# Appendix A
# 8086/8088-80186/80188-80286-80386 MICROPROCESSOREN INSTRUCTIESET

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | O | D | I | T | S | Z | A | P | C |
| AAA<br>ASCII-correctie van AL na een optelling | | 8 | 8 | 3 | 4 | ? | | | | ? | ? | ± | ? | ± |
| AAD<br>ASCII-correctie van AX voor een deling | | 60 | 15 | 14 | 19 | ? | | | | ± | ± | ? | ± | ? |
| AAM<br>ASCII-correctie van AX na een vermenigvuldiging | | 83 | 19 | 16 | 17 | ? | | | | ± | ± | ? | ± | ? |
| AAS<br>ASCII-correctie van AL na een aftrekking | | 8 | 7 | 3 | 4 | ? | | | | ? | ? | ± | ? | ± |
| ADC<br>op 1 ← op 1 + op 2 + C | reg, reg | 3 | 3 | 2 | 2 | ± | | | | ± | ± | ± | ± | ± |
| | men, reg | 16+EA | 10 | 7 | 7 | | | | | | | | | |
| | reg, men | 9+EA | 10 | 7 | 6 | | | | | | | | | |
| | reg, im | 4 | 4 | 3 | 2 | | | | | | | | | |
| | men, im | 17+EA | 16 | 7 | 7 | | | | | | | | | |
| | ac, im | 4 | 4 | 3 | 2 | | | | | | | | | |
| ADD<br>op 1 ← op 1 + op 2 | reg, reg | 3 | 3 | 2 | 2 | ± | | | | ± | ± | ± | ± | ± |
| | men, reg | 16+EA | 10 | 7 | 7 | | | | | | | | | |
| | reg, men | 9+EA | 10 | 7 | 6 | | | | | | | | | |
| | reg, im | 4 | 4 | 3 | 2 | | | | | | | | | |
| | men, im | 17+EA | 16 | 7 | 7 | | | | | | | | | |
| | ac, im | 4 | 4 | 3 | 2 | | | | | | | | | |
| AND<br>op 1 ← op 1. op 2 | reg, reg | 3 | 3 | 2 | 2 | O | | | | ± | ± | ? | ± | O |
| | men, reg | 16+EA | 10 | 7 | 7 | | | | | | | | | |
| | reg, men | 9+EA | 10 | 7 | 6 | | | | | | | | | |
| | reg, im | 4 | 4 | 3 | 2 | | | | | | | | | |
| | men, im | 17+EA | 16 | 7 | 7 | | | | | | | | | |
| | ac, im | 4 | 4 | 3 | 2 | | | | | | | | | |
| ARPL<br>Pas de RPL van op 1 aan t.o.v. de RPL van rw | reg, reg | – | – | 10 | 20 | | | | | | | ± | | |
| BOUND<br>Controleer de index rw op veldbegrenzing (in md) | reg 16, men 32 | – | 35 | 13 | 10 | | | | | | | | | |
| | reg 32, men 64 | – | – | – | 10 | | | | | | | | | |
| BSF<br>Zoek bit (vooruit) | reg 16, reg 16<br>reg 16, men 16<br>reg 32, reg 32<br>reg 32, men 32 | – | – | – | 10+3n | | | | | ± | | ± | | ± |
| BSR<br>Zoek bit (achteruit) | reg 16, reg 16<br>reg 32, reg 32<br>reg 16, men 16<br>reg 32, men 32 | – | – | – | 10+3n | | | | | ± | | ± | | ± |
| BT<br>Test bit | reg 16, im 8 | – | – | – | 3 | | | | | | | | | ± |
| | men 16, im 8 | – | – | – | 6 | | | | | | | | | |
| | reg 16, reg 16 | – | – | – | 3 | | | | | | | | | |
| | men 16, reg 16 | – | – | – | 12 | | | | | | | | | |
| BTC<br>Test en complementeer bit | reg 16, im 8 | – | – | – | 6 | | | | | | | | | ± |
| | men 16, im 8 | – | – | – | 8 | | | | | | | | | |
| | men 16, reg 16 | – | – | – | 6 | | | | | | | | | |
| | men 16, reg 16 | – | – | – | 13 | | | | | | | | | |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | O | D | I | T | S | Z | A | P | C |
| BTR<br>Test bit en zet bit op 0 | reg 16, im 8 | – | – | – | 6 | | | | | | | | | ± |
| | men 16, im 8 | – | – | – | 8 | | | | | | | | | |
| | reg 16, reg 16 | – | – | – | 6 | | | | | | | | | |
| | men 16, reg 16 | – | – | – | 13 | | | | | | | | | |
| BTS<br>Test bit en zet bit op 1 | reg 16, im 8 | – | – | – | 6 | | | | | | | | | ± |
| | men 16, im 8 | – | – | – | 8 | | | | | | | | | |
| | reg 16, reg 16 | – | – | – | 6 | | | | | | | | | |
| | men 16, reg 16 | – | – | – | 13 | | | | | | | | | |
| CALL<br>Roep de subroutine aan | Label disp (2) | 19 | 14 | 7+m | 7+m | | | | | | | | | |
| | Label disp (4) | 28 | 23 | 13+m | 17+m | | | | | | | | | |
| | reg | 16 | 13 | 7+m | 7+m | | | | | | | | | |
| | men 16 | 21+EA | 19 | 11+m | 10+m | | | | | | | | | |
| | men 32 | – | – | | | | | | | | | | | |
| | men 32 | 37+EA | 35 | 16+m | 22+m | | | | | | | | | |
| | men 48 | – | – | | | | | | | | | | | |
| CBW<br>Verleng een byte in AL tot een woord in AX | | 2 | 2 | 2 | 3 | | | | | | | | | |
| CDQ<br>Verleng een WDL tot een WVL | | – | – | – | 2 | | | | | | | | | |
| CLC<br>Zet carry-vlag op 0 | | 2 | 2 | 2 | 2 | | | | | | | | | 0 |
| CLD<br>Zet richtings-vlag op 0 | | 2 | 2 | 2 | 2 | | 0 | | | | | | | |
| CLI<br>Zet interrupt-vlag op 0 | | 2 | 2 | 2 | 2 | | | 0 | | | | | | |
| CLTS<br>Zet taakwissel-vlag op 0 | | – | – | 2 | 5 | | | | | | | | | |
| CMC<br>Complementeer de carry-vlag | | 2 | 2 | 2 | 2 | | | | | | | | | ± |
| CMP<br>Vergelijk op 1 met op 2 | reg, reg | 3 | 3 | 2 | 2 | ± | | | | ± | ± | ± | ± | ± |
| | men, reg | 9+EA | 10 | 7 | 5 | | | | | | | | | |
| | reg, men | 9+EA | 10 | 6 | 6 | | | | | | | | | |
| | reg, im | 4 | 3 | 3 | 2 | | | | | | | | | |
| | men, im | 10+EA | 10 | 6 | 5 | | | | | | | | | |
