



*Quality Management Program*



# Importance of Quality Assurance Programs

*“It has become increasingly more difficult for the customer to be assured they have received the material and quality product they have specified”*

## Is the Product Received the Product You Purchased?

Today, valves and actuators are manufactured worldwide with many simply “Brand Labeled” for sale by non-manufacturing suppliers. Quality Assurance programs have long existed for foundries and machine shops of professional manufacturers, but are often non-existent for those companies selling “Brand Labeled” products. Quite often this absence of a quality assurance program by non-manufacturing companies results in materials, finished parts and assemblies which are not in compliance with the specifications. As a result it has become increasingly more difficult for the customer to be assured they have received the material and quality product which has been specified.

Product liability and performance is directly related to the product quality and a major concern of any customer who must have the assurance they are receiving products with the material and quality level that meet their requirements.

Bray International understands that to be truly successful worldwide, we must provide assurance to our customers that they are indeed receiving the highest quality product. With this in mind, Bray has established a Quality Assurance Program worldwide based on state-of-the-art technology and procedures in material and product testing.

This brochure provides an overview of Bray International’s Quality Assurance Program utilized worldwide to provide products and services that meet our customer requirements.

### Bray’s Commitment to Quality

Bray International recognizes that *“our success is totally dependent upon our customers”* and they have a choice of many manufacturers when selecting valves, actuators and accessories for their applications. Since most manufacturers have access to providing the same materials of construction for these products, Bray believes that the customer’s purchase of products is heavily based on the following key factors:

- **Trust in the Manufacturer**
- **Confidence in the Quality Assurance and Integrity of the Manufacturer**
- **Quality, Features and Benefits of the Product**
- **Delivery**
- **Field Service**
- **Price**

Bray International recognizes that in today’s global environment the products offered must meet or exceed the quality standards required by the customer. It is with this understanding Bray has made a continuous commitment to providing the highest quality in the industry worldwide. Whether the customer purchases the product from Bray USA, Bray China or any Bray Division worldwide, they will have the assurance the products are produced under the same “Bray Quality Management Program”. As a result, Bray International has become the leading manufacturer of butterfly valves, ball valves, check valves, quarter-turn actuators and accessories in the world.

### Product Testing:

- **Valve Testing** - All Bray valves are pressure tested to 110% of rated pressure to assure bubble tight shutoff.
- **Actuator Testing** - All Actuators are calibrated and cycle tested before shipment. Pneumatic actuators are also pressure tested to assure no leakage.
- **Material Traceability** - Material certifications can be provided upon request for all valve pressure retaining components.
- **Positive Material Identification (PMI)** – As required by PED, materials are subjected to PMI testing to verify material traceability certificates.

### Material Testing:

Brays Mechanical testing labs are equipped with **fully calibrated equipment in accordance with International and NIST requirements** for testing and verifying chemical and physical properties of a wide variety of materials.



**Receiving Inspection:**  
Positive Material Identification (PMI)  
Performed at Receiving Inspection.

### Magnetic Particle Tester (MP)

Magnetic Particle testing is carried out in accordance with ASME Section V Article 7 and ASTM E 709.



# Quality Assurance Management

*“Bray’s Quality Assurance Management Program is supported by Third Party Certifications & Approvals and extensive product testing.”*



## Third Party Certificates and Product Approvals

The basis for Bray International’s high level of quality assurance are the quality control guidelines and procedures submitted, reviewed and approved in accordance with criteria established within ISO 9001 and EU Directives.



### Nuclear “N” Stamp Certification

The Certificate of Authorization from the American Society of Mechanical Engineers (ASME) authorizes Bray to use the N-stamp symbol. The N-stamp can be applied by Bray Controls, USA to Class 2 & 3 valves constructed in its Houston, Texas facility, which meet the requirements of the ASME Boiler and Pressure Vessel Code.



### Fire-Safe

API 607 5th Edition, EN10497, TA Luft and US Navy NAVSEA Certified  
All Bray double and triple offset design valves meet or exceed the latest international fire test requirements.

### CE/PED (Pressure Equipment Directive)

PED, which includes valves and fluid pressured actuators, requires that all equipment within its scope must not only be safe for the applicable pressures but manufactured of the materials specified by the customers. Manufacturers with products having the PED approval carry the label and are subject to legal action should products be supplied with incorrect materials.



### NSF (National Sanitation Foundation)

Bray EPDM seated/Nylon 11 encapsulated ductile iron disc valves are NSF approved for use in Potable water service.



### SIL

Series 92/93 Pneumatic Actuators  
Flow-Tek Ball Valves



### Marine

- ABS
- DNV
- CCS



# Quality Policy

*“By performing and monitoring our activities as specified within our documented Quality System, we will continue to improve our products, processes and services while meeting or exceeding our customer’s expectations.”*

## Precision Test Samples:



Cast Bars with full Traceability to Heat Numbers



Precision Machined Test Bars in Accordance with ASTM A-370



Profiling of Test Bars Prior to Tensile Testing

## Tensile Testing:

Tensile Testing: in Accordance with ASTM A-370 Standard Test Methods and Definitions and ASTM E-8 Test Methods for Tensile Testing of Metallic Materials.

