

# Smart Pendant

Quick and easy programming



The YASKAWA Smart Pendant is an innovative teach pendant with a large 10-inch touch screen and offers a newly thought-out operator control concept.

The tablet-based graphical user interface (GUI) enables the guided entry of commands, parameters, functions and program sequences. The central interface comprises the main and navigation menus, where entries are listed and switched in a specific, easily comprehensible order.

The Smart Pendant has a revolutionary patented coordinate system – the “Smart Frame” – that also supports rotation and inclination of the Smart Pendant. This means that the operator no longer has to convert motions or break them down into a coordinate space (X,Y,Z) when teaching them, and his line of vision relative to the robot is automatically taken into consideration by the system.

In the case of collaborative robots, the “Hand Guiding” function – guiding the robot manually to a desired position – is also supported.

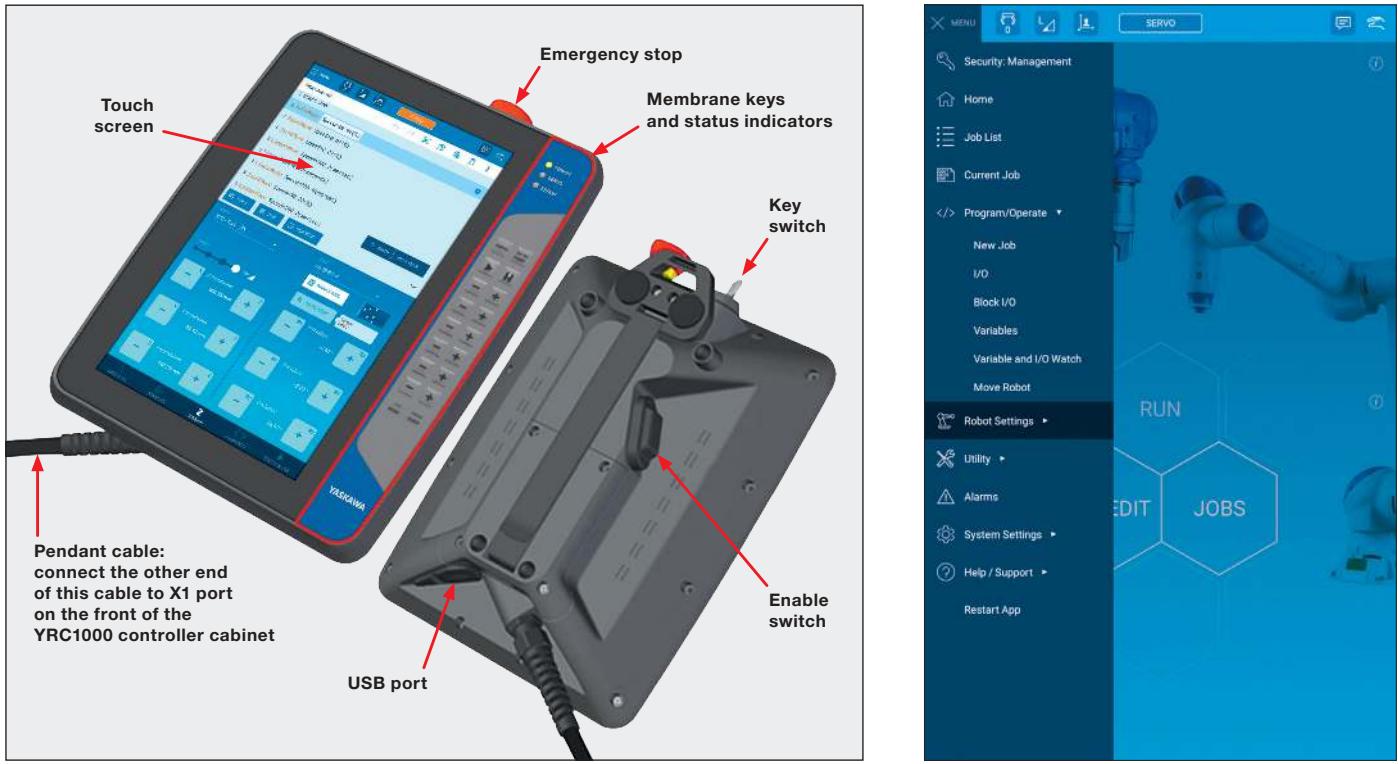
The Smart Pendant is available for the following MOTOMAN robots with the YRC1000 and YRC1000micro controller generations:

- **MOTOMAN YRC1000:**  
HC10, HC10DT, GP7 to GP600
- **MOTOMAN YRC1000micro:**  
MotoMINI, HC10DT, GP7, GP8, GP12

## KEY BENEFITS

- Large touch screen (10")
- Ergonomic design with low weight, diagonal side cable entry and integrated Emergency Stop
- Simple and intuitive operator control, short learning curve
- Ideal for users who need to carry out frequent reprogramming and thus appreciate simple operator control
- Supports many powerful functions of the MOTOMAN YRC1000
- Context-sensitive help and help menu offer many explanations

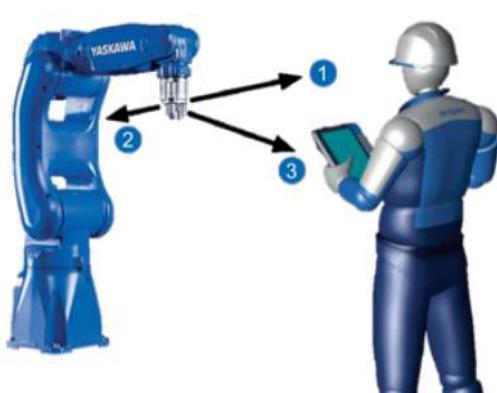
# Smart Pendant



Main menu

## Smart Frame

The patented technology of the "Smart Frame" determines the user's orientation relative to the robot. This eliminates the use of conventional coordinates (X, Y, Z) frames. The intuitive robot jogging by tilting the smart pendant makes it also easy to use.



# Simplified Programming

Command Builder function enables various editing possibilities.

The screenshot shows the 'COMMAND BUILDER' tab selected in a software interface. A dropdown menu 'What do you want to do?' has 'Set' selected. Below it, a text input field contains 'Set B001 1'. There are three radio button options: 'Set a Variable to a Constant Value' (selected), 'Set a Variable to Another Variable', 'Set a Digital Output to ON/OFF', and 'Set a Digital Output ON for a specified Time'. Buttons for 'SET', 'READ', and 'WAIT' are at the top right, along with a close button 'X'.

Configuration enables fast TCP setup

This screenshot shows the 'Set the Tool Center Point (TCP)' section. It includes a diagram of a tool with coordinate axes X<sub>F</sub>, Y<sub>F</sub>, Z<sub>F</sub> and the TCP point. Input fields for X<sub>F</sub>, Y<sub>F</sub>, and Z<sub>F</sub> are set to 0.000 mm, while Z<sub>F</sub> is set to 10.000 mm. A checkbox 'Show without tool' is present. Below this, 'Advanced Tool Settings (improves performance)' are listed with sections for Center of Gravity, Moment of Inertia, and Orientation of Tool Tip, each with X, Y, and Z inputs.

Simple tool

# Hand Guiding

This function enables manual guidance of the robot to a desired position by hand.

The screenshot shows the 'Hand Guiding' mode selected in the 'Mode' dropdown. The 'Tool' dropdown is set to '#3: GRIPPER & PART'. Under 'Tool', there are buttons for 'TOGGLE TOOL' and 'GO TO POINT', and a note 'Motion Command Not Selected'. The 'Speed' slider is set to 'High'. The 'ALL JOINTS' section allows manual control of joints X3, Y3, and Z3. A table lists joint angles: (S)wing (-1.41°), (L)ower Arm (7.68°), (U)pper Arm (89.40°), (R)otate (-7.02°), (B)end (-83.96°), and (T)wist (37.08°). A 'Direct Teach Settings' link is at the bottom.



- ① Button replaces deadman switch
- ② Button is freely programmable (i.e. Open/Close gripper)
- ③ Teach button to program current position

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All drawing dimensions in mm.  
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