| | ac, im | 4 | 4 | 3 | 2 | | | | | | | | | |
| CMPS<br>Vergelijk string | [[segreg ]] src, [ES:] dest | 22 | 22 | 8 | 10 | ± | | | | ± | ± | ± | ± | ± |
| CMPSB<br>Vergelijk strings byte voor byte | idem | 22 | 22 | 8 | 10 | ± | | | | ± | ± | ± | ± | ± |
| CMPSW<br>Vergelijk strings woord voor woord | idem | 22 | 22 | 8 | 10 | ± | | | | ± | ± | ± | ± | ± |
| CWD<br>Verleng een woord in AX tot een WDL in DX (voorteken verlenging) | | 5 | 4 | 2 | 2 | | | | | | | | | |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | O | D | I | T | S | Z | A | P | C |
| DAA<br>Decimale correctie van AL na een BCD-optelling | | 4 | 4 | 3 | 4 | ? | | | | ± | ± | ± | ± | ± |
| DAS<br>Decimale correctie van AL na een BCD-aftrekking | | 4 | 4 | 3 | 4 | ? | | | | ± | ± | ± | ± | ± |
| DEC<br>op 1 ← op 1–1 | reg 8 | 3 | 3 | 2 | 2 | ± | | | | ± | ± | ± | ± | ± |
| | men | 15+EA | 15 | 7 | 6 | | | | | | | | | |
| | reg 16 | 3 | 3 | 2 | 2 | | | | | | | | | |
| | reg 32 | – | – | – | 2 | | | | | | | | | |
| DIV<br>Deling zonder voorteken byte handeling : AX/op 1 woord handeling : DX : AX/op 1 | reg 8 | 80 | 29 | 14 | 14 | ? | | | | ? | ? | ? | ? | ? |
| | men 8 | 86+EA | 35 | 17 | 17 | | | | | | | | | |
| | reg 16 | 144 | 38 | 22 | 22 | | | | | | | | | |
| | men 16 | 150+EA | 44 | 25 | 25 | | | | | | | | | |
| | reg 32 | – | – | – | 38 | | | | | | | | | |
| | men 32 | – | – | – | 41 | | | | | | | | | |
| ENTER<br>Maak de stapel-frame voor de pro-cedure parameter | im 16,0 | – | 11 | 11 | 10 | | | | | | | | | |
| | im 16,1 | – | 15 | 15 | 12 | | | | | | | | | |
| | im 16, im 8 | – | 12 | 12 | 15 | | | | | | | | | |
| ESC<br>Geheugen gebruik (door co-processor) | im, reg | 2 | 6 | 9-20 | X | | | | | | | | | |
| | im, men | 8+EA | | 9-20 | X | | | | | | | | | |
| HLT<br>Stop de processor | | 2 | 2 | 2 | 5 | | | | | | | | | |
| IBTS<br>Invoegen van een bit-string | | – | – | – | 12/19 | | | | | | | | | |
| IDIV<br>Deling met voorteken byte handeling : AX/op 1 woord handeling : DX : AX/op 1 | reg 8 | 101 | 44 | 17 | 19 | ? | | | | ? | ? | ? | ? | ? |
| | men 8 | 107+EA | 50 | 20 | 22 | | | | | | | | | |
| | reg 16 | 165+EA | 53 | 25 | 27 | | | | | | | | | |
| | men 16 | 171+EA | 59 | 28 | 30 | | | | | | | | | |
| | reg 32 | – | – | – | 43 | | | | | | | | | |
| | men 32 | – | – | – | 46 | | | | | | | | | |
| IMUL<br>Vermenigvuldiging met voorteken byte handeling : AX ← AL op 1 woord handeling : DX : AX ← AX × op rw ← rw × iop rw ← mop × iop | reg 8 | 80 | 25 | 13 | 9 | ± | | | | ? | ? | ? | ? | ± |
| | men 8 | 86 | 25 | 16 | 12 | | | | | | | | | |
| | men 16 | 86 | 31 | 16 | 12 | | | | | | | | | |
| | reg 32 | – | – | – | 38 | | | | | | | | | |
| | men 32 | – | – | – | 41 | | | | | | | | | |
| | reg 16, im | – | – | 21 | 9 | | | | | | | | | |
| | reg 32, im | – | – | – | 9 | | | | | | | | | |
| | reg 16, reg 16, im | – | – | 21 | 9 | | | | | | | | | |
| | reg 32, reg 32, im | – | – | – | 9 | | | | | | | | | |
| | reg 16, men 16, im | – | – | 24 | 12 | | | | | | | | | |
| | reg 32, men 32, im | – | – | – | 12 | | | | | | | | | |
| IN<br>Byte/woord invoer vanuit een bouw-steen (DX) naar ac | ac, im | 10 | 10 | 5 | 12 | | | | | | | | | |
| | ac, DX | 8 | 8 | 5 | 13 | | | | | | | | | |
| INC<br>op 1 ← op 1 + 1 | reg 8 | 3 | 3 | 2 | 2 | ± | | | | ± | ± | ± | ± | |
| | men | 15+EA | 15 | 7 | 6 | | | | | | | | | |
| | reg 16 | 3 | 3 | 2 | 2 | | | | | | | | | |
| | reg 32 | – | – | – | 2 | | | | | | | | | |
| INSB<br>Byte/string invoer vanuit een bouwsteen (DX) naar ES : [DI] | [ES :] dest, DX | – | 8 | 5 | 15 | | | | | | | | | |
| INSW<br>Woord/string invoer vanuit een bouwsteen (DX) naar ES : [DI] | [ES :] dest, DX | – | 8 | 5 | 15 | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | O | D | I | T | S | Z | A | P | C |
| INT<br>Verzoek tot onder-breken op niveau 8 | im 8 | 51 | 47 | 23 | 37 | | | 0 | 0 | | | | | |
| INTO<br>Verzoek tot onder-breken op niveau 4, indien O = 1 | int 3 | 52 | 45 | 23 | 33 | | | | | | | | | |
| IRET<br>Terugkeer van een onderbrekings-routine | | 53 | 48 | 24 | 35 | ± | ± | ± | ± | ± | ± | ± | ± | ± |
| IRETD<br>Terugkeer van een onderbrekings-routine | | 32 | 28 | 17 | 22 | ± | ± | ± | ± | ± | ± | ± | ± | ± |
| J...<br>Spring, als er aan een voorwaarde wordt voldaan | disp | – | – | – | 22 | ± | ± | ± | ± | ± | ± | ± | ± | ± |
| JA<br>Spring, indien logisch groter (IP ← IP + disp als C = 0 en Z = 0 | disp | 4/16 | 4/13 | 3/7+m | 3/7+m | | | | | | | | | |
| JAE<br>Spring, indien logisch groter of gelijk (IP ← IP + disp als C = 0 | disp | × | | × | × | | | | | | | | | |
