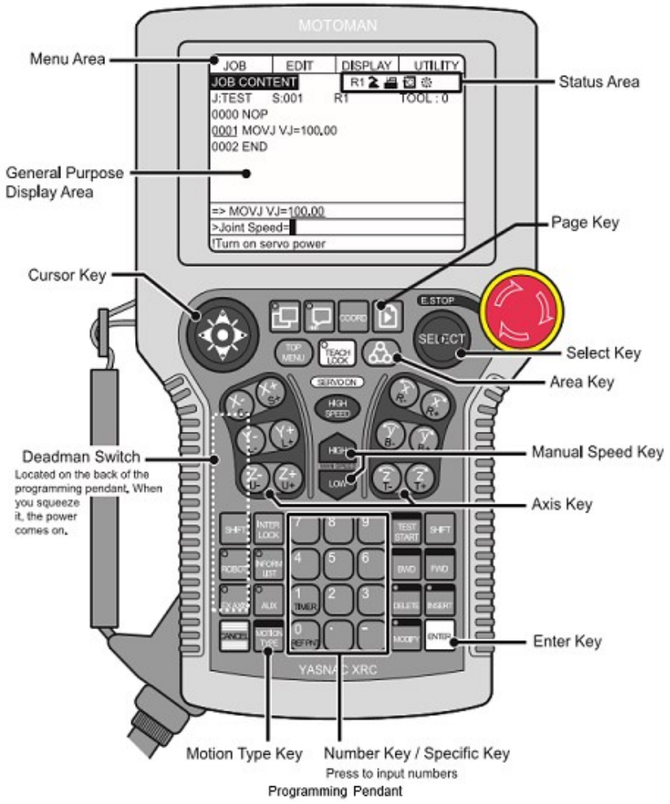
Motoman XRC



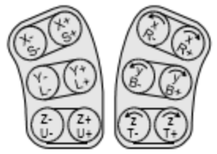
Cursor

Reserved Display Key

Direct Open Key

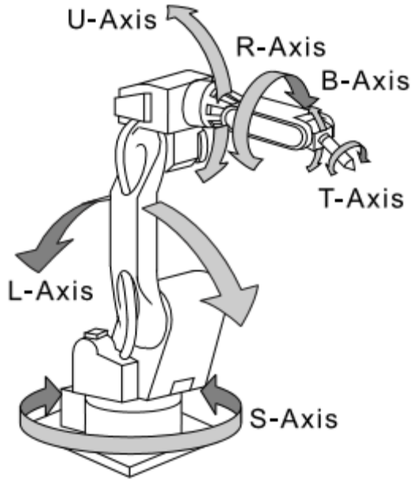
Page Key

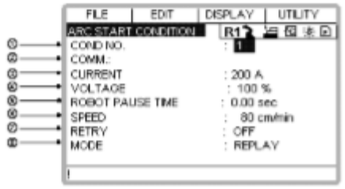
Area Key

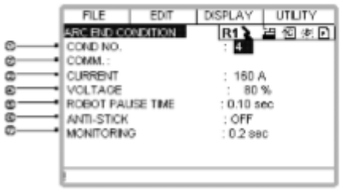


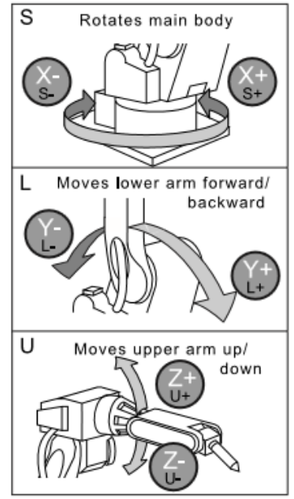
Axis Operation

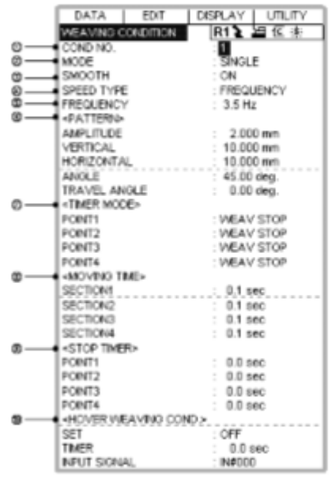
Number

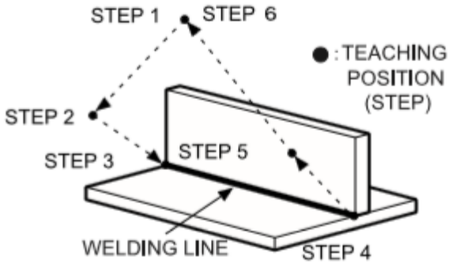








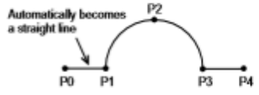




Example Job

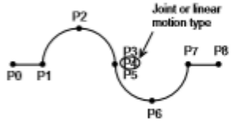
LINE	INSTRUCTION	EXPLANATION	
0000	NOP		
0001	MOVJ VJ=25.00	Moves manipulator to waiting position.	(Step 1)
0002	MOVJ VJ=25.00	Moves manipulator near welding start position.	(Step 2)
0003	MOVJ VJ=12.50	Moves manipulator to welding start position.	(Step 3)
0004	ARCON	Specifies manipulator arc start.	
0005	MOVL V=50	Moves manipulator to welding end position.	(Step 4)
0006	ARCOF	Specifies manipulator arc end.	
0007	MOVJ VJ=25.00	Moves manipulator to position a safe distance away from equipment.	(Step 5)
0008	MOVJ VJ=25.00	Moves manipulator to waiting position.	(Step 6)
0009	END		

Motion type for single circular



	Motion type	Instruction
P0	Joint or Linear	MOVJ MOVL
P1 P2 P3	Circular	MOVC
P4	Joint or Linear	MOVJ MOVL

Motion Type for continuous Circular



Point	Motion Type	Instruction
