

TR-75713

Pneumatic Tank-Full Shut-Off

Copyright ©2007 Durham GeoSlope Indicator. All Rights Reserved.

This equipment should be installed, maintained, and operated by technically qualified personnel. Any errors or omissions in data, or the interpretation of data, are not the responsibility of Durham Geo Slope Indicator. The information herein is subject to change without notification.

This document contains information that is proprietary to Durham Geo Slope Indicator and is subject to return upon request. It is transmitted for the sole purpose of aiding the transaction of business between Durham Geo Slope Indicator and the recipient. All information, data, designs, and drawings contained herein are proprietary to and the property of Durham Geo Slope Indicator, and may not be reproduced or copied in any form, by photocopy or any other means, including disclosure to outside parties, directly or indirectly, without permission in writing from Durham Geo Slope Indicator.



2175 West Park Court
Stone Mountain, GA 30087, USA
Tel: 800-837-0864 Fax: 770-465-7447
E-mail: dge-solutions@durhamgeo.com
Website: www.DGSI.info

Contents

Pneumatic Tank-Full Shut-Off.....	1
Installation	2
Operational Testing	4
Maintenance.....	5
Troubleshooting	5
Parts list	6
Specifications.....	9

Pneumatic Tank Full Shut-Off

Method of Operation

The TR-72713 Pneumatic Tank-Full Shut-Off is employed to shut off the air supply to a pneumatic operated pump, typically a free floating product skimming pump such as the FAP+ZW, before the level of the recovered product over-tops the product storage tank.

The TR-75713 Pneumatic Tank-Full Shut Off aluminum guide tube is inserted into the product storage tank thru the supplied 2" male pipe threaded bushing. Other large pipe thread openings can be reduced by the appropriate threaded bushing (supplied by others), but the 2 inch diameter aluminum guide tube assembly must be inserted at least 12 inches into the tank's interior. The compressed gas used to power the pneumatic pump(s) is connected to the "AIR INPUT" ¼" push to connect tube fitting on the Pneumatic Tank-Full Shut Off. The Compressed gas that will power the pumps is connected to the "TO PUMP" ¼" in push-to-connect tube fitting on the unit. (3/8" hose barbs are included for longer hose runs on multi-well installations). When the storage tank is near capacity, the floats within the guide tube rise with the level of the product. When the product level is approximately half way up the aluminum guide tube the upper float which has a large rare earth magnet embedded in the top will jump to the bottom of the PVC enclosure. This snap action is due to the magnetic attraction of another magnet within the enclosure that is affixed to the actuator beam of the control valve. When this occurs, the air valve will close, shutting off the air supply to the pump(s). The small amount of compressed gas down stream of the unit will be consumed by the pump(s) after a few cycles.

When the TR-75713 Pneumatic Tank-Full Shut-Off is supplying compressed air to the pump(s) the indicator just above the compressed gas connections will be green. After the valve closes and the pump(s) consume the down stream compressed gas, the indicator will become black.

To reset the TR-75713 Pneumatic Tank-Full Shut-Off, the product storage tank must first be emptied of the recovered product. The black ball knob on the reset bar must then be lifted to it's full upward extent. The magnet inside of the enclosure will be moved far enough from the magnet in the upper float to allow it to move/fall to it's lowest position in the guide tube. When these steps have been completed the compressed gas supply will be reestablished to the pump(s).

Installation

1. Tools Required

1. Pipe wrench 18"
2. 2 each adjustable wrenches; 8" & 10"
3. #2 Philips Head Screw driver
4. 7/64" Size Allen Key
5. 1/4" Open End Wrench
6. Ruler or tape measure



2. Attach 2" threaded bushing into product storage tank.



3. Place the aluminum guide tube on the TR-75713 into the bushing on the storage tank.



4. Attach ¼" O.D. tubing to the "AIR INPUT" and "TO PUMP". Push to connect tube fittings.



5. To reset unit, empty product storage tank and then lift up on black knob as shown.

Note: The unit may need to be reset during initial installation.

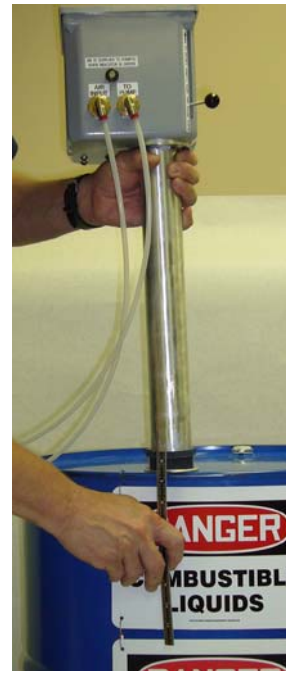


6. 5. Use wrenches on the bulk head fittings to prevent it from rotating when removing or installing larger fittings. Failure to keep the bulk head from turning will result in damaged components inside the enclosure.



