

# MEDICAL CONTRACT MANUFACTURING

Clean Room Injection Molding,  
Assembly & Injection Tool Shop

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Global presence in 5 countries and 3 continents  
Strong customer base in Medical Industries

Trusted partner in the journey from conceptualizing product, mold making and injection molding to assembly

20+ Years of experience

Team of highly experienced Managers and Experts in the field

Manufactured over 8000 molds

High tech tool shops

Contract tool-shops for warranty and modifications

1998

## Start

Company registered in Hong-Kong as VEM - Virtual Electronics Manufacturing Ltd

01

2008

## VEM Thailand

Set up 100% owned factory in Rayong, Thailand, 3000sqm

03

## VEM China

Set up 100% owned factory in Shenzhen, China, 5000sqm

2003

04

## VEM India

Set up 100% owned factory in Pune, India, 1500sqm

2016

2019

## VEM Europe

Set up 100% owned factory in Plovdiv, Bulgaria, 2000sqm

05

## VEM Mexico

Set up 100% owned factory in Queretaro, Mexico, 2 facilities with total of 3000sqm

2020

2022

## VEM Thailand

Added another 5000sqm factory in Rayong, Thailand.

07

## **Environmental Sustainability**

- VEM Thailand factory 1 is fully equipped with Solar panels.
- VEM Thailand factory 2 is fully equipped with Solar panels.



## ISO 13485

**bsi.**



### Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 13485:2016 & EN ISO 13485:2016

This is to certify that:

VEM (THAILAND) CO., LTD  
427 Moo. 2 Mapyangporn,  
Pluakdaeng,  
Rayong  
21140  
Thailand

Holds Certificate Number:

**MD 683191**

and operates a Quality Management System which complies with the requirements of ISO 13485:2016 & EN ISO 13485:2016 for the following scope:

The manufacture of plastic injection parts and assembly for medical ventilator system.

*Gary E Slack*

For and on behalf of BSI:

Gary E Slack, Senior Vice President - Medical Devices

Original Registration Date: 2019-01-09

Effective Date: 2022-01-09

Latest Revision Date: 2021-12-15

Expiry Date: 2025-01-08

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...making excellence a habit™

## ISO 7 / Class 10,000



### CERTIFICATE OF COMPLIANCE

**VEM (Thailand) Co., Ltd.**

**ISO Class 7 Cleanroom, In Operation**

As per requirements of ISO 14644-1: 2015 (E), the designated area listed above has met the acceptance criteria for Class 7 at  $\geq 0.5\mu\text{m}$ ,  $\geq 1.0\mu\text{m}$  and  $\geq 5.0\mu\text{m}$ , under In Operation condition. Testing was performed and was obtained in accordance with the current edition of the NEBB procedural standards for certified testing of cleanrooms, and as outlined in the above standard and the results are attested to in the Report No: C220041.



Date of Certification:

Mukdavan Prakobvattayakit

13 Mar 2022

NEBB Certified CPT Professional

QV TEST CO., LTD.

1014 SOI NAWAMIN 111 YAK 4, NAWAMIN, HUNG KUIE, BANGKOK, THAILAND 10230  
Tel: +66 2 860 3552, FAX: +66 (02) 860 3281

## ISO 8 / Class 100,000



### CERTIFICATE OF COMPLIANCE

**VEM (Thailand) Co., Ltd.**

**Cleanroom#2**

**ISO Class 8 Cleanroom, In Operation**

As per requirements of ISO 14644-1: 2015 (E), the designated area listed above has met the acceptance criteria for Class 8 at  $\geq 0.5\mu\text{m}$ ,  $\geq 1.0\mu\text{m}$  and  $\geq 5.0\mu\text{m}$ , under in operation condition. Testing was performed and was obtained in accordance with the current edition of the NEBB procedural standards for certified testing of cleanroom, and as outlined in the above standard and the results are attested to in the Report No: C220135.