P0	Joint or Linear	MOVJ MOVL
P1 P2 P3	Circular	MOVC
P4	Joint or Linear	MOVJ MOVL
P5 P6 P7	Circular	MOVC
P8	Joint or Linear	MOVJ MOVL

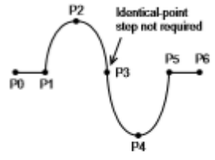
Arc Welding

1 TIMER	Use when registering a timer instruction "TIMER" in the job.
0 REFP	Use when registering a reference point "REFP" in the job. Use when the registered reference point is modified. Also, it moves the robot to the registered reference point using [REFP] + "FWD".
8 ARC ON	Use when registering an arc start instruction "ARCON".
5 ARC OFF	Use when registering an arc end instruction "ARCOF".
9 FEED 6 RETRACT	Use when wire inching is performed. Press [FEED] to feed the wire, and press [RETRACT] to retract the wire. While these buttons are pressed, the wire feed motor is operated. When the following are pressed simultaneously, wire inching is performed in the high speed mode. [HIGH SPD] + [FEED] [HIGH SPD] + [RETRACT]

Motion Type for a Single Free Curve

Point	Motion Type	Instruction
P0	Joint or Linear	MOVJ MOVL
P1 P2 P3	Spline	MOVS
P4	Joint or Linear	MOVJ MOVL

Motion Type for Continuous Free Curves



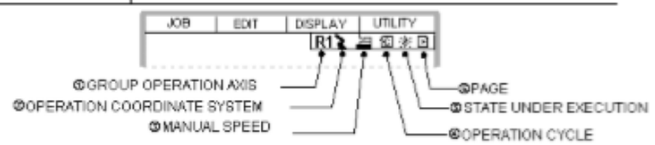
Point	Motion Type	Instruction
P0	Joint or Linear	MOVJ MOVL
P1 P2 P5	Spline	MOVS
P6	Joint or Linear	MOVJ MOVL

When the parabolas overlap, a composite motion path is created.

