

Independent test results from US Grill Manufacturer

Summary of Results:

Results conformed to the data on the chart below.

Excellent consistency between sensors was shown in the results for tests 1 and 2.

Here the higher gas usage test had the sensors tripping earlier (although this fact is compensated for because at higher gas usage the time to use up remaining gas is lessened).

Result spread was greater (but still usable) on tests 3 and 4 where a slow burn was used from the start. This is considered a worst case as a 10+ min preheat at higher gas usage would be normal.

The average amount of fuel remaining during this series of tests was 3.73lbs. This corresponds to the lower tangent point on the side of the tank.

LBS Fuel Remaining					
Ave BTU/hr Level	60,445	54,616	23,333	14,986	Average
Lbs Propane at Start	5.40	10.06	5.98	7.30	
Sensor no 1	4.70	2.61	4.10	3.68	3.77
Sensor no 2	4.00	2.61	2.18	4.20	3.25
Sensor no 3	4.00	2.52	5.70	4.20	4.11
Sensor no 4	4.00	2.47	5.50	2.28	3.56
Sensor no 5	4.70	2.47	4.70	-	3.96
Average	4.28	2.54	4.44	3.59	3.73
Std Dev	0.14	0.03	1.41	0.91	ALL

Short test

(Average of 23,333 BTU/hr)

Test Setup

An OPD tank (from an exchange program) was used to operate a gas grill. The sensors were placed around the side of the tank, as low on the tank as possible (bottom of sensor unit 67mm from the base of the tank). The grill was positioned so that the tank was level. Equipment was set up one hour prior to the start of testing to allow temperatures to stabilize. Atmospheric conditions (temperature, cloud cover, solar position, etc.) were recorded and changes during testing noted.

Testing Method

The grill was lit and operated on PREHEAT (30,000 BTU/h level) for 10 minutes. Then the grill was turned down to High (26,000 BTU/h level) for ten minutes. The grill was then turned down to LOW (14,000 BTU/h level) for ten minutes. The grill was then turned OFF and allowed to cool for at least 1-1/2 hours. This process was repeated until all sensors had indicated a low fuel condition. Records were kept of the time and valve position every time a sensor detected a low fuel level. The tank weight was recorded once the last sensor had indicated a low fuel condition.

TESTING

Gross weight of tank at start = 24.15 lbs.

Five sensor units were mounted equi-spaced around the tank.

Propane in tank at start of testing = 5.98lbs (24.15-18.17)

18-09-03 10:00am Start test on PREHEAT- Temp 72 F - sunny
10:15am Sensor #3 activated
10:15am Turned down to HIGH
10:25am Sensor #4 activated
10:25am Turned down to LOW
10:35am Turned OFF
1:00pm Start test on PREHEAT- Temp 84 F - sunny
1:10pm Turned down to HIGH
1:30pm Sensor #5 activated
1:30pm Turned OFF
2:30pm Start test on PREHEAT- Temp 84 F - sunny
2:40pm Turned down to HIGH
3:00pm Sensor #1 activated
3:00pm Turned down to LOW
3:30pm Turned OFF
4:30pm Start test on PREHEAT- Temp 85 F - sunny
4:40pm Turned down to HIGH
4:50pm Turned down to LOW
5:00pm Turned OFF
19-09-03 10:30am Start test on PREHEAT- Temp 78 F - sunny
11:15am Sensor #2 activated
11:15am Turned OFF

Total time on PREHEAT = 90 min. @ 500 BTU/m = 45,000 BTU's

Total time on HIGH = 60 min. @ 433BTU/m = 25,980 BTU's

Total time on LOW = 50 min. @ 233BTU/m = 11,650 BTU's

Total Calculated Fuel Consumed = 82,630 BTU's = 3.827

Measured Fuel Consumed = 3.8lbs.

Gross weight of tank at end = 20.35 lbs.