Date of Certification:

Mukdavan Prakobvattayakit

28 August 2022

NEBB Certified CPT Professional

QV TEST CO., LTD.

1014 SOI NAWAMIN 111 YAK 4, NAWAMIN, HUNG KUIE, BANGKOK, THAILAND 10230  
Tel: +66 2 860 3552, FAX: +669 4885 5099

- Help sourcing ROHS/ REACH/ USP class VI compliant materials
- Biocompatibility and Cytotoxicity testing certificate of raw materials is ensured wherever required
- FMEA and FDM to identify and eliminate potential problems in manufacturing
- Support 3D printed prototypes



Validate the product and manufacturing capabilities  
Quick and efficient prototyping technologies:

- Soft steel prototype molds
- Aluminum prototype molds
- 3D printed prototypes (Steel and Plastic)

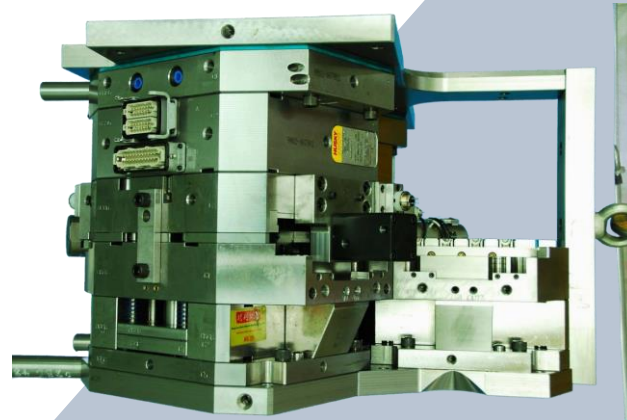
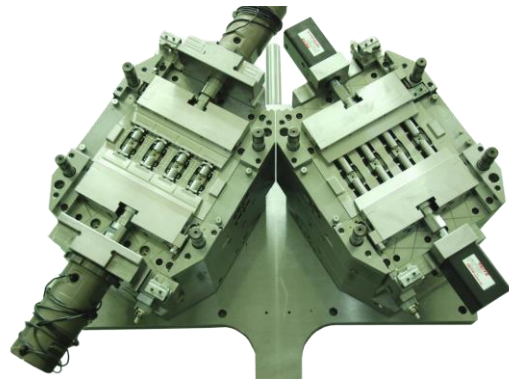
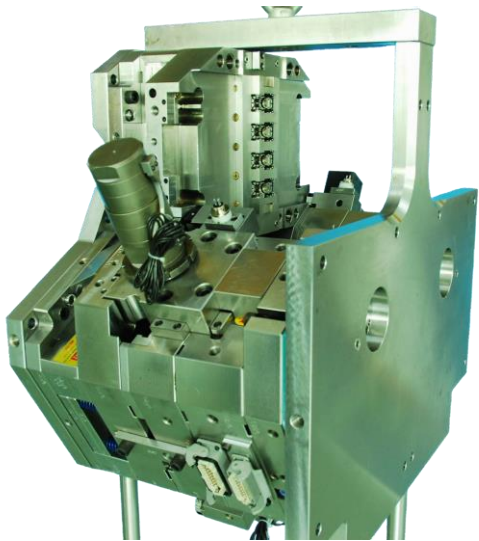
Printing plastic prototypes for validation & functional testing.

- PLA
- ABS
- PETG
- Nylon
- TPU and TPE



## Expertise in:

2K Molds, Multi cavity molds, High precision molds



## Mold Maintenance:

Internal maintenance & modification capabilities



### 3D Steel Printing

- Mold steel inserts
- Optimized conformal cooling channels
- Significant reduction in production cycle time



## In house toolmaking facilities in China/India/Bulgaria

China: <https://youtu.be/57rX3deD1A0>

India: <https://youtu.be/cHnLGGuvFls>

Bulgaria: <https://youtu.be/4EqW5crDHQ8>

30+ Injection molding machines

Machine range 5 TON to 850 TON

Fully equipped with desiccant dryers, HR controllers, MTC,  
Bimetallic barrel



Clean Room ISO 7 / Class 10,000 (Video tour: <https://youtu.be/-jyKbd6Vmsg>)





High Level of Production Automation on our product lines.



