

FACTORY AUTOMATION

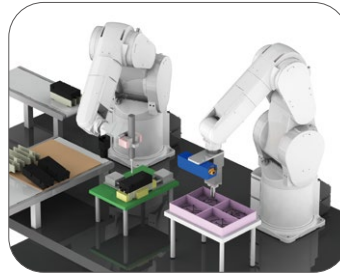
MITSUBISHI ELECTRIC INDUSTRIAL ROBOT MELFA-3D Vision 3.0



Feature 1

Lightweight and Compact

Smaller and more lightweight, equipped with ENSENSE camera head. Both hand-eye and fixed installation are available. Additionally, the camera itself supports oil mist environments (IP65/IP67), and increased workpiece distance and visual field allow for broader application. It flexibly supports everything from precision assembly of small parts to bulk picking from large pallets.



Small part assembly (hand-eye)



Picking from large pallet (fixed camera)

Feature 2

High-speed Picking

High-speed recognition technology reduces the time required for image recognition (30% improvement over previous model). Model-less recognition is available, which does not require a 3D model of the workpiece. Model-less recognition: A method of recognizing workpiece grip by registering the shape of the hand tip and suction pad and looking for a space to insert the tip or where the pad can stick (The shape of the workpiece does not need to be registered).

Feature 3

Auto Calibration Function

Equipped with an auto calibration function to automatically align the robot and vision sensor. This simplifies adjustment work.

Start up

1 Attach vision sensor

2 Robot Calibration

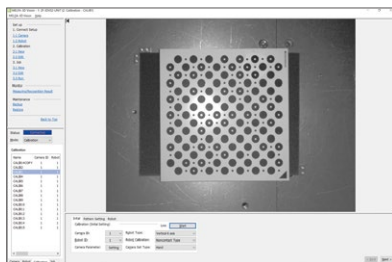
3 Adjust measurement parameters

4 Adjust recognition parameters

Using vertical 6-axis robot

STEP 1 Imaging position teaching

Initialize and configure patterns



Initialization (items)

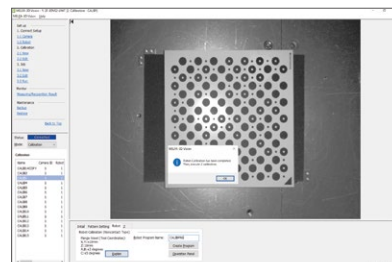
- Camera ID
- Robot ID
- Robot type
- Robot calibration
- Camera installation type
- Camera parameters

Pattern settings (items)

- Number of patterns
- Grid size (mm)

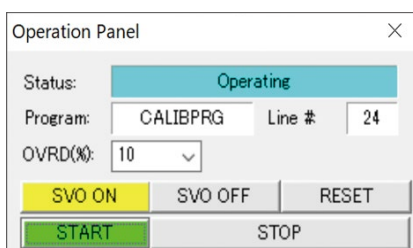
STEP 2 Generate calibration program

Press "Generate program" button to generate program

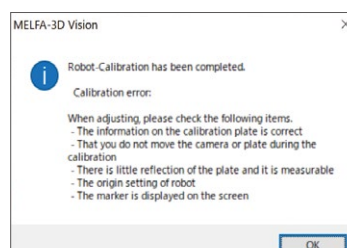


STEP 3 Start calibration

Open control panel and press "Start" button
(Calibration will start automatically)



