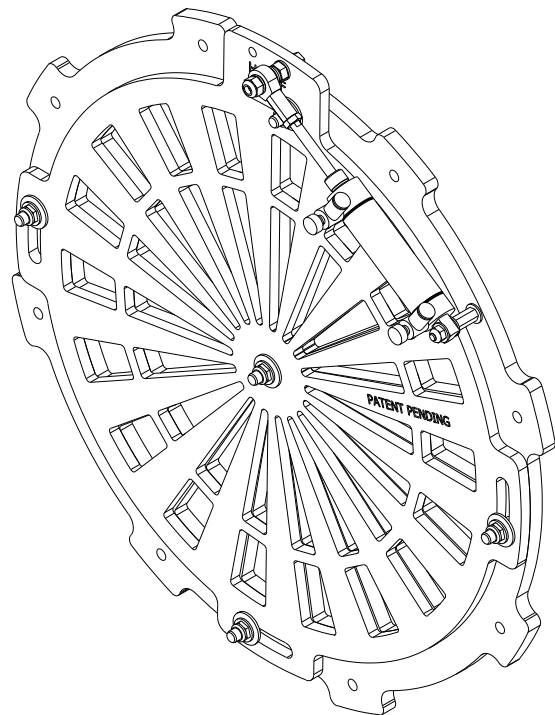


Dryer StarGate (Sonny's Dryer)

# Installation & Operations Manual



Model No.:

Part No.: **699605**

Description: **DRYER STARGATE (SONNY'S DRYER)**

Revision Date: **February 18, 2020**

Release Date: **January 17, 2019**

PECO Corporation – 244 Rex Boulevard – Auburn Hills – Michigan – 48326 – USA – 1-248-299-5800

# Dryer StarGate (Sonny's Dryer)

## General Warning

READ ENTIRE MANUAL CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE THE PECO Equipment. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION AND ADDITIONAL INSTRUCTIONS INCLUDED WITH THIS EQUIPMENT. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE!

## Product Description & Specification

### System Description:

This Dryer StarGate fits over the intake nozzle of the latest model of Sonny's Dryer. This unit is designed to control the air flow entering the dryer housing. This gate device opens and closes the inlet of the dryer. With the gate closed, there is no air flow exiting the dryer nozzle. While closed, the air load is removed from the impeller, dramatically reducing the amp draw of the motor. Close the Dryer Stargate between vehicles to reduce power consumption. In addition, this device can be used with an Open Bed Detector to automatically prevent the Dryer from blowing water, foam, or debris out of a Pick-Up Truck Bed.

### System Technical Data:

**699605 STARGATE**

**Construction:** PVC.

**Air Requirements:** .5 cfm at 40 psi (14.1 lpm @ 0.28 MPa)

**Shipping Weight:** 15 lbs. (6.8 kg)

# Dryer StarGate (Sonny's Dryer)

## General Safety Information

All **WARNINGS, CAUTIONS, AND SAFETY TIPS** below concern the safe installation, operation, and service of your PECO Equipment. Please abide by this information; it is listed for your protection. Review thoroughly with all personnel working on or near this machine.

- NEVER ATTEMPT TO WORK ON THE EQUIPMENT WHILE IT IS RUNNING.
- PERSONNEL MUST BE TRAINED IN SAFE OPERATING PROCEDURES. ALL PERSONNEL SHOULD REVIEW THIS MANUAL PERIODICALLY.
- EMERGENCY STOP BUTTONS MUST BE WELL MARKED AND THEIR LOCATION AND OPERATION REVIEWED WITH ALL PERSONNEL.
- MAINTENANCE OR REPAIR WORK ON EQUIPMENT MUST BE PERFORMED ONLY BY TRAINED EMPLOYEES ASSIGNED BY THE CAR WASH OPERATOR.
- DO NOT WEAR LOOSE FITTING CLOTHING WHEN WORKING ON OR AROUND EQUIPMENT.
- WHEN OPERATING THE MACHINERY OR PERFORMING MAINTENANCE WORK, AT LEAST TWO QUALIFIED PERSONNEL MUST BE ON HAND. EXTREME CARE MUST BE EXERCISED TO AVOID THE NORMAL HAZARDS ASSOCIATED WITH MOVING MACHINERY.
- ALL CAR WASHES SHOULD HAVE A HORN OR ALARM THAT SOUNDS PRIOR TO EQUIPMENT STARTING.
- DO NOT OPERATE EQUIPMENT IF ANY COMPONENT MALFUNCTION IS FOUND.
- NO UNAUTHORIZED INDIVIDUALS SHOULD BE PERMITTED NEAR THE EQUIPMENT AT ANY TIME. CLEAR THE AREA OF PEOPLE AND ANY LOOSE DEBRIS PRIOR TO STARTING THE WASH.
- NEVER ATTEMPT TO CLEAN AROUND THE EQUIPMENT WHEN THE UNIT IS RUNNING. KEEP ALL LOOSE ITEMS, SUCH AS, HOSES, WIRE, AND ROPE AWAY FROM THE MOVING EQUIPMENT.
- LOCK OUT THE ELECTRICAL SUPPLY TO THE DRYER PRIOR TO SERVICING THIS UNIT.
- LOCK OUT THE AIR SUPPLY TO THE UNIT PRIOR TO SERVICING THIS MACHINE.
- DO NOT OPERATE EQUIPMENT FOR ANY OTHER PURPOSE THAN EXPRESSED IN "SYSTEM DESCRIPTION" SECTION AT THE BEGINNING OF THIS GUIDE.