Propane in tank at end of testing = 2.18 lbs. (20.35-18.17)

Average Consumption rate = 1.08lbs/h (23,333 BTU/h)

PROPANE Gas Genie®

NEVER RUN OUT OF PROPANE AGAIN!

Fast tests - (60,445 BTU/hr & 54,616 BTU/hr)

Test Setup

An OPD tank (from an exchange program) was used to operate a turkey fryer. The tank sensors were placed around the side of the tank, as low on the tank as possible (bottom of sensor unit 67mm from the base of the tank). The turkey fryer was positioned so that the tank was level. Equipment was set up one hour prior to the start of testing to allow temperatures to stabilise. Atmospheric conditions (temperature, cloud cover, solar position, etc.) were recorded and changes during testing noted.

Testing Method

The turkey fryer was lit and operated at max BTU level (nominal 63,000BTU/hr). The fryer burned until all sensors indicated a low fuel condition. Records were kept of the time at which a sensor detected a low fuel level. The tank weight was recorded once the last sensor had indicated a low fuel condition.

TESTING

13-08-03 - Test started at 1:25pm -- Temp 87F -- partly cloudy.
Five sensor units were mounted equi-spaced around the tank.

Gross weight of tank at start = 23.58 lbs.
Propane in tank at start of testing = 5.41lbs (23.58-18.17)

Units #1 and #5 activated after 15 minutes
Estimated amount of propane in tank after 15 min =
4.71lbs [(5.41-4.01)/2]+4.01

Units #2, #3 and #4 activated after 30 minutes
Gross weight of tank at end = 22.18 lbs.
Propane in tank at end of testing = 4.01lbs (22.18-18.17)

Test ended at 1:55pm -- Temp 87F -- partly cloudy.

Consumption rate = 2.8 lbs/h (60,455 BTU/h)

14-08-03 - Second test started at 10:00am --
Temp 80F -- partly cloudy.

Five sensor units were mounted equi-spaced around the tank.

Gross weight of tank at start = 28.23 lbs.
Propane in tank at start of testing = 10.06 lbs (28.23-18.17)

Units #1 & #2 activated after 170 minutes.
(Temp 88F -- partly cloudy)

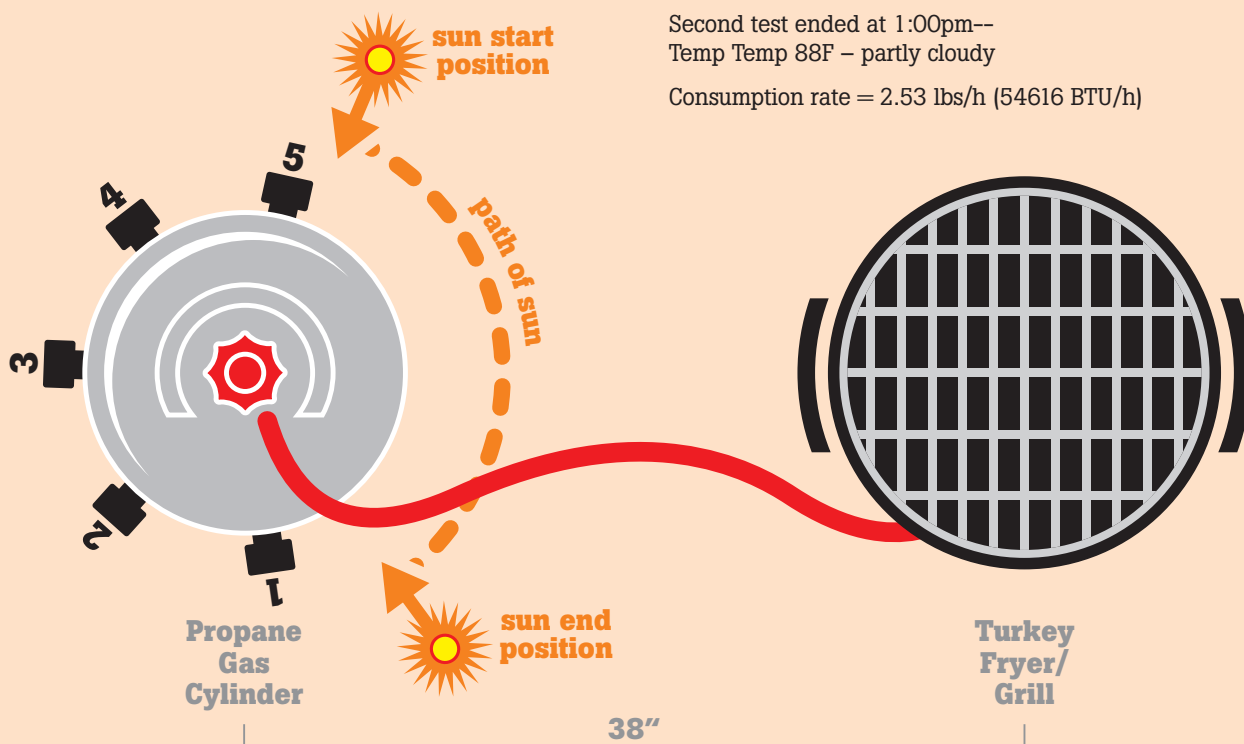
Unit #3 activated after 176 minutes.
(Temp 88F -- partly cloudy)