Clean Room ISO 8 / Class 100,000 Molding (Video tour: <https://youtu.be/-jyKbd6Vmsg>)



## Assembly Example Ventilator Connector

Injection Molding



Over Molding



Assembly



Testing

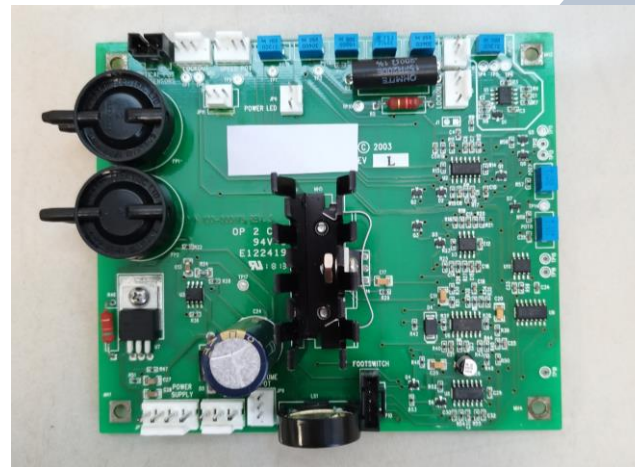
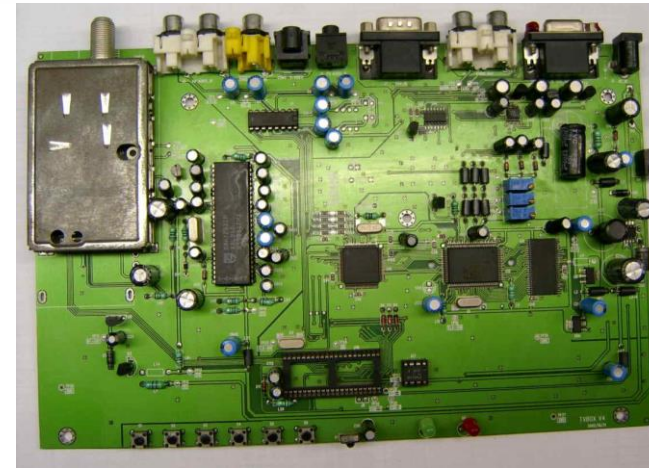


Final Packaging



We provide PCBA related services:

- PCBA production
- Box built products, manual assembly
- ICT/FCT testing and IC programming
- Tester building and maintenance



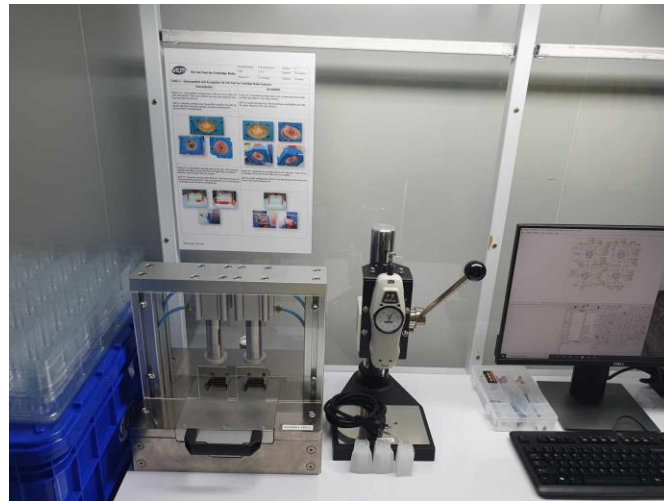
## Process qualification as per medical standards

- **Installation Qualification**
- **Operation Qualification – using DOE**
- **Performance Qualification**

