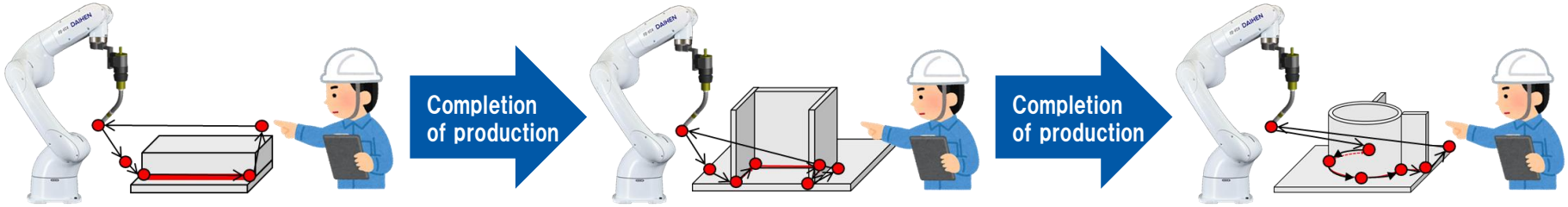
New Proposal for High-mix, Low-volume Production in Which Robots “See” and Generate Their Own Movements

Teaching-Less System

International Robot Exhibition 2023

Challenge of job shop type production with robots

Teaching work occurs frequently, so it is time consuming



Workpiece 1 teaching operation

Workpiece 2 teaching operation

Workpiece 3 teaching operation

Especially for small products, teaching time is longer than production time

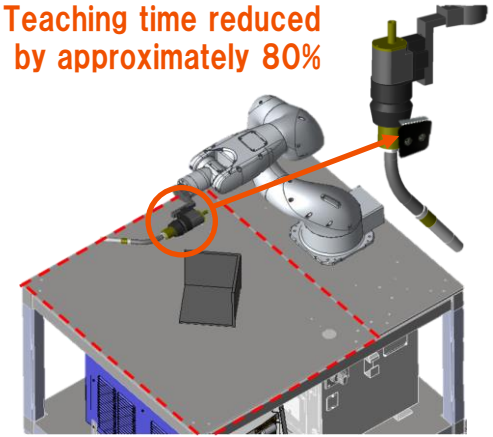
DAIHEN's teaching-less system solves this trouble !

Under development

Features of teaching-less system

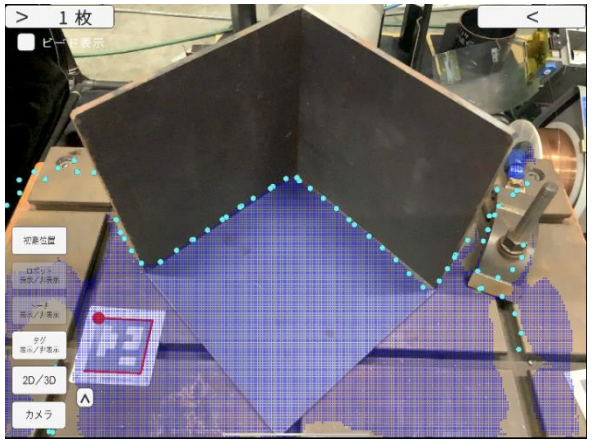
Just place the workpiece and specify the welding location
The robot “sees” the workpiece and automatically generates the motion!

Teaching time reduced by approximately 80%



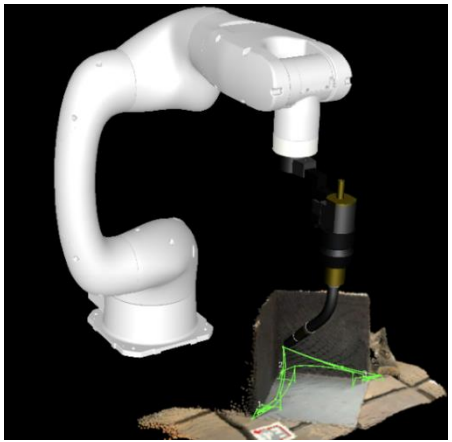
①Automation of shooting operation

Workpiece recognition by photographing the entire workbench
Determine shooting position from workpiece position/orientation



②Weld line detection

The robot estimates and presents the welding location



③Robot motion generation

Automatically generates motion to avoid interference

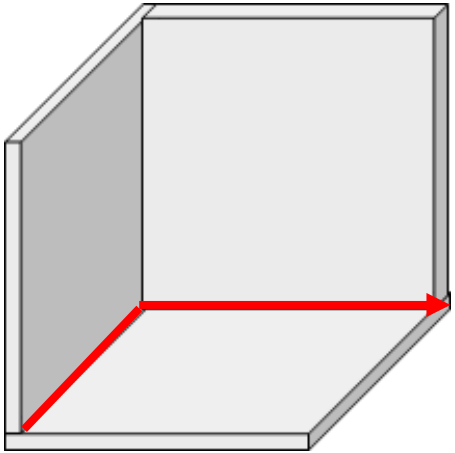
Demonstration: Arc Welding for Work Installed on Rough

STEP1：Recognize the workpiece by shooting the entire platform

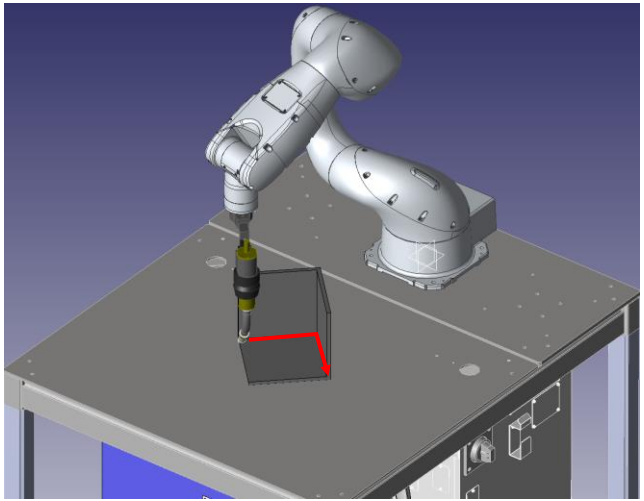
STEP2：Determine the shooting position from the workpiece position posture and shoot

STEP3：Designate the part to be welded (human work)

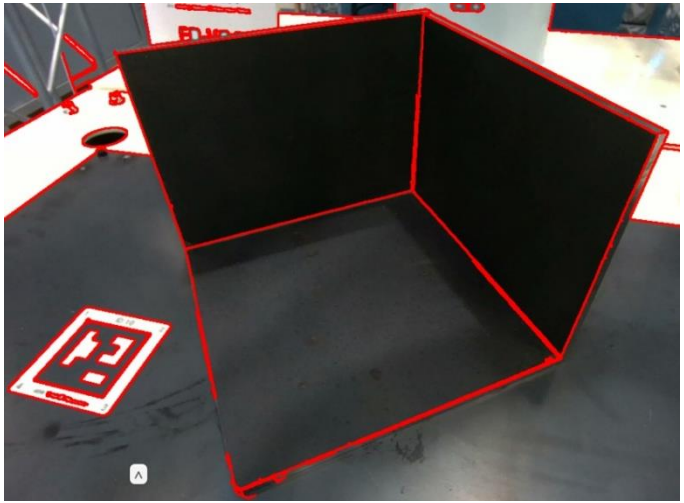
STEP4：Robot motion generation and welding operations



Welded work



Automatic recognition of welding line candidates from workpiece shape



fillet joint

lap joint

DAIHEN's teachingless system contributes to automation and productivity improvement in customer factories.

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