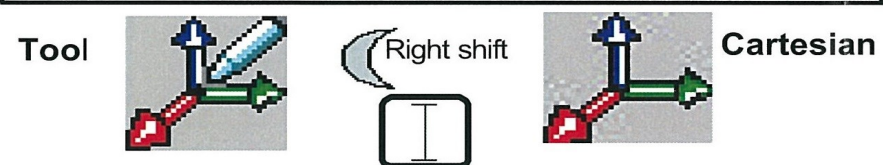


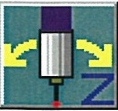
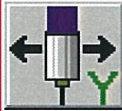
Robot operation ON

The diagram illustrates the FANUC 0i-MC control panel with the following components and labels:

- Top Row:** L-shift key, Deadman switch (back side), Start-up switch, Hold switch, Servo-ON switch, Emergency stop switch.
- Left Side:** Operation function key (I, II, III, IV), Mode select switch.
- Center:** Main display screen showing program data.
- Right Side:** Jog up, Jog click, Jog down, Jog dial, Entry key, Window change, Cancel.
- Bottom Row:** Auto/Teach switch, User function keys (F1, F2, F3, F4, F5).
- Bottom Right:** Jog width 0.20mm H M [L] Switch with R-shift key.
- Bottom Section (Keys in teaching mode):**
 - Trace
 - Gas check
 - Teach
 - Command add
 - Page change
 - Speed
 - Weld
 - Operation mode
 - Coordinate system
 - Page change

Operation coordinate system (Standasrd)



Left shift 		
		
		
		

Used to angle-change

Combination
alternation is
available at tool pivot

Left shift		
		
		
		

Used to move

Movement of recommended coordinate system

The diagram is divided into two main sections: **Move** and **Angle change**.

Move (Cartesian coordinate system): This section shows a 3D coordinate system with X (red), Y (blue), and Z (green) axes. A robotic arm is depicted with its end effector at the origin. A table lists movements relative to the robot:

With respect to the robot	
	Move right/left
	Move forward/backward
	Move up/down

Angle change (Tool coordinate system): This section shows a 3D coordinate system with X (red), Y (blue), and Z (green) axes. A robotic arm is depicted with its end effector at the origin. A table lists angle changes relative to the torch:

With respect to the torch	
	Torch right/ left
	Torch forward/backward
	Torch rotation

The diagram also includes a 3D view of a rectangular block with X, Y, and Z axes and a 2D view of a rectangular block with X, Y, and Z axes, showing the relationship between the coordinate system and the workpiece.

GII menu icon chart

Ver 20020307



File	Edit	View	Add command	Set
New	Cut	File list	In/out	Variable
Open	Copy	Display change	Flow	I/O In/out
Close	Paste	Operating management	Weld	Robot
Save	Paste (oder)	Window	TIG weld	Controller
Save as	Paste (reverse)	Arc weld information	X=A Calculated	TP
Transfer	Find		Move	System information
Properties	Replace		+ α Option	Backup
Delete	Jump			Management tool
Rename	Global variable settings			Arc welding
	+ α Option			

Objective mechanism	Coordinate	Interpolation type	Speed	Add/Change/Delete	Weld ON/OFF	I/O status	More
Robot	Joint	PTP	Speed (low)	Add	Weld point/air-cut point registration	I/O In/out	Teach settings
External axis	Cartesian	Linear	Speed (middle)	Change			Extension setting
	Tool	Circular	Speed (high)	Delete			
	Cylindrical	Weaving					
	User	Circle-weaving					



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Icons in AUTO mode



Limit condition	Program unit	Cycle time	Override	Offline programming
☐ I/O (input/output limit)	☒ Arc (weld limit)	☐ Robot (robot operation limit)		

Basic command

IN/OUT	Flow control
Output 1 ON [OUT 01#(1:01#001)=ON] Output 1 OFF [OUT 01#(1:01#001)=OFF]	Wait for input [WAIT_IP 11#(1:11#0001)ON·T=0.00s] Wait for time [DELAY 0.01s]

Linear teaching exercise ① New program creation (Place this sheet on the table during exercise.) P33

Operation procedure

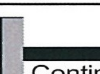
1	Turn ON the power on the robot.	
2	Set the mode select switch to Teach.	
3	Open the file.	 + 
4	Select the New from the file menu.	 + 
5	Select OK or Entry	 +  / 
6	Turn ON the robot.	 →   ON (Lamp is lit)
7	Hold deadman switch gently, and turn ON the servo power.	