Fully equipped measurement laboratory

SPC online wherever needed

Inspections 24 hours



We ship all over the world  
INCOE Terms as required by customers



# Our Clients



**Edwards**



**Medtronic**  
*When Life Depends on Medical Technology*



**MASTERFLEX**<sup>®</sup>



**Baxter**



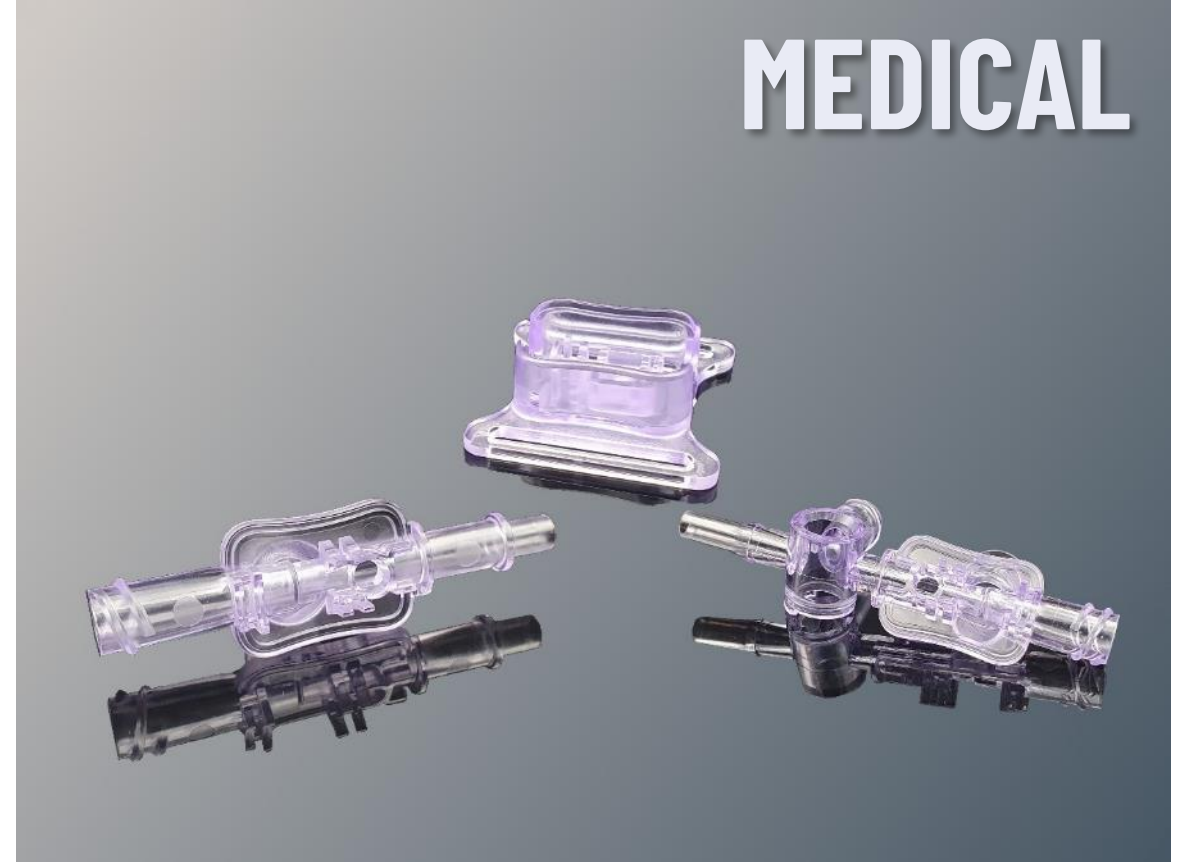


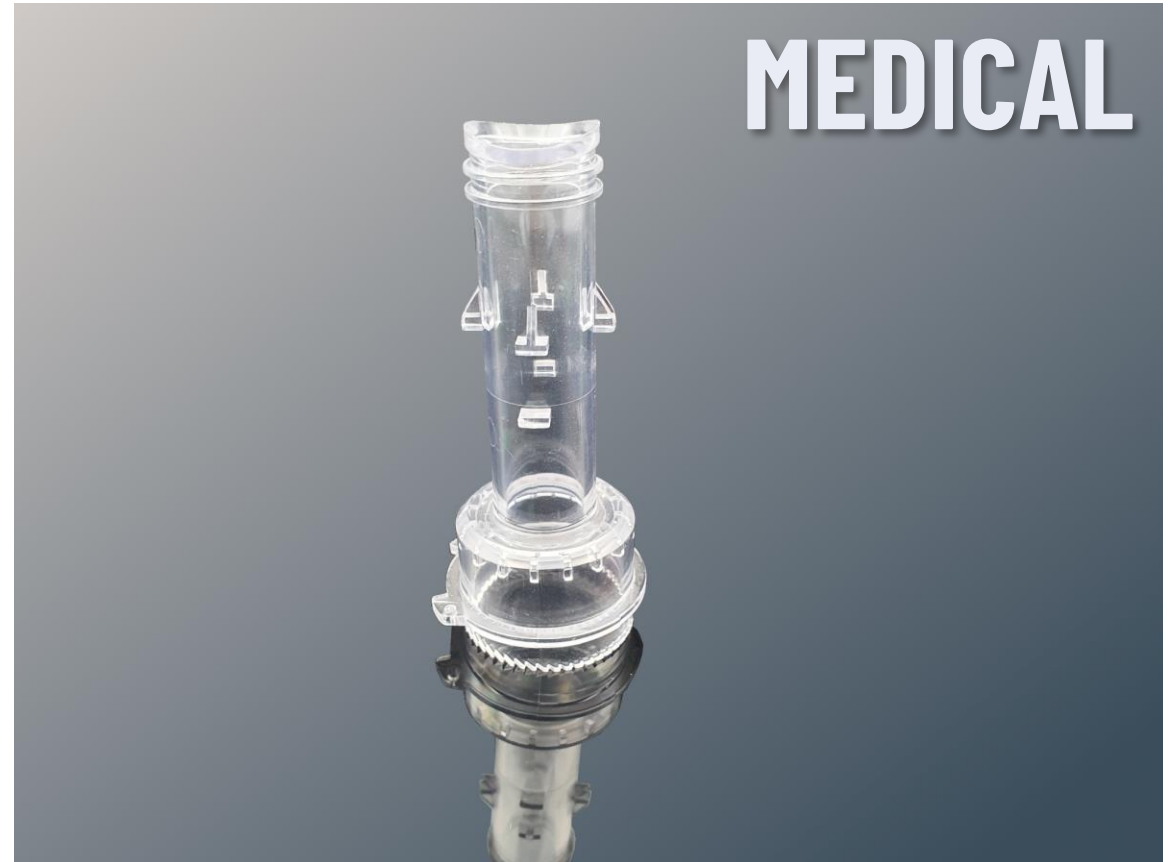
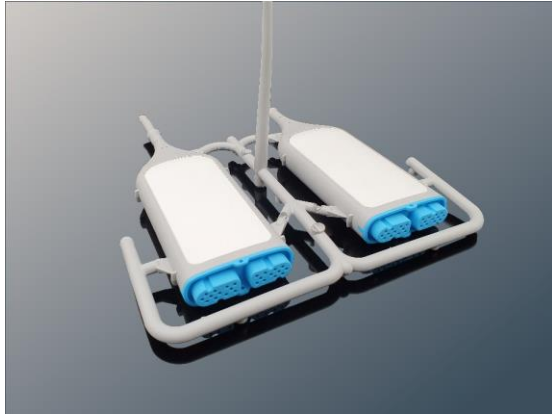
# Point-of-care PCR Home Device



# Consumable Parts for Auto-Ventilator









**GET IN TOUCH**