



### INSPECTION REPORT

To:	xxxxxxx	Attn:	xxxxxxx
From:	Troika Inspection Service Co., Ltd	Report Date:	xxxxxxx

Project No.:	: xxxxxxxx
Vendor Name	: xxxxxxxx
Factory Name	: xxxxxxxx
Factory Address	: xxxxxxxx
Order No. / PO No.	: xxxxxxxx
Product description:	: Domestic diaphragm meters
Inspection Date:	: xxxxxx

#### 1.0 Scope of Inspection:

The purpose of this visit is to witness the test according to ITP SP17401/GGL/20170228/01 Rev.0

Equipment description:	Domestic diaphragm meters	
I.T.P. line number	Inspection Activity	Results
Body & internal Parts	Material of Body & Trim review	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
Calibration	Calibration, accuracy, 3 Point Calibration Qmin, 0.2Qmax, Qmax	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
Leak Test	Body Leak Test	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
	Pressure absorption	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
	Functional test Pressure (max. pressure & Operating pressure), Flow - Maximum Flow	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
Assembly	Centre to centre distance of inlet and outlet connection , Dimension-Size , Seal, Marking , Construction & workmen ship , threading, Colour and appearance, Meter	<input type="checkbox"/> Accepted without deviation <input checked="" type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject

#### 2.0 Reason for visit

In order to certify the materials supplied according to the purchase order are fully in accordance with the technical and commercial conditions as specified in the purchase order and all of its attachments including applicable specification and codes, as proposed by sub-vendor on XXX, the inspector witnessed the dimension, visual inspection, leakage test;

#### 3.0 Documentation used

DOCUMENT NUMBER	REV. No.	TITLE	Approval Status
SP17401/GGL/20170228/01	0	ITP	By purchaser
EN 1359	2014	Gas meters- Diaphragm meters	By purchaser

**4.0 Details of inspection performed**

**4.1 Quantity inspection**

In the QAP the total quantity for the order is 50000 pieces and during this visit vendor plan to ship 12500 pcs; after inspection finished on April 1, 2017, all 12500 pieces were finished and packed;

Description	PO QTY	Actual QTY	Finished	Packed
Domestic diaphragm meter BK-G1.6	50000 pcs	12500 pcs	12500 pcs	12500 pcs

**4.2 Packing inspection**

Outer package:

The boxes packed in carton. Four inner boxes in each carton;

Inner package:

The meter was packed in box; the outlet and the inlet were protected by plastic caps

Remark: the results are subjected to buyer's evaluation.

**4.3 Marking inspection**

Marking on gas meter and inner package



Remark: the marking on the gas meter it is in compliance to the requirements in EN1359;

Marking on shipping carton



- Remark: 1. The product date is marked as May, 2017 on side mark instead of 03-2017 marked on product;  
 2. The results subjected to buyer's evaluation as no detail instruction from client;

**4.4 Visual Quality Inspection**

According to QAP 2 percent of gas meter were sampled for visual inspection;  
 Sample size: 250pcs  
 Reference document: QAP No: SP17401/GGL/20170228/01 Rev.0  
 The thread of inlet and outlet are protected with yellow plastic cap.  
 The paint is grey and no obvious visual defect was found.  
 The direction of arrow is from left to right.  
 The emergency call sticker was found on meter body. No: 1800 102 9282  
 During inspection the inspector just found 3pcs with slight painting scratch.



Picture a: slight painting scratch

Picture b: slight painting scratch

Remark: the results subject to buyer's evaluation.

**4.5 Calibration, Pressure absorption and Function test**

According to QAP 2 percent of gas meter were sampled for test;  
 Sample size: 250pcs  
 Reference document: QAP No: SP17401/GGL/20170228/01 Rev.0  
 During this inspection, total 250 samples were randomly selected, the details are as following:  
 The products were kept in the clean room under testing condition for 10 hours.



