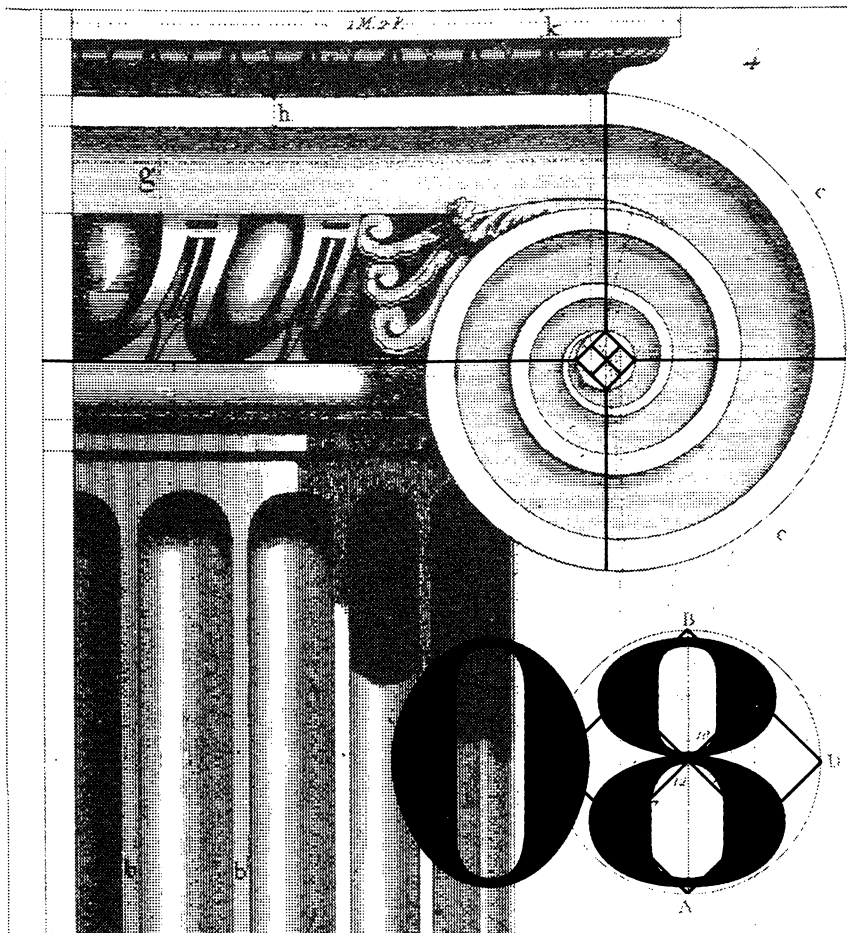


# HC08

*Addendum to  
HC08 Family  
Reference  
Guide*



This addendum provides corrections to the  
*HC08 Family Reference Guide, Rev. 1*  
(Motorola document number M68HC08RG/AD).



**MOTOROLA**

This addendum provides corrections to the *HC08 Family Reference Guide*, Rev. 1 (Motorola document number M68HC08RG/AD).

To update your guide, replace the CBEQ instruction row in the **Instruction Set** table, and the **Source Forms, Addressing Mode, Machine Code, and Cycle** tables for the following instructions:

- CBEQ
- CBEQA
- CBEQX
- DBNZ
- MOV

(Cut out the following tables labeled “To” and paste over existing tables.)

# Instruction Set

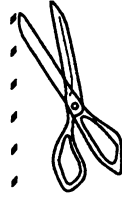
From:

CBEQ <i>opr,rel</i>	PC ← (PC) + \$0003 + rel ? (A) – (M) = \$00									31	dd rr	5
CBEQA # <i>opr,rel</i>	PC ← (PC) + \$0003 + rel ? (A) – (M) = \$00									41	rr rr	4
CBEQX # <i>opr,rel</i>	PC ← (PC) + \$0003 + rel ? (X) – (M) = \$00									51	rr rr	4
CBEQ <i>opr,X+,rel</i>	PC ← (PC) + \$0003 + rel ? (A) – (M) = \$00									61	rr rr	5
CBEQ <i>X+,rel</i>	PC ← (PC) + \$0002 + rel ? (A) – (M) = \$00									71	ff rr	4
CBEQ <i>opr,SP,rel</i>	PC ← (PC) + \$0004 + rel ? (A) – (M) = \$00									9E61	ff rr	6
Compare and Branch if Equal												

To:

CBEQ <i>opr,rel</i>	PC ← (PC) + \$0003 + rel ? (A) – (M) = \$00									31	dd rr	5
CBEQA # <i>opr,rel</i>	PC ← (PC) + \$0003 + rel ? (A) – (M) = \$00									41	rr rr	4
CBEQX # <i>opr,rel</i>	PC ← (PC) + \$0003 + rel ? (X) – (M) = \$00									51	rr rr	4
CBEQ <i>opr,X+,rel</i>	PC ← (PC) + \$0003 + rel ? (A) – (M) = \$00									61	ff rr	5
CBEQ <i>X+,rel</i>	PC ← (PC) + \$0002 + rel ? (A) – (M) = \$00									71	rr rr	4
CBEQ <i>opr,SP,rel</i>	PC ← (PC) + \$0004 + rel ? (A) – (M) = \$00									9E61	ff rr	6
Compare and Branch if Equal												