Robot gets into manual operation mode.

Trace checking

1	Turn OFF the robot	 →  OFF (Lamp goes out)
2	Move the cursor with both-arrow to the front end. ●Begin of Program	
3	Turn ON the robot	 →  ON (Lamp is lit)
4	Turn ON the trace icon.	 +  ON (Lamp is lit)

Proceed to trace operation

Forward	 +  Continuously press the switch ON → Stop
Backward	 +  Continuously press the switch ON → Stop

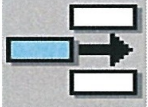
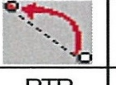
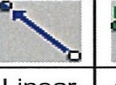
Exiting from the operation

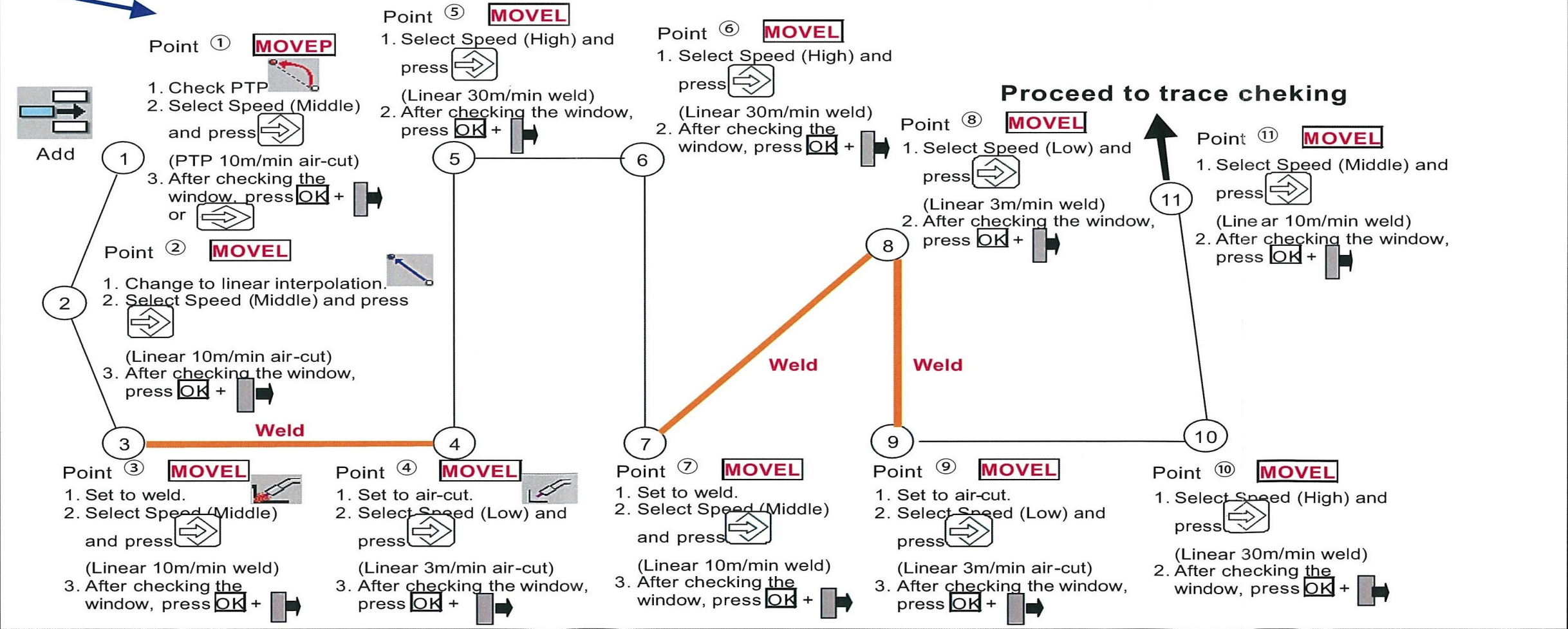
1	Turn ON/OFF the robot.	 →  OFF (Lamp goes out)
2	Turn ON the window change key.	
3	Select the file.	 + 
4	Save the file (program).	 + 
	Save it?	 +  / 
5	Close the file.	 +  /  + 

