

STAR MANUFACTURING INTERNATIONAL, INC.
9325 OLIVE BLVD., P.O. Box 8492
ST. LOUIS, MO 63132

MODEL 451, 452 AND 452M STARMASTER GAS GRIDDLES
GENERAL INSTALLATION DATA

CAUTION: THIS EQUIPMENT IS DESIGNED AND SOLD FOR COMMERCIAL USE ONLY BY PERSONNEL TRAINED AND EXPERIENCED IN ITS OPERATION AND IS NOT SOLD FOR CONSUMER USE IN AND AROUND THE HOME NOR FOR USE DIRECTLY BY THE GENERAL PUBLIC IN FOOD SERVICE LOCATIONS. FOR EQUIPMENT TO BE USED BY THE GENERAL PUBLIC, PLEASE CONTACT THE FACTORY.

THE STARMASTER MODEL GRIDDLES ARE EQUIPPED FOR USE WITH THE TYPES OF GAS SPECIFIED ON THE NAMEPLATE.

ALL UNITS ARE SHIPPED FROM THE FACTORY FOR USE ON NATURAL GAS. THE UNIT CAN EASILY BE CONVERTED FOR USE ON PROPANE GAS. SEE ADJUSTING BURNERS (PROPANE GAS).

THE INSTALLATION OF THE APPLIANCE SHOULD CONFORM TO THE NATIONAL FUEL GAS CODE ANSI Z223.1-1984 AND NFPA 70-1984 AND ALL LOCAL GAS COMPANY RULES AND REGULATIONS.

THIS APPLIANCE, ITS PRESSURE REGULATOR 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 1/2 PSIG(3.45KPA). THIS APPLIANCE AND ITS PRESSURE REGULATOR MUST BE ISOLATED FROM THE GAS SUPPLY SYSTEM BY CLOSING ITS INDIVIDUAL MANUAL SHUTOFF VALVE DURING ANY PRESSURE TESTING OF THE GAS SUPPLY PIPING SYSTEM AT TEST PRESSURES EQUAL TO OR LESS THAN 1/2 PSIG(3.45KPA). FOR YOUR PROTECTION, WE RECOMMEND A QUALIFIED INSTALLING AGENCY INSTALL THIS APPLIANCE. THEY SHOULD BE FAMILIAR WITH GAS INSTALLATIONS AND YOUR LOCAL REQUIREMENTS. IN ANY CASE, YOUR GAS COMPANY SHOULD BE CALLED TO APPROVE THE FINAL INSTALLATION. IN ADDITION, THERE SHOULD BE POSTED, IN A PROMINENT LOCATION, DETAILED INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE OPERATOR SMELLS GAS. OBTAIN THE INSTRUCTIONS FROM THE LOCAL GAS SUPPLIER.

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

KEEP THE APPLIANCE AREA FREE AND CLEAR FROM COMBUSTIBLES.

CLEARANCE

CLEARANCES FROM COMBUSTIBLE MATERIAL MUST BE A MINIMUM OF 48" FROM THE TOP OF THE APPLIANCE AND 6" FROM THE SIDES AND BACK. ADEQUATE CLEARANCE SHOULD ALSO BE PROVIDED FOR PROPER OPERATION AND SERVICING.

AIR SUPPLY

MAKE CERTAIN NOT TO OBSTRUCT THE FLOW OF COMBUSTION AND VENTILATION AIR.

EXHAUST CANOPY

IT IS ESSENTIAL THAT FACILITIES BE PROVIDED OVER THE FRYER TO CARRY OFF FUMES AND GASES. HOWEVER, THE UNIT SHOULD NOT BE DIRECTLY CONNECTED TO A FLUE OR STACK.

LEVELING UNIT

THIS GRIDDLE IS SUPPLIED WITH (4) FEET WHICH MUST BE SCREWED INTO THE LEGS ATTACHED TO THE BODY. LEVEL UNIT BY ADJUSTING THE (4) FEET WHICH HAVE AN ADJUSTMENT OF 1" FOR ACCURATE AND PERFECT LINEUP WITH OTHER DESIGNER SERIES UNITS. CAUTION: DO NOT INSTALL WITHOUT THE FEET - DO NOT REMOVE FEET.