The testing condition was as following:

Temperature	Relative Humidity	Air pressure
18.0~220C	55~70%	98.4~99.0KPa

5.1 Pressure loss test:

Pressure loss (Pa)		Result
Required	Checked	
Max 200	40-140	Acceptable
The Oscillation of each meter Max.40	4.5-16	Acceptable

5.2 Flow rate error test:

Flow rate point	Flow rate (L/h)	Permissible error	Result
Qmax	2500	±1.5%	-0.95%~+1.10%
0.2Qmax	500	±1.5%	-0.95%~+0.86%
Qmin	16	±3%	-2.94%~+2.61%

The data of test result were in following attachment:



05\_Calibration, function and lea

Remark: The results are acceptable. For client did not supplied relative drawing or Spec. Also supplier did not agree to supply us their drawings. The dimension and tolerance is supplied by supplier.

4.6 Witness Body leak test

According to QAP 2 percent of gas meter were sampled for body leak test;

Sample size: 250pcs

Reference document: QAP No: SP17401/GGL/20170228/01 Rev.0

During this inspection, total 250 samples were randomly selected to check, the details are as following:

Description	Sample size	Required	Pressure 1.5 Pmax	Test duration (30S)
BK-G1.6 Gas Meter	250pcs, serial number see attachment	Actual test	(78Kpa-85Kpa)	30S
		Result	No leakage was found.	

Remark: The serial numbers were in attachment "05\_Calibration, function and leak test data witness". The results are acceptable.

4.7 Dimension check

According to QAP 2 percent of gas meter were sampled for dimension inspection;

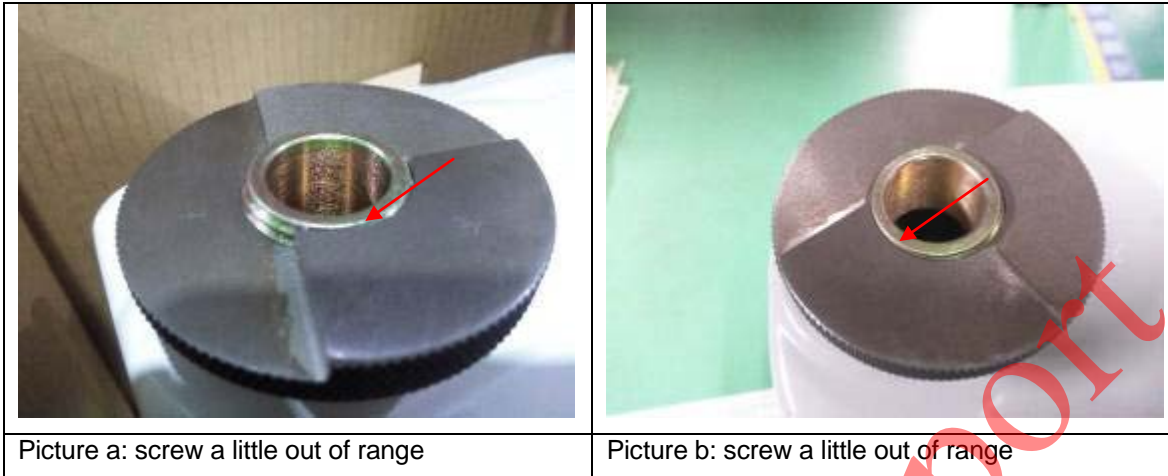
Sample size: 250pcs

Reference document: QAP No: SP17401/GGL/20170228/01 Rev.0

During this inspection, total 250 samples were randomly selected, the details were as following:

Unit: mm

Required gauge	NPT3/4" thread gauge				
Result:	248pcs: Ok with gauge (2pcs a little out of range)				
	outlet and inlet	dimension			
	Centre to center distance of inlet and outlet connection	Meter length	Meter width	Meter height	Painting thickness
Required	110mm	205mm	157mm	221mm	-
	No tolerance specification from supplier or client				
Checked	109.82~110.08	204.46~205.32	156.86~157.05	210.85~221.06	99.9-108µm



Remark: Samples' serial numbers are in attachment "05\_Calibration, function and leak test data witness". The results are subjected to buyer's evaluation. For client did not supplied relative drawing or Spec. Also supplier did not agree to supply us their drawings.

