NEW Simple robot teaching system

Virtual Robot Programming System (VRPS)

Utilization of Virtual Reality (VR)
Realize “Simple robot teaching” with intuitive operation

Efficiency ➔ Reduced teaching time by utilizing VR equipment
Usability ➔ Allowed intuitive operation to the actual work
For everyone ➔ No professional skill is needed for teaching

(*1) In the industry of the VR teaching equipment of welding robot using actual works. (According to our research as of April 21, 2020)
(*2) Our company specified equipment
Outline of “Simple robot teaching” system
It enables a user who is unfamiliar with robot operation to easily perform robot teaching. Use the VR equipment and register teaching points for the actual work.

Product form

- **Product of Panasonic**
  - Installation CD-ROM
  - Torch model (Torch shape part to be mounted on the VR equipment)

- **Customer preparation**
  - Gaming PC or Desk top computer (with graphic card)
  - A set of our company specified VR equipment: For details, please contact Panasonic representatives.

- **VR equipment**
  - Head mounted display (Not in use in this function)
  - PC with VRPS software installed

Comparison of teaching time
(Measurements under the condition specified by our company)

<table>
<thead>
<tr>
<th>Teaching method</th>
<th>Teaching time</th>
<th>Correction time</th>
<th>Addition of weld command time</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual machine</td>
<td>2 hours (90 s/pint)</td>
<td>None</td>
<td>Add while teaching</td>
<td>2 hours</td>
</tr>
<tr>
<td>Offline software</td>
<td>1 hour (45 s/pint)</td>
<td>30 min.</td>
<td>The same as above</td>
<td>1.5 hours</td>
</tr>
</tbody>
</table>

VRPS (*)
Approx. 7 min. (5 s/pint)  30 min.  Approx. 10 min.  47 min.

*About teaching points: Accuracy of the aiming position is within 3 mm. Need correction.
Condition 1: The head mounted display does not lose tracking while teaching.
Condition 2: Prior to calibration, move the VR equipment for 30 seconds or so.
Condition 3: Set the robot TCP (Tool Center Point).

Operating environment

Teaching points:
- Approx. 80 points
- Weld section:
- Approx. 30 points

Operating environment

- VR equipment: HTC VIVE Pro (Our company specified equipment: For details, please contact Panasonic representatives.)
- CPU: Intel® Core™ i5-4590 or the equivalent or higher class
- Graphics: NVIDIA® GeForce® GTX 1060 or the equivalent or higher
- Memory: 4 GB RAM or more
- Video output: DisplayPort 1.2 or higher
- USB port: USB 3.0 port or higher, 2 ports
- OS: Windows® 10 or higher

Make sure that the applied PC should satisfy the above specifications or higher.
If not, the software, especially graphic, won’t run.

Safety precautions
- Before attempting to use any welding product, always read the manual to ensure correct use.

Specifications are subject to change without notice.
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