| JB<br>Spring, indien logisch kleiner (IP ← IP + disp als C = 1) | disp | 4/16 | 4/13 | 3/7+m | 3/7+m | | | | | | | | | |
| JBE<br>Spring, indien logisch kleiner of gelijk (IP ← IP + disp als C = 1 of Z = 1) | disp | × | | × | × | | | | | | | | | |
| JC<br>Spring, indien het carry bit = 1 (IP ← IP + disp als C = 1) | disp | × | × | × | × | | | | | | | | | |
| JCXZ<br>Spring, indien disp ECX = 0 (IP ← IP + disp als CX = 0) | disp | × | × | × | × | | | | | | | | | |
| JECXZ<br>Spring, indien disp ECX = 0 | disp | – | – | – | × | | | | | | | | | |
| JE<br>Spring, indien gelijk (IP ← IP + disp als Z = 1) | disp | × | × | × | × | | | | | | | | | |
| JG<br>Spring, indien rekenkundig groter of gelijk (IP ← IP + disp als S = 0) | disp | × | × | × | × | | | | | | | | | |
| JL<br>Spring, indien rekenkundig kleiner (IP ← IP + disp als S < > 0) | disp | × | × | × | × | | | | | | | | | |
| JLE<br>Spring, indien rekenkundig kleiner of gelijk (IP ← IP + disp als S < > 0 of Z = 0) | disp | × | × | × | × | | | | | | | | | |
| JNA<br>Spring, indien niet logisch groter (IP ← IP + disp als C = 1 of Z = 1) | disp | × | × | × | × | | | | | | | | | |
| JNAE<br>Spring, indien niet logisch groter of gelijk (IP ← IP + disp als C = 1) | disp | × | × | × | × | | | | | | | | | |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | O | D | I | T | S | Z | A | P | C |
| JNB<br>Spring, indien niet logisch kleiner (IP ← IP + disp als C = 0) | disp | × | × | × | × | | | | | | | | | |
| JNBE<br>Spring, indien niet logisch kleiner of gelijk (IP ← IP + disp als C = 0 en Z = 0) | disp | × | × | × | × | | | | | | | | | |
| JNC<br>Spring, indien carry bit = 0 (IP ← IP + disp als C = 0) | disp | × | × | × | × | | | | | | | | | |
| JNGE<br>Spring, indien niet rekenkundig groter of gelijk (IP ← IP + disp als S < > O) | disp | × | × | × | × | | | | | | | | | |
| JNL<br>Spring, indien niet rekenkundig kleiner (IP ← IP + disp als S = 0) | disp | × | × | × | × | | | | | | | | | |
| JNLE<br>Spring, indien niet rekenkundig kleiner of gelijk (IP ← IP + disp als S = 0 en Z = 1) | disp | × | × | × | × | | | | | | | | | |
| JNO<br>Spring, indien geen overloop (IP ← IP + disp als O = 0) | disp | × | × | × | × | | | | | | | | | |
| JNS<br>Spring bij voorteken plus (O) (IP ← IP + disp als S = 0) | disp | × | × | × | × | | | | | | | | | |
| JNZ<br>Spring bij gelijk aan nul (IP ← IP + disp als Z = 0) | disp | × | × | × | × | | | | | | | | | |
| JO<br>Spring bij overloop (IP ← IP + disp als O = 1) | disp | × | × | × | × | | | | | | | | | |
| JP<br>Spring bij even pariteit (IP ← IP + disp als P = 1) | disp | × | × | × | × | | | | | | | | | |
| JPE<br>Spring bij even pariteit (IP ← IP + disp als P = 1) | disp | × | × | × | × | | | | | | | | | |
| JPO<br>Spring bij oneven pariteit (IP ← IP + disp als P = 0) | disp | × | × | × | × | | | | | | | | | |
| JS<br>Spring bij voor-teken minus (IP ← IP + disp als S = 1) | disp | × | × | × | × | | | | | | | | | |
| JZ<br>Spring bij nul (IP ← IP + disp als Z = 1) | disp | × | × | × | × | | | | | | | | | |
| JMP<br>Omovrwaardelijke Sprong naar adres procedure | label disp (1) | 15 | 13 | 7+m | 7+m | | | | | | | | | |
| | Label disp (2) | 15 | 13 | 7+m | 7+m | | | | | | | | | |
| | label disp (4) | 15 | 13 | 11+m | 12+m | | | | | | | | | |
| | reg 16 | 11 | 11 | 7+m | 7+m | | | | | | | | | |
| | reg 32 | – | – | – | 7+m | | | | | | | | | |
| | men 16 | 18+EA | 17 | 11+m | 10+m | | | | | | | | | |
| | men 32 | – | – | – | 10+m | | | | | | | | | |
| | men 32 | 24+EA | 26 | 15+m | 12+m | | | | | | | | | |
| | men 48 | – | – | – | 12+m | | | | | | | | | |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | O | D | I | T | S | Z | A | P | C |
| LAHF<br>Laad AH met 8080-vlaggen (SZ × A × P × C) | | 4 | 2 | 2 | 2 | | | | | | | | | |
| LAR<br>Laad de interrupt prioriteit van op. in de meest bedui-dende byte van rop | reg 16, reg 16 | – | – | 14 | 15 | | | | | | | | | |
| | reg 32, reg 32 | – | – | – | 15 | | | | | | | | | |
| | reg 16, men 16 | – | – | 16 | 16 | | | | | | | | | |
| | reg 32, men 32 | – | – | – | 16 | | | | | | | | | |
| LDS<br>Laad WDL van op. in DS en rop | reg, men | 16+EA | 18 | 7 | 7 | | | | | | | | | |
| LEA<br>Laad het effectief adres van mop in rop | reg, men | 2+EA | 6 | 3 | 2 | | | | | | | | | |
| LEAVE<br>Verlaat een procedure, die met ENTER werd gestart (BP ← SP en POP BP) | | – | 8 | 5 | 4 | | | | | | | | | |
| LES<br>Laad WDL van op. in ES en rop | reg, men | 16+EA | 18 | 7 | 7 | | | | | | | | | |