MANUAL SHUT OFF VALVE

A MANUAL SHUT OFF VALVE SHOULD BE INSTALLED UPSTREAM FROM THE UNION AND WITHIN 6 FEET OF THIS APPLIANCE.

PRESSURE REGULATOR

A CONVERTIBLE PRESSURE REGULATOR IS PROVIDED WITH EACH GRIDDLE. IT SHOULD BE CONNECTED TO THE INLET PIPE AT THE REAR OF THE UNIT. THE GAS SUPPLY LINE IS THEN CONNECTED TO IT. IT IS SHIPPED SET FOR 6" W.C. MANIFOLD PRESSURE FOR USE ON NATURAL GAS.

GAS PIPING

GAS PIPING SHALL BE OF SUCH SIZE AND SO INSTALLED AS TO PROVIDE A SUPPLY OF GAS SUFFICIENT TO MEET THE FULL GAS INPUT OF THE APPLIANCE. IF THE APPLIANCE IS TO BE CONNECTED TO EXISTING PIPING IT SHALL BE CHECKED TO DETERMINE IT HAS ADEQUATE CAPACITY. JOINT COMPOUND (PIPE DOPE) SHALL BE USED SPARINGLY AND ONLY TO THE MALE THREADS OF THE PIPE JOINTS. SUCH COMPOUNDS SHALL BE RESISTANT TO THE ACTION OF L.P. GASES. WARNING: ANY LOOSE DIRT OR METAL PARTICLES WHICH ARE ALLOWED TO ENTER THE GAS LINES ON THIS APPLIANCE WILL DAMAGE VALVE AND AFFECT ITS OPERATION. WHEN INSTALLING THIS APPLIANCE, ALL PIPE AND FITTINGS MUST BE FREE FROM ALL LOOSE DIRT.

PROPANE GAS

THIS GRIDDLE IS EQUIPPED WITH FIXED ORIFICE HOODS AND IS SHIPPED FROM THE FACTORY FOR USE ON NATURAL GAS. TO CONVERT TO PROPANE GAS, INSTALL THE #51 BLACK BURNER ORIFICE HOODS SUPPLIED, BEHIND THE CONTROL PANEL, AS FOLLOWS:

1. REMOVE INSPECTION PANEL (THREE ON MODEL 452) BY REMOVING THUMB SCREWS LOCATED AT THE TOP OF PANEL(S).
2. REMOVE SHIPPING WIRES FROM BURNER. THESE NEED NOT BE REPLACED AS THEY ARE THERE FOR SHIPMENT ONLY.
3. REMOVE BURNER(S) FOR ORIFICE HOOD(S). THIS IS ACCOMPLISHED BY LIFTING UP ON THE REAR OF THE BURNER(S) AND SLIDING BURNER(S) OFF OF HOOD(S).
4. REMOVE NATURAL GAS ORIFICE HOOD(S) AND INSTALL THE PROPANE HOOD(S) (FURNISHED).
5. REINSTALL BURNER(S).
6. REINSTALL INSPECTION PANEL(S).
7. SET MANIFOLD PRESSURE TO (10) INCH WATER COLUMN. A 1/8" PIPE PLUG ON THE SUPPLY PIPE CAN BE REMOVED FOR ATTACHING A PRESSURE GAUGE. REMOVE THE SLOTTED COVER FROM THE PRESSURE REGULATOR AND INVERT THE PLUG. REPLACE THE COVER ON THE REGULATOR AND THE SUPPLY PIPE PLUG. REGULATOR IS NOW SET AT 10" W.C.