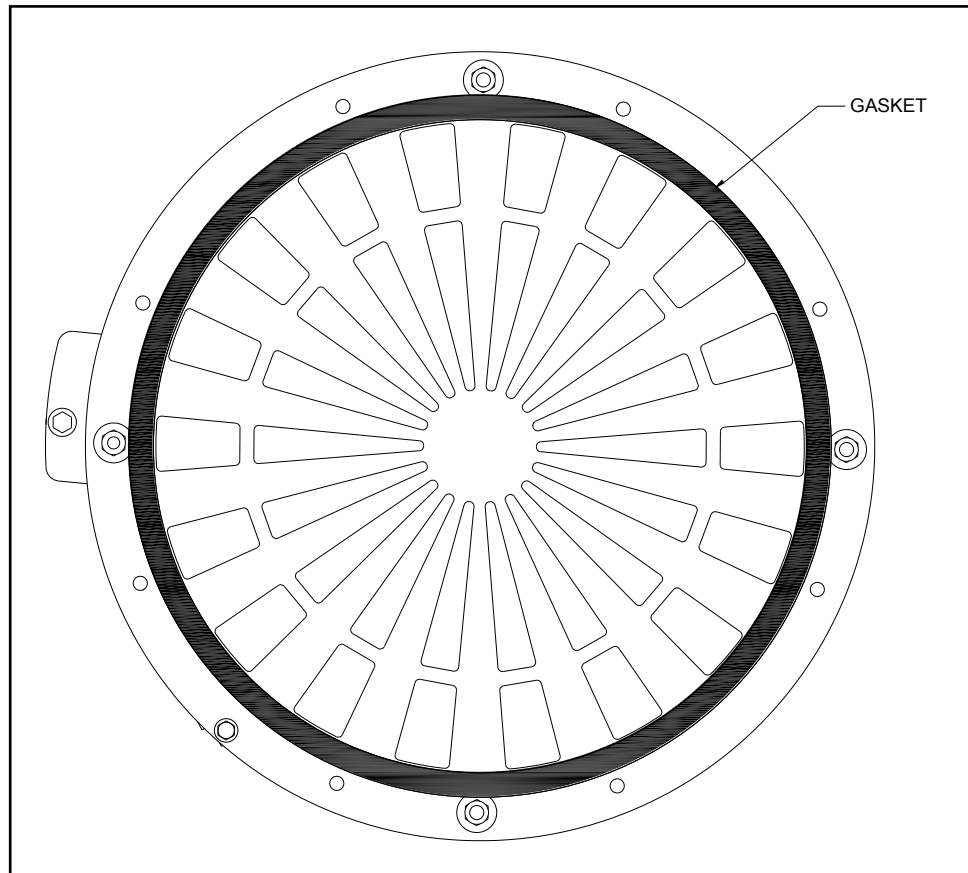
# Dryer StarGate (Sonny's Dryer)

**YOU MUST USE ANTI-SEIZE ON ALL STAINLESS STEEL NUTS AND BOLTS TO PREVENT GALLING, CROSS-THREADING, AND FROZEN HARDWARE.**