(OK + ) is the same as 

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<Check items>

Teaching content		
		
Add	Change	Delete
Coordinate system		
		
Joint	Cartesian	Tool
Operation type		
		
PTP	Linear	Circular
Speed		
		
Speed (Low)	Speed (Middle)	Speed (High)
Weld ON/OFF		
		
Weld ON	Weld OFF (Air-cut)	



Linear correction exercise ② Program trace correction (Place this sheet on the table during exercise.) P34

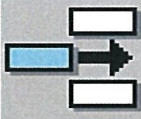
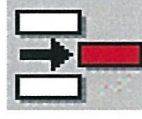
Operation procedure

1	Turn ON the power on the robot.	
2	Set the mode select switch to Teach.	
3	Open the file.	 + 
4	Select the New from the file menu.	 + 
5	Select the desired program (Move the cursor to the desired program).	 Objective Prog + 
6		 +  / 
7	Turn ON the robot.	 →  ON (Lamp is lit)
8	Turn ON the trace icon.	 →  R-shift key  ON (Lamp is lit)

Proceed to trace operation.

(OK + ) is the same as 

<Check items>

Teaching content				
				
Add	Change	Delete		
Coordinate system				
				
Joint	Cartesian	Tool	Cylindrical	User
Operation type				
				
PTP	Linear	Circular	Weaving	Circular weaving
Speed				
				
Speed (Low)	Speed (Middle)	Speed (High)		
Weld ON/OFF				
				
Weld ON	Weld OFF (Air-cut)			