LIGHTING INSTRUCTIONS

1. TURN THE THERMOSTAT KNOB(S) TO "OFF" POSITION. CAUTION: IF GAS VALVES HAVE BEEN ON AND GAS HAS ESCAPED THROUGH THE BURNERS, TURN UNIT OFF AND WAIT 5 MINUTES TO CLEAR GAS.
2. PUSH RED BUTTON AND LIGHT PILOT.
3. HOLD IN FOR 60 SECONDS OR UNTIL PILOT REMAINS LIT WHEN BUTTON IS RELEASED.
4. SET THERMOSTAT(S) TO DESIRED TEMPERATURE.
5. IF BURNERS DO NOT LIGHT REPEAT STEPS 1 THRU 4.

ADJUSTING SAFETY PILOT

1. OPEN RIGHT DOOR PANEL (452 ONLY), REMOVE THE RIGHT ACCESS PANEL BY LOOSENING THE TWO SCREWS LOCATED AT BOTTOM OF PANEL, AND PULL OUT ON BOTTOM OF PANEL (451 ONLY).
2. REMOVE THE SLOTTED SCREW CAP ADJACENT TO THE PILOT GAS OUTLET.
3. TURN INNER SCREW TO ADJUST THE SAFETY PILOT FLAME. THE FLAME SHOULD SURROUND TOP DISK.
4. REPLACE THE SLOTTED SCREW CAP TIGHTLY TO PREVENT GAS LEAKAGE.
5. CLOSE DOOR (452 ONLY) OR REPLACE PANEL (451).

LIGHTING BURNERS

1. PUSH DIAL INWARD AND TURN IT COUNTERCLOCKWISE A QUARTER OF A TURN OR MORE.
2. TURN DIAL TO DESIRED TEMPERATURE.
3. TO SHUT OFF GAS, TURN DIAL CLOCKWISE TO "OFF" POSITION.

ADJUSTING BURNERS

1. PUSH DIAL IN AND SET THERMOSTAT OF ONE BURNER TO 450 F.
2. OBSERVING THE FLAME THROUGH LIGHTING HOLE, CLOSE THE AIR SHUTTER TO GIVE A SOFT BLUE FLAME HAVING LUMINOUS TIPS AND OPEN TO A POINT WHERE THE YELLOW TIPS DISAPPEAR AND A HARD BLUE FLAME IS OBTAINED.
3. REPEAT STEPS 1 AND 2 FOR OTHER BURNER (452 AND 452M ONLY).
4. CLOSE LIGHTING HOLE COVER.

ADJUSTING BY-PASS (MINIMUM FLAME)

ENOUGH GAS MUST BE BY-PASSED THROUGH THE THERMOSTAT TO KEEP THE ENTIRE BURNER LIGHTED AFTER THE THERMOSTAT ACTION HAS REDUCED THE FLAME ON THE BURNER. TO ALLOW ACCURATE CONTROL OF TEMPERATURE, BE SURE TO SET THE BY-PASS ADJUSTMENT ACCURATELY. TO MAKE THIS ADJUSTMENT PROCEED AS FOLLOWS: LIGHT THE MAIN BURNER(S).

1. LIGHT THE MAIN BURNER(S).
2. SET THE THERMOSTAT DIAL(S) AT 350 F.
3. ALLOW THE GRIDDLE TO HEAT UNTIL THE THERMOSTAT ACTION HAS CUT DOWN THE FLAME ON THE BURNER(S). THIS WILL TAKE ABOUT 10 MINUTES.
4. SET THE THERMOSTAT DIAL(S) AT 150 AND OPEN LIGHTING HOLE COVER TO OBSERVE FLAME.
5. THE BURNER FLAME SHOULD NOW NOT EXCEED 1/8" IN HEIGHT. IF ADJUSTMENT IS NEEDED REMOVE DIAL(S), OPEN DOORS (452 ONLY), TURN THE BY-PASS ADJUSTMENT (ADJUSTMENT SCREW ON THERMOSTAT) SCREW CLOCKWISE TO DECREASE UNTIL THE FLAME OVER THE ENTIRE BURNER IS NOT MORE THAN 1/8" IN HEIGHT.