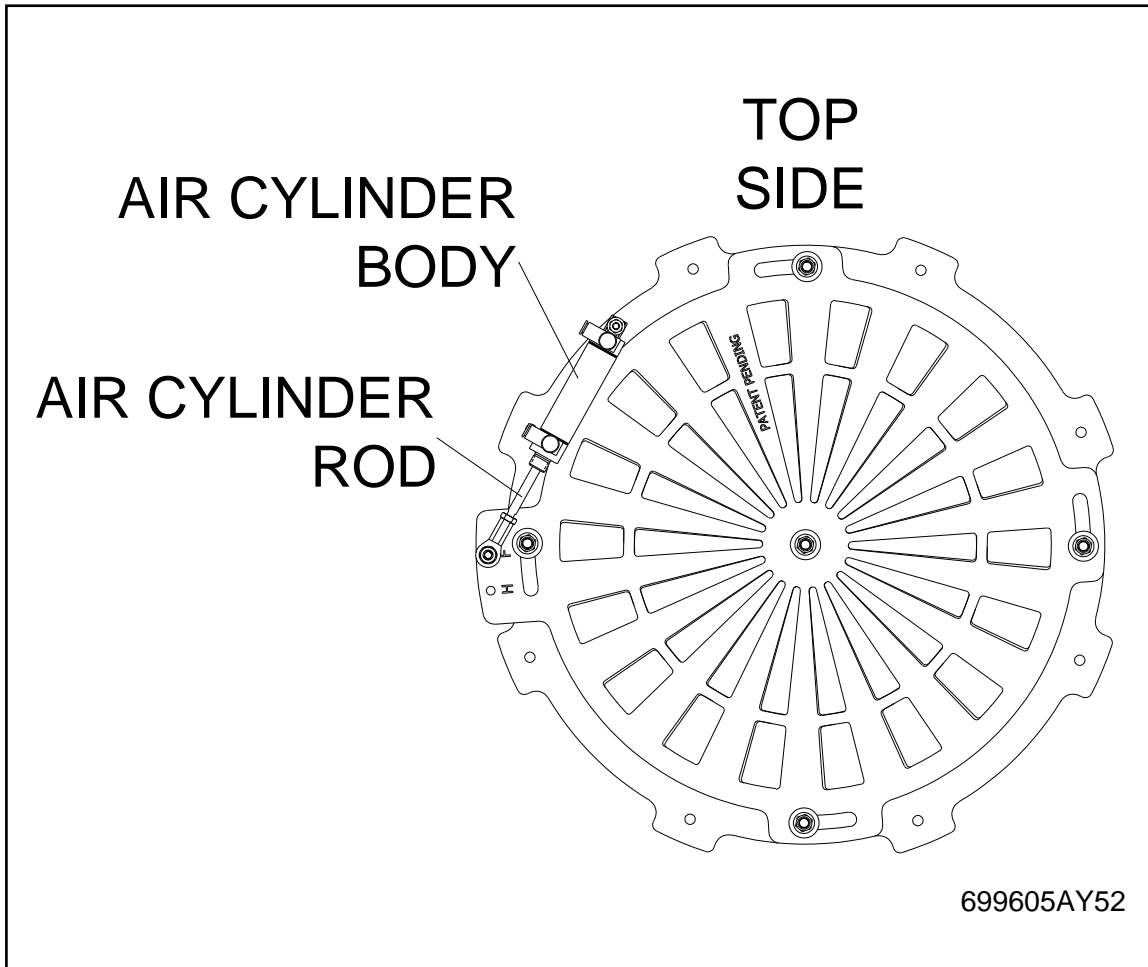
## Installation Procedures

### Disassembly Steps:

1. Lockout the power to the dryer motor(s).
2. Remove the Inlet Screen by removing the four attachment bolts and washer. Keep the bolts and washers for mounting the Stargate on the Inlet Cone.
3. Use the supplied gasket between the Stargate and the Dryer Inlet Cone. Attach the Stargate to the Dryer Inlet Cone with the existing hardware. Orient the Stargate so the air cylinder rod is lower than the cylinder body. This will promote longer cylinder life.



