

**ERC BASIC
PROGRAMMING
QUICK REFERENCE
GUIDE**

Revised 10/14/96

Part Number 131915-1

December 1, 1993

MOTOMAN

805 Liberty Lane

West Carrollton, OH 45449

TEL: 937-847-6200 FAX: 937-847-6277

24-HOUR SERVICE HOTLINE: 937-847-3200

The information contained within this document is the proprietary property of Motoman, Inc., and may not be copied, reproduced or transmitted to other parties without the expressed written authorization of Motoman, Inc.

©1999 by **MOTOMAN**

All Rights Reserved

Calling A Job

TEACH ➡ OTHER JOB ➡ (cursor to job) ➡ ENTER

1. Press TEACH.
2. Press OTHER JOB.
3. Move cursor to job.
4. Press ENTER.

Playing A Job

PLAY ➡ CYCLE (AUTO, 1-CYCLE, OR STEP) ➡ START

1. Call the job to be played onto the screen.
2. Press the PLAY key.
3. Choose the desired cycle (AUTO, 1-CYCLE, or STEP).
4. Press the START button.

Calling Master Job To Screen

TEACH ➡ MASTER JOB ➡ CALL ➡ PLAY ➡ START

1. Press the TEACH button.
2. Press MASTER JOB.
3. Press CALL.
4. Press PLAY.
5. Press START.

Registration Of Master Job

**TEACH ➡ MASTER JOB ➡ STORE ➡
(cursor to job) ➡ ENTER**

1. Press TEACH.
2. Press MASTER JOB.
3. Press STORE.
4. Move cursor to job by using the CURSOR keys.
5. Press ENTER.

Naming a Job Alphabetically

**TEACH ➡ NEW JOB ➡ JOB ➡ ABC-ABC
➡ (insert data) ➡ EXIT ➡ ENTER**

1. Press the TEACH button.
2. Press NEW JOB.
3. Press JOB.
4. Press ABC•ABC.
Character display appears.
5. Place the cursor on the desired alphabet letter by using the CURSOR keys. Press the ENTER key. Move cursor to the next desired alphabet letter and press ENTER again. Continue until spelling is complete.
6. Press EXIT to end the character inputting. Otherwise the job cannot be registered.
7. Press ENTER.

E-Stop Recovery

1. Release the E-Stop by twisting the button clockwise.
2. Engage servo power by pressing the SERVO POWER ON key on the operator's panel or operator's station.
3. Wait three seconds for the controller to acquire the encoder data.
4. Press the START pushbutton on the operator's panel or operator's station.

Slow Speed

PLAY ➡ SLOW SPEED ➡ START

1. Press PLAY.
2. Press SLOW SPEED.
3. Press START.

Check

PLAY ➡ CHECK ➡ START

1. Press PLAY.
2. Press CHECK.
3. Press START.

To release check operation:

PLAY ➡ RELEASE

1. Press PLAY.
2. Press RELEASE.

Modifying Points

***(move cursor) ➡ (move manipulator) ➡
MODIFY ➡ RECORD***

1. Move the cursor to the position that will be modified.
2. Move the manipulator to the desired point.
3. Press MODIFY.
4. Press RECORD.

Inserting Points

***(move cursor) ➡ (move manipulator) ➡
INSERT ➡ RECORD***

1. Move the cursor to the position before the step to be inserted. The new step will be inserted after the position of the cursor.
2. Move the manipulator to the desired point.
3. Press INSERT.
4. Press RECORD.

Deleting Points

***ADDR ➡ (move cursor) ➡ DELETE ➡
RECORD***

1. Press ADDR key.
2. Move the cursor to the step to be deleted.
3. Press DELETE.
4. Press RECORD.

Position Level Specification

***MOTION TYPE ➡ PLAY SPEED ➡ POS LVL
➡ +ON or -OFF ➡ RECORD***

1. Choose MOTION TYPE.
2. Choose PLAY SPEED.
3. Press POS LVL.
The positioning level previously selected is displayed.
4. Select the desired level by pressing +ON or -OFF.
5. Press RECORD.