| LFS<br>Laad WDL van op in FS en rop | reg, men | – | – | – | 7 | | | | | | | | | |
| LGDT<br>Laad het globale beschrijvings-register | men 64 | – | – | 11 | 11 | | | | | | | | | |
| LGS<br>Laad WDL van op in GS en rop | reg, men | – | – | – | 7 | | | | | | | | | |
| LIDT<br>Laad het interrupt beschrijvings-register | men 64 | – | – | 12 | 11 | | | | | | | | | |
| LIDT<br>Laad het locale beschrijvings-register | reg 16 | – | – | 17 | 20 | | | | | | | | | |
| | men 16 | – | – | 19 | 24 | | | | | | | | | |
| LMSW<br>Laad het machine status woord | reg 16 | – | – | 3 | 10 | | | | | | | | | |
| | men 16 | – | – | 6 | 13 | | | | | | | | | |
| LOCK<br>Geef het LOCK-signaal voor de volgende handeling af | | 2 | 2 | 0 | 0 | | | | | | | | | |
| LODS<br>Laad operand van [DS v S]] in ac | [segreg ]] src | 12 | 6+11A | 5 | 5 | | | | | | | | | |
| LODSB<br>Laad byte van [DS v S]] in AL | | 12 | 6+11n | 5 | 5 | | | | | | | | | |
| LODSW<br>Laad woord van [DSvS]] in AX | | 12 | 6+11n | 5 | 5 | | | | | | | | | |
| LODD<br>Laad dubbel woord | | – | – | – | 5 | | | | | | | | | |
| LOOP<br>Spring onder controle van het CX-register | disp | 5/17 | 6/16 | 8+m | 11+m | | | | | | | | | |
| LOOPC<br>DEC CX; spring als CX < > 0 en Z = 1 | disp | 5/17 | 6/16 | 8+m | 11+m | | | | | | | | | |
| LOOPE<br>DEC CX; spring als CX < > 0 en Z = 1 | disp | 6/18 | 6/16 | 8+m | 11+m | | | | | | | | | |
| LOOPNE<br>DEC CX; spring als CX < > 0 en Z = 0 | disp | 5/19 | 6/16 | 4/8 | 11+m | | | | | | | | | |
| LOOPNZ<br>DEC CX; spring als CX < > 0 en Z = 0 | disp | 5/19 | 6/16 | 4/8 | 11+m | | | | | | | | | |
| LOOPZ<br>DEC CX; spring als CX < > 0 en Z = 1 | disp | 6/18 | 6/16 | 8+m | 11+m | | | | | | | | | |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | O | D | I | T | S | Z | A | P | C |
| LSL<br>Laad de begrenzing van de segmenten | reg 16, reg 16 | – | – | 14 | 20,25 | | | | | | | ± | | |
| | reg 32, reg 32 | – | – | – | 20,25 | | | | | | | | | |
| | reg 16, men 16 | – | – | 16 | 21,26 | | | | | | | | | |
| | reg 32, men 32 | – | – | – | 21,26 | | | | | | | | | |
| LSS<br>Laad WDL van op in SS en rop | idem | | | | idem | | | | | | | ± | | |
| LTS<br>Laad op in het taakregister | reg 16 | – | – | 17 | 23 | | | | | | | | | |
| | men 16 | – | – | 19 | 27 | | | | | | | | | |
| MOV<br>op 1 ← op 2 MOV mop 1, mop 2 niet toegestaan | reg, reg | 2 | 2 | 2 | 2 | | | | | | | | | |
| | men, reg | 9+EA | 12 | 3 | 2 | | | | | | | | | |
| | reg, men | 8+EA | 9 | 5 | 4 | | | | | | | | | |
| | men, im | 10+EA | 13 | 3 | 2 | | | | | | | | | |
| | reg, im | 4 | 4 | 2 | 2 | | | | | | | | | |
| | men, ac | 10 | 8 | 3 | 2 | | | | | | | | | |
| | ac, men | 10 | 9 | 5 | 4 | | | | | | | | | |
| | segreg, reg 16 | 2 | 2 | 2 | 2 | | | | | | | | | |
| | segreg, men 16 | 8+EA | 9 | 5 | 5 | | | | | | | | | |
| | reg 16, segreg | 2 | 2 | 2 | 2 | | | | | | | | | |
| | men 16, segreg | 9+EA | 11 | 3 | 2 | | | | | | | | | |
| MOV<br>enkel bij 80386 | r32, conreg | – | – | – | 6 | ? | | | | ? | ? | ? | ? | ? |
| | conreg, r 32 | – | – | – | CR0=10<br>CR2=4<br>CR3=5 | | | | | | | | | |
| | r32, debreg | – | – | – | DR0-3 =22<br>DR6-7 =14 | | | | | | | | | |
| | debreg, reg 32 | – | – | – | DR0-3 =22<br>DR6-7 =16 | | | | | | | | | |
| | r32, testreg | – | – | – | 12 | | | | | | | | | |
| | testreg, r32 | – | – | – | 12 | | | | | | | | | |
| MOVS<br>Laad operand van [DS : S]] in [ES : DI] | [ES :] dest, [segreg ]] src | 18 | 14 | 5 | 7 | | | | | | | | | |
| MOVSB<br>Laad byte van DS : SI in [ES : DI] | [ES :] dest, [segreg ]] src | 18 | 14 | 5 | 7 | | | | | | | | | |
| MOVSW<br>Laad woord van DS : SI in [ES : DI] | [ES :] dest, [segreg ]] src | 18 | 14 | 5 | 7 | | | | | | | | | |
| MOVSX<br>Overdracht van op naar rop met voorteken-verlenging enkel 80386 | reg, reg | – | – | – | 3 | | | | | | | | | |
| | reg, men | – | – | – | 6 | | | | | | | | | |
| MOVZX<br>Overdracht van op naar rop met nulverlenging Enkel 80386 | reg, reg | – | – | – | 3 | | | | | | | | | |
| | reg, men | – | – | – | 6 | | | | | | | | | |
| MUL<br>Vermenigvuldiging zonder voorteken Byte handeling : AX ← AL × op 1 Woord handeling : DX : AX ← AX × op 1 | reg 8 | 70 | 26 | 13 | 9 | ± | | | | ? | ? | ? | ? | ± |
| | men 8 | 76+EA | 32 | 16 | 12 | | | | | | | | | |
| | reg 16 | 118 | 35 | 21 | 9 | | | | | | | | | |
| | men 16 | 124+EA | 41 | 24 | 12 | | | | | | | | | |
| | reg 32 | – | – | – | 9 | | | | | | | | | |
| | men 32 | – | – | – | 12 | | | | | | | | | |