Proceed to trace operation

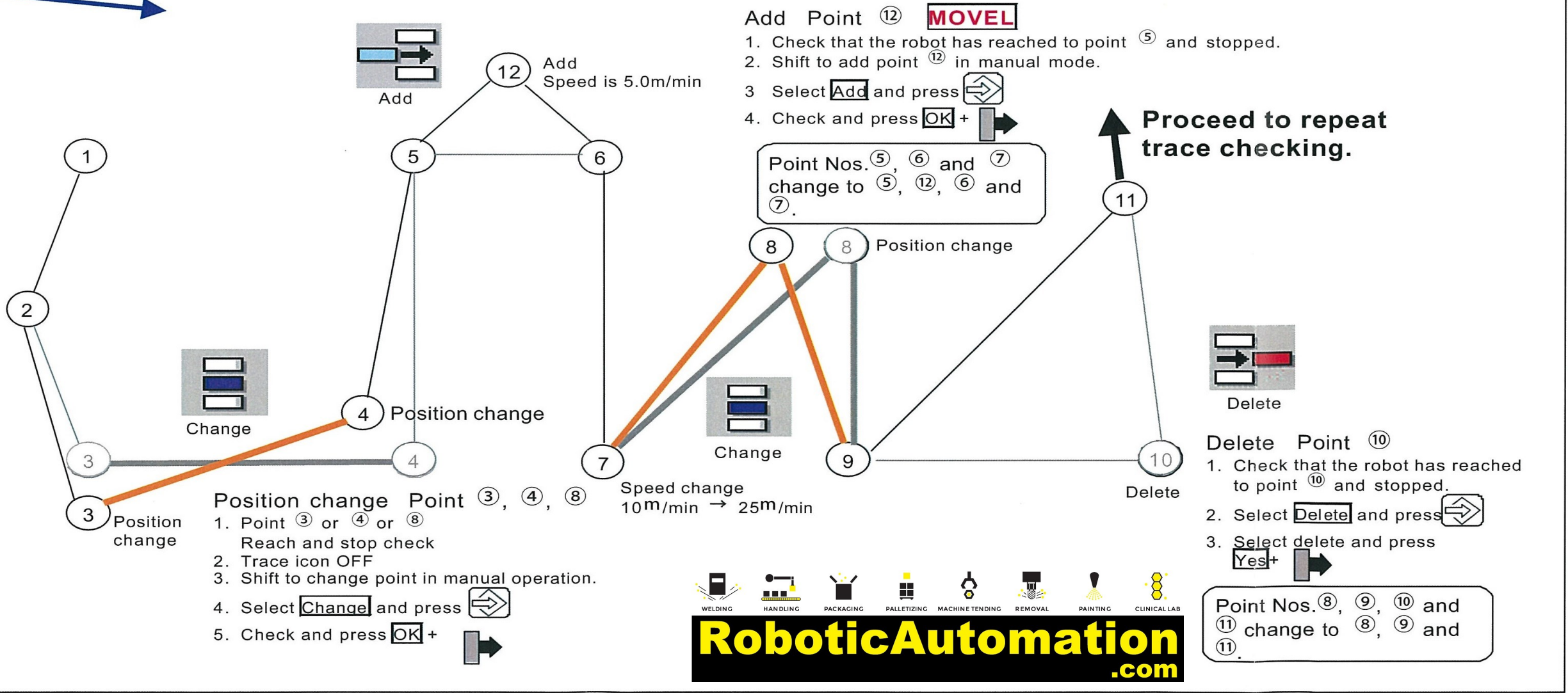
Forward	 +  Stop
Backward	 +  Stop

When repeating trace check

1	Turn OFF the robot.	 OFF (Lamp goes out)
2	Move the cursor with both-arrow to the front end. ●Begin of Program	
3	Turn ON the robot.	 ON (Lamp is lit)
4	Turn ON the trace icon.	 R-shift key  ON (Lamp is lit)

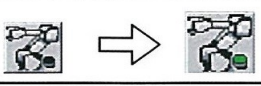
Exiting from the operation

1	Turn ON/OFF the robot.	 OFF (Lamp goes out)
2	Turn ON the window change key.	
3	Select the file.	 + 
4	Save the file (program).	 + 
	Save it?	 + 
5	Close the file.	 + 



Circular teaching exercise ① New program creation (Place this sheet on the table during exercise.) P35

Operation procedure

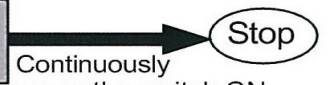
1	Turn ON the power on the robot.	
2	Set the mode select switch to Teach.	
3	Open the file.	 + 
4	Select the New creation from the file menu.	 + 
5	Select OK or Entry	 +  / 
6	Turn ON the robot.	  ON (Lamp is lit)
7	Hold deadman switch gently, and turn ON the servo power.	

Robot gets into manual operation mode.

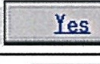
Trace checking

1	Turn OFF the robot.	 OFF (Lamp goes out)
2	Move the cursor with both-arrow to the front end. ●Begin of Program	
3	Turn ON the robot.	 ON (Lamp is lit)
4	Turn ON the trace icon.	 R-shift key  ON (Lamp is lit)

Proceed to trace operation

Forward	 + 
Backward	 + 

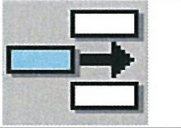
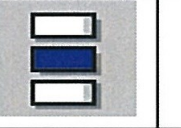
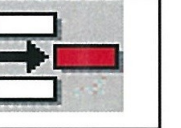
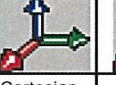
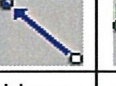
Exiting from the operation