ADJUSTING THERMOSTATS

THE THERMOSTAT IS A PRECISION INSTRUMENT. IT HAS BEEN CAREFULLY CALIBRATED AT THE FACTORY. FIELD RECALIBRATION IS SELDOM NECESSARY AND SHOULD NOT BE RESORTED TO UNTIL THE BY-PASS FLAME HAS BEEN ADJUSTED. TO MEASURE GRIDDLE TEMPERATURE USE A RELIABLE PYROMETER AND PROCEED AS FOLLOWS:

1. SET DIAL TO 400 F, LIGHTING BURNER.
2. AFTER BURNER HAS BEEN ON ABOUT 10 MINUTES, CHECK GRIDDLE SURFACE TEMPERATURE ABOVE OPERATING THERMOSTAT.
3. CONTINUE TO CHECK TEMPERATURE AT 5 MINUTE INTERVALS, UNTIL TWO SUCCESSIVE READINGS ARE WITHIN 5 OF EACH OTHER. IF YOUR READING IS NOT WITHIN 10 OF THE DIAL SETTING (400) RECALIBRATION IS REQUIRED.
4. REMOVE DIAL COMPLETE WITH "D" TYPE STEM.
5. TURN CALIBRATION SCREW CLOCKWISE TO OBTAIN A LOWER TEMPERATURE OR COUNTERCLOCKWISE FOR A HIGHER TEMPERATURE. EACH MARK ON RETAINER REPRESENTS 25.
6. REPEAT STEPS FOR OTHER THERMOSTAT (452 ONLY).

GENERAL OPERATING INSTRUCTIONS

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

AIR INTAKES IN BOTTOM

MAKE CERTAIN THAT THE AIR INTAKE OPENINGS IN THE BOTTOM OF THE APPLIANCE ARE NOT OBSTRUCTED. THEY ARE ESSENTIAL FOR PROPER COMBUSTION AND OPERATION OF THE APPLIANCE.

LIGHTING INSTRUCTIONS

THE GRIDDLE IS EQUIPPED WITH A SAFETY PILOT AND STANDING PILOTS AND SHOULD BE LIGHTED IMMEDIATELY AFTER THE GAS IS TURNED ON.

1. TURN THE THERMOSTAT KNOB(S) TO "OFF" POSITION. CAUTION: IF GAS VALVES HAVE BEEN ON AND GAS HAS ESCAPED THROUGH THE BURNERS, TURN OFF AND WAIT 5 MINUTES TO CLEAR GAS.
2. PUSH RED BUTTON AND LIGHT PILOT.
3. HOLD IN FOR 60 SECONDS OR UNTIL PILOT REMAINS LIT WHEN BUTTON IS RELEASED.
4. SET THERMOSTAT(S) TO DESIRED TEMPERATURE.
5. IF BURNER(S) DO NOT LIGHT REPEAT STEPS 1 THRU 4.

TO SEASON THE GRIDDLE HEATING SURFACE

CLEAN THE GRIDDLE SURFACE THOROUGHLY. AFTER THE GRIDDLE HAS BEEN THOROUGHLY CLEANED, IT SHOULD BE SEASONED TO PREVENT FOOD FROM STICKING. BEFORE USING, AND AFTER EACH THOROUGH SCOURING, SEASON THE GRIDDLE HEATING SURFACE IN THE FOLLOWING MANNER:

1. TURN THE TEMPERATURE CONTROL DIAL TO 350 .
2. USING A CLEAN CLOTH, NOT A SPATULA, SPREAD A THIN FILM OF COOKING OIL OR FAT OVER THE GRIDDLE COOKING SURFACE. THIS FILM SHOULD REMAIN ON THE HOT GRIDDLE SURFACE 1/2 HOUR.
3. REMOVE THE EXCESS FAT AND WIPE CLEAN.
4. APPLY ANOTHER FILM OF COOKING OIL OVER THE HOT COOKING AREA FOR ANOTHER 1/2 HOUR AND AGAIN REMOVE EXCESS FAT AND WIPE CLEAN. THE GRIDDLE SURFACES SHOULD NOW BE READY FOR USE.

