FLUID CONTROLS®
ENGINEERING CONNECTIONS EVERYDAY

R&D

INNOVATION

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. Our state-of-the-art manufacturing facility, our R&D and test laboratories, have ensured we exceed customer expectations. Every time.

Fluid Controls® offers design services and conversion engineering, including 3D modelling, FEA and prototyping via SolidWORKS and Ansys. Our engineers work closely with customers to understand their requirements and develop effective solutions for them.

DSIR APPROVAL

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.

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 constantly innovating.

- Over 25 new products developed since 2011
- First Global Patent published. Filing process for two more disclosures underway
- India 5000 Best MSME Award for Quality Excellence 2020
- Rail Solution Provider of the Year [Instrumentation] at Rail Infra & Mobility Business Digital Awards 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

F. No. TU/IV-RD/4166/2017

To

Dated: 26.11.2019

M/s Fluid Controls Pvt. Ltd.,
Unit No. 102, JV Patel, ITI Compound
Madhurkar Marg, Elphinstone Station Road (W)
Mumbai – 400 013

Subject: Registration of Research institution, other than a Hospital, for the purpose of availing Customs duty exemption in terms of Government Notifications No. 51/96 – Customs, dated 23.07.1996; No. 24/2007 – Customs dated 01.03.2007; No. 45/2017 – Customs dated 30.06.2017; No. 43/2017 – Customs dated 14.11.2017; Central Tax (Rate) & 47/2017 – Integrated Tax (Rate) dated 14.11.2017; No. 01/2018 – Integrated Tax (Rate), No. 09/2018 Union Territory Tax (Rate) & No. 10/2018 – Central Tax (Rate), dated 25.01.2018; and State Tax (Rate) as applicable and all notification as amended from time to time.

CERTIFICATE OF REGISTRATION

This is to certify that the in-house R&D unit(s) of M/s. Fluid Controls Pvt. Ltd., Mumbai located at GAT No. 3761, Chakan Talegaon Road, Kharabwadi, Khed, Pune, Maharashtra is registered with the Department of Scientific & Industrial Research (DSIR) for the purpose of availing Customs duty exemption in terms of Government Notifications No. 51/96 – Customs dated 23.07.1996; No. 24/2007 – Customs dated 01.03.2007; No. 43/2017 – Customs dated 30.06.2017; No. 45/2017 – Customs dated 01.03.2007; No. Integrated Tax (Rate) dated 14.11.2017; No. 5/2018 – Central Tax (Rate) & 47/2017 – Union Territory Tax (Rate) & No. 10/2018 – Integrated Tax (Rate); No. 09/2018 State Tax (Rate) as applicable and all notification as amended from time to time. The registration is subject to terms and conditions mentioned overleaf.

This registration is valid up to 31.03.2020.

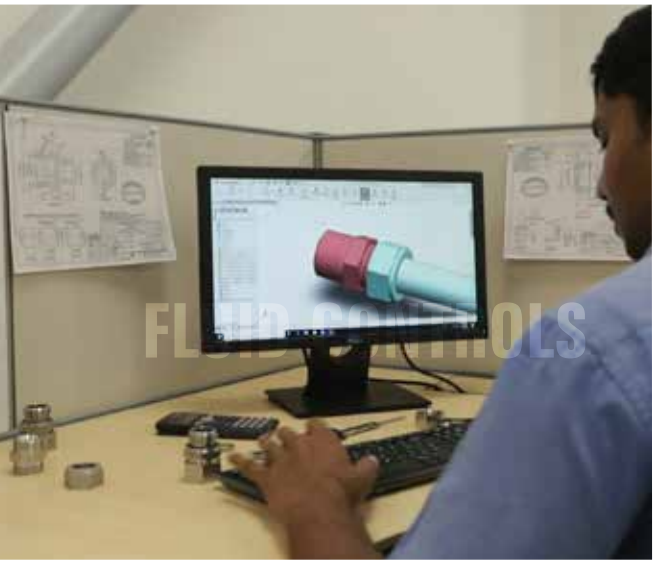
(Dr. S. K. Deshpande)
Scientist-G

OUR 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® R&D Center 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. Our laboratory has been used by the defence department to conduct pressure and burst tests for HARD Bomb Shells.

