FLUID CONTROLS®
ENGINEERING CONNECTIONS EVERYDAY

NABL







TESTING SERVICES

WHO WE ARE

50
YEARS

5 DECADES OF FOCUS ON DESIGN FOR CUSTOMER NEEDS AND PRODUCT PERFORMANCE



ETHOS

OUR ETHOS ESTABLISHED BY OUR FOUNDER DR. MOOCHHALA AND CARRIED FORWARD BY DR. TANSEN CHAUDHARI SINCE 2011

OUR COMPANY

Fluid Controls® was established in 1974 by Dr. Y.E. Moochhala, a Ph.D. from Northwestern University, with a vision to deliver high quality and high-performance products which delight customers. With 50 years of experience in engineering connections, Fluid Controls® offers customers across industries end-to-end "Make in India" solutions for various applications – from design & engineering services to supply of high-performance products.

Fluid Controls® offers clients a complete range of instrumentation products – connectors and adaptors for tubes and hose, valves, manifolds, DIN pipe clamps and SAE flanges. We also offer close coupled / prefabricated instrument hook-ups, high pressure needle valves, gas valves for turbine applications, block and bleed valves and O2 clean fittings for pharma and bio-tech applications. Our products ensure precision connections that are designed based on specific application requirements and perform to international standards.

OUR QUALITY ETHOS

CUSTOMER DELIGHT

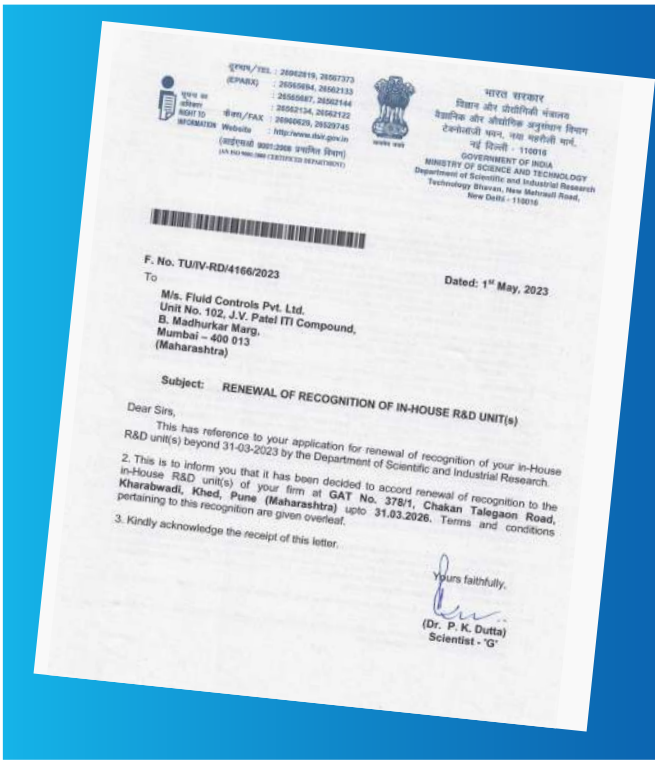
RIGOROUS TESTING
& CERTIFICATION PROGRAM

NO COMPROMISES



OUR RESEARCH & DEVELOPMENT

Since its inception in 1974, Fluid Controls® has engaged in original R&D and also has had an ethos of developing products which are indigenous replacements of imported products. Today, Fluid Controls® is approved as an "In-House R&D unit" by Department of Scientific & Industrial Research (DSIR), Government of India. Our state-of-the-art R&D center is located at Chakan, Pune. We offer design services and conversion engineering, including 3D modelling, FEA and prototyping via SolidWORKS and Ansys. The Fluid Controls® R&D team uses the latest software and is equipped to customize connectors and products for customer requirements. Our engineers work closely with customers to understand their requirements and develop effective solutions for them.



भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
वैज्ञानिक और औद्योगिक अनुसंधान विभाग
टेक्नोलॉजी भवन, नया महरौली मार्ग,
नई दिल्ली - 110016
GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
Department of Scientific and Industrial Research
Technology Bhavan, New Mehrauli Road,
New Delhi - 110016

F. No. TU/IV-RD/4166/2023 Dated: 1st May, 2023

To
M/s. Fluid Controls Pvt. Ltd.
Unit No. 102, J.V. Patel ITI Compound,
B. Madhurkar Marg,
Mumbai – 400 013
(Maharashtra)

Subject: RENEWAL OF RECOGNITION OF IN-HOUSE R&D UNIT(s)

Dear Sirs,

This has reference to your application for renewal of recognition of your in-House R&D unit(s) beyond 31-03-2023 by the Department of Scientific and Industrial Research.

