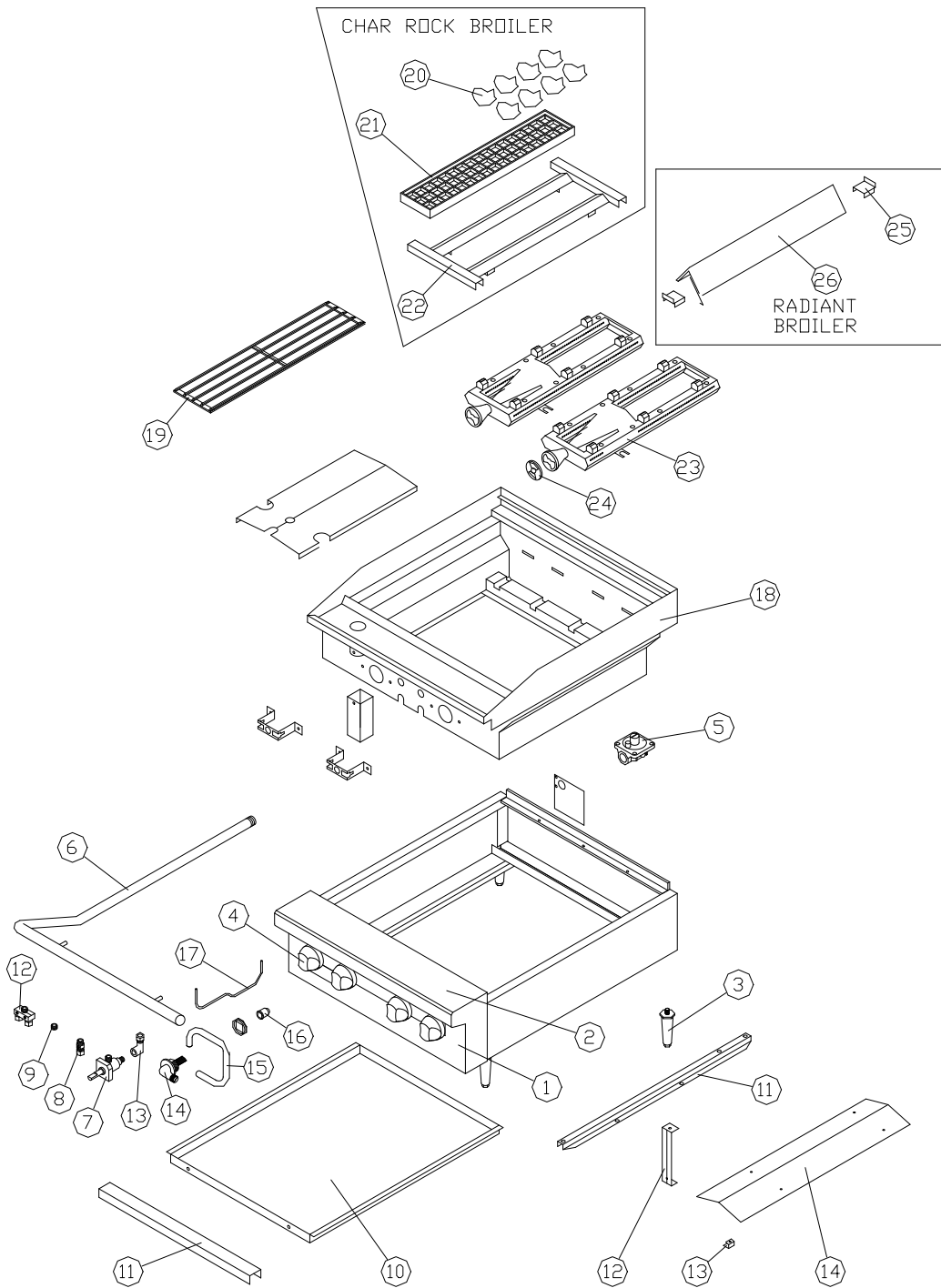


Griddle

Item Number	Part No.	Description	Qty Required					
			12"	24"	36"	48"	60"	72"
1	30198-01	Front Panel 12"	1					
	30198-02	Front Panel 24"		1				
	30198-03	Front Panel 36"			1			
	30198-04	Front Panel 48"				1		
	30198-05	Front Panel 60"					1	
	30198-06	Front Panel 72"						1
2	30103-01	Front Rail W/A 12"	1					
	30103-02	Front Rail W/A 24"		1				
	30103-03	Front Rail W/A 36"			1			
	30103-04	Front Rail W/A 48"				1		
	30103-05	Front Rail W/A 60"					1	
	30103-06	Front Rail W/A 72"						1
3	80034	4" leg	4	4	4	4	6	6
4	80000	Plastic Knob	1	2	3	4	5	6
5	80026-01	Regulator 5" Nat	1	1	1	1	1	1
	80026-02	Regulator 10" LP	1	1	1	1	1	1
6	81021-01	Manifold Pipe 12"	1					
	81021-02	Manifold Pipe 24"		1				
	81021-03	Manifold Pipe 36"			1			
	81021-04	Manifold Pipe 48"				1		
	81021-05	Manifold Pipe 60"					1	
	81021-06	Manifold Pipe 72"						1
7	80030	Manual Gas Valve	1	2	3	4	5	6
8	81018	Pilot Adjust Valve	1	2	3	4	5	6
9	81003-01	1/8 NPT Pipe Plug	1	1	3	3	3	5
10	30221	Griddle Bucket	1	1	1	1	2	2
11	30221-01	Griddle Bucket Handle	1	1	1	1	2	2
12	80015-01	BJ Thermostat Knob Griddle	1	1	2	2	3	3
13	80014	BJ Bezel	1	1	2	2	3	3
14	80017-01	BJWA Griddle Thermostat	1	1	2	2	3	3
15	80019	TEE Thermostat	1	1	2	2	3	3
16	81015	90 Elbow 3/8 CC x 1/4 NPT	1		1		1	
17	81027	TEE 3/8 CC 1/4 NPT			1	2	3	3
18	90013	3/8" x 8 Flexible Gas Tubing	1	2	3	4	5	6
19	81014	Elbow 3/8 TOD-3/8-27	1	2	3	4	5	6