- 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

OUR PATENT FILING

PATENT INFORMATION

TITLE:
METHOD OF HEAT TREATING AN ARTICLE

PUBLICATION NO.:
W02020170264

PUBLICATION DATE:
27.8.2020

INTERNATIONAL APPLICATION NO.:
PCT/IN2019/050294

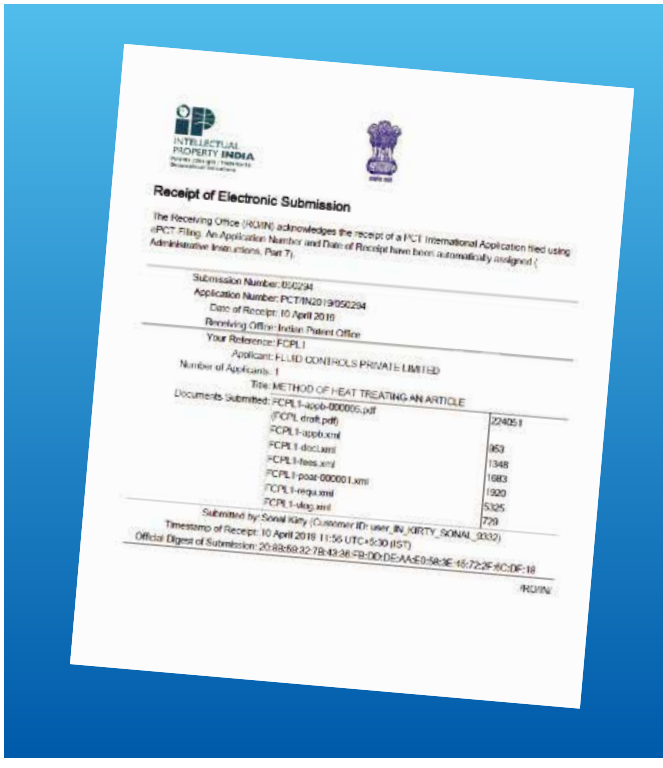
INTERNATIONAL FILING DATE:
10.4.2019

IPC:
C23C 8/38 2006.01 | C23C 8/22 2006.01 | C21D 1/74 2006.01

CPC:
C21D 1/74 | C23C 8/22 | C23C 8/38

APPLICANTS:
FLUID CONTROLS PRIVATE LIMITED
JV PATEL ITI COMPOUND
B. MADHURKAR MARG
MUMBAI 400013, IN

INVENTORS:
TANSEN DHANANJAY CHAUDHARI
& RAHUL MANIKRAO PATIL


INTELLECTUAL PROPERTY INDIA

Receipt of Electronic Submission

The Receiving Office (RO/IN) acknowledges the receipt of a PCT International Application filed using ePCT-Filing. An Application Number and Date of Receipt have been automatically assigned (Administrative Instructions, Part 7).

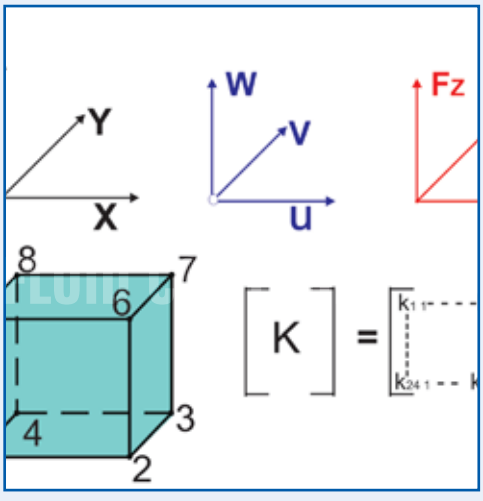
Submission Number: 050294
Application Number: PCT/IN2019/050294
Date of Receipt: 10 April 2019
Receiving Office: Indian Patent Office
Your Reference: FCPL1
Applicant: FLUID CONTROLS PRIVATE LIMITED
Number of Applicants: 1
Title: METHOD OF HEAT TREATING AN ARTICLE
Documents Submitted: FCPL1-appb-000005.pdf

(FCPL draft.pdf)	224051
FCPL1-appb.xml	
FCPL1-desc.xml	953
FCPL1-fees.xml	1348
FCPL1-poar-000001.xml	1683
FCPL1-requ.xml	1920
FCPL1-vlog.xml	5325
	779

Submitted by: Sonal Ajay (Customer ID: user_IN_AJAY_SONAL_3332)
Timestamp of Receipt: 10 April 2019 11:55 UTC+5:30 (IST)
Official Digest of Submission: 20:88:58:32:7B:43:36:FB:0D:DE:AA:E0:58:3E:16:72:2F:6C:DF:18 RIPEMD160

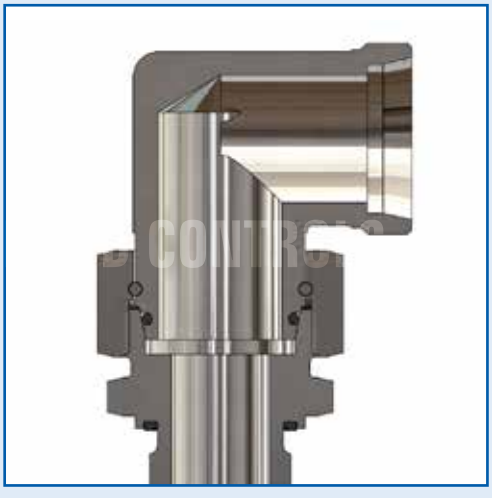
RO/IN

OUR R&D PROCESS



ANALYTICAL FORMULATIONS/ FIRST PRINCIPLES

Using the basic laws of physics and hydraulics, we use analytical formulas, wherever applicable, for a basic design formulation. This helps us design the product from First Principles. Our team refers to the latest published papers and standards during the process.