E.STOP Button 	**Turns off the servo power.** When the servo power is turned off, the SERVO ON LED on the programming pendant and the SERVO ON READY lamp will light. An emergency stop message is displayed on the screen.
Deadman Switch 	**Turns on the servo power.** Deadman switch is active only when the SERVO ON READY lamp is blinking and both the safety plug and Teach Lock are on.
[TEACH LOCK] 	**Sets to Teach Lock.** The LED lights when the Teach Lock is set. When you set Teach Lock, Start is disabled and mode changes are locked out until Teach Lock is turned off. When Teach Lock is off, servo power cannot be turned on using the deadman switch.
Cursor 	**Moves the cursor in the direction of the arrow.** The size of the cursor and the range /place where the cursor can move will vary dependent on the display. If the UP cursor button is pressed when the cursor is on the first line, the cursor will move to the last line of the job. Conversely, if the cursor is on the last line of the job and the DOWN cursor button is pressed, the cursor will jump to the first line of the job. When [SHIFT] is pressed simultaneously: [SHIFT] + UP Goes back to the previous page. [SHIFT] + DOWN Goes to the next page. [SHIFT] + RIGHT Scrolls the instruction area of the job content or play back display to the right. [SHIFT] + LEFT Scrolls the instruction area of the job content or playback display to the left.
[SELECT] 	**Selects menu items such as top menu, pull down menu, etc.**
[TOP MENU] 	**Displays the top menu.** When [SHIFT] is pressed simultaneously: [SHIFT] + [TOP MENU] When any display appears, the screen changes in the order of the display, sub-menu and top menu.
Area Key 	**Moves the cursor between "Menu Area" and "General Purpose Display Area".** When [SHIFT] is pressed simultaneously: [SHIFT] + [AREA] The language can be switched when the bilingual function is valid. (Bilingual function is optional.)
Page Key 	**Displays the next page.** When [SHIFT] is pressed simultaneously with [PAGE], the previous page is displayed. The page can be changed when the page appears in the status area.
Direct Open Key 	**Displays the content related to the current line.** To display the content of a CALL job or condition file, move the cursor to the next line and press [DIRECT OPEN]. The file will be displayed for the selected line. Display content will vary depending on the type of instruction used in the job. Example: For a CALL instruction, the content of the called job will be displayed. For an Operation instruction, the content of the condition file will be displayed. For input/output instructions, the input/output condition will be displayed.
Reserved Display Key 	**Displays the reserved display.** During operation the display, which is registered because it is often seen, can be called up by pressing this key.