2. This is to inform you that it has been decided to accord renewal of recognition to the in-House R&D unit(s) of your firm at **GAT No. 378/1, Chakan Talegaon Road, Kharabwadi, Khed, Pune (Maharashtra)** upto **31.03.2026.** Terms and conditions pertaining to this recognition are given overleaf.

3. Kindly acknowledge the receipt of this letter.

Yours faithfully,

(Dr. P. K. Dutta)
Scientist - 'G'

OUR TESTING CAPABILITIES

The Fluid Controls Testing Laboratory is equipped to conduct all pressure, vibration and reliability tests as well as in-house Spectro, PMI and UT testing. Our test laboratory is accredited to NABL Certification in accordance with ISO/IEC 17025:2017 and has been used by the Department of Defence to conduct pressure and burst tests for HARD Bomb Shells.



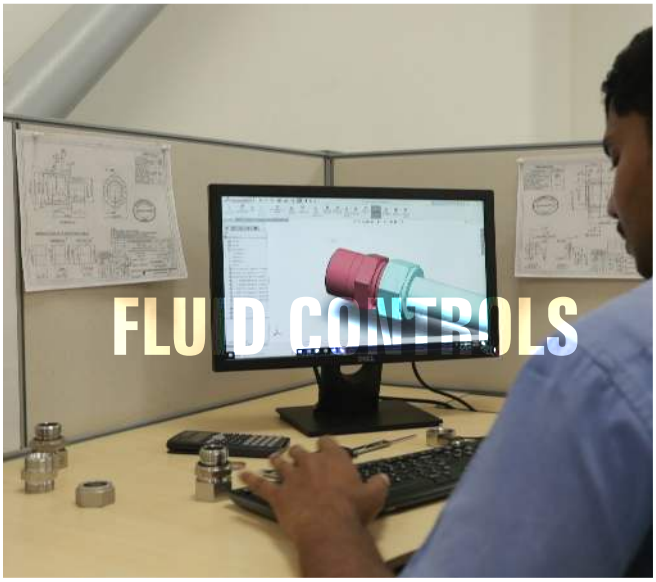
OUR ACHIEVEMENTS

Product design and development with performance testing is an inspiration for our business. Because of our R&D strength and DSIR approval, we are constantly researching new developments in our field and our primary research ensures that we are always innovating.

- Over 25 new products developed since 2011
- Two Global Patent published. Filing process for two more disclosures underway
- India 5000 Best MSME Award for Quality Excellence 2020
- Excellence in Technical Innovation by ISA Maharashtra Section at PPA Meet 2020
- Urban Infra Solutions Provider of the Year 2019
- CII Industrial Innovation Award for Medium Scale Manufacturing 2019
- CII Industrial Recognition for Top 25 Innovative Companies of the Year 2019 & 2021



OUR TESTING FACILITIES







OUR R&D FACILITIES

Since its founding days, Fluid Controls® has focused on product development and on offering solutions to our customers.

- Approved as an "In-House R&D unit" by Department of Scientific & Industrial Research (DSIR), Government of India
- State-of-the-art 10,000 sq. ft. R&D Center located at Chakan, Pune
- Team of 25 qualified design engineers headed by Dr. Tansen Chaudhari (PhD - Mechanical Engineering: IIT Bombay)
- Latest design software for 3D modelling, FEA and prototyping via SolidWORKS and ANSYS

OUR TESTING FACILITIES

The Fluid Controls Testing Laboratory has in-house NABL Certified (ISO17025) Performance Testing and Metrology Laboratories for all pressure, vibration and reliability tests. We also conduct in-house Spectro, PMI and UT testing.

- Hydrostatic pressure up to 58,000psi. Pneumatic testing up to 20,000psi
- In-house Spectro Testing and Oxy-Cleaning Facility
- SCADA Multi Test Bench
- Hydraulic Impulse and Vibration Test
- Temperature Cycling
- Corrosion Resistance of plating as per ASTM B840: 2002 by Salt Spray Method ASTM B117
- Stress Corrosion Test as per ASTM F1387
- Flexure Fatigue, Rotary Flexure and Tensile Pull Test
- Vacuum Test - up to 750mbar
- NRV's - Cracking Pressure to 0.5kg
- Cryogenic Test Setup for Temperatures to -196°C
- Valve Reliability Test Bench – for Cycle Testing
- In-house UTS, PMI and Rockwell & Vickers Hardness Testing
- Aerospace Test Rig for S-N Flexure Test
- Aerospace Test Setup Like Impulse Test, Proof Pressure Test, Repeated Test

OUR NABL ACCREDITATION

Fluid Controls® has been granted NABL (National Accreditation Board for Testing and Calibration Laboratories) Certification in accordance with ISO/IEC 17025:2017. The accreditation covers the Fluid Controls Performance Testing Laboratory and the Metrology Laboratory.

