

# Air Leak Detection Report

For

## **TEVA LTD Demo**

### **Barrow Site**

23rd May, 2011

Inspection No. 10915



prevention  
is better than  
cure



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# Air Leak Detection Report

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ULTRASOUND INSPECTION  
OF  
COMPRESSED AIR PROBLEMS

Provided for

Report Date: 23/05/2011

**TEVA Ltd , Barrow-in-Furness**

**Overview:**

The Ultrasound Air Leak Inspection was performed by T.E.V.A. Ltd, by a competent Field Service Engineer. All of the items inspected are listed in this InspecTrend report. Any anomalies are listed in order of priority based on the component's leak severity. T.E.V.A. Ltd assumes no liability directly or indirectly as a result of this inspection.

**Current Inspection No: 10915 May 23, 2011**

Prior Inspection No:

Priority	Current Inspection	Prior Inspection	Percent of Change
1-Critical	0 = 0%	NA	NA
2-Serious	0 = 0%	NA	NA
3-Important	10 =100%	NA	NA
4-Minor	0 = 0%	NA	NA
<b>Total Tested Problems:</b>	<b>10</b>	NA	NA

Number of New Documented Problems: 10 =100% NA NA

Number of Tested re-occurring Problems: 0 = 0% NA NA

Number of prior problems which were Not Tested this inspection : NA

Number of Total Open Problems **9**

Number of prior problems which tested Normal this inspection : NA

I hereby certify the above project was inspected by myself or under my direction and that the enclosed data is the direct result of this inspection.

**T.E.V.A. Ltd**

Eccles, Stuart

\* Summary of reoccurring problems on following page(s)

## Cost Benefit Analysis Report

<u>Problem ID</u>	<u>Component Comment</u>	<u>CFM Value</u>	<u>Cost per Year</u>
V1	Air Leak - Compressed Air Leak on solenoid block (5.7)	3.3	£520.34
V2	Air Leak - Compressed Air Leak on top of filter around guage connection (6.2)	2.3	£362.66
V3	Air Leak - Compressed Air Leak on pipework from compressor 1 (6.0)	2.3	£362.66
V4	Air Leak - Compressed Air Leak on pnumatic control valve (5.2)	4	£630.72
V5	Air Leak - Compressed Air Leak on union to silo 2 pnumatic control unit (6.3)	2	£315.36
V6	Air Leak - Compressed Air Leak on connection to solenoid valve (5.2)	4	£630.72
V7	Air Leak - Compressed Air Leak on pipework to filter unit (6.3)	2	£315.36
V8	Air Leak - Compressed Air Leak on air gun flex (5.3)	2	£315.36
V9	Air Leak - Compressed Air Leak on filter connection (4.6)	4.3	£678.02
V10	Air Leak - Compressed Air Leak on pipework connection above 'D' Refiner (6.8)	1.8	£283.82

Estimated Annual Savings using Generic Data

**£4,415.04**

As an example, this is the calculation we are using for 4.9 (CFM) x 1.8 (pence) / 100 (£) x 24 (hours) x 365 (days). The estimated leak cost per year would therefore be £772.63.

As a rule of thumb: 1 kW per hour produces 5 CFM at a cost of 9 pence (or 1.8 pence per CFM)