**OPERATIONAL
TESTING OF
TR-75713**

With the compressed gas supply turned on and the unit reset, remove the unit from the tank keeping the aluminum guide tube vertical. Use a ruler to slowly push up on the black float that is housed in the 2" diameter aluminum guide tube as shown. When the float has been lifted between 4 to 5 inches, the upper float that houses the rare earth magnet will make the jump to the magnet in the enclosure. This snap action will shut off the compressed air supply to the pump(s). After a pump(s) cycles the Pressure Indicator will change from green to black.



MAINTENANCE

Under normal operation there is no maintenance required, but it is suggested that when the site personnel are on location, that the operational test as described above be performed on the unit.

TROUBLE SHOOTING

If the TR-75713 fails to shut the compressed gas supply off, perform the following steps to determine and correct the problem.

1. Remove the 4 screws from the lid and with the compressed gas supply on, check for any gas leaks. If there are no leaks, continue to step 2. If there is air leakage, then replace the $\frac{1}{4}$ " O.D. polyethylene or $\frac{5}{32}$ " O.D. urethane tubing as required. If the valve is leaking, it must be returned to the factory for repair.

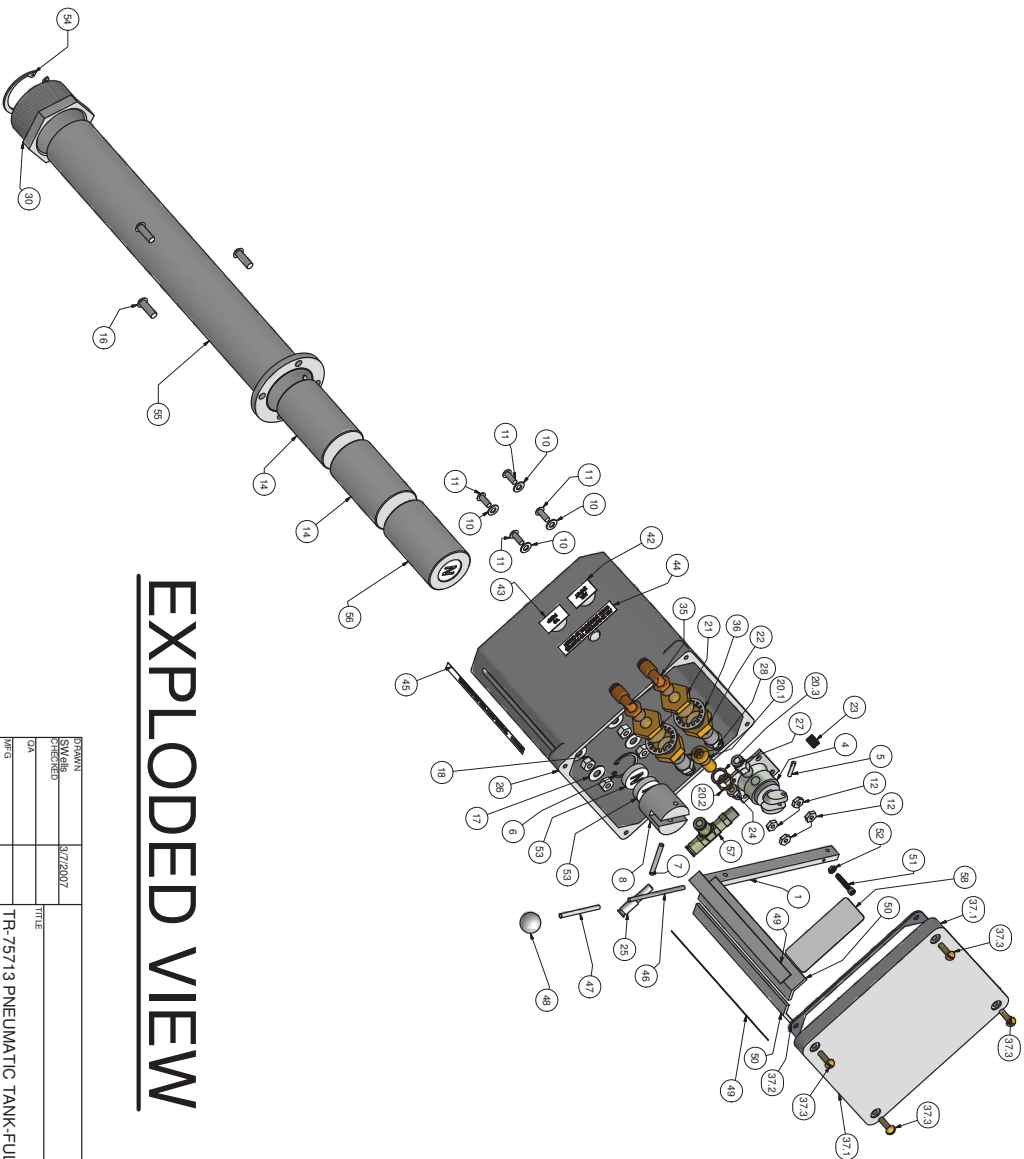


2. Perform the operational test but do not reset the TR-75713. (Refer to the exploded view drawings for further reference). The magnets that are on the beam air valve will be attached to the magnets that are in the upper float. The magnet holder beam will be pulled to the bottom of the PVC enclosure. Next, loosen the 6-32 locknut as shown with a $\frac{1}{4}$ " open end wrench. Using a $\frac{7}{64}$ " hex key wrench tighten the 6/32 cap head screw slowly clock wise until the valve closes. Then while holding the hex key wrench stationary, tighten the lock nut. Perform the Operational Test to make certain the adjustment will close the valve completely before securing the lid.



REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
A	RELEASE FOR PRODUCTION	6/8/2007	SWH/s

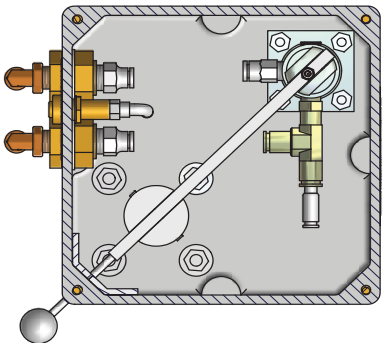
Parts List		
ITEM	QTY	PART NU DESCRIPTION
1	1	602327 BEAM, AIR VALVE
4	1	602653 HUMPHREY VALVE 125T
5	1	PIN VALVE
6	1	602651 RETAINING RING 1" INTERNAL
7	1	602650 ROLL PIN 5/32" X 13/8"
8	1	602328 MAGNET HOLDER BEAM
10	4	WASHER #10 18-8 SS
11	4	SCREW 10-32 X 1/2" BTH 18-8
12	4	NUT 10-24 18-8 SS
14	2	602341 FLOAT W/O MAGNET
16	4	SCREW BUTTON HEAD 1/4 X 20 X 3/4
17	4	WASHER FLAT 1/4" 18-8 SS
18	4	NUT 1/4" X 20 18-8 SS
20	1	602648 INDICATOR ASSEMBLY
20.1	1	INDICATOR BODY
20.2	1	NUT, INDICATOR
20.3	1	INDICATOR WASHER
21	2	2151207 BULK HEAD BODY 1/4" NPT
22	2	BULK HEAD NUT
23	1	2151238 PIPE PLUG HEX 1/8" SS
24	1	602647 TUBE FITTING 90 SWIVEL 5/32 T X 10-32
25	1	2151258 TUBE REDUCER 1/4" TO 5/32"
26	1	602333 ENCLOSURE PVC
27	1	2151190 TUBE FITTING 1/4" TUBE X 1/8 MNPT
28	2	2151167 TUBE FITTING 1/4" TUBE X 1/4" MNPT
30	1	602655 TANK BUSHING
35	2	2151144 TUBE FITTING 90 SWIVEL 1/4" T X 1/4" MNPT
36	2	BULK HEAD WASHER
37	1	ENCLOSURE LID ASSEMBLY
37.1	1	ENCLOSURE LID
37.2	1	ENCLOSURE GASKET
37.3	4	ENCLOSURE SCREW
42	1	602656 "AIR INPUT" LABEL
43	1	602657 "TO PUMP" LABEL
44	1	602658 "AIR IS" LABEL
45	1	602659 "TO RESET" LABEL
46	1	602831 ALL THREAD 6-32 X 2 1/2" L SS
47	1	HEAT SHRINK TUBING
48	1	602832 BALL KNOB
49	2	601887 TAPE DOUBLE SIDED
50	2	602834 FELT POL YESTER WHITE
51	1	602833 SCREW CAP HEAD 6/32 X 7/8 "L SS
52	1	NUT 6-32 TPI 18-8 SS
53	2	602836 MAGNET 1" DIA. X 1/4" T.
54	1	602837 INTERNAL RETAINING RING 1 7/8"
55	1	602838 GUIDE TUBE WELDMENT
56	1	602839 FLOAT WITH MAGNETS
57	1	602646 TEE SWIVEL 1/4" TUBE X 1/8" MNPT
58	1	DGSI LOGO LABEL