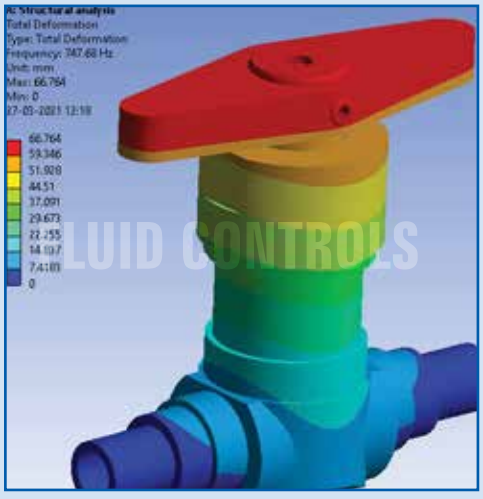
IN-HOUSE 2D + 3D MODELING

After these calculations, we create options through Solid Models via 2D and 3D design packages which:

- Resolve physical conflicts and fine-tune the product
- Help us drive the cost savings opportunities
- Enable new developments to be finalised with speed and detailing

FINITE ELEMENT MODELING & ANALYSIS

The developed design is validated virtually using Finite Element Analysis (FEA). The solid model is first meshed, applied with a suitable material model and subjected to appropriate boundary conditions and solved using SolidWORKS & ANSYS. Graphical output helps compare the Stresses/Strains with material parameters. This virtual validation is iterated until a product is designed and validated so that can be manufactured.



MANUFACTURING & TESTING BY OUR TEAM

Based on the virtual validation, manufacturing drawings are prepared. Samples are made on our in-house CNC machines to the highest quality standards.

FINAL PERFORMANCE TESTING

With our belief that "seeing is believing", the manufactured product is then taken to our centralised state-of-the-art laboratory. A range of performance tests as per client requirements / standards are conducted to validate performance parameters. The newly designed product is then offered to our clients.

PRODUCT DEVELOPMENT

SINGLE FERRULE BITE CONNECTORS

240 WELD NIPPLES

600 CONE

ACROSS FRAME

370 FLARED JIC CONNECTORS

ISOLATING VALVES
FOR RAILWAY PIPING

FLEXIGRIP CONNECTORS

QUICK DISCONNECT

HOSE CO

SINGLE FERRULE

SPHERICAL / FLANGED SLEEVE COMPRESSION

O RING FACE

DIN SWIVEL CONNECTORS


450 FLARED JIC CONNECTORS
CONNECTORS
CONNECTORS
DEFINE
MEASURE
ANALYSE
IMPROVE
CONTROL
COUPLINGS
COMPRESSION CONNECTORS
CONNECTORS
SEAL
CONNECTORS

CERTIFICATIONS

OUR SYSTEM CERTIFICATIONS

- Integrated Management System: ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018 for Fittings, Valves and Manifolds
- Quality Management: ISO 9001:2015 for Pipe Clamps, Flanges and Hydraulic Fittings
- Certification under European Pressure Equipment (PED) Directive for Fittings
- Certification under European Pressure Equipment (PED) Directive for Valves & Manifolds
- Certification under European Pressure Equipment (PED) Module H for Valves and Manifolds
- Certification under International Railway Industry Standard (IRIS)