# Dryer StarGate (Sonny's Dryer)

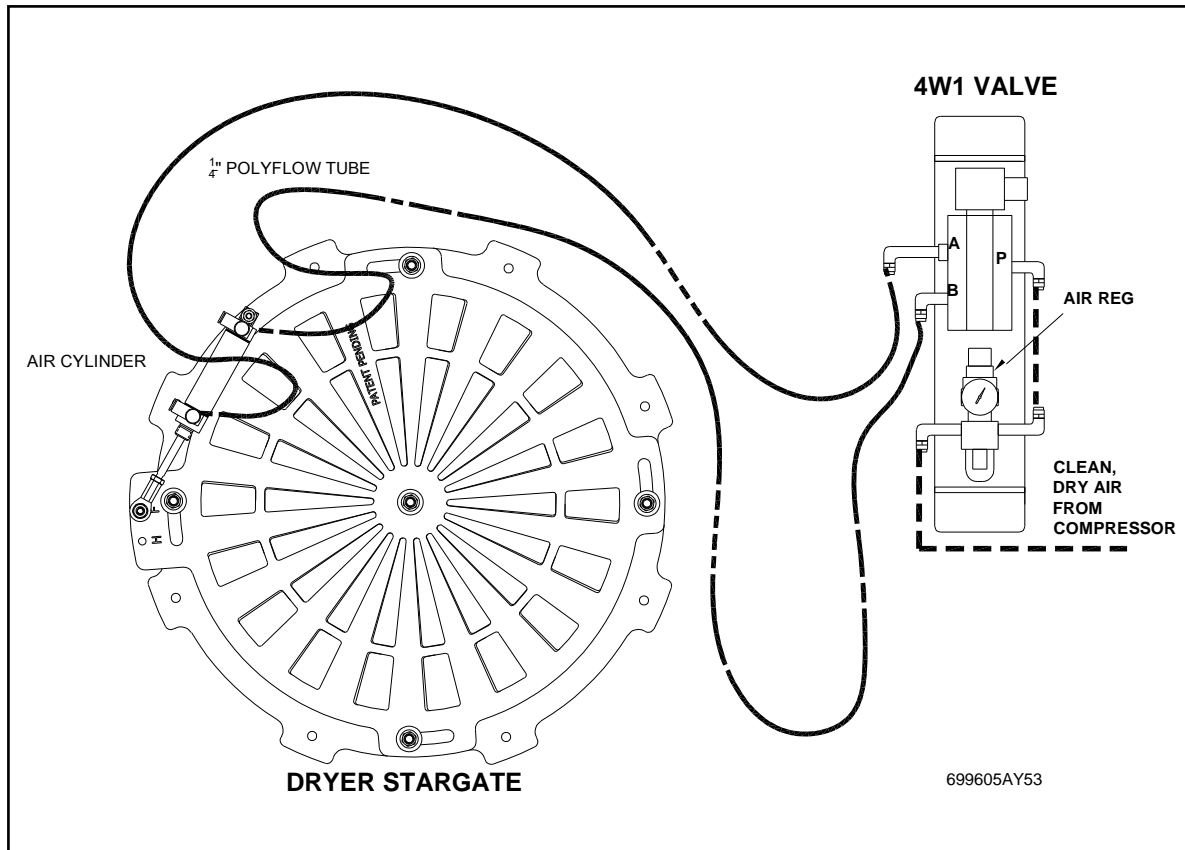


# Dryer StarGate (Sonny's Dryer)

## Operation Adjustments

### Air Connections

1. Connect air supply lines (1/4" polyflow) from 4-Way Valve (4W1) to the Air Cylinder Control Valve on the Stargate.
2. Supply clean, dry air to the 4-Way valve. Moisture laden air fouls the cylinder and control valves causing erratic operation.
3. Route two 1/4" Polyflow Tubes from the 4W1 Air Solenoid to the Air Cylinder on the Stargate. Take care not to block the inlet of the dryer with these air lines. Secure the Polyflow with wire ties after testing is complete.



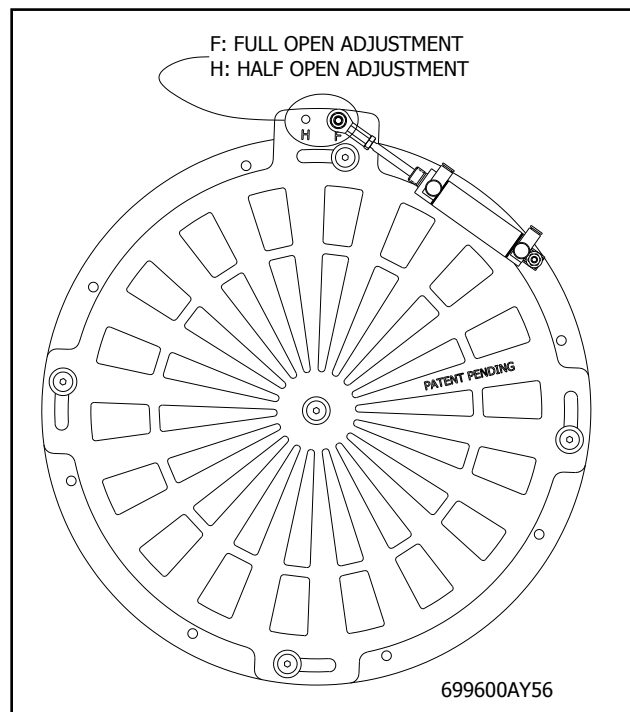
# Dryer StarGate (Sonny's Dryer)