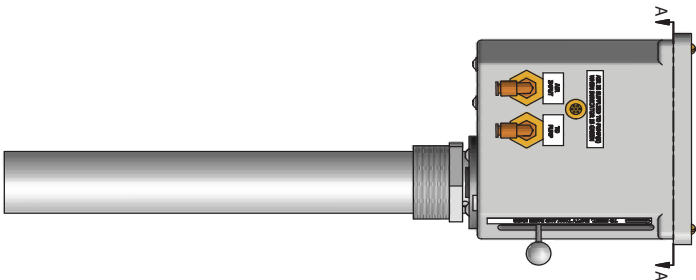
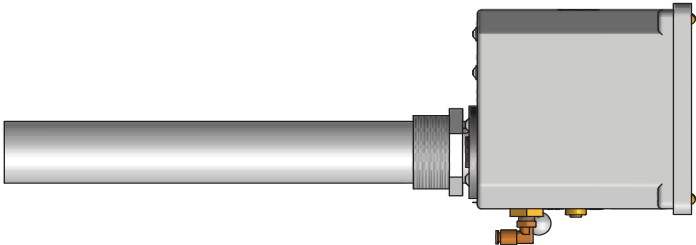
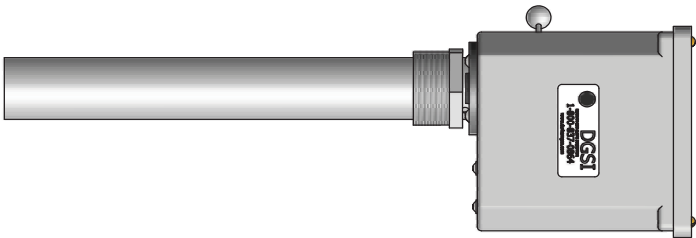
EXPLODED VIEW

DESIGN	3/7/2007	TITLE	TR-75713 PNEUMATIC TANK-FULL
CHECKED			
DATE			
APPROVED			
SIZE		DATE	REV
ID	602661		A
SCALE		SHEET	1 OF 3

REVISION HISTORY		DATE	APPROVED
REV	DESCRIPTION		
A	RELEASE FOR PRODUCTION	6/8/2007	SWAIS



SECTION A-A



DRAWN		3/7/2007	TITLE	
SWAIS				
CHECKED				
OK				
WFG			TR-75713 PNEUMATIC TANK-FULL SHUT OFF	
APPROVED				
SIZE		DWG NO	REV	
D		602661	A	
SCALE		SHEET 2 OF 3		

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
A	RELEASE FOR PRODUCTION	8/28/17	Sveas

TUBING 1/4" O.D.
POLYETHYLENE X
3 3/4" LONG

TUBING 5/32 O.D.
URETHANE X
14.5" LONG

1/4" O.D. TUBING
POLYETHYLENE X
4" LONG

TUBING, RUNS, SIZE AND LENGTHS

DESIGNED			TITLE	
DRAWN			TR-75713 PNEUMATIC TANK-FULL	
CHECKED	3/17/2017		SHUT OFF	
QA			SIZE	
APPROVED			DRAWING	
			SCALE	
			SHEET 3 OF 3	

SPECIFICATIONS FOR THE TR-75713 PNEUMATIC TANK-FULL SHUT-OFF

Enclosure	PVC and 6061 aluminum
Chemical Compatibility, Exterior Component	Refined petroleum products
Compressed Gas Supply	0 to 100 PSI, filtered to 40 microns (see note 1)
Compressed Gas Consumption.....	0 SCFM
Control Valve	2 way normally open, 20 SCFM At 100 PSI (see note 2)
Operating Temperature.....	33 to 120°F. (see note 3)
Compressed Gas Connections.....	Primary ¼" O.D. push-to-connect tubing fittings Secondary ¼" female NPT on bulk heads
Operation Status Indicator	Pressure indicator colorimetric, "Green" compressed gas is supplied to pumps, "Black" compressed gas is shut off to pump(s)
Reset After Shut Down	Manually operated

Note 1: The use of synthetic oil in an air compressor can cause chemical deterioration of components in the control valve that could result in failure of the unit.

Note 2: The TR- 75713 can support up to six each FAP+ZW skimmer pumps. Consult with a factory representative before using a larger number.

Note 3: If the unit must be operated in temperatures less than 33°F. a desiccant air dryer must be used to reduce the dew point of the moisture in the compressed gas to a lower temperature than ambient. If using inert compressed gas, check with the supplier concerning the dew point temperature of the inert gas supplier.