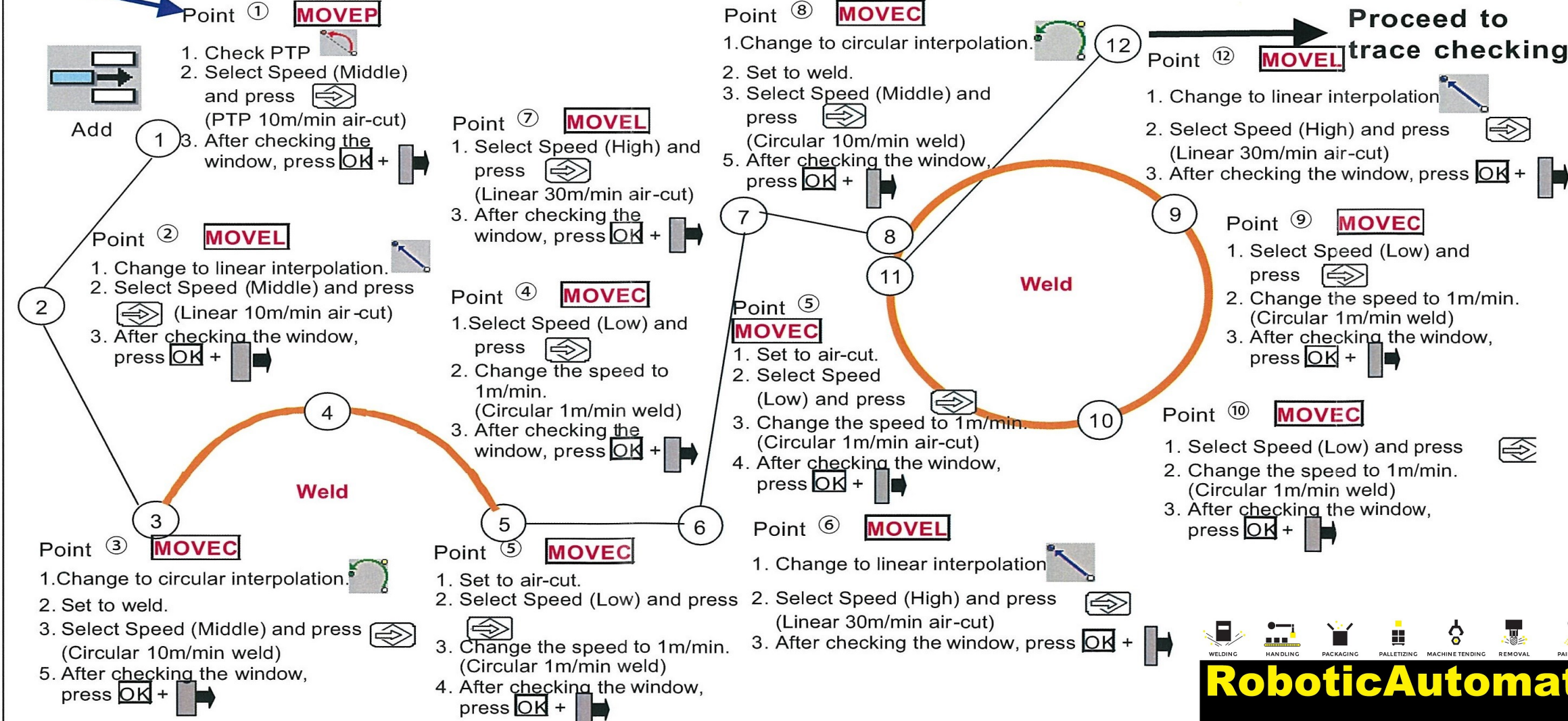
1	Turn ON/OFF the robot.	 OFF (Lamp goes out)
2	Turn ON the window change key.	
3	Select the file.	 + 
4	Save the file (program).	 + 
	Save it?	 + 
5	Close the file.	 + 