### Computerized Tensile Test Results.



# Quality Objective

*“Bray has made a continuous commitment to providing the highest quality in the industry worldwide”*

## Chemical Analysis:

Chemical Analysis by Mass Spectrometer to ASTM 1086, Standard Test Method for Optical Emission Vacuum. Computerized Chemical Readout with up to 30 Elements.



## Vickers Hardness Testing:



## Test Results:

Bray Computerized Material Test Report Showing Chemical and Mechanical Results. These Results are Verified against the Foundry Supplied EN 10204 3.1 Certificates.

Report No.: 076620090018001      Date: 2009-09-18

**Bray** Bray(China)Controls Co.,Ltd  
Material Test Report  
In accordance with EN10204 2005 3.1

Sample Name: test bar	Supplier: ABC Metals Incorporated	Sample No.: 77
Dim.: 827.84	Standard No.: ASTM A216 Gr VCCB	Heat No.: 8408
Test Item: Chemical Composition      Test equipment: SPECTOR MAXX-M		
Elemental Composition      (Original Report No.: 8110209 11 05 25.4)		
Required C (%)	0.25max	0.25max
Actual C (%)	0.207	0.207
Required Mn (%)	0.035max	0.035max
Actual Mn (%)	0.022	0.022
Required P (%)	0.012max	0.012max
Actual P (%)	0.008	0.008
Required S (%)	0.008max	0.008max
Actual S (%)	0.005	0.005
Required Ni (%)	0.010max	0.010max
Actual Ni (%)	0.005	0.005
Required Cu (%)	0.010max	0.010max
Actual Cu (%)	0.005	0.005
Required Nb (%)	0.010max	0.010max
Actual Nb (%)	0.005	0.005
Required Mo (%)	0.010max	0.010max
Actual Mo (%)	0.005	0.005
Required Cr (%)	0.010max	0.010max
Actual Cr (%)	0.005	0.005
Required N (%)	0.010max	0.010max
Actual N (%)	0.005	0.005
Required O (%)	0.010max	0.010max
Actual O (%)	0.005	0.005
Required H (%)	0.010max	0.010max
Actual H (%)	0.005	0.005
Test Item Mechanical Properties      In accordance with ASTM E8 E21		
Tensile Testing Results      (Original Report No.: 2005-09-14 7924 9125)		
Required Tensile Strength(MPa)	483-655	min 250
Actual Tensile Strength(MPa)	529	326
Required Elongation(%)	16	min 22
Actual Elongation(%)	21	21
Required Impact	50J	min 27
Actual Impact	52J	32J
Required Temperature(T)	Average of 3 Test Blocks(J)	50(J of 3 Test Blocks(J)
Actual Temperature(T)	20	20
Test Item Micrographic Examination      In accordance with ASTM A247		
Examination Results      (Original Report No.:)		
Required Grain Size	5-8	min 5
Actual Grain Size	5-8	5-8
Test Summary		
Tested by: G.S.	Verified by: P.S.J.	Approved by: S.J.J.

All Bray valves are manufactured and certified to CE/PED and certified material test reports of all required valve components are maintained on file.

## **BRAY INTERNATIONAL, INC.**

### **USA**

Houston, TX. +281.894.5454

## **BRAY CONTROLS**

### **USA**

Houston, TX. +281.894.5454

### **BENELUX**

Heerhugowaard +31.72.572.1410

### **BRAZIL**

Paulinia SP-Brazil +55.19.3844.6161

### **CANADA**

Montréal +514.344.2729

### **CHILE**

Santiago +56.2739.2966

### **CHINA**

Hangzhou, Zhejiang +86.571.828.52200

### **GERMANY**

Krefeld +49.2151.53360

### **INDIA**

Gujarat +91.265.2633868

### **MEXICO**

Zapopan, Jalisco, +52.33.3836.4460

### **PACIFIC**

Melbourne, Australia +613.9580.9755

### **PERU**

Lima +511.251.0251

### **POLAND**

Oświęcim +48.33.842.1968

### **UNITED KINGDOM**

Inchinnan +44.141.812.5199

### **VIETNAM**

Ho Chi Minh City +84.8.3742.3428

## **FLOW-TEK**

### **USA**

Houston, TX +832.912.2300

### **CHINA**

Hangzhou, Zhejiang +86.571.828.52200

## **RITEPRO**

### **CANADA,**

Montréal +514.324.8900

### **CHINA,**

Hangzhou, Zhejiang +86.571.828.52200

Bray Controls is certified to ISO 9001 standards.

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## **Global Manufacturing, Service Around the Corner**

To serve you locally, each region maintains a  
factory certified sales and service network  
for all Bray International products.



▼ BRAY CONTROLS - CHINA - Office & Manufacturing

 **Bray** INTERNATIONAL, INC.

13333 Westland East Blvd, Houston, Texas 77041  
281.894.5454 FAX 281.894.9499 www.bray.com