## Operation Information

1. **Connect the air to the cylinder in a manner that the Stargate is in the normally closed position.**
2. **Program the tunnel controller to open the Stargate when the vehicle nears the dryer.**
3. **Typically, one 4W1 will operate four Stargates. However, the length of run will affect this number. We suggest one 4W1 for every two Stargates.**

## Adjustments

1. **Increase or decrease to air pressure regulator on the 4-Way valve to pivot the Stargate. Start at 40 psi.**
2. **Adjust the valves on each air cylinder to produce a smooth, steady pivoting action for the Stargate. Open or close the valves on the cylinder to speed up or slow down the pivoting action. Do not let the gate slam open or closed.**
3. **Move the bolt attached to the rod end bearing from F to H to reduce the opening position and decrease the air flow. Typically, this is done for StarGates when used in conjunction with a Shammy Dry setup.**



# Dryer StarGate (Sonny's Dryer)

## Maintenance Schedule

Maintenance Performed	Daily	Weekly	Monthly	6-Months	Yearly
Observe Pivoting Motion		X			
Check for excessive Wear on Gate Components		X			
Clean Gate surface with a mild detergent and compressed air				X	

## Recommended Replacement Parts List

Part Number	Description	Comments
027805	CYLINDER, 1-1/16 BORE x 2 STROKE	
010535	BRG-ROD END-5/16, STD FM	

## Trouble Shooting Chart

Trouble	Possible Cause	Probable Remedy
Gate not pivoting or moving erratically.	Loss of air pressure	Check air supply lines.
	Not enough air pressure	Increase air pressure by small amount and observe performance
	Tunnel controller not adjusted	Adjust if necessary
	Control valves on air cylinder not adjusted	Adjust if necessary by opening or closing.
	Clogged or dirty air control valves	Clean valves and use air dryer on air compressor



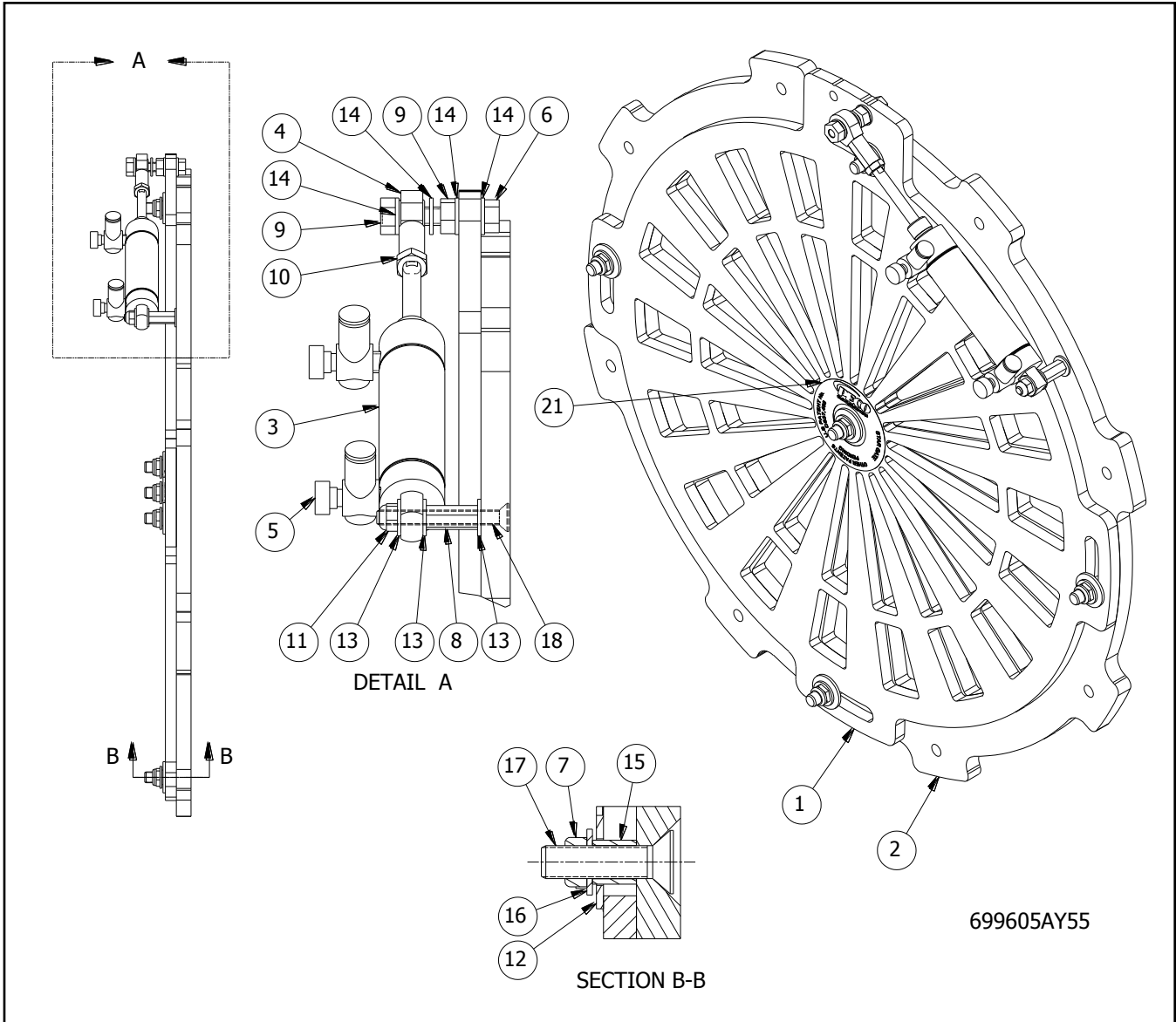
# Dryer StarGate (Sonny's Dryer)