TEVA Ltd  
Barrow-in-Furness

# Documentation/ Work Order Compressed Air Leak

InspectionNo: 10915  
Report Date: 23/05/2011

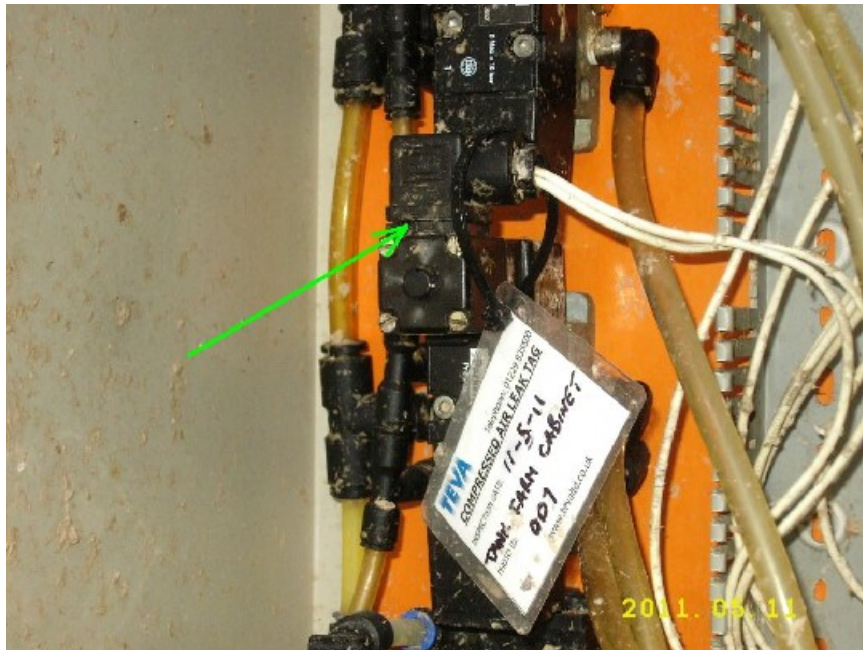
Work Order #:

10915-1

Current Prob No: Visual/1

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW TANK FARM MAIN SUPPLY CAB

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	solenoid block leaking
Observations:	Air Leak - Compressed Air Leak on solenoid block (5.7)
What is the Cause:	air leak



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

### Repair Information

Consequences of Failure:

Repair Date:

Repaired By:

Root Cause:

Repair Recommendation:

Repair air leak if possible. If not replace item

Repair Procedure:

Repair air leak if possible. If not replace item

Repair Notes:

Photo File:

Photo Date:

DSCI0001a.JPG

This report was generated by InspectTrend and this inspection was performed by: T.E.V.A. Ltd

InspectionNo: 10915  
 Report Date: 23/05/2011

Work Order #:

10915-2

Current Prob No: Visual/2

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW COMPRESSOR HOUSE FILTER UNIT 1

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	air leak of top of filter
Observations:	Air Leak - Compressed Air Leak on top of filter around guage connection (6.2)
What is the Cause:	air leak



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

**Repair Information**

Consequences of Failure:

Repair Date:

Repaired By:

Root Cause:

Repair Recommendation:

Make seal good around guage

Repair Procedure:

Make seal good around guage

Repair Notes:

Photo File:

Photo Date:

DSCI0018a.JPG

This report was generated by InspectTrend and this inspection was performed by: T.E.V.A. Ltd



TEVA Ltd  
Barrow-in-Furness

# Documentation/ Work Order Compressed Air Leak

InspectionNo: 10915  
Report Date: 23/05/2011

Work Order #:

10915-3

Current Prob No: Visual/3

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW COMPRESSOR HOUSE COMPRESSOR 1

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	on pipework
Observations:	Air Leak - Compressed Air Leak on pipework from compressor 1 (6.0)
What is the Cause:	air leak on pipework



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

### Repair Information

Consequences of Failure:

Repair Date:

Repaired By:

Root Cause:

Repair Recommendation:

Re-seal and make joint good

Repair Procedure:

Re-seal and make joint good

Repair Notes:

Photo File:

Photo Date:

DSCI0001.JPG

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TEVA Ltd  
Barrow-in-Furness

# Documentation/ Work Order Compressed Air Leak

InspectionNo: 10915  
Report Date: 23/05/2011

Work Order #:

10915-4

Current Prob No: Visual/4

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW DE-INK AREA CELL 2

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	on open/ close control valve
Observations:	Air Leak - Compressed Air Leak on pnumatic control valve (5.2)
What is the Cause:	Wear and/ or damage to seals



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

### Repair Information

Consequences of Failure:

Repair Date:

Repaired By:

Root Cause:

Repair Recommendation:

Shut down and check seals for damage. Replace if necessary

Repair Procedure:

Shut down and check seals for damage. Replace if necessary

Repair Notes:

Photo File:

Photo Date:

DSCI0025a.JPG

This report was generated by InspectTrend and this inspection was performed by: T.E.V.A. Ltd