(OK + ) is the same as 

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<Check items>

Teaching content		
		
Add	Change	Delete
Coordinate system		
		
Joint	Cartesian	Tool
Operation type		
		
PTP	Linear	Circular
Speed		
		
Speed (Low)	Speed (Middle)	Speed (High)
Weld ON/OFF		
		
Weld ON	Weld OFF (Air-cut)	



Circular correction exercise ② Program trace correction (Place this sheet on the table during exercise.) P36

Operation procedure

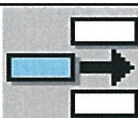
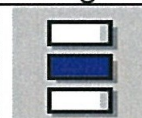
1	Turn ON the power on the robot.	
2	Set the mode select switch to <u>Teach</u> .	  Auto Teach
3	Open the file. 	 + 
4	Select the New creation from the file menu. 	 + 
5	Select the desired program (Move the cursor to the desired program).	 Objective Prog + 
6		 +  / 

7	Turn ON the robot.  → 	  ON (Lamp is lit)
8	Turn ON the trace icon.  → 	 +   ON (Lamp is lit)

Proceed to trace operation. 

(OK + ) is the same as 

<Check items>

Teaching content				
				
Add	Change	Delete		
Coordinate system				
				
Joint	Cartesian	Tool	Cylindrical	User
Operation type				
				
PTP	Linear	Circular	Weaving	Circular weaving
Speed				
				
Speed (Low)	Speed (Middle)	Speed (High)		
Weld ON/OFF				
				
Weld ON		Weld OFF (Air-cut)		