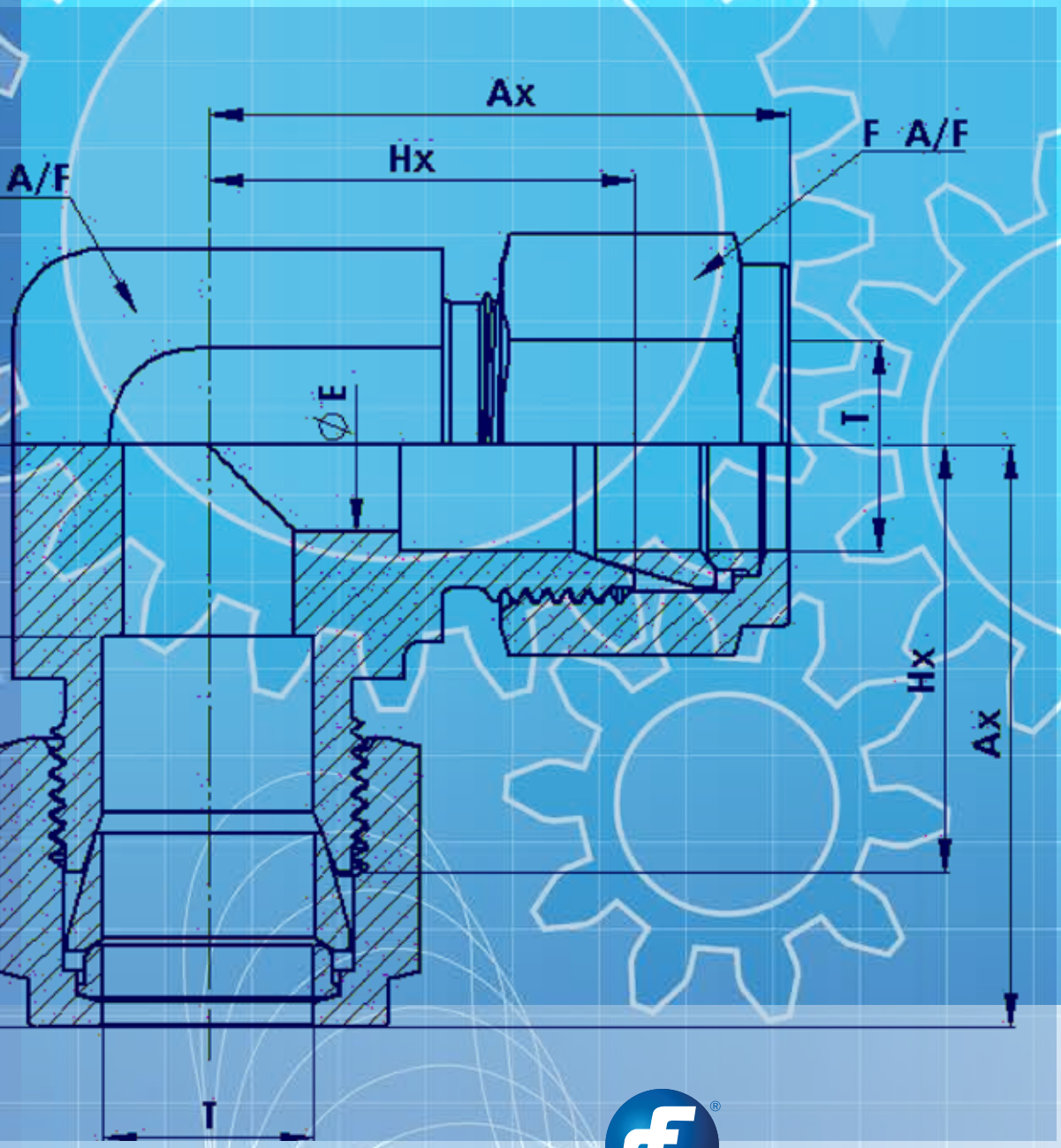
PERFORMANCE CERTIFICATIONS: CONNECTORS

- American Bureau of Shipping Certificate of Design Assessment for Double Ferrule Fittings
- Design Assessment (DRIV) as per ISO 8434-1 & DIN2353 for DIN Single Ferrule Fittings
- ASTM F1387-99 (2012) for Double Ferrule Fittings
- ISO 19879/BS EN 61373/IEC 60068 / IACS P2.2-12 for DIN Single Ferrule Fittings
- Vibration Test as EN 61373 and ISO 19879
- Cyclic Endurance (Impulse) Test With Vibration as per ISO 19879
- Salt Mist Test IEC 60068-2-52
- Oxy-Clean Certification for Double Ferrule Fittings as per ASTM G93, G131, G127

PERFORMANCE CERTIFICATIONS: VALVES & MANIFOLDS

- American Bureau of Shipping Certificate of Design Assessment for Valves
- American Bureau of Shipping Certificate of Design Assessment for Manifolds
- Design Verification Report Needle & Ball Valve – ASME 816.34, MSS SP 99
- MSS SP 99 (2001)
- Fugitive Emission Testing ISO 15848-1
- Fire Safe Test API 607:2010 / ISO 10497:2010
- Cryogenic Test for Needle Valves to Standards PN400
- Check Valve CV Test with Air & Water – ANSI/ISA-S75.02-1996
- Seismic Vibration Test Reports and Non-Seismic Vibration Testing to Nuclear Standards


FLUID CONTROLS



FLUID CONTROLS

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Email: sales@fluidcontrols.com Website: www.fluidcontrols.com

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