**4.8 AMR Compatibility test**

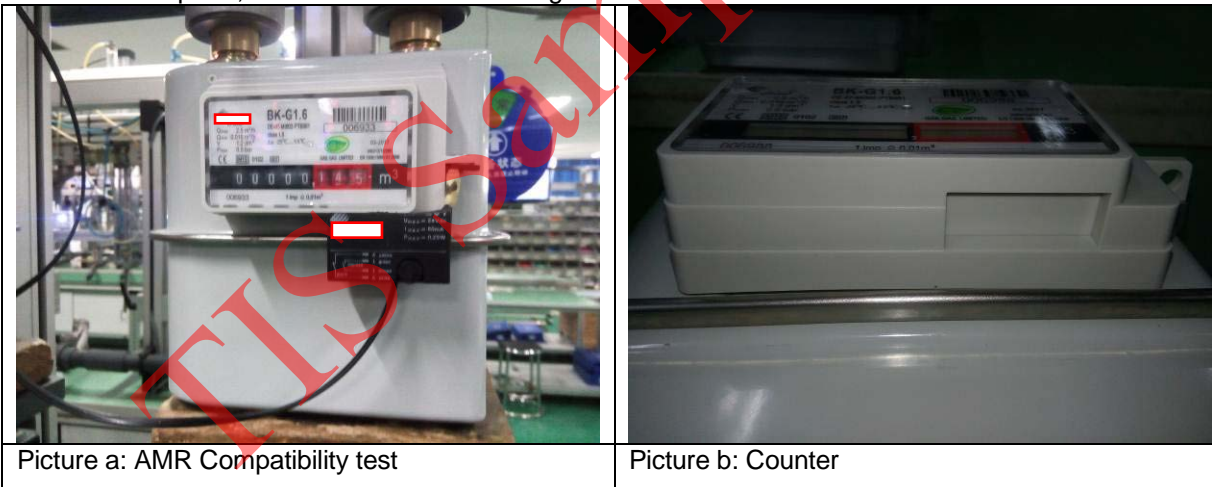
According to QAP 2 percent of gas meter were sampled for AMR Compatibility test;

Sample size: 250pcs

Reference document: QAP No: SP17401/GGL/20170228/01 Rev.0

During this inspection, total 250 samples were randomly selected to this test according to buyer's requirement, the details were as following:

The test was performed after clarification with manufacturer. Manufacturer install signal reader on meter, and this reader connect to computer, software can show meter gas flow on interface.



Remark: The results are acceptable.

**4.9. Used test equipment:**

Type of equipment	Identification No.	Status of Calibration
Caliper	LS01-00789	Up to 2018-03-21
Height caliper	LS0310001	Up to 2017-04-17
Thread gauge	8	Up to 2017-07-19
Painting thickness meter	N610580	Up to 2017-09-14



5.0. Result of Inspection

Accepted without deviation  Accepted with deviation  Reject

6.0. Quality Records reviewed and attached:

- 6.1 Reviewed material report of body, report is in attachment "01\_material report of body".
- 6.2 Reviewed material report of diaphragm, report is in attachment "02\_material report of diaphragm".
- 6.3 Reviewed body leak test, function test, calibration test report is in attachment "04\_Calibration, function and leak test data review".
- 6.4 Witnessed body leak test, function test, calibration test report is in attachment "05\_Calibration, function and leak test data witness".
- 6.5 Reviewed BK-G1.6 type certificate, it is attachment "03\_BK-G1.6 type certificate\_ DIN-EN1359\_ Zul-Zertifikat- NG-4701BM0442\_\_2017-4-1"
- 6.6 Reviewed Compliance Certificate, it is attachment "06\_Compliance Certificate".
- 6.7 Reviewed leakage warranty, "07\_Leakage Warranty".
- 6.8 Calibration certificate  
Remark: the results subject to buyer's evaluation.

7.0 Progress Status

- The material is ready for delivery if client accept this lot;

8.0 Next Forecasted Inspection Date:

TBA;

9.0 Attendees

- Mr. XXX supplier inspector
- Mr. XXX TIS inspector on behalf of XXX

Any deviation & PUNCH attached : Yes <input checked="" type="checkbox"/> No, <input type="checkbox"/>	Punch No.: XXXX
IRN attached : Yes <input type="checkbox"/> No, <input checked="" type="checkbox"/>	IRN No.: NA