| NEG<br>Maak het twee-complement van de operand | reg | 3 | 3 | 2 | 2 | ± | | | | ± | ± | ± | ± | ± |
| | men | 16+EA | | 7 | 6 | | | | | | | | | |
| NOP<br>Geen operatie | | 3 | 3 | 3 | 3 | | | | | | | | | |
| NOT<br>Maak het 1-complement van de operand | reg | 3 | 3 | 2 | 2 | | | | | | | | | |
| | men | 16+EA | | 7 | 6 | | | | | | | | | |
| OR<br>op 1 ← op 1 + op 2 | reg, reg | 3 | 3 | 2 | 2 | 0 | | | | ± | ± | ? | ± | 0 |
| | men, reg | 16+EA | 10 | 7 | 7 | | | | | | | | | |
| | reg, men | 9+EA | 10 | 7 | 6 | | | | | | | | | |
| | reg, im | 4 | 4 | 3 | 2 | | | | | | | | | |
| | men, im | 17+EA | 16 | 7 | 7 | | | | | | | | | |
| | ac, im | 4 | 3 | 3 | 2 | | | | | | | | | |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | O | D | I | T | S | Z | A | P | C |
| OUT<br>Byte/woordafgifte van ac naar een I/O-bouwsteen Byte/woordafgifte van ac naar een I/O-bouwsteen | im 8, ac | 10 | 9 | 3 | 10 | | | | | | | ± | | |
| | DX, ac | 8 | 7 | 3 | 11 | | | | | | | | | |
| OUTS<br>Byte/woordafgifte van [DS : S]] naar een I/O-bouwsteen (DX) | DX, [segreg ]] src | – | 14 | 5 | 14 | | | | | | | | | |
| OUTSB<br>Bytesafgifte van [DS : S]] naar een I/O-bouwsteen (DX) | | – | 14 | 5 | 14 | | | | | | | | | |
| OUTSW<br>Woordafgifte van [DS : S]] naar een I/O-bouwsteen (DX) | | – | 14 | 5 | 14 | | | | | | | | | |
| POP<br>Breng de stapel naar de operand | reg 16 | 8 | 8 | 5 | 4 | | | | | | | | | |
| | reg 32 | – | – | – | 4 | | | | | | | | | |
| | men 16 | 17+EA | 20 | 5 | 5 | | | | | | | | | |
| | men 32 | – | – | – | 5 | | | | | | | | | |
| | segreg | 8 | 8 | 5 | 7 | | | | | | | | | |
| | segreg | – | – | – | 7 | | | | | | | | | |
| POPA<br>Breng de stapel naar alle registers (DI, SI, BP, SP, BX, DX, CX, AX) | | – | 51 | 19 | 24 | | | | | | | | | |
| POPAD<br>Breng de stapel naar alle 32 registers | | – | – | – | 24 | | | | | | | | | |
| POPF<br>Breng de stapel naar het vlag-register | | 8 | 8 | 5 | 5 | ± | ± | ± | ± | ± | ± | ± | ± | ± |
| POPFD<br>Breng de stapel naar het 32-bits vlagregister | | – | – | – | 5 | ± | ± | ± | ± | ± | ± | ± | ± | ± |
| PUSH<br>Breng de operand naar de stapel | reg 16 | 11 | 10 | 3 | 2 | | | | | | | | | |
| | reg 32 | – | – | – | 2 | | | | | | | | | |
| | men 16 | 16+EA | 16 | 5 | 5 | | | | | | | | | |
| | men 32 | – | – | – | 5 | | | | | | | | | |
| | ES, SS, CS, segreg | 10 | 9 | 3 | 2 | | | | | | | | | |
| | FS, GS, segreg | – | – | – | 2 | | | | | | | | | |
| | im | – | 10 | 3 | 2 | | | | | | | | | |
| PUSHA<br>Breng alle registers naar de stapel (AX, CX, DX, BX, SP, BP, SI, DI) | | – | 36 | 17 | 18 | | | | | | | | | |
| PUSHAD<br>Breng alle 32-registers naar stapel | | – | – | – | 18 | | | | | | | | | |
| PUSHF<br>Breng het vlag-register naar de stapel | | 10 | 9 | 3 | 4 | | | | | | | | | |
| PUSHFD<br>Breng het 32-bits vlagregister naar de stapel | | – | – | – | 4 | | | | | | | | | |
| RCL | reg, 1 | 2 | 2 | 2 | 9 | ± | | | | | | | | ± |
| | men, 1 | 15+EA | 15 | 7 | 10 | | | | | | | | | |
| | reg, CL | 8+4n | 5+n | 5+n | 9 | | | | | | | | | |
| | men, CL | 20+EA | 17+n | 8+n | 10 | | | | | | | | | |
| | reg, im 8 | – | 5+n | 5+n | 9 | | | | | | | | | |
| | men, im 8 | – | 17+n | 8+n | 10 | | | | | | | | | |
| RCR | reg, 1 | 2 | 2 | 2 | 9 | ± | | | | | | | | ± |
| | men, 1 | 15+EA | 15 | 7 | 10 | | | | | | | | | |
| | reg, CL | 8+4n | 5+n | 5+n | 9 | | | | | | | | | |
| | men, CL | 20+EA | 17+n | 8+n | 10 | | | | | | | | | |
| | reg, im 8 | – | 5+n | 5+n | 9 | | | | | | | | | |
| | men, im 8 | – | 17+n | 8+n | 10 | | | | | | | | | |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | | O | D | I | T | S | Z | A | P | C |
| REP<br>Herhaal de volgende string-handeling zolang CX <> 0<br>(CX wordt na elke string-handeling met 1 verminderd) | | | | | | | | | | | | | | | |
| REP MOVS | dest, src | 9+17n | 8+8n | 5+4n | 8+4n | | | | | | | | | | |
| REP MOVSB | dest, src | 9+17n | 8+8n | 5+4n | 8+4n | | | | | | | | | | |
| REP MOVSW | dest, src | 9+17n | 8+8n | 5+4n | 8+4n | | | | | | | | | | |
| REP STOS | dest | 9+10n | 6+9n | 4+3n | 5+5n | | | | | | | | | | |
| REP STOSB | dest | 9+10n | 6+9n | 4+3n | 5+5n | | | | | | | | | | |
| REP STOSW | dest | 9+10n | 6+9n | 4+3n | 5+5n | | | | | | | | | | |
| REP INS | dest, DX | – | 8+8n | 5+4n | 13+6n | | | | | | | | | | |
| REP INSB | dest, DX | – | 8+8n | 5+4n | 13+6n | | | | | | | | | | |
| REP INSW | dest, DX | – | 8+8n | 5+4n | 13+6n | | | | | | | | | | |
| REP OUTS | DX, src | – | 8+8n | 5+4n | 12+5n | | | | | | | | | | |
| REP OUTSB | DX, src | – | 8+8n | 5+4n | 12+5n | | | | | | | | | | |