[COORD] 	**Select the operation coordinate system when the manipulator is operated manually.** Five coordinate systems (joint, rectangular, cylinder, tool and user) can be used. Each time this key is pressed, the coordinate system is switched in the following order: "JOINT"→"WLD/CYL"→"TOOL"→"USER" The selected coordinate system is displayed on the status display area. When [SHIFT] is pressed simultaneously with [COORD], the coordinate number can be changed when the "TOOL" or "USER" coordinate system is selected.
[MAN SPD] 	**Sets the speed for manual operation.** This speed is also valid for operations with [FWD] and [BWD]. There are four speed levels (slow, medium, fast, and inching). Each time [FST] is pressed, manual speed changes in the following order: "INCH"→" SLOW"→"MED"→"FST" Each time [SLW] is pressed, manual speed changes in the following order: "FST"→" MED"→"SLOW"→"INCH" The selected speed is displayed on the status area.
[HIGH SPD] 	**Changes the speed of axis operation when and axis button is pressed.** The speed of the manipulator will change to high regardless of the programmed speed. Note that only one axis can be operated at high speed. High-speed operation of multiple axes is not possible.
[MOTION TYPE] 	**Selects the motion type for playback operation.** The selected motion type is shown in the status display area on the screen. Each time this key is pressed, the motion type changes in the following order: "MOVJ"→" MOVL"→"MOVC"→"MOVS" When [SHIFT] is pressed simultaneously with [MOTION TYPE], the motion mode changes in the following order: "STANDARD"→" EXTERNAL REFERENCE POINT"*→" CONVEYOR"* Motion Type can be changed in any mode. *: These modes are purchased options.
[ROBOT] 	**Changes the robot axis for axis operation.** Pressing this key enables the robot axis operation.
[EX.AXIS] 	**Changes the external axis for axis operation.** Pressing this key enables the external axis operation. [EX.AXIS] is active for the system with the external axis.
Axis Key 	**Moves specified axes on manipulator.** The manipulator axes only move while the key is held down. Multiple axes can be operated simultaneously by pressing two or more keys at the same time. Axis type (robot or external) is changed as follows: The manipulator operates in the selected coordinate system.
[TEST START] 	**Moves the manipulator through taught steps in a continuous motion when [TEST START] and [INTERLOCK] are simultaneously pressed.** The manipulator can be moved to check the path of taught steps. The manipulator operates according to the currently selected operation cycle: "AUTO","1CYCLE",or "STEP" If an operating speed exceeds the maximum teaching speed, the operation proceeds at the maximum teaching speed. Operation stops immediately when this key is released.
[FWD] 	**Moves the manipulator through the taught steps while this key is pressed.** Only move instructions are executed (no weld commands). When [SHIFT] is pressed simultaneously with [FWD], all instructions except move instructions are executed. As for the operation of pressing [REF PNT] simultaneously, see the description of "TEST START".
[BWD] 	**Moves the manipulator through the taught steps in the reverse direction while this key is pressed.** Only move instructions are executed (no weld commands).

[INFORM LIST] 	**Displays instruction lists of commands available for job editing.**
[CANCEL] 	**Cancels data input and resets errors.**
[DELETE] 	**Deletes registered instructions and data.** [DELETE] functions only when the key lamp is lit.
[INSERT] 	**Inserts new instructions or data.** [INSERT] functions only when the key lamp is lit.
[MODIFY] 	**Modifies taught position data, instructions, and data.** [MODIFY] functions only when the key lamp is lit.
[ENTER] 	**Registers instructions, data, current position of the manipulator, etc.** When [ENTER] is pressed, the instruction or data displayed in the input buffer line moves to the cursor position to complete a registration, insertion, or modification.
[SHIFT] 	**Changes the functions of the other keys.** Used with [TOP MENU], [COORD], [MOTION TYPE], CURSOR, RESERVED DISPLAY KEY  , NUMBER KEY, Page Key  to access alternate functions. Refer to the description of each key for the alternate [SHIFT] functions.
[INTERLOCK] 	**Changes the functions of the other keys.** Used with [TEST START], [FWD], NUMBER KEY (number key customize function) Refer to the description of each key for the alternate [INTERLOCK] functions.
Number Key 	**Enters the number or symbol when the ">" prompt appears on the input line.** "." is the decimal point. "-" is a minus sign or hyphen. The number keys are also used as function keys. Refer to the explanation of each key for details.



④OPERATION CORDINATE SYSTEM
Displays the selected coordinate system.

: Link Coordinate
: XYZ Coordinate
: Cylinder Coordinate
: Tool Coordinate
: User Coordinate

③MANUAL SPEED
Displays the selected speed.

: Inching
: Low Speed
: Medium Speed
: High Speed

②OPERATION CYCLE
Displays the present operation cycle.

: Step
: Cycle
: Continuous

①STATE UNDER EXECUTION
Displays the present system status (STOP, HOLD, ESTOP, ALARM, or RUN).

: Stop Status
: Hold Status
: Emergency Stop Status
: Alarm Status
: Operating Status

⑥PAGE
Displays the screen where the page is switched.