STEP 4 Calibration complete



**Just 4 steps!
Quick and simple
setup!**

Global Partner. Local Friend

USA Mitsubishi Electric Automation, Inc. 500 Corporate Woods Parkway, Vernon Hills, IL 60061, U.S.A. TEL: +1-847-478-2100	Brazil Mitsubishi Electric do Brazil Comercio e Servicos Ltda. Avenida Adelino Cardana, 293, 21.o andar, Bethaville, Barueri SP, Brazil 06401-147 TEL: +55 (11) 4689-3003	Mexico Mitsubishi Electric Automation, Inc. Mexico Branch Boulevard Miguel de Cervantes Saavedra 301, Torre Norte Piso 5 Col, Ampliacion Granada, Miguel Hidalgo, Ciudad de Mexico, C.P.11520, Mexico TEL: +52(55)3067-7500
Australia Mitsubishi Electric Australia Pty. Ltd 348 Victoria Road, Rydalmere, NSW, 2116 Australia TEL: +61-2-9684-7777	China Mitsubishi Electric Automation (China) Ltd. No.1386 Hongqiao Road, Mitsubishi Electric Automation Center 3FShanghai, China TEL: +86-21-2322-3030	Taiwan Mitsubishi Electric Taiwan Co., Ltd. 10F, No.88 Sec. 6, Chung-Shan N.Rd,Taipei, Taiwan, TEL: +886-02-2833-5430
Korea Mitsubishi Electric Automation Korea Co.,Ltd 7F-9F, Gangseo Hangang Xi-tower A, 401, Yangcheon-ro, Gangseo-Gu, Seoul 157-801, Korea TEL: +82-2-3664-8333	Singapore Mitsubishi Electric Asia Pte. Ltd 307 Alexandra Road, Mitsubishi Electric Building, Singapore 159943 TEL: +65-6473-2486	Malaysia MITSUBISHI ELECTRIC SALES MALAYSIA SDN. BHD. Lot 11, Jalan 51A/219, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan, Malaysia +60-3-7626-5000
Indonesia PT. Mitsubishi Electric Indonesia Gedung Jaya 8th Floor, JL. MH. Thamrin No.12, Jakarta Pusat 10340, Indonesia TEL: +62-21-3192-6461	Vietnam Mitsubishi Electric Vietnam Company Limited 11th & 12th Floor, Viettel Tower B, 285 Cach Mang Thang Tam Street, Ward 12, District 10, Ho Chi Minh City, Vietnam. TEL: +84-28-3910-5945	Thailand Mitsubishi Electric Factory Automation (Thailand) Co., Ltd. 101, True Digital Park Office, 5th Floor, Sukhumvit Road, Bang Chak, Prakanong, Bangkok, Thailand TEL: +66-2092-8600
Philippines MELCO Factory Automation Philippines Inc. 128, Lopez-Rizal St, Brgy. Highway Hills, Mandaluyong City, MM, Philippines TEL: +63-(0)2-8256-8042	India Mitsubishi Electric India Pvt. Ltd. ICC-Devi Gaurav Technology Park, Unit no.402, Fourth Floor, Survey no. 191-192 (P), Opp. Vallabh Nagar Bus Depot, Pune - 411018, Maharashtra, India TEL: +91-(20)-46242100	Germany Mitsubishi Electric Europe B.V. German Branch Mitsubishi-Electric-Platz 1, 40882 Ratingen, Germany TEL: +49-2102-486-0
UK Mitsubishi Electric Europe B.V. UK Branch Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, U.K TEL: +44 (0) 1707/28-87-80	Italy Mitsubishi Electric Europe B.V. Italian Branch Energy Park Via Energy Park 14, 20871, Vimercate (MB) TEL: +39-039-60531	Spain Mitsubishi Electric Europe, B.V. Spanish Branch Carretera de Rubi, 76-80-AC. 4720, E-08190 Sant Cugat del Valles (Barcelona), Spain TEL: +34-935-65-3131
France Mitsubishi Electric Europe B.V. French Branch 2, Rue de l'Union-92565 Rueil-Malmaison Cedex TEL: +33 (0) 1-55-68-57-01,	Czech Republic Mitsubishi Electric Europe B.V. Czech Branch, Prague Office Pekarska 621/7, 155 00 Praha 5, Czech Republic TEL: +420-734-402-587	Poland Mitsubishi Electric Europe B.V. Polish Branch ul. Krakowska 50, 32-083 Balice, Poland TEL: +48(0)12-347-65-00
Ireland Mitsubishi Electric Europe B.V. Plunkett House, Grange Castle Business Park, Nangor Road, Dublin 22 TEL: +353 (0)1-4198800	Netherlands, Belgium and Luxembourg Mitsubishi Electric Europe B.V. Beechavenue 111, NL-1119 RB Schiphol-Rijk TEL: +31 (0) -297-250-350	Hungary Mitsubishi Electric Europe B.V. Hungarian Branch 2040 Budaors, Szabadsag ut 117 TEL: +36-70-3322-372
Sweden Mitsubishi Electric Europe B.V. Sweden Branch Hedvig Mollers gata 6 223 55 Lund TEL: +46(0)8-625-10-84	Turkey Mitsubishi Electric Europe B.V. Turkey Branch Serifali Mahallesi, Kale Sok. No:41, 34775 Umraniye / ISTANBUL TEL: +90(0)216/969-25-00	India MITSUBISHI ELECTRIC INDIA PRIVATE LIMITED ICC Devi Gaurav Technology park, Unit no 4+B12:D2902 4th floor, Pimpri Pune -411018 Maharashtra India TEL: +91-020-46242227

Windows is registered trademark of Microsoft Corporation in the United States and other countries.

Ethernet is registered trademark of Xerox Corporation.

SolidWorks is trademark of Dassault Systèmes SolidWorks Corporation.

All other company names and product names used in this document are trademarks or registered trademarks of their respective companies.

Mitsubishi Electric's
Product Security
Initiatives.



Mitsubishi Electric's e-F@ctory concept utilizes both FA and IT technologies, to reduce the total cost of development, production and maintenance, with the aim of achieving manufacturing that is a "step ahead of the times". It is supported by the e-F@ctory Alliance Partners covering software, devices, and system integration, creating the optimal e-F@ctory architecture to meet the end users needs and investment plans.



MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BLDG., 2-7-3 MARUNOUCHI,
CHIYODA-KU, TOKYO 100-8310, JAPAN