TEVA Ltd  
Barrow-in-Furness

# Documentation/ Work Order Compressed Air Leak

InspectionNo: 10915  
Report Date: 23/05/2011

Work Order #:

10915-5

Current Prob No: Visual/5

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW BASEMENT SILO 2

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	on union
Observations:	Air Leak - Compressed Air Leak on union to silo 2 pneumatic control unit (6.3)
What is the Cause:	air leak



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

### Repair Information

Consequences of Failure:

Repair Date:

Repaired By:

Root Cause:

Repair Recommendation:

Repair Procedure:

Repair Notes:

Photo File:

Photo Date:

DSCI0026a.JPG

This report was generated by InspectTrend and this inspection was performed by: T.E.V.A. Ltd

InspectionNo: 10915  
Report Date: 23/05/2011

Work Order #:

10915-6

Current Prob No: Visual/6

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW MACHINE HOUSE PM1 AREA CALENDAR ROLL CONTROL CAB

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	air leak on connection to solenoid valve
Observations:	Air Leak - Compressed Air Leak on connection to solenoid valve (5.2)
What is the Cause:	air leak



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

**Repair Information**

Consequences of Failure:

Repair Date:

Repaired By:

Root Cause:

Repair Recommendation:

Repair air leak if possible. If not replace item

Repair Procedure:

Repair air leak if possible. If not replace item

Repair Notes:

Photo File:

Photo Date:

DSCI0022a.JPG

This report was generated by InspectTrend and this inspection was performed by: T.E.V.A. Ltd



TEVA Ltd  
Barrow-in-Furness

# Documentation/ Work Order Compressed Air Leak

InspectionNo: 10915  
Report Date: 23/05/2011

Work Order #:

10915-7

Current Prob No: Visual/7

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW MACHINE HOUSE PM2 AREA PM2 PUMP HOUSE FILTER UNIT

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	on pipework to filter
Observations:	Air Leak - Compressed Air Leak on pipework to filter unit (6.3)
What is the Cause:	air leak



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

**Repair Information**

Consequences of Failure:

Repair Date:

Repaired By:

Root Cause:

Repair Recommendation:

Make pipework seal good

Repair Procedure:

Make pipework seal good

Repair Notes:

Photo File:

Photo Date:

DSCI0023a.JPG

This report was generated by InspectTrend and this inspection was performed by: T.E.V.A. Ltd

InspectionNo: 10915  
Report Date: 23/05/2011

Work Order #:

10915-8

Current Prob No: Visual/8

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW MACHINE HOUSE PM1 AREA PM1 WINDER

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	on air gun flex
Observations:	Air Leak - Compressed Air Leak on air gun flex (5.3)
What is the Cause:	Damaged air line



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

**Repair Information**

Consequences of Failure:

Repair Date:

Repaired By:

Root Cause:

Repair Recommendation:

Cut back. Re-fix air gun ensuring connection is sealed and tight.

Repair Procedure:

Cut back. Re-fix air gun ensuring connection is sealed and tight.

Repair Notes:

Photo File:

Photo Date:

DSCI0029.JPG

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TEVA Ltd  
Barrow-in-Furness

# Documentation/ Work Order Compressed Air Leak

InspectionNo: 10915  
Report Date: 23/05/2011

Work Order #:

10915-9

Current Prob No: Visual/9

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW BASEMENT PM1 SEC 2 F/S

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	on filter connection
Observations:	Air Leak - Compressed Air Leak on filter connection (4.6)
What is the Cause:	Loose/ Bad connection



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

### Repair Information

Consequences of Failure:

Repair Date:

Repaired By:

Repair Recommendation:

Re-seal and tighten connection

Root Cause:

Repair Procedure:

Re-seal and tighten connection

Repair Notes:

Photo File:

Photo Date:

DSCI0017a.JPG

This report was generated by InspectTrend and this inspection was performed by: T.E.V.A. Ltd

InspectionNo: 10915  
 Report Date: 23/05/2011

Work Order #:

10915-10

Current Prob No: Visual/10

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	TEVA LTD BARROW REFINER ROOM MAIN PIPEWORK RING MAIN

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Air Leak
Hazard Classification:	Energy Loss
Hazard Group:	Air Leak
Hazard Issue:	on pipework
Observations:	Air Leak - Compressed Air Leak on pipework connection above 'D' Refiner (6.8)
What is the Cause:	air leak on pipework