10. Photo Report

	
<p>finished products stowed in warehouse</p>	<p>packing condition</p>
	
<p>shipping mark</p>	<p>side mark</p>
	
<p>inner packing</p>	<p>inner packing</p>



detail of product



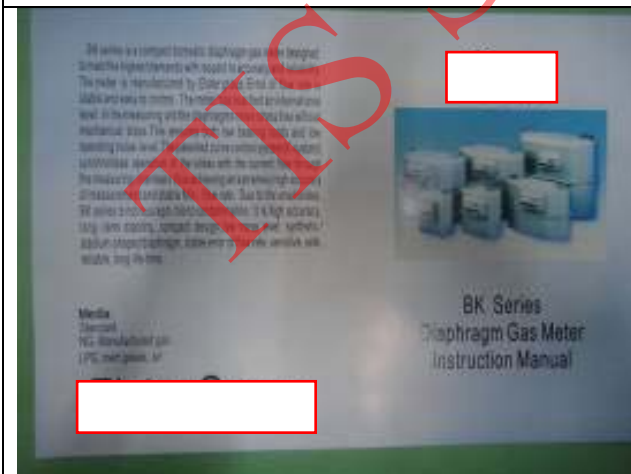
detail of product



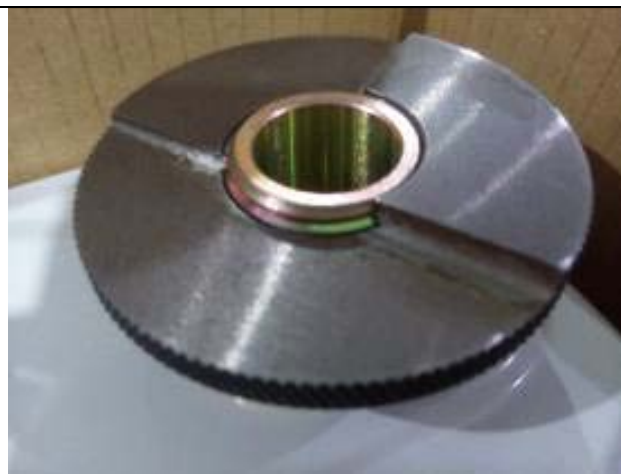
detail of product



manual



manual



thread gauge test;





dimension inspection



dimension inspection



dimension inspection



visual inspection



weight check



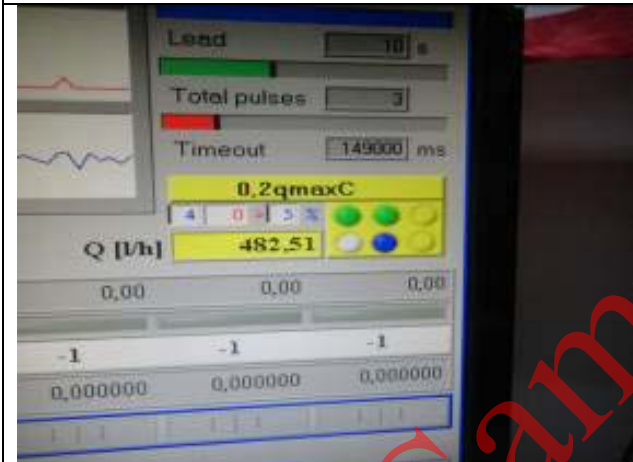
selected samples for test



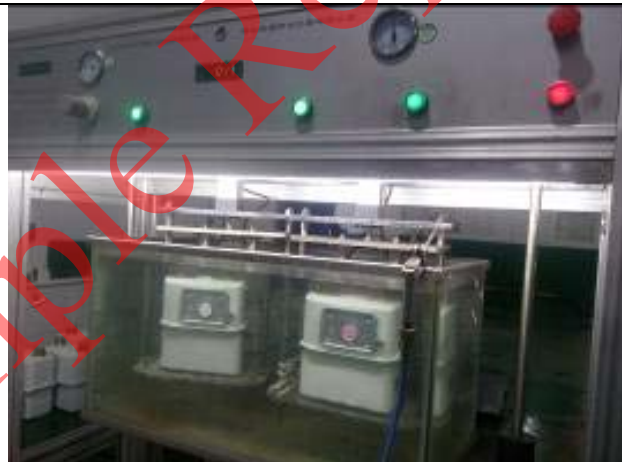
calibration and pressure absorption testing



test result



test result



body leak test



AMR compatibility test



AMR compatibility test



gas meter is suitable for AMR compatibility test



paint thickness test

Prepared by : xxxxx

Signed: xxxxxx

Date: xxxxx

Reviewed by : xxxxxxx

TIS Sample Report