| REP OUTSW | DX, src | – | 8+8n | 5+n | 12+5n | | | | | | | | | | |
| REPE (REPZ)<br>Herhaal de volgende stringhandeling zolang CX < > 0 en Z=1<br>(CX wordt na elke string-handeling met 1 verminderd) | | | | | | | | | | | | | | | |
| REPE CMPS | dest, src | 9+22n | 5+22n | 5+9n | 5+9n | | | | | | | | | | |
| REPE CMPSB | dest, src | 9+22n | 5+22n | 5+9n | 5+9n | | | | | | | | | | |
| REPE CMPSW | dest, src | 9+22n | 5+22n | 5+9n | 5+9n | | | | | | | | | | |
| REPE SCAS | dest | 9+15n | 5+15n | 5+8n | 5+8n | | | | | | | | | | |
| REPE SCASB | dest | 9+15n | 5+15n | 5+8n | 5+8n | | | | | | | | | | |
| REPE SCASW | dest | 9+15n | 5+15n | 5+8n | 5+8n | | | | | | | | | | |
| REPNE (REPZ)<br>Herhaal de volgende de stringhandeling zolang CX < > 0 en Z = 0<br>(CX wordt na elke handeling met 1 verminderd) | | | | | | | | | | | | | | | |
| REPNE CMPS | dest, src | 9+22n | 5+22n | 5+9n | 5+9n | | | | | | | | | | |
| REPNE CMPSB | dest, src | 9+22n | 5+22n | 5+9n | 5+9n | | | | | | | | | | |
| REPNE CMPSW | dest, src | 9+22n | 5+22n | 5+9n | 5+9n | | | | | | | | | | |
| REPNE SCAS | dest | 9+15n | 5+15n | 5+8n | 5+8n | | | | | | | | | | |
| REPNE SCASB | dest | 9+15n | 5+15n | 5+8n | 5+8n | | | | | | | | | | |
| REPNE SCASW | dest | 9+15n | 5+15n | 5+8n | 5+8n | | | | | | | | | | |
| RET<br>Terugkeer uit een procedure, met CALL aangeroepen | | 16 | 16 | 11+m | 10+m | | | | | | | | | | |
| | im 8 | 20 | 18 | 11+m | 10+m | | | | | | | | | | |
| | im 16 | 25 | 25 | 15+m | 18+m | | | | | | | | | | |
| RETN | | 16 | 16 | 11+m | 10+m | | | | | | | | | | |
| (NEAR) | im 8 | 20 | 18 | 11+m | 10+m | | | | | | | | | | |
| RETF | | 26 | 22 | 15+m | 18+m | | | | | | | | | | |
| (FAR) | im 16 | 25 | 25 | 15+m | 18+m | | | | | | | | | | |
| ROL | reg 1 | 2 | 2 | 2 | 2 | ± | | | | | | | | | ± |
| Roteer aantal posities naar links | men, 1 | 15+EA | 15 | 7 | 7 | | | | | | | | | | |
| | reg, CL | 8+4n | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, CL | 20+EA | 17+n | 8+n | 7 | | | | | | | | | | |
| | reg, im 8 | – | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, im 8 | – | 17+n | 8+n | 7 | | | | | | | | | | |
| ROR | reg, 1 | 2 | 2 | 2 | 3 | ± | | | | | | | | | ± |
| Roteer aantal posities naar rechts | men, 1 | 15+EA | 15 | 7 | 7 | | | | | | | | | | |
| | reg, CL | 8+4n | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, CL | 20+EA | 17+n | 8+n | 7 | | | | | | | | | | |
| | reg, im 8 | – | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, im 8 | – | 17+n | 8+n | 7 | | | | | | | | | | |
| SAHF<br>Sla AH op in de 8080-vlaggen (SZ x A x P x C) | | 4 | 3 | 2 | 3 | | | | | | ± | ± | ± | ± | ± |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | | O | D | I | T | S | Z | A | P | C |
| SAL | reg, 1 | 2 | 2 | 2 | 2 | ± | | | | | ± | ± | ? | ± | ± |
| Schuif een aantal posities naar links (opvullen met nullen) | men, 1 | 15+EA | 15 | 7 | 7 | | | | | | | | | | |
| | reg, CL | 8+4n | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, CL | 20+EA | 17+n | 8+n | 7 | | | | | | | | | | |
| | reg, im 8 | – | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, im 8 | – | 17+n | 8+n | 7 | | | | | | | | | | |
| SAR | reg, 1 | 2 | 2 | 2 | 2 | ± | | | | | ± | ± | ? | ± | ± |
| Schuif aantal posities naar rechts (opvullen met voorteken) | men, 1 | 15+EA | 15 | 7 | 7 | | | | | | | | | | |
| | reg, CL | 8+4n | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, CL | 20+EA | 17+n | 8+n | 7 | | | | | | | | | | |
| | reg, im 8 | – | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, im 8 | – | 17+n | 8+n | 7 | | | | | | | | | | |
| SBB<br>op 1 ← op 1 - op 2 - C | reg, reg | 3 | 3 | 2 | 2 | ± | | | | | ± | ± | ± | ± | ± |
| | men, reg | 16+EA | 10 | 7 | 6 | | | | | | | | | | |
| | reg, men | 9+EA | 10 | 7 | 7 | | | | | | | | | | |
| | reg, im | 4 | 4 | 3 | 2 | | | | | | | | | | |
| | men, im | 17+EA | 16 | 7 | 7 | | | | | | | | | | |
| | ac, im | 4 | 4 | 3 | 2 | | | | | | | | | | |
| SCAS<br>Vergelijk byte op woordgewijs strings in ac en [ES : DI] | [ES :] dest | 15 | 15 | 7 | 7 | ± | | | | | ± | ± | ± | ± | ± |
| SCASB<br>Vergelijk strings in AL en [ES : DI] (byte voor byte) | | 15 | 15 | 7 | 7 | ± | | | | | ± | ± | ± | ± | ± |
| SCASW<br>Vergelijk strings in AX en [ES : DI] (woord voor woord) | | 15 | 15 | 7 | 7 | ± | | | | | ± | ± | ± | ± | ± |
| SCASD<br>Vergelijk strings in AX en of EAX (dubbel woord voor dubbel woord) | | – | – | – | 7 | ± | | | | | ± | ± | ± | ± | ± |
| SETcc<br>Zet bop op voorwaarde<br>cc<br>cc = X betekent X = 1<br>cc = not X betekent X=0 | cond. reg 8 | – | – | – | 4 | | | | | | | | | | |