Modifying Motion Types

***(cursor to step) ➡ EDIT ➡ ALTER ➡
CHOOSE MOTION TYPE ➡ ENTER***

1. At the operator's panel cursor to the step to be changed.
2. Press the EDIT key.
3. Press the soft key labeled ALTER.
4. Choose motion type.
5. Press ENTER.

Speed Correction From Operator's Panel

(cursor to step) ➡ EDIT ➡ SPEED CHANGE ➡ (choose speed type) ➡ (input speed) ➡ ENTER ➡ EXIT

1. Move cursor to the first step to be changed.
2. Press EDIT.
3. Press SPEED CHANGE.
4. Choose the type of speed being changed.
5. Input the desired speed from the DATA keys.
6. Press ENTER.
7. When no other step is to be changed press EXIT.

Removing Instructions

(cursor to instruction) ➡ EDIT ➡ DELETE ➡ EXECUTE

1. Move cursor to the instruction to be removed.
2. Press EDIT.
3. Press DELETE.
4. Press EXECUTE.

Call

**EDIT ➡ INSERT ➡ SEQUENCE ➡ (⇨) ➡
CALL ➡ JOB ➡ (cursor to job) ENTER ➡
ENTER**

1. Press EDIT.
2. Press INSERT.
3. Press SEQUENCE.
4. Press the right arrow soft key.
5. Press CALL.
6. Press JOB.
7. Move cursor to job to be called.
8. Press ENTER.
9. Press ENTER.

Return

**EDIT ➡ INSERT ➡ SEQUENCE ➡ (⇨) ➡
RET ➡ ENTER**

1. Press EDIT.
2. Press INSERT.
3. Press SEQUENCE.
4. Press the right arrow soft key.
5. Press RET.
6. Press ENTER.

Jump

EDIT ➡ INSERT ➡ SEQUENCE ➡ JUMP ➡ LABEL ➡ ABC ➡ (name it) ➡ ENTER ➡ ENTER

1. Press EDIT.
2. Press INSERT.
3. Press SEQUENCE.
4. Press JUMP.
5. Press LABEL.
6. Press ABC.
7. Insert name.
8. Press ENTER.
The buffer will read JUMP *XXXX.
9. Press ENTER.

Label

EDIT ➡ INSERT ➡ SEQUENCE ➡ LABEL ➡ ABC ➡ (Name It) ➡ EXIT ➡ ENTER

1. Press EDIT.
2. Press INSERT.
3. Press SEQUENCE.
4. Press LABEL.
5. Press ABC.
6. Insert name.
7. Press EXIT.
8. Press ENTER.

Commenting

***(cursor to instruction) ➡ EDIT ➡ INSERT
➡ SEQUENCE ➡ (→) ➡ COMMENT ➡ ABC
➡ ENTER***

1. Move cursor to the instruction that needs a comment line.
2. Press EDIT.
3. Press INSERT.
4. Press SEQUENCE.
5. Press right arrow.
6. Press COMMENT.
7. Insert comment line using alphabet.
8. Press ENTER

Timer Input from ERC

***EDIT ➡ INSERT ➡ SEQUENCE ➡ TIMER ➡
(insert amount of time) ➡ ENTER***

1. Press EDIT.
2. Press INSERT.
3. Press SEQUENCE.
4. Press TIMER.
5. Insert amount of time required.
6. Press ENTER.

DOUT

***EDIT ➡ INSERT ➡ IN/OUT ➡ DOUT ➡ OT#
➡ (choose output #) ➡ ENTER ➡ ON/OFF***

1. Press EDIT.
2. Press INSERT.
3. Press IN/OUT.
4. Press DOUT.
5. Press OT#.
6. Choose output #.
7. Press ENTER.
8. Press ON/OFF.

PULSE

***EDIT ➡ INSERT ➡ IN/OUT ➡ PULSE ➡
(enter device address to be pulsed) ➡
ENTER ➡ TIME ➡ (enter time to be
pulsed) ➡ ENTER***

1. Press EDIT.
2. Press INSERT.
3. Press IN/OUT.
4. Press PULSE.
5. Enter output # to be pulsed.
6. Press ENTER.
7. Press TIME.
8. Insert desired time.
9. Press ENTER.