EVEN WITH CAREFUL SEASONING, FOOD MAY TO SOME EXTENT, STICK TO THE GRIDDLE COOKING SURFACE UNTIL GRIDDLE PLATE IS "BROKEN IN".

COOKING

SET THE THERMOSTAT DIAL KNOB AT THE TEMPERATURE DESIRED. AFTER A SHORT PREHEATING PERIOD, THE THERMOSTAT WILL AUTOMATICALLY MAINTAIN THE SELECTED TEMPERATURE.

IDLE PERIODS

TO SAVE ON OPERATING COSTS, LOWER THE TEMPERATURE SETTING OF THE THERMOSTATS TO ABOUT 250. IT IS NOT NECESSARY TO MAINTAIN COOKING TEMPERATURE DURING IDLE PERIODS. THE GRIDDLE CAN QUICKLY BE REHEATED TO THE DESIRED TEMPERATURE.

OVERNIGHT SHUTDOWN

TURN THERMOSTAT KNOB (KNOBS) TO THE "OFF" POSITION. OPEN PILOT LIGHTING HOLE COVER AND EXTINGUISH PILOT. THIS AUTOMATICALLY SHUTS OFF THE GAS SUPPLY. TO RE-ACTIVATE UNIT, FOLLOW THE SAFETY PILOT LIGHTING INSTRUCTIONS.

GRIDDLE CARE

IT TAKES VERY LITTLE TIME AND EFFORT TO KEEP THE GRIDDLE ATTRACTIVE AND PERFORMING AT TOP EFFICIENCY. IF GREASE IS PERMITTED TO ACCUMULATE, IT WILL FORM A GUMMY CAKE AND THEN CARBONIZE INTO A HARD SUBSTANCE WHICH IS EXTREMELY DIFFICULT TO REMOVE. TO PREVENT THIS CONDITION, THE FOLLOWING SUGGESTIONS FOR CLEANLINESS SHOULD BE FOLLOWED:

1. AFTER EACH USE SCRAPE THE GRIDDLE WITH A SCRAPER OR FLEXIBLE SPATULA TO REMOVE EXCESS FAT AND FOOD. A WASTE DRAWER IS PROVIDED FOR THE SCRAPINGS. IF THERE IS AN ACCUMULATION OF BURNED ON FAT AND FOOD, THE GRIDDLE SHOULD BE THOROUGHLY SCOURED AND RESEASONED AS OUTLINED ABOVE. USE PUMICE OR GRIDDLE STONE WHILE THE GRIDDLE IS WARM. DO NOT USE STEEL WOOL BECAUSE OF THE DANGER OF STEEL SLIVERS GETTING TO THE FOOD.
2. DAILY - USE A CLEAN CLOTH AND GOOD NON-ABRASIVE CLEANER TO CLEAN THE STAINLESS STEEL BODY OF THE GRIDDLE. WIPE THE POLISHED FRONT WITH A SOFT CLOTH.
3. AT LEAST ONCE A DAY, REMOVE THE WASTE DRAWER AND WASH IN THE SAME WAY AS AN ORDINARY COOKING UTENSIL. THE DRAWER IS REMOVED BY PULLING FORWARD, UP AND OUT.

REPAIRS AND SERVICE

THIS APPLIANCE SHOULD ONLY BE REPAIRED OR SERVICED BY THE FACTORY OR FACTORY AUTHORIZED PERSONNEL.

