

4.3 LIST OF INSTRUCTIONS

The PDP-11/40 instruction set is shown in the following sequence.

SINGLE OPERAND

Mnemonic	Instruction	Op Code	Page
General			
CLR(B)	clear destination	■050DD	4-6
COM(B)	complement dst	■051DD	4-7
INC(B)	increment dst	■052DD	4-8
DEC(B)	decrement dst	■053DD	4-9
NEG(B)	negate dst	■054DD	4-10
TST(B)	test dst	■057DD	4-11
Shift & Rotate			
ASR(B)	arithmetic shift right	■062DD	4-13
ASL(B)	arithmetic shift left	■063DD	4-14
ROR(B)	rotate right	■060DD	4-15
ROL(B)	rotate left	■061DD	4-16
SWAB	swap bytes	0003DD	4-17
Multiple Precision			
ADC(B)	add carry	■055DD	4-19
SBC(B)	subtract carry	■056DD	4-20
SXT	sign extend	0067DD	4-21
DOUBLE OPERAND			
General			
MOV(B)	move source to destination	■1SSDD	4-23
CMP(B)	compare src to dst	■2SSDD	4-24
ADD	add src to dst	06SSDD	4-25
SUB	subtract src from dst	16SSDD	4-26
Logical			
BIT(B)	bit test	■3SSDD	4-28
BIC(B)	bit clear	■4SSDD	4-29
BIS(B)	bit set	■5SSDD	4-30
Register			
MUL	multiply	070RSS	4-31
DIV	divide	071RSS	4-32
ASH	shift arithmetically	072RSS	4-33
ASHC	arithmetic shift combined	073RSS	4-34
XOR	exclusive OR	074RDD	4-35

PROGRAM CONTROL

Mnemonic	Instruction	Op Code or Base Code	Page
Branch			
BR	branch (unconditional)	000400	4-37
BNE	branch if not equal (to zero)	001000	4-38
BEQ	branch if equal (to zero)	001400	4-39
BPL	branch if plus	100000	4-40
BMI	branch if minus	100400	4-41
BVC	branch if overflow is clear	102000	4-42
BVS	branch if overflow is set	102400	4-43
BCC	branch if carry is clear	103000	4-44
BCS	branch if carry is set	103400	4-45
Signed Conditional Branch			
BGE	branch if greater than or equal (to zero)	002000	4-47
BLT	branch if less than (zero)	002400	4-48
BGT	branch if greater than (zero)	003000	4-49
BLE	branch if less than or equal (to zero)....	003400	4-50
Unsigned Conditional Branch			
BHI	branch if higher	101000	4-52
BLOS	branch if lower or same	101400	4-53
BHIS	branch if higher or same	103000	4-54
BLO	branch if lower	103400	4-55
Jump & Subroutine			
JMP	jump	0001DD	4-56
JSR	jump to subroutine	004RDD	4-58
RTS	return from subroutine	00020R	4-60
MARK	mark	006400	4-61
SOB	subtract one and branch (if ≠ 0)	077R00	4-63
Trap & Interrupt			
EMT	emulator trap	104000—104377	4-65
TRAP	trap	104400—104777	4-66
BPT	breakpoint trap	000003	4-67
IOT	input/output trap	000004	4-68
RTI	return from interrupt	000002	4-69
RTT	return from interrupt	000006	4-70
MISCELLANEOUS			
HALT	halt	000000	4-74
WAIT	wait for interrupt	000001	4-75
RESET	reset external bus	000005	4-76
MFPI	move from previous instruction space ..	0065SS	4-77
MTPI	move to previous instruction space	0066DD	4-78
Condition Code Operation			
CLC, CLV, CLZ, CLN, CCC	clear	000240	4-79
SEC, SEV, SEZ, SEN, SCC	set	000260	4-79