The NABL accreditation is a testament to Fluid Controls® enhanced competency in calibration & testing and to our commitment to continuous improvement.

FLUID CONTROLS TESTING SERVICES

Fluid Controls® offers standard and customized testing based on customer and/or project requirements and specifications. The Fluid Controls® stage-wise approach to testing services:

STAGE 1:

THE R&D AND LABORATORY TEAM WORK WITH CUSTOMERS TO UNDERSTAND THEIR REQUIREMENTS AND DRAW UP A FRAMEWORK TESTING PLAN.

STAGE 2:

FINALISE THE TESTING AND EXPECTATIONS.

STAGE 3:

CUSTOMIZE TEST EQUIPMENT / FIXTURES IF REQUIRED.

STAGE 4:

CONDUCT THE TESTING IN A CONTROLLED ENVIRONMENT AND PROVIDE FORMAL CERTIFICATES.



VACUUM
TEST



PMI

HIGH PRESSURE
CRYOGENIC



HYDROSTATIC
PRESSURE

TESTING



VIBRATION TESTING

LAB

ENDURANCE

SPECTRO TEST





Testing on prototype or sample type-testing. These tests simulate actual environmental conditions or are designed to test extreme operating conditions (for example burst tests, cyclic endurance tests).

Chemical testing of metals via Spectro, Hardness testing, Viscosity testing.

Positive Material Identification (PMI) and Ultrasonic Testing (UT) performed in-house by certified technicians and engineers.

Customized Testing based on customer and/or project requirements and specifications.

FLUID CONTROLS TESTING SERVICES

1. PRODUCT PERFORMANCE VALIDATION TESTS

TYPE OF TEST	STANDARDS	CAPACITY
Hydrostatic Pressure Test (Poor Pressure Test/High Pressure Test)	ASTM F 1387, ISO 19879, BS EN 854, AS 18280, AS 2094*	4,000 Bar/ 58,000 PSI
Pneumatic Pressure Test (Poor Pressure Test/High Pressure Test)	ASTM F 1387, ISO 19879, BS EN 854, AS 18280, AS 2094*	1,400 Bar/ 20,000 PSI
Hydrostatic Burst Test	ASTM F 1387, ISO 19879, AS2094*	4,000 Bar/ 58,000 PSI
Vibration Test	ASTM F 1387, ISO 19879, EN 61373	60 Hz
Impulse Test	ASTM F 1387, ISO 19879, BS EN 854, AS 18280, AS 2094*	As Per Standard
Flexure Fatigue Test	ASTM F 1387, ISO 19879, AS 18280, AS 2094*	As Per Standard
Salt Spray Test	ASTM B117	As Per Standard
Salt Mist Test	IEC60068/ASTM B117*	As Per Standard
Rotary Flex Test With SN Curve	ASTM F 1387, AS 18280, AS2094*	As Per Standard
Vacuum Test	ASTM F1387	-760 mm/Hg
Cryogenic Test	BS 6364/ APIS/ISO 15548	Up to -196°C
Cracking Pressure Test /Min Burst Pressure (Non Return Valve/Typical Valve Test)	Fluid Controls / Customer Test Procedure	0.2 Bar to 5 Bar
High Pressure Thermal Cyclic Test	ASTM F1387	537°C/1000°F
Spring Load Test Appartus	Fluid Controls / Customer Test Procedure	As Per Standard
Repeated Assembly Test For Fititngs/Hoses	ASTM F 1387, ISO 19879, BS EN 854, AS 18280, AS 2094*	As Per Standard
Maximum Torque Test Clamps/ Bolts	Fluid Controls / Customer Test Procedure	Up to 800 Nm
Valve Cyclic Endurance Test	Fluid Controls / Customer Test Procedure	As Per Standard