Proceed to trace operation

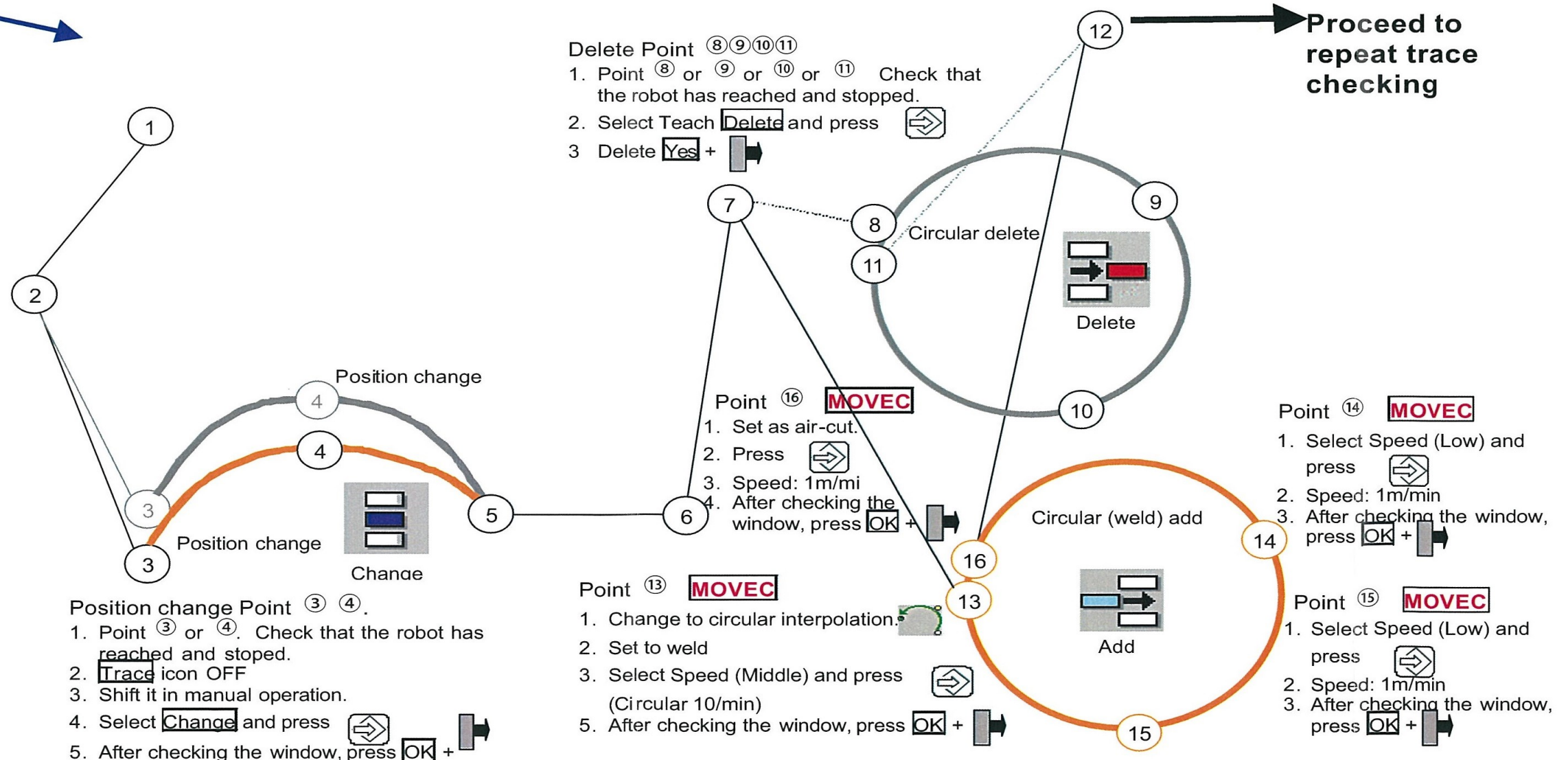
Forward	
Backward	

When repeating trace check

1	Turn OFF the robot.  → 	  OFF (Lamp goes out)
2	Move the cursor with both-arrow to the front end. ●Begin of Program	
3	Turn ON the robot.  → 	  ON (Lamp is lit)
4	Turn ON the trace icon.  → 	 +   ON (Lamp is lit)

Exiting from the operation

1	Turn ON/OFF the robot.  → 	  OFF (Lamp goes out)
2	Turn ON the window change key.	
3	Select the file. 	 + 
4	Save the file (program). 	 + 
	Save it?	 +  / 
5	Close the file.  	 +   + 



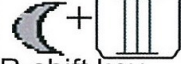
Weaving teaching exercise ① New program creation (Place this sheet on the table during exercise.) P37

Operation procedure

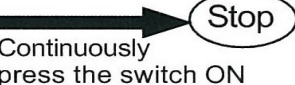
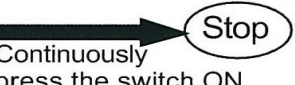
1	Turn ON the power on the robot.	
2	Set the mode select switch to Teach.	
3	Open the file.	 + 
4	Select the New creation from the file menu.	 + 
5	Select OK or Entry	 +  / 
6	Turn ON the robot.	 →   ON (Lamp is lit)
7	Hold deadman switch gently, and turn ON the servo power.	

Robot gets into manual operation mode.

Trace checking

1	Turn OFF the robot.	 OFF (Lamp goes out)
2	Move the cursor with both-arrow to the front end. ●Begin of Program	
3	Turn ON the robot.	 ON (Lamp is lit)
4	Turn ON the trace icon.	 R-shift key  ON (Lamp is lit)

Proceed to trace operation

Forward	 + 
Backward	 + 

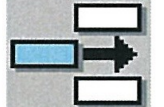
Exiting from the operation

1	Turn ON/OFF the robot.	 OFF (Lamp goes out)
2	Turn ON the window change key.	
3	Select the file.	 + 
4	Save the file (program).	 + 
	Save it?	 + 
5	Close the file.	 + 

(OK + ) is the same as 

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<Check items>

Teaching content		
		
Add	Change	Delete
Coordinate system		
		
Joint	Cartesian	Tool
Operation type		
		
PTP	Linear	Circular
Speed		
		
Speed (Low)	Speed (Middle)	Speed (High)
Weld ON/OFF		
		
Weld ON	Weld OFF (Air-cut)	



- Point ③ **MOVEW**
1. Change to weaving interpolation.
 2. Set to Weld
 3. Select Middle speed and press .
 4. Pattern 2 Frequency :1.5 Hz
 5. After checking the window, press  + .