		UNS						
20	81016-01	Orifice Elbow 3/8-27 x 3/8CC	1	2	3	4	5	6
21	81022-39	Orifice Drill #39 (Nat)	1	2	3	4	5	6
	81022-52	Orifice Drill #52 (LP)	1	2	3	4	5	6
22	90038	Pilot Tip Assy 3/16 x 12.5 Lg	1	2	3	4	5	6
23	80022	Burner Assembly	1	1	2	3	3	3
24	30215-01	Griddle W/A 12"	1					
	30215-02	Griddle W/A 24"		1				
	30215-03	Griddle W/A 36"			1			
	30215-04	Griddle W/A 48"				1		
	30215-05	Griddle W/A 60"					1	
	30215-06	Griddle W/A 72"						1
	30215-07	Thermostat Griddle W/A 12"	1					
	30215-08	Thermostat Griddle W/A 24"		1				
	30215-09	Thermostat Griddle W/A 36"			1			
	30215-10	Thermostat Griddle W/A 48"				1		
	30215-11	Thermostat Griddle W/A 60"					1	
	30215-12	Thermostat Griddle W/A 72"						1

Broiler



Broiler

Item Number	Part No.	Description	Qty Required					
			12"	24"	36"	48"	60"	72"
1	30198-01	Front Panel 12"	1					
	30198-02	Front Panel 24"		1				
	30198-03	Front Panel 36"			1			
	30198-04	Front Panel 48"				1		
	30198-05	Front Panel 60"					1	
	30198-06	Front Panel 72"						1
2	30103-01	Front Rail W/A 12"	1					
	30103-02	Front Rail W/A 24"		1				
	30103-03	Front Rail W/A 36"			1			
	30103-04	Front Rail W/A 48"				1		
	30103-05	Front Rail W/A 60"					1	
	30103-06	Front Rail W/A 72"						1
3	80034	4" leg	4	4	4	4	6	6
4	80000	Plastic Knob	2	4	6	8	10	12
5	80026-01	Regulator 5" Nat	1	1	1	1	1	1
	80026-02	Regulator 10" LP	1	1	1	1	1	1
6	81021-01	Manifold Pipe 12"	1					
	81021-02	Manifold Pipe 24"		1				
	81021-03	Manifold Pipe 36"			1			
	81021-04	Manifold Pipe 48"				1		
	81021-05	Manifold Pipe 60"					1	
	81021-06	Manifold Pipe 72"						1
7	80030	Manual Gas Valve	1	2	3	4	5	6
8	81018	Pilot Adjust Valve	1	2	3	4	5	6
9	81003-01	1/8 NPT Pipe Plug	1	4	6	8	11	13
10	30195-01	12" Drip Tray	1					
	30195-02	24" Drip Tray		1		2	1	
	30195-03	36" Drip Tray			1		1	2
11		12" Drip Tray Handle	1					
		24" Drip Tray Handle		1		2	1	
		36" Drip Tray Handle			1		1	2
12	81026	Pilot Valve TEE 3/16	1					
13	81014	Elbow 3/8 TOD-3/8-27 UNS	1	2	3	4	5	6
14	81016-01	Orifice Elbow 3/8-27 x 3/8 CC	1	2	3	4	5	6
15	90013	3/8/x 8 Flexible Gas Tubing	1	1	2	2	3	3

16	81022-39	Orifice Drill #39 (Nat)	1	2	3	4	5	6
	81022-52	Orifice Drill #52 (LP)	1	2	3	4	5	6
17	90038	Pilot Tip Assy 3/16 x 12.5 Lg	1	2	3	4	5	6
18	30253-01	Broiler Top W/A 12"	1					
	30253-02	Broiler Top W/A 24"		1				
	30253-03	Broiler Top W/A 36"			1			
	30253-04	Broiler Top W/A 48"				1		
	30253-05	Broiler Top W/A 60"					1	
	30253-06	Broiler Top W/A 72"						1
19	82011	Grate Broiler	3	5	7	10	12	15
20	82015	Lava Rock	1	2	3	4	5	6
21	82008	Waffle Grate Broiler	2	5	8	11	14	17
22	30254	Waffle Grate Support	1	2	3	4	5	6
23	30522	Burner Assembly		1	1	2	3	2
24	80029-02	Air Shutter H Burner	1	2	3	4	5	6
25	30255	Radiant Support Bracket	4	8	12	16	20	24
26	82007	Broiler Radiant	2	4	6	8	10	12

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NOTES