*Test Accredited Under NABL Scope

2. METALLURGICAL TESTING

TYPE OF TEST	STANDARDS	CAPACITY
Chemical Test Of Metallic Material By Spectro Test	AS per ASTM/IS Material Standard*	Ferrous/Non- Ferrous Alloy
Chemical Test By PMI Method	AS per ASTM/IS Material Standard	Ferrous/Non- Ferrous Alloy
Hardness By Rockwell Test Of Metallic Material	ASTM E 18*	As Per Standard
Hardness By Micro Vickers Test (Surface Hardness) of Metallic Material	ASTM E 384*	Up to 800 Nm
Water Absorption Testing	ASTM D570	As Per Standard
Plating Thickness Testing	Fluid Controls / Customer Test Procedure	2 to 25 Microns
Viscosity Testing	ASTM D445	As Per Standard
High Voltage Test Machine	IEC 60060	As Per Standard

*Test Accredited Under NABL Scope

FLUID CONTROLS TESTING SERVICES

3. NON-DESTRUCTIVE TESTING

TYPE OF TEST	STANDARDS	CAPACITY
Die Penetrant Inspection (DP) On Forged/Machined Part	ASME Sec. V	Bar, Forging, Castings
Ultrasonic Test (UT) On Bar/ Forged/Machined Part	ASME Sec. V	Bar, Forgings
PMI	As Per FCL / Customer Specified	Ferrous & Non-Ferrous Alloy

4. CUSTOMIZED TESTING

Fluid Controls® offers customized testing based on customer and/or project requirements and specifications.

Some tests we have customized and conducted include:

- Customized Vibration and Pressure-Impulse Testing
- Valve Cyclic Endurance Test
- Make & Break (Repeated Assembly) Testing for Connectors
- Non Return Valve Cracking Pressure Test.



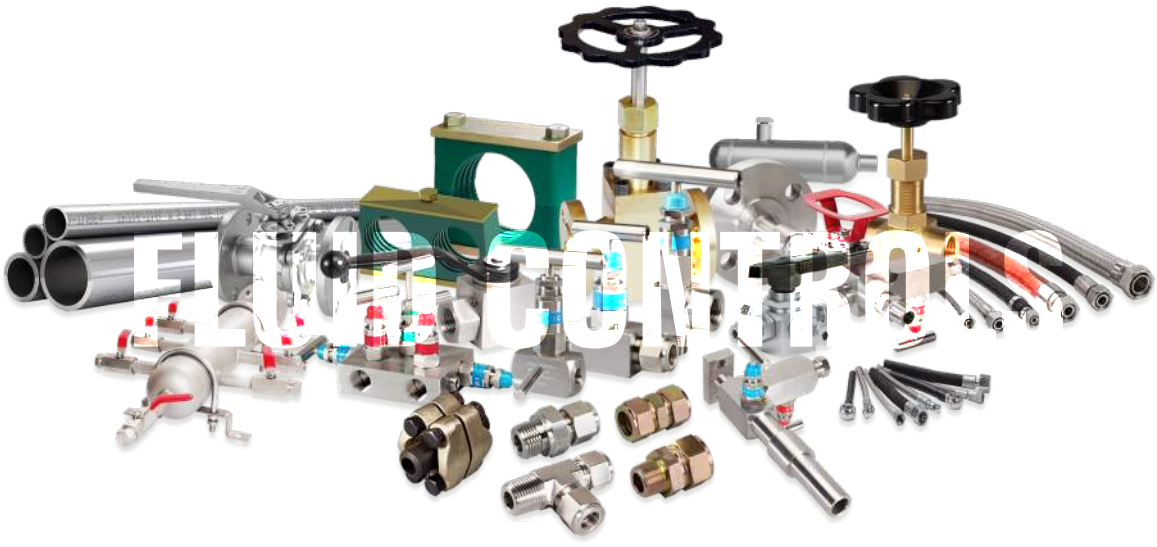
EXAMPLE 1
FITTINGS MISALIGNMENT WITH VIBRATION TESTING

A simulation test which mimics actual environmental conditions encountered by railway rolling stock. The Fluid Controls Customized Test Ring checks for leakage across multiple pipelines, some of which are mis-aligned, with customer specified frequency ranges.



EXAMPLE 2
CRYOGENIC TESTING

Fluid Controls® has an indigenously developed setup for testing valves and connectors at cryogenic environmental conditions (temperatures to -196°c).



FLUID CONTROLS LIMITED

(Formerly known as Fluid Controls Pvt. Ltd.)

Corporate Office: 5th Floor, The International, 16 Maharshi Karve Road, New Marine Lines, Mumbai 400 020, INDIA

Registered Office: Gat. No. 378/1 (Part), Kharabwadi, Talegaon-Chakan Road, Chakan, Khed, Pune- 410501, INDIA

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