| | cond. men 8 | – | – | – | 5 | | | | | | | | | | |
| SETA<br>_c = not c en not Z | | – | – | – | X | | | | | | | | | | |
| SETAE<br>_c = not c | | – | – | – | X | | | | | | | | | | |
| SETB<br>_cc = c | | – | – | – | X | | | | | | | | | | |
| SETBE<br>_c = C of Z | | – | – | – | X | | | | | | | | | | |
| SETE<br>_cc = Z | | – | – | – | X | | | | | | | | | | |
| SETG<br>_c = not Z en (S=0) | | – | – | – | X | | | | | | | | | | |
| SETGE<br>_c = (S=0) | | – | – | – | X | | | | | | | | | | |
| SETL<br>_c = (S < > 0) | | – | – | – | X | | | | | | | | | | |
| SETLE<br>_cc = Z of (S < > 0) | | – | – | – | X | | | | | | | | | | |
| SETNA<br>_cc = C of Z | | – | – | – | X | | | | | | | | | | |
| SETNAE<br>_cc = C | | – | – | – | X | | | | | | | | | | |
| SETNB<br>_cc = not C | | – | – | – | X | | | | | | | | | | |
| SETNE<br>_cc = not Z | | – | – | – | X | | | | | | | | | | |
| SETNG<br>_cc = Z of (S < > 0) | | – | – | – | X | | | | | | | | | | |
| SETNGE<br>_cc = (S < > 0) | | – | – | – | X | | | | | | | | | | |
| SETNL<br>_c = (S = 0) | | – | – | – | X | | | | | | | | | | |
| SETNLE<br>_c = not Z en (S = 0) | | – | – | – | X | | | | | | | | | | |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | | O | D | I | T | S | Z | A | P | C |
| SETNO<br>_c = not 0 | | – | – | – | X | | | | | | | | | | |
| SETNP<br>_c = not P | | – | – | – | X | | | | | | | | | | |
| SETNS<br>_c = not S | | – | – | – | X | | | | | | | | | | |
| SETNZ<br>_c = not Z | | – | – | – | X | | | | | | | | | | |
| SETO<br>_cc = 0 | | – | – | – | X | | | | | | | | | | |
| SETP<br>_cc = P | | – | – | – | X | | | | | | | | | | |
| SETPE<br>_c = P | | – | – | – | X | | | | | | | | | | |
| SETPO<br>_c = not P | | – | – | – | X | | | | | | | | | | |
| SETS<br>_c = S | | – | – | – | X | | | | | | | | | | |
| SETZ<br>_c = Z | | – | – | – | X | | | | | | | | | | |
| SGDT<br>Zet het globale beschrijvings-register in het geheugen | men 64 | – | – | 11 | 9 | | | | | | | | | | |
| SHL<br>(zie SAL) | | | | | | | | | | | | | | | |
| SHLD<br>Schuif aantal posities dubbel naar links (opvullen met 0) | reg 16, reg 16, im 8 | – | – | – | 3 | ? | | | | | ± | ± | ? | ± | ± |
| | reg 32, reg 32, im 8 | – | – | – | 3 | | | | | | | | | | |
| | men, 16 reg 16, im 8 | – | – | – | 7 | | | | | | | | | | |
| | men 32, reg 32, im 8 | – | – | – | 7 | | | | | | | | | | |
| | reg 16, reg 16, CL | – | – | – | 3 | | | | | | | | | | |
| | reg 32, reg 32, CL | – | – | – | 3 | | | | | | | | | | |
| | men 16, reg 16, CL | – | – | – | 7 | | | | | | | | | | |
| | men 32, reg 32, CL | – | – | – | 7 | | | | | | | | | | |
| SHR<br>Schuif aantal posities naar rechts (opvullen met 0) | reg, 1 | 2 | 2 | 2 | 2 | ± | | | | | ± | ± | ? | ± | ± |
| | men, 1 | 15+EA | 15 | 7 | 7 | | | | | | | | | | |
| | reg, CL | 8+4n | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, CL | 20+EA | 17+n | 8+n | 7 | | | | | | | | | | |
| | reg, im 8 | – | 5+n | 5+n | 3 | | | | | | | | | | |
| | men, im 8 | – | 17+n | 8+n | 7 | | | | | | | | | | |
| SHRL<br>Schuif aantal posities dubbel naar rechts (opvullen met 0) | idem | | | | | | | | | | | | | | |
| SIDT<br>Zet het interrupt-beschrijvingsregister in het geheugen | men 64 | – | – | 12 | 9 | | | | | | | | | | |
| SLDT<br>Zet het locale beschrijvingsregister in het geheugen | reg 16 | – | – | 2 | 2 | | | | | | | | | | |
| | men 16 | – | – | 3 | 2 | | | | | | | | | | |
| SMSW<br>Zet het machine statuswoord in het geheugen | reg 16 | – | – | 2 | 10 | | | | | | | | | | |
| | men 16 | – | – | 3 | 3, pm=2 | | | | | | | | | | |
| STC<br>Zet de Carry-vlag | | 2 | 2 | 2 | 2 | | | | | | | | | | 1 |
| STD<br>Zet de richtingsvlag | | 2 | 2 | 2 | 2 | | | | 1 | | | | | | |
| STI<br>Zet de interrupt-vlag | | 2 | 2 | 2 | 3 | | | | | 1 | | | | | |
| STOS<br>Zet de operand van AL in [ES : DI] | [ES :] dest | 11 | 10 | 3 | 4 | | | | | | | | | | |
| STOSB<br>Zet AL in [ES : DI] | | 11 | 10 | 3 | 4 | | | | | | | | | | |

| Mnemonics + omschrijving | Operanden | Klokcyclussen | | | | | Beïnvloede vlaggen | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8086 8088 | 80186 80188 | 80286 | 80386 | | O | D | I | T | S | Z | A | P | C |
| STOSW<br>Zet AX in [ES : DI] | | 11 | 10 | 3 | 4 | | | | | | | | | | |
| STOSD<br>(dubbel woord)<br>Zet AL, AX of EAX in [ES : DI] | | – | – | – | 4 | | | | | | | | | | |
| STR<br>Zet het taakregister in het geheugen | reg 16 | – | – | 2 | 2 | | | | | | | | | | |
| | men 16 | – | – | 3 | 2 | | | | | | | | | | |