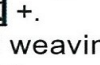
- Point ① **MOVEP**
1. Set to PTP.
 2. Select High speed and press .
 3. After checking the window, Press  + .

- Point ② • ⑦ **MOVE**
1. Change to linear interpolation.
 2. Select High speed and press .
 3. After checking the window, press  + .

- Point ④ • ⑤ **WEAVEP**
1. Select Low speed and press .
 2. Change the speed to 1m/min (Wave 1m/min weld)
 3. Change the speed to 1m/min
 4. Pattern 2: frequency: 1.5Hz
 5. After checking the window, press  + .
 6. Carry out weaving completion processing.

- Point ⑭ **MOVEW**
1. Set as air-cut.
 2. Select Low speed and press .
 3. Change the speed to 1m/min
 4. Pattern 1: frequency: 2.0Hz
 5. After checking the window, press  + .
 6. Carry out weaving completion processing.

- Point ⑧ **MOVEW**
1. Change to weaving interpolation.
 2. Set to Weld
 3. Select Middle speed and press .
 4. Pattern 1 Frequency: 2.0 Hz
 5. After checking the window, press  + .

- Point ⑥ **MOVEW**
1. Set as air-cut.
 2. Select Low speed and press .
 3. Change the speed to 1m/min
 4. Pattern 2: frequency: 1.5Hz
 5. After checking the window, press  + .
 6. Carry out weaving completion processing.

- Point ⑨ • ⑩ or ⑫ • ⑬ **WEAVEP**
1. Select Low speed and press .
 2. Change the speed to 1m/min (Wave 1m/min weld)
 3. Change the speed to 1m/min
 4. Pattern 1 Frequency: 2.0Hz
 5. After checking the window, press  + .

- Point ⑮ **MOVE**
1. Change to linear interpolation.
 2. Select High speed and press .
 3. After checking the window, press  + .

- Point ⑪ **MOVEW**
1. Set to weld.
 2. Select Low speed and press .
 3. Change the speed to 1m/min. (weaving 1m/min weld)
 4. Pattern 1 Frequency: 2.0Hz
 5. After checking the window, press  + .

Proceed to trace checking

Weaving correction exercise ② Program trace correction (Place this sheet on the table during exercise.) P38

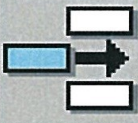
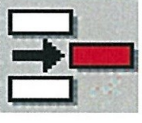
Operation procedure

1	Turn ON the power on the robot.	
2	Set the mode select switch to Teach.	
3	Open the file.	 + 
4	Select the New creation from the file menu.	 + 
5	Select the desired program (Move the cursor to the desired program).	 Objective Prog + 
6		 +  / 
7	Turn ON the robot.	 →    ON (Lamp is lit)
8	Turn ON the trace icon.	 →  R-shift key  ON (Lamp is lit)

Proceed to trace operation. 

(OK + ) is the same as 

<Check items>

Teaching content				
				
Add	Change	Delete		
Coordinate system				
				
Joint	Cartesian	Tool	Cylindrical	User
Operation type				
				
PTP	Linear	Circular	Weaving	Circular weaving
Speed				
				
Speed (Low)	Speed (Middle)	Speed (High)		
Weld ON/OFF				
				
Weld ON	Weld OFF (Air-cut)			

Proceed to trace operation

Forward	 +  Stop
Backward	 +  Stop

When repeating trace check

1	Turn OFF the robot.	  OFF (Lamp goes out)
2	Move the cursor with both-arrow to the front end. ●Begin of Program	
3	Turn ON the robot.	  ON (Lamp is lit)
4	Turn ON the trace icon.	 R-shift key  ON (Lamp is lit)

Exiting from the operation

1	Turn ON/OFF the robot.	  OFF (Lamp goes out)
2	Turn ON the window change key.	
3	Select the file.	 + 
4	Save the file (program).	 + 
	Save it?	 + 
5	Close the file.	 + 