Units #4 & #5 activated after 180 minutes.
(Temp 88F -- partly cloudy)

Gross weight of tank at end = 20.64 lbs.
Propane in tank at end of testing = 2.47 lbs (20.64-18.17)

Second test ended at 1:00pm--
Temp Temp 88F -- partly cloudy

Consumption rate = 2.53 lbs/h (54616 BTU/h)



PROPANE GasGenie®

NEVER RUN OUT OF PROPANE AGAIN!

Slow test - (14,986 BTU/h)

Test Setup

Use an OPD tank (from an exchange program) to operate a Char-Broil gas grill. The tank sensors will be placed around the side of the tank, as low on the tank as possible (bottom of sensor unit 67mm from the base of the tank). The grill is to be positioned so that the tank is level. Equipment is to be set up one hour prior to the start of testing to allow temperatures to stabilize. Atmospheric conditions (temperature, cloud cover, solar position, etc.) are to be recorded and changes during testing noted.

Testing Method

The Grill will be lit and operated with both valves on the minimum setting (14,000 BTU/h level) for 3-4 hours. The grill would then be turned OFF and allowed to cool for 1/2 to 1 hour. This process is to be repeated until all sensors have indicated a low fuel condition. Records are to be kept of the time at which a sensor detects a low fuel level. The tank weight is to be recorded once the last sensor has indicated a low fuel condition.

TESTING

28-8-03 - Test started at 1:00pm - Temp 86F - sunny
Four sensor units were mounted equi-spaced around the tank.

Gross weight of tank at start = 25.47lbs.
Propane in tank at start of testing = 7.30lbs (25.47-18.17)

Test halted at 5:15pm-- Temp 87F - overcast

Units #2 & 3 activated after 4h 30m. (Temp 80F - sunny)
Estimated amount of propane 4.5 x .690lbs/h = 3.11
7.3 - 3.11lbs = 4.19lbs

Unit #1 activated after 5h 15m. (Temp 83F - sunny)
Estimated amount of propane 5.25 x .690lbs/h = 3.62
7.3 - 3.62lbs = 3.68lbs

Unit #4 activated after 7h 15m. (Temp 87F - sunny)
Estimated amount of propane 7.25 x .690lbs/h = 5.003
7.3 - 3.10lbs = 2.3lbs

29-8-03 - Test ended (after 9h 45m total) - Temp 90F - sunny

Gross weight of tank at start = 18.95lbs

Propane in tank at end of testing = 0.78lbs (18.95-18.17)

6.52lbs/567 minutes/60 minutes = 0.690lbs/h

Consumption rate = 0.690lbs/h (14,986 BTU/h)