## Replacement Parts List

ITEM	NAME	DESCRIPTION	QTY
1	699849	DR-STARGATE-PVC, BAFFLE	1
2	699847	DR-STARGATE-PVC, SONNY'S	1
3	027805	CYLINDER, 1-1/16" BORE x 2" STROKE (SS BODY)	1
4	010535	BRG-ROD END-5/16, STD FM	1
5	318995	VALVE, FLOW CONTROL 1/8" NPT x 1/4" TUBE	2
6	600087	BOLT-HEX-SS, 5/16 - 18 x 1-3/4 (FULL THREAD)	1
7	600132	NUT-NYLON INSERT-SS, 3/8 - 16 JAM	5
8	600109	NUT-COUPLING-SS, 1/4 - 20	1
9	600184	NUT-SS, 5/16 - 18 ESNA	2
10	600108	NUT-HEX-SS, 5/16 - 24 JAM	1
11	600186	NUT-NYLON INSERT-SS, 1/4 - 20	1
12	600135	WASHER-FLAT-SS, 1/2 SAE	5
13	600147	WASHER-FLAT-SS, 1/4 SAE	3
14	600178	WASHER-FLAT-SS, 5/16 SAE	4
15	015100	SPACER-ALUM, 1/2 OD x 3/8 ID x 1/2	5
16	600133	WASHER-FLAT-SS, 3/8 SAE	5
17	017132	SCREW-SOCKET CAP-SS, 3/8-16 x 1 1/2 (FLAT HD) (82° COUNTERSINK)	5
18	017131	SCREW-SOCKET CAP-SS, 1/4-20 x 2 1/4 (FLAT HD) (82° COUNTERSINK)	1
19	699874	DR-GASKET-FOAM, PECO DRYER (3/4"W x 1/8"T)	1
20	950023	BOX, 22 x 22 x 6	1
21	950480	DR-DECAL, "STARGATE PATENT NUMBERS" (2.8750"OD x 1.3125"ID)	1

# Dryer StarGate (Sonny's Dryer)

## Replacement Parts List Diagram



# Dryer StarGate (Sonny's Dryer)

Packed By:	Date: / /
Inspected By:	Date: / /

Serial #

# Packing List

**DRYER STARGATE  
(SONNY'S DRYER)**

**699605**

DRYER STARGATE

Part Number	Description	Qty.	Shipped
699605	STARGATE UNIT	1	_____
699874	DR-GASKET-FOAM, PECO DRYER	72"	_____
699605ML	MANUAL, STARGATE	1	_____