Cut Here





# CBEQ

*From:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
CBEQ <i>opr</i>	DIR	31	dd rr	5
CBEQA <i>#opr, rel</i>	IMM	41	ii rr	4
CBEQX <i>#opr, rel</i>	IMM	51	ii rr	4
CBEQ <i>X+, rel</i>	IX+	71	rr	4
CBEQ <i>opr, X+, rel</i>	IX1+	61	ff rr	5
CBEQ <i>opr, SP, rel</i>	SP1	9E61	ff rr	6

*To:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
CBEQ <i>opr, rel</i>	DIR	31	dd rr	5
CBEQA <i>#opr, rel</i>	IMM	41	ii rr	4
CBEQX <i>#opr, rel</i>	IMM	51	ii rr	4
CBEQ <i>X+, rel</i>	IX+	71	rr	4
CBEQ <i>opr, X+, rel</i>	IX1+	61	ff rr	5
CBEQ <i>opr, SP, rel</i>	SP1	9E61	ff rr	6



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# CBEQ



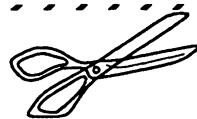
# CBEQA

*From:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
CBEQ <i>opr</i>	DIR	31	dd rr	5
CBEQA <i>#opr, rel</i>	IMM	41	ii rr	4
CBEQX <i>#opr, rel</i>	IMM	51	ii rr	4
CBEQ <i>X+, rel</i>	IX+	71	rr	4
CBEQ <i>opr, X+, rel</i>	IX1+	61	ff rr	5
CBEQ <i>opr, SP, rel</i>	SP1	9E61	ff rr	5

*To:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
CBEQ <i>opr, rel</i>	DIR	31	dd rr	5
CBEQA <i>#opr, rel</i>	IMM	41	ii rr	4
CBEQX <i>#opr, rel</i>	IMM	51	ii rr	4
CBEQ <i>X+, rel</i>	IX+	71	rr	4
CBEQ <i>opr, X+, rel</i>	IX1+	61	ff rr	5
CBEQ <i>opr, SP, rel</i>	SP1	9E61	ff rr	6



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# CBEQA





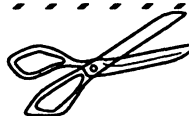
# CBEQX

*From:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
CBEQ <i>opr</i>	DIR	31	dd rr	5
CBEQA <i>#opr, rel</i>	IMM	41	ii rr	4
CBEQX <i>#opr, rel</i>	IMM	51	ii rr	4
CBEQ <i>X+, rel</i>	IX+	71	rr	4
CBEQ <i>opr, X+, rel</i>	IX1+	61	ff rr	5
CBEQ <i>opr, SP, rel</i>	SP1	9E61	ff rr	5

*To:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
CBEQ <i>opr, rel</i>	DIR	31	dd rr	5
CBEQA <i>#opr, rel</i>	IMM	41	ii rr	4
CBEQX <i>#opr, rel</i>	IMM	51	ii rr	4
CBEQ <i>X+, rel</i>	IX+	71	rr	4
CBEQ <i>opr, X+, rel</i>	IX1+	61	ff rr	5
CBEQ <i>opr, SP, rel</i>	SP1	9E61	ff rr	6



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# CBEQX



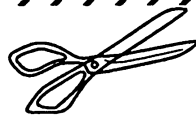
# DBNZ

*From:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
DBNZ <i>opr</i>	DIR	3B	dd rr	5
DBNZA <i>opr</i>	INH	4B	rr	3
DBNZX <i>opr</i>	INH	5B	rr	3
DBNZ <i>opr</i>	IX	7B	rr	4
DBNZ <i>opr</i>	IX1	6B	rr rr	5
DBNZ <i>opr</i>	SP1	9E6B	rr rr	6

*To:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
DBNZ <i>opr, rel</i>	DIR	3B	dd rr	5
DBNZA <i>rel</i>	INH	4B	rr	3
DBNZX <i>rel</i>	INH	5B	rr	3
DBNZ <i>X, rel</i>	IX	7B	rr	4
DBNZ <i>opr, X, rel</i>	IX1	6B	ff rr	5
DBNZ <i>opr, SP, rel</i>	SP1	9E6B	ff rr	6



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# DBNZ



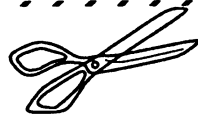
# MOV

*From:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
MOV <i>opr</i>	IMD	6E	ii dd	4
MOV <i>opr</i>	DD	4E	dd dd	5
MOV <i>opr</i>	IX+D	7E	dd	4
MOV <i>opr</i>	DIX+	5E	dd	4

*To:*

Source Forms	Addr Mode	Machine Code		HC08 Cycles
		Opcode	Operand(s)	
MOV <i>#opr, opr</i>	IMD	6E	ii dd	4
MOV <i>opr, opr</i>	DD	4E	dd dd	5
MOV <i>X+, opr</i>	IX+D	7E	dd	4
MOV <i>opr, X+</i>	DIX+	5E	dd	4




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# MOV





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