WAIT

***EDIT ➡ INSERT ➡ IN/OUT ➡ WAIT ➡ IN#
➡ ON (=1) (or option of time) ➡ ENTER***

1. Press EDIT.
2. Press INSERT.
3. Press IN/OUT.
4. Press WAIT.
5. Insert IN#.
6. Press ON.
7. Press ENTER.

Delete A Job

**TEACH ➡ OTHER JOB ➡ EDIT ➡ JOB
DELETE ➡ (cursor to job) ➡ ENTER ➡
EXECUTE**

1. Press TEACH.
2. Press OTHER JOB.
3. Press EDIT.
4. Press JOB DELETE.
5. Move cursor to the job to be deleted.
6. Press ENTER.
7. Press EXECUTE.

Job Copy

**TEACH ➡ OTHER JOB ➡ EDIT ➡ JOB COPY
➡ (cursor to job) ➡ ENTER ➡ ABC•ABC
➡ CANCEL ➡ (type new job name) ➡ EXIT
➡ ENTER ➡ EXECUTE**

1. Press TEACH.
2. Press OTHER JOB.
3. Press EDIT.
4. Press JOB COPY
5. Move cursor to the job to be copied.
6. Press ENTER.
7. Press ABC•ABC.
8. Press CANCEL.
9. Enter new job name.
10. Press EXIT.
11. Press ENTER.

Backing Up Selected Jobs

OP1 ➔ (Insert Disk) ➔ FLOPPY ➔ SAVE ➔ SELECT JOB ➔ Cursor to job ➔ SELECT ➔ EXIT ➔ EXECUTE

1. Press OP1.
2. Insert disk.
3. Press FLOPPY.
4. Press SAVE.
5. Press SELECT JOB.
6. Move cursor to the job to be saved.
7. Press SELECT.
8. Repeat Steps 6 and 7 for each job to be saved.
9. Press EXECUTE.

Loading Jobs From Disk Onto The ERC

OP1 ➔ FLOPPY ➔ (cursor to JOBS) ➔ LOAD ➔ ALL JOB or SELECT JOB ➔ EXECUTE

1. Press OP1.
2. Press FLOPPY.
3. Move cursor to JOBS.
4. Press LOAD.
5. If all the jobs on disk are to be loaded press ALL JOB.
6. If only a few select jobs are to be loaded, press the SELECT JOB key and follow

select jobs).

7. Press EXECUTE.

Checking Specified Point

***SERVO POWER ON ➡ TEACH ➡ OP1 ➡
SPEC. PNT. ➡ MOVE/MODIFY ➡ ENABLE
TP ➡ FWD ➡ (verify alignment) ➡
DISABLE TP ➡ OP PANEL ➡ CHECK***

1. Turn on the servo motors.
2. Press TEACH MODE.
3. Press OP1.
4. Press SPECIFIED POINT.
5. Press MOVE/MODIFY.
6. Enable the teach pendant.
"SECOND HOME" will be displayed and will be flashing.
7. Press FWD until the robot stops moving and the message stops flashing.
8. Locate alignment marks on each robot axis and verify alignment.
9. If alignment is correct, disable the teach pendant and return to the operator's panel.
10. Press CHECK.
The CRT will display "Completed to check specified point".

NOTES

NOTES

NOTES

NOTES

INDEX

B

Backing Up Selected Jobs, 13

C

Call, 7

Calling A Job, 1

Calling Master Job To Screen, 1

Check, 3

Checking Specified Point, 14

Commenting, 9

D

Delete A Job, 12

Deleting Points, 4

DOUT, 10

E

E-Stop Recovery, 3

I

Inserting Points, 4

J

Job Copy, 12

Jump, 8

L

Label, 8

*Loading Jobs From Disk Onto
The ERC, 13*

INDEX

M

Modifying Motion Types, 5

Modifying Points, 4

N

Naming a Job Alphabetically, 2

P

Playing A Job, 1

Position Level Specification, 5

Pulse, 10

R

Registration Of Master Job, 2

Removing Instructions, 6

Return, 7

S

Slow Speed, 3

*Speed Correction From Operator's
Panel, 6*

T

Timer Input from ERC, 9

”

Wait, 11