**PLEASE PROVIDE FEEDBACK AFTER REPAIR**

Loss to Production

Yes  No  Unknown

**Repair Information**

Consequences of Failure:

Repair Date:

Repaired By:

Root Cause:

Repair Recommendation:

Re-seal and make joint good

Repair Procedure:

Re-seal and make joint good

Repair Notes:

Photo File:

DSCI0181a.JPG

Photo Date:

This report was generated by InspectTrend and this inspection was performed by: T.E.V.A. Ltd



## List of All Open Problems

TEVA Ltd  
Barrow-in-Furness

Operation Priority Key
CTO = Critical to operation
ETO = Essential to operation
NON = Non-essential to operation
UNC = Un-Classified

Report Date: 23/05/2011

Prior Inspection No :

Current Inspection No : 10915 May 23, 2011

Asset ID	Operation Priority	Prob#	Insp#	Temp Rise	% Load	Severity	Status
Equipment: TEVA LTD BARROW \ BASEMENT \ PM1 SEC 2 F/S Component: Air Leak - Compressed Air Leak on filter connection (4.6)	CTO	V 9	10915			3-Important	TESTED
Equipment: TEVA LTD BARROW \ BASEMENT \ SILO 2 Component: Air Leak - Compressed Air Leak on union to silo 2 pneumatic control unit (6.3)	CTO	V 5	10915			3-Important	TESTED
Equipment: TEVA LTD BARROW \ COMPRESSOR HOUSE \ COMPRESSOR 1 Component: Air Leak - Compressed Air Leak on pipework from compressor 1 (6.0)	CTO	V 3	10915			3-Important	TESTED
Equipment: TEVA LTD BARROW \ COMPRESSOR HOUSE \ FILTER UNIT 1 Component: Air Leak - Compressed Air Leak on top of filter around guage connection (6.2)	CTO	V 2	10915			3-Important	TESTED
Equipment: TEVA LTD BARROW \ DE-INK AREA \ CELL 2 Component: Air Leak - Compressed Air Leak on pneumatic control valve (5.2)	CTO	V 4	10915			3-Important	TESTED
Equipment: TEVA LTD BARROW \ MACHINE HOUSE \ PM1 AREA \ CALENDAR ROLL CONTROL CAB Component: Air Leak - Compressed Air Leak on connection to solenoid valve (5.2)	CTO	V 6	10915			3-Important	TESTED
Equipment: TEVA LTD BARROW \ MACHINE HOUSE \ PM1 AREA \ PM1 WINDER Component: Air Leak - Compressed Air Leak on air gun flex (5.3)	CTO	V 8	10915			3-Important	TESTED
Equipment: TEVA LTD BARROW \ MACHINE HOUSE \ PM2 AREA \ PM2 PUMP HOUSE \ FILTER UNIT Component: Air Leak - Compressed Air Leak on pipework to filter unit (6.3)	CTO	V 7	10915			3-Important	TESTED
Equipment: TEVA LTD BARROW \ TANK FARM \ MAIN SUPPLY CAB Component: Air Leak - Compressed Air Leak on solenoid block (5.7)	CTO	V 1	10915			3-Important	TESTED

This report was generated by InspectTrend and this inspection was performed by: T.E.V.A. Ltd



**List of Closed Problems For This Inspection**

TEVA Ltd  
Barrow-in-Furness

<b>Operation Priority Key</b>
CTO = Critical to operation
ETO = Essential to operation
NON = Non-essential to operation
UNC = Un-Classified

Report Date: 23/05/2011

Prior Inspection No :

Current Inspection No : 10915 May 23, 2011

	<u>Asset ID</u>	<u>Operation Priority</u>	<u>Prob#</u>	<u>Insp#</u>	<u>Temp Rise</u>	<u>% Load</u>	<u>Severity</u>	<u>Status</u>
Equipment: TEVA LTD BARROW \ REFINER ROOM \ MAIN PIPEWORK RING MAIN		CTO	V 10	10915			3-Important	TESTED
Component: Air Leak - Compressed Air Leak on pipework connection above 'D' Refiner (6.8)								