**NO
EXPLODED VIEW
AVAILABLE
FOR THESE
UNITS.**

PARTS LIST

EFFECTIVE— OCTOBER 1982

MODEL 451
STAR MASTER 18" GAS GRIDDLE

Produced from 10-68 to 7-90

KEY NUMBER	PART NUMBER	NUMBER PER UNIT	DESCRIPTION
	G2-451001	1	GRIDDLE TOP ASSEMBLY
	2T-9493	1	THERMOSTAT (LESS KNOB)
	2R-9499	1	KNOB, THERMOSTAT
	G2-4832	1	BURNER CASTING
	2T-Y1962	1	Thermostat Stem
	2J-9718	1	MANIFOLD
	2P-1063	1	AIR MIXER CAP
	G2-6695	1	ORIFICE HOOD L.P. #53 DRILL HOLE N/A, No substitutions
	G2-9497 →	1	ORIFICE HOOD NAT. #41 DRILL HOLE → Use G2-Y3310 Instead
	2V-9719 →	1	SAFETY PILOT VALVE → Use 2V-9495 Instead
	G3-9730	1	SAFETY PILOT BURNER (THERMOCOUPLE)
	G2-451008	1	GREASE DRAWER ASSEMBLY (LESS FRONT) (7"W x 4-3/4"Lx3-1/4"H)
	G2-9460	1	GREASE DRAWER FRONT
	Z1-115006	4	LEG ASSEMBLY (LESS FOOT)
	2A-7612	4	FOOT
	2A-9347	4	EXTENSION FOOT
	G2-9782	1	PANEL LEFT N/A, No substitutions
	G2-9783	1	PANEL RIGHT N/A, No substitutions
	G2-451017	1	Safety Valve Kit
	2J-Y6532		Pressure Regulator (convertible)
	2J-Y3948		Pressure Regulator (adjustable)

*SUGGESTED PARTS STOCKING—

IMPORTANT: WHEN ORDERING SPECIFY VOLTAGE OR TYPE GAS DESIRED
INCLUDE MODEL AND SERIAL NUMBER—(1) MINIMUM PARTS ORDER—\$5.00

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STAR MANUFACTURING COMPANY

9325 OLIVE BLVD. • P.O. BOX 8492 • ST. LOUIS, MO. 63132

PHONE: (314) 994-0880



PARTS LIST

EFFECTIVE— JANUARY 15, 1982

MODEL 452 *Produced from 5-69 to 7-90*
 STAR MASTER 36" GRIDDLE
 NAT./MFG. OR L.P.

KEY NUMBER	PART NUMBER	NUMBER PER UNIT	DESCRIPTION
	G2-452001	1	GRIDDLE TOP ASSEMBLY
	2T-9493	2	THERMOSTAT (LESS KNOB)
	2R-9499	2	KNOB, THERMOSTAT
	G2-9487	1	BURNER CASTING (RIGHT) N/A, No substitutions
	2T-Y1962	2	Thermostat Stem
	G2-9491	1	BURNER CASTING (LEFT) N/A, No substitutions
	2J-9492	1	MAINFOLD
	2P-1063	2	AIR MIXER CAP
	2K-9496	2	ORIFICE FITTING
	2A-3663 →	2	ORIFICE HOOD L.P. #52 DRILL → Use 2A-Y5357 Instead
	G2-9497 →	2	ORIFICE HOOD NAT. #41 DRILL → Use G2-Y3310 Instead
	2V-9495	1	SAFETY PILOT VALVE
	G2-9530 →	1	SAFETY PILOT BURNER (PILOT LIGHT W/THERMOCOUPLE) Use G3-9730 Instead
	G2-452012	1	GREASE DRAWER ASSEMBLY (LESS DRAWER FRONT) N/A, No substitutions
	G2-9337	1	DRAWER FRONT
	G2-452007	1	LEFT DOOR PANEL ASSEMBLY (LESS LINER) N/A, No substitutions
	G2-9522	1	LEFT DOOR LINER
	G2-452008	1	RIGHT DOOR PANEL ASSEMBLY
	G2-9523	1	RIGHT DOOR LINER
	Z1-115006	4	LEG ASSEMBLY (LESS FOOT)
	2A-7612	4	FOOT
	2C-9348	4	Stud
	2A-9347	4	EXTENSION FOOT
	SERIAL #		4522957 - FIRST W/REGULATOR
	2J-Y6532		Pressure Regulator (convertible)
	2J-Y3948		Pressure Regulator (adjustable)

*SUGGESTED PARTS STOCKING—

IMPORTANT: WHEN ORDERING SPECIFY VOLTAGE OR TYPE GAS DESIRED
 INCLUDE MODEL AND SERIAL NUMBER—(1) MINIMUM PARTS ORDER—\$5.00

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