| SUB<br>op 1 ← op 1 - op 2 | reg, reg, | 3 | 3 | 2 | 2 | ± | | | | | ± | ± | ± | ± | ± |
| | men, reg | 16+EA | 10 | 7 | 6 | | | | | | | | | | |
| | reg, men | 9+EA | 10 | 7 | 7 | | | | | | | | | | |
| | reg, im | 4 | 4 | 3 | 2 | | | | | | | | | | |
| | men, im | 17+EA | 16 | 7 | 7 | | | | | | | | | | |
| | ac, im | 4 | 4 | 3 | 2 | | | | | | | | | | |
| TEST<br>Vergelijk logisch-EN op 1 - op 2 | reg, reg | 3 | 3 | 2 | 2 | 0 | | | | | ± | ± | ? | ± | 0 |
| | men, reg | 9+EA | 10 | 6 | 5 | | | | | | | | | | |
| | reg, men | 9+EA | 10 | 6 | 5 | | | | | | | | | | |
| | reg, im | 5 | 4 | 3 | 2 | | | | | | | | | | |
| | men, im | 11+EA | 10 | 6 | 5 | | | | | | | | | | |
| | ac, im | 4 | 4 | 3 | 2 | | | | | | | | | | |
| VERR<br>Controleer of een segment (gegeven in op) beschreven kan worden. | reg 16 | – | – | 14 | 10 | | | | | | | | ± | | |
| | men 16 | – | – | 16 | 10 | | | | | | | | | | |
| VERW<br>Controleer of een segment (gegeven in op) gelezen kan worden | reg 16 | – | – | 14 | 15 | | | | | | | | ± | | |
| | men 16 | – | – | 16 | 16 | | | | | | | | | | |
| WAIT<br>Wacht, tot de NOT BUSY-ingang hoog (inactief) is | | 4 | 6 | 3 | 6 | | | | | | | | | | |
| XBTS<br>Neem een bit-string uit. | | – | – | – | 6/13 | | | | | | | | | | |
| XCHG<br>Verwissel de inhouden van op 1 en op 2 | reg, reg | 4 | 4 | 3 | 3 | | | | | | | | | | |
| | reg, men | 17+EA | 17 | 5 | 5 | | | | | | | | | | |
| | men, reg | 17+EA | 17 | 5 | 5 | | | | | | | | | | |
| | ac, reg 16 | 3 | 3 | 3 | 3 | | | | | | | | | | |
| | ac, reg 32 | – | – | – | 3 | | | | | | | | | | |
| | reg 16, ac | 3 | 3 | 3 | 3 | | | | | | | | | | |
| XLAT<br>Zet het element uit een tabel op positie [DS : BX + AL] in AL | [segreg] : men] | 11 | 11 | 5 | 5 | | | | | | | | | | |
| XLATB | idem | | | | | | | | | | | | | | |
| XOR<br>op 1 ← op 1 ⊕ op 2 | reg, reg | 3 | 3 | 2 | 2 | 0 | | | | | ± | ± | ? | ± | 0 |
| | men, reg | 16+EA | 10 | 7 | 6 | | | | | | | | | | |
| | reg, men | 9+EA | 10 | 7 | 7 | | | | | | | | | | |
| | reg, im | 4 | 4 | 3 | 2 | | | | | | | | | | |
| | men, im | 17+EA | 16 | 7 | 7 | | | | | | | | | | |
| | ac, im | 4 | 4 | 3 | 2 | | | | | | | | | | |

laat nieuwe INT toe.

## Afkortingen en aanduidingen.

| Afkorting | Betekenis |
|---|---|
| ac | Accumulator AX of AL (ook EAX bij de 80386). |
| aantal | Aantal te verschuiven posities. |
| bop | Byte operand. |
| Cond | Condition-code (voorwaardelijk). |
| A | Auxiliary carry (hulp-overdracht). |
| C | Carry (overdracht). |
| O | Overflow (overloop). |
| S | Sign (voorteken). |
| Z | Zero (nul). |
| P | Parity (pariteit). |
| disp | Verplaatsing. |
| iop | Directe operand. |
| md | Geheugen locatie (4-bytes). |
| mop | Geheugenoperand. |
| op | Onbepaalde operand (register, geheugen, data). |
| op 1 | Operand 1. |
| op 2 | Operand 2. |
| rop | Register operand. |
| rw | Woordregister. |
| proc | Subroutine (procedure). |
| n 8 | Acht-bits getal. |
| n 16 | 16-bits getal. |
| IP | Programmateller. |
| reg | Algemeenregister. |
| segreg | Een van de segmentregisters : DS, ES, SS of CS (ook FS of GS bij de 80386). |
| men | Een directe of indirecte geheugenoperand. |
| label | Een label geheugenlocatie in het codesegment. |
| scr, dest | Een bron of bestemmings geheugenoperand gebruikt in een stringoperatie. |
| im | Een constante operand. |
| EA | Effectief adres. |
| pm | Beschermde mode. |
| n | Iteratie. |
| m | Volgende instructie component. |
| . | Logische EN-functie. |
| + | Logische OF-functie. |
| ⊕ | Logische exclusieve OF. |
| × | Vermenigvuldiging. |
| Woord | Woord van enkele lengte 2-bytes (16-bits). |
| WDL | Woord van dubbele lengte 4-bytes. |
| WVL | Woord van viervoudige lengte 8-bytes. |
| RPL | Request privilege level. |
| X | Komt voor ofwel bij de 8086/8088, 80186, 80286 en de 80386. |
| | Beïnvloede vlaggen |
| 1 | Zet de vlag op 1. |
| 0 | Zet de vlag op 0. |
| ? | Kan de vlag veranderen, maar de waarde is onbepaald. |
| blanco | Geen effect op de vlaggen. |
| ± | De waarde van de vlag wordt bepaald door de operatie. |

Opmerking :

Wat betreft het aantal klokcyclussen.

- Er wordt ondersteld dat de instructie reeds geprefetched is.
- Geen WAIT-states of HOLD-aanvraag.
- Geen interrupt in uitvoering.
- Geheugen toegang begint op even adres.
- Als een geheugentoegang op een oneven adres begint dan moeten er vier klokcyclussen worden bijgeteld (8086/80186).
- Bij de 8088/80188 moeten vier klokcyclussen worden bijgeteld als er een woordtransfer naar het geheugen of I/O gebeurt.