## Current Inspection Inventory Status

**TEVA Ltd**  
**Barrow-in-Furness**

**Report Date: 23/05/2011**

**Inspected By :** Eccles, Stuart

Prior Inspection No:

Current Inspection No: 10915

### Problem Type Key

E = I/C Electrical  
 TD = T/D Electrical  
 M = Mechanical  
 V = Visual Inspection

### Operation Priority Key

CTO = Critical to operation  
 ETO = Essential to operation  
 NON = Non-essential to operation  
 UNC = Un-Classified

### Equipment Test Status Key

TBT = To Be Tested  
 NT/NL = Not Tested/No Load  
 NT/TC = Not Tested/Time Constraint  
 NT/UR = Not Tested/Under Repair  
 NT/LO = Not Tested/Locked Out  
 NT/NA = Not Tested/Not Available  
 NT/TC = Not Tested/Time Constraint  
 NT/NS = Not Tested/Not Specified  
 NSF1 = Not Selected for this insp.

Tested	Next Insp. Date	CTO	Problem #	Barcode	Asset ID	Equipment Name	Test Status Notes
TESTED	22/05/2012	CTO				TEVA LTD BARROW	
TESTED	22/05/2012	CTO				BASEMENT	
TESTED	22/05/2012	CTO				PM1 SEC 1 F/S	
TESTED	22/05/2012	CTO	V9			PM1 SEC 2 F/S	
TESTED	22/05/2012	CTO				PM1 SEC 2 F/S	
TESTED	22/05/2012	CTO				PM1 SEC 4 F/S	
TESTED	22/05/2012	CTO	V5			SILO 2	
TESTED	22/05/2012	CTO				COMPRESSOR HOUSE	
TESTED	22/05/2012	CTO				AIR RECEIVER 12	
TESTED	22/05/2012	CTO				AIR RECEIVER 13	
TESTED	22/05/2012	CTO	V3			COMPRESSOR 1	
TESTED	22/05/2012	CTO	V2			FILTER UNIT 1	
TESTED	22/05/2012	CTO				FILTER UNIT 2	
TESTED	22/05/2012	CTO				DE-INK AREA	
TESTED	22/05/2012	CTO	V4			CELL 2	
TESTED	22/05/2012	CTO				MACHINE HOUSE	
TESTED	22/05/2012	CTO				PM1 AREA	
TESTED	22/05/2012	CTO	V6			CALENDAR ROLL CONTROL CAB	
TESTED	22/05/2012	CTO	V8			PM1 WINDER	
TESTED	22/05/2012	CTO				PM2 AREA	
TESTED	22/05/2012	CTO				PM2 PUMP HOUSE	
TESTED	22/05/2012	CTO	V7			FILTER UNIT	
TESTED	22/05/2012	CTO				REFINER ROOM	
TESTED	22/05/2012	CTO				MAIN PIPEWORK RING MAIN	
TESTED	22/05/2012	CTO				REFINER 'A'	
TESTED	22/05/2012	CTO				REFINER 'B'	
TESTED	22/05/2012	CTO				STOCK PREP AREA	
TESTED	22/05/2012	CTO				TANK FARM	

This report was generated by InspecTrend and this inspection was performed by: T.E.V.A. Ltd



# Current Inspection Inventory Status

**TEVA Ltd**  
**Barrow-in-Furness**

**Report Date: 23/05/2011**

**Inspected By :** Eccles, Stuart

Prior Inspection No:  
Current Inspection No: 10915

Tested	Next Insp. Date	CTO
TESTED	22/05/2012	CTO

Problem #	Barcode	Asset ID
V1		

Equipment Name
MAIN SUPPLY CAB

Test Status Notes

### Problem Type Key

E = I/C Electrical
TD = T/D Electrical
M = Mechanical
V = Visual Inspection

### Operation Priority Key

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NT/UR = Not Tested/Under Repair
NT/LO = Not Tested/Locked Out
NT/NA = Not Tested/Not Available
NT/TC = Not Tested/Time Constraint
NT/NS = Not Tested/Not Specified
NSFI = Not Selected for this insp.